California Environmental Quality Act
INITIAL STUDY

Altamira Canyon Creek Restoration Project

Lead Agency:

City of Rancho Palos Verdes
30940 Hawthorne Boulevard
Rancho Palos Verdes, CA 90275
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SECTION A. ENVIRONMENTAL CHECKLIST FORM

1.	Project Title:	Altamira Canyon Creek Restoration Project
2.	Lead Agency Name and Address:	City of Rancho Palos Verdes 30940 Hawthorne Boulevard Rancho Palos Verdes, CA 90275
3.	Contact Person and Phone Number:	Amy Seeraty, Senior Planner (310) 544-5231
4.	Project Location:	As shown in **Figure A-1, Regional Location Map**, the City of Rancho Palos Verdes (City) is located in the southwestern portion of Los Angeles County. As shown in **Figure A-2, Project Location Map**, the majority of the Project Site, which comprises a segment of Altamira Canyon Creek, is located at 25 Sweetbay Road (Petak Property) on the south side of Sweetbay Road with the southern third of the segment located at 26 Sweetbay Road (Smith Property). The nearest cross street is Narcissa Drive, approximately 650 feet to the northeast. The Project Site comprises Los Angeles County Assessor's Parcel Numbers 7572-013-017, 7572-013-015, and 7572-011-025.
5.	Project Sponsor's Name and Address:	William Petak 25 Sweetbay Road Rancho Palos Verdes, CA 90275
6.	General Plan Designation:	Residential <= 1 DU/acre
7.	Zoning:	RS-1 Residential Single – Lot > 1 acre
	Zoning Overlay Districts:	Natural Overlay Control District (OC-1) Urban Appearance Overlay Control District (OC-3) Landslide Moratorium

8. Description of Project:

<u>Existing Conditions</u>

The Project Site is located within the gated Portuguese Bend neighborhood, north of Palos Verdes Drive South, on the south side of Sweetbay Road, southeast of the

intersection with Narcissa Drive, and east of Cinnamon Lane. The section of Altamira Canyon Creek that comprises the Project Site is mostly located along the common boundary between the two properties at 25 and 26 Sweetbay Road. The natural embankments of Altamira Canyon Creek are incised and show moderate slopes to near vertical conditions, with heights of 10 to 20 feet. Portions of the embankments within the Project Site have been modified with protection consisting of concrete and gabion walls. The slope that ascends on the west side of Altamira Canyon Creek is generally at a grade slightly steeper than 2:1 and exhibits a surface slump.

Project Background

In 2015, due to approximately two decades of severe erosion of the embankments of Altamira Canyon Creek resulting from high storm flows within the creek itself and adjacent drainages, the property owner of 25 Sweetbay Road installed gabion baskets along the eastern bank of Altamira Canyon Creek and along the northern bank of an unnamed drainage. The purpose of installing these structures was to prevent further loss of property and protect the animals in the equestrian facilities abutting the drainages. These rock-filled, wire mesh baskets, along with concrete footings, armored the eroding eastern bank and served to protect the bank from further high flow events. The gabions were installed without proper permits from the United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and Los Angeles Regional Water Quality Control Board (LARWQCB). Subsequently, after site visits by the USACE and LARWQCB, a notice of violation for failure to obtain a Section 401 Water Quality Certification was issued. The property owner was directed to conduct required biological and engineering studies to support the regulatory permitting process.

Project Characteristics

In response to the notice of violation, the property owner proposes a Project that involves the following restoration, repairs, and improvements (see **Figure A-3**, Proposed Grading/Restabilization Plan):

- Most of the existing gabion baskets and foundation, grout, and grouted stones that were installed as part of the existing creek embankment protection would be removed. Approximately 100 linear feet of the existing gabion wall and foundations would be removed.

- Exposed channel bank would be restored to a 2:1 slope.

- Any channel protection within the Project Site would be removed and restored.

- Any surface slumps within the Project Site would be repaired.

- A section of the slope would be reinforced with erosion control mats (i.e., Enkamats[1]) and riprap and earthen fill over the riprap.

- Areas along the slope would undergo habitat restoration, while other areas within the creek channel would be left in place. The habitat restoration, which would include the removal of non-native and invasive weed species and the planting of riparian habitat, would be implemented in accordance with the Habitat Mitigation and Monitoring Plan (HMMP) specifically prepared for the Project (see Appendix B of this Initial Study).

The area within Altamira Canyon Creek and the embankments that would be disturbed would be limited to approximately 4,192 square feet and would involve approximately 748 cubic yards of earthen cut, approximately 195 cubic yards of gabion removal, approximately 92 cubic yards of earthen fill, and approximately 679 cubic yards of rock riprap fill. The gabion removal and some of the earthen cut would be exported from the Project Site, and the rock riprap fill would be imported to the Project Site.

9. Surrounding Land Uses and Setting:

   The segment of Altamira Canyon Creek within the Project Site is bounded on the north by Sweetbay Road and a culvert, on the east by livestock corrals and related facilities, and on the south and west by large residential parcels. Both sides of Altamira Canyon Creek are vegetated with ornamental shrubs and trees, including citrus trees, Peruvian pepper trees, and gum trees.

10. Other Public Agencies Whose Approval is Required:

    - U.S. Army Corps of Engineers
    - California Department of Fish and Wildlife
    - Los Angeles Regional Water Quality Control Board

11. Have California Native American tribes traditionally and culturally affiliated with the project area requested consultation pursuant to Public Resources Code (PRC) Section 21080.3.1? If so, is there a plan for consultation that includes, for example, the determination of significance of impacts to tribal cultural resources, procedures regarding confidentiality, etc.?[2]

[1] Enkamat is an open three-dimensional synthetic mat, consisting of randomly placed filaments of plyamide and nylon. Application of Enkamats is ideal for protection of slopes and embankments against hydraulic loadings and erosion by rainfall and wind and establishment of vegetation on steep weathered slopes.

[2] NOTE: Conducting consultation early in the CEQA process allows tribal governments, lead agencies, and project proponents to discuss the level of environmental review, identify and address potential adverse impacts to tribal cultural resources, and reduce the potential for delay and conflict in the environmental review process. (See Public Resources Code section 21080.3.2.) Information may also be available from the California Native American Heritage Commission's Sacred Lands File per Public Resources Code section 5097.96 and the California Historical Resources Information System administered by the California Office of Historic Preservation. Please also note that Public Resources Code section 21082.3(c) contains provisions specific to confidentiality.

Yes. The City sent notification letters to the Gabrieleno/Tongva San Gabriel Band of Mission Indians, the Gabrieleño Band of Mission Indians—Kizh Nation, the Gabrielino/Tongva Nation, the Gabrielino Tongva Indians of California Tribal Council, the Gabrielino-Tongva Tribe, the Santa Rosa Band of Cahuilla Indians, and the Soboba Band of Luiseño Indians on August 9, 2022. Please refer to Section XVIII, Tribal Cultural Resources, of this Initial Study for a discussion of the results of the notification and consultation process.

Source: Google Map, 2021

FIGURE A-1
Regional Location Map

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Source: Google Map, 2022.

FIGURE A-2
Project Location Map

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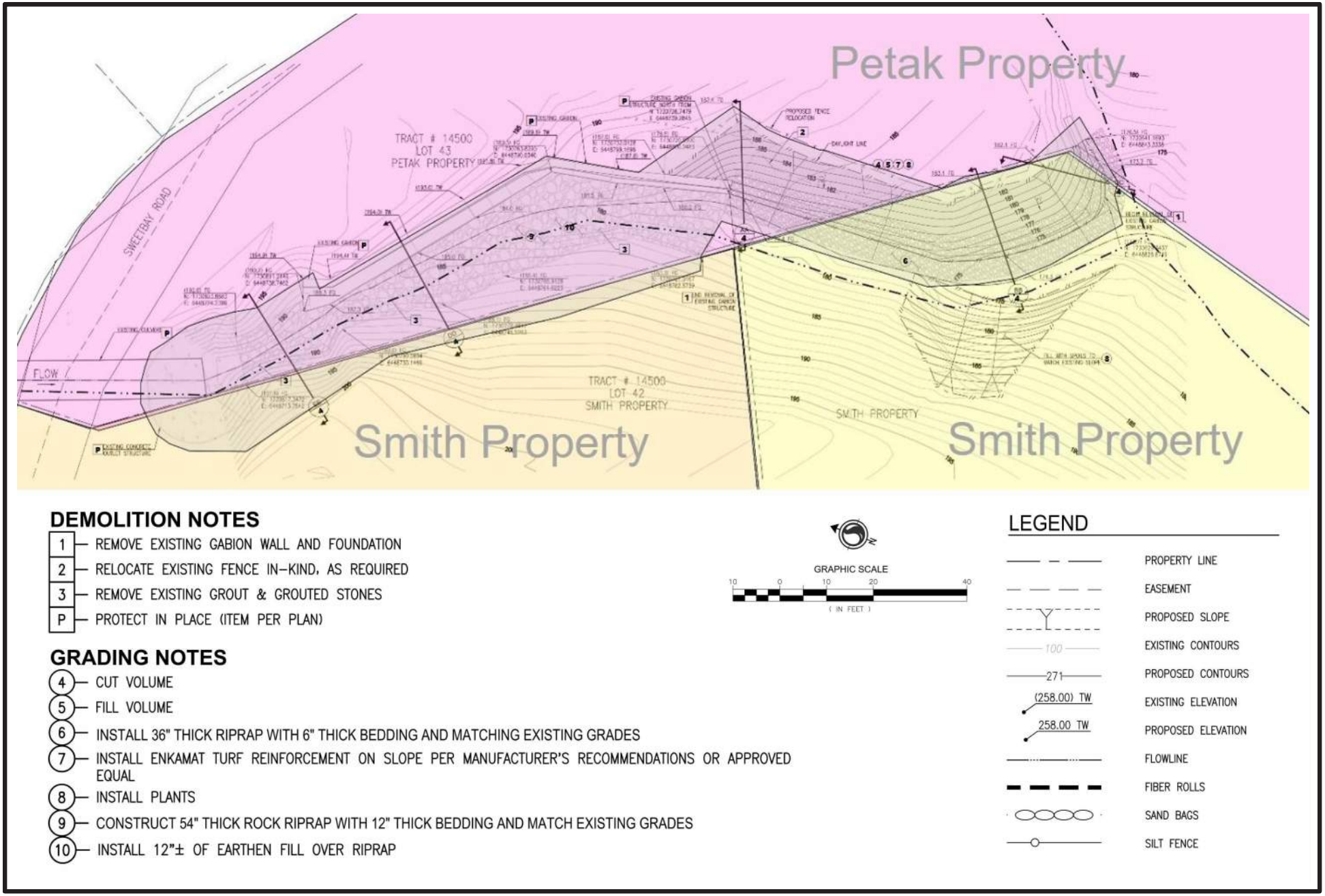

Source: Stantec, 2020

FIGURE A-3
Proposed Grading/Restabilization Plan

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SECTION B. ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

☐ Aesthetics	☐ Agriculture and Forestry Resources	☐ Air Quality
☐ Biological Resources	☐ Cultural Resources	☐ Energy
☐ Geology/Soils	☐ Greenhouse Gas Emissions	☐ Hazards & Hazardous Materials
☐ Hydrology/Water Quality	☐ Land Use/Planning	☐ Mineral Resources
☐ Noise	☐ Population/Housing	☐ Public Services
☐ Recreation	☐ Transportation/Traffic	☐ Tribal Cultural Resources
☐ Utilities/Service Systems	☐ Wildfire	☐ Mandatory Findings of Significance

For the evaluation of potential impacts, the questions in the Initial Study Checklist are stated and an answer is provided according to the analysis undertaken as part of the Initial Study. The analysis considers the long-term, direct, indirect, and cumulative impacts of the project. To each question, there are four possible responses:

- **No Impact**. The project would not have any measurable environmental impact on the environment.
- **Less Than Significant Impact**. The project would have the potential for impacting the environment, although this impact would be below established thresholds that are considered to be significant.
- **Less Than Significant Impact With Measures Incorporated**. The project would have the potential to generate impacts which may be considered a significant effect on the environment, although measures or changes to the development's physical or operational characteristics can reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact**. The project would have impacts which are considered significant, and additional analysis is required to identify measures that could reduce these impacts to less than significant levels.

SECTION C. DETERMINATION

(To be completed by the Lead Agency)

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☒ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the proposed project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

January 25, 2023

Signature | Date

SECTION D. EVALUATION OF ENVIRONMENTAL IMPACTS

I. Aesthetics

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
AESTHETICS: *Except as provided in Public Resources Code Section 21099, would the project:*				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☐	☒
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☐	☒
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion

a) Would the project have a substantial adverse effect on a scenic vista?

No Impact. A scenic vista is defined as a publicly accessible, prominent vantage point that provides expansive views of highly valued landscapes or prominent visual elements composed of man-made or natural features. As described in the City's General Plan Visual Resources Element, the vistas of the surrounding Los Angeles basin and coastal region of the Palos Verdes Peninsula are a valuable resource to residents and visitors. Views of the ocean, islands, distant mountains, and urban lights are not only important from public spaces, such as arterial streets, trails, parks, and open spaces, but also from private property. Views of open space areas, such as canyons, pastoral environment, ridges, and bluffs, from both public and private spaces contribute to the City's character.[3] The Project Site is located in the private and gated Portuguese Bend neighborhood, and the section of Altamira Canyon Creek that comprises the Project Site is mostly located along the common boundary between the two properties at 25 and 26 Sweetbay Road. The Visual Resources Element has identified vistas, vehicular view corridors, and viewing sites and path/trail view corridors farther north of the Project Site.[4] However, the vicinity

[3] City of Rancho Palos Verdes, General Plan Visual Resources Element, September 2018.
[4] City of Rancho Palos Verdes, General Plan Visual Resources Element, September 2018, Figures 1 and 2.

of the Project Site has varying topography, a winding street layout, and thick vegetation and trees. As such, the views of the Project Site are limited from off-site vantage points. In addition, as the Project would consist of embankment improvements and would not change the uses or add structures or height to the site, the Project would not result in the obstruction of scenic views. Therefore, the Project would not have an adverse effect on scenic vistas, and no impact would occur.

b) Would the project substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. The Project Site is not located along or within a designated state scenic highway.[5] The Project Site is located approximately 13.5 miles from the closest eligible scenic highway (i.e., a portion of the Pacific Coast Highway, State Route 1) and approximately 24 miles from the closest officially designated scenic highway (i.e., Topanga Canyon Boulevard). Based on these distances, the Project Site would not be visible from these designated or eligible state scenic highways. As such, the Project would not adversely affect the viewshed from a state scenic highway.

As discussed above, the Project Site currently includes embankment improvements along a portion of the creek that were installed without approval from the responsible regulatory agencies. The existing site also includes rocks and trees adjacent to an equestrian area that is upslope of the creek. The Project would comply with the applicable regulatory permitting processes and remove a majority of the existing embankment improvements, remove and restore channel protection, repair surface slumps, and reinforce erosion control features. In addition, portions along the slope would undergo habitat restoration. The Project would not require the removal of trees and would not add buildings or structures to the site. Accordingly, upon completion, the Project would result in a relatively unaltered visual character if viewed from afar. Therefore, because of the Project Site's distance from the nearest officially designated or eligible scenic highway and the lack of impacts to scenic resources on the Project Site, the Project would have no impact on scenic resources within a state scenic highway.

c) Would the project, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point.) If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?

No Impact. The Project would be located in a residential and urbanized area. For purposes of determining impact significance for projects within urbanized areas, a project is evaluated for whether it would conflict with applicable zoning or other regulations governing "scenic quality." The term "scenic quality" is not specifically defined in the threshold language of Appendix G of the CEQA Guidelines. No applicable federal or state regulations pertain to aesthetic impact; however, the Project would need to comply with Rancho Palos Verdes Municipal Code regulations governing scenic quality for areas

[5] California Department of Transportation, California State Scenic Highway System Map, https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?, accessed August 23, 2022.

zoned as RS-1 Residential Single (Lot > 1 acre). As provided in Rancho Palos Verdes Municipal Code Section 17.02.040, a "view" which is protected can include (a) a "near view," which is defined as a scene located on the peninsula, including but not limited to a valley, ravine, equestrian trail, pastoral environment, or any natural setting; and/or (b) a "far view," which is defined as a scene located off the peninsula, including but not limited to the ocean, Los Angeles basin, City lights at night, harbor, Vincent Thomas Bridge, shoreline, or offshore islands. A "view," which is protected by Rancho Palos Verdes Municipal Code Section 17.02.040, does not include vacant land that is developable under the Municipal Code, distant mountain area not normally visible, or the sky, either above distant mountain areas or above the height of offshore islands. Further, "a view may extend in any horizontal direction (360 degrees of horizontal arc) and shall be considered as a single view, even if broken into segments by foliage, structures, or other interference."

The Project would be consistent with such RS-1 Residential Single (Lot > 1 acre) code requirements because the Project would involve embankment improvements and habitat restoration within a sloped area of the creek, the views of which are not widely available from the vicinity of the Project Site due to varying topography, winding street layout, and vegetation and trees. Therefore, the Project would not conflict with applicable zoning and other regulations governing scenic quality, and no impact would occur.

d) Would the project create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?

No Impact. The section of Altamira Canyon Creek that comprises the Project Site is located along the common boundary between the two properties at 25 and 26 Sweetbay Road. The site does not currently include substantial light or glare sources, and the Project would not introduce additional occupants or uses on-site that would require lighting. The Project would be limited to embankment improvements and habitat restoration activities that would not utilize glossy or reflective construction materials that could create or generate significant amounts of glare off-site. Therefore, the Project would not create new sources of light or glare that would adversely affect day or nighttime views in the area, and no impact would occur.

II. Agriculture and Forestry Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
AGRICULTURE AND FORESTRY RESOURCES: *In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:*				

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

Discussion

a) Would the project convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?

No Impact. As stated in the Project Description of this Initial Study, the Project Site is located in a residential area of the gated Portuguese Bend neighborhood. The section of Altamira Canyon Creek that comprises the Project Site is mostly located along the common boundary between the two properties at 25 and 26 Sweetbay Road. No agricultural uses or operations occur on-site or in the vicinity of the Project Site. Additionally, neither the Project Site nor the areas surrounding it are mapped as Prime Farmland, Unique Farmland, or Farmland of Statewide or Local Importance pursuant to the Farmland Mapping and Monitoring Program of the California Department of Conservation.[6] Therefore, the Project would not convert farmland to a non-agricultural use, and no impact would occur.

[6] California Department of Conservation, California Important Farmland Finder, https://maps.conservation.ca.gov/DLRP/CIFF/, accessed August 3, 2022.

b) Would the project conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The Project Site is zoned as RS-1 (Residential Single – Lot > 1 acre) by the City and designated as Residential <= 1 DU/acre in the City's General Plan. Agricultural uses are not permitted on properties zoned RS-1. Further, neither the Project Site nor the surrounding areas are subject to a Williamson Act contract.[7] Therefore, the Project would not conflict with existing zoning for agricultural uses or a Williamson Act contract, and no impact would occur.

c) Would the project conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220(g)), timberland (as defined by Public Resources Code Section 4526), or timberland zoned Timberland Production (as defined by Government Code Section 51104(g))?

No Impact. The Project Site is zoned as RS-1 (Residential Single – Lot > 1 acre) by the City and designated as Residential <= 1 DU/acre in the City's General Plan. Accordingly, the Project Site does not include any forestland or timberland. Therefore, the Project would not conflict with existing zoning for, or cause rezoning of, forestland, timberland, or timberland zoned Timberland Production, and no impact would occur.

d) Would the project result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The Project Site does not include any forestland or timberland. Therefore, the Project would not result in the loss or conversion of forestland to non-forest use, and no impact would occur.

e) Would the project involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. As stated in the responses to Checklist Questions II(a) and II(c), above, the Project Site does not include any farmland or forestland. Therefore, the Project would not result in conversion of farmland to non-agricultural use or forestland to non-forest use, and no impact would occur.

III. Air Quality

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY: *Where available, the significance criteria established by the applicable air quality management district or air pollution control district may be relied upon to make the following determinations. Would the project:*				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

[7] California Department of Conservation, State of California Williamson Act Contract Land, 2017.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

Discussion

a) Would the project conflict with or obstruct implementation of the applicable air quality plan?

Less Than Significant Impact. The City of Rancho Palos Verdes is located within the South Coast Air Basin (Basin), which is bounded by the San Gabriel, San Bernardino, and San Jacinto Mountains to the north and east and by the Pacific Ocean to the south and west. The South Coast Air Quality Management District (SCAQMD) has jurisdiction in the Basin, which has a history of recorded air quality violations and is an area where both State and federal ambient air quality standards are exceeded.[8] Areas that meet ambient air quality standards are classified as attainment areas, while areas that do not meet these standards are classified as non-attainment areas. The air quality in the Los Angeles County portion of the Basin does not meet the ambient air quality standards for ozone (O_3), coarse particulate matter (PM_{10}), fine particulate matter ($PM_{2.5}$), and lead and is, therefore, classified as a non-attainment area for these pollutants.[9] The SCAQMD is required to reduce emissions of air pollutants for which the Basin is in federal non-attainment (i.e., O_3 and $PM_{2.5}$).

In order to reduce emissions, the SCAQMD adopted the 2016 Air Quality Management Plan (AQMP), which establishes a program of rules and regulations directed at reducing air pollutant emissions and achieving State and federal air quality standards.[10] The 2016 AQMP is a regional and multiagency effort including the SCAQMD, the California Air Resources Board (CARB), the Southern California Association of Governments (SCAG), and the U.S. Environmental Protection Agency (USEPA). In addition to the AQMP, the SCAQMD regulates construction activities through Rule 403, which requires that excessive fugitive dust emissions be controlled by regular watering or other dust prevention measures, thus greatly reducing PM_{10} and $PM_{2.5}$ concentrations.

The 2016 AQMP pollutant control strategies are based on the latest scientific and technical information and planning assumptions, including the 2016-2040 Regional

[8] South Coast Air Quality Management District, *Final 2016 Air Quality Management Plan*, March 2017.
[9] *Ibid*
[10] *Ibid.*

Transportation Plan/Sustainable Communities Strategy, updated emission inventory methodologies for various source categories, and SCAG's latest growth forecasts.[11] SCAG's latest growth forecasts were defined in consultation with local governments and with reference to local general plans. Therefore, the SCAQMD considers projects that are consistent with the 2016 AQMP to also have less-than-significant cumulative impacts.[12]

The criteria for determining consistency with the 2016 AQMP are defined by the following indicators:

- *The Project will not result in an increase in the frequency or severity of existing air quality violations, or cause or contribute to new violations, or delay the attainment of air quality standards or the interim emissions reductions specified in the AQMP.*

- *The Project will be consistent with the population, housing, and employment growth projections utilized in the preparation of the AQMP and will implement all feasible air quality mitigation measures.*

As discussed in the response to Checklist Question III(b), below, the Project would result in construction emissions below the SCAQMD thresholds, and there would be no long-term operational phase emissions. Accordingly, the Project would not have the potential to increase the frequency or severity of existing air quality violations or cause or contribute to new violations of the ambient air quality standards that would delay the attainment of air quality standards for O_3, PM_{10}, and $PM_{2.5}$. In addition, the Project would not involve changes in land use or stationary sources that would emit substantial amounts of pollutants or result in population, housing, or employment growth. The Project would not require mitigation and would result in less-than-significant air quality impacts, as described in responses to Checklist Questions III(b) through III(d), below. Furthermore, compliance with all emissions reduction regulations established by the SCAQMD, such as Rule 403 controlling fugitive dust, would be required. Therefore, the Project would not conflict with or obstruct implementation of the AQMP, and impacts would be less than significant.

b) Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?

Less Than Significant Impact. The Project Site is located in the Basin, which is considered a non-attainment area for certain criteria pollutants. The Project would involve removal of the existing gabion wall and foundations and restoration of the creek embankment. These activities would temporarily contribute to regional and localized pollutant emissions.

It is anticipated that the Project would be implemented over a period of one month. The analysis of daily construction emissions has been prepared utilizing emission factors developed by CARB for off-road construction equipment (OFFROAD2007) and on-road vehicles and on-

[11] Southern California Association of Governments, 2016–2040 Regional Transportation Plan/Sustainable Communities Strategy, April 2016. The 2020–2045 RTP/SCS was approved in September 2020. However, the 2016 AQMP relies on the 2016–2040 RTP/SCS and is, therefore, utilized in this discussion for consistency with the 2016 AQMP.

[12] South Coast Air Quality Management District, *SCAQMD Air Quality Significance Thresholds*, March 2015.

road heavy-heavy-duty diesel trucks (EMFAC2007 version 2.3). **Table III-1** presents the anticipated daily short-term construction emissions associated with the Project.

Table III-1
Short-Term Construction Emissions

Emissions Source	Pollutant (pounds/day)					
	VOC	NO_X	CO	SO_x	PM_{10}	$PM_{2.5}$
Off-Road Equipment[a]	2.30	20.65	10.71	0.05	0.52	--
Construction Worker Trips[b]	0.29	0.21	2.39	<0.01	0.06	0.04
Haul Truck Trips[c]	0.77	8.79	3.83	0.03	0.77	0.64
Maximum Daily Emissions	**3.36**	**29.65**	**16.93**	**0.09**	**1.35**	**0.68**
SCAQMD Thresholds[d]	*75*	*100*	*550*	*150*	*150*	*55*
Is Threshold Exceeded?	***No***	***No***	***No***	***No***	***No***	***No***

Notes: VOC = volatile organic compounds; NO_x = nitrogen oxides; CO = carbon monoxide; SO_x = sulfur oxides; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

[a] Emissions were calculated using factors from OFFROAD2007, assuming an overestimation of maximum horse-power equipment usage that includes one off-highway truck watering every two hours during an 8-hour day, and one roller and one skid steer loader, each operating for 8 hours a day.

[b] Emissions were calculated using factors from EMFAC2007 version 2.3, assuming six construction workers traveling 50 miles per trip or 100 miles round trip per day.

[c] Emissions were calculated using factors from EMFAC2007 version 2.3, assuming four haul trucks traveling 100 miles per trip or 200 miles round trip per day.

[d] South Coast Air Quality Management District, SCAQMD Air Quality Significance Thresholds, March 2015.

Source: Refer to Appendix A of this Initial Study for detailed calculation sheets.

Construction activities are a source of fugitive dust emissions that may have a temporary impact on local air quality. Fugitive dust emissions vary substantially from day to day, depending on the level of activity, specific operations, and weather conditions, and would be short term, ceasing upon Project completion. As stated above, SCAQMD Rule 403 requires that excessive fugitive dust emissions during construction be controlled by regular watering or other dust prevention measures. Adherence to SCAQMD Rule 403 would greatly reduce PM_{10} and $PM_{2.5}$ concentrations. As shown in **Table III-1**, total PM_{10} and $PM_{2.5}$ emissions would not exceed the SCAQMD thresholds during construction. Other construction-related exhaust emissions would result from the transport of machinery and supplies to and from the Project Site and emissions produced by equipment used on-site. As presented in **Table III-1,** construction equipment, worker vehicle, and haul truck exhaust emissions would be below the established SCAQMD significance thresholds. In addition, once restoration of the creek embankment is complete, no pollutant emissions would occur. Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or State ambient air quality standard, and, as such, air quality impacts would be less than significant.

c) Would the project expose sensitive receptors to substantial pollutant concentrations?

Less Than Significant Impact. Sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases, such as asthma, emphysema, and bronchitis.[13] In order to identify impacts to sensitive receptors, the SCAQMD recommends addressing localized significance thresholds (LSTs) for construction and operations impacts (area sources only).[14] The closest sensitive receptors are residences adjoining the Project Site to the west and south. These sensitive receptors may be potentially affected by air pollutant emissions generated during on-site construction activities.

Table III-2 presents the localized construction-related emissions for NO_X, CO, PM_{10}, and $PM_{2.5}$ in comparison to the appropriate LST lookup tables established by the SCAQMD. The localized emissions presented in **Table III-2** are less than the emissions displayed in **Table III-1** because localized emissions include only on-site emissions (i.e., from construction equipment and fugitive dust and shown in **Table III-1** as off-road equipment) and do not include off-site emissions (i.e., from construction worker trips and hauling activities). As shown in **Table III-2**, the Project's localized construction emissions would not exceed the LST emission levels found in the LST lookup tables with adherence to SCAQMD rules and requirements. Therefore, because the Project would not exceed short-term allowable emissions from the LST lookup tables, the Project would not expose sensitive receptors to substantial pollutant concentrations, and air quality impacts would be less than significant.

Table III-2
Localized Significance of Construction Emissions

	Pollutant (pounds/day)			
	NO_X	**CO**	**PM_{10}**	**$PM_{2.5}$**
Maximum Daily Emissions[a]	**29.65**	**16.93**	**1.35**	**--**
SCAQMD Localized Significance Threshold Screening Criteria[b]	*91*	*664*	*5*	*3*
Screening Criteria Exceeded?	***No***	***No***	***No***	***No***

Notes: NO_x = nitrogen oxide; CO = carbon monoxide; PM_{10} = coarse particulate matter; $PM_{2.5}$ = fine particulate matter

[a] Off-road equipment emissions from Table III-1 above.

[b] The LST screening criteria were determined using Appendix C of the SCAQMD *Final Localized Significant Threshold Methodology* guidance document for pollutants NO_X, CO, PM_{10}, and $PM_{2.5}$. The LST screening criteria were based on the anticipated daily acreage disturbance for construction (the allowable emissions for 1 acre were used), the distance to sensitive receptors (25 meters), and the source receptor area (SRA 3).

Source: Refer to Appendix A of this Initial Study for detailed model input/output data.

[13] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993.
[14] South Coast Air Quality Management District, *Final Localized Significance Threshold Methodology*, July 2008.

d) Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Less Than Significant Impact. According to the SCAQMD *CEQA Air Quality Handbook*, land uses associated with odor complaints typically include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding.[15] The Project involves restoration of creek embankments and does not include any uses identified by the SCAQMD as being associated with odors.

Construction activities associated with the Project may generate other emissions and detectable odors from heavy-duty equipment exhaust. However, construction-related emissions and odors would be short term in nature and cease upon Project completion. In addition, the Project would be required to comply with the California Code of Regulations, Title 13, Sections 2449(d)(3) and 2485, which minimizes the idling time of construction equipment either by shutting it off when not in use or by reducing idling time to no more than five minutes. This would further reduce the detectable odors from heavy-duty equipment exhaust. Any odor impacts to existing adjacent land uses would be short term and localized to the Project Site and immediate vicinity. As such, the Project would not result in other emissions (such as those leading to odors) adversely affecting a substantial number of people, and impacts would be less than significant.

IV. Biological Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES: *Would the project:*				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☐	☒
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

[15] South Coast Air Quality Management District, *CEQA Air Quality Handbook*, November 1993.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☒	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☒	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☒	☐

Discussion

a) Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

No Impact. Biological resources surveys were conducted within and adjacent to the Project Site to identify if there are any sensitive species, including special-status species, present on the Project Site.[16] The following analysis is based on the results of these surveys.

Plants

The surveys indicated that non-native grasslands, dominated by brome species (*Bromus* spp.), occur within the dry channel of Altamira Canyon Creek and along the western bank. Other non-native annual herbaceous species, including short pod mustard (*Hirschfeldia incana*), sow thistle (*Sonchus oleraceus*), and wild oats (*Avena fatua*), and other grasses were observed on the Project Site. Sparsely interspersed on-site are native shrubs common to adjacent areas of native scrub, including toyon (*Heteromeles arbutifolia*) and coyote bush (*Baccharis pilularis*). The eastern and southern edges of the Project Site are dominated by non-native Peruvian pepper trees (*Schinus molle*) with gum trees

[16] Stantec, Altamira Canyon Creek Project, Biological Resources Technical Report, August 25, 2022. See Appendix B of this Initial Study.

(*Eucalyptus* sp.) being a near co-dominant species in some areas. These areas of the Project Site have a mixture of non-native grasses and forbs consistent within the understory, including smilo grass (*Stipa miliacea*), bitter dock (*Rumex obtusifolius*), and garden nasturtium (*Tropaeolum majus*). A complete list of the common plant species observed during the surveys is presented in Table 1 of the Biological Resources Technical Report prepared for the Project (see Appendix B of this Initial Study).

Wildlife

Invertebrates and Gastropods

Habitat conditions on the Project Site provide a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates on the Project Site play a crucial role in several biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. General surveys of the Project Site detected a wide variety of common and non-native invertebrates, including, but not limited to, dragonflies and damselflies (*Odonata*); true bugs (*Hemiptera*); beetles (*Coleoptera*); flies (*Diptera*); stone flies (*Pleocoptera*); moths and butterflies (*Lepidoptera*); wasps, bees, and ants (*Hymenoptera*); and grasshoppers (*Orthoptera*).

Amphibians

Amphibian species were not observed during the surveys on the Project Site. Species not observed on the Project Site, but known to occur in the Altamira Canyon Creek watershed, include the Pacific treefrog (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), and the non-native bullfrog (*Lithobates catesbeiana*). These species all require aquatic habitats for all or part of their life cycle. Since aquatic habitats are only present during and immediately after substantial rain events on the Project Site, these amphibian species are not likely to occur on the Project Site outside of the rainy season, generally from November through March.

Reptiles

Western fence lizard (*Sceloporus occidentalis*) was the only reptile species observed on the Project Site during the surveys. Although not detected, several other common reptiles, including the western skink (*Plestiodon skiltonianus*), California whipsnake (*Masticophis lateralis*), and western rattlesnake (*Crotalus oreganus*), are likely to be present on the Project Site due to suitable habitat conditions that were observed during the surveys.

Birds

Birds were identified by sight and sound and were observed throughout the Project Site during the surveys. Some of these included black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), and Anna's

hummingbird (*Calypte anna*). All avian species identified on the Project Site during the surveys are listed in Table 2 of the Biological Resources Technical Report prepared for the Project (see Appendix B of this Initial Study). It is possible that many other birds use the Project Site either as wintering habitat, seasonal breeding, or as occasional migrants. Although several common birds were not detected on the Project Site, suitable habitat conditions for these birds, including mourning dove (*Zenaida macroura*), spotted towhee (*Pipilo maculatus*), and American robin (*Turdus migratorius*), were observed during the surveys.

Mammals

Mammal species were not observed during surveys on the Project Site. However, several common mammals, including the California ground squirrel (*Spermophilus beecheyi*), Audubon's cottontail rabbit (*Sylvilagus audubonii*), Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and raccoon (*Procyon lotor*), are expected to occur on the Project Site given the habitat conditions and species that are known to occur in the Project vicinity. It should be noted that while mountain lions (Puma concolor) were identified in Section 4.3.5 of the Biological Resources Technical Report dated August 25, 2022 (see Appendix B), a biologist from the Palos Verdes Peninsula Land Conservancy has specified that mountain lions have not been observed on the peninsula.[17]

Although bats were not detected on the Project Site, they likely forage and roost within the Altamira Canyon Creek riparian corridor. Many bats tend to concentrate foraging activities in riparian habitats, such as those present on and adjacent to the Project Site, where insect abundance is high.

Special-Status Species

No special-status plant or wildlife species were observed on the Project Site or immediately adjacent to the Project Site during the surveys. The potential for special-status species to occur within the Project Site and immediately surrounding areas is considered low due to the absence of suitable habitat or limited suitable habitat observed during the surveys. Therefore, the Project would not have any adverse effect, either directly or through habitat modification, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the CDFW or USFWS. As such, no impact would occur.

b) Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

c) Would the project have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

[17] Adrienne Mohan, Executive Director, Palos Verdes Peninsula Land Conservancy, E-mail to Amy Seeraty Re: Question about Existence Large Cat Species on the Peninsula, January 20, 2023.

Less Than Significant Impact. According to the Biological Resources Technical Report, the segment of Altamira Canyon Creek and associated contiguous areas of riparian vegetation within the Project Site boundaries that have been disturbed by the existing embankment improvements total approximately 0.12 acre of federal non-wetland waters of the U.S. and approximately 0.17 acre of State jurisdictional waters. The Project would involve embankment and habitat restoration efforts, which would provide benefits to the creek and surrounding areas by increasing biological function and value in the drainage system. Restoration efforts would also enhance Altamira Canyon Creek as a wildlife movement corridor, expand suitable breeding and foraging habitat for wildlife species, and encourage additional wildlife dispersal into the area.[18] The removal of non-native and invasive weed species and planting of riparian habitat are expected to expand habitat and nutrient cycling within the watershed, reduce weed distribution, and encourage native plant and animal recruitment.[19] The restoration efforts would include the use of a palette of native species, which would increase native plant cover and future natural plant recruitment in the area. Construction/implementation of the Project would follow guidelines set forth by USACE, CDFW, and LARWQCB to minimize the temporary impacts of construction on sensitive biological resources. Therefore, the Project would not have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS or on State or federally protected wetlands through direct removal, filling, hydrological interruption, or other means. As such, impacts on riparian habitat and state protected wetlands would be less than significant.

d) Would the project interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Less Than Significant Impact. Approximately 0.25 mile north of the Project Site are the Portuguese Bend Reserve and Upper Filiorum Reserve creating a contiguous section of regionally important habitat areas and natural vegetation. While these contiguous habitat areas are an important corridor for various wildlife, the Portuguese Bend Reserve and Upper Filiorum Reserve also include designated California gnatcatcher Critical Habitat. Altamira Canyon may also serve as a link for wildlife to pass through the Project area; however, such movement is limited by existing residential land uses that are close to the creek and the dominance of exotic woodlands within the creek.[20] Nonetheless, as discussed above in response to Checklist Questions IV(b) and IV(c), the Project would involve embankment and habitat restoration efforts, which would enhance Altamira Canyon Creek as a wildlife movement corridor, expand suitable breeding and foraging habitat for wildlife species, and encourage additional wildlife dispersal into the area. Construction/implementation of the Project would follow guidelines set forth by USACE, CDFW, and LARWQCB to minimize the temporary impacts of construction on wildlife

[18] Stantec, Altamira Canyon Creek Project, Habitat Mitigation and Monitoring Plan, September 13, 2019. See Appendix B of this Initial Study.

[19] Stantec, Altamira Canyon Creek Project, Habitat Mitigation and Monitoring Plan, September 13, 2019. See Appendix B of this Initial Study.

[20] Stantec, Altamira Canyon Creek Project, Biological Resources Technical Report, August 25, 2022. See Appendix B of this Initial Study.

movement. Therefore, the Project would not interfere with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. As such, impacts would be less than significant.

e) Would the project conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

f) Would the project conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

Less Than Significant Impact. The Project is primarily a corrective action in response to a notice of violation and to secure the necessary permits from USACE, CDFW, and LARWQCB to properly install embankment protection in the segment of Altamira Canyon Creek within the Project Site boundaries. As part of the embankment and habitat restoration efforts, an HMMP would be implemented to ensure that restoration efforts comply with the requirements of the California Fish and Game Code and sections of the federal Clean Water Act and follow the guidelines set forth by USACE, CDFW, and LARWQCB. Restoration and enhancement of disturbed habitat are expected to maintain and expand existing native restoration efforts within the watershed consistent with the objectives of the City's Natural Community Conservation Plan/Habitat Conservation Plan (NCCP/HCP), as well as maintain existing drainage patterns within Altamira Canyon Creek and the adjacent tributary, and would not alter the existing hydrologic system. Although the Project Site is not located within an NCCP Preserve, the portion of Altamira that traverses the Portuguese Bend landslide area was identified as part of the proposed Covered City Projects in the City's NCCP/HCP to address drainage and erosion and to prevent water from percolating into the landslide plane. Based on the above, the Project would not conflict with any local policies or ordinances protecting biological resources or the provisions of the City's NCCP/HCP. Therefore, impacts would be less than significant.

V. Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
CULTURAL RESOURCES: *Would the project:*				
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?	☐	☒	☐	☐
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☒	☐

Discussion

a) Would the project cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?

No Impact. A historical resource is defined in CEQA Guidelines Section 15064.5(a)(3) as any object, building, structure, site, area, place, record, or manuscript determined to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California. Historical resources are further defined as being associated with significant events, important persons, or distinctive characteristics of a type, period, or method of construction; representing the work of an important creative individual; or possessing high artistic values. A property must also retain sufficient architectural integrity to continue to evoke the sense of place and time with which it is historically associated.

The Project Site includes a portion of the Altamira Canyon Creek located primarily along the common boundary between the two properties at 25 and 26 Sweetbay Road. No buildings or structures exist within the Project Site. In addition, the Project Site is not associated with significant events or important persons to be considered historically significant. The Project Site currently includes embankment improvements that were installed without approval from the responsible regulatory agencies. The Project would involve the removal of a majority of such embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. In addition, portions along the slope would undergo habitat restoration. Therefore, the Project would not cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5, and no impact would occur.

b) Would the project cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?

Less Than Significant Impact with Mitigation Incorporated. An archaeological resource is defined in CEQA Guidelines Section 15064.5(c) as a site, area, or place determined to be historically significant as defined in Section 15064.5(a) or as a unique archaeological resource defined in PRC Section 21083.2 as an artifact, object, or site that contains information needed to answer important scientific research questions of public interest, or that has a special and particular quality such as being the oldest or best example of its type, or that is directly associated with a scientifically recognized important prehistoric or historic event or person.

According to the City's Conservation and Open Space Element, the City is known to include several significant archaeological sites, as well as probable archaeological sites surrounded by archaeologically sensitive sites. The specific locations of the known and probable sites are on file with the City's Community Development Department. The most prominent of these occur on the Palos Verdes Peninsula along the City's coastline where the Tongva-Indians had established campsites and some trade centers.[21] The City's entire coastal area is considered as archaeologically sensitive and is designated with an

[21] City of Rancho Palos Verdes, General Plan Conservation and Open Space Element, September 2018.

Overlay Control District in the General Plan. Other areas that should be considered as archaeologically sensitive include the vacant land areas north and east of Narcissa Drive in the upper Portuguese Bend neighborhood.

The Project Site is not located along the City's coastal area but is located in proximity to the archaeologically sensitive areas identified above. As such, the Project Site could possibly include archaeologically sensitive areas. The Project would involve the removal of a majority of existing embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. In addition, portions along the slope would undergo habitat restoration. The area within Altamira Canyon Creek, including the embankments that are proposed to be disturbed, would be limited to approximately 4,192 square feet and would involve approximately 748 cubic yards of earthen cut. As such, the Project would not result in extensive ground disturbance and would have a low potential to disturb previously unknown archaeological resources. However, the potential exists for unanticipated discovery of archaeological resources during Project-related ground disturbance activities, which may extend to 6.5 feet below ground level. Therefore, **Mitigation Measure CUL-1** is included to ensure that impacts to archaeological resources pursuant to CEQA Guidelines Section 15064.5, if found, would be less than significant with mitigation incorporated.

Mitigation Measure

CUL-1 **Cultural Resources Monitoring and Avoidance.** Prior to the issuance of any grading permit, the applicant shall retain and pay for a City-approved qualified archaeologist to monitor all ground disturbance activities associated with the project, including but not limited to grading, excavating, clearing, leveling, and backfilling. The monitoring shall be conducted by an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology (National Park Service 1983) and who is qualified to identify subsurface archaeological resources. The archaeologist shall observe all ground-disturbing activities on construction sites when such activities are taking place.

In the event that any subsurface objects or artifacts that may be archaeological resources are encountered during ground disturbance activities, all such activities shall temporarily cease in the area of discovery, the radius of which shall be determined by the qualified archaeologist, until the potential cultural resources are properly assessed and addressed pursuant to the process set forth below:

- The applicant may recommence ground disturbance activities, so long as this radius has been reviewed by a qualified archaeologist and determined to be reasonable and appropriate.

- Copies of any subsequent prehistoric archaeological study, detailing the nature of any significant archaeological resources, remedial actions taken, and disposition of any significant resources, shall be submitted to the South

Central Coastal Information Center (SCCIC) at California State University, Fullerton.

- Any information determined to be confidential in nature by the City Attorney's Office shall be excluded from submission to the SCCIC or the general public under the provisions of the California Public Records Act and the California Public Resources Code.

c) Would the project disturb any human remains, including those interred outside of dedicated cemeteries?

Less Than Significant Impact. The Project Site has been previously disturbed by grading activities. The Project would involve the removal of the majority of existing embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. In addition, portions along the slope would undergo habitat restoration. The area within Altamira Canyon Creek and the embankments that would be disturbed would be limited to approximately 4,192 square feet and would involve approximately 748 cubic yards of earthen cut. As such, the Project would not result in extensive ground disturbance and would have a low potential to disturb human remains. However, if human remains are discovered during Project-related earth-moving activities, according to the California Health and Safety Code Section 7050.5, there must be no further excavation or disturbance of a site or any nearby area reasonably suspected to overlie adjacent remains until the Los Angeles County coroner has determined the manner and cause of any death, and the recommendations concerning the treatment and disposition of the human remains have been made to the person responsible for the excavation or to his or her authorized representative. Project personnel/construction workers are prohibited to collect or move any human remains and associated materials. If the human remains are of Native American origin, the coroner must notify the Native American Heritage Commission (NAHC) within 24 hours of this identification. The NAHC will immediately identify a Native American most likely descendant to inspect the site and provide recommendations within 48 hours for the proper treatment of the remains and associated grave goods. Accordingly, impacts related to the disturbance of human remains, including those interred outside of dedicated cemeteries, would be less than significant with the Project's compliance with California Health and Safety Code Section 7050.5.

VI. Energy

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
ENERGY: *Would the project:*				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Discussion

a) Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Less Than Significant Impact. Implementation of the Project would consume a relatively small amount of energy in comparison to regional and local energy consumption. Construction activities would require energy for the import and export of construction materials/waste, construction workers' vehicle trips, and operation of construction equipment for site preparation and creek embankment restoration. Once construction activities are completed, there are no elements of the Project that would consume energy. For these reasons, the Project would not result in a significant environmental impact due to the wasteful, inefficient, or unnecessary consumption of energy, and impacts related to energy would be less than significant.

b) Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

No Impact. As discussed above, the Project would consume only the energy required for the import and export of construction materials/waste, construction workers' vehicle trips, and operation of construction equipment for site preparation and creek embankment restoration. Once construction activities are completed, there are no elements of the Project that would consume energy. Therefore, the Project would not conflict with or obstruct a State or local plan for renewable energy or energy efficiency. As such, no impact would occur.

VII. Geology and Soils

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS: *Would the project:*				
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☒	☐

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
ii) Strong seismic ground shaking?	☐	☐	☒	☐
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☒	☐
iv) Landslides?	☐	☐	☒	☐
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☒	☐
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Discussion

a.i) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The Alquist-Priolo Earthquake Fault Zoning Act of 1972 serves to mitigate the hazard of surface faulting to structures for human occupancy, and is intended to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The act requires the State Geologist to establish regulatory zones, known as Alquist-Priolo Earthquake Fault Zones, around the surface traces of active faults and to issue maps delineating these zones. If an active fault is found, a structure for human occupancy cannot be placed over the trace of the fault and must be set back from the fault (typically 50 feet). The act defines active faults as those that have experienced surface displacement or movement during the last 11,000 years.

According to the California Geological Survey (CGS), the Project Site is not mapped within a State-designated Alquist-Priolo Earthquake Fault Zone.[22] Based on the Geotechnical and Geologic Investigation Report prepared for the Project and included as Appendix C of this Initial Study, the Palos Verdes Fault is the nearest active fault to the Project Site at a distance of 2.75 miles to the northeast.[23] According to the City of Rancho Palos Verdes General Plan Safety Element, the Palos Verdes Fault poses the most significant earthquake hazard to the City due to its proximity. As described in the Safety Element, the recurrence interval and magnitude of the most recent displacement is still not well characterized and as such the CGS considers it a "Potentially Active" fault.[24] Other faults in the surrounding areas include the Newport-Inglewood Fault, which is located 7 to 10 miles from the Palos Verdes Peninsula, and the Puente Hills Blind Thrust Fault, which is located more than 15 miles from the Palos Verdes Peninsula.[25] Nevertheless, the Geotechnical and Geologic Investigation Report concluded that the potential for surface fault rupture at the Project Site is considered to be remote.

Furthermore, the Project would involve creek embankment improvements and habitat restoration and would not result in the construction or renovation of habitable structures. The Project is subject to necessary permits from the USACE, LARWQCB, and CDFW and would require engineering studies to support the regulatory permitting process. Therefore, based on the above discussion, the Project would not directly or indirectly cause potential adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault. As such, potential impacts related to rupture of a known earthquake fault would be less than significant.

a.ii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?

Less Than Significant Impact. As with most of Southern California, the Project Site is located in a seismically active area that has historically been affected by moderate to occasionally high levels of ground motion. As discussed above, the Project Site lies in relatively close proximity to several active faults; therefore, the Project Site would be susceptible to moderate to occasionally high ground shaking from these fault zones, as well as some background shaking from other seismically active areas of the Southern California region. However, the Project is subject to necessary permits from the USACE, LARWQCB, and CDFW and, therefore, would require engineering studies to support the regulatory permitting process. In addition, the Project would be required to adhere to the seismic design parameters as outlined in the City and California Building Code to further stabilize and prevent future creek embankment failure during seismic events. Furthermore, the Project would not result in the construction of habitable structures in which occupants would be exposed to strong seismic ground shaking. Therefore, the Project would not directly or indirectly cause potential substantial adverse effects,

[22] California Department of Conservation, California Geological Survey, EQ Zapp: California Earthquake Hazards Zone Application, https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed August 3, 2022.

[23] Coast Geotechnical, Inc., *Geotechnical and Geologic Investigation for Proposed Altamira Creek Channel Restoration at Lot 42/43 of Tract 14500, Rancho Palos Verdes, California*, October 7, 2021. See Appendix C of this Initial Study.

[24] City of Rancho Palos Verdes, General Plan Safety Element, September 2018.

[25] City of Rancho Palos Verdes, General Plan Safety Element, September 2018.

including the risk of loss, injury, or death involving strong seismic ground shaking. As such, potential impacts related to seismic ground shaking would be less than significant.

a.iii) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Liquefaction is the loss of strength in generally cohesionless (granular), saturated soils when the pressure of groundwater held within a soil or rock, in gaps between particles (referred to as "pore-water pressure") induced in the soil by a seismic event, becomes equal to or exceeds the overburden pressure. Lateral spread or flow refers to landslides that commonly form on gentle slopes and that have rapid fluid-like flow movement, like water. In general, lateral spreading is a result of liquefaction. The primary factors that influence the potential for liquefaction include groundwater table elevation; the relative density of the soil; and the intensity and duration of ground shaking.

As discussed in the City's General Plan Safety Element, the potential for liquefaction in the City is very low since the local soil deposits are relatively thin and cohesive and groundwater is usually at depth. Liquefaction is not considered to be a significant hazard in the City. In addition, according to CGS and as reflected in the Geotechnical and Geologic Investigation prepared for the Project, the Project Site is not located within a liquefaction zone.[26] Furthermore, the Project would not result in the construction of habitable structures in which occupants would be exposed to the effects of seismic-related ground failure. Therefore, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, such as liquefaction, and impacts would be less than significant.

a.iv) Would the project directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Less Than Significant Impact. Landslides tend to occur in weak soil and rock on sloping terrain. Boundaries of CGS Landslide Hazard Zones of Required Investigation generally indicate steep hillslopes composed of weak materials that may fail when shaken by an earthquake. The process for zoning earthquake-induced landslides incorporates expected future earthquake shaking, existing landslide features, slope gradient, and strength of hillslope materials. According to the City's General Plan Safety Element, Portuguese Bend (in which the Project Site is located) is one of two major landslide systems within the City. Portions of the landslide system are known for historical land movement that has caused varying degrees of distress to structures, site improvements, and infrastructure. CGS maps the Project Site as being within an area susceptible to landslides.[27] However, according to the Geotechnical and Geologic Investigation prepared for the Project, on a local scale, the Project Site does not show a significant sloped condition. The Project would also comply with the investigation's recommendations for slope restoration, channel protection, and slope repair, as well as any engineering measures required by agencies as part of the regulatory permitting process. Furthermore, the Project would not result in the construction of

[26] California Department of Conservation, California Geological Survey, EQ Zapp: California Earthquake Hazards Zone Application, https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed August 3, 2022.

[27] California Department of Conservation, California Geological Survey, EQ Zapp: California Earthquake Hazards Zone Application, https://maps.conservation.ca.gov/cgs/EQZApp/app/, accessed August 3, 2022.

habitable structures in which occupants would be exposed to landslides. Accordingly, the Project would not directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides. Therefore, Project impacts related to landslides would be less than significant.

b) Would the project result in substantial soil erosion or the loss of topsoil?

Less Than Significant Impact. In 2015, due to approximately two decades of severe erosion of the embankments of Altamira Canyon Creek resulting from high storm flows within the creek itself and adjacent drainages, the property owner of 25 Sweetbay Road installed gabion baskets along the eastern bank of Altamira Canyon Creek and along the northern bank of an unnamed drainage. These rock-filled, wire mesh baskets, along with concrete footings, armored the eroding eastern bank and served to protect the bank from further high flow events. As such, extensive alterations have already occurred on-site prior to the proposal of the Project. Specifically, Project activities would be limited to the removal of a majority of such embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. Furthermore, the area within Altamira Canyon Creek and the embankments that would be disturbed would be limited to approximately 4,192 square feet and would involve approximately 748 cubic yards of earthen cut, approximately 195 cubic yards of gabion removal, approximately 92 cubic yards of earthen fill, and approximately 679 cubic yards of rock riprap fill. As such, the Project's activities would not result in substantial loss of topsoil, and impacts would be less than significant.

c) Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. Typical types of instability that can affect sloped property are regional and local instability, slope creep, and debris/mudflow. As described in the Geotechnical and Geologic Investigation, the topography of the Project Site varies. The central portion of the Project Site shows a natural to moderate downward gradient to the south that has been altered from past grading to accommodate existing horse stalls, sheds, storage buildings, and corrals. Along the tributaries, the natural embankments are incised and show moderate-sloped to near vertical conditions, with heights of 10 to 20 feet. Portions of the embankments have been modified with protection consisting of concrete and gabion walls. A surface instability is currently present on the slope that ascends westerly of Altamira Creek and exhibits a surface slump. However, the slump would be repaired as part of the Project based on grading recommendations identified in the Geotechnical and Geologic Investigation, which include proper moisture conditions, compaction, and fill. In addition, the Geotechnical and Geologic Investigation did not find gross instability, creep movement, or debris/mudflow to be present or risks to the Project.[28]

[28] Coast Geotechnical, Inc., *Geotechnical and Geologic Investigation for Proposed Altamira Creek Channel Restoration at Lot 42/43 of Tract 14500, Rancho Palos Verdes, California*, October 7, 2021. See Appendix C of this Initial Study.

With regard to landslides and liquefaction, please refer to response to Checklist Questions VII(a)(iv) and VII(a)(iii), respectively.

Subsidence occurs when a large portion of land is displaced vertically, usually due to the withdrawal of groundwater, oil, or natural gas. Soils that are particularly subject to subsidence include those with high silt or clay content. Subsidence may cause differential settlement of the overlying structure and substantially more damage than if the structure were to settle evenly throughout. Large-scale subsidence due to fluid withdrawal (groundwater or oil) has not been reported within the City.[29] Therefore, Project impacts related to subsidence would be less than significant.

Collapsible soils consist of loose, dry, low-density materials that collapse and compact under the addition of water or excessive loading. These soils are distributed throughout the southwestern United States, specifically in areas of young alluvial fans, debris flow sediments, and windblown sediment deposits. Soil collapse occurs when the land surface is saturated at depths greater than those reached by typical rain events and eliminates the clay bonds holding the soil grains together. The Geotechnical and Geologic Investigation observed that the Project Site's soils do not identify with physical characteristics of soils with potential for collapse. As such, the Project would not be located on soil that would potentially result in collapse, and related impacts would be less than significant.

Based on the above and because the Project would not result in the construction of habitable structures in which occupants would be exposed to unstable soils, the Project would not be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse, and, as such, impacts would be less than significant.

d) Would the project be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Less Than Significant Impact. Expansive soils are generally associated with soils, alluvium, and bedrock formations that contain clay minerals susceptible to expansion under wetting conditions and contraction under drying conditions. The shrink and swell cycle of highly sensitive clay minerals in expansive soils can exert enough force on footings or foundations to cause damage to structures and buildings. Expansive soils tend to have a greater effect near the surface since expansion pressures are counteracted by soil overburden pressures at depth. Cracked foundations, floors, and basement walls are typical types of damage done by expansive soils. Expansive soils can cause post-construction damage to building foundations or interior slabs, or exterior hardscape.[30]

Soils of the Rancho Palos Verdes area are typically various combinations of Diablo and Altamont soils, which produce dark grey, neutral clay. These combinations have a high shrink-swell potential. As described in the City's Safety Element, while these soils are highly expansive, they should not be a factor in precluding development as modern soil engineering

[29] City of Rancho Palos Verdes, General Plan Safety Element, September 2018.
[30] City of Rancho Palos Verdes, General Plan Safety Element, September 2018.

procedures and foundation designs can effectively and inexpensively address and alleviate the effects of most expansive soils.

The Geotechnical and Geologic Investigation's expansion tests indicated that the near surface soils have a high expansion potential. As such, the Project would implement the investigation's recommendations for moisture control and compaction of fill materials. In addition, the Project would comply with City and State code requirements to avoid any impacts related to soil expansion. Furthermore, the Project would not result in the construction of habitable structures in which occupants would be exposed to the effects of expansive soils. Accordingly, with compliance with required design criteria and compliance with City and State code requirements, the Project would not result in direct or indirect risks to life or property due to expansive soils. Therefore, potential impacts related to expansive soils would be less than significant.

e) Would the project have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. The Project would involve embankment improvements and habitat restoration and would not generate wastewater. No septic tanks or wastewater disposal systems would be required on-site. Therefore, no impact related to soil capacity to support septic tanks or alternative wastewater disposal systems would occur.

f) Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Less Than Significant Impact. Paleontological resources, as defined by the Bureau of Land Management, U.S. Department of the Interior, are the physical remains or other physical evidence of plants and animals preserved in soils and sedimentary rock formations. The two major classes of fossils that occur on the Peninsula are foraminifer and mollusks. Both contain species of fauna that are marine in origin.[31] Because of the degree of research done in this area and the wide distribution of paleontological resources through the Peninsula, these resources are not thought to be endangered.

Implementation of the Project is limited to an area of approximately 4,192 square feet, which has been disturbed by past grading activities, and would consist of the removal of a majority of existing embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. As such, the Project would not result in extensive ground disturbance and would have a low potential to directly or indirectly destroy a unique paleontological resource or site or unique geologic feature. Therefore, Project impacts related to paleontological resources would be less than significant.

[31] City of Rancho Palos Verdes, General Plan Conservation and Open Space Element, September 2018.

VIII. Greenhouse Gas Emissions

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS: *Would the project:*				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Discussion

a) Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Less Than Significant Impact. Greenhouse gases (GHGs) are global in their effect, which increases Earth's ability to absorb heat in the atmosphere. As primary GHGs have a long lifetime in the atmosphere, accumulate over time, and are generally well-mixed, their impact on the atmosphere is mostly independent of the point of emission.

In 2017, the City of Rancho Palos Verdes, in cooperation with the South Bay Cities Council of Governments, developed an Emissions Reduction Action Plan (ERAP) to reduce GHG emissions within the City. The City's ERAP serves as a guide for action by setting GHG emissions reduction goals and establishing strategies and policy to achieve desired outcomes through 2037. The City's ERAP identifies community-wide strategies to lower GHG emissions from a range of sources within the jurisdiction, including transportation, land use, energy generation and consumption, water, and waste. Development and adoption of the ERAP allows the City to (1) understand the community GHG emissions that it now produces, (2) identify strategies at the local level that will result in GHG emissions reductions, (3) develop a plan to implement strategies, and (4) monitor and report progress toward climate change goals. These goals enhance the community and neighborhoods to help ensure a safe, healthy, and sustainable environment; promote and encourage the adoption and growth of zero emission vehicles and behavior change that reduce waste; and advance strategies for housing and buildings that reduce energy and water usage and encourage and support the market for renewable energy and storage.[32]

The City has not adopted a numerical significance threshold for assessing impacts related to GHG emissions. Similarly, SCAQMD, CARB, or any other State or regional agency has not yet adopted a numerical significance threshold for assessing GHG emissions that is

[32] City of Rancho Palos Verdes, Emissions Reduction Action Plan, adopted December 2019.

applicable to the Project. However, rather than base the significance of the Project's GHG emissions impacts on the amount of GHG emissions resulting from the Project, a lead agency can make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies and/or other regulatory strategies to reduce GHG emissions pursuant to Section 15064.4 of the CEQA Guidelines. A project would be considered consistent with these applicable plans, policies, and regulations if a qualitative analysis demonstrates that the project meets the general intent in reducing GHG emissions in order to facilitate the achievement of local- and State-adopted goals and does not impede attainment of those goals.

Direct GHG emissions generated by the Project would be limited to short-term emissions from construction activities, which are anticipated to occur for no more than one month. Once restoration of the creek embankment is complete, no pollutant emissions would occur. Accordingly, the Project would not generate GHG emissions that would have a significant impact on the environment and would not conflict with or preclude implementation of the City's ERAP, the statewide Climate Change Scoping Plan, SCAG's RTP/SCS, or other applicable plans, policies, or regulations adopted for the purpose of reducing GHG emissions. Therefore, impacts related to GHG emissions would be less than significant.

IX. Hazards and Hazardous Materials

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS AND HAZARDOUS MATERIALS: *Would the project:*				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☒	☐

Discussion

a) Would the project create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Less Than Significant Impact. Materials are generally considered hazardous if they are poisonous (toxicity), can be ignited by open flame (ignitability), corrode other materials (corrosivity), or react violently, explode, or generate vapors when mixed with water (reactivity). The term “hazardous material” is defined in California Health and Safety Code Section 25501(n)(1) as any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. The code additionally states that a hazardous material becomes a hazardous waste once it is abandoned, discarded, or recycled.

The transportation, use, and disposal of hazardous materials, as well as the potential release of hazardous materials to the environment, are closely regulated through State and federal laws. Such laws include those incorporated into the California Health and Safety Code, such as the California Hazardous Materials Release Response Plans and Inventory law and the California Hazardous Waste Control law, as well as other regulations governing hazardous waste promulgated by State and federal agencies, such as the LARWQCB, USEPA, Los Angeles County Department of Public Works, California Department of Toxic Substances Control (DTSC), and California Division of Occupational Safety and Health.

The Project Site currently includes embankment improvements that were installed without approval from the responsible regulatory agencies. The Project would involve the removal of a majority of such embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. The Project would also include habitat restoration in portions of the site.

Although construction activities may include refueling and minor maintenance of construction equipment on-site, which could lead to minor fuel and oil spills, as described in the response to Checklist Question X(a), below, a variety of routine construction control measures would be incorporated, including spill prevention/containment, sedimentation and erosion controls, and irrigation controls, to prevent conditions that would release hazardous materials into the environment during Project construction. Upon completion, the Project would not require the routine transport, use, and disposal of hazardous materials.

Based on the above, with the temporary and relatively minor anticipated level of use of hazardous materials during Project construction and the requirement to comply with various State and federal laws regulating hazardous materials, the Project would not result in a significant impact involving the routine transport, use, or disposal of hazardous materials. Therefore, potential impacts related to hazardous materials would be less than significant.

b) Would the project create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Less Than Significant Impact. Locations known to contain toxic substances and contamination are identified using data from DTSC. The Project Site is not identified as a clean-up site or located within 0.5 mile of a cleanup site listed in the DTSC EnviroStor database.[33] The GeoTracker database, maintained by the State Water Resources Control Board, identified one cleanup site within 0.5 mile of the Project Site. This site is located at 96 Narcissa Drive and is associated with a leaking underground storage tank with gasoline. The site was cleaned up and the case closed in 1996.[34]

Because Project-related ground disturbance would be limited to the Project Site, which is not listed on hazardous waste disposal or cleanup databases maintained by the State, the Project would not result in reasonably foreseeable upset of existing contamination located at the cleanup sites in the Project vicinity.

As discussed above, although construction activities may include refueling and minor maintenance of construction equipment on-site, which could lead to minor fuel and oil spills, a variety of routine construction control measures would be incorporated to prevent conditions that would release hazardous materials into the environment during Project construction.

Additionally, upon completion, the Project, which would involve embankment improvements and habitat restoration, would not result in any use, transport, or disposal of hazardous materials. As such, there would not be a significant hazard to the public involving the accidental release of hazardous materials into the environment during Project operation. Therefore, the Project would not result in any reasonably foreseeable

[33] Department of Toxic Substances Control, EnviroStor database, https://www.envirostor.dtsc.ca.gov/public/map/?, accessed August 8, 2022.

[34] State Water Resources Control Board, GeoTracker, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=rancho+palos+verdes#, accessed August 9, 2022; GeoTracker, Tucker's Property (T0603705391), https://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0603705391, accessed August 9, 2022.

upset and accident conditions involving the release of hazardous materials into the environment, and impacts would be less than significant.

c) Would the project emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?

No Impact. The nearest school to the Project Site is Rancho Del Mar High School, which is located approximately 1 mile northeast of the Project Site (located at 38 Crest Road in the City of Rolling Hills).[35] Therefore, no impact would occur.

d) Would the project be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

No Impact. Neither the Project Site nor any of the adjacent properties appear on the DTSC's EnviroStor database, SWRCB's GeoTracker database, or the SWRCB's list of solid waste disposal sites with waste constituents above hazardous waste levels outside the waste management unit.[36] As such, the Project would not create a significant hazard to the public or the environment, and no impact would occur.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard or excessive noise for people residing or working in the project area?

No Impact. The nearest airport to the Project Site is the Zamperini Field Airport, which is a public use airport located approximately 4 miles northeast in the City of Torrance. Therefore, the Project Site is not within 2 miles of a public airport and would not result in a safety hazard or excessive noise for people residing or working in the Project area, and no impact would occur.

f) Would the project impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

No Impact. The disaster routes nearest to the Project Site include Palos Verdes Drive South (approximately 0.4 mile southwest) and Crest Road (0.8 mile north).[37] The Project would involve embankment improvements, as well as habitat restoration, in portions of Altamira Canyon Creek. The Project would not include changes to rights-of-way, emergency access, or disaster/evacuation routes. Therefore, implementation of the Project as proposed would not impair implementation of an adopted emergency response plan or evacuation plan, and no impact would occur.

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35 Palos Verdes Peninsula Unified School District, PVPUSD Schools Map, https://www.pvpusd.net/apps/pages/index.jsp?uREC_ID=2877182&type=d&pREC_ID=2331531, August 8, 2022.

36 Department of Toxic Substances Control, EnviroStor database, https://www.envirostor.dtsc.ca.gov/public/map/?, accessed August 8, 2022; State Water Resources Control Board, GeoTracker, https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=rancho+palos+verdes#, accessed August 9, 2022; State Water Resources Control Board, Sites Identified with Waste Constituents Above Hazardous Waste Levels Outside the Waste Management Unit, accessed August 8, 2022.

37 City of Rancho Palos Verdes, General Plan Safety Element, September 2018, Figure 5.

g) Would the project expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?

Less Than Significant Impact. The entire City, including the Project Site, is located within a Very High Fire Hazard Severity Zone (VHFHSZ), as identified by the California Department of Forestry and Fire Protection.[38] However, the Project would involve embankment improvements and habitat restoration and would not result in the construction of habitable structures in which occupants would be exposed to the effects of wildland fires. Accordingly, the Project would not directly or indirectly expose people or structures to a significant risk of loss, injury, or death involving wildland fires, and impacts would be less than significant.

X. Hydrology and Water Quality

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY AND WATER QUALITY: *Would the project:*				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:	☐	☐	☒	☐
i) result in substantial erosion or siltation on- or off-site?	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☒	☐

[38] California Department of Forestry and Fire Protection, FHSZ Viewer, https://egis.fire.ca.gov/FHSZ/, accessed August 10, 2022; City of Rancho Palos Verdes, General Plan Safety Element, September 2018, Figure 1.

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
iv) impede or redirect flood flows?	☐	☐	☒	☐
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Discussion

a) Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Less Than Significant Impact. The LARWQCB prepares and maintains a Basin Plan, which identifies narrative and numerical water quality objectives to protect all beneficial uses of the waters of that region. The Basin Plan strives to achieve the identified water quality objectives through implementation of waste discharge requirements and by employing three strategies for addressing water quality issues: control of point source pollutants, control of nonpoint source pollutants, and remediation of existing contamination. The Project Site is located in the Los Angeles region and is, therefore, covered under the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan).

Point sources of pollutants are well-defined locations at which pollutants flow into water bodies (e.g., discharges from wastewater treatment plants and industrial sources). These sources are controlled through regulatory systems including permitting under California's Waste Discharge Requirements (WDRs) and the National Pollutant Discharge Elimination System (NPDES) program; permits are issued by the appropriate RWQCB and may set discharge limitations or other discharge provisions. According to the Basin Plan, nonpoint sources of pollutants are typically derived from project site runoff caused by rain or irrigation and have been classified by the USEPA into one of the following categories: agriculture, urban runoff, construction, hydromodification, resource extraction, silviculture, and land disposal.

As previously described, the Project would involve the removal of a majority of existing embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. The area within Altamira Canyon Creek and the embankments that would be disturbed would be limited to approximately 4,192 square feet and would involve approximately 748 cubic yards of earthen cut, approximately 195 cubic yards of gabion removal, approximately 92 cubic yards of earthen fill, and approximately 679 cubic yards of rock riprap fill. As such, short-term impacts could occur during Project construction activities, where the pollutants of greatest concern are sediment, which may run off the Project site due to site grading, site preparation activities, and hydrocarbon or fossil fuel remnants from construction

equipment. In addition, on-site watering activities to reduce airborne dust could contribute to pollutant loading in surface runoff. However, the Project would be required to obtain a Clean Water Act Section 401 Water Quality Certification, which is a permit issued by the State Water Resources Control Board and the RWQCBs to applicants for a federal license or permit for activities that may result in a discharge into waters of the U.S., including, but not limited to, the discharge or dredged or fill material.[39] Compliance with the requirements of the Clean Water Act Section 401 and the corresponding Water Quality Certification permit would ensure that the Project would not cause a violation of any water quality standards and waste discharge requirements. Therefore, the Project would not substantially degrade surface or groundwater quality during Project implementation.

Upon completion of construction activities, the Project would not result in changes to impervious and pervious surface areas on the Project Site. The Project does not include development of structures or introduction of inhabitants on-site. The Project Site would result in improved protection along the embankments and reduced risk of erosion. As such, once operational, the Project would not violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality.

Therefore, based on the above, Project impacts related to water quality standards and waste discharge requirements would be less than significant.

b) Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Less Than Significant Impact. The City and the rest of the Palos Verdes Peninsula are served by the Palos Verdes District of the Rancho Dominguez Water District of the California Water Service Company (Cal Water).[40] Within the Rancho Dominguez Water District, the Palos Verdes service area's source of water supply consists of imported purchased water from the West Basin Municipal Water District (WBMWD), which is a member agency of the Metropolitan Water District of Southern California (MWD).[41] Specifically, the water is imported into Southern California through MWD's connections to the State Water Project and the Colorado River, and the WBMWD acts as a secondary wholesale water agency that purchases the water from MWD and resells it to Cal Water for use within the District.[42]

Although the Palos Verdes District overlies the West Coast Subbasin of the Los Angeles Groundwater Basin, groundwater is not being used as a source of the District's water supply. The Palos Verdes District is located in an area of the West Coast Subbasin in which groundwater is unconfined marine sediment, and wells have not been found to be

[39] State Water Resources Control Board, 401 Water Quality Certification and Wetlands Program, https://www.waterboards.ca.gov/water_issues/programs/cwa401/, accessed August 19, 2022.
[40] California Water Services, Find My District, https://www.calwater.com/customercare/find-my-district/, accessed August 21, 2022.
[41] California Water Services, *Palos Verdes District 2020 Urban Water Management Plan*, June 2021.
[42] California Water Services, *Palos Verdes District 2020 Urban Water Management Plan*, June 2021.

cost effective. Cal Water holds groundwater rights to 999 acre-feet per year, but these rights are exercised by Cal Water's Hermosa-Redondo District.[43]

There are no groundwater wells on the Project Site, and none are proposed. Upon completion of construction activities, the Project would not result in changes to impervious and pervious surface areas on the Project Site. As such, operation of the Project would not interfere with groundwater recharge. Therefore, the Project would not substantially deplete groundwater supplies or interfere with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level. Impacts to groundwater would be less than significant.

c.i) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. As described in the Conservation and Open Space Element of the City's General Plan, the Palos Verdes Peninsula is a single hill formation with a drainage pattern that is dispersed via a number of small watershed systems. There are no major watershed systems that are completely confined within the City boundaries, and all hydrologic systems within the City are affected by runoff from other jurisdictions or affect other downstream jurisdictions.[44]

The section of Altamira Canyon Creek that comprises the Project Site is primarily located along the common boundary between the two properties at 25 and 26 Sweetbay Road. As discussed in response to Checklist Question VII(b), during construction of the Project, uncovered soils on-site may become exposed to wind or rainstorms and, thus, subject to erosion. The Project would comply with SCAQMD Rule 403, Fugitive Dust, to reduce the amount of particulate matter in the ambient air due to man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. This rule requires that construction activities include a variety of best available control measures, including measures that would prevent wind-induced erosion of uncovered soils, such as application of chemical stabilizers to areas that would remain inactive for 10 days or longer or the suspension of grading when wind speeds exceed 25 miles per hour. In addition, the Project is required to have a Clean Water Act Section 401 Water Quality Certification in order to rectify the existing improvements and conduct permitted activities that may result in a discharge into the Altamira Canyon Creek, which is considered waters of the U.S. As such, Project construction activities would not result in substantial soil erosion. Furthermore, upon completion, the Project would prevent further erosion of the site's embankments during high storm flow events. The Project would not result in changes to the drainage pattern or the amount of impervious and pervious surface areas on the Project Site. Therefore, the Project would not substantially alter the existing drainage pattern of the Project Site or area in a manner that would result in erosion or siltation, on- or off-site, and impacts related to erosion and siltation would be less than significant.

[43] California Water Services, *Palos Verdes District 2020 Urban Water Management Plan*, June 2021.
[44] City of Rancho Palos Verdes, General Plan Conservation and Open Space Element, September 2018.

c.ii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?

Less Than Significant Impact. According to the Federal Emergency Management Agency (FEMA) Flood Hazard Zone mapping, the Project Site and immediate surroundings are located within a Zone X (area of minimal flood hazard).[45] The area further north of the Project Site is located within a Zone D (area with possible but undetermined flood hazards).[46] A Zone D classification also means that no flood hazard analysis has been conducted for the area.[47] As described in the City's General Plan Safety Element, temporary flash floods from heavy winter rains can still occur within the City. Most of this flash flood activity is isolated along the canyons, the floors of which provide the runoff channels for the hilly, steep terrain. The amount of runoff during a storm would be increased by the high runoff characteristic of the local soils. Most flash flood conditions in the City would be short-lived in nature, due to the limited size of the available watershed.

As previously described, the Project Site would involve the removal of a majority of the existing embankment improvements (previously installed without approval from the responsible regulatory agencies), removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control in compliance with required regulatory permitting. The Project is subject to necessary permits from the USACE, LARWQCB, and CDFW and would require engineering studies to support the regulatory permitting process. In addition, the Project would not result in changes to the drainage pattern or the amount of impervious and pervious surface areas on the Project Site. Therefore, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff and result in flooding on- or off-site. As such, impacts would be less than significant.

c.iii) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. See responses to Checklist Questions X(c)(i) and X(c)(ii), above. The Project would involve embankment improvements and habitat restoration and would not introduce new structures to the Project Site. The Project would not alter the course of the creek or result in the addition of impervious surfaces and, as such, would

[45] Federal Emergency Management Agency, Flood Insurance Rate Map 06037C2026G, effective April 21, 2021.
[46] Federal Emergency Management Agency, Flood Insurance Rate Map 06037C1940F, effective September 26, 2008.
[47] Federal Emergency Management Agency, Glossary, https://www.fema.gov/about/glossary, accessed August 22, 2022.

not contribute additional runoff when compared to existing conditions. Therefore, the Project would not substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff. Impacts would be less than significant.

c.iv) Would the project substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

Less Than Significant Impact. As stated above, the Project Site and the immediate surroundings are located within a Zone X (area of minimal flood hazard) according to the FEMA Flood Insurance Rate Map. The area further north of the Project Site is located within a Zone D (area with possible but undetermined flood hazards). However, because the Project would not alter the existing drainage pattern of the Project Site, the Project would not alter the site or area in a manner which would impede or redirect flood flows. Therefore, impacts would be less than significant.

d) Would the project, in flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?

Less Than Significant Impact. A seiche is the sudden oscillation of water that occurs in an enclosed, landlocked body of water due to wind, earthquake, or other factors. There are no reservoirs or other bodies of water near the Project Site that could result in seiche impacts to the Project. A tsunami is an unusually large wave or set of waves that is triggered in most cases by a seaquake or an underwater volcanic eruption. Given the high elevation of the Project Site relative to the shoreline, the Project would not result in risk of inundation by tsunami.[48] Finally, as stated above, the Project Site and immediate surroundings are located within a FEMA Zone X (area of minimal flood hazard), and the area further north of the Project Site is located within a Zone D (area with possible but undetermined flood hazards).

According to the General Plan Safety Element, there is no great threat from water storage facility failures. The Palos Verdes Reservoir, which is the largest of 12 water impoundments located throughout the Palos Verdes Peninsula, is not a threat as it is 3.1 miles northeast of the Project Site and separated from the Project Site by hilly terrain. The Project Site is not located near any other major dam or water-retaining structures. In addition, the capacity, pressure, and distribution system of reservoirs are monitored by water companies such that damages can be detected, main leaks isolated, and water retained in the reservoirs to prevent any flooding.[49] Furthermore, the Project would involve embankment improvements and habitat restoration. Therefore, implementation of the

[48] Coast Geotechnical, Inc., *Geotechnical and Geologic Investigation for Proposed Altamira Creek Channel Restoration at Lot 42/43 of Tract 14500, Rancho Palos Verdes, California*, October 7, 2021. See Appendix C of this Initial Study.

[49] City of Rancho Palos Verdes, General Plan Safety Element, September 2018.

Project would not risk release of pollutants due to inundation, and impacts would be less than significant.

e) Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Less Than Significant Impact. As discussed above, the service area in which the Project Site is located obtains water supply that is imported from the State Water Project and the Colorado River. Although the Palos Verdes District overlies the West Coast Subbasin of the Los Angeles Groundwater Basin, groundwater is not being used as a source of the district's water supply.[50] The Project would not include development of structures or introduction of inhabitants on-site and would not result in a water demand. Furthermore, upon completion of construction activities, the Project would not result in changes to impervious and pervious surface areas on the Project Site. The Project Site would result in improved protection along the embankments and reduced risk of erosion. As such, the Project would not conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan, and impacts would be less than significant.

XI. Land Use and Planning

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING: *Would the project:*				
a) Physically divide an established community?	☐	☐	☐	☒
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Discussion

a) Would the project physically divide an established community?

No Impact. The Project Site includes a portion of the Altamira Canyon Creek primarily located along the common boundary between the two properties at 25 and 26 Sweetbay Road. No buildings or structures exist within the Project Site. The Project Site currently includes embankment improvements that were installed without approval from the responsible regulatory agencies. The Project would be limited to the removal of a majority of such embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control. In addition, portions along the slope would undergo habitat restoration. As such, the Project would not result in the construction of a linear feature, such as railroad tracks or major roadway, or the removal of a means of access that would result in a physical division of an established community. No physical alterations to any land use within the City are proposed outside of the Project

[50] California Water Services, *Palos Verdes District 2020 Urban Water Management Plan*, June 2021.

Site. Therefore, the Project would not physically divide an established community, and no impact would occur.

b) Would the project cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Less Than Significant Impact. The Project would involve the removal of a majority of the existing unpermitted embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. As such, the Project would not modify or increase the density of uses on the Project Site or conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect, including the City's General Plan and Municipal Code. In addition, the Project would require approval from the USACE, CDFW, and LARWQCB to allow for implementation. Specifically, the Project is required to have a Clean Water Act Section 401 Water Quality Certification to proceed with the embankment improvements and conduct permitted activities that may result in a discharge into the Altamira Canyon Creek. As such, based on the scope of Project activities and the required permitting, the Project would not conflict with an applicable land use plan, policy, or regulation established for the purpose of avoiding or mitigating an environmental effect. Project impacts related to land use and planning would be less than significant.

XII. Mineral Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
MINERAL RESOURCES: *Would the project:*				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

Discussion

a) Would the project result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

b) Would the project result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. Localized areas of the City were quarried for basalt, diatomaceous earth, and Palos Verdes stone from 1948 to 1958, but was found to have mineral resources of low

market value relative to the land's value as residential or commercial real estate.[51] In addition, the 1975 General Plan/EIR Mineral Resources Section states that a majority of the subsurface geology includes very hard rock, which is not known to contain oil or gas deposits. The City has only one oil well, which is idle and located approximately 3.15 miles east-southeast of the Project Site.[52] As such, the Project Site is not located within an area that includes a known mineral resource that would be of regional or statewide value or local importance. Furthermore, the Project would result in minimal ground disturbance and grading. Therefore, no Project impacts to mineral resources would occur.

XIII. Noise

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE: *Would the project result in:*				
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

Discussion

a) Would the project result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Less Than Significant Impact. The Project would involve the removal of a majority of the existing unpermitted embankment improvements, removal and restoration of channel protection, repair of surface slumps, and reinforcement of erosion control features. Pursuant to Municipal Code Section 17.56.020, construction activities may only occur between 7:00 a.m. and 6:00 p.m., Monday through Friday, and between 9:00 a.m. to 5:00

[51] City of Rancho Palos Verdes, General Plan/Environmental Impact Report, adopted June 26, 1975.
[52] California Department of Conservation, Department of Oil, Gas, and Geothermal Resources, Well Finder CalGEM GIS, https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-118.31331/33.73590/15, map generated August 8, 2022.

p.m. on Saturday. Construction activities are prohibited on Sundays and holidays. These permitted hours of construction are included in the Municipal Code in recognition that construction activities undertaken during daytime hours are a typical part of living in an urban environment and do not cause a significant disruption. Therefore, due to the restricted construction hours and a relatively short period of construction of approximately one month, implementation of the Project would not generate a substantial temporary or permanent increase in ambient noise levels in the vicinity of the Project in excess of standards established in the City's General Plan or noise ordinance, or applicable standards of other agencies. Furthermore, upon completion of construction activities, noise would not be generated on the Project Site beyond existing conditions. As such, noise impacts would be less than significant.

b) Would the project result in generation of excessive groundborne vibration or groundborne noise levels?

Less Than Significant Impact. Construction activities can generate varying degrees of groundborne vibration, depending on the procedure and equipment used. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of the construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels to low rumbling sounds and perceptible vibration at moderate levels to slight damage at the highest levels. However, groundborne vibrations from construction activities rarely reach levels that damage structures.

Construction vibration impacts include human annoyance and building damage. Human annoyance occurs when construction vibration rises significantly above the threshold of human perception for extended periods of time. Building damage can be cosmetic or structural. Ordinary buildings that are not particularly fragile would not experience any cosmetic damage (e.g., plaster cracks) at distances beyond 30 feet from the source. This distance can vary substantially depending on the soil composition and underground geological layer between vibration source and receiver. In addition, not all buildings respond similarly to vibration generated by construction equipment. For example, buildings that are constructed with typical timber frames and masonry show that a vibration level of up to 0.2 inch-per-second peak particle velocity (PPV) is considered safe and would not result in any construction vibration damage.[53] The City currently does not have a significance threshold to assess construction vibration impacts. Therefore, this analysis uses the Federal Transit Administration (FTA) architectural damage criterion for continuous vibrations at non-engineered timber and masonry buildings of 0.2 inch-per-second PPV and human annoyance criterion of 0.1 inch-per-second PPV in accordance with California Department of Transportation (Caltrans) guidance.[54] The FTA has published standard vibration velocities for construction equipment operations. The vibration levels produced by construction equipment are presented in **Table XIII-1**.

[53] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.
[54] City of Rancho Palos Verdes, City of Rancho Palos Verdes General Plan Update Noise and Vibration Study Technical Report, October 2017.

Table XIII-1
Typical Vibration Levels for Construction Equipment

Equipment	Approximate peak particle velocity at 25 feet (inches/second)[a]	Approximate peak particle velocity at 70 feet (inches/second)[a]
Vibratory roller	0.21	0.045
Large bulldozer	0.089	0.019
Loaded trucks	0.076	0.016
Small bulldozer	0.003	<0.001

Notes:

[a] Calculated using the following formula:

$PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}$

where: PPV (equip) = the peak particle velocity in in/sec of the equipment adjusted for the distance

PPV (ref) = the reference vibration level in in/sec from Table 7-4 of the FTA *Transit Noise and Vibration Impact Assessment Manual*

D = the distance from the equipment to the receiver

Source: Federal Transit Administration, *Transit Noise and Vibration Impact Assessment Manual*, September 2018.

Groundborne vibration decreases rapidly with distance. The nearest vibration-sensitive receptor is located approximately 70 feet to the west and southwest (i.e., residence at 26 Sweetbay Road) of the proposed construction activities. As indicated in **Table XIII-1**, vibration velocities from typical heavy construction equipment used during Project construction would range from 0.001 (a small bulldozer) to 0.045 (vibratory roller) inch-per-second PPV at the nearest structure (i.e., 70 feet) from the source of activity, which would not exceed FTA's 0.2 inch-per-second PPV threshold. Further, construction vibration would not cause excessive human annoyance as the highest groundborne vibration nearest sensitive receptors (i.e., 0.045 inch-per-second PPV) would not exceed Caltrans' 0.1-inch-per-second PPV human annoyance criterion. Therefore, implementation of the Project would not expose sensitive receptors to excessive groundborne vibration levels. As such, vibration impacts associated with construction would be less than significant.

c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

No Impact. The nearest airport to the Project Site is the Zamperini Field Airport, which is a public use airport located approximately 4 miles northeast in the City of Torrance. Additionally, the Project Site is not located within the vicinity of a private airstrip or related facilities. Furthermore, the Project would not result in the construction of habitable structures in which occupants would be exposed to airport noise. Therefore, the Project would not expose people residing or working in the Project area to excessive noise levels associated with aircraft, and no impacts would occur.

XIV. Population and Housing

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING: *Would the project:*				
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion

a) Would the project induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The section of Altamira Canyon Creek that comprises the Project Site is primarily located along the common boundary between the two properties at 25 and 26 Sweetbay Road. The Project would involve embankment improvements and habitat restoration and would not introduce habitable buildings or occupants to the Project Site. Therefore, the Project would not directly or indirectly result in substantial unplanned population growth in the area, and no impact would occur.

b) Would the project displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

No Impact. The section of Altamira Canyon Creek that comprises the Project Site is primarily located along the common boundary between the two properties at 25 and 26 Sweetbay Road. As the Project Site does not include any buildings, there are no current on-site residents or housing units on-site that would be displaced as part of the Project. Therefore, no impact would occur.

XV. Public Services

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES:				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
i) Fire protection?	☐	☐	☐	☒
ii) Police protection?	☐	☐	☐	☒
iii) Schools?	☐	☐	☐	☒
iv) Parks?	☐	☐	☐	☒
v) Other public facilities?	☐	☐	☐	☒

Discussion

a.i) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection?

No Impact. Fire protection services within the City are provided by the Los Angeles County Fire Department.[55] The Project would involve embankment improvements and habitat restoration along a section of Altamira Canyon Creek and would not introduce any habitable buildings or occupants to the Project Site. As such, the Project would not generate any population that would increase the demand for fire protection services within the Project Site. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for fire protection services, and, thus, no impact would occur.

a.ii) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection?

No Impact. The City contracts with the Los Angeles County Sheriff's Department for law enforcement services through a joint regional law enforcement agreement with the Cities

[55] City of Rancho Palos Verdes, Public Safety, https://www.rpvca.gov/972/Public-Safety, accessed August 10, 2022.

of Rolling Hills and Rolling Hills Estates. The Lomita Sheriff's Station serves the Peninsula Region Cities, as well as the City of Lomita and the unincorporated areas of Academy Hill and Westfield.[56] The Project would involve embankment improvements and habitat restoration along a section of Altamira Canyon Creek and would not introduce any habitable buildings or occupants to the Project Site. As such, the Project would not generate any population that would increase the demand for police protection. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for police protection, and, thus, no impact would occur.

a.iii) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for schools?

No Impact. The Project Site is located in the Palos Verdes Peninsula Unified School District.[57] The Project would involve embankment improvements and habitat restoration along a section of Altamira Canyon Creek and would not introduce any habitable buildings or occupants to the Project Site. As such, the Project would not generate a population of school-aged children. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain performance objectives for schools, and, thus, no impact would occur.

a.iv) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for parks?

No Impact. The Project would involve embankment improvements and habitat restoration along a section of Altamira Canyon Creek located along the common boundary between two private properties. As the Project would not introduce habitable buildings or occupants to the Project Site, the Project would not generate a population that would use parks in the City. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could

[56] City of Rancho Palos Verdes, Law Enforcement, https://www.rpvca.gov/519/Law-Enforcement, accessed August 10, 2022.

[57] Palos Verdes Peninsula Unified School District, PVPUSD Schools Map, https://www.pvpusd.net/apps/pages/index.jsp?uREC_ID=2877182&type=d&pREC_ID=2331531, August 8, 2022.

cause significant environmental impacts, in order to maintain acceptable service ratios or performance objectives for parks, and, thus, no impact would occur.

a.v) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for other public facilities?

No Impact. The Project would involve embankment improvements and habitat restoration along a section of Altamira Canyon Creek located along the common boundary between two private properties. As the Project would not introduce habitable buildings or occupants to the Project Site, the Project would not generate a population that would use other public facilities, such as libraries. Therefore, the Project would not result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or performance objectives for libraries or other public facilities, and, thus, no impact would occur.

XVI. Recreation

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
RECREATION:				
a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒
b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion

a) Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

b) Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. As discussed in response to Checklist Question XV(a)(iv), above, the Project would involve embankment improvements and habitat restoration along a section of Altamira Canyon Creek located along the common boundary between two private

properties. As the Project would not introduce habitable buildings or occupants to the Project Site, the Project would not generate a population that would use parks in the City. The Project would not include recreational facilities or increase the demand of such facilities. Therefore, the Project would not increase the use of parks or other recreational facilities, such that substantial physical deterioration of the facility would occur or be accelerated, or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment, and, thus, no impact would occur.

XVII. Transportation/Traffic

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION: *Would the project:*				
a) Conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☒
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Discussion

a) Would the project conflict with a program, plan, ordinance or policy addressing the circulation system, taking into account all modes of transportation including transit, roadways, bicycle and pedestrian facilities??

Less Than Significant Impact. The Project would involve the removal of existing embankment improvements in order to install new improvements in accordance with the regulatory permitting process per the USACE, CDFW, and LARWQCB. The area within Altamira Canyon Creek and the embankments that would be disturbed would be limited to approximately 4,192 square feet and would involve approximately 748 cubic yards of earthen cut, approximately 195 cubic yards of gabion removal, approximately 92 cubic yards of earthen fill, and approximately 679 cubic yards of rock riprap fill. While construction-related vehicle traffic would utilize the surrounding street network, particularly the truck haul routes, the impacts would be temporary and would fluctuate in intensity throughout the construction day and vary throughout the duration of construction, which is anticipated to occur for one month. Project construction vehicles would also be able to park on the applicant's property next to the Project Site. As such, because the construction traffic impacts associated with the Project would be temporary, Project construction would not significantly affect the performance of the vehicular transportation

network. Once the Project is completed, the Project Site would continue to operate as a creek as it currently exists but with the proposed improvements in compliance with regulatory agency requirements.

Based on the above, the Project would not conflict with a program, plan, ordinance, or policy addressing the circulation system, taking into account all modes of transportation, including transit, roadways, bicycle and pedestrian facilities. Therefore, such impacts would be less than significant.

b) Would the project conflict with CEQA Guidelines Section 15064.3, subdivision (b)?

No Impact. As of July 1, 2020, transportation impact assessments prepared in accordance with CEQA are required to determine if a Project would conflict with CEQA Guidelines Section 15064.3(b), which outlines a new set of criteria for analyzing transportation impacts using vehicle miles traveled (VMT) as the primary measure of transportation impact. VMT is generally defined as the amount and the distance of automobile travel associated with a project. The City has not adopted guidelines to set new significance criteria for transportation impacts based on VMT for land use projects and plans in accordance with this checklist question. However, the County of Los Angeles has established guidelines regarding screening and impact criteria to address the question. For non-retail projects, if a development project does not generate a net increase of 110 or more daily vehicle trips, further transportation impact analysis is not required.[58]

Under existing conditions, the Project Site does not include trip-generating uses. As the Project would result in embankment improvements and habitat restoration and no development of trip-generating uses, the Project would not require a VMT analysis pursuant to CEQA Guidelines 15064.3(b). Therefore, the Project would not conflict with CEQA Guidelines Section 15064.3(b), and no impact would occur.

c) Would the project substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The section of Altamira Canyon Creek that comprises the Project Site is located along the common boundary between the two properties at 25 and 26 Sweetbay Road. The Project would involve embankment improvements and habitat restoration limited to the site boundaries within the creek. The Project would not change or add uses or geometric design features that would result in an increased hazard. Therefore, no impact would occur.

d) Would the project result in inadequate emergency access?

No Impact. The disaster routes nearest to the Project Site include Palos Verdes Drive South (approximately 0.4 miles southwest) and Crest Road (0.8 miles north).[59] Project activities would be limited to embankment improvements and habitat restoration. The

[58] County of Los Angeles, Transportation Impact Analysis Guidelines, 2020.
[59] City of Rancho Palos Verdes, General Plan Safety Element, Figure 5, September 2018.

Project would not include changes to rights-of-way or disaster/evacuation routes. Therefore, the Project would not result in inadequate emergency access, and no impact would occur.

XVIII. Tribal Cultural Resources

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
TRIBAL CULTURAL RESOURCSE:				
a) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☒	☐	☐

Discussion

a.i) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k)?

No Impact. The Project Site has been previously disturbed by grading activities and consists of existing embankment improvements. No buildings or structures are located within the Project Site. As discussed in response to Checklist Question V(a), above, there

are no historical resources located on-site. Therefore, the Project would not cause an adverse change in the significance of a tribal cultural resource, defined in PRC Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is listed or eligible for listing in the California Register or in a local register of historical resources.

a.ii) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is a resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1? In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Less Than Significant Impact with Mitigation Incorporated. Approved by Governor Brown on September 25, 2014, Assembly Bill 52 established a formal consultation process for California Native American tribes to identify potential significant impacts to tribal cultural resources as defined in PRC Section 21074, as part of CEQA. As specified in Assembly Bill 52, lead agencies must provide notice to tribes that are traditionally and culturally affiliated with the geographic area of a project site if the tribe has submitted a written request to be notified. The tribe must respond to the lead agency within 30 days of receipt of the notification if it wishes to engage in consultation on the project, and the lead agency must begin consultation within 30 days of receiving the request for consultation. The City sent notification letters to the Gabrieleno/Tongva San Gabriel Band of Mission Indians, the Gabrieleño Band of Mission Indians—Kizh Nation, the Gabrielino/Tongva Nation, the Gabrielino Tongva Indians of California Tribal Council, the Gabrielino-Tongva Tribe, the Santa Rosa Band of Cahuilla Indians, and the Soboba Band of Luiseño Indians on August 9, 2022. The Gabrieleño Band of Mission Indians—Kizh Nation requested consultation on the Project, and City staff met with them via a phone call on November 2, 2022. The City reviewed some materials that were sent by Chairman Salas and Matt Teutimez, a biologist with the Gabrieleño Band of Mission Indians—Kizh Nation. City staff also followed up with the aforementioned representatives on November 22, 2022 to answer a question the Kizh Nation representatives asked regarding the status of the soil, where the grading is proposed. City staff responded that pursuant to information received from the Project engineer, the area consists of disturbed soil. However, after over seven weeks with no response, City staff informed the representatives that the City respectfully believes that the intent of AB 52 had been met and that the Project would comply with **Mitigation Measure TCR-1** to address any inadvertent discovery of tribal cultural resources. The Kizh Nation representatives responded to the City's e-mail on January 18, 2023, and stated they believed that the Project information and mitigation provided by the City was insufficient and requested that the City instead utilize the Kizh Nation's mitigation measures (attached to their e-mail) to protect their tribal cultural resources. The City responded on January 20, 2023, that, although the City understands the Kizh Nation's position, the City believes that the City's mitigation measure (**Mitigation Measure TCR-1**) is sufficient, especially because it requires that "Prior to the

commencement of any ground disturbance activities at a construction site, the applicant, or its successor, shall notify any California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project that ground disturbance activities are about to commence and invite the tribes to observe the ground disturbance activities, if the tribes wish to monitor." Additionally, if any resources are found, the City's mitigation measure also requires that the applicant "…immediately stop all ground disturbance activities, and contact the following: (1) all California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project…" The Kizh Nation was also advised that City staff are glad to continue the discussion and would be mailing out the Initial Study/MND shortly, to which the Kizh Nation is welcome to submit additional comments and continue the AB 52 consultation dialogue during the 30-day comment period with the goal of reaching an agreement with the Kizh Nation.

According to the City's Conservation and Open Space Element, the City is known to include several significant archaeological sites on the Palos Verdes Peninsula, along the City's coastline where the Tongva-Indians had established campsites and some trade centers.[60] Other areas that should be considered as archaeologically sensitive include the vacant land areas north and east of Narcissa Drive in the upper Portuguese Bend community. The Project Site is not located along the City's coastal area but is located in proximity to the archaeologically sensitive areas identified above. As such, the Project Site could possibly include archaeologically sensitive areas. However, the Project's ground disturbance activities may result in the inadvertent discovery of tribal cultural resources. As such, the Project would comply with **Mitigation Measure TCR-1** to reduce potential impacts related to unknown tribal cultural resources to a less-than-significant level.

Mitigation Measure

TCR-1 **Cultural Resources Monitoring and Avoidance.** Prior to the issuance of any grading permit, each applicant shall retain and pay for a City-approved qualified archaeologist to monitor all ground disturbance activities associated with the project, including, but not limited to, grading, excavating, clearing, leveling, and backfilling. The monitoring shall be conducted by an archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for prehistoric archaeology (National Park Service 1983) and who is qualified to identify subsurface archaeological resources. The archaeologist shall observe all ground-disturbing activities on construction sites when such activities are taking place.

Prior to the commencement of any ground disturbance activities at a construction site, the applicant, or its successor, shall notify any California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project that ground disturbance activities are about to commence and invite the tribes to observe the ground disturbance activities, if the tribes wish to monitor.

[60] City of Rancho Palos Verdes, General Plan Conservation and Open Space Element, September 2018.

In the event that any subsurface objects or artifacts that may be tribal cultural resources are encountered during ground disturbance activities, all such activities shall temporarily cease in the area of discovery, the radius of which shall be determined by the qualified archaeologist, until the potential tribal cultural resources are properly assessed and addressed pursuant to the process set forth below:

1) Upon discovery of a potential tribal cultural resource, an applicant, or its successor, shall immediately stop all ground disturbance activities, and contact the following: (1) all California Native American tribes that have informed the City that they are traditionally and culturally affiliated with the geographic area of the proposed project, and (2) the City's Community Development Department, Planning Division.

2) If the City determines, pursuant to Public Records Code Section 21704 (a)(2), that the object or artifact appears to be a tribal cultural resource in its discretion and supported by substantial evidence, the City shall provide any affected tribe a reasonable period of time, not less than 14 days, to conduct a site visit and make recommendations to the applicant, or its successor, and the City regarding the monitoring of future ground disturbance activities, as well as the treatment and disposition of any discovered tribal cultural resources.

3) The applicant, or its successor, shall implement the tribe's recommendations if a qualified archaeologist, retained by the City and paid for by the applicant or its successor, reasonably concludes that the tribe's recommendations are reasonable and feasible.

4) In addition to any recommendations from the applicable tribe(s), the applicant's City-approved qualified archaeologist shall develop a list of actions that shall be taken to avoid or minimize impacts to the identified tribal cultural resources substantially consistent with best practices identified by the Native American Heritage Commission and in compliance with any applicable federal, state, or local law, rule or regulation.

5) If the applicant, or its successor, does not accept a particular recommendation determined to be reasonable and feasible by the qualified archaeologist, the applicant, or its successor, may request mediation by the City's mediator. The mediator must have the requisite professional qualifications and experience to mediate such a dispute. The City shall make the determination as to whether the mediator is at least minimally qualified to mediate the dispute. After making a reasonable effort to mediate this particular dispute, the City may: (1) require the recommendation to be implemented as originally proposed by the archaeologist; (2) require the recommendation, as modified by the City, to be implemented that is at least as equally effective to mitigate a potentially significant impact; (3) require a

substitute recommendation to be implemented that is at least as equally effective to mitigate a potentially significant impact to a tribal cultural resource; or (4) not require the recommendation to be implemented because it is not necessary to mitigate any significant impacts to tribal cultural resources. The applicant, or its successor, shall pay all costs and fees associated with the mediation.

6) The applicant, or its successor, may recommence ground disturbance activities outside of a specified radius of the discovery site, so long as this radius has been reviewed by a qualified archaeologist and determined to be reasonable and appropriate.

7) The applicant, or its successor, may recommence ground disturbance activities inside of the specified radius of the discovery site only after it has complied with all the recommendations developed and approved pursuant to the process set forth in paragraphs 2 through 5 above.

8) Copies of any subsequent prehistoric archaeological study, tribal cultural resources study or report, detailing the nature of any significant tribal cultural resources, remedial actions taken, and disposition of any significant tribal cultural resources, shall be submitted to the South Central Coastal Information Center (SCCIC) at California State University, Fullerton and to the Native American Heritage Commission for inclusion in its Sacred Lands File.

9) Notwithstanding paragraph 8 above, any information determined to be confidential in nature, by the City Attorney's Office, shall be excluded from submission to the SCCIC or the general public under the provisions of the California Public Records Act, California Public Resources Code.

XIX. Utilities and Service Systems

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS: *Would the project:*				
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☐	☒

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐
c) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☐	☒

Discussion

a) Would the project require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?

No Impact. The Project would involve embankment improvements and habitat restoration. The Project would not alter the land uses or introduce habitable buildings or occupants to the Project Site. Accordingly, the Project would not generate demand for water or wastewater services or increased use of stormwater drainage facilities. In addition, the Project would not utilize electric power, natural gas, or telecommunication facilities. Therefore, the Project would not require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects. As such, no impact would occur.

b) Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

Less Than Significant Impact. As discussed above, the Project would not alter the land uses or introduce habitable buildings or occupants to the Project Site. However, restoration of portions of the Project Site, including revegetation, would require irrigation. According to the HMMP, it is not unusual for revegetated sites, planted during the right time of the year, to require little to no water after the initial planting. However, initially, all plantings would need to be deep watered for at least one to two weeks to ensure

establishment and deep root growth. Additionally, irrigation would be provided for all areas when natural moisture conditions are inadequate to ensure survival of plants. Furthermore, irrigation would be provided as needed for a period of at least two years from planting. Irrigation would be phased out during the fall/winter of the second year unless unusually severe conditions threaten the survival of plantings. It is anticipated that the site restoration and revegetation would be sustained by natural rainfall events and would not require much additional irrigation.[61] As such, the Project would not generate a substantial demand for water. Accordingly, the Project would not significantly affect water supplies during normal, dry and multiple dry years, and impacts would be less than significant.

c) Would the project result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

No Impact. As discussed above, the Project would not alter the land uses or introduce habitable buildings or occupants to the Project Site. As such, the Project would not generate wastewater. Accordingly, the Project would not affect the capacity of wastewater treatment facilities, and no impacts would occur.

d) Would the project generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?

e) Would the project comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

No Impact. As discussed above, the Project would not alter the land uses or introduce habitable buildings or occupants to the Project Site. During Project implementation, most of the existing, unpermitted gabion baskets and foundation, grout, and grouted stones that were installed would be removed. Approximately 100 linear feet of the existing gabion wall and foundations would be removed. The area within Altamira Canyon Creek and the embankments that would be disturbed would be limited to approximately 4,192 square feet and would involve approximately 748 cubic yards of earthen cut and approximately 195 cubic yards of gabion removal. During such construction activities, the Project would be required to comply with the City's relevant construction and demolition waste diversion requirements and applicable federal and State requirements to ensure that the solid waste stream diverted to landfills and recycling facilities is reduced in accordance with existing regulations.[62] Once operational, the Project would not generate solid waste. Accordingly, the Project would not conflict with federal, State, or local management and reduction statutes and regulations related to solid waste. Furthermore, the Project would not generate solid waste in excess of

[61] Stantec, Altamira Canyon Creek Project, Habitat Mitigation and Monitoring Plan, September 13, 2019. See Appendix B of this Initial Study.

[62] City of Rancho Palos Verdes, Community Development Department, Building and Safety Division, Construction and Demolition Debris Waste Management Plan (WMP) Residential and Non-Residential Projects–Diversion Requirements.

State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals. As such, no impact would occur.

XX. Wildfire

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
WILDFIRE: *If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:*				
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☒	☐
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

Discussion

a) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project substantially impair an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. As stated in response to Checklist Question IX(g), above, the entire City, including the Project Site, is located within a VHFHSZ, as identified by the California Department of Forestry and Fire Protection.[63] The disaster routes nearest to the Project Site include Palos Verdes Drive South (approximately 0.4 miles southwest) and Crest Road (0.8 miles north).[64] As the Project would only involve embankment improvements and habitat restoration, the Project would not affect any rights-of-way or emergency access. Therefore, the Project would not substantially impair an adopted emergency response plan or emergency evacuation plan, and impacts would be less than significant.

[63] California Department of Forestry and Fire Protection, FHSZ Viewer, https://egis.fire.ca.gov/FHSZ/, accessed August 10, 2022; City of Rancho Palos Verdes, General Plan Safety Element, September 2018, Figure 1.

[64] City of Rancho Palos Verdes, General Plan Safety Element, September 2018, Figure 5.

b) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project, due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

No Impact. The Project Site, which comprises a section of Altamira Canyon Creek, is located within a VHFHSZ. As detailed in response to Checklist Question VII(a)(iv), the Project would adhere to geotechnical recommendations for slope restoration, channel protection, and slope repair, as well as any engineering measures required by the agencies as part of the Project's regulatory permitting process. The Project would not introduce habitable buildings or occupants to the Project Site. Therefore, the Project would not exacerbate wildfire risks due to slope, prevailing winds, or other factors and expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. As such, no impact would occur.

c) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

No Impact. The Project Site, which comprises a section of Altamira Canyon Creek, is located within a VHFHSZ. The Project would involve embankment improvements and habitat restoration. The Project would not require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities). Therefore, the Project would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or result in temporary or ongoing impacts to the environment. As such, no impact would occur.

d) If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

No Impact. The Project Site, which comprises a section of Altamira Canyon Creek, is located within a VHFHSZ. As detailed in response to Checklist Question VII(a)(iv), while the Safety Element and the CGS identify the Project Site to be located within an area susceptible to landslides, the Geotechnical and Geologic Investigation prepared for the Project states that the Project Site does not show a significant sloped condition on a local scale. Furthermore, the Project would comply with geotechnical recommendations (e.g., proper moisture conditions, compaction, and fill) for slope restoration, channel protection, and slope repair, as well as any engineering measures required by the agencies as part of the regulatory permitting process. Moreover, as previously described, the Project would not introduce structures or inhabitants to the Project Site and would not exacerbate any existing flooding, landslide, or slope instability conditions. Therefore, the Project would not expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, and no impact would occur.

XXI. Mandatory Findings of Significance

	Potentially Significant Impact	Less Than Significant Impact with Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE:				
a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☒	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☐	☒	☐
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Discussion

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?

Less Than Significant Impact With Mitigation. Based on the analysis in Section IV, Biological Resources, of this Initial Study, the Project would not have substantial impacts to special-status species, riparian habitat, wetlands, or wildlife corridor/dispersal. Furthermore, the Project would not affect the local, regional, or national populations or ranges of any plant or animal species and would not threaten any plant communities. Similarly, as discussed in Section V, Cultural Resources, of this Initial Study, with the incorporation of **Mitigation Measures CUL-1 and TCR-1**, the Proposed Project would not have substantial impacts to archaeological resources and tribal cultural resources and, thus, would not eliminate any important examples of California history or prehistory.

Therefore, the Project would not result in a Mandatory Finding of Significance due to impacts to biological, cultural resources, or tribal cultural resources.

b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?

Less Than Significant Impact. A significant cumulative impact may occur if the Project, in conjunction with related projects in the region, would result in impacts that are less than significant when viewed separately but would be significant when viewed together. When considering the Project in combination with other past, present, and reasonably foreseeable future projects in the vicinity, the Project does not have the potential to cause impacts that are cumulatively considerable. As detailed in the above discussions, the Project would not result in any significant and unavoidable impacts in any environmental categories. In all cases, the impacts associated with the Project are limited to the Project Site and are of such a negligible degree that they would not result in a considerable contribution to any cumulative impacts. Therefore, the Project would not result in a Mandatory Finding of Significance due to cumulative impacts.

c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?

Less Than Significant Impact. As detailed above, the Project would not have the potential to result in direct or indirect substantial adverse effects on human beings. Due to the small size of the Project and the short duration of Project implementation (i.e., approximately one month), the Project would not approach or exceed any significance thresholds typically associated with direct or indirect effects on people, such as air, water, or land pollution, natural environmental hazards, transportation-related hazards, or adverse effects to emergency service response. Therefore, the Project would not result in a Mandatory Finding of Significance due to direct or indirect effects on human beings.

SECTION E. REFERENCES

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APPENDIX A
AIR EMISSIONS CALCULATIONS

OFF-ROAD CONSTRUCTION EQUIPMENT EMISSIONS

SCAB Fleet Average Emission Factors (Diesel)

Reference: https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/off-road-mobile-source-emission-factors

2022

Air Basin	SC

		(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)	(lb/hr)
Equipment	**MaxHP**	**ROG**	**CO**	**NOX**	**SOX**	**PM**	**CO2**	**CH4**
Off-Highway Trucks	175	0.0734	0.7537	0.3503	0.0014	0.0176	125	0.0066
	250	0.0836	0.3474	0.3804	0.0019	0.0132	167	0.0075
	500	0.1348	0.5379	0.5724	0.0027	0.0209	272	0.0122
	750	0.2189	0.8725	0.9428	0.0044	0.0342	442	0.0198
	1000	0.3246	1.2658	3.5349	0.0063	0.0734	625	0.0293
Off-Highway Trucks Composite		0.1303	0.5447	0.6574	0.0027	0.0216	260	0.0118
Rollers	15	0.0074	0.0386	0.0461	0.0001	0.0018	6.3	0.0007
	25	0.0161	0.0549	0.1017	0.0002	0.0038	13.3	0.0015
	50	0.0444	0.2347	0.1923	0.0003	0.0101	26.0	0.0040
	120	0.0486	0.3836	0.3270	0.0007	0.0207	59.0	0.0044
	175	0.0669	0.6103	0.4265	0.0012	0.0225	108	0.0060
	250	0.0760	0.3121	0.5217	0.0017	0.0180	153	0.0069
	500	0.1052	0.4391	0.6689	0.0022	0.0243	219	0.0095
Rollers Composite		0.0500	0.3799	0.3198	0.0008	0.0181	67.0	0.0045
Skid Steer Loaders	25	0.0168	0.0570	0.1062	0.0002	0.0042	13.8	0.0015
	50	0.0211	0.1991	0.1551	0.0003	0.0029	25.5	0.0019
	120	0.0197	0.2669	0.1446	0.0005	0.0043	42.8	0.0018
Skid Steer Loaders Composite		0.0204	0.2114	0.1485	0.0004	0.0034	30.3	0.0018

		Regional Emissions (lbs/day)				
	(hrs/day)	**ROG**	**CO**	**NOX**	**SOX**	**PM**
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
		0	0	0	0	0
	4	1.29847264	5.063268305	14.13974272	0.02512571	0.29356982
	8	0.84125181	3.512858689	5.351123107	0.01720438	0.19476659
		0	0	0	0	0
		0	0	0	0	0
	8	0.15736059	2.13514411	1.156428967	0.00401294	0.03410727
Totals		2.30	10.71	20.65	0.05	0.52
Threshold		75	550	100	150	150
Exceedance?		**No**	**No**	**No**	**No**	**No**

Highest (Most Conservative) EMFAC2007 (version 2.3)
Emission Factors for On-Road Passenger Vehicles & Delivery Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Passenger Vehicles (<8500 pounds) & Delivery Trucks (>8500 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model, taking the weighted average of vehicle types and simplifying into two categories:
Passenger Vehicles & Delivery Trucks.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle categories listed in the tables below, by use of the following equation:
Emissions (pounds per day) = N x TL x EF
where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

This methodology replaces the old EMFAC emission factors in Tables A-9-5-J-1 through A-9-5-L in Appendix A9 of the current SCAQMD CEQA Handbook. All the emission factors account for the emissions from start, running and idling exhaust. In addition, the ROG emission factors include diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors include tire and brake wear.

Scenario Year: **2021**
All model years in the range 1977 to 2021

Passenger Vehicles (pounds/mile)	
CO	0.00421218
NOx	0.00037757
ROG	0.00050573
SOx	0.00001073
PM10	0.00009640
PM2.5	0.00006364
CO2	1.11009559
CH4	0.00004322

Delivery Trucks (pounds/mile)	
CO	0.00748303
NOx	0.00773500
ROG	0.00115568
SOx	0.00002755
PM10	0.00033125
PM2.5	0.00025331
CO2	2.86434187
CH4	0.00004905

Scenario Year: **2022**
All model years in the range 1978 to 2022

Passenger Vehicles (pounds/mile)	
CO	0.00397866
NOx	0.00035150
ROG	0.00048658
SOx	0.00001072
PM10	0.00009661
PM2.5	0.00006389
CO2	1.11019931
CH4	0.00004121

Delivery Trucks (pounds/mile)	
CO	0.00699290
NOx	0.00722470
ROG	0.00108569
SOx	0.00002774
PM10	0.00031501
PM2.5	0.00023906
CO2	2.87006769
CH4	0.00004557

Construction Workers (6 construction workers, 50 miles per trip or 100 miles round trip/day)

600 miles/day

2.387195
0.210898
0.291946
0.006430
0.057967
0.038334
666.119583
0.024727

Reference: https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)#:~:text=To%20simplify%20calculating%20on-road%20mobile%20source%20emissions%2C%20the,obtain%20emission%20factors%20in%20pounds%20per%20mile%20traveled.

Highest (Most Conservative) EMFAC2007 (version 2.3) Emission Factors for On-Road Heavy-Heavy-Duty Diesel Trucks

Projects in the SCAQMD (Scenario Years 2007 - 2026)
Derived from Peak Emissions Inventory (**Winter**, **Annual**, **Summer**)

Vehicle Class:
Heavy-Heavy-Duty Diesel Trucks (33,001 to 60,000 pounds)

The following emission factors were compiled by running the California Air Resources Board's EMFAC2007 (version 2.3) Burden Model and extracting the **Heavy-Heavy-Duty Diesel Truck (HHDT)** Emission Factors.

These emission factors can be used to calculate on-road mobile source emissions for the vehicle/emission categories listed in the tables below, by use of the following equation:

Emissions (pounds per day) = N x TL x EF

where N = number of trips, TL = trip length (miles/day), and EF = emission factor (pounds per mile)

The **HHDT-DSL** vehicle/emission category accounts for all emissions from heavy-heavy-duty diesel trucks, including start, running and idling exhaust. In addition, ROG emission factors account for diurnal, hot soak, running and resting emissions, and the PM10 & PM2.5 emission factors account for tire and brake wear.

The **HHDT-DSL, Exh** vehicle/emission category includes only the exhaust portion of PM10 & PM2.5 emissions from heavy-heavy-duty diesel trucks.

Scenario Year: **2021**

All model years in the range 1977 to 2021

HHDT-DSL (pounds/mile)	
CO	**0.00503726**
NOx	**0.01179977**
ROG	**0.00103095**
SOx	**0.00004033**
PM10	**0.00059437**
PM2.5	**0.00046287**
CO2	**4.21495573**
CH4	**0.00004734**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00045411**
PM2.5	**0.00041729**

Scenario Year: **2022**

All model years in the range 1978 to 2022

HHDT-DSL (pounds/mile)	
CO	**0.00478830**
NOx	**0.01098794**
ROG	**0.00096142**
SOx	**0.00004106**
PM10	**0.00055427**
PM2.5	**0.00042597**
CO2	**4.21520828**
CH4	**0.00004448**

HHDT-DSL, Exh (pounds/mile)	
PM10	**0.00041399**
PM2.5	**0.00037807**

(4 haul trucks, 100 miles per trip 800 or 200 miles round trip per day)	
3.830639	0.331195
8.790352	0.302455
0.769139	
0.032846	
0.443418	
0.340775	
3372.167	
0.035583	

Reference: https://www.aqmd.gov/home/rules-compliance/ceqa/air-quality-analysis-handbook/emfac-2007-(v2-3)-emission-factors-(on-road)#:~:text=To%20simplify%20calculating%20on-road%20mobile%20source%20emissions%2C%20the,obtain%20emission%20factors%20in%20pounds%20per%20mile%20traveled.

APPENDIX B
BIOLOGICAL RESOURCES REPORTS

Stantec

ALTAMIRA CANYON CREEK PROJECT

Biological Resources Technical Report

August 25, 2022

Prepared for:
Petak Family Trust
25 Sweetbay Road
Rancho Palos Verdes, CA 90275

Prepared by:
Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

Project Number: 185804202

The conclusions in the Report titled Biological Resources Technical Report are Stantec's professional opinion, as of the time of the Report, and concerning the scope described in the Report. The opinions in the document are based on conditions and information existing at the time the scope of work was conducted and do not take into account any subsequent changes. The Report relates solely to the specific project for which Stantec was retained and the stated purpose for which the Report was prepared. The Report is not to be used or relied on for any variation or extension of the project, or for any other project or purpose, and any unauthorized use or reliance is at the recipient's own risk.

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Prepared by: Ashleigh Townsend
Signature

Ashleigh Townsend, Project Biologist
Printed Name

Reviewed by:
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Meg Schaap, Senior Biologist
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Signature

Jared Varonin, Principal Biologist/Ecosystems Technical Resource Group Leader
Printed Name

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Acronyms / Abbreviations

BSA	Biological Study Area
CCH	Consortium of California Herbaria
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
FESA	Federal Endangered Species Act
Jurisdictional Waters	Waters of the United States
LARWQCB	Los Angeles Regional Water Quality Control Board
LCP	Local Coastal Program
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NPPA	Native Plant Protection Act
Project Site	Petak Family Trust property at 25 Sweetbay Road, Rancho Palos Verdes, CA
RWQCB	Regional Water Quality Control Boards
Secretary	Secretary of Commerce or the Secretary of the Interior
TNW	Traditionally Navigable Water
USACE	United States Army Corps of Engineers
USFWS	United States Fish & Wildlife Service
USGS	United States Geological Survey
WDR	Waste Discharge Requirements

1 Introduction

This report is intended to document the biological resources that occur at the Petak Family Trust property located at 25 Sweetbay Road, Rancho Palos Verdes, CA (Project Site); refer to Appendix A, Figure 1. The surveys and discussions presented in this report were conducted/prepared to support regulatory agency permitting and associated documentation. Surveys were conducted within and adjacent (where accessible) to the Project Site within an area defined as the Biological Study Area (BSA); refer to Appendix A, Figure 1.

1.1 Project Description

In 2015, in response to approximately two decades of severe erosion of their property resulting from high storm flows within Altamira Canyon Creek and adjacent drainages, the owners of the subject property installed gabion baskets along the eastern bank of Altamira Canyon Creek and northern bank of an unnamed drainage. The purpose of installing these structures was to prevent further loss of property and protect the animals in the equestrian facilities immediately abutting the drainages. These rock-filled, wire mesh baskets, along with concrete footings armored the eroding eastern bank and served to protect the bank from further high flow events. The gabions were installed based on recommendations from the City of Rancho Palos Verdes after an assessment of hydrological conditions within the watershed. The property owner, without realizing they were required by certain regulatory agencies, did not seek the necessary permits from the United States Army Corps of Engineers (USACE), Los Angeles Regional Water Quality Control Board (LARWQCB), and California Department of Fish and Wildlife (CDFW). Subsequently, after site visits by the USACE and LARWQCB, a notice of violation for failure to obtain a Section 401 Water Quality Certification was issued. The property owner was directed to conduct required biological and engineering studies to support the regulatory permitting process.

2 Methods

Stantec biologists conducted a habitat assessment and biological resource surveys within the BSA on July 24, 2018, and a follow up survey on July 20, 2022. The 2018 assessment and survey was conducted by Stantec Principal Biologist Jared Varonin, Associate Biologist Rocky Brown, and Staff Biologist Laura Butler. The 2022 assessment and survey was conducted by Project Biologist Ashleigh Townsend and Staff Biologist Cassandra DuBois. This included, but was not limited to, a literature review, reconnaissance-level survey, non-protocol surveys to detect the presence of special status plant and wildlife species, non-protocol avian surveys to detect the presence of listed songbirds, and preliminary jurisdictional delineation. Surveys were conducted on foot within the BSA where accessible based on terrain and vegetative cover.

2.1 Literature Review

A literature search focused on the BSA was conducted prior to field surveys. The BSA is located within the U.S. Geological Survey's (USGS) San Pedro, California, 7.5-minute topographic quadrangle. A search of the CDFW California Natural Diversity Database (CNDDB) was conducted for this quadrangle to determine special status plants, wildlife, and vegetation communities that have been documented within the vicinity of the Project Area (CDFW, 2022a). The following three adjacent quadrangles were also included in the database search due to their proximity to the BSA (note: due to the Project's proximity to the coastline, no quadrangles occur to the south, southeast, and southwest):

- Long Beach
- Redondo Beach
- Torrance

Additional data regarding the potential occurrence of special status species and policies relating to these special status natural resources were gathered from the following sources:

- State and Federally Listed Endangered, Threatened, and Rare Plants of California (CDFW 2022b);
- State and federally listed endangered and threatened animals of California (CDFW, 2022c);
- Special Animals List (CDFW, 2022d);
- California's Wildlife – Life History and Range (CDFW 2022e);
- California Sensitive Natural Communities (CDFW 2022f);
- Inventory of Rare and Endangered Vascular Plants of California (CNPS, 2022);
- Consortium of California Herbaria (CCH, 2022); and
- Locally important species lists.

2.2 Biological Surveys and Habitat Assessments

To document the existing biological resources that are present in and adjacent to the BSA, Stantec conducted habitat assessment and reconnaissance-level surveys, focused non-protocol surveys for special status plant and wildlife species, a non-protocol avian survey to detect the presence of listed songbirds, and a preliminary jurisdictional delineation (a delineation was only conducted during the 2018 survey). The primary goal of the wildlife surveys was to identify and assess habitat capable of supporting special status wildlife species and/or to document the presence/absence of special status wildlife species. To the extent possible surveys were conducted when special status plant species would be in bloom or identifiable, migratory birds were expected to be present at the BSA, resident bird species were nesting and fledging, small mammals were active and detectable visually or by sign or scat, and above-ground amphibian and reptile movement would generally be detectable. However, it is acknowledged that some wildlife species and/or individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior.

The BSA was investigated on foot by experienced field biologists. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.). Where necessary,

samples of selected plant species were taken to the laboratory and identified microscopically or in consultation with a local herbarium. Species identifications conform to the most up-to-date field guides and technical literature. A list of all plant species observed in the BSA is presented in Table 1 and a list of wildlife species observed is presented in Table 2.

2.2.1 PLANTS

The entire BSA was assessed by walking "meandering transects" (Nelson, 1987) throughout all accessible portions, with particular attention given to areas of suitable habitat for special status plant species. All plant species observed were identified in the field or collected for later identification. Plants were identified using keys, descriptions, and illustrations in Baldwin et al. (2012), applicable volumes of the Flora of North America (1993+), and other regional references. In conformance with CDFW protocols (2009), surveys were (a) floristic in nature, (b) consistent with conservation ethics, (c) systematically covered all habitat types on the sites, and (d) well documented by this report and by voucher specimens to be deposited at Rancho Santa Ana Botanic Garden. A list of special status plant species that have the potential to occur in the BSA is presented in Table 3 (Section 5.3).

2.2.2 WILDLIFE

A reconnaissance-level survey was performed by walking meandering transects through the entirety of the BSA at an average pace of approximately 1.5 km/hr. while visually searching for and listening to wildlife songs and calls and observing for animal signs. The walking survey was halted approximately every 50 meters to listen for wildlife or as necessary to identify, record, or enumerate any other detected species.

Terrestrial insects and other invertebrates were searched for on flowers and leaves, under loose bark, and under stones and logs on the ground throughout the BSA. Randomly selected areas within appropriate micro habitats (e.g., leaf litter, underneath felled logs, etc.) were hand raked or visually inspected to determine the presence/absence of gastropods.

Surveys were conducted during daylight hours when temperatures were such that reptiles would be active (i.e., between 75° – 95° Fahrenheit). Visual observations were made to locate basking reptiles, and potential refuge areas, such as debris piles (e.g., woody debris, trash, etc.), were searched. All refugia sites search were returned to their original state upon survey completion. A list of special status wildlife species that have the potential to occur in the BSA is presented in Table 4 (Section 5.4).

2.2.3 VEGETATION MAPPING

Vegetation descriptions and names are based on Sawyer et al. (2009) and have been defined at least to the alliance level. Vegetation maps were prepared by drawing tentative vegetation type boundaries onto high-resolution aerial images while in the field, then digitizing these polygons into a geographic information system. Mapping was done electronically using ArcGIS (version 10.7) with aerial photos with an accuracy of one foot. Most boundaries shown on the maps are accurate within approximately three feet; however,

boundaries between some vegetation types are less precise due to difficulties interpreting aerial imagery and accessing stands of vegetation.

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. Note also that all vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to intergrade on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.

Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type. For this Study Area, the minimum mapping unit was approximately three feet, and smaller inclusions are described in the text but are not visible on the maps.

3 Regulatory Environment

3.1 Federal Regulations

3.1.1 FEDERAL ENDANGERED SPECIES ACT

Federal Endangered Species Act (FESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the FESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wild-life.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3). Critical habitat is defined in Section 3(5)(A) of the FESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.” The effects analyses for

designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the recent Ninth Circuit judicial opinion, Gifford Pinchot Task Force v. USFWS. Activities that may result in "take" of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.

3.1.2 MIGRATORY BIRD TREATY ACT

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or "take" any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. "Take" is defined as possession or destruction of migratory birds, their nests, or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

3.1.3 BALD AND GOLDEN EAGLE PROTECTION ACT OF 1940 (16 USC 668)

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: "disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior'' (72 FR 31132; 50 CFR 22.3).

The USFWS is the primary federal authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required for this project. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the "take" of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest because of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

3.1.4 FEDERALLY REGULATED HABITATS

Areas meeting the regulatory definition of “Waters of the U.S.” (Jurisdictional Waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the Clean Water Act (CWA) (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). The Project Area falls within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.

Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the CWA. As a part of the permit process the USACE works directly with the USFWS to assess potential project impacts on biological resources.

3.1.5 NATIONAL ENVIRONMENTAL POLICY ACT

The National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and utilize public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans/documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 U.S.C. 4321- 4327) (40 CFR 1500-1508).

3.2 State Regulations

3.2.1 CALIFORNIA ENVIRONMENTAL QUALITY ACT

California Environmental Quality Act (CEQA) establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects by using alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

3.2.2 CALIFORNIA ENDANGERED SPECIES ACT

Provisions of California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in “take” of individuals (“take” means “hunt,

pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill"). Habitat degradation or modification is not expressly included in the definition of "take" under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as "fully protected" (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a "watch list." Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is "unlawful to take, possess, or destroy any birds of prey (in the order Falconiformes or Strigiformes) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto." Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered "take" by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

3.2.3 NATIVE PLANT PROTECTION ACT (FISH & GAME CODE 1900-1913)

California's Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.

3.2.4 SECTION 3503 & 3503.5 OF THE FISH AND GAME CODE

Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

3.2.5 PORTER-COLOGNE WATER QUALITY CONTROL ACT

Regional water quality control boards (RWQCB) regulate the “discharge of waste” to “waters of the State.” All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both terms “discharge of waste” and “waters of the State” are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other “discharge.” Isolated wetlands within California, which are no longer considered “waters of the United States” as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.

3.2.6 STATE-REGULATED HABITATS

The State Water Resources Control Board is the State agency (together with the RWQCB) charged with implementing water quality certification in California. The Project Area falls under the jurisdiction of the LA RWQCB.

The CDFW extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project applicant enter into a Streambed Alteration Agreement with the CDFW.

3.2.7 CALIFORNIA COASTAL ACT

The California Coastal Act of 1976 was borne out of the Coastal Conservation Initiative, passed in 1972 by California voters concerned about coastal development and its impact on public access and coastal resources. This initiative resulted in the creation of the Coastal Commission and, four years after the initiative was passed, the State Legislature enacted the Coastal Act. The act is designed to balance the right to develop with strict policies to protect resources.

The Coastal Zone encompasses 1.5 million acres of land along the length of the 1,100-mile California coastline and stretches from three miles at sea to an inland boundary that varies from several blocks in urban areas to as much as five miles inland in less developed areas. It also includes 287 miles of shoreline surrounding nine offshore islands.

The Coastal Act is umbrella legislation designed to encourage local governments to create Local Coastal Programs (LCPs) to govern decisions that determine the short- and long-term conservation and use of coastal resources. These LCPs can be thought of as the equivalent of General Plans for areas within the Coastal Zone. LCPs must be consistent with the policies of Coastal Act and protect public access and

coastal resources. Until the Coastal Commission certifies an LCP, the Commission makes the final decisions on all development within a jurisdiction (city or county) within the Coastal Zone. Once an LCP is certified for a jurisdiction, decisions are handled locally, but can be appealed to the Commission. The Project Site lies within the Santa Monica Mountains LCP.

3.3 Other Applicable Regulations, Plans, and Standards

3.3.1 CALIFORNIA NATIVE PLANT SOCIETY RARE PLANT PROGRAM

The mission of the California Native Plant Society (CNPS) Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a California Rare Plant Rank (CRPR). In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies, and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered and are described as follows:

- 0.1 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known.

3.3.2 RANCHO PALOS VERDES GENERAL PLAN

The goal of the City of Rancho Palos Verdes' General Plan is to conserve, protect, and enhance its natural resources, beauty, and open space for the benefit and enjoyment of its residents and the residents of the entire region. All future development is to recognize the sensitivity of the natural environmental and be accomplished in such a manner as to maximize the protection of it (Rancho Palos Verdes, 2011).

3.3.3 RANCHO PALOS VERDES MUNICIPAL CODE

The City's Municipal Code provides another layer of environmental protection to lands located within the city limits. Title 17, Chapter 40, Section 040 of the City's Municipal Code provides the regulations for the Natural Overlay Control District (OC-1), which includes those areas of the General Plan within Resource Management (RM)-5 (Old Landslide Area), RM-6 (Hydrologic Factors), RM-7 (Marine Resource), RM-8 (Wildlife Habitat), and RM-9 (Natural Vegetation). Similar designations within the Coastal Specific Plan are also within this overlay district. According to the City's General Plan Natural Environment Element, Altamira Canyon is located within Resource Management (RM) District 6 – Hydrologic Factors, which is included within OC-1. Within this district it is the City's policy to prohibit activities which create excessive silt, pollutant runoff, increase canyon wall erosion, or potential for landslide. Performance criteria relevant to biological resources include restrictions against altering the course, carrying capacity or gradient of the drainage; developing uses within 50 feet of the edge of the drainage; clearing or thinning more than 20% of the vegetation within the district; and use of herbicides (Rancho Palos Verdes, 2011).

4 Existing Conditions

4.1 Setting

The BSA is located within Los Angeles County, California, in the city of Palos Verdes (refer to Appendix A, Figure 1). It is situated in Township 35 North, Range 73 East of the USGS San Pedro 7.5-minute topographic quadrangle. Land uses surrounding the BSA are limited to rural residential and open space. Elevations range from approximately 300 to approximately 500 feet above mean sea level. The region typically receives an average annual rainfall of 18.67 inches, with temperatures ranging from approximately 55-71 degrees Fahrenheit (Western Regional Climate Center, 2022).

4.2 General Vegetation Communities and Land Cover

Within the non-developed portions of the BSA, biological resources observed during the field surveys comprised primarily of common plant species and vegetation communities that are characteristic of the coastal ranges and valleys of southern California. Habitat conditions within undeveloped portions of the BSA were noted to be of poor or fair quality, with well-established monocultures of non-native tree species dominating the canopy and non-native grasses and non-native herbaceous plants in the riparian areas in and adjacent to Altamira Canyon Creek. Within the BSA, Stantec biologists mapped two plant communities defined by Sawyer et al. (2009) and one additional land cover type. These are described further in Section 4.2.1 below. Figure 2 (Appendix A) illustrates the land cover types occurring in the BSA.

4.2.1 VEGETATION COMMUNITIES AND LAND COVER TYPES

4.2.1.1 Vegetation Communities

4.2.1.1.1 Annual Brome Grasslands

Non-native grasslands, dominated by brome species (*Bromus* spp.), occur within the dry channel of Altamira Canyon Creek and along the western bank. Other non-native annual herbaceous species (including other grasses) are also common within this community, including short pod mustard (*Hirschfeldia incana*), sow thistle (*Sonchus oleraceus*), and wild oats (*Avena fatua*). Sparsely interspersed within this community are native shrubs common to adjacent areas of native scrub including toyon (*Heteromeles arbutifolia*), coyote bush (*Baccharis pilularis*). Approximately 0.13 acre of this community was noted within the BSA at the time of the survey.

4.2.1.1.2 Pepper Tree Groves

This community occurs along the eastern and southern edges of the BSA. This area is dominated by non-native Peruvian pepper trees (*Schinus molle*) with gum trees (*Eucalyptus* sp.) being a near co-dominant species in some areas. This community has a mixture of non-native grasses and forbs consistent within the understory including smilo grass (*Stipa miliacea*), bitter dock (*Rumex obtusifolius*), and garden

nasturtium (*Tropaeolum majus*). Approximately 0.09 acre of this community was noted within the BSA at the time of the survey.

4.2.1.2 Other Land Cover Types

4.2.1.2.1 Disturbed/Developed

This classification was used to map portions of the BSA that are developed, primarily existing paved roadways (Sweetbay Road), livestock corrals and facilities, and concrete lined portions of Altamira Canyon Creek. Where vegetated, these areas are generally composed of ornamental species, citrus trees (*Citrus* spp.), Peruvian pepper trees, and gum trees. Approximately 0.39 acre of this land cover type was noted within the BSA at the time of the survey.

4.2.2 COMMON PLANT SPECIES OBSERVED

The BSA was assessed for common and rare vascular plants during the July 2018 and July 2022 surveys, though a focused, floristic-level survey was not conducted. The survey resulted in the documentation of 47 species of native and non-native plants within the BSA. Table 1, below, presents a list of all plants observed within the BSA.

Table 1. Plant Species Observed within the BSA

Scientific Name	Common Name
*Acacia cyclops**	coastal wattle
Agave sp. *	agave
Amaranthus blitoides	prostrate pigweed
*Avena fatua**	wild oats
Baccharis pilularis	coyote bush
Bromus sp.*	brome grass
*Centaurea melitensis *	tocolate
*Centranthus ruber**	red valerian
Cercocarpus betuloides	birch leaf mountain mahogany
*Chenopodium murale**	nettle leaf goosefoot
*Citrus limon**	lemon
*Citrus reticulata**	tangerine
*Crassula ovata**	jade plant
Eucalyptus sp.*	gum tree
*Euphorbia terracina**	carnation spurge
*Euphorbia virgata**	leafy spurge
*Foeniculum vulgare**	sweet fennel
Gambelia speciosa	showy island snapdragon
*Hedera helix**	English ivy
*Helminthotheca echioides**	bristly ox tongue

Scientific Name	Common Name
Heteromeles arbutifolia	toyon
*Hirschfeldia incana**	short pod mustard
*Jacaranda mimosifolia**	black poui
Juglans californica	southern California black walnut
*Lactuca serriola**	prickly lettuce
*Marrubium vulgare**	white horehound
*Melilotus albus**	white sweet clover
*Mesembryanthemum crystallinum**	crystalline ice plant
*Nerium oleander**	oleander
*Nicotiana glauca**	tree tobacco
*Pinus halepensis**	pine tree
*Plumbago auriculata**	cape leadwort
*Prunus persica**	peach
*Punica granatum**	pomegranate
Rhus integrifolia	lemonade berry
Rhus ovata	sugar bush
*Ricinus communis**	castor bean
Rosa sp.*	rose
*Rosmarinus officinalis**	rosemary
*Rumex obtusifolius**	bitter dock
*Salsola tragus**	Russian thistle
*Schinus molle**	Peruvian pepper
*Sonchus oleraceus**	sow thistle
*Stipa miliacea**	smilo grass
Symphoricarpos mollis	snowberry
*Tropaeolum majus**	garden nasturtium
Umbellularia californica	California bay

* Indicates non-native species

4.2.3 JURISDICTIONAL WATERS/WETLANDS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California: the USACE Regulatory Program regulates activities pursuant to Section 404 of the federal CWA; the CDFW regulates activities under the Fish and Game Code Section 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act.

One potentially jurisdictional aquatic feature was documented within the BSA and is associated with Altamira Canyon Creek: USACE non-wetland Waters of the U.S. and CDFW State Waters. Altamira Canyon Creek flows directly into the Pacific Ocean, which is a Traditionally Navigable Water (TNW). Based on this connectivity to a TNW, Altamira Canyon Creek would be federally jurisdictional and the

creek and associated contiguous areas of riparian vegetation would be under the jurisdiction of the CDFW. Approximately 0.12 acre of Waters of the U.S. and 0.17 acres of CDFW Jurisdictional Waters occur within the BSA.

4.3 Common Wildlife

4.3.1 INVERTEBRATES AND GASTROPODS

Focused insect surveys within the boundaries of the BSA were not performed during the survey events; however, a variety of common insects are known to occur in the area. Habitat conditions in the BSA provide a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates in the BSA play a crucial role in several biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. General surveys of the BSA detected a wide variety of common and non-native invertebrates. Some of the orders identified in the BSA included *Odonata* (dragonflies, damselflies), *Hemiptera* (true bugs), *Coleoptera* (beetles), *Diptera* (flies), *Pleocoptera* (stone flies), *Lepidoptera* (moths and butterflies), *Hymenoptera* (wasps, bees and ants), and *Orthoptera* (grasshoppers).

4.3.2 AMPHIBIANS

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Amphibian species were not observed during surveys within the BSA. Species not observed in the BSA but known to occur in the Altamira Canyon Creek watershed include the Pacific treefrog (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), and the non-native bullfrog (*Lithobates catesbeiana*). These species all require aquatic habitats for all or part of their life cycle, which is only present during and immediately after substantial rain events within the BSA, and therefore are not likely to occur within the BSA outside of the rainy season, generally from November-March. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material, present in very limited portions of the BSA, in various stages of decay (often referred to as coarse woody debris) likely provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988).

4.3.3 REPTILES

The number and type of reptile species that may occur at a given site is related to several biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the survey for reptile activity.

Western fence lizard (*Sceloporus occidentalis*) was the only reptile species observed in the BSA during either survey. Although not observed, several other common reptiles likely occur in the BSA. Many reptile species, even if present, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases, they are only observed when flushed from their refugia. Although not detected in the BSA, suitable habitat conditions for several common reptiles including western skink (*Plestiodon skiltonianus*), California whipsnake (*Masticophis lateralis*), and western rattlesnake (*Crotalus oreganus*) were observed within the BSA at the time of the survey.

4.3.4 BIRDS

Birds were identified by sight and sound and were observed throughout the BSA. Some of these included black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), northern mockingbird (*Mimus polyglottos*), and Anna's hummingbird (*Calypte anna*). All avian species identified in the BSA during the surveys are listed in Table 2. It is possible that many other birds use the BSA either as wintering habitat, seasonal breeding, or as occasional migrants. Special status species are further discussed in Section 5.4. Although not detected in the BSA suitable habitat conditions for several common birds including mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), spotted towhee (*Pipilo maculatus*), and American robin (*Turdus migratorius*), were observed within the BSA at the time of the survey.

4.3.5 MAMMALS

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas). While no mammal species were detected during the surveys, several common mammals are expected to occur within the BSA, given the habitat conditions and species that are known to occur in the general vicinity of the BSA. These may include California ground squirrel (*Spermophilus beecheyi*), Audubon's cottontail rabbit (*Sylvilagus audubonii*), Virginia opossum (*Didelphis virginiana*), coyote (*Canis latrans*), mountain lion (*Puma concolor*), bobcat (*Lynx rufus*), and raccoon (*Procyon lotor*), all known to generally occur in the region. No special status mammal species were observed in the BSA. Special status species with the potential to occur are further discussed in Section 5.4.

Although bats were not detected in the BSA, they likely forage and roost within the Altamira Canyon Creek riparian corridor. Many bats tend to concentrate foraging activities in riparian habitats like those present within and adjacent the BSA where insect abundance is high (CDFW, 2000).

Table 2. Wildlife Species Observed within the BSA

Scientific Name	Common Name
Reptiles	
Sceloporus occidentalis	western fence lizard
Birds	
Archilochus alexandri	black-chinned hummingbird
Calypte anna	Anna's hummingbird
Corvus brachyrhynchos	American crow
Haemorhous mexicanus	house finch
Mimus polyglottos	northern mockingbird
Pavo sp.	peacock
Sayornis nigricans	black phoebe
Selasphorus sasin	Allen’s hummingbird
Spinus tristis	American goldfinch
Vireo huttoni	Hutton’s vireo
Mammals	
Equus asinus	donkey
Equus ferus	horse

*No special status species were observed in the BSA at the time of the survey.

5 Special Status Species

The background information presented above, combined with field observations taken during the survey, was used to generate a list of special status natural communities and special status plant and animal taxa that either occur or may have the potential to occur within the BSA and/or adjacent habitats. For the purposes of this report, special status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California or Federal ESAs;
- Are candidate species being considered or proposed for listing under these same acts;
- Are recognized as Species of Special Concern by the CDFW;
- Are ranked as CRPR 1, 2, 3 or 4 plant species;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions.

5.1 Special Status Natural Communities

Special status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. Based on the vegetation mapping, no special status natural communities occur within the BSA.

5.2 Designated Critical Habitat

Literature review conducted prior to conducting field surveys determined that critical habitat for coastal California gnatcatcher (*Polioptila californica*) occurs within the southern portion of the BSA. The CNDDB reports multiple occurrences of this species within two miles of the BSA (the most recent was recorded in 2018); suitable habitat for this species was not present in the BSA at the time of the survey but may be present in adjacent areas.

5.3 Special Status Plants

Table 3, presents a list of special status plants, including federally- and state listed species and CRPR 1-4 species that are known to occur in the vicinity of the BSA. No special status plants were observed within the BSA during surveys conducted in July 2018 or July 2022.

A records search of the CNDDB, the CNPS Online Inventory, and the Consortium of California Herbaria (CCH) was performed for special status plant taxa and non-protocol plant surveys were conducted within

the BSA (refer to Appendix A, Figures 3a and 3b). Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- Present: Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- High: Both a documented recent record (within 10 years) exists of the taxa within the BSA, or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- Moderate: Both a documented recent record (within 10 years) exists of the taxa within the BSA, or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the Project Area or the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- Low: A historical record (over 10 years) exists of the taxa within the BSA, or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the BSA.

5 Special Status Species

Table 3. Known and Potential Occurrence of Special Status Plant Taxa within the BSA

Scientific Name	Common Name	Status Federal/ State/CNPS	General Habitat Description	Blooming Period	Potential for Occurrence
Aphanisma blitoides	aphanisma	- /S2/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub; about 1-305 m.	Feb - Jun	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Atriplex coulteri	Coulter's saltbush	- /S1S2/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, valley and foothill grassland; about 3-460 m.	Mar-Oct	**Not Likely to Occur;** Suitable habitat is not present in the BSA, nearest CNDDB record is approximately 4 miles to the northwest.
Atriplex pacifica	south coast saltscale	- /S2/1B.2	Coastal bluff scrub, coastal dunes, coastal scrub, playas; about 0-140 m.	Mar-Oct	**Not Likely to Occur;** Suitable habitat is not present in the BSA, nearest CNDDB record is approximately 3 miles to the southeast.
Atriplex parishii	Parish's brittlescale	- /S1/1B.1	Chenopod scrub, playas, vernal pools; about 25-1900 m.	Jun-Oct	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Atriplex serenana var. *davidsonii*	Davidson's saltscale	- /S1/1B.2	Coastal bluff scrub, coastal scrub; about 10-200 m.	Apr-Oct	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Calochortus catalinae	Catalina mariposa lily	- / - /4.2	Chaparral, cismontane woodland, coastal scrub, valley and foothill grassland; about 15-700 m.	(Feb) Mar-Jun	**Moderate;** Limited suitable habitat observed in the BSA. The species was not detectable at the time of the survey since the survey was conducted outside of its optimal blooming period.
Calystegia peirsonii	Peirson's morning glory	- / - /4.2	Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, valley and foothill grassland; about 30-1500 m.	Apr-Aug	**Low;** Limited suitable habitat is present in the BSA.

5 Special Status Species

Scientific Name	Common Name	Status Federal/ State/CNPS	General Habitat Description	Blooming Period	Potential for Occurrence
Camissoniopsis lewisii	Lewis' evening-primrose	- / - /3	Sandy or clay; coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, valley and foothill grassland; about 0-300 m.	Mar-May (Jun)	**Low;** Limited suitable habitat is present in the BSA.
Centromadia parryi ssp. *australis*	southern tarplant	- /S2/1B.1	Marshes and swamps (margins), valley and foothill grassland (vernally mesic), vernal pools; about 0-480 m.	May-Nov	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Centromadia pungens ssp. *laevis*	smooth tarplant	- /S2/1B.1	Occurs in chenopod scrub, meadows and seeps, playas, riparian woodland, and valley and foothill grasslands; alkaline soils.	Apr-Sep	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Chloropyron maritimum ssp. *maritimum*	salt marsh bird's-beak	FE/SE, S1/1B.2	Coastal strand, coastal salt marsh, wetland-riparian; about 0-30 m.	May-Oct (Nov)	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Cistanthe maritima	seaside cistanthe	- / - /4.2	Coastal bluff scrub, coastal scrub, valley and foothill grassland; about 5-300 m.	(Feb) Mar-(Jun) Aug	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Convolvulus simulans	small flowered morning glory	- / - /4.2	Clay, serpentinite seeps; chaparral (openings), coastal scrub, valley and foothill grassland; about 30-740 m.	Mar-Jul	**Low;** Limited suitable habitat is present in the BSA.
Crossosoma californicum	Catalina crossosoma	- /S3/2B.2	Chaparral, coastal scrub; about 0-500 m.	Feb - May	**Low;** Limited suitable habitat is present in the BSA.
Dithyrea maritima	beach spectaclepod	- /ST, S1/1B.1	Coastal strand, coastal sage scrub; about 3-50 m.	Mar- May	**Low;** Limited suitable habitat is present in the BSA.
Dudleya virens ssp. *insularis*	island green dudleya	- /S3/1B.2	Coastal bluff scrub, coastal scrub; about 5-300 m.	Feb-Jul (Sep)	**Low;** Limited suitable habitat is present in the BSA.

5 Special Status Species

Scientific Name	Common Name	Status Federal/ State/CNPS	General Habitat Description	Blooming Period	Potential for Occurrence
Horkelia cuneata var. *puberula*	mesa horkelia	- /S1/1B.1	Perennial herb; sandy or gravely soils in chaparral, woodlands, and coastal scrub. San Luis Obispo County south to San Diego County, from about 230 to 2,700 ft. elev.	Feb–Sept	**Moderate;** Limited suitable habitat is present in the BSA. Nearest CNDDB record is approximately 1.5 miles to the northwest. The survey was conducted at a time when the species would have been detectable (in bloom). The plant was not observed during the Survey.
Isocoma menziesii var. *decumbens*	decumbent goldenbush	- /S2/1B.2	Chaparral, coastal scrub (sandy, often in disturbed areas); about 10-135 m.	Apr- Nov	**Low;** Limited suitable habitat is present in the BSA. Nearest CNDDB record is approximately 7 miles to the east.
Lasthenia glabrata ssp. *coulteri*	Coulter's goldfields	- /S2/1B.1	Marshes and swamps (coastal salt), playas, vernal pools; about 1-1220 m.	Feb-Jun	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Leptosyne maritima	sea dahlia	- / - /2B.2	Coastal bluff scrub, coastal scrub; about 5-150 m.	Mar-May	**Low;** Limited suitable habitat is present in the BSA.
Lycium brevipes var. *hassei*	Santa Catalina Island desert-thorn	- /S1/3.1	Coastal bluff scrub, coastal scrub; about 65-300 m.	Jun (Aug)	**Low;** Limited suitable habitat is present in the BSA.
Lycium californicum	California box-thorn	- / - /4.2	Coastal bluff scrub, coastal scrub; about 5-150 m.	(Dec) Mar, Jun, Jul, Aug	**Low;** Limited suitable habitat is present in the BSA.
Nama stenocarpa	mud nama	- /S1S2/1B.2	Marshes and swamps (lake margins, riverbanks; about 5-500 m	Jan - Jul	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Navarretia prostrata	prostrate vernal pool navarretia	- /S2/1B.2	Coastal scrub, meadows and seeps, valley and foothill grassland alkaline), vernal pools; about 3-1210 m.	Apr - Jul	**Not Likely to Occur;** Suitable habitat is not present in the BSA.

5 Special Status Species

Scientific Name	Common Name	Status Federal/ State/CNPS	General Habitat Description	Blooming Period	Potential for Occurrence
Nemacaulis denudata var. *denudata*	coast woolly-heads	- /S2/1B.2	Coastal dunes; about 0-100 m.	Apr - Sep	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Pentachaeta lyonii	Lyon's pentachaeta	FE/SE, S1/ 1B.1	Chaparral, Coastal scrub, valley and foothill grassland; about 30-690 m.	(Feb) Mar-Aug	**Moderate;** Limited suitable habitat is present in the BSA. Nearest CNDDB record is approximately 1 mile to the east.
Phacelia hubbyi	Hubby's phacelia	- / - /4.2	Gravelly, rocky, talus; chaparral, coastal scrub, valley and foothill grassland; about 0-1000 m.	Apr-Jul	**Low;** Limited suitable habitat is present in the BSA.
Phacelia stellaris	Brand's star phacelia	- /S1/1B.1	Coastal dunes, coastal strand; about 1-400 m.	Mar-Jun	**Moderate;** Limited suitable habitat is present in the BSA. Nearest CNDDB record is approximately 1 mile to the northwest.
Suaeda esteroa	estuary seablite	- /S2/1B.2	Marshes and swamps (coastal salt); about 0-5 m.	(May) Jul-Oct (Jan)	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Suaeda taxifolia	wooly seablite	- / - /4.2	Coastal bluff scrub, coastal dunes, marshes and swamps (margins of coastal salt); about 0-50 m.	Jan - Dec	**Not Likely to Occur;** Suitable habitat is not present in the BSA.
Symphyotrichum defoliatum	San Bernardino aster	- /S2/1B.2	Cismontane woodland, coastal scrub, lower montane coniferous forest, meadows and seeps, marshes and swamps, valley and foothill grassland (vernally mesic)	Jul - Nov	**Low;** Limited suitable habitat is present in the BSA.
Sources: CNPS 2022, CNDDB 2022					

5 Special Status Species

Scientific Name	Common Name	Status Federal/ State/CNPS	General Habitat Description	Blooming Period	Potential for Occurrence
Federal Designation FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate Species for Listing CDFW State Designation State Ranking SE = State Endangered SR = State Rare ST = State Threatened S1 = Critically Imperiled S2 = Imperiled S3 = Vulnerable S4 = Apparently Secure S5 = Secure			California Rare Plant Rank (CRPR) 1A Plants considered by the CNPS to be extinct in California. 1B Plants rare, threatened, or endangered in California and elsewhere. 2B Plants presumed extinct in California but more common elsewhere. 3 Review List: Plants about which more information is needed 4 Plants of limited distribution – a watch list. .1 Seriously threatened in California (high degree/immediacy of threat). .2 Fairly threatened in California (moderate degree/immediacy of threat). .3 Not very threatened in California (low degree/ immediacy of threat or no current threats known).		

5.4 Special Status Wildlife

Special-status taxa include those listed as threatened or endangered under the federal or California Endangered Species Acts, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the BSA. No special-status wildlife species were either observed within or immediately adjacent to the BSA during the survey conducted in July 2018.

The CNDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the BSA occurs and the three surrounding quadrangles, as discussed above in Section 2.0 (refer to Appendix A, Figures 3a and 3b). The specific habitat requirements and the locations of known occurrences of each special-status wildlife taxa were the principal criteria used for inclusion in the list of taxa potentially occurring within the BSA. Table 4 summarizes the special-status wildlife taxa known to regionally occur and their potential for occurrence in the BSA; refer to Appendix A, Figures 3A and 3B for a graphical depiction of species locations. Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the Project Area based on the following criteria:

- Present: Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- High: Habitat (including soils) for the taxa occurs on site and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the Project Area) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- Moderate: Habitat (including soils) for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs on site; or the taxa's range includes the geographic area and suitable habitat exists.
- Low: Limited habitat for the taxa occurs on site and no known occurrences were found within the database search and the taxa's range includes the geographic area

Table 4. Known and Potential Occurrence of Special Status Wildlife within the BSA

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
INVERTEBRATES				
Bombus crotchii	Crotch bumble bee	- /S1S2/ -	This bee lives in grassland and scrub habitat types. It nests underground. Its food plants include milkweeds, dusty maidens, lupines, medics, phacelias, and sages.	**Low;** Marginally suitable habitat and preferred food plants occur within the BSA. The nearest recorded occurrence to the BSA is approximately 1.02 miles to the east.
Brennania belkini	Belkin's dune tabanid fly	- /S1S2/ -	Inhabits coastal sand dunes of southern California.	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 9 miles to the north of the BSA.
Cicindela gabbii	Western tidal-flat tiger beetle	- /SA/ -	Inhabits estuaries and mudflats along the coast of southern California; generally found on dark-colored mud in the lower zone; occasionally found on dry saline flats of estuaries.	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The BSA contains an ephemeral drainage with no estuaries or mudflats. The nearest recorded occurrence of this species to the BSA is approximately 7 miles northeast.
Cicindela hirticollis gravida	sandy beach tiger beetle	- /S2/ -	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco Bay to Northern Mexico; clean dry, light-colored sand in the upper zone. Subterranean larvae prefer mist sand not affected by wave action.	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The BSA is surrounded by residential and open space. The nearest and most recent recorded occurrence is approximately 5 miles north of the BSA.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Cicindela latesignata	western beach tiger beetle	- /S1/ -	Mudflats and beaches in coastal southern California.	**Not Likely to Occur;** No suitable beaches or coastal habitat in the BSA. The nearest and most recent recorded occurrence is approximately 4 miles east of the BSA.
Cicindela senilis frosti	senile tiger beetle	- /S1/ -	Inhabits marine shoreline, from central California coast south to salt marshes of San Diego, also found at Lake Elsinore. Inhabits dark-colored mud in the lower zone and dried salt pans in the upper zone.	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 9 miles north of the BSA.
Danaus plexippus plexippus pop. 1	monarch butterfly	FC/S2S3/ -	Winter roost sites extended along the coast from northern Mendocino to Baja California, Mexico; roosts located in wind-protected tree groves (eucalyptus, Monterey Pine, Cypress), with nectar and water sources nearby.	**Moderate;** Marginally suitable habitat and preferred roosting trees occur within the BSA. The nearest recorded occurrence is approximately 4 miles north of the BSA.
Euphilotes battoides allyni	El Segundo blue butterfly	FE/S1/ -	Restricted to remnant coastal dune habitat in southern California; host plant is E*riogonum parvifolium*; larvae feed only on the flowers and seeds; used by adults as major nectar source.	**Low;** No suitable habitat occurs within the BSA but may occur in adjacent areas. The nearest recorded occurrence of this species to the BSA is approximately 4 miles northwest.
Glaucopsyche lygdamus palosverdesensis	Palos Verdes blue butterfly	FE/S1/ -	Restricted to the cool, fog-shrouded, seaward side of Palos Verdes Hills, Los Angeles County.	**Low;** Suitable habitat does not occur within the BSA. The nearest and most recent recorded occurrence is 0.14 miles north of the BSA.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Glyptostoma gabrielense	San Gabriel chestnut	- /S2/ -	Rocky hillsides under plant debris, in rock piles, wood rat nests, and spaces beneath logs, stumps, and boulders	**Moderate;** marginally suitable habitat is present, but the species is unlikely to occur due to the developed residential conditions. The nearest and most recent recorded occurrence is approximately 1 mile east of the BSA.
Gonidea angulata	western ridged mussel	- /S1S2/ -	Inhabits creeks and rivers of all sizes and can be found on substrates varying from firm mud to coarse particles	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 9.5 miles east of the BSA.
Habroscelimorpha gabbii	western tidal-flat tiger beetle	- /S1/ -	Salty coastal habitats including salt marshes, tidal flats, beaches.	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 7 miles east of the BSA.
Rhaphiomidas terminatus terminatus	El Segundo flower-loving fly	- /S1/ -	Presumed extinct but recently discovered on Malaga dunes, Los Angeles County; perched dunes.	**Low;** Suitable habitat does not occur within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.2 miles to the west.
Streptocephalus woottoni	Riverside fairy shrimp	FE/S1S2/ -	Endemic to western riverside, orange, and San Diego counties in areas of tectonic swales/earth slump basins in grassland and coastal sage scrub; inhabits seasonally astatic pools filled by winter/spring rains. Hatch in warm water later in the season.	**Moderate;** Marginally suitable habitat occurs within the BSA. An ephemeral drainage is present with the BSA. The nearest recorded occurrence of this species to the BSA is approximately 5.5 miles north.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Tryonia imitator	mimic tryonia (California brackishwater snail)	- /S2/ -	Inhabits coastal lagoons, estuaries and salt marshes, from Sonoma County south to San Diego County; found only in permanently submerged areas in a variety of sediment types; able to withstand a wide range of salinities.	**Low;** No suitable habitat occurs within the BSA but may occur in adjacent areas. The nearest recorded occurrence of this species to the BSA is approximately 3 miles southeast.
FISH				
Siphateles bicolor mohavensis	Mohave tui chub	FE/SE, S1/FP	Endemic to the Mojave River Basin, adapted to alkaline, mineralized waters; needs deep pools, ponds, or slough-like areas, needs vegetation for spawning.	**Not Likely to Occur;** No suitable spawning habitat occurs within the BSA. Species is endemic to the Mojave River. The nearest recorded occurrence of this species to the BSA is approximately 2.7 miles to the northeast; this is a historic record that indicates the occurrence is a transplanted individual.
AMPHIBIANS				
Spea hammondii	western spadefoot	- /S3/SSC	Lives in a wide range of habitats; lowlands to foothills, grasslands, open chaparral, pine-oak woodlands. It prefers shortgrass plains, sandy or gravelly soil (e.g., alkali flats, washes, alluvial fans). It is fossorial and breeds in temporary rain pools and slow-moving streams (e.g., areas flooded by intermittent streams).	**Low;** Persisting aquatic habitat is not present in the BSA; this habitat may be present for short periods of the year during the rainy season if water persists. The nearest recorded occurrence is within the BSA, in 1959.
REPTILES				

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Anniella stebbinsi	Southern California legless lizard	- /S3/SSC	Generally, south of the transverse range, extending to northwestern Baja California, occurs in sandy or loose loamy soils under sparse vegetation; disjunct populations in the Tehachapi and Piute mountains in Kern County; variety of habitats; generally, in moist, loose soil, they prefer soils with a high moisture content.	**Low;** Marginally suitable habitat occurs within the BSA. The nearest and most recent recorded occurrence is approximately 3.5 miles north of the BSA.
Phrynosoma blainvillii	coast horned lizard	- /S3S4/SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes; open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	**Low;** Marginally suitable habitat and patched of loose soil occur within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 3 miles to the east.
BIRDS				
Accipiter striatus	sharp-shinned hawk	- / - / WL	Inhibit forest edge and are not found where trees are scarce or scattered, except on migration. Require dense forest, ideally with a closed canopy, for breeding. Favor forests that contain conifers and nest in stands of aspen in Colorado, oak-hickory forest in Missouri, and the hardwood forests of the East.	**Not Likely to Occur (nesting)/Low (Foraging);** No suitable breeding habitat is present in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Agelaius tricolor	tricolored blackbird	- /ST, S1S2/SSC	Highly colonial species, most numerous in central valley & vicinity, largely endemic to California; requires open water, protected nesting substrate, and foraging areas with insect prey within a few kilometers of colony.	**Not Likely to Occur (Nesting and Foraging);** The BSA is located within the known geographic range for this species, though suitable breeding and foraging habitat does not occur within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 5 miles to the northeast.
Ardea herodias	great blue heron	- / - /SA	Freshwater and saltwater habitats. Forage in grasslands and agricultural fields.	**Not Likely to Occur (Nesting and Foraging);** Marginally suitable plant species including grasslands occur within the BSA however, no suitable freshwater and saltwater habitat. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Circus hudsonius	northern harrier	- / - /SSC	Undisturbed tracts of wetlands and grasslands with low, thick vegetation. They breed in freshwater and brackish marshes, lightly grazed meadows, old fields, tundra, dry upland prairies, drained marshlands, high-desert shrubs, and riverside woodlands across Canada and the northern United States.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Campylorhynchus brunneicapillus sandiegensis	coastal cactus wren	- / - /SSC, BCC	Coastal sage scrub with tall opuntia cacti; some characteristic shrubs include flat-top buckwheat, California sagebrush, white sage, and black sage.	**Low (Nesting and Foraging);** Small pockets of suitable habitat occur within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Charadrius alexandrinus nivosus	western snowy plover	FE/ - /SSC, BCC	Breeds on coastal beaches from southern Washington to southern Baja California, Mexico. Breeding generally occurs above the high tide line on coastal beaches, sand spits, dune-backed beaches, sparsely vegetated dunes, beaches at creek and river mouths, and salt pans at lagoons and estuaries	**Not Likely to Occur (Nesting and Foraging);** No suitable coastal habitat occurs within the BSA but may occur in adjacent areas. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT/SE, S1/ -	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems; nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 7 miles to the northeast.
Coturnicops noveboracensis	yellow rail	- /S1S2/SSC	Breeding: emergent wetlands, grass or sedge marshes and wet meadows in freshwater situations. Non-breeding: grain fields in winter and when migrating. Winters in both freshwater and brackish marshes, as well as in dense, deep grass.	**Low (Nesting and Foraging);** limited suitable habitat is present within the BSA. The nearest and most recent recorded occurrence is approximately 9 miles northwest of the BSA.
Egretta thula	snowy egret	- / - /SA	Nest in thick vegetation in isolated places such as barrier islands, dredge-spoil islands, salt marsh islands, swamps, and marshes.	**Not Likely to Occur (Nesting)/Low (Foraging);** No suitable island or marsh habitat occur within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.6 miles to the east.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Empidonax traillii	willow flycatcher	- /SE/BCC	Willows or other shrubs near standing or running water. May breed in drier scrubby areas.	**Low (Nesting and Foraging);** No suitable riparian habitat occurs on site, however, may occur in adjacent areas. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Falco columbarius	merlin	- /FP/BCC	Breed in open and semi-open areas across northern North America; usually nests near forested openings, in fragmented woodlots, near rivers, lakes, or bogs, and on lake island	**Low (Nesting and Foraging);** No suitable habitat occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.6 miles to the east.
Falco peregrinus anatum	American peregrine falcon	Delisted/ - /WL	Riparian habitat; breeds in low- to moderate-elevation native forests lining the rivers and streams of the western United States.	**Low (Nesting and Foraging);** No suitable riparian habitat occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.6 miles to the east.
Gavia immer	common loon	- / - /SSC	Prefer lakes with coves and islands while resting and nesting. They also require lakes with enough surface area for their flapping-and-running takeoffs across the water.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Geothlypis trichas sinuosa	saltmarsh common yellowthroat	- / - /SSC, BCC	Breeds in salt marshes of the San Francisco Bay area, ranging from Tomales Bay to Carquinez Strait to San Jose. Non-breeding areas along California coast from the breeding range to San Diego, casual north to northern California	**Not Likely to Occur (Nesting and Foraging);** No suitable salt marsh habitat occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.6 miles to the east.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Haliaeetus leucocephalus	bald eagle	Delisted/FP/BCC	Nest in forested areas adjacent to large bodies of water, staying away from heavily developed areas when possible.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat with large bodies of water occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.6 miles to the east.
Hydroprogne caspia	Caspian tern	- / - /BCC	Breeds in wide variety of habitats along water, such as salt marshes, barrier islands, dredge spoil islands, freshwater lake islands, and river islands.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Numenius americanus	long-billed curlew	- / - /WL, BCC	Live in sparse short grasses during summer, including shortgrass and mixed-grass prairies as well as agricultural fields. After their young leave the nest, they may move to areas with taller, denser grasses.	**Not Likely to Occur (Nesting and Foraging);** Limited suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Pandion haliaetus	osprey	- / - /WL	Habitat includes almost any expanse of shallow, fish-filled water, including rivers, lakes, reservoirs, lagoons, swamps, and marshes.	**Low (Nesting and Foraging);** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Pelecanus occidentalis californicus	California brown pelican	- /S3/FP	Colonial nester on coastal islands just outside the surf line; nests on coastal islands of small to moderate size which afford immunity from attack by ground-dwelling predators. Roosts communally.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 7.7 miles to the southeast.
Phalacrocorax auritus	double-crested cormorant	- / - /WL	May roost and form breeding colonies on smaller lagoons or ponds.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Polioptila californica californica	coastal California gnatcatcher	FT/S2/SSC	Obligate, permanent resident of coastal sage scrub below 2500 feet in southern California; low, coastal sage scrub in arid washes, on mesas and slopes, not all classified as coastal sage scrub are occupied.	**Not Likely to Occur (Nesting)/Low (Foraging);** Suitable habitat does not occur in the BSA but may occur in adjacent areas. The nearest recorded occurrence of this species to the BSA is approximately 0.14 miles to the east.
Riparia riparia	bank swallow	- /ST, S2/ -	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert; requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**Low (Nesting and Foraging);** No suitable habitat occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 4.6 miles to the east.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Selasphorus rufus	Rufous hummingbird	- / - /BCC	Breed in open or shrubby areas, forest openings, yards, and parks, and sometimes in forests, thickets, swamps, and meadows from sea level to about 6,000 feet; wintering species live in oak, pine, and juniper woods at 7,500 to 10,000 feet elevation, shrubby areas, and thorn forests.	**High (Nesting and Foraging);** Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.6 miles to the east.
Sternula antillarum browni	California least tern	FE/SE, S2/FP	Nests along the coast from San Francisco Bay south to northern Baja California; colonial breeder on bare or sparsely vegetated, flat substrates: sand beaches, alkali flats, landfills, or paved areas.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 5 miles to the east.
Thalasseus elegans	elegant tern	- / - /WL	Coastal waters, occasionally ocean far from land. Breeds on low, flat, sandy islands.	**Not Likely to Occur (Nesting and Foraging);** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Thryomanes bewickii leucophrys	San Clemente Bewick's wren	- / - /SSC	Bushy areas, brushland, well-vegetated suburban areas, regenerating farmland	**Moderate (Nesting and Foraging);** Marginally suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
MAMMALS				

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Eumops perotis californicus	western mastiff bat	- /S3S4/SSC	Arid and semiarid, rocky canyon country habitats in the Chihuahuan Desert; roosts in crevices and shallow caves on the sides of cliffs and rock walls, and occasionally buildings.	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 9.2 miles to the north.
Lasionycteris noctivagans	silver-haired bat	- / - /SA	Primarily a coastal and montane forest dweller, feeding over streams, ponds & open brushy areas; roosts in hallow trees, beneath exfoliating bark, abandoned woodpecker holes, and rarely under rocks; needs drinking water.	**Moderate;** Marginally habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 mile to the west.
Neotoma lepida intermedia	San Diego desert woodrat	- /S3S4/SSC	Coastal scrub of southern California from San Diego County to San Luis Obispo County; moderate to dense canopies preferred, they are particularly abundant in rock outcrops, rocky cliffs, and slopes.	**Moderate;** Marginally suitable habitat occurs in the BSA. The nearest recorded occurrence of this species to the BSA is approximately 0.5 miles to the south.
Nyctinomops femorosaccus	pocketed free-tailed bat	- /S3/SSC	Variety of arid area in southern California; pine-juniper woodlands, desert scrub, palm; rocky areas with high cliffs.	**Low;** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 4.3 miles to the northeast.
Nyctinomops macrotis	big free-tailed bat	- /S3/SSC	Low-lying arid areas in southern California; need high cliffs or rocky outcrop for roosting sites. Feeds principally on large moths.	**Not Likely to Occur;** No suitable habitat occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 9.6 miles to the east.

Common Name	Scientific Name	Status Federal/ State/CDFW	General Habitat Description	Potential for Occurrence
Perognathus longimembris pacificus	pacific pocket mouse	FE/S1/SSC	Inhabits the narrow coastal plains from the Mexican border north to El Segundo, Los Angeles County; seems to prefer soils of fine alluvial sands near the ocean, but much remains to be learned.	**Low;** No suitable occurs within the BSA. The nearest recorded occurrence of this species to the BSA is approximately 5 miles to the north.

Federal Rankings:	State Rankings:
FE = Federally Endangered FT = Federally Threatened FC = Federal Candidate for Listing BCC = USFWS Bird of Conservation Concern Delisted = removed from federal listing	FP = Fully Protected SE= State Endangered ST = State Threatened SA = CDFW Special Animal SC = State Candidate for Listing WL = CDFW Watch List SSC = Species of Special Concern S1 = Critically Imperiled S2 = Imperiled S3 = Vulnerable S4 = Apparently Secure S5 - Secure

5.5 Wildlife Corridors and Special Linkages

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, and upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas, and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of Coast Range newts, California red-legged frogs, southwestern pond turtles, and two-striped garter snakes found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian "movement corridor" (Hunt, 1993; Rathbun et al., 1992; Bulger et al., 2002; Trentham, 2002; Ramirez, 2002, 2003a, 2003b). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark, 1995; Beier, 1993, 1995; Noss, et al., 1996; Noss et al., no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.

- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.

- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll, 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.

- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic

resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll, 1997).

Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent “choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).

5.5.1 WILDLIFE MOVEMENT WITHIN THE BSA

Immediately north of the BSA is the Portuguese Bend Reserve and Upper Filiorum Reserve creating a contiguous section of regionally important habitat areas and natural vegetation. While these contiguous habitat areas are an important corridor for all wildlife, the Portuguese Bend Reserve and Upper Filiorum Reserve include designated California gnatcatcher Critical Habitat. Altamira Canyon may also serve as a link for wildlife to pass through the study area; however, such movement is limited by existing residential land uses that are close to the drainage and the dominance of exotic woodlands within the drainage (Rancho Palos Verdes, 2011).

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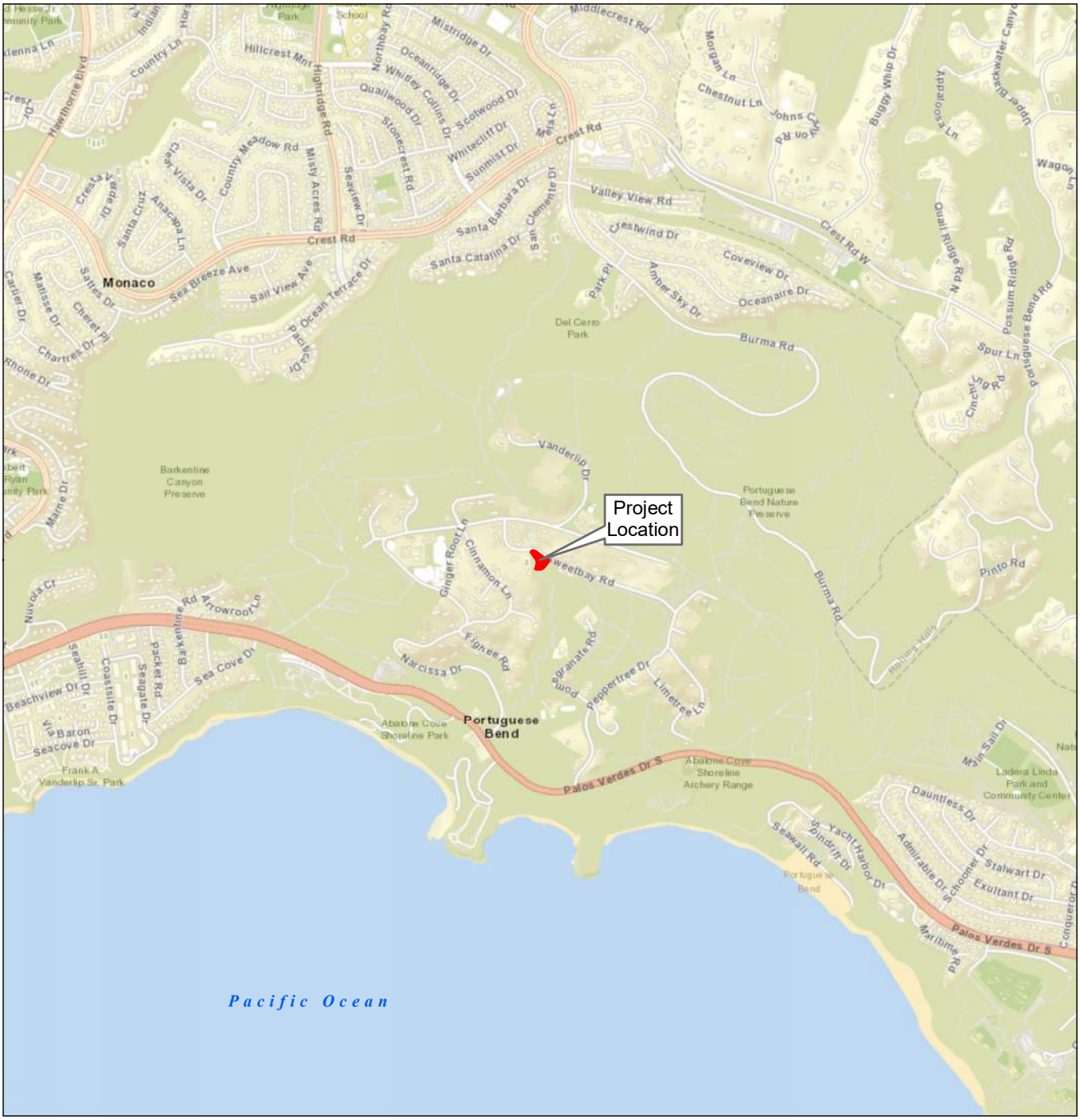
APPENDICIES

Appendix A Figures



Project Location

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Stantec

Project Location	Prepared by ABC on 2022-08-09
Rancho Palos Verdes, CA	TR by SET on 2022-08-09
	IR by JV on 2022-08-09
Client/Project	185804202
Petak Family Trust	
Altamira Canyon Creek Project	
Biological Resources Techincal Report	
Figure No.	
1	
Title	
Project Location	

Notes

1. Coordinate System: NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Data Sources: Stantec 2022.
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community
Esri, Garmin, GEBCO, NOAA NGDC, and other contributors

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BSA

Vegetation Communities and Land Cover Types

- Annual Brome Grasslands
- Disturbed/Developed
- Pepper Tree Groves

0 25 50 Feet

(At original document size of 8.5x11)
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Stantec

Project Location
Rancho Palos Verdes, CA

Prepared by ABC on 2022-08-09
TR by SET on 2022-08-09
IR by JV on 2022-08-09

Client/Project
185804202
Petak Family Trust
Altamira Canyon Creek Project
Biological Resources Techincal Report

Figure No.
2

Title
Vegetation Communities and Land Cover Types

Notes
1. Coordinate System: NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Data Sources: Stantec 2022.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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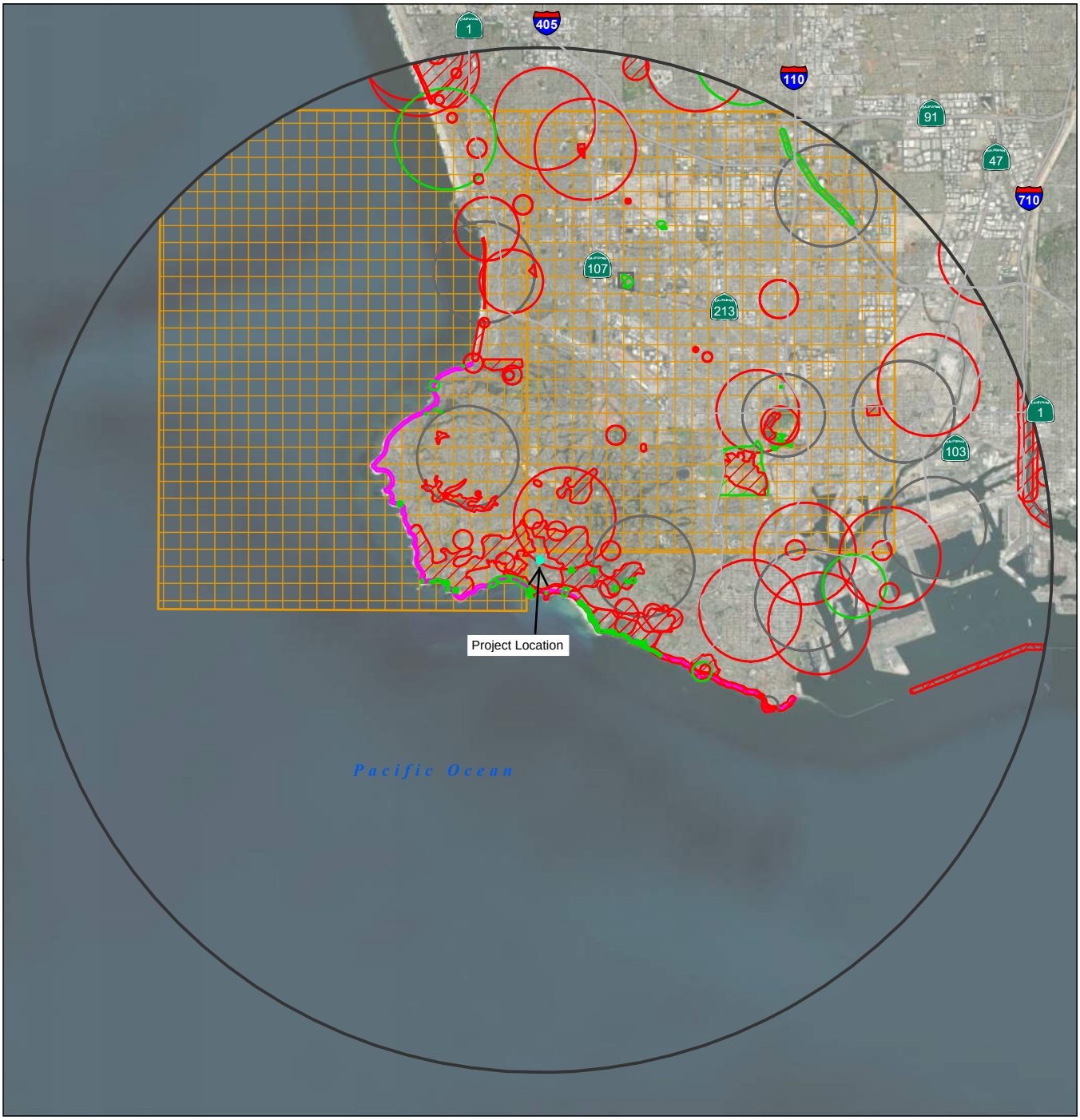

- Project Location
- 10 Mile Search Radius

CNDDB

- Plant (80m)
- Plant (specific)
- Plant (non-specific)
- Plant (circular)
- Animal (80m)
- Animal (specific)
- Animal (non-specific)
- Animal (circular)
- Terrestrial Comm. (non-specific)
- Multiple (non-specific)
- Multiple (circular)
- Sensitive EO's (Commercial only)

0 1.5 3 Miles

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Stantec

Project Location
Rancho Palos Verdes, CA

Prepared by ABC on 2022-08-09
TR by SET on 2022-08-09
IR by JV on 2022-08-09

Client/Project 185804202
Petak Family Trust
Altamira Canyon Creek Project
Biological Resources Techincal Report

Figure No.
3a

Title
CNDDB Species Occurrence Information - 10 Mile Radius

Notes
1. Coordinate System: NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Data Sources: Stantec 2022. CNDDB data from CDFW 2022.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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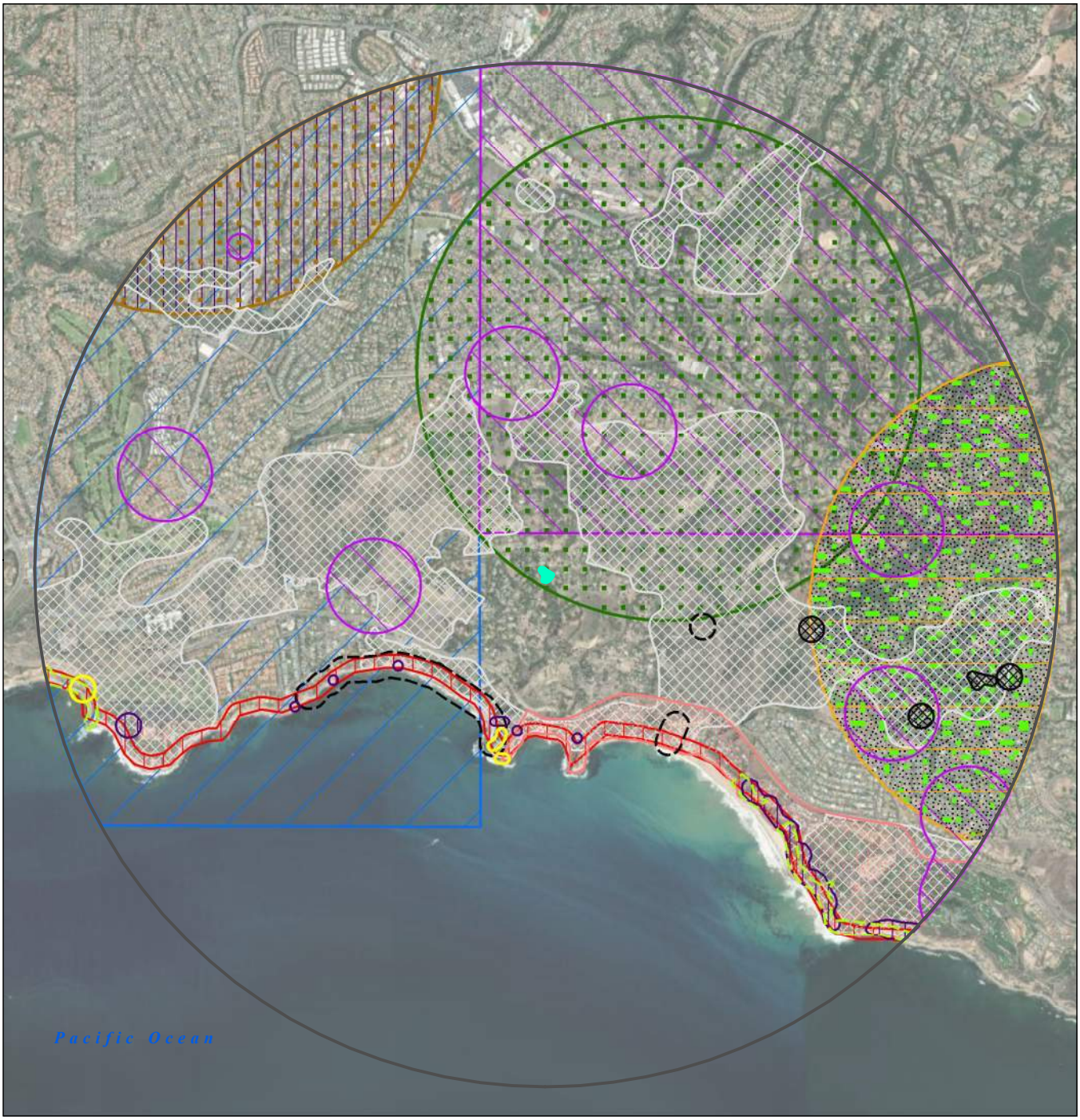

Project Location
2 Mile Search Radius

Plants
- Lyon's pentachaeta
- Catalina crossosoma
- mesa horkelia
- island green dudleya
- south coast saltscale
- Santa Catalina Island desert-thorn
- aphanisma

Wildlife
- Crotch bumble bee
- coastal California gnatcatcher
- San Gabriel chestnut
- El Segundo flower-loving fly
- San Diego desert woodrat
- western spadefoot
- Palos Verdes blue butterfly

Terrestrial Community
- Southern Coastal Bluff Scrub

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Stantec

Project Location
Rancho Palos Verdes, CA

Prepared by ABC on 2022-08-09
TR by SET on 2022-08-09
IR by JV on 2022-08-09

Client/Project 185804202
Petak Family Trust
Altamira Canyon Creek Project
Biological Resources Techincal Report

Figure No.
3b

Title
CNDDB Species Occurrence Information - 2 Mile Radius

Notes
1. Coordinate System: NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Data Sources: Stantec 2022. CNDDB from CDFW 2022.
3. Background: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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Appendix B Photographic Log

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC LOG	
Client: Petak Family Trust	**Job Number:** 185804202
Site Name: Altamira Canyon Creek	**Photographer:** J. Varonin and Ashleigh Townsend

Photo 1: July 24, 2018

View looking upstream at Altamjra Creek from the southern end of the BSA.

Photo 2: July 24, 2018

View looking downstream at Altamira Creek from the upstream extent of the BSA.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC LOG	
Client: Petak Family Trust	**Job Number:** 185804202
Site Name: Altamira Canyon Creek	**Photographer:** J. Varonin and Ashleigh Townsend

Photo 3: July 24, 2018

View looking downstream at Altamira Creek from the southern portion of the BSA.

Photo 4: July 24, 2018

View looking downstream from the top extent of a small drainage (originating from Sweetbay Rd.) that empties into Altamira Creek.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC LOG	
Client: Petak Family Trust	**Job Number:** 185804202
Site Name: Altamira Canyon Creek	**Photographer:** J. Varonin and Ashleigh Townsend

Photo 5: July 20, 2022

View looking upstream at Altamjra Creek from the southern end of the BSA facing northwest.

Photo 6: July 20, 2022

View looking upstream at Altamira Creek from Southern end of BSA facing north and taken from platform above creek.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC LOG	
Client: Petak Family Trust	**Job Number:** 185804202
Site Name: Altamira Canyon Creek	**Photographer:** J. Varonin and Ashleigh Townsend

Photo 7: July 20, 2022

View looking downstream at Altamira Creek from the upstream extent of the BSA.

Photo 8: July 20, 2022

View looking downstream at Altamira Creek from the southern portion of the BSA.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC LOG	
Client: Petak Family Trust	**Job Number:** 185804202
Site Name: Altamira Canyon Creek	**Photographer:** J. Varonin and Ashleigh Townsend
Photo 9: July 20, 2022	
	
View looking downstream from the top extent of a small drainage (originating from Sweetbay Rd.) that empties into Altamira Creek.	

Jurisdictional Wetlands/Waters Delineation Report

Altamira Canyon Creek Project

Original: September 14, 2018

Revised: October 3, 2018

Prepared for:

Petak Family Trust
25 Sweetbay Road
Rancho Palos Verdes, CA
90275

Prepared by:

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

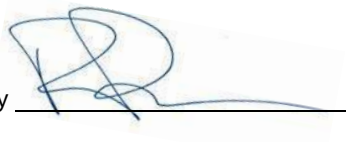
Sign-off Sheet

This document entitled Altamira Canyon Creek Project Jurisdictional Wetlands/Waters Delineation Report was prepared by Stantec Consulting Services Inc. (“Stantec”) for the account of the Petak Family Trust (the “Client”). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec’s professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Prepared by 

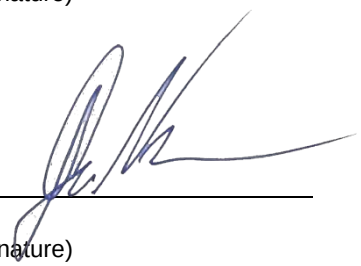
(signature)

Laura Butler, Staff Biologist

Reviewed by 

(signature)

Rocky Brown, Associate Biologist

Prepared and Approved by 

(signature)

Jared Varonin, Principal Biologist

Table of Contents

1.0 INTRODUCTION

1.1 PURPOSE OF THE REPORT

This report presents the findings of an investigation of potential jurisdictional features conducted by Stantec Consulting Services Inc. (Stantec) for the Altamira Canyon Creek Project (Project) in Rancho Palos Verdes, CA (refer to Appendix A, Figure 1). The assessment of jurisdictional wetlands, other "waters of the U.S.," waters of the State, and CDFW jurisdictional waters was conducted on 24 July 2018, by Stantec Associate Biologist Rocky Brown and Staff Biologist Laura Butler. The investigation included sections of Altamira Canyon Creek and a small tributary drainage abutting a portion of the Client's property utilized for equestrian purposes. This equestrian area, the adjacent sections of the subject drainages and immediately surrounding areas are defined as the Biological Study Area (BSA), which was the focus of this investigation (refer to Appendix A, Figure 2 for a depiction of the BSA). This assessment was conducted to determine the extent of resources under the jurisdiction of the USACE, RWQCB, and CDFW that occur within the BSA.

1.2 PROJECT LOCATION

As shown in Figure 1, the BSA is located within a rural residential community at 25 Sweetbay Road, Rancho Palos Verdes, CA. The BSA is located within the geographic sub-region known as the Palos Verdes Peninsula, within Los Angeles County, California, in the city of Palos Verdes (refer to Appendix A, Figure 1). It is situated in Township 35 North, Range 73 East of the U.S. Geographical Survey (USGS) San Pedro 7.5-minute topographic quadrangle.

1.3 PROJECT DESCRIPTION

In 2015, in response to approximately two decades of severe erosion of their property resulting from high storm flows within Altamira Canyon Creek and adjacent drainages, the owners of the subject property installed gabion baskets along the eastern bank of Altamira Canyon Creek and northern bank of an unnamed drainage. The purpose of installing these structures was to to prevent further loss of property and protect the animals in the equestrian facilities immediately abutting the drainages. These rock-filled, wire mesh baskets, along with concrete footings armored the eroding eastern bank and served to protect the bank from further high flow events. The gabions were installed based on recommendations from the City of Rancho Palos Verdes after an assessment of hydrological conditions within the watershed. The property owner, without realizing they were required by certain regulatory agencies, did not seek the necessary permits from the United States Army Corps of Engineers (USACE), Los Angeles Regional Water Quality Control Board (LARWQCB), and California Department of Fish and Wildlife (CDFW). Subsequently, after site visits by the USACE and LARWQCB, a notice of violation for failure to obtain a Section 401 Water Quality Certification was issued. The property owner was directed to conduct required biological and engineering studies to support the regulatory permitting process.

2.0 EXISTING SITE CONDITIONS

2.1 TOPOGRAPHY AND SURROUNDING LAND USES

The BSA is located within Los Angeles County, California, in the city of Palos Verdes (refer to Appendix A, Figure 1). It is situated in Township 35 North, Range 73 East of the U.S. Geographical Survey (USGS) San Pedro 7.5-minute topographic quadrangle. Land uses surrounding the BSA are limited to rural residential and open space. Elevations range from approximately 300 feet above mean sea level (amsl) to approximately 500 feet amsl.

2.2 VEGETATION

Within the BSA, Stantec biologists mapped two plant communities defined by Sawyer et al. (2009) and one additional land cover type. These are described further in Section 4.2.1 below. Figure 2 (Appendix A) illustrates the land cover types occurring in the BSA.

Annual Brome Grasslands

Non-native grasslands, dominated by brome species (*Bromus* sp.), occur within the dry channel of Altamira Canyon Creek and along the western bank. Other non-native annual herbaceous species (including other grasses) are also common within this community, including short pod mustard (*Hirschfeldia incana*), sow thistle (*Sonchus oleraceus*), and wild oats (*Avena fatua*). Sparsely interspersed within this community are native shrubs common to adjacent areas of native scrub including toyon (*Heteromeles arbutifolia*) coyote bush (*Baccharis pilularis*). Approximately 0.13 acre of this community occurs within the BSA.

Pepper Tree Groves

This community occurs along the eastern and southern edges of the BSA. This area is dominated by Peruvian pepper trees (*Schinus molle*) with gum trees (*Eucalyptus* sp.) a near co-dominant species in some areas. This community has a mixture of non-native grasses and forbs consistent within the understory including smilo grass (*Stipa miliacea*), bitter dock (*Rumex obtusifolius*), and garden nasturtium (*Tropaeolum maju*). Approximately 0.09 acre of this community occurs within the BSA.

Disturbed/Developed

This classification was used to map portions of the BSA that are developed, primarily existing paved roadways (Sweetbay Road), livestock corrals and facilities, and concrete lined portions of Altamira Canyon Creek. Where vegetated, these areas are generally composed of ornamental species, citrus trees (*Citrus* sp.) Peruvian pepper trees, and gum trees. Approximately 0.39 acre of this land cover type occurs within the BSA.

2.3 CLIMATE

The Rancho Palos Verdes area has a Mediterranean climate characterized by mild winters, when most rainfall occurs, and warm, dry summers. Average summer high and low temperatures (July) in the general area are 74°F (23°C) and 61°F (16°C), respectively. Average winter high and low temperatures (January) are 63°F (17°C) and 45°F (7°C),

respectively. Rainfall averages approximately 12 inches (0.30 meters) per year. The region typically receives an average annual rainfall of 18.67 inches, with temperatures ranging from approximately 55-71 degrees Fahrenheit (http://www.wrcc.dri.edu, accessed August 21, 2018).

2.4 HYDROLOGY AND GEOMORPHOLOGY

The BSA is located on the Palos Verdes Peninsula. Since the Rancho Palos Verdes Peninsula is a single hill formation, a central ridge disperses drainage in a number of small watershed systems. However, no major watershed systems are completely confined within the boundaries of Rancho Palos Verdes. All surface waters originate from precipitation that falls on the peninsula (City of Rancho Palos Verdes, 1975). The drainage pattern flows in several directions as a result of the central ridge. The majority of the runoff flows directly south into the Pacific Ocean. The remaining runoff flows east through San Pedro, north through Rolling Hills and Rolling Hills Estates, or west through Palos Verdes Estates. All runoff, however, eventually flows into the Pacific Ocean. The project area is part of an approximately 855-acre watershed that includes developed and undeveloped land. Offsite areas to the north of the project area include existing Tracts 27789, 31617 and 31714, as well as natural hillside and canyon open space areas. Altamira Canyon is the main natural drainage course that drains the project area and offsite tributary areas. [City of Rancho Palos Verdes, 2012]

2.5 GEOLOGY

Regional Geology

As described in the Rancho Palos Verdes General Plan Natural Environment Element, the Palos Verdes Peninsula is underlain by a sequence of middle Miocene and younger bedded sedimentary rocks that are draped anticlinally over a core of Mesozoic schist “basement rocks.” Both the schist and sedimentary rocks have been intruded by irregular masses of basaltic volcanic rocks. A series of marine terrace benches developed across the rocks of the Peninsula during late Pleistocene and Holocene geologic time (the last few hundred thousand years) and both sandy marine terrace deposits and overlying deposits of landward origin occupy these benches. The landscape in parts of the region has been significantly modified by the movement of massive landslides during the time interval between formation of the oldest terraces and the present (Rancho Palos Verdes General Plan, 1975). The peninsula has been uplifted by movement on two sub-parallel bounding faults, the Palos Verdes fault on the northeast and the San Pedro fault offshore on the southwest. [Rancho Palos Verdes, 2012a]

The faulting and seismicity of Southern California is dominated by the compressionary regime associated with the “Big Bend” of the San Andreas Fault Zone. The San Andreas Fault Zone separates two of the major tectonic plates that comprise the Earth’s crust. The Pacific Plate lies west of the San Andreas Fault Zone. The North American Plate lies east of the San Andreas Fault Zone. The relative movement between the two plates is the driving force of fault ruptures in the region. The San Andreas Fault generally trends northwest-southeast. However, north of the Transverse Ranges Province, the fault trends in an east-west direction (the Big Bend), causing the fault’s right-lateral strike-slip movement to produce north-south compression between the two plates. This compression has produced rapid uplift of many of the mountain ranges in Southern California. North-south compression in southern California has been estimated to be 5 to 20 millimeters per year (SCEC, 1995). [City of Rancho Palos Verdes, 2012a]

Local Geology

The project area is located on Middle Miocene to Early Pliocene Monterey formation, which constitutes the exposed bedrock over most of the Palos Verdes Peninsula. The Altamira Shale Member of the Monterey formation is the lowest of three distinct phases of the Monterey formation in the area and is the source of the Ancient Portuguese Bend Landslide (APBL), and all subsequent landslides within the APBL including the Recent Portuguese Bend Landslide (PBL) and the Abalone Cove Landslide (ACL). The Altamira Shale is further subdivided into three distinct lithofacies, or zones of distinct deposition and thus rock types. These are the Portuguese Tuff, the Cherty Lithofacies and the Phosphatic Lithofacies. Of these three, the Portuguese Tuff is the most prominent and encountered unit in the area, and is typically used as a reference point in discussing stratigraphy. Because of its thickness, estimated between 50 feet and 75 feet, and its composition (an altered ash tuff to bentonite clay), it is also commonly considered to have the greatest potential to affect the slope stability of the local area (LGC Valley, Inc, 2011). [City of Rancho Palos Verdes, 2012b]

2.6 SOILS

Soils within the BSA were unable to be accessed due to the presence of gravel, cobble, and boulders. Prior to conducting the delineation, historic soils data from the Natural Resources Conservation Service (NRCS) was used to determine potential soil types that may occur within the BSA and included determining where hydric soils have historically occurred (refer to Appendix A, Figure 3). Characteristics of soils present on the site are summarized in Appendix C. Table 1 identifies the soils historically known to occur within the BSA. None of the soils listed in Table 1 appear on the NRCS hydric soils list.

Table 1. Historic Soil Units Occurring in the BSA

Map Unit Symbol	Map Unit Name	Description	Acres Within BSA
1168	Haploxerepts, 10 to 35 percent slopes	A soil that that is associated with landslides from 0 – 1,210 feet in elevation; parent material is mixed slide deposits derived mostly from calcareous shale; not prone to flooding; depth to water table is more than 80 inches; loam (0 – 20 inches), and channery loam (20 -79 inches).	0.43
1179	Zaca Ballast complex, 10 to 50 percent slopes	A soil that is associated with slump blocks and hillslopes from 180 – 1,250 feet in elevation; parent material is colluvium and/or slump block derived from calcareous shale; not prone to flooding; depth to water table is more than 80 inches; Zaca – clay loam (0 – 69 inches), Ballast – clay loam (0 - 7 inches), clay (7 – 22 inches), very channery clay loam (22 – 35 inches), and bedrock (35 – 44 inches).	0.17

3.0 REGULATORY BACKGROUND

The USACE Regulatory Program regulates activities pursuant to Section 404 of the federal Clean Water Act (CWA); the CCC regulates wetland habitats under the California Coastal Act; the CDFW regulates activities under California

Fish and Game Code Sections 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. Refer to Appendix E for additional details on regulatory authorities and background.

4.0 WATERS/WETLANDS DELINEATION

4.1 DELINEATION METHODOLOGY

This section describes the methods employed by Stantec during the survey conducted on 24 July 2018, to determine the extent of potentially jurisdictional wetlands and/or waters that occur within the BSA. Prior to conducting the field assessment, Stantec reviewed current and historic aerial photographs, detailed topographic maps, and soil maps of the BSA (USDA, 2018), the National Wetlands Inventory (USFWS, 2018), and local and state hydric soil lists (NRCS, 2018a and 2018b) to evaluate the potential active channels and wetland features that may occur in the BSA. During the field assessment, hydrophytic vegetation and hydrologic features were mapped using a global positioning system (GPS) unit and identified on aerial photographs (refer to Appendix A, Figure 4). Field maps were digitized using geographic information systems (GIS) technology and the total jurisdictional area for each regulatory jurisdiction was calculated.

Federal Wetlands/Waters

Jurisdictional non-wetland “waters of the U.S.” were delineated based on the limits of the ordinary high water mark (OHWM) as determined by changes in physical and biological features, such as bank erosion, deposited vegetation or debris, and vegetative characteristics. Where present, jurisdictional wetlands are delineated using a routine determination in accordance with the methods outlined in the USACE Wetland Delineation Manual (Environmental Laboratory, 1987) and the Arid West Supplement (Environmental Laboratory, 2011) and based on three wetland parameters: dominant hydrophytic vegetation, wetland hydrology, and hydric soils. See Tables 1 and 2 in Appendix D (Potential Geomorphic and Vegetative Indicators of Ordinary High Water Marks for the Arid West) for a list of key physical features used to determine the OHWM identified by the Arid West Manual.

CDFW Jurisdictional Waters

CDFW jurisdiction was delineated to the top of the banks of the channel and/or to the edge of contiguous riparian canopy/riparian habitat. For portions of the proposed BSA, the CDFW jurisdictional boundary mirrors the OHWM, though for the most part, the tops of the banks extend beyond the OHWM. Therefore, the total acreage of CDFW jurisdictional waters is greater than the combined acreage of federal jurisdictional waters/wetlands.

4.1.1.1 Wetland Vegetation

Vegetation percent cover was visually estimated for plant species in each of the four strata (tree, sapling/shrub, herb, and woody vine), and species in each stratum were ranked based on canopy dominance (USACE, 20016). Species with a total percent cover of at least 50 percent and species with 20 percent coverage within each stratum were recorded on the Field Data Sheets (50/20 Rule). Wetland indicator status was assigned to each dominant species using the USACE Arid West Regional Wetland Plant List (2016), the California subregion of the National List of Vascular Plant Species that Occur in Wetlands: 1996 National Summary (USFWS, 1997), and Wetland Plants of Specialized Habitats

in the Arid West (USACE 2007). If greater than 50 percent of the dominant species from all strata were Obligate, Facultative-Wetland, or Facultative species, the criteria for wetland vegetation was considered to be met (refer to Appendix D, Table 3). Plants observed within the BSA are listed below in Table 3, along with their wetland indicator status.

Table 3. Wetland Indicator Status of Plant Species Observed within the BSA

Scientific Name	Common Name	Wetland Indicator Status*
*Hirschfeldia incana***	short pod mustard	--
Agave sp.	agave	UPL
*Avena fatua***	wild oats	UPL
Baccharis pilularis	coyote bush	FAC
Bromus sp.**	brome grass	FACU/UPL
*Centaurea melitensis **	tocolate	--
*Centranthus ruber***	red valerian	--
Citrus sp.	orange tree	--
Eucalyptus sp.**	gum tree	--
*Euphorbia virgata***	leafy spurge	--
*Foeniculum vulgare***	sweet fennel	--
*Hedera helix***	english ivy	FACU
*Helminthotheca echioides***	bristly ox tongue	FAC
Heteromeles arbutifolia	toyon	--
*Lactuca serriola***	prickly lettuce	FACU
*Melilotus albus***	white sweet clover	FACU
*Nerium oleander***	oleander	--
*Nicotiana glauca***	tree tobacco	FAC
Pinus sp.**	pine tree	FAC/FACU
*Plumbago auriculata***	cape leadwort	UPL
*Ricinus communis***	castor bean	FACU
*Rumex obtusifolius***	bitter dock	FAC
*Salsola tragus***	Russian thistle	FACU
*Schinus molle***	peruvian pepper	FACU
*Sonchus oleraceus***	sow thistle	UPL
*Stipa miliacea***	smilo grass	--
*Tropaeolum majus***	garden nasturium	UPL

* Wetland Indicator Status codes are defined in Appendix D
** Non-native/invasive species

4.1.1.2 Wetland Hydrology

The presence of wetland hydrology was evaluated by recording the extent of observed primary and secondary indicators, as listed in Tables 4 and 5 of Attachment 4 (Environmental Laboratory, 2011). Wetland hydrology indicators are divided into two categories (primary and secondary indicators) and presence of one primary indicator from any of the groups is considered evidence of wetland hydrology. If only secondary indicators are present, two or more must be observed to conclude presence of wetland hydrology. Indicators are intended to be one-time observations of site conditions representing evidence of wetland hydrology when hydrophytic vegetation and hydric soils are present (Environmental Laboratory, 2011).

4.1.1.3 Wetland Soils

Soils data from the NRCS was referenced to determine if hydric soils have been previously documented and/or historically occurred in or near the Study Area. Based on this review hydric soils were not expected to occur within the BSA. Appendix D, Tables 6 and 7, includes a complete list of hydric soils indicators. A total of two soil test pits were excavated within distinct locations in the BSA; the locations of each soil test pit are depicted on Figure 4 (Appendix A). A routine small area, the type of delineation chosen for this site (based on USACE guidance), requires a soil test pit within each distinct habitat type in the area to be surveyed.

4.2 RESULTS

Two types of jurisdictional features were recorded within the BSA. These included USACE/RWQCB non-wetland waters of the U.S. and CDFW jurisdictional waters, as summarized in Table 2 and Figure 4 (refer to Appendix A). According to the NRCS Hydric Soils List, no hydric soil associations have been historically mapped in the BSA (refer to Section 2.6 above); soil pits dug within the BSA confirmed the absence of hydric soils within portions of the BSA. Vegetation occurring at the soil pit locations did not satisfy the 50/20 Rule required to meet the hydrophytic vegetation threshold; therefore, the wetland vegetation criteria was not met. The National Wetlands Inventory has mapped Riverine (R4SBA;) habitat within portions of the BSA; data is dated March 2006.

The impact acreages presented below in Table 2 were calculated using an estimated 4-foot wide impact area related to the installation of the gabion baskets discussed above in Section 1.3. Based on a review of site photos prior to the installation of the baskets, and information from the property owner, it was determined that conditions within the installation areas consisted of near vertical banks. Therefore, the installed baskets and associated footings, approximately 4-feet wide in total, were installed from the vertical banks outward towards the main channel. This area is shown on Figure 4 (Appendix A) as the extension of USACE Waters of the U.S. prior to construction.

Table 2. Acreage of Potential Jurisdictional Waters and Wetlands within the BSA*

Drainage Feature/Type	USACE/RWQCB Non-Wetland Waters (acres)*		CDFW Jurisdictional Waters (acres)*		Cowardin Type
	BSA	Project Impact Area	BSA	Project Impact Area	
Altamira Canyon Creek	0.110	0.018	0.137	0.018	R4SBA**
Unnamed Tributary	0.027	0.005	0.043	0.005	R4SBA**
Totals	0.137	0.023	0.180	0.023	R4SBA**

* Acreages reported for the BSA represent the estimated total acreage of jurisdiction prior to installation of the Project.
** Riverine, Intermittent, Streambed, Temporary Flooded

Federal Non-Wetlands Waters

Based on Stantec's professional opinion following an assessment of hydrology, soil characteristics, vegetation, and the limits of the OHWM, an approximate total of 0.137 (estimated pre-project extent of waters) acre of non-wetland waters of the United States are estimated to have occurred within the BSA, with approximately 0.023 acre impacted by the Project;. Hydrologic indicators observed during the delineation within the BSA included Sediment Deposits (B2) and Drift Deposits (B3); refer to Appendix D for detailed information on these and other indicators.

Federal Wetlands

Based on Stantec's professional opinion following an assessment of hydrology, vegetation, and soils, no portion of the BSA satisfies the criteria to be considered wetlands (Environmental Laboratory, 1987 and 2008).

CDFW Jurisdictional Waters

Based on Stantec's professional opinion following an assessment of hydrology and the presence of bed and bank, there is a total of 0.180 acre of CDFW Jurisdictional Waters present within the BSA (estimated pre-project conditions), approximately 0.023 acre of which is estimated to have been impacted by the Project.

5.0 SUMMARY AND CONCLUSIONS

The BSA supports USACE/RWQCB non-wetland waters and CDFW jurisdictional waters. Surface water was not present within Altamira Canyon Creek during the survey event; however, based on Stantec's professional opinion following an assessment of hydrology, soil characteristics, vegetation, and the limits of the OHWM, there is approximately 0.137 acre of non-wetland waters of the United States present within the BSA. The Project is estimated to have impacted approximately 0.023 acre of non-wetland waters of the United States.

No portion of the BSA meets at the three criteria for federal wetlands (dominance of hydrophytic vegetation, evidence of wetland hydrology, and hydric soils). Following an assessment of hydrology and the presence of bed and bank, it was estimated that there are A total of 0.180 acre of CDFW jurisdictional waters is present in the BSA, and approximately 0.023 acre of CDFW jurisdictional waters is estimated to have been impacted by the Project.

Project-related impacts to jurisdictional areas will require the Project proponent to procure after-the-fact regulatory permits from the USACE, CDFW, and RWQCB. These include Clean Water Act Section 401 and 404 and CDFW Lake and Streambed Alteration Agreement permits.

The conclusions presented above represent Stantec's professional opinion based on our knowledge and experience with the applicable regulatory agencies, including their technical guidance documents and manuals. However, the USACE, CDFW, and RWQCB have final authority in determining the status and presence of jurisdictional wetlands/waters and the extent of their boundaries.

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APPENDIX A

Figures

Biological Survey Area

N

0 850 1,700 Feet

1:20,000 (At original document size of 8.5x11)

Notes
1. NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Stantec

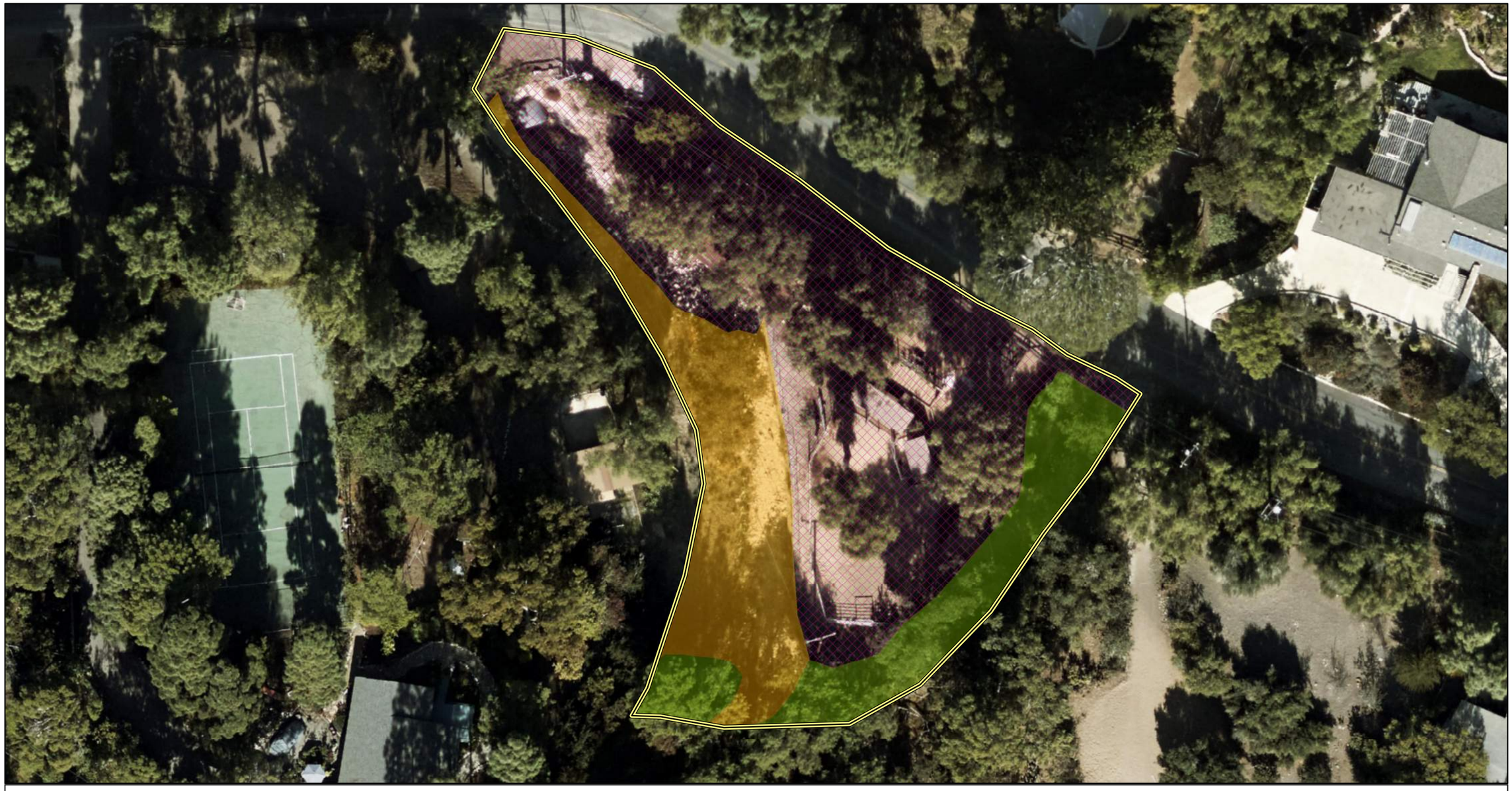
Project Location
Rancho Palos Verdes, CA

Prepared by JV on 2018-09-11
Technical Review by RB on 2018-09-12
Independent Review by JV on 2018-09-12

Client/Project
Petak Family Trust
Altamira Canyon Creek Project
Jurisdictional Delineation Report

Figure No.
1

Title
Project Location



Biological Survey Area

Type

- Annual Brome Grasslands
- Disturbed/Developed
- Pepper Tree Groves

N

0 10 20 Feet

1:419 (At original document size of 8.5x11)

Notes
1. NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Stantec

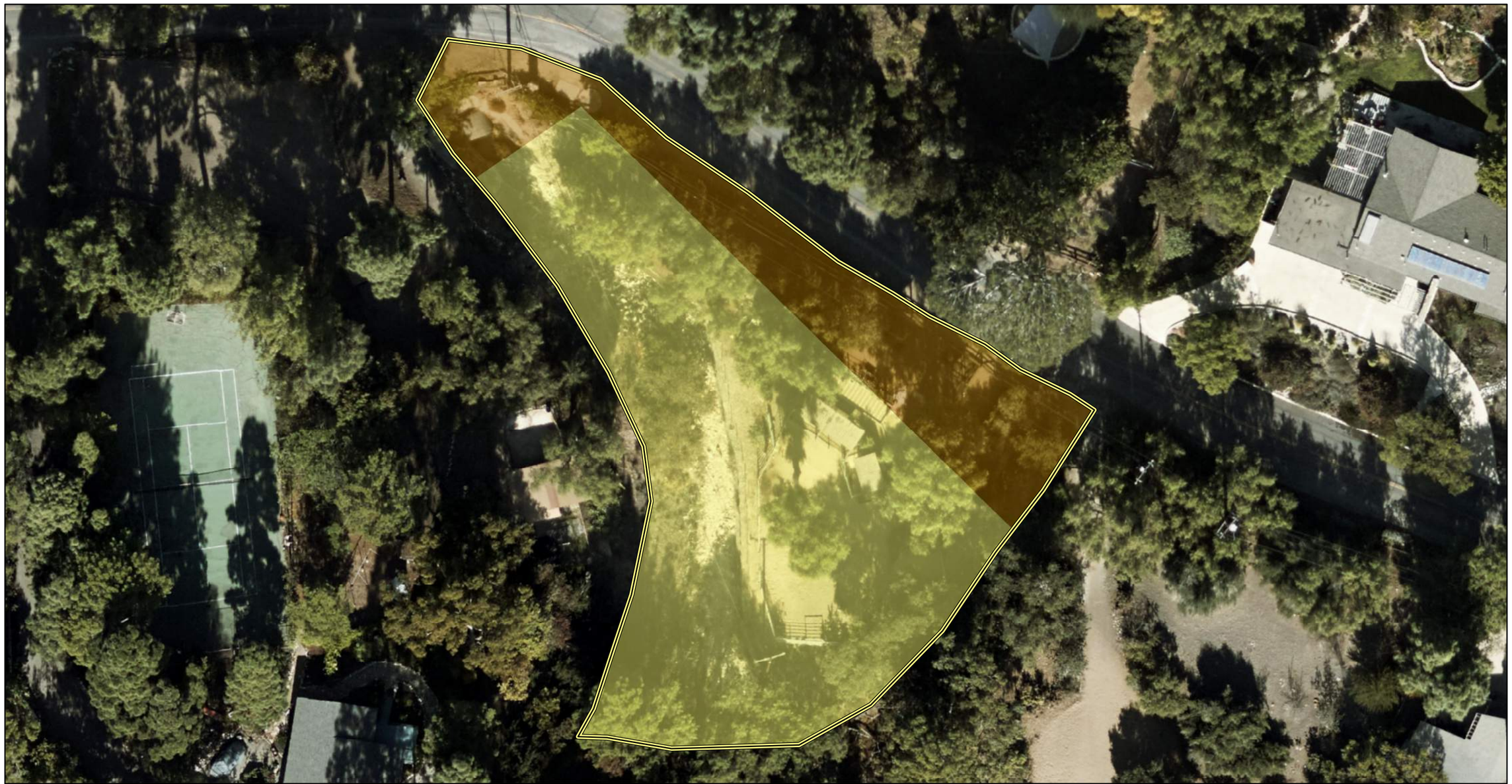
Project Location
Rancho Palos Verdes, CA

Prepared by JV on 2018-09-11
Technical Review by RB on 2018-09-12
Independent Review by JV on 2018-09-12

Client/Project
Petak Family Trust
Altamira Canyon Creek Project
Jurisdictional Delineation Report

Figure No.
2

Title
Vegetation Communities and Land Cover Types



Biological Survey Area

MUSYM

1168

1179

N

0 10 20 Feet

1:412 (At original document size of 8.5x11)

Notes

1. NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
3. MUSYM - Refer to Section 2 of the Jurisdictional Delineation Report for more information on MUSYM in the Survey Area.

Stantec

Project Location

Rancho Palos Verdes, CA

Prepared by JV on 2018-09-11
Technical Review by RB on 2018-09-12
Independent Review by JV on 2018-09-12

Client/Project

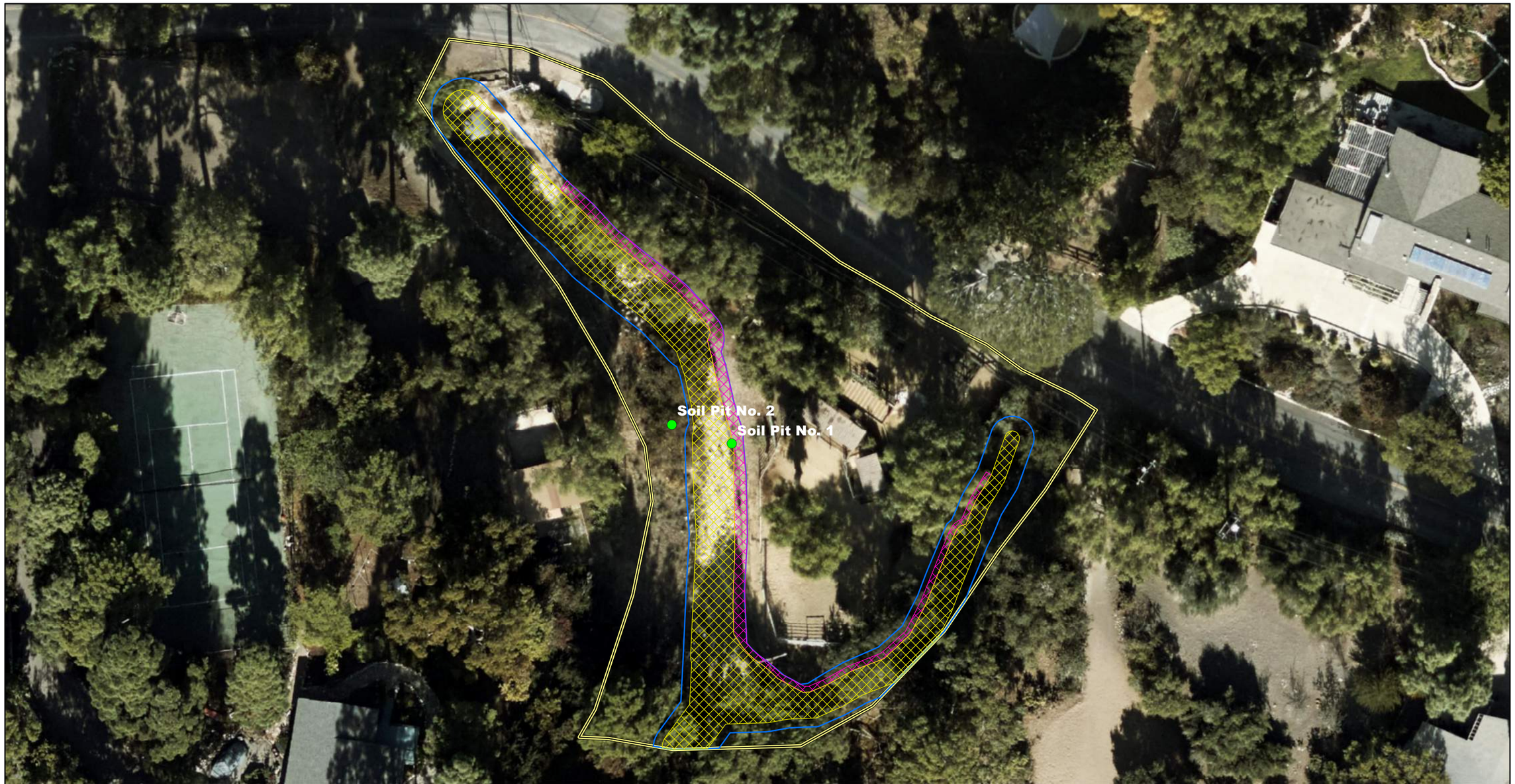
Petak Family Trust
Altamira Canyon Creek Project
Jurisdictional Delineation Report

Figure No.

3

Title

Historic Soil Types



- Soil Pits
- USACE Waters of the U.S. (Current Conditions; 0.114 acres)
- USACE Waters of the U.S./Impact Area (Extent of Waters of the U.S. Prior to Construction; 0.023 acres)
- CDFW Waters (0.180 acres)
- Biological Survey Area

N

0 10 20 Feet

1:413 (At original document size of 8.5x11)

Notes
1. NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
3. MUSYM - Refer to Section 2 of the Preliminary Jurisdictional Delineation Report for more information on MUSYM in the Survey Area.

Stantec

Project Location

Rancho Palos Verdes, CA

Prepared by JV on 2018-09-11
Technical Review by RB on 2018-09-12
Independent Review by JV on 2018-09-12

Client/Project

Petak Family Trust
Altamira Canyon Creek Project
Jurisdictional Delineation Report

Figure No.

4

Title

Jurisdictional Waters

APPENDIX B

Site Photographs

STANTEC CONSULTING SERVICES INC.
PHOTOGRAPHIC LOG

Client: Petak Family Trust	**Job Number:** 185804202
Site Name: Altamira Canyon Creek	**Photographer:** J. Varonin

Photo 1: July 24, 2018

View looking upstream at Altamira Canyon Creek from the southern end of the BSA.

Photo 2: July 24, 2018

View looking downstream at Altamira Canyon Creek from the upstream extent of the BSA.

STANTEC CONSULTING SERVICES INC. PHOTOGRAPHIC LOG	
Client: Petak Family Trust	**Job Number:** 185804202
Site Name: Altamira Canyon Creek	**Photographer:** J. Varonin

Photo 3: July 24, 2018

View looking downstream at Altamira Canyon Creek from the southern portion of the BSA.

Photo 4: July 24, 2018

View looking downstream from the top extent of a small tributary drainage (originating from Sweetbay Rd.) that empties into Altamira Canyon Creek.

APPENDIX C

Historic Soils Information

Los Angeles County, California, Southeastern Part

1168—Haploxerepts, 10 to 35 percent slopes

Map Unit Setting

National map unit symbol: 2w62h
Elevation: 0 to 1,210 feet
Mean annual precipitation: 13 to 17 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 360 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Haploxerepts and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Haploxerepts

Setting

Landform: Landslides
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Parent material: Mixed slide deposits derived mostly from calcareous shale

Typical profile

A - 0 to 7 inches: loam
Bw1 - 7 to 20 inches: loam
Bw2 - 20 to 37 inches: channery loam
Bw3 - 37 to 79 inches: channery loam

Properties and qualities

Slope: 10 to 35 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: Moderate (about 8.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Lunada

Percent of map unit: 10 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

1179—Zaca-Ballast complex, 10 to 50 percent slopes

Map Unit Setting

National map unit symbol: 2w61z
Elevation: 180 to 1,250 feet
Mean annual precipitation: 14 to 16 inches
Mean annual air temperature: 62 to 64 degrees F
Frost-free period: 360 to 365 days
Farmland classification: Not prime farmland

Map Unit Composition

Zaca and similar soils: 65 percent
Ballast and similar soils: 20 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Zaca

Setting

Landform: Slump blocks, hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave, convex
Across-slope shape: Concave, convex
Parent material: Colluvium and/or slump block derived from calcareous shale

Typical profile

A1 - 0 to 11 inches: clay loam
A2 - 11 to 16 inches: clay loam
Bss - 16 to 37 inches: clay loam
Bk1 - 37 to 53 inches: clay loam
Bk2 - 53 to 69 inches: clay loam

Properties and qualities

Slope: 10 to 50 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very high

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 8 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.0 mmhos/cm)
Available water storage in profile: High (about 9.9 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Ballast

Setting
Landform: Slump blocks, hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Colluvium and/or slump block derived from calcareous shale

Typical profile
A - 0 to 7 inches: clay loam
Btk1 - 7 to 22 inches: clay
Btk2 - 22 to 35 inches: very channery clay loam
R - 35 to 44 inches: bedrock

Properties and qualities
Slope: 10 to 50 percent
Depth to restrictive feature: 24 to 49 inches to lithic bedrock
Natural drainage class: Moderately well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low to low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 25 percent
Salinity, maximum in profile: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water storage in profile: Low (about 5.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Calcic pachic haploxerolls, clay loam
Percent of map unit: 5 percent
Landform: Hillslopes

Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Lunada

Percent of map unit: 5 percent
Landform: Canyons
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Oceanaire

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

APPENDIX D

Arid West Indicator Tables

Table 1. Potential Geomorphic Indicators of Ordinary High Water Marks for the Arid West

(A) Below OHW	(B) At OHW	(C) Above OHW
1. In-stream dunes 2. Crested ripples 3. Flaser bedding 4. Harrow marks 5. Gravel sheets to rippled sands 6. Meander bars 7. Sand tongues 8. Muddy point bars 9. Long gravel bars 10. Cobble bars behind obstructions 11. Scour holes downstream of obstructions 12. Obstacle marks 13. Stepped-bed morphology in gravel 14. Narrow berms and levees 15. Streaming lineations 16. Desiccation/mud cracks 17. Armored mud balls 18. Knick Points	1. Valley flat 2. Active floodplain 3. Benches: low, mid, most prominent 4. Highest surface of channel bars 5. Top of point bars 6. Break in bank slope 7. Upper limit of sand-sized particles 8. Change in particle size distribution 9. Staining of rocks 10. Exposed root hairs below intact soil layer 11. Silt deposits 12. Litter (organic debris, small twigs and leaves) 13. Drift (organic debris, larger than twigs)	1. Desert pavement 2. Rock varnish 3. Clast weathering 4. Salt splitting 5. Carbonate etching 6. Depositional topography 7. Caliche rubble 8. Soil development 9. Surface color/tone 10. Drainage development 11. Surface relief 12. Surface rounding

Table 2. Potential Vegetation Indicators of Ordinary High Water Marks for the Arid West

	(D) Below OHW	(E) At OHW	(F) Above OHW
Hydroriparian indicators	1. Herbaceous marsh species 2. Pioneer tree seedlings 3. Sparse, low vegetation 4. Annual herbs, hydromesic ruderals 5. Perennial herbs, hydromesic clonals	1. Annual herbs, hydromesic ruderals 2. Perennial herbs, hydromesic clonals 3. Pioneer tree seedlings 4. Pioneer tree saplings	1. Annual herbs, xeric ruderals 2. Perennial herbs, non-clonal 3. Perennial herbs, clonal and non-clonal co-dominant 4. Mature pioneer trees, no young trees 5. Mature pioneer trees w/upland species 6. Late-successional species
Mesoriparian Indicators	6. Pioneer tree seedlings 7. Sparse, low vegetation 8. Pioneer tree saplings 9. Xeroriparian species	5. Sparse, low vegetation annual herbs, hydromesic 6. ruderals 7. Perennial herbs, hydromesic clonals 8. Pioneer tree seedlings 9. Pioneer tree saplings 10. Xeroriparian species 11. Annual herbs, xeric ruderals	7. Xeroriparian species 8. Annual herbs, xeric ruderals 9. Perennial herbs, non-clonal 10. Perennial herbs, clonal and non-clonal codominent 11. Mature pioneer trees, no young trees 12. Mature pioneer trees, xeric understory 13. Mature pioneer trees w/upland species 14. Late-successional species 15. Upland species
Xeroriparian indicators	10. Sparse, low vegetation 11. Xeroriparian species 12. Annual herbs, xeric ruderals	12. Sparse, low vegetation 13. Xeroriparian species 14. Annual herbs, xeric ruderals	16. Annual herbs, xeric ruderals 17. Mature pioneer trees w/upland species 18. Upland species

Table 3. Summary of Wetland Indicator Status

Category		Probability
Obligate Wetland	OBL	Almost always occur in wetlands (estimated probability >99%)
Facultative Wetland	FACW	Usually occur in wetlands (estimated probability of 67–99%)
Facultative	FAC	Equally likely to occur in wetlands/non-wetlands (estimated probability of 34–66%)
Facultative Upland	FACU	Usually occur in non-wetlands (estimated probability 67–99%)
Obligate Upland	UPL	Almost always occur in non-wetlands (estimated probability >99%)
Non-Indicator	NI	No indicator status has been assigned

Source: Reed, 1988; USFWS, 1997; USACE, 2012.

Table 4. Wetland Hydrology Indicators*

Primary Indicators	Secondary Indicators
Watermarks	Oxidized Rhizospheres Associated with Living Roots
Water-Borne Sediment Deposits	FAC-Neutral Test
Drift Lines	Water-Stained Leaves
Drainage Patterns Within Wetlands	Local Soil Survey Data

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 5. Wetland Hydrology Indicators for the Arid West*

	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)
Group A – Observation of Surface Water or Saturated Soils		
A1 – Surface Water	X	
A2 – High Water Table	X	
A3 – Saturation	X	
Group B – Evidence of Recent Inundation		
B1 – Water Marks	**X** (Non-riverine)	**X** (Riverine)
B2 – Sediment Deposits	**X** (Non-riverine)	**X** (Riverine)
B3 – Drift Deposits	**X** (Non-riverine)	**X** (Riverine)
B6 – Surface Soil Cracks	X	
B7 – Inundation Visible on Aerial Imagery	X	
B9 –Water-Stained Leaves	X	
B10 – Drainage	X	X
B11 – Salt Crust	X	
B12 – Biotic Crust	X	
B13 – Aquatic Invertebrates	X	

Table 5. Wetland Hydrology Indicators for the Arid West*		
	Primary Indicator (any one indicator is sufficient to make a determination that wetland hydrology is present)	**Secondary Indicator (two or more indicators are required to make a determination that wetland hydrology is present)**
Group C – Evidence of Current or Recent Soil Saturation		
C1 – Hydrogen Sulfide Odor	X	
C2 – Dry-Season Water Table		X
C3 – Oxidized Rhizospheres along Living Roots	X	

*Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0.

Table 6. Field Indicators of Hydric Soil Conditions*	
1. Indicators of Historical Hydric Soil Conditions	**2. Indicators of Current Hydric Soil Conditions**
a. Histosols b. Histic epipedons; c. Soil colors (e.g., gleyed or low-chroma colors, soils with bright mottles (Redoximorphic features) and/or depleted soil matrix d. High organic content in surface of sandy soils e. Organic streaking in sandy soils f. Iron and manganese concretions g. Soil listed on county hydric soils list	a. Aquic or peraquic moisture regime (inundation and/or soil saturation for *7 continuous days) b. Reducing soil conditions (inundation and/or soil saturation for *7 continuous days) c. Sulfidic material (rotten egg smell)

*Table adapted from 1987 USACE Manual and Related Guidance Documents.

Table 7. Hydric Soil Indicators for the Arid West*			
Hydric Soil Indicators	**Hydric Soil Indicators**	**Hydric Soil Indicators**	**Hydric Soil Indicators**
A1 – Histosol	S1 – Sandy Mucky Mineral	F1 – Loamy Mucky Mineral	A9 – 1 cm Muck
A2 – Histic Epipedon	S4 – Sandy Gleyed Matrix	F2 – Loamy Gleyed Matrix	A10 – 2 cm Muck
A3 – Black Histic	S5 – Sandy Redox	F3 – Depleted Matrix	F18 – Reduced Verti
A4 – Hydrogen Sulfide	S6 – Stripped Matrix	F6 – Redox Dark Surface	TF2 – Red Parent Material
A5 – Stratified Layers	—	F7 – Depleted Dark Surface	Other (See Section 5 of Regional Supplement, Version 2.0)
A9 – 1 cm Muck	—	F8 – Redox Depressions	—
A11 – Depleted Below Dark Surface	—	F9 – Vernal Pools	—
A12 – Thick Dark Surface	—	—	—

* Table adapted from Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Arid West Region, Version 2.0. ** Indicators of hydrophytic vegetation and wetland hydrology must be present

APPENDIX E

Regulatory Background

Regulatory Background Information

Section 404 of the Clean Water Act (CWA)

Section 404 of the CWA regulates the discharge of dredged material, placement of fill material, or certain types of excavation within "waters of the U.S." (resulting in more than incidental fallback of material) and authorizes the Secretary of the Army, through the Chief of Engineers, to issue permits for such actions. Permits can be issued for individual projects (individual permits) or for general categories of projects (general permits). "Waters of the U.S." are defined by the CWA as "rivers, creeks, streams, and lakes extending to their headwaters and any associated wetlands." Wetlands are defined by the CWA as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support a prevalence of vegetation typically adapted for life in saturated soil conditions." The USACE has adopted several revisions to their regulations in order to more clearly define "waters of the U.S." Until the beginning of 2001, "waters of the U.S." included, among other things, isolated wetlands and lakes, intermittent streams, prairie potholes, and other waters that are not part of a tributary system to interstate waters or to navigable "waters of the U.S."

The jurisdictional extent of USACE regulation changed with the 2001 SWANCC (Solid Waste Agency of Northern Cook County) ruling. The U.S. Supreme Court held that the USACE could not apply Section 404 of the CWA to extend their jurisdiction over an isolated quarry pit. The Court ruled that the CWA does not extend Federal regulatory jurisdiction over non-navigable, isolated, intra-state waters. However, the Court made it clear that non-navigable wetlands adjacent to navigable waters are still subject to USACE jurisdiction.

Section 401 of the CWA

Section 401 of the CWA requires that any applicant for a Federal permit for activities that involve a discharge to 'waters of the State,' shall provide the Federal permitting agency a certification from the State in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the Federal Clean Water Act. Therefore, before the USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 Water Quality Certification from the RWQCB. Applications to the RWQCB must include a complete CEQA document (e.g., Initial Study/Mitigated Negative Declaration).

Section 1602 of the California Fish and Game Code

Section 1602 of the California Fish and Game Code requires any person, State or local governmental agency, or public utility which proposes a project that will substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake, or use materials from a streambed, or result in the disposal or deposition of debris, waste, or other material containing crumbled, flaked, or ground pavement where it can pass into any river, stream, or lake, to first notify the CDFW of the proposed project. Notification is generally required for any project that will take place in or in the vicinity of a river, stream, lake, or their tributaries. This includes rivers or streams that flow at least periodically or permanently through a bed or channel with banks that support fish or other aquatic life and watercourses having a surface or subsurface flow that support or have supported riparian vegetation. Based on the notification materials

submitted, the CDFW will determine if the proposed project may impact fish or wildlife resources. If the CDFW determines that a proposed project may substantially adversely affect existing fish or wildlife resources, a Lake or Streambed Alteration Agreement (SAA) will be required. A completed CEQA document must be submitted to CDFW before a SAA will be issued.

APPENDIX F

Field Data Sheets

Project: Petak
Project Number:
Stream:
Investigator(s): R. Brown, L. Butler, J. Varonin

Date: 7/24/18 **Time:** 0840
Town: Rancho Palos Verdes **State:** CA
Photo begin file# **Photo end file#**

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

Y ☒ / N ☐ Is the site significantly disturbed?

Location Details: see GIS data
Projection: **Datum:**
Coordinates:

Notes:
Ephemeral drainage – channelized upstream, flows under Rd. through 8' culvert; cement/riprap/gabions armoring banks/bed throughout survey area. No riparian veg along banks

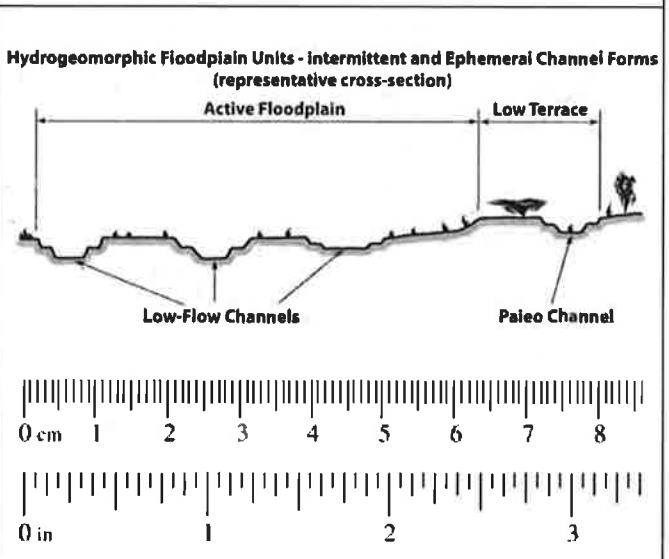
Brief site description:

Checklist of resources (if available):

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

The dominant Wentworth size class that imparts a characteristic texture to each zone of a channel cross-section is recorded in the average sediment texture field under the characteristics section for the zone of interest.

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



☒ **Walk the channel and floodplain within the study area to get an impression of the vegetation and geomorphology present at the site. Record any potential anthropogenic influences on the channel system in "Notes" above.**

☒ **Locate the low-flow channel (lowest part of the channel). Record observations.**

Characteristics of the low-flow channel:

Average sediment texture: concrete w/reinforced rip-rap

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

Community successional stage:

☒ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: Bromus diandrus, Foeniculum vulgare

Other: ☐ ☐ ☐ ☐

☒ **Walk away from the low-flow channel along cross-section. Record characteristics of the low-flow/active floodplain boundary.**

Characteristics used to delineate the low-flow/active floodplain boundary:

☒ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb

☒ Change in overall vegetation maturity

☒ Change in dominant species present

☒ Other ☒ Presence of bed and bank

☐ Drift and/or debris

☐ Other: _____

☐ Other: _____

☐ **Continue walking the channel cross-section. Record observations below.**

Characteristics of the low-flow channel: Single low-flow channel. See observations above.

Average sediment texture: _____

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

Community successional stage:

☐ NA ☐ Mid (herbaceous, shrubs, saplings)

☐ Early (herbaceous & seedlings) ☐ Late (herbaceous, shrubs, mature trees)

Dominant species present: _____

Other: ☐ ☐ ☐ ☐

☐ NA **Continue walking the channel cross-section. Record indicators of the active floodplain/low terrace boundary.**

Characteristics used to delineate the active floodplain/ low terrace boundary:

☐ Change in average sediment texture
☐ Change in total veg cover ☐ Tree ☐ Shrub ☐ Herb
☐ Change in overall vegetation maturity
☐ Change in dominant species present
☐ Other ☐ Presence of bed and bank
☐ Drift and/or debris
☐ Other: _____
☐ Other: _____

☒ **Walk the active floodplain/low terrace boundary both upstream and downstream of the cross-section to verify that the indicators used to identify the transition are consistently associated the transition in both directions.**

Consistency of indicators used to delineate the active floodplain/low terrace boundary:

Y ☒ N ☐ Change in average sediment texture
Y ☒ N ☐ Change in total veg cover ☒ Tree ☒ Shrub ☒ Herb
Y ☒ N ☐ Change in overall vegetation maturity
Y ☒ N ☐ Change in dominant species present
Y ☒ N ☐ Other: Y ☒ N ☐ Presence of bed and bank
Y ☐ N ☐ Drift and/or debris
Y ☐ N ☐ Other: _____
Y ☐ N ☐ Other: _____

☐ **If the characteristics used to delineate the active floodplain/low terrace boundary were NOT consistently associated with the transition in both the upstream and downstream directions, repeat all steps above.**

☒ **Continue walking the channel cross-section. Record characteristics of the low terrace.**

Characteristics of the low terrace:

Average sediment texture: gravelly sand

Total veg cover: 70 % Tree: 40 % Shrub: 20 % Herb: 15 %

Community successional stage:

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

Dominant species present: Schinus molle, Pinus sp., Heteromeles arbutifolia

Other: ☐ _____
☐ _____
☐ _____
☐ _____

☒ **If characteristics used to delineate the active floodplain/low terrace boundary were deemed reliable, acquire boundary.**

Active floodplain/low terrace boundary acquired via:

☐ Mapping on aerial photograph ☒ GPS
☒ Digitized on computer ☐ Other: _____

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Petaluma City/County: Rancho Palos Verdes Sampling Date: 7/24/18

Applicant/Owner: State: CA Sampling Point: 01

Investigator(s): R. Brown; L. Butler; J. Varonin Section, Township, Range:

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

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒

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

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

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

Remarks:
Ephemeral drainage → exits culvert at N. end of study area; bed & bank channelized w/ cement and/or cement-reinforced rip-rap; gabions along eastern bank

VEGETATION

Tree Stratum (Use scientific names.) 10 m	Absolute % Cover	Dominant Species?	Indicator Status
1. Heteromeles arbutifolia	25	Y	
2. Schinus molle	5		
3. Eucalyptus sp.	2		
4.			
Total Cover:	35 %		

Sapling/Shrub Stratum 5 m			
1.			
2.			
3.			
4.			
5.			
Total Cover:	0 %		

Herb Stratum 2 m			
1. Bromus diandrus	10		
2. Centaurea melitensis	5		
3. Foeniculum vulgare	2		
4.			
5.			
6.			
7.			
8.			
Total Cover:	40 %		

Woody Vine Stratum			
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: 0 (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 =	0
FACW species	x 2 =	0
FAC species	x 3 =	0
FACU species	x 4 =	0
UPL species	x 5 =	0
Column Totals:	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☒

Remarks:

SOIL

Sampling Point: 01

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[3]	Remarks
Rocky soils; unable to dig pit.								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ◯ No ◯

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ◯ No ◯ Depth (inches):

Water Table Present? Yes ◯ No ◯ Depth (inches):

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

Wetland Hydrology Present? Yes ◯ No ✗

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

Remarks:

WETLAND DETERMINATION DATA FORM - Arid West Region

Project/Site: Petak City/County: Rancho Palos Verdes / LA Co Sampling Date: 7/24/08

Applicant/Owner: State: CA Sampling Point: 02

Investigator(s): R. Brown Section, Township, Range:

Landform (hillslope, terrace, etc.): Hillslope Local relief (concave, convex, none): convex Slope (%): 30

Subregion (LRR): Lat: Long: Datum:

Soil Map Unit Name: NWI classification:

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

Are Vegetation ☒ Soil ☒ or Hydrology ☒ significantly disturbed? Are "Normal Circumstances" present? Yes ☐ No ☒

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

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

Hydrophytic Vegetation Present? Yes ☐ No ☐

Hydric Soil Present? Yes ☐ No ☐

Wetland Hydrology Present? Yes ☐ No ☐

Is the Sampled Area within a Wetland? Yes ☐ No ☒

Remarks: See notes for Sampling Point 01

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status
1. Heteromeles arbutifolia	55	Y	
2. Schinus molle	15		
3. Pinus sp.	~5		
4.			
Total Cover:	75%		
Sapling/Shrub Stratum			
1. Agave sp.	1		
2.			
3.			
4.			
5.			
Total Cover:	1 %		
Herb Stratum			
1. English ivy	10		
2. Bromus diandrus	10		
3.			
4.			
5.			
6.			
7.			
8.			
Total Cover:	10 %		
Woody Vine Stratum			
1.			
2.			
Total Cover:	%		

% Bare Ground in Herb Stratum 75 % % 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: 0 (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 =	0
FACW species	x 2 =	0
FAC species	x 3 =	0
FACU species	x 4 =	0
UPL species	x 5 =	0
Column Totals:	(A)	0 (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

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

[1]Indicators of hydric soil and wetland hydrology must be present.

Hydrophytic Vegetation Present? Yes ☐ No ☐

Remarks:

Leaf litter present

SOIL

Sampling Point: 02

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[3]	Remarks
Refusal due to rocky soils								

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix. [2]Location: PL=Pore Lining, RC=Root Channel, M=Matrix.

[3]Soil Textures: Clay, Silty Clay, Sandy Clay, Loam, Sandy Clay Loam, Sandy Loam, Clay Loam, Silty Clay Loam, Silt Loam, Silt, Loamy Sand, Sand.

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:[4]

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

[4]Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type:

Depth (inches):

Hydric Soil Present? Yes ○ No ☒

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ☐ 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 Plowed Soils (C6)
- ☐ 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)
- ☐ Thin Muck Surface (C7)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present? Yes ○ No ○ Depth (inches):

Water Table Present? Yes ○ No ○ Depth (inches):

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

Wetland Hydrology Present? Yes ○ No ☒

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

Remarks:

US Army Corps of Engineers

Habitat Mitigation and Monitoring Plan

Altamira Canyon Creek Project

September 13, 2019

Prepared for:

Petak Family Trust
25 Sweetbay Road
Rancho Palos Verdes, CA 90275

Prepared by:

Stantec Consulting Services Inc.
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361

Sign-off Sheet

This document entitled Habitat Mitigation and Monitoring Plan was prepared by Stantec Consulting Services Inc. ("Stantec") for the account of Petak Family Trust (the "Client"). Any reliance on this document by any third party is strictly prohibited. The material in it reflects Stantec's professional judgment in light of the scope, schedule and other limitations stated in the document and in the contract between Stantec and the Client. The opinions in the document are based on conditions and information existing at the time the document was published and do not take into account any subsequent changes. In preparing the document, Stantec did not verify information supplied to it by others. Any use which a third party makes of this document is the responsibility of such third party. Such third party agrees that Stantec shall not be responsible for costs or damages of any kind, if any, suffered by it or any other third party as a result of decisions made or actions taken based on this document.

Reviewed by 

(signature)

Mayra Navaro, Staff Scientist

Reviewed by 

(signature)

Rocky Brown, Associate Biologist

Prepared and Approved by 

(signature)

Jared Varonin, Principal Biologist

Table of Contents

LIST OF APPENDICES

1.0 INTRODUCTION

This Habitat Mitigation and Monitoring Plan (HMMP) is being prepared for the purpose of mitigating impacts from the installation of gabion baskets (Project) along a section of Altamira Canyon Creek (Creek) and an unnamed tributary on property owned by the Petak Family Trust (Petak). Impacts occurred to approximately 0.023 acre of waters under the jurisdiction of the United States Army Corps of Engineers (USACE), Los Angeles Reginal Water Quality Control Board (LARWQCB), and California Department of Fish and Wildlife (CDFW). .

In 2015, in response to approximately two decades of severe erosion of their property resulting from high storm flows within the Creek and adjacent drainages, the owners of the subject property installed gabion baskets along the eastern bank of the Creek and northern bank of an unnamed drainage. The purpose of installing these structures was to prevent further loss of property and protect the animals in the equestrian facilities immediately abutting the drainages. These rock-filled, wire mesh baskets, along with concrete footings armored the eroding eastern bank and served to protect the bank from further high flow events. The gabions were installed based on recommendations from the City of Rancho Palos Verdes after they conducted an assessment of hydrological conditions within the watershed. The property owner, without realizing they were required by certain regulatory agencies, did not seek the necessary permits from the USACE, LARWQCB, and CDFW. Subsequently, after site visits by the USACE and LARWQCB, a notice of violation for failure to obtain a Section 401 Water Quality Certification was issued. The property owner was directed to conduct required biological and engineering studies to support the regulatory permitting process.

2.0 PURPOSE

The purpose of this HMMP is to outline the process by which approximately 0.023 acre of impacts to stream functions within the Creek and adjacent tributary will be mitigated and/or restored pursuant to section 1600 of the California Fish and Game Code and Sections 301, 308, 309, and 404 of the Federal Clean Water Act. The HMMP follows guidelines set forth by the CDFW, USACE, United States Environmental Protection Agency (EPA) and LARWQCB. This will include the restoration/enhancement of 0.056 acre of habitat within the Creek and an adjacent tributary (2.4:1 mitigation ratio).

2.1 SCOPE OF THE HMMP

The purpose of the HMMP is to address the 0.056 acre of mitigation/restoration required for impacts to approximately 0.023 acre of jurisdictional waters within the Creek and an unnamed tributary. This HMMP includes the following items:

- Location of the mitigation/restoration site.
- Project specific mitigation requirements.
- Appropriate habitats for planting.
- Planting pallet to be used for revegetation..
- Time of year that the planting will occur.

- A description of the irrigation methodology.
- Measures to control exotic vegetation on site.
- Success criteria.
- A biological monitoring program.
- Contingency measures should the success criteria not be met.
- Restoration Site grading information.

2.2 RESPONSIBLE PARTIES

Petak is responsible for successful implementation of the revegetation and monitoring efforts outlined in this HMMP. Stantec will aid Petak with the implementation of the HMMP. Success of the entire process will depend on the cooperation of all involved regulatory agencies. Contact information for all responsible parties involved with the activities outlined in this HMMP is listed below:

Petak Family Trust
Contact: Mr. William Petak
25 Sweetbay Road
Rancho Palos Verdes, CA 90275
Tel: (310) 598-8293

Regional Water Quality Control Board
Contact: Ms. L.B. Nye
320 West 4th Street, Suite 200
Los Angeles, CA 90013
Tel: (213) 576-6785

U.S. Army Corps of Engineers
Contact: Mr. Timothy Jackson
Carlsbad Field Office
2151 Alessandro Drive #255
Carlsbad, CA
Tel: (213) 220-6808

California Department of Fish and Game
Contact: TBD
Streambed Alteration Program, South Coast Region
4949 Viewridge Avenue
San Diego, CA 92123
Tel: (858) 467-4201

Stantec Consulting Services Inc.
Contact: Jared Varonin
290 Conejo Ridge Avenue
Thousand Oaks, CA 91361
Tel: (805) 358-7696

2.2.1 Estimated Project Costs

Project costs pertaining to the restoration efforts are an estimated $75,000 to $95,000.00 over a five-year period. This estimated cost includes monitoring and reporting for a five-year period as outlined in Section 5.0 of this HMMP.

3.0 RESTORATION SITE DESCRIPTION

The restoration will occur along the top of the east bank of Altamira Canyon Creek and an adjacent tributary within property owned by Petak, located at 25 Sweetbay Road in Ranchos Palos Verdes, CA. All areas proposed for restoration are depicted on Figure 3 (Appendix A), referred to as Restoration Site for the duration of this HMMP.

3.1 DRAINAGE PATTERNS

Restoration and enhancement of the 0.069 acre of habitat is expected to maintain and expand existing native restoration efforts within the watershed. All efforts within the Restoration Site will maintain existing drainage patterns within the Creek and the adjacent tributary and will not alter the existing hydrologic regime.

3.2 JURISDICTIONAL WATERS

As previously stated, the Restoration Site is located within the Altamira Canyon Creek watershed. The proposed mitigation will provide restoration and enhancement (non-native removal) to both "Waters of the United States (Waters) and CDFW jurisdictional Waters (CDFW Waters) This portion of the Creek and tributary is populated primarily by non-native and invasive species including Peruvian pepper trees (*Schinus molle*), gum trees (*Eucalyptus* sp.), short pod mustard (*Hirschfeldia incana*), sow thistle (*Sonchus oleraceus*), and wild oats (*Avena fatua*). No mitigation is proposed within the main channel of the Creek as the velocity of flows during rain events is prohibitive to the long term establishment of vegetation. Where an approximately 80-foot long section of gabion baskets is removed, and the slope laid back (at 2:1), the newly formed slope will be planted and is included in the Restoration Site as shown in Figure 3 (Appendix A)

Revegetation activities planned in the Restoration Site will provide benefits to the Creek and surrounding areas by increasing biological function and value in the drainage system. The Restoration Site is expected to enhance the existing wildlife movement corridor, expand suitable breeding and foraging habitat for wildlife species, and encourage additional wildlife dispersal into the area. The removal of non-native and invasive weed species within the Restoration Site is expected to reduce weed distribution and encourage native plant and animal recruitment, as well as increase the aesthetic value of the Creek. The restoration efforts will include the use of a pallet of native species, which will increase native plant cover and future natural plant recruitment in the area.

3.3 EXISTING VEGETATION COMMUNITIES AND LAND COVER TYPES

The associations of vegetation communities described in this HMMP correspond to those developed by Sawyer and Keeler-Wolf in the Manual of California Vegetation, Second Edition (2009). An association is derived from a general classification, such as a tree dominated forest. Within a forest, a more discrete classification can be characterized, such as a sycamore forest or a California walnut forest. Two plant communities defined by Sawyer et al. (2009) and one additional land cover type have been mapped within the Restoration Site.

3.3.1 Vegetation

3.3.1.1 Annual Brome Grasslands

Non-native grasslands, dominated by brome species (*Bromus* sp.), occur within the dry channel of the Creek and along the western bank. Other non-native annual herbaceous species (including other grasses) are also common within this community, including short pod mustard, sow thistle, and wild oats. Sparsely interspersed within this community are native shrubs common to adjacent areas of native scrub including toyon (*Heteromeles arbutifolia*) and coyote brush (*Baccharis pilularis*).

3.3.1.2 Pepper Tree Groves

These areas are dominated by Peruvian pepper trees, with gum trees a near co-dominant species in some areas. This community has a consistent mixture of non-native grasses and forbs within the understory, including smilo grass (*Stipa miliacea*), bitter dock (*Rumex obtusifolius*), and garden nasturtium (*Tropaeolum maju*).

3.3.2 Land Cover Types

3.3.2.1 Disturbed/Developed

This classification was used to map areas that are developed, primarily existing paved roadways (Sweetbay Road), livestock corrals and facilities, and concrete lined portions of the Creek. Where vegetated, these areas are generally composed of ornamental species, citrus trees (*Citrus* sp.), Peruvian pepper trees, and gum trees.

3.4 FUNCTIONS AND VALUES OF RESTORED HABITAT

The restoration of the Restoration Site is expected to result in the following watershed improvements:

- Native plant recruitment.
- Wildlife recruitment.
- Creation and/or enhancement of special-status species habitat (i.e. nesting bird habitat, reptile habitat, amphibian habitat and small mammal foraging grounds).
- Reduction of non-native, invasive plant population.

Special-status wildlife species that could benefit from the activities outlined in this HMMP may include but are not limited to:

- coastal California gnatcatcher (*Polioptila californica californica*)
- San Clemente Bewick's wren (*Thryomanes bewickii leucophrys*)
- rufous hummingbird (*Selasphorus rufus*)

It is anticipated that prior to or upon meeting the five-year success criteria detailed in Section 4.5, the Restoration Site's functional value will meet if not exceed that provided by the existing and pre-disturbance habitats present in the area. This will be achieved by removing invasive, non-native vegetation, and enhancement of the habitat with native seed and cuttings.

3.4.1 Ecosystem/Watershed Improvements

The activities outlined in Section 4.0 will serve to improve the conditions of the Creek's watershed. Some of these activities will include the following:

- Removal of non-native, invasive vegetation.
- Removal of trash and anthropogenic debris from riparian areas.
- Planting of native trees and shrubs.

The removal of non-native vegetation and planting of riparian habitat is expected to expand habitat and nutrient cycling within the watershed. The Restoration Site is expected to enhance a potential wildlife movement corridor and expand suitable breeding and foraging habitat for wildlife species within the watershed. Native plant cover and natural recruitment within the watershed will also be encouraged through planting and weed removal in the Restoration Site. The removal of non-native (exotic) and invasive weed species within the Restoration Site will improve the overall quality of the watershed by minimizing weed distribution and encouraging native plant and animal recruitment. In addition, the restoration efforts will increase the aesthetic value of the Creek and provide a wider flood plain for potential water storage during large storm events.

4.0 REVEGETATION AND RESTORATION SCOPE OF WORK

4.1 PRE-CONSTRUCTION WILDLIFE SURVEY

Prior to initiation of activities outlined in the HMMP, a qualified biologist will conduct a pre-construction type survey of the Restoration Site for wildlife species. If species are found in the path of activities, they will be relocated to a nearby area, though far enough away as to prevent their return to or near the Restoration Site for the duration of site activities. If species relocation is required, preventive fencing will be erected to prevent reentry to the Restoration Site. The biologist will also be consulted during the course of restoration activities if any issues related to local wildlife should arise.

4.2 SITE PREPARATION

All site preparation activities will be performed by hand or via heavy equipment; heavy equipment will only be used to remove an approximately 80-foot long section of gabion baskets and install a 2:1 earthen slope in its place. In addition, toe protection in the form of large rock will be installed along both sides of the creek (refer to Appendix C). Temporary flagging will be installed during the preparation and planting of the Restoration Site to delineate the area and discourage unauthorized access. Non-native and invasive plants will be removed as described in Section 4.2.1 and planting will occur once the above preparation work is complete as described in Section 4.4.

4.2.1 Non-Native Vegetation/Debris Removal

All invasive and non-native herbaceous vegetation and shrubs will be removed from the Restoration Site prior to the commencement of restoration activities. Trees less than one-inch diameter at breast height (DBH) will be removed, however larger trees will remain in place. Many of the trees within the portion of the unnamed tributary are in excess of thirty feet tall and would require considerable labor to remove as there is no vehicular access. These trees currently provide potential roosting habitat for bats and nesting habitat for raptors and other bird species. Removal of vegetation will be performed by hand, using hand loppers or similar equipment. Small trees and large shrubs found on-site will be cut down via chainsaw (to a height of 6 inches) and chipped into a fine mulch material. Depending on site conditions at the time of removal activities, the resulting mulch will be spread in areas outside of any jurisdictional boundaries or taken off-site for disposal at an appropriate green waste disposal facility. If any non-native woody species are encountered during the removal activities they will have an approved aquatic herbicide applied to help prevent future regrowth. All trash, litter, and debris will be removed from the Restoration Site and disposed of at an approved landfill or within local on-site receptacles. Receipts for each load of material taken to approved landfills will be kept on hand and be available upon request. All removal efforts will be supervised by a qualified biologist from Stantec.

4.2.2 Soil

A soil amendment such as compost may be added to portions of the Restoration Site atop the eastern bank of the Creek due to the compact nature of the soil; all other areas within the Restoration Site are not expected to require a soil amendment. Compost shall be certified clean, pre-packaged by the manufacturer, and delivered to the Restoration Site in unopened bags. Compost meeting the specifications for native species restoration projects can be purchased through the native seed suppliers such as S&S Seeds (www.ssseeds.com).

Areas up- and downstream appear to be similar in vegetation composition to that historically present in the Restoration Site, invasive, non-native vegetation seems to be the major factor in limiting growth of native species, not soil quality. Suitable soils are expected to occur throughout the Restoration Site.

4.3 PROPOSED SPECIES FOR REVEGETATION

The lists of species in Table 1 consists of native, non-invasive plants indigenous to the Creek watershed and Los Angeles County, California. These species are known to exist in areas within the vicinity of the Restoration Site. The suggested planting mix is comprised of species generally associated with vegetative series known to occur in the area as well as others known to have occurred historically on the Restoration Site. The planting mix in Table 1 will take advantage of a local native species stock, which should help the long-term success of the restoration efforts.

Table 1 – Native Species Planting List

Scientific Name	Common Name
Salix exigua	narrow leaf willow
Baccharis salicifolia	mulefat
Salix lasiolepis	arroyo willow

Scientific Name	Common Name
Quercus agrifolia	coast live oak
Prunus ilicifolia	holly leaf cherry

4.4 PLANTING PLAN

4.4.1 Restoration Site Access

Access to the Restoration Site is gained via a large gate along Sweetbay Road. Access to the residential community in which the Restoration Site occurs can be gained from a private gated entrance (requiring a code to enter) located just off of Palos Verdes Drive South in Ranchos Palos Verdes, CA.

4.4.2 Planting Locations

Specific placement and numbers of plants will be determined prior to the start of revegetation activities, after site preparation activities are complete, and will be developed by a qualified biologist knowledgeable with the local flora. At the completion of planting activities, a Global Positioning System (GPS) point will be taken at the location of each planting and projected onto an aerial- or topographical map-based figure for reporting purposes. The qualified biologist will remain on-site during initial revegetation activities to oversee the seeding and planting activities.

All container plants will be obtained from a local or nearby native plant nursery whose stock has been derived from native seed. Prior to the start of restoration activities, the local nurseries will be contacted and the purchased stock either stored at the nursery until planting or on-site at a location near the Restoration Site. If the purchased stock is to be kept on-site, appropriate irrigation will be provided during the period between purchase and planting. Approximate numbers of container plants to be used on the Restoration Site can be found below in Table 2.

Table 2 - Estimated Number of Container Plants

Common Name	Number of Plants*
narrow leaf willow	15-20
mulefat	15-20
arroyo willow	–10-15
coast live oak	–5-10
holly leaf cherry	5-10

* These are estimated numbers and may vary depending on availability of each species prior to restoration efforts.

4.4.3 Schedule

Restoration activities will be initiated in the spring/summer of 2020 (assuming construction is complete in the fall/winter 2019/2020). It is anticipated that invasive plant removal, site preparation, and planting activities will be completed within one month's time. As described in Section 5.0, monitoring will occur monthly in year one, and twice per year in years

two through five, to be conducted in May/June and November/December. Maintenance of the Restoration Site will occur annually or as needed based on monitoring observations. It is expected that initial maintenance will be more frequent to remove the non-native and invasive species recruited to the Restoration Site. Annual reports will be submitted to the regulatory agencies by December 31st of each monitoring year.

4.4.4 Irrigation

It is not unusual for revegetated sites, planted during the right time of the year, to require little to no water after the initial planting. Initially however, all plantings will be deep watered for at least one to two weeks to ensure establishment and deep root growth. Additionally, irrigation shall be provided for all areas when natural moisture conditions are inadequate to ensure survival of plants. Irrigation shall be provided as needed for a period of at least two years from planting. Irrigation shall be phased out during the fall/winter of the second year unless unusually severe conditions threaten the survival of plantings. It is anticipated that the Restoration Site will be sustained by natural rainfall events and will not require much additional irrigation.

4.5 SUCCESS CRITERIA AND CONTINGENCY MEASURES

Revegetation success for the seed mix and cuttings is defined below in Table 3.

Table 3 - Minimum Coverage and Success Criteria

Type of Vegetation	Criteria	Alternative Actions
Container Plants (Table 1)	Minimum of 85% survival after 5 years for the life of the project.*	If plants do not meet coverage criteria, additional planting will be completed. Dead or severely distressed containerized plant material will be replaced to bring densities up to 80% of the original planting density.

*No woody invasive species shall be present, and herbaceous invasive species shall not exceed 5% cover.

Along with the above quantitative assessment, qualitative criteria will be used to determine success. The following qualitative criteria will be used for the restoration site.

- No signs of herbivory.
- No signs of drought stress.
- No trash/debris present.
- Plants showing healthy and upward growth each year.

The Restoration Site may be considered successful if the five-year success criteria are achieved prior to the end of the monitoring period, pending regulatory agency confirmation.

4.5.1 Rationale for Success

The restoration activities outlined in this HMMP should result in a successful Restoration Site given the existing parameters listed below:

- The Restoration Site historically supported a variety of native and non-native vegetation.
- The surrounding land use should aid in providing water/moisture for the restoration site.
- Climate conditions in this part of the watershed are ideal for the type of mitigation outlined in this HMMP.
- Annual monitoring and maintenance of the Restoration Site will occur (see Section 5.0 below) with each year's percent cover and growth rates compared to the previous year.

5.0 MONITORING AND MAINTENANCE

5.1 MONITORING PLAN

During year 1 monitoring will be conducted quarterly, while during years two through five, monitoring will be conducted twice per year in May/June and November/December. All monitoring will be conducted by a qualified biologist or botanist knowledgeable of the local flora of the Creek. The monitoring results will be included in an annual status report, prepared by a qualified biologist or botanist, due for submittal to the CDFW, USACE, and LARWQCB by December 31st of each monitoring year. This report shall include the percent survival, percent cover, and height by species of both trees and shrubs. Also included will be the number by species of plants replaced, an overview of the revegetation and exotic plant control efforts, and the methods used to assess these parameters discussed above. .

Monitoring will be conducted in accordance with the CDFW "Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities" and the California Native Plant Society's "CNPS Botanical Survey Guidelines." Please see refer to Appendix B for copies of the above guidelines.

5.1.1 Qualitative

Qualitative monitoring will serve to document site conditions such as any potential erosion concerns, invasive plant growth, and general vegetative development. This will involve photo documentation of the Restoration Site via photo stations set up during the initial monitoring event. Monitoring of wildlife and aquatic resources should be done in the summer and winter of each year.

5.1.2 Quantitative

Quantitative measurements for vegetation should be performed annually in the spring and fall to determine percent cover, survivability, height, and species composition. Quantitative assessments will include the use of randomly located

transects to measure native species composition, diversity and coverage based on the methodology developed by the California Native Plant Society.

5.2 MAINTENANCE PLAN

Invasive species and other non-native vegetation will be removed at least annually or as needed (to be determined by a qualified biologist and will not be allowed to threaten the survival of native plants in the revegetated areas or infest adjacent undisturbed areas. A qualified biologist will coordinate the invasive and non-native vegetation efforts as described above with maintenance crews to be provided by Petak. During vegetation removal activities, all trash and debris will be removed from the restoration site.

6.0 COMPLETION OF MITIGATION

6.1 NOTIFICATION OF COMPLETION

A Notice of Completion will be sent to all appropriate resource agencies in conjunction with the issuance of the final annual report indicating that all restoration commitments have been completed.

6.2 AGENCY CONFIRMATION

Upon receipt of the final five-year monitoring report (or earlier year, depending on the site achieving the success criteria), the participating resource agencies may request an on-site meeting to confirm the status of the mitigation commitments. Preferably, the site visits should take place during the months of June or July to view the site during the optimal period of plant growth. Within 60 days of receiving the Notification of Completion, the agencies will be requested to respond in writing expressing their opinion regarding the completion of restoration.

7.0 REFERENCES

Sawyer, J.O., T. Keeler-Wolf and J. M. Evans. 2009. A Manual of California Vegetation; Second Edition. California Native Plant Society Press, Sacramento, California.

APPENDIX A

Figures

Project Site

N

0 850 1,700 Feet

1:20,000 (At original document size of 8.5x11)

Notes
1. NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Service Layer Credits: Sources: Esri, HERE, DeLorme, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), MapmyIndia, NGCC, © OpenStreetMap contributors, and the GIS User Community
Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

Stantec

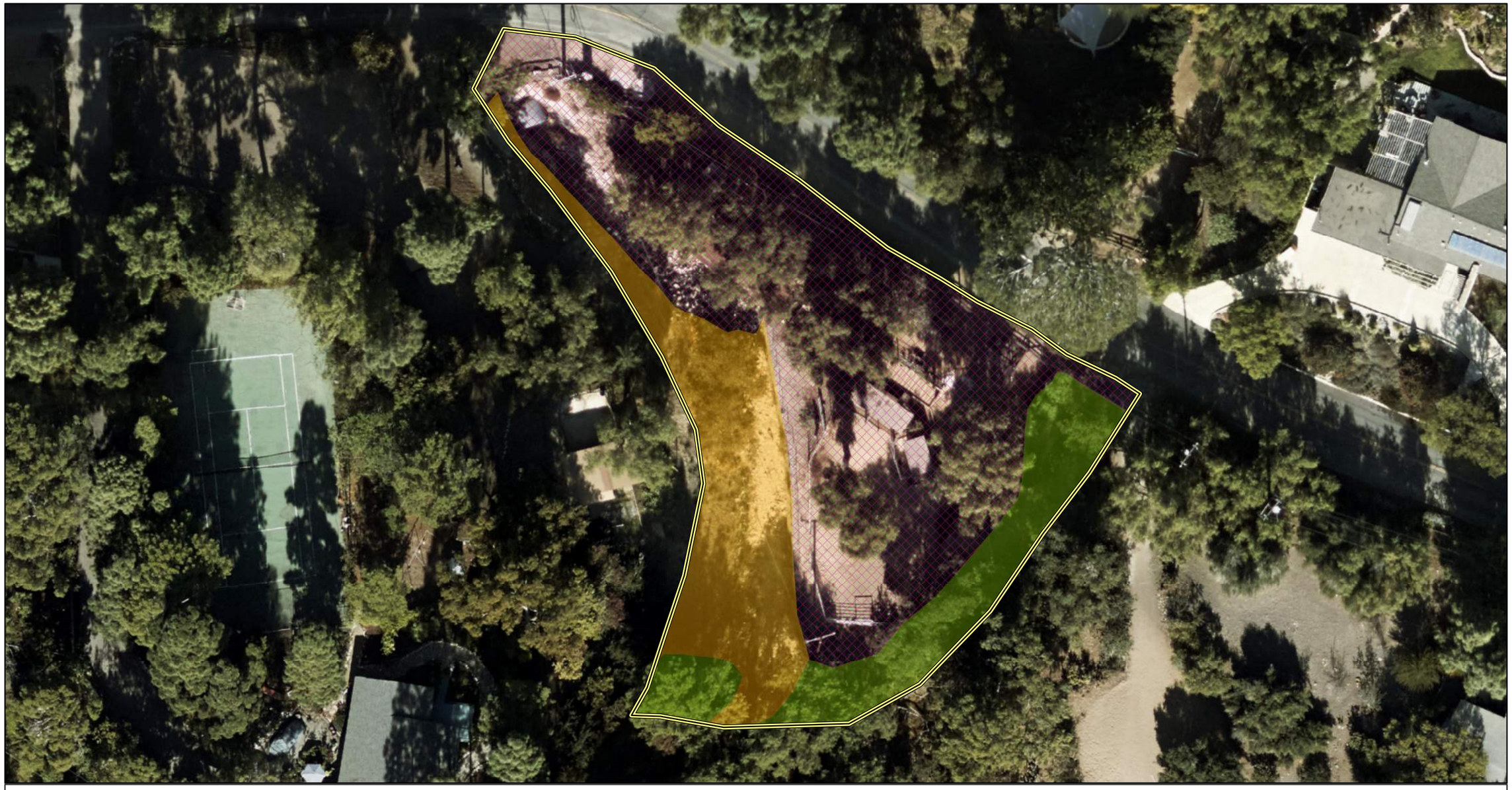
Project Location
Rancho Palos Verdes, CA

Prepared by JV on 2018-10-08
Technical Review by RB on 2018-10-08
Independent Review by MN on 2018-10-09

Client/Project
Petak Family Trust
Altamira Canyon Creek Project
Habitat Mitigation and Monitoring Plan

Figure No.
1

Title
Project Location



Biological Survey Area

Annual Brome Grasslands

Disturbed/Developed

Pepper Tree Groves

N

0 10 20 Feet

1:419 (At original document size of 8.5x11)

Notes
1. NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Stantec

Project Location

Rancho Palos Verdes, CA

Prepared by JV on 2018-10-08
Technical Review by RB on 2018-10-08
Independent Review by MN on 2018-10-09

Client/Project

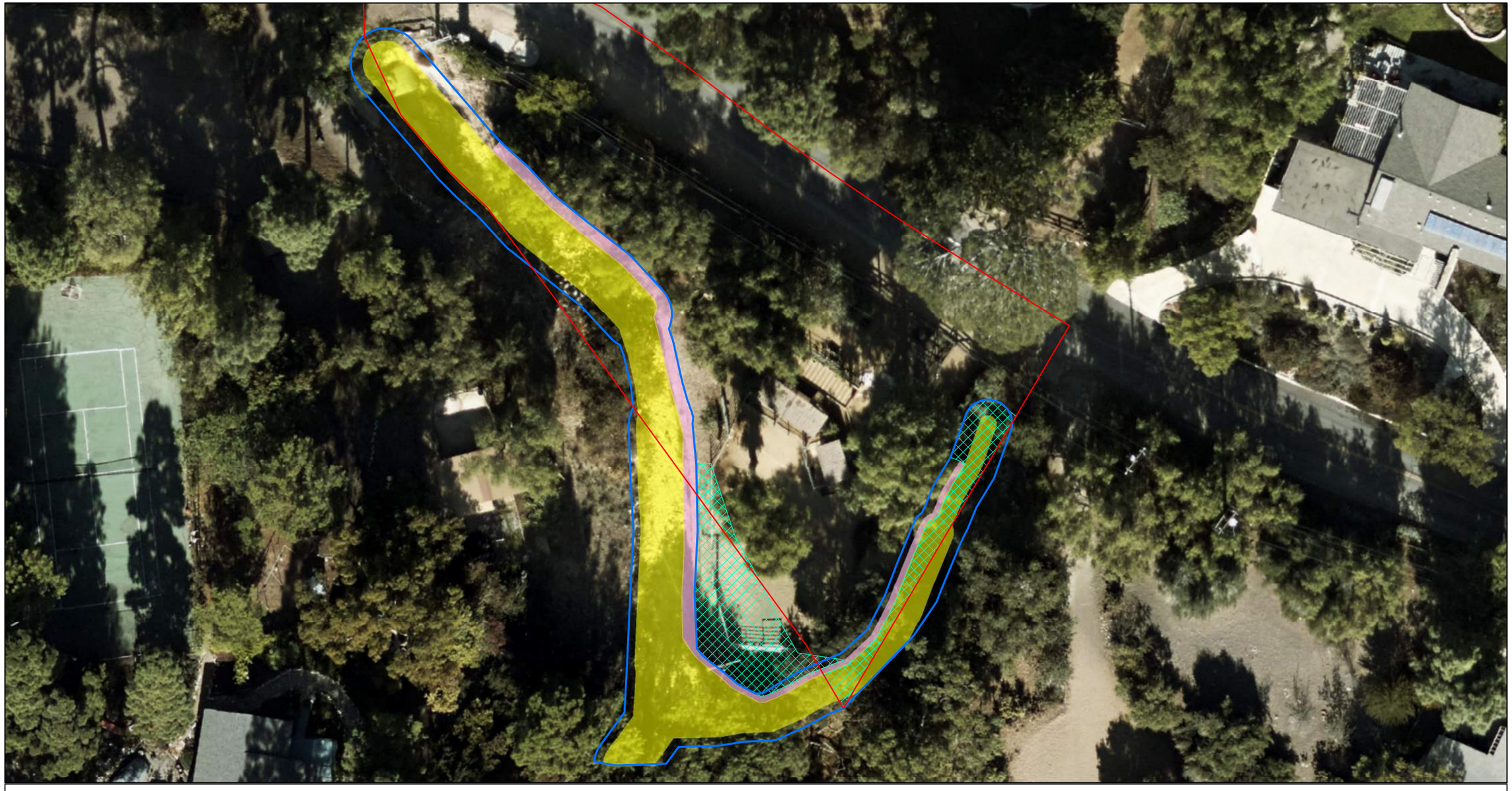
Petak Family Trust
Altamira Canyon Creek Project
Habitat Mitigation and Monitoring Plan

Figure No.

2

Title

Vegetation Communities and Land Cover Types



Petak Family Trust Property Boundary (Approximate)
Approximate Location of Restoration Areas
CDFW Waters
USACE Waters of the U.S. (Current Conditions)
USACE Waters of the U.S./Impact Area (Waters of the U.S. Impacted During Construction)

N

0 10 20 Feet

1:375 (At original document size of 8.5x11)

Notes
1. NAD 1983 CORS96 StatePlane California V FIPS 0405 Ft US
2. Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
3. MUSYM - Refer to Section 2 of the Preliminary Jurisdictional Delineation Report for more information on MUSYM in the Survey Area.

Stantec

Project Location

Rancho Palos Verdes, CA

Prepared by JV on 2019-09-13
Technical Review by RB on 2019-09-13
Independent Review by MN on 2019-9-13

Client/Project

Petak Family Trust
Altamira Canyon Creek Project
Habitat Mitigation and Monitoring Plan

Figure No.

4

Title

Restoration Site

APPENDIX B

CDFW and CNPS Guidelines

APPENDIX C

Guidelines for Assessing the Effects of Proposed Projects on Rare, Threatened, and Endangered Plants and Natural Communities

State of California
THE RESOURCES AGENCY
Department of Fish and Game
December 9, 1983
Revised May 8, 2000

The following recommendations are intended to help those who prepare and review environmental documents to determine **when** a botanical survey is needed, **who** should be considered qualified to conduct such surveys, **how** field surveys should be conducted, and **what** information should be contained in the survey report. The Department may recommend that lead agencies not accept the results of surveys that are not conducted according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all rare, threatened, and endangered plants and plant communities. Rare, threatened, and endangered plants are not necessarily limited to those species which have been "listed" by state and federal agencies but should include any species that, based on all available data, can be shown to be rare, threatened, and/or endangered under the following definitions:
A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens. Rare natural communities are those communities that are of highly limited distribution. These communities may or may not contain rare, threatened, or endangered species. The most current version of the California Natural Diversity Database's List of California Terrestrial Natural Communities may be used as a guide to the names and status of communities.

2. It is appropriate to conduct a botanical field survey to determine if, or to the extent that, rare, threatened, or endangered plants will be affected by a proposed project when:
a. Natural vegetation occurs on the site, it is unknown if rare, threatened, or endangered plants or habitats occur on the site, and the project has the potential for direct or indirect effects on vegetation; or
b. Rare plants have historically been identified on the project site, but adequate information for impact assessment is lacking.

3. Botanical consultants should possess the following qualifications:
a. Experience conducting floristic field surveys;
b. Knowledge of plant taxonomy and plant community ecology;
c. Familiarity with the plants of the area, including rare, threatened, and endangered species;
d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
e. Experience with analyzing impacts of development on native plant species and communities.

4. Field surveys should be conducted in a manner that will locate any rare, threatened, or endangered species that may be present. Specifically, rare, threatened, or endangered plant surveys should be:
a. Conducted in the field at the proper time of year when rare, threatened, or endangered species are both evident and identifiable. Usually, this is when the plants are flowering. When rare, threatened, or endangered plants are known to occur in the type(s) of habitat present in the

project area, nearby accessible occurrences of the plants (reference sites) should be observed to determine that the species are identifiable at the time of the survey.
b. Floristic in nature. A floristic survey requires that every plant observed be identified to the extent necessary to determine its rarity and listing status. In addition, a sufficient number of visits spaced throughout the growing season are necessary to accurately determine what plants exist on the site. In order to properly characterize the site and document the completeness of the survey, a complete list of plants observed on the site should be included in every botanical survey report.
c. Conducted in a manner that is consistent with conservation ethics. Collections (voucher specimens) of rare, threatened, or endangered species, or suspected rare, threatened, or endangered species should be made only when such actions would not jeopardize the continued existence of the population and in accordance with applicable state and federal permit requirements. A collecting permit from the Habitat Conservation Planning Branch of DFG is required for collection of state-listed plant species. Voucher specimens should be deposited at recognized public herbaria for future reference. Photography should be used to document plant identification and habitat whenever possible, but especially when the population cannot withstand collection of voucher specimens.
d. Conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas.
e. Well documented. When a rare, threatened, or endangered plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form, accompanied by a copy of the appropriate portion of a 7.5 minute topographic map with the occurrence mapped, should be completed and submitted to the Natural Diversity Database. Locations may be best documented using global positioning systems (GPS) and presented in map and digital forms as these tools become more accessible.

5. Reports of botanical field surveys should be included in or with environmental assessments, negative declarations and mitigated negative declarations, Timber Harvesting Plans (THPs), EIR's, and EIS's, and should contain the following information:
a. Project description, including a detailed map of the project location and study area.
b. A written description of biological setting referencing the community nomenclature used and a vegetation map.
c. Detailed description of survey methodology.
d. Dates of field surveys and total person-hours spent on field surveys.
e. Results of field survey including detailed maps and specific location data for each plant population found. Investigators are encouraged to provide GPS data and maps documenting population boundaries.
f. An assessment of potential impacts. This should include a map showing the distribution of plants in relation to proposed activities.
g. Discussion of the significance of rare, threatened, or endangered plant populations in the project area considering nearby populations and total species distribution.
h. Recommended measures to avoid impacts.
i. A list of all plants observed on the project area. Plants should be identified to the taxonomic level necessary to determine whether or not they are rare, threatened or endangered.
j. Description of reference site(s) visited and phenological development of rare, threatened, or endangered plant(s).
k. Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms.
l. Name of field investigator(s).
m. References cited, persons contacted, herbaria visited, and the location of voucher specimens.

CNPS Botanical Survey Guidelines

CALIFORNIA NATIVE PLANT SOCIETY
December 9, 1983
Revised June 2, 2001

The following recommendations are intended to help those who prepare and review environmental documents determine when a botanical survey is needed, who should be considered qualified to conduct such surveys, how surveys should be conducted, and what information should be contained in the survey report. The California Native Plant Society recommends that lead agencies not accept the results of surveys unless they are conducted and reported according to these guidelines.

1. Botanical surveys are conducted in order to determine the environmental effects of proposed projects on all botanical resources, including special status plants (rare, threatened, and endangered plants) and plant (vegetation) communities. Special status plants are not limited to those that have been listed by state and federal agencies but include any plants that, based on all available data, can be shown to be rare, threatened, or endangered under the following definitions:

   > A species, subspecies, or variety of plant is "endangered" when the prospects of its survival and reproduction are in immediate jeopardy from one or more causes, including loss of habitat, change in habitat, over-exploitation, predation, competition, or disease. A plant is "threatened" when it is likely to become endangered in the foreseeable future in the absence of protection measures. A plant is "rare" when, although not presently threatened with extinction, the species, subspecies, or variety is found in such small numbers throughout its range that it may be endangered if its environment worsens.[1]

   Rare plant (vegetation) communities are those communities that are of highly limited distribution. These communities may or may not contain special status plants. The most current version of the California Natural Diversity Database's *List of California Terrestrial Natural Communities*[2] should be used as a guide to the names and status of communities.

   Consistent with the California Native Plant Society's goal of preserving plant biodiversity on a regional and local scale, and with California Environmental Quality Act environmental impact assessment criteria[3], surveys should also assess impacts to locally significant plants. Both plants and plant communities can be considered significant if their local occurrence is on the outer limits of known distribution, a range extension, a rediscovery, or rare or uncommon in a local context (such as within a county or region). Lead agencies should address impacts to these locally unique botanical resources regardless of their status elsewhere in the state.

2. Botanical surveys must be conducted to determine if, or to the extent that, special status or locally significant plants and plant communities will be affected by a proposed project when any natural vegetation occurs on the site and the project has the potential for direct or indirect effects on vegetation.

3. Those conducting botanical surveys must possess the following qualifications:
   a. Experience conducting floristic field surveys;
   b. Knowledge of plant taxonomy and plant community ecology and classification;
   c. Familiarity with the plants of the area, including special status and locally significant plants;

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[1] California Environmental Quality Act Guidelines, §15065 and §15380.
[2] List of California Terrestrial Natural Communities. California Department of Fish and Game Natural Diversity Database. Sacramento, CA.
[3] California Environmental Quality Act Guidelines, Appendix G (Initial Study Environmental Checklist).

d. Familiarity with the appropriate state and federal statutes related to plants and plant collecting; and,
e. Experience with analyzing impacts of a project on native plants and communities.

4. Botanical surveys should be conducted in a manner that will locate any special status or locally significant plants or plant communities that may be present. Specifically, botanical surveys should be:

   a. Conducted in the field at the proper times of year when special status and locally significant plants are both evident and identifiable. When special status plants are known to occur in the type(s) of habitat present in the project area, nearby accessible occurrences of the plants (reference sites) should be observed to determine that the plants are identifiable at the time of survey.

   b. Floristic in nature. A floristic survey requires that every plant observed be identified to species, subspecies, or variety as applicable. In order to properly characterize the site, a complete list of plants observed on the site shall be included in every botanical survey report. In addition, a sufficient number of visits spaced throughout the growing season is necessary to prepare an accurate inventory of all plants that exist on the site. The number of visits and the timing between visits must be determined by geographic location, the plant communities present, and the weather patterns of the year(s) in which the surveys are conducted.

   c. Conducted in a manner that is consistent with conservation ethics and accepted plant collection and documentation techniques[4,5]. Collections (voucher specimens) of special status and locally significant plants should be made, unless such actions would jeopardize the continued existence of the population. A single sheet should be collected and deposited at a recognized public herbarium for future reference. All collections shall be made in accordance with applicable state and federal permit requirements. Photography may be used to document plant identification only when the population cannot withstand collection of voucher specimens.

   d. Conducted using systematic field techniques in all habitats of the site to ensure a thorough coverage of potential impact areas. All habitats within the project site must be surveyed thoroughly in order to properly inventory and document the plants present. The level of effort required per given area and habitat is dependent upon the vegetation and its overall diversity and structural complexity.

   e. Well documented. When a special status plant (or rare plant community) is located, a California Native Species (or Community) Field Survey Form or equivalent written form, accompanied by a copy of the appropriate portion of a 7.5-minute topographic map with the occurrence mapped, shall be completed, included within the survey report, and separately submitted to the California Natural Diversity Database. Population boundaries should be mapped as accurately as possible. The number of individuals in each population should be counted or estimated, as appropriate.

5. Complete reports of botanical surveys shall be included with all environmental assessment documents, including Negative Declarations and Mitigated Negative Declarations, Timber Harvesting Plans, Environmental Impact Reports, and Environmental Impact Statements. Survey reports shall contain the following information:

   a. Project location and description**,** including:

[4] Collecting Guidelines and Documentation Techniques. California Native Plant Society Policy (adopted March 4, 1995).
[5] Ferren, W.R., Jr., D.L. Magney, and T.A. Sholars. 1995. The Future of California Floristics and Systematics: Collecting Guidelines and Documentation Techniques. *Madroño* 42(2):197-210.

1) A detailed map of the location and footprint of the proposed project.
2) A detailed description of the proposed project, including one-time activities and ongoing activities that may affect botanical resources.
3) A description of the general biological setting of the project area.

b. Methods, including:
   1) Survey methods for each of the habitats present, and rationale for the methods used.
   2) Description of reference site(s) visited and phenological development of the target special status plants, with an assessment of any conditions differing from the project site that may affect their identification.
   3) Dates of surveys and rationale for timing and intervals; names of personnel conducting the surveys; and total hours spent in the field for each surveyor on each date.
   4) Location of deposited voucher specimens and herbaria visited.

c. Results, including:
   1) A description and map of the vegetation communities on the project site. The current standard for vegetation classification, *A Manual of California Vegetation*[6], should be used as a basis for the habitat descriptions and the vegetation map. If another vegetation classification system is used, the report must reference the system and provide the reason for its use.
   2) A description of the phenology of each of the plant communities at the time of each survey date.
   3) A list of all plants observed on the project site using accepted scientific nomenclature, along with any special status designation. The reference(s) used for scientific nomenclature shall be cited.
   4) Written description and detailed map(s) showing the location of each special status or locally significant plant found, the size of each population, and method used to estimate or census the population.
   5) Copies of all California Native Species Field Survey Forms or Natural Community Field Survey Forms and accompanying maps.

d. Discussion, including:
   1) Any factors that may have affected the results of the surveys (*e.g.*, drought, human disturbance, recent fire).
   2) Discussion of any special local or range-wide significance of any plant population or community on the site.
   3) An assessment of potential impacts. This shall include a map showing the distribution of special status and locally significant plants and communities on the site in relation to the proposed activities. Direct, indirect, and cumulative impacts to the plants and communities shall be discussed.
   4) Recommended measures to avoid and/or minimize direct, indirect, and cumulative impacts.

e. References cited and persons contacted.

f. Qualifications of field personnel including any special experience with the habitats and special status plants present on the site.

[6] Sawyer, J.O. and T. Keeler-Wolf. 1995. *A Manual of California Vegetation*. California Native Plant Society. Sacramento, CA. 471 pp.

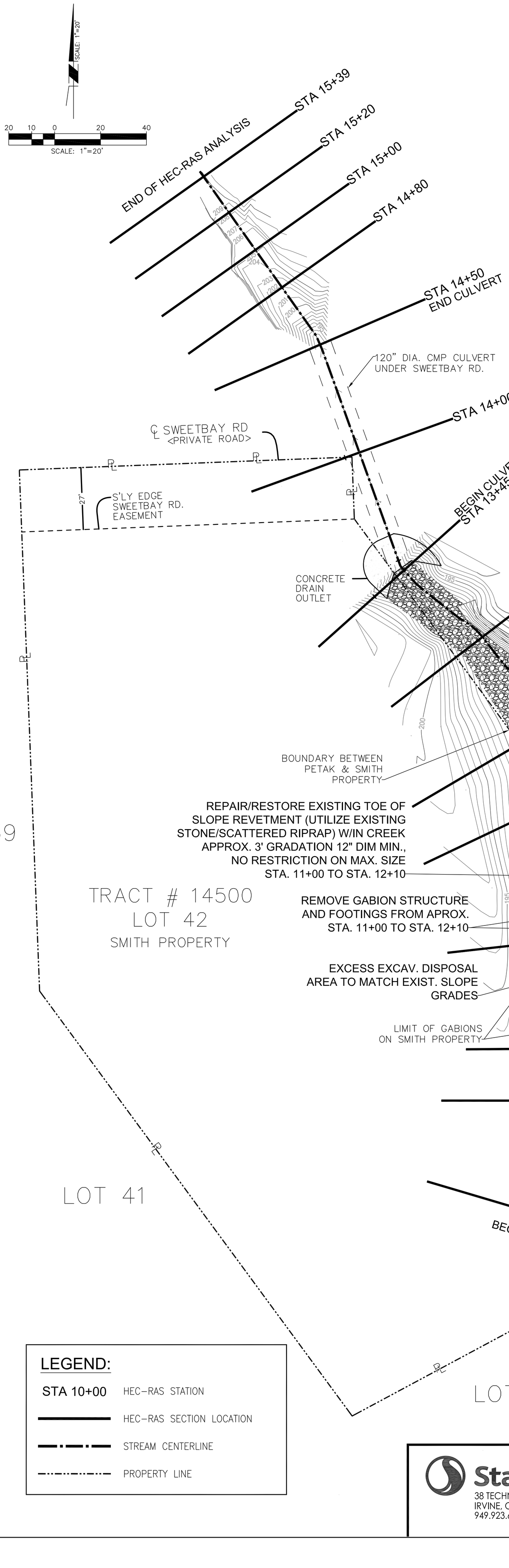
APPENDIX C

Proposed Restoration Work Plan

SCALE: 1"=20'

20 10 0 20 40

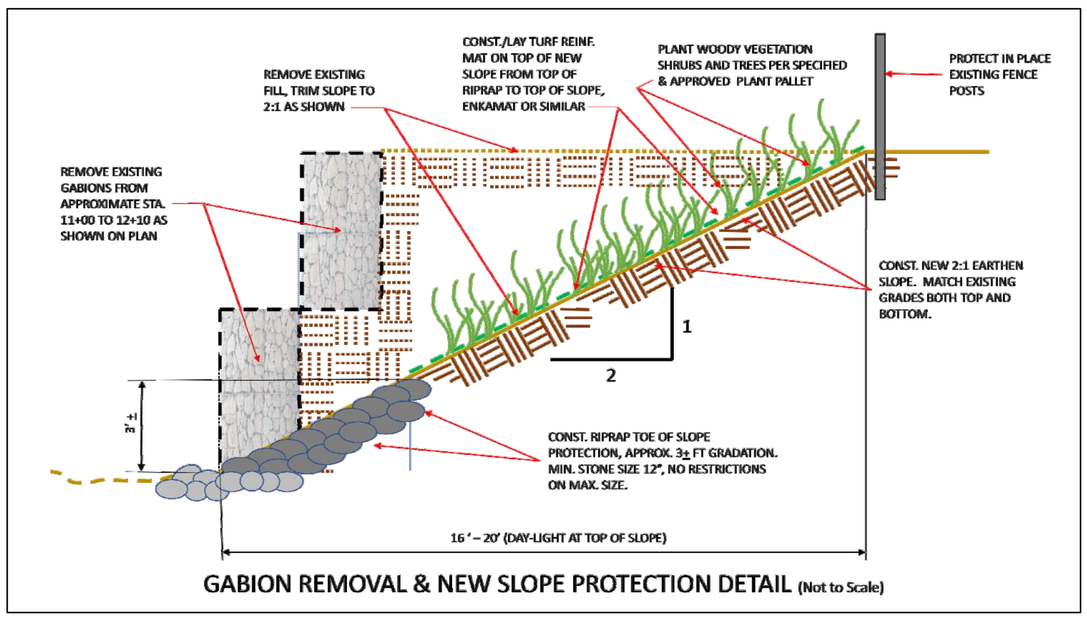
SCALE: 1"=20'



PETAK PROPERTY
LOT 43

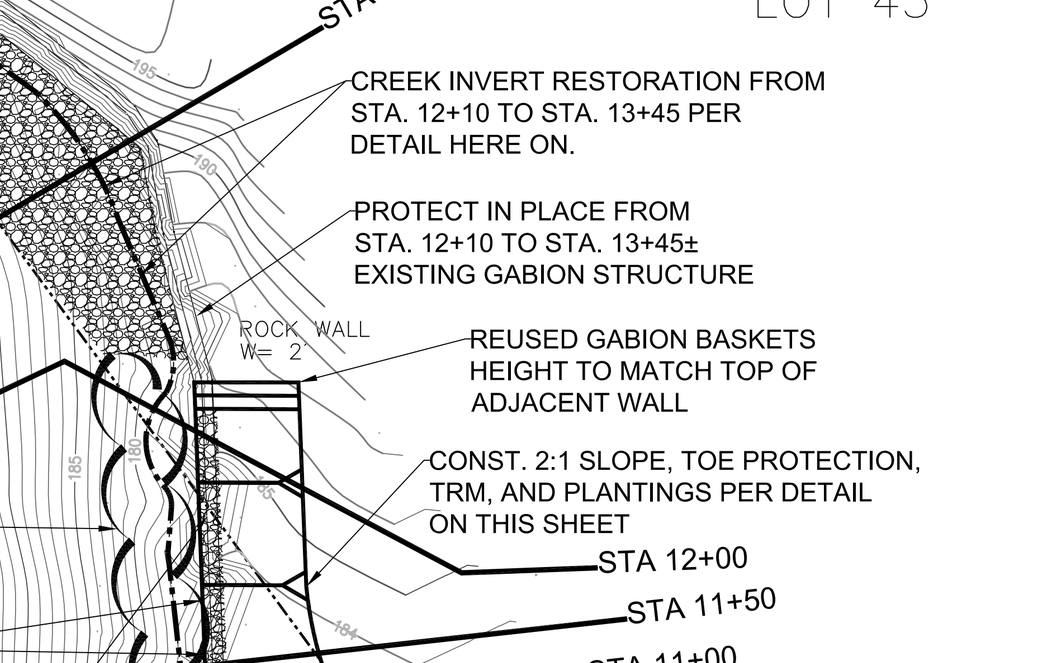
CREEK INVERT RESTORATION FROM
STA. 12+10 TO STA. 13+45 PER
DETAIL HERE ON.

PROTECT IN PLACE FROM
STA. 12+10 TO STA. 13+45±
EXISTING GABION STRUCTURE



GABION REMOVAL & NEW SLOPE PROTECTION DETAIL (Not to Scale)

CREEK INVERT RESTORATION DETAIL FROM STA. 12+00 TO STA. 13+45± (Not to Scale)



RIPRAP GRADATION TABLE
PERCENT LIGHTER BY WEIGHT (LBS.)

W 100	
MAX	MIN
7,873	3,149
W 50	
MAX	MIN
2,335	1,575
W 15	
MAX	MIN
1,168	492

LEGEND:

STA 10+00	HEC–RAS STATION
———	HEC–RAS SECTION LOCATION
—·—·—	STREAM CENTERLINE
—··—··—	PROPERTY LINE

Stantec
38 TECHNOLOGY DRIVE, SUITE 100
IRVINE, CA 92618
949.923.6000 stantec.com

ALTAMIRA CANYON WASH/CREEK
FROM APPROX. 100' U/S OF SWEETBAY RD.
TO APPROX. 400' D/S OF SWEETBAY RD.

HEC-RAS WORKMAP

DATE: 09/10/19
PROJECT NO. 185804202
EXHIBIT 1

APPENDIX C

GEOTECHNICAL REPORT

COAST GEOTECHNICAL, INC.

Geotechnical and Geologic Investigation

of

Proposed Altamira Creek Channel Restoration

at

Lot 42/43 of Track 14500, Rancho Palos Verdes, California

BY:

COAST GEOTECHNICAL, INC.
W. O. 620821-01, dated October 7, 2021

FOR:

Mr. William Petak
25 Sweetbay Road
Rancho Palos Verdes, CA 90275

COAST GEOTECHNICAL, INC.

1200 West Commonwealth, Fullerton, CA 92833 ▪ Ph:(714)870-1211▪ Fax:(714)870-1222 ▪ email:coastgeotec@sbcglobal.net

October 7, 2021 W.O. 620821-01

Mr. William Petak
25 Sweetbay Road
Rancho Palos Verdes, CA 90275

Subject: Geotechnical and Geologic Investigation for Proposed Altamira Creek Channel Restoration at Lot 42/43 of Tract 14500, Rancho Palos Verdes, California

Dear Mr. Petak:

Pursuant to your request, a geotechnical engineering investigation has been performed at the subject site. The purposes of the investigation were to assess the general geotechnical and geological engineering characteristics of the near surface earth materials on and underlying the proposed channel mitigation for Altamira Creek.

The findings and recommendations contained in this report are based upon our understanding of the proposed project and analyses of the data obtained from our field and laboratory testing programs.

This report completes our scope of geotechnical engineering services authorized by the client in the May 28, 2021 proposal.

PROJECT DESCRIPTION

Various phases of embankment improvements have been installed along the eastern bank of Altamira Creek and to the northern bank of an unnamed tributary to the east, to mitigate loss of property.

The existing protective mitigation generally consists of concrete and gabion walls and has occurred on property owned by the client (Petak), Lot 43 of Tract 14500, and on adjacent property, Lot 42 of Tract 14500, owned by Smith, with the mitigation performed over an unspecified time period.

At some point it was discovered that approval from the responsible regulatory agency(s) was not obtained. Our understanding is that those agencies consist of the United States Army Corps of Engineers (USACE), California Department of Fish and Wildlife (CDFW), and the Los Angeles Regional Water Quality Control Board (LARWQCB). Our understanding is that after a site visit by the USACE and LARWQCB, a notice of violation to secure a Section 401 Water Quality Certification was issued.

Our understanding is that Mr. Petak is attempting to comply with the notice of violation to allow the channel mitigation to remain, and that the Smith property will have the improvements removed.

A grading plan, by Stantec, is attached as Figure 3.2, and shows existing channel mitigation to remain, and that to be removed. Sections by Stantec showing details of the proposed work are shown on Figure 4.

PROJECT WORK SCOPE

The purpose of our services was to evaluate the project near surface earth materials in the area to be removed and to provide geotechnical engineering conclusions and recommendations relative to the reconstruction of the channel embankment. Our scope of services consisted of the following:

1. A cursory geotechnical reconnaissance of the site and surrounding areas.

2. Excavation of three exploratory test pits to determine the near surface earth material conditions and if encountered, groundwater conditions.

3. Collection of representative bulk and/or undisturbed earth material samples for laboratory analysis.

4. Laboratory analyses of samples including determination of in-situ and maximum density, in-situ and optimum moisture content, shear strength characteristics, expansion potential, and sulfate content.

5. Geotechnical analysis of the data obtained from exploration, review and testing programs.

6. Preparation of this report presenting results of our investigation and initial recommendations.

SITE CONDITIONS

The subject site is identified as Lot 43 (Petak) and Lot 42 (Smith) of Tract 14500, in the City of Rancho Palos Verdes, and is located on the Site Vicinity Map, Figure 1.

Physiographically, the project site is located in the gated Portuguese Bend Riding Club area, north of Palos Verdes Drive South, on the southern side of Sweetbay Road, easterly of Narcissa Drive. The subject properties have an irregular shape, with the Petak property generally bound by Sweetbay Road to the north, and two drainage tributaries, Altamira Creek along the western boundary and an unnamed tributary along the eastern boundary. Altamira Creek generally follows the common boundary between the two properties.

Topographically the property shows varied relief. The central portion of the property shows a natural gentle to moderate downward gradient to the south that has been altered from past grading to accommodate existing horse stalls, sheds, storage buildings, and corrals. Along the tributaries the natural embankments are incised and show moderate sloped to near vertical conditions, with heights of ten to twenty feet. Portions of the embankments have been modified with protection consisting of concrete and gabion walls. The slope that ascends westerly of Altamira Creek is generally at a grade slightly steeper than 2:1(H:V), and exhibits a surface slump.

Site configuration and topography is shown on the appended Overall Site Plan (Figure 3) and Site Geology Map (Figure 3.1). The base map for these figures was obtained from Stantec.

RECORD REVIEW

A search of geotechnical records was requested at the City of Rancho Palos Verdes for the subject site. Records pertinent to this report were not located in the tract and address files.

Readers of this report are advised that a record search is not an exact science; it is limited by time and resource constraints, incomplete records, ability of custodian of records to locate files, and where records are located is only a limited interpretation of other consultant's work. Readers of this report should perform their own review of City and or internet records to arrive at their own interpretations and conclusions concerning geologic conditions of the area and associated risk's with construction in the area.

FIELD INVESTIGATION

The field investigation was performed on August 9, 2021, and consisted of the excavation of three test pits by hand equipment at the locations shown on the attached Site Geology Map, Figure 3.1. As excavations progressed, personnel from this office visually classified the earth materials encountered, and secured representative samples for laboratory testing.

Pushing or driving a sampling spoon into the material obtained undisturbed samples for detailed testing in our laboratory. A solid barrel-type spoon was used having an inside diameter of 2.5 inches with a tapered cutting tip at the lower end and a ball valve at the upper end. The sampler was driven with a slide hammer.

The barrel is lined with thin brass rings, each one inch in length. The spoon penetrated into the earth material below the depth of test pit approximately six inches. The central portion of this sample was retained for testing. All samples in their natural field condition were sealed in airtight containers and transported to the laboratory.

LABORATORY TESTING

Laboratory testing was programmed following a review of the field investigation, and after considering the probable foundation design to be evaluated. Please see Appendix A for laboratory testing.

GEOLOGIC CONDITIONS

The project is located within a geographic area known as the Palos Verdes Peninsula. The peninsula's regional geology is a series of sub-parallel synclinal and anticlinal folds and minor faults formed by uplift and deformation south of the Palos Verdes Fault. As uplift progressed changes in sea level caused wave eroded benches to be cut into the peninsula flanks, and continued geomorphic processes occurred resulting in present day landforms.

A regional geology map prepared by Thomas Dibblee (1999) is presented on Figure 2 and the Landslide Inventory Map for the Palos Verdes Peninsula (2007) by the California Geologic Survey is presented on Figure 2.1. These maps show the map preparer's interpretation of landslide boundaries, landslide activity, and the landslide's relationship to the location of the subject site.

The subject site is found within the Portuguese Bend Landslide complex. This complex consists of various sub-landslides that have been identified through the years generally based on geomorphic features, locality, and land movements.

The City has divided this slide complex into zones based on past movements, historic damage, potential future movement and other factors. The subject property is found within Zone 2 of the City of Rancho Palos Verdes Landslide Moratorium area. The property is located about 1200 feet from Zone 5 (Abalone Cove Landslide) to the south, and 2,200 feet from Zone 6 (Active Portuguese Bend Landslide) to the west. The reader should refer to City documents for descriptions of each zone.

Recent work by the City of Rancho Palos Verdes in preparation of the Zone 2 Landslide Moratorium Ordinance Revisions dated March 2014 concluded the following in reference to undeveloped parcels in Zone 2:

- "It is our conclusion that the development of the 47 lots within Zone 2 will not have a negative impact to the gross stability of either Zone 2 or adjacent areas, provided the recommendations of the architectural standards adopted by the Portuguese Bend Community Association and the City's Landslide Moratorium Exception Conditions are implemented into all future design and construction."

- "Geotechnical studies, investigations, and reviews of the APBL, PBL, and ACL have been performed by numerous geotechnical professionals over the years to determine and document the factor of safety of the ancient and active landslides within the subject area. There are many varying opinions regarding the overall stability within Zone 2. These opinions range Project No. 103002-01 Page 15 March 29, 2011 from the area being at unity, i.e. factor of safety at or just below 1.0, (GeoKinetics, 2007), a factor of safety that is probably greater than 1.0 however is less than 1.5 (Cotton Shires, 2001) to a factor of safety of greater than 1.5 (Leighton, 2001 and 2006)."

Many of other documents are available through a search of online materials held by the City of Rancho Palos Verdes under Portuguese Bend Landslide, Abalone Cove Landslide, Klondike Canyon landslide, Non Monk Zone 2 Lots, historic landslide documents, and other keywords. Some recent documents such as;

- Feasibility Study Update, Portuguese Bend Landslide Complex, by Daniel B. Stephens and Associates, Inc. dated July 26, 2018.

- Geotechnical Study for the Preparation of an EIR for Zone 2 Landslide Moratorium, by LGC Valley Inc., dated March 29, 2011.

- Geotechnical Evaluation Report, Portuguese Bend Landslide Complex Mitigation Measures, by Geo-Logic Associates, Inc., dated December 2019.

contain well written summaries of past studies, historic movemet, and past and proposed mitigation measures. Readers should review these documents in full context.

A search for documents found a "Preliminary Geotechnical Evaluation for the Altamira Canyon Drainage/Erosion Mitigation Project, Rancho Palos Verdes, California, by Ninyo Moore, prepared for Harris and Associates, dated December 12, 2016", the report addressed existing conditions as follows:

> "The existing drainage channel and associated erosion have been a significant coneern in Altamira Canyon. Several preliminary drainage studies for Altamira Canyon have been performed (Robert Stone and Associates, 1983; ASL Engineering Consultants, 1990; Charles Abbott Associates, 1993). The canyon conveys high-velocity water runoff from numerous drainage tributaries north, west, and east of the area. Portions of the canyon are deeply eroded and pose potential hazards for residential structures and appurtenances, as well as, other improvements such as roadways and utilities in the area. In response to erosion concerns, drainage improvements, including pipelines, culverts, and retention systems have been implemented at various locations in the canyon."

The report addressed several methods of repair as geotechnically feasible. Based on current site conditions, these repairs have not been made.

Site specific, the subject area is at the natural convergence of two tributaries that have been modified with manmade improvements. Within the area of proposed channel mitigation geologic conditions are not a significant factor for the proposed mitigation.

SITE LITHOLOGY

Our understanding of the site lithology was developed through review of previous area work, site reconnaissance, and logging of exploratory pits. Site exploration exposed undocumented fills, and landslide material composed of colluvium and alluvial deposits.

Artificial fill (Af) encountered consisted of well placed to poorly placed tan gray silty clay, diatomaceous, soft to stiff, damp to moist, some trash and rubble, zones of oversized rock fragments. The fills are opined undocumented and appear to above been placed to raise grade to the top of the existing gabion wall, as part of past embankment repair; or to create level corral areas.

Slopewash (Qsw) was not exposed in the placed test pits, but was observed to be present on the slope ascending from Altamira Creek channel to the west. The expose material consisted of grey black diatomaceous silty clay, soft, damp with abundant roots, rock fragments, and rodent burrowing.

Colluvium (Qls-Qc) encountered consisted of dark grey black clay diatomaceous, firm, dry to moist, scattered with bedrock fragments.

Alluvial material (Qls-Qal) consisted of brown to grey black clayey silt, clay, diatomaceous, abundant gravel to large cobble sub angular rocks, moist and firm.

While not exposed in the test pits landslide material consisting of bedded sedimentary bedrock identified as intact to disturbed Monterey formation (Qls-Tm)is exposed just downstream of the subject site, in a near vertical channel embankment bank.

Logs of the exploratory test pits are presented on Plates B through D.

GEOLOGIC STRUCTURE

Our interpretation of site geology is presented on Figure 3.1. Some civil sections presented on Figure 4 have been altered to show subsurface conditions and proposed grading limits. The cross section is only a representation of subsurface conditions adequate for geotechnical and geologic use only. Actual conditions exposed during channel mitigation could differ.

The site did not exhibit geologic structure at the depths explored, nor were bedrock exposures observed that could locally influence the proposed work.

GROUNDWATER

Groundwater was not encountered and is not anticipated to affect the proposed mitigation.

DRAINAGE

Existing site drainage is poorly controlled sheet flow. Site mitigation shall incorporate designed drainage as needed to comply with the regulations of the permitting agency.

SEISMICITY

Southern California is located in an active seismic region. Moderate to strong earthquakes can occur on numerous faults. The United States Geological Survey, California Division of Mines and Geology, private consultants, and universities have been studying earthquakes in Southern California for several decades. Early studies were directed toward earthquake prediction estimation of the effects of strong ground shaking. Studies indicate that earthquake prediction is not practical and not sufficiently accurate to benefit the general public. Governmental agencies are shifting their focus to earthquake resistant structures as opposed to prediction. The purpose of the code seismic design parameters is to prevent collapse during strong ground shaking. Cosmetic damage should be expected.

Within the past 50 years, Southern California and vicinity have experienced an increase in seismic activity beginning with the San Fernando earthquake in 1971. In 1987, a moderate earthquake

struck the Whittier area and was located on a previously unknown fault. Ground shaking from this event caused substantial damage to the City of Whittier, and surrounding cities. The January 17, 1994, Northridge earthquake was initiated along a previously unrecognized fault below the San Fernando Valley. The energy released by the earthquake propagated to the southeast, northwest, and northeast in the form of shear and compression waves, which caused the strong ground shaking in portions of the San Fernando Valley, Santa Monica Mountains, Simi Valley, City of Santa Clarita, and City of Santa Monica.

Southern California faults are classified as: active, potentially aetive, or inactive. Faults from past geologic periods of mountain building but do not display any evidence of recent offset, are considered "inactive" or "potentially active". Faults that have historically produced earthquakes or show evidence of movement within the past 11,000 years are known as "active faults". There are no known aetive faults within the subject property. The nearest causative fault is the Palos Verdes Fault and is about 4.4 kilometers to the northeast.

- *The Palos Verdes Fault* is generally described in terms of three individual segments, namely the San Pedro Bay, the on-shore, and the Santa Monica Bay segments (Ziony, 1985). All segments are believed to possess a reverse or reverse right oblique sense of motion. References reviewed as part of this report indicate that sedimentary materials; however, evidence for Holoeene activity along the on-shore and Santa Monica Bay segments is currently in dispute. Nonetheless, in light of the increased amount of seismicity that has been attributed to the Santa Monica Bay segment, the Palos Verdes Hills fault has been classified as active.

Seismic hazards are discussed in the following section.

SEISMIC HAZARDS

The potential hazards to be evaluated with regard to seismic conditions include fault rupture, landslides triggered by ground shaking, soil liquefaction, earthquake-induced vertical and lateral displacements, earthquake-induced flooding due to the failure of water containment structures, seiches, and tsunamis.

Fault rupture

The project is not located within a currently designated Alquist-Priolo Earthquake Zone (Bryant and Hart, 2007). No known active faults are mapped on the site. Based on this consideration, the potential for surface fault rupture at the site is considered to be remote.

Ground Shaking

The site is located in a seismically aetive area that has historically been affected by moderate to oecasionally high levels of ground motion and site lies in relatively close proximity to several aetive faults; therefore, during the life of the proposed development, the property will probably experience moderate to occasionally high ground shaking from these fault zones, as well as some background shaking from other seismically active areas of the Southern California region. Design

of structures by code is to maintain struetural integrity not to prevent damage. Earthquake insurance is available where the damage risk is not acceptable to the client.

Seismic induced landslide

Earthquake-induced landslide zones were delineated by the State of California using criteria adopted by the California State Mining and Geology Board. Under those criteria, earthquake-induced landslide zones are areas meeting one or more of the following:

1. Areas known to have experienced earthquake-induced slope failure during historic earthquakes.

2. Areas identified as having past landslide movement, including both landslide deposits and source areas.

3. Areas where CDMG's analyses of geologic and geotechnical data indicate that the geologic materials are susceptible to earthquake-induced slope failure.

Based on the Seismic Hazard Zone Map published by the State of California, San Pedro, Torrance and Redondo Beach Quadrangles, appended as Figure 5, the site is mapped as being in an area subject to potential seismic induced landslides. The area is mapped; as such, due to the region being mapped as a landslide.

On a local scale the site does not show a significant sloped condition, and is opinioned not to have a local significant risk for seismic induced landsliding.

Seismic induced liquefaction

Liquefaction is a seismic phenomenon in which loose, saturated, non-cohesive granular soils exhibit severe reduction in strength and stability when subjected to high-intensity ground shaking. The mechanism by which liquefaction occurs is the progressive increase in excess pore pressure generated by the shaking associated with the seismic event and the tendency for loose non-cohesive soils to consolidate. As the excess pore fluid pressure approaches the in-situ overburden pressure, the soils exhibit behavior similar to a dense fluid with a corresponding significant decrease in shear strength and increase in compressibility. Liquefaction occurs when three general conditions exist: 1) shallow groundwater; 2) low density, non-cohesive sandy soils; and 3) high-intensity ground motion.

Based on the Seismie Hazard Zone Map published by the State of California, San Pedro, Torrance and Redondo Beach Quadrangles, appended as Figure 5, the project is not mapped as having a potential for seismic induced liquefaction. Based on subsurface conditions the site is opined not to have a potential for liquefaction.

Lateral spreading

The occurrence of liquefaction may cause lateral spreading. Lateral spreading is a phenomenon in which lateral displacement can occur on the ground surface due to movement of non-liquefied soils along zones of liquefied soils. For lateral spreading to occur, the liquefiable zone must be continuous, unconstrained laterally, and free to move along sloping ground toward an unconfined area.

The area does not exhibit characteristics common to areas subject to seismic induced lateral spread. Our opinion is that the site is not subject to seismie induced lateral spread.

Earthquake-induced settlements

Strong ground shaking can cause settlement by allowing sediment particles to become more tightly packed, thereby reducing pore space. Unconsolidated, loosely packed alluvium, beaeh/lake deposits are especially suseeptible to this phenomenon. Poorly compacted artificial fills may also experience seismically induced settlement.

The site is underlain by thin unmapped fills and native earth materials. Seismic induced settlement will be negligible.

Earthquake-Induced Flooding

The failure of dams or other water-retaining structures as a result of earthquakes and strong ground shaking could result in the inundation of adjacent areas. Due to the lack of a major dam or water-retaining structure located near the site, the potential of earthquake-induced flooding affecting the site is considered not to be present.

Seiches

Seiches are large waves generated in enclosed bodies of water in response to ground shaking. Based on the lack of nearby enclosed bodies of water the risk from a seiche event is nil.

Tsunamis

Tsunamis are waves generated in large bodies of water as a result of change of seafloor topography caused by tectonie displacement. Based on the elevation of the site the project has nil potential to be affected by a tsunami.

Collapsible soil

Collapsible soil consists of loose, dry, low-density materials that collapse and eompact under the addition of water or excessive loading. These soils are distributed throughout the southwestern United States, specifically in areas of young alluvial fans, debris flow sediments, and loess (wind-blown sediment) deposits. Soil collapse occurs when the land surface is saturated at depths greater

than those reached by typical rain events and eliminates the clay bonds holding the soil grains together.

Site earth materials consist of earth materials which do not show physical characteristics common to earth material having a collapse potential. Our opinion is that site earth materials are not subject to collapse.

SLOPE CONDITIONs

Typical types of instability that can affect sloped property are regional and local instability, slope creep, and debris/mudflow.

The subject site is within the Portuguese Bend Landslide complex, portions of which are known for historic recent land movement that has caused varying degrees of distress to structures, site improvements, and infrastructure. Recorded movement has occurred in the area and is presented on appended Figure 6. This classification and movement does not preclude, assign, or imply any level to the risk that future regional movement and or distress may or may not take place. This risk is the client's.

The client has the sole responsibility for assessing the risks associated with the proposed project and regional movement, and could at his choice contract for various additional methods of site exploration, monitoring, and or geologic and geotechnical analysis that could provide useful information for assessing regional stability.

Locally, neither gross instability, creep movement, nor mud debris flows is opined present or to be a risk to the proposed mitigation, under current conditions.

A surface instability is present on the slope that ascends westerly from the creek channel and is shown on Figures 3.1 and 4.1. The slump has an arcuate shape with a depth of about three feet. The slump probably was from oversaturated surface soils and lack of support along the toe. This slump is proposed to be repaired as part of site channel mitigation.

The proposed channel mitigation is opined not to have a negative impact to the regional or local stability as the channel geometry is not being significantly altered; the driving and resistance forces for assessing slope stability are not changing significantly, and the infiltration of waters into the ground surface will remain similar.

GEOTECHNICAL DISCUSSION

Development of the project as understood is considered feasible from a geotechnical engineering standpoint, provided that the recommendations stated herein are incorporated in the design and are implemented in the field. General comments are as follows.

- Earthwork is anticipated to consist of removal of existing gabion walls and restoration of the exposed channel bank to a 2:1(H:V) slope, removals and placement of channel protection, and repair of the surface slump.

- The existing gabion walls to remain are functioning, are not considered a geotechnical hazard in their present condition, and should continue to perform until repair or replacement is needed. The owner has sole responsibility for these structures and could secure the services of a qualified engineer for evaluation of the walls to remain.

- Repair of the existing surface slump is geotechnically feasible. Since the repaired slope will need to match existing grade, about 1.5:1(H:V), the use of geogrid will be required. Detailed repair is provided elsewhere in this report.

- The proposed project is opined not to have a measurable impact to the gross stability of the regional landslide. This opinion is based on the mitigation not increasing the weight of the landslide signifieantly in comparison to the overall mass of the landslide; the proposed mitigation not significantly changing the geometry of the slide area, and not increasing the infiltration of runoff waters into the landslide mass.

- The proposed project as shown on the plans depicted on attached Figures 3.2 and 4 is opined geotechnically feasible.

- Based on our understanding of the project the inclusion of foundation and retaining wall design recommendations typical to a geotechnical report did not seem needed. If requested this information can be provided as an addendum.

The proposed development is not anticipated to have an adverse affect, from a geotechnical perspective, on adjacent sites and vice versa provided our guidelines, building codes and construction standards are followed.

PROPOSED GRADING

Grading plans available at the time our work are attached as Figure 3.1. Actual grading performed will be dependent on field conditions exposed. All recommendations within this report are subject to change based observations exposed during grading.

The following are general grading recommendations, which shall be incorporated into the project where applicable.

GRADING RECOMMENDATIONS

Slope restoration

Where the gabion walls are removed the proposed 2:1 (H:V) slope is anticipated to expose existing fill, colluvium, and alluvial material.

At a minimum the exposed slope surface will require tracking rolling to provide a firm finish surface; however, the proposed slope would perform in a more favorable manner if the slope was reconstructed with benched compacted fill as depicted on Figure 4. Based on the slope height and grade neither a keyway nor subdrain would be required. Exposed benches would require processing, moisture conditioning, and compaction to a minimum of 90% relative compaction prior to any fill placement. The slope face should be track rolled to a firm surface.

Channel mitigation

Where channel protection is to be placed, removals shall be to the depth needed per the civil plan. The removal bottom shall require processing, moisture conditioning, and eompaction to a minimum of 90% relative compaction prior to any plaeement of channel protection.

Where removals are needed adjacent to existing gabion walls to remain (Section DD Figure 4) care shall be taken not to remove support for the existing wall. The contractor shall pothole this area to assess the depth and condition of the existing gabion wall foundation. COAST GEOTECHNICAL, Inc. shall be contacted to observe the conditions exposed and will provide field recommendations for continued eonstruction. Construction in limited sections may be required.

Slope repair

Repair of the slope surface failure shall begin along the toe of slope. In this area a keyway shall be excavated a minimum of two feet into acceptable fills at the toe and shall extend at least five feet beyond the lateral limits of the damaged slope area. The keyway shall be a minimum of five feet in width and shall slope back toward the keyway heel. The keyway bottom shall be processed and compacted to a minimum of 90% relative compaction. At the heel of the keyway a subdrain shall be installed. The subdrain shall consist of four-inch diameter perforated SDR 35 or SCH 40 pipe placed holes down. The pipe shall be surrounded with 3/4-inch gravels. The gravels shall be wrapped in filter cloth. The subdrain outlet pipe shall be solid pipe.

As the fill slope is constructed the new fills shall be benched into existing fill. The exposed benches shall be processed as needed and rolled to a minimum of 90% relative compaction. Subsequent fills shall be placed in six to eight-inch lifts, moisturized to a minimum of 2% to 3% over optimum moisture content and compacted to a minimum of 90% relative compaction. This process shall be followed to finish grade. The slope face shall be rolled to show a relative compaction of 90% or better.

Where the slope exceeds a 2:1(H:V) gradient it is required to place geogrid every two feet in vertical height and extending at least eight feet into the slope, to improve the long term performance of the slope. The geogrid should be similar to Miragrid-XT or equivalent.

See Figure 4.1 for a typical repair section.

General comment

Filter fabric shall be placed between any soil/granular earth material (sand, gravels, rocks) to minimize the loss of fines into voids within the granular material.

The contraetor is advised that abundant oversized cobble to boulder sized rocks will be encountered. Oversized material is not allowed in placed eompacted fills.

The geotechnical engineer or representative and the City/County Grading Inspector prior to processing shall observe exposed excavation bottoms. Field recommendations will be made depending on conditions encountered. Upon approval, the excavation bottoms shall be processed; moisture conditioned to 3-4% percent over optimum moisture content and compacted to a minimum of 90% relative compaction.

Subsequent fills shall be placed in six to eight inch lifts, moisturized to a minimum of 3-4% percent over optimum moisture content and compacted to a minimum of 90% relative compaction. This process shall be followed to finish grade.

GENERAL GRADING NOTES

Areas to be graded shall be cleared of vegetation, debris, foundation structures, and underground systems prior to grading. Excavations shall be backfilled according to the soil engineering recommendations. Generally unsuitable material shall be removed to competent earth material and the void backfilled with soils compacted to a minimum of 90% relative compaction or better.

The entire grading operation shall be done in accordance with the attached "Specifications for Grading". Any import fill materials to the site shall not have an expansion index greater than 40, and shall be tested and approved by our laboratory. All recommendations are subject to modification upon review of permitted plans.

EXPANSIVE SOILS

Results of expansion tests indicate that the near surface soils have a high expansion potential.

SHRINKAGE AND SUBSIDENCE

Subsidence is expected to be minimal. Shrinkage is anticipated to range from five to fifteen percent.

SOLUBLE SULFATES

A chemical analysis of typical near surfaee earth materials for soluble sulfates showed a sulfate content of 175 ppm. Based on the current CBC and Table 4.3.1 of ACI 318-05 this is a moderate exposure to sulfate corrosion. Type II concrete with compressive strength of 4,000 psi with a water cementitious material ration of 0.50 and may be utilized for concrete in contact with soil.

DRAINAGE

Positive drainage should be planned for the site. Drainage should be directed away from top of slopes and structures via non-erodible conduits to suitable disposal areas. Top of slope areas should have a berm to prevent the flow of waters over and onto a sloped surface.

RPV ADMINISTRATIVE CODE 15.18.090 Section 107A COMPLIANCE STATEMENT

"A finding regarding the safety of the site, for the proposed structure or use against hazard from any variety of landsliding or settlement or slippage"

The project is within the Portuguese Bend Landslide complex which has documented variable rates of movement and associated distress to improvements. Our professional geotechnical opinion is that existing and proposed improvements have a continued risk of movement and distress associated with undefined ongoing and or future landsliding, settlement, or slippage of the landslide complex. This risk is the sole responsibility of the client to understand and to assume.

"A finding regarding the effect the proposed building, grading, and/or construction and use of the site will have on the geologic stability of the site and/or property outside the site".

Our professional geotechnical opinion is that the proposed mitigation will not aggravate the geologic stability of the site or offsite areas, provided grading is minimized, drainage is controlled, irrigation is minimized, and existing Portuguese Bend/ Abalone Cove Landslide mitigation measures (dewatering) are continued.

ENGINEERING CONSULTATION, TESTING & OBSERVATION

We will be pleased to provide additional input with respect to foundation design once methods of construction and/or nature of imported soil has been determined.

Grading and foundation plans should be reviewed by this office prior to commencement of grading so that appropriate recommendations, if needed, can be made.

Areas to receive fill should be observed by COAST GEOTECHNICAL, Inc. when unsuitable materials have been removed and prior to placement of fill, and fill should be observed and tested for compaction as it is placed.

AGENCY REVIEW

All soil and structural aspects of the proposed development are subject to the review and approval of the governing agency(s). It should be recognized that the governing agency(s) can dictate the manner in which the project proceeds. They could approve or deny any aspect of the proposed improvements and/or could dictate which foundation and grading options are acceptable. Supplemental geotechnical consulting in response to agency requests for additional information could be required and will be charged on a time and materials basis.

LIMITATIONS

This report presents recommendations pertaining to the subject site based on the assumption that the subsurface conditions do not deviate appreciably from those disclosed by our exploratory excavations. Our recommendations are based on the technical information, our understanding of the proposed construction, and our experience in the geotechnical field. We do not guarantee the performance of the project, only that our engineering work and judgments meet the standard of care of our profession at this time.

In view of the general conditions in the area, the possibility of different local soil conditions may exist. Any deviation or unexpected condition observed during construction should be brought to the attention of the Geotechnical Engineer. In this way, any supplemental recommendations can be made with a minimum of delay necessary to the project.

If the proposed construction will differ from our present understanding of the project, the existing information and possibly new factors may have to be evaluated. Any design changes and the finished plans should be reviewed by the Geotechnical Consultant. Of particular importance would be extending development to new areas, changes in structural loading conditions, postponed development for more than a year, or changes in ownership.

This report is issued with the understanding that it is the responsibility of the owner, or of his representative, to ensure that the information and recommendations contained herein are called to the attention of the Architects and Engineers for the project, and incorporated into the plans and that the necessary steps are taken to see that the Contractors and Subcontractors carry out such recommendations in the field.

This report is subject to review by the controlling authorities for this project.

We appreciate this opportunity to be of service to you.

Respectfully submitted:
COAST GEOTECHNICAL, INC.

Ming-Tarng Chen
RCE 54011

REGISTERED PROFESSIONAL ENGINEER
MING-TARNG CHEN
No. 54011
Exp.12/31/21
CIVIL
STATE OF CALIFORNIA

Todd D. Houseal
CEG 1914 Exp. 4/22

REGISTERED GEOLOGIST
TODD D. HOUSEAL
No. 1914
CERTIFIED
ENGINEERING
GEOLOGIST
STATE OF CALIFORNIA

APPENDIX A

This appendix contains a description of the field investigation, laboratory testing procedures and results, site plan, exploratory logs, and expansive soil recommendations.

FIELD INVESTIGATION

The field investigation was performed on August 9, 2021 consisting of the excavation of three test pits at the locations shown on the attached Site Geology Map. As excavation progressed, personnel from this office visually classified the soils encountered, and secured representative samples for laboratory testing.

Pushing or driving a sampling spoon into the material obtained undisturbed samples for detailed testing in our laboratory. A slide hammer was utilized to drive the sampler into the earth material. A solid barrel-type spoon was used having an inside diameter of 2.5 inches with a tapered cutting tip at the lower end and a ball valve at the upper end. The barrel is lined with thin brass rings, each one inch in length. The spoon penetrated into the earth material below the exploration bottom approximately six inches. The central portion of this sample was retained for testing. All samples in their natural field condition were sealed in airtight containers and transported to the laboratory.

Description of the earth materials encountered is presented on the attached test pit logs. The data presented on this log is a simplification of actual subsurface conditions encountered and applies only at the specific exploration location and the date excavated. It is not warranted to be representative of subsurface conditions at other locations and times.

LABORATORY TESTING

Field samples were examined in the laboratory and a testing program was then established to develop data for preliminary evaluation of geotechnical conditions.

Field moisture and dry densities were calculated for each undisturbed sample. The samples were obtained per ASTM:D-2937 and tested under ASTM:D-2216.

Maximum density-optimum moisture relationships were established per ASTM:D-1557 for use in evaluation of in-situ conditions and for future use during grading operations.

Direct shear tests were performed in accordance with ASTM:D-3080, on specimens at near saturation under various normal loads. The results of tests are based on an 80% peak strength or ultimate strength, whichever is lower, and are attached as Plates D, E and F.

Expansion tests were performed on typical specimens of earth materials in accordance with the procedures outlined in ASTM: D-4829.

TEST RESULTS

Maximum Density/Optimum Moisture (ASTM:D-1557)

Test Pit	Depth in Feet	Maximum Density, pcf	Optimum Moisture, %
1	0 – 4	100	24

Direct Shears

Test Pit	Depth in Feet	Cohesion (lbs./sq. ft.)	Angle of Internal Friction (Degrees)
1	0 – 4 (remolded)	400	26
3	6 (Qls-Qc)	450	25
2	4 (Qls-Qal)	350	30

Expansion Index (ASTM: D-4829)

Test Pit	Depth in Feet	Expansion Index	Expansion Potential
1	0 - 4	96	High

Chemical Analysis (USEPA Method 375.4)

Boring	Depth in Feet	Soluble Sulfate (ppm)
1	0 – 4	100

SPECIFICATIONS FOR GRADING

SITE CLEARING

All existing vegetation shall be stripped and hauled from the site.

PREPARATION

After the foundation for the fill has been cleared, plowed or scarified, it shall be disced or bladed until it is uniform and free from large clods, brought to a proper moisture content and compacted to not less than ninety percent of the maximum dry density in accordance with ASTM:D-1557 (5 layers - 25 blows per layer; 10 lb. hammer dropped 18"; 4" diameter mold).

MATERIALS

On-site materials may be used for fill, or fill materials shall consist of materials approved by the Soils Engineer and may be obtained from the excavation of banks, borrow pits or any other approved source. **The materials used should be free of vegetable matter and other deleterious substances and shall not contain rocks or lumps greater than six inches in maximum dimension.**

PLACING, SPREADING AND COMPACTING FILL MATERIALS

The selected fill material shall be placed in layers which, when eompacted, shall not exceed six inches in thickness. Each layer shall be spread evenly and shall be thoroughly mixed during the spreading to ensure uniformity of material and moisture of each layer.

Where moisture of the fill material is below the limits specified by the Soils Engineer, water shall be added until the moisture content is as required to ensure thorough bonding and thorough compaction.

Where moisture content of the fill material is above the limits specified by the Soils Engineer, the fill materials shall be aerated by blading or other satisfactory methods until the moisture content is as specified.

After each layer has been placed, mixed and spread evenly, it shall be thoroughly compacted to not less than 90 percent of the maximum dry density in accordance with ASTM:D-1557 (5 layers -25 blows per layer; 10 lbs. hammer dropped 18 inches; 4" diameter mold) or other density tests which will attain equivalent results.

Compaction shall be by sheepfoot roller, multi-wheel pneumatic tire roller, track loader or other types of acceptable rollers.

Rollers shall be of such design that they will be able to compact the fill to the specified density. Rolling shall be accomplished while the fill material is at the specified moisture content. Rolling of each layer shall be continuous over the entire area and the roller shall make sufficient trips to ensure that the desired density has been obtained. The final surface of the lot areas to receive slabs on grade should be rolled to a dense, smooth surface.

The outside of all fill slopes shall be compacted by means of sheepfoot rollers or other suitable equipment. Compaction operations shall be continued until the outer nine inches of the slope is at least 90 percent compacted. Compacting of the slopes may be progressively in increments of three feet to five feet of fill height as the fill is brought to grade, or after the fill is brought to its total height.

Field density tests shall be made by the Soils Engineer of the compaction of each layer of fill. Density tests shall be made at intervals not to exceed two feet of fill height provided all layers are tested. Where the sheepfoot rollers are used, the soil may be disturbed to a depth of several inches and density readings shall be taken in the compacted material below the disturbed surface. When these readings indicate that the density of any layer of fill or portion there is below the required 90 percent density, the particular layer or portion shall be reworked until the required density has been obtained.

The grading specifications should be a part of the project specifications.

The Soil Engineer shall review the grading plans prior to grading.

INSPECTION

The Soil Engineer shall provide continuous supervision of the site clearing and grading operation so that he can verify the grading was done in accordance with the accepted plans and specifications.

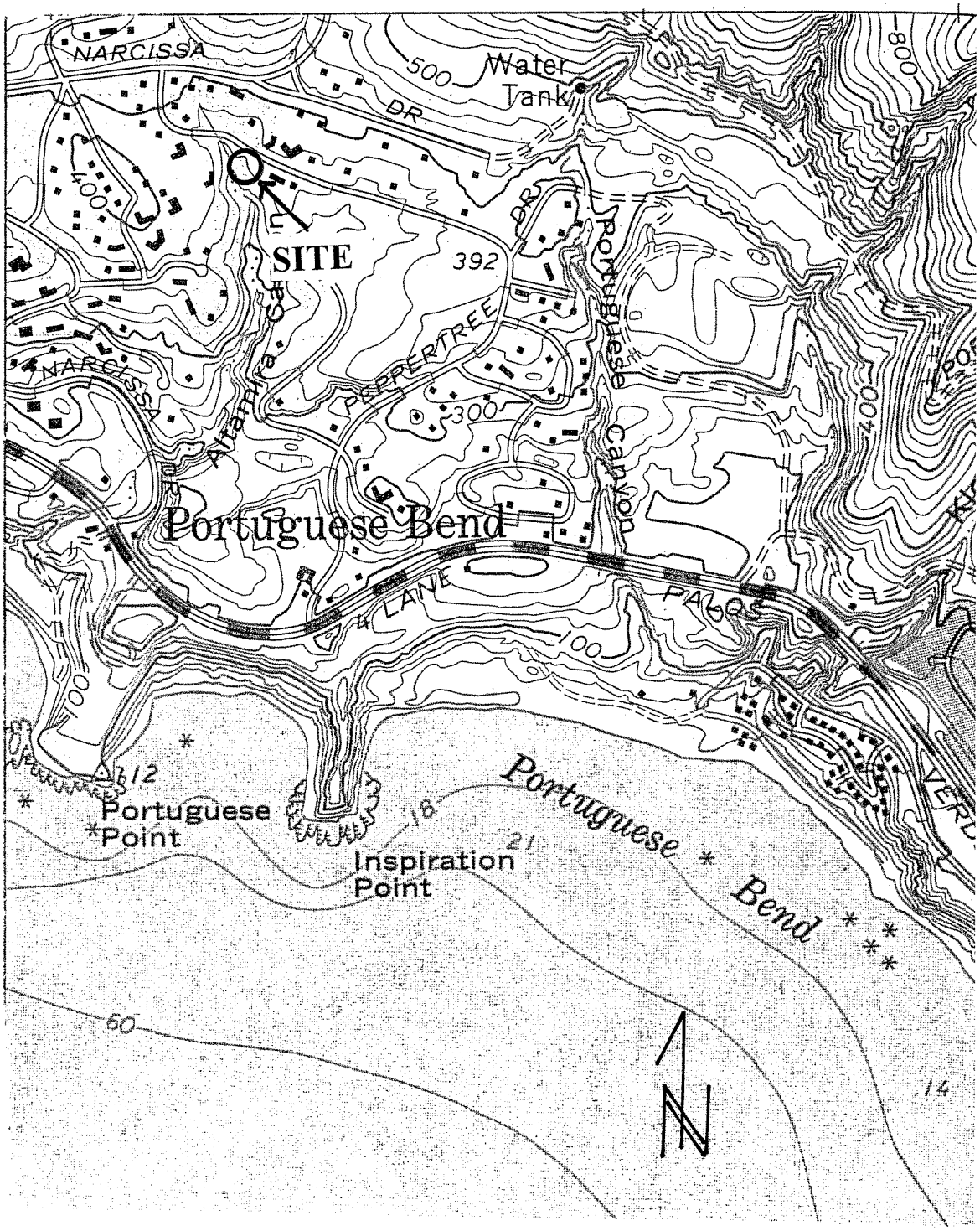
SEASONAL LIMITATIONS

No fill material shall be plaeed, spread or rolled during unfavorable weather conditions. When heavy rains interrupt work, fill operations shall not be resumed until the field tests by the Soils Engineer indicate the moisture content and density of the fill are as previously specified.

EXPANSIVE SOIL CONDITIONS

Whenever expansive soil conditions are encountered, the moisture content of the fill or recompacted soil shall be as recommended in the expansive soil recommendations included herewith.

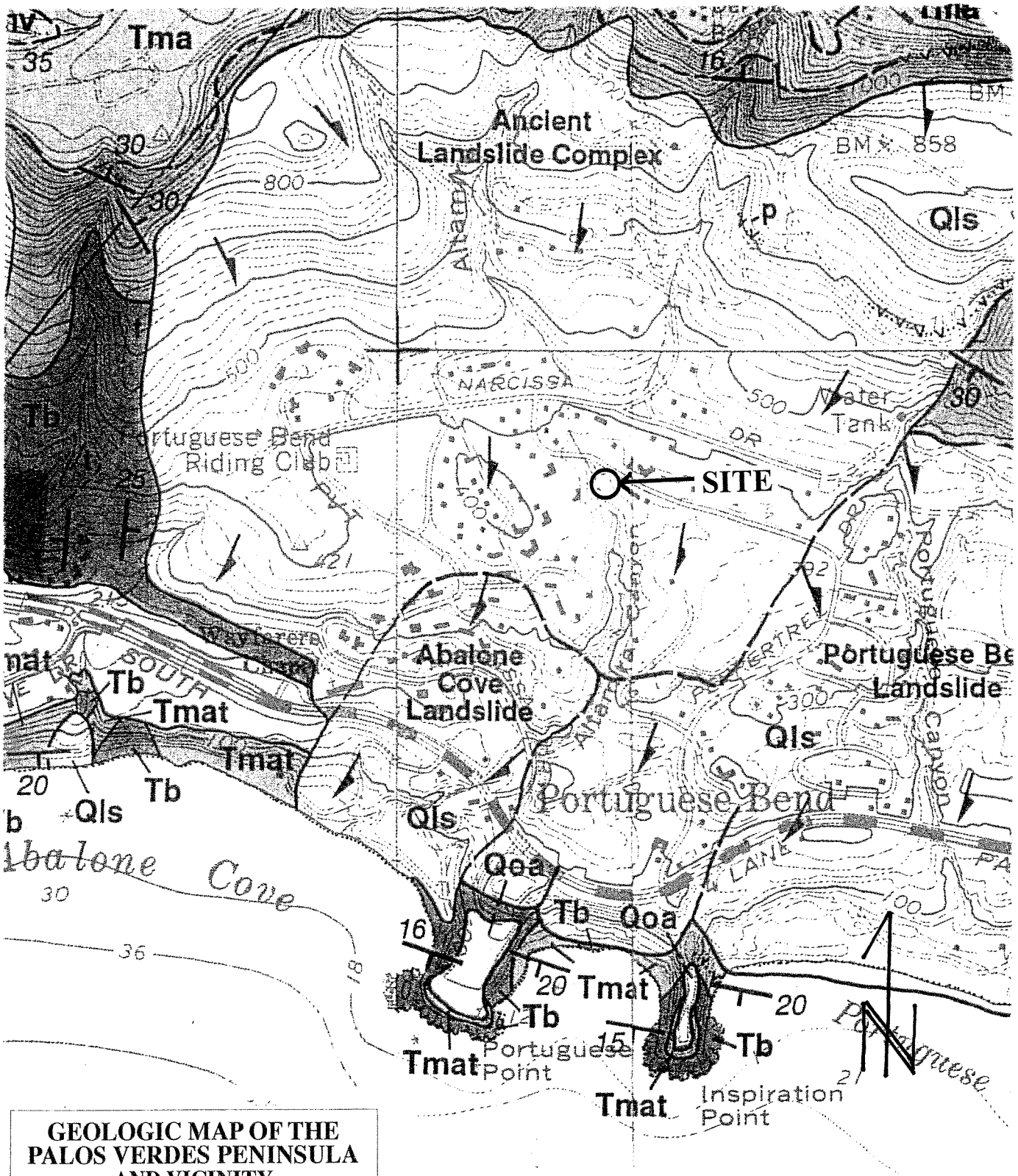
SITE VICINITY MAP



San Pedro USGS Topographic Map

COAST GEOTECHNICAL, INC.	
W.O. 620821	Figure 1

REGIONAL GEOLOGY MAP



GEOLOGIC MAP OF THE PALOS VERDES PENINSULA AND VICINITY

Redondo Beach, Torrance, and San Pedro Quadrangles

Los Angeles County, California

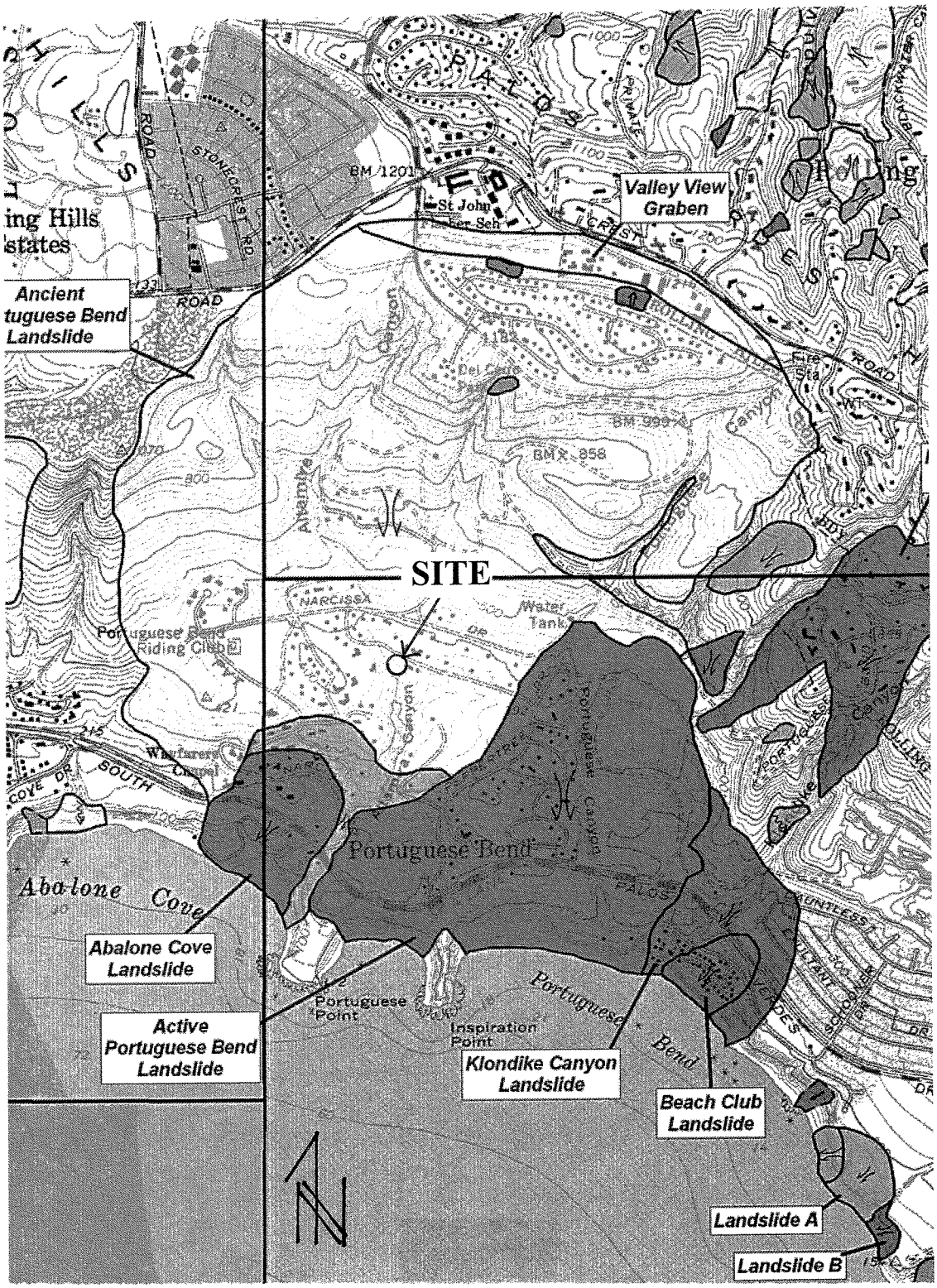
By THOMAS W. DIBBLEE, JR., 1999

Edited by Helmut E. Ehrenspeck with Perry L. Ehlig and Wendy Lou Bartlett

COAST GEOTECHNICAL, INC.

W.O. 620821 Figure 2

REGIONAL GEOLOGY MAP

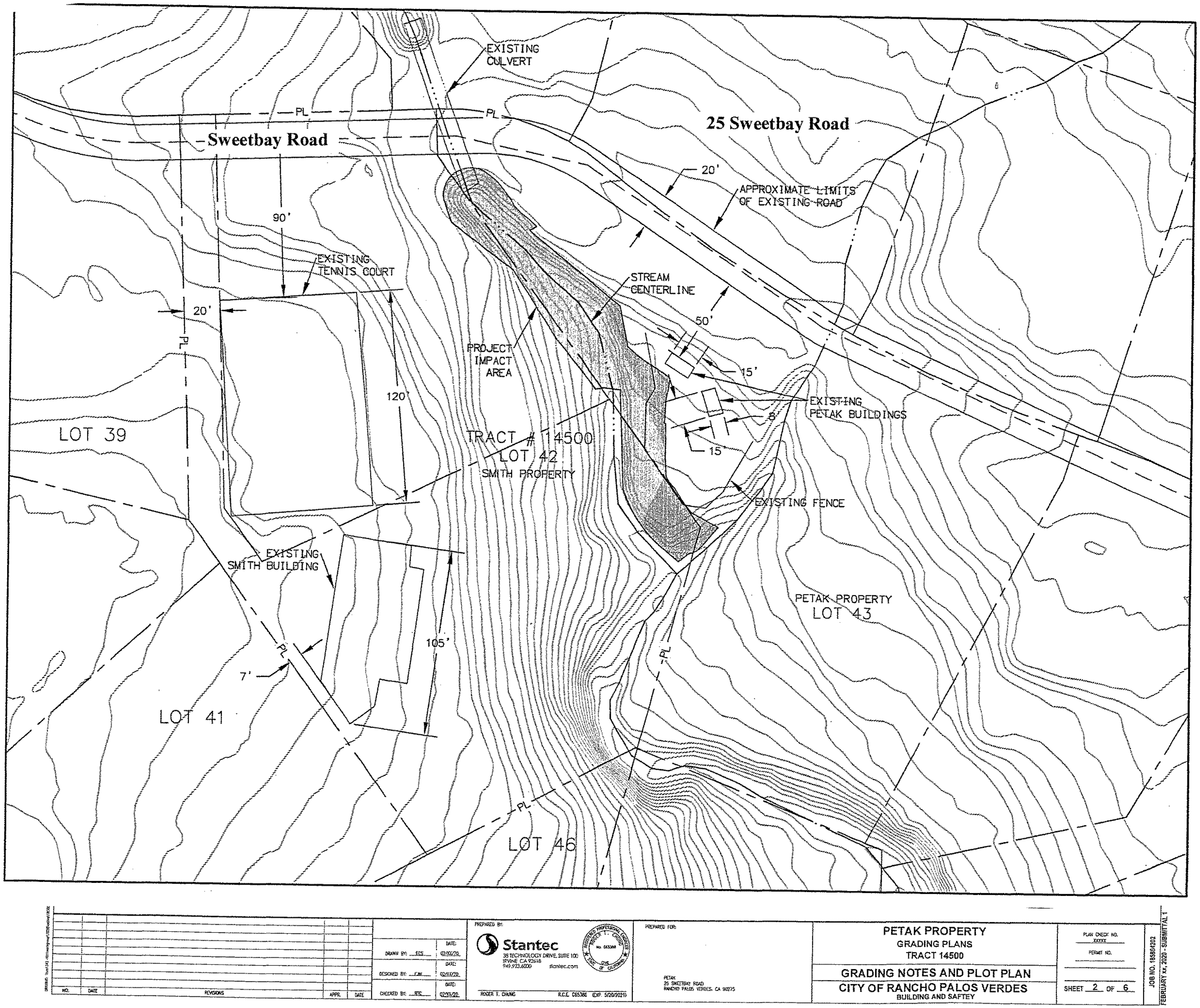


Landslide Inventory Map Palos Verdes Peninsula

May 2007 CGS

COAST GEOTECHNICAL, INC.	
W.O. 620821	Figure 2.1

OVERALL SITE PLAN



EXISTING CULVERT
PL
Sweetbay Road
25 Sweetbay Road
20'
APPROXIMATE LIMITS OF EXISTING ROAD
90'
EXISTING TENNIS COURT
20'
PL
STREAM CENTERLINE
50'
PROJECT IMPACT AREA
15'
EXISTING PETAK BUILDINGS
8'
120'
LOT 39
TRACT # 14500
LOT 42
SMITH PROPERTY
15'
EXISTING FENCE
EXISTING SMITH BUILDING
PETAK PROPERTY
LOT 43
105'
7'
LOT 41
LOT 46
PREPARED BY:
Stantec
38 TECHNOLOGY DRIVE, SUITE 100
IRVINE CA 92618
949.923.6000 stantec.com
ROGER T. CHUNG R.C.E. C65386 (EXP. 5/20/2021)
PREPARED FOR:
PETAK
25 SWEETBAY ROAD
RANCHO PALOS VERDES, CA 90275
PETAK PROPERTY
GRADING PLANS
TRACT 14500
GRADING NOTES AND PLOT PLAN
CITY OF RANCHO PALOS VERDES
BUILDING AND SAFTEY
PLAN CHECK NO. XXXXX
PERMIT NO.
SHEET 2 OF 6
JOB NO. 185804202
FEBRUARY xx, 2020 - SUBMITTAL 1

COAST GEOTECHNICAL, INC.

W.O. 620821 *Figure 3*

SITE GEOLOGY MAP

EXISTING CULVERT

PL

Shows surface deposits within Qls zone

20'

APPROXIMATE LIMITS OF EXISTING ROAD

Sweetbay Road

10 foot diameter outlet pipe

90'

Qal

EXISTING TENNIS COURT

STREAM CENTERLINE

20'

50'

PROJECT IMPACT AREA

TP1

Qc

15'

West Fork

Af

EXISTING PETAK BUILDINGS

8'

TP2

15'

East Fork

LOT 39

TRACT # 14500

LOT 42

SMITH PROPERTY

EXISTING FENCE

Recent slump

TP3

Qsw

EXISTING SMITH BUILDING

Qal

PETAK PROPERTY

LOT 43

Altamira Canyon

105'

7'

Old slump

LOT 41

Qls(Tm)

50°

Vertical cut bank

Scale 1" ~ 40ft.

LOT 46

Legend

Af	Artificial fill
Qsw	Slopewash
Qc	Colluvium
Qal	Alluvial deposits
Qls(Tm)	Landslide deposits-Monterey formation
	Test pit location
	Bedding attitude
	~Contact of surface deposits

PETAK PROPERTY
GRADING PLANS
TRACT 14500

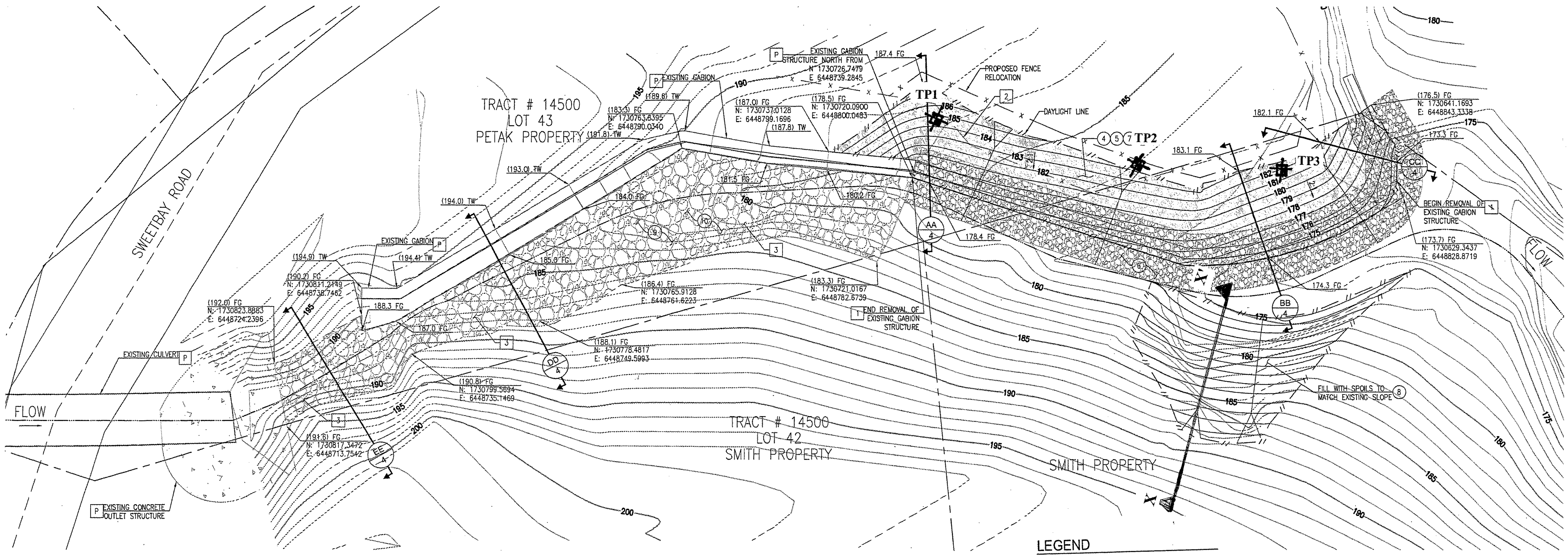
GRADING NOTES AND PLOT PLAN
CITY OF RANCHO PALOS VERDES

Stantec

COAST GEOTECHNICAL, INC.

W.O. 620821 Figure 3.1

PROPOSED GRADING PLAN



LEGEND

- PROPERTY LINE
- EASEMENT
- PROPOSED SLOPE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- EXISTING ELEVATION — (258.00) TW
- PROPOSED ELEVATION — 258.00 TW
- FLOWLINE
- FIBER ROLLS
- SAND BAGS
- SILT FENCE

GRAPHIC SCALE

10 0 10 20 40

(IN FEET)

Scale 1" ~ 20ft.

DEMOLITION NOTES

1 — REMOVE EXISTING GABION WALL ANO FOUNOATION

2 — RELDCATE EXISTING FENCE IN-KIND, AS REOUIRED

3 — REMOVE EXISTING GROUT & GROUTEO STONES

P — PROTECT IN PLACE (ITEM PER PLAN)

GRADING NOTES

(4) — CUT VOLUME

(5) — FILL VOLUME

(6) — INSTALL 36" THICK RIPRAP PER SECTIONS ON SHEET 4. RIPRAP TO CONFROM TO STONE GRADATION TABLE 3 ON SHEET 3 WITH 6" THICK BEOOING PER STONE GRAOATION TABLE 2 ON SHEET 3, ANO MATCH EXISTING GRADES

(7) — INSTALL ENKAMAT TURF REINFORCEMENT ON SLOPE PER MANUFACTURER'S RECOMMENDATIONS OR APPROVED EOUAL

(8) — INSTALL PLANTS

(9) — CONSTRUCT 54" THICK ROCK RIPRAP PER SECTIONS ON SHEET 4. RIPRAP TO CONFROM TO STONE GRAOATION TABLE 1 ON SHEET 3 WITH 12" THICK BEOOING PER STONE GRADATION TABLE 2 ON SHEET 3, AND MATCH EXISTING GRADES

(10) — INSTALL 12"± OF EARTHEN FILL OVER RIPRAP

TABLE 1

RIPRAP GRAOATION
PERCENT LIGHTER BY WEIGHT (LBS.)

	MAX	MIN
W 100	7,873	3,149
W 50	2,335	1,575
W 15	1,168	492

TABLE 2

RIPRAP GRADATION
PERCENT LIGHTER BY WEIGHT (LBS.)

	MAX	MIN
W 100	36	15
W 50	11	7
W 15	5	2

TABLE 3

RIPRAP GRAOATION
PERCENT LIGHTER BY WEIGHT (LBS.)

	MAX	MIN
W 100	2,331	933
W 50	691	467
W 15	346	146

Stantec

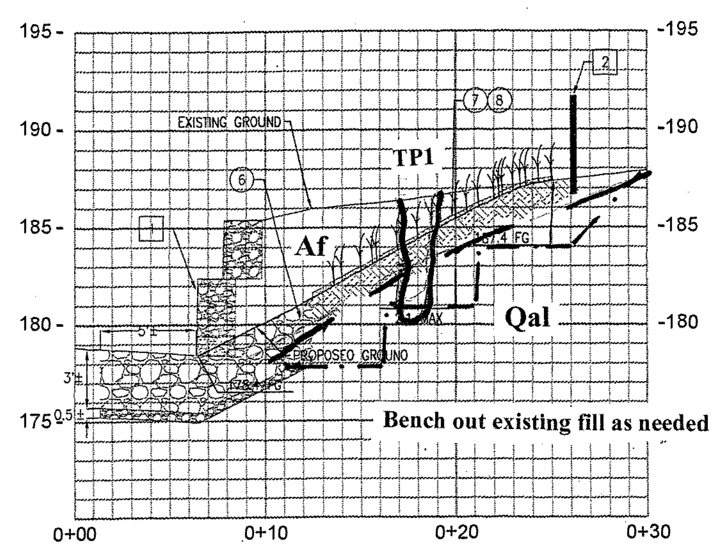
PETAK PROPERTY
GRADING PLANS
TRACT 14500

PRECISE GRADING PLAN
CITY OF RANCHO PALOS VERDES
BUILDING AND SAFTEY

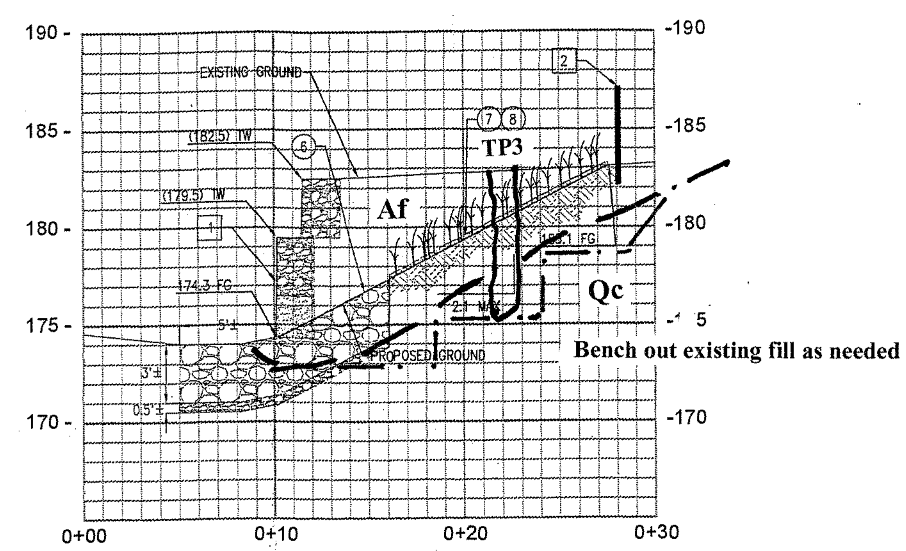
SHEET 3 OF 6

COAST GEOTECHNICAL, INC.	W.O. 620821	Figure 3.2

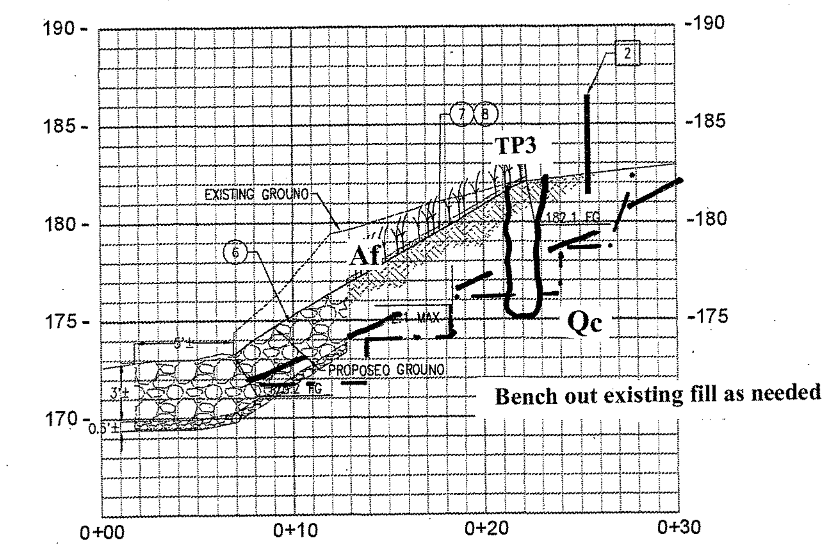
GEOLOGIC SECTION



SECTION AA PROFILE
HORIZ: 1"= 5'
VERT: 1"= 5'

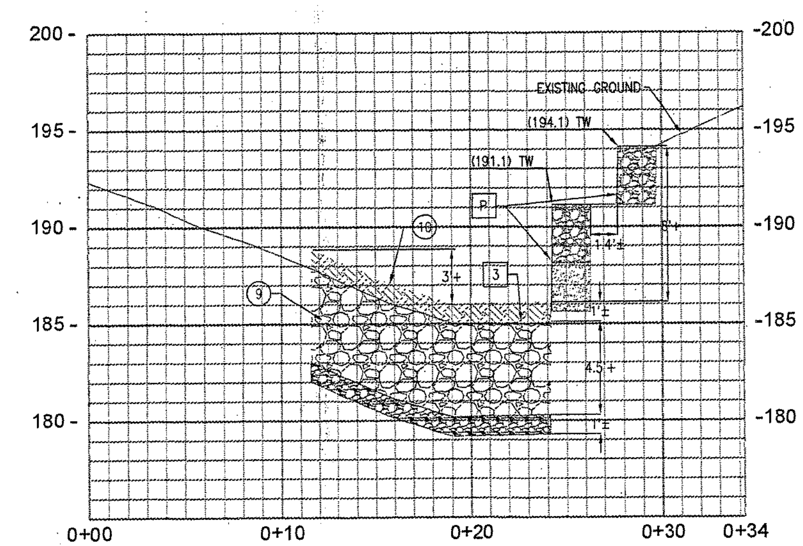


SECTION BB PROFILE
HORIZ: 1"= 5'
VERT: 1"= 5'

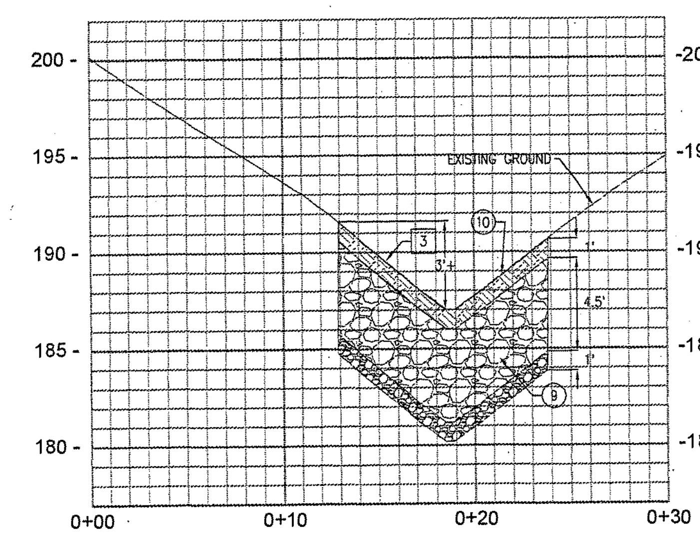


SECTION CC PROFILE
HORIZ: 1"= 5'
VERT: 1"= 5'

Scale 1" ~ 10ft. (H=V)



SECTION DD PROFILE
HORIZ: 1"= 5'
VERT: 1"= 5'
GABION WALL TO REMAIN



SECTION EE PROFILE
HORIZ: 1"= 5'
VERT: 1"= 5'

DEMOLITION NOTES

1 — REMOVE EXISTING GABION WALL ANO FOUNDATION
2 — RELOCATE EXISTING FENCE IN-KINO, AS REOUIREO
3 — REMOVE EXISTING GROUT & GROUTED STONES
P — PROTECT IN PLACE (ITEM PER PLAN)

GRADING NOTES

(4) — CUT VOLUME
(5) — FILL VOLUME
(6) — INSTALL 36" THICK RIPRAP PER SECTIONS ON SHEET 4. RIPRAP TO CONFROM TO STONE GR ON SHEET 3 WITH 6" THICK BEDOING PER STONE GRADATION TABLE 2 ON SHEET 3, ANO M GRAOES
(7) — INSTALL ENKAMAT TURF REINFORCEMENT ON SLOPE PER MANUFACTURER'S RECOMMENOATIONS EOUAL
(8) — INSTALL PLANTS
(9) — CONSTRUCT 54" THICK ROCK RIPRAP PER SECTIONS ON SHEET 4. RIPRAP TO CONFROM TO TABLE 1 ON SHEET 3 WITH 12" THICK BEDOING PER STONE GRADATION TABLE 2 ON SHEET EXISTING GRADES
(10) — INSTALL 12"± OF EARTHEN FILL OVER RIPRAP

PREPARED BY: Stantec, 38 TECHNOLOGY DRIVE, SUITE 100, IRVINE, CA 92618, 949.923.6000, stantec.com — ROGER T. CHUNG, R.C.E. C65388, EXP. 5/20/2021

PREPARED FOR: PETAK, 25 SWEETBAY ROAD, RANCHO PALOS VERDES, CA 90275

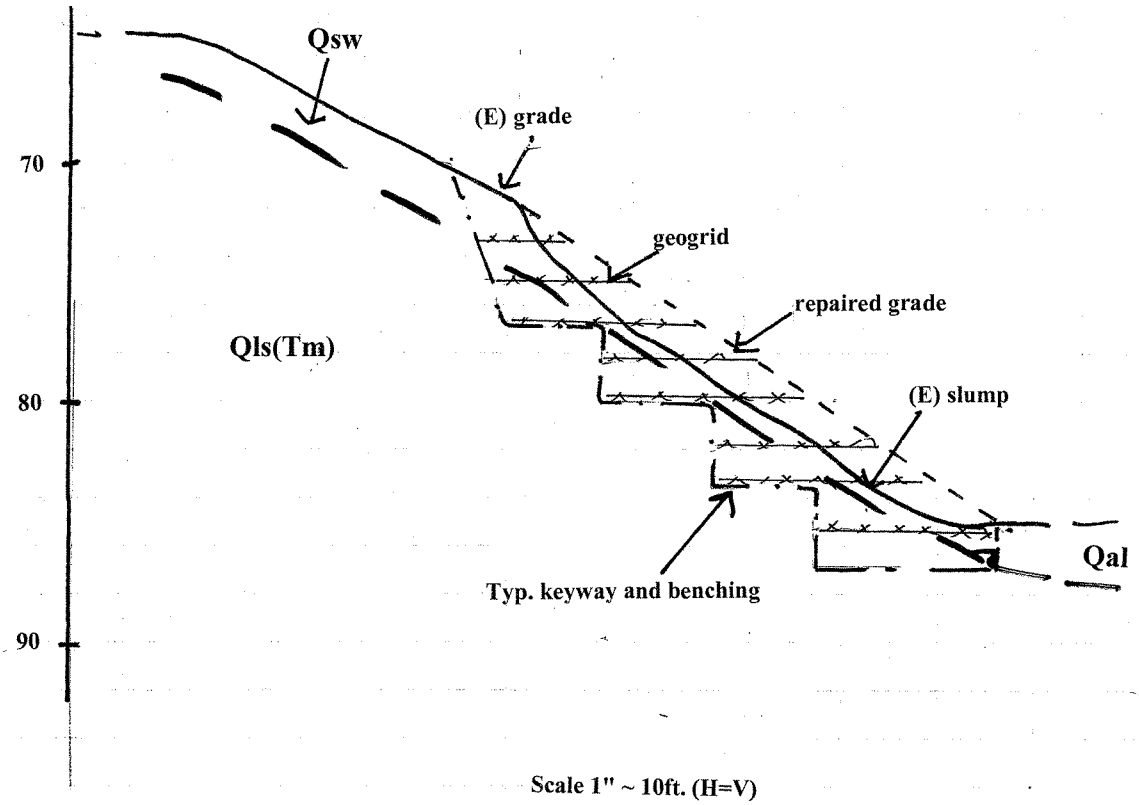
PETAK PROPERTY
GRADING PLANS
TRACT 14500
DETAILS AND TYPICAL SECTIONS
CITY OF RANCHO PALOS VERDES
BUILDING AND SAFTEY

SHEET 4 OF 6

JOB NO. 185804202 — FEBRUARY xx, 2020 - SUBMITTAL 1

COAST GEOTECHNICAL, INC.	W.O. 620821	Figure 4

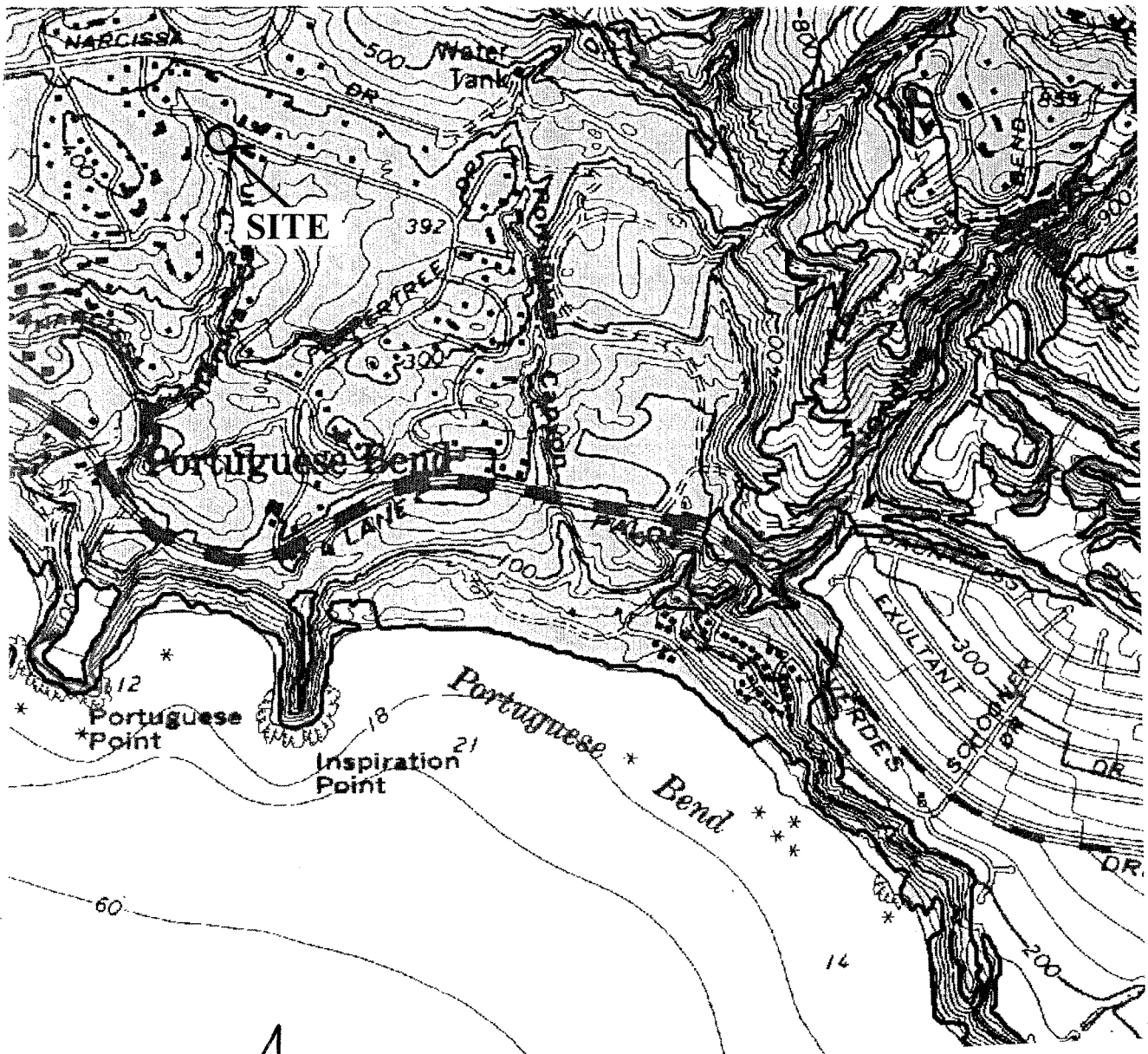
GEOLOGIC SECTION X-X'



Scale 1" ~ 10ft. (H=V)

COAST GEOTECHNICAL, INC.	
W.O. 620812	Figure 4.1

SEISMIC HAZARD MAP



STATE OF CALIFORNIA

SEISMIC HAZARD ZONES

Delineated in compliance with
Chapter 7.8, Division 2 of the California Public Resources Code
(Seismic Hazards Mapping Act)

SAN PEDRO QUADRANGLE

OFFICIAL MAP

Released: March 25, 1999

MAP EXPLANATION

Zones of Required Investigation:

Liquefaction

Areas where historic occurrence of liquefaction, or local geological, geotechnical and groundwater conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

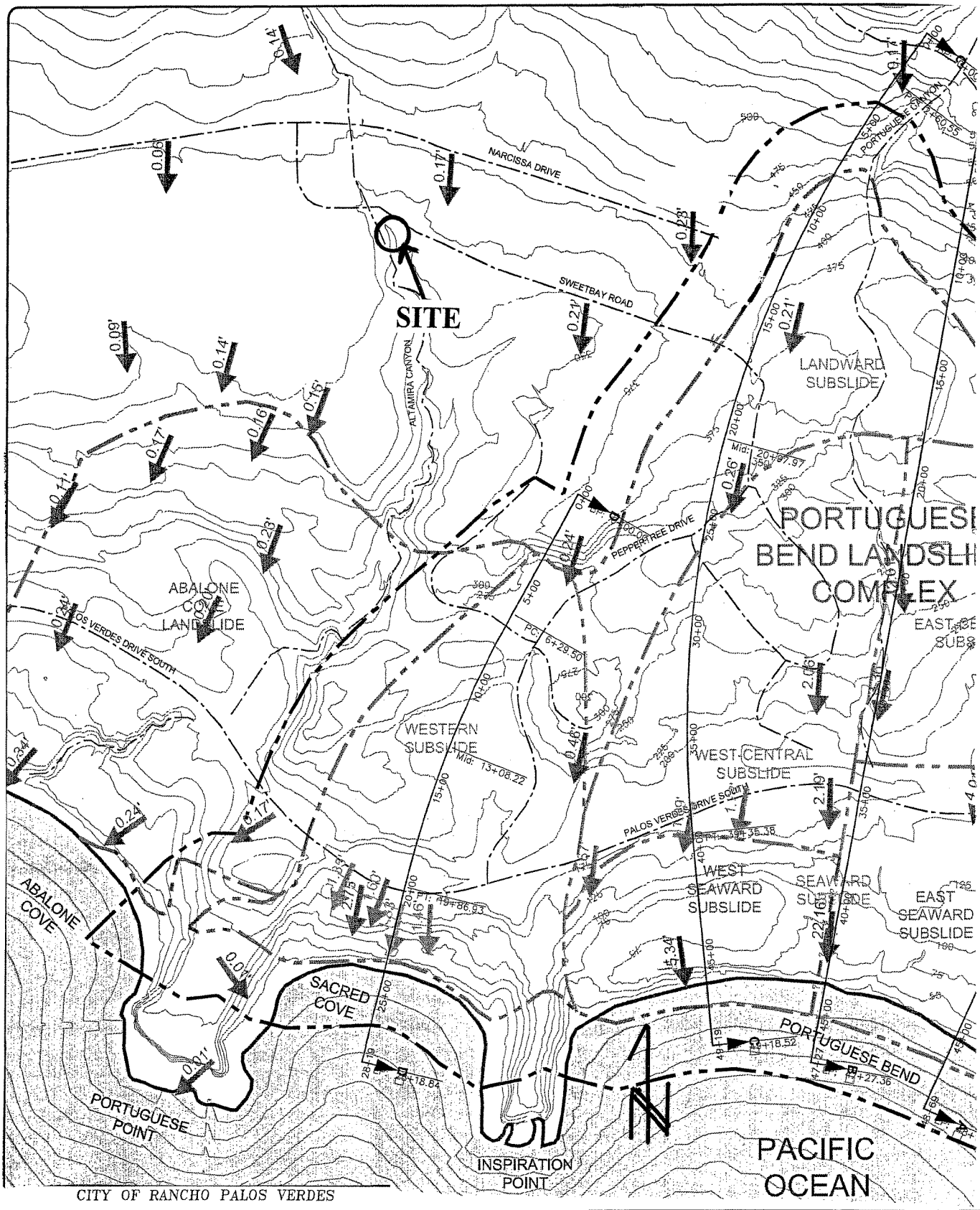
Earthquake-Induced Landslides

Areas where previous occurrence of landslide movement, or local topographic, geological, geotechnical and subsurface water conditions indicate a potential for permanent ground displacements such that mitigation as defined in Public Resources Code Section 2693(c) would be required.

COAST GEOTECHNICAL, INC.

W.O. 620821 Figure 5

HORIZONTAL MOVEMENT OF LANDSLIDE COMPLEX



CITY OF RANCHO PALOS VERDES

PORTUGUESE BEND LANDSLIDE

RANCHO PALOS VERDES, CALIFORNIA

MEASURED HORIZONTAL DISPLACEMENT 2015 – 2017

Geo-Logic ASSOCIATES

3150 Bristol Street, Costa Mesa, California 92626
geo-logic.com | 657.218.4708

COAST GEOTECHNICAL, INC.

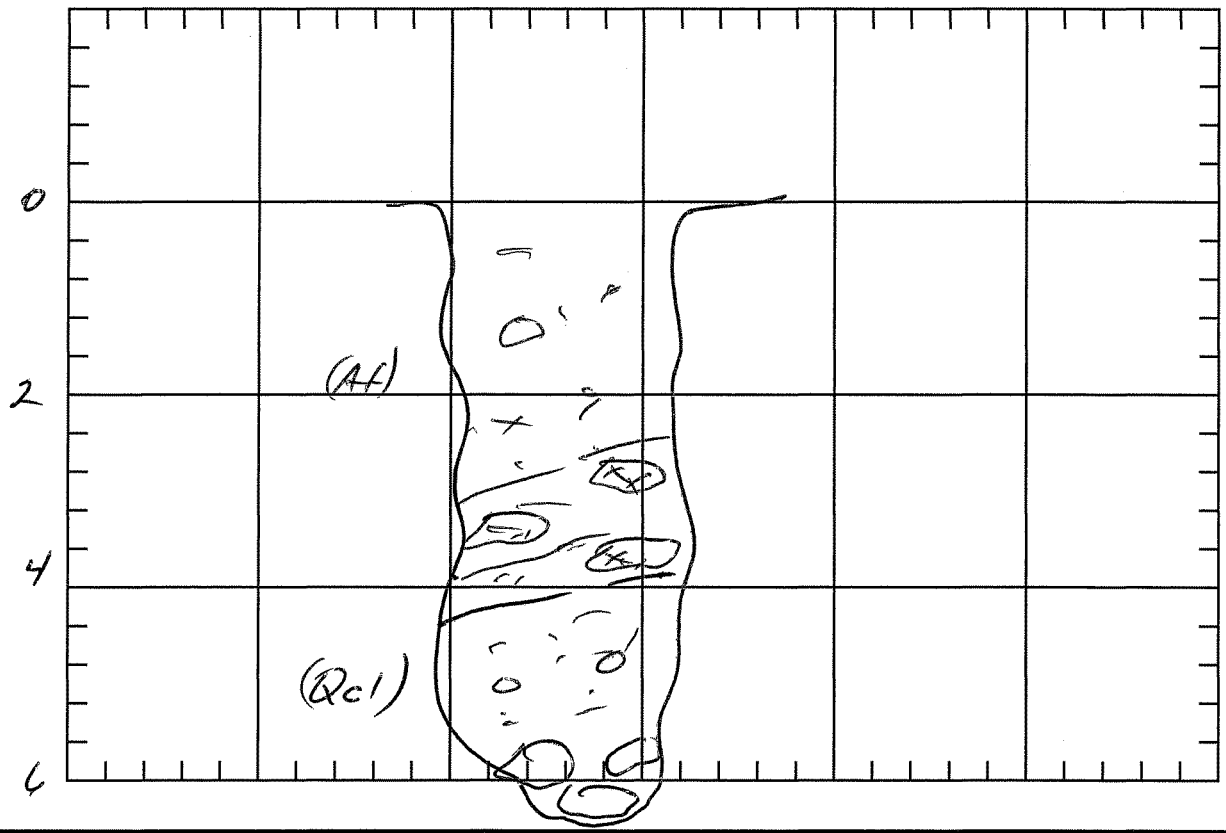
W.O. 620821 **Figure 6**

SUMMARY OF TEST PIT NO. 1

Date: 8/9/2021

Dry Density (Pcf)	Moisture (% Dry Wt.)	Samples U	Samples B	Depth (Ft.)	Description
				2	TAN CLAY SILTY CLAY, DIATOMACEOUS, FIRM TO STIFF, MOIST, SMALL ANGULAR ROCK FRAGMENTS (Af)
				4	BLACK SILTY CLAY, RUBBLE, SAND BAG / TARP REMNANTS, SOFT (Af)
				6	TAN BEIGE SILT, CLAYEY, DIATOMACEOUS, MOIST, FIRM, SMALL TO LARGE COBBLES, SUBROUNDED @ 6' (Qc1)
				8	
				10	HOPE 7' - REFUSAL FROM COBBLES

CROSS SECTION SKETCH



Geotechnical Engineering Investigation
Lot 42/43 Tract 14500 Sweetbay Road
Rancho Palos Verdes, California

Work Order 620821

Plate No. A

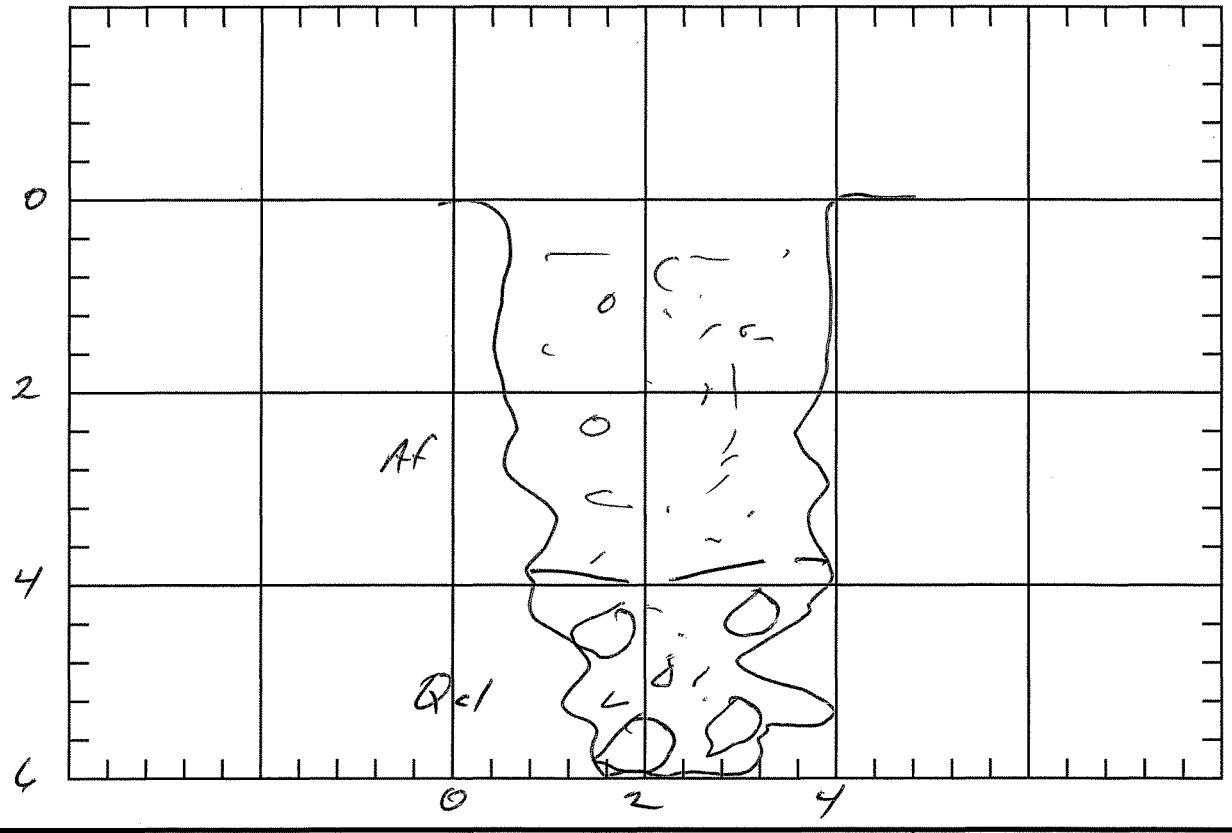
COAST GEOTECHNICAL, INC.

SUMMARY OF TEST PIT NO. 2

Date: 8/9/2021

Dry Density (Pcf)	Moisture (% Dry Wt.)	Samples U	Samples B	Depth (Ft.)	Description
				2	GRAY BLACK SILTY DIATOMACEOUS CLAY, SOFT TO FIRM, DAMP TO MOIST, ROOTS (Af)
86	27	■		4	GRAY BLACK SILTY CLAY, CLAYEY SILT, DIATOMACEOUS; FIRM ABUNDANT GRAVEL TO LARGE COBBLE SUBANGULAR ROCKS, ROOTLETS
				6	EOPE 6'- REFUSAL FROM COBBLES (Qc1)
				8	
				10	

CROSS SECTION SKETCH



Geotechnical Engineering Investigation
Lot 42/43 Tract 14500 Sweetbay Road
Rancho Palos Verdes, California

Work Order 620821

Plate No. B

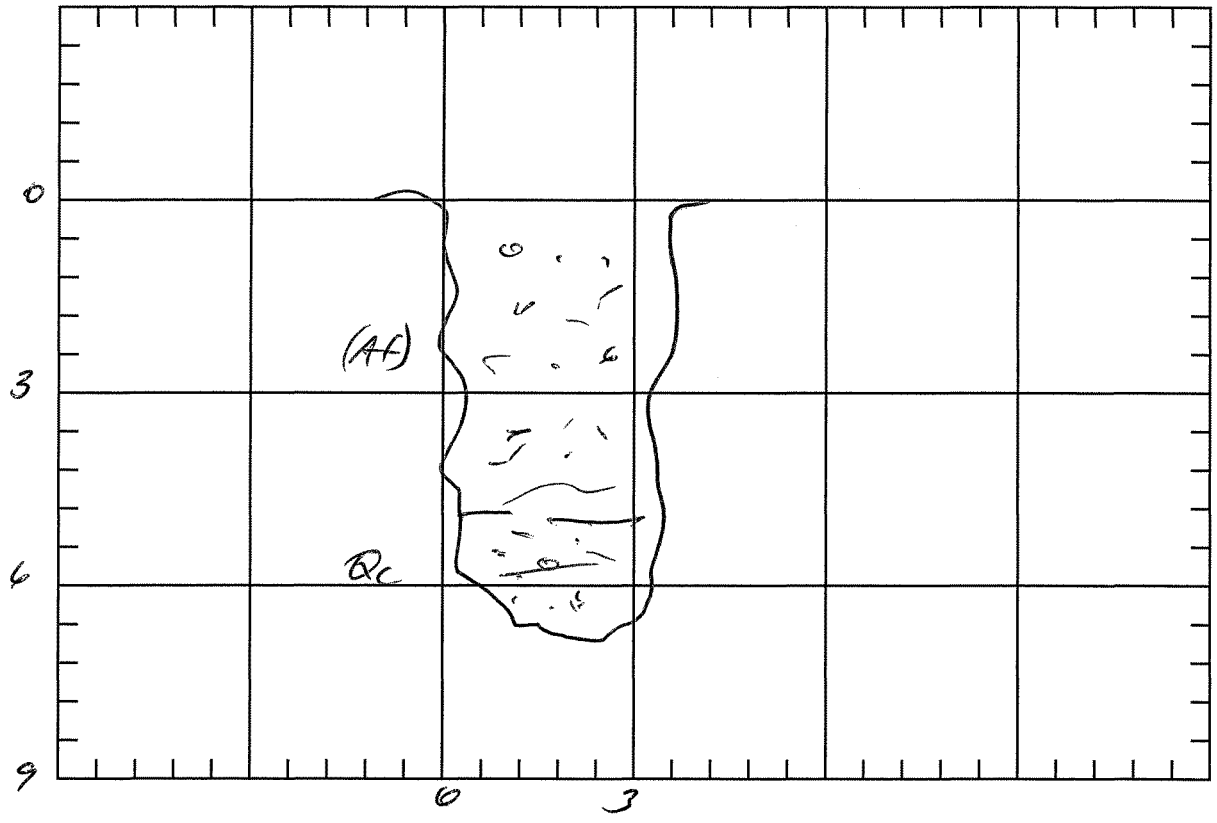
COAST GEOTECHNICAL, INC.

SUMMARY OF TEST PIT NO. 3

Date: 8/9/2021

Dry Density (Pcf)	Moisture (% Dry Wt.)	Samples U	Samples B	Depth (Ft.)	Description
				0	TAN CLAY SILTY CLAY CLAYEY SILT, MOIST, FIRM, FRACMENTED ROCK, ROOTS (Af)
85	31	▨		4	DARK GRAY BLACK DIATOMACEOUS CLAY, MOIST STIFF, MINOR ROCK CHIPS (Qc)
				8	EOPE 7.5' - NO H2O - NO CAVING
				10	

CROSS SECTION SKETCH



Geotechnical Engineering Investigation
Lot 42/43 Tract 14500 Sweetbay Road
Rancho Palos Verdes, California

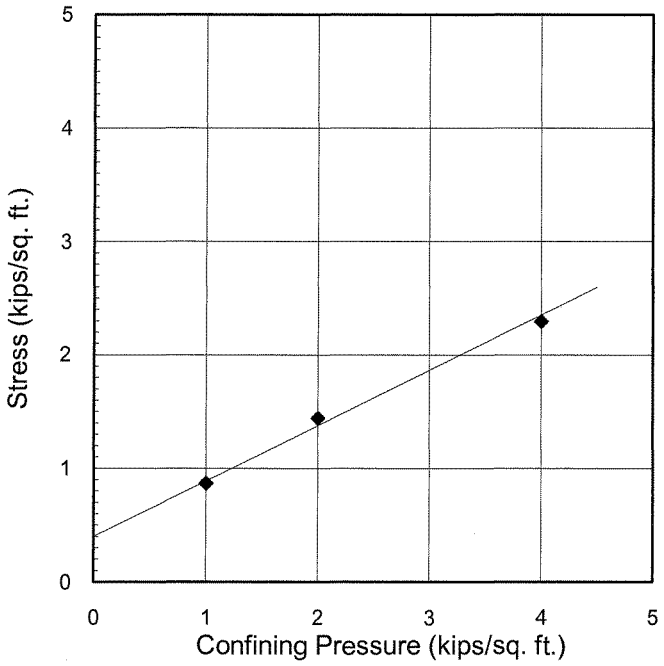
Work Order 620821

Plate No. C

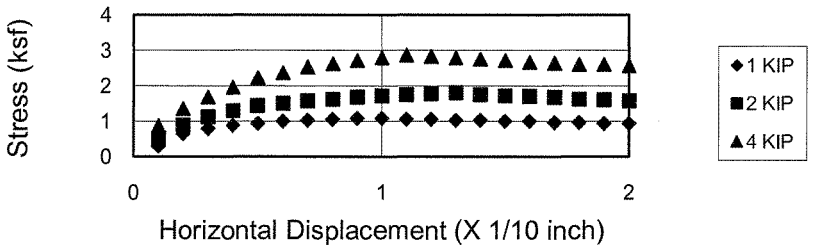
COAST GEOTECHNICAL, INC.

SHEAR TEST RESULT

Test Pit No.1 @ 0-4 Feet (Remolded)



Stress - Displacement Diagram



Remolded soil samples were submerged for at least 24 hours.

The sample had a dry density of 90 lbs./cu.ft. and a moisture content of 32 %.

Cohesion = 400 psf

Friction Angle = 26 degrees

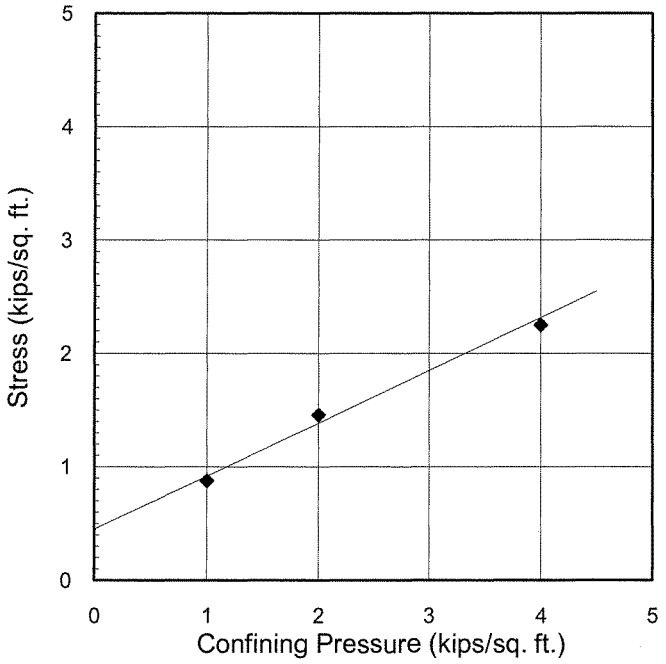
Based on 80% Peak Strength or Ultimate Strength, Whichever is lower

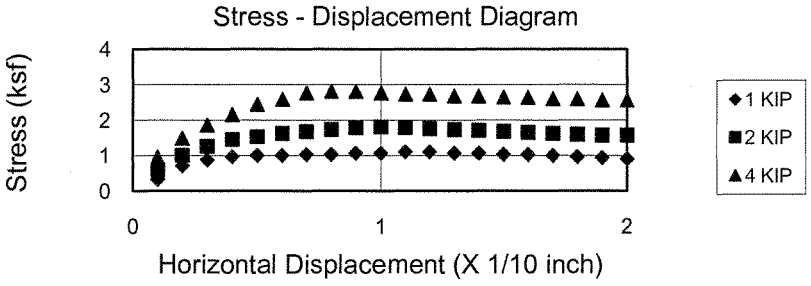
Geotechnical and Geologic Investigation Lot 42/43 Tract 14500 Sweetbay Road Rancho Palos Verdes, California	Work Order 620821 Plate D

COAST GEOTECHNICAL, INC.

SHEAR TEST RESULT

Test Pit No. 3 @ 6 Feet





Colluvium samples were submerged for at least 24 hours.

The sample had a dry density of 85 lbs./cu.ft. and a moisture content of 36.1 %.

Cohesion = 450 psf

Friction Angle = 25 degrees

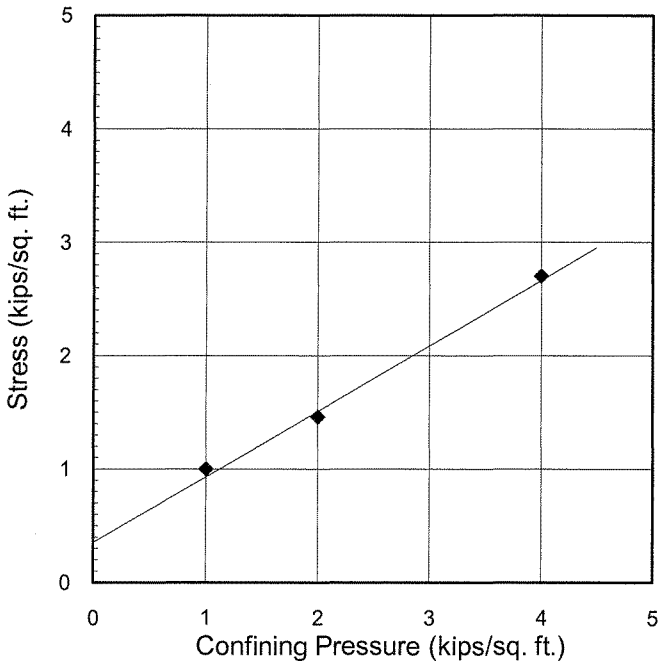
Based on 80% Peak Strength or Ultimate Strength, Whichever is lower

Geotechnical and Geologic Investigation Lot 42/43 Tract 14500 Sweetbay Road Rancho Palos Verdes, California	Work Order 620821 Plate E

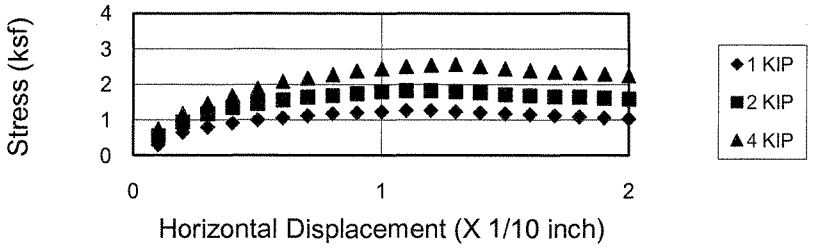
COAST GEOTECHNICAL, INC.

SHEAR TEST RESULT

Test Pit No. 2 @ 4 Feet



Stress - Displacement Diagram



Alluvium samples were submerged for at least 24 hours.

The sample had a dry density of 86 lbs./cu.ft. and a moisture content of 35.1 %.

Cohesion = 350 psf

Friction Angle = 30 degrees

Based on 80% Peak Strength or Ultimate Strength, Whichever is lower

Geotechnical and Geologic Investigation Lot 42/43 Tract 14500 Sweetbay Road Rancho Palos Verdes, California	Work Order 620821 Plate F

COAST GEOTECHNICAL, INC.