I-80/Gilman Street Interchange Improvement Project

DELINEATION OF WATERS OF THE UNITED STATES

Caltrans District 04

04-ALA-80-PM 6.4/6.82

EA 04-0A7700 / Project ID 0400020155

Revised August 2017

I-80 GILMAN
INTERCHANGE IMPROVEMENT PROJECT

Caltrans

ALAMEDA County Transportation Commission

CITY OF BERKELEY

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Acronyms

Alameda CTC	Alameda County Transportation Commission
Bay Trail	San Francisco Bay Trail
BCDC	San Francisco Bay Conservation and Development Commission
bgs	below ground surface
Caltrans	California Department of Transportation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CWA	Clean Water Act
EPA	Environmental Protection Agency
ºF	degrees Fahrenheit
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
HOV	High Occupancy Vehicle
ICM	Integrated Corridor Mobility
I-	Interstate
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act
NL	not listed
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
OBL	obligate
OHWM	ordinary high water mark
PG&E	Pacific Gas and Electric
Project	I-80/Gilman Street Interchange Improvement Project
RWQCB	Regional Water Quality Control Board
SWRCB	State Water Resources Control Board
TCE	temporary construction easements
TDM	Transportation Demand Management
TSM	Transportation System Management
UPL	upland
UPRR	Union Pacific Railroad
U.S.	United States
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey

1 INTRODUCTION

The California Department of Transportation (Caltrans) and the Alameda County Transportation Commission (Alameda CTC) propose the Interstate (I-) 80/Gilman Street Interchange Improvement Project (Project) to improve traffic, pedestrian, and bicycle operations at the I-80/Gilman Street interchange in Berkeley in Alameda County, California.

The purpose of the proposed Project is to:

- Simplify and improve the navigation, mobility, and traffic operations at the I-80/Gilman Street interchange.
- Reduce congestion, vehicle queues and conflicts at the I-80/Gilman Street Interchange.
- Improve local and regional bicycle connections and pedestrian facilities through the I-80/Gilman Street interchange.
- Improve safety for all modes of transportation.

1.1 Project Description

This section describes the proposed action and the Project alternatives developed to meet the identified purpose and need of the Project, while avoiding or minimizing environmental impacts. The two alternatives include the Roundabout Alternative and the No Build Alternative.

The Project is located in Alameda County at the I-80/Gilman Street interchange in the City of Berkeley (Post Miles 6.4 to 6.82). Within the limits of the proposed Project, I-80 is a conventional 10-lane freeway with 12-foot lanes and 11-foot shoulders. Gilman Street is a 4-lane major arterial with 11-foot lanes and 6-foot shoulders that passes underneath I-80. The I-80/ Gilman Street interchange is a four-lane arterial roadway (Gilman Street), with two lanes in the east/west direction that are intersected with four I-80 on- and off-ramps, West Frontage Road, and the Eastshore Highway. The purpose of the Project is to simplify and improve navigation, mobility and traffic operations, reduce congestion, vehicle queues and conflicts, improve local and regional bicycle connections and pedestrian facilities, and improve safety at the I-80/Gilman Street interchange. Current conditions, along with an overall increase in vehicle traffic, have created poor, confusing, and unsafe operations in the interchange area for vehicles, pedestrians, and bicyclists.

1.1.1 Project Alternatives

Two Project alternatives are proposed for consideration, as described below. One build alternative, the Roundabout Alternative, was developed to meet the identified purpose and need of the Project, while avoiding or minimizing environmental impacts. The second alternative is the No Build Alternative. The alternatives will be evaluated based upon Project cost, including life cycle costs, vehicle miles traveled and other traffic data, and impacts to the environment, such as community and land use impacts, cultural resources, floodplains, wetlands, greenhouse gas emissions, and special-status species. The general Project vicinity is shown in Figure 1; the specific Project location is shown in Figure 2.

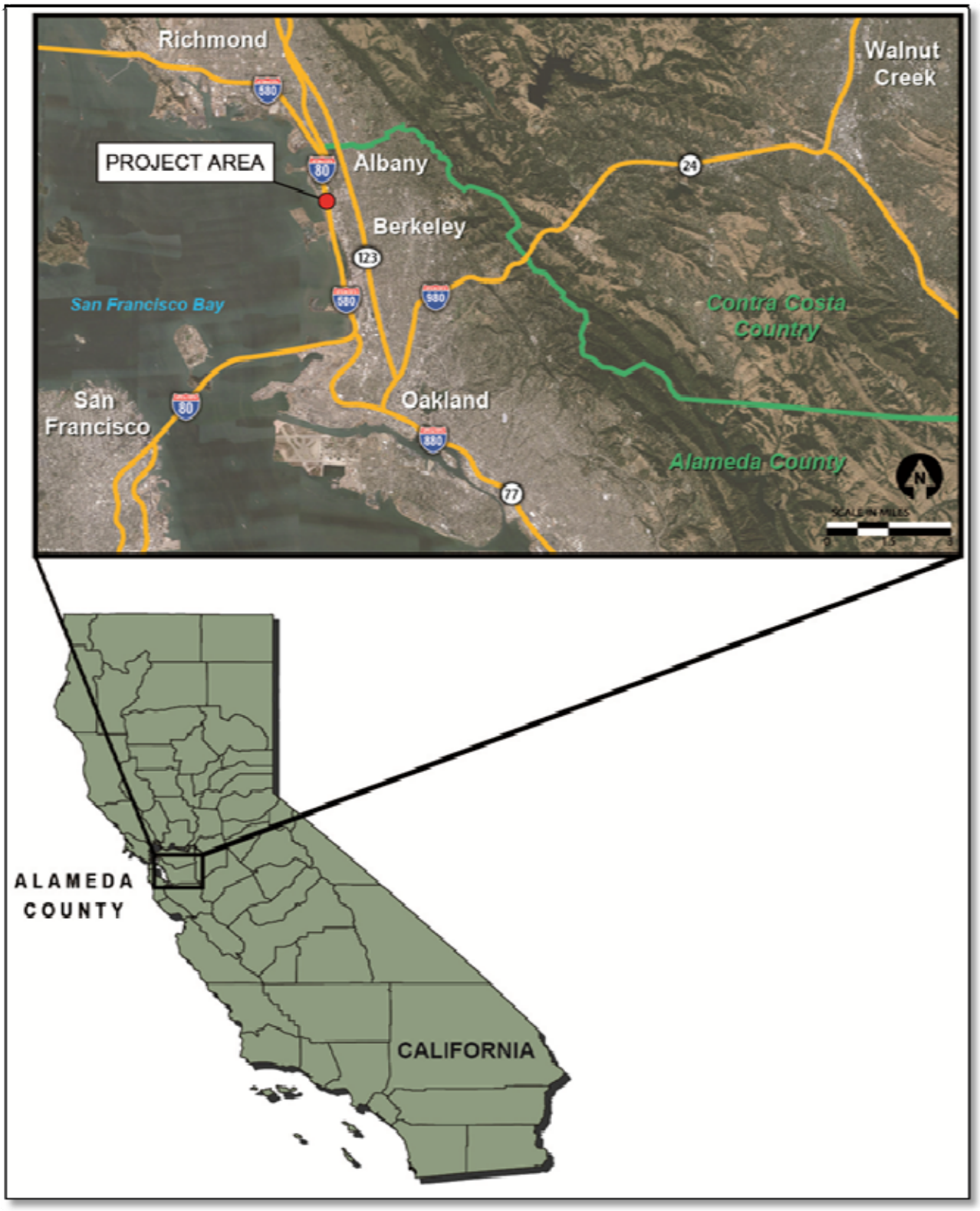

Figure 1. Project Vicinity

Source: Parsons

Figure 2. Project Location

Source: Parsons

1.1.1.1 Roundabout Alternative

The Roundabout Alternative includes the reconfiguration of I-80 ramps and intersections at Gilman Street. The existing non-signalized intersection configuration with stop-controlled ramp terminuses would be replaced with two hybrid single-lane roundabouts with multilane portions on Gilman Street at the I-80 ramp terminals. The I-80 ramps and frontage road intersections at each ramp intersection would be combined to form one single roundabout intersection. Gilman Street would be reconstructed from approximately 300 feet west of West Frontage Road to approximately 100 feet east of 4th Street. Work would also include reconstruction of West Frontage Road and Eastshore Highway to allow for the minimum amount of spacing between ramp intersections and local intersections. In addition, Eastshore Highway would be converted from two lanes to one lane entering the roundabout in order to reduce the number of conflicts. During this reconfiguration, pavement preservation (mill and overlay) would be implemented.

These improvements associated with the installation of the roundabouts would extend approximately 340 feet south on West Frontage Road from the Gilman Street Interchange and 650 feet north and 1,100 feet south on Eastshore Highway from the Gilman Street Interchange. Work associated with the reconfiguration of the eastbound I-80 off-ramp and on-ramp would extend 800 feet south and 250 feet north, respectively. Work associated with the reconfiguration of the westbound I-80 off-ramp and on-ramp would extend 300 feet north and 210 feet south, respectively. There are no proposed improvements to the freeway mainline.

All existing connections from minor streets would be maintained under the Roundabout Alternative with the exception of the southbound and northbound movements onto Eastshore Highway. These movements would instead be made via 2nd Street to Page Street or 2nd Street to Harrison Street, respectively. The western roundabout intersection would consist of four approaching legs: eastbound and westbound Gilman Street, West Frontage Road and I-80 westbound off-ramp. The eastern roundabout intersection would include a total of five approaching legs: I-80 eastbound off-ramp, northbound and southbound Eastshore Highway, and eastbound and westbound Gilman Street. Left-turn pockets would be provided on Gilman Street for vehicles turning onto 2nd Street. The Roundabout Alternative is shown in Figure 3.

Pedestrian and Bicycle Facilities

A shared-use Class I path for pedestrians and bicyclists would be constructed on the south side of the Gilman Street undercrossing. A Class I path consists of a 10-foot-wide travel way with two foot wide shoulders on either side of the path and provides for a completely separated right-of-way for bikes and pedestrian use. The shared-use path would extend south along Eastshore Highway, where it would then connect to a proposed bicycle/pedestrian overcrossing. The overcrossing would be constructed over I-80, merging into the existing San Francisco Bay Trail (Bay Trail) that runs parallel to West Frontage Road. The shared-use path would terminate at the Bay Trail on the west and at the eastern roundabout on the east side of the Project. From the eastern roundabout, it would join a two-way cycle track and the existing sidewalk.

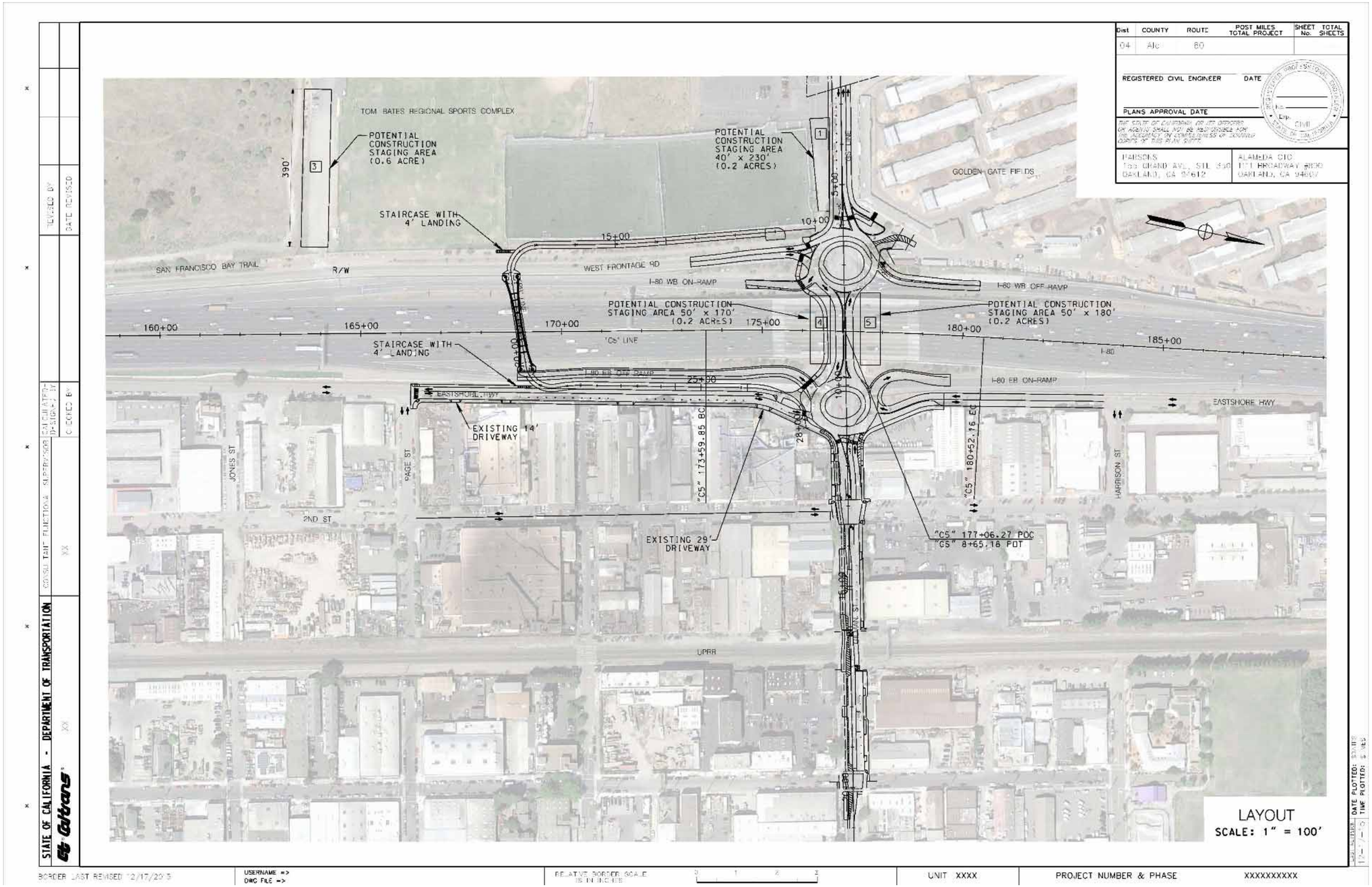

Figure 3. Roundabout Alternative Layout Sheet

Source: Parsons

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The Roundabout Alternative also includes a two-way cycle track on the south side Gilman Street between the eastern roundabout and 4th Street. The two-way cycle track is separated from vehicle traffic with a minimum 3-foot striped buffer and a parking lane in some locations. This facility would connect the bicycle lanes to the pedestrian overcrossing and to the Class I Bay Trail facility along West Frontage Road. The addition of the two-way cycle track would require a signal to be installed at the intersection of 4th Street and Gilman Street. The northern curb line on Gilman Street would also be shifted 2 to 5 feet north. Along Eastshore Highway, the sidewalk, curb, and gutter would be replaced between Page Street and Gilman Street.

West of the interchange, the existing Bay Trail would be extended west along the south side of Gilman Street from its current terminus at the intersection of West Frontage Road and Gilman Street. Improvements to the Bay Trail under the proposed Project would end 100 feet from the shoreline, outside of the San Francisco Bay Conservation and Development Commission (BCDC) jurisdiction. The proposed Bay Trail extension would be 10 feet wide, un-striped, with 2-foot wide unpaved shoulders on either side of the trail. This extension would eventually tie into a related project that East Bay Regional Parks District is undertaking to extend the Bay Trail from the north, terminating at Golden Gate Fields. As currently designed, this would leave a small gap (175 feet) in the Bay Trail, between the end of the trail at Golden Gate Fields and the end of the trail on the south side of Gilman Street. East Bay Regional Parks District, or a related agency, would be responsible for planning, designing, and constructing this 175-foot gap in the Bay Trail. These proposed improvements can be seen in Figure 3.

The bicycle/pedestrian overcrossing would be similar to the existing bicycle/pedestrian overcrossing over I-80 at University Avenue. The structure would have a minimum of three spans with a maximum span length of approximately 230 feet over I-80. The foundations for the pedestrian bridge would be located on 2-foot diameter Cast-In-Drilled-Hole piles 120 feet below the existing ground surface. There would be two staircases incorporated into the overcrossing, one on each side of I-80. They would be approximately 45 feet long with a height of 25 feet to connect to the overcrossing. There would also be retaining walls on the east and west side of the overcrossing; they would be approximately 6 feet tall at the highest point and taper down to zero. The maximum depth of the retaining wall piles are expected to be 50 feet below the ground surface.

Golden Gate Fields Access

The existing driveway entrance to the Golden Gate Fields is located immediately adjacent to the westbound I-80 off-ramp at the end of the curb return. The construction of the roundabout would expand the ramp intersection to the north and provide adequate truck turning for the range of vehicles that access the fields.

Partial Property Acquisitions

Construction of the roundabout would require partial acquisition of adjacent properties for the Project right-of-way. These would be required between the San Francisco Bay Trail and the Tom Bates Sports Complex (APN: 60-2529-1-3) for the bicycle/pedestrian overcrossing. Additionally, an easement from Golden Gate Fields (APN: 60-2535-1) would be required in order to modify access. Temporary construction easements (TCEs) would be required for construction equipment storage and laydown from the Tom Bates Sports Complex. Additional partial acquisitions may

also be required from other parcels in order to construct the Project. No businesses or residences would be displaced.

Utilities, Landscaping, and Drainage
Existing Pacific Gas and Electric (PG&E) overhead electric lines along Gilman Street, West Frontage Road, and Eastshore Highway would be relocated under the Roundabout Alternative. Some of these overhead lines may be placed underground to enhance the gateway theme for the interchange. Minor drainage modifications would also be required to conform to the new roundabout alignment. Utility relocations and new drainage systems may require trenching to a depth of approximately 6 feet. Light pole foundations would be 2 feet in diameter and would range from 5 to 13 feet deep in the vicinity of the roundabout. An existing EBMUD recycled water transmission line will be relocated and extended as part of the Project. Approximately 1,100 feet of a new 12-inch recycled water transmission pipeline within Eastshore Highway from Page Street to Gilman Street and approximately 1,050 feet of pipeline within Gilman Street from 2nd Street to the Buchanan Street extension are part of the Build Alternative. The maximum excavations for the pipe trench will be approximately 24 inches by 60 inches deep. Approximately 1,100 feet of an existing 10-inch EBMUD recycled water pipeline located within Caltrans right of way along the eastbound Gilman Street off-ramp shoulder will be abandoned in place or removed.

Existing vegetation is sparse and consists of ornamental plantings or ruderal vegetation. The Build Alternative would remove existing landscaping and trees on the sidewalk along Eastshore Highway from Page Street to Gilman Street. In addition, trees and/or shrubs would be removed at the I-80 off-ramps, westbound I-80 on-ramp, and along the San Francisco Bay Trail. Opportunities for new landscaping or artwork would be available in the center of each roundabout.

Union Pacific Railroad Improvements
The City of Berkeley would like to grade separate the intersection of Gilman Street and the UPRR crossing at 3rd Street as a separate, future project. The proposed project improvements are not currently funded. All improvements would not preclude or inhibit this future grade separation.

Construction Activities

Construction Hours. Construction work for the Roundabout Alternative would be done primarily during daylight hours from 7:00 a.m. to 6:00 p.m.; however, there may be some work during night-time hours to avoid temporary roadway closures for tasks that could interfere with traffic or create safety hazards. Examples of these tasks include striping operations, traffic control setup, installation of storm drain crossings, and asphalt pavement mill and overlay.

Road Closures and Detours. Temporary lane and ramp closures and detours would occur. It is anticipated that temporary closure of existing bicycle or pedestrian facilities would occur at times, and may require temporary rerouting of transit service due to intersection work. A Transportation Management Plan would be developed and implemented as part of the Project construction planning phase. The Transportation Management Plan would address potential impacts to circulation of all modes (transit, bicycles, pedestrians, and private vehicles). Roadway

and/or pedestrian access to all occupied businesses and respective parking lots would be maintained during Project construction. The Transportation Management Plan would include an evaluation of potential impacts as a result of diverting traffic to alternate routes, and it would also include measures to minimize, avoid and/or mitigate impacts to alternate routes, such as agreements with local agencies to provide enhanced infrastructure on arterial roads or intersections to deal with detoured traffic. The Transportation Management Plan may provide for contracting with local agencies for traffic personnel, especially for special event traffic through or near the construction zone.

Staging Location. The anticipated construction staging areas available include areas within the existing roadway right-of-way construction limits. An additional staging area may be required west of the Project on Gilman Street in one or two parking lots owned by East Bay Regional Parks. All staging areas would be located outside of BCDC jurisdiction.

Construction Equipment. The following equipment is anticipated to be used during construction: auger drill rig, backhoe, compactor, concrete pump, crane, dozer, excavator, front end loader, grader, heavy duty dump trucks, jackhammer, vibratory roller, and pavement breaker.

1.1.1.2 Transportation System Management (TSM) and Transportation Demand Management (TDM)

Transportation System Management and Transportation Demand Management measures alone could not satisfy the purpose and need of the Project. The following TSM and TDM measures have been incorporated into the build alternative for this Project: bicycle and pedestrian improvements. In addition, the build alternative would connect to the newly constructed I-80 Integrated Corridor Mobility (ICM) project. The I-80 ICM represents one of the most comprehensive Intelligent Transportation Systems in the state, implementing a network of integrated electronic signs, ramp meters and other state-of-the-art elements between the Carquinez Bridge and the Bay Bridge to enhance motorist safety, improve travel time reliability and reduce accidents and associated congestion.

1.1.1.3 No Build Alternative

The No Build Alternative consists of the future conditions with transportation improvements only as currently planned and programmed for funding. The No Build Alternative provides a basis for comparing the build alternatives. Under the National Environmental Policy Act (NEPA), the No Build Alternative can be used as the baseline for comparing environmental impacts; under the California Environmental Quality Act (CEQA), the baseline for environmental impact analysis consists of the existing conditions at the time the environmental studies began.

1.1.1.4 Alternatives Considered But Eliminated From Further Discussion

Additional alternatives have been studied and reviewed by Project stakeholders during the Project alternative development phase, including a signalized intersection alternative, roundabout alternative with bypass ramps, construction of a pedestrian and bicyclist undercrossing, and alternate access to Golden Gate Fields.

The signalized intersection alternative was eliminated from further discussion because of engineering, right-of-way, and cost constraints. Under the signalized intersection alternative, there would not have been sufficient space for left-turn pockets under the I-80 Undercrossing, and it would have required removal and replacement of the structure. This would have caused significant traffic impacts and inconvenience for motorists. In addition, the cost of this alternative renders it infeasible.

An additional Roundabout Alternative with bypass lanes was also eliminated from further discussion. This alternative would have been similar to the proposed Roundabout Alternative, except for the addition of two bypass ramps under the Gilman Undercrossing. The bypass ramps would have been constructed underneath the I-80 freeway structure between the abutment and columns to provide direct connection between the roundabouts and the I-80 eastbound and westbound on-ramps. This would have caused access from the east leg of Eastshore Highway to Gilman Street to be permanently closed to make room for the bypass ramp. This alternative was eliminated because of the constraints regarding sight distance, and lateral clearance to the abutments, limitations on turning radius and shoulder widths, restrictions for high-occupancy vehicle (HOV) placement on on-ramps, and increased confusion for drivers entering and exiting the roundabout.

Concepts developed during the early Project development phase called for pedestrian and bicycle shared-used paths on the north and south side of the Gilman Street undercrossing. Currently, there is a significant volume of right-turn traffic entering the I-80 eastbound on-ramp from northbound Gilman Street at a relatively high speed. It is difficult and unsafe for pedestrians and bicyclists to cross the ramp, especially during peak hours. Design review revealed that the non-motorists and motorists conflict at the eastbound on-ramp is intense for the future scenarios given the high volume of ramp traffic and the need for a two-lane crossing. Because there are few pedestrians and bicyclists currently using the north path to access the northeast side of the interchange where Golden Gate Fields is located, the north shared-use path was removed from consideration with Project stakeholders and the bicycle group’s input.

Alternate access to Golden Gate Fields was evaluated and discussed with the owner, Golden Gate Fields. The alternatives included eliminating access to Gilman Street by connecting the existing entrance to the access road along the Buchanan Street Extension, and relocating the entrance 250 feet to the west of its current location. Golden Gate Fields management requested that access be maintained directly into the roundabout. These alternate entrances were removed from consideration based upon the owner’s request and the Project Development Team’s input.

2 REGULATORY FRAMEWORK

This chapter describes the sections of the federal and State laws that regulate aquatic features within the Study Area. The Study Area was designed to extend potentially outside of the Project in order to ensure that the entire Project footprint is characterized (Figure 4).

2.1 Federal Regulations

2.1.1 Section 404 of the Clean Water Act

Wetlands and other water resources (e.g., rivers, streams, and natural basins) are a subset of federal "waters of the U.S." and receive protection under Section 404 of the Clean Water Act (CWA). The United States (U.S.) Army Corps of Engineers (USACE) has the primary federal responsibility for administering regulations that concern waters and wetlands. The USACE acts under two statutory authorities: the Rivers and Harbors Act (Sections 9 and 10), which governs specified activities in "navigable waters," and the CWA (Section 404), which governs specified activities in "waters of the U.S.," including wetlands.

The USACE and the U.S. Environmental Protection Agency (EPA) define wetlands as "areas that are saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support a prevalence of vegetation typically adapted for the life in saturated soil conditions. Wetlands generally include swamps, marches, bogs, and similar areas" (Environmental Laboratory 1987).

The term "waters of the United States" is defined in 33 *Code of Federal Regulations* (CFR) Part 328.3(a) and 40 CFR Part 230.3(s) 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 interstate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation of 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 (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.

Figure 4. Study Area Map

The term "other waters of the U.S." is used to characterize water bodies, such as intermittent streams, that do not meet the full criteria for wetlands designation.

2.1.1.1 Other Waters of the U.S.

The limits of USACE jurisdiction under Section 404 as given in 33 CFR Section 328.4 are as follows: a) territorial seas: 3 nautical miles in a seaward direction from the baseline; b) tidal waters of the U.S.: high tide line or to the limit of adjacent non-tidal waters; c) non-tidal waters of the U.S.: ordinary high water mark (OHWM) or to the limit of adjacent wetlands; and d) wetlands: to the limit of the wetland. The USACE jurisdiction in non-tidal areas extends to the OHWM, which is defined as:

> "*...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impresses on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.*" (Federal Register Vol. 51, No. 219, Part 328.3 (e). November 13, 1986)

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

Two cases recently brought before the U.S. Supreme Court, *Rapanos v. United States* (No. 04-1034) and *Carabell v. Army Corps of Engineers* (No. 04-1384), challenged the USACE's interpretation of waters of the U.S. (USACE and EPA 2007). The two cases are hereafter referred to jointly as *Rapanos*. USACE had interpreted the CWA, 33 United States Code 1362(7), to regulate wetland areas that are separated from a tributary of a navigable water by a narrow, constructed berm where evidence of an occasional hydrologic connection exists between the wetland and the tributary. *Rapanos* also questioned congressional authority under the Commerce Clause to apply the CWA to the wetlands at issue in the case.

On June 19, 2006, the court held 5 to 4 in favor of tightening the definition of "waters of the U.S." The decision stated that a water or wetland constitutes "navigable waters" under the CWA if it possesses a "significant nexus" to waters that are currently navigable or could feasibly be made navigable. The case has been remanded to determine whether such a nexus exists.

USACE and the EPA issued a joint memorandum on June 5, 2007, that included new guidelines for establishing whether wetlands and other waters of the U.S. fall within USACE jurisdiction (USACE and EPA 2007). The memorandum asserted USACE and EPA jurisdiction over traditional navigable waters, wetlands adjacent to traditional navigable waters, non-navigable tributaries to traditional navigable waters that are relatively permanent waters, and wetlands that abut relatively permanent waters, wetlands that are adjacent to non-relatively permanent waters, and wetlands adjacent to, but not directly abutting a relatively permanent non-navigable tributary. The agencies generally do not assert jurisdiction over swales, erosional features, or ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

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

In 2001, the U.S. Supreme Court issued a decision in the *Solid Waste Agency of Northern Cook County v. United States Army Corps of Engineers et al.* (No. 99-1178). The case involved the filling of hydrologically isolated waters that had formed from remnant excavation ditches on a 533-acre parcel. In the decision, the court denied USACE jurisdiction over isolated water bodies, which the USACE had previously regulated using the "Migratory Bird Rule" of 1986. The court defined an isolated water as any body of water that is non-navigable, intrastate, and lacking any significant nexus to navigable bodies of water (Pooley 2002).

2.2 Regional Water Quality Control Board

The California Water Code defines "waters of the State" as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Section 13050[e]). According to the State Water Resources Control Board (SWRCB), this includes all waters of the U.S. and is "broadly construed to include all waters within the state's boundaries, whether private or public, including waters in both natural and artificial channels" (SWRCB 2015).

The SWRCB protects the beneficial uses of surface water and groundwater in California under the Porter-Cologne Act, with a focus on water quality. The Regional Water Quality Control Boards (RWQCBs) regulate all pollutant or nuisance discharges that may affect either surface water or groundwater. The San Francisco Bay RWQCB may exercise jurisdiction over discharges into waters of the State pursuant to the Porter-Cologne Act, in cases where the waters are excluded from regulation under the federal CWA. No formal protocol exists for delineating waters of the State.

2.3 Wetlands and Other Waters Potentially Exempt from USACE Jurisdiction

A number of exemptions from CWA regulations exist for areas that would otherwise qualify as waters of the U.S. These exemptions are classified as discretionary or non-discretionary exemptions.

2.3.1 Discretionary Exemptions

As described in the preamble discussion of USACE regulations in November 13, 1986, *Federal Register*, areas that meet the technical definition of wetlands generally are not considered waters of the U.S. (33 CFR 328.3[a]). However, the USACE and EPA reserve the right to determine that a particular water body within the categories listed below is a water of the U.S. Such areas include:

- Non-tidal drainage and irrigation ditches excavated on dry land
- Artificially irrigated areas that would revert to upland if the irrigation ceased
- Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and that are used exclusively for purposes such as stock watering, irrigation, settling basins, and rice growing

- Artificial reflecting or swimming pools or other small ornamental bodies of water created by excavating and/or diking dry land to retain water primarily for aesthetic reasons
- Water-filled depressions created in dry land incidental to construction activity and pits excavated in dry land for the purpose of obtaining fill, sand, or gravel unless and until the construction or excavation operation is abandoned and the resulting body of water meets the definition of waters of the U.S. (USACE 1986).

Features such as roadside ditches, drainage ditches, and irrigation canals that appear to have been excavated in uplands and do not convey or connect to other waters of the U.S. are considered non-jurisdictional waters under the new USACE methodology. Many of these features are located in areas with little or no topography, indicating a flow path to a seasonal stream (a stream that flows for about 3 months a year) that eventually discharges to a traditional navigable water. Canals and ditches that do not maintain a flow connection with a traditional navigable water are considered isolated. Canals that transport water from relatively permanent waters that do not reconnect or recirculate water back to relatively permanent waters draining to a traditional navigable water are not considered jurisdictional. Likewise, any artificial drainage ditch that drains upland to a relatively permanent water is non-jurisdictional. An exception to this may be a flood-irrigated field watered by a jurisdictional canal that is found to drain to a ditch leading to relatively permanent waters connected to a traditional navigable water.

2.3.2 Non-Discretionary Exemptions

USACE regulations contain a non-discretionary exemption for waste treatment systems designed to meet the requirements of the CWA (33 CFR 328.3[a][7]). The systems, including treatment ponds and lagoons, are not considered waters of the U.S.

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3 METHODS

This section describes the methods utilized to delineate waters of the U.S. (including wetlands) and waters of the State.

3.1 Wetlands Delineation

Prior to conducting the field surveys, reference materials were reviewed, including the *Soil Survey of Alameda County, California, Western Part* (U.S. Department of Agriculture [USDA] 1975); the Richmond and Oakland West U.S. Geological Survey (USGS) 7.5' quadrangle maps; the *National Wetlands Inventory* (U.S. Fish and Wildlife Service [USFWS] 2016) as shown in Figure 5; and aerial photos of the site. A field survey was conducted on May 18, 2016, within the Study Area.

The three parameters used to delineate wetlands are the presence of: 1) hydrophytic vegetation, 2) wetland hydrology, and 3) hydric soils. According to the USACE Wetlands Delineation Manual (USACE Manual [Environmental Laboratory 1987]), for areas not considered “problem areas” or “atypical situations,” in order to make a positive wetland determination, there must be evidence of at least one positive wetland indicator from each parameter.

The Arid West Region supplement to the USACE Manual (USACE 2008) is applicable to the portion of California containing the Project area. The Arid West Region supplement includes procedures for identifying wetlands that may lack indicators due to natural processes (problem areas) or recent disturbances (atypical situations). Problem area wetlands are defined as naturally occurring wetland types that periodically lack indicators of hydrophytic vegetation, hydric soil, or wetland hydrology due to normal seasonal or annual variability. Some problem area wetlands may permanently lack certain indicators due to the nature of the soils or plant species on the site. Atypical situations are defined as wetlands in which vegetation, soil, or hydrology indicators are absent due to recent human activities or natural events. Atypical situations may also affect the normal circumstances of a site, or conditions and functions that are relatively permanent.

Three features within the Study Area were evaluated for the presence or absence of indicators of the three parameters. Paired sample points were collected to characterize the wetland-upland boundary. The boundary was primarily determined by a shift in plant species composition and hydric soil. Vegetation was also documented within this area to determine whether wetland vegetation indicators were present. The methods for evaluating the presence of waters of the U.S. employed during the site visits are described in detail below.

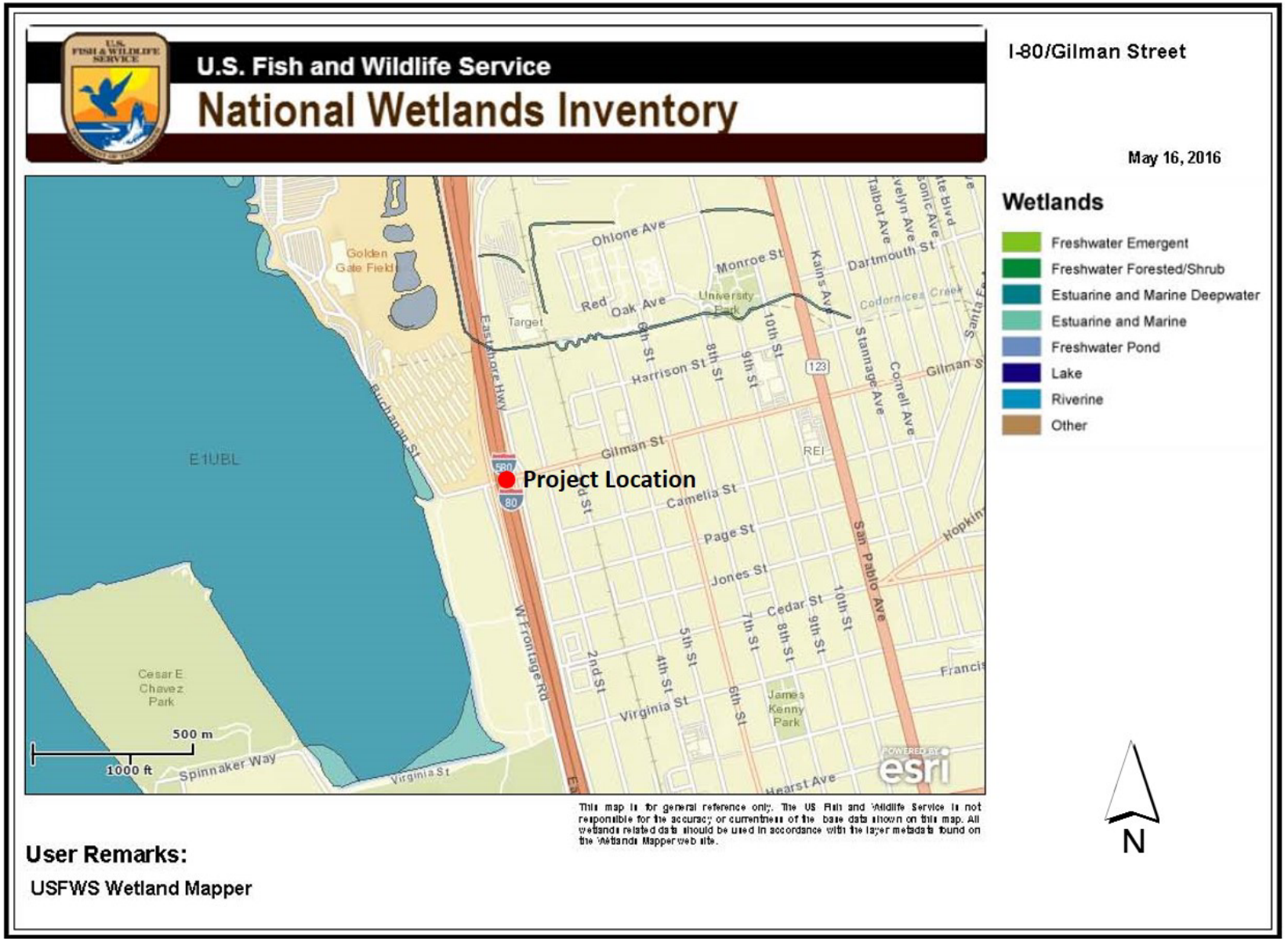

Figure 5. USFWS National Wetlands Inventory Map

3.1.1 Vegetation

Unknown plant species observed in the Study Area were identified using the *Jepson Manual* (Baldwin et al. 2012). Plants were assigned a wetland indicator status according to the *National Wetland Plant List* (Lichvar 2016) and the *Arid West 2014 Regional Wetland Plant List* (Lichvar 2014). Where differences in nomenclature occur between the two documents, the species name as it occurred in the national list is shown in brackets. Wetland indicator status is based on the expected frequency of occurrence in wetlands as shown in Table 1.

Table 1. Wetland Plant Species Indicator Status

Indicator Status	Description	Frequency Occurrence
OBL	Always found in wetlands	>99%
FACW	Usually found in wetlands	67-99%
FAC	Equal in wetlands or non-wetlands	34-66%
FACU	Usually found in non-wetlands	1-33%
UPL/NL	Upland/not listed (upland)	<1%

Source: Environmental Laboratory 1987

The presence of hydrophytic vegetation was then determined based on indicator tests described in the Arid West Region supplement.

3.1.2 Hydrology

The USACE jurisdictional wetland hydrology criterion is satisfied if an area is inundated or saturated for a period sufficient to create anoxic soil conditions during the growing season (a minimum of 14 consecutive days in the Arid West Region supplement). Evidence of wetland hydrology can include direct observations, evidence, indirect evidence, and vegetation or soil features that indicate wet conditions. Primary indicators are visible inundation or saturation, drift deposits, oxidized root channels, and salt crusts. Secondary indicators are the Facultative (FAC)-neutral test, presence of a shallow aquitard, or drainage patterns. The presence or absence of the primary or secondary indicators described in the Arid West Region supplement was used to determine if sample points within the Study Area met the wetland hydrology criterion.

3.1.3 Soils

The USDA Natural Resources Conservation Service (NRCS) defines a hydric soil as follows:

> *"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."* (Federal Register 59:133, July 13, 1994)

Soils formed over long periods of time under wetland (anaerobic) conditions often possess characteristics that indicate they meet the definition of hydric soils. Hydric soils can have a hydrogen sulfide (rotten egg) odor, low chroma matrix color, presence of redox concentrations, gleyed or depleted matrix, or high organic matter content. In addition, they are generally designated 0, 1, or 2, used to identify them as hydric according to specific indicators that can be used to determine whether a soil is hydric, for the purposes of wetland delineation. The

indicators are provided in the NRCS *Field Indicators of Hydric Soils in the U.S.* (USDA 2010). The Arid West Region supplement provides a list of 23 of these hydric soil indicators that are known to occur in the Arid West Region. Soil samples were collected and described according to the methodology provided in the Arid West Region supplement. Soil chroma and values were determined by using a standard Munsell soil color chart (Gretag Macbeth 2009).

Hydric soils were determined to be present if any of the soil samples met one or more of the 23 indicators listed in the Arid West Region supplement.

4 ENVIRONMENTAL SETTING

This section provides more information on environmental factors that influence wetland formation and continuity such as climate and precipitation, topography, soils, and hydrology.

4.1 Location and Topography

The Study Area is located in the Richmond USGS 7.5 Minute quadrangle in the City of Berkeley. The Study Area is bound by the San Francisco Bay to the west, the City of Albany to the north, and the City of Berkeley to the south and east. The Study Area is surrounded by a mix of industrial, commercial, and recreational development. The Study Area is relatively flat, sloping from east to west toward the San Francisco Bay. Along Gilman Street, elevations North American Vertical Datum of 1988 ([NAVD] 88) range from 11.7 feet west of West Frontage Road to 13.8 feet at the I-80 eastbound ramp intersection. I-80 is elevated on fill north and south of Gilman Street and crosses over Gilman Street as an elevated bridge structure with a vertical clearance of approximately 15 feet (WRECO 2016a). See Figure 6 for a topographic map.

Figure 6. Topographic Map of the Study Area

4.2 Climate and Precipitation

According to the Köeppen climate classification system, the Project area has a Mediterranean climate, characterized by hot, dry summers and mild, moist winters (George 2015). The Project area generally experiences precipitation between mid-October and mid-April. A climate summary for the nearest National Oceanic and Atmospheric Administration (NOAA) weather

station with similar elevation and topography to the Project reports the following precipitation and temperature information (Western Regional Climate Center 2016):

Berkeley Station 040693

- Average annual rainfall for Berkeley is 23.41 inches
- Average temperatures range seasonally from 49.2 to 64.9 degrees Fahrenheit (ºF)

The maximum average temperature reported for the Berkeley area was 71.8ºF in September and the minimum average temperature was 42.7ºF in December. The wettest month of the year is January, with an average rainfall of 4.98 inches, and the driest month is July, with an average of 0.03 inches. Winter storms are usually of moderate duration and intensity (Western Regional Climate Center 2016).

4.3 Geology and Soils

4.3.1 Geology

Figure 7 presents geologic units as mapped in the Study Area. The geology of the Study Area consists of artificial fill (Historic) and alluvial fan and fluvial deposits (Holocene and late Pleistocene). Artificial fill (af; Historic) consists of man-made deposits of various materials and ages. Some fills are compacted and quite firm, but fills made before 1965 are typically not compacted and consist simply of dumped materials. Artificial fill overlies Holocene and/or late Pleistocene bay margin deposits. Based upon review of available data, artificial fill could be as thick as 5 to 10 feet and taper to 0 feet, depending upon the location within the Study Area (WRECO 2016b).

Alluvial fan and fluvial deposits (Qhaf; Holocene, and late Pleistocene) consist of sand and clay deposited in valley areas. Deposits are brown or tan, medium dense to dense, gravelly sand or sandy gravel that generally grades upward to sandy or silty clay. Near the distal fan edges, the fluvial deposits are typically brown, never reddish, medium dense sand that fines upward to sandy or silty clay. The best-developed Holocene alluvial fans are on the San Francisco Bay plain. All other alluvial fans and fluvial deposits are confined to narrow valley floors. The deposits are present at the eastern end of the Study Area along Gilman Street and likely underlie the artificial fill that covers most of the Study Area. Based upon review of available data, the transition from Holocene deposits to late Pleistocene deposits could be between 20 to 30 feet below ground surface (bgs) (WRECO 2016b).

Figure 7. Geologic Map of the Study Area

4.3.2 Soils

Available logs of test borings identify the soils within the top 10 feet of the surface as very loose to loose sand and very soft organic clay (Bay Mud) with approximately 5 to 10 feet of the surface soils being fill material (WRECO 2016a).

The NRCS "Web Soil Survey" classifies the Study Area as Urban Land and Urban Land-Clear Lake complex. Urban Land is defined as land covered by buildings, roads, parking lots, and other structures. The soil within this unit is heterogeneous fill derived from various sources. Many areas designated under this map unit consist of reclaimed land adjacent to San Francisco Bay. The Urban Land soil unit has not been assigned a hydrologic soil group (USDA 1975). See Figure 8 for the soils map.

Urban Land – Clear Lake complex is about 55 percent Urban Land and 35 percent Clear Lake, with small areas of Omni silty clay loam and Marvin silt loam making up the remaining 10 percent. The soil within this unit is poorly drained and the slope ranges from 0 to 5 percent. It formed in alluvium derived from sedimentary rock (USDA 1975). This soil is in the hydrologic soil group C, defined as soils having a slow infiltration rate when thoroughly wet. These consist primarily of soils having a layer that impedes the downward movement of water or soils of moderately fine texture to fine texture.

4.3.2.1 Hydric Soils

Both soil types within the Study Area are considered hydric. The hydrologic properties for Urban Land are not defined, and hydrologic properties of Urban Land – Clear Lake complex are characterized as "poorly drained" (USDA 2014). Hydric soil is one criterion used to determine the presence or absence of wetland conditions. Table 2 summarizes site soil information.

Table 2. Soil Types Occurring within the Study Area

Map Unit Symbol	Map Unit Name (slope)	Drainage	Land Form	Hydric Soil
146	Urban Land	NA	Basin floors	Yes
148	Urban land – Clear Lake complex	poorly drained	Basin floors	Yes

Figure 8. Soils Map of the Study Area

4.3.3 Hydrology

There are no creeks, streams, or river crossings within the limits of the Project. The Project area is within the Gilman Street and Schoolhouse Creek watersheds. The Gilman Street watershed drains the majority of the Project area, to the west of the I-80 eastbound on- and off-ramps, and all of the Project area on the north side of Gilman Street. The Schoolhouse Creek watershed drains the remaining portion, from the south side of Gilman Street between the Eastshore Highway to the UPRR tracks (WRECO 2016a).

The Gilman Street watershed consists of the various networks of drainage facilities that connect to the 60-inch reinforced concrete pipe that runs under Gilman Street and discharges to the San Francisco Bay. Based on the watershed maps, the only Project areas not within the Gilman Street watershed are the areas south of Gilman Street between Eastshore Highway and the UPRR tracks. Within this area, drainage facilities are directed to a culvert that runs under Second Street, which is a tributary of the main Schoolhouse Creek culvert under Virginia Street. See Figure 9 for local hydrology.

Figure 9. Local Hydrology Map

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5 RESULTS

USACE protocol was followed to conduct a jurisdictional delineation on May 18, 2016, by WRECO biologists Jared Elia and Scott Elder. Potential jurisdictional features found within the Study Area are described below. Wetland Determination Data Forms for the Arid West Region are found in Appendix A. Photographs of the representative portions of the Study Area are shown in Appendix B.

5.1 Hydrophytic Vegetation

Plant species that may be considered wetland indicator species were found within the Study Area. Table 3 includes a list of vegetation observed during the survey, the indicator status of the plants, and whether the plants are native or non-native.

Table 3. Vegetation Observed

Scientific Name	Common Name	Hydrophytic	Native/ Non-Native
Avena fatua	wild oat	Upland	Non-native
Brassica nigra	black mustard	Upland	Non-native
Bromus catharticus	rescue grass	Upland	Non-native
Bromus diandrus	ripgut brome	Upland	Non-native
Carduus pycnocephalus	Italian thistle	Upland	Non-native
Cyperus eragrostis	tall flatsedge	FACW	Native
Festuca perennis	Italian rye grass	Upland	Non-native
Foeniculum vulgare	sweet fennel	Upland	Non-native
Galium aparine	common bedstraw	FACU	Native
Helminthotheca echioides	bristly ox-tongue	FAC	Non-native
Hordeum sp.	barley sp.	Unknown	Unknown
Juncus sp.	rush sp.	FAC	Unknown
Malva nicaeensis	bull mallow	Upland	Non-native
Phalaris ssp.	canary grass ssp.	Unknown	Unknown
Plantago lanceolata	narrow leaved plantain	FAC	Non-native
Rumex crispus	curly dock	FAC	Non-native

Notes:
FAC Facultative; equally found in wetlands and non-wetlands
FACU Facultative Upland; usually found in non-wetlands
FACW Facultative Wetland; usually found in wetlands
Upland Occurs almost always in non-wetlands

5.2 Surveyed Features Within the Study Area

As stated in Section 4.3.3, no creeks or major drainages occur within the limits of the Study Area. Two small, earthen drainage channels and a small depression are located within the western portion of the Study Area, near the sports complex. All three features receive surface water runoff during storm events. See Figure 10 for the locations of features surveyed within the Study Area.

Figure 10. Surveyed Features Map

5.2.1 Swale 1

Swale 1 is an approximately 300-foot-long, earthen drainage channel, located between the sports complex parking lot and a vacant, asphalt covered lot (Photo 1). The channel receives water from a drainage outlet located at the southern edge of the channel. Water flows north through the channel, into a drainage inlet, and into the local storm drain system. Based on the City of Berkeley drain map, it appears that water from this drainage channel eventually leads to the San Francisco Bay. Based on the survey conducted on May 18, 2016, this feature does not meet the USACE criteria for waters of the U.S. (wetlands); however, the USACE will make the final determination. Additional photos are located in Appendix B.

5.2.1.1 Wetland Hydrology

Near the drainage outlet, less than 1 inch of standing water was observed during the delineation, and the rest of the channel was dry. No precipitation had occurred during the previous 72 hours. It is likely that this swale receives runoff from the sports complex and surrounding area.

5.2.1.2 Hydric Soil

A soil sample test pit was performed within the center of the channel (Sample Point 1). Soils were an unconsolidated loam, and no indicators of hydric soil were observed. No upland soil sample test pit was performed because there was no sign of hydric soils in the center of the channel.

5.2.1.3 Hydrophytic Vegetation

Hydrophytic vegetation was present. The dominant species was Italian rye grass (*Festuca perennis*) (Upland). Observed hydrophytic vegetation observed consisted of curly dock (*Rumex crispus*) (FAC). All other vegetation observed was upland.

Photo 1. Swale 1, facing north

5.2.2 Swale 2

Swale 2 is an earthen storm drain channel, approximately 560 feet long, located between the Bay Trail and the soccer fields (Photo 2). The channel receives runoff from the Bay Trail. Water within the channel flows into two different drainage inlets, located near both ends of the channel. The swale inlets are connected to the City storm drain system, which eventually outlets into San Francisco Bay. Based on the survey conducted on May 18, 2016, this feature does not meet the USACE criteria for waters of the U.S. (wetlands); however, the USACE will make the final determination. See Figure 10 for features surveyed in the Study Area. Additional photos are located in Appendix B.

5.2.2.1 Wetland Hydrology

The entire swale was dry, with no visible signs of recent ponding. An irrigation system was observed in the form of sprinklers, which would provide an additional source of hydrology.

5.2.2.2 Hydric Soils

A soil sample test pit was performed within the center of the channel (Sample Point 2). Soils within the drainage channel were unconsolidated with gravel less than 1 inch deep. No indicators of hydric soil were observed. No upland soil sample test pit was performed because there was no sign of hydric soils in the center of the channel.

5.2.2.3 Hydrophytic Vegetation

Hydrophytic vegetation was present; Italian rye grass (Upland) was the dominant species. Observed hydrophytic vegetation consisted of narrow leafed plantain (*Plantago lanceolata*) (FAC), bristly ox tongue (*Helminthotheca echioides*) (FAC), and a single tall flat sedge (*Cyperus eragrostis*) (FACW).

Photo 2. Swale 2, facing south

5.2.3 Depression 1

A small depression, approximately 130 feet long (Photo 3), is located within the property boundaries of the sports complex, adjacent to the Bay Trail and just west of Swale 2. Indicators of hydrophytic vegetation were visually observed, and a two-paired soil sample was also collected to determine the wetland and upland boundary. See Figure 10 for features surveyed in the Study Area. Additional photos are located in Appendix B.

5.2.3.1 Wetland Hydrology

This depressional feature appears to be man-made because a sprinkler irrigation system was observed. The feature also appears to receive water through runoff from the Bay Trail and soccer field. During a field meeting with the USACE, Caltrans, and Parsons on July 18, 2017, a drainage grate was observed within the depression at the northern end (Photo 4). This grate was partially covered by vegetation and was raised a few inches above ground level. Another drainage grate was observed about 70 ft south of the depression within the soccer field (Photo 5). Water entering the feature quickly drains off through the grates, therefore any hydric soils or hydrophytic vegetation is sustained by temporary applications of surface water and runoff. No ponded water has been observed at this site during the wetlands delineation field visit or during the USACE field meeting on July 18, 2017. With the drainage grate located within the depression and an observed irrigation system present, wetland hydrology is man-made, therefore, the depression does not meet the hydrology criteria.

The Tom Bates Regional Sports Complex Baseball and Softball Improvements Services During Construction report (Fugro West, Inc. 2011) describes how these drainages were designed as part of a larger drainage system for the sports complex. Along the fence line of the soccer field, where the depression is located, drain sand (approximately 12 in. to 18 in. below grade) and drainage inlets were placed to provide drainage for parts of the soccer field (Fugro West, Inc. 2011). This system of inlets drains to the San Francisco Bay. This information further strengthens the lack of hydrology since this depression was man-made and is connected to a larger drainage system. See Attachment C for the utility plan for the Tom Bates Regional Sports Complex.

5.2.3.2 Hydric Soils

Paired sample points were collected to characterize the wetland-upland boundary (Sample Points 3 and 4). Soils consisted of loam from 0 to 8 inches bgs, and sandy gravel from 8 to 10 inches bgs. Hydric soils were present at Sample Point 3 in the form of redox depressions from 2 to 10 inches bgs.

5.2.3.3 Hydrophytic Vegetation

The dominant hydrophytic plant species observed was a rush species (*Juncus* sp.) (FAC). Additional hydrophytic vegetation consisted of narrow leaf plantain (FAC) and curly dock (FAC).

Photo 3. Depression 1, facing south

Photo 4. Drainage Grate at Northern End of Depression 1, facing west

Photo 5. Drainage Grate South of Depression 1, facing north

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6 SUMMARY OF POTENTIAL JURISDICTIONAL AREAS

Based on the jurisdictional delineation conducted, there are no potential jurisdictional features within the Study Area. Depression 1 was included in the discussion as a potential wetland because it did have hydrophytic vegetation and hydric soils, however, these two indicators are maintained by frequent watering from an irrigation system and by stormwater runoff in the winter. There are no natural sources of hydrology. Therefore, the depression did not meet all three criteria to be considered a water of the U.S. (wetland). See Figure 11 and 12 for the potential non-jurisdictional feature maps. Site development activities will not impact this depression; therefore, a Section 404 Clean Water Act permit (Nationwide Permit) from the USACE or a Section 401 of the Clean Water Act and the State Porter-Cologne Act through the RWQCB is not anticipated. Swale 1 and Swale 2 did not meet the USACE criteria for waters of the U.S. (wetlands); however, the USACE will make the final determination.

The conclusions of this delineation are based on conditions observed at the time of the field surveys conducted on May 18, 2016, and during the field meeting with USACE on July 18, 2017. They are considered preliminary until verified by these agencies and/or until any permits are issued by these agencies authorizing or exempting activities within or near these areas. See Appendix B for site photos.

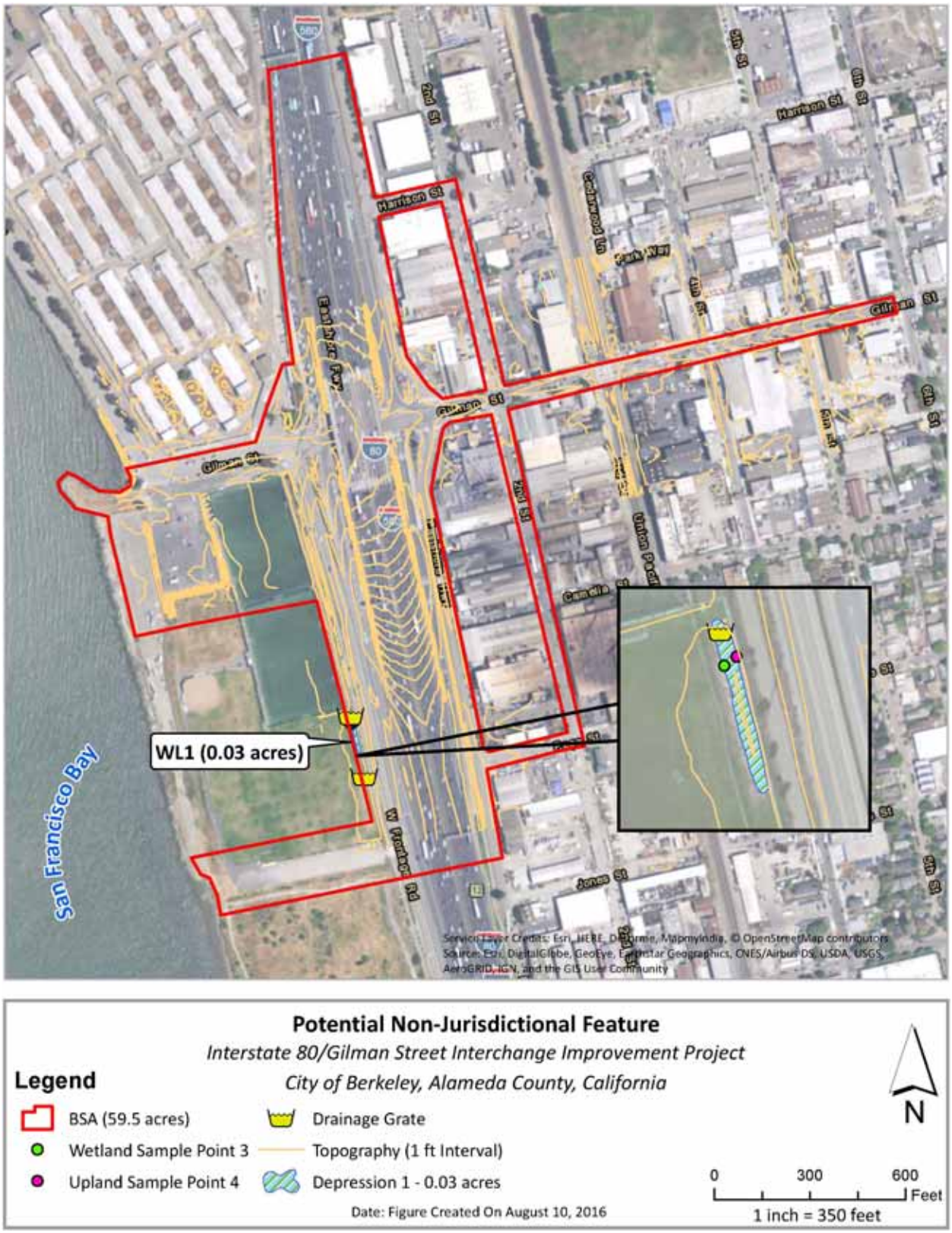

Figure 11. Potential Non-Jurisdictional Feature

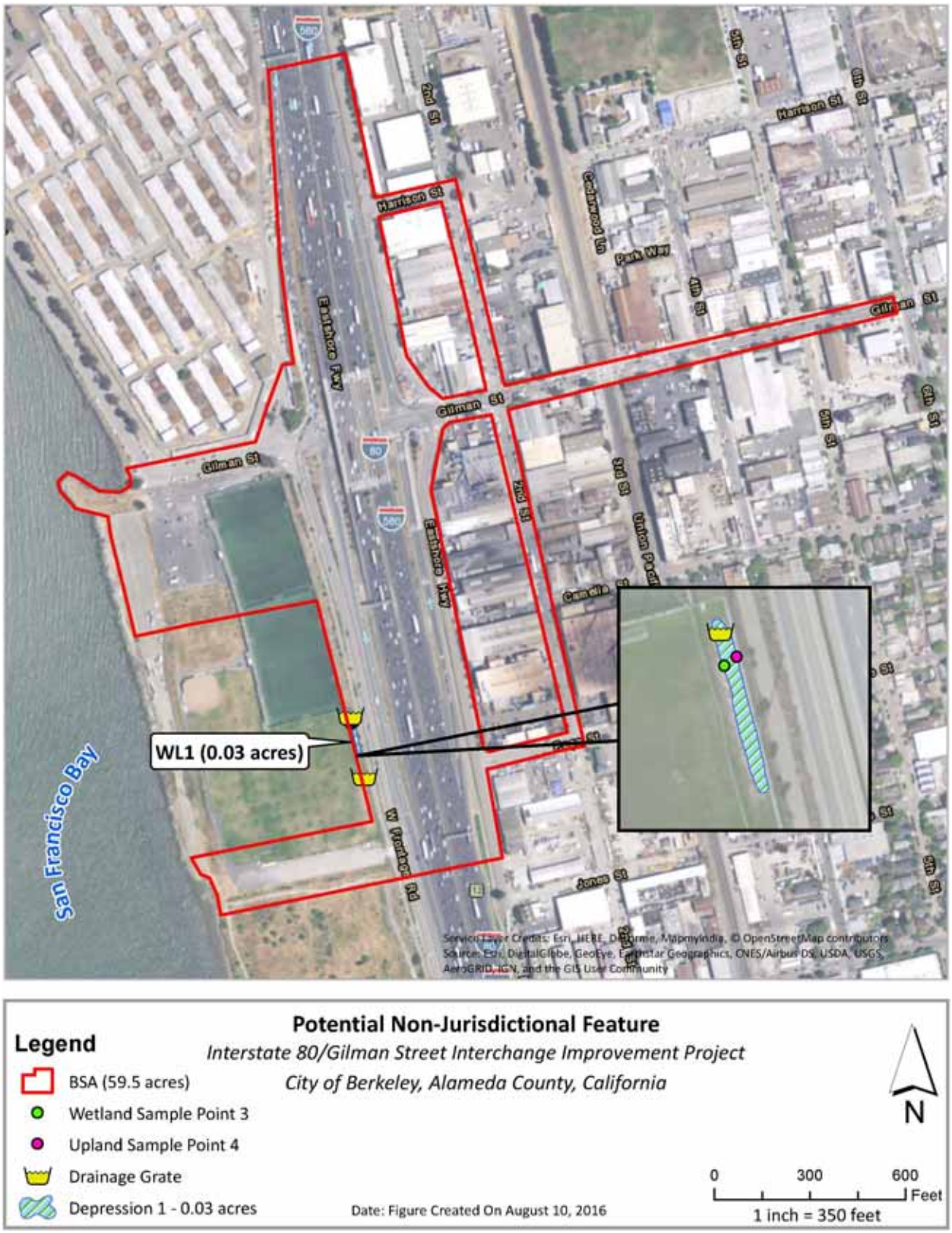

Figure 12. Potential Non-Jurisdictional Feature without Topography Lines

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Appendix A **Wetland Determination Data Forms**

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WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: _____ State: CA Sampling Point: 1

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

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

Subregion (LRR): C - Mediterranean Lat: 37°52'36.72" N Long: 122°18'33.98" W Datum: NAD 83

Soil Map Unit Name: 146 - Urban land NWI classification: _____

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____	No X	
Wetland Hydrology Present?	Yes X	No _____	

Remarks:
Sample point taken in middle of channel, midway between outlet and inlet

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 m^2)			
1. Galium aparine	5		FACU
2. Carduus pycnocephalus	5		UPL
3. Festuca perennis	60	Yes	UPL
4. Malva nicaeensis	5		UPL
5. Rumex crispus	1		FAC
6. Foeniculum vulgare	1		UPL
7. Phalaris sp.	5		
8. Brassica nigra	2		UPL
9. Avena fatua X	5		UPL
	= ~~Total Cover~~		
~~Woody Vine Stratum~~ (Plot size: _____)			
1. Bromus diandrus	5		UPL
2. Bromus catharticus	6		UPL
	100 = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	x 2 =	0
FAC species	1	x 3 =	3
FACU species	1	x 4 =	4
UPL species	8	x 5 =	40
Column Totals:	10 (A)		47 (B)

Prevalence Index = B/A = 4.7

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:

SOIL

Sampling Point: 1

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
0-4	10YR 2/2	100					loam	Root zone
4-14	10YR 2/2	100					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:

Soil is unconsolidated.

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)
- X 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 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:

Small storm drain channel connected to drainage inlet, outflow to San Francisco Bay.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: State: CA Sampling Point: 2

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

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

Subregion (LRR): C-Mediterranean Lat: 37°52'36.08" N Long: 122°18'27.32" W Datum: NAD83

Soil Map Unit Name: 146 - Urban land NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes X 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 m²)			
1. Festuca perennis	50	Yes	UPL
2. Plantago lanceolata	10		FAC
3. Cyperus eragrostis	1		FACW
4. Foeniculum vulgare	1		UPL
5. Helminthotheca echioides	5		FAC
6. Hordeum sp.	10		
7. Avena fatua	5		UPL
8.			
	82 = Total Cover		
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum 18 % Cover of Biotic Crust ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	1	x 2 =	2
FAC species	2	x 3 =	6
FACU species	0	x 4 =	0
UPL species	3	x 5 =	15
Column Totals:	6 (A)		23 (B)

Prevalence Index = B/A = 3.8

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:

SOIL

Sampling Point: 2

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

[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: Hardpan

Depth (inches): 3

Hydric Soil Present? Yes ____ No X

Remarks:

Fill material, unconsolidated, gravel < 1"

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)
- X 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 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:

Small drainage channel adjacent to bike path, irrigation system observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: State: CA Sampling Point: 3

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Small depression Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): C - Mediterranean Lat: 37°52'32.3" N Long: 122°18'26.28" W Datum: NAD83

Soil Map Unit Name: 146 - Urban Land NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 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:
Created wetland, irrigation system present.

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. Juncus sp.	80	Yes	FAC
2. Galium aparine	5		FACU
3. Rumex crispus	1		FAC
4. Plantago lanceolata	1		FAC
5. Avena fatua	13		UPL
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

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 _____	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: 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
0-2							loam	Organic layer
2-8	2.5YR 5/2	90	10YR 4/6	10	C	M	loam	Roots
8-10	10YR 5/4	60	10YR 4/6	40	C	M	Sandy	Gravel 4.25"

[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)
- X 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: Hardpan

Depth (inches): 10

Hydric Soil Present? Yes X 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)
- X 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 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:

Irrigation present, recieves water runoff from bike path and soccer field

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I 80/Gilman Street City/County: Berkeley/Alameda Sampling Date: 5/18/16

Applicant/Owner: State: CA Sampling Point: 4

Investigator(s): Jared Elia, Scott Elder Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Small slope Local relief (concave, convex, none): concave Slope (%): 10

Subregion (LRR): C - Mediterranean Lat: 37°52'32.35"N Long: 122°18'26.20"W Datum: NAD83

Soil Map Unit Name: 146 - Urban land NWI classification:

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

Are Vegetation _____, Soil _____, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	**Is the Sampled Area within a Wetland?** Yes _____ No X
Hydric Soil Present?	Yes _____ No X	
Wetland Hydrology Present?	Yes _____ No X	

Remarks:

Small slope adjacent to wetland.

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 m^2)			
1. Festuca perennis	80	Yes	UPL
2. Plantago lanceolata	10		FAC
3. Galium aparine	4		FACU
4. Avena fatua	5		UPL
5. Helminthotheca echioides	1		FAC
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species 0	x 1 = 0
FACW species 0	x 2 = 0
FAC species 2	x 3 = 6
FACU species 1	x 4 = 4
UPL species 2	x 5 = 10
Column Totals: 5 (A)	20 (B)

Prevalence Index = B/A = 4

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:

SOIL

Sampling Point: 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
0-2	10YR 2/2	100					Sandy	Root zone
2-12	10YR 2/2	100					Sandy	Gravel < .25"

[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:

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 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 _____ No X

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

Remarks:

On small slope adjacent to wetland.

Appendix B **Soil Test Pit Location Photos**

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Photo 1. Swale 1, test pit 1 location.

Photo 2. Swale 1, test pit 1 soil.

Photo 3. Swale 2, test pit 2 location.

Photo 4. Swale 2, test pit 2 soil.

Photo 5. Depressional feature, test pit 3 location.

Photo 6. Depressional feature, test pit 3 soil.

Photo 7. Depressional feature, test pit 4 location.

Photo 8. Depressional feature, test pit 4 soil.

Appendix C **Utility Plan**

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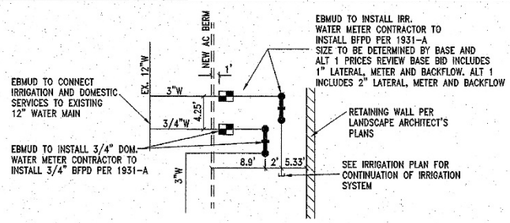
LEGEND (FOR THIS SHEET ONLY)

PROPOSED	EXISTING							
		ASPHALT BERM			BACKFLOW PREVENTION DEVICE	GV	GV	GAS VALVE
		BUILDING LINE			ELECTROLIER	GA	GA	GUY ANCHOR
		CENTER LINE			FIRE HYDRANT	IE	IE	INVERT ELEVATION
		CONCRETE CURB			POST INDICATOR VALVE	IB	IB	IRRIGATION BOX
		CONCRETE CURB & GUTTER			POWER POLE/JOINT POLE	JP	JP	JOINT POWER POLE
		CONTOUR LINE			TRANSFORMER	PBMH	PBMH	PAC BELL MANHOLE
		DRIVEWAY			TRAFFIC SIGN	PIV	PIV	POST INDICATOR VALVE
		EDGE OF PAVEMENT			UTILITY BOX	PP	PP	POWER POLE
		ELECTRIC LINE				RWL	RWL	RAIN WATER LEADER
		FENCE LINE			AIR RELEASE VALVE	RVP	RVP	RELEASE VALVE POST
		FIRE SERVICE & VALVE			AIR VALVE POST	RE	RE	RIM ELEVATION
		FIBER OPTICS LINE			BACKFLOW PREVENTION DEVICE	SSCO	SSCO	SANITARY SEWER CLEANOUT
		GAS LINE-VALVE & METER			BLOWOFF VALVE	SSMH	SSMH	SANITARY SEWER MANHOLE
		GUARD RAIL			CABLE TELEVISION BOX	SOCB	SOCB	SIDE OPENING CATCH BASIN
		LOT LINE			CALTRANS BOX	SMH	SMH	SPRINT MANHOLE
		MONUMENT/MONUMENT LINE			CATCH BASIN	SM	SM	SPRINT MARKER
		OVERHEAD POWER LINE			CLEANOUT TO GRADE	SSMH	SSMH	STORM DRAIN MANHOLE
		OVERHEAD POWER LINE			CONCRETE HEADWALL	SL	SL	STREET LIGHT
		PROPERTY LINE			DOWN SPOUT	SLB	SLB	STREET LIGHT BOX
		SANITARY SEWER-MANHOLE & CLEANOUT			ELECTRIC BOX	TB	TB	TELEPHONE BOX
		SIDEWALK			ELECTROLYSIS TEST STATION	TMH	TMH	TELEPHONE MANHOLE
		SPOT ELEVATION			EXHAUST PIPE	TSB	TSB	TRAFFIC SIGNAL BOX
		STORM DRAIN-MANHOLE & CATCH BASIN			FIRE HYDRANT	TSP	TSP	TRAFFIC SIGNAL POLE
		TELEPHONE LINE			FLOW LINE	WB	WB	WATER BOX
		WATER LINE & VALVE			GAS MARKER	WM	WM	WATER METER
						WV	WV	WATER VALVE



DETAIL 'A'
N.T.S.

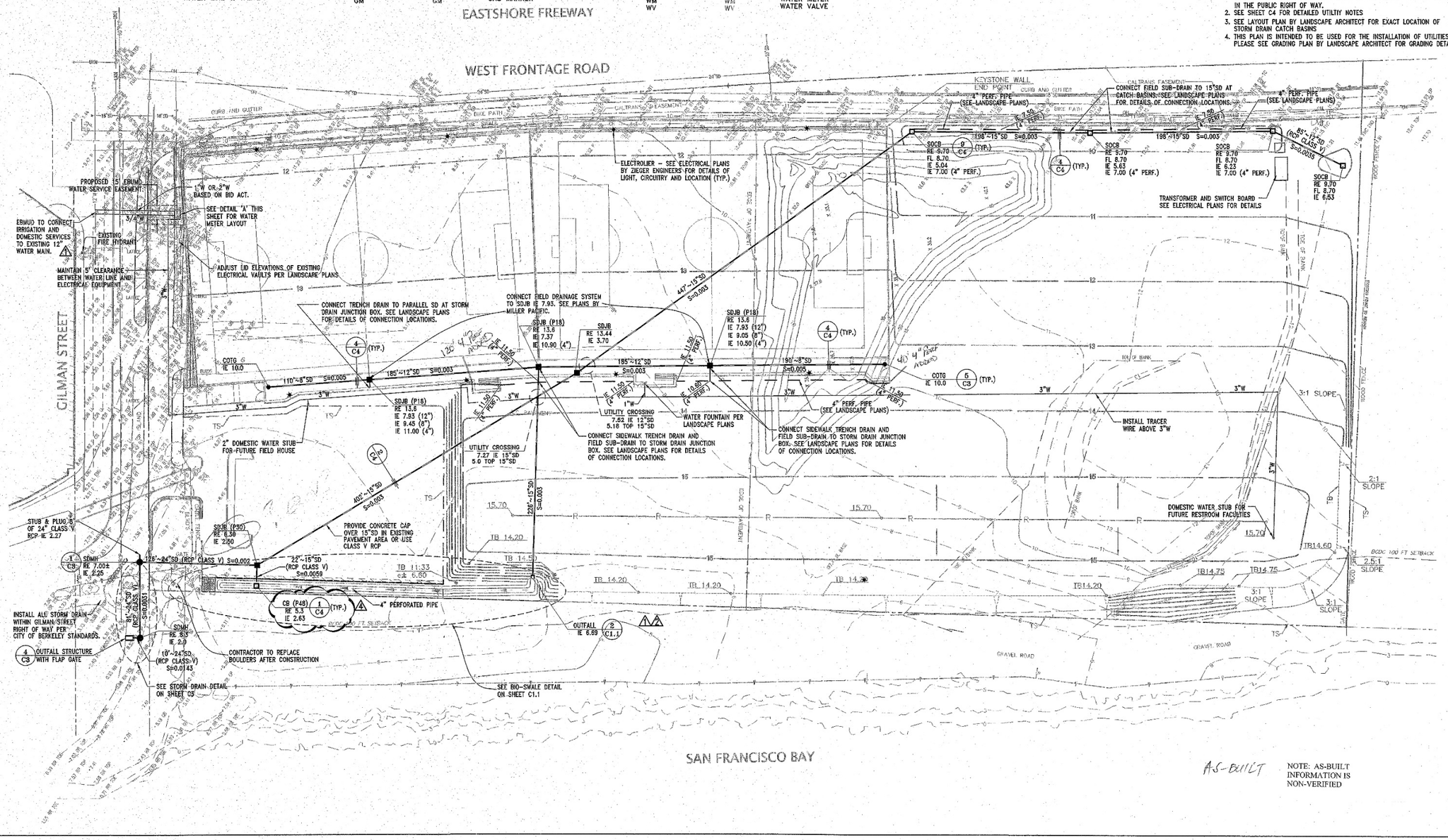
NORTH

0 50 100 150

Scale 1" = 50 ft

NOTES:

1. ALL WORK WITHIN THE PUBLIC RIGHT OF WAY SHALL CONFORM TO THE CITY OF BERKELEY STANDARDS AND SPECIFICATIONS. CONTRACTOR SHALL OBTAIN ALL ENGINEERING PERMITS FROM THE PERMIT SERVICE CENTER FOR ALL WORK IN THE PUBLIC RIGHT OF WAY.
2. SEE SHEET C4 FOR DETAILED UTILITY NOTES
3. SEE LAYOUT PLAN BY LANDSCAPE ARCHITECT FOR EXACT LOCATION OF STORM DRAIN CATCH BASINS
4. THIS PLAN IS INTENDED TO BE USED FOR THE INSTALLATION OF UTILITIES PLEASE SEE GRADING PLAN BY LANDSCAPE ARCHITECT FOR GRADING DETAILS



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(925) 249-4555
Fax (925) 249-4563

UTILITY PLAN

REVISIONS

SYMBOL	DATE	DESCRIPTION	APPROVED
1	10/27/06	CITY COMMENT	
2	11/16/06	CITY COMMENT	
3	11/16/06	REGIONAL BOARD COMMENT	

DESIGNED BY JAM | DRAWN BY JAM | SCALE 1" = 50' | CHECKED BY JAM | DATE 12/20/2006

GILMAN STREET SPORTS FIELDS
W. FRONTAGE ROAD AND GILMAN STREET

PLANS PREPARED FOR:
CITY OF BERKELEY

SFE PROJECT NUMBER:

SHEET
C1
OF 47 SHEETS

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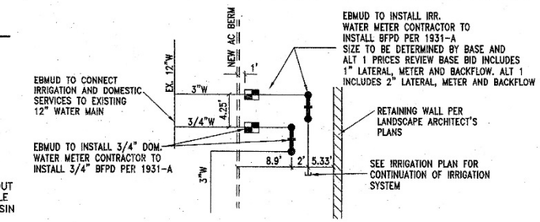
LEGEND (FOR THIS SHEET ONLY)

EXISTING							
	ASPHALT BERM			BACKFLOW PREVENTION DEVICE	GV	GV	GAS VALVE
	BUILDING LINE			ELECTROLIER	GA	GA	GUY ANCHOR
	CENTER LINE			FIRE HYDRANT	IE	IE	INVERT ELEVATION
	CONCRETE CURB			POST INDICATOR VALVE	IB	IB	IRRIGATION BOX
	CONCRETE CURB & GUTTER			POWER POLE/JOINT POLE	JP	JP	JOINT POWER POLE
100	CONTOUR LINE	T		TRANSFORMER	PBMH	PBMH	PAC BELL MANHOLE
	DRIVEWAY			TRAFFIC SIGN	PIV	PIV	POST INDICATOR VALVE
	EDGE OF PAVEMENT			UTILITY BOX	PP	PP	POWER POLE
	ELECTRIC LINE				RWL	RWL	RAIN WATER LEADER
	FENCE LINE	ARV	ARV	AIR RELEASE VALVE	RVP	RVP	RELEASE VALVE POST
	FIRE SERVICE & VALVE	AVP	AVP	AIR VALVE POST	RE	RE	RIM ELEVATION
	FIBER OPTICS LINE	BFPD	BFPD	BACKFLOW PREVENTION DEVICE	SSCO	SSCO	SANITARY SEWER CLEANOUT
	GAS LINE-VALVE & METER	BOV	BOV	BLOWOFF VALVE	SSMH	SSMH	SANITARY SEWER MANHOLE
	GUARD RAIL	CATVB	CATVB	CABLE TELEVISION BOX	SOCB	SOCB	SIDE OPENING CATCH BASIN
	LOT LINE	CCB	CCB	CALTRANS BOX	SMH	SMH	SPRINT MANHOLE
	MONUMENT/MONUMENT LINE	CB	CB	CATCH BASIN	SM	SM	SPRINT MARKER
	OVERHEAD POWER LINE	COTG	COTG	CLEANOUT TO GRADE	SSMH	SSMH	STORM DRAIN MANHOLE
	OVERHEAD POWER LINE	HDWL	HDWL	CONCRETE HEADWALL	SL	SL	STREET LIGHT
	PROPERTY LINE	DS	DS	DOWN SPOUT	SLB	SLB	STREET LIGHT BOX
	SANITARY SEWER-MANHOLE & CLEANOUT	EB	EB	ELECTRIC BOX	TB	TB	TELEPHONE BOX
	SIDEWALK	ETS	ETS	ELECTROLYSIS TEST STATION	TMH	TMH	TELEPHONE MANHOLE
100.00	SPOT ELEVATION	EXP	EXP	EXHAUST PIPE	TSB	TSB	TRAFFIC SIGNAL BOX
	STORM DRAIN-MANHOLE & CATCH BASIN	FH	FH	FIRE HYDRANT	TSP	TSP	TRAFFIC SIGNAL POLE
	TELEPHONE LINE	FL	FL	FLOW LINE	WB	WB	WATER BOX
	WATER LINE & VALVE	GM	GM	GAS MARKER	WM	WM	WATER METER
					WV	WV	WATER VALVE



DETAIL 'A'
N.T.S.

NORTH

0 50 100 150

Scale 1" = 50 ft

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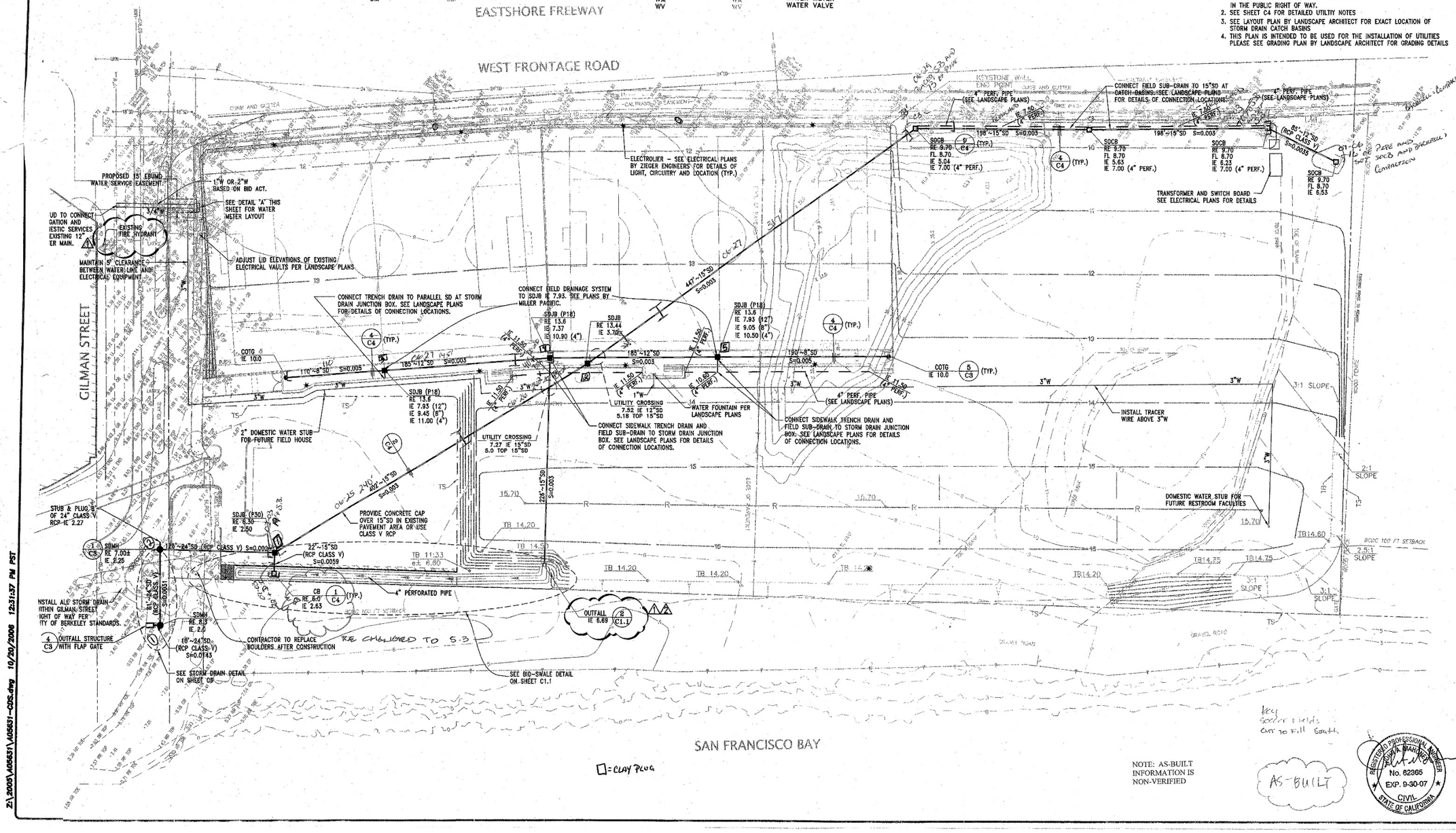

□=CLAY PLUG

urban design landscape architecture

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UTILITY PLAN

REVISIONS			
STRUCK	DATE	DESCRIPTION	APPROVED
1	10/20/06	CITY COMMENTS	
DESIGNED BY	JAM	DRAWN BY	JAM
SCALE	1" = 50'	DATE	

GILMAN STREET SPORTS FIELDS
W. FRONTAGE ROAD AND GILMAN STREET

PLANS PREPARED FOR:
CITY OF BERKELEY

REGISTERED PROFESSIONAL ENGINEER
JOHN A. MARKUS
No. 62365
EXP. 9-30-07
CIVIL
STATE OF CALIFORNIA

SHEET
C1
OF 47 SHEETS

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Technical Memorandum

Date: December 15, 2017

To: Carie Montero, Parsons

From: Jared Elia, WRECO

Subject: I-80 Gilman Interchange Project
Addendum to the Wetland Delineation Report

Introduction

This memorandum is in response to the United States Army Corps of Engineers (USACE) email to Caltrans on December 11, 2017 indicating Swale #2 (located within the Tom Bates Sports Complex) identified in the I-80 Gilman Interchange Improvement Projects' Wetland Delineation Report was determined to be jurisdictional. This determination was based, in part, on the USACE correcting the indicator status identification of *Festuca perennis* from upland to FAC. In addition, the USACE determined that the soil type identified on the field delineation sheet as "fill" was considered problematic and concluded that wetland hydrology is present.

The project team conducted additional research on December 14, 2017 in order to clarify the origination, construction history of Swale #2, and its potential to exhibit hydric soils. The team reviewed as-builts provided by the City of Berkeley of the Gilman Street Sports Complex (now known as the Tom Bates Sports Complex), and historical aerial photographs (Google Earth). WRECO also performed a wetland determination of the swale by digging four (4) additional soil sample test pits on December 14, 2017 (the results of which are documented in the field data sheet attached). The following information is a summary of the results of this additional research.

Historical Setting

The Tom Bates Sports Complex was constructed in 2006-2007. The as-builts clearly show the swale as a graded component of the construction for the sports complex (Attachment 1). Historical aerial imagery shows that in 2007 during the construction of the sports complex, this swale did not exist, but can later been seen in 2009 aerial imagery after construction. These photos are shown in Attachment 2.

Historical aerial photographs also indicate that this man-made swale is routinely mowed and maintained, with planted landscape vegetation occurring along the bicycle trail (San Francisco Bay Trail). The mowing and regular maintenance was also observed from field visits made by WRECO between 2016 and 2017 (as shown in Attachment 2). The two drainage inlets that occur along the southern end of the swale indicate the swale was created to convey water from the bicycle trail, as well as runoff from the adjacent soccer fields. An above ground irrigation system (sprinklers) is also

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located along the banks of the swale, and travels the entire length. The drainage inlet and sprinkler system are shown in Attachment 2.

Methods

A field determination was conducted on December 14, 2017 to further investigate the swale, since only one sample test pit was previously dug on May 18, 2016. The December field visit included digging four soil sample test pits within the project area. Two sample pits were dug within the center of the swale and two in upland areas (the sample pits were dug in pairs relatively adjacent to each other in swale and upland areas). The wetland delineation forms for the December 14, 2017 field investigation are shown in Attachment 3.

Results

During the field investigation, facultative vegetation was observed; however, none of the test locations met the dominance test or prevalence index test required to indicate hydrophytic vegetation was present. Redox was observed at Sample Pit 1; however, the soil matrix did not meet any criteria for soil chroma or value to be considered hydric based on the NRCS *Field Indicators of Hydric Soils in the United States* (Version 7.0, 2010). No other soil sample pits showed signs of redox or hydric soils. No primary or secondary indicators of hydrology were observed in accordance to the wetland determination forms. During the May 18, 2016 field delineation, hydrology was marked on the data form; however, the only hydrologic indicator observed was the irrigation system as noted in the comment section of the data form.

Conclusion

Based on the December 14, 2017 field investigations, the project team is requesting a review of the most recent information available showing the following:

1. Swale #2 was created during the construction of the sports complex to convey water. It is our determination that this swale was created artificial hydrology in the form of an irrigation system that maintains facultative vegetation, and does not meet the USACE three parameters of hydrophytic vegetation, hydric soils and hydrology (shown on the May 2016 and December 2017 delineation forms).
2. The swale also does not meet the USACE definition for “waters of the United States” defined in 33 CFR Part 328.3(a) and 40 CFP Part 230.3(s).
3. In addition, following the Rapanos v. United States and Carabell v. Army Corps of Engineers, the USACE and the EPA issued a joint memorandum on June 5, 2007 that included new guidelines for establishing whether wetlands and other waters of the U.S. fall within the USACE jurisdiction. In that memorandum it states that the agencies generally do not assert jurisdiction over swales, erosional features, or ditches excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

According to these findings stated above, the project team would like the USACE to reevaluate their determination for Swale #2.

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ATTACHMENTS

- Attachment 1: As-built Plans
- Attachment 2: Photos Documentation
- Attachment 3: December 14, 2017 Wetland Delineation Forms

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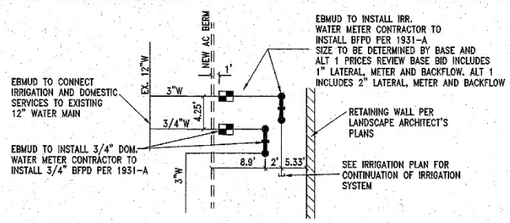
Attachment 1: As-Built Plans

LEGEND (FOR THIS SHEET ONLY)

PROPOSED	EXISTING			
		ASPHALT BERM		
		BUILDING LINE		
		CENTER LINE		
		CONCRETE CURB		
		CONCRETE CURB & GUTTER		
		CONTOUR LINE		
		DRIVEWAY		
		EDGE OF PAVEMENT		
		ELECTRIC LINE		
		FENCE LINE		
		FIRE SERVICE & VALVE	ARV	ARV
		FIBER OPTICS LINE	AVP	AVP
		GAS LINE-VALVE & METER	BFPD	BFPD
		GUARD RAIL	BOV	BOV
		LOT LINE	CATVB	CATVB
		MONUMENT/MONUMENT LINE	CCB	CCB
		OVERHEAD POWER LINE	CB	CB
		OVERHEAD POWER LINE	COTG	COTG
		PROPERTY LINE	HDWL	HDWL
		SANITARY SEWER-MANHOLE & CLEANOUT	DS	DS
		SIDEWALK	EB	EB
		SPOT ELEVATION	ETS	ETS
		STORM DRAIN-MANHOLE & CATCH BASIN	EXP	EXP
		TELEPHONE LINE	FH	FH
		WATER LINE & VALVE	FL	FL
			GM	GM

BACKFLOW PREVENTION DEVICE	GV	GV
ELECTROLIER	GA	GA
FIRE HYDRANT	IE	IE
POST INDICATOR VALVE	IB	IB
POWER POLE/JOINT POLE	JP	JP
TRANSFORMER	PBMH	PBMH
TRAFFIC SIGN	PIV	PIV
UTILITY BOX	PP	PP
	RWL	RWL
AIR RELEASE VALVE	RVP	RVP
AIR VALVE POST	RE	RE
BACKFLOW PREVENTION DEVICE	SSCO	SSCO
BLOWOFF VALVE	SSMH	SSMH
CABLE TELEVISION BOX	SOCB	SOCB
CALTRANS BOX	SMH	SMH
CATCH BASIN	SM	SM
CLEANOUT TO GRADE	SSMH	SSMH
CONCRETE HEADWALL	SL	SL
DOWN SPOUT	SLB	SLB
ELECTRIC BOX	TB	TB
ELECTROLYSIS TEST STATION	TMH	TMH
EXHAUST PIPE	TSB	TSB
FIRE HYDRANT	TSP	TSP
FLOW LINE	WB	WB
GAS MARKER	WM	WM
	WV	WV

GAS VALVE
GUY ANCHOR
INVERT ELEVATION
IRRIGATION BOX
JOINT POWER POLE
PAC BELL MANHOLE
POST INDICATOR VALVE
POWER POLE
RAIN WATER LEADER
RELEASE VALVE POST
RIM ELEVATION
SANITARY SEWER CLEANOUT
SANITARY SEWER MANHOLE
SIDE OPENING CATCH BASIN
SPRINT MANHOLE
SPRINT MARKER
STORM DRAIN MANHOLE
STREET LIGHT
STREET LIGHT BOX
TELEPHONE BOX
TELEPHONE MANHOLE
TRAFFIC SIGNAL BOX
TRAFFIC SIGNAL POLE
WATER BOX
WATER METER
WATER VALVE



DETAIL 'A'
N.T.S.

NORTH

0 50 100 150
Scale 1" = 50 ft

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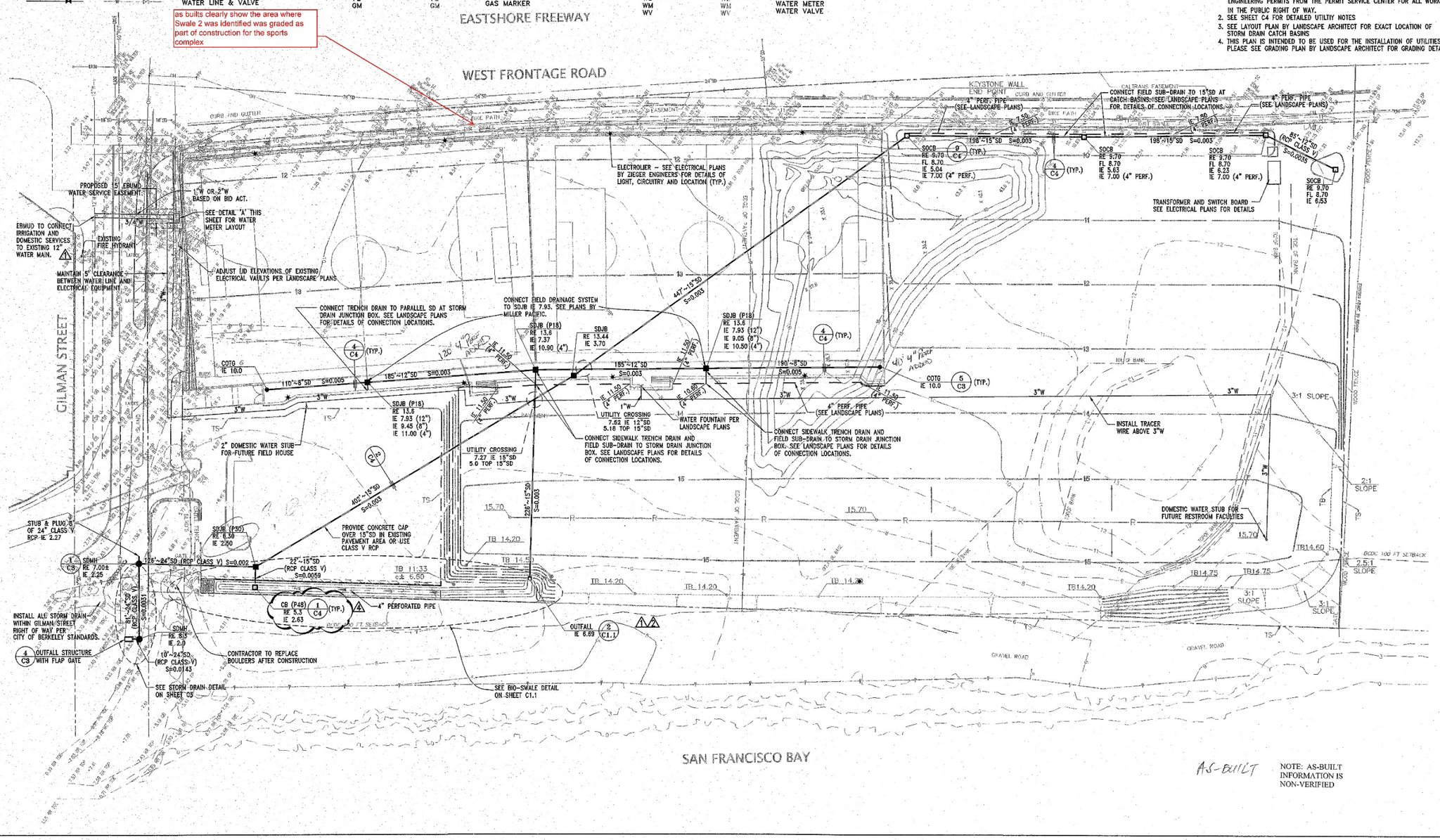
as builts clearly show the area where Swale 2 was identified was graded as part of construction for the sports complex



AS-BUILT

NOTE: AS-BUILT INFORMATION IS NON-VERIFIED

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UTILITY PLAN

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LEGEND (FOR THIS SHEET ONLY)

EXISTING							
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	CONCRETE CURB & GUTTER			POWER POLE/JOINT POLE	JP	JP	JOINT POWER POLE
100	CONTOUR LINE	T		TRANSFORMER	PBMH	PBMH	PAC BELL MANHOLE
	DRIVEWAY			TRAFFIC SIGN	PIV	PIV	POST INDICATOR VALVE
	EDGE OF PAVEMENT			UTILITY BOX	PP	PP	POWER POLE
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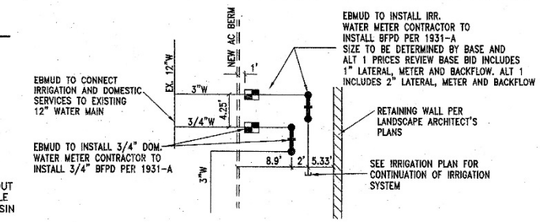
	TELEPHONE LINE	FL	FL	FLOW LINE	WB	WB	WATER BOX
	WATER LINE & VALVE	GM	GM	GAS MARKER	WM	WM	WATER METER
					WV	WV	WATER VALVE



DETAIL 'A'
N.T.S.

NORTH

0 50 100 150

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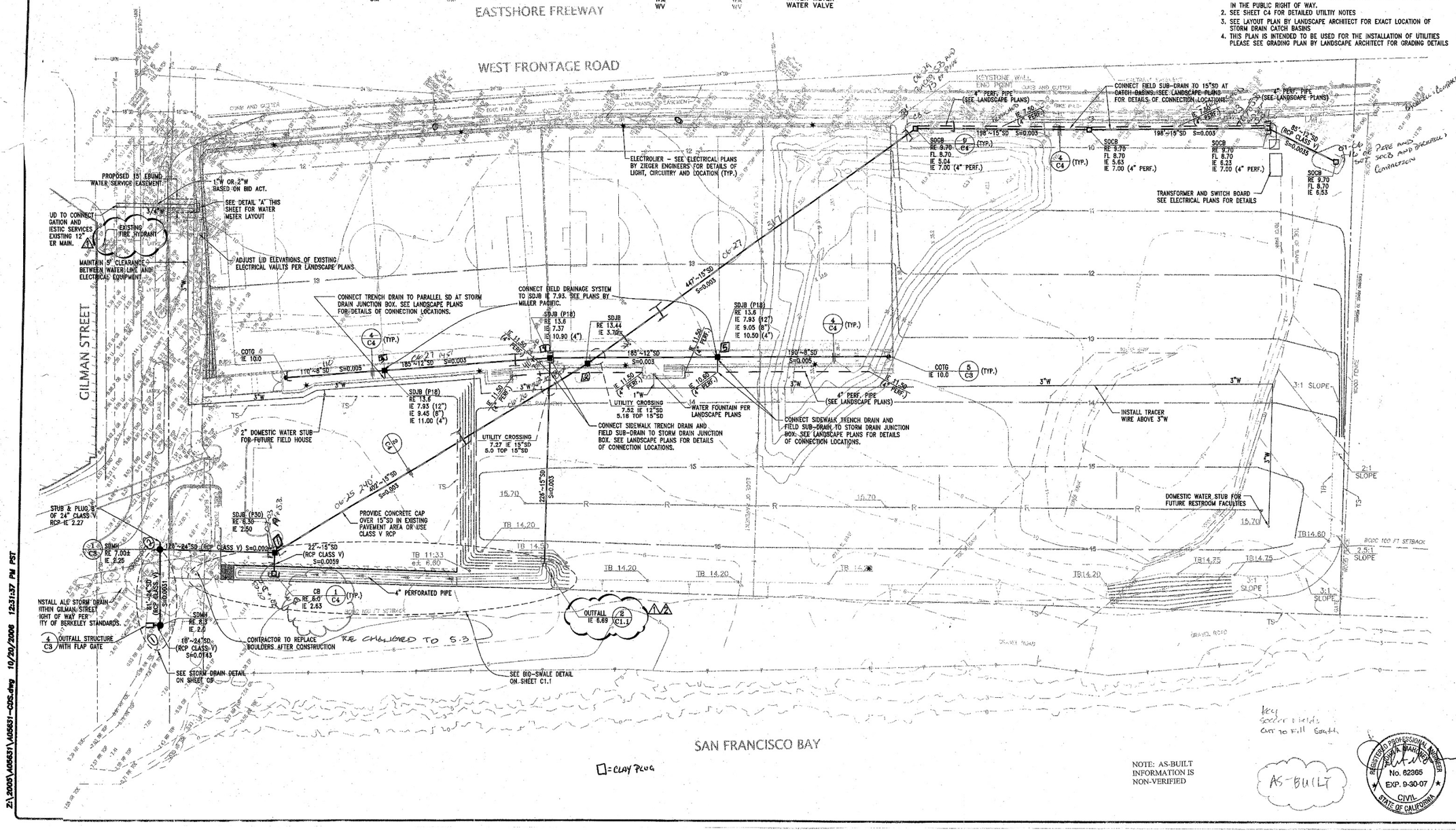

□=CLAY PLUG

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PLANS PREPARED FOR:
CITY OF BERKELEY

REGISTERED PROFESSIONAL ENGINEER
JOHN A. MARKUS
No. 62365
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CIVIL
STATE OF CALIFORNIA

SHEET
C1
OF 47 SHEETS

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Swale #2 Location

FRONTAGE ROAD

SOCCER FIELD 1

SOCCER FIELD 2

SOFTBALL FIELD 2

SOFTBALL FIELD 1

GILMAN STREET

(E) SERVICE METER PEDESTALS (CALTRANS)

TRANSFORMER ON POLE

(E) DOWN GUY TO BE REPOSITIONED OFF PROPERTY BY PG&E

(E) FENCED ENCLOSURE

(E) TELE ENCLOSURE & PAD

(E) HV VAULT

(E) TELE VAULT

(E) DOWN GUY

2"CO WITH PULL WIRE

IRRIGATION CONTROL

LIGHTS FOR SOFTBALL FIELD 2

(E) 1 1/2"C, 3 #2 + 3 #10THW + #8 GND

(E) 3/4"C, 2 #10 + #8 GND

(R) 1 1/4"C, 3 #2 + #8 GND

(R) 1 1/4"C, 2 #2 THW + #8 GND

105'

87'-8"

N00°33'28"E 650.89' FROM POINT A TO POINT B

NOTE:
SHEET NOTES ARE ON SHEET E3

NOTE: AS-BUILT INFORMATION IS NON-VERIFIED

AS-BUILT

SHEET E2
SHEET E3

BASE BID WORK - ELECTRICAL SITE PLAN

SCALE: 1"=30'-0"

0 15' 30' 60'

REGISTERED PROFESSIONAL ENGINEER
Daniel D. Zeiger
No. E12168
Exp. 9/30/08
Electrical
STATE OF CALIFORNIA

12/20/06
DATE SIGNED

SFE
urban design
landscape
architecture

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Telephone: 925.552.4900
Facsimile: 925.552.4909

ZEIGER ENGINEERS, INC.
ELECTRICAL CONSULTANTS
479 3RD STREET
OAKLAND, CA 94607
TEL (510) 452-9391
FAX (510) 452-0661
ZEIGER
CERTIFIED SBE

REVISIONS

SYMBOL	DATE	DESCRIPTION	APPROVED
1	10/02/06	CITY COMMENT	

DESIGNED BY RZ
DRAWN BY STAFF
SCALE AS SHOWN
DATE 12/20/06
CHECKED BY RZ

PLANS PREPARED FOR:

SITE PROJECT NUMBER:

SHEET

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Attachment 2: Photo Documentation

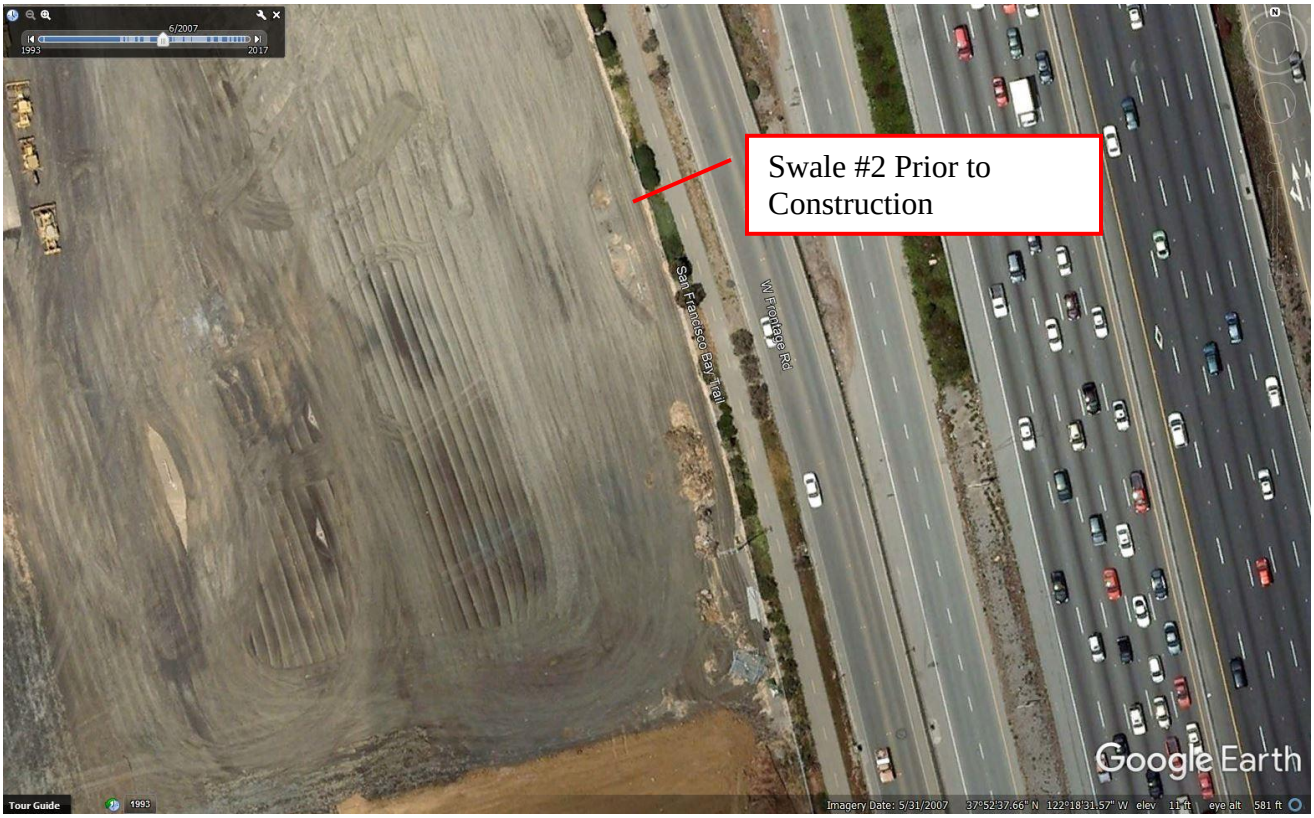

Photo 1. 2007 Areal Imagery of the Swale # 2 Area. North is located at the top of the Photo.

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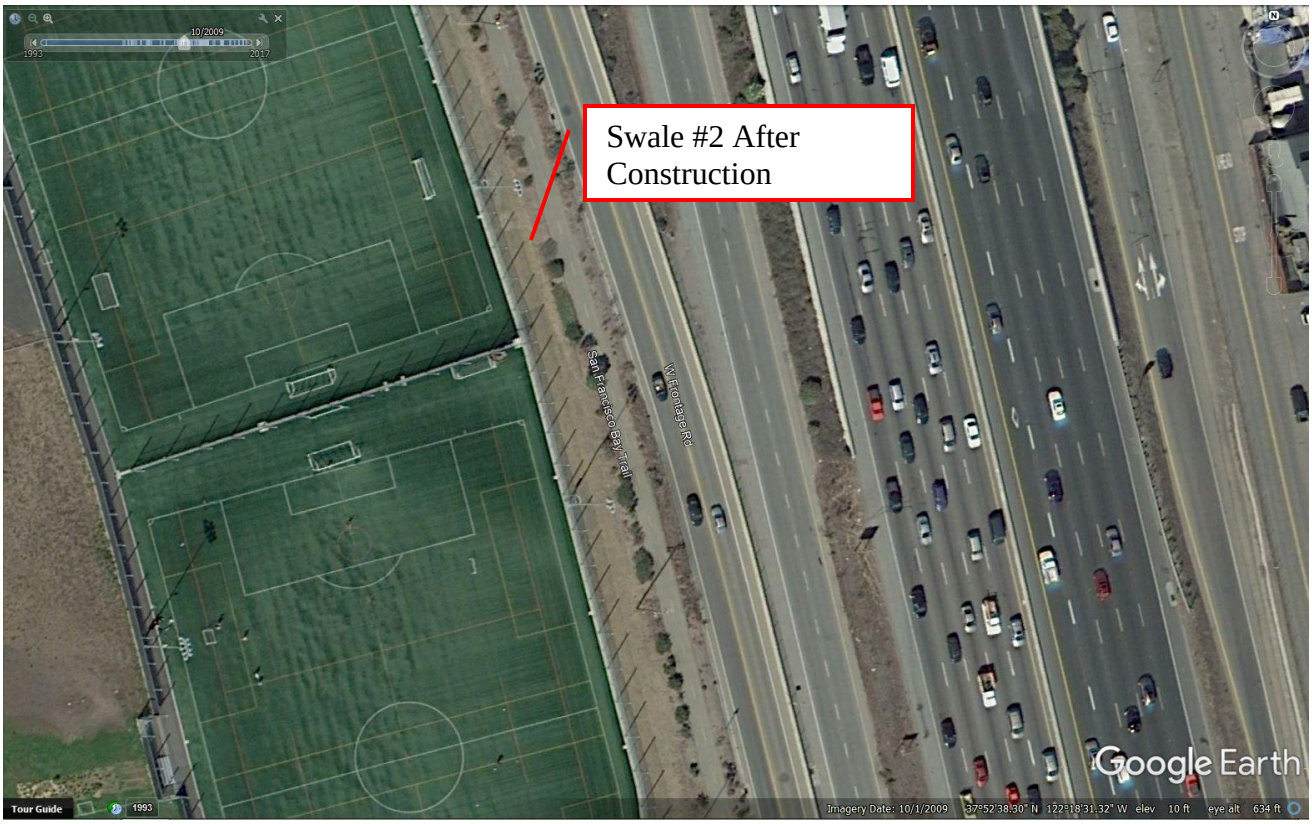

Photo 2. 2008 Areal Imagery of the Swale #2 Area. North is located at the top of the Photo.

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Photo 3. Tall Vegetation in Swale #2 Taken on 3/17/2016, Looking South.

Photo 4. Mowed Vegetation in Swale #2 Taken on 6/30/2016, Looking North.

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Photo 5. Drainage Inlet along Swale #2, Looking South.

Photo 6. Swale Conditions on December 14, 2017, Looking South.

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Photo 7. Swale Conditions on December 14, 2017, Looking North.

Photo 8. Soil Test Pit 1 Location, Looking Southeast.

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Attachment 3: December 14, 2017 Wetland Delineation Forms

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-80 / Gilman St. City/County: Berkeley/Alameda Sampling Date: 12/14/17

Applicant/Owner: State: CA Sampling Point: 1

Investigator(s): J. Elia, G. Wattley Section, Township, Range: S4 T1S R4W

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): ~~Concave~~ Convex Slope (%): 2

Subregion (LRR): C - Mediterranean Lat: Long: Datum: WGS 84

Soil Map Unit Name: 146 - Urban land NWI classification:

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	

Remarks:
Taken in the center of the swale between two drainage inlets.

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: 1m²)			
1. Plantago lanceolata	3		FAC
2. Helminthotheca echioides	7		FAC
3. Geranium rotundifolium	10		UPL
4. Trifolium hirtum	45	Yes	UPL
5. Lolium Perenne	35	Yes	FAC
6.			
7.			
8.			
	100 = Total Cover		
Woody Vine Stratum (Plot size:)			
1.			
2.			
	= Total Cover		

% Bare Ground in Herb Stratum % Cover of Biotic Crust

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	x 2 =	
FAC species 45	x 3 =	135
FACU species	x 4 =	
UPL species 55	x 5 =	275
Column Totals: 100 (A)		410 (B)

Prevalence Index = B/A = 4.1

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:

SOIL

Sampling Point: 1

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
0-3								Topsoil, organic layer
3-8	10YR 3/2	30	10YR 4/6	70	D	M	Clay loam. Gravel < 1 inch.	

[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:

Although redox was observed, it does not meet any criteria for soil chroma or value to be considered hydric.

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 X

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

Remarks:

Irrigation (sprinkler) system observed.

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: I-80 Gilman St. City/County: Berkeley/Alameda Sampling Date: 12/14/17

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

Investigator(s): J. Elia, G. Wattlex Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: WGS 84

Soil Map Unit Name: 146 - Urban land NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	

Remarks:
Taken on slope above swale.

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: 1m²)			
1. Helminthotheca echioides	3		FAC
2. Trifolium hirtum	35	Yes	UPL
3. Plantago lanceolata	1		FAC
4. Geranium dissectum	40	Yes	UPL
5. Lolium perenne	16		FAC
6.			
7.			
8.			
	95 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 5 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 20	x 3 = 60
FACU species _____	x 4 = _____
UPL species 75	x 5 = 375
Column Totals: 95 (A)	435 (B)

Prevalence Index = B/A = 4.5

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:

SOIL

Sampling Point: 2

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
1-2	10YR 3/3	100						Organic layer, top soil
2-6	10YR 3/4	100					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)
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if present):

Type: Rocky soil, compacted

Depth (inches): 6

Hydric Soil Present? Yes ____ No X

Remarks:

Based on rocky soil conditions, test pit was only performed up to 6 inches.

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 X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: _____ City/County: _____ Sampling Date: 12/14/17

Applicant/Owner: _____ State: _____ Sampling Point: 3

Investigator(s): J. Elia, G. Wattley Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Convex Slope (%): 2

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: WGS 84

Soil Map Unit Name: 146- urban land NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	

Remarks:
Taken in center of swale, near southern limits.

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 m²)			
1. Helminthotheca echioides	30	Yes	FAC
2. Foeniculum Vulgare	10		UPL
3. Geranium rotundifolium	3		UPL
4. Geranium dissectum	2		UPL
5. Trifolium hirtum	35	Yes	UPL
6. Lolium Perenne	10		FAC
7.			
8.			
	90 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

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

Dominance Test worksheet:

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

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 50% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species _____	x 1 = _____
FACW species _____	x 2 = _____
FAC species 40	x 3 = 120
FACU species _____	x 4 = _____
UPL species 50	x 5 = 250
Column Totals: 90 (A)	370 (B)

Prevalence Index = B/A = 4.1

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:

SOIL

Sampling 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
0-2							organic layer, top soil	
2-12	10YR 3/2	100					clay loam	Gravel 1-2 inch

[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:

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 X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: _____ City/County: _____ Sampling Date: 12/14/17

Applicant/Owner: _____ State: _____ Sampling Point: 4

Investigator(s): J. Elia, G. Wattley Section, Township, Range: _____

Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2

Subregion (LRR): _____ Lat: _____ Long: _____ Datum: WGS 84

Soil Map Unit Name: 146- Urban land NWI classification: _____

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

Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X 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 X	

Remarks:
Taken on slope above swale.

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. Coyote Brush	25	Yes	UPL
2.			
3.			
4.			
5.			
	25 = Total Cover		
Herb Stratum (Plot size: 1 M²)			
1. Plantago lanceolata	5		FAC
2. Foeniculum vulgare	1		UPL
3. Lolium Perenne	9		FAC
4.			
5.			
6.			
7.			
8.			
	15 = Total Cover		
Woody Vine Stratum (Plot size: _____)			
1.			
2.			
	_____ = Total Cover		

% Bare Ground in Herb Stratum 60 % Cover of Biotic Crust _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

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

Percent of Dominant Species That Are OBL, FACW, or FAC: 0 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	_____	x 1 =	_____
FACW species	_____	x 2 =	_____
FAC species	14	x 3 =	42
FACU species	_____	x 4 =	_____
UPL species	26	x 5 =	_____
Column Totals:	40 (A)		130 (B)

Prevalence Index = B/A = 3.25

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:

SOIL

Sampling Point: 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
0-1	10YR 3/1	100						rocky, unconsolidated
1-4	10YR 4/3	100					Sandy	loam. Loose

[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: rocky layer

Depth (inches): 4

Hydric Soil Present? Yes ____ No X

Remarks:

Soil appears to be fill type material, based on rocky material.

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 X

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

Remarks:

Cuyler Stapelmann

From: Montero, Carie <Carie.Montero@parsons.com>
Sent: Wednesday, January 10, 2018 3:10 PM
To: Matthew Rechs (Matthew.Rechs@dot.ca.gov)
Cc: Yeakel, John@DOT; 'Herman, Paul@DOT'; Susan Chang; Pimentel, Rodney
Subject: FW: Gilman JD Update- revised BSA map
Attachments: Surveyed Features.jpg; Surveyed Features.pdf

Hi Matt,

Please see the attached map for submittal to the USACE.

Let me know if you have questions or need any other information.

Regards,

Carie

Carie S. Montero, M.A., RPA
Senior Project Manager-Environmental Practice Lead
PARSONS
Infrastructure
555 12th Street, Suite 1850 ◆ Oakland, CA 94607
Office 510.907.2163 ◆ Cell 510-914-2047
carie.montero@parsons.com ◆ www.parsons.com

From: Jared Elia [mailto:Jared_Elia@wreco.com]
Sent: Wednesday, January 10, 2018 11:48 AM
To: Montero, Carie <Carie.Montero@parsons.com>
Cc: Sandra Etchell <Sandra_Etchell@wreco.com>
Subject: RE: Gilman JD Update

Hi Carie,
Attached is the revised figure in PDF and jpg format. Let me know if there's additional changes.

Thanks!
Jared Elia | Biologist
WRECO
Desk: 925-941-0017 ext. 229

From: Montero, Carie [mailto:Carie.Montero@parsons.com]
Sent: Wednesday, January 10, 2018 11:16 AM
To: Jared Elia <Jared_Elia@wreco.com>

Cc: Sandra Etchell <Sandra_Etchell@wreco.com>
Subject: FW: Gilman JD Update

Hi Jared,

Please see the email below and send over a new figure with the mapping adjusted accordingly.

Thanks,

Carie

Carie S. Montero, M.A., RPA
Senior Project Manager-Environmental Practice Lead
PARSONS
Infrastructure
555 12th Street, Suite 1850 ◆ Oakland, CA 94607
Office 510.907.2163 ◆ Cell 510-914-2047
carie.montero@parsons.com ◆ www.parsons.com

From: Rechs, Matthew@DOT [mailto:Matthew.Rechs@dot.ca.gov]
Sent: Wednesday, January 10, 2018 9:32 AM
To: Montero, Carie <Carie.Montero@parsons.com>
Cc: Pimentel, Rodney <Rodney.Pimentel@parsons.com>; Susan Chang <schang@alamedactc.org>; Yeakel, John@DOT <john.yeakel@dot.ca.gov>; Herman, Paul@DOT <Paul.Herman@dot.ca.gov>
Subject: Gilman JD Update

Hello Carie,

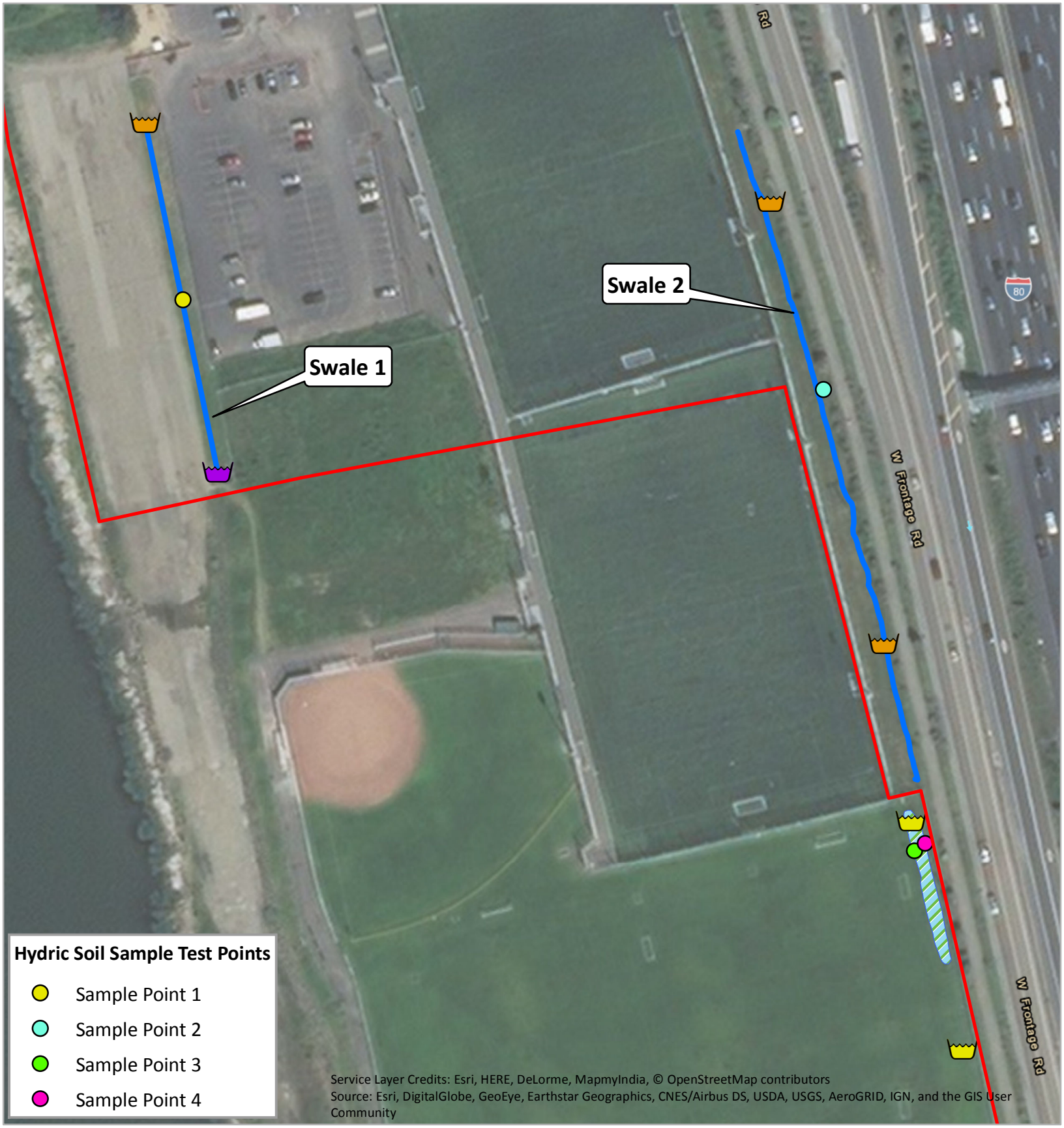
Good news on the Gilman project. Janelle called me late yesterday with an update on the Gilman JD. She has confirmed that the Corp is NOT going to take jurisdiction over 'Swale 1' and 'Swale 2', so we are free to work in those areas.

'Depression 1' is still questionable for them and would require another season with the sprinklers turned off to make a determination. However, as the project is not impacting that area we just need to assure them that it is outside of our project limits. To do this we need to revise Figure 10 (detail of the sports field) so that the BSA line runs outside of the fence. See the attached image for my crude example of what they want.

Now that the matter is resolved it will not be necessary for you or Susan to attend a special meeting with the Corp. She did not give me a date when we would receive the actual approved JD. I will be in a meeting from 10am-11:30am, but will be around most of the day if you have any questions.

Regards,

Matthew A. Rechs
Environmental Planner (NS)
Office of Biological Science and Permits
Caltrans District 4
111 Grand Ave, MS-8E
Oakland, CA 94612



Surveyed Features

Interstate 80/Gilman Street Interchange Improvement Project

City of Berkeley, Alameda County, California

BSA
Depression 1
Swale
Drainage Grate
Drainage inlet
Drainage outlet

N

0 50 100 200 Feet

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, U.S. ARMY CORPS OF ENGINEERS
1455 MARKET STREET, 16TH FLOOR
SAN FRANCISCO, CALIFORNIA 94103-1398

MAR 16 2018

Regulatory Division

Subject: File Number 2017-00207S

Ms. Jo Ann Cullom
California Department of Transportation, District 4
PO Box 236600
Oakland, California 94623

Dear Ms. Cullom:

This correspondence is in reference to your submittal of September 1, 2017, requesting an approved jurisdictional determination of the extent of navigable waters of the United States and waters of the United States occurring on a 59.5 acre site at the I-80 / Gillman Street Interchange in the City of Berkeley, Alameda County, California.

All proposed discharges of dredged or fill material occurring below the plane of ordinary high water in non-tidal waters of the United States; or below the high tide line in tidal waters of the United States; or within the lateral extent of wetlands adjacent to these waters, typically require Department of the Army authorization and the issuance of a permit under Section 404 of the Clean Water Act of 1972, as amended (33 U.S.C. § 1344 et seq.). Waters of the United States generally include the territorial seas; all traditional navigable waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including waters subject to the ebb and flow of the tide; wetlands adjacent to traditional navigable waters; non-navigable tributaries of traditional navigable waters that are relatively permanent, where the tributaries typically flow year-round or have continuous flow at least seasonally; and wetlands directly abutting such tributaries. Where a case-specific analysis determines the existence of a "significant nexus" effect with a traditional navigable water, waters of the United States may also include non-navigable tributaries that are not relatively permanent; wetlands adjacent to non-navigable tributaries that are not relatively permanent; wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary; and certain ephemeral streams in the arid West.

All proposed structures and work, including excavation, dredging, and discharges of dredged or fill material, occurring below the plane of mean high water in tidal waters of the United States, in former diked baylands currently below mean high water, outside the limits of mean high water but affecting the navigable capacity of tidal waters or below the plane of ordinary high water in non-tidal waters designated as navigable waters of the United States, typically require Department of the Army authorization and the issuance of a permit under section 10 of the Rivers and Harbors Act of 1899, as amended (33 U.S.C. § 403 et seq.). Navigable waters of the United States generally include all waters subject to the ebb and flow of the tide, and/or all

waters presently used, or have been used in the past, or may be susceptible for future use to transport interstate or foreign commerce.

The enclosed delineation map titled "I-80 / Gillman Street Interchange, City of Berkeley, California," in two sheets, date certified February 6, 2018, reflects the absence of jurisdictional waters of the United States and navigable waters of the United States within the boundary area of the site, as defined by Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act. This approved jurisdictional determination is based on the current upland conditions of the site, as verified during a field investigation of July 18, 2017, a review of available digital photographic imagery, and a review of other data included in your submittal. This approved jurisdictional determination will expire in five years from the date of this letter unless new information or a change in field conditions warrants a revision to the delineation map prior to the expiration date. The basis for this approved jurisdictional determination is explained in the enclosed *Approved Jurisdictional Determination Form.*

The current absence of jurisdictional navigable waters of the United States and waters of the United States within the boundary area of the site does not obviate any requirement to obtain other Federal, State, or local approvals necessitated by law. Any impacts to federally-listed threatened or endangered species and/or designated critical habitat may be subject to regulation by the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under Section 10 of the Endangered Species Act of 1973, as amended (16 U.S.C. § 1531 *et seq.*). Sites located along the margins of San Francisco Bay may be subject to regulation by the San Francisco Bay Conservation and Development Commission under the McAteer-Petris Act of 1965, as amended (Public Resources Code § 66600 *et seq.*), or the Suisun Marsh Preservation Act of 1977, as amended (Public Resources Code §§ 29000-29612 *et seq.*). Therefore, you are urged to contact this agency directly to determine the need for other authorizations or permits.

You are advised that the approved jurisdictional determination may be appealed through the U.S. Army Corps of Engineers' Administrative Appeal Process, as described in 33 C.F.R. § 331 (65 Fed. Reg. 16,486; Mar. 28, 2000) and outlined in the enclosed flowchart and Notification of Administrative Appeal Options, Process, and Request for Appeal (NAO-RFA) Form. If you do not intend to accept the approved jurisdictional determination, you may elect to provide new information to this office for reconsideration of this decision. If you do not provide new information to this office, you may elect to submit a completed NAO-RFA Form to the Division Engineer to initiate the appeal process; the completed NAO-RFA Form must be submitted directly to the Appeal Review Officer at the address specified on the NAO-RFA Form. You will relinquish all rights to a review or an appeal unless this office or the Division Engineer receives new information or a completed NAO-RFA Form within 60 days of the date on the NAO-RFA Form. If you intend to accept the approved jurisdictional determination, you do not need to take any further action associated with the Administrative Appeal Process.

You may refer any questions on this matter to Janelle Leeson of my Regulatory staff by telephone at (415) 503-6773 or by e-mail at Janelle.D.Leeson@usace.army.mil. All correspondence should be addressed to the Regulatory Division, South Branch, referencing the file number at the head of this letter.

The San Francisco District is committed to improving service to our customers. My Regulatory staff seeks to achieve the goals of the Regulatory Program in an efficient and cooperative manner while preserving and protecting our nation's aquatic resources. If you would like to provide comments on our Regulatory Program, please complete the Customer Service Survey Form available on our website: http://www.spn.usace.army.mil/Missions/Regulatory.aspx.

Sincerely,

Rick M. Bottoms, Ph.D.
Chief, Regulatory Division

Enclosures

Copy Furnished (w/ encls):

✓Caltrans, District 4, Oakland, CA (Attn.: Mr. Matthew Rechs)

Copy Furnished (w/ encl 1 only):

CA RWQCB, Oakland, CA

Copy Furnished (w/o encls):

CA SWRCB, Sacramento, CA

DRY LAND APPROVED JURISDICTIONAL DETERMINATION FORM[1]
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): February 6, 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: San Francisco District, Interstate Route 80 / Gillman Street Interchange, 2017-00207S

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: CA County/parish/borough: Alameda City: Berkeley
Center coordinates of site (lat/long in degree decimal format): Lat. 37.878080 °, Long. -122.307242 °
Universal Transverse Mercator:
Name of nearest waterbody: SF Bay
Name of watershed or Hydrologic Unit Code (HUC): 18050002

- ☑ Check if map/diagram of review area is available upon request.
- ☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

- ☐ Office (Desk) Determination. Date:
- ☑ Field Determination. Date(s): July 18, 2017

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area.

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are no** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area.

SECTION III: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☑ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:
- ☑ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☐ Office concurs with data sheets/delineation report.
  - ☑ Office does not concur with data sheets/delineation report: Data sheets contain incorrect vegetation indicator status and therefore do not represent the correct determination for the presence of hydrophytic vegetation.
- ☐ Data sheets prepared by the Corps:
- ☐ U.S. Geological Survey Hydrologic Atlas:
  - ☐ USGS NHD data.
  - ☐ USGS 8 and 12 digit HUC maps.
- ☐ U.S. Geological Survey map(s). Cite scale & quad name:
- ☐ USDA Natural Resources Conservation Service Soil Survey. Citation:
- ☐ National wetlands inventory map(s). Cite name:
- ☐ State/Local wetland inventory map(s):
- ☐ FEMA/FIRM maps:
- ☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
- ☑ Photographs: ☑ Aerial (Name & Date):
- ☐ or ☑ Other (Name & Date):
- ☑ Previous determination(s). File no. and date of response letter: SPN-2007-400314
- ☐ Applicable/supporting case law:
- ☐ Applicable/supporting scientific literature:
- ☑ Other information (please specify): As-build designs

B. REQUIRED ADDITIONAL COMMENTS TO SUPPORT JD. EXPLAIN RATIONALE FOR DETERMINATION THAT THE REVIEW AREA ONLY INCLUDES DRY LAND: Swale 1:

Swale 1: Swale 1 is an approximate 300-foot long depression receiving runoff from a drainage outlet. Per design plans provided by the applicant, swale one is a constructed bio-swale for the purpose of stormwater treatment. Per the definition of Waters of the U.S. (40 CFR 230.3(s)), waste

[1] This form is for use only in recording approved JDs involving dry land. It extracts the relevant elements of the longer approved JD form in use since 2007 for aquatic areas and adds no new fields.

treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA are not waters of the United States. Furthermore, a preliminary jurisdictional determination (PJD) was completed for this portion of the project area, found in file SPN-2007-400314. The PJD verifies that the bio-swale was constructed in uplands.

Swale 2: Swale 2 is an approximate 560-foot long depression receiving runoff from the Bay Trail. The swale drains into two different drainage inlets, located near both ends of the swale. The inlets connect to the City storm drain system. A PJD was completed for this portion of the project area, found in file SPN-2007-400314. This PJD and design plans provided by the applicant depict that swale 2 is a ditch constructed entirely within uplands.

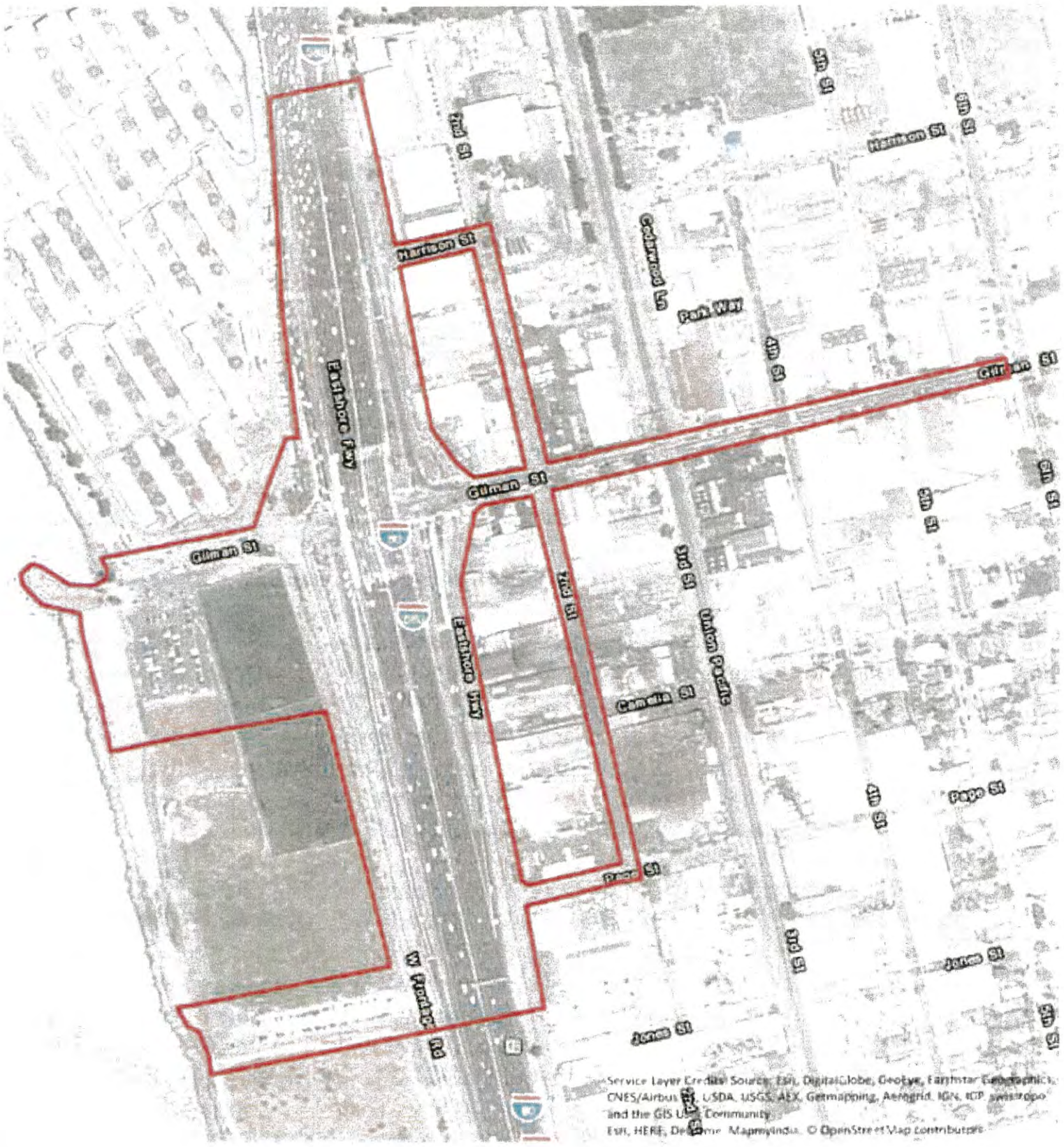


Figure 4. Study Area Map

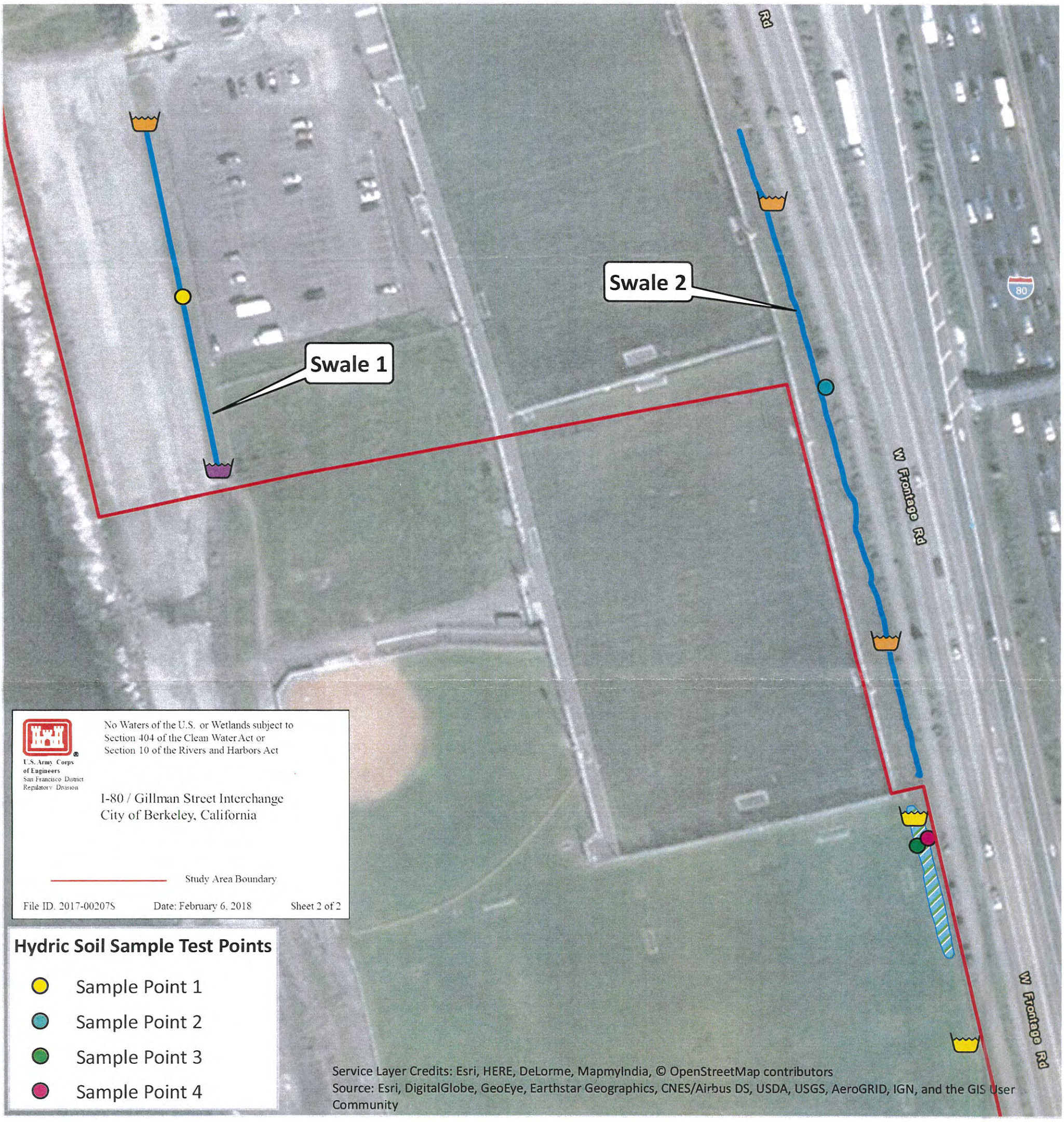
U.S. Army Corps of Engineers
San Francisco District
Regulatory Division

No Waters of the U.S. or Wetlands subject to Section 404 of the Clean Water Act or Section 10 of the Rivers and Harbors Act

I-80 / Gillman Street Interchange
City of Berkeley, California

Study Area Boundary

File ID. 2017-00207S Date: February 6, 2018 Sheet 1 of 2



Surveyed Features

Interstate 80/Gilman Street Interchange Improvement Project

City of Berkeley, Alameda County, California

BSA
Depression 1
Swale
Drainage Grate
Drainage inlet
Drainage outlet

N

0 50 100 200 Feet

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: California Department of Transportation	File Number: 2017-00207S	Date: 6 Feb 2018
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice, means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.
- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:
Katerina Galacatos
South Branch Chief, Regulatory Division
San Francisco District, U.S. Army Corps of Engineers
1455 Market Street, 16th floor
San Francisco, CA 94103-1398
Phone: (415) 503-6778 Email: Katerina.galacatos@usace.army.mil

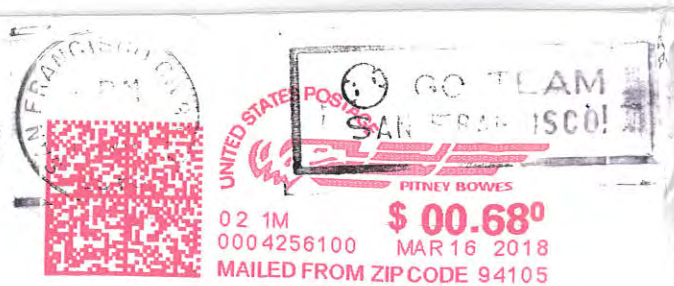
If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh
Administrative Appeal Review Officer,
U.S. Army Corps of Engineers
South Pacific Division
1455 Market Street, 2052B
San Francisco, California 94103-1399
Phone: (415) 503-6574 Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

	Date:	Telephone number:
_____ Signature of appellant or agent.		

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SAN FRANCISCO
CORPS OF ENGINEERS
1455 MARKET STREET, SPN-R
SAN FRANCISCO, CALIFORNIA 94103-1398

OFFICIAL BUSINESS



Mr. Mattew Rechs
California Department of Transportation, District 4
P..O. Box 236600
Oakland, California 94623