

DRAFT
INITIAL STUDY/
MITIGATED NEGATIVE DECLARATION
for
HATTON CANYON
SEWER REPLACEMENT PROJECT



CARMEL AREA WASTEWATER DISTRICT

July 2018

TABLE OF CONTENTS

1.	Background Information	1
2.	Project Description.....	2
2.1	Project Location	2
2.2	Project Summary.....	2
2.3	Project Background.....	5
2.4	Project Schedule.....	5
2.5	Project Objective.....	6
2.6	Project Approvals.....	6
3.	Environmental Factors potentially Effected.....	7
4.	Determination	8
5.	Environmental Evaluation.....	9
5.1	Evaluation of Environmental Impacts.....	9
5.2	Environmental Setting and Impacts	10
5.2.1	Aesthetics.....	10
5.2.2	Agricultural and Forestry Resources.....	12
5.2.3	Air Quality	14
5.2.4	Biological Resources.....	18
5.2.5	Cultural Resources	38
5.2.6	Geology and Soils.....	40
5.2.7	Greenhouse Gas Emissions.....	43
5.2.8	Hazards and Hazardous Materials.....	45
5.2.9	Hydrology and Water Quality.....	46
5.2.10	Land Use	49
5.2.11	Mineral Resources.....	50
5.2.12	Noise	51
5.2.13	Population and Housing.....	54
5.2.14	Public Services.....	54
5.2.15	Recreation	55
5.2.16	Transportation.....	56
5.2.17	Tribal Cultural Resources	58
5.2.18	Utilities and Service Systems.....	60
5.2.19	Mandatory Findings of Significance.....	62
6.	References.....	64
6.1	Lead Agency	64
6.2	Report Preparation	64
6.3	Persons Contacted.....	64
6.4	Bibliography	64

LIST OF FIGURES

Figure 1. Location Map.....	66
Figure 2. Site Plan.....	67
Figure 3. Vegetation Map	68
Figure 4. Potentially Jurisdictional Wetlands and Other Waters Map.....	69
Figure 5. Trees within Proposed Project Area	70

LIST OF TABLES

Table 1. North Central Coast Air Basin Attainment Status Summary as of January 2015.....	14
Table 2. Construction Air Pollutant Emissions for the Hatton Canyon Sewer Replacement Project.....	16
Table 3. Historic Surveys Completed in Evaluation Area	18
Table 4. Acreage of Potentially Jurisdictional Wetlands and Other Waters in the Proposed Project Area	24

APPENDICES

- A. Project Plans
- B. Project Specific CalEEMod Report
- C. Hatton Canyon Sewer Replacement Project Biological Resources Report
- D. Historic Property Survey Report/Finding of Effect Hatton Canyon Sewer Replacement Project

1. BACKGROUND INFORMATION

Project Title: Hatton Canyon Sewer Replacement Project

Lead Agency/Project Proponent Name and Address: Carmel Area Wastewater District, P.O. Box 221428, 3945 Rio Road, Carmel, CA 93922

Project Location: The project is located within Hatton Canyon Park, northeast of the mouth of Carmel Valley (intersection of Highway 1 and Carmel Valley Road). The project site is within unincorporated Monterey County and is owned by the California Department of Parks and Recreation. There is no recorded assessor number for this parcel.

Project Summary: The replacement of 5,600 linear feet of sewer main, including six sewer lateral connections, the improvement of 20 manholes, and the addition of 1 new manhole.

Surrounding Land Uses:

North: Open Space, Recreation Trail

South: Carmel Valley Road, Commercial

West: Residential

East: Residential

2. PROJECT DESCRIPTION

2.1 PROJECT LOCATION

The project is located within Hatton Canyon Park, northeast of the mouth of Carmel Valley (intersection of Highway 1 and Carmel Valley Road). The project site is within unincorporated Monterey County and is owned by the California Department of Parks and Recreation (State Parks). There is no recorded assessor number for this parcel. The site includes a portion of the Carmel River and Hill Recreation Trail, which is not currently available for public use, pending necessary planning, facility development and staffing by State Parks. However, the Carmel River and Hill Recreation Trail, is informally used by the public. See **Figures 1 and 2** for more information. All figures are located at the end of the document.

2.2 PROJECT SUMMARY

The Carmel Area Wastewater District (District) owns and maintains an 8-inch vitrified clay pipe (VCP) sewer main through the Hatton Canyon Park property. The existing sewer main is installed within a 20-foot wide easement, held by the District. The existing sewer main was installed in the 1960s and is in poor condition. The existing pipe has deteriorated structurally, as well as separated at joints allowing roots and water to enter into the pipeline along the entire pipeline alignment. Stormwater runoff in Hatton Canyon Park has been rerouted by overgrown vegetation out of the natural drainage path onto the maintenance easement along the sewer main alignment. Runoff during 2017 winter storms eroded the surface around one manhole, deforming the sewer main, resulting in a sanitary sewer overflow (SSO).

The existing condition issues and recent failure of the pipeline require the existing pipeline to be replaced. The District plans to replace the existing 8-inch VCP sewer main with 10-inch high density polyethylene (HDPE) DR17 pipe to reduce the risk of future SSOs, reduce inflow and infiltration and simplify maintenance. The sewer main replacement project would also include repairs to existing manholes, including wrapping the exterior of manhole joints with a sealing material and adding grade rings to limit inflow and infiltration. The sewer main replacement will begin at upstream manhole O803 (rim elevation 200.93 ft), directly east of Canyon Drive, and terminate at downstream manhole R823 (rim elevation 48.90 ft) on the southern side of Carmel Valley Road (**Appendix A**). There are sewer laterals along this section of sewer main. In total, approximately 5,600 linear feet of sewer main will be replaced, 20 manholes will be improved, and one new manhole constructed. Approximately 3.4 acres of land has been designated for the contractor's use in completion of the work; the actual disturbed area will be significantly less than 3.4 acres. The alignment will be modified in two segments to relocate the sewer main to within the existing easement. Several sewer main segments will require sag repairs completed by open trench.

The existing sewer main will be replaced by a combination of pipe bursting and open trench methods. The contractor will use various equipment to perform the work. Pipe bursting involves excavating an entry and exit pit at the ends of the sewer segments to be replaced. The pits will be excavated with a backhoe or small tracked excavator. The pits will be as deep as the existing sewer main, which varies between 5 and 10 feet deep, and approximately 30-inches wide, with a length of up to 20 feet, depending on the depth of the existing sewer main. The pipe bursting process utilizes hydraulic equipment or a tension winch to pull a bursting head and the new sewer line through the existing pipe between manholes. The broken VCP segments will remain. In open trench construction, a trench will be excavated using a small excavator or

backhoe, and the new pipe installed in the trench. The existing pipe will be removed or abandoned in place where not within the trench limits for the new sewer main. For both methods, pipe segments will be fused together with a trailer-mounted pipe-fusing machine. Each manhole will require an area around the manhole to be excavated for repairs and to connect the new sewers to the manholes. The vast majority of work will occur within or from the existing maintenance road.

Acceptable excavated material will be stockpiled and reused as backfill or loaded onto trucks and disposed of offsite. The location for material to be stockpiled will be within the maintenance road adjacent to the excavation, if sufficient working area is available. If sufficient area adjacent to the pipeline is not available, material will be stockpiled in the designated staging area outside of sensitive habitats. Excavations will be protected from public access by the contractor using steel plates and/or barricades. Excavations will be backfilled once they are no longer needed for the prosecution of the work and would typically remain open for one to five days, depending on which portion of the work is actively progressing.

Sewer bypassing will be required for each pipe segment, while the segment is being replaced by pipe bursting or open trench replacement. Typically, bypassing operations will consist of pumps installed on an upstream manhole, discharging to a temporary pipeline installed on grade within or immediately adjacent to the existing roadway. The pipeline will convey wastewater around the work area to a downstream manhole. For sewer segments with sewer laterals, bypassing the flow from each lateral will be required. Lateral bypasses will discharge to a downstream manhole or share a common bypassing line.

On the upstream end of the project, bypassing to replace the sewer segment between manholes O803 and O804 will require installation of a temporary below grade structure providing a source from which to pump from. The sewer main upstream from Manhole O803 will be temporarily diverted to this structure. Installation of the diversion to direct the flow to this temporary structure will require a temporary plug to be installed up stream, at manhole O845, to stop flow in the system and allow construction of a diversion. The plug will need to be removed following successful installation of the diversion. An associated work truck trip to and from this manhole is anticipated to install and remove the plug. Access to this manhole is via a dirt road leading from Canyon Drive. A similar process will be required to reinstate normal flow once the pipe segment between manholes O803 and O804 is complete.

Temporary bypassing operations will be required for other sewer mains entering the sewer main to be replaced. Temporary bypassing set-ups may also be installed at manholes O837, P804, P811, and Q803. Alternatively, in these locations, the Contractor may choose to construct a temporary bypassing set-up immediately adjacent to the pipeline alignment in these locations.

During replacement of the sewer segments between manholes Q807 and R822, and between R822 and R823, wastewater flow will need to be conveyed to the south side of Carmel Valley Road. During this operation, the contractor will install temporary bypassing set-ups at Manholes Q810, Q806 or Q807, and R858. These three set-ups would discharge to separate, or combined piping temporarily installed on grade. The pipeline would be routed along the side of Carmel Valley Road, and along the existing bike path, through the existing tunnel under Carmel Valley Road, and would discharge to Manhole R824.

All bypassing pumps will be required to use “whisper quiet” engines or be electric with silenced generators to maintain noise production to a normal speaking volume. In most cases, bypassing is anticipated to only

occur during normal working hours, however, if required, 24-hour bypassing may be required if a construction issue results in a segment not being reactivated by the end of a work day. No additional vegetation disturbance is anticipated as a result of bypassing operations.

In preparation for project construction, the contractor will be required to prepare a Bypass Plan. This plan will be submitted and reviewed by the design engineer and the District. The Bypass Plan will include, at a minimum, measures that ensure fully redundant pumping equipment and full-time monitoring during bypassing activities.

Excavations will be backfilled with a combination of imported material and stockpiled on-site materials. The material within the pipe zone will be imported. Above the pipe zone, native material will be used in vegetated areas to grade. Also, in vegetated areas, the contractor will stockpile topsoil separately, which will be reused for surfacing. For portions of the work within the access roadway, native material will be used, if suitable, and imported material will be used if unsuitable for vehicle loading. Imported material will be used to resurface the top of excavations to match pre-existing conditions. Excavation backfill will be compacted in place, except for topsoil placed over the top of excavations, outside the access roadway. Excavations in vegetated areas will be re-vegetated as required. An Erosion Control Plan sufficient to satisfy Monterey County requirements will be prepared by the contractor

General equipment anticipated to be used for the work includes work trucks, power generators, bypassing pumps and pipes, and power tools to perform manhole improvement work. The contractor will implement the following best management practices during construction:

- Water all active construction areas as required with non-potable sources to the extent feasible; frequency should be based on the type of operation, soil, and wind exposure and minimized to prevent wasteful use of water and non-stormwater runoff.
- Prohibit grading activities during periods of high wind (over 15 mph).
- Cover all trucks hauling soil, sand, and other loose materials and require trucks to maintain at least 2 feet of freeboard.
- Hand sweep daily within paved areas.
- Sweep streets daily (with water sweepers) if visible soil material is carried onto adjacent public streets;
- Enclose, cover, or water daily exposed stockpiles (dirt, sand, aggregate, etc.);
- Replant vegetation in disturbed areas as quickly as possible.
- Provide stabilized construction entrances/exits to limit sediment tracking from the site.

Construction equipment and materials will be staged at designated storage areas near the fork in the maintenance roadway between manholes O806 and O807. Significant effort will be made to limit ground disturbance, especially in riparian habitat areas. All surfaces in excavated areas will be returned to approximately their pre-existing grades. No hazardous materials are anticipated to be stored on site other than typical construction equipment fluids including gasoline, diesel, and lubricants for maintaining equipment.

Access to the project area is from Carmel Valley Road, the cul-de-sac at the end of Canyon Drive and the cul-de-sac at the end of Canada Court. An existing dirt and gravel maintenance road in the District's existing

easement) follows the existing sewer alignment up the valley. The existing maintenance roadway will be used for construction activity to the greatest extent feasible. Construction activities are anticipated to generate about 32 total additional trips per day. Twelve one-way trips would be produced by construction workers driving to and from the site and 20 one-way trips would be produced by equipment and construction material deliveries. Construction crews will park in the designated staging areas, as show in **Appendix A**. The lead agency will be required to obtain an encroachment permit from Monterey County in order to complete work within the Carmel Valley Road right-of-way. During the approximately 11 days that construction will be occurring near Carmel Valley Road, a Traffic Control Plan will be required to allow for placement of equipment on the road shoulder and within the traveled way. The Traffic Control Plan will include, at a minimum, measures to reduce safety hazards resulting from increased traffic on Carmel Valley Road may result from increased traffic. In addition, construction crew will only access the site via Canada Court or Canyon Drive to the north. Construction vehicles used for mobilization and demobilization of equipment, deliveries or construction materials, and off-hauling of construction materials will not access the project site via Carmel Valley Road during peak commuting hours and will only turn right when entering and exiting the project site via Carmel Valley Road.

2.3 PROJECT BACKGROUND

The California Department of Transportation (Caltrans) originally acquired the right-of-way for Hatton Canyon in 1956 for potential use as a realignment of Highway 1 (referred to as the Hatton Canyon Freeway). The Federal Highway Administration, in cooperation with Caltrans, developed a proposal and conducted environmental review for a four-lane divided highway from Carmel Valley Road to the existing interchange at Highway 1 and 68 during the 1980s. After lawsuits and push-back from the local community, the plan to build the Hatton Canyon Freeway officially ended in 1999.

In 2001, the State Legislature enacted Assembly Bill No. 434 which rescinded the creation of the Hatton Canyon Freeway and declared that the land was surplus property within the coastal zone. The bill authorized Caltrans to transfer its right-of-way to the State Parks for use as a state park. In 1999, in anticipation of the land transfer to State Parks, Caltrans secured federal Transportation Enhancement funds to build one segment of the Carmel Hill and River Recreation Trail. In 2002, as a result of Assembly Bill 434, Caltrans transferred the property and associated Transportation Enhancement funds to the State Parks. In 2003, there was litigation that questioned the ability of Assembly Bill 434 to add Hatton Canyon to the coastal zone. Untimely it was determined that proposed project area is not within the coastal zone (M. Watson, personal communication, May 21, 2018). In 2005, State Parks requested the Transportation Enhancement funds be transferred to the Transportation Agency of Monterey County (TAMC).

2.4 PROJECT SCHEDULE

Construction will typically occur from 7am to 5pm, Monday through Friday. On-site activities are anticipated to last 100 calendar days or less. Construction is anticipated to occur between June 1, and August 30, 2019.

2.5 PROJECT OBJECTIVE

The primary objective of the project is to replace the existing 8-inch VCP sewer main with 10-inch high density polyethylene (HDPE) pipe to reduce the risk of future SSOs, reduce inflow and infiltration and simplify maintenance.

2.6 PROJECT APPROVALS

The project will require the following approvals:

- Federal Approvals
 - U.S. Army Corps of Engineers – Clean Water Act Section 404 Permit
 - U.S. Fish and Wildlife Service – Endangered Species Act Section 7 Letter of Concurrence
- State Approvals
 - California Department of Fish and Wildlife – Lake and Streambed Alteration Agreement
 - Regional Water Quality Control Board – Clean Water Act Section 401 Water Quality Certification Regional/Local Approvals
- Local Approvals
 - Monterey Bay Air Resources District – Authority to Construct
 - Monterey County – Encroachment Permit

3. 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.

- | | | | |
|-------------------------------------|------------------------------------|-------------------------------------|------------------------------------|
| <input type="checkbox"/> | Aesthetics | <input type="checkbox"/> | Mineral Resources |
| <input type="checkbox"/> | Agriculture and Forestry Resources | <input type="checkbox"/> | Noise |
| <input type="checkbox"/> | Air Quality | <input type="checkbox"/> | Population and Housing |
| <input checked="" type="checkbox"/> | Biological Resources | <input type="checkbox"/> | Public Services |
| <input checked="" type="checkbox"/> | Cultural Resources | <input type="checkbox"/> | Recreation |
| <input type="checkbox"/> | Geology and Soils | <input checked="" type="checkbox"/> | Transportation |
| <input type="checkbox"/> | Greenhouse Gas Emissions | <input checked="" type="checkbox"/> | Tribal Cultural Resources |
| <input type="checkbox"/> | Hazards and Hazardous Materials | <input type="checkbox"/> | Utilities and Service Systems |
| <input type="checkbox"/> | Hydrology and Water Quality | <input checked="" type="checkbox"/> | Mandatory Findings of Significance |
| <input type="checkbox"/> | Land Use | | |

4. DETERMINATION

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.

Signature

Date

5. ENVIRONMENTAL EVALUATION

This Initial Study evaluates the following resource sections within **Section 5.2. Environmental Setting and Impacts**: aesthetics, agricultural resources, air quality, biological resources, cultural resources, geology and soils, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use, mineral resources, noise, population/housing, public services, recreation, transportation, tribal resources, and utilities and service systems.

5.1 EVALUATION OF ENVIRONMENTAL IMPACTS

The following describes how the proposed project's impacts to resource areas will be analyzed in this Initial Study in accordance with the California Environmental Quality Act (CEQA). Each resource section includes: 1) existing setting and applicable regulatory background, 2) CEQA impact checklist for the resource area, and 3) impact discussion in response to the questions in the checklist and mitigation where warranted. The impact discussion will identify the level of environmental effect from the proposed project. An explanation or discussion is required for all answers to the resource impact checklist as follows.

1. A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on project-specific screening analysis).
2. All answers must take into account the whole action involved, including offsite as well as onsite, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.
3. Once the lead agency has determined that a particular environmental impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant based on the thresholds. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.
4. "Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures and briefly explain how they reduce the effect to a less than significant level mitigation measures.
5. Supporting Information Sources: A source list will be attached, and other sources used, or individuals contacted will be cited in the discussion.
6. The explanation of each issue will identify:
 - a. The significance criteria or threshold, if any, used to evaluate each question; and
 - b. The mitigation measure identified, if any, to reduce the impact to less than significant.

5.2 ENVIRONMENTAL SETTING AND IMPACTS

The following section describes the environmental setting and identifies the environmental impacts anticipated from implementation of the proposed project. The criteria provided in the CEQA environmental checklist was used to identify potentially significant environmental impacts associated with the project.

5.2.1 AESTHETICS

Setting

The proposed project lies near the mouth of western end of Carmel Valley between the Carmel River and the northern ridgeline of Carmel Valley. Visually sensitive areas are those scenic resources visible from existing, potential, and proposed scenic routes. The project site is not designated as a, “visually sensitive area” by the Monterey County General Plan. (Monterey County, 2010).

The State Scenic Highways Program is designed to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The project site is located within the vicinity of Highway 1, which is designated as a scenic highway by the Monterey County General Plan and the California Scenic Highway Mapping System (Caltrans, 2018). However, the project site is not visible from Highway 1 due to topography and existing vegetation along the east side Highway 1. The project site is also adjacent to Carmel Valley Road (Monterey County Route G16). Carmel Valley Road is designated as a Proposed Scenic Highway by the Monterey County General Plan; it is not designated as a scenic highway by the California Scenic Highway Mapping System. A portion of the project alignment will be visible from Carmel Valley Road.

The proposed project area is characterized primarily by two different types of landscape. The first type of landscape is ruderal and disturbed, which exists within the existing access road. The second type of landscape within the proposed project area is riparian woodland, which exists on either side of the existing access road. This area is heavily wooded with mature willows, cottonwoods, and blackberry shrubs. Prominent visual resources in the proposed project vicinity include the Monterey Peninsula, Highway 1, Carmel Beach, Carmel Valley, Del Monte Forest, Point Lobos, and the Pacific Ocean.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?			X	
b) Substantially damage scenic resources, including but not limited to trees, rock outcroppings, and historic buildings within a state scenic highway?			X	
c) Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d) Create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?				X

Explanation

- a) **Less Than Significant Impact.** The majority of the project site is located within a canyon and is not visible from any public roads due to topography and existing vegetation. The project would not impact scenic vistas and is not located within a scenic corridor. Construction of the project may be temporarily visible from a small amount of private residences. Impacts to private views in a project's immediate vicinity are not considered under CEQA.
- b) **Less Than Significant Impact.** The project site is not visible from Highway 1. A small portion of the project site, located at the entrance to Hatton Canyon, is visible from Carmel Valley Road. Carmel Valley Road is designated as a Proposed Scenic Highway by the Monterey County General Plan; Carmel Valley Road is not designated as a State Scenic Highway. Project construction activities could result in temporary changes to the visual character in the vicinity of construction due to presence of equipment and construction materials. Construction activities would be temporary in nature and the total area of temporary disturbance would be minimal and would therefore be visible only briefly to motorists traveling on Carmel Valley Road. There may be minor vegetation removal along the sewer pipeline alignment to accommodate access during construction and maintenance of the sewer line during project operation. For these reasons, construction and operation of the sewer pipeline would result in a less than significant impact to scenic resources within scenic highways.
- c) **Less Than Significant Impact.** The existing visual character of the project site is comprised of ruderal disturbed and riparian woodland landscapes. The overall visual quality of the site is considered high due to the pleasant natural setting and display of the region's natural scenic beauty. The project site would be visible to pedestrians using the access road as an informal recreation trail. For more discussion of impacts to the Carmel Hill and River Recreation Trail, see **Sections 5.2.14 and 5.2.15**. Construction impacts would include the presence of construction vehicles, equipment and materials, stockpiles, and exposed soils. These impacts would be temporary in nature. There may be minor vegetation removal along the sewer pipeline alignment to accommodate access

during construction and maintenance of the sewer line during project operation, however, all areas will be replanted with native, locally occurring vegetation. For these reasons, construction and operation of the sewer pipeline would result in a less than significant impact to the visual quality of the site.

- d) **No Impact.** The project does not propose any new sources of light or glare, as the sewer line and all associated appurtenances will be underground. Construction will not occur at night; therefore, no safety lighting will be needed.

Conclusion: The project would have a less than significant impact on aesthetics.

5.2.2 AGRICULTURAL AND FORESTRY RESOURCES

Setting

In California, agricultural land is given consideration under CEQA. According to Public Resources Code §21060.1, “agricultural land” is identified as prime farmland, farmland of statewide importance, or unique farmland, as defined by the U.S. Department of Agriculture land inventory and monitoring criteria, as modified for California. CEQA also requires consideration of impacts on lands that are under Williamson Act contract. Hatton Canyon is owned by State Parks, and the Monterey County Important Farmlands Map classifies the property as “Other Land” (County of Monterey, 2018). The project site does not contain lands under Williamson Act contract (CA NRA, 2016).

CEQA requires the evaluation of forest and timber resources where they are present. The project site is in a strip of urban open space surrounded by residential properties. The site does not contain any forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or property zoned for Timberland Production as defined by Government Code section 51104(g).

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
<p>AGRICULTURAL AND FOREST 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 Department 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:</p>				
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?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
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 section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d) Result in the loss of forest land or conversion of forest land to non-forest uses?				X
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?				X

Explanation

- a, b) **No Impact.** The project site is designated as “Other Land” on the Important Farmlands Map for Monterey County and does not contain any prime farmland, unique farmland, farmland of statewide importance, or lands under Williamson Act contract.
- c, d) **No Impact.** The project would not impact forest resources or result in the loss or conversion of forest land since the project site does not contain any forest land as defined in Public Resources Code section 12220(g), timberland as defined by Public Resources Code section 4526, or property zoned for Timberland Production as defined by Government Code section 51104(g).
- e) **No Impact.** As per the discussion above, the proposed project would not involve changes in the existing environment which, due to their location or nature, could result in conversion of farmland or agricultural land, since none are present on this property. The project is a replacement of an existing structure and would not convert any land for other use.

Conclusion: The project would have no impact on agricultural and forest resources.

5.2.3 AIR QUALITY

Setting

The Federal Clean Air Act and the California Clean Air Act mandate the control and reduction of specific air pollutants. Under these Acts, the U.S. Environmental Protection Agency (EPA) and the California Air Resources Board have established ambient air quality standards for specific "criteria" pollutants, designed to protect public health and welfare. Primary criteria pollutants include carbon monoxide (CO), reactive organic gases (ROG), nitrogen oxides (NO_x), particulate matter (PM₁₀), sulfur dioxide (SO₂), and lead (Pb). Secondary criteria pollutants include ozone (O₃), and fine particulate matter (PM_{2.5}).

The project site is located within the North Central Coast Air Basin (Air Basin). The Air Basin covers an area of 5,159 square miles along the central coast of California and is generally bounded by the Monterey Bay to the west, the Santa Cruz Mountains to the northwest, the Diablo Range on the northeast, with the Santa Clara Valley between them (Denise Duffy and Associates, 2015). The Monterey Bay Air Resources District (MBARD) is the regional agency tasked with managing air quality in the region.

The EPA administers the National Ambient Air Quality Standards (NAAQS) under the Federal Clean Air Act. The EPA sets the NAAQS and determines if areas meet those standards. Violations of ambient air quality standards are based on air pollutant monitoring data and evaluated for each air pollutant. Areas that do not violate ambient air quality standards are considered to have attained the standard. Existing levels of air pollutants in the area of the proposed project can generally be inferred from ambient air quality measurements conducted by MBARD at its closest station, the Carmel Valley – Fort Road monitoring station, located in Carmel Valley off of Pilot Road between Via Contenta and Del Fino Place.

Although the North Central Coast Air Basin is in attainment of all federal air quality standards, it is designated as nonattainment with respect to the more stringent state PM₁₀ standard and the state eight-hour ozone standard. See **Table 1** below for a summary of the North Central Coast Air Basin attainment status.

Pollutant	State Standards ¹	National Standards
Ozone (O ₃)	Nonattainment²	Attainment / Unclassified ³
Inhalable Particulates (PM ₁₀)	Nonattainment	Attainment
Fine Particulates (PM _{2.5})	Attainment	Attainment / Unclassified ⁴
Carbon Monoxide (CO)	Attainment	Attainment / Unclassified
Nitrogen Dioxide (NO ₂)	Attainment	Attainment / Unclassified ⁵
Sulfur Dioxide (SO ₂)	Attainment	Attainment ⁶
Lead	Attainment	Attainment / Unclassified ⁷
Notes:		
1) State designations based on 2010 to 2012 air monitoring data.		
2) Effective July 26, 2007, the ARB designated the NCCAB a nonattainment area for the State ozone standard, which was revised in 2006 to include an 8-hour standard of 0.070 ppm.		
3) On March 12, 2008, EPA adopted a new 8-hour ozone standard of 0.075 ppm. In April 2012, EPA designated the NCCAB attainment/unclassified based on 2009-2011 data.		
4) This includes the 2006 24-hour standard of 35 µg/m ³ and the 2012 annual standard of 12 µg/m ³ .		
5) In 2012, EPA designated the entire state as attainment/unclassified for the 2010 NO ₂ standard.		
6) In June 2011, the ARB recommended to EPA that the entire state be designated as attainment for the 2010 primary SO ₂ standard. Final designations to be addressed in future EPA actions.		
7) On October 15, 2008 EPA substantially strengthened the national ambient air quality standard for lead by lowering the level of the primary standard from 1.5 µg/m ³ to 0.15 µg/m ³ . Final designations were made by EPA in November 2011.		
8) Nonattainment designations are highlighted in Bold.		

Plans to attain these standards already accommodate the future growth projections available at the time these plans were prepared. Any development project capable of generating air pollutant emissions exceeding regionally-established criteria is considered significant for purposes of CEQA analysis, whether or not such emissions have been accounted for in regional air planning. Furthermore, any project that would directly cause or substantially contribute to a localized violation of an air quality standard would generate substantial air pollution impacts. The same is true for a project that generates a substantial increase in health risks from toxic air contaminants or introduces future occupants to a site exposed to substantial health risks associated with such contaminants.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY. Where available, the significance criteria established by the applicable air quality management 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?			X	
b) Violate any air quality standard or contribute to an existing or projected air quality violation?			X	
c) 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 (including releasing emissions, which exceed quantitative thresholds for ozone precursors)?			X	
d) Expose sensitive receptors to substantial pollutant concentrations?			X	
e) Create objectionable odors affecting a substantial number of people?			X	

Explanation

- a) **Less Than Significant Impact.** CEQA Guidelines §15125(b) requires that a project is evaluated for consistency with applicable regional plans, including the Air Quality Management Plan (AQMP). The MBARD is required to update their AQMP once every three years; the most recent update (MBARD, 2017) was approved in March of 2017. This plan addresses attainment of the State ozone standard and federal air quality standard. The AQMP accommodates growth by projecting growth in emissions based on population forecasts prepared by the Association of Monterey Bay Area Governments (AMBAG) and other indicators. Consistency determinations are issued for commercial, industrial, residential, and infrastructure related projects that have the potential to induce population growth. A project is considered inconsistent with the AQMP if it has not been accommodated in the forecast projections considered in the AQMP. The proposed sewer replacement would not cause and/or otherwise induce population growth. In addition, due to lack of operational emissions, it would not cause any long-term adverse air quality affects. As a result,

this project would not conflict with and/or otherwise obstruct the implementation of MBARD's AQMP.

- b, c) **Less Than Significant Impact.** The MBARD 2016 CEQA Air Quality Guidelines (Guidelines) contains standards of significance for evaluating potential air quality effects of projects subject to the requirements of CEQA. According to the MBARD, a project will not have a significant air quality effect on the environment, if the following criteria are met:

Construction of the project will:

- Emit (from all sources, including exhaust and fugitive dust) less than;
 - 137 pounds per day of oxides of nitrogen (NO_x)
 - 137 pounds per day of reactive organic gases (ROG)
 - 82 pounds per day of respirable particulate matter (PM₁₀)
 - 55 pounds per day of fine particulate matter (PM_{2.5})
 - 550 pounds per day carbon monoxide (CO)

Operation of the project will:

- Emit (from all project sources, mobile, area, and stationary) less than;
 - 137 pounds per day of oxides of nitrogen (NO_x)
 - 137 pounds per day of reactive organic gases (ROG)
 - 82 pounds per day of PM₁₀
 - 55 pounds per day of PM_{2.5}
 - 550 pounds per day carbon monoxide (CO)
- Not cause or contribute to a violation of any California or National Ambient Air Quality Standards;
- Not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment;
- Not exceed the health risk public notification thresholds adopted by the MBARD;
- Not create objectionable odors affecting a substantial number of people; and
- Be consistent with the adopted federal and state Air Quality Plans (MBARD, 2016)

Based on the above thresholds, the proposed project would result in a less than significant construction-related air quality effect. See **Table 2** for a summary of air quality calculations

Table 2.				
Construction Air Pollutant Emissions for the Hatton Canyon Sewer Replacement Project				
	Emissions in Pounds/Day			
	NO_x	PM_{2.5}	PM₁₀	ROG
Significance Threshold (MBARD)	137*	55	82	137*
Emissions generated by the Sewer Replacement	25	1	1	2
Exceed Threshold?	No	No	No	No
Emissions Source: Attachment 2, Air Quality and GHG Calculations Spreadsheets Significance Threshold Source: MBARD, 2016 * Applies to non-typical construction equipment (i.e., well drilling) MBARD has identified that construction projects using typical construction equipment such as dump trucks, scrapers, bulldozers, compactors and front-end loaders that temporarily emit precursors of ozone (i.e., VOC or NO _x), are accommodated in the emission inventories of State- and federally-required air plans. Temporary emissions associated with the operation of construction equipment have been accommodated in State- and federally-required air plans				

In addition, the MBARD Guidelines for evaluating impacts during construction state that if a project generates less than 82lb/day of PM₁₀ emissions, the project is considered to have less than significant impact (see Table 5-1, MBARD, 2016). The Guidelines also state that a project will result in less than significant impacts if daily ground-disturbing activities entail less than 8.1 acres of minimal earthmoving, or less than 2.2 acres of grading and excavation. Construction projects below these acreage thresholds would be below the applicable MBARD 82 lb/day threshold of significance and would constitute a less than significant effect for the purposes of CEQA (MBARD, 2016).

The proposed sewer replacement would result in temporary increases in emissions of inhalable particulates (PM_{2.5} and PM₁₀), VOC, and NO_x associated with construction-related activities, see **Table 2. Construction Air Pollutant Emissions for the Hatton Canyon Sewer Replacement Project** below for detailed information on these emissions. See the spreadsheets provided in **Attachment A Project Specific CalEEMod Report**, for more information. Construction-related fugitive dust emissions associated with the proposed sewer replacement would be generated from project site grading and construction. In addition to construction-related fugitive dust, exhaust emissions associated with construction vehicles and equipment would also be generated. In total, approximately 3.4 acres of land has been designated for the contractor's use in completion of the work, the area of disturbance at any given time would include only a small portion of the 3.4 acre area, as construction will progress linearly along the proposed sewer main alignment. Construction of the sewer replacement will include limited grading and would be well below the threshold of 2.2 acres of daily grading. The operation of the proposed sewer replacement would not result in a new or substantially more severe significant impact due to air quality emissions during operations. Based upon the low level of operational emissions, operation of the proposed sewer replacement would not result in emissions that would cause a new or substantially more severe impact based on an exceedance or violation of the applicable air quality standards or result in a cumulatively considerable net increase of any criteria pollutants.

- d) **Less Than Significant Impact.** A “sensitive receptor” is generally defined as any residence including private homes, condominiums, apartments, or living quarters; education resources such as preschools and kindergarten through grade twelve (k-12) schools; daycare centers; and health care facilities such as hospitals or retirement and nursing homes. The CEQA Air Quality Guidelines prepared by MBARD in 2016 state that a project would have a significant impact to sensitive receptors if it would cause a violation of any CO, PM₁₀ or toxic air contaminant standards at an existing or reasonably foreseeable sensitive receptor.

The construction contractor will be required to implement the air quality best management practices described in **Section 2.2 Project Summary**. Emissions of CO resulting from construction of the proposed project would be approximately 20 pounds/day. As discussed in b) above, the proposed project would not exceed any MBARD thresholds.

- e) **Less Than Significant Impact.** There may be intermittent odors from construction associated with diesel exhaust and exposed sewer manholes that could be noticeable at times to residences in close proximity. However, given the limited construction duration, potential intermittent odors are not anticipated to result in odor complaints and would not affect a substantial number of people.

Conclusion: The proposed project would have a less than significant impact on air quality.

5.2.4 BIOLOGICAL RESOURCES

Setting

Multiple projects have been proposed for Hatton Canyon over the last three decades. As a result, Caltrans and expert consultants have surveyed the area extensively (**Table 3**). Biological surveys were conducted by Caltrans staff in coordination with previous plans to realign Highway 1 through Hatton Canyon. These surveys resulted in the preparation of a letter of completion of informal consultation regarding steelhead, issued by National Oceanic and Atmospheric Administration - National Marine Fisheries Service (NMFS) on October 8, 1998, and a Biological Opinion for the California red-legged frog (*Rana draytonii*; CRLF) issued by the U.S. Fish and Wildlife Service (USFWS) on January 21, 1999.

Additional biological surveys were conducted in Hatton Canyon by Denise Duffy and Associates (DDA) between May 2007 and April 2008 to review and confirm previous surveys, identify any special-status plant or wildlife species, and characterize vegetation types present within the Carmel Hill and River Recreation Trail Project site and vicinity (**Table 3**). A wetland delineation was also conducted for the Carmel Hill and River Recreation Trail Project between December 2007 and January 2008 to determine the presence of wetlands and other waters within and adjacent to the project site and to determine if the resources were jurisdictional under the U.S. Army Corps of Engineers (ACOE). Additionally, a survey for Smith's blue butterfly was conducted by Caltrans biologist, Tom Edell, on July 31, 2008. As a result, the evaluation area has been thoroughly surveyed and evaluated in regard to the presence of special-status species and sensitive habitats.

Table 3. Historic Surveys Completed in Evaluation Area		
Survey Type	Surveyor	Date
General Resource Surveys	Gary Ruggerone (Caltrans) Craig Martz (Caltrans) Stan Ford (Caltrans)	1984
Smith's Blue Butterfly Survey	Dick Arnold (Entomological Consultant)	August 1985
Wetland Delineation	Larry VanZant (ACOE) Joyce Minjeras (ACOE)	March 1987
Wetland Delineation "spot check"	Gary Ruggerone Chuck Cesena	May 1994
Wetland Delineation	Gary Ruggerone Chuck Cesena Greg Smith (Caltrans) Dana York (Caltrans)	June/October 1996 & February/March 1997
Addendum Wetland Delineation	Gary Ruggerone Chuck Cesena	May 1998
Grassland Surveys	Gary Ruggerone Craig Martz	April 1988

Table 3. Historic Surveys Completed in Evaluation Area		
Survey Type	Surveyor	Date
Grassland Surveys	Gary Ruggerone Chuck Cesena Greg Smith Lisa Schicker (Caltrans) Ellie Wagner (Caltrans) John Luchetta (Caltrans) Wayne Mills (Caltrans) Bob Pavlik (Caltrans)	April/May 1988-1995
Grassland Surveys	Gary Ruggerone Lisa Schicker Wayne Mills Tom Edell (Caltrans)	1997/1998
CRLF Surveys	Habitat Restoration Group	June 1995
CRLF Day & Night Surveys	Gary Ruggerone Chuck Cesena Greg Smith	June 1996
CRLF Day Surveys	Gary Ruggerone Chuck Cesena	June/July 1996
CRLF Night Surveys	Gary Ruggerone Chuck Cesena Lisa Schicker	February 1997
CRLF Day & Night Surveys	Gary Ruggerone Chuck Cesena	April-June 1997
Steelhead Literature Review	Gary Ruggerone	August 1998
Yadon's Piperia survey	Gary Ruggerone Tom Edell David Hacker (Caltrans)	July 1998
Botanical/Rare Plant Survey	Jeff Norman (Botanical Consultant)	May 2007
Wetland Delineation	Josh Harwayne (DDA) Matt Johnson (DDA) Jami Colley (DDA)	December 2007 & January 2008
Site Assessment	Jami Colley	April 2008
Smith's Blue Butterfly Survey	Tom Edell	July 2008

Additional biological surveys were conducted for the proposed project by DDA on January 2 and 5, 2018 to review and confirm previous surveys and identify any changed circumstances or new resources, including vegetation characterization, presence or potential presence of special-status plant and wildlife species, and potentially jurisdictional wetlands and waters. The results of the surveys are presented in a Biological

Resources Report (Bio Report¹), prepared for the proposed project by DDA in April 2018 (**Appendix C**). In addition, a Wetland Delineation Report was prepared by DDA in January 2018 that identifies potentially jurisdictional federal wetlands and other waters within the evaluation area (Appendix E of Bio Report). The information provided in these reports are summarized below.

Focused rare plant surveys were conducted by DDA on April 20 and May 16, 2018 to determine the presence or absence of the rare plant species that were identified within the Bio Report with the potential to occur. The area surveyed included the proposed project area and a buffer of approximately two feet on either side of the access road. For the purposes of the biological analysis, the “proposed project area” includes the contractor disturbance areas, as well as the access road, which comprise 3.4 acres in total. The results of this survey are provided below.

Vegetation Types

The proposed project area contains four major plant communities, including Monterey pine forest, riparian (including some areas that also meet the federal definition of wetlands and other waters), poison oak scrub, and ruderal areas (**Figure 3**). Additionally, a small portion of the area is developed (paved). The following is the acreage of each area within the proposed project area:

- Monterey pine forest (0.2 acre),
- Riparian (0.3 acres),
- Poison oak scrub (0.3 acre),
- Ruderal/disturbed (2.3 acres), and
- Developed (0.3 acre).

A brief description of each of these vegetation types can be found below along with the identification of the presence or potential presence of special-status species within each type. A generalized nomenclature for vegetation types is used within this document for ease of reference; however, each vegetation type description also lists the *Manual of California Vegetation* (Sawyer et.al., 2009) vegetation type(s) in order to provide a crosswalk to the *List of Vegetation Alliances and Associations* (CDFW, 2010).

Monterey Pine Forest

- *A Manual of California Vegetation classification: Monterey Pine Forest (Pinus radiata – Quercus agrifolia/Toxicodendron diversilobum Association)*
- *California Department of Fish and Wildlife (CDFW) List of Alliances and Associations: Sensitive*

Monterey pine forest is present on the slopes above the existing access road and pipeline alignment (**Figure 3**). These areas are dominated by Monterey Pine trees (*Pinus radiata*), but also support coast live

¹ The Bio Report was prepared prior to finalization of the project description and therefore describes the existing biological resources within a larger evaluation area that includes the proposed project area. The Bio Report looks generally at what types of impacts could occur as a result of the proposed project; provides generalized recommended avoidance, minimization, and mitigation measures for potential impacts; and includes an overview of applicable federal, state, and local regulation, regulatory and responsible agencies with jurisdiction over sensitive resources within the evaluation area, and the relevant permits that may be required; however, the Bio Report does not include an impact analysis or provide avoidance, minimization, or mitigation measures.

oak (*Quercus agrifolia*), California coffeeberry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), creeping snowberry (*Symphoricarpos mollis*), and California wood fern (*Dryopteris arguta*). Closed-cone coniferous forest provides habitat for several species, including mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), Monterey dusky-footed woodrat (*Neotoma macrotis luciana*), red-tailed hawk (*Buteo jamaicensis*), scrub jay (*Aphelocoma californica*), chestnut-backed chickadee (*Poecile rufescens*), and American robin (*Turdus migratorius*).

Monterey dusky-footed woodrat nests were observed throughout the Monterey pine forest within the proposed project area and this species is assumed present. Hoary bat (*Lasiurus cinereus*) and Townsend's big-eared bat (*Corynorhinus townsendii*) may utilize the Monterey pine trees for night roosts, and white-tailed kite (*Elanus leucurus*) and other raptor and migratory bird species may nest within these trees. Additionally, CRLF and coast range newt (*Taricha torosa*) may utilize the Monterey pine forest habitat within the proposed project area as upland habitat. Northern California legless lizard (*Anniella pulchra*) may also be found within this area where loose sandy soils are present. Monterey pine trees are a special-status plant species and are the dominant species within this vegetation type. No additional special-status plant species were identified within the Monterey pine forest habitat during surveys in 2018 or historic surveys in Hatton Canyon.

Monterey pine forest habitat is identified as sensitive on the CDFW's *List of Alliances and Associations* (CDFW, 2010) and may also be considered ESHA by the CCC. Portions of the Monterey pine forest habitat may also support potentially jurisdictional other waters under the regulation of the ACOE, CCC, and RWQCB.

Poison Oak Scrub

- *A Manual of California Vegetation classification*: Poison Oak Scrub (*Toxicodendron diversilobum* Shrubland Alliance)
- *CDFW List of Alliances and Associations*: Not sensitive

Poison oak scrub occurs within (mostly undisturbed) open areas of the proposed project area where there is little to no tree cover (**Figure 3**). These areas are co-dominated by poison oak, coyote bush (*Baccharis pilularis*), and California coffeeberry. Other species found in this habitat type include redberry (*Rhamnus crocea*), California sagebrush (*Artemisia californica*), Carmel ceanothus (*Ceanothus griseus* var. *griseus*), fuchsia-flowered gooseberry (*Ribes speciosum*), coast morning-glory (*Calystegia macrostegia* ssp. *cyclostegia*), and sticky-monkey flower (*Mimulus aurantiacus*). Common wildlife that occur within poison oak scrub habitats include California quail (*Callipepla californica*), California towhee (*Pipilo crissalis*), California thrasher (*Toxostoma redivivum*), scrub jay, western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), and brush rabbit (*Sylvilagus bachmani*).

Monterey dusky-footed woodrat nests were observed throughout the poison oak scrub within the proposed project area and this species is assumed present. Additionally, CRLF and coast range newt may utilize the poison oak scrub as upland habitat and California legless lizard may be found where loose sandy soils are present. Migratory bird species may also nest within this vegetation type. No special-status plant species were identified within the poison oak scrub habitat during surveys in 2018 or historic surveys in Hatton

Canyon. Portions of the poison oak scrub habitat may also support potentially jurisdictional other waters under the regulation of the ACOE, CCC, and RWQCB.

Riparian

- *A Manual of California Vegetation classification: Arroyo Willow Thickets (Salix lasiolepis Shrubland Alliance)*
- *CDFW List of Alliances and Associations: Sensitive*

Riparian habitats are those plant communities supporting woody vegetation found along rivers, creeks, streams, canyon bottom drainages, and seeps. They can range from a dense thicket of shrubs to a closed canopy of large mature trees. Riparian areas dominate the floor of Hatton Canyon and are supported by the Hatton Canyon stream (**Figure 3**). This area is dominated by Arroyo willow (*Salix lasiolepis*) and, slightly less dominant, western red dogwood (*Cornus serica*). Also present are California blackberry (*Rubus ursinus*), box elder (*Acer negundo* var. *californica*), black cottonwood (*Populus trichocarpa*), poison oak, hoary nettle (*Urtica dioica*), mugwort (*Artemisia douglasiana*), and poison hemlock. Riparian areas provide habitat for many wildlife species, particularly birds and herpetofauna. Common species that may be found within the riparian habitat in the site includes Sierran treefrog (*Pseudacris sierra*), Monterey ensatina (*Ensatina eschscholtzii eschscholtzii*), red-winged blackbird (*Agelaius phoeniceus*), and song sparrow (*Melospiza melodia*).

Monterey dusky-footed woodrat nests were observed throughout the riparian habitat within the proposed project area and this species is assumed present. Hoary bat and Townsend's big-eared bat may utilize the large willow and black cottonwood trees for night roosts, and raptors, migratory bird species, and white-tailed kite, may nest within the riparian trees. CRLF and coast range newt may utilize the riparian habitat within the proposed project area as upland habitat. Additionally, Northern California legless lizard may be found within the riparian areas where loose sandy soils are present. No special-status plant species were identified within the riparian habitat during surveys in 2018 or historic surveys in Hatton Canyon.

Riparian habitat is identified as sensitive on the CDFW's *List of Alliances and Associations* (CDFW, 2010) and may also be considered ESHA by the CCC. Portions of the riparian habitat may also support potentially jurisdictional wetlands and other waters under the regulation of the ACOE, CCC, and RWQCB.

Ruderal/Disturbed

- *A Manual of California Vegetation classification: Poison Hemlock and Fennel Patches (Conium maculatum - Foeniculum vulgare Semi-Natural Herbaceous Stands)*
- *CDFW List of Alliances and Associations: Not sensitive*

Ruderal areas are those areas which have been developed and disturbed by human activities (e.g., existing roads or structures) and are devoid of vegetation or dominated by non-native species. Within the proposed project area, this habitat includes gravel and dirt roads, the former staging area for the Carmel Valley Road expansion, and other highly disturbed/maintained areas throughout Hatton Canyon (**Figure 3**). These areas are either mostly devoid of vegetation or are dominated by non-native, "weedy" species such as poison hemlock (*Conium maculatum*) and summer mustard (*Hirschfeldia incana*).

Common wildlife species which do well in urbanized and disturbed areas that may occur within the ruderal habitat include American crow (*Corvus brachyrhynchos*), raccoon, striped skunk (*Mephitis mephitis*), scrub jay, European starling (*Sturnus vulgaris*), western fence lizard, and rock dove (*Columba livia*).

Special-status species that may be found in the ruderal areas includes: Northern California legless lizard, obscure bumble bee (*Bombus caliginosus*), and western bumble bee (*Bombus occidentalis*). Additionally, migratory bird species may forage and nest within the ruderal areas. No special-status plant species were identified within the ruderal areas during surveys in 2018 or historic surveys in Hatton Canyon. Portions of the ruderal habitat may also support potentially jurisdictional other waters under the regulation of the ACOE, CCC, and RWQCB.

Developed

- *A Manual of California Vegetation classification*: None
- *CDFW List of Alliances and Associations*: None

Developed areas within the proposed project area include Carmel Valley Road and paved portion of the existing trail (**Figure 3**). These areas are completely devoid of vegetation and provide no habitat for plants and wildlife. No special-status wildlife or plant species were observed within the developed areas and none are expected to occur due to lack of suitable habitat.

Sensitive Habitats

The floristic alliance occurring within the Monterey pine forest and riparian habitats are listed as sensitive on the CDFW's *List Vegetation Alliances and Associations* (CDFW, 2010). Riparian habitat is under CDFW jurisdiction.

The stream that runs through Hatton Canyon conveys water from upland runoff and sheet flow through a combination of confined channels, shallow wetlands, and culverts. The stream runs from the top of the Hatton Canyon and empties directly into the Carmel River. A Wetland Delineation Report was prepared that evaluated the potential presence of wetlands within an evaluation area (which includes the entire proposed project area) (Appendix E of Bio Report). The Wetland Delineation Report concluded that portions of the riparian area may be federal wetlands under the jurisdiction of the ACOE. The Wetland Delineation Report also identified several drainages within the evaluation area that may be jurisdictional other waters of the U.S. regulated by the ACOE and may also be within the California Regional Water Quality Control Board's (RWQCB) jurisdiction. **Figure 4** and **Table 4** identify the areas of potentially jurisdictional wetlands and other waters of the U.S. within the Proposed Project area.

Table 4.	
Acreage of Potentially Jurisdictional Wetlands and Other Waters in the Proposed Project Area	
Type	Acres
<i>Potential Federal Wetlands</i>	0.05 ac
<i>Potential Other Waters of the U.S.</i>	637.3 linear feet (0.04 acre ²)

Special-Status Wildlife Species

Several special-status wildlife species are known or have the potential to occur within or adjacent to the proposed project area based on presence of appropriate habitat and documented occurrences within the vicinity. All other species evaluated are assumed “unlikely to occur” or were determined “not present” within the proposed project area for the species-specific reasons presented in Appendix A of the Bio Report prepared for the project (**Appendix C**). The following special-status wildlife species are known or have the potential to occur within or adjacent to the proposed project area.

Townsend’s big-eared bat

The Townsend’s big-eared bat is a CDFW species of special concern. The Townsend’s big-eared bat is a year-round resident in California occurring from low desert to mid-elevation montane habitats. It is found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Townsend’s big-eared bats typically roost during the day in caves and mines but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees. This species hibernates in mixed sex aggregations of a few to several hundred individuals. Hibernation is more prolonged in colder areas. This species arouses periodically and moves to alternative roosts and actively forages and drinks throughout the winter. A single young is born per year between May and July.

The California Natural Diversity Data Base (CNDDDB) reports one occurrence of Townsend’s big-eared bat within the five quadrangles reviewed, located approximately 4.2 miles from the proposed project area. Suitable foraging and night roost habitat for this species is present within the proposed project area; however, suitable habitat for day, colonial, or maternal roosts is not available.

Hoary Bat

The hoary bat is included on CDFW’s CNDDDB “Special Animals” list. This species has the broadest range of any North American bat, occurring from Northern Canada to South America, and may be found at any location in California. This species winters in California and Mexico and often migrates towards summer quarters in the north and east during the spring. Spring migration is typically February to May, while fall migration typically occurs September through November. Hoary bats are a solitary species except during migration when larger groups are often formed or when mothers are rearing their young; however, unlike other bat species, hoary bats do not form maternity colonies. Hoary bats mate in fall or winter and sperm is stored over winter. Fertilization occurs in early spring and gestation is 80 to 90 days. One to four young

² An average width of three feet was used to calculate acreage of potential other waters within the proposed project area.

are born in late May to late June. As such, parturition occurs at summer quarters and there is little evidence that females give birth and raise young in California. Unlike many other bat species that often roost in buildings, hoary bats are seldom found in urban settings. The hoary bat typically roosts 10-15 feet above ground in the branches/foliage of medium to large deciduous and coniferous trees. Individuals wintering in cold climates hibernate but may be active on warm winter days. This species is nocturnal, emerging late in the evening with peak activity varying with season and location, but usually three to five hours after sunset. The hoary bat hunts above canopy level, in clearings, and over water. This species has also been known to set up foraging territories at bright lights where insects congregate.

The CNDDDB reports two occurrences of hoary bat within the five quadrangles reviewed, the nearest of which is approximately 1.7 miles from the proposed project area. Suitable foraging and day and night roost habitat for this species is present within the proposed project area; however, this species does not form maternity colonies and is not known to breed in California.

Monterey Dusky-Footed Woodrat

The Monterey dusky-footed woodrat is a CDFW species of special concern. This is a subspecies of the dusky-footed woodrat (*Neotoma fuscipes*), which is common to oak woodlands and other forest types throughout California. Dusky-footed woodrats are frequently found in forest habitats with moderate canopy cover and a moderate to dense understory, including riparian forests; however, they may also be found in chaparral communities. Relatively large nests are constructed of grass, leaves, sticks, and feathers and are built in protected spots, such as rocky outcrops or dense brambles of blackberry and/or poison oak. Typical food sources for this species include leaves, flowers, nuts, berries, and truffles. Dusky-footed woodrats may be a significant food source for small- to medium-sized predators. Populations of this species may be limited by the availability of nest material. Within suitable habitat, nests are often found in close proximity to each other.

Although the CNDDDB does not report any occurrences of this species within the five quadrangles analyzed, this species is known to occur throughout Monterey County in various forest habitats. Suitable habitat for this species is present within the proposed project area and several woodrat nests were observed during surveys. As such, this species is assumed present within the proposed project area.

Raptors and Other Protected Avian Species

Raptors and their nests are protected under Fish and Game Code. While the life histories of these species vary, overlapping nesting and foraging similarities (approximately February through August) allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest vegetation types, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through August, with peak activity May through July. Prey for these species includes small birds, small mammals, and some reptiles and amphibians. Many raptor species hunt in open woodland and habitat edges. Various common raptor species (such as red-tailed hawk, red-shouldered hawk, great horned owl, western screech owl, American kestrel, and turkey vulture [*Cathartes aura*]) and special-status raptor species (such as white-tailed kite) have a potential to nest within any of the large trees present within the proposed project area, which includes

willows, Monterey pine, and black cottonwood. Suitable nesting and foraging habitat for other protected avian species is also present within the proposed project area.

California Red-Legged Frog

The CRLF was listed as a federally Threatened species on June 24, 1996 and is also a CDFW species of special concern. The CRLF is the largest native frog in California (44-131 mm snout-vent length) and was historically widely distributed in the central and southern portions of the state. Adults generally inhabit aquatic habitats with riparian vegetation, overhanging banks, or plunge pools for cover, especially during the breeding season. They may take refuge in small mammal burrows, leaf litter, or other moist areas during periods of inactivity or to avoid desiccation. Radio telemetry data indicates that adults engage in straight-line breeding season movements irrespective of riparian corridors or topography and they may move up to two miles between non-breeding and breeding sites. During the non-breeding season, a wider variety of aquatic habitats are used including small pools in coastal streams, springs, water traps, and other ephemeral water bodies. CRLF may also move up to 300 feet from aquatic habitats into surrounding uplands, especially following rains, where individuals may spend days or weeks.

This species requires still or slow-moving water during the breeding season where it can deposit large egg masses, which are most often attached to submergent or emergent vegetation. Breeding typically occurs between December and April depending on annual environmental conditions and locality. Juvenile CRLF appear to have different habitat needs than adults, such as shallow water and limited shoreline or emergent vegetation. Additionally, it was important that there be small one-meter breaks in the vegetation or clearings in the dense riparian cover to allow juveniles to sun themselves and forage, but to also have close escape cover from predators. Jennings and Hayes also noted that tadpoles have different habitat needs and that in addition to vegetation cover, tadpoles use mud. It is speculated that CRLF larvae are algae grazers, however, foraging larval ecology remains unknown.

One CNDDDB occurrence of CRLF includes a portion of the proposed project area near Carmel Valley Road. One adult CRLF was observed in June 1996 by Caltrans biologists near the Carmel Valley Road culvert of the Hatton Canyon stream. Further surveys did not locate any other individuals (Caltrans, 1998). No CRLF were observed during pre-construction and construction-phase monitoring by DDA in 2010 for the Camel Hill Trail Project (DDA, 2010). Two additional CNDDDB occurrences are within one mile of the proposed project area, associated with the Carmel River. The nearest known breeding sites (both adults and larvae were observed) are located greater than one mile, but less than two miles, south of the proposed project area within the proximity of San Jose Creek and Palo Corona Regional Park. The presence of CRLF within the proposed project area is inferred based on existing habitat types and the proximity to known breeding locations.

Northern California Legless Lizard

The Northern California legless lizard is a CDFW species of special concern. The Northern California legless lizard is a fossorial (burrowing) species that typically inhabits sandy or loose (friable) soils. Habitats known to support this species include (but are not limited to) coastal dunes, valley and foothill grasslands, chaparral, and coastal scrub at elevations from near sea level to approximately 1800 meters (6000 feet). The Northern California legless lizard forages on invertebrates beneath the leaf litter or duff layer at the

base of bushes and trees or under wood, rocks, and slash in appropriate habitats. Little is known about the specific habitat requirements for courtship and breeding; however, the mating season for this species is believed to begin late spring or early summer, with one to four live young born between September and November.

The CNDDDB reports 41 occurrences of the Northern California legless lizard within the five quads evaluation, the nearest of which is located approximately 1.1 mile from the proposed project area within the Carmel Lagoon. Suitable habitat for this species is present within the proposed project area where loose sandy soils are present.

Coast Range Newt

The Coast Range newt, a subspecies of the California newt (*Taricha torosa*), is a CDFW species of special concern within all portions of their range south of the Salinas River in Monterey County. This species was historically distributed in coastal drainages from the vicinity of Sherwoods (central Mendocino County) in the North Coast Ranges, south to Boulder Creek, in San Diego County. The known elevation range of this species extends from near sea-level to 1830 meters. In central California, breeding appears to occur in two waves, the first in January or February and the second in March or April, although coast range newts may enter ponds as early as December. Breeding and egg-laying occur in intermittent streams, rivers, permanent and semi-permanent ponds, lakes and large reservoirs. Eggs are laid in small clusters on the submerged portion of emergent vegetation, on submerged vegetation, and on the underside of rocks off the bottom. Larvae take approximately three to six months to reach metamorphosis.

The CNDDDB does not report any occurrences of this species within the five quadrangles evaluated; however, this species is known to occur within the vicinity based on professional experience. The nearest known occurrence is located approximately 2.3 miles from the proposed project area at the Salamander Pond on Palo Corona Regional Park. Potential breeding habitat may also be present within the Carmel River; however, Coast Range newt breeding has not been documented within this aquatic resource. Suitable upland habitat for this species is present within the Monterey pine forest, riparian, poison oak scrub, and ruderal habitats within the proposed project area.

Obscure Bumble Bee

The obscure bumble bee is included on CDFW's CNDDDB "Special Animals" list. The obscure bumble bee occurs in Mediterranean California and along the Pacific Coast from southern California to southern British Columbia in Canada. This species occurs primarily along the coast in grassy prairies and meadows. Select food genera include *Baccharis*, *Cirsium*, *Lupinus*, *Lotus*, *Grindelia*, and *Phacelia*. The obscure bumble bee nests both underground and above ground; when nesting above ground, abandoned bird nests are often utilized.

The CNDDDB reports three occurrences of the obscure bumblebee within the five quads evaluation, including a historic non-specific occurrence (from the 1920s) that includes the entire proposed project area. Suitable habitat for this species may be present within the ruderal areas within the proposed project area.

Western Bumble Bee

The western bumble bee is included on CDFW's CNDDDB "Special Animals" list. The western bumble bee was formerly common from the Pacific coast to the Colorado Rocky Mountains; however, populations from central California to southern British Columbia, Canada and west of the Sierra-Cascade Ranges have declined sharply since the late 1990s. Select food genera include *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum*. The western bumble bee generally nests underground.

The CNDDDB reports four occurrences of the western bumblebee within the five quads evaluation, including a historic non-specific occurrence (from the 1920s) that includes the entire proposed project area. Suitable habitat for this species may be present within the ruderal areas within the proposed project area.

Special-Status Plant Species

One special-status plant species is known to occur within or adjacent to the proposed project area based on focused botanical surveys. All other species evaluated are assumed "unlikely to occur" or were determined "not present" within the proposed project area for the species-specific reasons presented in Appendix A of the Bio Report prepared for the project (**Appendix C**).

Monterey Pine

Monterey pine is a CNPS List 1B species. This evergreen tree occurs in closed-cone coniferous forests at elevations from 82-607 feet. Only four native stands of this species exist in the world. One stand is found on Guadalupe Island off Baja California. The other three stands are all within California at Ano Nuevo, Cambria, and the Monterey Peninsula. Monterey pines are introduced in many areas, including in New Zealand where it is used as a plantation crop. Only one-half of the species' historical extent remains undeveloped on the Monterey Peninsula. Monterey pines are threatened by development, genetic contamination, pine pitch canker disease, and forest fragmentation, especially in the Del Monte Forest on the Monterey Peninsula.

The CNDDDB reports two occurrences of Monterey pine within the five quads evaluation, one of which includes the entire proposed project area. This species was identified throughout the Monterey pine forest habitat and five Monterey pine trees six inches in diameter at breast height (dbh) or greater are present within the proposed project area (**Figure 5**).

Regulatory Setting

A description of the regulations relevant to the proposed project is provided in the Bio Report prepared for the project (**Appendix C**). The following regulations are applicable to the proposed project:

- Federal Regulations
 - Federal Endangered Species Act
 - The Clean Water Act
 - Executive Order 11990 - Protection of Wetlands
 - Executive Order 13112-Invasive Species

- State Regulations
 - California Endangered Species Act
 - California Fish and Game Code
 - Native Plant Protection Act
 - Porter-Cologne Water Quality Control Act
- Local Regulations
 - 2010 Monterey County General Plan

There are no adopted Habitat Conservation Plans (HCPs) or Natural Community Conservation Plans (NCCPs) associated with the proposed project area.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant 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 Wildlife or U.S. Fish and Wildlife Service?		X		
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		X		
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		
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?		X		
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
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?				X

Explanation

a) **Less Than Significant With Mitigation Incorporated.**

Special-Status Plants

Monterey Pine. The proposed project may have a significant impact on Monterey Pine, a CNPS CRPR 1B species. Five Monterey pine trees are present within the proposed project area. Two of these trees may be removed. In addition, project activities could result in mortality of additional Monterey Pine trees not scheduled for removal if the work impacts the root systems. These impacts are considered significant and will be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-1, BIO-2, BIO-14, and BIO-17.**

Special-Status Wildlife

Townsend's Big-eared Bat. The Townsend's big-eared bat is a CDFW species of special concern. Suitable foraging and night roost habitat for this species is present within the proposed project area; however, suitable habitat for day, colonial, or maternal roosts is not available. As such, it is unlikely that the proposed project would impact this species as construction will not occur during the night when the species may be utilizing the site. This is considered a less-than-significant impact and no mitigation is necessary.

Hoary Bat. The hoary bat is included on CDFW's CNDDDB "Special Animals" list. Suitable foraging and day and night roost habitat for this species is present within the proposed project area; however, this species does not form maternity colonies and is not known to breed in California. Removal of large Monterey pine and coast live oak trees may result in direct mortality of individual hoary bats. This is considered a significant impact that will be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-3, BIO-4, BIO-13, and BIO-14.**

Monterey dusky-footed woodrat. The Monterey dusky-footed woodrat is a CDFW species of special concern. Direct impacts to individual Monterey dusky-footed woodrat could occur as a result of construction activities, including the removal of vegetation, construction equipment traffic, and destruction of active nests. Indirect impacts could include increased dust, noise, and vibration during construction. Additionally, construction activities during the breeding season could result in the nest abandonment within the proposed project area and immediately adjacent areas. This is considered a significant impact that will be reduced to a less than significant level with implementation of **Mitigation Measures BIO-3 through BIO-5, BIO-11, and BIO-13 through BIO-15.**

Raptors and Other Protected Avian Species. Raptors and other protected avian species, including, but not limited to the white-tailed kite, have the potential to occur within or immediately adjacent to the proposed project area. Raptors and their nests are protected under Fish and Game Code and white-tailed kite is a fully protected species. Direct impacts to raptor nests may occur if trees are removed. Additionally, removal of other vegetation may result in impacts to smaller protected avian species. Construction activities during the breeding season could also result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment within the

proposed project area and immediately adjacent areas. This would be a potentially significant impact that can be reduced to a less than significant level with implementation of **Mitigation Measures BIO-3, BIO-4, BIO-6, and BIO-13 through BIO-15.**

California red-legged frog. The CRLF is a federally Threatened species and a CDFW species of special concern that is known to occur in Hatton Canyon. Hatton Canyon has no ponding or backwaters and lacks sufficient hydrology to support CRLF breeding requirements. The wetland and riparian habitat resources within and adjacent to the proposed project area are considered marginal for use by CRLF due to a lack of sufficient water in winter and a complete lack of moisture in all other seasons. In addition, access to the wetland and riparian resources of Hatton Canyon by CRLF is significantly restricted. Specifically, the lower portion of Hatton Canyon was filled in to build the adjacent shopping mall and the drainage put underground into a 0.5-mile long pipe to the Carmel River. As a result, CRLF have one of two options to access Hatton Canyon and the proposed project area: the first option is to enter the pipe and travel over a half a mile uphill to exit just south of Carmel Valley Road, and the second option is to go overland through the shopping mall or adjacent open fields by crossing Rio Road. Given the fact that a CRLF road kill has never been documented in this area, the overland route is not often used. CRLF moving up the pipe and occupying Hatton Canyon is also unlikely or at least unusual as evidenced by the lack of sightings during the history of surveys in the area. Five survey efforts over the course of two years (see **Table 3**) resulted in the documentation of the occurrence of only one adult CRLF adjacent to the proposed project area in the culvert under Carmel Valley Road in 1996. Further, CRLF were not observed during monitoring conducted for the Carmel Hill and River Recreational Trail in 2010. This single occurrence over the course of such a survey history combined with the lack of road kill documented in the area suggest that adult CRLF use the riparian and wetland habitats present within the proposed project area infrequently and at very low numbers, if at all. However, impacts to individuals of the species are possible.

Direct impacts could include take of individual CRLF as a result of construction activities, such as removal of riparian vegetation, construction equipment traffic, or holes/ditches left uncovered overnight. Indirect impacts could include increased dust, noise, and vibration during construction. However, CRLF do not typically move out in the open unless it is raining, and it is unlikely that work will occur during precipitation events. This is considered a significant impact that will be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-3 and BIO-7 through BIO-16.**

Northern California Legless Lizard. The Northern California legless lizard is a CDFW species of special concern. Direct impacts could include mortality of individual Northern California legless lizard as a result of construction activities, such as vegetation removal or excavation. Indirect impacts could include increased noise and vibration during construction. This is considered a significant impact that will be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-3, BIO-4, BIO-13 through BIO-16.**

Coast Range Newt. The Coast Range newt is a CDFW species of special concern. Direct impacts could include mortality of individual Coast Range newt as a result of construction activities, such as removal of riparian vegetation, construction equipment traffic, or holes/ditches left uncovered

overnight. Indirect impacts could include increased dust, noise, and vibration during construction. However, Coast Range newt do not typically move out in the open unless it is raining, and it is unlikely that work will occur during precipitation events. This is considered a significant impact that will be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-3, BIO-4, BIO-10, BIO-11, BIO-13 through BIO-16.**

Obscure Bumble Bee and Western Bumble Bee. The obscure bumble bee and western bumble bee are included on CDFW's CNDDDB "Special Animals" list. Direct impacts could include mortality of individuals or nests as a result of construction activities, such as vegetation removal, staging of materials, or construction equipment traffic. Indirect impacts could include increased dust, noise, and vibration during construction. This is considered a significant impact that will be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-3, BIO-4, and BIO-14.**

b) **Less Than Significant With Mitigation Incorporated.**

Riparian Habitat

The floristic alliance occurring within the riparian habitat is listed as sensitive on the CDFW's *List Vegetation Alliances and Associations* (CDFW, 2010). Riparian habitat is under CDFW jurisdiction per Fish and Game code Section 1602 and a Lake and Streambed Alteration Agreement for the proposed project may be required related to impacts to riparian habitat. Direct impacts may include the removal of 0.3 acre of riparian habitat (**Figure 3**). This is considered a significant impact that can be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-14 through BIO-17.** Please note that the mitigation will be applied to the post-construction area that is actually impacted.

Monterey Pine Forest

The floristic alliance occurring within the Monterey pine forest habitat is listed as sensitive on the CDFW's *List Vegetation Alliances and Associations* (CDFW, 2010). Monterey pine forest may also be considered ESHA by the CCC. Direct impacts may include the removal of 0.2 acre of Monterey pine forest habitat (**Figure 5**). This is considered a significant impact that can be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-1, BIO-2, BIO-14 and BIO-17.** Please note that the mitigation will be applied to the post-construction area that is actually impacted.

c) **Less Than Significant With Mitigation Incorporated.**

Potentially Jurisdictional Federal Wetlands and Other Waters of the U.S.

The ACOE has jurisdiction over wetlands and other waters of the U.S. and a Nationwide permit may be required for the proposed project related to impacts to these resources. All wetland areas within the proposed project area occur within riparian habitat and as such, the CDFW has jurisdiction over some wetland areas within the state and would require a Streambed Alteration

Agreement for impacts to this habitat. The riparian habitat analysis provided above, and this section addresses impacts to the wetland portion of the Streambed Alteration Agreement jurisdictional area.

The proposed project was designed to avoid wetland and other waters of the U.S. to the greatest extent feasible. However, approximately 0.05 acre of potentially jurisdictional federal wetland and 0.04 acre (637.3 linear feet) of potentially jurisdictional other waters of the U.S. are present within the proposed project area. The proposed project may impact 0.05 acre of potentially jurisdictional federal wetlands and 0.03 acre (435.4 linear feet) of potentially jurisdictional other waters of the U.S. (**Figure 3**). Temporary impacts to approximately 0.01 acre (201.9 linear feet) of potentially jurisdictional other waters of the U.S. may occur as a result of vehicle and equipment access along the existing access road (**Figure 4**). However, the proposed project will occur during the dry season and it is unlikely that water will be present within these small drainage channels. Additionally, these potential waters of the U.S. are present along a regularly used maintenance access road and the impact from the construction traffic is unlikely to be substantially greater than the existing impact. No mitigation is required for temporary impacts to potentially jurisdictional other waters of the U.S.; however, permanent impacts to potentially jurisdictional federal wetlands and other waters of the U.S. is considered a significant impact that can be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-14** through **BIO-17**.

- d) **Less Than Significant With Mitigation Incorporated.** The proposed project will not remove substantial portions of the surrounding habitats; however, some nesting sites for raptors, migratory birds, other avian species, Monterey dusky-footed woodrat, and special-status bees may be directly or indirectly disturbed. Direct impacts may include the destruction of active nests as the result of vegetation removal including riparian habitat. Indirect impacts could include increased dust, noise and vibration during construction. This is considered a significant impact that can be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-2** through **BIO-6**, and **BIO-13-17**.
- e) **Less Than Significant Impact.** The proposed project will not conflict with the 2010 Monterey County General Plan. The proposed project will remove sensitive habitats, including Monterey pine forest and riparian, and special-status tree species. This is considered a significant impact that can be reduced to a less-than-significant level with implementation of **Mitigation Measures BIO-1** through **BIO-6**, and **BIO-13-17**.
- f) **No Impact.** There are no adopted HCPs, NCCPs, or other approved local, regional or state habitat conservation plans associated with the proposed project area.

Mitigation Measures

Special-Status Plant Species

Mitigation Measure BIO-1

The contractor shall document all Monterey pine and coast live oak trees removed during construction. Following construction, all Monterey pine and coast live oak trees six inches dbh or greater that are removed shall be replaced at a 1:1 success ratio and a Revegetation Plan shall be prepared by a qualified biologist and submitted to the District for approval prior to the initiation of grading. The plan shall include, but is not limited to, a detailed description of restoration areas, source material and planting specifications, and a monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

Mitigation Measure BIO-2

The following measures shall be employed to avoid potential impacts to Monterey pine and coast live oak trees within or adjacent to the proposed project area during construction:

- Trees six inches dbh or greater located within or adjacent to the construction area that are not scheduled for removal shall be protected from damage by construction equipment by the use of temporary fencing in combination with wrapping of trunks with protective materials where ever there may be construction present. Fencing shall consist of chain link, heavy duty snowdrift or plastic mesh, hay bales, or field fence. Fencing shall not be attached to the tree but free standing and self-supporting so as not to damage trees. Fencing shall be rigidly supported both vertically and horizontally and shall stand a minimum of height of six feet above grade. Fenced areas and the trunk protection materials shall remain in place during the entire construction period
- Trenching construction located adjacent to trees should be done by hand where practical and any roots greater than 1.5 inches in diameter should be bridged or pruned appropriately.
- Any roots of trees that must be cut should be cut by manually digging a trench and cutting exposed roots with a saw, vibrating knife, rock saw, narrow trencher with sharp blades, or other approved root pruning equipment.
- Any roots of trees that are damaged during grading or excavation should be exposed to sound tissue and cut cleanly with a saw.
- If significant roots are identified that must be removed that will destabilize or negatively affect the trees, the Construction Manager will be notified immediately and a determination for removal will be assessed and made as required by law for treatment of the area that will not risk death, decline or instability of the tree consistent with the implementation of appropriate construction design approaches to minimize affects, such as hand digging, bridging or tunneling under roots, etc.
- Deposit of fill, soil compaction, parking of vehicles or heavy equipment, stockpiling of construction materials, and/or dumping of materials is not to be allowed adjacent to trees, especially within fenced areas.
- Any necessary pruning shall be conducted so as not to unnecessarily injure the tree. General principles of pruning include placing cuts immediately beyond the branch collar, making clean cuts by scoring the underside of the branch first.

Special-Status Wildlife Species

Mitigation Measure BIO-3

A qualified biologist shall conduct an Employee Education Program for construction crew and District staff prior to construction activities. A qualified biologist shall meet with the construction crew at the onset of construction at the proposed project area to educate the construction crew on the following: 1) the appropriate access route in and out of the construction area and review proposed project boundaries; 2) how a biological monitor will examine the area and agree upon a method that will ensure the safety of the monitor during such activities, 3) the special-status species that may be present; 4) the specific mitigation measures that will be incorporated into the construction effort; 5) the general provisions and protections afforded by the USFWS and the CDFW and the penalties for non-compliance; and 6) the proper procedures if a special-status animal is encountered within the proposed project site.

Mitigation Measure BIO-4

A representative shall be appointed by the District who will be the contact source for any employee or contractor who may inadvertently kill or injure a special-status species or find one dead, injured, or trapped. The representative shall notify the qualified biologist immediately to notify the appropriate regulatory agency (USFWS and/or CDFW). The representative shall be identified during the Employee Education Program and his/her contact information shall be provided to the qualified biologist.

Mitigation Measure BIO-5

A qualified biologist shall conduct pre-construction surveys for woodrat nests within the Proposed Project Area and within a buffer zone of 25 feet from the proposed project Area. All woodrat nests shall be flagged for avoidance of direct construction impacts where feasible. Nests that cannot be avoided shall be manually deconstructed. Deconstruction includes clearing the vegetation from around the nest prior to dismantling to encourage the dispersal of the animal during dismantling due to lack of sufficient cover, and/or dismantling by hand, allowing animals to escape either along existing woodrat trails or toward other available habitat. If a litter of young is found or suspected, nest materials should be replaced and the nest left alone for two to three weeks before a recheck to verify that the young are capable of independent survival before proceeding with the next dismantling.

Mitigation Measure BIO-6

Construction activities that may directly (e.g., vegetation removal) or indirectly affect (e.g. noise/ground disturbance) nesting raptors and/or other protected bird species will be timed to avoid the breeding and nesting seasons. Specifically, trenching, pipe bursting, and vegetation removal can be scheduled after September 16 and before January 31.

If construction activities must occur during the breeding and nesting season (February 1 through September 15), a qualified biologist shall conduct pre-construction surveys for nesting raptors and other protected avian species within 300 feet of the proposed construction activities. Pre-construction surveys should be conducted no more than 7 days prior to the start of the construction activities during the early part of the breeding season (February through April) and no more than 14 days prior to the initiation of

these activities during the late part of the breeding season (May through August). Based on the results of these surveys, one or more of the following will occur:

- If it is determined that nests of raptors or other migratory bird are not present at the site, no additional mitigation is required.
- If raptors or other migratory bird nests are identified, the qualified biologist would notify the project proponent and an appropriate no-disturbance buffer would be imposed within which no construction activities or disturbance would take place (generally 300 feet in all directions for raptors; other avian species may have species-specific requirements) until the young of the year have fledged and are no longer reliant upon the nest or parental care for survival, as determined by a qualified biologist.

Mitigation Measure BIO-7

A qualified biologist will survey the proposed project area and immediately adjacent areas 48 hours before and the morning of the onset of work activities for the presence of CRLF. If any life stage of CRLF is observed, construction activities will not commence until the USFWS is consulted and appropriate actions are taken to allow project activities to continue.

Mitigation Measure BIO-8

During ground disturbing and vegetation removal activities, a qualified biologist shall survey appropriate areas of the construction site daily before the onset of work activities for the presence of CRLF. The qualified biologist shall remain available to come to the site if a CRLF is identified until all ground disturbing activities are completed. If any life stage of the CRLF is found and these individuals are likely to be killed or injured by work activities, the qualified biologist shall be contacted, and work shall stop in that area until the CRLF has moved on its own out of the work area and the USFWS has been contacted. Construction activities will not resume until the USFWS is consulted and appropriate actions are taken to allow project activities to continue.

Mitigation Measure BIO-9

After ground disturbing and vegetation removal activities are complete, or earlier if determined appropriate by the qualified biologist, the qualified biologist will designate a construction monitor to oversee on-site compliance with all avoidance and minimization measures. The qualified biologist shall ensure that this construction monitor receives the sufficient training in the identification of CRLF. The construction monitor or the qualified biologist is authorized to stop work if the avoidance and/or minimization measures are not being followed. If work is stopped, the USFWS shall be notified. The qualified biologist and the construction monitor shall complete a daily log summarizing activities and environmental compliance throughout the duration of the proposed project.

Mitigation Measure BIO-10

To prevent inadvertent entrapment of CRLF and/or Coast Range newt during project construction, all excavated, steep-walled holes or trenches more than two feet deep will be covered at the close of each

working day with plywood or similar materials. Before such holes or trenches are filled, they will be thoroughly inspected for trapped animals.

Mitigation Measure BIO-11

Only tightly woven fiber netting or similar material may be used for erosion control at the project site. Coconut coir matting is an acceptable erosion control material. No plastic mono-filament matting will be used for erosion control, as this material may ensnare wildlife, including CRLF.

Mitigation Measure BIO-12

Because dusk and dawn are often the times when CRLF are most actively foraging and dispersing, all construction activities should cease one half hour before sunset and should not begin prior to one half hour after sunrise.

Mitigation Measure BIO-13

All trash that may attract predators shall be properly contained, removed from the construction site, and disposed of regularly. Following construction, all trash and construction debris shall be removed from work areas.

Sensitive Habitats

Mitigation Measure BIO-14

Disturbance or removal of vegetation shall not exceed the minimum necessary to complete operations.

Mitigation Measure BIO-15

Protective fencing shall be placed so as to keep construction vehicles and personnel from impacting riparian vegetation and other sensitive habitats adjacent to the proposed project area outside of work limits. Typically, protective fencing, also referred to as Environmentally Sensitive Area (ESA) fencing, is four (4) feet in height and is made of a highly visible color of polypropylene plastic.

Mitigation Measure BIO-16

Cleaning and refueling of equipment and vehicles will occur only within designated staging areas on previously paved or graded parking areas. No maintenance, cleaning or fueling of equipment will occur within wetland, other waters of the U.S., or riparian areas, or within 100 feet of such areas if possible. At a minimum, all equipment and vehicles will be checked and maintained on a daily basis to ensure proper operation and avoid potential leaks or spills. During construction, all project-related spills of hazardous materials within or adjacent to proposed project area will be cleaned up immediately. Spill prevention and clean-up materials will be onsite at all times during construction. Construction materials/debris will also be stored within the designated staging areas. No debris, soil, silt, sand, oil, petroleum products, cement, concrete, or washings thereof will be allowed to enter into, or be placed where they may be washed by rainfall or runoff, into riparian or wetland habitats.

Mitigation Measure BIO-17

Following construction, the area of riparian, wetland, and Monterey pine forest impacted during construction shall be quantified and revegetated. A Revegetation Plan shall be prepared by a qualified biologist and submitted to the District for approval prior to the initiation of construction. The plan shall include the following:

- a description of the baseline conditions of the habitats impacted;
- a detailed description of revegetation areas, sources for plant material, seeding and planting specifications, and any measures required by regulatory permits (such as increased planting ratio to ensure the 1:1 success ratio);
- procedures to control non-native species invasion and elimination of existing non-native species within the revegetation areas; and
- a monitoring program that describes annual monitoring efforts which incorporate success criteria and contingency plans if success criteria are not met.

Conclusion: The project would have a less-than-significant impact with mitigation incorporated on biological resources.

5.2.5 CULTURAL RESOURCES

Setting

Section 106 of the National Historic Preservation Act (NHPA) requires the federal government to take into consideration the effects of an undertaking on historic properties. In order to comply with this regulation, a lead agency must first determine if the action is the type of action that has the potential to affect historic properties. If so, the lead agency must identify the area of potential effect (APE), determine if historic properties are present within that APE, determine the effect that the undertaking will have on historic properties, and consult with the State Historic Preservation Officer (SHPO) and federally recognized tribes with historic ties to the APE.

In accordance with CEQA §15064.5, a Historic Property Survey Report/Finding of Effect (HPSR/FOE) was prepared by Basin Research Associates in March 2018 to evaluate the potential impact of the proposed project on important historical and archaeological resources. The project's APE for archaeological resources (which includes the footprint of the 1.1-mile-long Hatton Canyon sewer line to be replaced, access roads to the project area, and staging areas for construction materials and possible storage of excavated spoils) lies within zones of high or moderate sensitivity for prehistoric archaeological resources (Monterey County Archaeological Sensitivity Map). However, the HPSR/FOE found no archaeologically, historically, or architecturally significant sites, structures, landmarks, or points of interest in or immediately adjacent to the project APE. For more information on Tribal consultation, see **Section 5.2.17** of this Initial Study.

A December 2017 archaeological inventory of the project APE found no prehistoric or significant historic cultural materials or culturally modified sediments in the area. Additionally, the APE or portions of the alignment have been subject to five previous archaeological inventories from 1974 to 2008, and negative

results were also reported. The project APE is not listed in the NRHP or the California Register of Historical Resources (CRHR). For more information see **Appendix D** to this report.

In 2013, State Parks conducted a site visit to Hatton Canyon based on consultation with a representative of the Pajaro Ohlone Indian Council. After discussions with the representative, State Parks learned that a prominent member of the tribe, known as El Sordo, lived in Hatton Canyon in the late 1800s. El Sordo's cabin site lies within the staging area of the proposed project. There is potential for cultural remains to exist at the site, however, there is no above ground evidence of the cabin or other artifacts. No digging will occur within the proposed staging area, therefore, no further impacts are anticipated, and not further investigation is necessary (personal communication, Rea Schwaderer, State Parks).

The findings of the HPSR/FOE and the various field inventories of the project site, coupled with a lack of archaeological discoveries during previous excavations for the existing sewer system, suggest a low potential for the unexpected discovery of significant subsurface prehistoric archaeological materials during project construction. Additionally, the project's proposed construction methods include a combination of pipe bursting and trenching. Pipeline bursting is a trenchless method of replacing buried pipelines, which would minimize excavation and, therefore, lessen potential impact on cultural resources.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant 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 as defined in CEQA 15064.5?				X
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA 15064.5?		X		
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?			X	
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		

Explanation

a) No Impact. There are no historic resources within the APE of the project. Therefore, no impacts will result to historical resources as defined in CEQA 15064.5.

b, d) Less Than Significant With Mitigation Incorporated. The HPSR/FOE found no archaeologically, historically, or architecturally significant sites, structures, landmarks, or points of interest in or immediately adjacent to the project APE, however, the project site is located within a zone of high or moderate sensitivity for prehistoric archaeological resources. No known archaeological resources or human remains have been documented in the APE. However, there is the possibility of inadvertently uncovering human remains during construction. The potential

inadvertent discovery of archaeological resources and/or human **remains** and potential inadvertent damage or disturbance during construction is considered a significant impact. This impact can be mitigated to a less than significant level with the implementation of **Mitigation Measure CR-1**.

- c) **Less Than Significant Impact.** The proposed project would not be located in proximity of general areas of significant paleontological resources as mapped by Monterey County (Monterey County, 2006). Therefore, the potential impact to known paleontological resources would be considered less than significant and no **mitigation** is necessary.

Mitigation Measures

Mitigation Measure CR-1

If archaeological resources or human remains are unexpectedly discovered during construction, work shall be halted within 50 meters (± 160 feet) of the find until it can be evaluated by a qualified professional archaeologist. If the find is determined to be significant, appropriate mitigation measures shall be formulated and implemented, with the concurrence of the District. The County Coroner shall be notified in accordance with provisions of Public Resources Code 5097.98-99 in the event human remains are found and the Native American Heritage Commission shall be notified in accordance with the provisions of Public Resources Code section 5097 if the remains are determined to be of Native American origin.

Conclusion: The project would have a less than significant impact on cultural resources after incorporation of mitigation measures.

5.2.6 GEOLOGY AND SOILS

Setting

The proposed project site is located at the west end of Carmel Valley, which lies within the Coast Ranges Geomorphic Province, a discontinuous series of northwest-southeast trending mountain ranges, ridges, and intervening valleys characterized by complex folding and faulting. The topography of the area is greatly varied, ranging from the flat bottomlands at the mouth of the Carmel River to the steep hillsides of the Carmel Hills.

Soils at the project site are mostly disturbed. Current and historic ground disturbance are due mostly to grading for access roads. There is a significant amount of imported soils within the project area associated with the historic and on-going maintenance of the access road. The Monterey County Soil Survey indicates several mapping units within the project area, including:

- Elder very fine sandy loam, which characterizes most of the project site. Elder soils are gently sloping and moderately sloping, slightly hummocky soil that occupies small areas in narrow valleys. They formed on alluvial fans, terraces, and flood plains. Permeability is moderate. Runoff is slow and the erosion hazard is moderate. Roots can penetrate to a depth of 40 to 60 inches, and the available water capacity is about six to 11 inches. Elder soils are generally found on slopes of two to nine percent.

- Santa Lucia – Reliz Association, small amounts of which are found in the northernmost portion of the project area. The Santa Lucia series consists of moderately deep well-drained soils that formed in material weathered from sandstone and white shale containing some ash, and some siliceous and diatomaceous material. Runoff is rapid or very rapid and the erosion hazard is very high. Roots can penetrate to a depth of 10 to 40 inches and the available water capacity is one to 5.5 inches. Santa Lucia soils are on uplands and are generally found on slopes of 30 to 75 percent.
- Santa Ynez fine sandy loam, small amounts of which are found on the southern portion of the site at and below the Carmel Valley Road undercrossing. Santa Ynez soils are gently sloping to moderately sloping soil on terraces. The series consists of moderately well-drained soils that formed on terraces in alluvium derived from sandstone and granitic rock. Runoff is slow or medium, and the erosion hazard is slight to moderate. Roots can generally penetrate to a depth of 60 inches or more, but some roots are restricted to a depth of 15 to 36 inches by the clay subsoil. The available water capacity is three to five inches and some water is slowly available from the subsoil. Santa Ynez soils are generally found on slopes of two to nine percent.

The proposed project site is in a region with several active faults and has the potential for moderate to high seismic activity. The northern end of the project site borders an approximately 250-meter sliver of the Hatton Canyon Fault. A 2008 geotechnical report for the area (Kleinfelder West, Inc., May 2008) indicates that several earthquakes align with the Hatton Fault and suggest the possibility of recent activity. The proposed project lies approximately 5 kilometers (3 miles) south of the Monterey Bay-Tularcitos fault and 2.5 kilometers (1½ miles) from the Cypress Point fault. The proposed site is also approximately 8 kilometers (5 miles) to the northeast of the off-shore San Gregorio – Palo Colorado fault zone and 19 kilometers (11¾ miles) to the southwest of the Rinconada fault. The San Andres Fault, located approximately 46 kilometers (28½ miles) northeast of the project site, is the most active fault in the project’s vicinity.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY AND SOILS. Would the project:				
a) Expose people or structures to 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.			X	
ii) Strong seismic ground shaking?			X	
iii) Seismic-related ground failure, including liquefaction?			X	
iv) Landslides?			X	
b) Result in substantial soil erosion or the loss of topsoil?			X	
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?			X	
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?			X	
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?				X

Explanation

ai-aiv) **Less Than Significant Impact.** Although the project site is in a region with several active faults, it is not mapped within an Alquist-Priolo Earthquake Fault Zone. The proposed project lies within seismic hazard zones designated as low to moderately high. The greatest geologic hazard if related to ground shaking, are not expected to be great. The geotechnical report prepared in 2008 by Klienfelder West, identified a moderate to high liquefaction and lateral spreading potential in the area, but there is no evidence of historic liquefaction within two miles of the project site. Slopes in the project area are primarily 10-30%, representing a moderate susceptibility for landslides. Certain portions of the project are in areas designated as having a high susceptibility to landslide and erosion. Landslides are found regionally, but no evidence of landslide was found at the project site and the potential is expected to remain low. Seismic impacts in areas of low density development are generally low, due to the lower human population and lack of built structures. Furthermore, because the project is a replacement of existing infrastructure in an undeveloped open urban space, and because construction would occur in the canyon floor and not on slopes, the project would have

a less than significant impact on people or structures resulting from rupture of faults, seismic ground-shaking, ground failure including liquefaction, and landslides. The project contractor would fully comply with all state, federal, and other laws, rules, regulations to ensure worker safety during construction.

- b) **Less Than Significant Impact.** Slopes in the project area are primarily 10-30%, representing a moderate susceptibility for erosion. According to the GMPAP, the proposed project area lies primarily within Zone IV for landslide zones and erosion susceptibility, with only the southernmost portion in Zone VI. Landslide and erosion susceptibility zones range from I (least) to VI (greatest). According to the Monterey County Soil Survey, susceptibility to erosion at the project site is moderate to high. Grading, cutting, and filling during construction could result in erosion impacts, especially if construction takes place during the wet weather season. The contractor is required to prepare an Erosion Control Plan. The Best Management Practices included in this plan will ensure compliance with applicable regulations and reduce potential soil erosion to a less than significant level.

- c-d) **Less Than Significant Impact.** See discussion for ai-aiv above. Soils in the remainder of the project area have a moderate constraint rating and therefore they would be potentially unstable. Without appropriate design specifications, project construction could result in an off-site landslide, lateral spreading subsidence, liquefaction, or collapse. This impact would be temporary, as construction is anticipated to last less than 100 days. Risks to life and property would not occur during operation of the proposed sewer line, because the pipeline will be entirely underground. The project contractor would fully comply with all state, federal, and other laws, rules, regulations to ensure worker safety during construction. This is considered a less than significant impact.

- e) **No Impact.** The project is a sewer main replacement and does not propose any septic tanks or alternative wastewater disposal system.

Conclusion: The project would have a less than significant impact on geology and soils.

5.2.7 GREENHOUSE GAS EMISSIONS

Setting

Global temperatures are affected by naturally occurring and anthropogenic-generated atmospheric gases, such as water vapor, carbon dioxide, methane, and nitrous oxide (Intergovernmental Panel on Climate Change, 2007). Gases that trap heat in the atmosphere are called greenhouse gases (GHGs). Solar radiation enters the earth's atmosphere from space, and a portion of the radiation is absorbed at the surface. The earth emits this radiation back toward space as infrared radiation. Greenhouse gases, which are mostly transparent to incoming solar radiation, are effective in absorbing infrared radiation and redirecting some of this back to the earth's surface. As a result, this radiation that otherwise would have escaped back into space is now retained, resulting in a warming of the atmosphere. This is known as the greenhouse effect. The greenhouse effect helps maintain a habitable climate. Emissions of GHGs from human activities, such as electricity

production and motor vehicle use, are elevating the concentration of GHGs in the atmosphere and are leading to a trend of unnatural warming of the earth’s natural climate, known as climate change.

Climate change is a cumulative impact; a project contributes to this impact through its incremental contribution of GHG emissions combined with the cumulative increase of all other sources of GHGs. The MBARD’s GHG threshold is defined in terms of carbon dioxide equivalent (CO2e), a metric that accounts for the emissions from various GHGs based on their global warming potential. If annual emissions of GHGs exceed these threshold levels, the proposed project would result in a cumulatively considerable contribution of GHG emissions and must implement mitigation measures.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant 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?			X	
b) Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

Explanation

- a) **Less Than Significant Impact.** The MBARD has determined that if a project emits less than 10,000 metric tons per year (MT/yr) CO2e that its impact will be less than significant. This calculation is made by combining the estimated greenhouse gas emissions generated by construction, amortized over a 30-year period, with the estimated annual GHG emissions resulting from operation of the project.

Construction of the proposed project would result in a one-time emission total of up to 112 MT/yr of CO2e during the 3-month construction period therefore, the annual amortized GHG emissions for the construction phase is 3.7 MT/year. The estimated annual greenhouse gas emissions generated by operation of the proposed project would be approximately 767 MT/year. Therefore, the estimated annual emissions for the entire project is 771 MT/year. This falls well below the threshold of 10000 MT/year and is therefore considered to be less than significant.

- b) **Less Than Significant Impact.** The proposed project would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases, since the proposed project will not substantially increase GHG emissions.

Conclusion: The project would have a less than significant impact related to GHG emissions.

5.2.8 HAZARDS AND HAZARDOUS MATERIALS

Setting

The proposed project would replace an existing sewer main. It would not create new hazards, nor would it handle or release hazardous materials. The project site is in a strip of urban open space owned by State Parks, and it is not within the vicinity of hazardous waste facilities. According to the California Department of Toxic Substances Control EnviroStor database, there are no contaminated cleanup sites in proximity of the proposed sewer replacement site. No hazardous materials are anticipated to be stored on site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant 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?			X	
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?			X	
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?				X
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?				X
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 for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?			X	

Explanation

- a) **Less Than Significant Impact.** No hazardous materials are anticipated to be stored on site during construction other than typical construction equipment fluids, including gasoline, diesel, and lubricants for maintaining equipment. These materials would be handled and stored in compliance with all local, State, and Federal regulations pertaining to hazardous materials.
- b) **Less than Significant Impact.** There is a low possibility of a wastewater spill during construction. Per project specifications, the contractor will be required to prepare and submit detailed Bypass Plans for review and approval by the District and the project engineer. Project specifications also require redundant pumping equipment to be onsite and full-time monitoring by the contractor during bypassing all activities.
- c,d,e,f) **No Impact.** The proposed project site is within the vicinity of Carmel High School, however, the contractor would not handle hazardous or acutely hazardous materials as part of the proposed project. The project site is not within the vicinity of, a hazardous site as designated by Government Code Section 65962.5, a public airport, or a private airstrip.
- g) **No Impact.** The project would not impede emergency response or evacuation plans, as it is not part of vehicular transportation network used by emergency vehicles.
- h) **Less Than Significant Impact.** The project site is an undeveloped corridor within a residential area. While there is potential for wildland fires in such a land use type, the proposed project would not increase the risk of wildfires to residents because construction of the project would not involve any equipment or activities that present a severe fire risk. Implementation of the proposed project would not further expose people or structures to wildland fires.

Conclusion: The project would have a less than significant impact related to hazards and hazardous materials.

5.2.9 HYDROLOGY AND WATER QUALITY

Setting

The proposed project area lies within the boundaries of the Carmel River Basin. The drainage basin consists of approximately 164,000 acres or 258 square miles. Hatton Canyon drains 825 acres or 0.05% of the total Carmel River Basin. Almost all drainage within the basin is ultimately carried by the Carmel River, which flows naturally during the winter and spring months. The Hatton Canyon drainage and the remainder of the Carmel River Basin's drainage flow into the Carmel Lagoon and Carmel Bay, which are part of the Monterey Bay National Marine Sanctuary and are designated an Area of Special Biological Significance as identified by the State Water Resources Control Board. The climate in this region consists of generally mild temperatures year-round, with high temperatures varying from the low 60s in the winter to the high 60s in the summer. Average annual precipitation is 18 to 20 inches, and the majority of rainfall occurs in winter. The Pacific Ocean, Carmel River, and the Hatton Canyon Stream are the principal surface water features in the area.

The Hatton Canyon Stream is a relatively straight, ephemeral stream that conveys water directly to the Carmel River. North of Carmel Valley Road the stream is a combination of steeply sloped channels exhibiting bed and bank features and narrow to wide wetland areas with no defined channel. South of Carmel Valley Road, there is only a small section of wetland before the stream enters a culvert under the Carmel Rancho Shopping Center. The culvert empties into the Carmel River at or just above the ordinary high water mark (OHWM).

Precipitation, sheet flow, surface runoff, and seepage from the toe of the adjacent surrounding slopes are the principle natural hydrologic sources for the Hatton Canyon Stream. Residential development around Hatton Canyon has dramatically increased run-off and flows in the Hatton Canyon Stream (DDA, 2007). The hydrology of the stream is not consistent throughout, as evidenced by portions of the stream having surface flow throughout the wet season, while other portions are dry except during precipitation events. The wetland portions of the stream exist within the historic riparian corridor where sand, gravel, and cobble deposits likely act as a subsurface hydrologic conduit allowing the seasonal flows to daylight and go subsurface again multiple times along the length of the creek.

The proposed project site does not contain any wells.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant 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?			X	
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local ground water table level (for example, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?				X
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site.			X	
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			X	
e) Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?			X	
f) Otherwise substantially degrade water quality?			X	
g) Place housing within a 100-year flood-hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood-hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X
j) Inundation by seiche, tsunami, or mudflow?				X

Explanation

- a) **Less Than Significant Impact.** Construction activities would result in minimal construction debris and would comply with standard construction regulations. The project, therefore, would not violate any water quality standards or waste discharge requirements. No waste discharge is proposed as part of this project.
- b) **No Impact.** There is no groundwater extraction proposed as part of the project; therefore, no groundwater resources would be impacted.

- c, d) **Less Than Significant Impact.** The proposed project would not result in any permanent impacts to the Hatton Canyon Stream. Temporary impacts will include very minor work within a number of unvegetated and incised road-side channels. Construction within the Hatton Canyon Stream is anticipated to be complete by October 15, but this is not guaranteed. The construction contractor is responsible for the preparation of a detailed Dewatering Plan, as required by Monterey County. Per project specifications, an Erosion Control Plan sufficient to satisfy Monterey County requirements will also be prepared by the contractor. In addition, in compliance with Section 401 of the Clean Water Act, a Water Quality Certification (WQC) will be granted by the Regional Water Quality Control Board. The WQC will place conditions on the project to further reduce impacts and to ensure that the proposed project complies with all applicable water quality standards, limitations, and restrictions.
- e, f) **Less Than Significant Impact.** Construction activities consist of pipe bursting and open trench methods to replace the existing sewer main, repairs to existing manholes, and the addition of one manhole. Construction and operation of the proposed project would not increase the impervious surfaces onsite, thus, would not generate additional runoff compared to existing conditions, substantially alter the existing drainage pattern of the site, or otherwise substantially degrade water quality.
- g, h, i, j) **No Impact.** No housing is proposed as part of the project and all permeant structures associated with the proposed project would be underground; therefore, no housing or structures would be placed within a 100-year floodplain as a result of this project. The proposed project is not within a dam inundation area (Monterey County, 2010) or a tsunami inundation area (California Emergency Management Agency, 2009).

Conclusion: The project would have a less than significant impact on hydrology and water quality.

5.2.10 LAND USE

Setting

The project is located within Hatton Canyon Park, northeast of the mouth of Carmel Valley (intersection of Highway 1 and Carmel Valley Road). The project site is owned by State Parks. There is no recorded assessor number for this parcel. The proposed project is not within the coastal zone.

The 2010 Monterey County General Plan is applicable to the proposed project. As identified in the Monterey County General Plan, it is the intent of Monterey County to maintain and enhance the County's rural character, natural resources, and economic base by providing for adequate residential and industrial growth in areas best suited for development while restricting urban sprawl and indiscriminate development.

State Parks is currently in the planning process to prepare a regional General Plan for four state park units located in the Carmel area: 1) Carmel River State Beach, 2) Point Lobos State Natural Reserve, 3) Point Lobos Ranch (an unclassified park unit), and 4) Hatton Canyon (an unclassified park unit). This planning project is referred to as the Carmel Area State Parks General Plan. When complete, the Carmel Area Parks General Plan will direct the long-range development and management of Hatton Canyon Park by providing broad policy and program guidance.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?			X	
c) Conflict with any applicable Habitat Conservation Plan or Natural Community Conservation Plan?				X

Explanation

- a) **No Impact.** The project is the replacement of an existing sewer main, therefore, it would not physically divide an established community.
- b) **Less Than Significant Impact.** The replacement of an existing section of a sanitary sewer main would be consistent with this designation. With implementation of mitigation measures in this Initial Study the project would be consistent with all relevant County policies. The proposed project is not within the coastal zone.
- c) **No Impact.** There is no approved Habitat Conservation Plans, Natural Community Conservation Plans, or other approved local, regional, or state habitat conservation plans that are applicable the project area. Therefore, no impacts due to conflicts with conservation plans would be associated with this project.

Conclusion: The project would have a less than significant impact on land use and planning.

5.2.11 MINERAL RESOURCES

Setting

In accordance with the Surface Mining and Reclamation Act of 1975 (SMARA), the California Geological Survey (CGS) maps the regional significance of mineral resources throughout the state, with priority given to areas where future mineral resource extraction could be precluded by incompatible land use or to mineral resources likely to be mined during the 50-year period following their classification. The CGS delineates Mineral Resource Zones (MRZs) based on their mineral resource potential.

Most of the proposed project site is zoned MRZ-4 (areas where available geologic information is insufficient to rule out either the presence or absence of mineral resources), and the southern end of the site is outside of a classified MRZ.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant 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?				X
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?				X

Explanation

- a, b) **No Impact.** The CGS does not consider the project site a mineral resource delineation priority; most of the area is zoned MRZ-4, and the remainder is outside of a classified MRZ. Because no known mineral resources exist on the project site, implementation of the project would not have an impact on mineral resources.

Conclusion: The project would have no impact on mineral resources.

5.2.12 NOISE

Setting

In the context of this document, “noise” is defined as unwanted sound. The primary source of existing noise in the proposed project area is traffic on adjacent roadways.

The Monterey County General Plan includes guidance for noise and provides land use compatibility guidelines for exterior community noise levels. Based on these guidelines, sensitive noise receptors near the project site are private residences, schools, childcare centers, and open spaces. The normally acceptable noise range for low density residential areas is 50 to 60 decibels (dB). The conditionally acceptable noise range for low density residential areas is 55 to 70 dB. Development in areas where noise levels are considered “conditionally acceptable” may be undertaken only after additional noise analysis is provided and appropriate mitigation features are included in the project design.

The proposed project is not located within an airport land use plan, public airport, or private airstrip.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE. Would the project result in				

a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance or applicable standards of other agencies?			X	
b) Exposure of persons to or generation of excessive ground borne vibration or ground borne noise levels?			X	
c) Substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	
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 expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X

Explanation

a, b, d) **Less Than Significant Impact.** Sensitive receptors in the area include nearby residences on either side of Hatton Canyon and Carmel High School. Project construction would generate a temporary increase in noise associated with the use of construction equipment and pipe bursting. Noise generated by pipe bursting can vary greatly depending on the specific equipment selected by the construction contractor. It is estimated that it will vary between 60 and 80 decibels³ at a distance of 50 feet. The loudest piece of equipment will likely be the concrete saw, used for cutting existing asphalt on Carmel Valley Road, this is estimated to be up to 90 decibels at a distance of 50 feet. All bypassing pumps will be required to use “whisper quiet” engines or be electric with silenced generators to maintain noise production to a normal speaking volume (estimated to be approximately 55 decibels).

Project construction could result in the exposure of adjacent and nearby sensitive receptors to noise levels and ground borne vibration beyond existing conditions. The distance from the construction site to sensitive receptors varies greatly throughout the project area, the nearest being approximately 80 feet from the project site. Due to the distance from the construction area to the sensitive receptors, it is expected that noise generated by construction will be below the normally acceptable threshold (50-60 dB) noise range for low density residential areas. In addition, these impacts would, be temporary. Adherence to standard construction noise measures would further reduce noise impacts, including reducing the severity of impacts on adjacent sensitive receptors. In addition, the District and the State Parks will notify residents within the vicinity prior to project construction.

c) **No Impact.** Because the proposed project is a sewer main replacement, it would have no post-construction noise impact in the project vicinity.

e, f) **No Impact** The project is not located within an airport land use plan, public airport, or private airstrip.

Conclusion: The proposed project would have a less than significant noise impact.

5.2.13 POPULATION AND HOUSING

Setting

The proposed project would replace an existing 8-inch VCP sewer main with a 10-inch HDPE sewer main to repair stormwater damage and decrease groundwater inflow and infiltration rates for approximately 900 upstream residences. The project runs through part of Hatton Canyon Park, an urban open space owned by State Parks, and would not displace any existing housing.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING. Would the project:				
a) Induce substantial 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)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X

Explanation

- a) **No Impact.** Although the project would increase the size of the sewer main, it is a replacement of an existing sewer main and would not induce substantial population growth in the area.
- b, c) **No Impact.** The project is a replacement of an existing sewer main located in a State Parks property, and it would not affect housing availability or displace residents.

Conclusion: The project would have no impact on population and housing.

5.2.14 PUBLIC SERVICES

Setting

The proposed project is a replacement of an existing sewer main in Hatton Canyon Park, a State Parks property. The project site is serviced by the Cypress Fire Protection District (CFPD), located less than a mile away, and by the Monterey County Sheriff’s Department (MCSD), located five miles away.

Carmel High School is near Hatton Canyon, but the proposed project will have no physical impacts on the school, as it is a sewer replacement project.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities or 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 any of the public services:				
a) Fire protection?			X	
b) Police protection?			X	
c) Schools?				X
d) Parks?			X	
e) Other public facilities?				X

Explanation

- a, b) **Less Than Significant Impact.** Because the project is a replacement of an existing sewer main, it will have no post construction impact on CFPD or MCSD. Although unlikely, CFPD and MCSD could be required to respond to potential construction-related emergencies. Construction is expected to be completed within 100 calendar days and will not significantly impact fire protection or police protection services or require the construction of new or remodeled facilities.
- c, e) **No Impact.** The sewer main replacement would have no physical impact on schools or other public facilities and would not require the construction of new or remodeled facilities.
- d) **Less Than Significant Impact.** Access to the Carmel Hill and River Recreation Trail would be impacted during project construction. The trail will be closed to through pedestrians. If it is determined by the District and the contractor that portions of the trail can be safely accessed by the public during construction, access may be granted in areas where active construction is not occurring. These impacts would be temporary. In addition, the trail is used informally by the public and is currently designated as not available for public use by State Parks.

See **Section 5.2.15 Recreation**, for further discussion.

Conclusion: The project would have a less than significant impact on public services.

5.2.15 RECREATION

Setting

The proposed project site is with Hatton Canyon Park, which is owned by State Parks. State Parks has designated this area as, “new and not currently available for public use, pending necessary planning, facility development and staffing.” However, the Carmel Hill and River Recreation Trail within Hatton Canyon Park, is informally used by the public (email correspondence with Amy Palkovic, Environmental Scientist,

State Parks). Nineteen State Parks or State Beaches are located in Monterey County, including seven within 10 miles of the proposed project site (Asilomar, Carmel River Beach, Fort Ord Dunes, Garrapata, Marina State Beach, Monterey State Beach and Historic Park, and Point Lobos).

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
RECREATION. Would the project:				
a) 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?			X	
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?			X	

Explanation

- a) **Less Than Significant Impact.** The proposed project site is with Hatton Canyon Park. Implementation of the proposed project would not increase the use of Hatton Canyon Park and would therefore not contribute to the physical deterioration of park facilities.
- b) **Less Than Significant Impact.** Construction of the proposed project would occur within Hatton Canyon Park. The existing recreational values Carmel Hill and River Recreation Trail will be reduced during the temporary construction period (approximately 3 months), however, this is not considered to be a significant impact because Hatton Canyon Park is not currently open to the public.

Conclusion: The project would have a less than significant impact on recreational facilities.

5.2.16 TRANSPORTATION

Setting

The proposed project is located within Hatton Canyon Park, northeast of the mouth of Carmel Valley. Regional access to the project site is provided via Highway 1 and Carmel Valley Road, a major county roadway which provides access between Carmel and Carmel Valley and serves the many residential communities between these two areas. The project site can also be accessed via Canada Court and Canyon Drive, to the north.

The intersection of Highway 1 and Carmel Valley road is currently impacted during peak commuting times. Carmel Valley Road is a designated arterial roadway which provides access between Carmel and Carmel Valley, and serves the many residential communities between these two areas. The project will require excavation within the Monterey County right-of-way on the south side of Carmel Valley Road, across the street from the entrance to Hatton Canyon. The lead agency will be responsible for obtaining an

encroachment permit from the County of Monterey prior to the start of construction. The encroachment permit will require a traffic control plan.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION/TRAFFIC. Would the project:				
a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?			X	
b) Conflict with an applicable congestion management program, including but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?		X		
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?			X	
d) Substantially increase hazards due to a design feature (for example, sharp curves or dangerous intersections) or incompatible uses (for example, farm equipment)?		X		
e) Result in inadequate emergency access?		X		
f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?			X	

Explanation

- a, b) **Less Than Significant Impact.** Although the proposed sewer main replacement would have no post-construction impacts on traffic and transportation, the project would result in a temporary increase in traffic during construction. Construction would generate an estimated 10 truck trips (or 20 one-way trips) per day for materials and 12 one-way vehicle trips per day for worker commutes, and traffic control could be required on Carmel Valley Road to facilitate placement of construction materials on the road shoulder. The normal two lanes of traffic on Carmel Valley Road would be maintained in both directions, except very short interruptions to allow trucks to exist the project area onto west bound Carmel Valley Road. These impacts would be temporary and relatively low traffic increases would constitute a less than significant impact.

Additionally, construction would follow most of the Carmel Hill and River Recreation Trail from Carmel Valley Road to northwest of Canada Court, which would limit some public access to the

trail. Construction is not expected to last more than 100 calendar days, however, and the trail is not open to the public, so construction would still have a less than significant impact on traffic and transportation.

- c) **Less Than Significant Impact.** The proposed project is a sewer main repair and replacement in a lightly trafficked open space, and it would not change air traffic patterns.
- d,e) **Less Than Significant With Mitigation Incorporated.** Potential safety hazards resulting from increased traffic on Carmel Valley Road may result from increased traffic and closure of the southerly eastbound lane. This impact can be reduced to a less than significant level with the implementation of **Mitigation Measure TR-1**, below.
- e) **Less Than Significant Impact.** Because project construction would align with a large portion of the Carmel Hill and River Recreation Trail, the project would limit pedestrian and bicycle access to the trail. Construction is scheduled to last no more than 100 calendar days, however, and the trail is not open to the public, so this impact would be less than significant. The proposed sewer main replacement would have no post-construction impact on public transit, bicycle, or pedestrian facilities.

Mitigation Measure

Mitigation Measure TR-1

The construction crew will only access the site via Canada Court or Canyon Drive to the north. Construction vehicles used for mobilization and demobilization of equipment, deliveries or construction materials, and off-hauling of construction materials will not access the project site via Carmel Valley Road during peak commuting hours. In addition, construction vehicles may only turn right when entering the project site via Carmel Valley Road and construction vehicles exiting the project site may only turn right on Carmel Valley Road.

Conclusion: The project would have a less than significant impact on transportation with the implementation of **Mitigation Measure TR-1**.

5.2.17 TRIBAL CULTURAL RESOURCES

Setting

California Assembly Bill (AB) 52, in effect since July 2015, provides CEQA protections for tribal cultural resources. All lead agencies approving projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe, to consult with such tribe regarding the potential impact of a project on tribal cultural resources before releasing an environmental document. Under California Public Resources Code §21074, tribal cultural resources include site features, places, cultural landscapes, sacred places, or objects that are of cultural value to a tribe and that are eligible for or listed on the California Register of Historical Resources (CRHR) or a local historic register, or that the lead agency has determined to be of significant tribal cultural value.

The Native American Heritage Commission (NAHC) was contacted for a review of the Sacred Lands Files, which yielded negative results for the project site, and letters soliciting additional information were sent to the Native American individuals and groups recommended by the NAHC. Two responses were received: one from the Costanoan Rumsen Carmel Tribe, who had no comments since the proposed project site lies within a previous sewer alignment, and the other from Ohlone Costanoan Esselen Nation (OCEN), who are consulting with the District and will have a tribal representative available during excavation activities. Currently, consultation with the OCEN Tribe is ongoing.

A Historic Property Survey Report/Finding of Effect (HPSR/FOE) prepared for the proposed project in March 2018 (see **Section 5.2.5** for additional information) did not identify any Native American villages, trails, traditional use areas or contemporary use areas, or other features of tribal cultural significance in the APE.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRIBAL CULTURAL RESOURCES. Would the project:				
Cause a substantial adverse change in the significance of a tribal cultural resources, 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) Listed or eligible for listing in the California Register of Historic Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or		X		
b) 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 Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.		X		

Explanation

- a, b) **Less Than Significant With Mitigation Incorporated.** The NAHC review of their Sacred Lands Files did not yield any results for the project site, and the HPSR/FOE did not identify potential tribal cultural resources in the project APE. A culturally affiliated California Native American Tribe, OCEN, is currently consulting with the lead agency and will have a representative available during excavation activities. Requests made by OCEN’s tribal representative have been included as **Mitigation Measures TC-1 and TC-2.**

Mitigation Measures

Mitigation Measure TC-1

Because of their continuing interest in potential discoveries during construction, all listed Native American Contacts shall be notified of any and all discoveries of archaeological resources in the project area.

Mitigation Measure TC-2

A representative from the OCEN tribe shall be available during all construction activities.

Conclusion: The project would have a less than significant impact on cultural tribal resources with the implementation of **Mitigation Measures TC-1 and TC-2**.

5.2.18 UTILITIES AND SERVICE SYSTEMS

Setting

California American Water (CalAm) is the water service purveyor to the project area; the proposed project site does not have any water use or connections. State Parks is currently responsible for the collection of solid waste at the proposed project site. Waste is transported to the Monterey Regional Waste Management District facility north of the City of Marina. Pacific Gas & Electric Co. provides electric service to the proposed project site.

The District provides wastewater collection, treatment and disposal services to the areas of Carmel-by-the-Sea, Carmel Valley, and Carmel Highlands, including the areas adjacent to proposed project site. The District is also responsible for the maintenance and operation of the sewer system within its wastewater management district borders.

CEQA Thresholds

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction or which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) Result in a determination by the wastewater treatment provider, which serves or may serve the project, that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	
g) Comply with federal, state, and local statutes and regulations related to solid waste?			X	

Explanation

- a, b, e) **No Impact.** The proposed project is the repair and replacement of a small section of the District sanitary sewer system. The proposed project would not generate any additional wastewater that is not already being treated at the District Wastewater Treatment Plant. The project will not exceed or impact wastewater treatment requirements of the applicable Regional Water Quality Control Board. The proposed project would not increase water demands and wastewater generation, nor would it require or result in the construction of new water or wastewater treatment facilities or any expansion of existing facilities.
- c) **No Impact.** The project will not increase or replace any existing impervious surfaces on the site. The project, thus, would not exceed the capacity of existing or planned storm water drainage systems.
- d) **No Impact.** The proposed sewer replacement would not require additional water rights or entitlements.

f, g) **Less Than Significant Impact.** The proposed project would result in a less than significant impact in terms of solid waste generation. Trash, and other waste, such as removed sewer pipe will likely be hauled to the Monterey Regional Waste Management District facility in Marina. Concrete will be recycled. Excess soils will be disposed of off-site at a location to be determined by the contractor. The project will comply with all federal, state, and local statutes and regulations related to solid waste.

Conclusion: The project would have a less than significant impact on utilities and service systems.

5.2.19 MANDATORY FINDINGS OF SIGNIFICANCE

ENVIRONMENTAL IMPACTS	Potentially Significant Issues	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE. Does the project:				
a) Have the potential to 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, 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?		X		
b) 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 the past projects, the effects of other current projects, and the effects of probable future projects.			X	
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?			X	

Explanation

- a) **Less Than Significant With Mitigation Incorporated.** Based on this analysis, the proposed repair and replacement of a section of sanitary sewer main would not result in any significant impacts on the environment with the implementation of Mitigation Measures identified in this document.
- b) **Less Than Significant Impact.** Cumulative impacts related to development accommodated by the County of Monterey’s General Plan were found to be less than significant in the General Plan EIR. As described above, the proposed project would not include housing or development in areas that could induce growth and would also not remove any barriers that could result in population growth. The proposed project would result in less than significant impacts to aesthetics, air quality, biological resources, cultural resources, geology/soils, greenhouse gas emissions, hazards and hazardous materials, hydrology/water quality, noise, recreation, and utilities/service systems. When considered cumulatively along with past, current, and probable future projects that may occur in

the area, the proposed project's contribution is considered negligible and would not be cumulatively considerable.

- c) **Less Than Significant Impact.** The project would not result in environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly.

Conclusion: The project will have a less than significant impact related to the CEQA mandatory findings of significance with implementation of mitigation measures identified in this document.

6. REFERENCES

6.1 LEAD AGENCY

Carmel Area Wastewater District

Patrick Treanor, Engineer

6.2 REPORT PREPARATION

Denise Duffy & Associates, Inc.

Environmental Consultant

Josh Harwayne, Senior Project Manager

Jami Davis, Associate Environmental Scientist

Diana Staines, Associate Planner

Liz Camilo, Assistant Environmental Scientist

Robyn Simpson, Editor

6.3 PERSONS CONTACTED

Nick Panofsky, PE, MNS Engineers, Inc.

Stephen Backman, State Parks

Jeff Frey, State Parks

Amy Palkovic, State Parks

Nora Myagmar, California Governor's Office of Emergency Services

6.4 BIBLIOGRAPHY

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Location Map








Denise Duffy and Associates, Inc.
 Planning and Environmental Consulting

Date
5-10-18
 Scale
1 in = 2 mi

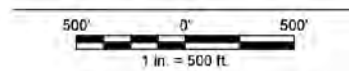
Figure
1



LEGEND

-  PARCEL BOUNDARY
-  EXISTING CAWD SEWER LINE
-  SEWER MAIN REPLACEMENT
-  SITE ACCESS POINT
-  CONSTRUCTION STAGING AREA

DRAFT NOT FOR CONSTRUCTION



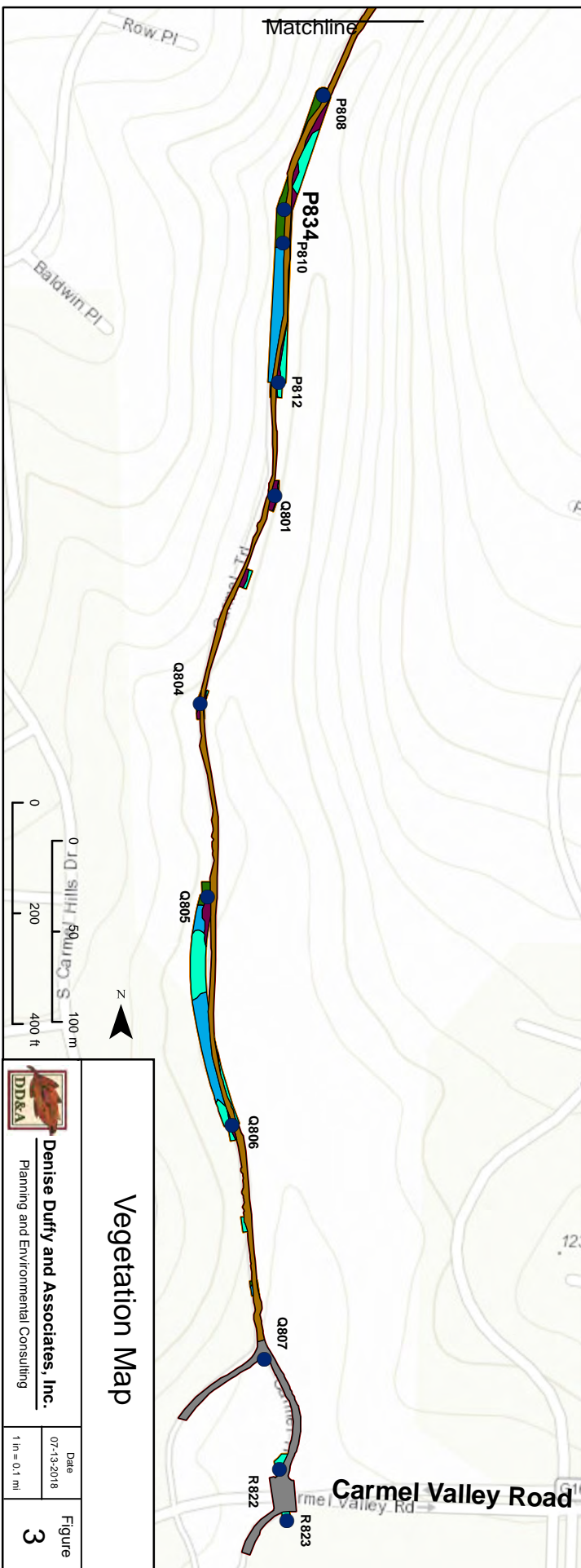
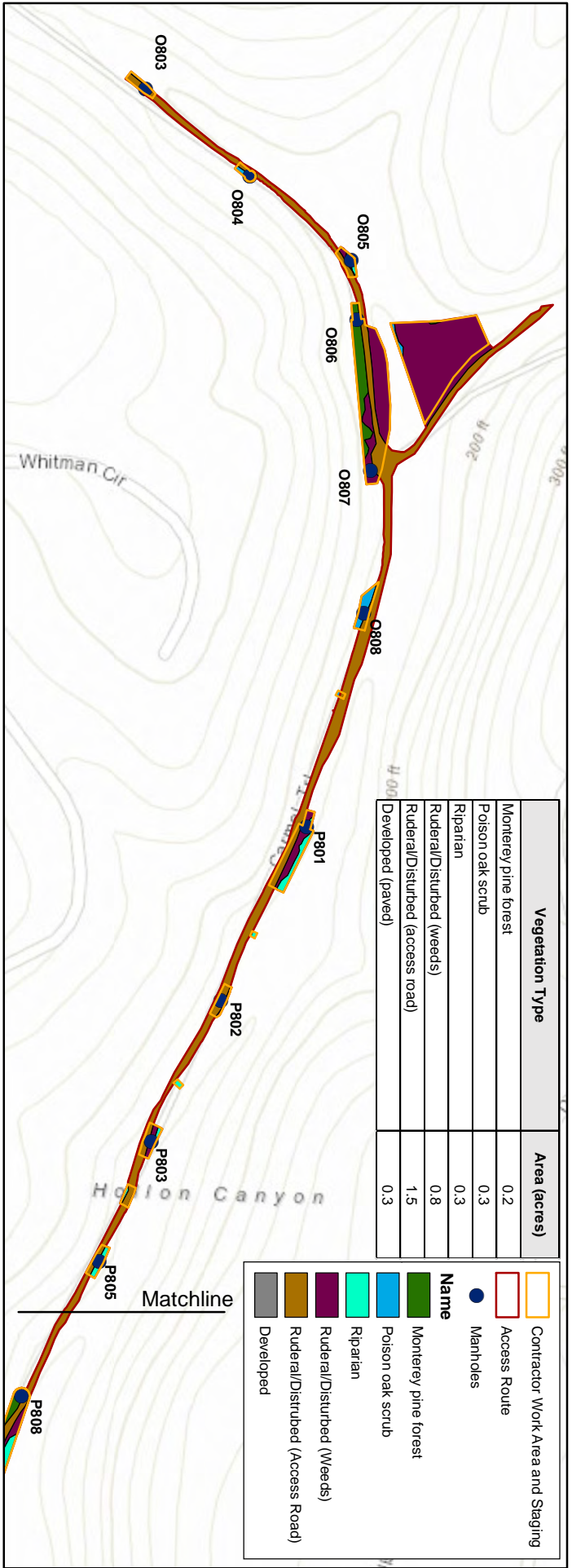
Site Plan



Denise Duffy and Associates, Inc.
 Planning and Environmental Consulting

Date
 5-11-18
 Scale
 NA

Figure
2



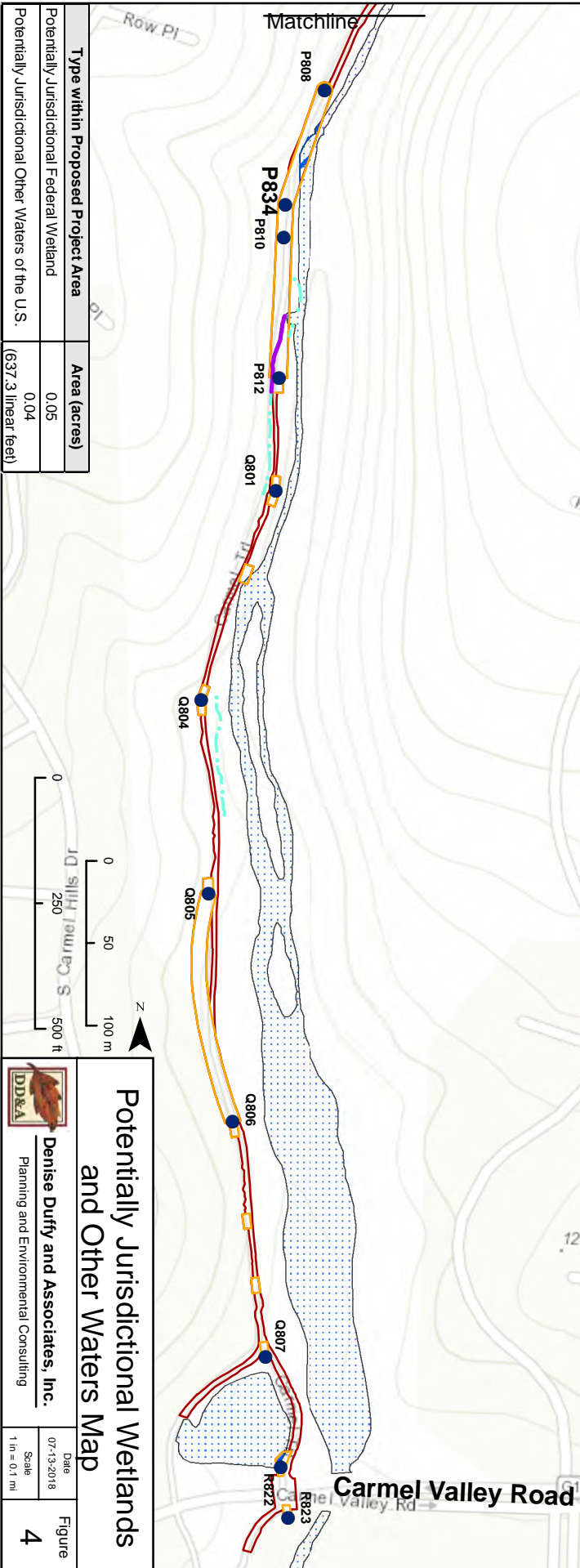
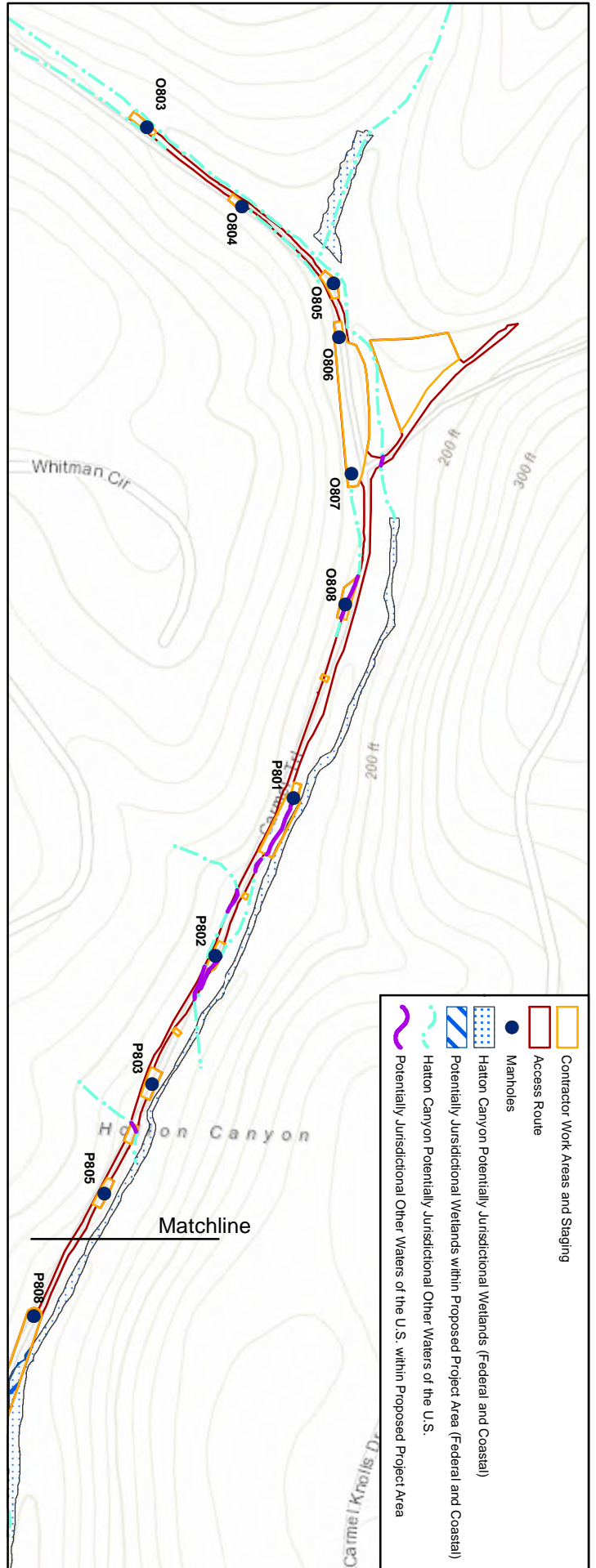
Vegetation Map



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 Planning and Environmental Consulting

Date: 07-13-2018
 1 in = 0.1 mi

Figure 3



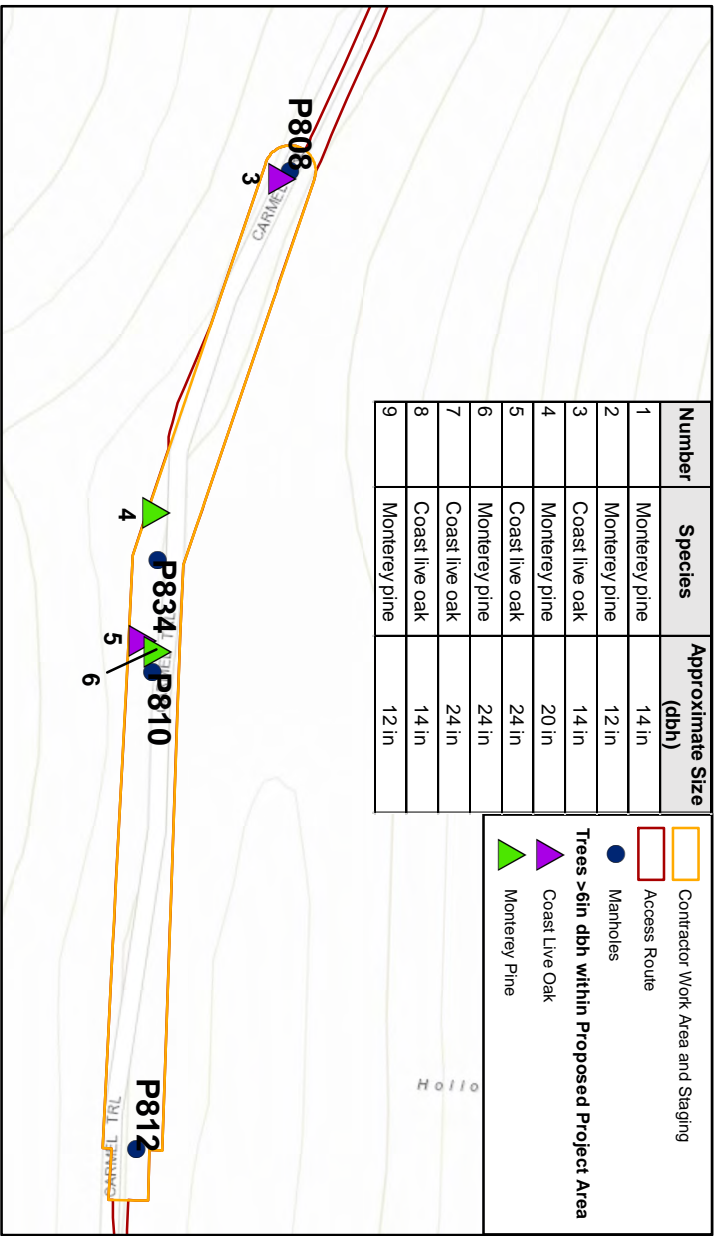
Type within Proposed Project Area	Area (acres)
Potentially Jurisdictional Federal Wetland	0.04
Potentially Jurisdictional Other Waters of the U.S.	(637.3 linear feet)

**Potentially Jurisdictional Wetlands
and Other Waters Map**

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Planning and Environmental Consulting

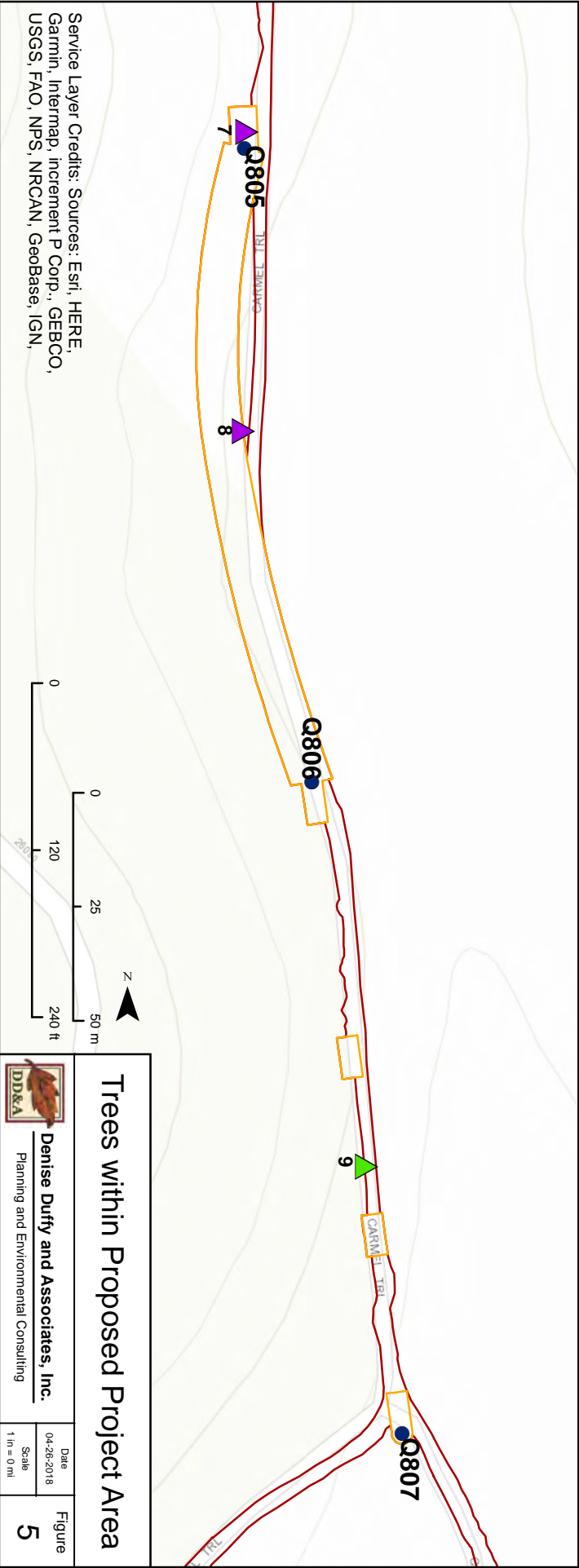
Date: 07-13-2018
Scale: 1 in = 0.1 mi

Figure: **4**



Number	Species	Approximate Size (dbh)
1	Monterey pine	14 in
2	Monterey pine	12 in
3	Coast live oak	14 in
4	Monterey pine	20 in
5	Coast live oak	24 in
6	Monterey pine	24 in
7	Coast live oak	24 in
8	Coast live oak	14 in
9	Monterey pine	12 in

Contractor Work Area and Staging
 Access Route
● Manholes
▲ Trees >6in dbh within Proposed Project Area
▲ Coast Live Oak
▲ Monterey Pine



Trees within Proposed Project Area

Denise Duffy and Associates, Inc.
 Planning and Environmental Consulting

Date 04-26-2018	Figure 5
Scale 1 in = 0 mi	

DD&A

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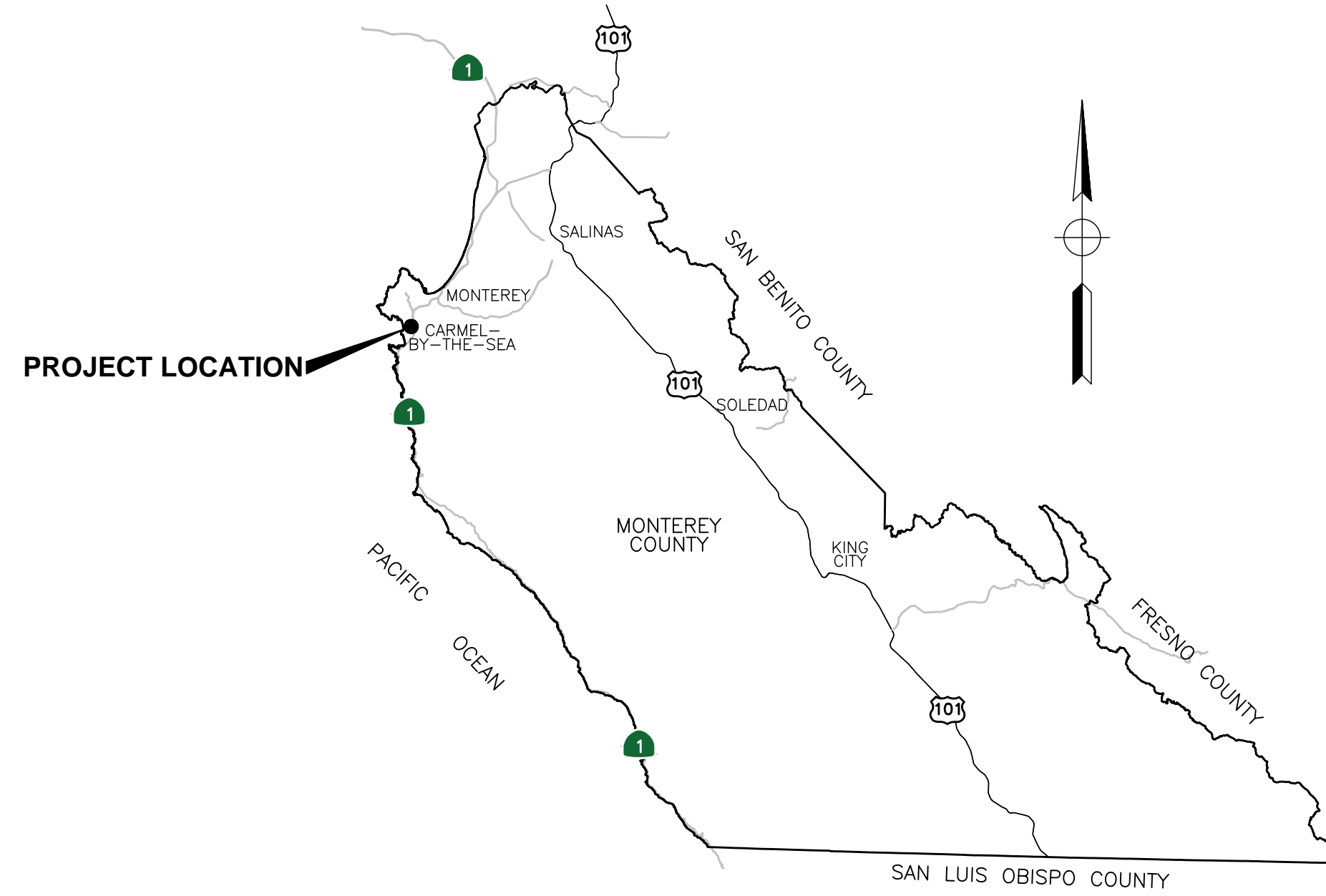
Appendix A

Project Plans

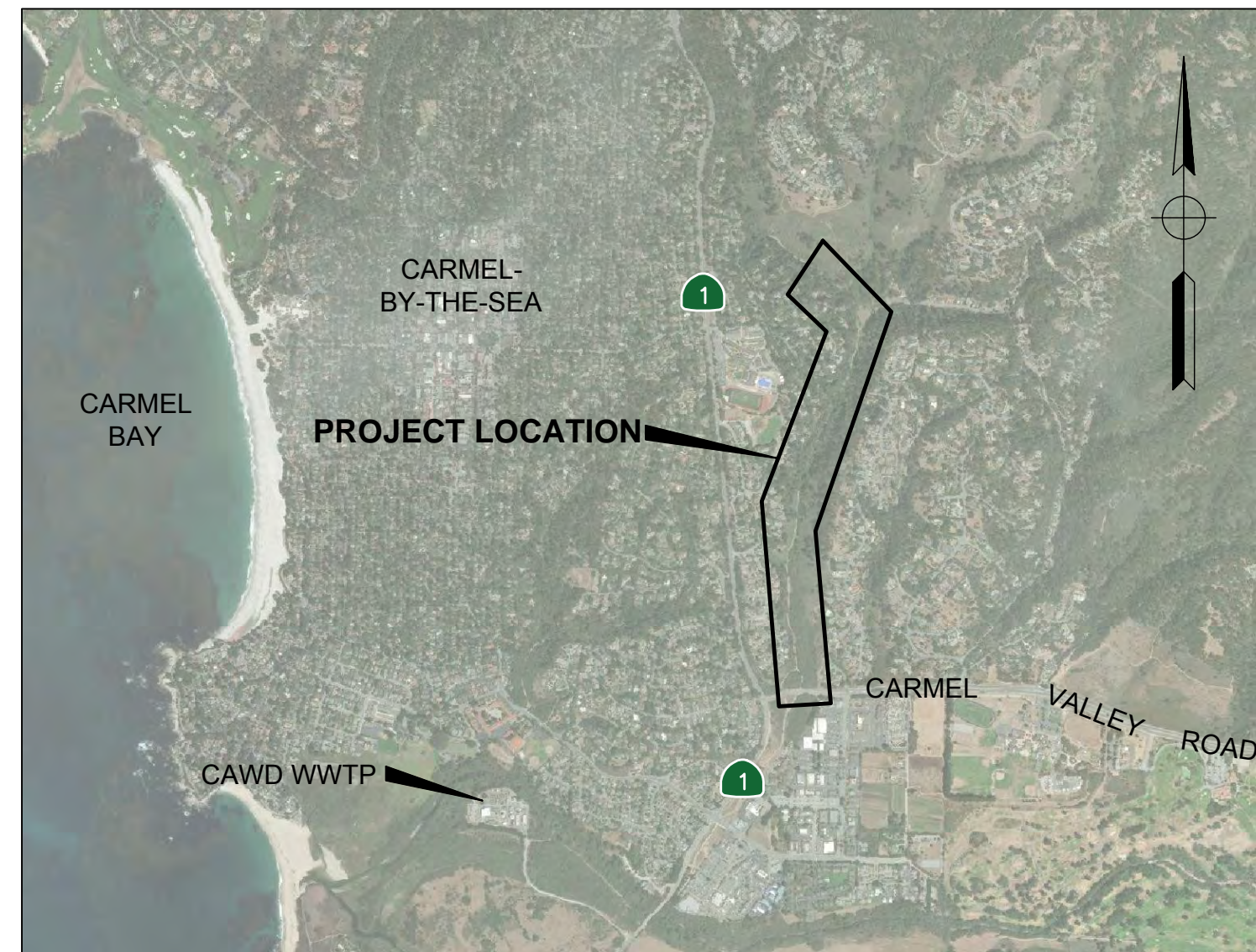
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HATTON CANYON SEWER REPLACEMENT

CARMEL AREA WASTEWATER DISTRICT



VICINITY MAP
NOT TO SCALE



LOCATION MAP
2,000' 0' 2,000'
1 in. = 2,000 ft.

SHEET INDEX		
SHEET NO.	DRAWING NO.	DESCRIPTION
1	G-1	TITLE SHEET, SHEET INDEX, VICINITY MAP, AND LOCATION MAP
2	G-2	NOTES AND SHEET LAYOUT PLAN
3	C-1	SEWER PLAN AND PROFILE STA 10+50 TO STA 22+00
4	C-2	SEWER PLAN AND PROFILE STA 22+00 TO STA 34+00
5	C-3	SEWER PLAN AND PROFILE STA 34+00 TO STA 46+00
6	C-4	SEWER PLAN AND PROFILE STA 46+00 TO STA 58+00
7	C-5	SEWER PLAN AND PROFILE STA 58+00 TO STA 66+34
8	C-6	SEWER DETAILS

LEGEND

	EXISTING 2-FT. CONTOUR LINE
	EXISTING 10-FT. CONTOUR LINE
	EXISTING SEWER MAIN
	CAWD EASEMENT BOUNDARY
	EXISTING MAINTENANCE ROAD/ BIKE PATH
	LIMIT OF DISTURBANCE
	SEWER MAIN ALIGNMENT

ABBREVIATIONS

Δ	CURVE ANGLE
ABAN.	ABANDONED
BC	BEGIN CURVE
CAWD	CARMEL AREA WASTEWATER DISTRICT
CO.	COUNTY
DR	DIMENSION RATIO
E	EAST(ERN)
EC	END CURVE
ELEV	ELEVATION
FG	FINISH GRADE
FT.	FOOT (FEET)
H	HORIZONTAL
HDPE	HIGH DENSITY POLYETHYLENE
IN.	INCH(ES)
INV	INVERT
L	LENGTH
LF	LINEAR FEET
MIN.	MINIMUM
N	NORTH(ERN)
NAD83	NORTH AMERICAN DATUM OF 1983
NAVD88	NORTH AMERICAN VERTICAL DATUM OF 1988
NO.	NUMBER
O.D.	OUTER DIAMETER
OFCI	OWNER-FURNISHED/CONTRACTOR-INSTALLED
PVC	POLYVINYL CHLORIDE
R	RADIUS
S	SOUTH(ERN)
SS	SANITARY SEWER, STAINLESS STEEL
SSMH	SANITARY SEWER MANHOLE
SSPWC	STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION
STA	STATION(ING)
SWPPP	STORMWATER POLLUTION PREVENTION PLAN
U.S.	UNITED STATES
V	VERTICAL
VCP	VITRIFIED CLAY PIPE
W	WEST(ERN)
WWTP	WASTEWATER TREATMENT PLANT

DIAL TOLL FREE
811
AT LEAST TWO DAYS
BEFORE YOU DIG



Know what's below.
Call before you dig.
UNDERGROUND SERVICE ALERT (USA) OF SOUTHERN CALIFORNIA

**** 60% DRAFT - NOT FOR CONSTRUCTION ****

REV	DATE	BY	DESCRIPTION

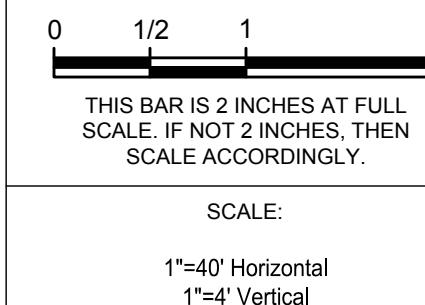
MNS
ENGINEERS IN C
ENGINEERING | SURVEYING
CONSTRUCTION MANAGEMENT

25 San Juan Grade Rd
Suite 105
Salinas, CA 93906
Phone: 831-242-0058
www.mnsengineers.com

DESIGNED: NEP
DRAWN: SPP
CHECKED: JA

PROJECT ENGINEER: NICHOLAS PANOFSKY
R.C.E. 75006 EXP. 12-31-2019

DATE



HATTON CANYON SEWER REPLACEMENT
CARMEL AREA WASTEWATER DISTRICT

**TITLE SHEET, SHEET INDEX, VICINITY MAP, AND
LOCATION MAP**

PROJECT NUMBER
CMAWD.170448








DRAWING NUMBER
G-1

SHEET NUMBER
1 OF **8**

GENERAL NOTES

- ALL WORK ON THIS PROJECT SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF THE CARMEL AREA WASTEWATER DISTRICT (CAWD, DISTRICT) STANDARDS, "2018 STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (SSPWC)", "2015 STANDARD PLANS FOR PUBLIC WORKS CONSTRUCTION (SPPWC)", AND THE CONTRACT DOCUMENTS.
- NOTIFY THE DISTRICT'S REPRESENTATIVE AND ALL OTHER PARTIES REQUIRED BY THE CONTRACT DOCUMENTS AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO THE START OF WORK.
- AT LEAST FORTY-EIGHT (48) HOURS PRIOR TO COMMENCING CONSTRUCTION, CONTACT THE REGIONAL NOTIFICATION CENTER (UNDERGROUND SERVICE ALERT OF NORTHERN CALIFORNIA - U.S.A. AT 811) AND REQUEST UTILITY OWNERS MARK OR OTHERWISE INDICATE THE LOCATION OF THEIR FACILITIES. TAKE ALL NECESSARY MEASURES TO PROTECT ALL UTILITIES AND ALL STRUCTURES FOUND AT THE SITE.
- ALL REQUIRED PERMITS AND NECESSARY COUNTY OF MONTEREY BUSINESS LICENSE(S) SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO BEGINNING CONSTRUCTION.
- DURING ALL PHASES OF CONSTRUCTION, INCLUDING SUSPENSION OF WORK, UNTIL FINAL ACCEPTANCE OF THE PROJECT, OBSERVE, FOLLOW AND IMPLEMENT ALL THE REQUIREMENTS OF THE NPDES AND STORMWATER POLLUTION PREVENTION PLAN AND KEEP THE WORK SITE CLEAN AND FREE FROM RUBBISH AND DEBRIS. ALSO ABATE DUST NUISANCE BY SPRINKLING WITH WATER AND USING DUST FENCES OR OTHER METHODS AS DIRECTED BY THE DISTRICT'S REPRESENTATIVE THROUGHOUT THE CONSTRUCTION OPERATION.
- KEEP A STRICT RECORD OF ALL CHANGES AND SUBMIT THIS RECORD TO THE DISTRICT. ALSO COORDINATE TRANSFERRING "AS-BUILT" INFORMATION ON THE CONTRACT DRAWINGS AND DELIVER THE CERTIFIED "AS-BUILT" PLANS TO THE DISTRICT BEFORE THE RELEASE FOR FINAL ACCEPTANCE OF THE PROJECT SHALL BE FILED.
- EXERCISE DUE CARE TO AVOID DAMAGE TO EXISTING IMPROVEMENTS OR FACILITIES, UTILITY FACILITIES, ADJACENT PROPERTY, AND TREES AND SHRUBBERY TO REMAIN. ALL DAMAGE CAUSED TO PUBLIC STREETS, INCLUDING HAUL ROUTES, ALLEYS, SIDEWALKS, CURBS OR STREET FURNISHINGS, OR TO PRIVATE PROPERTY SHALL BE REPAIRED AT THE SOLE EXPENSE OF THE CONTRACTOR TO THE SATISFACTION OF THE DISTRICT'S REPRESENTATIVE.
- DESIGNATE AND KEEP ON THE PROJECT AT ALL TIMES WHILE WORK IS BEING PERFORMED A COMPETENT SUPERINTENDENT WHO SHALL NOT BE REPLACED WITHOUT WRITTEN NOTICE TO THE DISTRICT'S REPRESENTATIVE. THE SUPERINTENDENT WILL BE THE CONTRACTOR'S REPRESENTATIVE AT THE SITE AND SHALL HAVE AUTHORITY TO ACT ON BEHALF OF THE CONTRACTOR. ALL COMMUNICATIONS GIVEN TO THE SUPERINTENDENT SHALL BE AS BINDING AS IF GIVEN TO THE CONTRACTOR. DURING PERIODS WHEN THE WORK IS SUSPENDED, MAKE APPROPRIATE ARRANGEMENTS FOR ANY EMERGENCY WORK WHICH MAY BE REQUIRED.
- THE COST OF ALL INITIAL TESTING AND RETESTING TO BE PERFORMED UNDER THE DIRECTION OF THE DISTRICT'S REPRESENTATIVE SHALL BE BORNE BY THE CONTRACTOR, UNLESS OTHERWISE SPECIFIED.
- WHEN THE WORK ON ANY PORTION OF THE WORK IS SUFFICIENTLY COMPLETE TO BE UTILIZED OR PLACED INTO SERVICE, THE DISTRICT SHALL HAVE THE RIGHT UPON WRITTEN NOTIFICATION TO THE CONTRACTOR TO UTILIZE SUCH PORTIONS OF THE WORK AND TO PLACE THE OPERABLE PORTIONS INTO SERVICE AND TO OPERATE SAME. UPON SAID NOTICE AND COMMENCEMENT OF UTILIZATION OR OPERATION BY THE DISTRICT, THE CONTRACTOR SHALL BE RELIEVED OF THE DUTY OF MAINTAINING THE PORTIONS SO UTILIZED OR PLACED INTO OPERATION; PROVIDED, HOWEVER, NOTHING IN THIS NOTE SHALL BE CONSTRUED AS RELIEVING THE CONTRACTOR OF THE FULL RESPONSIBILITY FOR COMPLETING THE WORK IN ITS ENTIRETY, FOR MAKING GOOD DEFECTIVE WORK AND MATERIALS, FOR PROTECTING THE WORK FROM DAMAGE, AND FOR BEING RESPONSIBLE FOR DAMAGE.
- CONDUCT OPERATIONS AS TO OFFER THE LEAST POSSIBLE OBSTRUCTION AND INCONVENIENCE TO THE PUBLIC, AND HAVE UNDER CONSTRUCTION NO GREATER LENGTH OR AMOUNT OF WORK THAN CAN BE EXECUTED PROPERLY WITH DUE REGARD TO THE RIGHTS OF THE PUBLIC. CONVENIENT ACCESS TO DRIVEWAYS, HOUSES, AND BUILDINGS ALONG THE LINE OF WORK SHALL BE MAINTAINED AND TEMPORARY CROSSINGS SHALL BE PROVIDED AND MAINTAINED IN GOOD CONDITION.
- UNTIL THE ACCEPTANCE OF THE WORK, THE RESPONSIBLE CHARGE AND CARE OF THE WORK AND OF THE MATERIALS TO BE USED THEREIN (INCLUDING MATERIALS FOR WHICH THE CONTRACTOR HAS RECEIVED PARTIAL PAYMENT OR MATERIALS WHICH HAVE BEEN FURNISHED BY THE DISTRICT) SHALL LIE WITH THE CONTRACTOR. THE CONTRACTOR SHALL BEAR THE RISK OF INJURY, LOSS, OR DAMAGE TO ANY PART THEREOF BY THE ACTION OF ELEMENTS OR FROM ANY OTHER CAUSE, WHETHER ARISING FROM THE EXECUTION OR FROM THE NON-EXECUTION OF THE WORK.

LEGEND

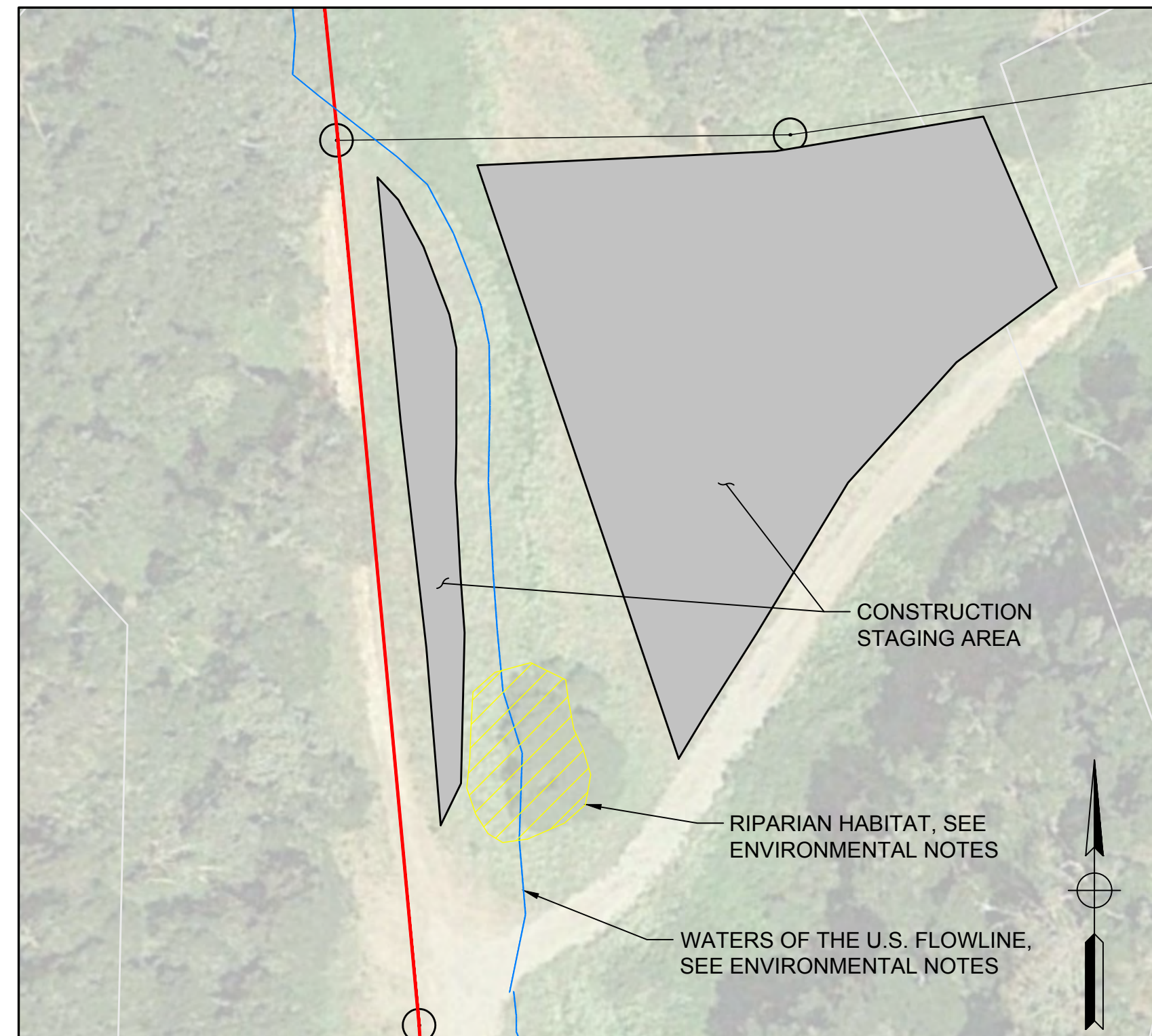
-  PARCEL BOUNDARY
-  EXISTING CAWD SEWER LINE
-  SEWER MAIN REPLACEMENT
-  WATERS OF THE U.S. FLOWLINE
-  RIPARIAN HABITAT AREA
-  SITE ACCESS POINT
-  CONSTRUCTION STAGING AREA

GENERAL NOTES CONTINUED

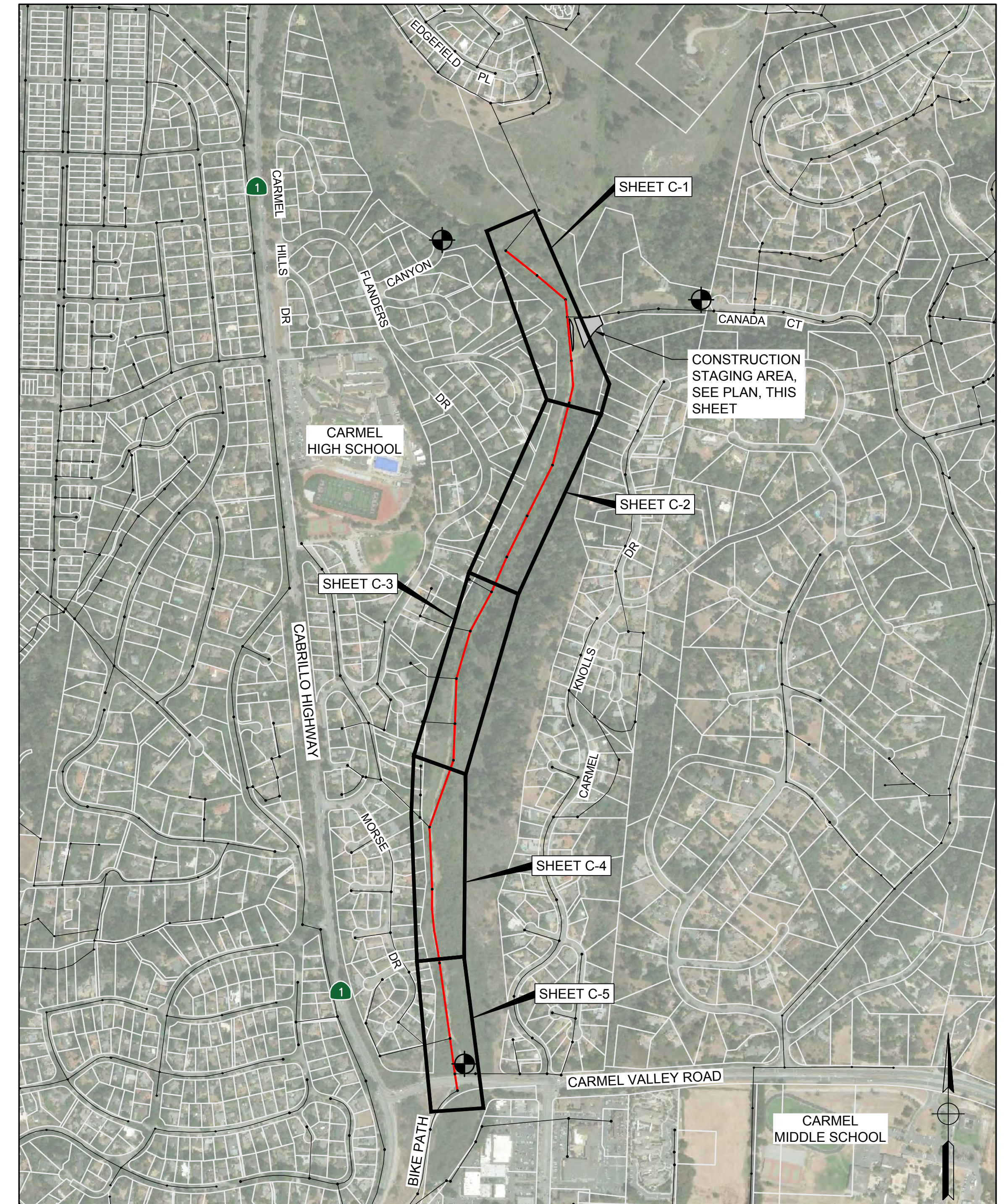
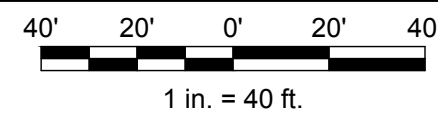
- IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL BE SOLELY AND COMPLETELY RESPONSIBLE FOR CONDITIONS OF THE JOB SITE, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY DURING PERFORMANCE OF THE WORK; AND SHALL FULLY COMPLY WITH ALL STATE, FEDERAL, AND OTHER LAWS, RULES, REGULATIONS, AND ORDER RELATING TO SAFETY OF WORKERS AND ALL OTHERS. THIS MAY INCLUDE THE ISSUANCE OF PERSONAL PROTECTIVE EQUIPMENT.
- TYPICAL DETAILS APPLY WHETHER OR NOT THEY ARE SPECIFICALLY REFERENCED ON INDIVIDUAL PLANS, DETAILS, OR SECTIONS.
- VERIFY DIMENSIONS AND CONDITIONS AT THE SITE BEFORE STARTING WORK. ANY CONFLICT BETWEEN DETAILS OR DIMENSIONS ON THE DRAWINGS SHALL BE REPORTED PROMPTLY TO THE DISTRICT'S REPRESENTATIVE WHO WILL DETERMINE THE INTENT OF THE DRAWINGS.
- THE CONTRACTOR SHALL MAINTAIN A COMPLETE SET OF CONTRACT DOCUMENTS, INCLUDING PLANS AND SPECIFICATIONS, AT THE JOB SITE WHILE ANY WORK IS BEING CONDUCTED.

ENVIRONMENTAL NOTES

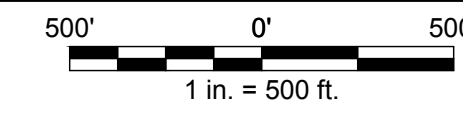
- THIS PROJECT OCCURS WITHIN AN ENVIRONMENTALLY SENSITIVE AREA. THE CONTRACTOR SHALL EXERCISE DUE CAUTION TO PROTECT ENVIRONMENTAL RESOURCES.
- THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS OF APPLICABLE PERMITS.



CONSTRUCTION STAGING AREA PLAN



SHEET LAYOUT PLAN



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P:\CMAWD\Shared Area\Website\Design\CAWD\170448\HATTON_CANYON_Sewer_Replacement\Engineering\CADD\Sheet\Notes\General_Notes.dwg

REV	DATE	BY	DESCRIPTION

MNS ENGINEERS INC
ENGINEERING | SURVEYING
CONSTRUCTION MANAGEMENT

25 San Juan Grade Rd
Suite 105
Salinas, CA 93906
Phone: 831-242-0058
www.mnsengineers.com

DESIGNED: NEP
DRAWN: SPP
CHECKED: JA

PROJECT ENGINEER: NICHOLAS PANOFSKY
R.C.E. 75006 EXP. 12 - 31 - 2019



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SCALE:
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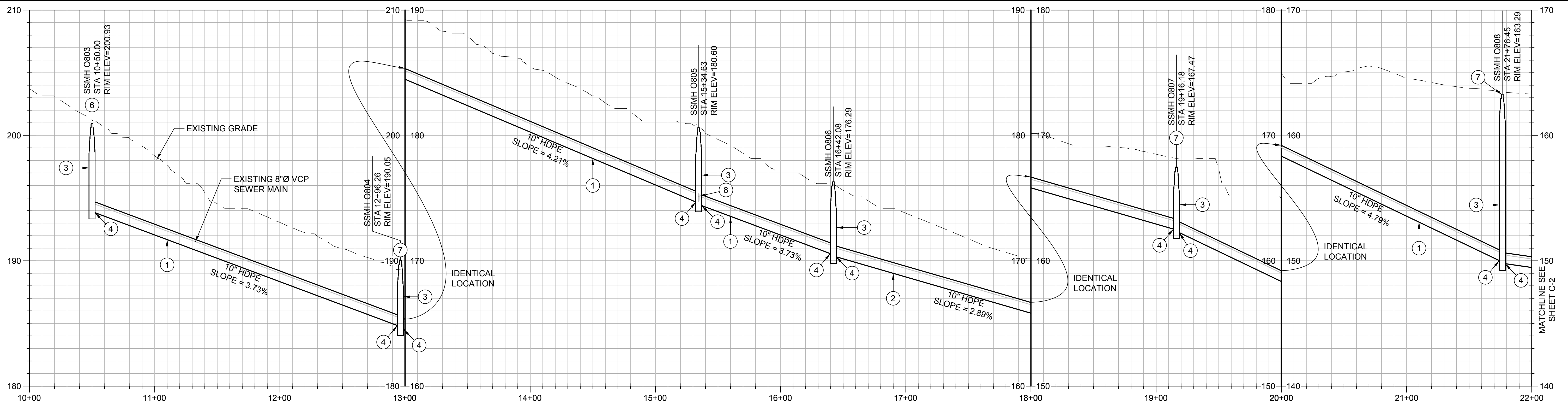
HATTON CANYON SEWER REPLACEMENT
CARMEL AREA WASTEWATER DISTRICT

PROJECT NUMBER
CMAWD.170448

NOTES AND SHEET LAYOUT PLAN

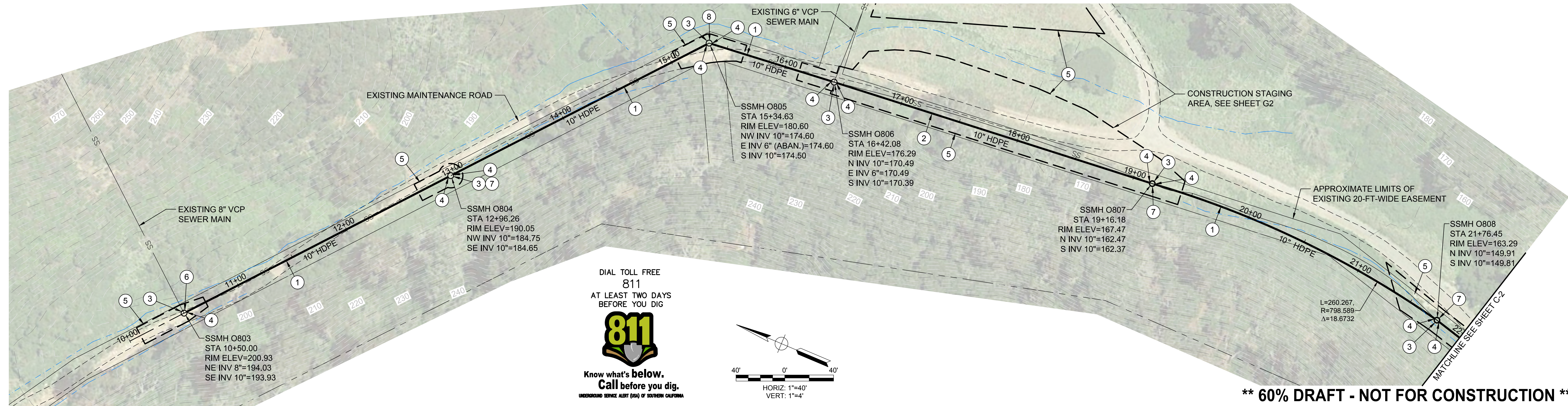
DRAWING NUMBER
G-2

SHEET NUMBER
2 OF 8



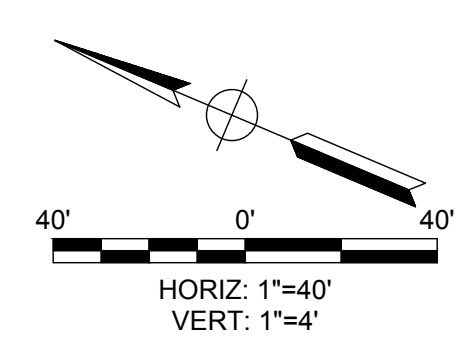
CONSTRUCTION NOTES

- ① REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY PIPE BURSTING. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ② REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY OPEN TRENCH OR PIPE BURSTING. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ③ WRAP EXTERIOR OF EXISTING MANHOLE TO SEAL JOINTS PER SPECIFICATIONS AND DETAIL 3, SHEET C-6.
- ④ CONNECT 10-INCH HDPE DR17 SEWER MAIN TO EXISTING MANHOLE. SEE DETAIL 4, SHEET C-6.
- ⑤ THE CONTRACTOR'S WORK AREA SHALL BE LIMITED TO THE AREA OF ALLOWABLE DISTURBANCE SHOWN AND EXISTING ACCESS ROADS.
- ⑥ RESET MANHOLE FRAME AND COVER. DEMOLISH AND REPLACE CONCRETE SURROUNDING PER CAWD STANDARD DETAIL SS-9.
- ⑦ RAISE MANHOLE FRAME AND COVER 24 INCHES BY ADDING GRADE RINGS.
- ⑧ PLUG ABANDONED INLET AND RESTORE MANHOLE BENCH.



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CHECKED: JA

PROJECT ENGINEER: NICHOLAS PANOFSKY
R.C.E. 75006 EXP. 12-31-2019

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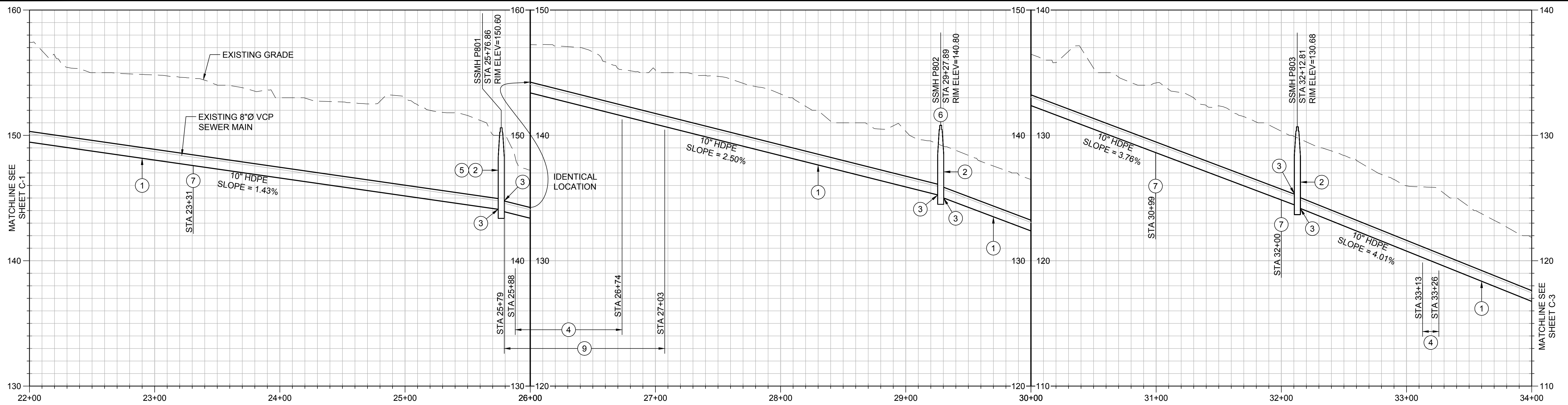
HATTON CANYON SEWER REPLACEMENT
CARMEL AREA WASTEWATER DISTRICT

PROJECT NUMBER
CMAWD.170448

DRAWING NUMBER
C-1

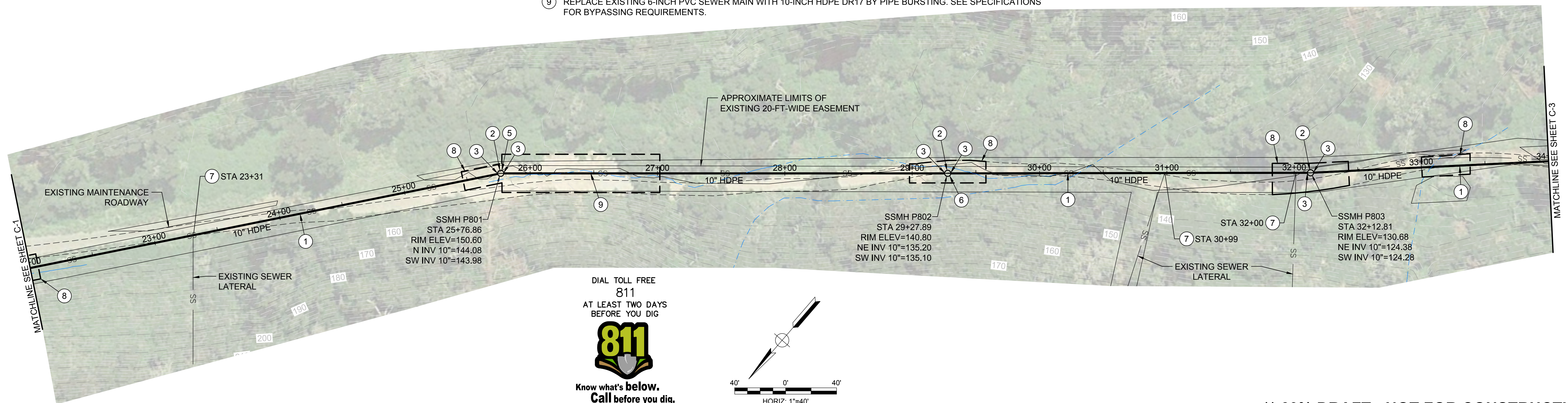
SHEET NUMBER
3 OF 8

SEWER PLAN AND PROFILE
STA 10+50 TO STA 22+00



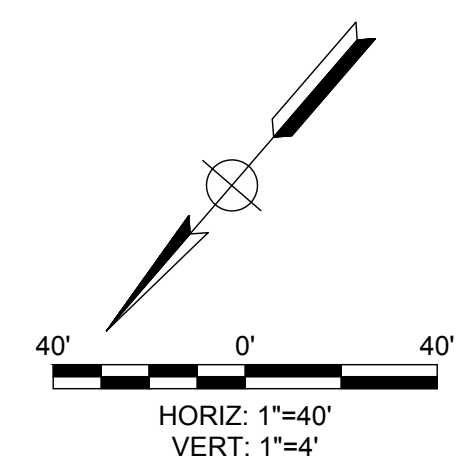
CONSTRUCTION NOTES

- ① REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY PIPE BURSTING. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ② WRAP EXTERIOR OF EXISTING MANHOLE TO SEAL JOINTS PER SPECIFICATIONS AND DETAIL 3, SHEET C-6.
- ③ CONNECT 10-INCH HDPE DR17 SEWER MAIN TO EXISTING MANHOLE. SEE DETAIL 4, SHEET C-6.
- ④ OPEN TRENCH REPAIR SAG AFTER PIPE BURSTING PER SPECIFICATIONS. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL.
- ⑤ FILL CRACK IN EXISTING MANHOLE BARREL WITH PRESSURE GROUT PER SPECIFICATIONS.
- ⑥ REMOVE AND REPLACE GRADE RINGS PER CAWD STANDARD DETAIL SS-9. RESET EXISTING MANHOLE FRAME AND COVER.
- ⑦ RECONNECT SEWER LATERAL PER SPECIFICATIONS AND DETAIL 2, SHEET C-6.
- ⑧ THE CONTRACTOR'S WORK AREA SHALL BE LIMITED TO THE ARE OF ALLOWABLE DISTURBANCE SHOWN AND EXISTING ACCESS ROADS.
- ⑨ REPLACE EXISTING 6-INCH PVC SEWER MAIN WITH 10-INCH HDPE DR17 BY PIPE BURSTING. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.



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Phone: 831-242-0058
www.mnsengineers.com

DESIGNED:	NEP
DRAWN:	SPP
CHECKED:	JA

PROJECT ENGINEER: NICHOLAS PANOFSKY
R.C.E. 75006 EXP. 12-31-2019

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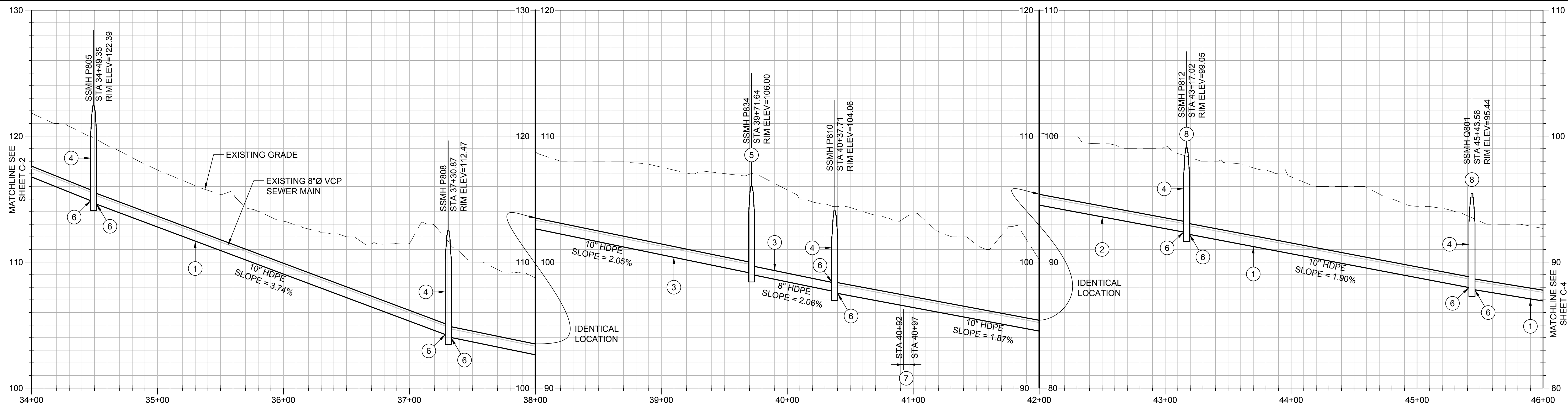
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1"=4' Vertical



HATTON CANYON SEWER REPLACEMENT
CARMEL AREA WASTEWATER DISTRICT

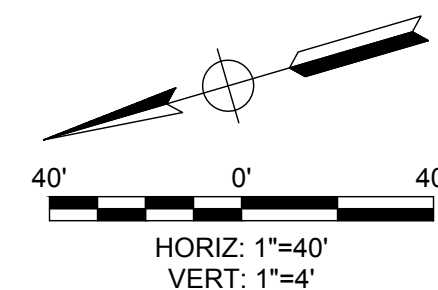
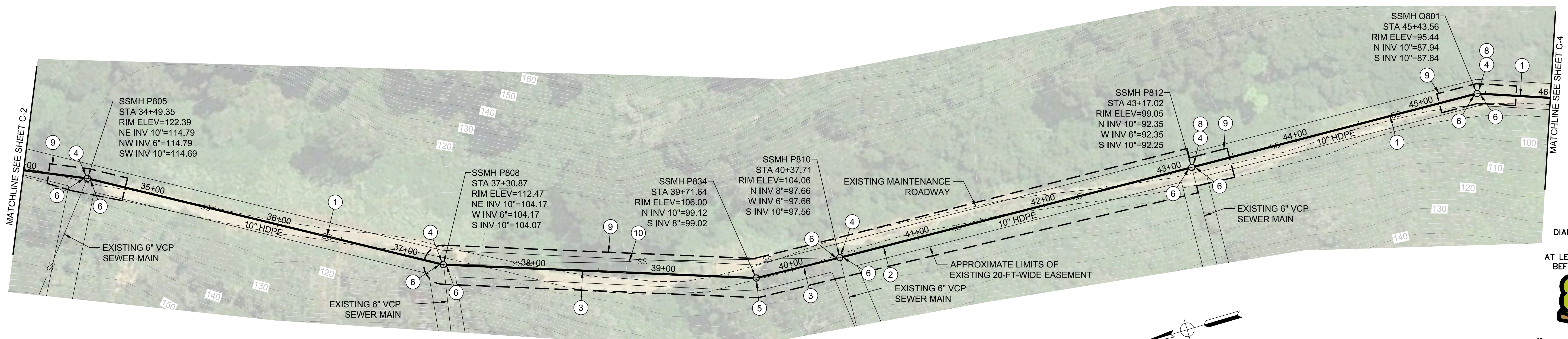
SEWER PLAN AND PROFILE
STA 22+00 TO STA 34+00

PROJECT NUMBER	CMAWD.170448
DRAWING NUMBER	C-2
SHEET NUMBER	4 OF 8



CONSTRUCTION NOTES

- ① REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY PIPE BURSTING. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ② REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY OPEN TRENCH OR PIPE BURSTING. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL DETAIL. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ③ REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY OPEN TRENCH. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL DETAIL. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ④ WRAP EXTERIOR OF EXISTING MANHOLE TO SEAL JOINTS. SEE DETAIL 3, SHEET C-6 AND THE SPECIFICATIONS.
- ⑤ INSTALL 48-INCH SEWER MANHOLE PER CAWD STANDARD DETAIL SS-9.
- ⑥ CONNECT 10-INCH HDPE DR17 SEWER MAIN TO EXISTING MANHOLE. SEE DETAIL 4, SHEET C-6.
- ⑦ OPEN TRENCH REPAIR SAG AFTER PIPE BURSTING PER SPECIFICATIONS. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL.
- ⑧ RAISE MANHOLE FRAME AND COVER 24 INCHES BY ADDING GRADE RINGS.
- ⑨ THE CONTRACTOR'S WORK AREA SHALL BE LIMITED TO THE AREA OF ALLOWABLE DISTURBANCE SHOWN AND EXISTING ACCESS ROADS.
- ⑩ ABANDON EXISTING 8" VCP SEWER MAIN PER SPECIFICATIONS.



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www.mnsengineers.com

DESIGNED:	NEP
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PROJECT ENGINEER: NICHOLAS PANOFSKY
R.C.E. 75006 EXP. 12-31-2019



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1"=4' Vertical



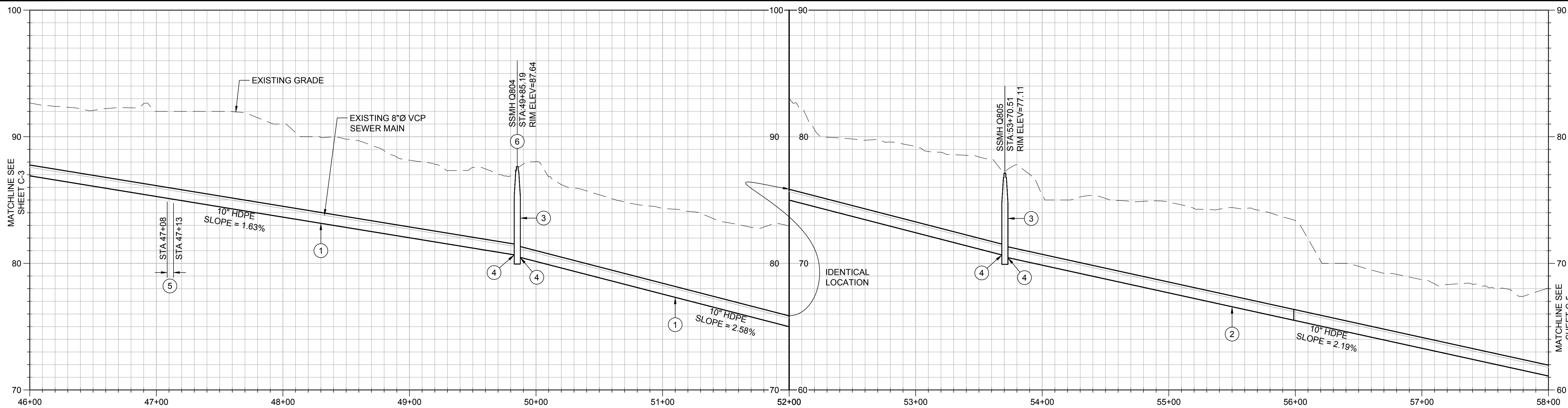
HATTON CANYON SEWER REPLACEMENT
CARMEL AREA WASTEWATER DISTRICT

SEWER PLAN AND PROFILE
STA 34+00 TO STA 46+00

PROJECT NUMBER
CMAWD.170448

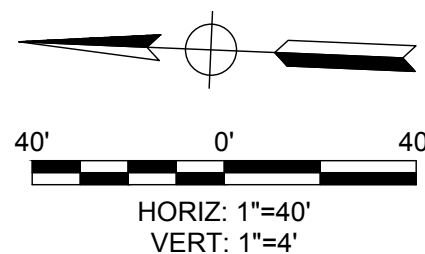
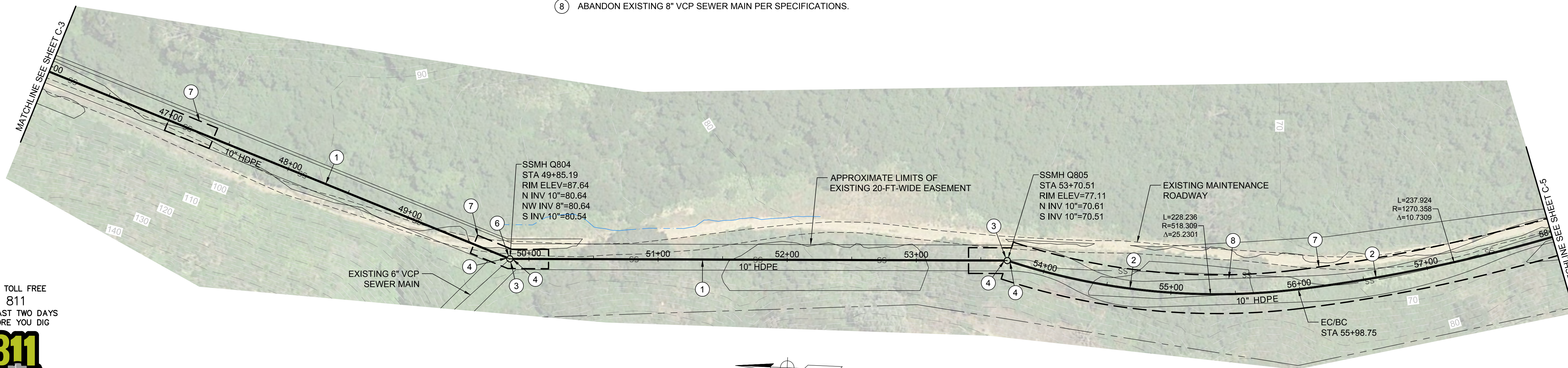
DRAWING NUMBER
C-3

SHEET NUMBER
5 OF 8



CONSTRUCTION NOTES

- ① REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY PIPE BURSTING. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ② REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY OPEN TRENCH. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL DETAIL. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ③ WRAP EXTERIOR OF EXISTING MANHOLE TO SEAL JOINTS. SEE DETAIL 3, SHEET C-6 AND THE SPECIFICATIONS.
- ④ CONNECT 10-INCH HDPE DR17 SEWER MAIN TO EXISTING MANHOLE. SEE DETAIL 4, SHEET C-6.
- ⑤ OPEN TRENCH REPAIR SAG AFTER PIPE BURSTING PER SPECIFICATIONS. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL.
- ⑥ RAISE MANHOLE FRAME AND COVER 24 INCHES BY ADDING GRADE RINGS. SALVAGE EXISTING GRADE RINGS.
- ⑦ THE CONTRACTOR'S WORK AREA SHALL BE LIMITED TO THE AREA OF ALLOWABLE DISTURBANCE SHOWN AND EXISTING ACCESS ROADS.
- ⑧ ABANDON EXISTING 8" VCP SEWER MAIN PER SPECIFICATIONS.



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CHECKED: JA

PROJECT ENGINEER: NICHOLAS PANOFSKY
R.C.E. 75006 EXP. 12-31-2019



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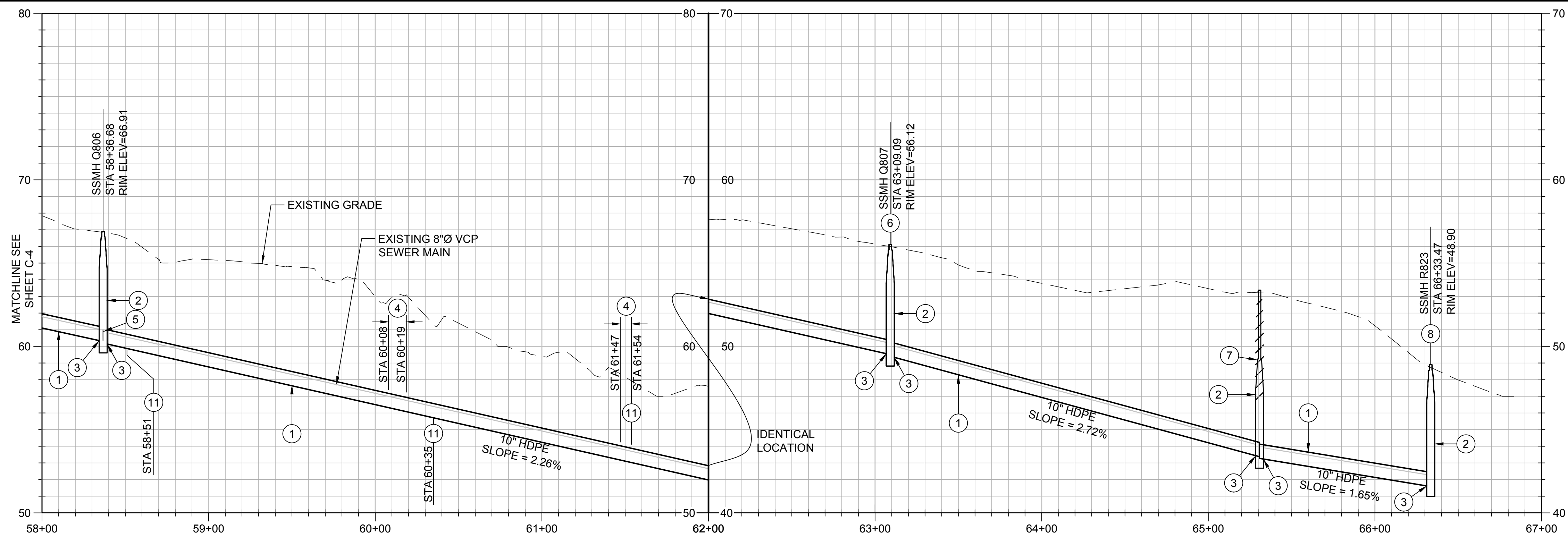
HATTON CANYON SEWER REPLACEMENT
CARMEL AREA WASTEWATER DISTRICT

SEWER PLAN AND PROFILE
STA 46+00 TO STA 58+00

PROJECT NUMBER
CMAWD.170448

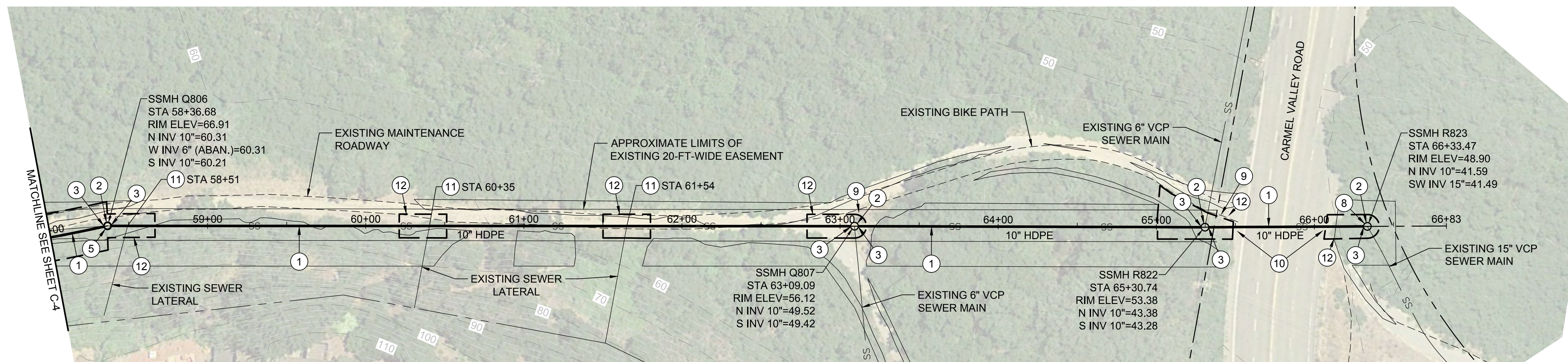
DRAWING NUMBER
C-4

SHEET NUMBER
6 OF 8



CONSTRUCTION NOTES

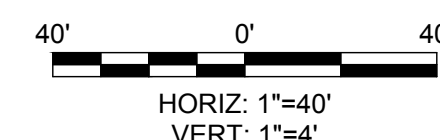
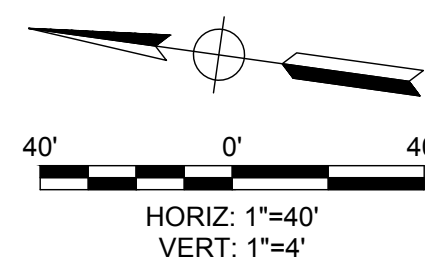
- ① REPLACE EXISTING 8-INCH VCP SEWER MAIN WITH 10-INCH HDPE DR17 BY PIPE BURSTING. SEE SPECIFICATIONS FOR BYPASSING REQUIREMENTS.
- ② WRAP EXTERIOR OF EXISTING MANHOLE TO SEAL JOINTS. SEE DETAIL 3, SHEET C-6 AND THE SPECIFICATIONS.
- ③ CONNECT 10-INCH HDPE DR17 SEWER MAIN TO EXISTING MANHOLE. SEE DETAIL 4, SHEET C-6.
- ④ OPEN TRENCH REPAIR SAG AFTER PIPE BURSTING PER SPECIFICATIONS. SEE DETAIL 1, SHEET C-6 FOR TRENCH BACKFILL.
- ⑤ PLUG ABANDONED INLET AND RESTORE MANHOLE BENCH.
- ⑥ RAISE MANHOLE FRAME AND COVER 24 INCHES BY ADDING GRADE RINGS.
- ⑦ REMOVE AND REPLACE EXISTING MANHOLE CONE AND 5'-9" CHIMNEY SECTION. RESTORE PER CAWD STANDARD DETAIL SS-9. RESET EXISTING FRAME AND COVER.
- ⑧ REPLACE EXISTING FRAME AND COVER WITH OFCI FRAME AND COVER.
- ⑨ RESTORE ALL DISTURBED PORTIONS OF EXISTING BIKE PATH PER DETAIL 5, SHEET C-6.
- ⑩ RESTORE ANY DISTURBED ROADWAY SURFACE PER DETAIL 6, SHEET C-6.
- ⑪ RECONNECT SEWER LATERAL PER SPECIFICATIONS AND DETAIL 2, SHEET C-6.
- ⑫ THE CONTRACTOR'S WORK AREA SHALL BE LIMITED TO THE AREA OF ALLOWABLE DISTURBANCE SHOWN AND EXISTING ACCESS ROADS.



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R.C.E. 75006 EXP. 12-31-2019



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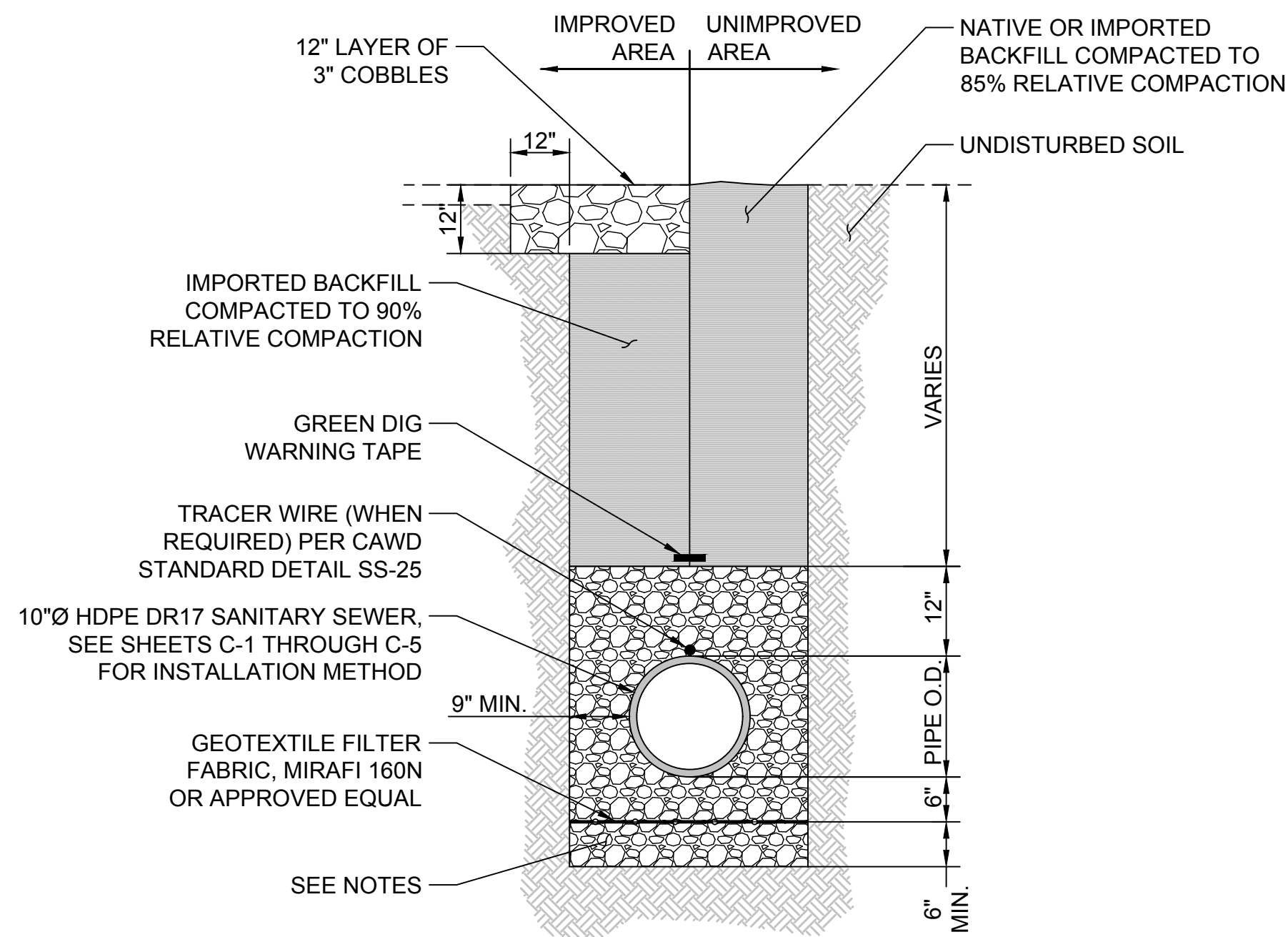
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CARMEL AREA WASTEWATER DISTRICT

SEWER PLAN AND PROFILE
STA 58+00 TO STA 66+34

PROJECT NUMBER
CMAWD.170448

DRAWING NUMBER
C-5

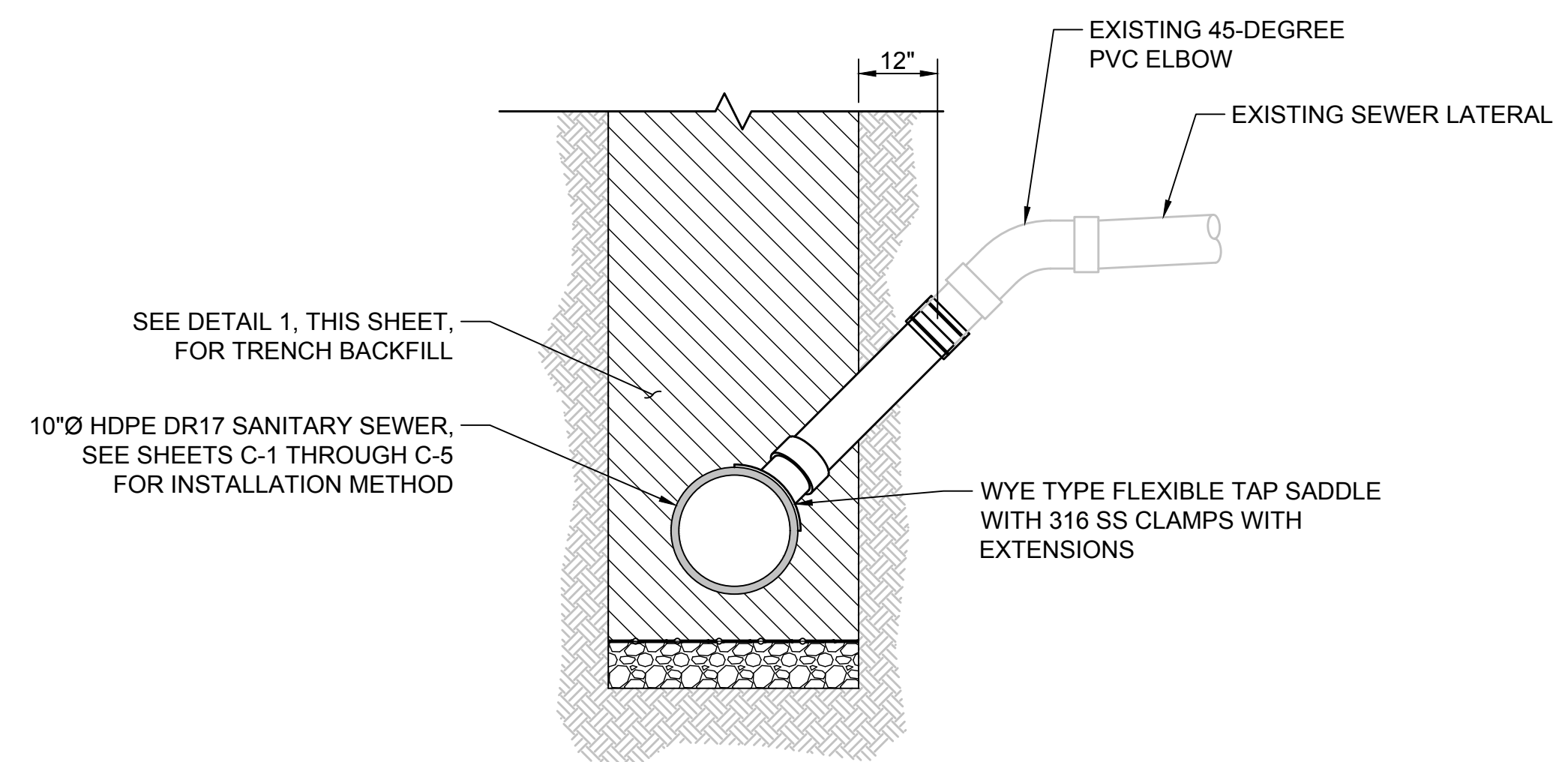
SHEET NUMBER
7 OF 8



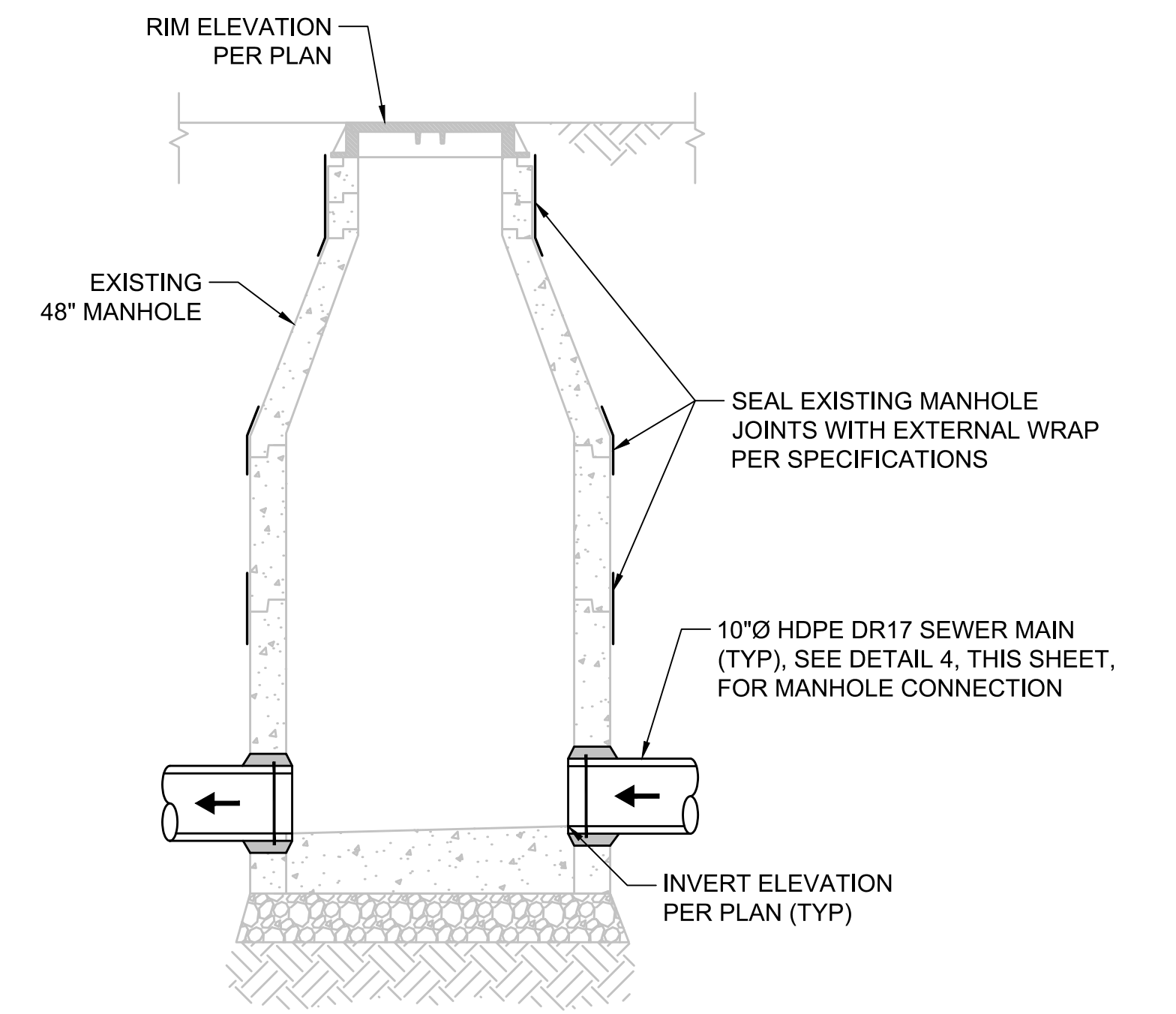
NOTES:

1. FOR STABLE TRENCH SECTION SHALL BE UNDISTURBED SOIL OR COMPACTED TO 95% RC.
2. FOR UNSTABLE TRENCH SECTION SHALL CONSIST OF ROCK BALLAST AND GEOTEXTILE FILTER FABRIC AS SHOWN.

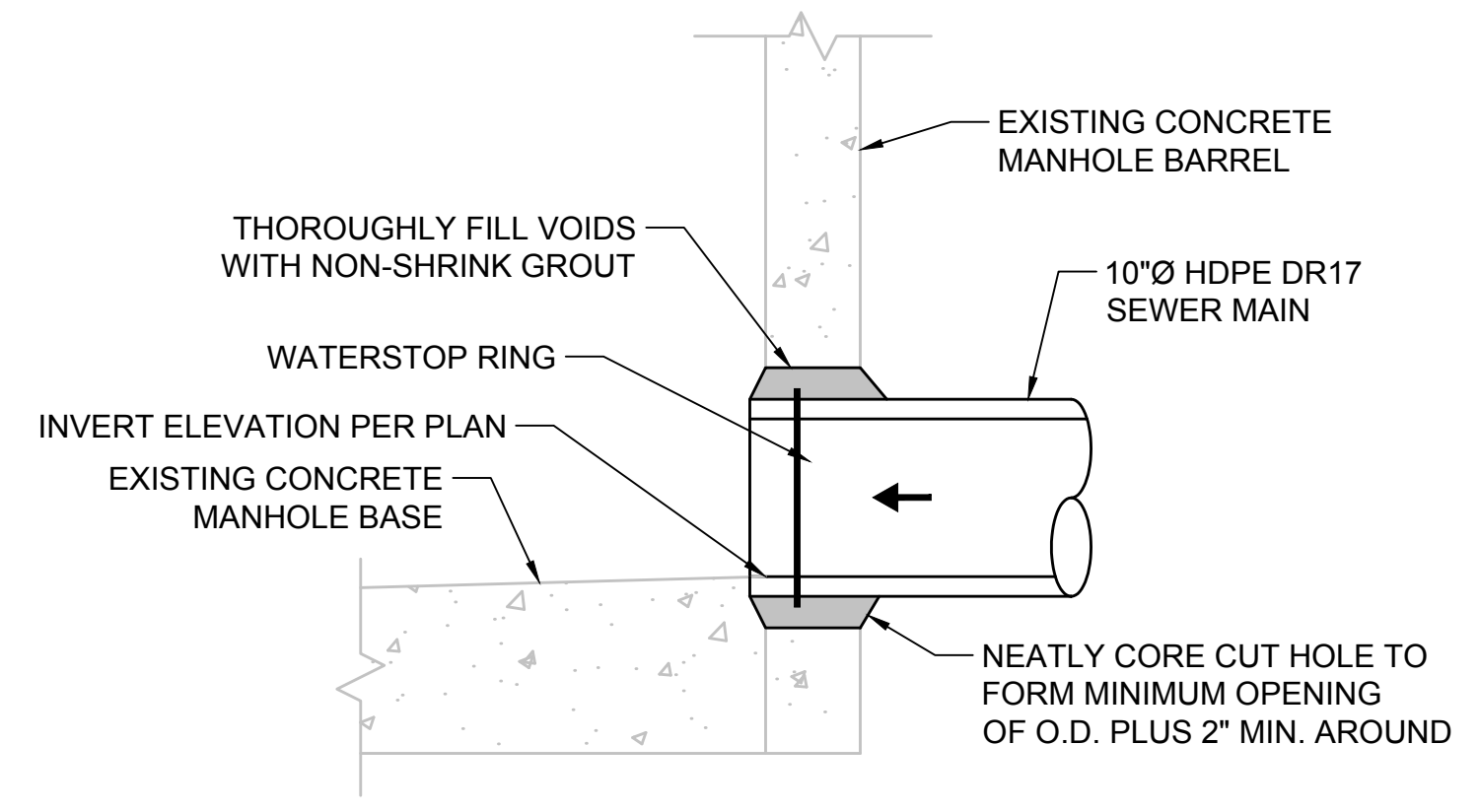
1 TYPICAL TRENCH DETAIL
C-1 THROUGH C-6 NOT TO SCALE



2 LATERAL CONNECTION DETAIL
C-2, C-5 NOT TO SCALE



3 MANHOLE SEALING DETAIL
C-1 THROUGH C-5
1 in. = 2 ft.



4 MANHOLE CONNECTION DETAIL
C-1 THROUGH C-6
1 in. = 1 ft.

5 BIKE PATH RESTORATION DETAIL
C-5
1 in. = 1 ft.

6 CARMEL VALLEY ROAD RESTORATION DETAIL
C-5
1 in. = 1 ft.

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DRAWN: SPP
CHECKED: JA

PROJECT ENGINEER: NICHOLAS PANOFSKY
R.C.E. 75006 EXP. 12-31-2019



0 1/2 1 2
THIS BAR IS 2 INCHES AT FULL SCALE. IF NOT 2 INCHES, THEN SCALE ACCORDINGLY.
SCALE:
AS NOTED



HATTON CANYON SEWER REPLACEMENT
CARMEL AREA WASTEWATER DISTRICT

SEWER DETAILS

PROJECT NUMBER
CMAWD.170448
DRAWING NUMBER
C-6
SHEET NUMBER
8 OF **8**

Appendix B

Project Specific CalEEMod Report

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Hatton Canyon Sewer Replacement Project Monterey County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	87.00	1000sqft	2.00	87,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.8	Precipitation Freq (Days)	55
Climate Zone	4			Operational Year	2018
Utility Company	Pacific Gas & Electric Company				
CO2 Intensity (lb/MWhr)	641.35	CH4 Intensity (lb/MWhr)	0.029	N2O Intensity (lb/MWhr)	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Section 2. Project Description of the Hatton Canyon Sewer Replacemnet Project IS/MND. Operational year consistant with the project specifications.

Land Use - See Section 3. Land Ase of IS/MND. The project consist of the replacement of 5,600 linear feet of sewer main, including six sewer lateral connections, the improvement of 20 manholes, and the addition of 1 new manhole.

Construction Phase - Project Schedule provided by MNS Engineers and CAWD.

Off-road Equipment - Based on applicant provided project equiptment assumptions. Cranes, forklifts and welders are not part of construction. Pumps will be used for pipe-bursting.

Off-road Equipment -

Off-road Equipment - Based on applicant provided construction assumptions.

Off-road Equipment - Based on applicant provided construction assumptions.

Grading - Based on applicant provided construction assumptions.

Trips and VMT - Based on applicant provided construction assumptions.

On-road Fugitive Dust - Defalt CalEEMod values.

Vehicle Trips - Defalt CalEEMod values.

Vehicle Emission Factors - Defalt CalEEMod values.

Vehicle Emission Factors - Defalt CalEEMod values.

Vehicle Emission Factors - Defalt CalEEMod values.

Road Dust - Defalt CalEEMod values.

Consumer Products - No/negligable VOC emissions from consumer products.

Area Coating -

Landscape Equipment - The proposed project does not include any landscaping.

Energy Use - No additional energy will be used as part of the proposed project, as it is the replacemnet of an existing sewer main. Energy use of the exisitng main has been accounted for in previous analysis.

Water And Wastewater - The proposed project will not use any water or wastewater services during operation. The project is the replacement of an existing sewer main.

Solid Waste - Operation of the proposed project will not generate waste that has not been accounted for in previous analysis. The proposed project is the replacement of an existing sewer main.

Construction Off-road Equipment Mitigation -

Water Mitigation -

Table Name	Column Name	Default Value	New Value
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	200.00	41.00
tblConstructionPhase	PhaseEndDate	11/9/2018	11/8/2018
tblConstructionPhase	PhaseStartDate	9/14/2018	9/13/2018
tblConsumerProducts	ROG_EF	2.14E-05	1E-09
tblEnergyUse	LightingElect	3.52	0.00
tblEnergyUse	NT24E	3.70	0.00
tblEnergyUse	NT24NG	6.67	0.00
tblEnergyUse	T24E	1.81	0.00
tblEnergyUse	T24NG	20.74	0.00
tblGrading	AcresOfGrading	7.50	1.00
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.37
tblOffRoadEquipment	OffRoadEquipmentType		Pumps
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	OffRoadEquipmentType		Tractors/Loaders/Backhoes
tblOffRoadEquipment	UsageHours	8.00	0.00
tblOffRoadEquipment	UsageHours	7.00	0.00
tblOffRoadEquipment	UsageHours	6.00	3.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblProjectCharacteristics	OperationalYear	2014	2018
tblSolidWaste	SolidWasteGenerationRate	107.88	0.00
tblTripsAndVMT	VendorTripNumber	14.00	40.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	37.00	12.00
tblTripsAndVMT	WorkerTripNumber	3.00	12.00

tblTripsAndVMT	WorkerTripNumber	3.00	12.00
tblWater	IndoorWaterUseRate	20,118,750.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.2396	24.6507	20.2237	0.0291	0.4604	1.1813	1.4919	0.1271	1.0868	1.1358	0.0000	2,758.9955	2,758.9955	0.7531	0.0000	2,774.8110
Total	2.2396	24.6507	20.2237	0.0291	0.4604	1.1813	1.4919	0.1271	1.0868	1.1358	0.0000	2,758.9955	2,758.9955	0.7531	0.0000	2,774.8110

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2018	2.2396	24.6507	20.2237	0.0291	0.4604	1.1813	1.3753	0.1271	1.0868	1.1232	0.0000	2,758.9955	2,758.9955	0.7531	0.0000	2,774.8110
Total	2.2396	24.6507	20.2237	0.0291	0.4604	1.1813	1.3753	0.1271	1.0868	1.1232	0.0000	2,758.9955	2,758.9955	0.7531	0.0000	2,774.8110

Project duration will be approximately 89 days, as summarized on page 7 of this report. Total emissions of CO2e generated during project construction would be approximately 246,958 lbs/day. This is equivalent to a one-time emission of 112 metric tons.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	7.82	0.00	0.00	1.11	0.00	0.00	0.00	0.00	0.00	0.00

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.5000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6609	6.9595	32.2490	0.0561	3.7524	0.0811	3.8334	1.0027	0.0747	1.0774		4,627.5505	4,627.5505	0.2338		4,632.4593
Total	2.6618	6.9596	32.2580	0.0561	3.7524	0.0811	3.8335	1.0027	0.0747	1.0774		4,627.5696	4,627.5696	0.2338	0.0000	4,632.4794

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	9.5000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.6609	6.9595	32.2490	0.0561	3.7524	0.0811	3.8334	1.0027	0.0747	1.0774		4,627.5505	4,627.5505	0.2338		4,632.4593
Total	2.6618	6.9596	32.2580	0.0561	3.7524	0.0811	3.8335	1.0027	0.0747	1.0774		4,627.5696	4,627.5696	0.2338	0.0000	4,632.4794

4,632 lbs/day is equivalent to 767 metric tons a year.

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Site Preparation	Site Preparation	8/1/2018	8/7/2018	5	5	
2	Trenching	Trenching	8/8/2018	9/13/2018	5	27	
3	Pipe-Bursting	Building Construction	9/13/2018	11/8/2018	5	41	
4	Backfilling	Trenching	11/9/2018	11/30/2018	5	16	

Acres of Grading (Site Preparation Phase): 1

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Pipe-Bursting	Cranes	1	0.00	226	0.29
Pipe-Bursting	Forklifts	2	0.00	89	0.20
Pipe-Bursting	Generator Sets	1	8.00	84	0.74
Pipe-Bursting	Tractors/Loaders/Backhoes	1	3.00	97	0.37
Pipe-Bursting	Welders	3	0.00	46	0.45
Pipe-Bursting	Pumps	1	8.00	84	0.74
Site Preparation	Graders	1	8.00	174	0.41
Trenching	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Backfilling	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Site Preparation	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Site Preparation	Scrapers	1	8.00	361	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Pipe-Bursting	9	12.00	40.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	3	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Trenching	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Backfilling	1	12.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Replace Ground Cover

Water Exposed Area

Clean Paved Roads

3.2 Site Preparation - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2121	0.0000	0.2121	0.0229	0.0000	0.0229			0.0000			0.0000
Off-Road	2.1932	24.5707	15.3552	0.0238		1.1803	1.1803		1.0859	1.0859		2,399.3596	2,399.3596	0.7470		2,415.0456
Total	2.1932	24.5707	15.3552	0.0238	0.2121	1.1803	1.3924	0.0229	1.0859	1.1088		2,399.3596	2,399.3596	0.7470		2,415.0456

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050

3.2 Site Preparation - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0955	0.0000	0.0955	0.0103	0.0000	0.0103			0.0000			0.0000
Off-Road	2.1932	24.5707	15.3552	0.0238		1.1803	1.1803		1.0859	1.0859	0.0000	2,399.3596	2,399.3596	0.7470		2,415.0456
Total	2.1932	24.5707	15.3552	0.0238	0.0955	1.1803	1.2758	0.0103	1.0859	1.0962	0.0000	2,399.3596	2,399.3596	0.7470		2,415.0456

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050

3.3 Trenching - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707		311.5080	311.5080	0.0970		313.5445
Total	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707		311.5080	311.5080	0.0970		313.5445

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050

3.3 Trenching - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707	0.0000	311.5080	311.5080	0.0970		313.5445
Total	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707	0.0000	311.5080	311.5080	0.0970		313.5445

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050

3.4 Pipe-Bursting - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1369	9.2743	8.4288	0.0143		0.6082	0.6082		0.6026	0.6026		1,363.3601	1,363.3601	0.1286		1,366.0608
Total	1.1369	9.2743	8.4288	0.0143		0.6082	0.6082		0.6026	0.6026		1,363.3601	1,363.3601	0.1286		1,366.0608

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5378	3.3262	8.1249	9.3100e-003	0.2633	0.0505	0.3138	0.0748	0.0465	0.1213		897.7764	897.7764	7.1100e-003		897.9256
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.5842	3.4062	8.7963	0.0105	0.3619	0.0515	0.4133	0.1010	0.0474	0.1483		990.9519	990.9519	0.0133		991.2307

3.4 Pipe-Bursting - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1369	9.2743	8.4288	0.0143		0.6082	0.6082		0.6026	0.6026	0.0000	1,363.3601	1,363.3601	0.1286		1,366.0608
Total	1.1369	9.2743	8.4288	0.0143		0.6082	0.6082		0.6026	0.6026	0.0000	1,363.3601	1,363.3601	0.1286		1,366.0608

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.5378	3.3262	8.1249	9.3100e-003	0.2633	0.0505	0.3138	0.0748	0.0465	0.1213		897.7764	897.7764	7.1100e-003		897.9256
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.5842	3.4062	8.7963	0.0105	0.3619	0.0515	0.4133	0.1010	0.0474	0.1483		990.9519	990.9519	0.0133		991.2307

3.5 Backfilling - 2018

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707		311.5080	311.5080	0.0970		313.5445
Total	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707		311.5080	311.5080	0.0970		313.5445

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050

3.5 Backfilling - 2018

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707	0.0000	311.5080	311.5080	0.0970		313.5445
Total	0.2650	2.6191	2.3272	3.0900e-003		0.1856	0.1856		0.1707	0.1707	0.0000	311.5080	311.5080	0.0970		313.5445

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050
Total	0.0464	0.0800	0.6714	1.2000e-003	0.0986	9.3000e-004	0.0995	0.0262	8.6000e-004	0.0270		93.1755	93.1755	6.1700e-003		93.3050

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6609	6.9595	32.2490	0.0561	3.7524	0.0811	3.8334	1.0027	0.0747	1.0774		4,627.5505	4,627.5505	0.2338		4,632.4593
Unmitigated	2.6609	6.9595	32.2490	0.0561	3.7524	0.0811	3.8334	1.0027	0.0747	1.0774		4,627.5505	4,627.5505	0.2338		4,632.4593

4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Light Industry	606.39	114.84	59.16	1,337,115	1,337,115
Total	606.39	114.84	59.16	1,337,115	1,337,115

4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Light Industry	9.50	7.30	7.30	59.00	28.00	13.00	92	5	3

LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
0.466367	0.039941	0.201694	0.176131	0.050793	0.007244	0.019307	0.021320	0.004510	0.001931	0.007565	0.000935	0.002260

5.0 Energy Detail

4.4 Fleet Mix

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Light Industry	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	9.5000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201
Unmitigated	9.5000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.6000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201
Total	9.5000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	9.0000e-005					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	8.6000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201
Total	9.5000e-004	8.0000e-005	9.0100e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005		0.0190	0.0190	5.0000e-005		0.0201

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type
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10.0 Vegetation

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Appendix C

Hatton Canyon Sewer Replacement Project Biological Resources Report

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HATTON CANYON SEWER MAIN REPLACEMENT PROJECT



BIOLOGICAL RESOURCES REPORT

APRIL 2018

Prepared for:



MNS Engineers, Inc.
811 El Capitan Way, Suite 130
San Luis Obispo, CA 93401

Prepared by:



Denise Duffy & Associates, Inc
Contact: Josh Harwayne
947 Cass Street, Suite 5
Monterey, CA 93940

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TABLE OF CONTENTS

INTRODUCTION 1
 Summary of Results 1
METHODS 5
 Personnel and Survey Dates 5
 Data Sources 7
 Botany 7
 Wildlife 8
 Special-Status Species 8
 Sensitive Habitats 9
 Regulatory Setting 9
 Federal Regulations 9
 State Regulations 11
 Local Regulations 13
RESULTS 14
 Vegetation Types 15
 Monterey Pine Forest 15
 Poison Oak Scrub 19
 Riparian 19
 Ruderal/Disturbed 20
 Developed 21
 Sensitive Habitats 21
 Monterey Pine Forest 21
 Riparian 21
 Wetlands and Waters of the U.S. 21
 Special-Status Species 24
 Special-Status Wildlife Species 25
 Special-Status Plant Species 29
IMPACTS AND MITIGATION 35
REFERENCES 36

APPENDIX A: SPECIAL-STATUS SPECIES TABLE

APPENDIX B: CNDDDB OCCURRENCE REPORT

APPENDIX C: IPaC RESOURCES LIST FOR THE EVALUATION AREA

APPENDIX D: DETAILED MAPS OF BIOLOGICAL RESOURCES AROUND MANHOLES AND PROPOSED STAGING AREAS

APPENDIX E: WETLAND DELIEANTION REPORT

FIGURES

Figure 1. Site Vicinity..... 2
Figure 2. Site Location..... 3
Figure 3. Vegetation Types..... 16
Figure 4. Wetland Areas 21

TABLES

Table 1: Historic Surveys Completed in Evaluation Area 5
Table 2: Acreage of Potentially Jurisdictional Wetlands and Other Waters in the Evaluation Area 25

INTRODUCTION

Denise Duffy & Associates, Inc. (DD&A) was contracted by the Carmel Area Wastewater District (CAWD) to prepare a Biological Resources Report for the Hatton Canyon Sewer Main Replacement Project (project), located within the Hatton Canyon State Park property, near the intersection of Highway 1 and Carmel Valley Road in the Camel area (**Figure 1**). The sewer main replacement would begin at upstream manhole O803, south of the parcels at the end of Edgefield Place, and end at downstream manhole R823 at the crossing with Carmel Valley Road (**Figure 2**). The existing 8-inch VCP sewer main will be replaced with a 10-inch HDPE sewer main. The method of replacement will include a combination of pipe-bursting and open trench pipe replacement. The project would also include wrapping existing manholes and potentially adding grade rings to limit infiltration and inflow, and optional maintenance roadway improvements. A defined project impact area has not been established at this time, and therefore, this report describes the biological resources within an evaluation area, which includes all areas that could potentially be impacted by the project, including access and staging locations.

The analysis presented in this report describes the existing biological resources within the evaluation area, including identification of any special-status species and sensitive habitats known to occur or with the potential to occur within the evaluation area. The report also generally looks at what types of impacts could occur as a result of the project, and provides generalized recommended avoidance, minimization, and mitigation measures. In addition, the report includes an overview of applicable federal, state, and local regulation, regulatory and responsible agencies with jurisdiction over sensitive resources within the evaluation area, and the relevant permits that may be required.

Summary of Results

Four vegetation types were observed within the evaluation area: Monterey pine forest, riparian, poison oak scrub, and ruderal. Additionally, a small portion of the evaluation area is developed. The floristic alliance occurring within the Monterey pine forest and riparian habitats are listed as sensitive on the California Department of Fish and Wildlife's (CDFWs) *List Vegetation Alliances and Associations* (CDFW, 2010). Portions of the riparian area may be federal wetlands under the jurisdiction of the U.S. Army Corps of Engineers (ACOE). Additionally, several drainages are present within the evaluation area, which may be jurisdictional other waters of the U.S., regulated by the ACOE, and may also be regulated under the California Regional Water Quality Control Board's (RWQCB) jurisdiction.

Several special-status species are known or have the potential to occur within or adjacent to the evaluation area based on presence of appropriate habitat and documented occurrences within the vicinity. All other species evaluated are assumed "unlikely to occur" or were determined "not present" within the survey area for the species-specific reasons presented in **Appendix A**.



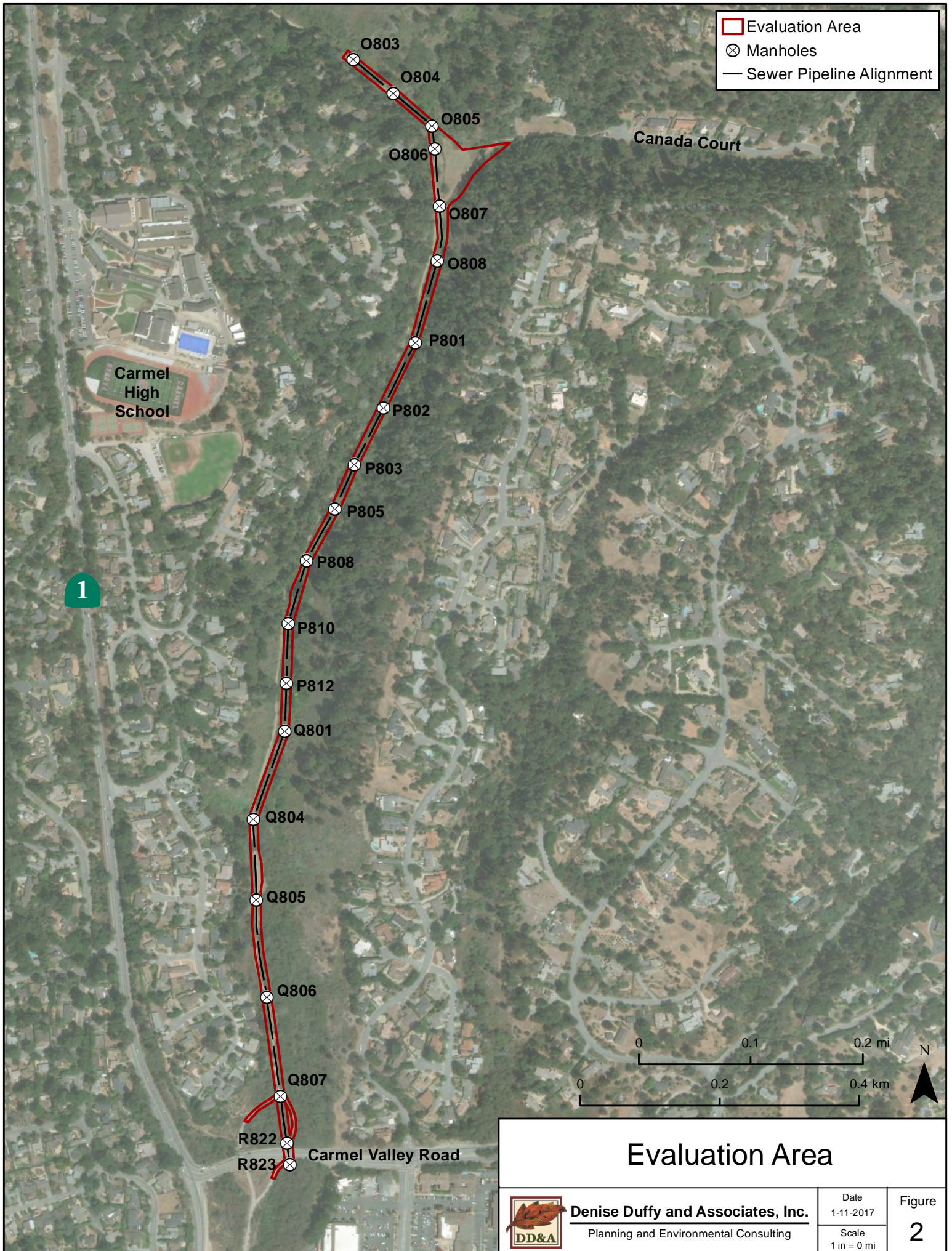
Project Vicinity




Denise Duffy and Associates, Inc.
 Planning and Environmental Consulting

Date
 1-11-2017
 Scale
 1 in = 2 mi

Figure
1



<h2>Evaluation Area</h2>		Figure 2
 Denise Duffy and Associates, Inc. Planning and Environmental Consulting	Date 1-11-2017 Scale 1 in = 0 mi	

The following special-status wildlife species are known, or have a moderate to high potential to occur within or adjacent to the evaluation area:

- Townsend’s big-eared bat (*Corynorhinus townsendii*) – CSC¹,
- Hoary bat (*Lasiurus cinereus*) – CNDDDB,
- Monterey dusky-footed woodrat (*Neotoma macrotis luciana*) – CSC,
- Northern California legless lizard (*Anniella pulchra*) – CSC,
- California red-legged frog (CRLF, *Rana draytonii*) – FT/CSC,
- Coast Range newt (*Taricha torosa*) – CSC,
- Nesting raptors and other protected avian species, including, but not limited to:
 - White-tailed kite (*Elanus leucurus*) – CFP, and
- Obscure bumble bee (*Bombus caliginosus*) – CNDDDB,
- Western bumble bee (*Bombus occidentalis*) – CNDDDB.

One special-status plant species, Monterey pine (*Pinus radiata*, 1B), is known to occur within the evaluation area. No other special-status plant species were identified within the evaluation area during previous surveys conducted within Hatton Canyon between 1984 and 2008. However, suitable habitat is present for several species and additional focused botanical survey are necessary to determine their presence/absence within the evaluation area. Suitable habitat is present within the evaluation area for the following species:

- Hickman’s onion (*Allium hickmanii*) – 1B,
- Jolon clarkia (*Clarkia jolonensis*) – 1B,
- San Francisco collinsia (*Collinsia multicolor*) – 1B,
- Seaside bird’s-beak (*Cordylanthus rigidus* ssp. *littoralis*) – SE/1B,
- Hospital Canyon larkspur (*Delphinium californicum* ssp. *interius*) – 1B,
- Hutchinson’s larkspur (*Delphinium hutchinsoniae*) – 1B,
- Marsh microseris (*Microseris paludosa*) – 1B,
- Yadon’s piperia (*Piperia yadonii*) – FE/1B,
- Hickman’s cinquefoil (*Potentilla hickmanii*) – FE/SE/1B,
- Pine rose (*Rosa pinetorum*) – 1B,
- Santa Cruz microseris (*Stebbinsoseris decipiens*) – 1B,
- Pacific Grove clover (*Trifolium polyodon*) – 1B, and
- Monterey clover (*Trifolium trichocalyx*) – FE/SE/1B.

The following permits are may be required depending on the defined project impact area and the construction methods used:

- Section 7 or 10 Incidental Take Permit for CRLF from the U.S. Fish and Wildlife Service (Service);
- CWA Section 404 and 401 Permits from the ACOE and Regional Water Quality RWQCB; and
- Lake and Streambed Alteration Agreement from the CDFW.

¹Status Definitions – FE – Federally Endangered, FT: Federally Threatened; SE: State Endangered; CSC: California Species of Concern; CFP: California Fully Protected Species; WL: 1B: California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) 1B Species (rare, threatened, or endangered in California and elsewhere); CNDDDB: animal species on the California Natural Diversity Data Base (CNDDDB) “Special Animals” list that are not assigned any of the other status designations but the CDFW considers to be those of greatest conservation need, regardless of their legal or protection status.

METHODS

Personnel and Survey Dates

Multiple projects have been proposed for Hatton Canyon over the last three decades. As a result, the California Department of Transportation (Caltrans) and expert consultants have surveyed the area extensively (**Table 1**). Biological surveys were conducted by Caltrans staff in coordination with previous plans to realign Highway 1 through Hatton Canyon. These surveys resulted in the preparation of a letter of completion of informal consultation regarding steelhead, issued by National Oceanic and Atmospheric Administration - National Marine Fisheries Service (NMFS) on October 8, 1998, and a Biological Opinion for CRLF issued by Service on January 21, 1999.

Additional biological surveys were conducted in Hatton Canyon by DD&A between May 2007 and April 2008 to review and confirm previous surveys, identify any special-status plant or wildlife species, and characterize vegetation types present within the Carmel Hill and River Bicycle Trail Project (Carmel Hill Trail Project) site and vicinity. A wetland delineation was also conducted for the Carmel Hill Trail Project between December 2007 and January 2008 to determine the presence of wetlands and other waters within and adjacent to the project site and to determine if the resources were jurisdictional under the ACOE. Additionally, a survey for Smith's blue butterfly was conducted by Caltrans biologist, Tom Edell, on July 31, 2008. As a result, the evaluation area has been thoroughly surveyed and evaluated in regard to the presence of special-status species and sensitive habitats.

Table 1: Historic Surveys Completed in Evaluation Area

Survey Type	Surveyor	Date
General Resource Surveys	Gary Ruggerone (Caltrans) Craig Martz (Caltrans) Stan Ford (Caltrans)	1984
Smith's Blue Butterfly Survey	Dick Arnold (Entomological Consultant)	August 1985
Wetland Delineation	Larry VanZant (ACOE) Joyce Minjeras (ACOE)	March 1987
Wetland Delineation "spot check"	Gary Ruggerone Chuck Cesena	May 1994
Wetland Delineation	Gary Ruggerone Chuck Cesena Greg Smith (Caltrans) Dana York (Caltrans)	June/October 1996 & February/March 1997
Addendum Wetland Delineation	Gary Ruggerone Chuck Cesena	May 1998
Grassland Surveys	Gary Ruggerone Craig Martz	April 1988

Survey Type	Surveyor	Date
Grassland Surveys	Gary Ruggerone Chuck Cesena Greg Smith Lisa Schicker (Caltrans) Ellie Wagner (Caltrans) John Luchetta (Caltrans) Wayne Mills (Caltrans) Bob Pavlik (Caltrans)	April/May 1988-1995
Grassland Surveys	Gary Ruggerone Lisa Schicker Wayne Mills Tom Edell (Caltrans)	1997/1998
CRLF Surveys	Habitat Restoration Group	June 1995
CRLF Day & Night Surveys	Gary Ruggerone Chuck Cesena Greg Smith	June 1996
CRLF Day Surveys	Gary Ruggerone Chuck Cesena	June/July 1996
CRLF Night Surveys	Gary Ruggerone Chuck Cesena Lisa Schicker	February 1997
CRLF Day & Night Surveys	Gary Ruggerone Chuck Cesena	April-June 1997
Steelhead Literature Review	Gary Ruggerone	August 1998
Yadon's Piperia survey	Gary Ruggerone Tom Edell David Hacker (Caltrans)	July 1998
Botanical/Rare Plant Survey	Jeff Norman (Botanical Consultant)	May 2007
Wetland Delineation	Josh Harwayne (DD&A) Matt Johnson (DD&A) Jami Colley (DD&A)	December 2007 & January 2008
Site Assessment	Jami Colley	April 2008
Smith's Blue Butterfly Survey	Tom Edell	July 2008

Biological surveys were conducted by DD&A on January 2 and 5, 2018 to review and confirm previous surveys and identify any changed circumstances or new resources, including vegetation characterization, presence or potential presence of special-status plant and wildlife species, and potentially jurisdictional wetlands and waters. Survey methods included walking the evaluation area using aerial maps, maps of previously mapped resources, and GPS to confirm or update existing mapped resources and identify any new biological resources within the evaluation area. Focused botanical surveys were conducted only for perennial special-status plant species that can be identified outside of their blooming period; an analysis of all other special-status plant species known to occur within the vicinity was conducted to determine the potential for their presence within the evaluation area based on presence of suitable habitats, soils, elevation range, and currently known geographic range. Current reference materials were reviewed prior to

conducting the field surveys, including CDFW's CNDDDB occurrence reports (**Appendix B**) and Special Animals list (CDFW, 2017a and 2017b), the Service's IPaC Resources List for the evaluation area (**Appendix C**; Service, 2017), and aerial photographs. Additionally, the reports prepared by DD&A in 2008 and 2009 for Carmel Hill Trail Project (DD&A, 2008a, 2008b, and 2009) were reviewed.

Data collected during the surveys were used to assess the environmental conditions of the evaluation area and its surroundings, evaluate environmental constraints at the evaluation area and within the local vicinity, and provide a basis for recommendations to minimize and avoid impacts. Updated maps were prepared for the evaluation area using ArcGIS software and Google Earth.

Data Sources

The primary literature and data sources reviewed in order to determine the occurrence or potential for occurrence of special-status species within and adjacent to the evaluation area are as follows: current agency status information from the Service and CDFW for species listed, proposed for listing, or candidates for listing as Threatened or Endangered under ESA or CESA, and those considered CDFW "species of special concern" (Service, 2017 and CDFW, 2017b); the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2015), CNDDDB occurrence reports from the United States Geological Survey (USGS) Monterey quadrangle and the four surrounding USGS quadrangles (Marina, Seaside, Soberanes Point, and Mt. Carmel) (CDFW, 2017a), and various reports prepared for the Carmel Hill and River Bicycle Trail Project (DD&A, 2008a, 2008b, and 2009). From these resources, a list of special-status plant and wildlife species known or with the potential to occur in the vicinity of the proposed project was created (**Appendix A**). The list presents these species along with their legal status, habitat requirements, and a brief statement of the likelihood to occur.

Botany

Vegetation types identified in *A Manual of California Vegetation* (Sawyer et al., 2009) were utilized to determine if vegetation types identified as sensitive on CDFW's *List of Vegetation Alliances and Associations* (CDFW, 2010) are present within the evaluation area. Scientific nomenclature for plant species identified within this document follows *The Jepson Manual: Vascular Plants of California, Edition 2* (Baldwin et al., 2012); common names follow *The Plants of Monterey County an Illustrated Field Key* (Matthews and Mitchell, 2015). The California Invasive Plant Council (Cal-IPC) Inventory (Cal-IPC, 2006) was reviewed to determine if any invasive plant species are present within the evaluation area. Additional literature reviewed includes: *Coastal California's Living Legacy The Monterey Pine Forest* (The Monterey Pine Forest Watch, 2011) and *California's Botanical Landscape, A Pictorial View of the State's Vegetation* (Barbour et. al., 2016).

The evaluation area was surveyed for botanical resources following the applicable guidelines outlined in: *Guidelines for Conducting and Reporting Botanical Inventories for Federally listed, Proposed and Candidate Plants* (Service, 2000), *Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities* (CDFW, 2009), and *California Native Plant Society (CNPS) Botanical Survey Guidelines* (CNPS, 2001). Habitats within the evaluation area were characterized during field surveys. Data was recorded on physiognomy of the vegetation and on dominant and characteristic species, as well as basic ecological factors, including topography, slope, aspect, soil type, hydrologic

regime, and evident disturbance. Habitat types were mapped using a combination of GIS and aerial photography and digitized using ArcGIS software.

Wildlife

The following literature and data sources were reviewed: Monterey Birds (Roberson, 2002); CDFW reports on special-status wildlife (Remsen, 1978; Williams, 1986; Jennings and Hayes, 1994; Thelander, 1994); California Wildlife Habitat Relationships Program species-habitat models (CDFW, 2008; Zeiner et al., 1988; and Zeiner et al., 1990); Bugguide.net (Iowa State University, 2017), *An Identification Guide: Bumble Bees of North America* (Williams et. al., 2014); and general wildlife references (Stebbins, 1985).

Special-Status Species

Special-status species are those plants and animals that have been formally listed or proposed for listing as Endangered or Threatened, or are Candidates for such listing under ESA or CESA. Listed species are afforded legal protection under the ESA and CESA. Species that meet the definition of Rare or Endangered under the CEQA Section 15380 are also considered special-status species. Animals on the CDFW’s list of “species of special concern” (most of which are species whose breeding populations in California may face extirpation if current population trends continue) meet this definition and are typically provided management consideration through the CEQA process, although they are not legally protected under the ESA or CESA. Additionally, the CDFW also includes some animal species that are not assigned any of the other status designations in the CNDDDB “Special Animals” list. The CDFW considers the taxa on this list to be those of greatest conservation need, regardless of their legal or protection status.

Plants listed as rare under the California Native Plant Protection Act (CNPPA) or included in CNPS CRPR (formerly known as “CNPS Lists”) 1A, 1B, 2A, and 2B, are also treated as special-status species as they meet the definitions of Sections 2062 and 2067 of the CESA and in accordance with CEQA Guidelines Section 15380.² In general, CDFW requires that plant species on CRPR 1A (Plants presumed extirpated in California and Either Rare or Extinct Elsewhere), CRPR 1B (Plants rare, threatened, or endangered in California and elsewhere), CRPR 2A (Plants presumed extirpated in California, but more common elsewhere); and CRPR 2B (Plants rare, threatened, or endangered in California, but more common elsewhere) of the CNPS *Inventory of Rare and Endangered Vascular Plants of California* (CNPS, 2015) be fully considered during the preparation of environmental documents relating to CEQA.³ In addition, species of vascular plants, bryophytes, and lichens listed as having special-status by CDFW are considered special-status plant species (CDFW, 2017a).

Raptors (e.g., eagles, hawks, and owls) and their nests are protected under both federal and state laws and regulations. The MBTA and California Fish and Game Code Section 3513 prohibit killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Birds of prey are protected in California under Fish and Game Code Section 3503.5. Section 3503.5 states

² CNPS initially created five CRPR in an effort to categorize degrees of concern; however, in order to better define and categorize rarity in California’s flora, the CNPS Rare Plant Program and Rare Plant Program Committee have developed the new CRPR 2A and CRPR 2B.

³ Species on CRPR 3 (Plants about which we need more information - a review list) and CRPR 4 (Plants of limited distribution - a watch list) may, but generally do not, meet the definitions of Sections 2062 and 2067 of CESA, and are not typically considered in environmental documents relating to CEQA.

that it is “unlawful to take, possess, or destroy the nest or eggs of any such bird except otherwise provided by this code or any regulation adopted pursuant thereto.” In addition, fully protected species under the Fish and Game Code Section 3511 (birds), Section 4700 (mammals), Section 5515 (fish), and Section 5050 (reptiles and amphibians) are also considered special-status animal species. Species with no formal special-status designation but thought by experts to be rare or in serious decline are also considered special-status animal species (CDFW, 2017a).

Sensitive Habitats

Sensitive habitats include riparian corridors, wetlands, habitats for legally protected species, areas of high biological diversity, areas supporting rare or special-status wildlife habitat, and unusual or regionally restricted habitat types. Vegetation types considered sensitive include those identified as sensitive on the CDFW’s *List of Vegetation Alliances and Associations* (i.e., those habitats that are rare or endangered within the borders of California) (CDFW, 2010), and those that are occupied by species listed under the federal Endangered Species Act (ESA) or are critical habitat in accordance with ESA. Specific habitats may also be identified as sensitive in city or county general plans or ordinances. Sensitive habitats are regulated under federal regulations (such as the Clean Water Act [CWA] and Executive Order 11990 – Protection of Wetlands), state regulations (such as CEQA and the CDFW Streambed Alteration Program), or local ordinances or policies (such as city or county tree ordinances and general plan policies).

Regulatory Setting

The following regulatory discussion describes the major laws applicable to the project.

Federal Regulations

Federal Endangered Species Act

Provisions of the ESA of 1973 (16 USC 1532 et seq., as amended) protect federally Listed Threatened or Endangered species and their habitats from unlawful take. Listed species include those for which proposed and final rules have been published in the Federal Register. The ESA is administered by the Service or NMFS. In general, NMFS is responsible for the protection of ESA-Listed marine species and anadromous fish, whereas other listed species are under Service jurisdiction.

Section 9 of ESA prohibits the take of any fish or wildlife species listed under ESA as endangered or threatened. Take, as defined by ESA, is “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct.” Harm is defined as “any act that kills or injures the fish or wildlife...including significant habitat modification or degradation that significantly impairs essential behavioral patterns of fish or wildlife.” In addition, Section 9 prohibits removing, digging up, and maliciously damaging or destroying federally listed plants on sites under federal jurisdiction. Section 9 does not prohibit take of federally listed plants on sites not under federal jurisdiction. If there is the potential for incidental take of a federally listed fish or wildlife species, take of listed species can be authorized through either the Section 7 consultation process for federal actions or a Section 10 incidental take permit process for non-federal actions. Federal agency actions include activities that are on federal land, conducted by a federal agency, funded by a federal agency, or authorized by a federal agency (including issuance of federal permits).

Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) of 1918 prohibits killing, possessing, or trading migratory birds except in accordance with regulation prescribed by the Secretary of the Interior. Most actions that result in taking or in permanent or temporary possession of a protected species constitute violations of the MBTA. The Service is responsible for overseeing compliance with the MBTA and implements Conventions (treaties) between the United States and four countries for the protection of migratory birds – Canada, Mexico, Japan, and Russia. The Service maintains a list of migratory bird species that are protected under the MBTA, which was updated in 2010 to: 1) correct previous mistakes, such as misspellings or removing species no longer known to occur within the United States; 2) add species, as a result of expanding the geographic scope to include Hawaii and U.S. territories and new evidence of occurrence in the United States or United States territories; and 3) update name changes based on new taxonomy.

The Clean Water Act

The ACOE and Environmental Protection Agency (EPA) regulate discharge of dredged and fill material into “Waters of the United States” (waters of the U.S.) under Section 404 of the CWA. Waters of the U.S. are defined broadly as waters susceptible to use in commerce (including waters subject to tides, interstate waters, and interstate wetlands) and other waters (such as interstate lakes, rivers, streams, mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds) (33 CFR 328.3). Potential wetland areas are identified as “those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils conditions.”

Under Section 401 of the CWA, any applicant receiving a Section 404 permit from the ACOE must also obtain a Section 401 Water Quality Certification from the RWQCB. A Section 401 Water Quality Certification is issued when a project is demonstrated to comply with state water quality standards and other aquatic resource protection requirements.

Executive Order 11990 - Protection of Wetlands

Executive Order 11990 - Protection of Wetlands calls for no net loss of wetlands. For the regulatory process, the ACOE and EPA jointly define wetlands as follows: "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions." Federal agencies are required to implement the following procedures for any federal action that involves wetlands: 1) provide an opportunity for early public involvement; 2) consider alternatives that would avoid wetlands, and if avoidance is not possible, measures to minimize harm to wetlands must be included in the action; 3) prepare a “Wetlands Only Practicable Alternative Finding” for actions that require an Environmental Impact Study.

Executive Order 13112-Invasive Species

Executive Order 13112 - Invasive Species requires the prevention of introduction and spread of invasive species. Invasive species are defined as “alien species whose introduction does or is likely to cause economic or environmental harm or harm to human health.” Each federal agency whose actions may affect the status of invasive species on a project site shall, to the extent practicable and permitted by law, subject

to the availability of appropriations, use relevant programs and authorities to: 1) prevent the introduction of invasive species; 2) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; 3) monitor invasive species populations accurately and reliably; 4) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; 5) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and 6) promote public education on invasive species and the means to address them. A national invasive species management plan was prepared by the National Invasive Species Council and the Invasive Species Advisory Committee (ISAC) that recommends objectives and measures to implement the Executive Order.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) was enacted in 1984. The California Code of Regulations (Title 14, §670.5) lists animal species considered Endangered or Threatened by the State. Section 2090 of CESA requires State agencies to comply with endangered species protection and recovery and to promote conservation of these species. Section 2080 of the Fish and Game Code prohibits "take" of any species that the commission determines to be an Endangered species or a Threatened species. "Take" is defined in Section 86 of the Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." A Section 2081 Incidental Take Permit from the CDFW may be obtained to authorize "take" of any State Listed species.

California Fish and Game Code

Birds: Section 3503 of the Fish and Game Code states that it is "unlawful 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." Section 3503.5 prohibits the killing, possession, or destruction of any birds in the orders Falconiformes or Strigiformes (birds-of-prey). Section 3511 prohibits take or possession of fully protected birds. Section 3513 prohibits the take or possession of any migratory nongame birds designated under the federal MBTA. Section 3800 prohibits take of nongame birds.

Fully Protected Species: The classification of fully protected was the state's initial effort in the 1960's to identify and provide additional protection to those animals that were rare or faced possible extinction. Lists were created for fish (§5515), mammals (§4700), amphibians and reptiles (§5050), and birds (§3511). Most fully protected species have also been listed as threatened or endangered species under the more recent endangered species laws and regulations. Fully protected species may not be taken or possessed at any time and no licenses or permits may be issued for their take except for collecting these species for necessary scientific research and relocation of the bird species for the protection of livestock.

Species of Special Concern: As noted above, the CDFW also maintains a list of animal "species of special concern." Although these species have no legal status, the CDFW recommends considering these species during analysis of project impacts to protect declining populations and avoid the need to list them as Endangered in the future.

Lake or Streambed Alteration: Sections 1600-1607 of the Fish and Game Code require any agency that proposes a project that will substantially divert or obstruct the natural flow of or substantially change the

bed or bank of a river, stream, or lake to notify CDFW before beginning construction. If CDFW determines that the project may substantially and adversely affect fish or wildlife resources, a Lake or Streambed Alteration Agreement will be required. CDFW's jurisdictional limits are usually defined by the tops of the stream or lake banks, or the outer edge of riparian vegetation, whichever is wider.

Native Plant Protection Act

The CNPPA of 1977 directed the CDFW to carry out the legislature's intent to "preserve, protect and enhance rare and Endangered plants in the State." The CNPPA prohibits importing rare and Endangered plants into California, taking rare and Endangered plants, and selling rare and Endangered plants. The CESA and CNPPA authorized the Fish and Game Commission to designate endangered, threatened, and rare species and to regulate the taking of these species (§2050-2098, Fish and Game Code). Plants listed as rare under the CNPPA are not protected under CESA.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act of 1969 (Porter-Cologne) is California's statutory authority for the protection of water quality and applies to surface waters, wetlands, and groundwater, and to both point and nonpoint sources. Under the Porter-Cologne, the State Water Resources Control Board (State Board) has the ultimate authority over State water rights and water quality policy. However, Porter-Cologne also establishes nine RWQCBs to oversee water quality on a day-to-day basis at the local/regional level. The Project Study Area is located within Region 3 – Central Coast RWQCB. Porter-Cologne incorporates many provisions of the federal CWA, such as delegation to the State Board and RWQCBs of the National Pollutant Discharge Elimination System (NPDES) permitting program.

Under Porter-Cologne, the state must adopt water quality policies, plans, and objectives that protect the state's waters for the use and enjoyment of the people. Regional authority for planning, permitting, and enforcement is delegate to the nine RWQCBs. The regional boards are required to formulate and adopt water quality control plans for all areas in the region and establish water quality objectives in the plans. The Porter-Cologne sets forth the obligations of the State Board and RWQCBs to adopt and periodically update water quality control plans (basin plans). The act also requires waste dischargers to notify the RWQCBs of such activities through filing of Reports of Waste Discharge (RWD) and authorizes the State Board and RWQCBs to issue and enforce waste discharge requirements (WDRs), NPDES permits, Section 401 water quality certifications, or other approvals. The RWQCBs also have authority to issue waivers to RWD requirements and WDRs for broad categories of "low threat" discharge activities that have minimal potential for adverse water quality effects, when implemented according to prescribed terms and conditions.

The term "Waters of the State" is defined by Porter-Cologne as "any surface water or groundwater, including saline waters, within the boundaries of the state." The RWQCB protects all waters in its regulatory scope but has special responsibility for wetlands, riparian areas, and headwaters, including isolated wetlands, and waters that many not be regulated by the USACE under Section 404 of the CWA. Waters of the State are regulated by RWQCB under the State Water Quality Certification Program, which regulates discharges of fill and dredged material under Section 401 of the CWA and the Porter-Cologne.

Local Regulations

Habitat Conservation Plans or NCCP

There are no adopted Habitat Conservation Plans (HCP) or Natural Community Conservation Plans (NCCP) associated with the evaluation area.

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RESULTS

Vegetation Types

The survey results include mapping and quantification of the acreage of four vegetation types within the evaluation area (**Figure 3**). A small portion of the evaluation area is also developed (paved). The following is the acreage of each area within the evaluation area:

- Monterey pine forest (0.8 acre),
- Riparian (1.8 acres),
- Poison oak scrub (0.8 acre),
- Ruderal/disturbed (3.1 acres), and
- Developed (0.3 acre).

A brief description of each of these vegetation types can be found below along with the identification of the presence or potential presence of special-status species within each type. A generalized nomenclature for vegetation types is used within this document for ease of reference; however, each vegetation type description also lists the *Manual of California Vegetation* (Sawyer et.al., 2009) vegetation type(s) in order to provide a crosswalk to the *List of Vegetation Alliances and Associations* (CDFW, 2010). **Appendix D** includes detailed maps of vegetation types surrounding each of the manholes within the evaluation area for project planning purposes.

Monterey Pine Forest

- *A Manual of California Vegetation classification*: Monterey Pine Forest (*Pinus radiata* – *Quercus agrifolia*/*Toxicodendron diversilobum* Association)
- *CDFW List of Alliances and Associations*: Sensitive

Monterey pine forest is present on the slopes above the existing trail and pipeline alignment (**Figure 3**). These areas are dominated by Monterey Pine trees (*Pinus radiata*), but also support coast live oak (*Quercus agrifolia*), California coffeeberry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), creeping snowberry (*Symphoricarpos mollis*), and California wood fern (*Dryopteris arguta*). Closed-cone coniferous forest provides habitat for several species, including mule deer (*Odocoileus hemionus*), raccoon (*Procyon lotor*), Monterey dusky-footed woodrat (*Neotoma macrotis luciana*), red-tailed hawk (*Buteo jamaicensis*), scrub jay (*Aphelocoma californica*), chestnut-backed chickadee (*Poecile rufescens*), and American robin (*Turdus migratorius*).

Monterey dusky-footed woodrat nests were observed throughout the Monterey pine forest within the evaluation area and this species is assumed present. Hoary bat and Townsend's big-eared bat may utilize the Monterey pine trees for night roosts, and white-tailed kite and other raptor and migratory bird species may nest within these trees. Additionally, CRLF and coast range newt may utilize the Monterey pine forest habitat within the evaluation area as upland habitat. California legless lizard may also be found within this area where loose sandy soils are present. Monterey pine trees are a special-status plant species and are the dominant species within this vegetation type. No additional special-status plant species were identified within the Monterey pine forest habitat during historic surveys in Hatton Canyon or surveys in 2018; however, suitable habitat is present for several species: Hickman's onion, San Francisco collinsia,

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Evaluation Area

⊗ Manholes

Vegetation Type

- Monterey pine forest
- Poison oak scrub
- Riparian
- Ruderal/Disturbed (Weeds)
- Ruderal/Disturbed (Access Road)
- Developed



Vegetation Map

Denise Duffy and Associates, Inc. Planning and Environmental Consulting	Date 1-11-2018	Figure 3
	Scale 1 in = 0 mi	

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Path: C:\GIS\GIS_Projects\2017-58 CAWD Hatton Canyon Pipeline\Final Products\Vegetation Map 11x17.mxd

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Seaside bird's-beak, Marsh microseris, Yadon's piperia, Pine rose, Santa Cruz microseris, and Monterey clover.

Monterey pine forest habitat is identified as sensitive on the CDFW's *List of Alliances and Associations* (CDFW, 2010). Portions of the Monterey pine forest habitat may also support potentially jurisdictional other waters under the regulation of the ACOE and RWQCB.

Poison Oak Scrub⁴

- *A Manual of California Vegetation classification*: Poison Oak Scrub (*Toxicodendron diversilobum* Shrubland Alliance)
- *CDFW List of Alliances and Associations*: Not sensitive

Poison oak scrub occurs within (mostly undisturbed) open areas of the evaluation area where there is little to no tree cover (**Figure 3**). These areas are co-dominated by poison oak, coyote bush (*Baccharis pilularis*), and California coffeeberry. Other species found in this habitat type include redberry (*Rhamnus crocea*), California sagebrush (*Artemisia californica*), Carmel ceanothus (*Ceanothus griseus* var. *griseus*), fuchsia-flowered gooseberry (*Ribes speciosum*), coast morning-glory (*Calystegia macrostegia* ssp. *cyclostegia*), and sticky-monkey flower (*Mimulus aurantiacus*). Common wildlife that occur within poison oak scrub habitats include California quail (*Callipepla californica*), California towhee (*Pipilo crissalis*), California thrasher (*Toxostoma redivivum*), scrub jay, western fence lizard (*Sceloporus occidentalis*), gopher snake (*Pituophis catenifer*), and brush rabbit (*Sylvilagus bachmani*).

Monterey dusky-footed woodrat nests were observed throughout the poison oak scrub within the evaluation area and this species is assumed present. Additionally, CRLF and coast range newt may utilize the poison oak scrub as upland habitat and California legless lizard may be found where loose sandy soils are present. Migratory bird species may also nest within this vegetation type. No special-status plant species were identified within the poison oak scrub habitat during historic surveys in Hatton Canyon or surveys in 2018; however, suitable habitat is present for several species: Hickman's onion, Jolon clarkia, San Francisco collinsia, Seaside bird's-beak, Hospital Canyon larkspur, Hutchinson's larkspur, Marsh microseris, and Santa Cruz microseris. Portions of the poison oak scrub habitat may also support potentially jurisdictional other waters under the regulation of the ACOE and RWQCB.

Riparian

- *A Manual of California Vegetation classification*: Arroyo Willow Thickets (*Salix lasiolepis* Shrubland Alliance)
- *CDFW List of Alliances and Associations*: Sensitive

Riparian habitats are those plant communities supporting woody vegetation found along rivers, creeks, streams, canyon bottom drainages, and seeps. They can range from a dense thicket of shrubs to a closed canopy of large mature trees. Riparian areas dominate the floor of Hatton Canyon and are supported by the Hatton Canyon stream (**Figure 3**). This area is dominated by Arroyo willow (*Salix lasiolepis*) and, slightly

⁴ Please note that the BA prepared for the Camel Hill Trail Project (DD&A, 2008a) refers to this habitat type as "coastal scrub;" however, the vegetation type name has been updated to "poison oak scrub" to be consistent with the most current classifications for California vegetation types.

less dominate, western red dogwood (*Cornus serica*). Also present are California blackberry (*Rubus ursinus*), box elder (*Acer negundo* var. *californica*), black cottonwood (*Populus trichocarpa*), poison oak, hoary nettle (*Urtica dioica*), mugwort (*Artemisia douglasiana*), and poison hemlock. Riparian areas provide habitat for many wildlife species, particularly birds and herpetofauna. Common species that may be found within the riparian habitat in the site includes Sierran treefrog (*Pseudacris sierra*), Monterey ensatina (*Ensatina eschscholtzii eschscholtzii*), red-winged blackbird (*Agelaius phoeniceus*), and song sparrow (*Melospiza melodia*).

Monterey dusky-footed woodrat nests were observed throughout the riparian habitat within the evaluation area and this species is assumed present. Hoary bat and Townsend's big-eared bat may utilize the large willow and black cottonwood trees for night roosts, and raptors, migratory bird species, and white-tailed kite, may nest within the riparian trees. CRLF and coast range newt may utilize the riparian habitat within the evaluation area as upland habitat. Additionally, California legless lizard may be found within the riparian areas where loose sandy soils are present. No special-status plant species were identified within the riparian habitat during historic surveys in Hatton Canyon or surveys in 2018; however, suitable habitat is present for several species: Hickman's onion, Jolon clarkia, Hickman's cinquefoil, and Monterey clover.

Riparian habitat is identified as sensitive on the CDFW's *List of Alliances and Associations* (CDFW, 2010). Portions of the riparian habitat may also support potentially jurisdictional wetlands and other waters under the regulation of the ACOE and RWQCB.

Ruderal/Disturbed

- *A Manual of California Vegetation classification*: Poison Hemlock and Fennel Patches (*Conium maculatum* - *Foeniculum vulgare* Semi-Natural Herbaceous Stands)
- *CDFW List of Alliances and Associations*: Not sensitive

Ruderal areas are those areas which have been developed and disturbed by human activities (e.g., existing roads or structures) and are devoid of vegetation or dominated by non-native species. Within the evaluation area, this habitat includes gravel and dirt roads, the former staging area for the Carmel Valley Road expansion, and other highly disturbed/maintained areas throughout Hatton Canyon (**Figure 3**). These areas are either mostly devoid of vegetation or are dominated by non-native, "weedy" species such as poison hemlock (*Conium maculatum*) and summer mustard (*Hirschfeldia incana*).

Common wildlife species which do well in urbanized and disturbed areas that may occur within the ruderal habitat include American crow (*Corvus brachyrhynchos*), raccoon, striped skunk (*Mephitis mephitis*), scrub jay, European starling (*Sturnus vulgaris*), western fence lizard, and rock dove (*Columba livia*).

Special-status species that may be found in the ruderal areas includes: California legless lizard, obscure bumble bee, and western bumble bee. Additionally, migratory bird species may forage and nest within the ruderal areas. No special-status plant species were identified within the ruderal areas during historic surveys in Hatton Canyon or surveys in 2018; however, suitable habitat is present for several species: Hickman's onion, Seaside bird's-beak, Marsh microseris, and Pacific Grove clover. Portions of the ruderal habitat may also support potentially jurisdictional other waters under the regulation of the ACOE and RWQCB.

Developed

- *A Manual of California Vegetation classification*: None
- *CDFW List of Alliances and Associations*: None

Developed areas within the evaluation area include Carmel Valley Road and paved portion of the existing trail (**Figure 3**). These areas are completely devoid of vegetation and provide no habitat for plants and wildlife. No special-status wildlife or plant species were observed within the developed areas and none are expected to occur due to lack of suitable habitat.

Sensitive Habitats

Monterey Pine Forest

Monterey pine forest (**Figure 3**) is a sensitive habitat listed on the CDFW *List of Vegetation Alliances and Associations* (CDFW, 2010). **Appendix D** includes detailed maps of Monterey pine forest habitat surrounding each of the manholes within the evaluation area for project planning purposes.

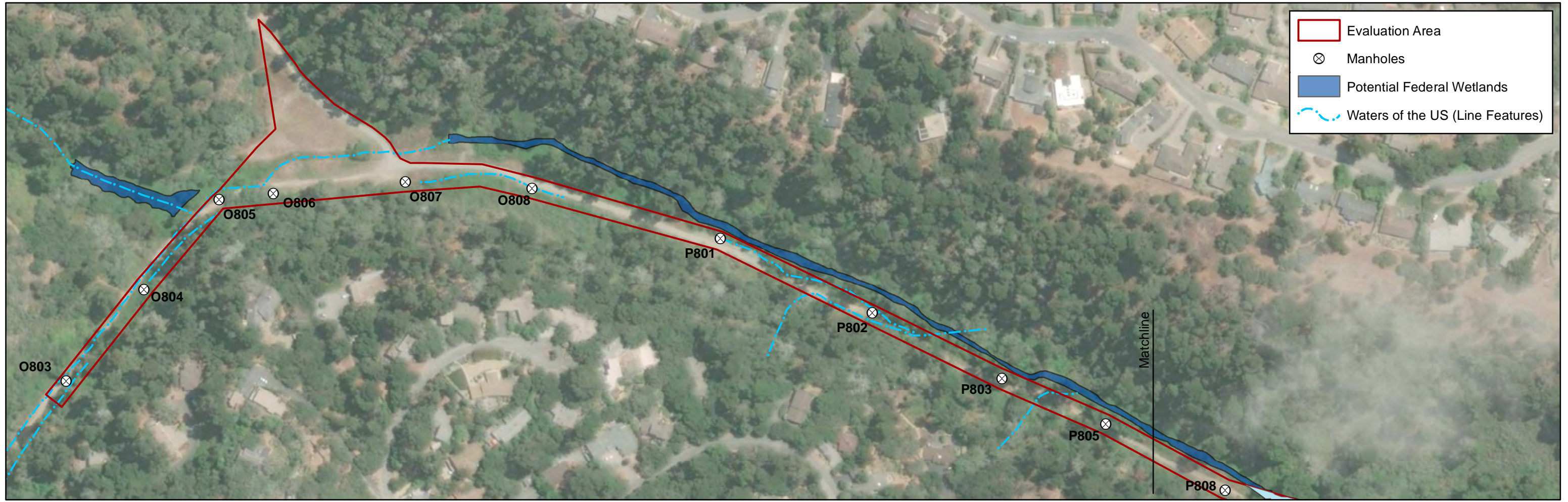
Riparian

Arroyo willow riparian (**Figure 3**) is a sensitive habitat listed on the CDFW *List of Vegetation Alliances and Associations* (CDFW, 2010). **Appendix D** includes detailed maps of riparian habitat surrounding each of the manholes within the evaluation area for project planning purposes.

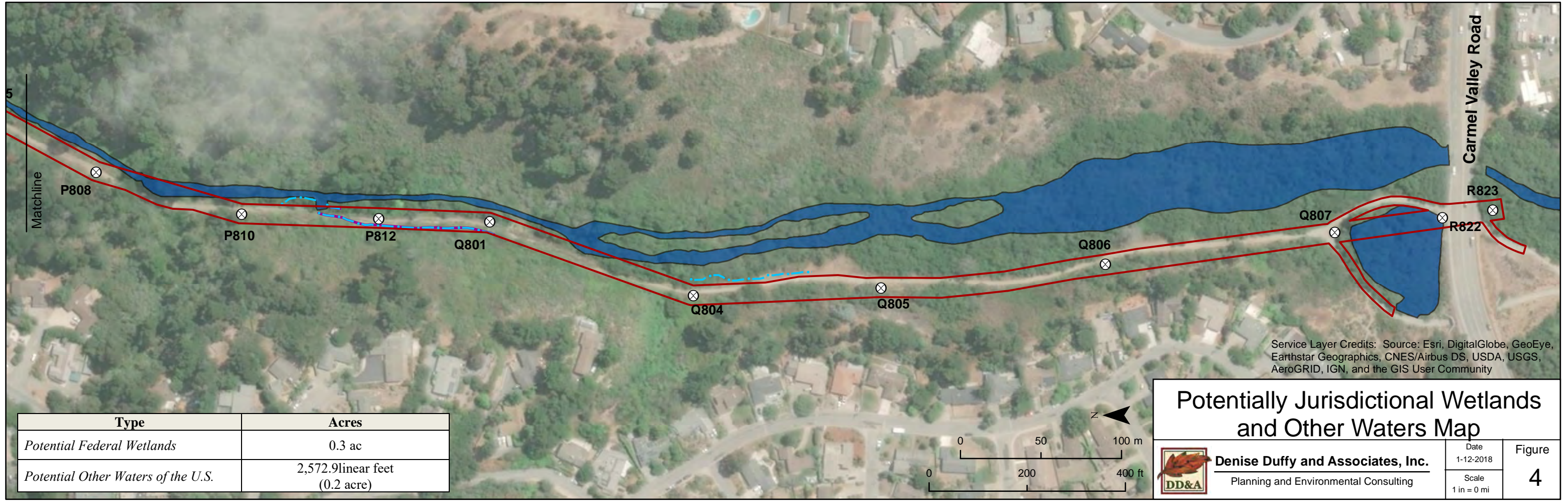
Wetlands and Waters of the U.S.

The stream that runs through Hatton Canyon conveys water from upland runoff and sheet flow through a combination of confined channels, shallow wetlands, and culverts. The stream runs from the top of the Hatton Canyon and empties directly into the Carmel River. The wetlands in this area exist within the riparian corridor and are dominated by the same species as described for riparian habitat above. Additional understory species include tall cyperus (*Cyperus eragrostis*), giant horsetail (*Equisetum telmateia*), common rush (*Juncus effusus*), spreading rush (*J. patens*), Mexican rush (*J. mexicanus*), and panicled bulrush (*Scirpus microcarpus*). Multiple surveys have been conducted as part of previous projects to identify wetlands and other waters within Hatton Canyon. The Wetland Delineation report prepared by DD&A in 2008 (DD&A, 2008b) consolidated this data to provide an overview of all areas of wetlands and other waters potentially under the jurisdiction of the ACOE. The 2008 report and the associated data were reviewed to confirm or update areas of potentially jurisdictional wetlands and other waters within the evaluation area. A new wetland delineation report was prepared for the project (**Appendix E**). **Figure 4** and **Table 2** identify the area of potentially jurisdictional wetlands and other waters of the U.S. within the evaluation area. **Appendix D** includes detailed maps of potentially jurisdictional wetlands and other waters surrounding each of the manholes within the evaluation area for project planning purposes.

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Evaluation Area
⊗ Manholes
 Potential Federal Wetlands
 Waters of the US (Line Features)



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Type	Acres
Potential Federal Wetlands	0.3 ac
Potential Other Waters of the U.S.	2,572.9linear feet (0.2 acre)

Potentially Jurisdictional Wetlands and Other Waters Map



Denise Duffy and Associates, Inc.
Planning and Environmental Consulting

Date
1-12-2018

Scale
1 in = 0 mi

Figure
4

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Table 2: Acreage of Potentially Jurisdictional Wetlands and Other Waters in the Evaluation Area

Type	Acres
<i>Potential Federal Wetlands</i>	0.3 ac
<i>Potential Other Waters of the U.S.</i>	2,572.9 linear feet (0.2 acre)

Special-Status Species

Published occurrence data within the proposed evaluation area and surrounding USGS quadrangles were evaluated to compile a table of special-status species known to occur in the vicinity of the project (**Appendix A**).⁵ Each of these species was evaluated for their likelihood to occur within and immediately adjacent to the evaluation area. The special-status wildlife species that are known to or have been determined to have a moderate to high potential to occur within or immediately adjacent the evaluation area are discussed below. All other wildlife species within the table are assumed “not present,” “unlikely to occur,” or have a low potential to occur within the evaluation area for the species-specific reasons presented in **Appendix A**.

Several focused botanical surveys have been conducted within Hatton Canyon from 1984-2009. Only one special-status species, Monterey pine, was observed during these surveys. The CDFW requires that focused rare plant surveys be conducted approximately every two to three years to determine presence or absence. Therefore, although there is only a low potential for other special-status plant species to occur within the evaluation area, the discussion below includes plant species whose preferred habitat types occur within the evaluation area. All other species within the table are assumed “not present” or “unlikely to occur” within the evaluation area for the species-specific reasons presented in **Appendix A**.

Special-Status Wildlife Species

Townsend’s big-eared bat

The Townsend’s big-eared bat is a CDFW species of special concern. The Townsend’s big-eared bat is a year-round resident in California occurring from low desert to mid-elevation montane habitats. It is found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Townsend’s big-eared bats typically roost during the day in caves and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees. This species hibernates in mixed sex aggregations of a few to several hundred individuals. Hibernation is more prolonged in colder areas. This species arouses periodically and moves to alternative roosts and actively forages and drinks throughout the winter. A single young is born per year between May and July.

The CNDDDB reports one occurrence of Townsend’s big-eared bat within the five quadrangles reviewed, located approximately 4.2 miles from the evaluation area. Suitable foraging and night roost habitat for this

⁵ The USGS quadrangles in which published CNDDDB data was searched included, Monterey, Marina, Seaside, Soberanes Point, and Mt. Carmel.

species is present within the evaluation area; however, suitable habitat for day, colonial, or maternal roosts is not available.

Hoary Bat

The hoary bat is included on CDFW's CNDDDB "Special Animals" list. This species has the broadest range of any North American bat, occurring from Northern Canada to South America, and may be found at any location in California. This species winters in California and Mexico and often migrates towards summer quarters in the north and east during the spring (Cryan, 2003). Spring migration is typically February to May, while fall migration typically occurs September through November. Hoary bats are a solitary species except during migration when larger groups are often formed or when mothers are rearing their young (Tuttle, 1995); however, unlike other bat species, hoary bats do not form maternity colonies. Hoary bats mate in fall or winter and sperm is stored over winter. Fertilization occurs in early spring and gestation is 80 to 90 days. One to four young are born in late May to late June. As such, parturition occurs at summer quarters and there is little evidence that females give birth and raise young in California (Cryan, 2003; Findley and Jones, 1964). Unlike many other bat species that often roost in buildings, hoary bats are seldom found in urban settings (Tuttle, 1995). The hoary bat typically roosts 10-15 feet above ground in the branches/foliage of medium to large deciduous and coniferous trees. Individuals wintering in cold climates hibernate, but may be active on warm winter days. This species is nocturnal, emerging late in the evening with peak activity varying with season and location, but usually three to five hours after sunset. The hoary bat hunts above canopy level, in clearings, and over water. This species has also been known to set up foraging territories at bright lights where insects congregate.

The CNDDDB reports two occurrences of hoary bat within the five quadrangles reviewed, the nearest of which is approximately 1.7 miles from the evaluation area. Suitable foraging and day and night roost habitat for this species is present within the evaluation area; however, this species is not known to breed in California.

Monterey Dusky-Footed Woodrat

The Monterey dusky-footed woodrat is a CDFW species of special concern. This is a subspecies of the dusky-footed woodrat (*Neotoma fuscipes*), which is common to oak woodlands and other forest types throughout California. Dusky-footed woodrats are frequently found in forest habitats with moderate canopy cover and a moderate to dense understory, including riparian forests; however, they may also be found in chaparral communities. Relatively large nests are constructed of grass, leaves, sticks, and feathers and are built in protected spots, such as rocky outcrops or dense brambles of blackberry and/or poison oak. Typical food sources for this species include leaves, flowers, nuts, berries, and truffles. Dusky-footed woodrats may be a significant food source for small- to medium-sized predators. Populations of this species may be limited by the availability of nest material. Within suitable habitat, nests are often found in close proximity to each other.

Although the CNDDDB does not report any occurrences of this species within the five quadrangles analyzed, this species is known to occur throughout Monterey County in various forest habitats. Suitable habitat for this species is present within the evaluation area and several woodrat nests were observed during surveys. As such, this species is assumed present within the evaluation area.

Raptors and Other Migratory Bird Species

Raptors and their nests are protected under Fish and Game Code and the MBTA. While the life histories of these species vary, overlapping nesting and foraging similarities (approximately February through August) allow for their concurrent discussion. Most raptors are breeding residents throughout most of the wooded portions of the state. Stands of live oak, riparian deciduous, or other forest vegetation types, as well as open grasslands, are used most frequently for nesting. Breeding occurs February through August, with peak activity May through July. Prey for these species includes small birds, small mammals, and some reptiles and amphibians. Many raptor species hunt in open woodland and habitat edges. Various common raptor species (such as red-tailed hawk, red-shouldered hawk, great horned owl, western screech owl, American kestrel, and turkey vulture [*Cathartes aura*]) and special-status raptor species (such as white-tailed kite) have a potential to nest within any of the large trees present within the evaluation area, which includes willows, Monterey pine, and black cottonwood.

Suitable nesting and foraging habitat for several other avian species protected under the MBTA is also present within the evaluation area. Migratory bird species that may occur within the evaluation area are identified on the Service's IPaC Resource List for the site (**Appendix C**).

California Red-Legged Frog

The CRLF was listed as a federally Threatened species on June 24, 1996 (61 FR 25813-25833) and is also a CDFW species of special concern. The CRLF is the largest native frog in California (44-131 mm snout-vent length) and was historically widely distributed in the central and southern portions of the state (Jennings and Hayes, 1994). Adults generally inhabit aquatic habitats with riparian vegetation, overhanging banks, or plunge pools for cover, especially during the breeding season (Jennings and Hayes, 1988). They may take refuge in small mammal burrows, leaf litter, or other moist areas during periods of inactivity or to avoid desiccation (Rathbun et al., 1993; Jennings and Hayes, 1994). Radiotelemetry data indicates that adults engage in straight-line breeding season movements irrespective of riparian corridors or topography and they may move up to two miles between non-breeding and breeding sites (Bulger et al., 2003). During the non-breeding season, a wider variety of aquatic habitats are used including small pools in coastal streams, springs, water traps, and other ephemeral water bodies (Service, 1996). CRLF may also move up to 300 feet from aquatic habitats into surrounding uplands, especially following rains, where individuals may spend days or weeks (Bulger et al., 2003).

This species requires still or slow-moving water during the breeding season where it can deposit large egg masses, which are most often attached to submergent or emergent vegetation. Breeding typically occurs between December and April depending on annual environmental conditions and locality. Eggs require 6 to 12 days to hatch and metamorphosis generally occurs after 3.5 to 7 months, although larvae are also capable of over-wintering. Following metamorphosis, generally between July and September, juveniles are 25-35 mm in size. Juvenile CRLF appear to have different habitat needs than adults. Jennings and Hayes (1988) recorded juvenile frogs mostly from sites with shallow water and limited shoreline or emergent vegetation. Additionally, it was important that there be small one-meter breaks in the vegetation or clearings in the dense riparian cover to allow juveniles to sun themselves and forage, but to also have close escape cover from predators. Jennings and Hayes also noted that tadpoles have different habitat needs and that in addition to vegetation cover, tadpoles use mud. It is speculated that CRLF larvae are algae grazers, however, foraging larval ecology remains unknown (Jennings, et al., 1993).

It has been shown that occurrences of CRLF are negatively correlated with presence of non-native bullfrogs (Moyle, 1973; Jennings and Hayes, 1986 and 1988), although both species are able to persist at certain locations, particularly in the coastal zone. It is estimated that CRLF has disappeared from approximately 75% of its former range and has been nearly extirpated from the Sierra Nevada, Central Valley, and much of southern California (Service, 1996).

One CNDDDB occurrence of CRLF includes a portion of the evaluation area near Carmel Valley Road. One adult CRLF was observed in June 1996 by Caltrans biologists near the Carmel Valley Road culvert of the Hatton Canyon stream. Further surveys did not locate any other individuals (Caltrans, 1998). No CRLF were observed during pre-construction and construction-phase monitoring by DD&A in 2010 for the Camel Hill Trail Project (DD&A, 2010). Two additional CNDDDB occurrences are within one mile of the evaluation area, associated with the Carmel River. The nearest known breeding sites (both adults and larvae were observed) are located greater than one mile, but less than two miles, south of the evaluation area within the proximity of San Jose Creek and Palo Corona Regional Park. The presence of CRLF within the evaluation area is inferred based on existing habitat types and the proximity to known breeding locations.

Northern California Legless Lizard

The Northern California legless lizard is a CDFW species of special concern. The Northern California legless lizard is a fossorial (burrowing) species that typically inhabits sandy or loose (friable) soils. Habitats known to support this species include (but are not limited to) coastal dunes, valley and foothill grasslands, chaparral, and coastal scrub at elevations from near sea level to approximately 1800 meters (6000 feet). The Northern California legless lizard forages on invertebrates beneath the leaf litter or duff layer at the base of bushes and trees or under wood, rocks, and slash in appropriate habitats. Little is known about the specific habitat requirements for courtship and breeding; however, the mating season for this species is believed to begin late spring or early summer, with one to four live young born between September and November.

The CNDDDB reports 41 occurrences of the Northern California legless lizard within the five quads evaluation, the nearest of which is located approximately 1.1 mile from the evaluation area within the Carmel Lagoon. Suitable habitat for this species is present within the evaluation area where loose sandy soils are present.

Coast Range Newt

The Coast Range newt, a subspecies of the California newt (*Taricha torosa*), is a CDFW species of special concern within all portions of their range south of the Salinas River in Monterey County. This species was historically distributed in coastal drainages from the vicinity of Sherwoods (central Mendocino County) in the North Coast Ranges, south to Boulder Creek, in San Diego County (CDFW 2008). The known elevation range of this species extends from near sea-level to 1830 meters (Stebbins 1985). In central California, breeding appears to occur in two waves, the first in January or February and the second in March or April (Stebbins 1951; Miller and Robbins 1954), although coast range newts may enter ponds as early as December. Breeding and egg-laying occur in intermittent streams, rivers, permanent and semi-permanent ponds, lakes and large reservoirs. Eggs are laid in small clusters on the submerged portion of emergent vegetation, on submerged vegetation, and on the underside of rocks off the bottom. Larvae take approximately three to six months to reach metamorphosis.

The CNDDDB does not report any occurrences of this species within the five quadrangles evaluated; however, this species is known to occur within the vicinity based on professional experience. The nearest known occurrence is located approximately 2.3 miles from the proposed project area at the Salamander Pond on Palo Corona Regional Park. Potential breeding habitat may also be present within the Carmel River; however, Coast Range newt breeding has not been documented within this aquatic resource. Suitable upland habitat for this species is present within the Monterey pine forest, riparian, poison oak scrub, and ruderal habitats within the proposed project area.

Obscure Bumble Bee

The obscure bumble bee is included on CDFW's CNDDDB "Special Animals" list. The obscure bumble bee occurs in Mediterranean California and along the Pacific Coast from southern California to southern British Columbia in Canada (Williams et. al., 2014). This species occurs primarily along the coast in grassy prairies and meadows. Select food genera include *Baccharis*, *Cirsium*, *Lupinus*, *Lotus*, *Grindelia*, and *Phacelia* (Pollinator Partnership and U.S. Forest Service [USFS], 2012). The obscure bumble bee nests both underground and above ground when nesting above ground, abandoned bird nests are often utilized.

The CNDDDB reports three occurrences of the obscure bumblebee within the five quads evaluation, including a historic non-specific occurrence (from the 1920s) that includes the entire evaluation area. Suitable habitat for this species may be present within the ruderal areas within the evaluation area.

Western Bumble Bee

The western bumble bee is included on CDFW's CNDDDB "Special Animals" list. The western bumble bee was formerly common from the Pacific coast to the Colorado Rocky Mountains; however, populations from central California to southern British Columbia, Canada and west of the Sierra-Cascade Ranges have declined sharply since the late 1990s (Pollinator Partnership and USFS, 2012; Williams et. al., 2014). Select food genera include *Melilotus*, *Cirsium*, *Trifolium*, *Centaurea*, *Chrysothamnus*, and *Eriogonum* (Pollinator Partnership and USFS, 2012). The western bumble bee generally nests underground.

The CNDDDB reports four occurrences of the western bumblebee within the five quads evaluation, including a historic non-specific occurrence (from the 1920s) that includes the entire evaluation area. Suitable habitat for this species may be present within the ruderal areas within the evaluation area.

Special-Status Plant Species

Hickman's Onion

Hickman's onion is a CNPS CRPR 1B species. It is a bulbiferous herb in the Liliaceae family that blooms March through May. Hickman's onion is typically associated with sandy loam, damp ground, and vernal swales, mostly in valley and foothill grasslands and coastal prairie, though it can be associated with chaparral, closed cone coniferous forests, and coastal scrub, within a range of 5-200 meters in elevation.

The CNDDDB reports 15 occurrences of Hickman's onion within the five quads evaluation, the nearest of which is located approximately 100 feet from the evaluation area on top of the eastern slopes of Hatton Canyon. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Hickman's onion may be present within the Monterey pine forest, riparian, poison oak scrub, and ruderal

habitats within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Jolon Clarkia

Jolon clarkia is a CNPS CRPR 1B species. It is an annual herb in the Onagraceae family and blooms between April and June. *Jolon clarkia* is typically associated with cismontane woodland, chaparral, coastal scrub, and riparian woodland within the range of 20-600 meters in elevation.

The CNDDDB reports seven occurrences of *Jolon clarkia* within the five quads evaluation, one of which includes a portion of the evaluation area. This is a non-specific occurrence from 1903 that was mapped in the vicinity of Carmel-by-the-Sea. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for *Jolon clarkia* may be present within the riparian and poison oak scrub habitats within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

San Francisco Collinsia

San Francisco collinsia is a CNPS CRPR 1B species. It is an annual herb in the Scrophulariaceae family and blooms March through May. *San Francisco collinsia* is typically associated with closed cone coniferous forest and coastal scrub, sometimes on serpentine soils, within the range of 20-600 meters in elevation.

The CNDDDB reports one occurrence of *San Francisco collinsia* within the five quads evaluation, located approximately 4.4 miles from the evaluation area, near the Monterey Regional Airport. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for *San Francisco collinsia* may be present within the Monterey pine forest and poison oak scrub habitats within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Seaside Bird's-Beak

Seaside Bird's-beak is a state endangered and CNPS CRPR 1B species. It is a hemiparasitic annual in the Scrophulariaceae family and blooms April through October. *Seaside Bird's-beak* is typically associated with closed-cone coniferous forest, chaparral, cismontane woodlands, coastal dunes, and coastal scrub in sandy soils and often in disturbed areas, within the range of 0-425 meters in elevation.

The CNDDDB reports 11 occurrences of *Seaside bird's-beak* within the five quads evaluation, the nearest of which is located approximately 2.8 miles from the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for *Seaside bird's-beak* may be present within the Monterey pine forest, poison oak scrub, and ruderal habitats within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Hospital Canyon Larkspur

Hospital Canyon larkspur is a CNPS CRPR 1B species. It is a perennial herb in the Ranunculaceae family and blooms April through June. *Hospital Canyon larkspur* is typically associated with opening in chaparral, mesic areas of cismontane woodland, and coastal scrub within the range of 195-1095 meters in elevation.

The CNDDDB reports one occurrence of Hospital Canyon larkspur within the five quads evaluation, located approximately 3.2 miles from the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Hospital Canyon larkspur may be present within the poison oak scrub habitat within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Hutchinson's Larkspur

Hutchinson's larkspur is a CNPS CRPR 1B species. It is a perennial herb in the Ranunculaceae family and blooms March through June. Hutchinson's larkspur is typically associated with broad-leaved upland forest, chaparral, coastal scrub, and coastal prairie within the range of 0-427 meters in elevation.

The CNDDDB reports 13 occurrences of Hutchinson's larkspur within the five quads evaluation, the nearest of which is located approximately 1.8 miles from the evaluation area, near San Jose Creek. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Hutchinson's larkspur may be present within the poison oak scrub habitat within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Marsh Microseris

Marsh microseris is a CNPS CRPR 1B species in the Asteraceae family. This rhizomatous, perennial herb is found in closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland habitats at elevations from 5-300 meters. The blooming period is from April through July.

The CNDDDB reports none occurrences of marsh microseris within the five quads evaluation, the nearest of which is located approximately 0.3 mile west of the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for marsh microseris may be present within the Monterey pine forest, poison oak scrub, and ruderal habitats within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Monterey Pine

Monterey pine is a CNPS List 1B species. This evergreen tree occurs in closed-cone coniferous forests at elevations from 82-607 feet. Only four native stands of this species exist in the world. One stand is found on Guadalupe Island off Baja California. The other three stands are all within California at Ano Nuevo, Cambria, and the Monterey Peninsula. Monterey pines are introduced in many areas, including in New Zealand where it is used as a plantation crop. Only one-half of the species' historical extent remains undeveloped on the Monterey Peninsula. Monterey pines are threatened by development, genetic contamination, pine pitch canker disease, and forest fragmentation, especially in the Del Monte Forest on the Monterey Peninsula.

The CNDDDB reports two occurrences of Monterey pine within the five quads evaluation, one of which includes the entire evaluation area. This species was identified throughout the Monterey pine forest habitat in the evaluation area.

Yadon's Piperia

Yadon's piperia is a federally endangered, CNPS CRPR 1B species. This perennial herb in the Orchidaceae family blooms from May to August and is found in closed-cone coniferous forest, maritime chaparral on sandy soils, and coastal bluff scrub at elevations from 10-510 meters. Overall, this species favors a well-drained, sandy soil substrate with podzolic conditions, and areas that retain moisture during the rainy season but are not subject to inundation (V.Yadon in litt. 2002). As in some other plant taxa, individual orchids that flower in one year may not have the necessary energy reserves to flower in the following year. As a result, an unknown proportion of a population may be dormant in any given year, thus making it difficult to track population dynamics through monitoring of population size (Wells 1981, Rasmussen 1995, A. Graff in litt. 2002). However, it would be expected that some percentage of a resident population would flower in any given year. As a result, while it may be difficult to track population dynamics in any given year, determining presence or absence for a specific area is not.

The CNDDDB reports 17 occurrences of Yadon's piperia within the five quads evaluation, the nearest of which is located approximately 0.4 mile west of the evaluation area at the Lester Rowntree Arboretum. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Yadon's piperia may be present within the Monterey pine forest habitat within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Hickman's Cinquefoil

Hickman's cinquefoil is a federal and state endangered, and CNPS CRPR 1B species in the Rosaceae family. This perennial herb is found in coastal bluff scrub, closed-cone coniferous forest, vernal mesic meadows and seeps, and freshwater marshes and swamps at elevations of 10-149 meters. The blooming period is from April-August.

The CNDDDB reports three occurrences of Hickman's cinquefoil within the five quads evaluation, the nearest of which is located approximately 1.6 miles from the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Hickman's cinquefoil may be present within the riparian habitat within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Pine Rose

Pine rose is a CNPS CRPR 1B species in the Rosaceae family. This perennial shrub is found in closed-cone coniferous forest and cismontane woodland at elevations of 2-945 meters. The blooming period is from May-July.

The CNDDDB reports nine occurrences of pine rose within the five quads evaluation, the nearest of which is located approximately two miles from the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for pine rose may be present within the Monterey pine forest habitat within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Santa Cruz Microseris

Santa Cruz microseris is a CNPS CRPR 1B species. This annual herb in the Asteraceae family is found in broadleaved upland forest, closed cone coniferous forest, chaparral, coastal prairie, coastal scrub, and valley and foothill grasslands in open areas, sometimes on serpentinite soils. The elevation range for Santa Cruz microseris is 10-500 meters and the blooming period is from April to May.

The CNDDDB reports two occurrences of Santa Cruz microseris within the five quads evaluation, the nearest of which is located approximately 4.4 miles from the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Santa Cruz microseris may be present within the Monterey pine forest and poison oak scrub habitats within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Pacific Grove Clover

Pacific Grove clover is a CNPS CRPR 1B species in the Fabaceae family. This annual herb is found in closed-cone coniferous forest, coastal prairie, meadows, seeps, and mesic areas in valley and foothill grassland at elevations of 5-120 meters. The blooming period is from April-June.

The CNDDDB reports 12 occurrences of Pacific Grove clover within the five quads evaluation, the nearest of which is located approximately 2.1 miles from the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Pacific Grove clover may be present within the Monterey pine forest and ruderal habitats within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

Monterey Clover

Monterey clover is a CNPS CRPR 1B species in the Fabaceae family. This annual herb is found in sandy openings and recently burned areas of closed-cone coniferous forest at elevations of 30-305 meters. The blooming period is from April-June.

The CNDDDB reports two occurrences of Monterey clover within the five quads evaluation, the nearest of which is located approximately 1.9 miles from the evaluation area. This species was not identified during historic surveys in Hatton Canyon; however, suitable habitat for Monterey clover may be present within the Monterey pine forest habitat within the evaluation area. Additional surveys would be required to identify this species' presence or absence within the evaluation area.

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IMPACTS AND MITIGATION

As identified above, a defined project impact area has not been established at this time and this report describes the biological resources within an evaluation area that includes all areas that could potentially be impacted by the sewer main replacement project. Several special-status species and sensitive habitats were identified within the evaluation area that may be impacted by the project. The following provides an overview of avoidance and minimization measures that are recommended to reduce impacts to special-status species and sensitive habitats within the evaluation area:

- Monterey pine forest habitat, riparian habitat, wetlands, and other waters should be avoided to the greatest extent feasible;
- Construction activities should be conducted during the dry season to avoid erosion issues and impacts to migrating special-status amphibians;
- Focused surveys should be conducted to determine the presence or absence of special-status plant species with the potential to occur. If found, these species should be avoided to the greatest extent feasible;
- Pre-construction surveys should be conducted for Monterey dusky-footed woodrat, white-tailed kit, nesting raptors, and other protected avian species;
- An employee education program should be conducted prior to construction activities to inform the construction crew of the sensitive resources present and the protections afforded to them; and
- A biological monitor should be on site for all vegetation removal and initial ground disturbing activities. Following ground disturbance, the biological monitor should train a construction crewmember to act as the biological monitor for the remainder of the construction.

The following regulatory permits are may be required depending on the project impact area and the construction methods used:

- Section 7 or 10 Incidental Take Permit for CRLF from the Service;
- CWA Section 404 Permit from the ACOE;
- CWA Section 401 Permit from the RWQCB; and
- Lake and Streambed Alteration Agreement from the CDFW.

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APPENDIX A

SPECIAL-STATUS SPECIES TABLE

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Special-Status Species Table

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
MAMMALS			
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	-- / CSC / --	Found primarily in rural settings from inland deserts to coastal redwoods, oak woodland of the inner Coast Ranges and Sierra foothills, and low to mid-elevation mixed coniferous-deciduous forests. Typically roost during the day in limestone caves, lava tubes, and mines, but can roost in buildings that offer suitable conditions. Night roosts are in more open settings and include bridges, rock crevices, and trees.	Moderate: Suitable foraging and night roost habitat present the evaluation area. No maternity roosting habitat present within the evaluation area. The nearest occurrence is approximately 4.2 miles south of the evaluation area.
<i>Enhydra lutris nereis</i> Southern sea otter	FT / CFP / --	Generally found inhabiting nearshore coastal waters of less than 117 feet in depth. <i>E. lutris</i> can be found in association with both rocky and soft-bottom habitats. Typical haunts of the sea otter are characterized by precipitous rocky shores, barrier reefs, tidewater stones, and dense kelp forests.	Not Present: No suitable habitat within the evaluation area.
<i>Lasiurus cinereus</i> Hoary bat	-- / CNDDDB / --	Prefers open habitats or habitat mosaics with access to trees for cover and open areas or edge for feeding. Generally roost in dense foliage of trees; does not use buildings for roosting. Winters in California and Mexico and often migrates towards summer quarters in the north and east during the spring. Young are born and reared in summer grounds, which is unlikely to occur in California.	Moderate: Suitable foraging and night roost habitat present the evaluation area. Not known to breed in California. The nearest occurrence is approximately 1.7 miles south of the evaluation area.
<i>Neotoma macrotis luciana</i> Monterey dusky-footed woodrat	-- / CSC / --	Forest and oak woodland habitats of moderate canopy with moderate to dense understory. Also occurs in chaparral habitats.	Present: Suitable habitat is present within the evaluation area. Several nests observed within the Hatton Canyon riparian corridor and the evaluation area.
<i>Reithrodontomys megalotis distichlis</i> Salinas harvest mouse	-- / CNDDDB / --	Known only to occur from the Monterey Bay region. Occurs in fresh and brackish water wetlands and probably in the adjacent uplands around the mouth of the Salinas River.	Not Present: No suitable habitat within the evaluation area. The evaluation area is outside of the known range for this species.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Taxidea taxus</i> American badger	-- / CSC / --	Dry, open grasslands, fields, pastures savannas, and mountain meadows near timberline are preferred. The principal requirements seem to be sufficient food, friable soils, and relatively open, uncultivated grounds.	Unlikely: No suitable habitat is present within the evaluation area.
BIRDS			
<i>Agelaius tricolor</i> Tricolored blackbird (nesting colony)	-- / SC&CSC / --	Nest in colonies in dense riparian vegetation, along rivers, lagoons, lakes, and ponds. Forages over grassland or aquatic habitats.	Low: Suitable habitat is present within the evaluation area. This species is not known to breed within the immediate area (Roberson, 2002). The nearest CNDDDB occurrence is approximately 7.5 miles west of the evaluation area.
<i>Athene cunicularia</i> Burrowing owl (burrow sites & some wintering sites)	-- / CSC / --	Year-round resident of open, dry grassland and desert habitats, and in grass, forb and open shrub stages of pinyon-juniper and ponderosa pine habitats. Frequent open grasslands and shrublands with perches and burrows. Use rodent burrows (often California ground squirrel) for roosting and nesting cover. Pipes, culverts, and nest boxes may be substituted for burrows in areas where burrows are not available.	Not Present: No suitable habitat within the evaluation area.
<i>Brachyramphus marmoratus</i> Marbled murrelet	FT / SE / --	Occur year-round in marine subtidal and pelagic habitats from the Oregon border to Point Sal. Partial to coastlines with stands of mature redwood and Douglas-fir. Requires dense mature forests of redwood and/or Douglas-fir for breeding and nesting.	Not Present: No suitable habitat within the evaluation area.
<i>Buteo regalis</i> Ferruginous hawk (wintering)	-- / WL / --	An uncommon winter resident and migrant at lower elevations and open grasslands in the Modoc Plateau, Central Valley, and Coast Ranges and a fairly common winter resident of grassland and agricultural areas in southwestern California. Frequent open grasslands, sagebrush flats, desert scrub, low foothills surrounding valleys, and fringes of pinyon-juniper habitats. Does not breed in California.	Not Present: No suitable habitat within the evaluation area.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Charadrius alexandrinus nivosus</i> Western snowy plover	FT / CSC / --	Sandy beaches on marine and estuarine shores, also salt pond levees and the shores of large alkali lakes. Requires sandy, gravelly or friable soil substrate for nesting.	Not Present: No suitable habitat within the evaluation area.
<i>Coturnicops noveboracensis</i> Yellow rail	-- / CSC / --	Wet meadows and coastal tidal marshes. Occurs year round in California, but in two primary seasonal roles: as a very local breeder in the northeastern interior and as a winter visitor (early Oct to mid-Apr) on the coast and in the Suisun Marsh region	Not Present: No suitable habitat within the evaluation area.
<i>Cypseloides niger</i> Black swift	-- / CSC / --	Regularly nests in moist crevice or cave on sea cliffs above the surf, or on cliffs behind, or adjacent to, waterfalls in deep canyons. Forages widely over many habitats.	Not Present: No suitable habitat within the evaluation area.
<i>Elanus leucurus</i> White-tailed kite (nesting)	-- / CFP / --	Open groves, river valleys, marshes, and grasslands. Prefer such area with low roosts (fences etc.). Nest in shrubs and trees adjacent to grasslands.	Moderate: Suitable nesting and foraging habitat is present within the evaluation area. The nearest CNDDDB occurrence is approximately 23 miles northeast the evaluation area; however, this species has been observed at the Carmel Lagoon, located approximately 1.3 miles south of the evaluation area.
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	FE / SE / --	Breeds in riparian habitat in areas ranging in elevation from sea level to over 2,600 meters. Builds nest in trees in densely vegetated areas. This species establishes nesting territories and builds, and forages in mosaics of relatively dense and expansive areas of trees and shrubs, near or adjacent to surface water or underlain by saturated soils. Not typically found nesting in areas without willows (<i>Salix sp.</i>), tamarisk (<i>Tamarix ramosissima</i>), or both.	Unlikely: The CNDDDB does not report any occurrences of this species within the quadrangles evaluated. The riparian areas may provide very marginal habitat; however, the evaluation area is very likely outside of the current range for this species.
<i>Eremophila alpestris actia</i> California horned lark	-- / WL / --	Variety of open habitats, usually where large trees and/or shrubs are absent. Found from grasslands along the coast to deserts at sea-level and alpine dwarf-shrub habitats are higher elevations. Builds open cup-like nests on the ground.	Low: Low quality nesting and foraging habitat is present within the open weedy area of the evaluation area. The nearest CNDDDB occurrence is approximately 11.5 miles northeast the evaluation area.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Gymnogyps californianus</i> California condor	FE / SE / --	Roosting sites in isolated rocky cliffs, rugged chaparral, and pine covered mountains 2000-6000 feet above sea level. Foraging area removed from nesting/roosting site (includes rangeland and coastal area - up to 19 mile commute one way). Nest sites in cliffs, crevices, potholes.	Not Present: No suitable habitat within the evaluation area.
<i>Laterallus jamaicensis coturniculus</i> California black rail	-- / ST&CFP / --	Inhabits freshwater marshes, wet meadows & shallow margins of saltwater marshes bordering larger bays. Needs water depths of about 1 inch that does not fluctuate during the year & dense vegetation for nesting habitat.	Not Present: No suitable habitat within the evaluation area.
<i>Oceanodroma homochroa</i> Ashy storm-petrel	-- / CSC / --	Tied to land only to nest, otherwise remains over open sea. Nests in natural cavities, sea caves, or rock crevices on offshore islands and prominent peninsulas of the mainland.	Not Present: No suitable habitat within the evaluation area.
<i>Pelecanus occidentalis californicus</i> California brown pelican	-- / CFP / --	Found in estuarine, marine subtidal, and marine pelagic waters along the California coast. Usually rests on water or inaccessible rocks, but also uses mudflats, sandy beaches, wharfs, and jetties.	Not Present: No suitable habitat within the evaluation area.
<i>Riparia riparia</i> Bank swallow (nesting)	-- / ST / --	Nest colonially in sand banks. Found near water; fields, marshes, streams, and lakes.	Not Present: No suitable habitat within the evaluation area.
<i>Sterna antillarum browni</i> California least tern	FE / SE / --	Prefers undisturbed nest sites on open, sandy/gravelly shores near shallow-water feeding areas in estuaries. Sea beaches, bays, large rivers, bars.	Not Present: No suitable habitat within the evaluation area.
<i>Vireo bellii pusilus</i> Least Bell's Vireo	FE / SE / --	Riparian areas and drainages. Breed in willow riparian forest supporting a dense, shrubby understory. Oak woodland with a willow riparian understory is also used in some areas, and individuals sometimes enter adjacent chaparral, coastal sage scrub, or desert scrub habitats to forage.	Unlikely: The CNDDDB does not report any occurrences of this species within the quadrangles evaluated. The riparian areas may provide very marginal habitat; however, the evaluation area is very likely outside of the current range for this species. Roberson (2002) reports that within Monterey County, this species was likely always limited to the humid interior outside of the direct influence of summer fog. The three known records of this species along the coast within the past 50 years were migrants.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
REPTILES AND AMPHIBIANS			
<i>Ambystoma californiense</i> California tiger salamander	FT / ST / --	Annual grassland and grassy understory of valley-foothill hardwood habitats in central and northern California. Need underground refuges and vernal pools or other seasonal water sources.	Unlikely: No suitable breeding or upland habitat is present within the evaluation area. The evaluation area is outside of the known dispersal range of any known breeding resources. The nearest CNDDDB occurrence is approximately 2.3 miles south of the evaluation area within Palo Corona Regional Park.
<i>Anniella pulchra</i> Northern California legless lizard	-- / CSC / --	Requires moist, warm habitats with loose soil for burrowing and prostrate plant cover, often forages in leaf litter at plant bases; may be found on beaches, sandy washes, and in woodland, chaparral, and riparian areas.	Moderate: Suitable habitat is present within the evaluation area. The nearest CNDDDB occurrence is approximately 1.1 mile south of the evaluation area at the Carmel Lagoon.
<i>Emys marmorata</i> Western pond turtle	UR / CSC / --	Associated with permanent or nearly permanent water in a wide variety of habitats including streams, lakes, ponds, irrigation ditches, etc. Require basking sites such as partially submerged logs, rocks, mats of vegetation, or open banks.	Unlikely: No suitable habitat is present within the evaluation area.
<i>Phrynosoma blainvillii</i> Coast horned lizard	-- / CSC / --	Associated with open patches of sandy soils in washes, chaparral, scrub, and grasslands.	Not Present: No suitable habitat within the evaluation area.
<i>Rana draytonii</i> California red-legged frog	FT / CSC / --	Lowlands and foothills in or near permanent or late-season sources of deep water with dense, shrubby, or emergent riparian vegetation. During late summer or fall adults are known to utilize a variety of upland habitats with leaf litter or mammal burrows.	Present: Suitable upland habitat is present within evaluation area. One CNDDDB occurrence of CRLF includes a portion of the evaluation area. Several additional occurrences are known within two miles of the evaluation area, including two breeding locations. Therefore, this species is assumed present.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Taricha torosa</i> Coast range newt	-- / CSC / --	Occurs mainly in valley-foothill hardwood, valley-foothill hardwood-conifer, coastal scrub, and mixed chaparral but is known to occur in grasslands and mixed conifer types. Seek cover under rocks and logs, in mammal burrows, rock fissures, or man-made structures such as wells. Breed in intermittent ponds, streams, lakes, and reservoirs.	Moderate: Suitable habitat is present within the evaluation area. The nearest CNDDDB occurrence is approximately 2.3 miles south of the evaluation area within Palo Corona Regional Park.
FISH			
<i>Eucyclogobius newberryi</i> Tidewater goby	FE / CSC / --	Brackish water habitats, found in shallow lagoons and lower stream reaches. Tidewater gobies appear to be naturally absent (now and historically) from three large stretches of coastline where lagoons or estuaries are absent and steep topography or swift currents may prevent tidewater gobies from dispersing between adjacent localities. The southernmost large, natural gap occurs between the Salinas River in Monterey County and Arroyo del Oso in San Luis Obispo County.	Not Present: No suitable habitat within the evaluation area.
<i>Oncorhynchus mykiss irideus</i> Steelhead (south/central California coast DPS)	FT / -- / --	Cold headwaters, creeks, and small to large rivers and lakes; anadromous in coastal streams.	Not Present: No suitable habitat within the evaluation area.
INVERTEBRATES			
<i>Bombus caliginosus</i> Obscure bumble bee	-- / CNDDDB / --	Native to the West Coast of the United States. Occurs primarily along the coast in grassy prairies and meadows within the Coast Range. This species can nest both under and above ground. When nesting above ground the species may utilize abandoned bird nests. Found in areas that are relatively humid including areas that are frequently foggy.	Moderate: Suitable habitat is present within the evaluation area. The CNDDDB includes a historic non-specific occurrence (from the 1920s) that includes the entire evaluation area.
<i>Bombus occidentalis</i> Western bumble bee	-- / CNDDDB / --	Occurs in open grassy areas, urban parks, urban gardens, chaparral, and meadows. This species generally nest underground.	Moderate: Suitable habitat is present within the evaluation area. The CNDDDB includes a historic non-specific occurrence (from the 1920s) that includes the entire evaluation area.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Branchinecta lynchi</i> Vernal pool fairy shrimp	FT / -- / --	Require ephemeral pools with no flow. Associated with vernal pool/grasslands from near Red Bluff (Shasta County), through the central valley, and into the South Coast Mountains Region. Require ephemeral pools with no flow.	Not Present: No suitable habitat within the evaluation area.
<i>Coelus globosus</i> Globose dune beetle	-- / CNDDDB / --	Coastal dunes. These beetles are primarily subterranean, tunneling through sand underneath dune vegetation.	Not Present: No suitable habitat within the evaluation area.
<i>Danaus plexippus</i> Monarch butterfly	-- / CNDDDB / --	Overwinters in coastal California using colonial roosts generally found in Eucalyptus, pine and acacia trees. Overwintering habitat for this species within the Coastal Zone represents ESHA. Local ordinances often protect this species as well.	Low: Only low quality habitat is present within the evaluation area. Populations of this species have not been observed overwintering within the evaluation area. The nearest CNDDDB occurrence is approximately 0.3 mile west of the evaluation area within the Lester Rowntree Arboretum.
<i>Euphilotes enoptes smithi</i> Smith's blue butterfly	FE / -- / --	Most commonly associated with coastal dunes and coastal sage scrub plant communities in Monterey and Santa Cruz Counties. Plant hosts are <i>Eriogonum latifolium</i> and <i>E. parvifolium</i> .	Not Present: No suitable habitat is present within the evaluation area. The plant host species were not identified during surveys.
<i>Lindieriella occidentalis</i> California linderiella (fairy shrimp)	-- / CNDDDB / --	Ephemeral ponds with no flow. Generally associated with hardpans.	Not Present: No suitable habitat within the evaluation area.
PLANTS			
<i>Agrostis lacuna-vernalis</i> Vernal pool bent grass	-- / -- / 1B	Vernal pool mima mounds at elevations of 115-145 meters. Annual herb in the Poaceae family; blooms April-May. Known only from Butterfly Valley and Machine Gun Flats of Ft. Ord National Monument.	Unlikely: No suitable habitat within the evaluation area. Evaluation area is outside of the currently known range for this species.
<i>Allium hickmanii</i> Hickman's onion	-- / -- / 1B	Closed-cone coniferous forests, maritime chaparral, coastal prairie, coastal scrub, and valley and foothill grasslands at elevations of 5-200 meters. Bulbiferous perennial herb in the Alliaceae family; blooms March-May.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Arctostaphylos edmundsii</i> Little sur manzanita	-- / -- / 1B	Coastal bluff scrub and chaparral on sandy soils at elevations of 30-105 meters. Evergreen shrub in the Ericaceae family; blooms November-April.	Not Present: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon or surveys in January 2018.
<i>Arctostaphylos hookeri</i> ssp. <i>hookeri</i> Hooker's manzanita	-- / -- / 1B	Closed-cone coniferous forest, chaparral, cismontane woodland, and coastal scrub on sandy soils at elevations of 85-536 meters. Evergreen shrub in the Ericaceae family; blooms January-June.	Not Present: Suitable habitat is present within the evaluation area; however, this species was not identified during historic surveys in Hatton Canyon or surveys in January 2018.
<i>Arctostaphylos montereyensis</i> Toro manzanita	-- / -- / 1B	Maritime chaparral, cismontane woodland, and coastal scrub on sandy soils at elevations of 30-730 meters. Evergreen shrub in the Ericaceae family; blooms February-March.	Not Present: Low quality habitat is present within the evaluation area; however, this species was not identified during historic surveys in Hatton Canyon or surveys in January 2018.
<i>Arctostaphylos pajaroensis</i> Pajaro manzanita	-- / -- / 1B	Chaparral on sandy soils at elevations of 30-760 meters. Evergreen shrub in the Ericaceae family; blooms December-March.	Not Present: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon or surveys in January 2018.
<i>Arctostaphylos pumila</i> Sandmat manzanita	-- / -- / 1B	Openings of closed-cone coniferous forests, maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub on sandy soils at elevations of 3-205 meters. Evergreen shrub in the Ericaceae family; blooms February-May.	Not Present: Suitable habitat is present within the evaluation area; however, this species was not identified during historic surveys in Hatton Canyon or surveys in January 2018.
<i>Arenaria paludicola</i> Marsh sandwort	FE / SE / 1B	Known from only two natural occurrences in Black Lake Canyon and at Oso Flaco Lake. Sandy openings of freshwater of brackish marshes and swamps at elevations of 3-170 meters. Stoloniferous perennial herb in the Caryophyllaceae family; blooms May-August.	Unlikely: No suitable habitat within the evaluation area. The evaluation area is outside of the currently known range for this species. Not identified during historic surveys in Hatton Canyon.
<i>Astragalus tener</i> var. <i>titi</i> Alkali milk-vetch	FE / SE / 1B	Sandy soils in coastal bluff scrub, coastal dunes, coastal prairie (mesic); elevation 3-164 feet. Annual herb in the Fabaceae family; blooms March-May.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Bryoria spiraliifera</i> Twisted horsehair lichen	-- / -- / 1B	California North Coast coniferous forest at elevations of 0–30 meters. Often found on conifers, including <i>Picea sitchensis</i> , <i>Pinus contorta</i> var. <i>contorta</i> , <i>Pseudotsuga menziesii</i> , <i>Abies grandis</i> , and <i>Tsuga heterophylla</i> . Fruticose lichen in the Parmeliaceae family.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Castilleja ambigua</i> var. <i>insalutata</i> Pink johnny-nip	-- / -- / 1B	Coastal prairie and coastal scrub at elevations of 0-100 meters. Annual herb in the Orobanchaceae family; blooms May-August.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Centromadia parryi</i> ssp. <i>congdonii</i> Congdon’s tarplant	-- / -- / 1B	Valley and foothill grassland on heavy clay, saline, or alkaline soils at elevations of 0-230 meters. Annual herb in the Asteraceae family; blooms May-November.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Chorizanthe minutiflora</i> Fort Ord spineflower	-- / -- / 1B	Sandy openings of maritime chaparral and coastal scrub at elevations of 55-150 meters. Only known occurrences on Fort Ord National Monument. Annual herb in the Polygonaceae family; blooms April-July.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon The evaluation rea is outside of the currently known range for this species.
<i>Chorizanthe pungens</i> var. <i>pungens</i> Monterey spineflower	FT / -- / 1B	Maritime chaparral, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grassland on sandy soils at elevations of 3-450 meters. Annual herb in the Polygonaceae family; blooms April-July.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Clarkia jolonensis</i> Jolon clarkia	-- / -- / 1B	Cismontane woodland, chaparral, riparian woodland, and coastal scrub at elevations of 20-660 meters. Annual herb in the Onagraceae family; blooms April-June.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Collinsia multicolor</i> San Francisco collinsia	-- / -- / 1B	Closed-cone coniferous forest and coastal scrub, sometimes on serpentinite soils, at elevations of 30-250 meters. Annual herb in the Plantaginaceae family; blooms March-May.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Cordylanthus rigidus</i> ssp. <i>littoralis</i> Seaside bird’s-beak	-- / SE / 1B	Closed-cone coniferous forests, maritime chaparral, cismontane woodlands, coastal dunes, and coastal scrub on sandy soils, often on disturbed sites, at elevations of 0-425 meters. Annual hemiparasitic herb in the Orobanchaceae family; blooms April-October.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Delphinium californicum</i> ssp. <i>interius</i> Hospital Canyon larkspur	-- / -- / 1B	Openings in chaparral, coastal scrub, and mesic areas of cismontane woodland at elevations of 230-1095 meters. Perennial herb in the Ranunculaceae family; blooms April-June.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Delphinium hutchinsoniae</i> Hutchinson's larkspur	-- / -- / 1B	Broadleaved upland forest, chaparral, coastal scrub, and coastal prairie at elevations of 0-427 meters. Perennial herb in the Ranunculaceae family; blooms March-June.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Ericameria fasciculata</i> Eastwood's goldenbush	-- / -- / 1B	Openings in closed-cone coniferous forest, maritime chaparral, coastal dunes, and coastal scrub on sandy soils at elevations of 30-275 meters. Evergreen shrub in the Asteraceae family; blooms July-October.	Not Present: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon or surveys in January 2018.
<i>Eriogonum nortonii</i> Pinnacles buckwheat	-- / -- / 1B	Chaparral and valley and foothill grassland on sandy soils, often on recent burns, at elevations of 300-975 meters. Annual herb in the Polygonaceae family; blooms May-September.	Unlikely: No suitable habitat within the evaluation area. The evaluation area is below the elevation range for this species. Not identified during historic surveys in Hatton Canyon.
<i>Erysimum ammophilum</i> Sand-loving wallflower	-- / -- / 1B	Openings in maritime chaparral, coastal dunes, and coastal scrub on sandy soils at elevations of 0-60 meters. Perennial herb in the Brassicaceae family; blooms February-June.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Erysimum menziesii</i> Menzies' wallflower	FE / SE / 1B	Coastal dunes at elevations of 0-35 meters. Perennial herb in the Brassicaceae family; blooms March-September.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Fritillaria liliacea</i> Fragrant fritillary	-- / -- / 1B	Cismontane woodland, coastal prairie, coastal scrub, and valley and foothill grassland, often serpentinite, at elevations of 3-410 meters. Bulbiferous perennial herb in the Liliaceae family; blooms February-April.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Gilia tenuiflora</i> ssp. <i>arenaria</i> Monterey gilia	FE / ST / 1B	Openings in maritime chaparral, cismontane woodland, coastal dunes, and coastal scrub on sandy soils at elevations of 0-45 meters. Annual herb in the Polemoniaceae family; blooms April-June.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Hesperocyparis goveniana</i> Gowen cypress	FT / -- / 1B	Closed-cone coniferous forest and maritime chaparral at elevations of 30-300 meters. Evergreen tree in the Cupressaceae family. Natively occurring only at Point Lobos near Gibson Creek and the Huckleberry Hill Nature Preserve near Highway 68.	Not Present: No suitable habitat within the evaluation area. Evaluation area is outside of the currently known range for this species. Not identified during historic surveys in Hatton Canyon or surveys in 2018.
<i>Hesperocyparis macrocarpa</i> Monterey cypress	-- / -- / 1B	Closed-cone coniferous forest at elevations of 10-30 meters. Evergreen tree in the Cupressaceae family. Natively occurring only at Cypress Point in Pebble Beach and Point Lobos State Park; widely planted and naturalized elsewhere.	Not Present: No suitable habitat within the evaluation area. Evaluation area is outside of the currently known range for this species. Not identified during historic surveys in Hatton Canyon or surveys in 2018.
<i>Horkelia cuneata</i> ssp. <i>sericea</i> Kellogg's horkelia	-- / -- / 1B	Openings of closed-cone coniferous forests, maritime chaparral, coastal dunes, and coastal scrub on sandy or gravelly soils at elevations of 10-200 meters. Perennial herb in the Rosaceae family; blooms April-September.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Horkelia marinensis</i> <i>Point Reyes horkelia</i>	-- / -- / 1B	Coastal dunes, coastal prairie, and coastal scrub on sandy soils at elevations of 5-350 meters. Perennial herb in the Rosaceae family; blooms May-September.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Lasthenia conjugens</i> Contra Costa goldfields	FE / -- / 1B	Mesic areas of valley and foothill grassland, alkaline playas, cismontane woodland, and vernal pools at elevations of 0-470 meters. Annual herb in the Asteraceae family; blooms March-June.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Layia carnosa</i> Beach layia	FE / SE / 1B	Coastal dunes and coastal scrub on sandy soils at elevations of 0-60 meters. Annual herb in the Asteraceae family; blooms March-July.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Lupinus tidestromii</i> Tidestrom's lupine	FE / SE / 1B	Coastal dunes at elevations of 0-100 meters. Perennial rhizomatous herb in the Fabaceae family; blooms April-June.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Malacothamnus palmeri</i> var. <i>involucratus</i> Carmel Valley bush-mallow	-- / -- / 1B	Chaparral, cismontane woodland, and coastal scrub at elevations of 30-1100 meters. Perennial deciduous shrub in the Malvaceae family; blooms May-October.	Not Present: Suitable habitat is present within the evaluation area; however, this species was not identified during historic surveys in Hatton Canyon or surveys in January 2018.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Malacothrix saxatilis</i> var. <i>arachnoidea</i> Carmel Valley malacothrix	-- / -- / 1B	Chaparral and coastal scrub on rocky soils at elevations of 25-1036 meters. Perennial rhizomatous herb in the Asteraceae family; blooms June-December.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Microseris paludosa</i> Marsh microseris	-- / -- / 1B	Closed-cone coniferous forest, cismontane woodland, coastal scrub, and valley and foothill grassland at elevations of 5-300 meters. Perennial herb in the Asteraceae family; blooms April-July.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Monardella sinuata</i> ssp. <i>nigrescens</i> Northern curly-leaved monardella	-- / -- / 1B	Chaparral, coastal dunes, coastal scrub, and lower montane coniferous forest (ponderosa pine sandhills) on sandy soils at elevations of 0-300 meters. Annual herb in the Lamiaceae family; blooms April-September.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Monolopia gracilens</i> Woodland woollythreads	-- / -- / 1B	Openings of broadleaved upland forest, chaparral, cismontane woodland, North Coast coniferous forest, and valley and foothill grassland on serpentinite soils at elevations of 100-1200 meters. Annual herb in the Asteraceae family; blooms February-July.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Pinus radiata</i> Monterey pine	-- / -- / 1B	Closed-cone coniferous forest and cismontane woodland at elevations of 25-185 meters. Evergreen tree in the Pinaceae family. Only three native stands in CA at Ano Nuevo, Cambria, and the Monterey Peninsula; introduced in many areas.	Present: Monterey pines are the dominant species of the closed-cone coniferous forest throughout Hatton Canyon. These Monterey pine trees are contiguous with the historic native forest and are protected.
<i>Piperia yadonii</i> Yadon's rein orchid	FE / -- / 1B	Sandy soils in coastal bluff scrub, closed-cone coniferous forest, and maritime chaparral at elevations of 10-510 meters. Annual herb in the Orchidaceae family; blooms February-August.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Plagiobothrys uncinatus</i> Hooked popcornflower	-- / -- / 1B	Chaparral, cismontane woodlands, and valley and foothill grasslands on sandy soils at elevations of 300-760 meters. Annual herb in the Boraginaceae family; blooms April-May.	Unlikely: No suitable habitat within the evaluation area. The evaluation area is below the elevation range for this species Not identified during historic surveys in Hatton Canyon.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Potentilla hickmanii</i> Hickman's cinquefoil	FE / SE / 1B	Coastal bluff scrub, closed-cone coniferous forests, vernal mesic meadows and seeps, and freshwater marshes and swamps at elevations of 10-149 meters. Perennial herb in the Rosaceae family; blooms April-August.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Ramalina thrausta</i> Angel's hair lichen	-- / -- / 1B	North coast coniferous forest on dead twigs and other lichens. Epiphytic fructose lichen in the Ramalinaceae family. In northern CA it is usually found on dead twigs, and has been found on <i>Alnus rubra</i> , <i>Calocedrus decurrens</i> , <i>Pseudotsuga menziesii</i> , <i>Quercus garryana</i> , and <i>Rubus spectabilis</i> . In Sonoma County it grows on and among dangling mats of <i>R. menziesii</i> and <i>Usnea</i> spp.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Rosa pinetorum</i> Pine rose	-- / -- / 1B	Closed-cone coniferous forest at elevations of 2-300 meters. Perennial shrub in the Rosaceae family; blooms May-July. Possible hybrid of <i>R. spithamea</i> , <i>R. gymnocarpa</i> , or others; further study needed.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Stebbinsoseris decipiens</i> <i>Santa Cruz microseris</i>	-- / -- / 1B	Broadleaved upland forest, closed-cone coniferous forest, chaparral, coastal prairie, coastal scrub, and openings in valley and foothill grassland, sometimes on serpentinite, at elevations of 10-500 meters. Annual herb in the Asteraceae family; blooms April-May.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Tortula californica</i> California screw moss	-- / -- / 1B	Valley and foothill grassland and chenopod scrub on sandy soils at elevations of 10-1460 meters. Moss in the Pottiaceae family.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Trifolium buckwestiorum</i> Santa Cruz clover	-- / -- / 1B	Gravelly margins of broadleaved upland forest, cismontane woodland, and coastal prairie at elevations of 105-610 meters. Annual herb in the Fabaceae family; blooms April-October.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.
<i>Trifolium hydrophilum</i> Saline clover	-- / -- / 1B	Marshes and swamps, mesic and alkaline valley and foothill grassland, and vernal pools at elevations of 0-300 meters. Annual herb in the Fabaceae family; blooms April-June.	Unlikely: No suitable habitat within the evaluation area. Not identified during historic surveys in Hatton Canyon.

Species	Status (Service/ CDFW/CNPS)	General Habitat	Potential Occurrence within Evaluation Area
<i>Trifolium polyodon</i> Pacific Grove clover	-- / SR / 1B	Mesic areas of closed-cone coniferous forest, coastal prairie, meadows and seeps, and valley and foothill grassland at elevations of 5-120 meters. Annual herb in the Fabaceae family; blooms April-July.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.
<i>Trifolium trichocalyx</i> Monterey clover	FE / SE / 1B	Sandy openings and burned areas of closed-cone coniferous forest at elevations of 30-240 meters. Annual herb in the Fabaceae family; blooms April-June.	Low: This species was not identified within Hatton Canyon during historic surveys; however, suitable habitat is present within the evaluation area.

STATUS DEFINITIONS

Federal

- FE = listed as Endangered under the federal Endangered Species Act
FT = listed as Threatened under the federal Endangered Species Act
FC = Candidate for listing under the federal Endangered Species Act
UR = Species that have been petitioned for listing under the ESA and for which a 90 day and/or 12 Month finding has not been published in the Federal Register, as well as species being reviewed through the candidate process but the CNOR has not yet been signed
-- = no listing

State

- SE = listed as Endangered under the California Endangered Species Act
ST = listed as Threatened under the California Endangered Species Act
SC = Candidate for listing under California Endangered Species Act
SR = listed as Rare under the California Endangered Species Act
CFP = California Fully Protected Species
CSC = CDFW Species of Concern
WL = CDFW Watch List
CNDDDB = This designation is being assigned to animal species that are not assigned any of the other status designations defined in this table. These animal species are included in CDFW's CNDDDB "Special Animals" list (2010), which includes all taxa the CNDDDB is interested in tracking, regardless of their legal or protection status. This list is also referred to as the list of "species at risk" or "special-status species." The California Department of Fish and Wildlife considers the taxa on this list to be those of greatest conservation need.
-- = no listing

California Native Plant Society

- 1B = California Rare Plant Rank 1B species; plants rare, threatened, or endangered in California and elsewhere
-- = no listing

POTENTIAL TO OCCUR

- Present = known occurrence of species within the site; presence of suitable habitat conditions; or observed during field surveys
High = known occurrence of species in the vicinity from the CNDDDB or other documentation; presence of suitable habitat conditions
Moderate = known occurrence of species in the vicinity from the CNDDDB or other documentation; presence of marginal habitat conditions within the site
Low = species known to occur in the vicinity from the CNDDDB or other documentation; lack of suitable habitat or poor quality
Unlikely = species not known to occur in the vicinity from the CNDDDB or other documentation, no suitable habitat is present within the site
Not Present = species was not observed during surveys

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APPENDIX B

CNDDDB OCCURRENCE REPORT

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Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database



Query Criteria: Quad (Monterey (3612158) OR Marina (3612167) OR Seaside (3612157) OR Soberanes Point (3612148) OR Mt. Carmel (3612147)) AND Taxonomic Group (Fish OR Amphibians OR Reptiles OR Birds OR Mammals OR Mollusks OR Arachnids OR Crustaceans OR Insects OR Ferns OR Gymnosperms OR Monocots OR Dicots OR Lichens OR Bryophytes)

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Agelaius tricolor</i> tricolored blackbird	ABPBXB0020	None	Candidate Endangered	G2G3	S1S2	SSC
<i>Allium hickmanii</i> Hickman's onion	PMLIL02140	None	None	G2	S2	1B.2
<i>Ambystoma californiense</i> California tiger salamander	AAAAA01180	Threatened	Threatened	G2G3	S2S3	WL
<i>Anniella pulchra</i> northern California legless lizard	ARACC01020	None	None	G3	S3	SSC
<i>Arctostaphylos edmundsii</i> Little Sur manzanita	PDERI04260	None	None	G2	S2	1B.2
<i>Arctostaphylos hookeri ssp. hookeri</i> Hooker's manzanita	PDERI040J1	None	None	G3T2	S2	1B.2
<i>Arctostaphylos montereyensis</i> Toro manzanita	PDERI040R0	None	None	G2?	S2?	1B.2
<i>Arctostaphylos pajaroensis</i> Pajaro manzanita	PDERI04100	None	None	G1	S1	1B.1
<i>Arctostaphylos pumila</i> sandmat manzanita	PDERI04180	None	None	G1	S1	1B.2
<i>Astragalus tener var. titi</i> coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G2T1	S1	1B.1
<i>Athene cunicularia</i> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<i>Bombus caliginosus</i> obscure bumble bee	IIHYM24380	None	None	G4?	S1S2	
<i>Bombus occidentalis</i> western bumble bee	IIHYM24250	None	None	G2G3	S1	
<i>Bryoria spiralifera</i> twisted horsehair lichen	NLTEST5460	None	None	G3	S1S2	1B.1
<i>Buteo regalis</i> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<i>Castilleja ambigua var. insalutata</i> pink Johnny-nip	PDSCR0D403	None	None	G4T2	S2	1B.1
<i>Centromadia parryi ssp. congdonii</i> Congdon's tarplant	PDAST4R0P1	None	None	G3T2	S2	1B.1



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Charadrius alexandrinus nivosus</i> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<i>Chorizanthe minutiflora</i> Fort Ord spineflower	PDPGN04100	None	None	G1	S1	1B.2
<i>Chorizanthe pungens var. pungens</i> Monterey spineflower	PDPGN040M2	Threatened	None	G2T2	S2	1B.2
<i>Clarkia jolonensis</i> Jolon clarkia	PDONA050L0	None	None	G2	S2	1B.2
<i>Coelus globosus</i> globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
<i>Collinsia multicolor</i> San Francisco collinsia	PDSCR0H0B0	None	None	G2	S2	1B.2
<i>Cordylanthus rigidus ssp. littoralis</i> seaside bird's-beak	PDSCR0J0P2	None	Endangered	G5T2	S2	1B.1
<i>Corynorhinus townsendii</i> Townsend's big-eared bat	AMACC08010	None	None	G3G4	S2	SSC
<i>Coturnicops noveboracensis</i> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<i>Cypseloides niger</i> black swift	ABNUA01010	None	None	G4	S2	SSC
<i>Danaus plexippus pop. 1</i> monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
<i>Delphinium californicum ssp. interius</i> Hospital Canyon larkspur	PDRAN0B0A2	None	None	G3T3	S3	1B.2
<i>Delphinium hutchinsoniae</i> Hutchinson's larkspur	PDRAN0B0V0	None	None	G2	S2	1B.2
<i>Emys marmorata</i> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<i>Eremophila alpestris actia</i> California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
<i>Ericameria fasciculata</i> Eastwood's goldenbush	PDAST3L080	None	None	G2	S2	1B.1
<i>Eriogonum nortonii</i> Pinnacles buckwheat	PDPGN08470	None	None	G2	S2	1B.3
<i>Erysimum ammophilum</i> sand-loving wallflower	PDBRA16010	None	None	G2	S2	1B.2
<i>Erysimum menziesii</i> Menzies' wallflower	PDBRA160R0	Endangered	Endangered	G1	S1	1B.1
<i>Eucyclogobius newberryi</i> tidewater goby	AFCQN04010	Endangered	None	G3	S3	SSC
<i>Euphilotes enoptes smithi</i> Smith's blue butterfly	IILEPG2026	Endangered	None	G5T1T2	S1S2	



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Fritillaria liliacea</i> fragrant fritillary	PMLIL0V0C0	None	None	G2	S2	1B.2
<i>Gilia tenuiflora ssp. arenaria</i> Monterey gilia	PDPLM041P2	Endangered	Threatened	G3G4T2	S2	1B.2
<i>Hesperocyparis goveniana</i> Gowen cypress	PGCUP04031	Threatened	None	G1	S1	1B.2
<i>Hesperocyparis macrocarpa</i> Monterey cypress	PGCUP04060	None	None	G1	S1	1B.2
<i>Horkelia cuneata var. sericea</i> Kellogg's horkelia	PDROS0W043	None	None	G4T1?	S1?	1B.1
<i>Horkelia marinensis</i> Point Reyes horkelia	PDROS0W0B0	None	None	G2	S2	1B.2
<i>Lasiurus cinereus</i> hoary bat	AMACC05030	None	None	G5	S4	
<i>Lasthenia conjugens</i> Contra Costa goldfields	PDAST5L040	Endangered	None	G1	S1	1B.1
<i>Laterallus jamaicensis coturniculus</i> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<i>Layia carnosa</i> beach layia	PDAST5N010	Endangered	Endangered	G2	S2	1B.1
<i>Lindleriella occidentalis</i> California lindleriella	ICBRA06010	None	None	G2G3	S2S3	
<i>Lupinus tidestromii</i> Tidestrom's lupine	PDFAB2B3Y0	Endangered	Endangered	G1	S1	1B.1
<i>Malacothamnus palmeri var. involucratus</i> Carmel Valley bush-mallow	PDMAL0Q0B1	None	None	G3T2Q	S2	1B.2
<i>Malacothrix saxatilis var. arachnoidea</i> Carmel Valley malacothrix	PDAST660C2	None	None	G5T2	S2	1B.2
<i>Microseris paludosa</i> marsh microseris	PDAST6E0D0	None	None	G2	S2	1B.2
<i>Monardella sinuata ssp. nigrescens</i> northern curly-leaved monardella	PDLAM18162	None	None	G3T2	S2	1B.2
<i>Monolopia gracilens</i> woodland woollythreads	PDAST6G010	None	None	G3	S3	1B.2
<i>Oceanodroma homochroa</i> ashy storm-petrel	ABNDC04030	None	None	G2	S2	SSC
<i>Oncorhynchus mykiss irideus pop. 9</i> steelhead - south-central California coast DPS	AFCHA0209H	Threatened	None	G5T2Q	S2	
<i>Pelecanus occidentalis californicus</i> California brown pelican	ABNFC01021	Delisted	Delisted	G4T3	S3	FP
<i>Phrynosoma blainvillii</i> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC



Selected Elements by Scientific Name
California Department of Fish and Wildlife
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Pinus radiata</i> Monterey pine	PGPIN040V0	None	None	G1	S1	1B.1
<i>Piperia yadonii</i> Yadon's rein orchid	PMORC1X070	Endangered	None	G1	S1	1B.1
<i>Plagiobothrys uncinatus</i> hooked popcornflower	PDBOR0V170	None	None	G2	S2	1B.2
<i>Potentilla hickmanii</i> Hickman's cinquefoil	PDR0S1B0U0	Endangered	Endangered	G1	S1	1B.1
<i>Ramalina thrausta</i> angel's hair lichen	NLLEC3S340	None	None	G5	S2?	2B.1
<i>Rana draytonii</i> California red-legged frog	AAABH01022	Threatened	None	G2G3	S2S3	SSC
<i>Reithrodontomys megalotis distichlis</i> Salinas harvest mouse	AMAFF02032	None	None	G5T1	S1	
<i>Riparia riparia</i> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<i>Rosa pinetorum</i> pine rose	PDR0S1J0W0	None	None	G2	S2	1B.2
<i>Sidalcea malachroides</i> maple-leaved checkerbloom	PDMAL110E0	None	None	G3	S3	4.2
<i>Stebbinsoseris decipiens</i> Santa Cruz microseris	PDAST6E050	None	None	G2	S2	1B.2
<i>Taricha torosa</i> Coast Range newt	AAAAF02032	None	None	G4	S4	SSC
<i>Taxidea taxus</i> American badger	AMAJF04010	None	None	G5	S3	SSC
<i>Tortula californica</i> California screw moss	NBMUS7L090	None	None	G2G3	S2S3	1B.2
<i>Trifolium buckwestiorum</i> Santa Cruz clover	PDFAB402W0	None	None	G2	S2	1B.1
<i>Trifolium hydrophilum</i> saline clover	PDFAB400R5	None	None	G2	S2	1B.2
<i>Trifolium polyodon</i> Pacific Grove clover	PDFAB402H0	None	Rare	G1	S1	1B.1
<i>Trifolium trichocalyx</i> Monterey clover	PDFAB402J0	Endangered	Endangered	G1	S1	1B.1

Record Count: 77

APPENDIX C

IPaC RESOURCES LIST FOR THE EVALUATION AREA

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IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Hatton Canyon Sewer Main Replacement Project

LOCATION

Monterey County, California



DESCRIPTION

Replace the existing 8-inch VCP sewer main with a 10-inch HDPE sewer main by pipe bursting method, including wrapping existing manholes and potentially adding grade rings to limit I/I, and optional maintenance roadway improvements

Local office

Ventura Fish And Wildlife Office

☎ (805) 644-1766

📠 (805) 644-3958

2493 Portola Road, Suite B
Ventura, CA 93003-7726

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Southern Sea Otter <i>Enhydra lutris nereis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8560	Threatened Marine mammal

Birds

NAME	STATUS
<p>California Condor <i>Gymnogyps californianus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8193</p>	Endangered
<p>California Least Tern <i>Sterna antillarum browni</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104</p>	Endangered
<p>Least Bell's Vireo <i>Vireo bellii pusillus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/5945</p>	Endangered
<p>Marbled Murrelet <i>Brachyramphus marmoratus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/4467</p>	Threatened
<p>Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/6749</p>	Endangered
<p>Western Snowy Plover <i>Charadrius alexandrinus nivosus</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8035</p>	Threatened

Amphibians

NAME	STATUS
<p>California Red-legged Frog <i>Rana draytonii</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/2891</p>	Threatened

California Tiger Salamander *Ambystoma californiense*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/2076>

Fishes

NAME

STATUS

Tidewater Goby *Eucyclogobius newberryi*

Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/57>

Insects

NAME

STATUS

Smith's Blue Butterfly *Euphilotes enoptes smithi*

Endangered

There is **proposed** critical habitat for this species. The location of the critical habitat is not available.

<https://ecos.fws.gov/ecp/species/4418>

Crustaceans

NAME

STATUS

Vernal Pool Fairy Shrimp *Branchinecta lynchi*

Threatened

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/498>

Flowering Plants

NAME

STATUS

Beach Layia *Layia carnosa*

Endangered

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/6728>

Clover Lupine <i>Lupinus tidestromii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4459	Endangered
Coastal Dunes Milk-vetch <i>Astragalus tener</i> var. <i>titi</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7675	Endangered
Hickman's Potentilla <i>Potentilla hickmanii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6343	Endangered
Marsh Sandwort <i>Arenaria paludicola</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2229	Endangered
Menzies' Wallflower <i>Erysimum menziesii</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/2935	Endangered
Monterey Clover <i>Trifolium trichocalyx</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4282	Endangered
Monterey Gilia <i>Gilia tenuiflora</i> ssp. <i>arenaria</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/856	Endangered
Monterey Spineflower <i>Chorizanthe pungens</i> var. <i>pungens</i> There is final critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/396	Threatened

Yadon's Piperia *Piperia yadonii*

Endangered

There is **final** critical habitat for this species. Your location is outside the critical habitat.

<https://ecos.fws.gov/ecp/species/4205>

Conifers and Cycads

NAME	STATUS
Gowen Cypress <i>Cupressus goveniana</i> ssp. <i>goveniana</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8548	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service³. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.
3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>

- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are [USFWS Birds of Conservation Concern](#) that might be affected by activities in this location. The list does not contain every bird you may find in this location, nor is it guaranteed that all of the birds on the list will be found on or near this location. To get a better idea of the specific locations where certain species have been reported and their level of occurrence, please refer to resources such as the [E-bird data mapping tool](#) (year-round bird sightings by birders and the general public) and [Breeding Bird Survey](#) (relative abundance maps for breeding birds). Although it is important to try to avoid and minimize impacts to all birds, special attention should be given to the birds on the list below. To get a list of all birds potentially present in your project area, visit the [E-bird Explore Data Tool](#).

NAME	BREEDING SEASON
Allen's Hummingbird <i>Selasphorus sasin</i> https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Ashy Storm-petrel <i>Oceanodroma homochroa</i> https://ecos.fws.gov/ecp/species/7237	Breeds May 1 to Jan 15
Black Oystercatcher <i>Haematopus bachmani</i> https://ecos.fws.gov/ecp/species/9591	Breeds Apr 15 to Oct 31
Black Rail <i>Laterallus jamaicensis</i> https://ecos.fws.gov/ecp/species/7717	Breeds Mar 1 to Sep 15
Black Skimmer <i>Rynchops niger</i> https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Black Swift <i>Cypseloides niger</i> https://ecos.fws.gov/ecp/species/8878	Breeds Jun 15 to Sep 10
Black Turnstone <i>Arenaria melanocephala</i>	Breeds elsewhere
Black-chinned Sparrow <i>Spizella atrogularis</i> https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Burrowing Owl <i>Athene cunicularia</i> https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31

California Spotted Owl <i>Strix occidentalis occidentalis</i> https://ecos.fws.gov/ecp/species/7266	Breeds Mar 10 to Jun 15
California Thrasher <i>Toxostoma redivivum</i>	Breeds Jan 1 to Jul 31
Clark's Grebe <i>Aechmophorus clarkii</i>	Breeds Jan 1 to Dec 31
Common Yellowthroat <i>Geothlypis trichas sinuosa</i> https://ecos.fws.gov/ecp/species/2084	Breeds May 20 to Jul 31
Costa's Hummingbird <i>Calypte costae</i> https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Gull-billed Tern <i>Gelochelidon nilotica</i> https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Lawrence's Goldfinch <i>Carduelis lawrencei</i> https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Lewis's Woodpecker <i>Melanerpes lewis</i> https://ecos.fws.gov/ecp/species/9408	Breeds Apr 20 to Sep 30
Long-billed Curlew <i>Numenius americanus</i> https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Marbled Godwit <i>Limosa fedoa</i> https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Mountain Plover <i>Charadrius montanus</i> https://ecos.fws.gov/ecp/species/3638	Breeds elsewhere
Nuttall's Woodpecker <i>Picoides nuttallii</i> https://ecos.fws.gov/ecp/species/9410	Breeds Apr 1 to Jul 20
Oak Titmouse <i>Baeolophus inornatus</i> https://ecos.fws.gov/ecp/species/9656	Breeds Mar 15 to Jul 15

Red Knot <i>Calidris canutus</i> ssp. <i>roselaari</i> https://ecos.fws.gov/ecp/species/8880	Breeds elsewhere
Rufous Hummingbird <i>selasphorus rufus</i> https://ecos.fws.gov/ecp/species/8002	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Snowy Plover <i>Charadrius alexandrinus</i>	Breeds Mar 5 to Sep 15
Song Sparrow <i>Melospiza melodia maxillaris</i> https://ecos.fws.gov/ecp/species/7716	Breeds Feb 20 to Sep 5
Spotted Towhee <i>Pipilo maculatus clementae</i> https://ecos.fws.gov/ecp/species/4243	Breeds Apr 15 to Jul 20
Tricolored Blackbird <i>Agelaius tricolor</i> https://ecos.fws.gov/ecp/species/3910	Breeds Mar 15 to Aug 10
Whimbrel <i>Numenius phaeopus</i> https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet <i>Tringa semipalmata</i>	Breeds elsewhere
Wrentit <i>Chamaea fasciata</i>	Breeds Mar 15 to Aug 10
Yellow-billed Magpie <i>Pica nuttalli</i> https://ecos.fws.gov/ecp/species/9726	Breeds Apr 1 to Jul 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote when the bird breeds in the Bird Conservation Region(s) in which your project lies. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

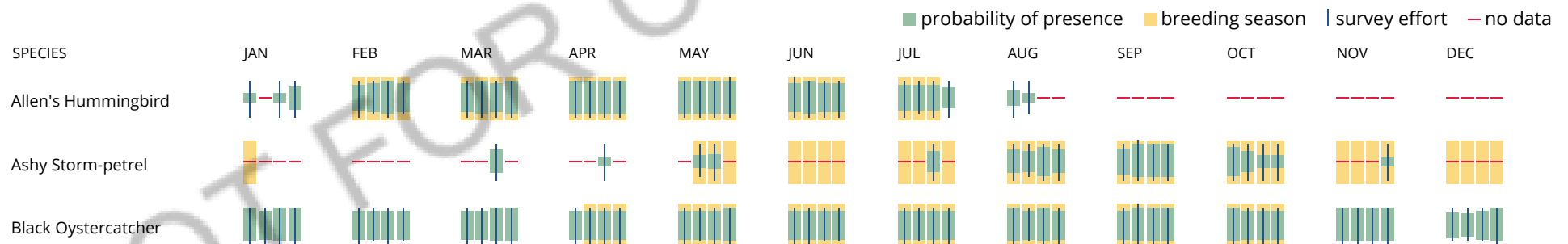
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

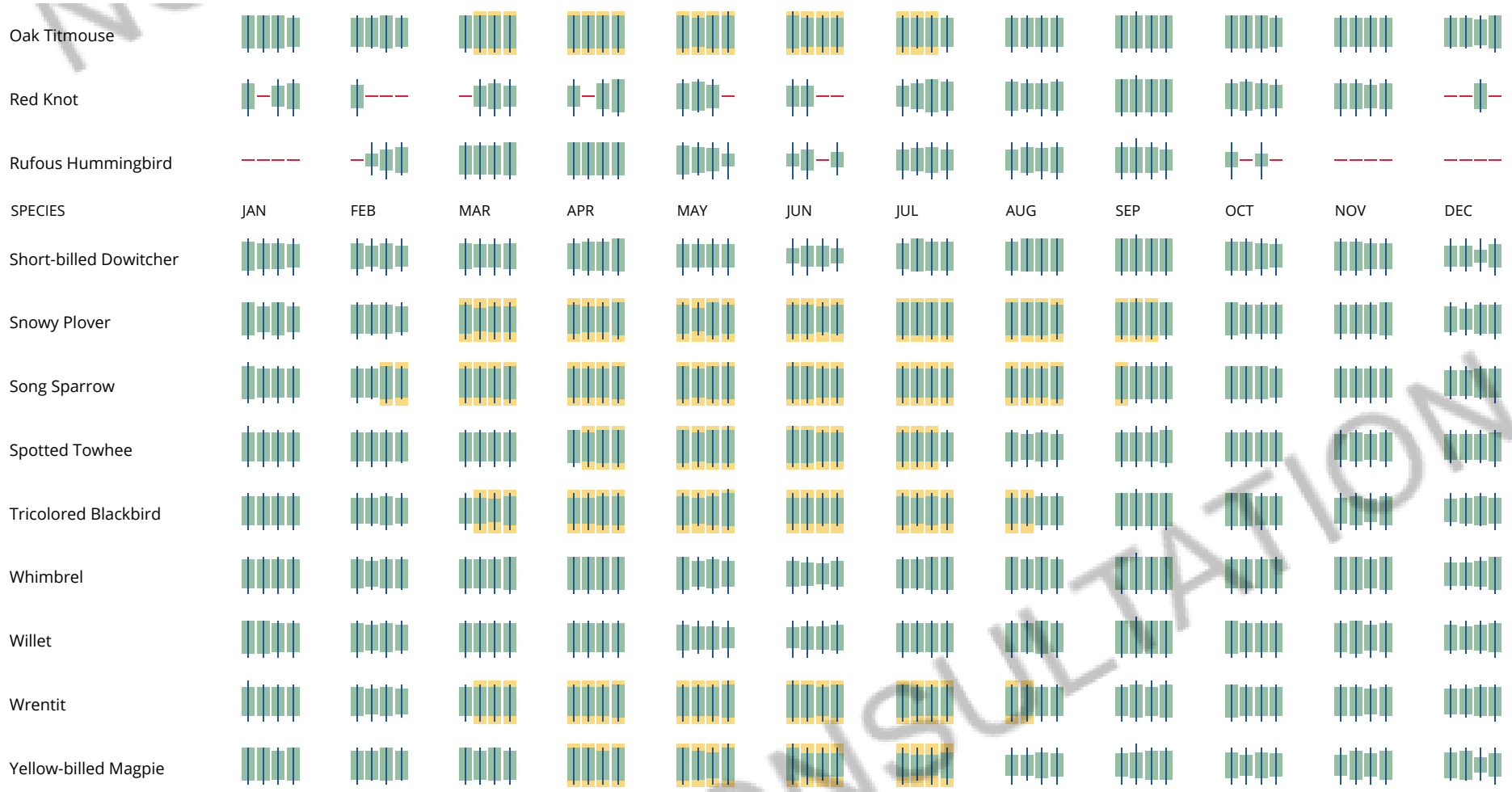
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

NOT FOR CONSULTATION

Marine mammals

Marine mammals are protected under the [Marine Mammal Protection Act](#). Some are also protected under the Endangered Species Act¹ and the Convention on International Trade in Endangered Species of Wild Fauna and Flora².

The responsibilities for the protection, conservation, and management of marine mammals under these acts are shared by the U.S. Fish and Wildlife Service and the National Marine Fisheries Service (NMFS). Marine mammals that fall under the responsibility of NMFS are **not** shown on this list.

1. The [Endangered Species Act](#) (ESA) of 1973.
2. The [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#) (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.

The following marine mammals are potentially affected by activities in this location:

NAME

Southern Sea Otter *Enhydra lutris nereis*
<https://ecos.fws.gov/ecp/species/8560>

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

[PEMA](#)

RIVERINE

[R4SBA](#)

A full description for each wetland code can be found at the National Wetlands Inventory website: <https://ecos.fws.gov/ipac/wetlands/decoder>

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.












Data precautions

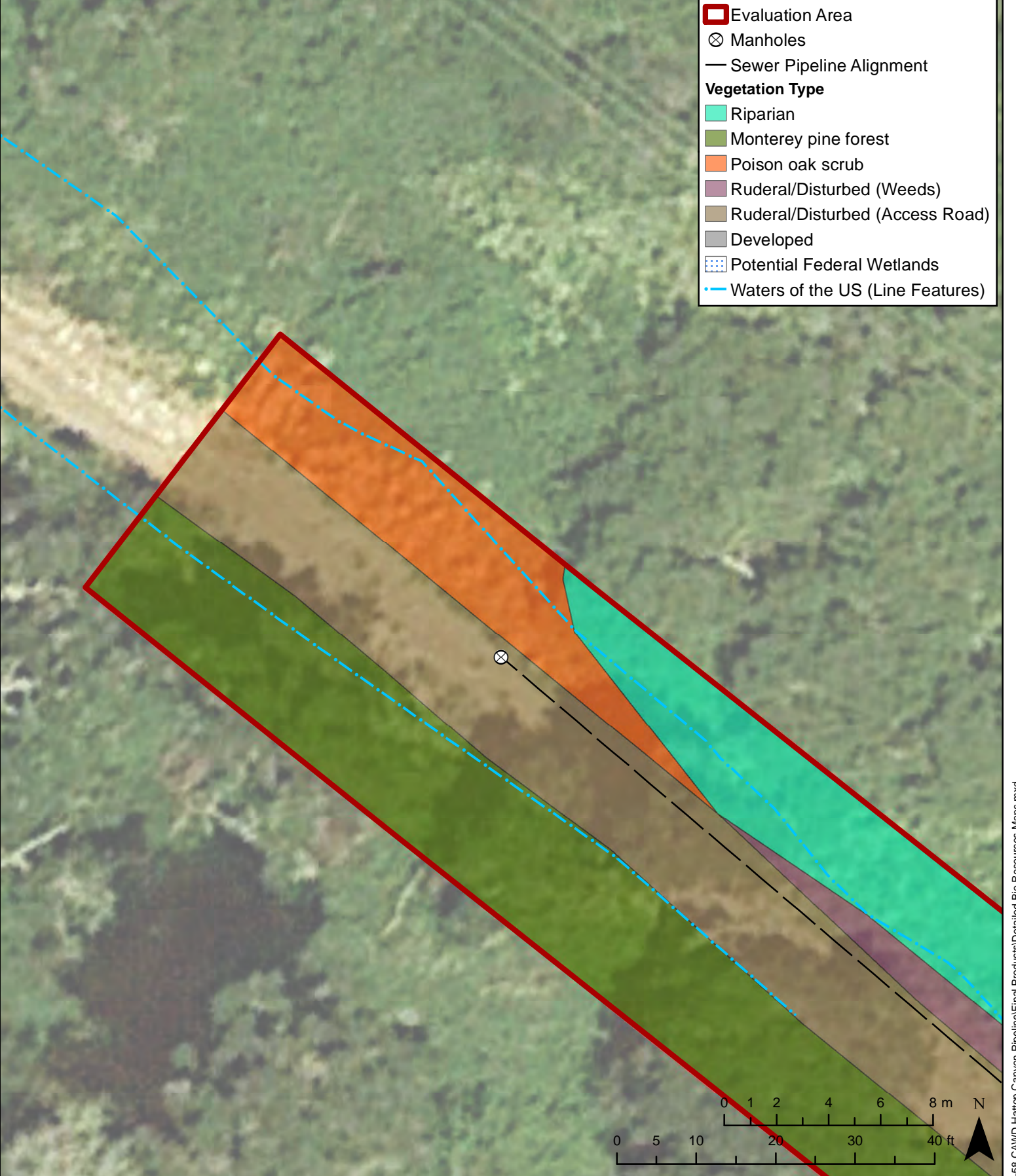
Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

APPENDIX D

DETAILED MAPS OF BIOLOGICAL RESOURCES AROUND MANHOLES AND PROPOSED STAGING AREAS

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-  Evaluation Area
-  Manholes
-  Sewer Pipeline Alignment
- Vegetation Type**
-  Riparian
-  Monterey pine forest
-  Poison oak scrub
-  Ruderal/Disturbed (Weeds)
-  Ruderal/Disturbed (Access Road)
-  Developed
-  Potential Federal Wetlands
-  Waters of the US (Line Features)



Manhole O803

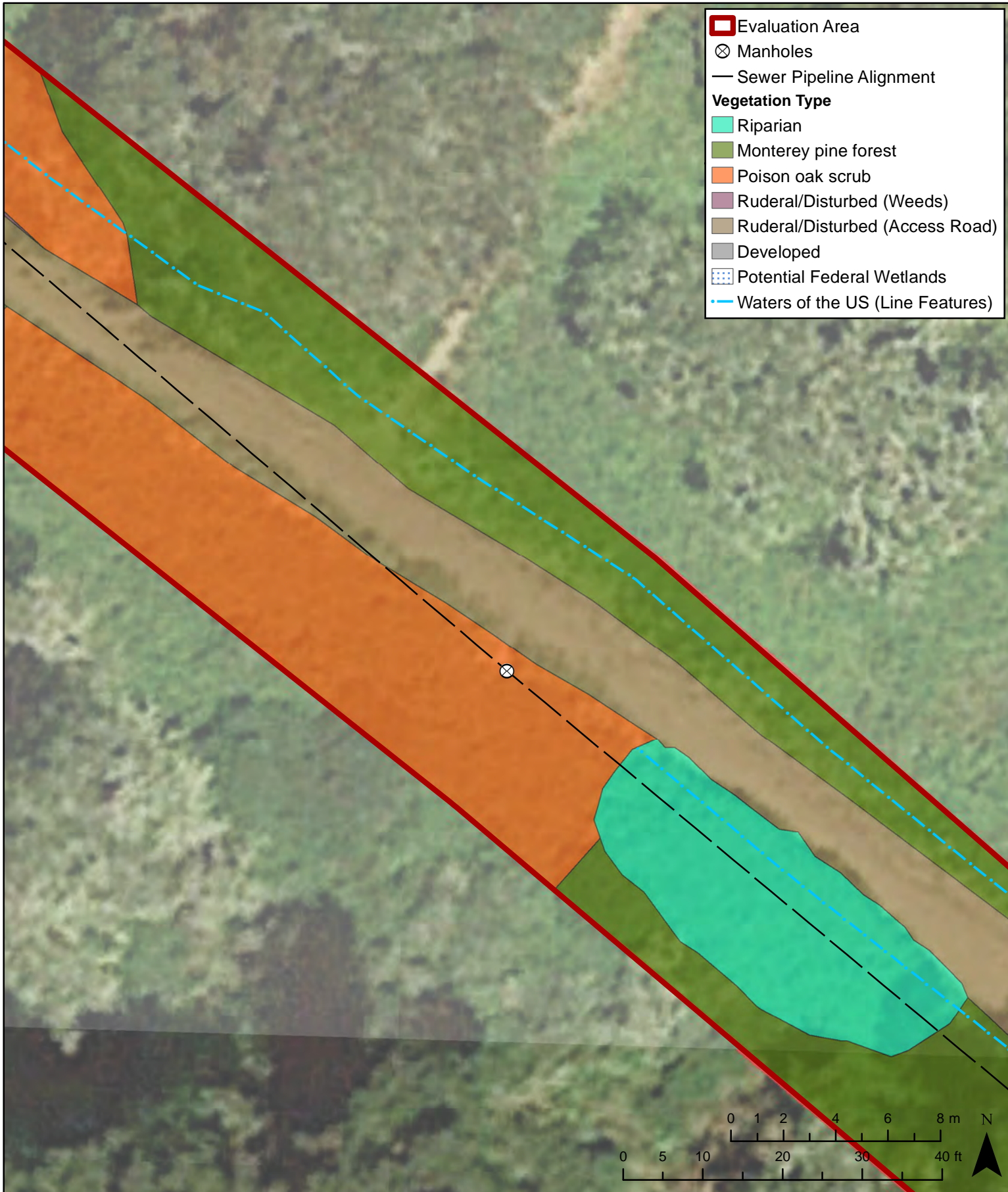


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Date
 1-16-2017

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Page
1



- Evaluation Area
- X Manholes
- Sewer Pipeline Alignment
- Vegetation Type**
- Riparian
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- Poison oak scrub
- Ruderal/Disturbed (Weeds)
- Ruderal/Disturbed (Access Road)
- Developed
- Potential Federal Wetlands
- Waters of the US (Line Features)

Manhole O804

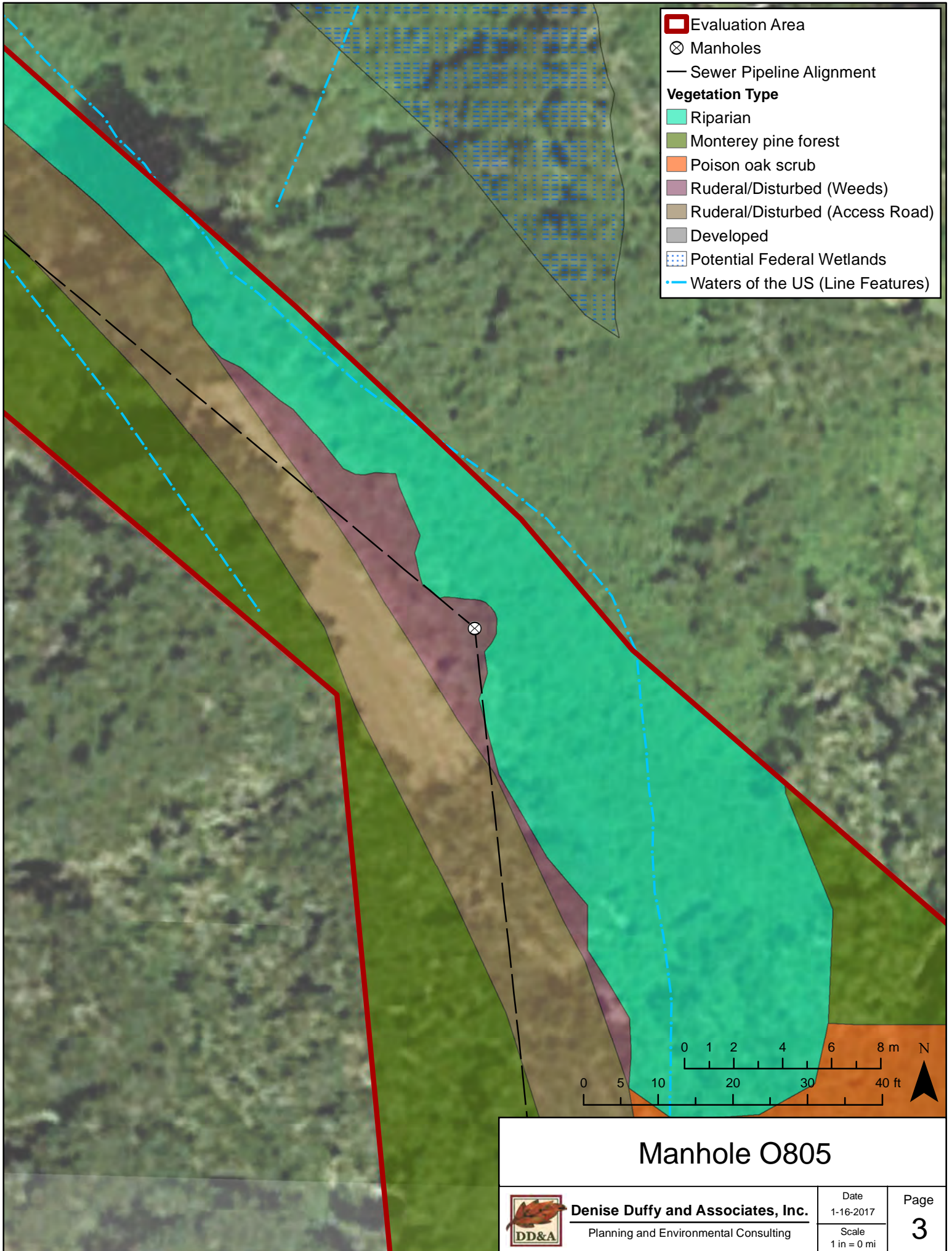


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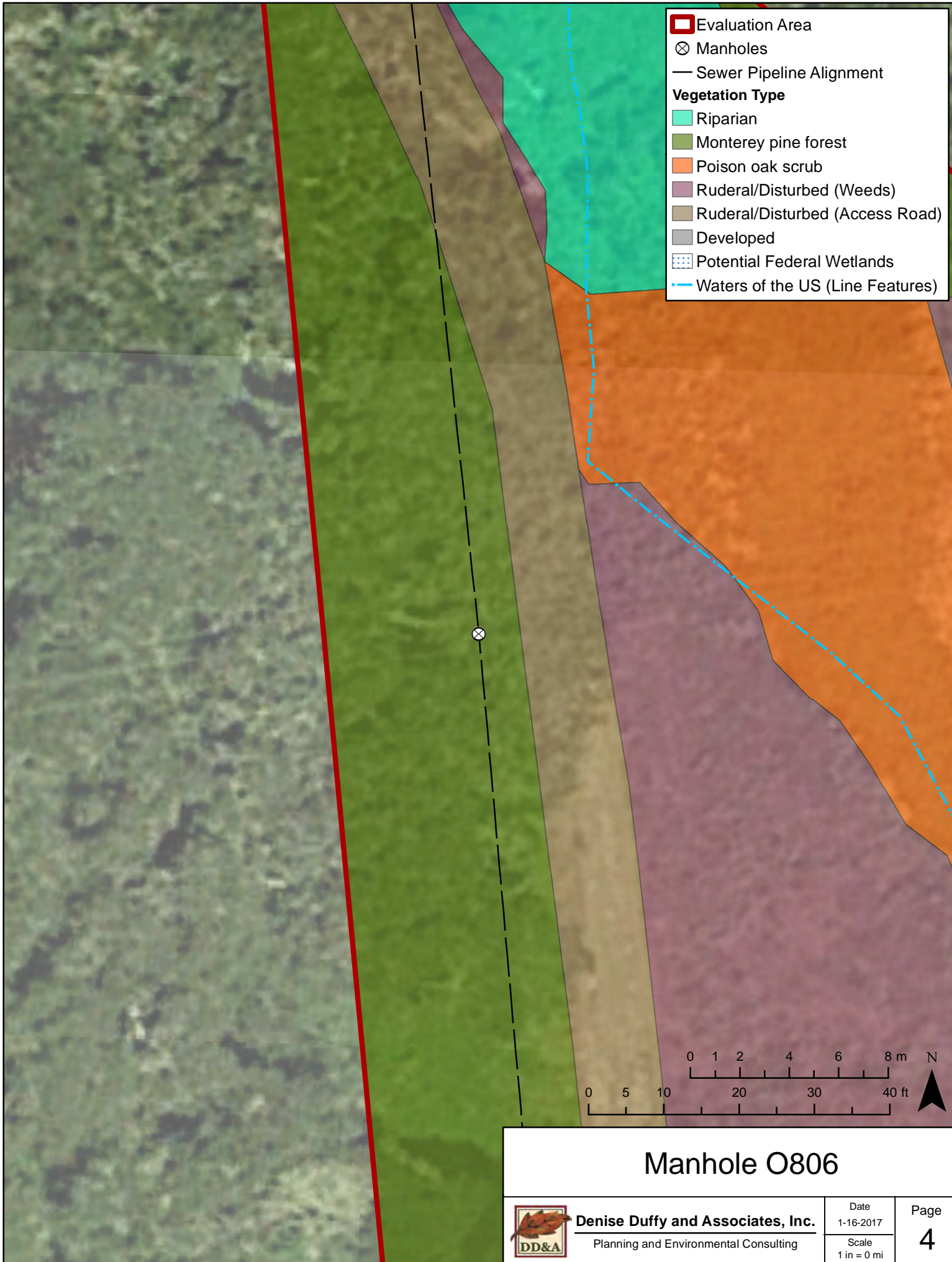
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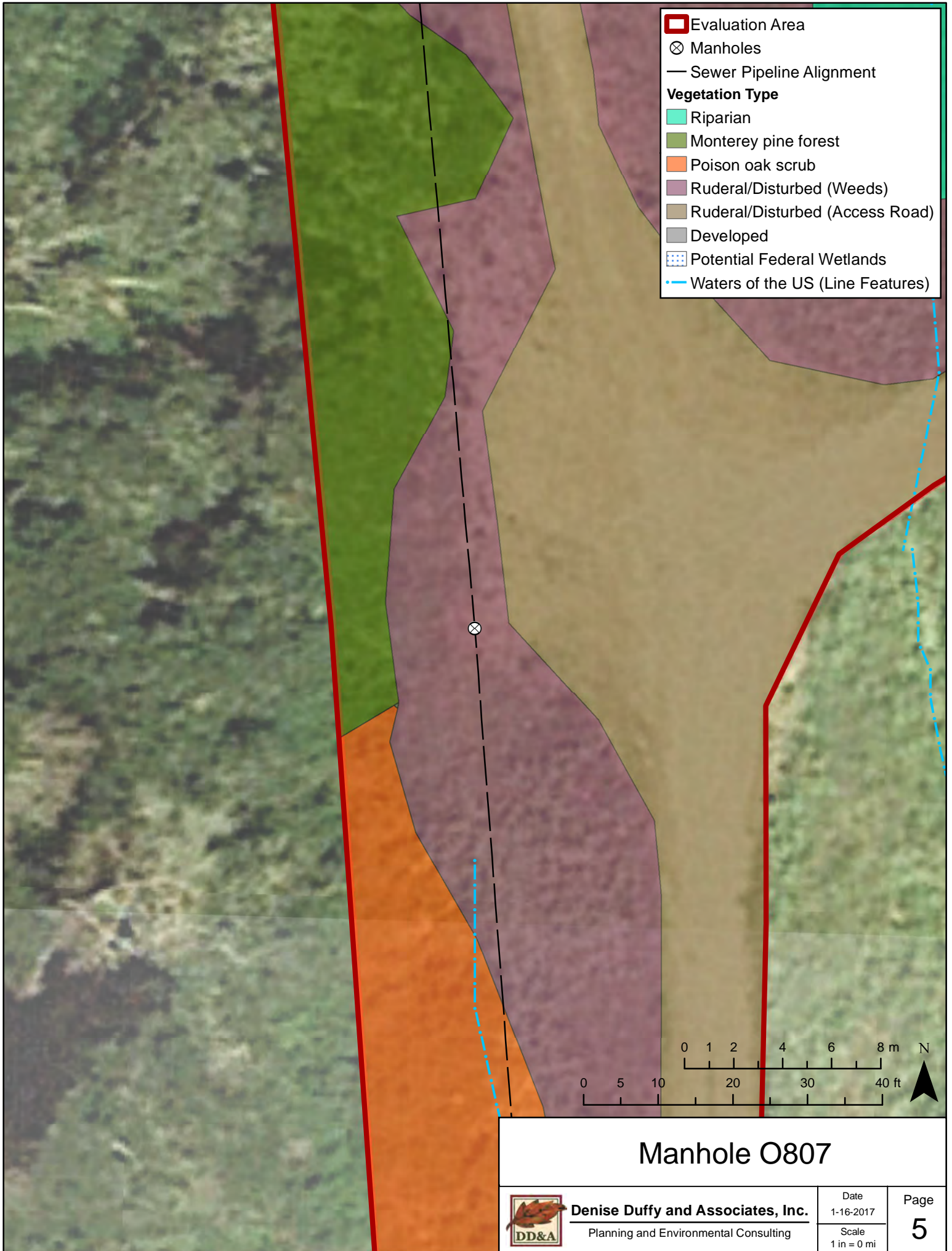


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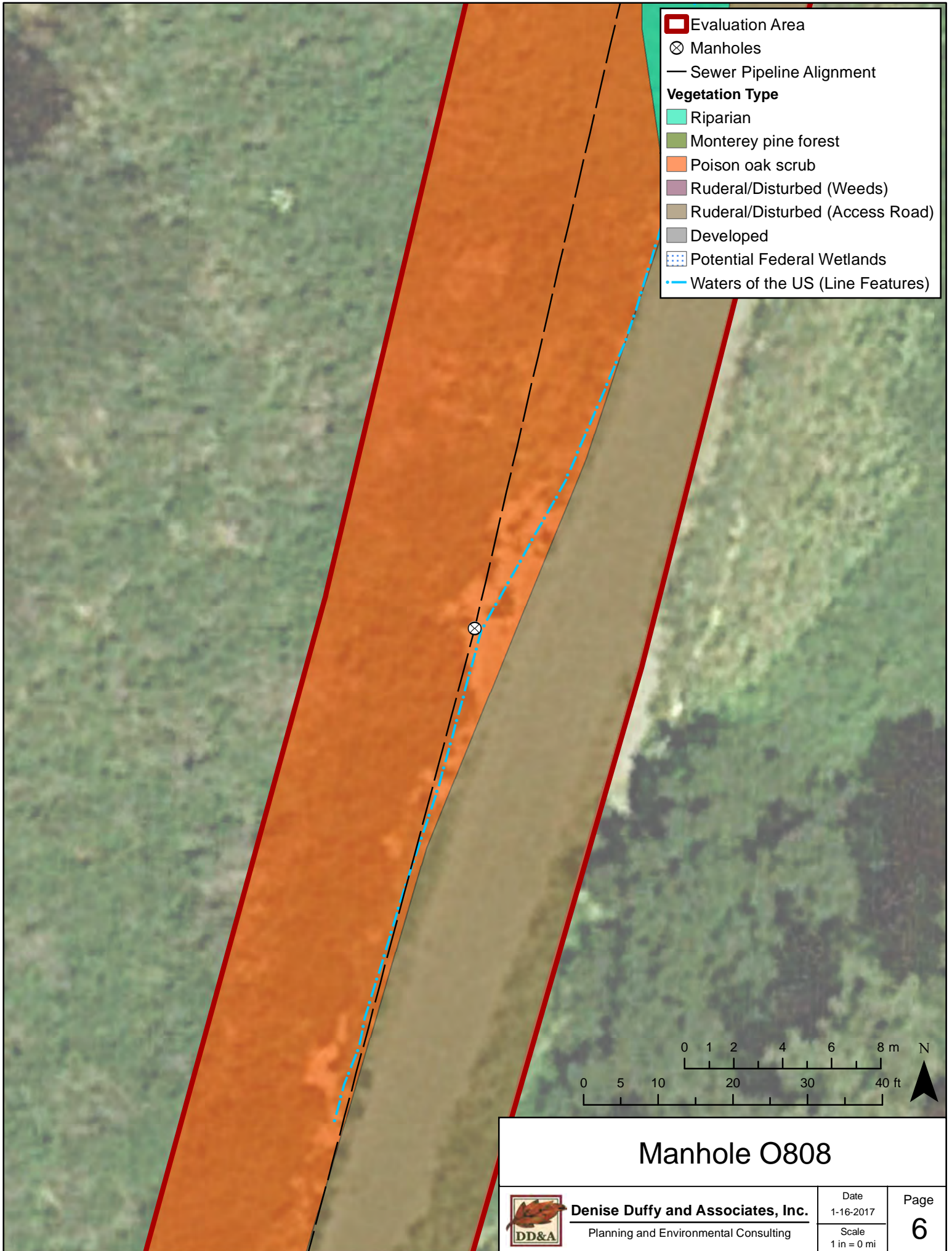


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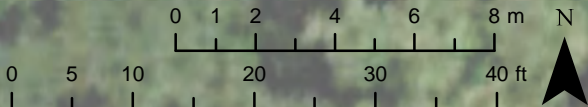
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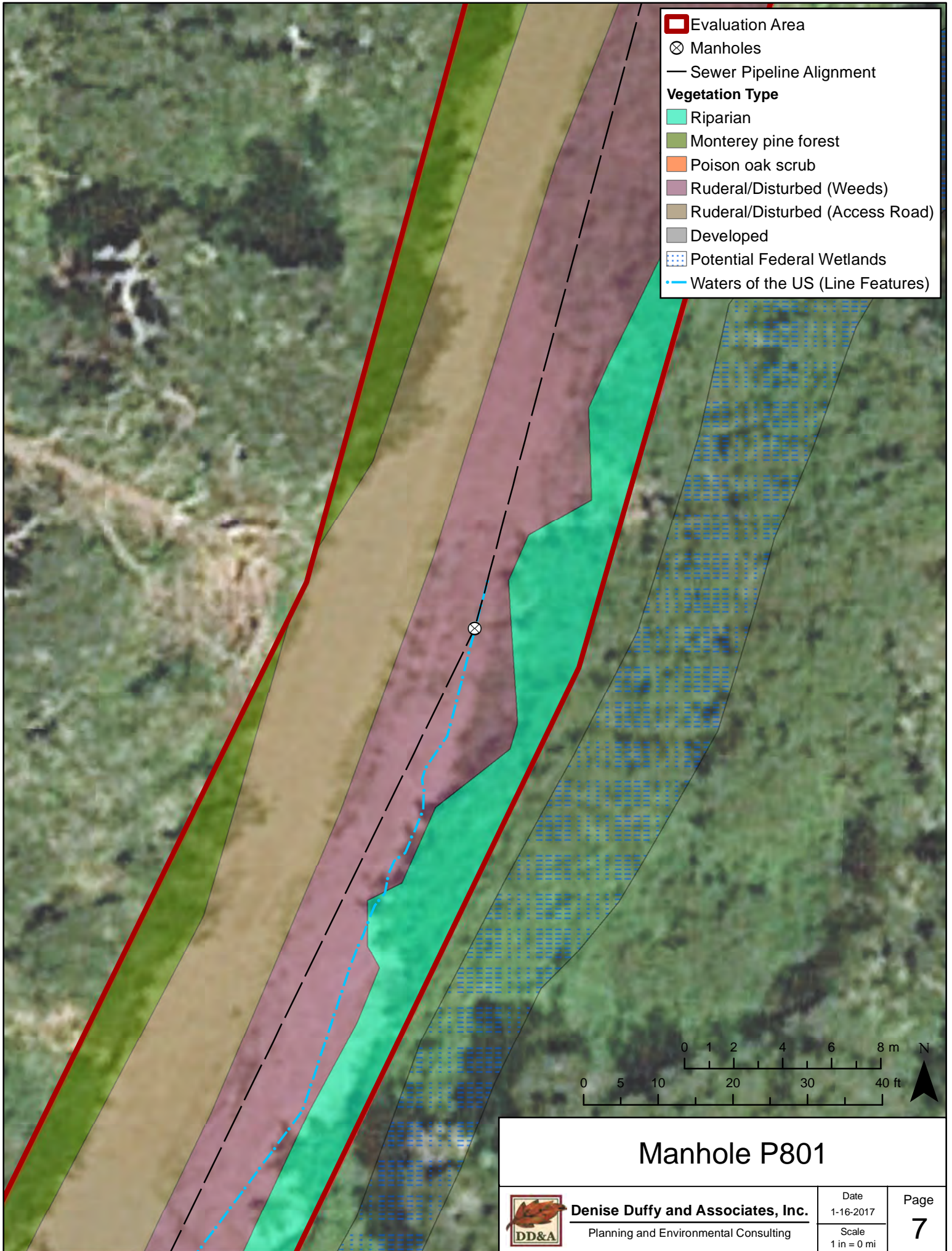
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5



- Evaluation Area
- ⊗ Manholes
- Sewer Pipeline Alignment
- Vegetation Type**
- Riparian
- Monterey pine forest
- Poison oak scrub
- Ruderal/Disturbed (Weeds)
- Ruderal/Disturbed (Access Road)
- Developed
- Potential Federal Wetlands
- Waters of the US (Line Features)



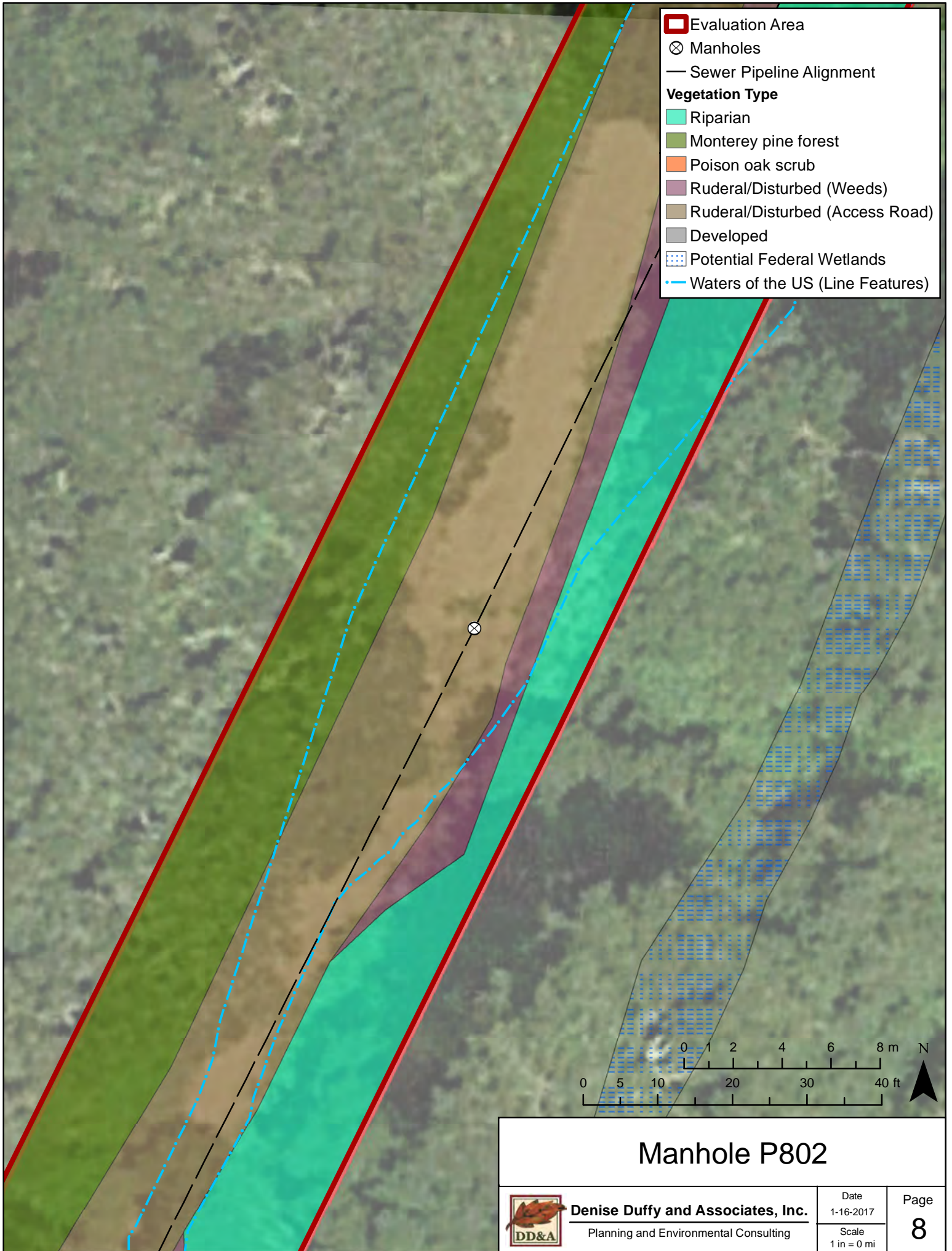
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Date 1-16-2017	Page 6
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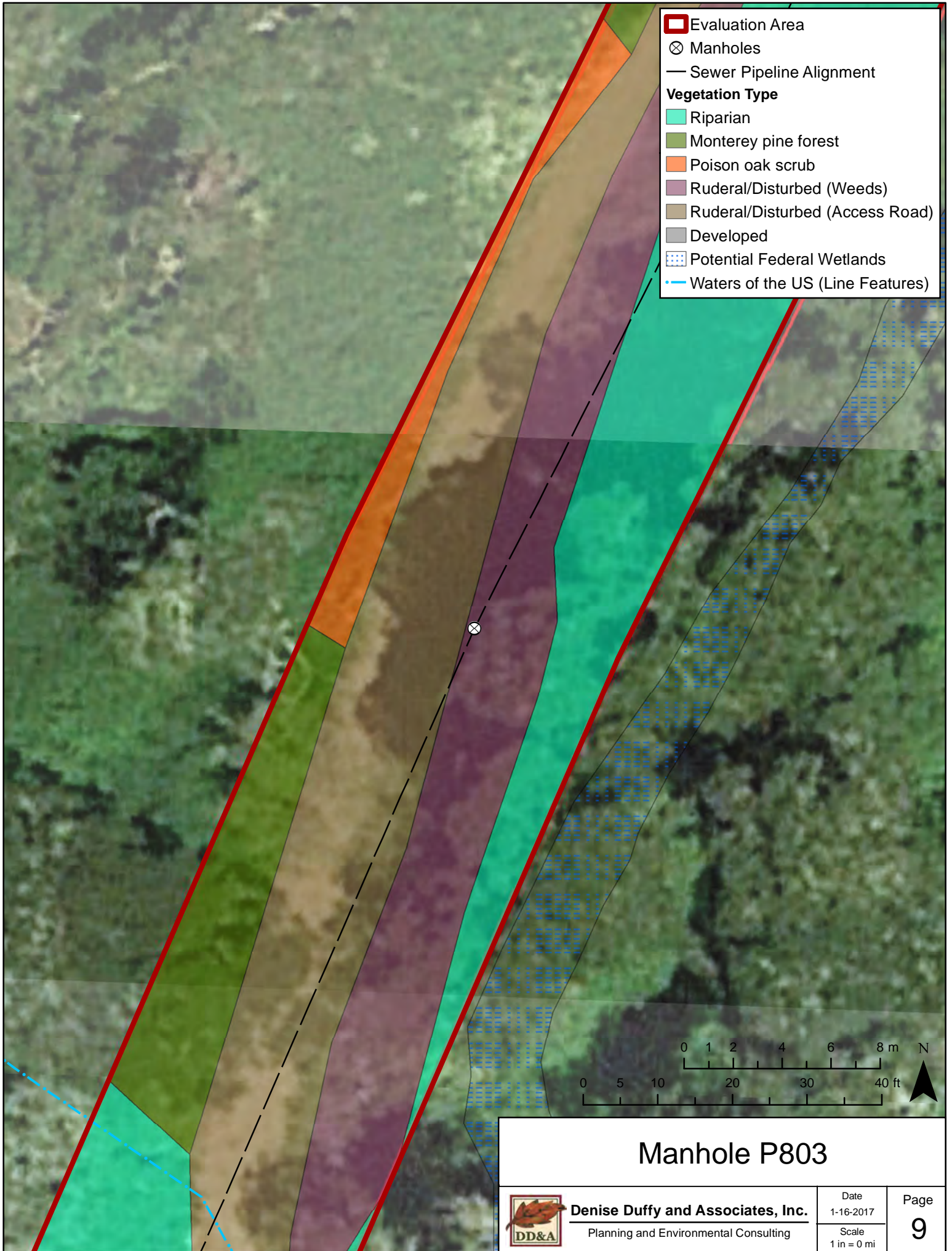


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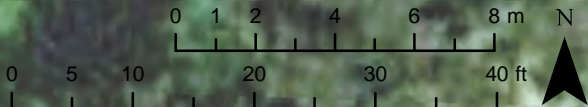
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Page
7



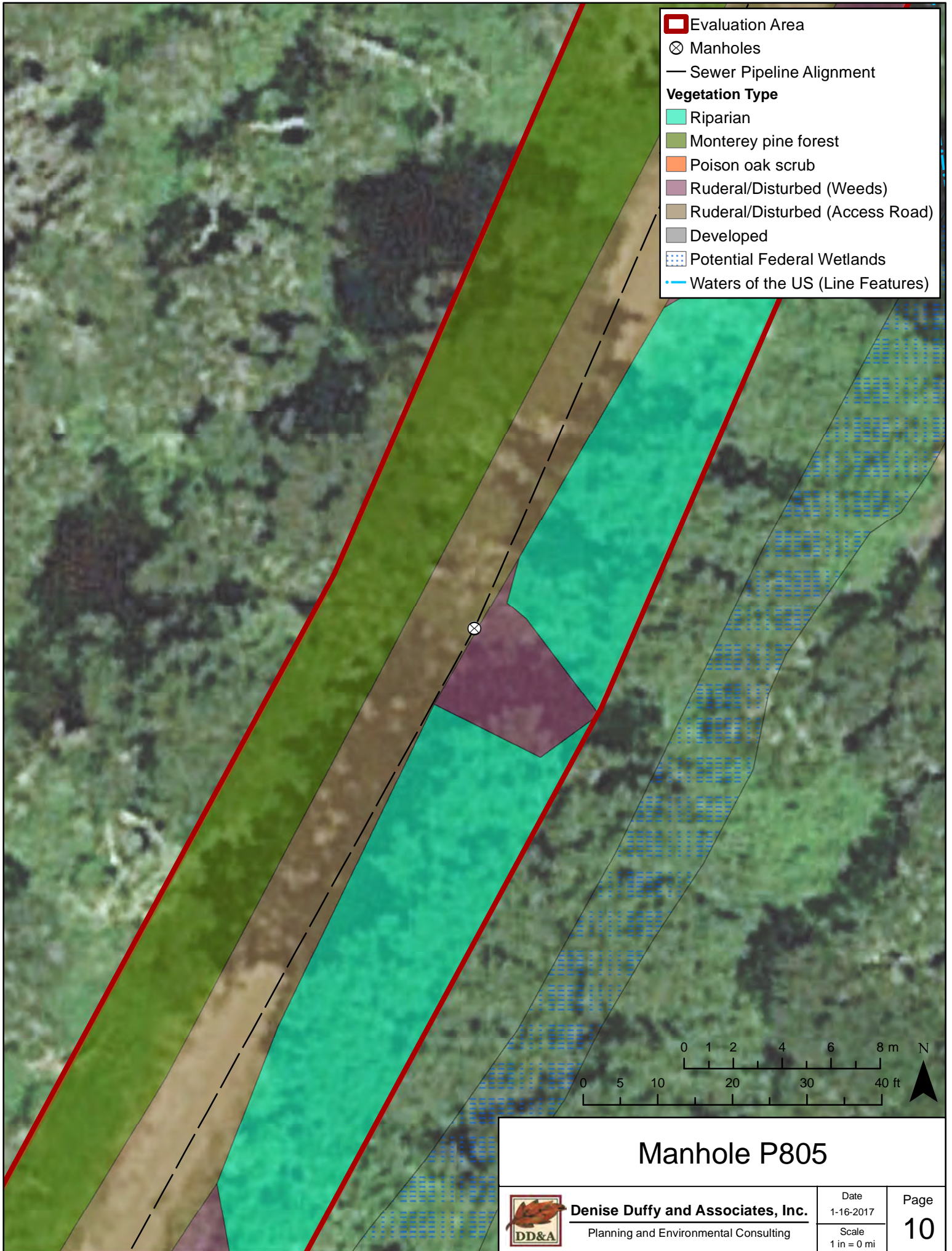


- Evaluation Area
- Manholes
- Sewer Pipeline Alignment
- Vegetation Type**
- Riparian
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- Ruderal/Disturbed (Access Road)
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Manhole P803

	Denise Duffy and Associates, Inc.	Date 1-16-2017	Page 9
	Planning and Environmental Consulting	Scale 1 in = 0 mi	

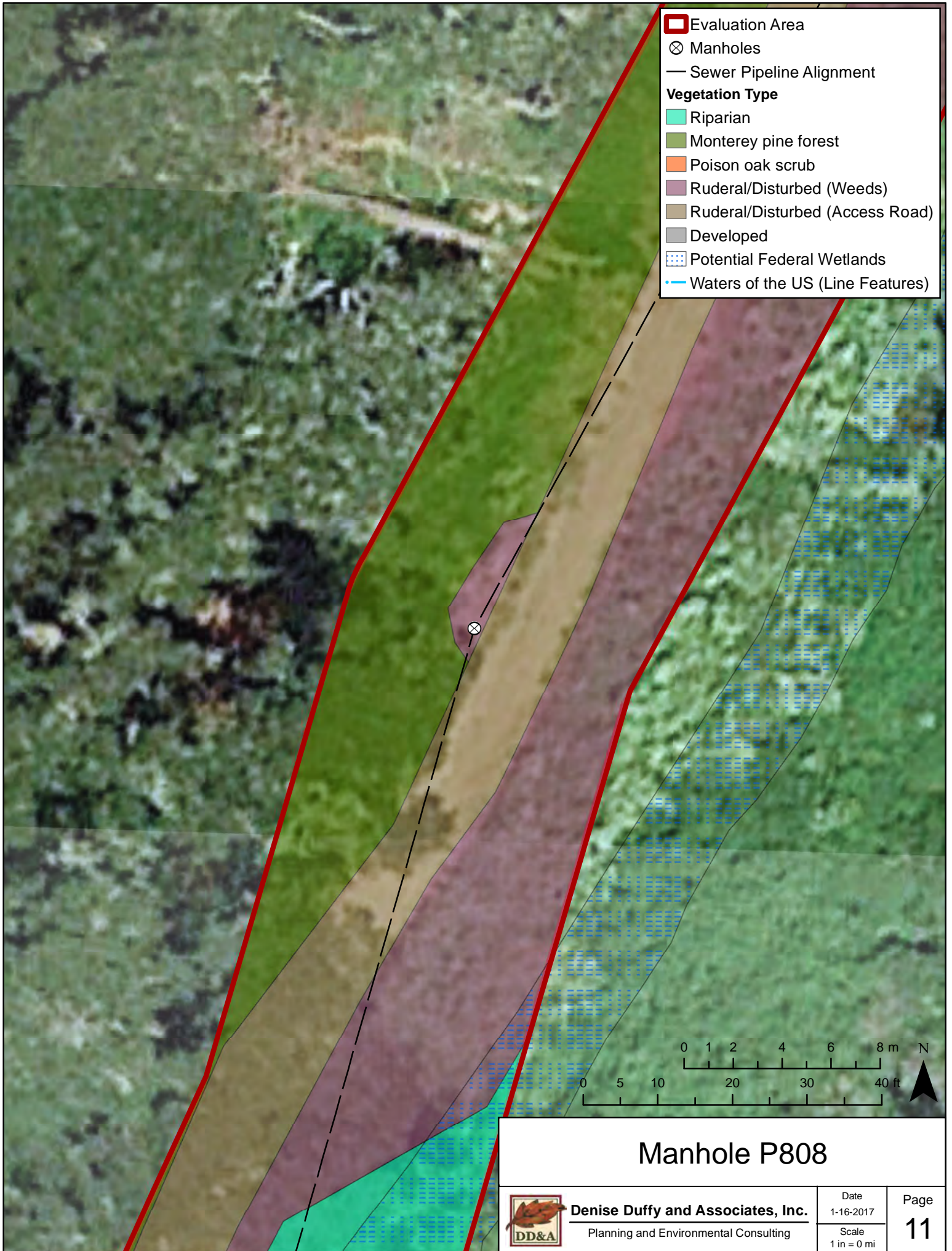


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Date
 1-16-2017

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Page
10



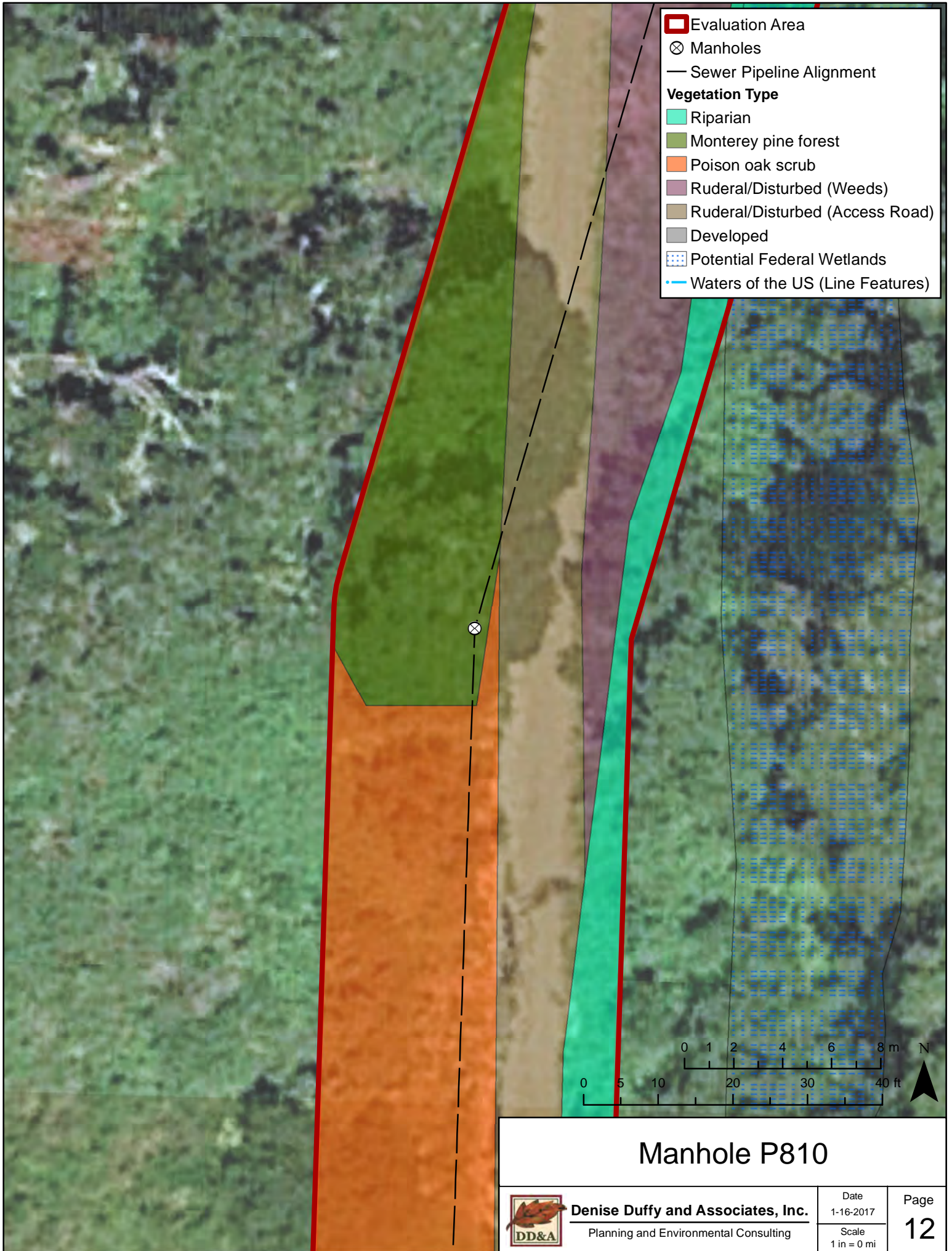
Manhole P808



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Date
1-16-2017
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Page
11



- Evaluation Area
- X Manholes
- Sewer Pipeline Alignment
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Manhole P810

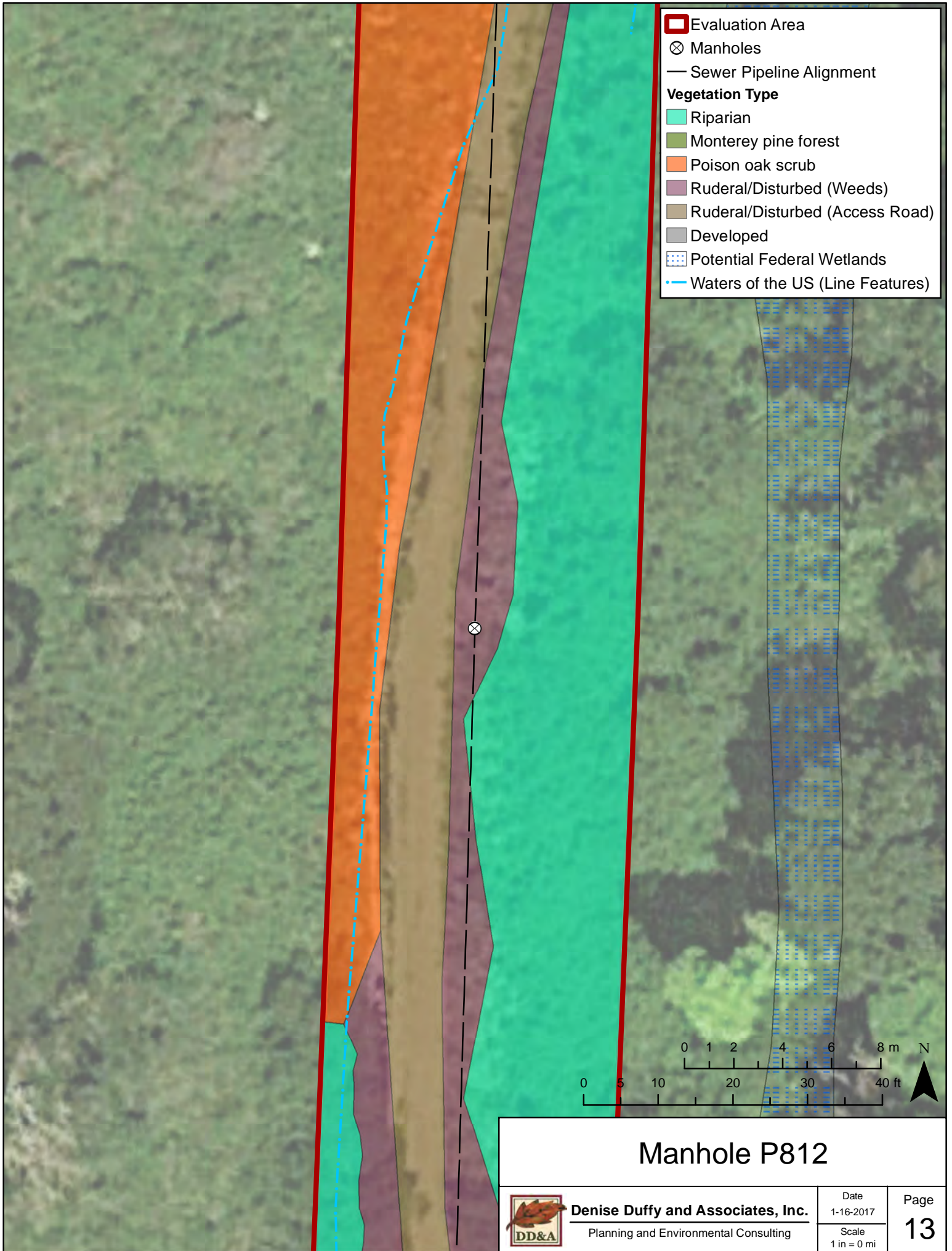


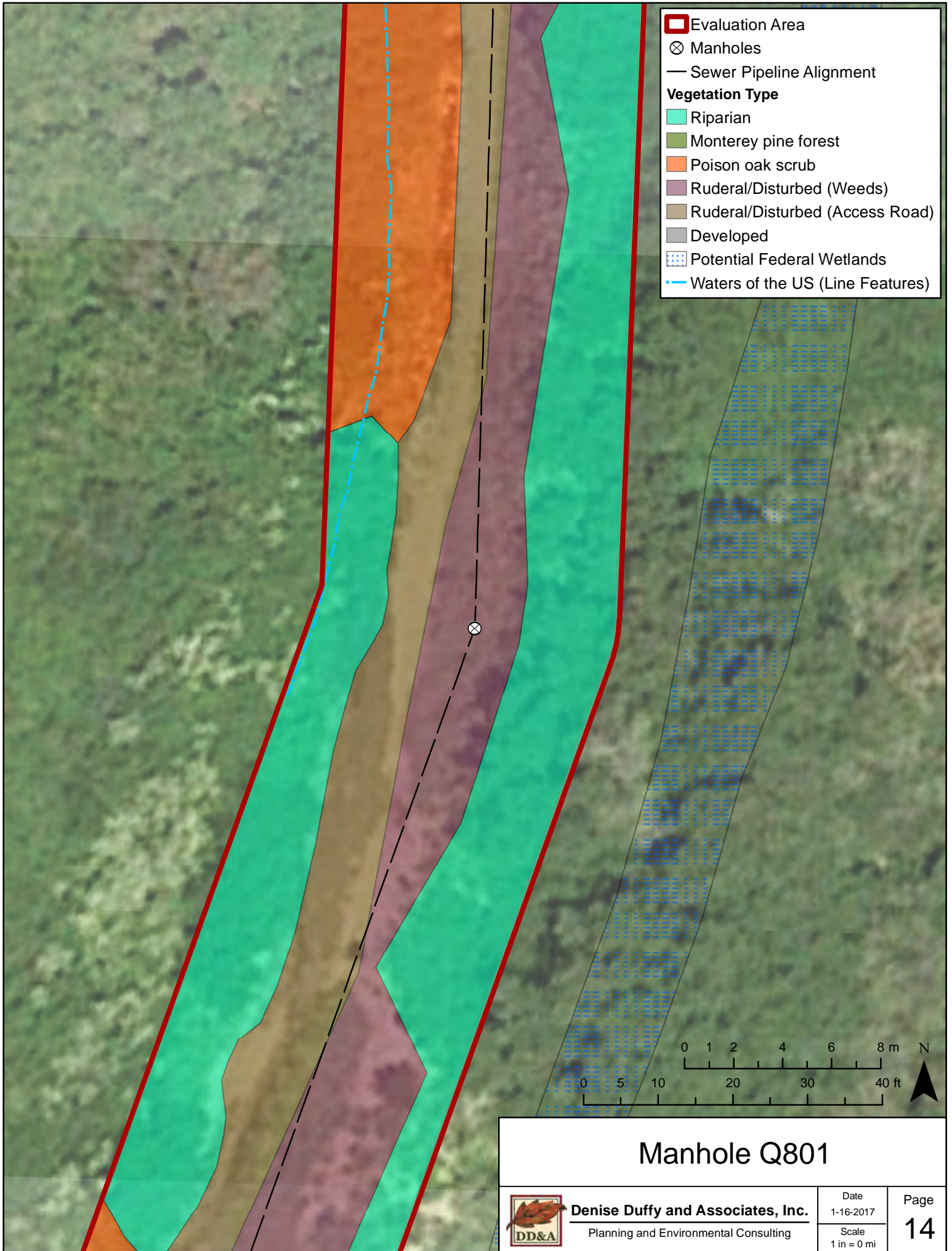
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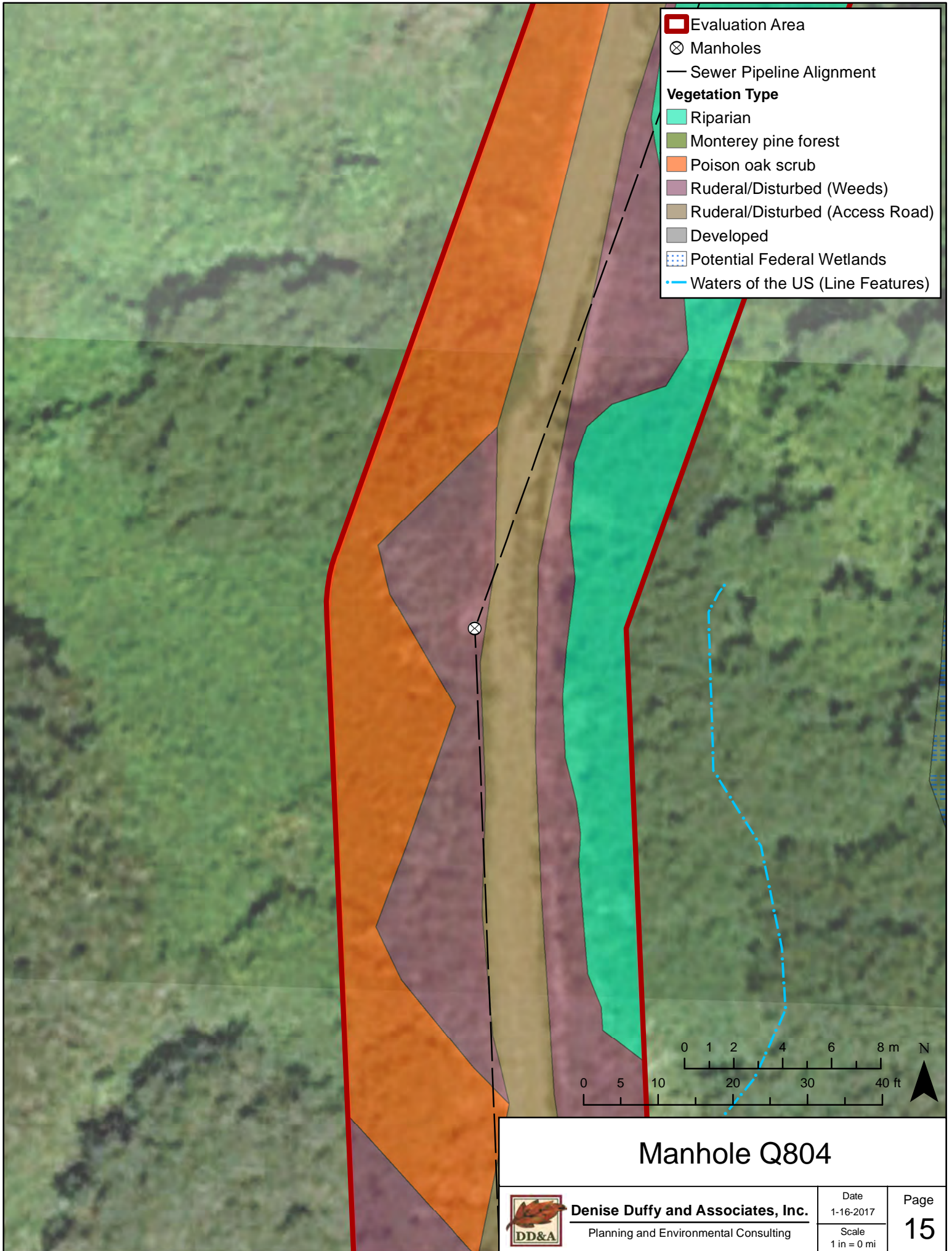
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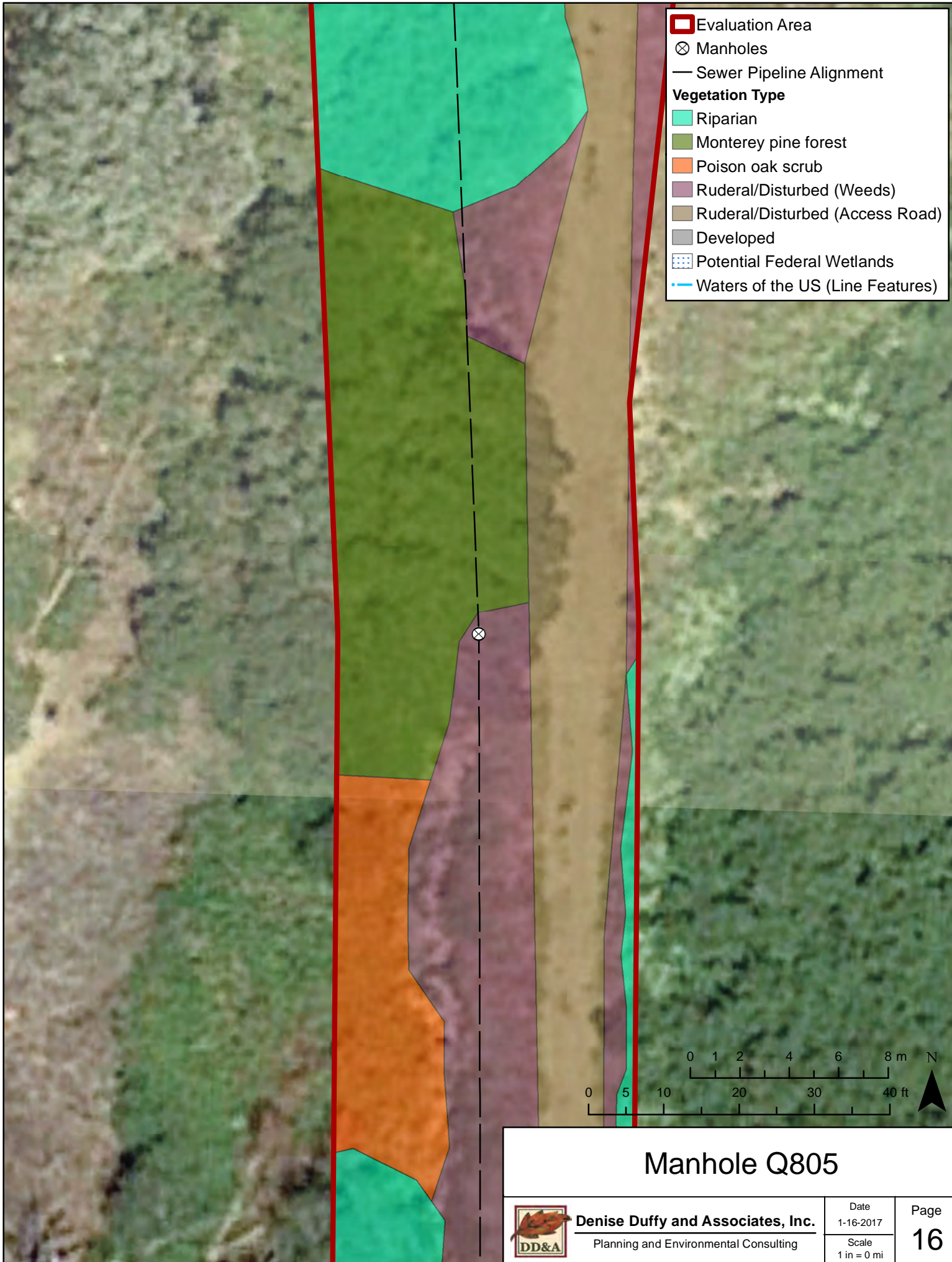
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Page
12







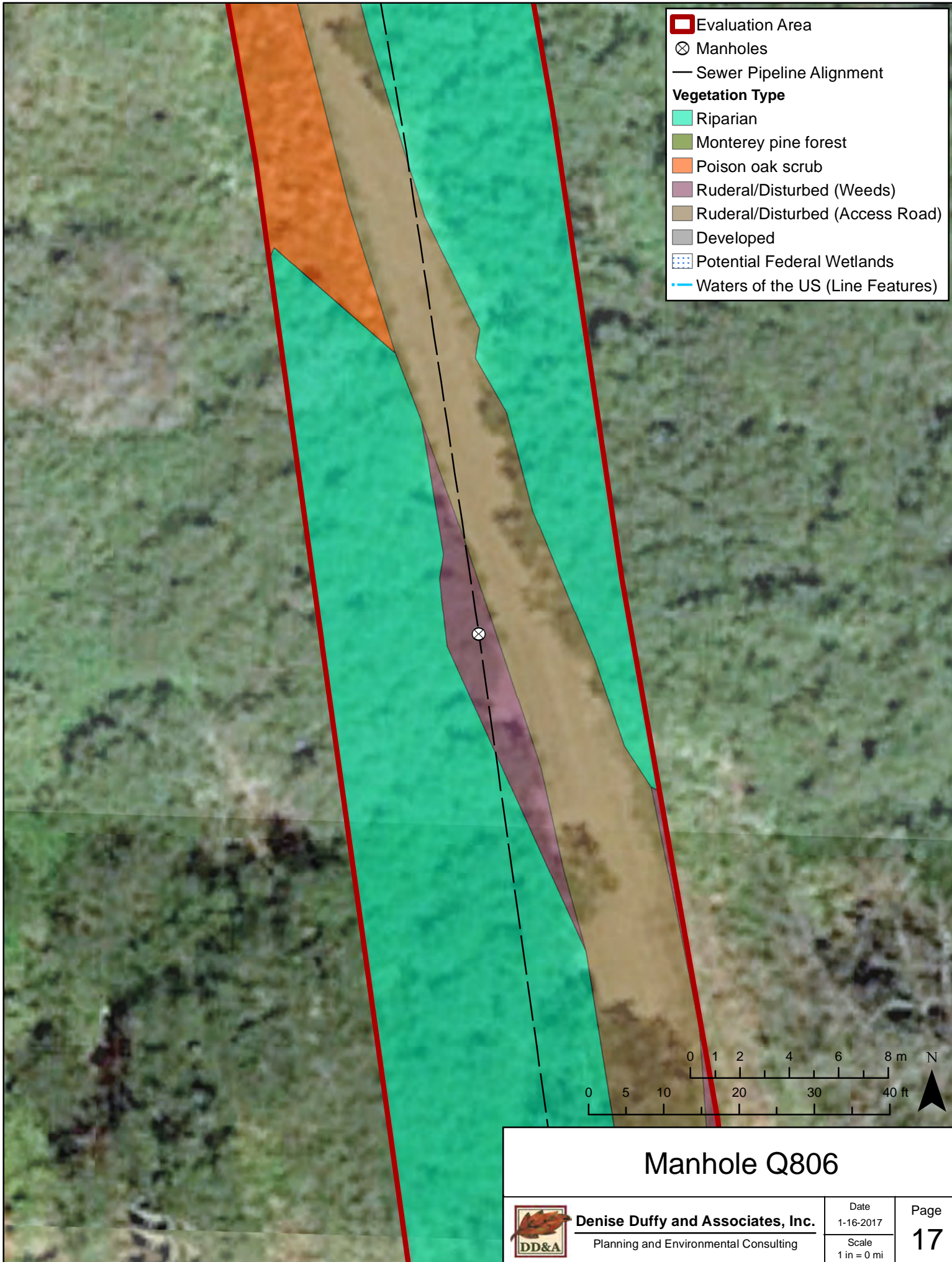


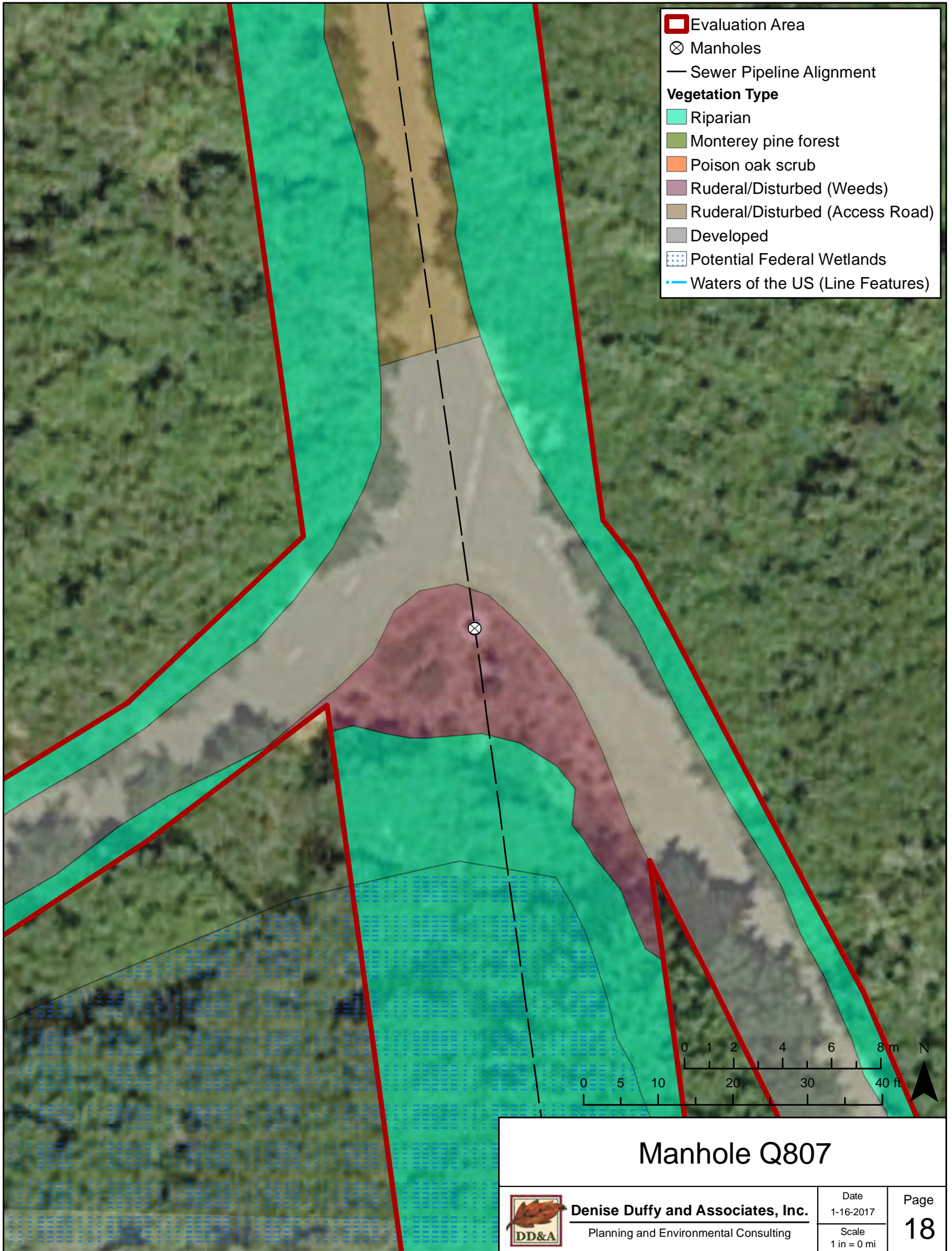
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16



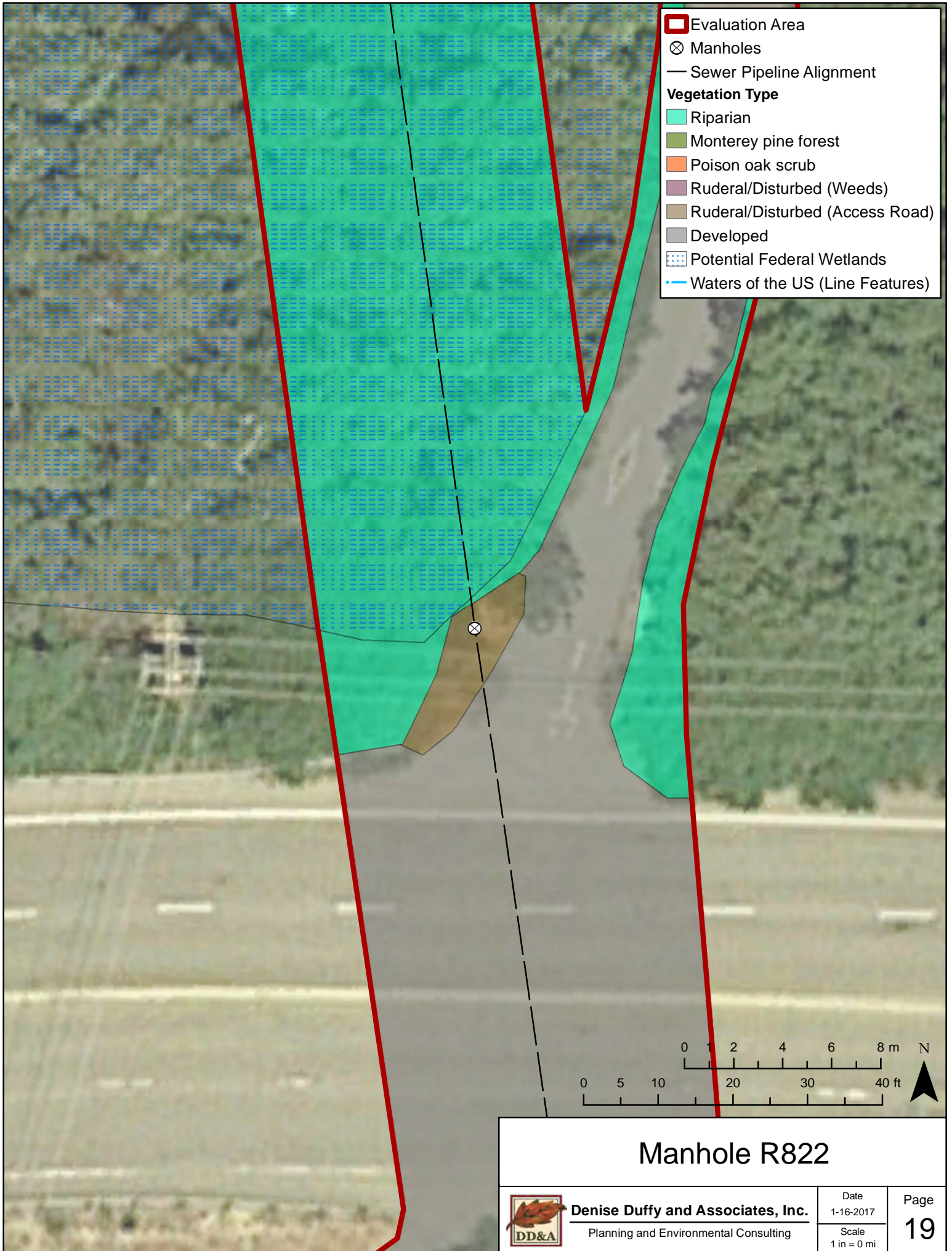


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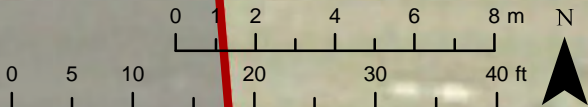
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Page
18

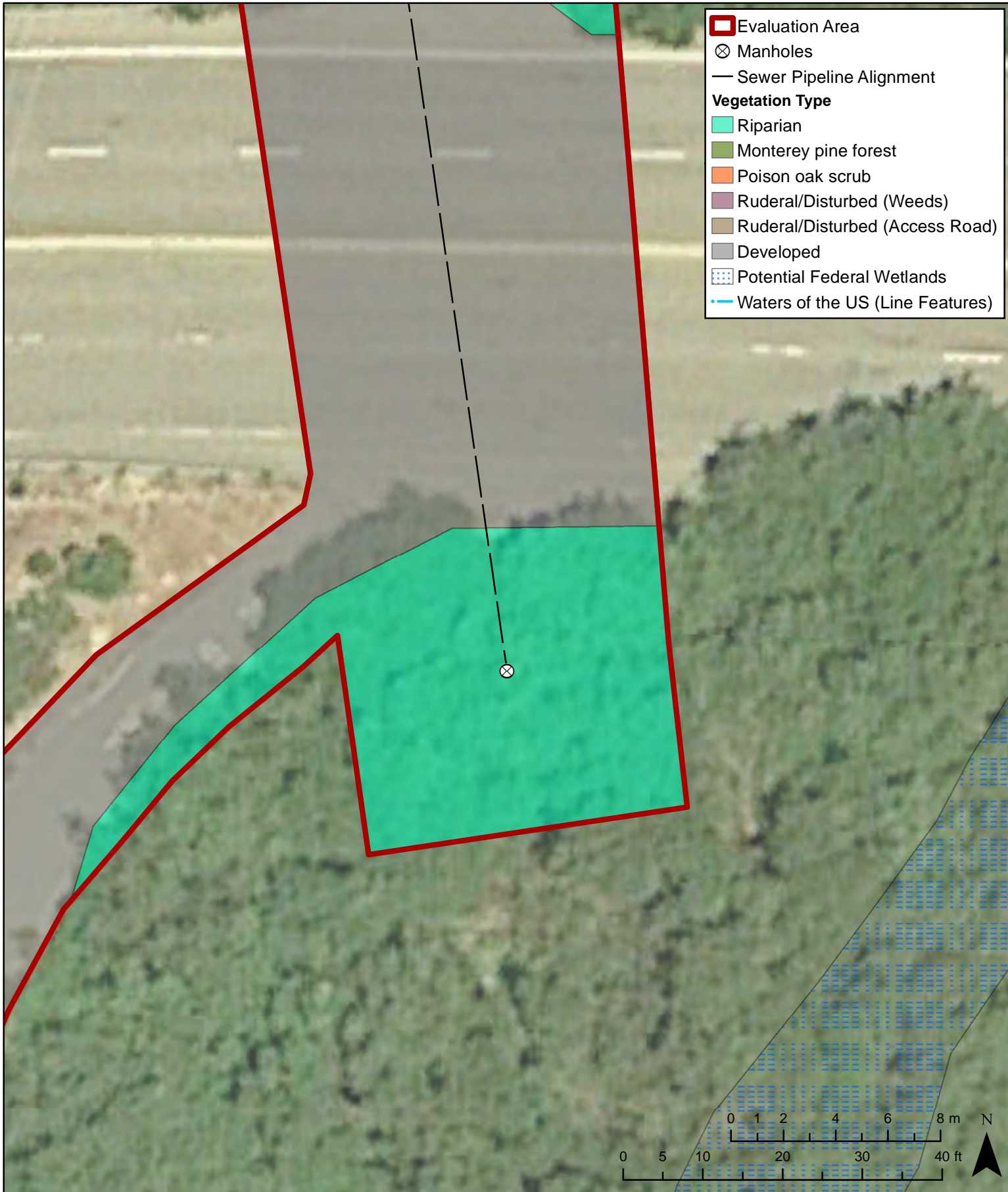


- Evaluation Area
- X Manholes
- Sewer Pipeline Alignment
- Vegetation Type**
- Riparian
- Monterey pine forest
- Poison oak scrub
- Ruderal/Disturbed (Weeds)
- Ruderal/Disturbed (Access Road)
- Developed
- Potential Federal Wetlands
- Waters of the US (Line Features)

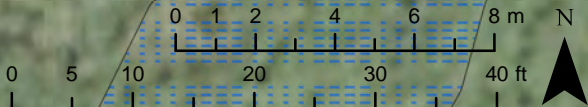


Manhole R822

	Denise Duffy and Associates, Inc.	Date 1-16-2017	Page 19
	Planning and Environmental Consulting	Scale 1 in = 0 mi	



- Evaluation Area
- Manholes
- Sewer Pipeline Alignment
- Vegetation Type**
- Riparian
- Monterey pine forest
- Poison oak scrub
- Ruderal/Disturbed (Weeds)
- Ruderal/Disturbed (Access Road)
- Developed
- Potential Federal Wetlands
- Waters of the US (Line Features)



Manhole R823

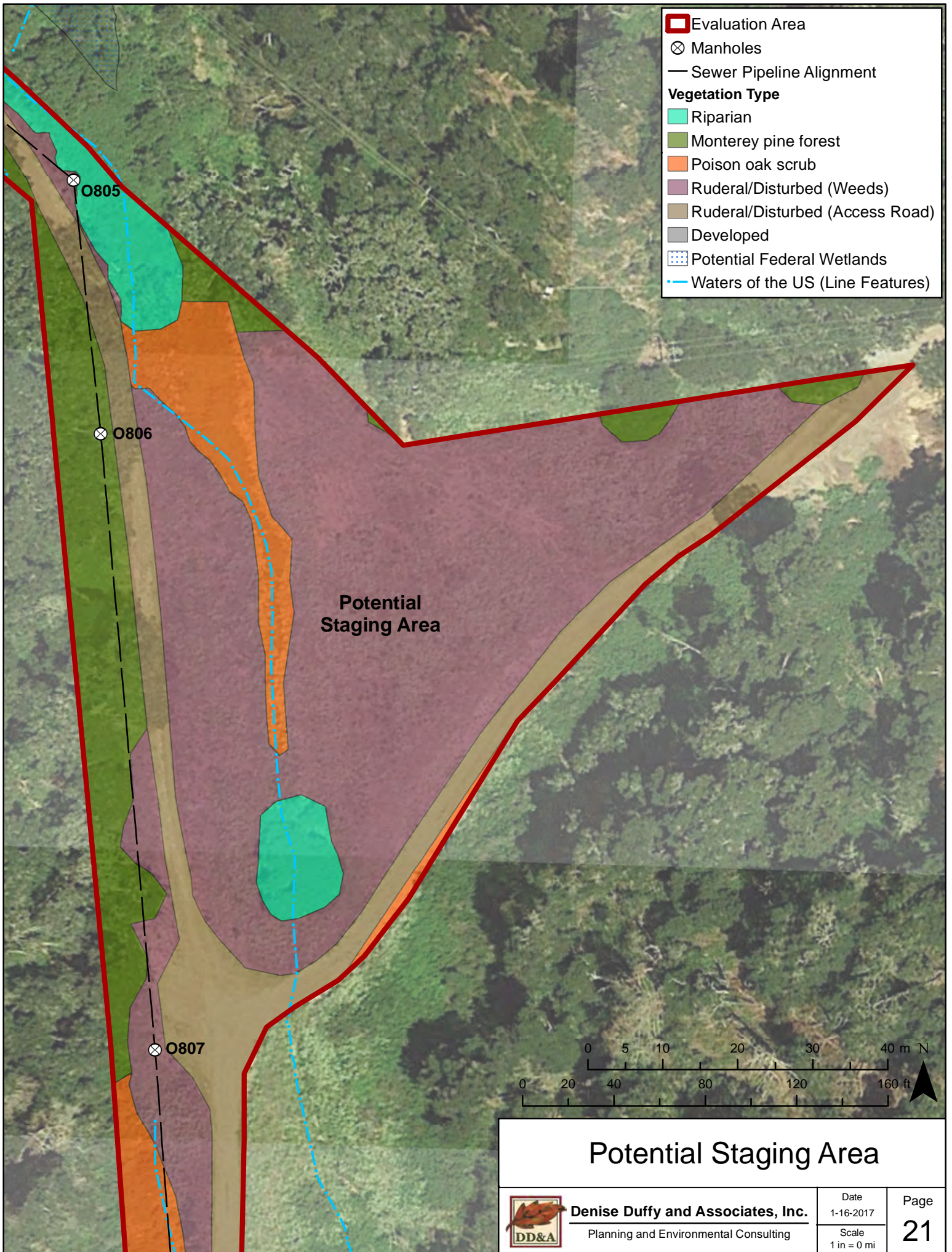


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 Planning and Environmental Consulting

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Potential Staging Area	
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APPENDIX E

WETLAND DELIEANTION REPORT

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HATTON CANYON SEWER MAIN REPLACEMENT PROJECT



Delineation of Jurisdictional Wetlands and Other Waters Under Section 404 of the Clean Water Act

January 22, 2018

Prepared for:



MNS Engineers, Inc.
811 El Capitan Way, Suite 130
San Luis Obispo, CA 93401

Prepared by:



Denise Duffy & Associates, Inc
Contact: Josh Harwayne
947 Cass Street, Suite 5
Monterey, CA 93940

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Table of Contents

CHAPTER 1. INTRODUCTION	1
1.1 Regulatory Background	1
CHAPTER 2. METHODS	7
CHAPTER 3. EVALUATION AREA DESCRIPTION	9
3.1. Vegetation.....	9
3.2. Soils.....	9
3.3. Hydrology	14
CHAPTER 4. RESULTS	17
4.1 Potential Federal Wetlands	17
4.2 Potential Other Waters of the U.S.....	17
CHAPTER 6. REFERENCES	19
APPENDIX A: 2008 REPORT (CARMEL HILL AND RIVER BICYCLE TRAIL PROJECT DELINEATION OF JURISDICTIONAL WETLANDS AND WATERS UNDER SECTION 404 OF THE CLEAN WATER ACT, MAY 2008)	
APPENDIX B: WETLAND DELINEATION MAP	

List of Figures

Figure 1: Project Location	2
Figure 2: Evaluation Area	3
Figure 3: Vegetation Types	11
Figure 4: Soils	13
Figure 5: Hydrology Map.....	15

List of Tables

Table 2-1: Historic Wetland Delineation Surveys Completed in Evaluation Area	7
Table 4-1: Acreage of Potentially Jurisdictional Wetlands and Other Waters in the Evaluation Area	17

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Chapter 1. Introduction

This wetland delineation report was prepared for the Hatton Canyon Sewer Main Replacement Project (project), located within the Hatton Canyon State Park property, near the intersection of Highway 1 and Carmel Valley Road in the Camel area of California (**Figure 1**). The sewer main replacement would begin at upstream manhole O803, south of the parcels at the end of Edgefield Place, and end at downstream manhole R823 at the crossing with Carmel Valley Road (**Figure 2**). The existing 8-inch VCP sewer main will be replaced with a 10-inch HDPE sewer main. The preferred method of replacement is by pipe bursting. The project would also include wrapping existing manholes, potentially adding grade rings to limit infiltration and inflow, and optional maintenance roadway improvements. A defined project impact area has not been established at this time, and therefore, this report describes the resources within an evaluation area, which includes all areas that could potentially be impacted by the project, including access and staging locations.

This wetland delineation report has been prepared using U.S. Army Corps of Engineers (ACOE) methods and standards; however, this report is intended for land use planning informational purposes as specific project plans have not been prepared at this time.

1.1 Regulatory Background

1.1.1 Federal Regulation

The ACOE is the primary federal agency responsible for regulating wetlands and other waters of the United States (waters). The ACOE and the Environmental Protection Agency (EPA) define wetlands as:

Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (ACOE, 1982 and EPA, 1980).

The Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual (Wetland Manual) (Wetland Training Institute, 1995) describes the three environmental parameters used in delineating jurisdictional wetlands. The three parameters are:

Vegetation. *The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in the definition of a wetland above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow effectively, compete, reproduce, and/or persist in anaerobic soil conditions;*

Soil. *Soils are present and have been classified as hydric or they possess characteristics that are associated with reducing soil conditions; and*

Hydrology. *The area is inundated either permanently or periodically at mean water depths of ≤ 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.*

The Wetland Manual states that “evidence of a minimum of one positive wetland indicator from each parameter...must be found in order to make a positive wetland determination.” However, climatic and hydrologic conditions in the Arid West often make it difficult to identify wetland indicators. Therefore, on December 18, 2006, the San Francisco District of the ACOE distributed a public notice requiring that, as of January 1, 2007, any new delineation work within their jurisdiction follow the guidance contained in



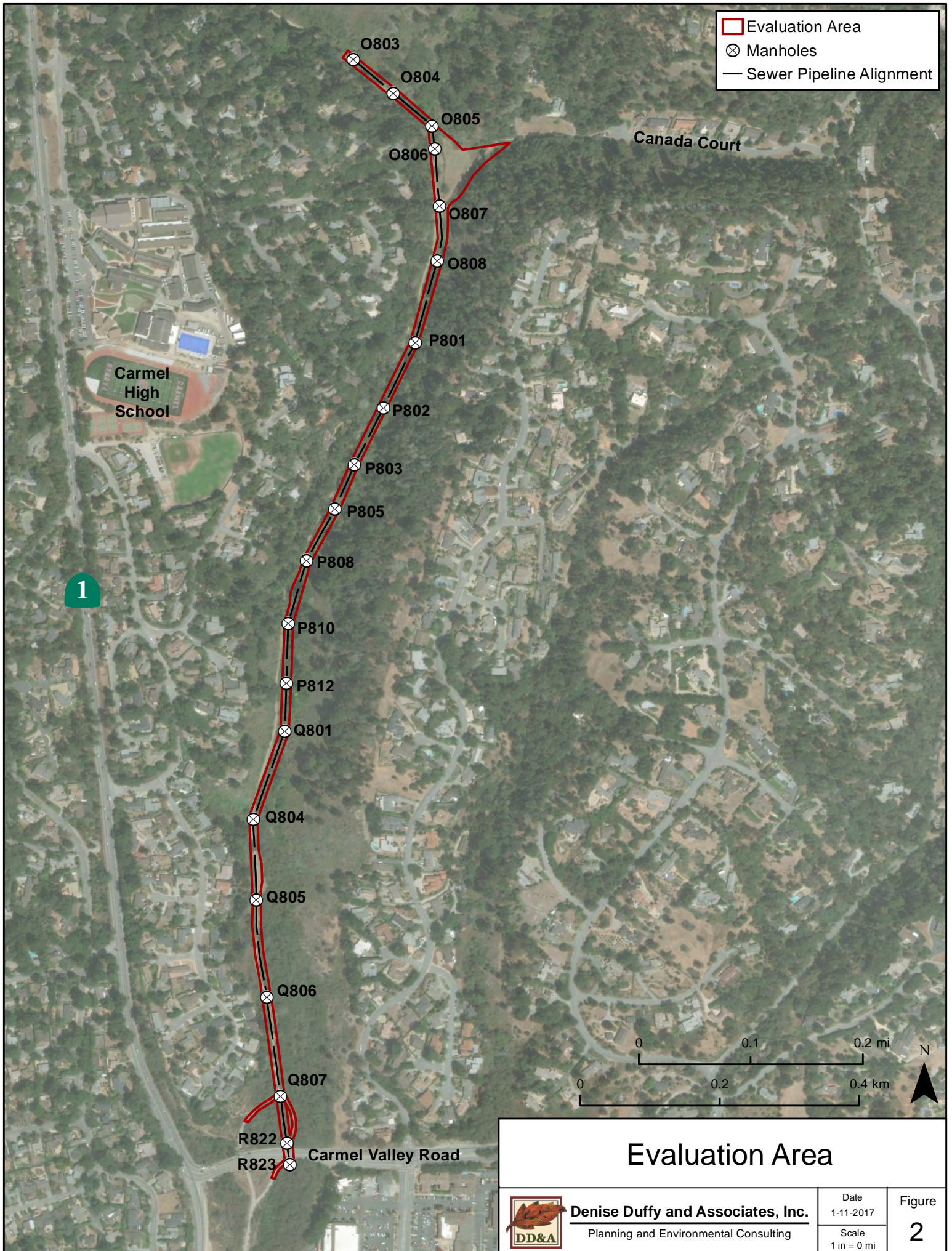
Project Vicinity




Denise Duffy and Associates, Inc.
 Planning and Environmental Consulting

Date
 1-11-2017
 Scale
 1 in = 2 mi

Figure
1



<h2>Evaluation Area</h2>		Figure 2
 Denise Duffy and Associates, Inc. Planning and Environmental Consulting	Date 1-11-2017 Scale 1 in = 0 mi	

the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Supplement) (ACOE, 2006). In September 2008, the ACOE released the final version of the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region (Version 2.0)* (Supplement) to replace the Interim Supplement. The Supplement provides both indicators for each parameter that are specific to the Arid West region and guidance on difficult wetland situations where indicators may be lacking.

Waters of the U.S. are defined as:

1. *All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;*
2. *All interstate waters including interstate wetlands;*
3. *All “other waters” such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:*
 - i. *Which are or could be used by interstate or foreign travelers for recreational or other purposes; or*
 - ii. *From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or*
 - iii. *Which are used or could be used for industrial purpose by industries in interstate commerce;*
4. *All impoundments of waters otherwise defined as waters of the United States under the definition;*
5. *Tributaries of waters identified in paragraphs [1-4] of this section;*
6. *The territorial seas;*
7. *Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs [1-6] of this section (ACOE, 1982).*

As identified above, “other waters,” including lakes, ponds, and streams, are subject to ACOE jurisdiction. “Other waters” are characterized by an ordinary high water (OHW) mark, which is defined as:

...that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (ACOE, 1982).

In the field, “other waters” are identified by the presence of a defined river or stream bed, a bank, and evidence of the flow of water.

On June 5, 2007, the ACOE and the EPA developed a Memorandum Regarding *Clean Water Act Jurisdiction Following Rapanos v. United States* which states that the agencies will assert jurisdiction over the following categories of water bodies:

- *TNWs [traditional navigable waters] and wetlands adjacent to TNWs and*
- *Non-navigable tributaries of TNWs that are relatively permanent (i.e., the tributaries typically flow year-round or have continuous flow at least seasonally) and wetlands that directly abut such tributaries*

In addition, the following waters will also be found jurisdictional based on a fact-specific analysis that they have a significant nexus with a TNW:

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

A significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a TNW. Principal considerations when evaluating significant nexus include the volume, duration, and frequency of the flow of water in the tributary and the proximity of the tributary to a TNW, plus the hydrologic, ecologic, and other functions performed by the tributary and all of its adjacent wetlands (ACOE & EPA, 2007).

The term “navigable waters of the U.S.” is defined to include

all those waters that are subject to the ebb and flow of the tide, and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce (ACOE, 1982).

On May 27, 2015, the EPA and the ACOE jointly announced a final rule defining the scope of waters protected under the Clean Water Act (CWA). The rule revises regulations that have been in place for more than 25 years. Revisions are being made in light of 2001 and 2006 Supreme Court rulings that interpreted the regulatory scope of the CWA more narrowly than the agencies and lower courts were then doing, which created uncertainty about the appropriate scope of waters protected under the CWA. Legal challenges to the Clean Water Rule were filed in multiple federal courts soon after it was announced. The petitions for review of the rule in courts of appeals have been consolidated in the U.S. Court of Appeals for the Sixth Circuit. On October 9, 2015, a three-judge panel of the Sixth Circuit placed a nationwide stay on the rule, pending further developments, including the need to determine the court’s own jurisdictional authority. On February 22, 2016, the Sixth Circuit ruled that it had jurisdiction to hear consolidated challenges to the final rule. As a result of the court’s Sixth Circuit’s October 2015 order and February 22, 2016, ruling, the ACOE and EPA are continuing to make CWA jurisdictional determinations based on the 2008 guidance, as they did before promulgation of the 2015 rule.

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Chapter 2. Methods

Multiple projects have been proposed for Hatton Canyon over the last three decades. As a result, the area has been surveyed extensively, including multiple wetland delineation surveys (**Table 2-1**). Wetland delineation surveys were conducted by Caltrans staff in coordination with previous plans to realign Highway 1 through Hatton Canyon in the 1980's and 1990's. An additional wetland delineation was conducted in Hatton Canyon by DD&A between December 2007 and January 2008 to review and confirm previous surveys and identify any new features within the Carmel Hill and River Bicycle Trail Project (Carmel Hill Trail Project) site and vicinity. The Wetland Delineation report prepared by DD&A in 2008 (2008 report) (DD&A, 2008a) consolidated the data from all previous surveys to provide an overview of all areas of wetlands and other waters potentially under the jurisdiction of the ACOE (**Appendix A**). As a result, wetlands and other waters within the evaluation area have been thoroughly surveyed and evaluated.

Table 2-1: Historic Wetland Delineation Surveys Completed in Evaluation Area

Survey Type	Surveyor	Date
Wetland Delineation	Larry VanZant (ACOE) Joyce Minjeras (ACOE)	March 1987
Wetland Delineation "spot check"	Gary Ruggerone Chuck Cesena	May 1994
Wetland Delineation	Gary Ruggerone Chuck Cesena Greg Smith (Caltrans) Dana York (Caltrans)	June/October 1996 & February/March 1997
Addendum Wetland Delineation	Gary Ruggerone Chuck Cesena	May 1998
Wetland Delineation	Josh Harwayne (DD&A) Matt Johnson (DD&A) Jami Colley (DD&A)	December 2007 & January 2008

The 2008 report and the associated data provide the basis for this wetland delineation report. The data were reviewed to confirm or update areas of potentially jurisdictional wetlands and waters within the evaluation area. Field surveys were conducted on January 2 and 5, 2018 by Associate Environmental Scientist, Jami Colley. Survey methods included walking the evaluation area using aerial maps, maps of previously mapped resources, and GPS to confirm or update existing mapped resources and identify any new wetland or other waters within the evaluation area. Surveys focused on looking for any new areas supporting herbaceous wetland species (such as rushes and sedges), mapping the current boundary of riparian habitat along the access road, and mapping the current configuration of potentially jurisdictional other waters. New sampling points were not evaluated; however, updated maps were prepared for the evaluation area using ArcGIS software and Google Earth.

As identified above, this wetland delineation and the 2008 delineation that it relies on were conducted in accordance with the methods set forth in the Wetland Manual and Supplement to identify indicators and evaluate whether a site meets any or all of the three parameters. The methods used for evaluating the presence of wetlands and waters are described in detail in the 2008 report (**Appendix A**). These methods are consistent with the current methodology for delineation of wetlands and other waters of the U.S.

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Chapter 3. Evaluation Area Description

3.1. Vegetation

Vegetation types within Hatton Canyon and the evaluation area are consistent with those identified in the 2008 report. Four major plant communities are present within the evaluation area: Monterey pine forest, poison oak scrub, riparian, and ruderal areas (**Figure 3**). Additionally, a small portion of the evaluation area is developed (paved). Monterey pine forest and poison oak scrub communities are present on the slopes above the access road, while riparian areas dominate the canyon floor and are supported by the Hatton Canyon stream. Ruderal areas include the dirt road that runs the length of the canyon and the maintained vegetation along the edge of the road, as well as a large, open maintained area in the northern portion of the canyon. There is only a small area of vegetation and natural channel south of Carmel Valley Road (County Route G16) before the stream enters a culvert under the Carmel Rancho Shopping Center. This area is dominated by riparian vegetation.

The Monterey pine forest areas are dominated by Monterey Pine trees (*Pinus radiata*), but also support coast live oak (*Quercus agrifolia*), California coffeeberry (*Frangula californica*), poison oak (*Toxicodendron diversilobum*), creeping snowberry (*Symphoricarpos mollis*), and California wood fern (*Dryopteris arguta*). Poison oak scrub areas are co-dominated by poison oak, coyote bush (*Baccharis pilularis*), and California coffeeberry. Riparian habitat throughout Hatton Canyon is dominated by Arroyo willow (*Salix lasiolepis*) and, slightly less dominate, western red dogwood (*Cornus serica*). Also present are California blackberry (*Rubus ursinus*), box elder (*Acer negundo* var. *californica*), black cottonwood (*Populus trichocarpa*), poison oak, hoary nettle (*Urtica dioica*), mugwort (*Artemisia douglasiana*), poison hemlock (*Conium maculatum*), tall cyperus (*Cyperus eragrostis*), giant horsetail (*Equisetum telmateia*), common rush (*Juncus effusus*), spreading rush (*J. patens*), Mexican rush (*J. mexicanus*), and panicled bulrush (*Scirpus microcarpus*). Ruderal areas are dominated by non-native, “weedy” species such as poison hemlock, summer mustard (*Hirschfeldia incana*), long-beaked filaree (*Erodium botrys*), English plantain (*Plantago lanceolata*), and French broom (*Genista monspessulana*).

3.2. Soils

The Monterey County Soil Survey (USDA, 1978) identifies four map units within the evaluation area (**Figure 4**). The Soil Survey descriptions of these mapping units are presented below with an indication of whether the soils are classified as hydric or not according to the National Hydric Soils List (USDA, 2007). Please note that the National Hydric Soils List cannot be used in the field to determine hydric soils as it is only a list of soils that are *likely* to be hydric.

Elder very fine sandy loam, 2 to 9 percent slopes (EbC) is a gently sloping and moderately sloping, slightly hummocky soil that occupies small areas in narrow valleys. It formed on alluvial fans, terraces, and flood plains. Slopes are mostly about three percent. Permeability is moderate. Runoff is slow, and the erosion hazard is moderate. Roots can penetrate to a depth of 40 to 60 inches, and the available water capacity is about six to 11 inches. This soil is classified as a hydric soil.

Santa Lucia shaly clay loam, 30 to 50 percent slopes (SfF) is a steep soil on uplands. Slopes are mostly 45 percent. The Santa Lucia series consists of well drained soils formed in material underlain by hard shale, mostly of the Monterey Formation. Runoff is rapid and the erosion hazard is high. Roots can generally penetrate to a depth of 20 to 40 inches, but some roots extend into the fractured shale. The available water capacity is two to 5.5 inches, depending on the amount of shale fragments in the soil. This soil is not classified as a hydric soil.

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Evaluation Area

⊗ Manholes

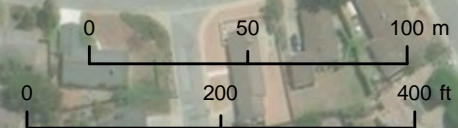
Vegetation Type

- Monterey pine forest
- Poison oak scrub
- Riparian
- Ruderal/Disturbed (Weeds)
- Ruderal/Disturbed (Access Road)
- Developed



Vegetation Map

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



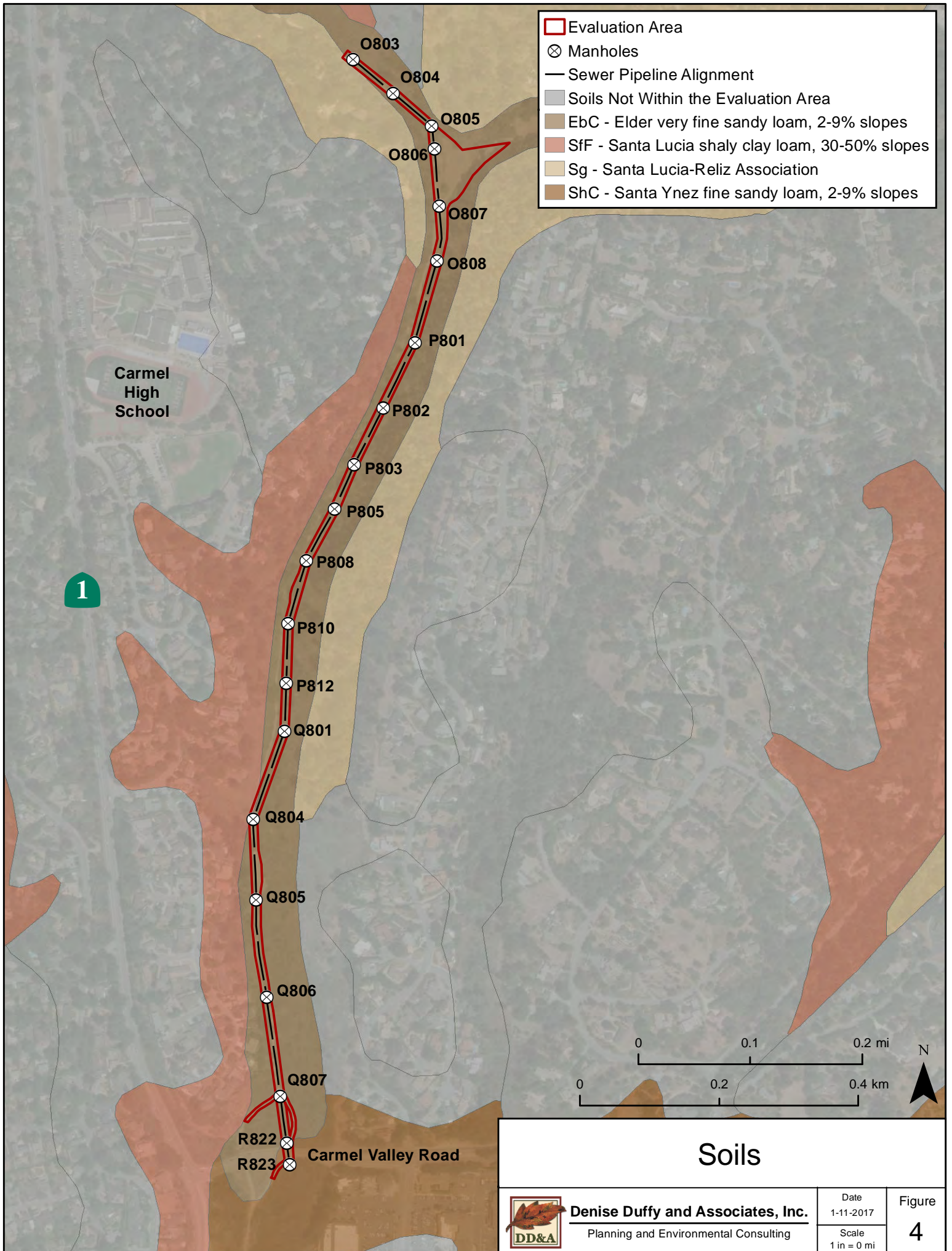
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 Planning and Environmental Consulting

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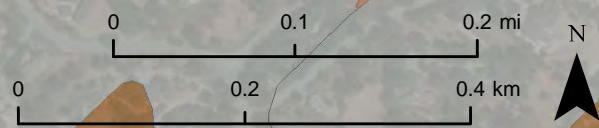
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Evaluation Area
⊗ Manholes
 Sewer Pipeline Alignment
 Soils Not Within the Evaluation Area
 EbC - Elder very fine sandy loam, 2-9% slopes
 SfF - Santa Lucia shaly clay loam, 30-50% slopes
 Sg - Santa Lucia-Reliz Association
 ShC - Santa Ynez fine sandy loam, 2-9% slopes

1



Soils

	Denise Duffy and Associates, Inc.	Date 1-11-2017	Figure 4
	Planning and Environmental Consulting	Scale 1 in = 0 mi	

Santa Lucia-Reliz Association (Sg) is steep to very steep soils on uplands. Slopes are 30 to 75 percent. The Santa Lucia series consists of well drained soils formed in material underlain by hard shale, mostly of the Monterey Formation. The Reliz series consists of excessively drained soils formed in material underlain by shale and sandstone. Runoff is rapid or very rapid and the erosion hazard is very high. This soil is not classified as a hydric soil.

Santa Ynez fine sandy loam, 2 to 9 percent slopes (ShC) is a gently sloping to moderately sloping soil on terraces. The Santa Ynez series consists of moderately well drained soils that formed on terraces in alluvium derived from sandstone and granitic rock. Slopes are mostly about five percent. Runoff is slow or medium and the erosion hazard is slight to moderate. Roots can generally penetrate to a depth of 60 inches or more, but some roots are restricted to a depth of 15 to 36 inches by the clay subsoil. The available water capacity is three to five inches and some water is slowly available from the subsoil. This soil is classified as a hydric soil.

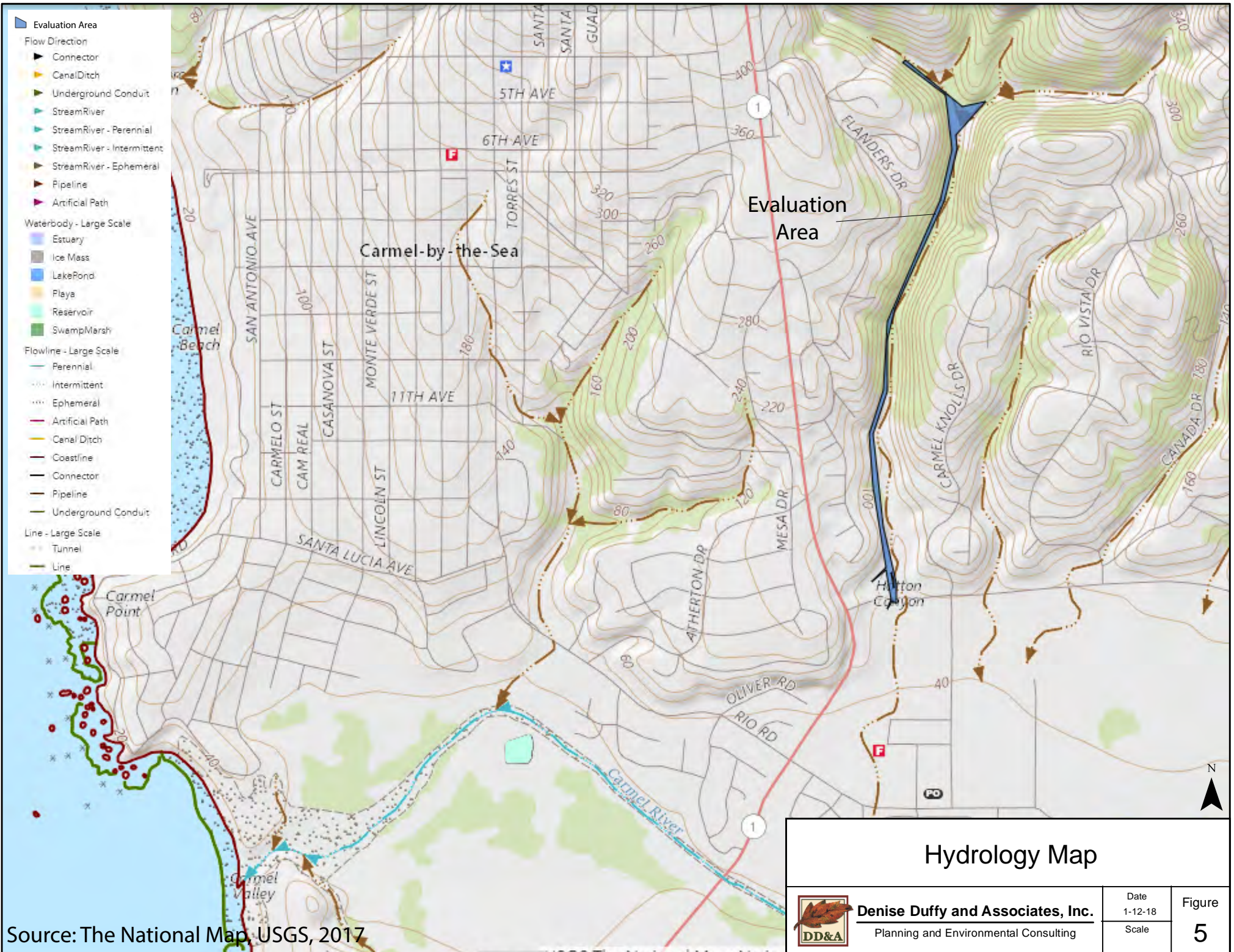
Soils observed during the wetland delineation surveys ranged from pure sand to pure clay; however, sand or sandy loam was observed at most sampling points. The soil colors observed at most sampling points were generally consistent with the mapped soil types described above; however, several sampling points exhibited very dark (black) soils, likely due to soil saturation and inundation. Fill soils were observed at a few sampling points, while sand or silt deposits from erosion were observed at a few others. All sampling points had significant amounts of rock as a component of the soils, which are likely a result of a combination of weathering and deposition, as well as movement of fill from management of the access road.

3.3. Hydrology


The evaluation area lies within the boundaries of the Carmel River Basin, which consists of 160,801 acres. Hatton Canyon drains 825 acres or 0.05% of the total Carmel River Drainage Basin. Almost all drainages within the basin are ultimately carried by the Carmel River, which is by definition a TNW. The Hatton Canyon stream, as well as all other drainages within the Carmel River Basin, flows into the Carmel Lagoon and Carmel Bay, which are part of the Monterey Bay National Marine Sanctuary (**Figure 5**).

The Hatton Canyon stream is a relatively straight, ephemeral stream that conveys water directly to the Carmel River. North of Carmel Valley Road the stream is a combination of steeply sloped channels exhibiting bed and bank features and narrow to wide wetland areas with no defined channel. South of Carmel Valley Road, there is only a small section of wetland before the stream enters a culvert under the Carmel Rancho Shopping Center. The culvert empties into the Carmel River at or just above the ordinary high water mark (OHWM).

Precipitation, sheet flow, surface runoff, and seepage from the toe of the adjacent surrounding slopes are the principle natural hydrologic sources for the Hatton Canyon stream. Residential development around Hatton Canyon has dramatically increased run-off and flows in the Hatton Canyon stream (DD&A, 2007). The hydrology of the stream is not consistent throughout, as evidenced by portions of the stream having surface flow throughout the wet season, while other portions are dry except during precipitation events. The wetland portions of the stream exist within the historic riparian corridor where sand, gravel, and cobble deposits likely act as a subsurface hydrologic conduit allowing the seasonal flows to daylight and go subsurface again multiple times along the length of the creek.



Source: The National Map, USGS, 2017

<h2>Hydrology Map</h2>		
	Denise Duffy and Associates, Inc.	
	Planning and Environmental Consulting	
Date 1-12-18	Figure 5	
Scale		

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Chapter 4. Results

As identified in the 2008 report, wetlands within Hatton Canyon occur within the riparian habitat associated with the stream channel. As a result, the vast majority of wetlands occur in, and are also, riparian habitat. Wetlands in the corridor are differentiated from the surrounding riparian habitat by soils and hydrological indicators.

4.1 Potential Federal Wetlands

No new areas of potentially jurisdictional federal wetlands were identified within the evaluation area. However, a small portion of federal wetlands that were identified in 2008 were removed as a part of the Carmel Hill Trail Project (**Appendix A**), near the trail's intersection with Carmel Valley Road and manhole R822. Rip rap was used to elevate the trail in this location and the rip rap is now the edge of the wetland boundary at this location. The delineation map provided in **Appendix B** shows the updated boundary of the federal wetlands in this area and all other areas of potential federal wetlands within Hatton Canyon and the evaluation area. **Table 4-1** identifies the area of potentially jurisdictional federal wetlands within the evaluation area.

4.2 Potential Other Waters of the U.S.

As identified above, residential development around Hatton Canyon has dramatically increased run-off and flows in the Hatton Canyon stream and the hydrology of the stream is not consistent throughout, as evidenced by portions of the stream having surface flow throughout the wet season, while other portions are dry except during precipitation events. Several small drainages were identified in the 2008 report that carry surface water along the edges of the access road (**Appendix A**). No new areas of potentially jurisdictional other waters of the U.S. were identified within the evaluation area. However, flooding from large storm events since the 2008 mapping (particularly in 2016), and regular and emergency maintenance of the access road have slightly altered the configuration of these drainages within the corridor. The delineation map provided in **Appendix B** shows the updated alignment of the potentially jurisdictional other waters of the U.S. in this within Hatton Canyon and the evaluation area. **Table 4-1** identifies the area of potentially jurisdictional other waters of the U.S. within the evaluation area.

Table 4-1: Acreage of Potentially Jurisdictional Wetlands and Other Waters in the Evaluation Area

Type	Acres
<i>Potential Federal Wetlands</i>	0.3 ac
<i>Potential Other Waters of the U.S.</i>	2,572.9 linear feet (0.2 acre ¹)

¹ An average width of three feet was used to calculate acreage of potential other waters of the U.S. within the evaluation area.

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Appendix A

2008 Report

**Carmel Hill and River Bicycle Trail Project Delineation
of Jurisdictional Wetlands and Waters Under Section 404
of the Clean Water Act, May 2008**

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Carmel Hill and River Bicycle Trail Project



Delineation of Potential Jurisdictional Wetlands and Waters Under Section 404 of the Clean Water Act

May 2008

Prepared for:

**U.S. Army Corps of Engineers
South Section Chief
1455 Market Street, 16th Floor
San Francisco, California 94103-1398**



Prepared by:

**Denise Duffy & Associates, Inc
Contact: Josh Harwayne
947 Cass Street, Suite 5
Monterey, CA 93940**



Table of Contents

CHAPTER 1. INTRODUCTION	1
CHAPTER 2. METHODS	5
2.1. Field Methods.....	5
2.2. Analysis.....	7
CHAPTER 3. EVALUATION AREA DESCRIPTION.....	8
3.1. Vegetation.....	8
3.2. Soils.....	8
3.3. Hydrology.....	10
CHAPTER 4. RESULTS	11
4.1. Jurisdictional Determination.....	11
CHAPTER 5. IMPACT ANALYSIS.....	12
5.1. Impacts	12
5.2. Conceptual Mitigation Plan	12
CHAPTER 6. REFERENCES	15
APPENDIX A: WETLAND DETERMINATION DATA FORMS FOR THE ARID WEST REGION	
APPENDIX B: WETLAND DELINEATION MAP	
APPENDIX C: APPROVED JURISDICTIONAL DETERMINATION FORM	
APPENDIX D: PROJECT IMPACT MAP	

List of Figures

Figure 1: Project Location	4
Figure 2: Soils Map.....	9
Figure 3: Restoration Site 1 Photos.....	14

List of Tables

Table 2-1: Wetland Vegetation Classification System	6
Table 4-1: Acreage of Wetlands and Waters in the Evaluation Area	11
Table 5-1: Acreage of Permanent and Temporary Impacts	12

Chapter 1. Introduction

The U.S. Army Corps of Engineers (ACOE) is the primary federal agency responsible for regulating wetlands and waters of the United States (waters). The ACOE and the Environmental Protection Agency (EPA) define wetlands as:

“Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (ACOE, 1982 and EPA, 1980).

The Field Guide for Wetland Delineation: 1987 Corps of Engineers Manual (Wetland Manual) (Wetland Training Institute, 2002) describes the three environmental parameters used in delineating jurisdictional wetlands. The three parameters are:

1. *Vegetation.* The prevalent vegetation consists of macrophytes that are typically adapted to areas having hydrologic and soil conditions described in the definition of a wetland above. Hydrophytic species, due to morphological, physiological, and/or reproductive adaptation(s), have the ability to grow effectively, compete, reproduce, and/or persist in anaerobic soil conditions;
2. *Soil.* Soils are present and have been classified as hydric or they possess characteristics that are associated with reducing soil conditions; and
3. *Hydrology.* The area is inundated either permanently or periodically at mean water depths of \leq 6.6 feet, or the soil is saturated to the surface at some time during the growing season of the prevalent vegetation.

The Wetland Manual states that “evidence of a minimum of one positive wetland indicator from each parameter...must be found in order to make a positive wetland determination.” However, climatic and hydrologic conditions in the Arid West often make it difficult to identify wetland indicators. Therefore, on December 18, 2006, the San Francisco District of the ACOE distributed a public notice requiring that, as of January 1, 2007, any new delineation work within their jurisdiction follow the guidance contained in the *Interim Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Supplement) (ACOE, 2006). The Supplement provides both indicators for each parameter that are specific to the Arid West region and guidance on difficult wetland situations where indicators may be lacking.

Waters are defined as:

1. All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
2. All interstate waters including interstate wetlands;
3. All “other waters” such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce including any such waters:

- i. Which are or could be used by interstate or foreign travelers for recreational or other purposes; or
 - ii. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
 - iii. Which are used or could be used for industrial purpose by industries in interstate commerce;
4. All impoundments of waters otherwise defined as waters of the United States under the definition;
 5. Tributaries of waters identified in paragraphs [1-4] of this section;
 6. The territorial seas;
 7. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs [1-6] of this section (ACOE, 1982).

As noted above, “other waters,” including lakes, ponds, and streams, are subject to ACOE jurisdiction. “Other waters” are characterized by an ordinary high water (OHW) mark, which is defined as:

“that line on the shore established by the fluctuations of water and indicated by physical characteristics such as clear, natural line impressed on the bank, shelving, changes in the characteristics of the soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas” (ACOE, 1982).

In the field, “other waters” are identified by the presence of a defined river or stream bed, a bank, and evidence of the flow of water.

On June 5, 2007, the ACOE and the EPA developed a Memorandum Regarding *Clean Water Act Jurisdiction Following Rapanos v. United States* which states that the agencies will assert jurisdiction over the following categories of water bodies:

- TNWs [traditional navigable waters] and wetlands adjacent to TNWs and
- Non-navigable tributaries of TNWs that are relatively permanent (i.e., the tributaries typically flow year-round or have continuous flow at least seasonally) and wetlands that directly abut such tributaries

In addition, the following waters will also be found jurisdictional based on a fact-specific analysis that they have a significant nexus with a TNW:

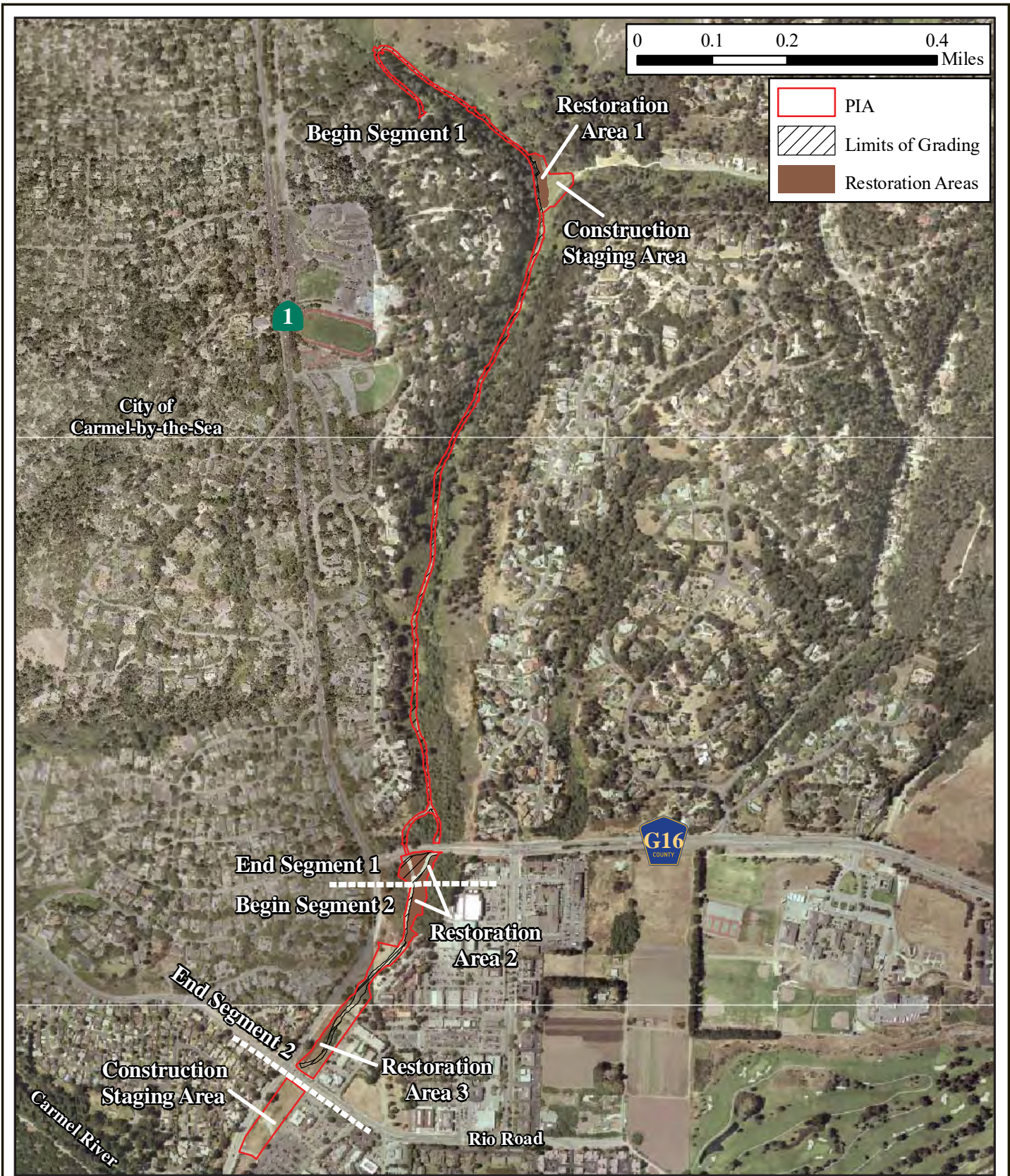
- Non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally;
- Wetlands adjacent to such tributaries; and
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

A significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or an insubstantial effect on the chemical, physical, and/or biological integrity of a TNW. Principal considerations when evaluating significant nexus include the volume, duration, and frequency of the flow of water in the tributary and the proximity of the tributary to a TNW, plus the hydrologic, ecologic, and other functions performed by the tributary and all of its adjacent wetlands” (ACOE & EPA, 2007).

The term “navigable waters of the U.S.” is defined to include

“all those waters that are subject to the ebb and flow of the tide, and/or are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce” (ACOE, 1982).

This wetlands and waters delineation report was prepared in conjunction with the Carmel Hill and River Bicycle Trail Project, located just east of and parallel to Highway 1 in Carmel, Monterey County, California (Figure 1). The evaluation area consists of the project site and surrounding potential jurisdictional areas within Hatton Canyon. The proposed project consists of the construction of a paved bicycle trail extending from Canyon Drive, at the top of Hatton Canyon within California State Parks property, south to the southern side of Rio Road. The project runs adjacent to an unnamed tributary (henceforth called the Hatton Canyon stream).



Project Location

Figure
1

Chapter 2. Methods

This wetland delineation was conducted in accordance with the requirements set forth in both the Wetland Manual and the Supplement as appropriate.

An analysis of ACOE jurisdiction within the evaluation area was conducted with guidance from the *U.S. Army Corps of Engineers Jurisdictional Determination Form Instructional Guidebook* (ACOE and EPA, 2007), as required by the June 5, 2007 ACOE/EPA Memorandum discussed above.

Prior to conducting field surveys, available reference materials were reviewed, including the Soil Survey of Monterey County (USDA, 1978), a botanical survey conducted by Jeff Norman (June 2007), and aerial photographs of the site. Additionally, data sheets and maps from a wetland delineation conducted by Caltrans at the project site in 1997 were referenced prior to and during the field surveys. An effort was made to collect data at the same locations that Caltrans used in 1997.

Field surveys were conducted on December 10-13 and 19, 2007 by Associate Environmental Scientist, Matt Johnson, Assistant Environmental Scientist, Jami Davis, and Senior Environmental Scientist/Wetland Scientist, Josh Harwayne. The methods for evaluating the presence of wetlands and waters are described in detail below.

2.1. Field Methods

The data collected during the field surveys were recorded on Wetland Determination Data Forms for the Arid West Region provided in the Supplement (Appendix A). Twenty-seven sampling points were taken. Most points were chosen to sample a sufficient subset of the data points taken by Caltrans in 1997 in order to identify any changes in vegetation, soils, or hydrology. Additional sampling points were chosen in areas where the vegetation and/or hydrology appeared visibly different from the Caltrans maps.

Twenty existing sampling points from the Caltrans data set were located using aerial maps and, when available, a Trimble Pro XH GPS unit (satellite coverage was limited or unavailable in several areas of Hatton Canyon). These points were labeled on the data sheets using the same labels as the existing data (A1-F4) with "07" added at the end for ease of comparison. Five additional sampling points were also mapped using GPS, if possible, and aerial maps. These points were labeled on the data sheets as Z1-Z5. All points were subsequently displayed in GIS (see the Wetland and Waters of the U.S. Delineation Map in Appendix B). Additionally, all waters within project boundaries were mapped using GPS.

Indicators described in the ACOE manual that were used to make wetland determinations at each sampling point are described below.

2.1.1. VEGETATION

Vegetation was broken into four strata for evaluation: tree, sapling/shrub, herb, and woody vines. Dominant plant species and approximate percent cover within five feet of the sampling point were recorded for the sapling/shrub and herb strata and within 30 feet for the tree and woody vine strata. Plant species were identified using *An Illustrated Field Key to the Flowering Plants of Monterey County* (Matthews, 1997) and *The Jepson Manual: Higher Plants of California* (Hickman, 1993), and were assigned a wetland status according to the *National List of Plant Species That Occur in Wetlands: 1988 National Summary* (Reed, 1988). For plant species not on this list, the *National List of Vascular Plant Species That Occur in Wetlands: 1996 National Summary* (USFWS, 1996), a draft revision of the 1988

list that is currently under review, was used to assign wetland status. This wetland classification system is based on the expected frequency of occurrence in wetlands as described in Table 2-1.

Table 2-1: Wetland Vegetation Classification System

Symbol	Indicator Category	Definition	Frequency of Occurrences
OBL	Obligate Wetland Plants	Always found in wetlands	>99%
FACW	Facultative Wetland Plants	Most often occur in wetlands	67-99%
FAC	Facultative Plants	Equal likelihood of occurring in wetlands and non-wetlands	33-67%
FACU	Facultative Upland Plants	Most often occur in non-wetlands	1-33%
UPL	Obligate Upland Plants	Always found in non-wetlands	<1%
NL	Not Listed (Assumed Upland)		

The “dominance test”, as described in the Supplement, was applied for each survey point. If greater than 50 percent of the dominant plant species across all strata were rated OBL, FACW, or FAC, then the plant community “passed” the dominance test and the vegetation was determined to be hydrophytic. Neither the prevalence test of morphological adaptations indicator were used as the conditions described in the manual for each were absent (i.e., plant community failing the dominance test with presence of both hydric soil and wetland hydrology)

2.1.2. SOILS

The National Technical Committee for Hydric Soils (NTCHS) defines a hydric soil as:

“A soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part” (USDA-NRCS, 1995).

The soil at each survey point was evaluated by digging a 20-inch hole, when possible, and identifying soil horizons, color, and texture, as well as any hydric soil indicators (as described in the Supplement). Soil color was evaluated by comparing a small wetted piece of soil to Munsell Soil Color Charts (Munsell, 2000). The last digit of the Munsell Soil Notation refers to the chroma of the sample. This notation consists of numbers beginning with 0 for neutral grays and increasing at equal intervals to a maximum of about 20. Chroma values of the soil matrix which are one or less, or of two or less if mottling is present, are typical of soils which have developed under anaerobic conditions and indicate hydric soils, unless otherwise noted in the Supplement for certain soil types.

2.1.3. HYDROLOGY

The Wetland Manual defines “wetland hydrology” as:

“Encompassing all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season. Areas with evident characteristics of wetland hydrology are those where the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively. Such characteristics are usually present in areas that are inundated or have soils that are saturated to the surface for sufficient duration to develop hydric soils and support vegetation typically adapted for life in periodically anaerobic soil conditions.”

Each survey point was evaluated for wetland hydrology using the indicators described in the Supplement. Evidence of one Primary Indicator sufficiently identified wetland hydrology; however, two or more Secondary Indicators were necessary if no Primary Indicators were observed. However, as stated in the Supplement, the Arid West is characterized by extended dry seasons in most years and by extreme temporal and spatial variability in rainfall, which causes many wetlands in the region to be dry for much of the year. At these times, hydrology indicators may be lacking altogether. Therefore, a “lack of an indicator is not evidence for the absence of wetland hydrology.” Guidance is provided in the supplement for difficult wetland situations such as this.

2.2. Analysis

Data collected at each sampling point was analyzed to determine if wetlands and other waters were present. As described above, evidence of a minimum of one positive wetland indicator from each parameter was necessary in order to make a positive wetland determination. The data were then compared to the 1997 wetland delineation and necessary changes were made to the delineation map using ArcGIS software.

The data were also analyzed to determine whether or not the wetlands and waters are under ACOE jurisdiction using the *Approved Jurisdictional Determination Form*.

Chapter 3. Evaluation Area Description

3.1. Vegetation

Five major plant communities are present within the evaluation area: closed-cone coniferous forest, coastal scrub, riparian, wetland, and ruderal areas. Closed-cone coniferous forest and coastal scrub communities are present on the slopes above the trail alignment while riparian and wetland areas dominate the canyon floor and are supported by the Hatton Canyon stream. Wetlands occur within the riparian habitat associated with the stream channel. As a result, the vast majority of wetlands occurs in, and is also, riparian habitat. Wetlands in the corridor are typically differentiated from the surrounding riparian habitat by soils and hydrological indicators. Ruderal areas include the dirt road that runs the length of the canyon and the maintained vegetation along the edge of the road, as well as a large, open maintained area in the northern portion of the canyon. There is only a small area of vegetation and natural channel south of Carmel Valley Road (County Route G16) before the stream enters a culvert under the Carmel Rancho Shopping Center. This area is dominated by ruderal vegetation; however, some riparian vegetation is present.

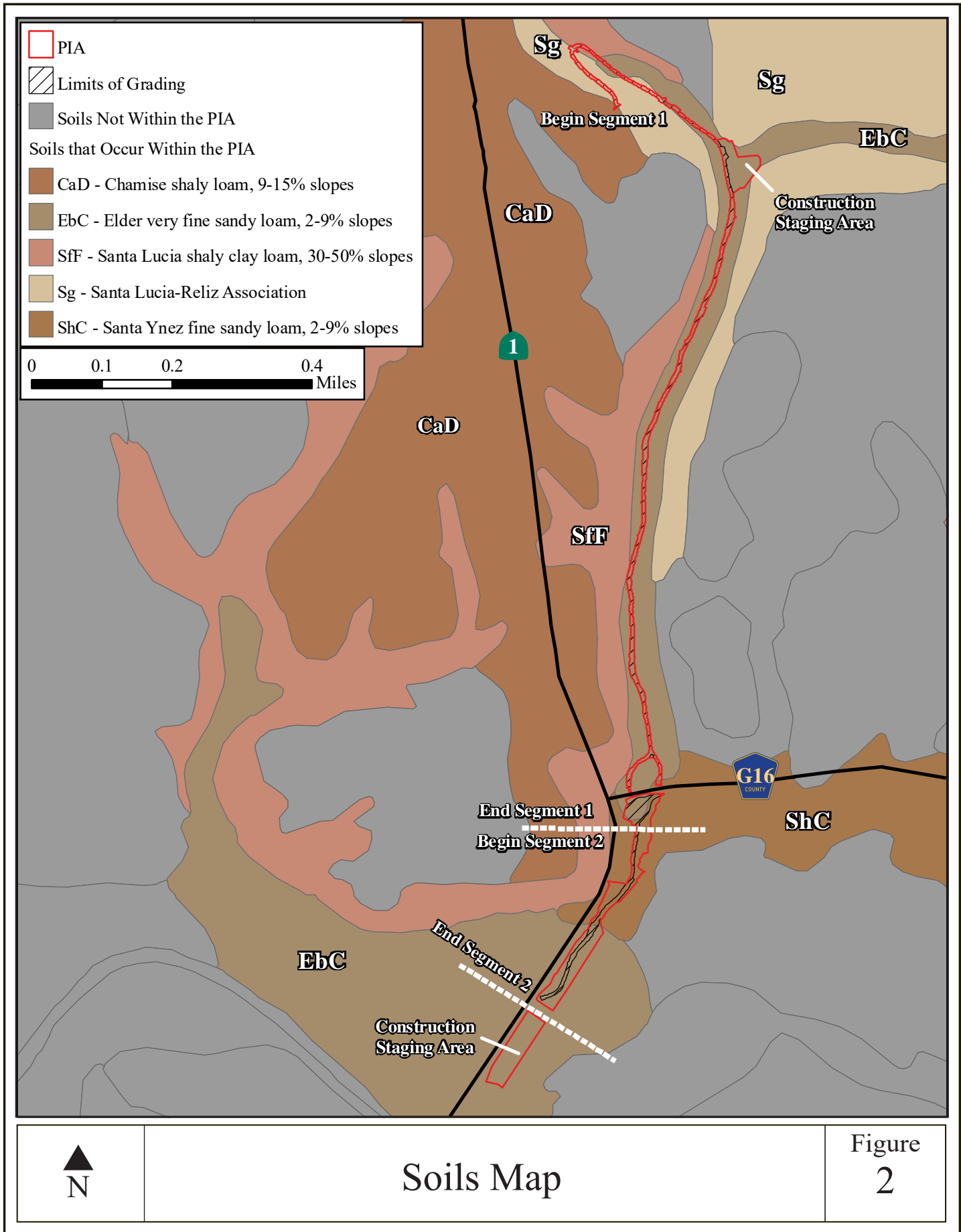
The closed-cone coniferous forest areas are dominated by Monterey Pine trees (*Pinus radiata*), but also support coast live oak (*Quercus agrifolia*), California coffeeberry (*Rhamnus californica*), poison oak (*Toxicodendron diversilobum*), creeping snowberry (*Symphoricarpos mollis*), and California wood fern (*Dryopteris arguta*). Coastal scrub areas are co-dominated by coyote bush (*Baccharis pilularis*), California sagebrush (*Artemisia californica*), and California coffeeberry. Riparian and wetland habitat throughout Hatton Canyon is dominated by Arroyo willow (*Salix lasiolepis*) and, slightly less dominant, western red dogwood (*Cornus serica*). Also present are California blackberry (*Rubus ursinus*), box elder (*Acer negundo* var. *californica*), poison oak, hoary nettle (*Urtica dioica*), mugwort (*Artemisia douglasiana*), poison hemlock (*Conium maculatum*) tall cyperus (*Cyperus eragrostis*), giant horsetail (*Equisetum telmateia*), common rush (*Juncus effusus*), spreading rush (*J. patens*), Mexican rush (*J. mexicanus*), and paniced bulrush (*Scirpus microcarpus*) are also present. Ruderal areas are dominated by non-native, “weedy” species such as French broom (*Genista monspessulana*), poison hemlock, long-beaked filaree (*Erodium botrys*), English plantain (*Plantago lanceolata*), and summer mustard (*Hirschfeldia incana*).

3.2. Soils

The Monterey County Soil Survey (USDA, 1978) identifies five map units within the evaluation area (Figure 2). The Soil Survey descriptions of these mapping units are presented below with an indication of whether the soils are classified as hydric or not according to the National Hydric Soils List (USDA, 2007). Please note that the National Hydric Soils List cannot be used in the field to determine hydric soils as it is only a list of soils that are *likely* to be hydric.

Chamise shaly loam, 9 to 15 percent slopes (CaD) is a strongly sloping soil on terraces. The Chamise series consists of well-drained soils that formed on high terraces in alluvium derived from shale. Runoff is medium and the erosion hazard is moderate. The possible rooting depth is more than 60 inches, but few roots penetrate the subsoil. Permeability is moderately slow and the available water capacity is six to eight inches. This soil is not classified as a hydric soil.

Elder very fine sandy loam, 2 to 9 percent slopes (EbC) is a gently sloping and moderately sloping, slightly hummocky soil that occupies small areas in narrow valleys. It formed on alluvial fans, terraces, and flood plains. Slopes are mostly about three percent. Permeability is moderate. Runoff is slow, and



Soils Map

Figure
2

the erosion hazard is moderate. Roots can penetrate to a depth of 40 to 60 inches, and the available water capacity is about six to 11 inches. This soil is classified as a hydric soil.

Santa Lucia shaly clay loam, 30 to 50 percent slopes (SfF) is a steep soil on uplands. Slopes are mostly 45 percent. The Santa Lucia series consists of well drained soils formed in material underlain by hard shale, mostly of the Monterey Formation. Runoff is rapid and the erosion hazard is high. Roots can generally penetrate to a depth of 20 to 40 inches, but some roots extend into the fractured shale. The available water capacity is two to 5.5 inches, depending on the amount of shale fragments in the soil. This soil is not classified as a hydric soil.

Santa Lucia-Reliz Association (Sg) is steep to very steep soils on uplands. Slopes are 30 to 75 percent. The Santa Lucia series consists of well drained soils formed in material underlain by hard shale, mostly of the Monterey Formation. The Reliz series consists of excessively drained soils formed in material underlain by shale and sandstone. Runoff is rapid or very rapid and the erosion hazard is very high. This soil is not classified as a hydric soil.

Santa Ynez fine sandy loam, 2 to 9 percent slopes (ShC) is a gently sloping to moderately sloping soil on terraces. The Santa Ynez series consists of moderately well drained soils that formed on terraces in alluvium derived from sandstone and granitic rock. Slopes are mostly about five percent. Runoff is slow or medium and the erosion hazard is slight to moderate. Roots can generally penetrate to a depth of 60 inches or more, but some roots are restricted to a depth of 15 to 36 inches by the clay subsoil. The available water capacity is three to five inches and some water is slowly available from the subsoil. This soil is classified as a hydric soil.

3.3. Hydrology

The project area lies within the boundaries of the Carmel River Basin, which consists of 160,801 acres. Hatton Canyon drains 825 acres or .05% of the total Carmel River Drainage Basin. Almost all drainages within the basin are ultimately carried by the Carmel River, which is by definition a TNW. The Hatton Canyon stream, as well as all other drainages within the Carmel River Basin, flows into the Carmel Lagoon and Carmel Bay, which are part of the Monterey Bay National Marine Sanctuary.

The Hatton Canyon stream is a relatively straight, ephemeral stream that conveys water directly to the Carmel River. North of Carmel Valley Road the stream is a combination of steeply sloped channels exhibiting bed and bank features and narrow to wide wetland areas with no defined channel. South of Carmel Valley Road, there is only a small section of wetland before the stream enters a culvert under the Carmel Rancho Shopping Center. The culvert empties into the Carmel River at or just above the ordinary high water mark (OHWM).

Precipitation, sheet flow, surface runoff, and seepage from the toe of the adjacent surrounding slopes are the principle natural hydrologic sources for the Hatton Canyon stream. Residential development around Hatton Canyon has dramatically increased run-off and flows in the Hatton Canyon stream (DD&A, 2007). The hydrology of the stream is not consistent throughout, as evidenced by portions of the stream having surface flow throughout the wet season, while other portions are dry except during precipitation events. The wetland portions of the stream exist within the historic riparian corridor where sand, gravel, and cobble deposits likely act as a subsurface hydrologic conduit allowing the seasonal flows to daylight and go subsurface again multiple times along the length of the creek.

Chapter 4. Results

4.1. Jurisdictional Determination

Within the evaluation area shown on the Wetlands and Waters of the U.S. Delineation Map, approximately 9,413.92 linear feet of waters with an average width of three feet (0.65 acre) and 6.08 acres of wetlands were found to potentially be jurisdictional based upon analysis using the *Approved Jurisdictional Determination Form* (Appendix C). The Hatton Canyon stream is considered non-relatively permanent waters (non-RPWs) and all of the wetlands evaluated directly about the Hatton Canyon stream.

Table 4-1: Acreage of Wetlands and Waters in the Evaluation Area

Wetlands and Waters of the U.S. (Acres)			
	Segment 1	Segment 2	Total
Wetlands	5.70	0.38	6.08
Waters of the U.S.	0.55 (8,020.15 linear ft.)	0.10 (1,393.77 linear ft.)	0.65 (9,413.92 linear ft.)

A significant nexus evaluation determined that the Hatton Canyon stream and its abutting wetlands are likely jurisdictional. The proximity of the Hatton Canyon stream to a TNW (the stream flows directly into the Carmel River) and the presence of federally listed species within the Carmel River were major factors in making this determination. Below is a detailed explanation of the analysis that was used to make the determination that the combination of this non-RPW and all of its adjacent wetlands has more than an insubstantial or speculative effect on the chemical, physical, and/or biological integrity of the Carmel River:

- The Hatton Canyon stream supports both riparian and wetland vegetation which provide important habitat for multiple rare species associated with the Carmel River and its associated Riparian Corridor. Numerous Monterey dusky-footed woodrat (*Neotoma macrotis luciana*) nests were observed throughout the riparian habitat in Hatton Canyon. Although no breeding habitat was evident during the field surveys, the federally Threatened California red-legged frog (*Rana aurora draytonii*) may use these habitats for movement to upland refugia. Avian species protected under the Migratory Bird Treaty Act have the potential to nest within the riparian forest. Fish species are unable to utilize the Hatton Canyon stream due to the presence of a flap-gate at the outlet of the existing drainage culvert that runs under the Carmel Rancho Shopping Center (Caltrans, 1998). However, nutrients and organic carbon carried by the Hatton Canyon stream is likely to support food webs within Carmel Lagoon, including those that include fish species like the federally Threatened south-central California coast steelhead (*Oncorhynchus mykiss irideus*).
- Several of the soils that comprise Hatton Canyon have medium to very rapid runoff rates and moderate to high erosion hazards, as described above in Section 3.0. The wetland and riparian habitat associated with the stream provides protection from on-going erosion potential. Wetlands associated with Hatton Canyon Stream potentially sequester sediment from erosion within the canyon and reduces discharge to the Carmel River which has the potential to impact water quality. The Hatton Canyon stream and its associated vegetation likely function as a filter of these sediments that would otherwise directly enter into Carmel River. Runoff carrying pollutants from the properties and roads surrounding Hatton Canyon are also likely trapped or filtered to some degree by the wetlands before reaching Carmel River.

Chapter 5. Impact Analysis

5.1. Impacts

The Carmel Hill and River Bicycle Trail project impact area (PIA) falls completely within the evaluation area and includes all areas where permanent and temporary impacts may occur as a result of project activities (Figure 1 and Appendix D). The project has been designed to avoid wetlands and waters to the greatest extent possible; however, portions of the trail alignment are located within these resources. Within the PIA, 0.11 acre of wetlands and 2,910.41 linear feet (0.20 acre) of waters are present and will be impacted (Appendix D). The waters consist of maintained road-side drainage ditches. The vast majority of the impacts will be permanent, while a small portion will be temporary as a result of construction staging (Table 5-1). Please note that although a section of waters is present within Segment 2 of the PIA (Appendix D), these waters will not be impacted as the stream runs through an underground culvert in this area.

Mitigation for permanent loss of wetlands as a result of the project would be at a 1:1 ratio by acre; therefore, a minimum of 0.11 acre of wetland shall be restored in satisfaction of Executive Order 11990, resulting in no net loss of wetlands for the project. As a result of improved hydrologic conveyance, the amount of roadside drainage channel will be reduced by approximately half. The majority of the improvement comes from redirecting hydrology away from the trail and back into the riparian corridor, where it was historically located. The function of these channels will be conserved and improved due to the reduction of linear feet of channel; therefore, no additional mitigation is required.

Table 5-1: Acreage of Permanent and Temporary Impacts

Permanent Impacts (Acres)			
	Segment 1	Segment 2	Total
Riparian	0.73	0.03	0.79
Wetlands	0.11	0.00	0.11
Waters of the U.S.	0.17 (2,386.88 linear ft.)	0.00	0.17 (2,386.88 linear ft.)
Temporary Impacts (Acres)			
	Segment 1	Segment 2	Total
Riparian	0.00	0.00	0.00
Wetlands	0.00	0.00	0.00
Waters of the U.S.	0.03 (523.53 linear ft.)	0.00	0.03 (523.53 linear ft.)

5.2 Conceptual Mitigation Plan

DD&A will prepare a Wetland Restoration and Monitoring Plan (Plan) for the Carmel Hill and River Bicycle Trail project which will detail mitigation for permanent impacts to wetlands. The plan shall be of sufficient detail and format for submission to the ACOE. The plan shall include the following:

- Details of the engineering and hydrological components necessary to restore wetland function in the designated area;
- Applicable planting details which include the use of local native plant species and the location and planting size of all planting stock;

- An irrigation plan, if necessary;
- Description of a 5-year monitoring program, including specific methods of vegetation monitoring data collection and analysis, restoration goals and objectives, success criteria, adaptive management if the criteria are not met, and a funding mechanism; and
- An outline of the specific content for reports that will be submitted to the ACOE annually.

This final plan will be developed as part of the regulatory permitting process and must be approved by the ACOE along with this delineation prior to any ground disturbance.

Three areas are proposed as mitigation sites for impacts to wetlands and riparian vegetation. An area in the northern portion of Hatton Canyon (Restoration Site 1) is proposed as a mitigation site for impacts to wetlands and two areas south of Carmel Valley Road are proposed as mitigation sites for impacts to riparian vegetation (Restoration Sites 2 and 3) (Appendix D).

The proposed Restoration Site 1 area consists of a portion of the Hatton Canyon riparian corridor that has been significantly impacted by ongoing disturbance and routine maintenance activities (Figure 3). Specifically, the vegetation is removed on a regular basis and likely has been for many years, resulting in a field dominated by invasive non-native species such as poison hemlock and summer mustard. In addition, the channel which conveys the Hatton Canyon stream through the field is severely channelized and appears to be maintained often. Maintenance consists of removing sediment and bedrock and piling it on the edge of the channel. As a result, the channel is approximately four feet deep in places and is surrounded by berms of up to two feet high. This channelization has lowered the water table in this area. While it is likely that a complex of wetland and riparian habitat existed here historically, wetland hydrology is currently absent as a result of the channelization.

Proposed Restoration Sites 2 and 3 will be designed to mitigate for impacts to riparian habitat at a 2:1 and will not be discussed further.



Restoration Site 1 Photos

Figure
3

Chapter 6. References

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Appendix A: Wetland Determination Data Forms for the Arid West Region

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Monterey County Sampling Date: 12-11-07
 Applicant/Owner: _____ State: CA Sampling Point: A2
 Investigator(s): JD & MU Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): [scribble] Local relief (concave, convex, none): Concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
2nd year of a drought - evidence of tree cutting in recent years
Dry during survey - would likely have saturated soils/standing H₂O not during drought

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____				Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum				Column Totals: _____ (A) _____ (B)
1. <u>Hedera helix</u>		<u>Y</u>	<u>N/A-UPL</u>	Prevalence Index = B/A = _____
2. <u>Rubus ursinus</u>		<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum				
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____				
% Cover of Biotic Crust _____				

Remarks:
evidence of cutting of salix lasiolepis in recent years

SOIL

Sampling Point: A2

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
18	10YR2/1		N/A			Sandy	

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

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Difficult to dig - rocky - sandstone
low chroma soils

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> 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:

In channel - culvert at head waters

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Monterey Cnty Sampling Date: 12-11-07
 Applicant/Owner: _____ State: CA Sampling Point: A3
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NMI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>2nd year of a draught - on bank above channel</u>	

VEGETATION

<u>Tree Stratum</u> (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				
Total Cover: _____				
<u>Sapling/Shrub Stratum</u>				Prevalence Index worksheet:
1. <u>Toxicodendron diversilobum</u>		<u>Y</u>	<u>UPL</u>	Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
<u>Herb Stratum</u>				Hydrophytic Vegetation Indicators:
1. _____				___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
3. _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
<u>Woody Vine Stratum</u>				¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
Remarks: _____				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/Country: Concepcion Valley / Monterey Cnty Sampling Date: 12-11-07
 Applicant/Owner: _____ State: CA Sampling Point: A5
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): _____ Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NMI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation Y, Soil Y, or Hydrology Y significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>2nd year of a drought - Area nearby is a past staging area for Carmel Valley Rd/Highway improvements - gravelly fill & invaded by non-native veg.</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Genista monspessulana</u>		<u>Y</u>	<u>N/A-UPL</u>	Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
6. _____				UPL species _____ x 5 = _____
7. _____				Column Totals: _____ (A) _____ (B)
8. _____				Prevalence Index = B/A = _____
Total Cover: _____				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Conium maculatum</u>		<u>Y</u>	<u>FACW</u>	___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
3. _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Footnote:
1. _____				¹ Indicators of hydric soil and wetland hydrology must be present.
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Remarks:				

SOIL

Sampling Point: A5

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
18	10YR 4/3		N/A			Sandy/Silt	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No

Remarks:
lots of sandstone rocks

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

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

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: Hatton Canyon City/County: San Mateo / Monterey Cnty Sampling Date: 12/11/07
 Applicant/Owner: _____ State: CA Sampling Point: B3
 Investigator(s): JD&MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): canyon Local relief (concave, convex, none): CONCAVE Slope (%): _____
 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 X (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 <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: <u>2nd year of a drought</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. Allium sp.			N/A	Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. Salix sp.			FACW	
3. Zantedeschia aethiopica			OBL	
4. Trapaetulum majus			N/A	
5. _____				
Total Cover: _____				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Trapaetulum majus</u>		<u>Y</u>	<u>N/A</u>	___ 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.
2. <u>Zantedeschia aethiopica</u>		<u>Y</u>	<u>OBL</u>	
3. <u>Allium sp. triquetrum</u>		<u>X</u>	<u>N/A</u>	
4. <u>Juncus patens</u>		<u>N</u>	<u>FACW</u>	
5. <u>Cyperus eragrostis</u>		<u>N</u>	<u>FACW</u>	
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes _____ No _____
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks: <u>Juncus & cyperus also present in area. allium tr. is a garden escapee & therefore disregarded from veg. indicators - other FACW plants in area</u>				

SOIL

Sampling Point: B3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
18	10YR3/1		N/A				Sand	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	<p>³Indicators of hydrophytic vegetation and wetland hydrology must be present.</p>

Restrictive Layer (if present):

Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No _____

Remarks:

Low chroma soil

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient) <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input checked="" type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	

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:

Juncus in area is bent from flowing water - slight drainage pattern

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: ~~San Diego~~ / Monterey ^{Cnty} Sampling Date: 12/11/07
 Applicant/Owner: _____ State: CA Sampling Point: B4
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): canyon Local relief (concave, convex, none): concave Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NMI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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: <u>2nd year of a drought</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A)
2. _____				Total Number of Dominant Species Across All Strata: _____ (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Rubus ursinus</u>			<u>FAC</u>	Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
6. _____				UPL species _____ x 5 = _____
Total Cover: _____				Column Totals: _____ (A) _____ (B)
Total Cover: _____				Prevalence Index = B/A = _____
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. _____				___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
3. _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes _____ No _____
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: ~~Monterey~~ Monterey Cnty Sampling Date: 12/11/07
 Applicant/Owner: _____ State: CA Sampling Point: BLO
 Investigator(s): JD&MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon/hillside Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NMI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (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 <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>2nd year of a drought</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Toxicodendron diversilobum</u>		<u>N</u>	<u>UPL</u>	Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
6. _____				UPL species _____ x 5 = _____
7. _____				Column Totals: _____ (A) _____ (B)
8. _____				Prevalence Index = B/A = _____
Total Cover: _____				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. _____				___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
3. _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Footnote:
1. _____				¹ Indicators of hydric soil and wetland hydrology must be present.
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Remarks:				

SOIL

Sampling Point: B6

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
18	10YR 3/3		N/A				Sandy loam	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Earthworms present

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: Contra Costa / Monterey Cnty Sampling Date: 12-11-07
 Applicant/Owner: _____ State: CA Sampling Point: C1
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation Y, Soil Y, or Hydrology _____ significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No _____
Remarks: <u>Area largely disturbed by nearby roadcut</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>			<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. <u>Rubus ursinus</u>			<u>FAC</u>	Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Genista monspessulana</u>			<u>N/AUPL</u>	
3. _____				
4. _____				
5. _____				
Total Cover: _____				
Herb Stratum				Hydrophytic Vegetation Indicators:
1. <u>unknown grass</u>			<u>N/AUPL</u>	___ 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.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum				Hydrophytic Vegetation Present?
1. _____				Yes _____ No <u>X</u>
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: C1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
18	10YR 3/2		N/A				sandy-fill	

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

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

Area appears to have "fill" over the entire area

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Contra Costa / Monterey Cnty Sampling Date: 12/11/07
 Applicant/Owner: _____ State: CA Sampling Point: C5
 Investigator(s): JD & MJ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of a draught</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Scirpus microcarpus</u>		<u>Y</u>	<u>OBL</u>	Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
6. _____				UPL species _____ x 5 = _____
7. _____				Column Totals: _____ (A) _____ (B)
8. _____				Prevalence Index = B/A = _____
Total Cover: _____				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. _____				___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
3. _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Footnote:
1. _____				¹ Indicators of hydric soil and wetland hydrology must be present.
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Remarks:				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: Contra Costa / Monterey CA Sampling Date: 12-11-07
 Applicant/Owner: _____ State: CA Sampling Point: C9
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of a drought</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>			<u>PACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: _____ (A) Total Number of Dominant Species Across All Strata: _____ (B) Percent of Dominant Species That Are OBL, FACW, or FAC: _____ (A/B)
2. _____				
3. _____				
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
1. <u>Equisetum telmateia</u>			<u>OBL</u>	
2. <u>Scirpus microcarpus</u>			<u>OBL</u>	
3. _____				
4. _____				
5. _____				
Total Cover: _____				
Herb Stratum				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.
1. <u>Equisetum telmateia</u>			<u>OBL</u>	
2. <u>Scirpus microcarpus</u>			<u>OBL</u>	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
Total Cover: _____				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: C9

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
18	10 YR 2/1		redox				Clayey/Sandy	

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

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

Indicators for Problematic Hydric Soils³:

- 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)

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

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Reducing conditions - low chroma

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

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)

- 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:

in channel - not saturated but very damp

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Monterey Cnty Sampling Date: 12/13/07
 Applicant/Owner: _____ State: CA Sampling Point: C11
 Investigator(s): JD & MJ Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): canyon Local relief (concave, convex, none): convex Slope (%): 3
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NMI 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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. <u>Cornus serica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>5</u> (B)
3. <u>Pinus radiata</u>	<u>10</u>	<u>N</u>	<u>UPL</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>80%</u> (A/B)
4. _____				
Total Cover: <u>100</u>				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Cornus serica</u>	<u>30</u>	<u>Y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
Total Cover: <u>30</u>				UPL species _____ x 5 = _____
Total Cover: _____				Column Totals: _____ (A) _____ (B)
Total Cover: _____				Prevalence Index = B/A = _____
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>Cyperus eragrostis</u>	<u>2</u>	<u>N</u>	<u>FACW</u>	<input type="checkbox"/> Dominance Test is >50%
2. <u>Toxicodendron diversilobum</u>	<u>5</u>	<u>Y</u>	<u>UPL</u>	<input type="checkbox"/> Prevalence Index is ≤3.0 ¹
3. <u>Juncus patens</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	<input type="checkbox"/> Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Equisetum telmateia</u>	<u>2</u>	<u>N</u>	<u>OBL</u>	<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: <u>19</u>				¹ Indicators of hydric soil and wetland hydrology must be present.
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes <input checked="" type="checkbox"/> No _____
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust _____				
Remarks: <u>Ground layer all duff/leaf litter</u>				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hafton Canyon City/County: Mariposa/ Monterey State: CA Sampling Date: 12-11-07
 Applicant/Owner: _____ Sampling Point: C15
 Investigator(s): JDM Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NMI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of a drought</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. <u>Rhamnus californica</u>		<u>Y</u>	<u>N/A-UPL</u>	Total Number of Dominant Species Across All Strata: <u>7</u> (B)
3. <u>dogwood - Cornus serica</u>		<u>Y</u>	<u>FACW</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>57</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Rhamnus californica</u>		<u>Y</u>	<u>N/A-UPL</u>	Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Urtica dioica</u>		<u>Y</u>	<u>FACW</u>	
3. <u>Toxicodendron diversilobum</u>		<u>Y</u>	<u>UPL</u>	
4. <u>dogwood - Cornus serica</u>		<u>Y</u>	<u>FACW</u>	
5. _____				
Total Cover: _____				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. _____				___ 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.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes <u>X</u> No _____
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: 015

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
18	10YR2/1		N/A				loamy/clay - mostly loam

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

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No _____

Remarks:

low chroma soils - damp

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input checked="" type="checkbox"/> Water-Stained Leaves (B9) | | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

Surface Water Present? Yes _____ No Depth (inches): _____
 Water Table Present? Yes _____ No Depth (inches): _____
 Saturation Present? Yes _____ No Depth (inches): _____
 (includes capillary fringe)

Wetland Hydrology Present? Yes No _____

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

Remarks:

Old stream channel - damp but not saturated soils - stream channel appears to be diverted above this point

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: San Diego / Monterey State: CA Sampling Date: 12-11-07
 Applicant/Owner: _____ Sampling Point: C16
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NMI classification: _____

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation Y, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of drought - evidence of tree trimming in recent years</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. <u>Urtica dioica</u>		<u>Y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Rubus ursinus</u>		<u>Y</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
Total Cover: _____				
Herb Stratum				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.
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
Total Cover: _____				
Woody Vine Stratum				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Remarks:				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: Concepcion/ Monterey Cnty Sampling Date: 12/10/07
 Applicant/Owner: _____ State: CA Sampling Point: D3
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>2nd year of a drought</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
<u>Sapling/Shrub Stratum</u>				<u>Prevalence Index worksheet:</u>
1. <u>Conium maculatum</u>	_____	_____	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
<u>Herb Stratum</u>				Column Totals: _____ (A) _____ (B)
1. _____	_____	_____	_____	Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	<u>Hydrophytic Vegetation Indicators:</u>
4. _____	_____	_____	_____	___ Dominance Test is >50%
5. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹
6. _____	_____	_____	_____	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
8. _____	_____	_____	_____	
Total Cover: _____				
<u>Woody Vine Stratum</u>				¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				<u>Hydrophytic Vegetation Present?</u> Yes <u>X</u> No _____
Remarks:				

SOIL

Sampling Point: D3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
	5/R 2.5/2		N/A				loamy	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (any one indicator is sufficient)</u>	<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	
<input type="checkbox"/> Other (Explain in Remarks)	

Field Observations:

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

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

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

Wetland Hydrology Present? Yes _____ No X

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

Remarks:

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Contra Costa / Monterey ^{Cnty.} Sampling Date: 12/10/07
 Applicant/Owner: _____ State: CA Sampling Point: D4
 Investigator(s): JD&MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of adraught - sand deposits in drainage channel</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
<u>Sapling/Shrub Stratum</u>				<u>Prevalence Index worksheet:</u>
1. <u>Conium maculatum</u>	_____	<u>Y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Rubus ursinus</u>	_____	<u>Y</u>	<u>FAC</u>	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
<u>Herb Stratum</u>				Column Totals: _____ (A) _____ (B)
1. _____	_____	_____	_____	Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	<u>Hydrophytic Vegetation Indicators:</u>
4. _____	_____	_____	_____	___ Dominance Test is >50%
5. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹
6. _____	_____	_____	_____	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
8. _____	_____	_____	_____	
Total Cover: _____				¹ Indicators of hydric soil and wetland hydrology must be present.
<u>Woody Vine Stratum</u>				<u>Hydrophytic Vegetation Present?</u> Yes <u>X</u> No _____
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

SOIL

Sampling Point: DA

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
18			N/A				Sandy	

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

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|---|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

unable to determine matrix color because soil is very sandy - deposited

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- | | | |
|--|--|--|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input checked="" type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Shallow Aquitard (D3) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | <input type="checkbox"/> FAC-Neutral Test (D5) |

Field Observations:

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

Wetland Hydrology Present? Yes X No _____

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

Remarks:

Drainage patterns include a roadside swale, point is located inside channel - sand deposits

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Monterey County Sampling Date: 12/12/07
 Applicant/Owner: _____ State: CA Sampling Point: D5
 Investigator(s): JD&MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of drought - in channel, but soils are sand deposits & difficult to determine matrix, veg. is highly invasive - mostly non-vegetated channel narrow channel - point located w/in channel - no veg. or soil but still a wetland point</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:																												
1. <u>Pinus radiata</u>	<u>2</u>	<u>N</u>	<u>N/A</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>3</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>2/3</u> (A/B)																												
2. <u>Quercus agrifolia</u>	<u>2</u>	<u>Y</u>	<u>N/A</u>																													
3. _____																																
4. _____																																
Total Cover: <u>4</u>																																
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:																												
1. <u>Baccharis pilularis</u>	<u>20</u>	<u>Y</u>	<u>N/A-UPL</u>	<table style="width:100%; border-collapse: collapse;"> <tr> <td align="center" colspan="2">Total % Cover of:</td> <td align="center" colspan="2">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td>_____ x 1 = _____</td> <td></td> <td></td> </tr> <tr> <td>FACW species</td> <td>_____ x 2 = _____</td> <td></td> <td></td> </tr> <tr> <td>FAC species</td> <td>_____ x 3 = _____</td> <td></td> <td></td> </tr> <tr> <td>FACU species</td> <td>_____ x 4 = _____</td> <td></td> <td></td> </tr> <tr> <td>UPL species</td> <td>_____ x 5 = _____</td> <td></td> <td></td> </tr> <tr> <td>Column Totals:</td> <td>_____ (A)</td> <td>_____ (B)</td> <td></td> </tr> </table> Prevalence Index = B/A = _____	Total % Cover of:		Multiply by:		OBL species	_____ x 1 = _____			FACW species	_____ x 2 = _____			FAC species	_____ x 3 = _____			FACU species	_____ x 4 = _____			UPL species	_____ x 5 = _____			Column Totals:	_____ (A)	_____ (B)	
Total % Cover of:		Multiply by:																														
OBL species	_____ x 1 = _____																															
FACW species	_____ x 2 = _____																															
FAC species	_____ x 3 = _____																															
FACU species	_____ x 4 = _____																															
UPL species	_____ x 5 = _____																															
Column Totals:	_____ (A)	_____ (B)																														
2. <u>Conium maculatum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>																													
3. <u>Cornus serica</u>	<u>10</u>	<u>N</u>	<u>FACW</u>																													
4. <u>Toxicodendron diversilobum</u>	<u>15</u>	<u>N</u>	<u>UPL</u>																													
5. <u>Raphanus sativus</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>																													
Total Cover: <u>90</u>																																
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:																												
1. <u>Artemisia douglasiana</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	___ 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)																												
2. <u>Raphanus sativus</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>																													
3. <u>Conium maculatum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>																													
4. _____																																
5. _____																																
Total Cover: <u>31</u>																																
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Footnote:																												
1. _____				¹ Indicators of hydric soil and wetland hydrology must be present.																												
2. _____																																
Total Cover: _____																																
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____																												
Remarks: <u>highly invaded with non-native plants other hydrophytic veg. present - in channel</u>																																

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Monterey Cnty. Sampling Date: 12/12/07
 Applicant/Owner: _____ State: CA Sampling Point: D7
 Investigator(s): JD&MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): convex 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes <u>X</u> No <u>X</u>
Remarks: <u>2nd year of drought - flood plain of drainage channel & low chroma soils present - veg. is highly invaded by non-natives but hydrophytic veg is present & part of dominants</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Pinus radiata</u>	<u>2</u>	<u>Y</u>	<u>N/A-UPL</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>2/7</u> (A/B)
2. <u>Quercus agrifolia</u>	<u>2</u>	<u>Y</u>	<u>N/A-UPL</u>	
3. _____				
4. _____				
Total Cover: <u>4</u>				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Baccharis pilularis</u>	<u>20</u>	<u>Y</u>	<u>N/AUPL</u>	
2. <u>Lionium maculatum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Cornus serica</u>	<u>10</u>	<u>N</u>	<u>FACW</u>	
4. <u>Toxicodendron diversilobum</u>	<u>15</u>	<u>N</u>	<u>UPL</u>	
5. <u>Rhaphanus sativus</u>	<u>25</u>	<u>Y</u>	<u>UPL</u>	
Total Cover: <u>90</u>				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	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.
1. <u>Artemisia douglasiana</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	
2. <u>Rhaphanus sativus</u>	<u>20</u>	<u>Y</u>	<u>UPL</u>	
3. <u>Cornium maculatum</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
4. _____				
5. _____				
6. _____				
7. _____				
Total Cover: <u>31</u>				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present? Yes _____ No <u>X</u>
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:
Same as D5 - immediately adjacent to channel in flood plain highly invaded by non-native vegetation

SOIL

Sampling Point: D7

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
	10YR 2/1							

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils³:
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):	Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Type: _____	
Depth (inches): _____	

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
<u>Primary Indicators (any one indicator is sufficient)</u>		<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____	
(includes capillary fringe)	

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

Remarks:
 Immediately adjacent to drainage channel
 flood plain of channel

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: Monterey County Sampling Date: 12/12/07
 Applicant/Owner: _____ State: CA Sampling Point: D10
 Investigator(s): JDM Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Channel Local relief (concave, convex, none): concave Slope (%): 5
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>Y</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of a drought - in channel</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Cornus serica</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u>Salix lasiolepis</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. <u>Cupressus macrocarpa</u>	<u>10</u>	<u>N</u>	<u>N/A-UPL</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				
Total Cover: <u>80</u>				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Cornus serica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____ OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
2. <u>Rubus ursinus</u>	<u>2</u>	<u>N</u>	<u>FAC</u>	
3. _____				
4. _____				
5. _____				
Total Cover: <u>22</u>				
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>N/A</u>				<input checked="" type="checkbox"/> 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.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____				Yes <u>X</u> No _____
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum <u>N/A</u>		% Cover of Biotic Crust <u>0</u>		
Remarks: <u>Ground layer all leaf litter / duff</u>				

SOIL

Sampling Point: D10

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
	<u>10YR2/1</u>						<u>Sandy loam</u>	

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

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

<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		³ Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
bw chroma soil

HYDROLOGY

Wetland Hydrology Indicators:

<u>Primary Indicators (any one indicator is sufficient)</u>	<u>Secondary Indicators (2 or more required)</u>
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input checked="" type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Shallow Aquitard (D3)
<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Biotic Crust (B12)	
<input type="checkbox"/> Aquatic Invertebrates (B13)	
<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	
<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	
<input type="checkbox"/> Presence of Reduced Iron (C4)	
<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	
<input type="checkbox"/> Other (Explain in Remarks)	

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:
in channel

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: ~~Contra Costa~~ Monterey Cnty Sampling Date: 12/10/07
 Applicant/Owner: _____ State: CA Sampling Point: D12
 Investigator(s): JDS MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	

Remarks:
2nd year of a drought - hole dug next to swale cause water to leak into hole causing wetland hydrology

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. <u>Rubus ursinus</u>	_____	<u>Y</u>	<u>FAC</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Toxicodendron diversilobum</u>	_____	<u>Y</u>	<u>UPL</u>	OBL species _____ x 1 = _____
3. <u>Urtica dioica</u>	_____	<u>Y</u>	<u>FACW</u>	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum				Column Totals: _____ (A) _____ (B)
1. _____	_____	_____	_____	Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	Hydrophytic Vegetation Indicators:
4. _____	_____	_____	_____	___ Dominance Test is >50%
5. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹
6. _____	_____	_____	_____	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
8. _____	_____	_____	_____	
Total Cover: _____				
Woody Vine Stratum				¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		
Remarks:				

SOIL

Sampling Point: D12

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
18	2.5YR	2.5/0	N/A					

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> 1 cm Muck (A9) (LRR C)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> 2 cm Muck (A10) (LRR B)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Loamy Mucky Mineral (F1)	<input type="checkbox"/> Reduced Vertic (F18)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Red Parent Material (TF2)
<input type="checkbox"/> Stratified Layers (A5) (LRR C)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 1 cm Muck (A9) (LRR D)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1)	<input type="checkbox"/> Vernal Pools (F9)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)		

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 very low chroma - below 1 value

HYDROLOGY

Wetland Hydrology Indicators:		Secondary Indicators (2 or more required)
Primary Indicators (any one indicator is sufficient)		
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Salt Crust (B11)	<input type="checkbox"/> Water Marks (B1) (Riverine)
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Biotic Crust (B12)	<input type="checkbox"/> Sediment Deposits (B2) (Riverine)
<input checked="" type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Aquatic Invertebrates (B13)	<input type="checkbox"/> Drift Deposits (B3) (Riverine)
<input type="checkbox"/> Water Marks (B1) (Nonriverine)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Drainage Patterns (B10)
<input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)	<input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)	<input type="checkbox"/> Dry-Season Water Table (C2)
<input type="checkbox"/> Drift Deposits (B3) (Nonriverine)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Thin Muck Surface (C7)
<input type="checkbox"/> Surface Soil Cracks (B6)	<input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)	<input type="checkbox"/> Crayfish Burrows (C8)
<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)
<input type="checkbox"/> Water-Stained Leaves (B9)		<input type="checkbox"/> Shallow Aquitard (D3)
		<input type="checkbox"/> FAC-Neutral Test (D5)

Field Observations:

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

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

Saturation Present? Yes No Depth (inches): lein

Wetland Hydrology Present? Yes No

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

Remarks:
 hole dug next to drainage swale - water from swale diverted into hole

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: ~~Orange~~ / Monterey Cnty Sampling Date: 12/10/07
 Applicant/Owner: _____ State: CA Sampling Point: D14
 Investigator(s): JD&MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes _____ No <u>X</u> Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>2nd year of a drought - Waters - no hydrophytic vegetation</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>50</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
<u>Sapling/Shrub Stratum</u>				<u>Prevalence Index worksheet:</u>
1. <u>Ribes speciosum</u>	_____	<u>Y</u>	<u>N/A-UPL</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Cornium maculatum</u>	_____	<u>Y</u>	<u>FACW</u>	OBL species _____ x 1 = _____
3. <u>Rubus ursinus</u>	_____	<u>Y</u>	<u>FAC</u>	FACW species _____ x 2 = _____
4. <u>Rhamnus crocea</u>	_____	<u>Y</u>	<u>N/A-UPL</u>	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
<u>Herb Stratum</u>				Column Totals: _____ (A) _____ (B)
1. _____	_____	_____	_____	Prevalence Index = B/A = _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	<u>Hydrophytic Vegetation indicators:</u>
4. _____	_____	_____	_____	___ Dominance Test is >50%
5. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹
6. _____	_____	_____	_____	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
7. _____	_____	_____	_____	___ Problematic Hydrophytic Vegetation ¹ (Explain)
8. _____	_____	_____	_____	
Total Cover: _____				
<u>Woody Vine Stratum</u>				¹ Indicators of hydric soil and wetland hydrology must be present.
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum _____		% Cover of Biotic Crust _____		<u>Hydrophytic Vegetation Present?</u> Yes _____ No <u>X</u>
Remarks:				

SOIL

Sampling Point: D14

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
<u>3</u>	<u>10YR 3/1</u>		<u>N/A</u>					

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

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

Indicators for Problematic Hydric Soils³:

- | | | |
|--|--|---|
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> 1 cm Muck (A9) (LRR C) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> 2 cm Muck (A10) (LRR B) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Loamy Mucky Mineral (F1) | <input type="checkbox"/> Reduced Vertic (F18) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Red Parent Material (TF2) |
| <input type="checkbox"/> Stratified Layers (A5) (LRR C) | <input checked="" type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 1 cm Muck (A9) (LRR D) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) | <input type="checkbox"/> Vernal Pools (F9) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | | |

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____
Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

Not able to dig hole to appropriate depth - very rocky
Low chroma soils

HYDROLOGY

Wetland Hydrology Indicators:

Secondary Indicators (2 or more required)

Primary Indicators (any one indicator is sufficient)

- | | | |
|--|--|---|
| <input type="checkbox"/> Surface Water (A1) | <input type="checkbox"/> Salt Crust (B11) | <input type="checkbox"/> Water Marks (B1) (Riverine) |
| <input type="checkbox"/> High Water Table (A2) | <input type="checkbox"/> Biotic Crust (B12) | <input checked="" type="checkbox"/> Sediment Deposits (B2) (Riverine) |
| <input type="checkbox"/> Saturation (A3) | <input type="checkbox"/> Aquatic Invertebrates (B13) | <input type="checkbox"/> Drift Deposits (B3) (Riverine) |
| <input type="checkbox"/> Water Marks (B1) (Nonriverine) | <input type="checkbox"/> Hydrogen Sulfide Odor (C1) | <input checked="" type="checkbox"/> Drainage Patterns (B10) |
| <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) | <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) | <input type="checkbox"/> Dry-Season Water Table (C2) |
| <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) | <input type="checkbox"/> Presence of Reduced Iron (C4) | <input type="checkbox"/> Thin Muck Surface (C7) |
| <input type="checkbox"/> Surface Soil Cracks (B6) | <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) | <input type="checkbox"/> Crayfish Burrows (C8) |
| <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) | <input type="checkbox"/> Other (Explain in Remarks) | <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) |
| <input type="checkbox"/> Water-Stained Leaves (B9) | | <input type="checkbox"/> Shallow Aquitard (D3) |
| | | <input type="checkbox"/> 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:

In channel

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Monterey Cnty. Sampling Date: 12-12-07
 Applicant/Owner: _____ State: CA Sampling Point: D17
 Investigator(s): JDS/MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): canyon Local relief (concave, convex, none): concave Slope (%): 0
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of adraught - in channel (middle) due to conditions can't sample further - appears to be the same throughout</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Cornus serica</u>	<u>55</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u>Salix lasiolepis</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Total Cover: <u>105</u>				
Sapling/Shrub Stratum				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.
1. <u>Cornus serica</u>	<u>20</u>	<u>Y</u>	<u>FACW</u>	
2. _____				Hydrophytic Vegetation Present? Yes <u>X</u> No _____
3. _____				
4. _____				
5. _____				
Total Cover: <u>20</u>				
Herb Stratum				
1. <u>NA</u>				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum				
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum <u>0</u> % Cover of Biotic Crust <u>0</u>				
Remarks: <u>Ground layer all duff</u>				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: Mariposa/Monterey CA Sampling Date: 12-11-07
 Applicant/Owner: _____ State: CA Sampling Point: Z1
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): canyon edge Local relief (concave, convex, none): CONVEX Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Hydric Soil Present? Yes <u>X</u> No _____	
Wetland Hydrology Present? Yes <u>X</u> No <u>X</u>	

Remarks:
2nd year of a drought - hydrology not present, but next to swale, low point in top - water probably collects in area

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>2</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: OBL species _____ x 1 = _____ FACW species _____ x 2 = _____ FAC species _____ x 3 = _____ FACU species _____ x 4 = _____ UPL species _____ x 5 = _____ Column Totals: _____ (A) _____ (B) Prevalence Index = B/A = _____
Total Cover: _____				
<u>Sapling/Shrub Stratum</u>				
1. <u>Rubus ursinus</u>		<u>Y</u>	<u>FAC</u>	
2. _____				
3. _____				
4. _____				
5. _____				
Total Cover: _____				
<u>Herb Stratum</u>				
1. _____				
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
<u>Woody Vine Stratum</u>				
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				

Remarks:

SOIL

Sampling Point: Z1

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

Depth (inches)	Matrix		Redox Features			Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹		
18	10YR 2/1		N/A			Sandy	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)
	<input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 Numerous sandstone rocks - low chroma soil

HYDROLOGY

Wetland Hydrology Indicators:	Secondary Indicators (2 or more required)
<u>Primary Indicators (any one indicator is sufficient)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> 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:
 probably has standing water during wetter years / large rain events

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hutton Canyon City/County: Monterey County Sampling Date: 12/13/07
 Applicant/Owner: _____ State: CA Sampling Point: ~~_____~~
 Investigator(s): JD & MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): canyon Local relief (concave, convex, none): CONCAVE Slope (%): 1
 Subregion (LRR): _____ Lat: _____ Long: _____ Datum: _____
 Soil Map Unit Name: _____ NWI classification: _____

Z2

Are climatic / hydrologic conditions on the site typical for this time of year? Yes _____ No X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Hydric Soil Present? Yes <u>X</u> No _____	Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: <u>2nd year of drought</u>			

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Solid laevifolia</u>	<u>40</u>	<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. <u>Cornus serica</u>	<u>10</u>	<u>Y</u>	<u>FACW</u>	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: <u>50</u>				
Sapling/Shrub Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Prevalence Index worksheet:
1. <u>Cornus serica</u>	<u>50</u>	<u>Y</u>	<u>FACW</u>	Total % Cover of: _____ Multiply by: _____
2. Scirpus microcarpus	15	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: <u>50</u>				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Indicators:
1. <u>english ivy-hedera helix</u>	<u>2</u>	<u>N</u>	<u>N/A</u>	___ Dominance Test is >50%
2. <u>riparius ursinus</u>	<u>1</u>	<u>N</u>	<u>FAC</u>	___ Prevalence Index is ≤3.0 ¹
3. <u>unknown grass</u>	<u>1</u>	<u>N</u>	<u>N/A</u>	___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. <u>Scirpus microcarpus</u>	<u>15</u>	<u>Y</u>	<u>OBL</u>	___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
Total Cover: <u>19</u>				
Woody Vine Stratum	Absolute % Cover	Dominant Species?	Indicator Status	Hydrophytic Vegetation Present?
1. _____	_____	_____	_____	Yes <u>X</u> No _____
2. _____	_____	_____	_____	
Total Cover: _____				
% Bare Ground in Herb Stratum <u>0</u>		% Cover of Biotic Crust <u>0</u>		
Remarks: <u>Ground layer duff/leaf litter 100%</u>				

SOIL

Sampling Point: ZZ

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
	10YR 2/1		N/A				loam/clay	

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

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.) <input type="checkbox"/> Histosol (A1) <input type="checkbox"/> Histic Epipedon (A2) <input type="checkbox"/> Black Histic (A3) <input type="checkbox"/> Hydrogen Sulfide (A4) <input type="checkbox"/> Stratified Layers (A5) (LRR C) <input type="checkbox"/> 1 cm Muck (A9) (LRR D) <input type="checkbox"/> Depleted Below Dark Surface (A11) <input type="checkbox"/> Thick Dark Surface (A12) <input type="checkbox"/> Sandy Mucky Mineral (S1) <input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Sandy Redox (S5) <input type="checkbox"/> Stripped Matrix (S6) <input type="checkbox"/> Loamy Mucky Mineral (F1) <input type="checkbox"/> Loamy Gleyed Matrix (F2) <input checked="" type="checkbox"/> Depleted Matrix (F3) <input type="checkbox"/> Redox Dark Surface (F6) <input type="checkbox"/> Depleted Dark Surface (F7) <input type="checkbox"/> Redox Depressions (F8) <input type="checkbox"/> Vernal Pools (F9)	Indicators for Problematic Hydric Soils³: <input type="checkbox"/> 1 cm Muck (A9) (LRR C) <input type="checkbox"/> 2 cm Muck (A10) (LRR B) <input type="checkbox"/> Reduced Vertic (F18) <input type="checkbox"/> Red Parent Material (TF2) <input type="checkbox"/> Other (Explain in Remarks)
--	--	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):
 Type: _____
 Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:
 Sandstone has red/orange in it low chroma
 Sandstone rocks in nearly every hole dug for drillin.

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (any one indicator is sufficient)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Water Marks (B1) (Nonriverine) <input type="checkbox"/> Sediment Deposits (B2) (Nonriverine) <input type="checkbox"/> Drift Deposits (B3) (Nonriverine) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> Salt Crust (B11) <input type="checkbox"/> Biotic Crust (B12) <input type="checkbox"/> Aquatic Invertebrates (B13) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6) <input type="checkbox"/> Other (Explain in Remarks)	<u>Secondary Indicators (2 or more required)</u> <input type="checkbox"/> Water Marks (B1) (Riverine) <input type="checkbox"/> Sediment Deposits (B2) (Riverine) <input type="checkbox"/> Drift Deposits (B3) (Riverine) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> 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:
 in channel

28

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: Monterey County Sampling Date: 12/11/07
 Applicant/Owner: _____ State: CA Sampling Point: 23
 Investigator(s): JD&MS Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 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 X (If no, explain in Remarks.)
 Are Vegetation N, Soil N, or Hydrology N significantly disturbed? Are "Normal Circumstances" present? Yes X No _____
 Are Vegetation N, Soil N, or Hydrology N naturally problematic? (If needed, explain any answers in Remarks.)

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

Hydrophytic Vegetation Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes _____ No _____
Hydric Soil Present? Yes _____ No _____	
Wetland Hydrology Present? Yes <u>X</u> No _____	
Remarks: <u>2nd year of a drought</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Salix sp. lasiolepis</u>		<u>Y</u>	<u>FACW</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>3</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75</u> (A/B)
4. _____				
Total Cover: _____				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. <u>Juncus patens</u>		<u>Y</u>	<u>FAC</u>	Total % Cover of: _____ Multiply by: _____
2. <u>Juncus effusus</u>		<u>Y</u>	<u>OBL</u>	OBL species _____ x 1 = _____
3. <u>Rumex crispus</u>		<u>N</u>	<u>FACW</u>	FACW species _____ x 2 = _____
4. <u>Cyperus eragrostis</u>		<u>N</u>	<u>FACW</u>	FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum				Hydrophytic Vegetation Indicators:
1. <u>Unknown grass</u>		<u>Y</u>	<u>N/A</u>	___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
3. _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				¹ Indicators of hydric soil and wetland hydrology must be present.
Woody Vine Stratum				Hydrophytic Vegetation Present?
1. _____				Yes <u>X</u> No _____
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				
Remarks:				

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Carmel Hill City/County: Marina/Paradise/Monterey Cnty Sampling Date: 12/19/07
 Applicant/Owner: _____ State: CA Sampling Point: Z4
 Investigator(s): MJ JH Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): Canyon Local relief (concave, convex, none): Concave Slope (%): _____
 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 <input checked="" type="checkbox"/> No _____ Hydric Soil Present? Yes <input checked="" type="checkbox"/> No _____ Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No _____	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No _____
Remarks:	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A)
2. _____	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>1</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100</u> (A/B)
4. _____	_____	_____	_____	
Total Cover: _____				
Sapling/Shrub Stratum				Prevalence Index worksheet:
1. _____	_____	_____	_____	Total % Cover of: _____ Multiply by: _____
2. _____	_____	_____	_____	OBL species _____ x 1 = _____
3. _____	_____	_____	_____	FACW species _____ x 2 = _____
4. _____	_____	_____	_____	FAC species _____ x 3 = _____
5. _____	_____	_____	_____	FACU species _____ x 4 = _____
Total Cover: _____				UPL species _____ x 5 = _____
Herb Stratum				Column Totals: _____ (A) _____ (B)
1. <u>Ruppia palustris</u>	<u>97</u>	<u>Y</u>	<u>OBL</u>	Prevalence Index = B/A = _____
2. <u>Lythrum latifolia</u>	<u>1</u>	_____	<u>OBL</u>	
3. <u>Codium maculatum</u>	<u>1</u>	_____	<u>FACW</u>	
4. <u>Lithrum sp.</u>	<u>1</u>	<u>N</u>	<u>OBL</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
Total Cover: <u>100</u>				
Woody Vine Stratum				Hydrophytic Vegetation Indicators:
1. _____	_____	_____	_____	___ Dominance Test is >50%
2. _____	_____	_____	_____	___ Prevalence Index is ≤3.0 ¹
Total Cover: _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
Remarks:				¹ Indicators of hydric soil and wetland hydrology must be present.
				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____

SOIL

Sampling Point: 24

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
18	10YR 2/1		N/A				Silty Muck	

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

<p>Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)</p> <p><input type="checkbox"/> Histosol (A1)</p> <p><input type="checkbox"/> Histic Epipedon (A2)</p> <p><input type="checkbox"/> Black Histic (A3)</p> <p><input type="checkbox"/> Hydrogen Sulfide (A4)</p> <p><input type="checkbox"/> Stratified Layers (A5) (LRR C)</p> <p><input type="checkbox"/> 1 cm Muck (A9) (LRR D)</p> <p><input type="checkbox"/> Depleted Below Dark Surface (A11)</p> <p><input type="checkbox"/> Thick Dark Surface (A12)</p> <p><input type="checkbox"/> Sandy Mucky Mineral (S1)</p> <p><input type="checkbox"/> Sandy Gleyed Matrix (S4)</p>	<p>Indicators for Problematic Hydric Soils³:</p> <p><input type="checkbox"/> Sandy Redox (S5)</p> <p><input type="checkbox"/> Stripped Matrix (S6)</p> <p><input type="checkbox"/> Loamy Mucky Mineral (F1)</p> <p><input type="checkbox"/> Loamy Gleyed Matrix (F2)</p> <p><input checked="" type="checkbox"/> Depleted Matrix (F3)</p> <p><input type="checkbox"/> Redox Dark Surface (F6)</p> <p><input type="checkbox"/> Depleted Dark Surface (F7)</p> <p><input type="checkbox"/> Redox Depressions (F8)</p> <p><input type="checkbox"/> Vernal Pools (F9)</p>	<p><input type="checkbox"/> 1 cm Muck (A9) (LRR C)</p> <p><input type="checkbox"/> 2 cm Muck (A10) (LRR B)</p> <p><input type="checkbox"/> Reduced Vertic (F18)</p> <p><input type="checkbox"/> Red Parent Material (TF2)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>
--	---	--

³Indicators of hydrophytic vegetation and wetland hydrology must be present.

Restrictive Layer (if present):

Type: _____

Depth (inches): _____

Hydric Soil Present? Yes No

Remarks:

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p>Primary Indicators (any one indicator is sufficient)</p> <p><input checked="" type="checkbox"/> Surface Water (A1)</p> <p><input checked="" type="checkbox"/> High Water Table (A2)</p> <p><input checked="" type="checkbox"/> Saturation (A3)</p> <p><input type="checkbox"/> Water Marks (B1) (Nonriverine)</p> <p><input type="checkbox"/> Sediment Deposits (B2) (Nonriverine)</p> <p><input type="checkbox"/> Drift Deposits (B3) (Nonriverine)</p> <p><input type="checkbox"/> Surface Soil Cracks (B6)</p> <p><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</p> <p><input type="checkbox"/> Water-Stained Leaves (B9)</p>	<p>Secondary Indicators (2 or more required)</p> <p><input type="checkbox"/> Salt Crust (B11)</p> <p><input type="checkbox"/> Biotic Crust (B12)</p> <p><input type="checkbox"/> Aquatic Invertebrates (B13)</p> <p><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</p> <p><input type="checkbox"/> Oxidized Rhizospheres along Living Roots (C3)</p> <p><input type="checkbox"/> Presence of Reduced Iron (C4)</p> <p><input type="checkbox"/> Recent Iron Reduction in Plowed Soils (C6)</p> <p><input type="checkbox"/> Other (Explain in Remarks)</p>	<p><input type="checkbox"/> Water Marks (B1) (Riverine)</p> <p><input type="checkbox"/> Sediment Deposits (B2) (Riverine)</p> <p><input type="checkbox"/> Drift Deposits (B3) (Riverine)</p> <p><input type="checkbox"/> Drainage Patterns (B10)</p> <p><input type="checkbox"/> Dry-Season Water Table (C2)</p> <p><input type="checkbox"/> Thin Muck Surface (C7)</p> <p><input type="checkbox"/> Crayfish Burrows (C8)</p> <p><input type="checkbox"/> Saturation Visible on Aerial Imagery (C9)</p> <p><input type="checkbox"/> Shallow Aquitard (D3)</p> <p><input type="checkbox"/> FAC-Neutral Test (D5)</p>
---	---	---

Field Observations:

Surface Water Present? Yes No _____ Depth (inches): 2

Water Table Present? Yes No _____ Depth (inches): 0

Saturation Present? (includes capillary fringe) Yes No _____ Depth (inches): 0

Wetland Hydrology Present? Yes No _____

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

Remarks: Ponded area caused by road maintenance

WETLAND DETERMINATION DATA FORM – Arid West Region

Project/Site: Hatton Canyon City/County: San Jose / Monterey Sampling Date: 12-19-07
 Applicant/Owner: _____ State: CA Sampling Point: 25
 Investigator(s): MJ & JH Section, Township, Range: _____
 Landform (hillslope, terrace, etc.): road Local relief (concave, convex, none): flat Slope (%): 0
 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 X (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 <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: <u>2nd year of a drought - Area paved as part of Carmel Valley Road expansion</u>	

VEGETATION

Tree Stratum (Use scientific names.)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____		<u>N/A</u>		Number of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A)
2. _____				Total Number of Dominant Species Across All Strata: <u>0</u> (B)
3. _____				Percent of Dominant Species That Are OBL, FACW, or FAC: <u>0</u> (A/B)
4. _____				
Total Cover: _____				
Sablino/Shrub Stratum				Prevalence Index worksheet:
1. _____		<u>N/A</u>		Total % Cover of: _____ Multiply by:
2. _____				OBL species _____ x 1 = _____
3. _____				FACW species _____ x 2 = _____
4. _____				FAC species _____ x 3 = _____
5. _____				FACU species _____ x 4 = _____
				UPL species _____ x 5 = _____
Total Cover: _____				Column Totals: _____ (A) _____ (B)
				Prevalence Index = B/A = _____
Herb Stratum				Hydrophytic Vegetation Indicators:
1. _____		<u>N/A</u>		___ Dominance Test is >50%
2. _____				___ Prevalence Index is ≤3.0 ¹
3. _____				___ Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
4. _____				___ Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____				
6. _____				
7. _____				
8. _____				
Total Cover: _____				
Woody Vine Stratum				
1. _____				
2. _____				
Total Cover: _____				
% Bare Ground in Herb Stratum _____ % Cover of Biotic Crust _____				Hydrophytic Vegetation Present? Yes _____ No <u>X</u>

Remarks: Area paved - no vegetation

Appendix B: Wetland Delineation Map

Appendix C: Approved Jurisdictional Determination Form

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

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

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD):

B. DISTRICT OFFICE, FILE NAME, AND NUMBER:

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State: CA County/parish/borough: Monterey City: Carmel
Center coordinates of site (lat/long in degree decimal format): Lat. 36 degrees 32 minutes 53 seconds ° **N**, Long. 121 degrees 54 minutes 26 seconds ° **W**.

Universal Transverse Mercator:

Name of nearest waterbody: Unnamed tributary

Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Carmel River

Name of watershed or Hydrologic Unit Code (HUC): Carmel - 18060012

Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.

Check if other sites (e.g., offsite mitigation sites, disposal sites, etc...) are associated with this action and are recorded on a different JD form.

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

Office (Desk) Determination. Date:

Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

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

Waters subject to the ebb and flow of the tide.

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

Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **Are** "waters of the U.S." within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [Required]

1. Waters of the U.S.

a. Indicate presence of waters of U.S. in review area (check all that apply):¹

TNWs, including territorial seas

Wetlands adjacent to TNWs

Relatively permanent waters² (RPWs) that flow directly or indirectly into TNWs

Non-RPWs that flow directly or indirectly into TNWs

Wetlands directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs

Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs

Impoundments of jurisdictional waters

Isolated (interstate or intrastate) waters, including isolated wetlands

b. Identify (estimate) size of waters of the U.S. in the review area:

Non-wetland waters: 8029.15 linear feet: 3 ft width (ft) and/or acres.

Wetlands: 6.08 acres.

c. Limits (boundaries) of jurisdiction based on: 1987 Delineation Manual

Elevation of established OHWM (if known): .

2. Non-regulated waters/wetlands (check if applicable):³

Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.

Explain: .

¹ Boxes checked below shall be supported by completing the appropriate sections in Section III below.

² For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).

³ Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. **TNW**

Identify TNW: .

Summarize rationale supporting determination: .

2. **Wetland adjacent to TNW**

Summarize rationale supporting conclusion that wetland is “adjacent”: .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are “relatively permanent waters” (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody⁴ is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. **Characteristics of non-TNWs that flow directly or indirectly into TNW**

(i) **General Area Conditions:**

Watershed size: 160,801 **acres**

Drainage area: 825 **acres**

Average annual rainfall: 19.58 inches

Average annual snowfall: 0 inches

(ii) **Physical Characteristics:**

(a) Relationship with TNW:

Tributary flows directly into TNW.

Tributary flows through **Pick List** tributaries before entering TNW.

Project waters are **1 (or less)** river miles from TNW.

Project waters are **Pick List** river miles from RPW.

Project waters are **1 (or less)** aerial (straight) miles from TNW.

Project waters are **Pick List** aerial (straight) miles from RPW.

Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW⁵: Unknown tributary (Trib. A) flows into Carmel River (TNW).

Tributary stream order, if known: .

⁴ Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

⁵ Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

(b) General Tributary Characteristics (check all that apply):

- Tributary is:** Natural
 Artificial (man-made). Explain: The section that runs under the Carmel Rancho Shopping Center runs through a culvert.
 Manipulated (man-altered). Explain: Sections of channel within Hatton Canyon are maintained.

Tributary properties with respect to top of bank (estimate):

Average width: 3 feet
Average depth: 3 feet
Average side slopes: **Vertical (1:1 or less).**

Primary tributary substrate composition (check all that apply):

- | | | |
|---|--|-----------------------------------|
| <input type="checkbox"/> Silts | <input checked="" type="checkbox"/> Sands | <input type="checkbox"/> Concrete |
| <input checked="" type="checkbox"/> Cobbles | <input checked="" type="checkbox"/> Gravel | <input type="checkbox"/> Muck |
| <input type="checkbox"/> Bedrock | <input type="checkbox"/> Vegetation. Type/% cover: | |
| <input type="checkbox"/> Other. Explain: | | |

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: This is a diverse system that consists of steep to shallow gradients which grade from significant in some areas to insignificant in others. As a result, the condition of the tributary consists of some areas that are deeply incised and suffer from ongoing erosion, while other areas are stable and exhibit wide, shallow, naturally sloping bed and bank features.

Presence of run/riffle/pool complexes. Explain: No.

Tributary geometry: **Relatively straight**

Tributary gradient (approximate average slope): Slopes from approximately 30% at the headwaters to less than 10% in the downstream portion where it meets Carmel Valley Road, and becomes relatively flat within the Carmel River floodplain (underground culvert) %

(c) Flow:

Tributary provides for: **Ephemeral flow**

Estimate average number of flow events in review area/year: **2-5**

Describe flow regime: The hydrology is not consistent throughout the tributary as evidenced by portions of the tributary having surface flow throughout the wet season while other portions are dry except during precipitation events.

Other information on duration and volume:

Surface flow is: **Confined.** Characteristics: See "flow regime" description above.

Subsurface flow: **Yes.** Explain findings: See "flow regime" description above.

Dye (or other) test performed:

Tributary has (check all that apply):

- | | |
|---|--|
| <input checked="" type="checkbox"/> Bed and banks | |
| <input checked="" type="checkbox"/> OHWM ⁶ (check all indicators that apply): | |
| <input checked="" type="checkbox"/> clear, natural line impressed on the bank | <input type="checkbox"/> the presence of litter and debris |
| <input checked="" type="checkbox"/> changes in the character of soil | <input type="checkbox"/> destruction of terrestrial vegetation |
| <input type="checkbox"/> shelving | <input type="checkbox"/> the presence of wrack line |
| <input type="checkbox"/> vegetation matted down, bent, or absent | <input type="checkbox"/> sediment sorting |
| <input type="checkbox"/> leaf litter disturbed or washed away | <input type="checkbox"/> scour |
| <input checked="" type="checkbox"/> sediment deposition | <input type="checkbox"/> multiple observed or predicted flow events |
| <input type="checkbox"/> water staining | <input checked="" type="checkbox"/> abrupt change in plant community |
| <input type="checkbox"/> other (list): | |
| <input checked="" type="checkbox"/> Discontinuous OHWM. ⁷ Explain: One section of waters runs through a culvert and other sections are interrupted | |

by wetlands.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

- | | |
|--|--|
| <input type="checkbox"/> High Tide Line indicated by: | <input type="checkbox"/> Mean High Water Mark indicated by: |
| <input type="checkbox"/> oil or scum line along shore objects | <input type="checkbox"/> survey to available datum; |
| <input type="checkbox"/> fine shell or debris deposits (foreshore) | <input type="checkbox"/> physical markings; |
| <input type="checkbox"/> physical markings/characteristics | <input type="checkbox"/> vegetation lines/changes in vegetation types. |
| <input type="checkbox"/> tidal gauges | |
| <input type="checkbox"/> other (list): | |

⁶A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.

⁷Ibid.

(iii) Chemical Characteristics:

Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).

Explain: Water is clear and generally unpolluted.

Identify specific pollutants, if known: Not known.

(iv) **Biological Characteristics. Channel supports (check all that apply):**

- Riparian corridor. Characteristics (type, average width): Willow/Dogwood Riparian- approximately 100 feet wide.
- Wetland fringe. Characteristics: .
- Habitat for:
 - Federally Listed species. Explain findings: .
 - Fish/spawn areas. Explain findings: .
 - Other environmentally-sensitive species. Explain findings: .
 - Aquatic/wildlife diversity. Explain findings: .

2. **Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW**

(i) **Physical Characteristics:**

(a) General Wetland Characteristics:

Properties:

Wetland size: 6.08 acres

Wetland type. Explain: Forrested wetlands within and adjacent to a braided and/or channelized ephemeral stream corridor associated riparian habitat.

Wetland quality. Explain: Reltively high quality - most wetland areas are undisturbed and unpolluted.

Project wetlands cross or serve as state boundaries. Explain: No.

(b) General Flow Relationship with Non-TNW:

Flow is: **Ephemeral flow**. Explain: .

Surface flow is: **Discrete**

Characteristics: Wetlands persit within the riparian cooridor in areas of ephemeral subsurface and surface flow.

Subsurface flow: **Yes**. Explain findings: Wetlands exist within a historic riparian corridor where sand, gravel, and cobble act as a subsurface hydrologic conduit .

Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:

Directly abutting

Not directly abutting

Discrete wetland hydrologic connection. Explain: .

Ecological connection. Explain: .

Separated by berm/barrier. Explain: Two wetland areas are adjacent to but not abutting the non-TNW either due to natural topographical features or natural features in combination with the location of the access road that runs the length of the canyon.

(d) Proximity (Relationship) to TNW

Project wetlands are **1 (or less)** river miles from TNW.

Project waters are **1 (or less)** aerial (straight) miles from TNW.

Flow is from: **Wetland to navigable waters**.

Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) **Chemical Characteristics:**

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Water is clear and relatively unpolluted.

Identify specific pollutants, if known: Not known.

(iii) **Biological Characteristics. Wetland supports (check all that apply):**

Riparian buffer. Characteristics (type, average width):Willow/Dogwood Riparian - Approximately 100 feet wide.

Vegetation type/percent cover. Explain: .

Habitat for:

Federally Listed species. Explain findings: The riparian forest may support California red-legged frog.

Fish/spawn areas. Explain findings: .

Other environmentally-sensitive species. Explain findings: Monterey dusky-footed woodrats are present throughout the riparian forest.

Aquatic/wildlife diversity. Explain findings: Avian species diversity.

3. **Characteristics of all wetlands adjacent to the tributary (if any)**

All wetland(s) being considered in the cumulative analysis: **5**

Approximately (6.08) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>	<u>Directly abuts? (Y/N)</u>	<u>Size (in acres)</u>
Y	.18	Y	4.23
Y	.43	Y	.52
Y	.72		

Summarize overall biological, chemical and physical functions being performed: The riparian and wetland vegetation provide important habitat for many species, particularly avian species and herpetofauna. Special-status wildlife species may also use these habitats, including the Monterey dusky-footed woodrat (*Neotoma macrotis luciana*) and the federally Threatened California red-legged frog (*Rana aurora draytonii*). Many raptor species protected under the Migratory Bird Treaty Act are also likely to nest within the riparian forest. The riparian and wetland vegetation supported by the non-RPW protect the surrounding landscape from high rates of erosion that could carry large amounts of sediment to the Carmel River. Several of the soils that comprise Hatton Canyon have medium to very rapid runoff rates and moderate to high erosion hazards. The non-RPW and its associated wetlands and riparian vegetation likely function as a filter of these sediments that would otherwise directly dump into Carmel River, particularly in areas where the flow of water is over, large relatively flat areas (such as the wetland area just north of Carmel Valley Road). Runoff carrying pollutants from the properties and roads surrounding Hatton Canyon are also likely trapped or filtered out by the wetlands before reaching Carmel River.

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .
2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: The non-RPW flows directly into Carmel River. The non-RPW supports both riparian and wetland vegetation which provide important habitat for many species, particularly avian species and herpetofauna, which are also found within the riparian corridor surrounding Carmel River. Special-status wildlife species may also use these habitats. Numerous Monterey dusky-footed woodrat (*Neotoma macrotis luciana*) nests were observed throughout the riparian habitat in Hatton Canyon. Although no breeding habitat was evident during the field surveys, the federally Threatened California red-legged frog (*Rana aurora draytonii*) may use these habitats for movement to upland refugia. Many raptor species protected under the Migratory Bird Treaty Act are also likely to nest within the riparian forest. Fish species are unable to utilize the non-RPW due to the presence of a flap-gate at the outlet of the existing drainage culvert that runs under the Carmel Rancho Shopping Center. However, nutrients and organic carbon carried by the non-RPW is likely to support food webs within Carmel Lagoon, including those that include fish species like the federally Threatened south-central California coast steelhead (*Oncorhynchus mykiss irideus*). The riparian and wetland vegetation supported by the non-RPW protect the surrounding landscape from high rates of erosion that could carry large amounts of sediment to the Carmel River. Several of the soils that comprise Hatton Canyon have medium to very rapid runoff rates and moderate to high erosion hazards. The non-RPW and its associated vegetation likely

function as a filter of these sediments that would otherwise directly dump into Carmel River, particularly in areas where the flow of water is over, large relatively flat areas (such as the wetland area just north of Carmel Valley Road). Runoff carrying pollutants from the properties and roads surrounding Hatton Canyon are also likely trapped or filtered out by the wetlands before reaching Carmel River.

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D:

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:

- TNWs: linear feet width (ft), Or, acres.
 Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**

- Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial:
 Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally:

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters:

3. **Non-RPWs⁸ that flow directly or indirectly into TNWs.**

- Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional waters within the review area (check all that apply):

- Tributary waters: **8,020.15** linear feet **3** width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters:

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
 Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:
 Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW:

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**

- Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**

⁸See Footnote # 3.

- Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

Provide estimates for jurisdictional wetlands in the review area: **6.08** acres.

7. Impoundments of jurisdictional waters.⁹

As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

- Demonstrate that impoundment was created from “waters of the U.S.,” or
 Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
 Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):¹⁰

- which are or could be used by interstate or foreign travelers for recreational or other purposes.
 from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
 which are or could be used for industrial purposes by industries in interstate commerce.
 Interstate isolated waters. Explain: .
 Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- Tributary waters: linear feet width (ft).
 Other non-wetland waters: acres.
Identify type(s) of waters: .
 Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
 Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
 Prior to the Jan 2001 Supreme Court decision in “*SWANCC*,” the review area would have been regulated based solely on the “Migratory Bird Rule” (MBR).
 Waters do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction. Explain: .
 Other: (explain, if not covered above): .

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource: .
 Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the “Significant Nexus” standard, where such a finding is required for jurisdiction (check all that apply):

- Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
 Lakes/ponds: acres.
 Other non-wetland waters: acres. List type of aquatic resource: .
 Wetlands: acres.

SECTION IV: DATA SOURCES.

⁹ To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

¹⁰ Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA Memorandum Regarding CWA Act Jurisdiction Following Rapanos.

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

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
 - Office concurs with data sheets/delineation report.
 - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps: .
- Corps navigable waters' study: .
- U.S. Geological Survey Hydrologic Atlas: .
 - USGS NHD data.
 - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: Monterey Quad.
- USDA Natural Resources Conservation Service Soil Survey. Citation: .
- National wetlands inventory map(s). Cite name: .
- State/Local wetland inventory map(s): .
- FEMA/FIRM maps: .
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs: Aerial (Name & Date): 2003.
or Other (Name & Date): .
- Previous determination(s). File no. and date of response letter: Unknown - 1997 Caltrans Wetland Delineation .
- Applicable/supporting case law: .
- Applicable/supporting scientific literature: .
- Other information (please specify): .

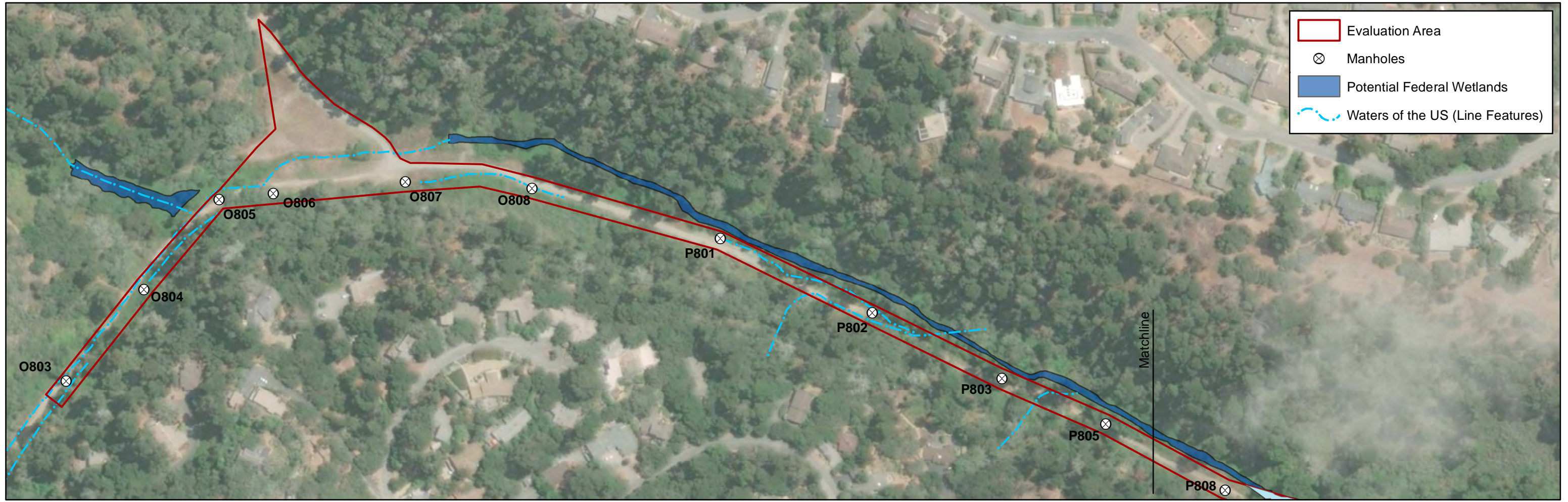
B. ADDITIONAL COMMENTS TO SUPPORT JD: .

Appendix D: Project Impact Map

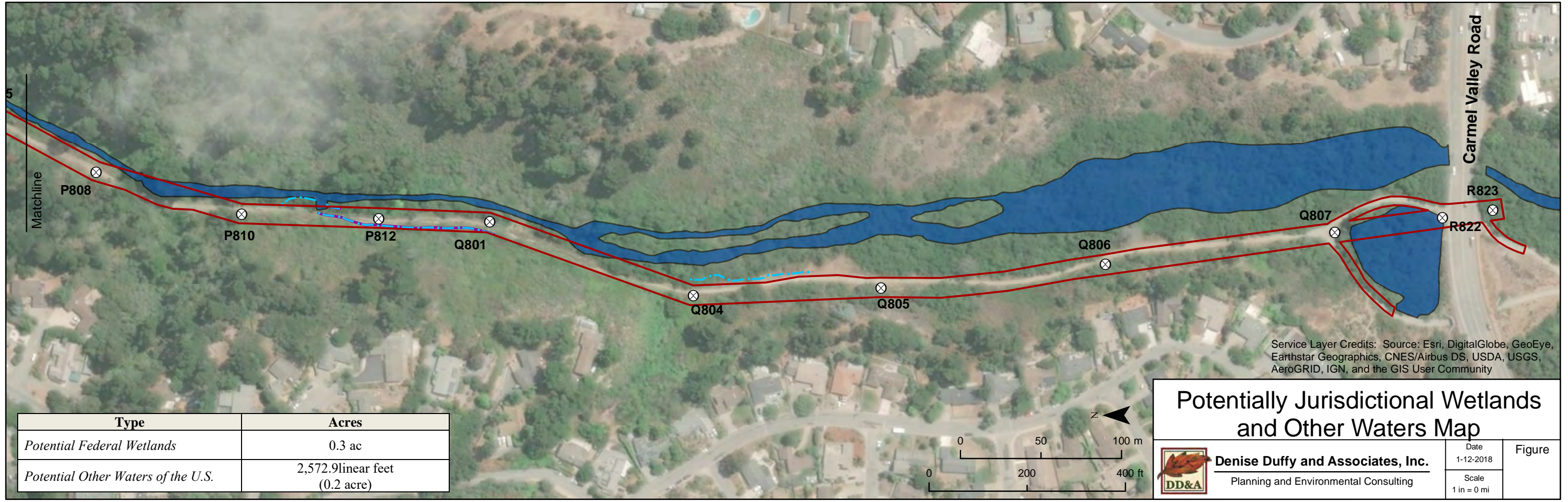
Appendix B

Wetland Delineation Map

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- Evaluation Area
- Manholes
- Potential Federal Wetlands
- Waters of the US (Line Features)




Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Type	Acres
Potential Federal Wetlands	0.3 ac
Potential Other Waters of the U.S.	2,572.9linear feet (0.2 acre)



Potentially Jurisdictional Wetlands and Other Waters Map



Denise Duffy and Associates, Inc.
Planning and Environmental Consulting

Date
1-12-2018

Scale
1 in = 0 mi

Figure

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Appendix D

Historic Property Survey Report/Finding of Effect Hatton Canyon Sewer Replacement Project

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**HISTORIC PROPERTY SURVEY REPORT/
FINDING OF EFFECT
(No Historic Properties Affected)**

**HATTON CANYON SEWER LINE REPLACEMENT PROJECT
VICINITY OF CARMEL, MONTEREY COUNTY, CALIFORNIA**

FOR

CARMEL AREA WASTEWATER DISTRICT
3945 Rio Road
Carmel-By-The-Sea, CA 93922

AND

DENISE DUFFY & ASSOCIATES, INC.
947 Cass Street, STE 5
Monterey, CA 93940

ATTN: Josh Harwayne, AICP
Senior Planner/Project Manager

BY

BASIN RESEARCH ASSOCIATES
1933 Davis Street, Suite 210
San Leandro, CA 94577

MARCH 2018

TABLE OF CONTENTS

1.0 INTRODUCTION	1
2.0 LOCATION AND DESCRIPTION	1
2.1 AREA OF POTENTIAL EFFECTS (APE)	2
3.0 REGULATORY CONTEXT	2
3.1 FEDERAL	2
3.2 STATE OF CALIFORNIA	2
4.0 BACKGROUND CONTEXT	5
4.1 ENVIRONMENTAL SETTING	5
4.2 NATIVE AMERICAN -Prehistoric	5
4.3 NATIVE AMERICAN - Ethnographic	6
4.4 HISTORIC ERA - Hispanic Period	8
4.5 HISTORIC ERA - American Period	10
5.0 RESEARCH PROTOCOLS	12
5.1 RECORDS SEARCH RESULTS	13
5.1A Compliance Reports and Other Reports	13
5.1B Recorded Sites and/or Reported Sites	17
5.1C Listed Historic Properties	18
5.1D Archaeological Sensitivity	18
6.0 INDIVIDUALS, GROUP AND AGENCY PARTICIPATION	18
7.0 FIELD INVESTIGATIONS	19
7.1 PREVIOUS ARCHAEOLOGICAL INVENTORIES	19
7.2 PROJECT INVENTORY	20
8.0 FINDINGS	20
9.0 FINDING OF EFFECT	21
10.0 RECOMMENDED PROJECT PERMIT CONDITIONS	21
11.0 REFERENCES CITED AND CONSULTED	22

ATTACHMENTS

FIGURES

FIGURE 1	Project Location (ESRI World Street Map)
FIGURE 2	Project Location T16S R1W, 1E (USGS Monterey, Calif. 1983)
FIGURE 3	Area of Potential Effects

TABLE OF CONTENTS, con't

ATTACHMENTS, con't

FIGURES, con't

FIGURE 4	Area of Potential Effects with Photo View Locations (Google Earth)
FIGURE 5	Hatton Canyon Trail from Carmel Valley Road – view north along paved section
FIGURE 6	Hatton Canyon Trail with sewer manhole Q805 – view south
FIGURE 7	Hatton Canyon Trail with sewer manhole Q801 – view north
FIGURE 8	Hatton Canyon Trail with sewer manhole P805 – view north
FIGURE 9	Hatton Canyon Trail in the vicinity of Whitman Circle – view north
FIGURE 10	Hatton Canyon Trail with sewer manhole O803 – view southeast

CORRESPONDENCE

LETTER	Request to Native American Heritage Commission
LETTER	Response from Native American Heritage Commission
LETTERS	Request to Native Americans Identified by the Native American Heritage Commission
LETTERS	Native American Responses

CHRIS/NWIC SEARCH RESULT

SEARCH	File No. 17-1691 dated January 16, 2018 (No Confidential Information)
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1.0 INTRODUCTION

This *Historic Property Survey Report/Finding of Effect* report (HPSR/FOE) represents the identification and evaluation effort completed for the 1.1 mile long Hatton Canyon Sewer Line Replacement Project located within Hatton Canyon State Park property, Monterey County, California. The Carmel Area Wastewater District (CAWD) plans to replace 1.1 mile long existing sewer line with a seamless High Density Polyethylene (HDPE) pipeline and undertake other minor improvements associated within the pipeline. The CAWD plans to apply for funding through the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) Section 404 Hazard Mitigation Grant Program (HMGP). Section 404 funding is used to provide protection to undamaged parts of a facility or to prevent or reduce damages caused by future disasters.

The CAWD is the lead state agency and the California Department of Parks and Recreation is the land owner and a responsible agency.

The Area of Potential Effects (APE) for Archaeology includes the area within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, should any be present within the APE. The horizontal and vertical APE consists of the proposed construction within the project's right of way (ROW) including access roads to the project area and staging areas for material laydown and storage of excavated spoils. The APE is commensurate with the footprint of the proposed undertaking which is focused on and replacement of the 1.1 mile long Hatton Canyon Sewer Line within the existing ROW.

The completion of this document satisfied the formal and context requirements of Section 106 of the National Historic Preservation Act (NHPA) of 1966 (as amended) (54 U.S.C. § 306108) and its implementing regulations 36 CFR Part 800 as well as FEMA internal requirements. The CAWD, as the lead state agency, is required to determine the potential impacts of the construction on both historical and archaeological cultural resources and mitigate impacts on any significant resources that may be affected by the project to a less than significant effect in accordance with the California Environmental Quality Act (CEQA).

This HPSR/FOE provides supporting materials for the Section 106 identification and evaluation including the results of a records search, a review of pertinent literature, consultation with local Native Americans, and a field review. The research has determined that a finding of *No Historic Properties Affected* pursuant to 36 CFR Part 800.4(d)(1) for historic properties is applicable as the Undertaking will have no effect as defined in 36 CFR Part 800.16(i).

2.0 LOCATION AND DESCRIPTION

The proposed 1.1 mile long Hatton Canyon Sewer Line Replacement Project is located within the Hatton Canyon State Park property within an existing trail/fire road/sewer utility easement located east of Carmel (Carmel-By-The-Sea) grid within the Hatton Canyon Bike Trail from Canyon Drive south to Carmel Valley Road, Monterey County, California (USGS Monterey, Calif.[ornia], 1983, T 16S, R1W and R1E, unsectioned) [Figs.1-3].

The CAWD plans to replace the existing line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The agency

will install the pipe in the existing right of way along the trail north of Carmel Valley Road near its intersection with the Cabrillo Highway (State Route 1).

The sewer main replacement would begin at upstream manhole O803, south of the parcels at the end of Edgefield Place, and end at downstream manhole R823 at the crossing with Carmel Valley Road. The existing 8-inch VCP sewer main will be replaced with a 10-inch HDPE sewer main. The preferred method of replacement is by pipe bursting. The project would also include wrapping existing manholes, potentially adding grade rings to limit infiltration and inflow, and optional maintenance roadway improvements.

2.1 AREA OF POTENTIAL EFFECTS (APE) [see Fig. 3]

The Area of Potential Effects (APE) for Archaeology includes the area within which an undertaking may directly or indirectly cause changes in the character or use of historic properties, should any be present within the APE. The horizontal and vertical APE consists of the proposed construction within the project's right of way (ROW) including access roads to the project area and staging areas for material laydown and possible storage of excavated spoils. The APE is commensurate with the footprint of the proposed undertaking which is focused on and replacement of the 1.1 mile long Hatton Canyon Sewer Line within the existing ROW. The construction method of pipe bursting to install the replacement pipe will minimize excavation as it will use existing manhole access to access the pipe.

3.0 REGULATORY CONTEXT

This report has been prepared to meet applicable federal and state regulatory requirements for historic properties (cultural resources) which require the identification and evaluation of cultural resources that could be affected by the project. Cultural resources include prehistoric and historic archaeological sites, districts and objects; standing historic structures, buildings, districts and objects; and locations of important historic events or sites of traditional/cultural importance to various groups. The analysis of cultural resources can provide valuable information on the cultural heritage of both local and regional populations.

Cultural resources may be determined significant or potentially significant in terms of national, state, or local criteria either individually or in combination. Resource evaluation criteria are determined by the compliance requirements of a specific project.

3.1 FEDERAL

The CAWD plans to apply for funding through the U.S. Department of Homeland Security (DHS) Federal Emergency Management Agency (FEMA) Section 404 Hazard Mitigation Grant Program (HMGP). Section 404 funding is used to provide protection to undamaged parts of a facility or to prevent or reduce damages caused by future disasters.

3.2 STATE OF CALIFORNIA

This report has been prepared to meet applicable California Environmental Quality Act (CEQA) which requires the identification and evaluation of cultural resources that could be affected by the project.

Public agencies under CEQA must consider the effects of their actions on both “historical resources” and “unique archaeological resources.” Pursuant to California Public Resources Code (PRC) Section 21084.1, a “project that may cause a substantial adverse change in the significance of an historical resource is a project that may have a significant effect on the environment.” PRC 21083.2 requires agencies to determine whether a proposed project would have an effect on “unique” archaeological resources.

Historical resource (see PRC 21084.1 and CEQA Guidelines Sections 15064.5(a) and 15064.5(b)) applies to any resource listed in or determined to be eligible for listing in the California Register of Historic Resources (CRHR). The CRHR includes resources listed in or formally determined eligible for listing in the NRHP, as well as some California State Landmarks and Points of Historical Interest.

Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified in a local historical resources inventory may be eligible for listing in the CRHR and are presumed to be “historical resources” for purposes of CEQA unless a preponderance of evidence indicates otherwise (PRC 5024.1 and 14 CCR 4850). Unless a resource listed in a survey has been demolished or has lost substantial integrity, or there is a preponderance of evidence indicating that it is otherwise not eligible for listing, a lead agency should consider the resource potentially eligible for the CRHR.

In addition to assessing whether historical resources potentially impacted by a proposed project are listed or have been identified in a survey process, lead agencies have a responsibility to evaluate them against the CRHR criteria prior to making a finding as to a proposed project’s impacts to historical resources (PRC 21084.1 and CEQA Guidelines Section 15064.5(a)(3)). In general, a historical resource, under this approach, is defined as any object, building, structure, site, area, place, record, or manuscript that:

- a. Is archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, or cultural annals of California; and,
- b. Meets any of the following criteria:
 1. Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
 2. Is associated with the lives of persons important in our past;
 3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,
 4. Has yielded, or may be likely to yield, information important in prehistory or history (State CEQA Guidelines Section 15064.5(a)(3)).

The fact that a resource is not listed or determined to be eligible for listing does not preclude a lead agency from determining that it may be a historical resource (PRC 21084.1 and CEQA Guidelines Section 15064.5(a)(4)).

CEQA also distinguishes between two classes of archaeological resources: archaeological sites that meet the definition of a historical resource, as described above, and “unique archaeological resources.” Under CEQA, an archaeological resource is considered “unique” if it:

Contains information needed to answer important scientific research questions and there is a demonstrable public interest in that information;

Has a special and particular quality such as being the oldest of its type or the best available example of its type; or

Is directly associated with a scientifically recognized important prehistoric or historic event or person (PRC 21083.2(g)).

CEQA states that if a proposed project would result in an impact that might cause a substantial adverse change in the significance of a historical resource, then an EIR must be prepared and mitigation measures considered. A “substantial adverse change” in the significance of a historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of a historical resource would be materially impaired (CEQA Guidelines Section 15064.5(b)(1)).

The CEQA Guidelines (Section 15064.5(c)) also provide specific guidance on the treatment of archaeological resources, depending on whether they meet the definition of a historical resource or a unique archaeological resource. If the site meets the definition of a unique archaeological resource, it must be treated in accordance with the provisions of PRC 21083.2. PRC Section 21083.2 requires the lead agency to treat that effect as a significant environmental effect. When an archaeological resource is listed in or is eligible to be listed in the CRHR, PRC Section 21084.1 requires that any substantial adverse effect to that resource be considered a significant environmental effect. PRC Sections 21083.2 and 21084.1 operate independently to ensure that potential effects on archaeological resources are considered as part of a project's environmental analysis. Either of these benchmarks may indicate that a project may have a potential adverse effect on archaeological resources.

Tribal Resources

Assembly Bill 52 (AB 52) provides protections for tribal cultural resources.¹ All lead agencies as of July 1, 2015 approving projects under CEQA are required, if formally requested by a culturally affiliated California Native American Tribe,² to consult with such tribe regarding the impacts of a project on tribal cultural resources prior to the release of any negative declaration, mitigated negative declaration or draft environmental impact report. Under PRC Section 21074, tribal cultural resources include site features, places, cultural landscapes, sacred places or objects

1. AB 52 amended Section 5097.94 of, and added Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2 and 21084.3 to, the California Public Resources Code

2. The Native American Heritage Commission maintains a list of more than 100 federally recognized California tribes and an additional list of tribes not recognized by the federal government but listed as non-recognized California tribes. Both groups have the right to request notification and consultation under the AB 52.

that are of cultural value to a tribe that are eligible or listed on the CRHR or a local historic register or that the lead agency has determined to be a significant tribal cultural resource.

Tribal consultation is to continue until mitigation measures are agreed to or either the tribe or the lead agency concludes in good faith that an agreement cannot be reached. In the case of agreement, the lead agency is required to include the mitigation measures in the environmental document along with the related Mitigation Monitoring and Reporting Program (MMRP) (see PRC Section 21084.3). If no agreement is reached, the lead agency must still impose all feasible mitigation measures necessary for a project to avoid or minimize significant adverse impacts on tribal cultural resources (PRC Section 21084.3).

Other California Laws and Regulations

Other state-level requirements for cultural resources management appear in the California PRC Chapter 1.7, Section 5097.5 "Archaeological, Paleontological, and Historical Sites," and Chapter 1.75 beginning at Section 5097.9 "Native American Historical, Cultural, and Sacred Sites" for lands owned by the state or a state agency.

The disposition of Native American burials is governed by Section 7050.5 of the California Health and Safety Code and PRC Sections 5097.94 and 5097.98, and falls within the jurisdiction of the Native American Heritage Commission.

4.0 BACKGROUND CONTEXT

This review provides a summary context in which to evaluate historic resources identified in the project.

4.1 ENVIRONMENTAL SETTING

The APE is situated within Hatton Canyon, a canyon that has been described as ". . . a relatively pristine canyon containing one of the increasingly rare stands of native Monterey pine forest in the Monterey area. The mosaic of Monterey pine forest, coastal sage scrub and annual grasslands covering the canyon slopes, and the dense riparian woodland lining the canyon floor ..." (Caltrans 1991:III-36 [FEIS]). Kuchler (1977) places the study area in coastal cypress and pine forest with coastal sagebrush in the vicinity of the Carmel River. Elevations within the project area range from 275 feet at the north to 52 feet at Carmel Valley Road in the south.

The surface geology is mapped as Middle Miocene marine (Mn) with recent Quaternary alluvium (Qal) along the Carmel River (CAL/Mines and Geology 1977:Santa Cruz sheet). Soil in the APE consist of Santa Lucia-Reliz Association (Sg) and mostly Elder very fine sandy loam, 2 to 9 percent slopes (EbC) (USDA/SCS 1978:Sheet 29 and index).

4.2 NATIVE AMERICAN - Prehistoric

Cultural resources are traces of human occupation and activity. In northern California, cultural resources extend back in time for at least 9000-11,500 years with Native American occupation.

Prior to 5000-4500 years ago, Native American use of central California appears to have been intermittent and sparse. Evidence of early occupation along the bayshore may have been hidden by rising sea levels from about 15,000 to 7000 years ago or buried under sediments caused by bay marshland infilling along estuary margins from 7000 years onward (see Bickel 1978a-b; Moratto 1984). Native American occupation sites in general appear to have been selected for accessibility, protection from seasonal flooding, and proximity to a diversified resource base. Early groups probably focused on hunting and the gathering of various plant foods along with shellfish collection.

The Carmel area would have provided a favorable environment during the prehistoric period with coastal, riparian, and inland resources available to the aboriginal population. The Carmel River and lagoon is located to the south of the project termination at Carmel Valley Road. Native American occupation and use of the Monterey Bay area appears to extend over 5000-7000 years and may be longer (e.g., Jones 1993:18-21, 66, Fig. 7). The Early Period appears to date 7,000-2,500 B.P., the Middle Period, 2,500-900-1300 B.P., and the Late Period, 900-1300-A.D. 1800 (Breschini and Haversat 1992:121). The Monterey Pattern in the "Monterey District" became widely established after ca. 500 B.C. and appears to correlate with the ethnographic group known as the Costanoans (Moratto 1984:247 after Breschini and Haversat 1980:14-15).

In general, archaeological information suggests an increase in the prehistoric population over time with an increasing focus on permanent settlements with large populations in later periods. This change from hunter-collectors to an increased sedentary lifestyle is due to more efficient resource procurement but with a focus on staple food exploitation, the increased ability to store food at village locations, and the development of increasing complex social and political systems including long-distance trade networks. Village sites are often located slightly inland from the coastal gathering/processing sites. During the Late Period, the Middle Period sites appear to have been abandoned even though the population was larger and more dispersed (Breschini and Haversat 1994:191-192).

General overviews and perspectives on the regional prehistory can be found in Elsasser (1978); King (1978), Monterey County Planning Department (MCoPD 1980), Moratto (1984), Dietz et al. (1988), Breschini and Haversat (1986, 1992), Jones (1993), Hylkema (2002) and Jones et al. (2007).

4.3 NATIVE AMERICAN - Ethnographic

Ethnographic boundaries and village locations are inexact due to incomplete historical records. Each tribelet occupied a specific territory with several more or less permanent settlements and a larger number of seasonal campsites for an annual round of subsistence activities.

The aboriginal inhabitants of study area belonged to a group known as the "*Costanoan*", derived from the Spanish word *Costanos* ("coast people" or "coastal dwellers") who occupied the central California coast as far east as the Diablo Range. Costanoan is part of the larger Penutian or Utian language stock spoken by other central California Indian groups known as the Wintun, Maidu, Miwok and Yokuts and was subdivided into eight separate and mutually unintelligible

languages. In 1770 the Costanoan or *Ohlone*³ lived in approximately 50 separate and politically autonomous tribelets with each group having one or more permanent villages surrounded by a number of temporary camps. Physiographic features usually defined the territory of each group which generally supported a population of approximately 200 persons with a range of between 50-500 individuals (Kroeber 1925; Levy 1978; Shipley 1978; Hart 1987).

The APE is located within the *Ohlone* group known as the *Rumsen* of who occupied the area in and around the Monterey Peninsula and lower Carmel Valley. There appear to have been five principal Rumsen villages: *Achasta* (?*acista*, *San Carlos*), *Ichxenta* (?*icxenta*, *San José*), *Tucutnut* (*Santa Theresa*), *Socorronda*⁴ (*San Miguel*), and *Echilat* (*San Francisco*)⁵ (Kroeber 1925:465, Fig. 42; Levy 1978:485, Fig. 1; Milliken 1987:53; Breschini and Haversat 1986:1-2, 1994:184-185, Fig. 6.1 after Milliken 1992; Milliken 2006:28, Fig. 6).

Researchers differ as to the placement of these settlements, but most agree that a village was located in the vicinity to the south of the southern APE boundary. Kroeber (1925:465, Fig. 42) shows the settlement of *Tamo-tk* [*Tucutnut*] southeast of Monterey and *Rumse-n* inland on the south side of the Carmel River. Levy (1978:485, Fig. 1, #37-38) ?*acista* (*San Carlos*) shown on Monterey Peninsula proper and ?*icxenta* (*San José*) on the south side of the mouth of the Carmel River. Milliken (1987:53, Map 1) places the *Achasta* (*San Carlos*) on the north side of the Carmel River, east of Mission San Carlos in the vicinity of the southern end of the project and CA-Mnt-12 on the south side of San Jose Creek, and the *Ichxenta* (*San Jose*) up the Carmel River with the community of *Tucutnut* between *Achasta* and *Ichxenta*. Breschini and Haversat (1994:184-185, Fig. 6.1 after Milliken 1992:151, Fig. 2) places the *Achasta* in the vicinity of the Presidio of Monterey and Carmel Mission on both sides of the Carmel River and *Ichxenta* in the vicinity of San Jose Creek and further south on the coast just south of Point Lobos (e.g., Gibson and Wildcat Creeks).

Milliken (1987:54-55) notes that the *Achasta* was the first to provide large numbers of converts to the Mission and logically would have been closer to the Mission. Culleton (1950:550) states that, *It seems certain that Rancheria Achasta, located near if not at Carmel church, was set up only after the mission had been moved to its new site. the inhabitants came from Tucutnut, Ichxenta, and Socorronda. This new place furnished many of Carmel's converts; its name was the first used to designate the Carmelenos and eventually its Christian title, San Carlos, passed to the rancheria at the mission.*^{6 7}

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3. Also known as the *Ohlone* (Galvan 1967/68; Margolin 1978).
 4. The small village of *Sepponet* was associated with *Socorronda* (Breschini and Haversat 1986:2).
 5. *Tucutnut* (on the Carmel River; one subsidiary settlement) and *Echilat* (Santa Lucia Mountains) as Esselen following Levy (1973 after Hester 1978).
 6. The Hudson Mound (CA-Mnt-12) located at the mouth of San Jose Creek, 2.5 miles south of the Mission, may have also been associated with the *Achasta* (Milliken 1987:54-55 after Howard and Cook 1971:1).
 7. Breschini and Haversat (1994:191) comment that ". . . the identification of these villages archaeologically has been a problem." and that ". . . No single large Late Period villages are known. The closest is a cluster of five or ten sites which together probably constituted the Late Period village of *Echilat*."

No known or inferred prehistoric/protohistoric trails have been identified in or near the APE. The closest, located north of the APE ran southeasterly from the vicinity of the Salinas River to present-day Paso Robles (Davis 1961:Map 1). Further north a major trail proceeded north of the general study area from Elkhorn Slough at Monterey Bay up the Pajaro River and onward (Elsasser 1986:48-49, Fig. 10).

Historic accounts of the distribution of the Ohlone tribelets and villages in the 1770s-1790s and the results of archaeological efforts in the area suggest that the Native Americans may have had temporary camps in the general vicinity of the project area throughout the prehistoric period and into the Hispanic Period (Kroeber 1925; King and Hickman 1973). Extensive ethnographic data on the Ohlone are lacking and the aboriginal lifeway apparently disappeared by approximately 1810 due to introduced diseases, a declining birthrate, the cataclysmic impact of the mission system and the later secularization of the mission 1834-1835 by the Mexican government (Levy 1978). Even after secularization of the Missions, "an Indian pueblo continues to exist there for a time" (Clark 1991:74, 78).

Reviews of the Ohlone are provided by Kroeber (1925:462-473), Harrington (1942), Galvan (1967/68), King and Hickman (1973), Levy (1978) and Milliken (1995, 2006). For more specific information regarding the *Rumsen* see Broadbent (1972), Milliken (1987, 1992), and Breschini and Haversat (1994).

4.4 HISTORIC ERA - Hispanic Period

The Spanish philosophy of government in northwestern New Spain was directed at the founding of *presidios* (forts), missions, and *pueblos* (secular towns) with the land held by the Crown (1769-1821), while the later Mexican Period policy (1822-1848) stressed individual ownership of the land with grants of vast tracts of land to individuals (Beck and Haase 1974; Hart 1987:314-315, 489-490).

Monterey Bay was probably viewed by Juan Rodriguez Cabrillo in 1542, and again by Sebastian Rodriguez Cermeño in 1595 and was entered and named in 1602 by Sebastian Vizcaíno. Vizcaíno discovered the Carmel River on January 3, 1603 and named it *Riío del Carmelo*, probably after the three friars of the Carmelite order who were members of his expedition. He was also named the small bay to the north of Carmel Point *Puerto del Carmelo*. He was the first European to visit and comment on numerous Native American occupying coastal and inland villages in the Monterey area (Hester 1978:496-497; Clark 1991:73, 84; Gudde 1998:66-67).

The 1769 expedition of Gaspar de Portola and Father Juan Crespi traveled up the coast in search of Monterey Bay, but apparently failed to recognize it due to fog. Nonetheless they saw the river and bay at Carmel in early October (Hoover et al. 1966:216-217; Jones et al. 2007:128, Fig. 9.2).

The first Spanish outpost in the general study area was the Presidio of Monterey founded in 1770, the second of four established in California, and named after Monterey Bay. The town, the civilian settlement of Monterey established in 1777 and was made a city by royal decree in 1813. This focal point for both the region and the province under Spanish and Mexican rule was situated about 2.25 miles north/northeast of the northern end of the project (Beck and Haase 1974:#19; Hart 1987:314, 316, 328; Clark 1991:320, 421).

Seven missions were established within Costanoan territory. The closest to the project, *Mission San Carlos Borromeo del Rio Carmelo* (*San Carlos Borromeo de Carmelo*, *El Carmelo* or "Mission Carmel") west of the APE,⁸ was founded in June 1770 within the first Presidio grounds at Monterey. Shortly thereafter in December 1771 it was moved by Father Junipero Serra to "Eslenes" near the Carmel River about five miles south of the Presidio and three-quarters of a west of the south end of the APE.⁹ Early baptisms at the Mission included three young boys from *Achasta* in 1770 and another 20 children from *Achasta*, *Tucutnut* and *Ichxenta*¹⁰ in 1771. By 1787 Palóu noted, "*In the neighborhood of the mission there are various rancherias of gentiles, that after the founding of the mission began to frequent it, and their reduction soon began ...*" (Broadbent 1972:51). The mission itself was well situated and prosperous due to both the *Rumsen* and *Esselen*¹¹ and until 1803 was the headquarters for the Padre Presidente of the California missions (Hoover et al. 1966:217-218; Broadbent 1972:51; Hester 1978:497-498; Hart 1987:324, 433; de La Perouse 1989 [Lapérouse 1797]; Milliken 1992:153; Breschini and Haversat 1994:184).

In 1776, Colonel Juan Bautista de Anza and Father Pedro Font traveled from Monterey to San Francisco. The Juan Bautista de Anza National Historic Trail [1776]¹² places their route west of the APE. The expedition also visited the Mission San Carlos and camped nearby. Reached Presidio of Monterey March 9, 1776 and were escorted to the Mission San Carlos where the very ill Anza recuperated (Hoover et al. 1966:219; Beck and Haase 1974:#17; USNPS 1995:Monterey County Map 5; USNPS 1996:opposite page 20).

The APE is situated within the former *Rancho Canada de la Segunda*¹³ This rancho was granted to James Meadows, an Englishman who married a Native American. This rancho was given by the prefect Castro to Lazaro Soto in 1839. It was confirmed to Soto in May 1845, but the decision was appealed and claimed by Fletcher M. Haight. The patent was issued to Haight in 1859, after the death of Andrew Randall who filed a claim for it in February 1853. Dominaga Goñi [Doni] de Atherton, wife of Faxon Dean Atherton acquired the rancho in 1869. By 1892,

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8. Mission San Carlos Borromeo de Carmelo, CA-MNT-18, located at the southwest corner of Lasuen Drive and Rio Road, Carmel, is on the *California History Plan and California Inventory of Historic Resources*, and is California State Landmark #135 (CAL/OHP 1973:108; CAL/OHP 1976:128, 244; CAL/OHP 1990:126).
 9. The Orchard was located between the Mission and APE (e.g., ?diseño Mission el Carmelo near Monterey in Howard 1978).
 10. Likely districts and not specific village sites (e.g., Breschini and Haversat 1994:192).
 11. See Kroeber (1908:20-24), Cook (1974a-b) and Hester (1978:496, Fig. 1) for additional information about the mission.
 12. The National Trails System Act (P.L. 90-543 (16 U.S.C. 1241 et. seq) as amended through P.L. 102-461, October 23, 1992 defines three types of national trails: National scenic trails, National recreation trails, and National historic trails. National historic trails are *extended trails which follow as closely as possible and practicable the original trails or routes of travel of national historical significance*. They are established to identify and protect a historic route, plus its historic remnants and artifacts, for public use and enjoyment (USNPS 1996:Appendix A).
 13. "the canyon of the second," may be named for the second major canyon (Clark 1991:69, 439).

rancho manager William Hatton purchased it from Mrs. Atherton (Cloud 1858 [plat]; Hoover et al. 1966:232; Howard 1978:16; Clark 1991:210, 439; Perez 1996:58).

El Camino Real, or Royal Road, which ran between forts, towns, and missions from Guatemala to Mexico City and as far north as Sonoma was situated west of the APE. The *Camino de Presidio* linked Mission Carmelo with the Presidio de Monterey (Hoover et al. 1966; Hornbeck 1983:61). *El Camino Real* is listed in *The California History Plan, California Inventory of Historic Resources*, and is also a State of California landmark. "El Camino Real (As Father Serra Knew It and Helped Blaze It)" (CAL/OHP 1973:150; CAL/OHP 1976:257; CAL/OHP 1990:204-205, #784). As a landmark designated after #770, it is automatically on the California Register of Historical Resources (CRHR) (e.g., CAL/OHP 2006).

No Hispanic Period adobe dwellings, other structures, roads or other features, have been reported in, adjacent, or near the proposed project APE.

4.5 HISTORIC ERA - American Period

In the mid-19th century, the majority of the rancho and pueblo lands and some of the ungranted land in California were subdivided as the result of population growth, the American takeover, and the confirmation of property titles. Growth can be attributed to the Gold Rush (1848), followed by the completion of the transcontinental railroad (1869) and local railroads. Still later, the development of the refrigerator railroad car (ca. 1880s) used for the transport of agricultural produce to distant markets had a major impact on California agriculture. The agricultural land-use pattern throughout has been rapidly replaced by urban and suburban development since post-World War II (Hart 1987).

Monterey County was one of the original 27 counties. The county seat was changed from Monterey to Salinas in 1873 (Hoover et al. 1966:216).

Carmel-by-the Sea, located just west of the APE, is on the *California History Plan* and *California Inventory of Historic Resources* under the theme of Exploration/Settlement (CAL/OHP 1973:106; CAL/OHP 1976:128, 244). In 1888, Santiago J. and Belisario E. Duckworth of Monterey agreed to buy 324.36 acres from Honore Escolle to develop a Catholic summer colony. S.J. Duckworth then filed a map of "Carmel City" which ran from Monte Verde Street to Monterey Street. S.J. Duckworth built a hotel at Ocean and Junipero Street (formerly Broadway) and later in 1892, built a bathhouse at the foot of Ocean Avenue. However, the city did not prosper until Frank H. Powers, a San Francisco attorney and promoter James Franklin Devendorf acquired Carmel City along with the remainder of the Escolle holdings. In 1903 they formed the Carmel Development Company and purchased additional land and offered to sell and lease land to artists and writers. "Carmel-by-the-Sea" was developed as a separate subdivision east of "Carmel City" and extended from Monte Verde Street west to the Pacific ocean. In October 1916, Carmel-by-the-Sea voted against incorporation of as City of "Carmel-by-the-Sea" (Hart 1987:82; Clark 1991:74; Gudde 1998:67).

"Carmel Hill", a geographic point of note is also located west of the APE. This geographic feature ". . . usually refers to that hill between Monterey and Carmel River traversed by present day Highway 1, or roughly the junction of Highways 1 and 68 to Carmel Valley Road, or, more

often it refers narrowly to the grade between Monterey and the summit, or even still more restricted, to the top of the grade - the *portuzela*." The grade of "Carmel Road" required male passengers from the Monterey railroad station disembark en route to Carmel hotels and walk up the hill. "The grade was cut down for the new highway in 1929" (State Highway 1) (Clark 1991:76).

Hatton Corners, west of the APE at the intersection of Highway 1 and Carmel Valley Road, was named for the Hatton family. William Hatton, born in Wicklow County, Ireland in June 1849, arrived in California in 1870 and died in Carmel in October 1894. He married Kate Harney in 1874 who died considerably later in March 1922 in Monterey. William Hatton managed several dairying operations in the Carmel Valley and also supervised the construction of the original San Clemente Dam built in 1882-1883 and became Dominaga Goñi [Doni] de Atherton's ranch manager in 1888. He later purchased the western portion of the *Rancho Cañada de la Segunda* by 1892 (Clark 1991:210; Grimes et al. 1994/1996/2008:13, 31).

Summary Historic Map Review

The 1858 Cloud Plat of *Rancho Cañada de la Segunda* shows the "Old Mission Road" crossing the western boundary of rancho and a road proceeding southeasterly [through Hatton Canyon] and then easterly, conforming to the current alignment of Carmel Valley Road.

The 1854-1855/1872 and 1873 General Land Office (GLOs) survey plat of Township No. 16 South, Range No. 1 West (T16S R1W) shows a number of "Old Road"[s] and a "Wagon Road"¹⁴ near the western boundary of *Rancho Cañada de la Segunda* apparently the successor to the *Camino de Presidio* which linked Mission Carmelo with the Presidio de Monterey. A "Stream Gulch" is shown and appears to correspond to Hatton Canyon. "Mission Carmel" just southwest of the rancho on the north side of the Carmel River was the most notable feature in the study area. A road is shown on the 1873 survey plat from the Mission in a straight-line northeasterly (US/BLM 1854/1855-1872, 1873; Clark 1991:297).

A schematic Anonymous/Source Unknown 1886 Map *Guide to Monterey and Vicinity* shows "Carmelo Mission" west of the APE and the "Dairy" [Hatton Dairy] within the southern portion of intersection of the road from Carmel Mission and Carmel Valley Road (not labeled). At the time, Carmel Valley Road terminated at Hatton Canyon.

The 1913 USGS Monterey topographic map, surveyed 1911-1912, shows an unpaved road north from Carmel Valley Road (not labeled) into Hatton Canyon. In addition a road from the Mission Carmel intersected with Carmel Valley Road. "Carmel Mission" is the only important feature labeled in the general area.

The 1950 Army Map Service, Corps of Engineers (USAMS/CE) topographic Monterey quadrangle map is similar to the 1983 USGS with the exception of urban development - numerous buildings - west of SR-1 and south of Carmel Valley Road.

14. This road conforms to the *Camino de Presidio* between the Presidio of Monterey and Mission Carmelo (e.g., Hornbeck 1983:61).

5.0 RESEARCH PROTOCOLS

A prehistoric and historic site record and literature search for the project APE and area within 0.25 miles was completed by the California Historical Resources Information System, Northwest Information Center, Sonoma State University (CHRIS/NWIC File No. 17-1691, dated January 16, 2018 by Hagel). The 0.25 mile records search radius was selected due to the size of the APE, type of construction project, the location of the APE, and previous construction within the APE and vicinity.

An earlier records search conducted for the Carmel Hill & River Bike Trail [Hatton Canyon] (Busby 2008m-n) was also consulted (CHRIS/NWIC File No. 07-0907 dated February 5, 2008 by Hagel). In addition, reference material from the Bancroft Library, University of California at Berkeley and Basin Research Associates, San Leandro was also consulted.

Historic Properties Directory for Carmel and vicinity, Monterey County (CAL/OHP 2012a) including updates of National Register of Historic Places, California Historical Landmarks, and California Points of Historical Interest, etc.;

National Register of Historic Places listings for Monterey County, California (USNPS 2015/2017);

Archaeological Determinations of Eligibility for Monterey County (CAL/OHP 2012b);

The California History Plan (CAL/OHP 1973);

California Inventory of Historic Resources (CAL/OHP 1976);

Five Views: An Ethnic Sites Survey for California (CAL/OHP 1988);

Listed California Historical Resources (CAL/OHP 2018) with the most recent updates of the National Register of Historic Places; California Historical Landmarks; and, California Points of Historical Interest as well as other evaluations of properties reviewed by the State of California Office of Historic Preservation;

Local lists (e.g., Monterey County 2002), historic and sensitivity maps (see REFERENCES CITED) were also consulted.

Reports and memoranda regarding the proposed Hatton Canyon Bike Pedestrian Path, and the earlier proposed Hatton Canyon four-lane freeway Route 1, P.M. 72.3/74.0 were also reviewed (see Section 5.1A Compliance and Other Reports below).¹⁵

The Native American Heritage Commission (NAHC) was contacted for a review of the Sacred Lands Files (Busby 2018a). Letters soliciting additional information were sent to the six Native American individuals/groups recommended by the NAHC (Busby 2018b-g).

No other agencies, departments or local historical societies were contacted regarding landmarks, potential historic sites or structures.

15. Provided by Kelda Wilson, District Archaeologist, Caltrans, District 5 in 2008.

An archaeological field inventory of the APE was completed on December 27, 2017 by Mr. Christopher Canzonieri (M.A.), an archaeologist meeting the Standards of the Secretary of the Interior.

5.1 RECORDS SEARCH RESULTS

The CHRIS/NWIC records search for the proposed project was negative for recorded and/or reported sites in the project APE. Two sites have been recorded within 0.25 miles of the APE.

Seven (7) cultural resources compliance reports on file with the CHRIS/NWIC include the project APE and another 28 reports include the area within 0.25 miles of the APE.

5.1A Compliance Reports and Other Reports [see Table 1]

Seven (7) cultural resources compliance reports on file with the CHRIS/NWIC include the project APE. Twenty-eight (28) additional reports include the area within 0.25 miles of the APE.

Two technical reports completed for the *Carmel Valley Master Plan EIR, Carmel Valley, Monterey County, California* include an archaeological sensitivity map and supporting text on prehistoric, historic and ethnographic cultural resources (Breschini and Haversat 1985/S-7775; Breschini and Haversat 1986/S-7775a). Each resource section also includes Existing Conditions, Policies, Environmental Impacts, and Mitigation Measures.

Two environmental documents completed for the State Highway 1 improvements in 1991 and 1998 are not on file with the CHRIS/NWIC but provide selected information on the archaeological resources within the APE.

The Final Environmental Impact Statement (FEIS) for the Highway 1 Improvement Project through Carmel notes that CA-MNT-290 was originally located within the highway APE, but the "highly disturbed remnant" of the site was determined to be "outside" of the APE. The report states that, "No archaeological resources were found within the project area" and "No buildings or sites of historic, architectural or cultural significance were previously recorded in the project vicinity." *A survey of all buildings in the project area found no structure of historical, architectural or cultural significance*" (Caltrans 1991).

The Draft Supplemental Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Highway 1 Improvement Project completed in 1998 found no historic/cultural resources within the project area and noted that ". . . no substantial changes in the project or surrounding area would result in significant adverse impacts to historic or archaeological resources" (Caltrans 1998).

TABLE 1
Studies In/Adjacent To or Within 0.25 miles of the Project Alignment

Report #	Author	Date	Title	Study Type	Comments	Resources
In or Adjacent						
S-003310	Robert H. Crabtree	1974	An Archaeological Survey of the Proposed Carmel Realignment No. 019021 (letter report)	Archaeological, Field study	27-000393 (MNT-290) is outside of the project area	None
S-007348	Wendy Waldron	1985	Archaeological Survey Report, proposed freeway alignment in Hatton Canyon, 05-Mon-1 P.M.72.3/75.0 05202-019020	Archaeological, Field study	27-000393 (MNT-290) is outside of the project area	None
S-007348a	Wendy Waldron	1985	Archaeological Survey Report, the Hatton Canyon Project, 05-MON-1 P.M. 72.3/75.0 05202-019020 (1st Addendum)	Archaeological, Field study	27-000393 (MNT-290) is outside of the project area	None
S-034491	Karin Goetter	2008	Historical Resources Compliance Report for the State Route 1 Operational Improvements From Rio Road to Carmel Valley Road Project, Near Carmel-By-The-Sea, Monterey County, California; Expenditure Authorization #05-0L5700, 05-MON-1, P.M. 72.3-72.9, Caltrans District 5	Archaeological, Architectural/historical Field study	27-000393 (MNT-290) is outside of the project area	None
S-034491a	Karin Goetter	2008	Archaeological Survey Report for the State Route 1 Operational Improvements From Rio Road to Carmel Valley Road Project, Near Carmel-By-The-Sea, Monterey County, California; Expenditure Authorization #05-0L5700, 05-MON-1, P.M. 72.3-72.9, Caltrans District 5	Archaeological, Field study	27-000393 (MNT-290) is outside of the project area	None
S-035365	Colin I. Busby	2008	Historic Properties Survey Report, Carmel Hill and River Bike Trail Near Route 1 From Rio Road to Canyon Drive, Monterey County; 05-MON-1 PM 72.61/73.9 CML-61 43 (032)	Archaeological/historical, Management/planning, Other research	27-000393 (MNT-290) is outside of the project area	None
S-035365a	Colin I. Busby	2008	Archaeological Survey Report: Carmel Hill and River Bike Trail Near Route 1 from Rio Road to Canyon Drive, Monterey County	Archaeological, Field study	27-000393 (MNT-290) is outside of the project area	None
Within a 0.25 mile radius						
S-004995	Chuck Smith	1982	Archaeological Survey Report for a proposed bike path along State Route 1, from Morse Drive to Carpenter Street, near Carmel, California, 05-MON-1, PM 72.3/74.6, 05302-259900	Archaeological, Field study	Negative	None
S-007585	R. Paul Hampson and Gary S. Breschini	1985	Preliminary Cultural Resources Reconnaissance of Assessors Parcel Number A09-291-11, in Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-009280	Gary S. Breschini and Charles R. Smith	1987	Preliminary Cultural Resources Reconnaissance of Parcel A.P.N. A09-052-25, Chiquito Place, Carmel, Monterey County, California	Archaeological, Field study	Negative	None

TABLE 1, con't
Studies In/Adjacent To or Within 0.25 miles of the Project Alignment

Report #	Author	Date	Title	Study Type	Comments	Resources
Within a 0.25 mile radius, con't						
S-010122	Anna Runnings and Gary S. Breschini	1988	Preliminary Cultural Resources Reconnaissance of a Proposed Development on Via Verde Way, Carmel Valley, Monterey County, California	Archaeological, Field study	Negative	None
S-010640	Anna Runnings and Trudy Haversat	1989	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel Number 009-271-16, Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-012342	Anna Runnings and Trudy Haversat	1990	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel Number 009-282-15, Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-020604	Barry A. Price	1998	Cultural Resources Assessment, Pacific Bell Mobile Services Facility SF-875-02, Carmel, Monterey County, California (Letter report)	Archaeological, Architectural/historical Field study	Negative	None
S-022657	Science Applications International Corporations	2000	Phase 1 Archaeological Survey Along Onshore Portions of the Global West Fiber Optic Cable Project	Archaeological, Field study	Appears in 2008 search (07-0907) but not 2018 search	
S-027375	Susan Morley	2003	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel 015 291 004 in the Unincorporated Area of Carmel Valley, County of Monterey, California	Archaeological, Field study	Negative	None
S-033528	Susan Morley	2007	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel 015 301 001 in the Unincorporated Area of Carmel Valley, County of Monterey, California	Archaeological, Field study	Negative	None
S-035763	Susan Morley	2008	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel APN 015 151 023, in the Carmel Area of the County of Monterey, California	Archaeological, Field study	Negative	None
S-036091	Mary Doane and Gary S. Breschini	2009	Preliminary Archaeological Reconnaissance of Assessor's Parcel 009-282-019 in Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-036380	Mary Doane and Gary S. Breschini	2009	Preliminary Archaeological Reconnaissance of Assessor's Parcel 009-281-011 in Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-036878	Eileen Barrow and Vicki Beard	2010	A Cultural Resources Survey for the Cottages of Carmel Project, 26241, 26243, and 26245 Carmel Rancho Boulevard, APN 015-021-036, Carmel, Monterey County, California	Archaeological, Architectural/historical, Field study	Negative	None

TABLE 1, con't
Studies In/Adjacent To or Within 0.25 miles of the Project Alignment

Report #	Author	Date	Title	Study Type	Comments	Resources
Within a 0.25 mile radius, con't						
S-037209	Mary Doane and Gary Breschini	2010	Preliminary Archaeological Reconnaissance of Assessor's Parcel 009-281-013, Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-037810	Susan Morley	2010	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel Number 009 282 013, in an Unincorporated Area of Carmel, County of Monterey, California	Archaeological, Field study	Negative	None
S-037815	Susan Morley	2011	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel Number 009 272 006, in an Unincorporated Area of Carmel, County of Monterey, California	Archaeological, Field study	Negative	None
S-038481	Mary Doane and Gary Breschini	2011	Preliminary Archaeological Assessment for APN 015-301-011, Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-038518	Mary Doane and Gary Breschini	2011	Preliminary Archaeological Assessment for APN 015-061-020, Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-038771	Mary Doane and Gary S. Breschini	2011	Preliminary Archaeological Assessment for APN 015-321-022, in Carmel, Monterey County, California, Project 4599	Archaeological, Field study	Negative	None
S-038783	Mary Doane and Gary S. Breschini	2012	Preliminary Archaeological Assessment for APN 009-281-008, in Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-038783a Voided - S-038782	Gary S. Breschini	2012	Review of information to provide an estimate of the distance between the Harrell basement project and CA-MNT-290 (letter report)	Archaeological, Field study, Other research	Negative	None
S-038783b Voided - S-038460	Mary Doane and Gary S. Breschini	2011	Preliminary Archaeological Assessment for APN 009-281-008, in Carmel, Monterey County, California	Archaeological, Field study	Negative	None
S-044329	Susan Morley	2011	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel Number 009 231 007 in an unincorporated portion of Carmel, County of Monterey, California	Archaeological, Field study	Negative	None
S-044367	Susan Morley	2014	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel Number (APN) 009-273-015 in an Unincorporated Area of Carmel, County of Monterey, California [PLN 140187]	Archaeological, Field study	Negative	None
S-045560	Mary Doane and Gary S. Breschini	2014	Preliminary Archaeological Assessment of APN 009-221-011, in Carmel, Monterey County, California	Archaeological, Field study	Negative	None

TABLE 1, con't
Studies In/Adjacent To or Within 0.25 miles of the Project Alignment

Report #	Author	Date	Title	Study Type	Comments	Resources
Within a 0.25 mile radius, con't						
S-047192	Jonathan Pangburn	2015	An Archaeological Survey Report for the Carmel Valley Regional Shaded Fuel Break, Monterey County, California	Archaeological, Field study	Three sites outside of project vicinity	None
S-048869	Susan Morley	2016	Preliminary Cultural Resources Reconnaissance of Assessor's Parcel Number 051-112-003, Carmel, County of Monterey, California	Archaeological, Field study	Negative	None

5.1B Recorded Sites and/or Reported Sites

No prehistoric, combined prehistoric and historic era, or historic era sites (including recorded architectural resources) are located in or adjacent to the APE. Two prehistoric sites have been recorded within 0.25 miles of the APE: CA-MNT-20H (P-27-000156) and CA-MNT-290 (P-27-000393).

CA-MNT-20H (P-27-000156), a historic site with an approximate location. The site is described as “A large oak tree with three crosses on its trunk. In this Mission Period it was here that the Esselen brought their corpse for blessing by the Padres” (Pilling and Fisher 1948/form).

CA-MNT-290 (P-27-000393), a prehistoric site known variously as the Hatton Ranch Site, the Hatton Canyon Site, and/or Hatton Dairy Site. Reportedly the site was entirely surface collected (and cataloged) and tested in 1951 with a 15-foot long trench and a 5-foot test unit (Fisher with Broadbent 1935/1951; Broadbent 1951; Howard 1975:52; Waldron 1984). The site, “apparently” destroyed by construction and highway development was also subject to “small volunteer excavation and data salvage by U.C. Berkeley students during the 1951-1953 period” (Breschini and Haversat 1986).¹⁶

In addition to the recorded sites, a portion of State Highway 1 (Coast Highway) also known as the Cabrillo Highway is near the southern end of the APE. The highway is on the *California Inventory of Historic Resources* under the theme of Economic/Industrial. The road/highway, described as “The beginning of the Coast Road south from Carmel, came into existence about 1830. Dr. John Roberts Marked a course from Monterey to San Luis Obispo county in 1897. However, it was not completed as a road for automobile traffic until the mid-1930s. It was designated the first official State Scenic Highway in California in 1965” (CAL/OHP 1976:87, 244; Caltrans 1991:II-36).

16. Subsequent review of various site forms, reports, and other supporting information indicates that the site is incorrectly mapped (*emphasis added*) (Busby 2008m-n).

5.1C Listed Historic Properties

No archaeologically, historically or architecturally significant sites, structures, landmarks, or points of interest are located in or adjacent to the project APE.

5.1D Archaeological Sensitivity

The APE is within an area classified as an area of "high" and "moderate" sensitivity for prehistoric archaeological resources. Prehistoric use of the general area was heavily influenced by the presence of various seasonal creeks, the Carmel River, and Monterey Bay. The known prehistoric archaeological sites appear to have been selected for relative accessibility, protection from seasonal flooding, and proximity to a diversified resource base.

The 1980 Monterey County archeological sensitivity map designates the APE as "Moderate" (Monterey County Planning Department (MCoPD) 1980).

The 1985 *Prehistoric Archaeological Sensitivity Map of the Carmel Valley Master Plan Area* includes the east side of the APE, assigning a "High" sensitivity (Breschini and Haversat 1985:1 and map).

The 2001 Monterey County Archaeological Sensitivity map shows the southern part of the Hatton Canyon APE as "High" and the remainder as "Moderate" (Monterey County Planning Department (MCoPD) 2001).

6.0 INDIVIDUALS, GROUP AND AGENCY PARTICIPATION

The Native American Heritage Commission (NAHC) was contacted for a review of the Sacred Lands Files for the Hatton Canyon Sewer Line Replacement Project (Busby 2018a).¹⁷ The NAHC search was negative (Lienert 2018). Letters soliciting additional information were sent to the six Native American individuals/groups recommended by the NAHC (Busby 2018b-g). None of these groups is a listed Indian Entity Recognized and Eligible to Receive Services from the United States Bureau of Indian Affairs (e.g., federally recognized; USDI/BIA 2017). Letters were sent to:

Tom Little Bear Nason, Esselen Tribe of Monterey County, Carmel Valley;

Tony Cerda, Chairperson, Costanoan Rumsen Carmel Tribe, Pomona;

Louise Miranda-Ramirez, Chairperson, Ohlone/Coastanoan-Esselen Nation, Monterey;

Valentin Lopez, Chairperson, Amah Mutsun Tribal Band, Galt;

Irenne Zwierlein, Chairperson, Amah/Mutsun Tribal Band of Mission San Juan Bautista, Woodside; and,

Ann Marie Sayers, Chairperson, Indian Canyon Mutsun Band of Costanoan, Hollister.

17. The NAHC was originally contacted for a review of the Sacred Lands Files in 2008 for the Carmel Hill River Bike Trail. The NAHC search was negative. Letters soliciting additional information were sent to the 12 Native Americans individuals/groups listed by the NAHC (Busby 2007, 2008a-l; Pilas-Treadway 2007). No responses to the information letters were received. One comment was received as a result of telephone follow-up.

Two responses were received. Mr. Tony Cerda had no comments via a telephone call on January 31, 2018 as the proposed work is within a previous sewer line alignment. Ms. Louise J. Miranda Ramirez, Chairperson, Ohlone/Costanoan-Esselen Nation (OCEN) responded via letter on February 22, 2018. She requested that the Tribal leadership be provided with various items as well as consultation with the lead agency. The letter was forwarded to Mr. Drew Lander, Principal Engineer, CAWD, for a response. No other responses were received.

No other local historical societies, or planning departments were contacted regarding landmarks, potential historic sites or structures in or adjacent to the project.

7.0 FIELD INVESTIGATIONS

The APE or portions of the alignment have been subject to five previous archaeological inventories from 1974 to 2008. Negative results were reported.

7.1 PREVIOUS ARCHAEOLOGICAL INVENTORIES

1974 - a Caltrans (District 5) archaeological survey in June 1974 for the Hatton Canyon Highway 1 project appears to have included the Hatton Canyon Sewer Line Replacement Project APE . CA-MNT-290 (P-27-000393), mapped within 0.25 miles of the proposed sewer line replacement project is described as ". . . *beneath, or was destroyed by, a recently constructed shopping center*" (Crabtree 1974).

1979 - the project area/vicinity appears to have been subject to a 1979 archaeological survey by amateur archaeologist, Donald M. Howard (1979). Howard maps no sites in or adjacent to the project. He does show the "Hatton Dairy Site" [CA-MNT-290] on the north side of the Carmel River east of SR-1 south of Carmel Valley Road west of Hatton Canyon (see Howard 1978:16).

1984 - Caltrans (District 5) completed an archaeological survey of the proposed Hatton Canyon Highway 1 APE in April 1984 (Waldron 1984) and May 1985 (Waldron 1985). As in the case of the 1974 survey, one site, a CA-MNT-290 (P-27-000393) was observed.¹⁸

2008 - a small portion of the southern end project Hatton Canyon Sewer Line Replacement Project APE was included within the APE of the *State Route 1 Operational Improvements From Rio Road to Carmel Valley Road Project* (Goetter 2008a). The intensive pedestrian survey of the entire *Route 1* APE was negative including CA-MNT-290 (P-27-000393) (Goetter 2008b).

2008 - a pedestrian archaeological field survey of the Carmel Hill River Bike Trail APE was conducted on January 30, 2008 by Basin Research Associates. For the most part, the proposed Carmel Hill and River/Hatton Canyon trail followed an existing fire road

18. As summarized by Levulett 1998), "A highly disturbed remnant of archaeological site CA-MNT-290 is located adjacent [to] the Carmel Rancho Shopping Center. Remains of the site had been bulldozed into a small pile at the edge of a seasonal stream, well outside the project limits. In addition, there are no previously recorded buildings or sites of historic, architectural or cultural significance in the project vicinity."

(approximately 18-20 feet wide). The APE varied from a maximum width of approximately 160 feet at the south end south of Carmel Valley Road to approximately 50 feet at the north end at Canyon Drive (see Busby 2008m:Fig. 4 and APE Map). No prehistoric or significant historic cultural materials or culturally modified sediments were observed (see Busby 2008m).

7.2 PROJECT INVENTORY [see Figs. 4 to 10]

An archaeological field inventory of the proposed *Hatton Canyon Sewer Line Replacement Project* APE was completed on December 27, 2017 by Mr. Christopher Canzonieri, (M.A.), an archaeologist meeting the Standards of the Secretary of the Interior. A previous field inventory of the sewer line replacement APE had been completed in January 2008 by Mr. Canzonieri.

Between 2008 and 2018 a number of trail improvements had been completed including paving at the bifurcated southern end of the APE and the placement of gravel along most of the trail north of Carmel Valley Road [see Fig. 5] as well as a bike/pedestrian tunnel under Carmel Valley Road. The improved trail is approximately 12 feet wide. The areas adjacent to the improved trail vary in width from 3-15 feet with dense vegetation including grass, brush, poison oak, black berries and pine and oak trees [Figs 6-10]. Eighteen (18) sanitary sewer manholes were marked with blue paddles: 5 along the east side of the trail; 11 along the west side; one along the south side and one in the center of the trail [Figs. 6-8, 10]. The exposed soil is a dark brown to black clayey loam with granite, shale, quartz and chert cobbles. Surface visibility was excellent along the existing trail, approximately 100 percent. Visibility adjacent to the improved trail from 5-30 percent. Surface visibility within a small triangular shaped field between the APE trail and a trail to the east near the project terminus at the north end of the APE was poor, approximately 5-20 percent.¹⁹ A narrow drainage (seasonal creek) runs north to south in the field; just east of the trail.

No prehistoric or significant historic cultural materials or culturally modified sediments were observed during the field inventory.

8.0 FINDINGS

This document was prepared to identify historic properties which may be listed, determined or potentially eligible for inclusion on the NRHP and/or the CRHR within or immediately adjacent to the APE.

- No historic properties (including archaeological sites, built environment or other resources) have been recorded within or immediately adjacent to the project APE.
- Seven (7) cultural resource compliance reports are on file with the CHRIS/NWIC that include the project APE.

19. The north end of this field which includes several mature oak trees and a shale rock outcropping is not in the APE. In addition, a 12-inch corrugated steel pipe is present along the trail proceeding east of the APE.

- No known Native American villages, trails, traditional use areas or contemporary use areas and/or other features of cultural significance have been identified in or adjacent to the APE.
- No known Hispanic Period expeditions, adobe dwellings, or other structures, features, etc. have been reported within or adjacent to the project APE.
- No American Period archaeological sites have been recorded or reported within or adjacent to the project APE.
- No evidence of significant prehistoric or historically significant archaeological resources or potentially significant architectural resources was observed during the field inventory conducted for the proposed project or during four previous archaeological field reviews.
- No local, state or federal historically or architecturally significant structures, landmarks, or points of interest have been identified within or adjacent to the project APE.
- The archival and literature record review in association with the completed field inventories from 1974 to 2017 suggests a low potential for the exposure of subsurface prehistoric cultural materials during installation of the replacement sewer line within the previously excavated alignment. These factors, coupled with a lack of any discoveries during previous excavation for the existing sewer system and/or installed trail improvements, appear to confirm the low potential for the unexpected discovery of significant subsurface prehistoric archaeological materials during construction although isolated finds are possible.

9.0 FINDING OF EFFECT

A reasonable and good faith effort has been made to identify historic properties listed, determined, or potentially eligible for inclusion on the NRHP (36 CFR Part 800.4) within or immediately adjacent to the project APE pursuant to the NHPA of 1966 (as amended) (54 U.S.C. § 306108) and its implementing regulations 36 CFR Part 800. In addition, the research included determining if any resources eligible the CRHR were present. The identification effort included a records search, literature review, consultation with local Native Americans and a field inventory.

The regulations implementing Section 106 define an effect as any action that would alter the characteristics of the property that may qualify the property for inclusion in the NRHP and, diminish the integrity of a property's location, setting, design, materials, workmanship, feeling or association (36 CFR Part 800.5(a)(1-2).

A determination of *No Historic Properties Affected* (36 CFR Par 800.4(d)(1) is applicable since no properties are within or adjacent to the APE have been listed, eligible or appear to be eligible for inclusion on the NRHP. Consequently, the undertaking will have no effect as defined in 36 CFR Part 800.16(i). No significant historical or archaeological resources eligible for the CRHR will be affected by the project in accordance with (CEQA).

10.0 RECOMMENDED PROJECT PERMIT CONDITIONS

The following conditions are recommended to enhance the finding of No Historic properties

affected.

- The development of a formal *Post-Review Discovery Plan* is not recommended due to the low potential for exposing significant cultural material with integrity within the APE.
- Post-review discoveries²⁰ shall be handled as per 36 CFR Part 800.13(b).
- The exposure of any Native American burials shall be handled in accordance with state law.

11.0 REFERENCES CITED AND CONSULTED²¹

Anonymous/Source Unknown

1886 Map. *Guide to Monterey and Vicinity*. In *Images of America: Monterey Peninsula The Golden Age* by Kim Coventry (2002, reprinted 2005). Arcadia Publishing, San Francisco.

Beck, W.A. and Y.D. Haase

1974 *Historical Atlas of California* (Third printing, 1977). University of Oklahoma Press, Norman.

Bickel, P. McW.

1978a *Changing Sea Levels along the California Coast: Anthropological Implications*. *Journal of California Anthropology* 5(1):6-20.

20. Significant prehistoric cultural materials may include:

- a. Human bone - either isolated or intact burials.
- b. Habitation (occupation or ceremonial structures as interpreted from rock rings/features, distinct ground depressions, differences in compaction (e.g., house floors).
- c. Artifacts including chipped stone objects such as projectile points and bifaces; groundstone artifacts such as manos, metates, mortars, pestles, grinding stones, pitted hammerstones; and, shell and bone artifacts including ornaments and beads.
- d. Various features and samples including hearths (fire-cracked rock; baked and vitrified clay), artifact caches, faunal and shellfish remains (which permit dietary reconstruction), distinctive changes in soil stratigraphy indicative of prehistoric activities.
- e. Isolated artifacts

Significant historic cultural materials may include finds from the late 19th through early 20th centuries. Objects and features associated with the Historic Period can include.

- f. Structural remains or portions of foundations (bricks, cobbles/boulders, stacked field stone, postholes, etc.).
- g. Trash pits, privies, wells and associated artifacts.
- h. Isolated artifacts or isolated clusters of manufactured artifacts (e.g., glass bottles, metal cans, manufactured wood items, etc.).
- i. Human remains.

In addition, cultural materials including both artifacts and structures that can be attributed to Hispanic, Asian and other ethnic or racial groups are potentially significant. Such features or clusters of artifacts and samples include remains of structures, trash pits, and privies.

21. See Table 1 for a comprehensive listing of reports in/adjacent and within 0.25 mile of the APE.

- 1978b Corrections to Sea Level Article. *Journal of California Anthropology* 5(2):296-297.
- Breschini, Gary S. and Trudy Haversat (Archaeological Consulting)
- 1980 Preliminary Archaeological Report and Archaeological Management Recommendations for CA-Mnt-170, on Pescadero Point, Monterey County, California . MS on file, S-3558, CHRIS/NWIC, Sonoma State University, Rohnert Park.
- 1985 Archaeological Sensitivity Map and Text for the Carmel Valley Master Plan [CVMP] EIR, Carmel Valley, Monterey County, California [has map attached]. December 20, 1985. MS on file, S-7775, CHRIS/NWIC, Sonoma State University, Rohnert Park.
- 1986 Archaeological Sensitivity Map and Text for the Carmel Valley Master Plan [CVMP] EIR, Carmel Valley, Monterey County, California [map not attached; see S-7775]. Revised January 27, 1985 [sic; 1986 correct]. MS on file, S-7555a, CHRIS/NWIC, Sonoma State University, Rohnert Park.
- 1992 Appendix 1. Archaeological Background for the Monterey Peninsula and Adjacent Areas, Monterey County, California. In *Baseline Archaeological Studies at Rancho San Carlos, Carmel Valley, Monterey County, California*. Coyote Press Archives of California Prehistory No. 36.
- 1994 *Rumsen Seasonality and Population Dynamics*. In *The Ohlone Past and Present: Native Americans of the San Francisco Bay Region*, pp. 183-201, compiled and edited by Lowell John Bean. Ballena Press Anthropological Papers 42, Menlo Park.
- Broadbent, Sylvia
- 1951 Archaeological Site form and Supplement, CA-MNT-290 (P-27-000393; Hatton Ranch, Hatton Canyon site). Both dated 6/23/1951. On file, CHRIS/NWIC, Sonoma State University, Rohnert Park.
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Indian Canyon Mutsun Band of Costanoan, Hollister; Louise Miranda-Ramirez, Chairperson, Ohlone/Costanoan-Esselen Nation, Monterey; Al Rodriguez, Vice Chairperson, Ohlone/Costanoan-Esselen Nation, Monterey; Rudy Rosales, Ohlone/Costanoan-Esselen Nation, Monterey; and, Ramona Garibay, Representative, Trina Marine Ruano Family, Lathrop. Regarding: Request for Information: Proposed Carmel Hill and River Bike Trail, Carmel, Monterey County [Hatton Canyon Trail]. Dated January 2, 2008. [Note: letter to Tony Cerda "return to sender" received by Basin Research 1/08/2008; Ms. Pilas-Treadway was contacted by telephone 1/08/2008 and could not provide a new contact information].

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Abbreviations

n.d.	no date	v.d.	various dates
N.P.	no publisher noted	n.p.	no place of publisher noted

CHRIS/NWIC, Sonoma State University, Rohnert Park refers to archival information on file with the California Historical Resources Information System, Northwest Information Center, Sonoma State University, Rohnert Park.

ATTACHMENTS

FIGURES

- FIGURE 1 Project Location (ESRI World Street Map)
- FIGURE 2 Project Location T16S R1W, 1E (USGS Monterey, Calif. 1983)
- FIGURE 3 Area of Potential Effects
- FIGURE 4 Area of Potential Effects with Photo View Locations (Google Earth)
- FIGURE 5 Hatton Canyon Trail from Carmel Valley Road – view north along paved section
- FIGURE 6 Hatton Canyon Trail with sewer manhole Q805 – view south
- FIGURE 7 Hatton Canyon Trail with sewer manhole Q801 – view north
- FIGURE 8 Hatton Canyon Trail with sewer manhole P805 – view north
- FIGURE 9 Hatton Canyon Trail in the vicinity of Whitman Circle – view north
- FIGURE 10 Hatton Canyon Trail with sewer manhole O803 – view southeast

CORRESPONDENCE

- LETTER Request to Native American Heritage Commission
- LETTER Response from Native American Heritage Commission
- LETTERS Request to Native Americans Identified by the Native American Heritage Commission
- LETTERS Native American Responses

CHRIS/NWIC SEARCH RESULT

- SEARCH File No. 17-1691 dated January 16, 2018
(No Confidential Information)



Figure 1: Project Location (ESRI World Street Map)

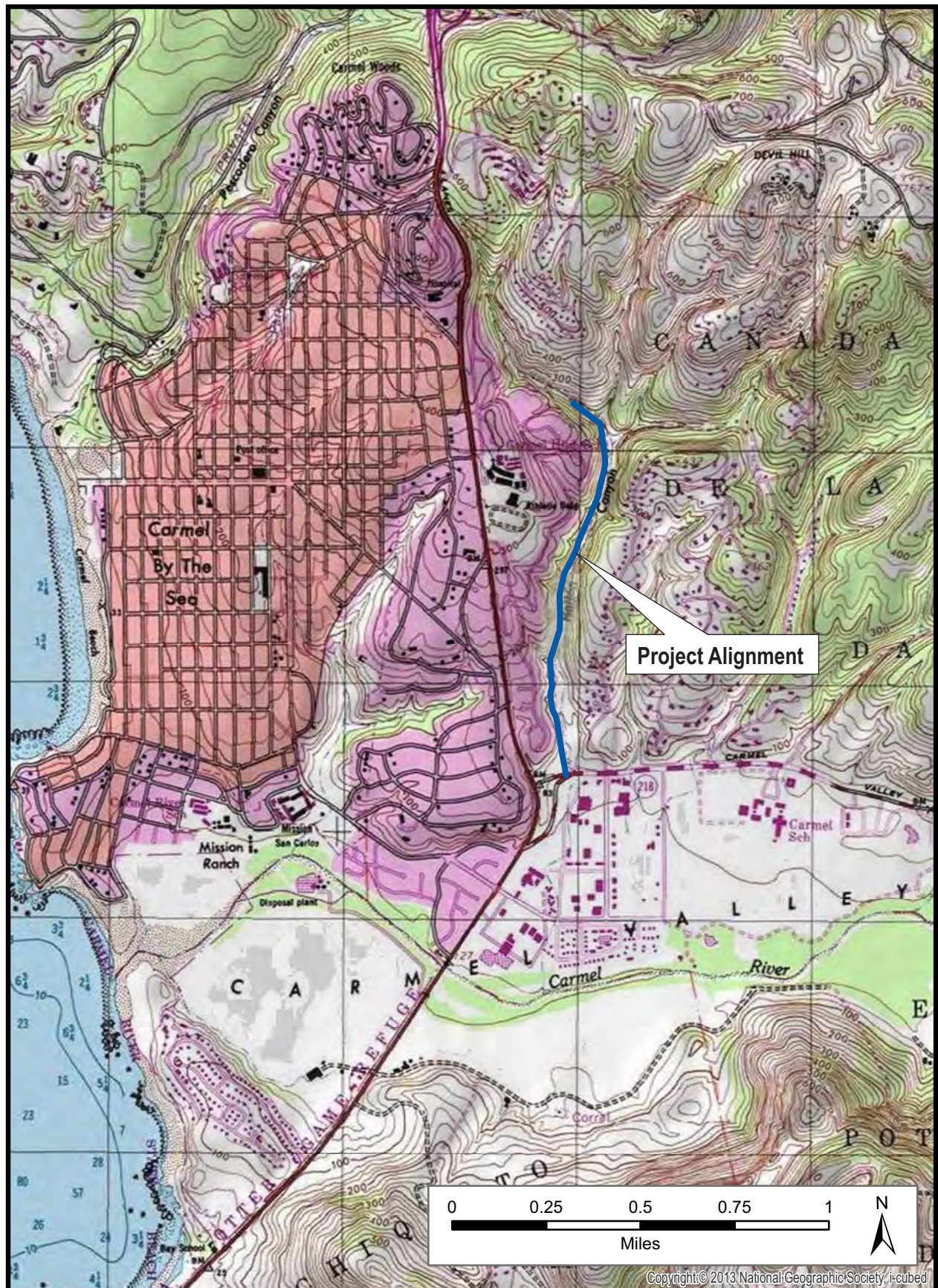


Figure 2: Project Location T16S R1W, 1E (USGS Monterey, Calif. 1983)



Figure 3: Area of Potential Effects

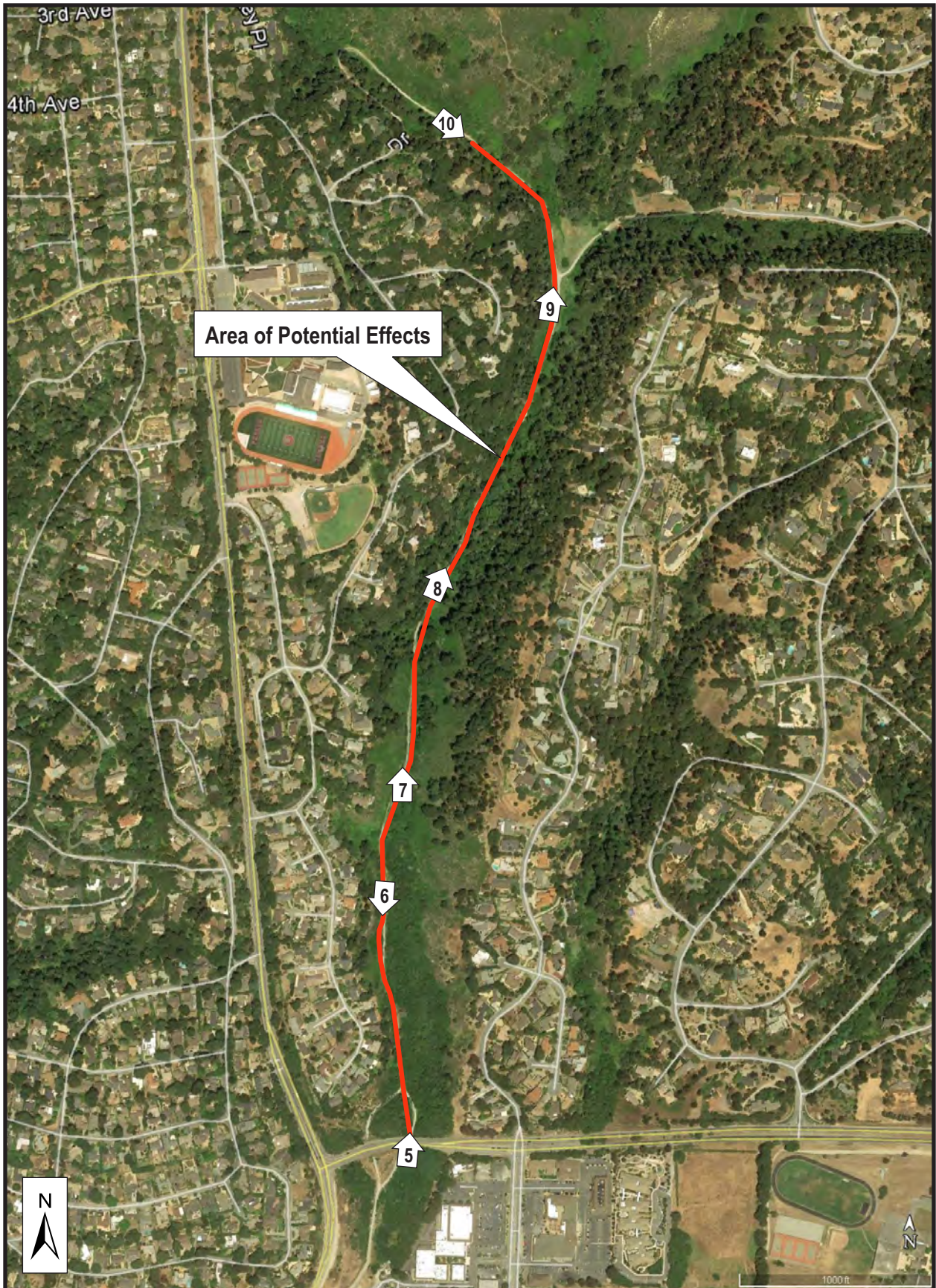


Figure 4: Area of Potential Effects with Photo View Locations (Google Earth)



Figure 5: Hatton Canyon Trail from Carmel Valley Road – view north along paved section



Figure 6: Hatton Canyon Trail with sewer manhole Q805 – view south



Figure 7: Hatton Canyon Trail with sewer manhole Q801 – view north



Figure 8: Hatton Canyon Trail with sewer manhole P805 – view north



Figure 9: Hatton Canyon Trail in the vicinity of Whitman Circle – view north



Figure 10: Hatton Canyon Trail with sewer manhole O803 – view southeast

Sacred Lands File & Native American Contacts List Request
NATIVE AMERICAN HERITAGE COMMISSION

1556 Harbor Boulevard, STE 100

West Sacramento, CA 95691

(916) 373-3710

(916) 373-5471 – Fax

nahc@nahc.ca.gov

Information Below is Required for a Sacred Lands File Search

Project: Hatton Canyon Sewer Line Replacement, Vicinity of Carmel

County: Monterey

USGS Quadrangle Name: USGS Monterey, Calif. 1983

Address: Hatton Canyon/Carmel Bike Trail - north of Carmel Valley Road near intersection with Cabrillo Highway (State Route 1)

Township: 16 South, **Range:** 1 East, unsectioned

Company/Firm/Agency: Basin Research Associates

Contact Person: Colin I. Busby, PhD, RPA

Street Address: 1933 Davis Street, STE 210

City/Zip: San Leandro, CA 94577

Phone: (510) 430-8441 x202

Fax: Please send response to basinresfax@gmail.com

Email: colinbusby@basinresearch.com

Project Location & Description:

The Carmel Area Water District (CAWD) plans to replace the 1.1 mile long existing sewer line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The CAWD plans to apply for a FEMA 404 Mitigation Grant.

Previous research by BASIN for the Caltrans sponsored Bike Trail in 2008 found no cultural resources within the right of way.

Date: 1/03/2018

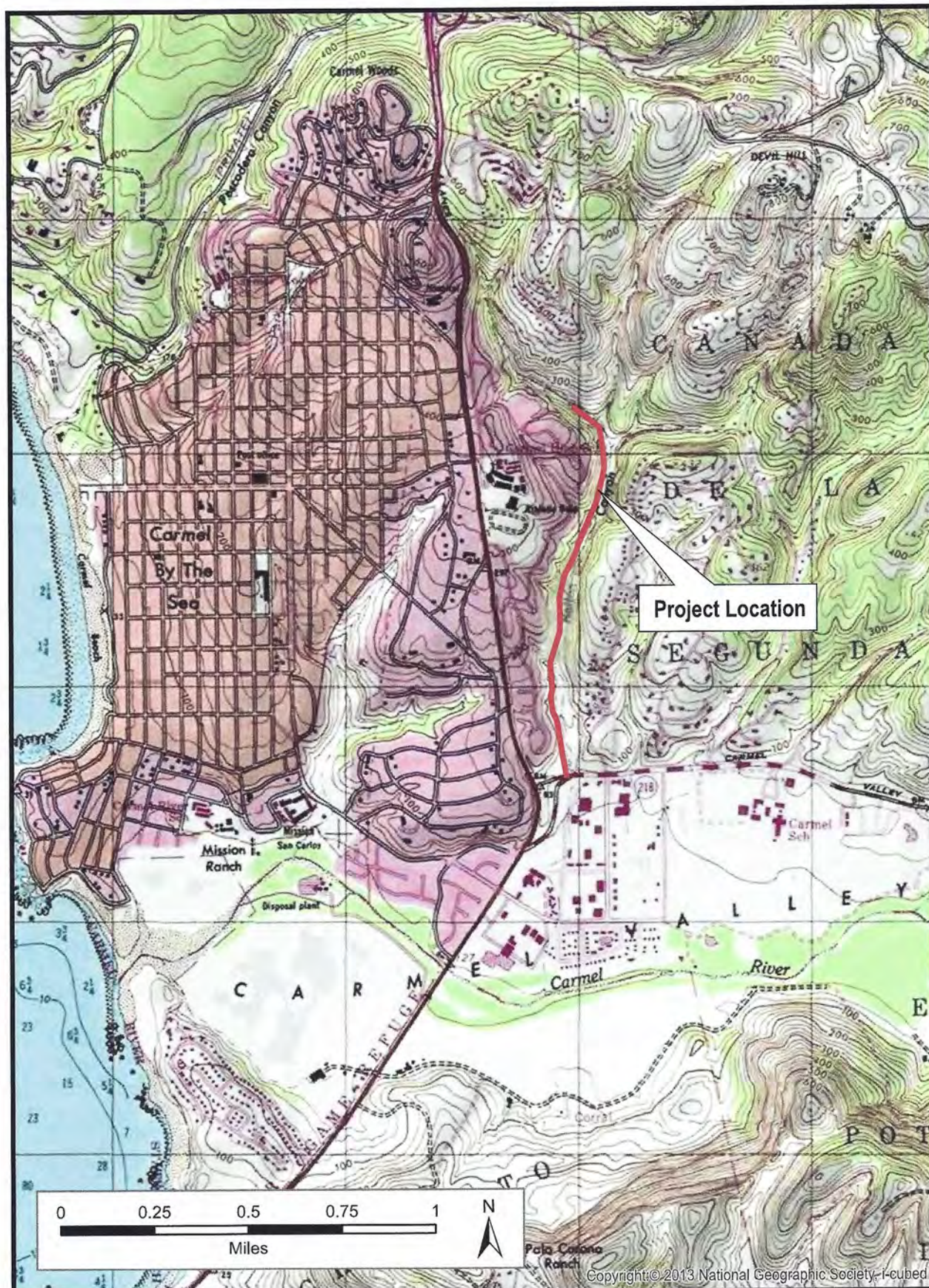


Figure 1: Project Location T16S R1W, 1E (USGS Monterey, Calif. 1983)

NATIVE AMERICAN HERITAGE COMMISSION

Environmental and Cultural Department
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471



January 17, 2018

Colin Busby
Basin Research Associates

Email to: basinresfax@gmail.com

RE: Hatton Canyon Sewer Line Replacement, Monterey County

Dear Mr. Busby,

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not preclude the presence of cultural resources in any project area. Other sources for cultural resources should also be contacted for information regarding known and/or recorded sites.

Enclosed is a list of Native Americans tribes who may have knowledge of cultural resources in the project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these tribes, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at 916-573-1033 or frank.lienert@nahc.ca.gov.

Sincerely,


Frank Lienert
Associate Governmental Program Analyst

Native American Heritage Commission
Native American Contacts
1/17/2018

Esselen Tribe of Monterey County
Tom Little Bear Nason
38655 Tassaiara Road Esselen
Carmel Valley , CA 93924 Ohlone
(408) 659-2153

Indian Canyon Mutsun Band of Costanoan
Ann Marie Savers, Chairperson
P.O. Box 28 Ohlone/Costanoan
Hollister , CA 95024
ams@indiancanyon.org
(831) 637-4238

Coastanoan Rumsen Carmel Tribe
Tony Cerda, Chairperson
244 E. 1st Street Ohlone/Costanoan
Pomona , CA 91766
rumsen@aol.com
(909) 524-8041 Cell
(909) 629-6081

Ohlone/Coastanoan-Esselen Nation
Louise Miranda-Ramirez, Chairperson
P.O. Box 1301 Esselen
Monterey , CA 93942 Ohlone/Costanoan
ramirez.louise@vahoo.com
(408) 629-5189
408-661-2486 Cell

Amah Mutsun Tribal Band
Valentin Lopez, Chairperson
P.O. Box 5272 Ohlone/Costanoan
Galt , CA 95632 Northern Valley Yokuts
vlopez@amahmutsun.org
(916) 743-5833

Amah Mutsun Tribal Band of Mission San Juan Bautista
Irene Zwielerlein, Chairperson
789 Canada Road Ohlone/Costanoan
Woodside , CA 94062
amahmutsuntribal@gmail.com
(650) 851-7489 Cell
(650) 851-7747 Office
(650) 332-1526 Fax

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resource Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native American Tribes with regard to cultural resources assessments for the proposed:
Hatton Canyon Sewer Line Replacement, Monterey County



January 24, 2018

BASIN
RESEARCH
ASSOCIATES

1933 DAVIS STREET
SUITE 210
SAN LEANDRO, CA 94577
VOICE (510) 430-8441
FAX (510) 430-8443

Tom Little Bear Nason
Esselen Tribe of Monterey County
38655 Tassajara Road
Carmel Valley; CA 93924

RE: Request for Information
Hatton Canyon Sewer Line Replacement, Vicinity of Carmel, Monterey County

Dear Tom,

The Native American Heritage Commission has provided your name as an individual who may have information regarding Native American sites within or adjacent to the above proposed project (see enclosed USGS map).

The Carmel Area Wastewater District (CAWD) is applying for a Federal Emergency Management Agency (FEMA) grant to replace the existing 1.1 mile long sewer line in Hatton Canyon along the Carmel Hill Bike Trail, Monterey County. The CAWD plans to replace the existing line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The agency will install the pipe in the existing right of way along the trail north of Carmel Valley Road near its intersection with the Cabrillo Highway (State Route 1). The alignment north of the Cabrillo Highway was reviewed for the Carmel Hill Bike Trail in 2008-2009 for Caltrans District 5 with negative results.

Any information provided will be used to determine if significant archaeological resources may be affected by the proposed project.

If I can provide any further information, please don't hesitate to contact me (510 430-8441 or Basinres1@gmail.com). The CAWD agency contact is Mr. Drew Lander, Principal Engineer, (881) 624-1248. Thank you for your timely review of our request.

BASIN RESEARCH ASSOCIATES, INC.

Colin I. Busby, Ph.D., RPA
Principal

CIB/dg

BASIN RESEARCH ASSOCIATES



January 24, 2018

BASIN
RESEARCH
ASSOCIATES

1933 DAVIS STREET
SUITE 210
SAN LEANDRO, CA 94577
VOICE (510) 430-8441
FAX (510) 430-8443

Mr. Tony Cerda, Chairperson
Coastanoan Rumsen Carmel Tribe
244 E. 1st Street
Pomona, CA 91766

RE: Request for Information
Hatton Canyon Sewer Line Replacement, Vicinity of Carmel, Monterey County

Dear Tony,

The Native American Heritage Commission has provided your name as an individual who may have information regarding Native American sites within or adjacent to the above proposed project (see enclosed USGS map).

The Carmel Area Wastewater District (CAWD) is applying for a Federal Emergency Management Agency (FEMA) grant to replace the existing 1.1 mile long sewer line in Hatton Canyon along the Carmel Hill Bike Trail, Monterey County. The CAWD plans to replace the existing line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The agency will install the pipe in the existing right of way along the trail north of Carmel Valley Road near its intersection with the Cabrillo Highway (State Route 1). The alignment north of the Cabrillo Highway was reviewed for the Carmel Hill Bike Trail in 2008-2009 for Caltrans District 5 with negative results.

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BASIN RESEARCH ASSOCIATES, INC.

Colin I. Busby, Ph.D., RPA
Principal

CIB/dg



January 24, 2018

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RESEARCH
ASSOCIATES

1933 DAVIS STREET
SUITE 210
SAN LEANDRO, CA 94577
VOICE (510) 430-8441
FAX (510) 430-8443

Louise Miranda-Ramirez, Chairperson,
Ohlone/Coastanoan-Esselen Nation
P.O. Box 1301
Monterey, CA 93942

RE: Request for Information
Hatton Canyon Sewer Line Replacement, Vicinity of Carmel, Monterey County

Dear Louise,

The Native American Heritage Commission has provided your name as an individual who may have information regarding Native American sites within or adjacent to the above proposed project (see enclosed USGS map).

The Carmel Area Wastewater District (CAWD) is applying for a Federal Emergency Management Agency (FEMA) grant to replace the existing 1.1 mile long sewer line in Hatton Canyon along the Carmel Hill Bike Trail, Monterey County. The CAWD plans to replace the existing line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The agency will install the pipe in the existing right of way along the trail north of Carmel Valley Road near its intersection with the Cabrillo Highway (State Route 1). The alignment north of the Cabrillo Highway was reviewed for the Carmel Hill Bike Trail in 2008-2009 for Caltrans District 5 with negative results.

Any information provided will be used to determine if significant archaeological resources may be affected by the proposed project.

If I can provide any further information, please don't hesitate to contact me (510 430-8441 or Basinres1@gmail.com). The CAWD agency contact is Mr. Drew Lander, Principal Engineer, (881) 624-1248. Thank you for your timely review of our request.

BASIN RESEARCH ASSOCIATES, INC.

Colin I. Busby, Ph.D., RPA
Principal

CIB/dg

BASIN RESEARCH ASSOCIATES



January 24, 2018

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RESEARCH
ASSOCIATES

1933 DAVIS STREET
SUITE 210
SAN LEANDRO, CA 94577
VOICE (510) 430-8441
FAX (510) 430-8443

Mr. Valentin Lopez, Chairperson
Amah Mutsun Tribal Band
P.O. Box 5272
Galt, CA 95632

RE: Request for Information
Hatton Canyon Sewer Line Replacement, Vicinity of Carmel, Monterey County

Dear Valentin,

The Native American Heritage Commission has provided your name as an individual who may have information regarding Native American sites within or adjacent to the above proposed project (see enclosed USGS map).

The Carmel Area Wastewater District (CAWD) is applying for a Federal Emergency Management Agency (FEMA) grant to replace the existing 1.1 mile long sewer line in Hatton Canyon along the Carmel Hill Bike Trail, Monterey County. The CAWD plans to replace the existing line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The agency will install the pipe in the existing right of way along the trail north of Carmel Valley Road near its intersection with the Cabrillo Highway (State Route 1). The alignment north of the Cabrillo Highway was reviewed for the Carmel Hill Bike Trail in 2008-2009 for Caltrans District 5 with negative results.

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If I can provide any further information, please don't hesitate to contact me (510 430-8441 or Basinres1@gmail.com). The CAWD agency contact is Mr. Drew Lander, Principal Engineer, (881) 624-1248. Thank you for your timely review of our request.

BASIN RESEARCH ASSOCIATES, INC.

Colin I. Busby, Ph.D., RPA
Principal

CIB/dg

BASIN RESEARCH ASSOCIATES



January 24, 2018

BASIN
RESEARCH
ASSOCIATES

1933 DAVIS STREET
SUITE 210
SAN LEANDRO, CA 94577
VOICE (510) 430-8441
FAX (510) 430-8443

Ms. Irenne Zwierlein, Chairperson
Amah/Mutsun Tribal Band of Mission San Juan Bautista
789 Canada Road
Woodside, CA 94062

RE: Request for Information
Hatton Canyon Sewer Line Replacement, Vicinity of Carmel, Monterey County

Dear Irenne,

The Native American Heritage Commission has provided your name as an individual who may have information regarding Native American sites within or adjacent to the above proposed project (see enclosed USGS map).

The Carmel Area Wastewater District (CAWD) is applying for a Federal Emergency Management Agency (FEMA) grant to replace the existing 1.1 mile long sewer line in Hatton Canyon along the Carmel Hill Bike Trail, Monterey County. The CAWD plans to replace the existing line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The agency will install the pipe in the existing right of way along the trail north of Carmel Valley Road near its intersection with the Cabrillo Highway (State Route 1). The alignment north of the Cabrillo Highway was reviewed for the Carmel Hill Bike Trail in 2008-2009 for Caltrans District 5 with negative results.

Any information provided will be used to determine if significant archaeological resources may be affected by the proposed project.

If I can provide any further information, please don't hesitate to contact me (510 430-8441 or Basinres1@gmail.com). The CAWD agency contact is Mr. Drew Lander, Principal Engineer, (881) 624-1248. Thank you for your timely review of our request.

BASIN RESEARCH ASSOCIATES, INC.

Colin I. Busby, Ph.D., RPA
Principal

CIB/dg

BASIN RESEARCH ASSOCIATES



January 24, 2018

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RESEARCH
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1933 DAVIS STREET
SUITE 210
SAN LEANDRO, CA 94577
VOICE (510) 430-8441
FAX (510) 430-8443

Ms. Ann Marie Sayers, Chairperson
Indian Canyon Mutsun Band of Costanoan
P.O. Box 28
Hollister, CA 95024

RE: Request for Information
Hatton Canyon Sewer Line Replacement, Vicinity of Carmel, Monterey County

Dear Ann Marie,

The Native American Heritage Commission has provided your name as an individual who may have information regarding Native American sites within or adjacent to the above proposed project (see enclosed USGS map).

The Carmel Area Wastewater District (CAWD) is applying for a Federal Emergency Management Agency (FEMA) grant to replace the existing 1.1 mile long sewer line in Hatton Canyon along the Carmel Hill Bike Trail, Monterey County. The CAWD plans to replace the existing line with a seamless High Density Polyethylene (HDPE) pipeline, effectively making the system watertight and less likely to break. The agency will install the pipe in the existing right of way along the trail north of Carmel Valley Road near its intersection with the Cabrillo Highway (State Route 1). The alignment north of the Cabrillo Highway was reviewed for the Carmel Hill Bike Trail in 2008-2009 for Caltrans District 5 with negative results.

Any information provided will be used to determine if significant archaeological resources may be affected by the proposed project.

If I can provide any further information, please don't hesitate to contact me (510 430-8441 or Basinres1@gmail.com). The CAWD agency contact is Mr. Drew Lander, Principal Engineer, (881) 624-1248. Thank you for your timely review of our request.

BASIN RESEARCH ASSOCIATES, INC.

Colin I. Busby, Ph.D., RPA
Principal

CIB/dg

BASIN RESEARCH ASSOCIATES

Tony Cerda - call to CIB regarding Hatton Canyon sewer improvement - Jan 31, 4:30 PM

No comments are proposed work is within previous sewer line alignment.

Ohlone/Costanoan-Esselen Nation



*Previously acknowledged as
The San Carlos Band of
Mission Indians
The Monterey Band
And also known as
O.C.E.N. or Esselen Nation
P.O. Box 1301
Monterey, CA 93942*

www.ohlonecostanoanesselenation.org

February 22, 2018

Saleki Atsa,

Ohlone/Costanoan-Esselen Nation is an historically documented previously recognized tribe. OCEN is the legal tribal government representative for over 600 enrolled members of Esselen, Carmeleno, Monterey Band, Rumsen, Chalon, Soledad Mission, San Carlos Mission and/or Costanoan Mission Indian descent of Monterey County. Though other indigenous people may have lived in the area, the area is the indigenous homeland of our people. Included with this letter please find a territorial map by Taylor 1856; Levy 1973; and Milliken 1990, indentifying Tribal areas.

Ohlone/Costanoan-Esselen Nation objects to all excavation in known cultural lands, even when they are described as previously disturbed, and of no significant archaeological value. Please be advised that it is our priority that our ancestor's remains be protected and undisturbed. We desire that all sacred burial items be left with our ancestors on site or as culturally determined by OCEN. All cultural items returned to Ohlone/Costanoan-Esselen Nation. We ask for the respect that is afforded all of our current day deceased, by no other word these burial sites are cemeteries, respect for our ancestors as you would expect respect for your deceased family members in today's cemeteries. **Our definition of respect is no disturbance.**

OCEN's Tribal leadership desires to be provided with:

Archaeological reports/surveys, including subsurface testing, and presence/absence testing.

OCEN request to be included in mitigation and recovery programs.

Reburial of any of our ancestral remains,

Placement of all cultural items, and that

A Native American Monitor of Ohlone/Costanoan-Esselen Nation, approved by the OCEN Tribal Council is used within our aboriginal territory.

OCEN request consultation with the lead agency.

We ask that a sacred lands search with the Northwest Information Center, Sonoma State University and the Native American Heritage Commission. Please feel free to contact me at (408) 629-5189. Nimasianexelpasaleki. Thank you

Sincerely and Respectfully Yours,

Louise J. Miranda Ramirez, Chairperson

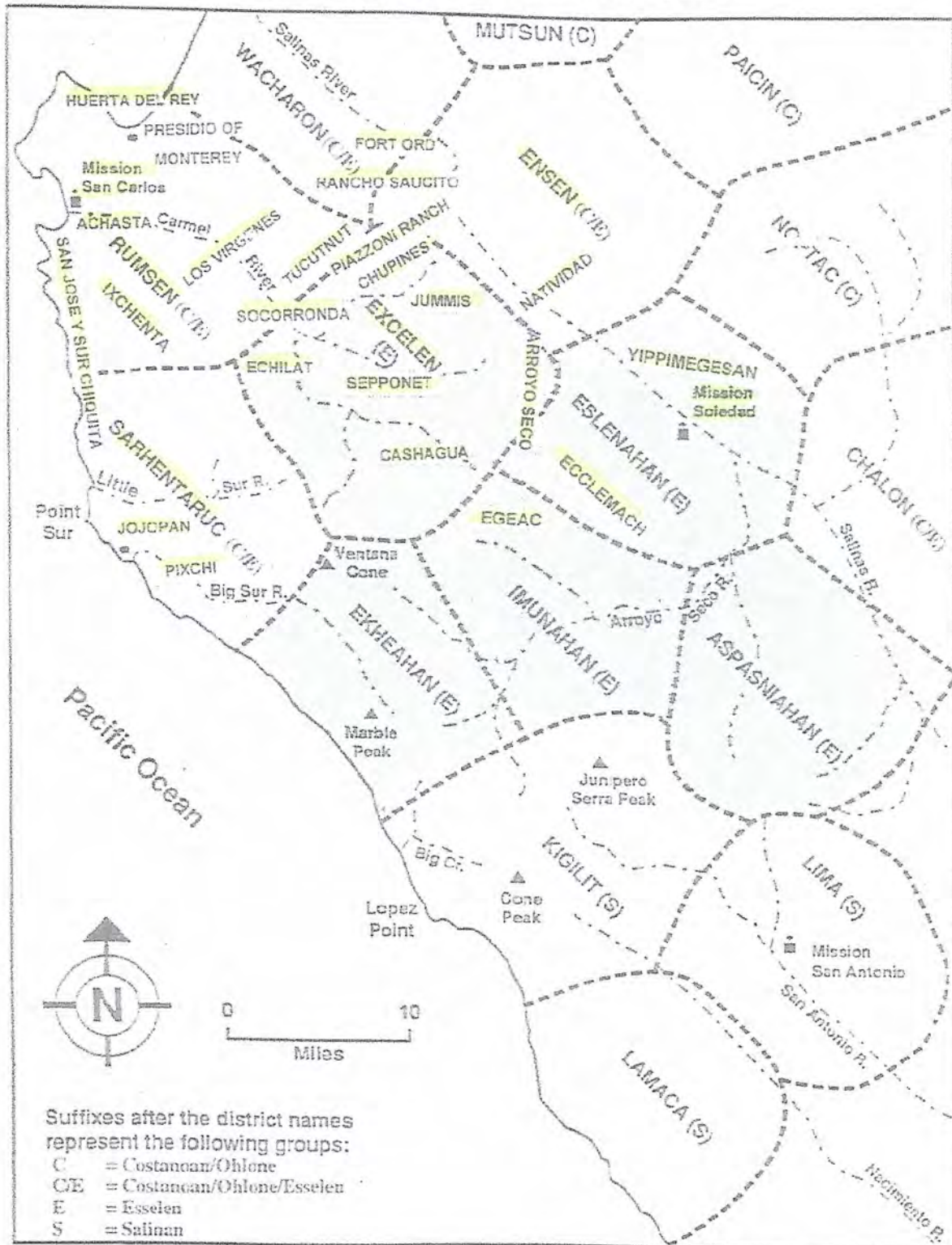
Ohlone/Costanoan-Esselen Nation

(408) 629-5189

Cc: OCEN Tribal Council

Distribution of Ohlone/Costanoan-Esselen Nation Tribal
Rancherias, Districts, Landgrants and Historic Landmarks

OCCIDENTAL DIRECT LINEAL DESCENT



Map after Taylor 1856; Levy 1973; Hester 1978; Milliken 1990

Figure 2:

CALIFORNIA
HISTORICAL
RESOURCES
INFORMATION
SYSTEM



ALAMEDA
COLUSA
CONTRA COSTA
DEL NORTE

HUMBOLDT
LAKE
MARIN
MENDOCINO
MONTEREY
NAPA
SAN BENITO

SAN FRANCISCO
SAN MATEO
SANTA CLATA
SANTA CRUZ
SOLANO
SONOMA
YOLO

Northwest Information Center
Sonoma State University
150 Professional Center Drive, Suite E
Rohnert Park, California 94928-3609
Tel: 707.588.8455
nwic@sonoma.edu
<http://www.sonoma.edu/nwic>

1/16/2018

NWIC File No.: 17-1691

Donna M. Garaventa
Basin Research Associates
1933 Davis Street, Suite 210
San Leandro, CA 94577

re: Hatton Canyon Sewer

The Northwest Information Center received your record search request for the project area referenced above, located on the Monterey USGS 7.5' quad(s). The following reflects the results of the records search for the project area and a 0.25 mile radius:

Resources within project area:	None
Resources within 0.25 mile radius:	P-27-393 & 156.
Reports within project area:	S-33565, 3310, 7348, & 34491.
Reports within 0.25 mile radius:	S-4995, 45560, 48869, 38771, 38518, 9280, 47192, 44329, 10640, 44367, 37815, 35763, 36091, 37810, 12342, 37209, 36380, 38783, 20604, 10122, 36878, 7585, 27375, 38481, & 33528.
Other Reports within records search radius:	S-848, 2164, 3455, 3456, 5537, 7775, 7850, 15529, 30204, 30789, 32596, 45010, 48474, & 48927. These reports are classified as Other Reports; reports with little or no field work or missing maps. The electronic maps do not depict study areas for these reports, however a list of these reports has been provided. In addition, you have not been charged any fees associated with these studies.

- Resource Database Printout (list):** enclosed not requested nothing listed
- Resource Database Printout (details):** enclosed not requested nothing listed
- Resource Digital Database Records:** enclosed not requested nothing listed
- Report Database Printout (list):** enclosed not requested nothing listed
- Report Database Printout (details):** enclosed not requested nothing listed
- Report Digital Database Records:** enclosed not requested nothing listed
- Resource Record Copies:** enclosed not requested nothing listed
- Report Copies:** enclosed not requested nothing listed

- OHP Historic Properties Directory:** enclosed not requested nothing listed
- Archaeological Determinations of Eligibility:** enclosed not requested nothing listed
- CA Inventory of Historic Resources (1976):** enclosed not requested nothing listed
- Caltrans Bridge Survey:** enclosed not requested nothing listed
- Ethnographic Information:** enclosed not requested nothing listed
- Historical Literature:** enclosed not requested nothing listed
- Historical Maps:** enclosed not requested nothing listed
- Local Inventories:** enclosed not requested nothing listed
- GLO and/or Rancho Plat Maps:** enclosed not requested nothing listed
- Shipwreck Inventory:** enclosed not requested nothing listed

*Notes:

 ** Current versions of these resources are available on-line:

 Caltrans Bridge Survey: <http://www.dot.ca.gov/hq/structur/strmaint/historic.htm>

 Soil Survey: <http://www.nrcs.usda.gov/wps/portal/nrcs/surveylist/soils/survey/state/?stateId=CA>

 Let us know if you want copies of any reports or resource records. The invoice will be kept open until 1/23/18.

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Requests made after initial invoicing will result in the preparation of a separate invoice.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Lisa C. Hagel
Researcher

Report detail sheets attached for documents within
Project APE

Report Detail: S-003310

Identifiers

Report No.: S-003310

Other IDs:	Type	Name
Voided		E-10 MNT

Cross-refs:

Citation information

Author(s): Robert H. Crabtree

Year: 1974 (Sep)

Title: An Archaeological Survey of the Proposed Carmel Realignment No. 019021 (letter report)

Affiliation: Archaeological Research, Inc.

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size:

Disclosure: Not for publication

Collections: No

General notes

Associated resources

Primary No.	Trinomial	Name
P-27-000393	CA-MNT-000290	Hatton Ranch

No. resources: 1

Has informals: No

Location information

County(ies): Monterey

USGS quad(s): Monterey

Address:

PLSS:

Database record metadata

Date	User
------	------

Entered: 4/7/2005	nwic-main
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Last modified: 1/4/2018	raelync
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IC actions:	Date	User	Action taken
-------------	------	------	--------------

	4/7/2005	jay	Appended records from NWICmain bibliographic database.
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Record status: Verified

Report Detail: S-007348

Identifiers

Report No.: S-007348

Other IDs:	Type	Name
	Voided	S-7455
	Caltrans	019020

Cross-refs: See also S-007455

Citation information

Author(s): Wendy Waldron

Year: 1985 (Mar)

Title: Archaeological Survey Report, proposed freeway alignment in Hatton Canyon, 05-Mon-1 P.M.72.3/75.0 05202-019020

Affiliation: Caltrans

No. pages:

No. maps:

Attributes: Archaeological, Field study

Inventory size: c 2.7 li mi

Disclosure: Not for publication

Collections: No

Sub-desig.: a

Author(s): Wendy Waldron

Year: 1985 (Jun)

Title: Archaeological Survey Report, the Hatton Canyon Project, 05-MON-1 P.M. 72.3/75.0 05202-019020 (1st Addendum)

Affiliation: Caltrans

Report type(s): Archaeological, Field study

Inventory size:

No. pages:

Disclosure: Not for publication

Collections: No

PDF Pages: 6-10

General notes

Both the main report and additional citation contain oversized maps that were not scanned

Associated resources

Primary No.	Trinomial	Name
P-27-000393	CA-MNT-000290	Hatton Ranch

No. resources: 1

Has informals: No

Location information

County(ies): Monterey

USGS quad(s): Monterey

Address:

PLSS:

Database record metadata

Date	User	Action taken
Entered: 4/7/2005	nwic-main	
Last modified: 1/4/2018	raelync	
IC actions: Date	User	Action taken
4/7/2005	jay	Appended records from NWICmain bibliographic database.
8/18/2014	muchb	added additional citation (S-7455)

Record status: Verified

Report Detail: S-034491

Identifiers

Report No.: S-034491

Other IDs:	Type	Name
	Caltrans	EA #05-0L5700

Cross-refs:

Citation information

Author(s): Karin Goetter

Year: 2008 (Feb)

Title: Historical Resources Compliance Report for the State Route 1 Operational Improvements From Rio Road to Carmel Valley Road Project, Near Carmel-By-The-Sea, Monterey County, California; Expenditure Authorization #05-0L5700, 05-MON-1, P.M. 72.3-72.9, Caltrans District 5

Affiliation: LSA Associates, Inc.

No. pages:

No. maps:

Attributes: Archaeological, Architectural/historical, Field study

Inventory size:

Disclosure: Not for publication

Collections: No

Sub-desig.: a

Author(s): Karin Goetter

Year: 2008 (Feb)

Title: Archaeological Survey Report for the State Route 1 Operational Improvements From Rio Road to Carmel Valley Road Project, Near Carmel-By-The-Sea, Monterey County, California; Expenditure Authorization #05-0L5700, 05-MON-1, P.M. 72.3-72.9, Caltrans District 5

Affiliation: LSA Associates, Inc.

Report type(s): Archaeological, Field study

Inventory size:

No. pages:

Disclosure: Not for publication

Collections: No

PDF Pages: 17-79

General notes

Evidence of P-27-393 was not found during the survey.

Associated resources

Primary No.	Trinomial	Name
P-27-000393	CA-MNT-000290	Hatton Ranch

No. resources: 1

Has informals: No

Location information

County(ies): Monterey

USGS quad(s): Monterey

Address:

PLSS:

Database record metadata

Date	User
------	------

Entered: 5/2/2008	guldenj
-------------------	---------

Last modified: 8/21/2014	hagell
--------------------------	--------

IC actions:

Record status: Verified

Report Detail: S-035365

Identifiers

Report No.: S-035365

Other IDs:	Type	Name
	Caltrans	CML-6143(032)
	Caltrans	EA 05-4A1954

Cross-refs:

Citation information

Author(s): Colin I. Busby

Year: 2008 (May)

Title: Historic Properties Survey Report, Carmel Hill and River Bike Trail Near Route 1 From Rio Road to Canyon Drive, Monterey County; 05-MON-1 PM 72.61/73.9 CML-61 43 (032)

Affiliation: Basin Research Associates, Inc.

No. pages:

No. maps:

Attributes: Architectural/historical, Management/planning, Other research

Inventory size: c. 1.69 miles

Disclosure: Not for publication

Collections: No

Sub-desig.: a

Author(s): Colin I. Busby

Year: 2008 (Apr)

Title: Archaeological Survey Report: Carmel Hill and River Bike Trail Near Route 1 from Rio Road to Canyon Drive, Monterey County

Affiliation: Basin Research Associates, Inc.

Report type(s): Archaeological, Field study

Inventory size:

No. pages:

Disclosure: Not for publication

Collections: No

PDF Pages: 18-105

General notes

Associated resources

Primary No.	Trinomial	Name
P-27-000393	CA-MNT-000290	Hatton Ranch

No. resources: 1

Has informals: No

Location information

County(ies): Monterey

USGS quad(s): Monterey

Address:

PLSS:

Database record metadata

Date	User	Action taken
Entered: 4/13/2009	guldenj	
Last modified: 1/12/2018	hagell	
IC actions: Date	User	Action taken
8/19/2014	rinerg	digitized
1/4/2018	raelync	Edited author and main report attributes.

Record status: Verified

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