Attachment B

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Before the Board of Supervisors in and for the County of Monterey, State of California

In the matter of the application of:
PACIFIC GAS & ELECTRIC (PLN160131)
RESOLUTION NO. 21 -
Resolution by the Monterey County Board of Supervisors:

1. Acknowledging changes to the project agreed upon to resolve contentions raised in the appeal of the Zoning Administrator's approval by Friends, Artists and Neighbors of the Elkhorn Slough (FANS);
2. Adopting a Mitigated Negative Declaration;
3. Approving a Combined Development Permit consisting of:
    a. Coastal Development Permit to allow grading of approximately 400 cubic yards over an area of approximately 2,855 square feet within 100 feet of environmentally sensitive habitat; and
    b. Coastal Development Permit to allow grading on slopes in excess of 25 percent; and
4. Adopting a Mitigation Monitoring and Reporting Plan; and
5. Granting FANS' request to waive provision of stamped envelopes.

490 and 500 Strawberry Canyon Road; and 95 and 123 Tucker Road, North County Land Use Plan, Coastal Zone (APNs: 129-281-007-000, 129-181-009-000, 129-281-008-000, and 129-281-017-000)

The appeal by Friends Artists and Neighbors of the Elkhorn Slough ("FANS" or "Appellant") from the decision of the Zoning Administrator on December 6, 2018, to adopt a Mitigated Negative Declaration and approve a Coastal Administrative Permit for development within 100 feet of ESHA and on slopes of 25 percent (PG&E/PLN160131) came on for a public hearing before the Monterey County Board of Supervisors on September 28, 2021, February 26, 2019, and March 26, 2019. Having considered all the written and documentary evidence, the administrative record, the staff report, oral testimony, and other evidence presented, the Board of Supervisors finds and decides as follows:

FINDINGS

1. **FINDING:** **PROCESS –** The County has processed the subject Combined Development Permit application (Planning File No. 160131/PG&E) (the project) in compliance with all applicable procedural requirements.

EVIDENCE:

a) On September 21, 2016, Pacific Gas & Electric (Applicant) filed an application for discretionary permits to allow grading of approximately 106 cubic yards over an area of approximately 895 square feet within 100 feet of environmentally sensitive habitat; and allow grading on slopes in excess of 25 percent to increase the vertical clearance between the ground and existing powerlines for fire safety. The project is located at the intersection of four (4) parcels (490 and 500 Strawberry Canyon Road; and 95 and 123 Tucker Road, respectively APNs: 129-281-007-000, 129-181-009-000, 129-281-008-000, and 129-281-017-000) North County Land Use Plan, Coastal Zone.

b) The County referred the originally-proposed project to the North County Land Use Advisory Committee (LUAC) for review. The LUAC, at a duly-noticed public meeting at which all persons had the opportunity to be heard, reviewed the proposed project on April 18, 2018, and voted 7-1 to support the project as proposed. See Finding No. 3, Evidence d.

c) On September 5, 2018, Monterey County circulated an Initial Study/Mitigated Negative Declaration (MND) for the proposed PG&E grading project involving vegetation removal and corresponding habitat restoration plan. No comments were received during the 30-day review period from September 5, 2018, to October 5, 2018. However, comments were received October 9, 2018, four days after the comment period expired. The comments contend that the Initial Study was inadequate and that there is a fair argument that the project would have an environmental impact.

d) On December 6, 2018, the Zoning Administrator adopted the MND and approved the project. That decision included clarifications and amplifications to the mitigation measures in response to public comments received during and after the close of the public comment period on the MND.

e) On January 2, 2019, Friends Artists and Neighbors of the Elkhorn Slough (FANS) filed a timely appeal to the Zoning Administrator's approval to the Board of Supervisors. In their appeal, FANS contend that there was a lack of a fair or impartial hearing, the findings and decision were not supported by the evidence, and the decision was contrary to law.

f) On February 26, 2019, the project came on for a public hearing before the Board of Supervisors and was continued to March 26, 2019. On March 29, 2019, the project was continued to a date uncertain at the

request of PG&E, with agreement from the appellant, to allow time to address the appellant's concerns.

g) Since that time, PG&E has consulted with FANS, the California Native Plant Society-Monterey County (CNPS), neighboring property owners Mr. and Mrs. Pennycook, and with Mark Silverstein of the Elkhorn Slough Foundation. Revisions to the project plans have been made as a result of consultation. On May 17, 2021, a revised restoration plan was submitted by PG&E to the HCD-Planning Division addressing the appellant's concerns regarding potential environmental impacts and strengthening mitigation measures. A finalized version of the plan that further clarified restoration efforts was provided on September 16, 2021.

h) The application, project plans, and related support materials submitted by the project applicant to Monterey County HCD-Planning for the proposed development found in Project File PLN160131; and Clerk of the Board of Supervisors' file(s) related to the appeal.

i) A duly noticed public hearing on the appeal was held before the Monterey County Board of Supervisors on September 28, 2021. Notice of the hearing was published on September 16, 2021, in the Monterey County Weekly; notices were mailed on or about September 14, 2021, to all property owners and occupants within 300 feet of the project site, and to persons who requested notice; and at least 3 notices were posted at and near the project site on or before September 18, 2021.

2. **FINDING:** **CONSISTENCY** – The proposed project and/or use, as conditioned, is consistent with the policies of the Monterey County 1982 General Plan, North County Coastal Land Use Plan, North County Coastal Implementation Plan – Part 2, Monterey County Zoning Code - Coastal (Title 20), Monterey County Code (Title 16, Chapter 16.08), and other County health, safety, and welfare regulations related to land use development.

EVIDENCE: a) This project involves grading to decrease flatten a knoll under existing Pacific Gas & Electric (PG&E) power lines, increasing the clearance between the ground and the lines for fire safety. The project originally involved grading 106 cubic yards over an area of 895 square feet. The project has been revised in response to comments received during review of the project. Changes are intended to minimize erosion by decreasing the finished cut slope from 2:1 to 3:1 and to add to the revegetation efforts originally proposed. As included in this permit, the project now involves 400 cubic yards of grading over an area of approximately 2,855 square feet. The limit of disturbance ("LOD") is approximately 6,880 square feet, including the specific grading location as well as the area utilized for stockpiling reserved topsoil and plants, maneuvering of equipment, and the redistribution of the cut (graded soils) on an existing service road. Grading as maintenance for the existing electrical transmission lines is an allowed use in the area

and has been determined to be superior to raising the lines from an environmental impact perspective since raising the lines would require a larger disturbance footprint. The project is proposed to meet federal recommendations for ground clearance to improve public safety and enhance fire prevention.

b) The project is located at the confluence of four privately held parcels: 490 and 500 Strawberry Canyon Road; 95 and 123 Tucker Road, North County Land Use Plan, Coastal Zone (APNs: 129-281007-000, 129-181-009-000, 129-281-008-000, and 129-281-017-000 North County Coastal Land Use Plan (LUP). The parcels are zoned Rural Density Residential, 5 acres per unit [RDR-5 (CZ)] and have a cumulative area of 28.54 acres (approximately 1,243,202 square feet). PG&E holds a recorded easement over the project site, and the project will occur within the easement as shown on the site plans attached.

c) The project has been reviewed for consistency with the text, policies, and regulations in the:
   - 1982 Monterey County General Plan;
   - North County Coastal Land Use Plan (LUP);
   - North County Coastal Implementation Plan (CIP);
   - Monterey County Zoning Code – Coastal (Title 20); and
   - Monterey County Code (Title 16, grading).

   No conflicts were found to exist with the above standards and policies. Comments have been received alleging potential inconsistencies with the North County Land Use Plan policies. Those comments have been reviewed and addressed (See Finding No. 12 and Evidence below and responses to appeal contentions). The County finds that the project is consistent with the text and policies in the applicable County plans, zoning, and regulations.

d) The whole of the project – the grading, contouring and subsequent restoration of vegetation within the disturbed area – is consistent with the RDR/5 (CZ) zoning district and the North County Coastal Land Use Plan. The development will occur within an existing PG&E utility line easement and involves maintenance of existing utility lines for fire prevision (Monterey County Code "MCC" section 20.144.040.B.1 CIP). No new uses or structures are proposed and as conditioned and mitigated, the project will not adversely impact the long-term maintenance of the chapparal habitat at the site. This has been confirmed by the project biologist (MCC section 21.144.040.B.2 CIP). Plans for revegetation of the site have been reviewed and negotiated between multiple parties including the appellant, the Elkhorn Slough Foundation, and representatives from the California Native Plant Society.

e) The project is located at the confluence of four parcels under separate, private ownerships; the project is located within the easement held by PG&E over these parcels. This portion of the respective properties is undeveloped, but previously disturbed in the early 1940s

to accommodate the existing 230 kV powerline and in the 1960s to accommodate the existing 500kV Moss Landing-Metcalf powerline; the grading activity is limited to contouring a remnant landform from previous grading activities associated with the original installation of the powerline. The proposed grading activities would not have a detrimental effect of the use of the respective properties or interfere with the existing or future uses of the respective properties.

f) The project will impact an area of 895 square feet that contains a mix of vegetation, including a Maritime Chaparral plant community which is designated as Environmentally Sensitive Habitat in the North County Land Use Plan. The project cannot be moved or relocated to avoid impacts, the impacts have been minimized and mitigated to require restoration following grading activities in accordance with Policy 2.3.2.8 of the North County Land Use Plan, and the development is compatible with the long-term maintenance of the resource (Policy 2.3.2.2). See also Finding No. 6 with supporting evidence.

g) The project will affect slopes greater than 25 percent. The slopes cannot be avoided and the criteria to grant a permit for development on slopes has been met in this case. See Finding No. 11 with supporting evidence.

h) The project site is in an area identified in County records as having a low archaeological sensitivity. The property is not within 750 feet of known archaeological resources; therefore, an archaeological report was not required. There is no evidence that any cultural resources would be disturbed, and the potential for inadvertent impacts to cultural resources is limited and will be controlled by application of the County's standard project condition (Condition No. 4) which requires the contractor to stop work if previously unidentified resources are discovered during construction.

i) The three parcels where ground disturbance will take place (Assessor Parcel Numbers 129-281-007-000, 129-181-009-000 and 129-281008-000) contain easements granted to PG&E: Easement 219 O.R. 381, Dated 7-11-1963, APN 129-281-008; Easement 235 O.R. 67, Dated July 30, 1963 APN 129-281-007 and 129-281-009.

j) On May 17, 2021, a revised grading and restoration plan was submitted by PG&E, and again on September 16, 2021, to the HCD-Planning Division addressing the appellant's concerns regarding potential environmental impacts and proposed mitigation measures. Since March 26, 2019, PG&E has consulted with FANS, the California Native Plant Society-Monterey County, neighboring property owners Mr. and Mrs. Pennycook, and with Mark Silverstein of the Elkhorn Slough Foundation. Revisions to the project plans have been made as a result of consultation. The new project plans propose to reduce the cut slope of the habitat restoration area from 2:1(106 cubic yards) to 3:1 (400 cubic yards) by increasing the grading area from approximately

895 square feet to approximately 2,855 square feet. Additionally, revisions to the revegetation plan have been agreed upon.

k) The project was referred to the North County Land Use Advisory Committee (LUAC) for review. The LUAC reviewed the project on April 18, 2018, and voted 7-1 to support the project as proposed. The dissenting vote was based on concern for potential erosion resulting from grading activities. Comments from the LUAC have been considered. The project incorporates Best Management Practices (BMPs) and is conditioned to require erosion control measures during the grading activities (Condition No. 9 and Condition No.10). Furthermore, the project includes restoration of the graded area with contours that would minimize runoff, temporary erosion control devices such as straw rolls and waddles, and replanting of the disturbed area with native plants indicative of Maritime Chaparral. The LUAC noted no comments were made by any neighbor or the public.

l) The application, plans, and supporting materials submitted by the project applicant to Monterey County HCD-Planning for the development found in Project File PLN160131.

3. **FINDING:** **SITE SUITABILITY –** The site is physically suitable for the development proposed. The project has been reviewed for site suitability by HCD-Planning, HCD-Public Works, HCD-Environmental Services, the North County Fire Protection District, and the Monterey County Water Resources Agency. County staff reviewed the application materials and plans, as well as the County's GIS database, to verify that the proposed project on the subject site conforms to the applicable plans, and that the site is suitable for the proposed development. The project will not have an adverse effect on the health, safety, and welfare of persons either residing or working in the neighborhood.

EVIDENCE: a) The following technical reports have been prepared:

- The Biological Assessment (LIB160313) prepared by Arcadis, Walnut Creek, California, August 2, 2016.
- Updated Biological Assessment (to the August 2, 2016 report) prepared by Arcadis, San Francisco, California, February 28, 2018.
- Updated Biological Assessment (to the August 2, 2016 report) prepared by Arcadis, San Francisco, California, October 17, 2018.
- Geotechnical Investigation (LIB180189) prepared Krazan & Associates, Inc., Corona, California, October 11, 2016.
- Habitat Restoration Plan prepared by Arcadis, Concord, California, April 2021 and September 2021.
- Site-specific Erosion and Sediment Control Plan prepared by Arcadis, San Jose, California, May 7, 2021.

b) County staff has independently reviewed these reports and concurs with their conclusions. FANS submitted a letter from Nicole Nedeff,

"Consulting Ecologist," dated December 31, 2018. Ms. Nedeff submitted similar comments to the Zoning Administrator as President of and on behalf of the Monterey Bay Chapter of the California Native Plant Society (See Exhibit I of the March 26, 2019, staff report to the Board of Supervisors.). Response to those comments is included in Finding No. 12 with supporting evidence below.

c) The project planners conducted site inspections on February 27, 2018, and June 20, 2018, to verify that the proposed project conforms to the applicable plans.

d) The properties associated with the project site are developed with single-family residential uses and, in some instances, small-scale agricultural uses. These respective uses are located down slope of the project site. The grading project would not interfere or impact the existing uses of the respective properties or future use of the properties.

e) The application, plans, and supporting materials submitted by the project applicant to Monterey County HCD-Planning for the development are found in Project File PLN160131.

4. **FINDING:** **HEALTH AND SAFETY –** The establishment, maintenance, or operation of the project applied for will not under the circumstances of this particular case be detrimental to the health, safety, peace, morals, comfort, and general welfare of persons residing or working in the neighborhood of such proposed use, or be detrimental or injurious to property and improvements in the neighborhood or to the general welfare of the County.

EVIDENCE: a) The proposed project would not require water or sanitary services. A grading permit is required and said permit will be reviewed to ensure that grading will not destabilize any slopes or other landforms, cause erosion, or cause flooding. The project does not include any structural development or introduce any new use to the location, or intensify the existing use of the location, and is limited to a minor alteration of a remnant landform. There would not be any permanent or future odor, noise, or vibrations associated with the completed grading activities. The Environmental Health Bureau did not impose any conditions for project approval.

b) The project is needed to protect health, life, and safety from threat of fire. Without the proposed grading, the existing overhead utility lines do not provide the vertical clearance between the ground and the lines required by federal standards to minimize risk of loss of life and structures from fires created by electrical transmission lines interacting with vegetation below. The PG&E grading project is limited to 400 cubic yards of grading over an area of 2,885 square feet. This is the minimum amount of grading required to accomplish the goal of meeting minimum federal ground clearance standards between the ground and overhead powerlines. The existing ground clearance is 30 feet. The federal minimum clearance is 36 feet, 4 inches. This project will create a 40-foot ground clearance. The alternative to grading,

which would require replacement of the existing PG&E tower with a new, taller tower, would result in more disturbance than the proposed grading as it would require the use of larger equipment such as cranes resulting in the clearing of or damage to more ESHA.

c) The application, plans, and supporting materials submitted by the project applicant to Monterey County HCD-Planning for the development found in Project File PLN160131.

5. **FINDING:** **NO VIOLATIONS –** The subject property is in compliance with all rules and regulations pertaining to zoning uses, subdivision, and any other applicable provisions of the Monterey County Code. No violations exist on the property.

EVIDENCE: a) Staff conducted site inspections on February 27, 2018, and June 20, 2018, and did not observe any code violations. Staff also researched County records to assess if any violation exists on the subject properties. There are no open code enforcement cases associated with any of the properties related to this project. Thus, the subject properties appear to be in compliance with all codes and policies.

b) The application, plans, and supporting materials submitted by the project applicant to Monterey County HCD-Planning for the development are found in Project File PLN160131.

6. **FINDING:** **DEVELOPMENT WITHIN 100 FEET OF ENVIRONMENTALLY SENSITIVE HABITAT AREAS (ESHA)** The subject project minimizes impact on environmentally sensitive habitat areas in accordance with the applicable goals and policies of the North County Land Use Plan and Implementation Plans.

EVIDENCE: a) The project includes development within environmentally sensitive habitat areas (ESHA). In accordance with the applicable policies of the North County Land Use Plan and the Monterey County Zoning Code (Title 20), a Coastal Development is required and the criteria to grant said permit have been met.

b) The North County Land Use Plan (NCLUP), Policy 2.3 regulates development in and adjacent to Environmentally Sensitive Habitat Areas (ESHA). The project would impact Maritime Chaparral plant communities which are designated as ESHA in the NCLUP. In this case, the development is required to protect health and safety by increasing vertical clearance between the ground and existing powerlines, thereby minimizing the risks for fire generated by sparking powerlines. The development must occur within the proposed location and protection of the habitat is not possible under the circumstances of this case (Policy 2.3.1). Grading and removal of vegetation in ESHA is limited to an area of land under an existing utility transmission line that must be recontoured to provide adequate clearance to enhance public safety and reduce the risk of accidental fire. This is the minimum disturbance necessary (Policy 2.3.2.8).

c) Two biological reports have been prepared for the proposed development (See Finding No. 3, Evidence a) in accordance with North County Land Use Plan Policy 2.3.2.4, and as proposed, conditioned, and mitigated, the project is compatible with the long-term maintenance of the resources (Policy 2.3.2.3). The applicant's biologist has recommended mitigation measures that include restoration of native plants and plant communities following grading activities. The project includes removing any healthy special-status plants from the area, retaining the plants on site in pots, and then replanting these native plants in the same approximate locations after the grading is completed. Non-native and invasive plants would be removed from the grading area and from the Limits of Disturbance (LOD). Local seed stock from the special-status plants would be harvested, germinated in an off-site nursery under the supervision of a qualified biologist, then replanted at the project site during the appropriate time of year. The project proposes to replant a minimum of 180 special-status plants to restore the site after grading is completed.

d) The Mitigation Measures include performance criteria for the vegetation replacement. Performance criteria establish standards for monitoring the success of revegetation. A qualified restoration ecologist will monitor the replacement vegetation quarterly in the first year and on an annual basis for four years thereafter (a five-year monitoring period). Included with the criteria is an Adaptive Management plan that responds to the restoration efforts as weighed against the criteria standards. The success criteria ensure that plants used in the revegetation maintain a minimum 75 percent survivability rate. A one-time clearing of non-native and invasive vegetation spanning 900 linear feet along the access road between the gate and the project restoration area was added to the project scope to enhance restoration efforts.

e) The project planner completed site inspections on February 27, 2018, and June 20, 2018 to verify that the plans reflect conditions on the ground.

f) The application, project plans, and related support materials submitted by the project applicant to Monterey County HCD-Planning for the proposed development found in Project File PLN160131.

7. **FINDING:** **CEQA: Mitigated Negative Declaration –** On the basis of the whole record before the Board of Supervisors, there is no substantial evidence that the proposed project as designed, mitigated and conditioned, will have a significant effect on the environment. A Mitigated Negative Declaration has been prepared that reflects the independent judgment and analysis of the County.

EVIDENCE: a) Pursuant to Public Resources Code Section 21080(c) and California Environmental Quality Act (CEQA) Guidelines Section 15064, the lead agency shall prepare a Mitigated Negative Declaration when there is no substantial evidence in light of the whole record that the project,

as designed and mitigated, may have a significant effect on the environment.

b) Monterey County HCD-Planning Division prepared an Initial Study pursuant to CEQA Guidelines Section 15063. The Initial Study is on file in the offices of HCD-Planning (PLN160131) and attached to the September 28, 2021, Board of Supervisors staff report as Exhibit E-2 and is hereby incorporated by reference.

c) The Initial Study analyzed the whole of the project, including the limit of disturbance ("LOD") which is approximately 6,880 square feet, including the specific grading location as well as the area utilized for stockpiling reserved topsoil and plants, maneuvering of equipment, and the redistribution of the cut (graded soils) on an existing service road. As shown in the Initial Study, the project would not have a significant effect on the environment with the incorporation of the mitigation measures. Accordingly, staff prepared a Mitigated Negative Declaration (MND).

d) Pursuant to CEQA Guidelines Section 15105, the Initial Study was circulated for public review from September 5, 2018 through October 5, 2018. No public comments were submitted during this review period, and no outside agency comments were received during the 30-day review period. Public comments submitted after the close of the public review period were provided to the Zoning Administrator and mitigation measures were revised as a result. See Finding No. 8.

e) Issues that were analyzed in the Initial Study include: aesthetics, agriculture and forest resources, air quality, biological resources, cultural resources, energy, geology/soils, greenhouse gas emissions, hazards/hazardous materials, hydrology/water quality, land use/planning, mineral resources, noise, population/housing, public services, recreation, transportation/traffic, tribal cultural resources, utility/service systems, and wildfires. The project will have no impacts or less than significant impacts on all resources other than biology. PG&E proposes a restoration and revegetation of the site following grading activities and has agreed to mitigations that will reduce impacts to a level of insignificance. These mitigations have been included as conditions of project approval.

f) The applicant proposed mitigation for biological resources as part of the project including removing and stockpiling the topsoil from the grading area and redistributing the topsoil over the disturbed area at the conclusion of the grading activities. Revegetation will include replanting a total of at least 180 sensitive plants as mitigation for temporary removal of any healthy plants including Pajaro Manzanita, Hooker's Manzantia, and Eastwood Golden bush. The redistributed topsoil would also be reseeded with local seed stock to promote the recovery of the disturbed area with native plant species such as monkey flower and various shrub typically associated with Maritime Chaparral. Straw mulch or a loose-weave erosion control product

would blanket disturbed areas to prevent erosion of the topsoil and seed stock, and to promote the establishment of the relocated special-status plants.

g) Less than significant impacts to air quality, geology and soils, greenhouse gas emissions, and noise levels were identified. All potential impacts have been addressed through implementation of existing policies and regulations, and where appropriate, through conditions of approval.

h) Cumulative effects of past, present, and future projects have been considered. The incremental effects of this project are not cumulatively considerable. Effects of the project are limited to 2,855 square feet of Maritime Chaparral plant community in the Coastal Zone of North Monterey County. On the four properties included in this permit alone, there is approximately 109,386 square feet of Maritime Chaparral. There are many more acres of Chaparral in the surrounding area. The proposed Limit of Disturbance (LOD) for this project is approximately 6,042 square feet, or approximately 6 percent of this ESHA habitat over the four parcels, while the specific grading location accounts for approximately 2,855 square feet, or approximately 2.6 percent of this ESHA. Additionally, there is no cumulative impact from the effect of this project combined with past, present, and reasonably probable future projects of this type in the Elkhorn Slough vicinity. The limited scope of this project supports a conclusion that cumulative effects are negligible. In addition, the project has been designed and mitigated to require replacement of the affected Chaparral community such that there will be no net loss of habitat. Applicant testimony at the October 11, 2018, Zoning Administrator hearing stated that grading activities are rarely conducted to address ground clearance issues. PG&E has testified that there are no other projects involving grading for vertical clearance between the ground and powerlines in North Monterey County. Thus, there is no cumulative impact from past, present, or reasonably probable future projects of this type within the geographic area. PG&E typically raises the tower height to increase ground clearance. In this instance, because of the line capacity and the limited area needing to be addressed, and increase in the tower height is not reasonable. The applicant has also demonstrated that increasing the tower height by replacing the towers with a taller unit would impact more sensitive habitat than the proposed project due to the need for access, foundations, and heavy equipment. Additionally, there is not a cumulative impact of tree removal of PG&E projects in the Elkhorn Slough. The Elkhorn Slough area is the relevant area for cumulative impact analysis, as this proposed grading project is located approximately two miles east of the Elkhorn Slough, within the Elkhorn Highlands. Proposed tree removal for this project is limited to juvenile trees typically about one inch in diameter. The other tree

removal projects cited in the appeal are wholly different than the project here. Those projects involved mature trees that are interfering with the buried natural gas lines thus creating a public safety hazard. The scope and purpose of that activity is explicitly tree removal to protect buried natural gas pipelines. By contrast, the scope of this subject permit is a grading activity, there is no similarity of project types to gauge cumulative impacts other than the fact that they are both carried out by PG&E. Additionally, the removal of seedlings in the grading project are incidental to the objective of increasing the ground clearance under the powerline. Many of the seedlings are oak, but others to be removed are Eucalyptus, a non-native tree. The project is consistent with land use regulations protecting biology in the area, past, present, and future projects of this type and magnitude would not have cumulative significant effects on sensitive habitat in the Elkhorn Slough area.

i) The mitigation measures associated with this project are sufficient to minimize impacts to biological resources to a less than significant level. The project would remove non-native and invasive plants from the grading area, other areas impacted by staging, access, and storage of materials, and along the access road. Restoration measures include salvaging (removing) special-status plants from the grading area and then replanting these plants in the approximate locations from which they were removed once grading activities are completed. The project includes harvesting local seed stock from the special-status plants, germinating the seeds in an off-site nursery by a qualified biologist, and planting the seedlings at the project site during the appropriate times of year at the direction of a qualified biologist. The extent of these restoration measures renders any project-related impacts to less than significant.

j) Evidence received and considered includes the project application materials, the Biological Assessment (LIB160313), revised Biological Assessment (PLN180398), Habitat Restoration Plan, Site-specific Erosion and Sediment Control Plan, available County resources (e.g., Monterey County Geographic Information System), staff reports that reflect the County's independent judgment, and information and testimony presented during public hearings. These documents are on file in HCD-Planning (PLN160131) and are hereby incorporated herein by reference.

k) Staff conducted site inspections on February 27, 2018, and June 20, 2018, to verify that the site is suitable for the scope and intent of this project.

l) Written comments were received after the close the public review period. These comments have been reviewed and revisions to the project have been agreed upon to address those comments.

m) Revisions to the IS/MND have been made since it was circulated for public comment. The proposed revisions are shown in strike out and

underline. Revisions proposed to the MND were made in response to comments received. The revisions clarify and amplify the analysis within the IS/MND and do not alter the conclusions. No new impacts have been identified beyond those that were disclosed in the IS/MND. Clarifications and amplifications include updating the project description as a result of changes made to address the appeal of the Zoning Administrators decision (minor increases in the grading area, bolstered revegetation plan, and removal of invasive species), clarification of the analysis supporting conclusions that the project will not have a significant effect on biological resources, and replacement of mitigation measures with more effective measures (See Finding 8).

n) The application, project plans, and related support materials submitted by the project applicant to Monterey County HCD-Planning for the proposed development found in Project File PLN160131.

o) Monterey County HCD-Planning, located at 1441 Schilling Place, 2nd Floor, Salinas, California, 93901, is the custodian of documents and other materials that constitute the record of proceedings upon which the decision to adopt the negative declaration is based.

8. **FINDING:** **REVISED MITIGATION MEASURES –** The County, on the basis of the whole record, determined that revised Mitigation Measures would be equal or more effective at reducing impacts to biological resources.

EVIDENCE: a) Mitigation language in the Initial Study prepared for the project concluded that the project was mitigated by design through incorporation of vegetation and plant restoration activities that were proposed to be implemented by PG&E as part of the project. Based on a comment letter received prior to the Zoning Administrator hearing, the mitigation was clarified, amplified, and made more effective by the requirement that a mitigation measure be included as a condition approval. The mitigation includes replanting/revegetation of the site, establishes performance criteria, and increasing the monitoring period for revegetation success. Other habitat enhancements include removing non-native and invasive plants within the Limits of Disturbance (LOD), including any non-native trees with a diameter at breast height (DBH) of less than six (6) inches. Local seed stock is being germinated in an off-site greenhouse and planted at the project site at the appropriate time of year under the direction of a qualified biologist. A one-time clearing of non-native and invasive vegetation spanning 900 linear feet along the access road between the gate and the project restoration area was added to the project to further enhance restoration efforts.

b) Success criteria have been added to the Mitigation Measures. The updated Biological Assessment (Revised October 2018, LIB180398) included the requirement to monitor restoration efforts over a three-year period. The proposed Habitat Restoration Plan (September 2021) has increased monitoring to a five-year period to ensure the success

rate of approximately 180 replanted special-status plants. Inspections of the grading site would be conducted twice yearly by a qualified biologist for identification and removal of invasive weed cover and to evaluate erosion control and soil stabilization measures. Corrective measures would be implemented as needed. Inspections would be conducted annually to evaluate the quantity of native plant cover and quantity of special-status species. A Summary Report must be completed at the end of each year and submitted to the HCD documenting the monitoring results. An Adaptive Management Plan is included with the Success Criteria that allows the restoration efforts to respond to local conditions, such as increased weeding or non-native plant removal or planting additional special-status plants, if needed to meet the Success Criteria benchmarks. This plan would be implemented as needed to ensure that the recovery of the disturbed area was meeting the targets established as described in the Biological Assessment (Revised October 2018, LIB180398) and the Habitat Restoration Plan (April 2021 and September 2021).

c) The revised mitigation measure is more effective at minimizing impacts to biological resource than the original mitigation language because it includes additional details and success criteria and clarifies that these requirements are conditions of project approval. The conclusions of the Initial Study have not changed, and no new impacts will result from the revised mitigations. Therefore, the Initial Study/Mitigated Negative Declaration does not require recirculation. This determination is consistent with CEQA Guideline Section 15074.1.

d) The application, project plans, and related support materials submitted by the project applicant to Monterey County HCD-Planning for the proposed development found in Project File PLN160131.

e) Monterey County HCD-Planning Division, located at 1441 Schilling Place, 2nd Floor, Salinas, California, 93901, is the custodian of documents and other materials that constitute the record of proceedings upon which the decision to adopt the negative declaration is based.

9. **FINDING:** **RECIRCULATION NOT REQUIRED –** No new significant information has been added to the revised draft initial study since circulation of the mitigated negative declaration (MND) that would require recirculation of the MND. Per section 15073.5 of the CEQA Guidelines, the County of Monterey is required to recirculate an MND when the document must be substantially revised after public notice is given of the availability of the MND for public review pursuant to section 15072 of the CEQA Guidelines, but prior to its adoption.

A "substantial revision" requiring recirculation may include, for example, a disclosure showing:

1) A new, avoidable significant effect, and mitigation measures or project revisions to reduce the effect to less than significant; or
2) The lead agency determines that the proposed mitigation measures or project revisions will not reduce potential effects to less than significant, and new measures or revisions must be required.

No such substantial revisions have been made or added.

EVIDENCE: a) Per section 15073.5(c) of the CEQA Guidelines, recirculation of the MND is not required where the new information merely clarifies, amplifies, or makes minor modifications to an adequate MND; or when new project revisions are added which do not result in new significant impacts. The information provided, and revisions to the draft initial study and proposed project since the public notice of availability of the MND, meet those criteria.

b) County staff initially filed a draft initial study and MND with the County Clerk on September 5, 2021, for public review. However, receipt of initial comments four days after the 30-day review period ended resulted in County staff clarifying and amplifying the initial study on November 29, 2018, and again in August of 2021. The Board of Supervisors will consider the revised initial study and MND, along with the Combined Development Permit, at a duly noticed public hearing held on September 28, 2021. The revisions incorporated in the revised initial study provide clarification and additional detail. Minor revisions were made to the draft mitigation measures to strengthen and clarify restoration efforts. These changes are equal to or more effective and have been agreed to by the applicant.

Revisions to the IS/MND are primarily focused on the project description, environmental setting, biological resources discussion, and Mandatory Finding Section of the document. Additionally, two sections have been added since the original circulation to address impacts related to Energy and Wildfire. No new significant effects were identified and no substantial increase in the severity of impacts previously considered have been found. The changes clarify and amplify the analysis leading to the same conclusions.

For these reasons, pursuant to section 15073.5(b) of the CEQA Guidelines, recirculation of the IS/MND is not required.

c) See also Finding Nos. 2, 4, 6, 7, 8 and 12, and supporting evidence.

10. **FINDING:** **PUBLIC ACCESS** – The project is in conformance with the public access and recreation policies of the Coastal Act (specifically Chapter 3 of the Coastal Act of 1976, commencing with Section 30200 of the Public Resources Code) and Local Coastal Program, and does not interfere with any form of historic public use or trust rights.

EVIDENCE:

a) No access is required as part of the project as no substantial adverse impact on access, either individually or cumulatively, as described in MCC section 20.146.130 of the CIP can be demonstrated.

b) No evidence has been submitted or found showing the existence of historic public use or trust rights over this property.

c) The subject property is not described as an area where the Local Coastal Program requires physical public access. The project is located approximately 2 miles east of the Elkhorn Slough and 6 miles east of the Pacific Ocean and is not in proximity to access to the coast or slough (North County Coastal Land Use Plan). Additionally, the project site is not near any existing or proposed public trails as described in the North County Land Use Plan (North County General Plan Shoreline Access/Trails-Fig. 6).

d) Staff conducted site inspections on February 27, 2018 and June 20, 2018 to verify that the proposed project would not impact public access.

e) The application, project plans, and related support materials submitted by the project applicant to Monterey County HCD-Planning for the proposed development found in Project File PLN60131.

11. **FINDING:** **DEVELOPMENT ON SLOPES EXCEEDING 25 PERCENT –** There is no feasible alternative which would allow grading on slopes of less than 25 percent.

EVIDENCE:

a) In accordance with applicable policies of the North County Coastal Land Use Plan and the Monterey County Zoning Code (Title 20, Parts 1 and 2), a coastal development permit is required for development on slopes over 25 percent, and the criteria to grant said permit have been met.

b) The project includes an application for grading to increase the vertical clearance between the ground and the existing overhead powerline. There is no alternative location for this project. One small section of ground (the knoll) located under existing powerlines is the only area in the vicinity that does not meet recommended clearances. An increase in this vertical clearance, presently 30 ½ feet, is required to comply with Federal safety guidelines of 36 feet, 4 inches so that public safety can be enhanced, specifically regarding fire prevention during strong wind events. The standard established by PG&E is 40 feet; the grading activity would increase the vertical distance from 30 ½ feet to 40 feet.

c) The project planners conducted site inspections on February 27, 2018 and June 20, 2018 to verify the subject grading on slopes exceeding 25 percent is in accordance with the applicable goals and policies of the applicable land use plan and zoning codes.

d) A geotechnical investigation and evaluation prepared by Krazan & Associates, Inc. (LIB180189) for the project determined that the site is suitable for the proposed grading (cut). The results of the study indicate there are no adverse geotechnical hazards (such as liquefaction, land

sliding, expansive soils) which would preclude the grading activities of this project or that the proposed grading activities would cause or exacerbate any geotechnical hazards. The grading activities would eliminate an existing cut-slope that is in retreat and prone to erosion while increasing the vertical clearance between the ground and the existing overhead powerline. Furthermore, the redistributed topsoil would be reseeded with local native seed stock and the recovered special-status plants replanted; this restored area would be blanketed with a mulch or a loose-fiber mat to prevent erosion while the disturbed area regenerates vegetative cover.

e) As proposed, the subject project minimizes development on slopes exceeding 25 percent in accordance with the applicable goals and policies of the North County Land Use Plan. The project planners conducted site inspections on February 27, 2018 and June 20, 2018 to analyze possible development alternatives and to verify the subject project minimizes development on slopes exceeding 25 percent.

f) The application, plans and supporting materials submitted by the project applicant to Monterey County HCD-Planning for the proposed development found in Project File PLN160131.

12. **FINDING:** **APPEAL** – Friends, Artists & Neighbors of Elkhorn Slough (FANS) ("Appellant") timely filed an appeal from the Zoning Administrator's decision adopting the MND and approving the project. The Appellant contends that there was a lack of fair or impartial hearing, and the Zoning Administrator's decision was not supported by the evidence and is contrary to law. Upon consideration of the documentary information, the staff reports, the oral and written testimony, and all other evidence presented before the Board of Supervisors, the Board responds as follows to the Appellants' contentions:

EVIDENCE: a) *Appellant's Contention 1: "Proposed Development is not Allowed in [environmentally sensitive habitat areas] ESHA under the [Local Coastal Plan] LCP [Part 2, North County]"*

Response 1: The project is consistent with the North County Land Use Plan as described in Finding No. 2 with supporting evidence and as further explained herein. The North County Land Use Plan Policy 2.3.2.1 states that: *"With the exception of resource dependent uses, all development, including vegetation removal, excavation, grading, filling, and the construction of roads and structures, shall be prohibited in the following environmentally sensitive habitat areas: riparian corridors, wetlands, dunes, sites of known rare or endangered species of plants…"* The project includes maintenance of electrical powerlines installed in the 1940s and 1960s. The project is proposed in order to comply with Federal safety standards for vertical clearance between the ground and existing powerlines to minimize fire risks and protect human health and safety. There are no new uses proposed and the development cannot be relocated outside of sensitive

habitat. For these reasons, North County Land Use Plan (NCLUP) policies allowing development within or adjacent to sensitive habitat apply. Two biological reports have been prepared for the development and recommended mitigations to protect and restore habitat have been incorporated (NCLUP Policy 2.3.2.5). Land disturbance is limited to the amount necessary to increase vertical clearance (NCLUP Policy 2.3.2.8). The habitat will be restored following grading activities to ensure that the development is compatible with the long-term maintenance of the habitat (NCLUP Policy 2.3.2.2). Non-native plant species will be removed from the site (NCLUP Policy 2.3.2.9). Therefore, the project is consistent with the goals and objectives of the North County Land Use Plan section 2.3.1.

b) Appellant's Contention 2: *"Mitigations are inadequate and do not mitigate impacts to less than significant."*
Response 2: The Initial Study/Mitigated Negative Declaration (MND) identified potential impacts from the grading activities on sensitive biological plant communities and mitigated the impacts to a less than significant level (See also Finding No. 7 with supporting evidence). Mitigation measures were applied requiring avoidance of impacts to the extent feasible within the Limits of Disturbance (MM3), collection and germination of local seed stock or cuttings from special-status plants species for later replanting at the site (MM1); removal and control of invasive plant species (MM2); and a mitigation measure was added by the Zoning Administrator based on comments received, that require monitoring and adaptive management of the plant restoration for a five year period (MM4).
Together these mitigation measures achieve a no net decrease in special-status plants or plant communities in the vicinity. PG&E proposes to replant a minimum of 180 special-status plants once grading activities are complete. A one-time clearing of non-native and invasive vegetation spanning 900 linear feet along the access road between the gate and the project restoration area was also added to the project to further enhance restoration efforts. The project is small in nature (2,855 square feet of area graded for clearance and a total of less than 7,000 square feet for access and staging) and vegetation will be restored following completion of the project. With these mitigation measures in place, the project will have a less than significant impact. There is no substantial evidence supporting a fair argument of an environmental impact. FANS submitted a letter dated December 31, 2018, from Nicole Nedeff, "Consulting Ecologist," as an expert. However, Ms. Nedeff submitted comments to the Zoning Administrator as an advocate for the Monterey Bay Chapter of the California Native Plant Society listing concerns about the project. Nonetheless, revisions to the project revegetation plan and mitigation

measures have been incorporated to address contentions raised. As revised, the proposed mitigation measures will ensure that impacts are mitigated.

c) Appellant Contention 3: "*Inadequate & Improper Cumulative Impact Analysis."* The Appellant contends that cumulative impacts with similar projects or PG&E projects were not considered when Staff determined that the impacts associated with this grading project were judged to be less than significant. The Appellant contends that this particular project should have been considered as a whole with other projects in the North County, including projects in Prunedale, Aromas, and Pajaro.
Response 3: Cumulative impacts have been considered. The PG&E project involves a small amount of grading and restoration of the Maritime Chaparral following grading, so that there will be no net loss in habitat. The appeal refers to tree and brush removal from projects performed by PG&E in 2015 and other projects located in Prunedale, Pajaro, Elkhorn, and Aromas. This geographic scope for cumulative analysis should be limited to the North County coastal areas. Given that impacts are limited to Maritime Chaparral communities in the North County coastal areas, the proper geographic scope would be the area in the North County Land Use Plan, coastal zone, east of Elkhorn Road, west of San Miguel Canyon Road, South of Hall Road, and North of Castroville Boulevard (also sometimes referred to as the Elkhorn Highlands). As can been seen in aerial imagery, this geographic area contains the most significant portions of undisturbed and interconnected Maritime Chaparral communities in the planning area. Aromas, Pajaro, and Prunedale are not included in this scope. Within the Elkhorn Highlands geographic area, there are hundreds of acres of Chaparral plant community. This project is limited to 2,855 square feet of grading; approximately 0.07 percent of an acre, thus resulting in less than a cumulatively considerable incremental effect. Moreover, the disturbed area will be restored following grading resulting in no net loss of habitat. The proposed Habitat Restoration Plan includes replanting at least 180 three special-status plants (Pajaro Manzanita, Hooker's Manzanita, and Eastwood's Goldenbush) to further enhance the restoration area. PG&E has no plans to carryout similar projects in the North Monterey County area at this time. There is also no cumulative impact from this project's tree removal combined with past, present, and reasonably probable tree removal by PG&E in the Elkhorn Slough area. This project's proposed tree removal is limited to juvenile trees typically about one inch in diameter. The other tree removal projects cited in the appeal are different than the project here, in terms of the age and size of the trees, the quantity of trees, and the type of trees removed. The projects cited by Appellant involved mature trees that are interfering with the buried natural gas lines, thus creating a public safety hazard.

That project is being reviewed under separate permit. The scope and purpose of that activity is explicitly tree removal to protect buried natural gas pipelines. By contrast, the scope of this subject permit is a grading activity. There is no similarity of project types other than the fact that they are all carried out by PG&E. Additionally, the removal of seedlings in the grading project are incidental to the objective of increasing the ground clearance under the powerline. Many of the seedlings are oak, but others to be removed are Eucalyptus, a nonnative tree. This project was also found to be consistent with North County Land Use Plan policies including being compatible with the long-term maintenance of sensitive biological resources. As such, past, present, and future projects of the same scope in the vicinity would not result in a cumulatively considerable impact.

d) *Appellant Contention 4: "Procedural problems with the County Review. Incorrect and Inaccurate Addresses and Locations. No Mention of the Coastal Zone."*
Response 4: Reports, and information provided to the public properly and adequately describe the project, project location, and other legally required information. Notice of a Land Use Advisory Committee meeting, Notice of Intent to adopt a Mitigated Negative Declaration pursuant to CEQA requirements, and notice of hearings before the Zoning Administrator and Board of Supervisors have been provided. The notices each included information required by law including a general description of the project location. There is no official address for the site where the project activities will occur, so the notices provided the nearest cross streets and addresses. The MND prepared for the project clearly describes the project as being located in the North County Land Use Plan area of the Coastal Zone and the project entitlements have consistently been referred to as "Coastal Development Permits." Staff has furnished the appellant with information upon request and has not withheld any applicant submitted information during the course of review of this project.

13. **FINDING:** **WAIVER OF STAMPED ENVELOPES –** The County of Monterey reserves the right to waive fees associated with the notice of appeal.

EVIDENCE: a) The appellant declined to provide stamped envelopes for notice to the property owners within 300 feet of the project site and filed a fee waiver request protesting this requirement.

b) Pursuant to Section 20.86.030.D of the Monterey County Zoning Code (Title 20) and the Coastal Act, local agencies cannot require appeal fees. If a fee is applied, the Coastal Act allows parties to appeal directly to the Coastal Commission. No appeal fee was required; however, appellant filed a request to waive the requirement/cost for providing pre-addressed, stamped envelopes. The County hereby grants the waiver of postage to be provided by the appellant.

14. **FINDING:** **APPEALABILITY –** The decision on this project may be appealed to the California Coastal Commission.

EVIDENCE: California Coastal Commission: Pursuant to Section 20.86.080.A of the Monterey County Zoning Code (Title 20), the project is subject to appeal by/to the California Coastal Commission because it involves development that is permitted in the underlying zone as a conditional use.

DECISION

NOW, THEREFORE BE IT RESOLVED, based on the above findings and evidence and the administrative record, that the Board of Supervisors does hereby:

A. Certify that the foregoing recitals and findings are true and correct;
B. Acknowledge changes to the project agreed upon by the applicant (PG&E) to resolve contentions raised in the appeal of the Zoning Administrator's approval by Friends, Artists and Neighbors of the Elkhorn Slough (FANS);
C. Adopt the Mitigated Negative Declaration;
D. Approve a Combined Development Permit consisting of:
    a. Coastal Development Permit to allow grading approximately 400 cubic yards over an area of approximately 2,855 square feet within 100 feet of environmentally sensitive habitat; and
    b. Coastal Development Permit to allow grading on slopes in excess of 25 percent;
E. Adopt Mitigation Monitoring and Reporting Program; and
F. Grant FANS' request to waive provision of stamped envelopes.

The approval shall be in general conformance with the attached plans, conditions, and mitigation measures all being attached hereto and incorporated herein by reference.

PASSED AND ADOPTED upon motion of Supervisor _____, seconded by Supervisor _____, and carried this 28th day of September 2021, by the following vote to wit:

AYES:
NOES:
ABSENT:
ABSTAIN:

I, Valerie Ralph, Clerk of the Board of Supervisors of the County of Monterey, State of California, hereby certify that the foregoing is a true copy of an original order of said Board of Supervisors duly made and entered in the minutes thereof Minute Book _____ for the meeting on September 28, 2021.

Date:
File Number:

Valerie Ralph, Clerk of the Board of Supervisors
County of Monterey, State of California

By_____
Deputy

Monterey County HCD Planning

DRAFT Conditions of Approval/Implementation Plan/Mitigation Monitoring and Reporting Plan

PLN160131

1. PD001 - SPECIFIC USES ONLY

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: This Combined Development Permit (PLN160131) allows 400 cubic yards of grading to increase the vertical clearance between the ground and overhead power line within 100 feet of environmentally sensitive habitat and on slopes greater than 25 percent. The grading covers approximately 2,855 sq. ft. at the confluence of 4 separate parcels. The property is located at 490 & 500 Strawberry Canyon Rd, and 95 & 123 Tucker Rd. (Assessor's Parcel Number 129-281-007-000, 129-281-009-000, and 129-281-008-000, and 129-281-017-000), North County Coastal Area Plan/Land Use Plan. This permit was approved in accordance with County ordinances and land use regulations subject to the terms and conditions described in the project file. Neither the uses nor the construction allowed by this permit shall commence unless and until all of the conditions of this permit are met to the satisfaction of the HCD Chief of Planning. Any use or construction not in substantial conformance with the terms and conditions of this permit is a violation of County regulations and may result in modification or revocation of this permit and subsequent legal action. No use or construction other than that specified by this permit is allowed unless additional permits are approved by the appropriate authorities. To the extent that the County has delegated any condition compliance or mitigation monitoring to the Monterey County Water Resources Agency, the Water Resources Agency shall provide all information requested by the County and the County shall bear ultimate responsibility to ensure that conditions and mitigation measures are properly fulfilled. (HCD - Planning)

Compliance or Monitoring Action to be Performed: The Owner/Applicant shall adhere to conditions and uses specified in the permit on an ongoing basis unless otherwise stated.

2. PD002 - NOTICE PERMIT APPROVAL

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: The applicant shall record a Permit Approval Notice. This notice shall state:
"A Combined Development Permit (Resolution Number _____) was approved by the Board of Supervisors for Assessor's Parcel Numbers 129-281-007-000 & 129-281-009-000 and 129-281-008-000 & 129-281-014-000 on September 28, 2021. The permit was granted subject to 17 conditions of approval which run with the land. A copy of the permit is on file with Monterey County HCD - Planning."

Proof of recordation of this notice shall be furnished to the HCD Chief of Planning prior to issuance of grading and building permits, Certificates of Compliance, or commencement of use, whichever occurs first and as applicable. (HCD - Planning)

Compliance or Monitoring Action to be Performed: Prior to the issuance of grading and building permits, certificates of compliance, or commencement of use, whichever occurs first and as applicable, the Owner/Applicant shall provide proof of recordation of this notice to the HCD - Planning.

3. CC01 INDEMNIFICATION AGREEMENT

Responsible Department: County Counsel

Condition/Mitigation Monitoring Measure: The property owner agrees as a condition and in consideration of approval of this discretionary development permit that it will, pursuant to agreement and/or statutory provisions as applicable, including but not limited to Government Code Section 66474.9, defend, indemnify and hold harmless the County of Monterey or its agents, officers and employees from any claim, action or proceeding against the County or its agents, officers or employees to attack, set aside, void or annul this approval, which action is brought within the time period provided for under law, including but not limited to, Government Code Section 66499.37, as applicable. The property owner will reimburse the County for any court costs and attorney's fees which the County may be required by a court to pay as a result of such action. The County may, at its sole discretion, participate in the defense of such action; but such participation shall not relieve applicant of his/her/its obligations under this condition. An agreement to this effect shall be recorded upon demand of County Counsel or concurrent with the issuance of building permits, use of property, filing of the final map, recordation of the certificates of compliance whichever occurs first and as applicable. The County shall promptly notify the property owner of any such claim, action or proceeding and the County shall cooperate fully in the defense thereof. If the County fails to promptly notify the property owner of any such claim, action or proceeding or fails to cooperate fully in the defense thereof, the property owner shall not thereafter be responsible to defend, indemnify or hold the County harmless. (County Counsel)

Compliance or Monitoring Action to be Performed: Upon demand of County Counsel or concurrent with the issuance of building permits, use of the property, recording of the final/parcel map, or recordation of Certificates of Compliance, whichever occurs first and as applicable, the Owner/Applicant shall submit a signed and notarized Indemnification Agreement to the County Counsel for review and signature by the County.

Proof of recordation of the Indemnification Agreement, as outlined, shall be submitted to the Office of County Counsel.

4. PD003(A) - CULTURAL RESOURCES NEGATIVE ARCHAEOLOGICAL REPORT

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: If, during the course of construction, cultural, archaeological, historical or paleontological resources are uncovered at the site (surface or subsurface resources) work shall be halted immediately within 50 meters (165 feet) of the find until a qualified professional archaeologist can evaluate it. Monterey County HCD - Planning and a qualified archaeologist (i.e., an archaeologist registered with the Register of Professional Archaeologists) shall be immediately contacted by the responsible individual present on-site. When contacted, the project planner and the archaeologist shall immediately visit the site to determine the extent of the resources and to develop proper mitigation measures required for recovery.
(HCD - Planning)

Compliance or Monitoring Action to be Performed: The Owner/Applicant shall adhere to this condition on an on-going basis.

Prior to the issuance of grading or building permits and/or prior to the recordation of the final/parcel map, whichever occurs first, the Owner/Applicant shall include requirements of this condition as a note on all grading and building plans. The note shall state "Stop work within 50 meters (165 feet) of uncovered resource and contact Monterey County HCD - Planning and a qualified archaeologist immediately if cultural, archaeological, historical or paleontological resources are uncovered."

When contacted, the project planner and the archaeologist shall immediately visit the site to determine the extent of the resources and to develop proper mitigation measures required for the discovery.

5. PD050 - RAPTOR/MIGRATORY BIRD NESTING

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: Any tree removal activity that occurs during the typical bird nesting season (February 22-August 1), the County of Monterey shall require that the project applicant retain a County qualified biologist to perform a nest survey in order to determine if any active raptor or migratory bird nests occur within the project site or within 300 feet of proposed tree removal activity. During the typical nesting season, the survey shall be conducted no more than 30 days prior to ground disturbance or tree removal. If nesting birds are found on the project site, an appropriate buffer plan shall be established by the project biologist. (HCD - Planning)

Compliance or Monitoring Action to be Performed: No more than 30 days prior to ground disturbance or tree removal, the Owner/Applicant/Tree Removal Contractor shall submit to HCD-Planning a nest survey prepare by a County qualified biologist to determine if any active raptor or migratory bird nests occur within the project site or immediate vicinity.

6. PD049 - TREE AND ROOT PROTECTION

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: Prior to grading or beginning any tree removal, trees which are located close to trees approved for removal shall be protected from inadvertent damage from equipment or tree removal activity by fencing off the canopy drip-lines and/or critical root zones (whichever is greater) with protective materials. Any tree protection measures recommended by a County-approved tree consultant, in addition to the standard condition, shall be implemented. (HCD - Planning)

Compliance or Monitoring Action to be Performed: Prior to grading or tree removal, the Owner/Applicant/Tree Removal Contractor shall submit evidence of tree protection to HCD-Planning for review and approval.

After construction or tree removal, the Owner/Applicant/Tree Removal Contractor shall submit photos of the trees on the property to HCD-Planning to document that the tree protection has been successful or if follow-up remediation measures or additional permits are required.

7. PD033 -RESTORATION NATURAL MATERIALS

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: Upon completion of the grading, the area disturbed shall be restored in compliance with the Performance Criteria described in the Habitat Restoration Plan dated April 2021 and September 28, 2021, subject to the approval of the HCD Chief of Planning.

Compliance or Monitoring Action to be Performed: Prior to Final Inspection, the Owner/Applicant shall submit evidence that the restoration has been completed in compliance to approved plans.

8. PD006(A) - CONDITION COMPLIANCE FEE

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: The Owner/Applicant shall pay the Condition Compliance fee, as set forth in the fee schedule adopted by the Board of Supervisors, for the staff time required to satisfy conditions of approval. The fee in effect at the time of payment shall be paid prior to clearing any conditions of approval.

Compliance or Monitoring Action to be Performed: Prior to clearance of conditions, the Owner/Applicant shall pay the Condition Compliance fee, as set forth in the fee schedule adopted by the Board of Supervisors.

9. GRADING PLAN

Responsible Department: Environmental Services

Condition/Mitigation Monitoring Measure: The applicant shall submit a grading plan that includes contour intervals and cross-sections that identify the existing grade, proposed grade, and the extent of any proposed excavation and/or fill. (HCD-Environmental Services)

Compliance or Monitoring Action to be Performed: Prior to issuance of any grading or building permits, the applicant shall submit a grading plan to HCD-Environmental Services for review and approval.

10. EROSION CONTROL PLAN

Responsible Department: Environmental Services

Condition/Mitigation Monitoring Measure: The applicant shall submit an erosion control plan in conformance with the requirements of Monterey County Code Chapter 16.12. The erosion control plan shall include a construction entrance, concrete washout, stockpile area(s), material storage area(s), portable sanitation facilities and waste collection area(s), as applicable. (HCD-Environmental Services)

Compliance or Monitoring Action to be Performed: Prior to issuance of any grading or building permits, the applicant shall submit an erosion control plan to HCD-Environmental Services for review and approval.

11. INSPECTION-PRIOR TO LAND DISTURBANCE

Responsible Department: Environmental Services

Condition/Mitigation Monitoring Measure: The applicant shall schedule an inspection with HCD-Environmental Services to ensure all necessary sediment controls are in place and the project is compliant with Monterey County regulations. This inspection requirement shall be noted on the Erosion Control Plan. (HCD – Environmental Services)

Compliance or Monitoring Action to be Performed: Prior to commencement of any land disturbance, the owner/applicant shall schedule an inspection with HCD-Environmental Services.

12. INSPECTION-FOLLOWING ACTIVE CONSTRUCTION

Responsible Department: Environmental Services

Condition/Mitigation Monitoring Measure: The applicant shall schedule an inspection with HCD-Environmental Services to ensure all disturbed areas have been stabilized and all temporary erosion and sediment control measures that are no longer needed have been removed. This inspection requirement shall be noted on the Erosion Control Plan. (HCD – Environmental Services)

Compliance or Monitoring Action to be Performed: Prior to final inspection, the owner/applicant shall schedule an inspection with HCD-Environmental Services.

13. MM1-COLLECTION OF LOCAL SEED STOCK

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: The applicant shall have a qualified biologist or ecologist collect special-status seedlings and cuttings that will be harvested and salvaged from the project site. The cuttings shall be grown in an off-site nursery, and monitored on a monthly basis until replanted at the site. In addition to the salvaged seedlings and cuttings, the applicant shall have a minimum of 180 special-status seedlings grown at an off-site nursery consisting of 20 hooker's manzanita, 30 pajaro manzanita, 80 eastwood's goldenbush, 25 black sage, and 25 bush monkeyflower planted under the supervision of the qualified biologist or ecologist at the site following completion of grading activities which are planned to occur during Fall 2021 as identified in the Habitat Restoration Plan (April 2021 and September 2021).

Compliance or Monitoring Action to be Performed: Mitigation Measure Monitoring Action No. 1a: Prior to the issuance of grading permits, the applicant shall provide to HCD-Planning information identifying the nursery or greenhouse where the seed stock is propagated and the name of the biologist or ecologist that will supervise the seed stock germination and replanting efforts.

Mitigation Measure Monitoring Action No. 1b: Prior to final of grading permits, the supervising biologist or ecologist shall provide to HCD-Planning evidence that a minimum of 180 special-status seedlings have been planted at the project site consisting of 20 hooker's manzanita, 30 pajaro manzanita, 80 eastwood's goldenbush, 25 black sage, and 25 bush monkeyflower.

14. MM2-ENHANCEMENT OF ENVIRONMENTAL SETTING

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: Invasive and non-native plants shall be removed from the grading location and from within the Limits of Disturbance (LOD). Invasive plants/weeds shall be less than 10% of the vegetative cover within the LOD at the conclusion of the 5-year monitoring period. A one-time clearing of non-native and invasive vegetation, spanning 900 linear feet with a 10 foot buffer on each side along the access road between the gate and the project restoration area, shall be performed under the supervision of the project biologist or ecologist. Special-status plant species shall be reintroduced and/or planted at the site, including both planting seedlings germinated in accordance with Mitigation Measure 1, following completion of grading activities and replanting of plants salvaged in accordance with Mitigation Measure 3.

Compliance or Monitoring Action to be Performed: Mitigation Measure Monitoring Action 2a: The supervising biologist or ecologist shall submit to HCD-Planning a summary report at the end of each calendar year that describes the over-all condition of the special-status plants located within the Limits of Disturbance. If success criteria is not met, adaptive management measures described in Mitigation Measure 4 shall be applied.

15. MM3-REMOVAL OF SPECIAL-STATUS PLANTS WITHIN THE LOD

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: The applicant shall have a qualified biologist or ecologist supervise the careful removal of any special-status plants with a hand shovel from within the Limits of Disturbance (LOD) that may be at risk from trampling or crushing from grading activities, including the maneuvering of equipment and the stockpiling of supplies or the stockpiling of salvaged special-status plants or top six inches of topsoil. The salvaged plants shall be placed in pots with soil and watered immediately. The salvaged six inches of topsoil shall be stockpiled on a plastic sheet and covered to prevent contamination with weeds. Salvaged special-status plants shall be retained on site for the duration of the grading activities. Once the grading activities are completed, the salvaged plants shall be replanted in the approximate location from which they were removed along with the top six inches of topsoil.

Compliance or Monitoring Action to be Performed: Mitigation Measure Monitoring Action 3a: Prior to final of grading permits, the applicant shall provide photo-documentary evidence of the site as it existed prior to the commencement of the project, staging and containment of salvaged plants during the grading activities, and, once the grading project is completed, installation of any salvaged plants and top six inches of topsoil within the disturbed areas at the site.

16. MM4- ADAPTIVE MANAGEMENT

Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: Following completion of grading activities, vegetation restoration and enhancement efforts shall be monitored quarterly in the first year and on an annual basis for 4 years thereafter for a minimum of five (5) years. The monitoring shall include observation of the health of the affected special-status plants and quantities of invasive plants within the Limits of Disturbance, documentation of compliance with the success criteria contained in the Habitat Restoration Plan (April 2021 and September 2021), and any corrective measures taken to obtain compliance with the success criteria. Such information shall be documented in an annual report and submitted for a minimum of five years, or until the success criteria of 75% survivability rate is met, to the HCD Chief of Planning for review and approval.

Compliance or Monitoring Action to be Performed: The applicant / supervising biologist/ecologist shall provide to HCD-Planning a status report at the conclusion of each calendar year for five consecutive years. The report shall provide written and photographic evidence demonstrating progress of the restoration and enhancement efforts. If the efforts are not meeting the established targets, the consulting biologist/ecologist shall describe corrective actions needed or taken to meet the performance standards. Appropriate corrective actions shall be implemented until success criteria of 75% survivability rate is fully met. The HCD Chief of Planning may extend the five-year monitoring and reporting period if necessary, to ensure achievement with restoration and success criteria.

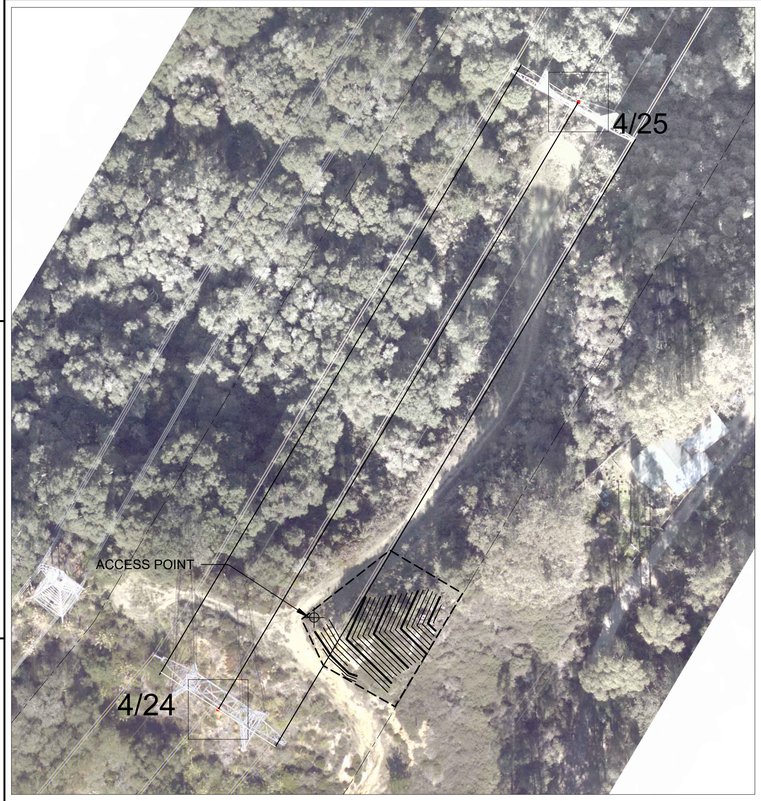
17. PD016 - NOTICE OF REPORT

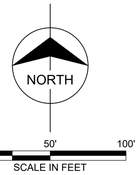
Responsible Department: HCD-Planning

Condition/Mitigation Monitoring Measure: Prior to issuance of building or grading permits, a notice shall be recorded with the Monterey County Recorder which states:
"A Biological Assessment (Library No. LIB180398), was prepared by Arcadis on August 2016 and revised October 2018, including a Habitat Restoration Plan prepared by Arcadis on April 2021 and September 2021, and is on file in Monterey County HCD - Planning. All development shall be in accordance with this report and corresponding restoration plan."
(HCD - Planning)

Compliance or Monitoring Action to be Performed: Prior to the issuance of grading and building permits, the Owner/Applicant shall submit proof of recordation of this notice to HCD - Planning.

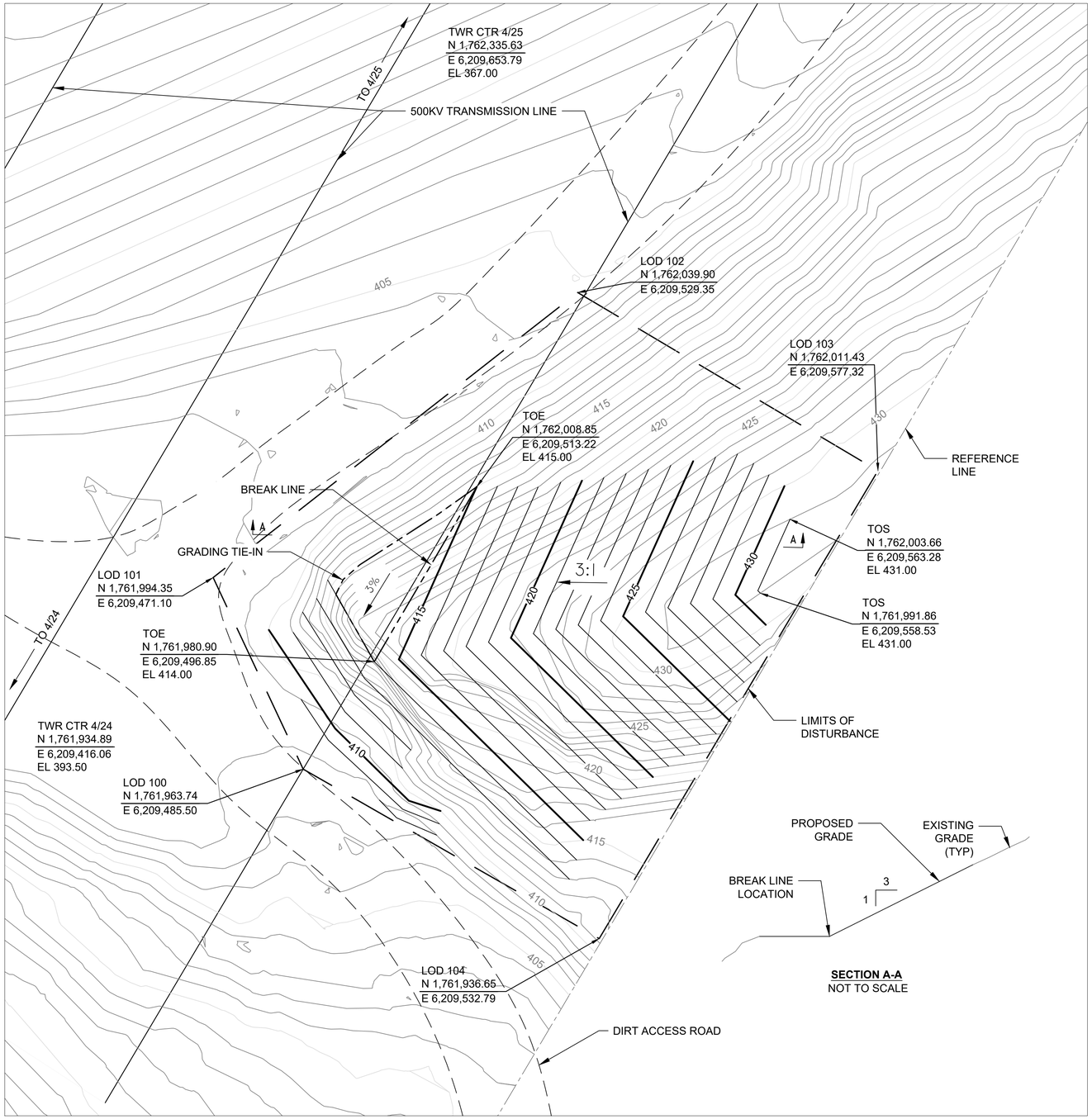
Prior to Final Inspection relating to the grading permit(s), the Owner/Applicant shall submit proof, for review and approval, that all restoration / enhancement efforts have been installed in accordance with the report to the HCD - Planning.





LEGEND:

LOD	LIMITS OF DISTURBANCE
TOS	TOP OF SLOPE
TOE	TOE OF SLOPE
— — —	GRADE BREAK
420	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
420	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR



SECTION A-A
NOT TO SCALE

0 10' 20'
SCALE IN FEET

PG&E FINAL 9-17-21, PLN 160131

SPECIAL CONSTRUCTION NOTES:

1. THE PROJECT FOOTPRINT WILL BE MINIMIZED TO THE MAXIMUM EXTENT FEASIBLE AND AVOID UNNECESSARY DISTURBANCE TO NATIVE VEGETATION. WHERE FEASIBLE, SHRUBS SHALL BE CUT TO THE GROUND WITHOUT DISTURBING ROOTS TO ALLOW FOR POTENTIAL RESPROUTING BY SOME SHRUB SPECIES.
2. PRECONSTRUCTION SURVEYS FOR PAJARO MANZANITA, HOOKER'S MANZANITA AND EASTWOOD'S GOLDENBUSH WILL BE CONDUCTED WITHIN THE LIMITS OF DISTURBANCE (LOD) AND PLANTS WILL BE FLAGGED TO ASSIST CREWS WITH AVOIDANCE WHEN POSSIBLE. WHERE FEASIBLE, TEMPORARY FENCING (E.G., ORANGE CONSTRUCTION FENCING) SHOULD BE INSTALLED OUTSIDE A FIVE-FOOT BUFFER FROM THE CANOPY EDGE OF ANY SENSITIVE NATIVE SHRUB OR SHRUBS AND SHOULD REMAIN IN PLACE FOR THE DURATION OF GRADING AND CONSTRUCTION ACTIVITIES IN THE AREA. FENCING SHOULD BE SUPPORTED BY POSTS ON MINIMUM SIX-FOOT (1.8 M) CENTERS OR EQUIVALENT.
3. AFTER GRADING, THE ERODED SLOPE WILL BE STABILIZED AND THE HABITAT RESTORED AS DETAILED IN THE 'HABITAT RESTORATION PLAN, MOSS LANDING-METCALF 500 KV GRADING PROJECT'.
4. ANY WATER GENERATED FROM CONSTRUCTION OR ENTERS SITE FROM OTHER CAUSE MUST BE CONTAINED ON SITE.

NOTES:

1. EXISTING TRANSMISSION REFERENCE LINE SHOWN AT 100-FT OFF CENTERLINE OF THE 500KV LINE WITH A WIDTH OF APPROXIMATELY 200-FT.
2. ALL CUT SLOPES ARE SHOWN AT A 3:1 (H:V) MAX, UNLESS NOTED OTHERWISE.
3. ALL ELEVATIONS SHOWN INDICATE FINAL GRADES.
4. CONTRACTOR SHALL PROVIDE AS-BUILT SURVEY INFORMATION TO ENSURE GRADING HAS BEEN DONE IN ACCORDANCE WITH THE DRAWINGS.
5. MAXIMUM DISTURBED AREA IS TO BE LESS THAN 6,042 SQ FT.
6. ALL MATERIAL USED AS FILL SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DRY DENSITY PER THE LATEST REVISION OF ASTM D-1557. ALL EXCESS MATERIAL NOT NEEDED TO COMPLETE THE PROPOSED GRADING PLAN WITHIN THE LIMITS OF DISTURBANCE SHOWN SHALL BE HAULED OFF SITE AND DISPOSED OF PROPERLY.
7. APPROXIMATELY 400 CU YDS ARE TO BE EXCAVATED. DEPTH OF CUT RANGES FROM APPROXIMATELY 1.0-FT TO 7.5-FT.
8. CONTRACTOR SHALL INSTALL & MAINTAIN EROSION CONTROL MEASURES AS DETAILED IN THE 'HABITAT RESTORATION PLAN, MOSS LANDING-METCALF 500 KV GRADING PROJECT' TO CONTROL STORM WATER RUNOFF.
9. COORDINATES ARE CALIFORNIA STATE PLANE NAD83 ZONE III.

PG&E ACCEPTED FOR CONSTRUCTION
ENGINEERING DEPARTMENT
BY: Henry Ho on 04/26/2021

FOR QUESTIONS ON REV 2 OF THIS DWG
PE: NICK WUERTZ 816-276-1599
DE: MARSHALL BIRD 816-800-9662

REV	DATE	DESCRIPTION	JOB NO	DSG/DWN	CHKD	SUPV	APVD
2	4/14/21	REVISED GRADING PLAN	74004600	BM/HEC	BM/PNW	BM/PNW	BM/PNW
1	7/15/15	NERC MITIGATION GRADING	31106461	BM/AKT	BM/PNW	BM/SCC	BM/SCC

ORDER NO.	31106461
DSG	BMcD/SDM
DWN	BMcD/AKT
CHKD	BMcD/PNW
SUPV	BMcD/SCC
APVD	BMcD/SCC
APVD	
DATE	7/15/15

MOSS LANDING-METCALF 500kV
(MONTEREY COUNTY)
FINAL GRADING PLAN
SPAN 4/24-4/25

DEPARTMENT OF ENGINEERING
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM	
BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO	SHEETS
3014266	REV 2

F4350

ARCADIS
Infrastructure · Water · Environment · Buildings

Site-specific Erosion and Sediment Control Plan (S-ESCP) Cover Sheet
PG&E NERC Program

Project/S-ESCP Information			
Site/Circuit Name	Moss Landing-Metcalf 500kV		
City	Prunedale		
County	Monterey		
Associated Towers/Poles	004/024 - 004/025		
Draft S-ESCP Date	05/07/21	**Final S-ESCP Date**	**05/17/21**

Project Contacts				
	Name	**Office**	**Mobile**	**Email**
PG&E Land Planner	Paul Marotto		415-940-5106	PSM1@pge.com
PG&E Environmental Field Specialist (EFS)	Dave Hendricks		925-765-9116	D5HM@pge.com
PG&E Contruction Foreman	TBD			
PG&E Biologist	Andi Henke		925-451-1469	AIH2@pge.com
Arcaids S-ESCP Author	Tim Rumbolz, QSD/QSP	408-797-2009	408-506-9731	timothy.rumbolz@arcadis.com
Arcadis Area Lead	Shannon Lindquist		415-624-4134	shannon.lindquist@ arcadis.com
Arcadis Biologist	Joshua Tallis		831-747-0509	joshua.tallis@arcadis.com
Arcadis Cultural Resource Spe	Leroy Laurie (SWCA)		805-440-8712	llaurie@swca.com
Burns-McDonnell PM	Brad Scheidecker		815-441-2295	bsscheidecker@burnsmcd.com
Construction Contractor	TBD			
Arcadis BMP Inspector	Tim Rumbolz, QSD/QSP	408-797-2009	408-506-9731	timothy.rumbolz@arcadis.com

Project Description

Project Name: NERC Moss Landing-Metcalf 500kV	Project Manager: Brad Scheidecker
Project Location: 2 miles east of Elkhorn Slough, CA	Phone: 815-441-2295
Nature of Project: Grading a small area (~2,855 sq ft) to remove soil, re-establish required clearance, and restore habitat	
Annual rainfall for the project area: **23 inches** (http://www.idcide.com/weather/ca)	
Amount of soil disturbance for the Project: 6,042 square feet (limits of disturbance)	

Construction Activities Include: ☐ *Concrete work* ☐ *Demolition* ☐ *Excavation/Trenching* ☒ *Grading* ☒ *Material/Stockpile Management* ☐ *Pavement work* ☐ *Other:*

Unique Site Features

☒ Biological Assessment has been prepared for the project
☒ Soil disturbance on slopes could result in high soil erosion potential (slope ≥2:1)
☐ Adjacent to sensitive habitat including wetlands or 303(d) listed surface water bodies (☒ 100 feet)
Receiving water: Elkhorn Slough

Project Schedule

Start of soil disturbing activities:	TBD
End of soil disturbing activities:	TBD
End of construction:	TBD

BMP Inspections, Maintenance, and Repair

BMPs will be inspected once a week and prior to and after rain events, unless directed otherwise by the Project Team. A Construction Site Inspection Checklist is provided in *Attachment C*. In the event that deficiencies in BMPs are found during the inspection, the cause of the failure will be determined, and the BMP will be repaired or replaced.

Discharge Reporting

If a discharge occurs or if the Project receives a written notice or order from any regulatory agency, contact the Project Manager first to ensure that all Arcadis spill response measures are followed as required.

CPM after hours contact number is 815-441-2295.

Training

The Erosion and Sediment Control Inspector (ESCI) assigned to this Project is:

Name: Tim J. Rumbolz, QSP	Phone: 408-797-2009
Company: Arcadis U.S., Inc.	Address: 6296 San Ignacio Ave., Suite C&D, San Jose, CA

The ESCI will have primary responsibility for the implementation, maintenance, and inspection of the ESCP.

Post-Construction Storm Water Management

Upon completion of construction within the project area, all temporary BMPs will be removed. All construction equipment will be demobilized and removed from the site. Gravel will be placed per project specifications to achieve final stabilization in non-vegetated areas. A final site inspection will be conducted to ensure that all disturbed soil areas have been stabilized with vegetation or other method per project specifications (minimum of 70% of pre-existing vegetative cover or equivalent soil stabilization in all disturbed soil areas). A Final Site Inspection Checklist is provided in *Attachment F*.

Best Management Practices (BMP)

Checklist *(Select BMPs that apply to this project)*

Erosion Control

- ☒ *EC-1, Scheduling*
- ☒ *EC-2**, Preservation of Existing Vegetation*
- ☒ *EC-3, Hydraulic Mulch*
- ☒ *EC-4, Hydroseeding**
- ☐ *EC-5, Soil Binders*
- ☐ *EC-6**, Straw Mulch**
- ☒ *EC-7**, Geotextiles, Plastic Covers, and Erosion Control Blankets/Mats*
- ☐ *EC-8**, Wood Mulch*
- ☐ *EC-9**, Earth Dikes and Drainage Swales*
- ☐ *EC-10, Velocity Dissipation Devices*
- ☐ *EC-11, Slope Drains*
- ☐ *EC-12, Streambank Stabilization*
- ☐ *EC-14, Compost Blankets*
- ☒ *EC-15, Soil Preparation / Roughening*
- ☐ *EC-16**, Non-Vegetative Stabilization*

- ☐ *SE-1**, Silt Fence*
- ☐ *SE-2, Sediment Basin*
- ☐ *SE-3, Sediment Trap*
- ☐ *SE-4, Check Dam*
- ☒ *SE-5**, Fiber Rolls*
- ☐ *SE-6**, Gravel Bag Berm*
- ☐ *SE-7, Street Sweeping and Vacuuming*
- ☐ *SE-8, Sandbag Barrier*
- ☐ *SE-9, Straw Bale Barrier*
- ☐ *SE-10*, Storm Drain Inlet Protection*
- ☐ *SE-11, Active Treatment Systems*
- ☐ *SE-12, Temporary Silt Dike*
- ☐ *SE-13, Compost Socks and Berms*
- ☐ *SE-14, Biofilter Bags*

Tracking Control

- ☐ *TC-1**, Stabilized Construction Entrance/Exit*
- ☐ *TC-2**, Stabilized Construction Roadway*
- ☐ *TC-3**, Entrance / Outlet Tire Wash*

Wind Erosion Control

- ☒ *WE-1, Wind Erosion Control*

Non-Storm Water

- ☒ *NS-1, Water Conservation Practices*
- ☐ *NS-2, Dewatering Operations*
- ☐ *NS-3**, Paving and Grinding Operations*
- ☐ *NS-4, Temporary Stream Crossing*
- ☐ *NS-5, Clean Water Diversion*
- ☐ *NS-6, Illicit Connection / Discharge*
- ☐ *NS-7, Potable Water / Irrigation*
- ☐ *NS-8, Vehicle and Equipment Cleaning*
- ☐ *NS-9**, Vehicle & Equipment Fueling*
- ☐ *NS-10, Vehicle and Equipment Maintenance*
- ☐ *NS-11, Pile Driving Operations*
- ☐ *NS-12, Concrete Curing*
- ☐ *NS-13, Concrete Finishing*
- ☐ *NS-14, Material Over Water*
- ☐ *NS-15, Demolition Adjacent to Water*
- ☐ *NS-16, Temporary Batch Plants*

Waste Management and Materials Pollution Control

- ☐ *WM-1**, Material Delivery and Storage*
- ☐ *WM-2**, Material Use*
- ☒ *WM-3**, Stockpile Management*
- ☒ *WM-4**, Spill Prevention and Control*
- ☒ *WM-5**, Solid Waste Management*
- ☐ *WM-6**, Hazardous Materials/Waste Management*
- ☐ *WM-7**, Contaminated Soil Management*
- ☐ *WM-8**, Concrete Waste Management*
- ☒ *WM-9**, Sanitary/Septic Waste Management*
- ☐ *WM-10**, Liquid Waste Management*

*Seed mixtures/straw used for erosion control must be certified weed free. Check with an Arcadis biologist whether special seed mixes are required for your geography.
**Has a PG&E cut sheet.

Attachment A: Water Pollution Control Drawings (WPCD)

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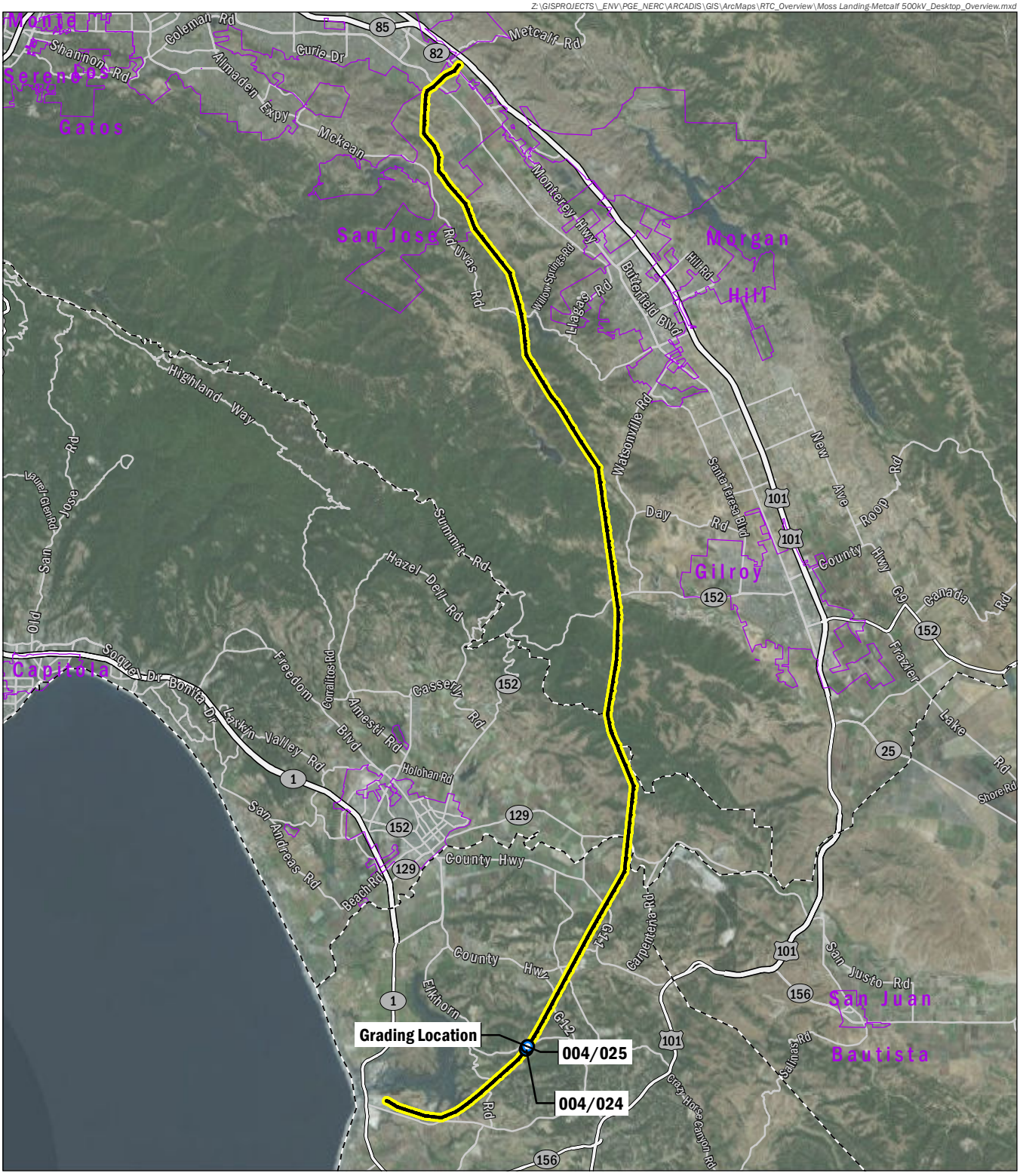


Counties

City

0 4.5 Miles N

Moss Landing-Metcalf 500kV

PG&E ARCADIS

Circuit Overview Map

0 150' 300'

GRAPHIC SCALE

PACIFIC GAS & ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

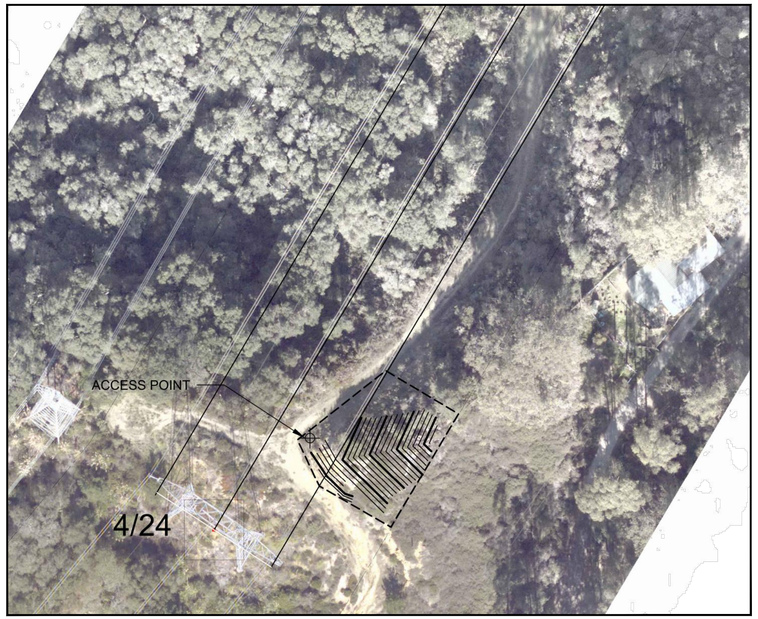
LOCATION MAP

ARCADIS

ATTACHMENT
A

XREFS:
IMAGES: PROJECTNAME: ----
Arcadis Logo_2021.PNG

C:\Users\jlharris\ACCDocs\Arcadis\ANA - PACIFIC GAS & ELECTRIC\Project Files\MOSS LANDING\2021\01-DWG\PGE NERC 30027996_MossLanding Attachment A.dwg LAYOUT: A SAVED: 5/13/2021 4:01 PM ACADVER: 23.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ACAD.CTB PLOTTED: 5/13/2021 5:21 PM BY: HARRIS, JESS



LEGEND:

LOD	LIMITS OF DISTURBANCE	420	PROPOSED MAJOR CONTOUR
TOS	TOP OF SLOPE		PROPOSED MINOR CONTOUR
TOE	TOE OF SLOPE		FLOW DIRECTION
	GRADE BREAK		FIBER ROLLS
420	EXISTING MAJOR CONTOUR		
	EXISTING MINOR CONTOUR		

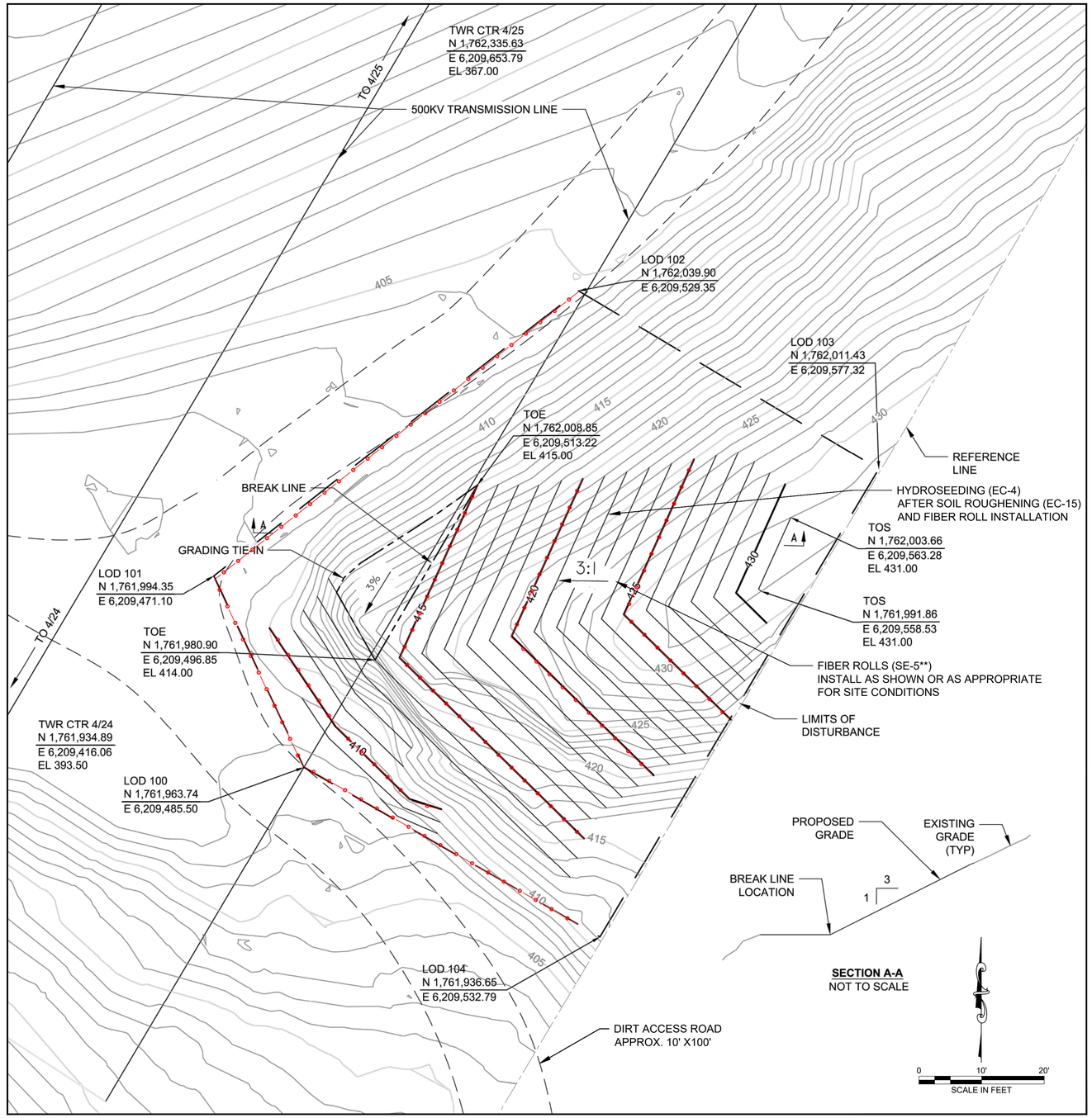
GENERAL NOTES:

1. THE INFORMATION ON THIS DRAWING IS ACCURATE FOR EROSION AND SEDIMENT CONTROL PURPOSE ONLY.
2. WATER GENERATED FROM CONSTRUCTION WORK OR FROM OTHER CAUSE MUST BE CONTAINED ON SITE.
3. THE SITE WILL APPLY NATURAL MATERIALS ONLY.
4. CONTRACTOR SHALL STOCKPILE TOPSOIL AND FINAL GRADING SHALL BE COMPLETED WITH THE STOCKPILED TOPSOIL.
5. ACTUAL SITE CONDITIONS, SCHEDULING OF OPERATIONS, METHODS OF OPERATION, AND WEATHER IMPACT THE EFFECTIVENESS OF THIS EROSION AND SEDIMENT CONTROL PLAN (ESCP). THE PERSONNEL RESPONSIBLE FOR DAILY ACTIVITIES ON THIS SITE SHALL REVIEW THIS ESCP PRIOR TO COMMENCING WORK.

PROGRAMMATIC AND STRUCTURAL BMPS:

1. EC-1 SCHEDULING.
2. EC-2** PRESERVATION OF EXISTING VEGETATION.
3. EC-4 HYDROSEEDING: SEED MIX TO BE APPROVED BY PG&E AND MONTEREY COUNTY.
4. EC-7** GEOTEXTILES, PLASTIC COVERS, AND EROSION CONTROL BLANKETS/MAT.
5. EC-15 SOIL PREPARATION/TRACK WALK.
6. SE-5** FIBER ROLLS: FIBER ROLLS SHALL BE INSTALLED ALONG CONTOURS SUCH THAT SHEET FLOW CANNOT CONTINUE FOR MORE THAN 10 LF BEFORE REACHING ANOTHER FIBER ROLL ON SLOPE OF 50%, 15 LF BEFORE REACHING ANOTHER FIBER ROLL ON SLOPE OF 25-50% AND 20 LF FOR SLOPE OF 0-25%. MAXIMUM SPACE OF 4 LF BETWEEN STAKES. USE ONLY FIBER ROLLS CONSTRUCTED OF WEED FREE NATURAL FIBERS.
7. WE-1 WIND EROSION CONTROL.
8. NS-1 WATER CONSERVATION PRACTICES.
9. WM-3** STOCKPILE MANAGEMENT: ACTIVE STOCKPILES SHALL BE COVERED AT: THE END OF EACH DAY, WHEN NOT BEING USED, AND WHEN THE NATIONAL WEATHER SERVICE PREDICTS A 50% OR GREATER CHANCE OF PRECIPITATION.
10. WM-4** SPILL PREVENTION AND CONTROL.
11. WM-5** SOLID WASTE MANAGEMENT
12. WM-9** SANITARY/SEPTIC WASTE MANAGEMENT: PORTABLE TOILETS SHALL HAVE CONTAINMENT AND BE SECURED TO PREVENT TIPPING. LOCATIONS WILL BE DETERMINED IN THE FILED.

** BMP HAS A PG&E CUT SHEET



REFERENCE PLAN -
BOURNS AND MCDONNELL
MOSS LANDING-METCALF 500kV (MONTEREY COUNTY)
FINAL GRADING PLAN SPAN 4/24-4/25

No.	Date	Revisions	By	Ckd

-
Professional Engineer's No.
-

State	Date Signed	Project Mgr.
CA		.AC
Designed by .CJ	Drawn by .CJ	Checked by .TR

ARCADIS U.S., INC.

PACIFIC GAS & ELECTRIC COMPANY,
SAN FRANCISCO, CALIFORNIA

MOSS LANDING-METCALF 500kV
EROSION AND SEDIMENT CONTROL PLAN

ARCADIS Project No.
30027996.1B

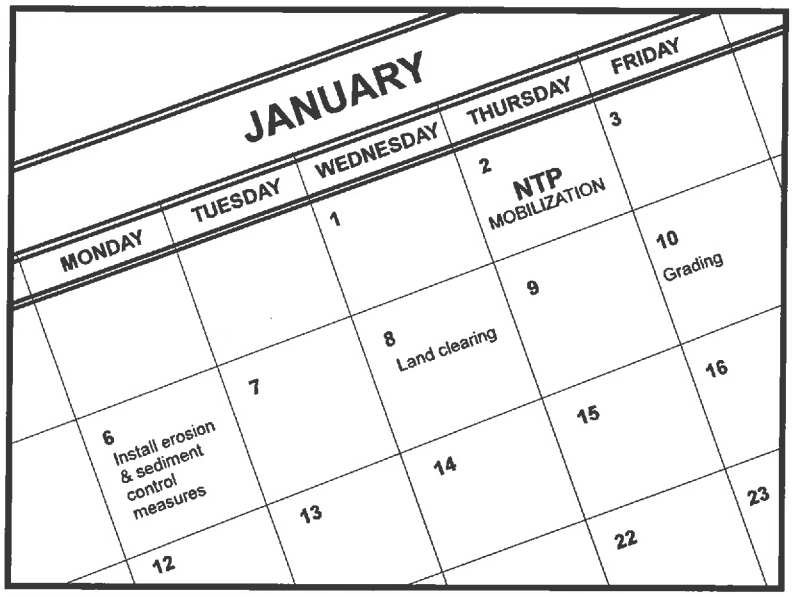
Date
MAY 7, 2021

ARCADIS
6296 DAN IGNACIO AVENUE,
SUITE C-D
SAN JOSE, CA 95119
TEL. 408-797-2009

EC1

Attachment B: BMP Cut Sheets

Scheduling EC-1



Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TC	Tracking Control	☒
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Suitable Applications

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Limitations

- Environmental constraints such as nesting season prohibitions reduce the full capabilities of this BMP.

Implementation

- Avoid rainy periods. Schedule major grading operations during dry months when practical. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means or to install sediment trapping devices.
- Plan the project and develop a schedule showing each phase

CASQA
CALIFORNIA STORMWATER QUALITY ASSOCIATION

of construction. Clearly show how the rainy season relates to soil disturbing and re-stabilization activities. Incorporate the construction schedule into the SWPPP.

- Include on the schedule, details on the rainy season implementation and deployment of:
  - Erosion control BMPs
  - Sediment control BMPs
  - Tracking control BMPs
  - Wind erosion control BMPs
  - Non-stormwater BMPs
  - Waste management and materials pollution control BMPs
- Include dates for activities that may require non-stormwater discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, pavement cleaning, etc.
- Work out the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, foundation pouring utilities installation, etc., to minimize the active construction area during the rainy season.
  - Sequence trenching activities so that most open portions are closed before new trenching begins.
  - Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
  - Schedule establishment of permanent vegetation during appropriate planting time for specified vegetation.
- Non-active areas should be stabilized as soon as practical after the cessation of soil disturbing activities or one day prior to the onset of precipitation.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year round to deploy erosion control and sediment control BMPs. Erosion may be caused during dry seasons by un-seasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

Costs

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

Inspection and Maintenance

- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted.
- Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

References

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005), U.S. Environmental Protection Agency, Office of Water, September 1992.

When

This BMP is applicable to projects when:

- There are areas onsite where no construction activity is planned or will occur later
- Areas to be preserved are in the immediate vicinity of the construction site. Mark as appropriate before clearing and grubbing or other soil disturbance activities begin
- Areas with vegetation that can be preserved to protect against soil erosion, such as on steep slopes, watercourses, and building sites in wooded areas
- Areas designated as Environmentally Sensitive Areas (ESAs), or where federal, state, or local government regulations require preservation, such as wetlands, vernal pools, marshes, etc. These areas are typically flagged by a qualified biologist

How

Use the following measures as applicable:

- Preserve existing vegetation whenever possible
- If necessary, contact the project Environmental Representative for clarification regarding areas to be preserved
- Whenever possible, minimize disturbed areas by locating temporary roadways to avoid stands of trees and shrubs, and follow existing contours to reduce cutting and filling
- Locate construction materials, equipment storage, and parking areas outside the drip line of any tree to be retained
- Consider the impact of grade changes to existing vegetation and the root zone
- Remove any markings, barriers, or fencing after project is completed

Maintenance and Inspection

To preserve vegetation, maintain the clearly marked limits of disturbance during construction.

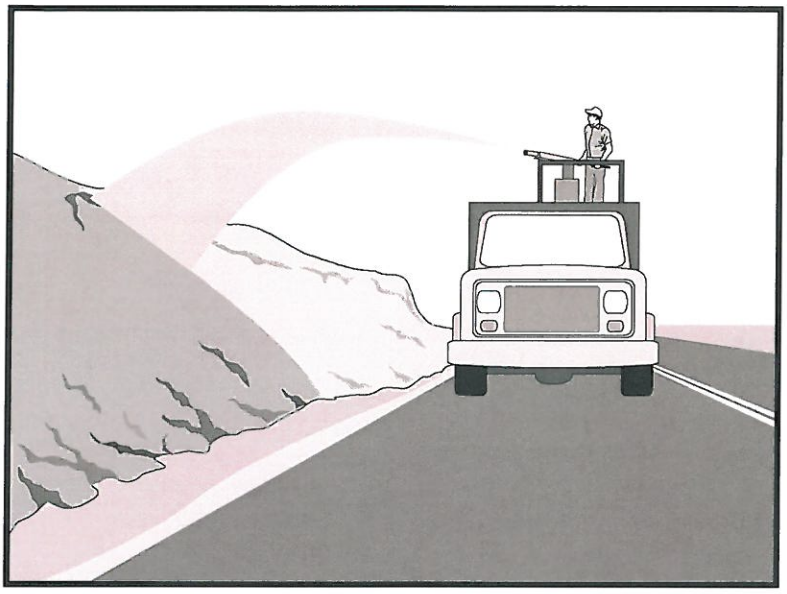
- Routinely inspect barriers during construction
- Repair or replace barriers as needed during construction

Mark vegetated area to be preserved

This slope should have been protected and will now be susceptible to erosion.

Ensure that vegetation protection barriers are adequate in length and delineation.

Hydraulic Mulch EC-3



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EC	Erosion Control	☑
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NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-4 Hydroseeding
EC-5 Soil Binders
EC-6 Straw Mulch
EC-7 Geotextiles and Mats
EC-8 Wood Mulching
EC-14 Compost Blanket
EC-16 Non-Vegetative Stabilization

Description and Purpose

Hydraulic Mulch consists of various types of fibrous materials mixed with water and sprayed onto the soil surface in slurry form to provide a layer of temporary protection from wind and water erosion.

Suitable Applications

Hydraulic mulch as a temporary, stand alone, erosion control BMP is suitable for disturbed areas that require temporary protection from wind and water erosion until permanent soil stabilization activities commence. Examples include:

- Rough-graded areas that will remain inactive for longer than permit-required thresholds (e.g., 14 days) or otherwise require stabilization to minimize erosion or prevent sediment discharges.
- Soil stockpiles.
- Slopes with exposed soil between existing vegetation such as trees or shrubs.
- Slopes planted with live, container-grown vegetation or plugs.
- Slopes burned by wildfire.

Hydraulic mulch can also be applied to augment other erosion control BMPs such as:

- In conjunction with straw mulch (see EC-6 Straw Mulch) where the rate of hydraulic mulch is reduced to 100-500 lbs per acre and the slurry is applied over the straw as a tackifying agent to hold the straw in place.
- Supplemental application of soil amendments, such as fertilizer, lime, gypsum, soil bio-stimulants or compost.

Limitations

In general, hydraulic mulch is not limited by slope length, gradient or soil type. However, the following limitations typically apply:

- Most hydraulic mulch applications, particularly bonded fiber matrices (BFMs), require at least 24 hours to dry before rainfall occurs.
- Temporary applications (i.e., without a vegetative component) may require a second application in order to remain effective for an entire rainy season.
- Treatment areas must be accessible to hydraulic mulching equipment.
- Availability of water sources in remote areas for mixing and application.
- As a stand-alone temporary BMP, hydraulic mulches may need to be re-applied to maintain their erosion control effectiveness, typically after 6-12 months depending on the type of mulch used.
- Availability of hydraulic mulching equipment may be limited just prior to the rainy season and prior to storms due to high demand.
- Cellulose fiber mulches alone may not perform well on steep slopes or in course soils.
- This BMP consists of a mixture of several constituents (e.g., fibers/mulches, tackifiers, and other chemical constituents), some of which may be proprietary and may come pre-mixed by the manufacturer. The water quality impacts of these constituents are relatively unknown and some may have water quality impacts due to their chemical makeup. Refer to specific chemical properties identified in the product Material Safety Data Sheet; products should be evaluated for project-specific implementation by the SWPPP Preparer. Refer to factsheet EC-05 for further guidance on selecting soil binders.

Implementation

- Where feasible, it is preferable to prepare soil surfaces prior to application by roughening embankments and fill areas with a crimping or punching type roller or by track walking.
- The majority of hydraulic mulch applications do not necessarily require surface/soil preparation (See EC-15 Soil Preparation) although in almost every case where re-vegetation is included as part of the practice, soil preparation can be beneficial. One of the advantages of hydraulic mulch over other erosion control methods is that it can be applied in areas where soil preparation is precluded by site conditions, such as steep slopes, rocky soils, or inaccessibility.

- Avoid mulch over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Hydraulic mulching is generally performed utilizing specialized machines that have a large water-holding/mixing tank and some form of mechanical agitation or other recirculation method to keep water, mulch and soil amendments in suspension. The mixed hydraulic slurry can be applied from a tower sprayer on top of the machine or by extending a hose to areas remote from the machine.
- Where possible apply hydraulic mulch from multiple directions to adequately cover the soil. Application from a single direction can result in shadowing, uneven coverage and failure of the BMP.
- Hydraulic mulch can also include a vegetative component, such as seed, rhizomes, or stolons (see EC-4 Hydraulic Seed).
- Typical hydraulic mulch application rates range from 2,000 pounds per acre for standard mulches (SMs) to 3,500 pounds per acre for BFMs. However, the required amount of hydraulic mulch to provide adequate coverage of exposed topsoil may appear to exceed the standard rates when the roughness of the soil surface is changed due to soil preparation methods (see EC-15 Soil Preparation) or by slope gradient.
- Other factors such as existing soil moisture and soil texture can have a profound effect on the amount of hydraulic mulch required (i.e. application rate) applied to achieve an erosion-resistant covering.
- Avoid use of mulch without a tackifier component, especially on slopes.
- Mulches used in the hydraulic mulch slurry can include:
  - Cellulose fiber
  - Thermally-processed wood fibers
  - Cotton
  - Synthetics
  - Compost (see EC-14, Compost Blanket)
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Categories of Hydraulic Mulches

Standard Hydraulic Mulch (SM)

Standard hydraulic mulches are generally applied at a rate of 2,000 pounds per acre and are manufactured containing around 5% tackifier (i.e. soil binder), usually a plant-derived guar or psyllium type. Most standard mulches are green in color derived from food-color based dyes.

Hydraulic Matrices (HM) and Stabilized Fiber Matrices (SFM)

Hydraulic matrices and stabilized fiber matrices are slurries which contain increased levels of tackifiers/soil binders; usually 10% or more by weight. HMs and SFMs have improved performance compared to a standard hydraulic mulch (SM) because of the additional percentage of tackifier and because of their higher application rates, typically 2,500 – 4,000 pounds per acre. Hydraulic matrices can include a mixture of fibers, for example, a 50/50 blend of paper and wood fiber. In the case of an SFM, the tackifier/soil binder is specified as a polyacrylamide (PAM).

Bonded Fiber Matrix (BFM)

Bonded fiber matrices (BFMs) are hydraulically-applied systems of fibers, adhesives (typically guar based) and chemical cross-links. Upon drying, the slurry forms an erosion-resistant blanket that prevents soil erosion and promotes vegetation establishment. The cross-linked adhesive in the BFM should be biodegradable and should not dissolve or disperse upon re-wetting. BFMs are typically applied at rates from 3,000 to 4,000 lbs/acre based on the manufacturer's recommendation. BFMs should not be applied immediately before, during or immediately after rainfall or if the soil is saturated. Depending on the product, BFMs typically require 12 to 24 hours to dry and become effective.

Mechanically-Bonded Fiber Matrices (MBFM)

Mechanically-bonded fiber matrices (MBFMs) are hydraulically applied systems similar to BFM that use crimped synthetic fibers and PAM and are typically applied to a slope at a higher application rate than a standard BFM.

Hydraulic Compost Matrix (HCM)

Hydraulic compost matrix (HCM) is a field-derived practice whereby finely graded or sifted compost is introduced into the hydraulic mulch slurry. A guar-type tackifier can be added for steeper slope applications as well as any specified seed mixtures. A HCM can help to accelerate seed germination and growth. HCMs are particularly useful as an in-fill for three-dimensional re-vegetation geocomposites, such as turf reinforcement mats (TRM) (see EC-7 Geotextiles and Mats).

Costs

Average installed costs for hydraulic mulch categories are is provided in Table 1, below.

Table 1
HYDRAULIC MULCH BMPs
INSTALLED COSTS

BMP	Installed Cost/Acre
Standard Hydraulic Mulching (SM)	$1,700 - $3,600 per acre
Hydraulic Matrices (HM) and Stabilized Fiber Matrices	
Guar-based	$2,000 - $4,000 per acre
PAM-based	$2,500 - $5,610 per acre
Bonded Fiber Matrix (BFM)	$3,900 - $6,900 per acre
Mechanically Bonded Fiber Matrix (MBFM)	$4,500 - $6,000 per acre
Hydraulic Compost Matrix (HCM)	$3,000 - $3,500 per acre

Source: Cost information received from individual product manufacturers solicited by Geosyntec Consultants (2004)

Inspection and Maintenance

- Maintain an unbroken, temporary mulched ground cover throughout the period of construction when the soils are not being reworked.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Compare the number of bags or weight of applied mulch to the area treated to determine actual application rates and compliance with specifications.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Controlling Erosion of Construction Sites, Agricultural Information #347, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service – SCS).

Guides for Erosion and Sediment Control in California, USDA Soils Conservation Service, January 1991.

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

Sedimentation and Erosion Control, An Inventory of Current Practices Draft, US EPA, April 1990.

Soil Erosion by Water, Agriculture Information Bulletin #513, U.S. Department of Agriculture, Soil Conservation Service.

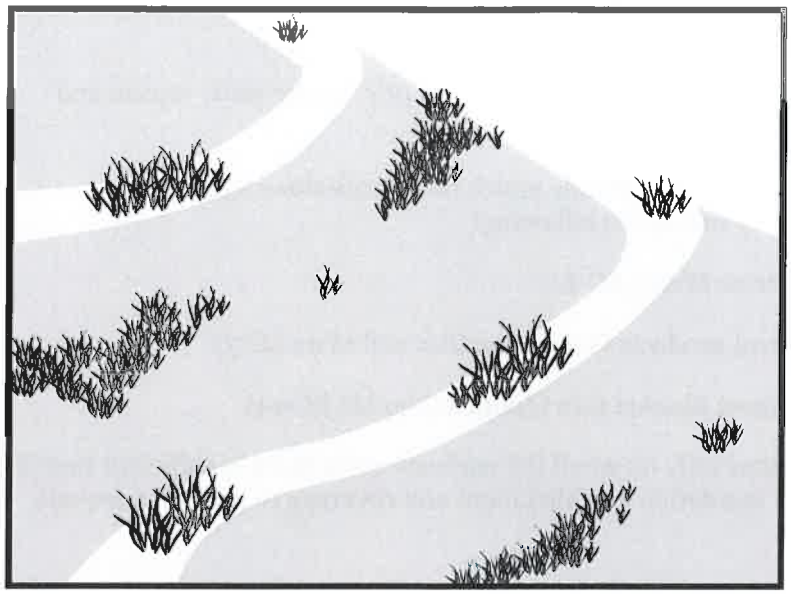
Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for the Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Hydroseeding EC-4



Description and Purpose

Hydroseeding typically consists of applying a mixture of a hydraulic mulch, seed, fertilizer, and stabilizing emulsion with a hydraulic mulcher, to temporarily protect exposed soils from erosion by water and wind. Hydraulic seeding, or hydroseeding, is simply the method by which temporary or permanent seed is applied to the soil surface.

Suitable Applications

Hydroseeding is suitable for disturbed areas requiring temporary protection until permanent stabilization is established, for disturbed areas that will be re-disturbed following an extended period of inactivity, or to apply permanent stabilization measures. Hydroseeding without mulch or other cover (e.g. EC-7, Erosion Control Blanket) is not a stand-alone erosion control BMP and should be combined with additional measures until vegetation establishment.

Typical applications for hydroseeding include:

- Disturbed soil/graded areas where permanent stabilization or continued earthwork is not anticipated prior to seed germination.
- Cleared and graded areas exposed to seasonal rains or temporary irrigation.
- Areas not subject to heavy wear by construction equipment or high traffic.

Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-5 Soil Binders

EC-6 Straw Mulch

EC-7 Geotextiles and Mats

EC-8 Wood Mulching

EC-14 Compost Blanket

EC-16 Non-Vegetative Stabilization

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Limitations

- Availability of hydroseeding equipment may be limited just prior to the rainy season and prior to storms due to high demand.
- Hydraulic seed should be applied with hydraulic mulch or a stand-alone hydroseed application should be followed by one of the following:
  - Straw mulch (see Straw Mulch EC-6)
  - Rolled erosion control products (see Geotextiles and Mats EC-7)
  - Application of Compost Blanket (see Compost Blanket EC-14)

  Hydraulic seed may be used alone only on small flat surfaces when there is sufficient time in the season to ensure adequate vegetation establishment and coverage to provide adequate erosion control.
- Hydraulic seed without mulch does not provide immediate erosion control.
- Temporary seeding may not be appropriate for steep slopes (i.e., slopes readily prone to rill erosion or without sufficient topsoil).
- Temporary seeding may not be appropriate in dry periods without supplemental irrigation.
- Temporary vegetation may have to be removed before permanent vegetation is applied.
- Temporary vegetation may not be appropriate for short term inactivity (i.e. less than 3-6 months).

Implementation

In order to select appropriate hydraulic seed mixtures, an evaluation of site conditions should be performed with respect to:

- Soil conditions
- Site topography and exposure (sun/wind)
- Season and climate
- Vegetation types
- Maintenance requirements
- Sensitive adjacent areas
- Water availability
- Plans for permanent vegetation

The local office of the U.S.D.A. Natural Resources Conservation Service (NRCS) is an excellent source of information on appropriate seed mixes.

The following steps should be followed for implementation:

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying (See EC-15, Soil Preparation) the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.

- Avoid use of hydraulic seed in areas where the BMP would be incompatible with future earthwork activities.
- Hydraulic seed can be applied using a multiple step or one step process.
  - In a multiple step process, hydraulic seed is applied first, followed by mulch or a Rolled Erosion Control Product (RECP).
  - In the one step process, hydraulic seed is applied with hydraulic mulch in a hydraulic matrix. When the one step process is used to apply the mixture of fiber, seed, etc., the seed rate should be increased to compensate for all seeds not having direct contact with the soil.
- All hydraulically seeded areas should have mulch, or alternate erosion control cover to keep seeds in place and to moderate soil moisture and temperature until the seeds germinate and grow.
- All seeds should be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag should be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee, and dates of test. The container should be labeled to clearly reflect the amount of Pure Live Seed (PLS) contained. All legume seed should be pellet inoculated. Inoculant sources should be species specific and should be applied at a rate of 2 lb of inoculant per 100 lb seed.
- Commercial fertilizer should conform to the requirements of the California Food and Agricultural Code, which can be found at http://www.leginfo.ca.gov/.html/fac_table_of_contents.html. Fertilizer should be pelleted or granular form.
- Follow up applications should be made as needed to cover areas of poor coverage or germination/vegetation establishment and to maintain adequate soil protection.
- Avoid over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Costs

Average cost for installation and maintenance may vary from as low as $1,900 per acre for flat slopes and stable soils, to $4,000 per acre for moderate to steep slopes and/or erosive soils. Cost of seed mixtures vary based on types of required vegetation.

BMP	Installed Cost per Acre
Hydraulic Seed	$1,900-$4,000

Source: Caltrans Soil Stabilization BMP Research for Erosion and Sediment Controls, July 2007

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Where seeds fail to germinate, or they germinate and die, the area must be re-seeded, fertilized, and mulched within the planting season, using not less than half the original application rates.
- Irrigation systems, if applicable, should be inspected daily while in use to identify system malfunctions and line breaks. When line breaks are detected, the system must be shut down immediately and breaks repaired before the system is put back into operation.
- Irrigation systems should be inspected for complete coverage and adjusted as needed to maintain complete coverage.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999.

When

Use the following methods when disturbed soils may be particularly difficult to stabilize or access, including the following situations:

- Steep slopes, generally steeper than 1:3 (V:H)
- Slopes where the erosion hazard is high
- Slopes and disturbed soils where mulch must be anchored
- Disturbed areas where plants are slow to develop adequate protective cover
- Channels with high flows
- Channels intended to be vegetated
- Slopes adjacent to water bodies of Environmentally Sensitive Areas (ESAs)
- Blankets and mats are generally not suitable for excessively rocky sites or areas where the final vegetation will be mowed (because staples and netting can catch in mowers)

Plastic results in 100 percent runoff; their use is limited to:

  - o Covering stockpiles
  - o Covering small graded areas for short periods, such as through an imminent storm event, until an alternative protection measure is implemented

How

Proper site preparation is essential to ensure complete contact of the blanket or matting with the soil:

- Grade and shape the area of installation
- Remove all rocks, clods, vegetation, or other obstructions, so that the installed blankets or mats have complete, direct contact with the soil
- Prepare seedbed by loosening topsoil
- Seed the area before blanket installation for erosion control and re-vegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding before blanket installation, re-seed all check slots and other areas disturbed during installation. Where soil filling is specified, seed the matting and the entire disturbed area after installation and before filling the mat with soil
- Use u-shaped wire staples, metal geotextile stake pins, or triangular wooden stakes to anchor mats and blankets to the ground surface
- Drive wire staples and metal stakes flush to the soil surface
- All anchors should be 6 inches to 18 inches long and have sufficient ground penetration to resist pullout. Longer anchors may be required for loose soils
- For installation on slopes, consult the manufacturer's recommendations. Generally:

- Begin at the top of the slope and anchor the blanket in a 6 inch deep by 6 inch wide trench. Backfill trench and tamp earth firmly
- Unroll the blanket down slope in the direction of water flow
- Overlap the edges of adjacent parallel rolls 2 inches to 3 inches and staple every 3 feet
- When blankets must be spliced, place blankets end-over-end (shingle style) with 6-inch overlap. Staple through overlapped area, approximately 12 inches apart
- Lay blankets loosely and maintain direct contact with the soil. Do not stretch
- Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Place staples down the center and stagger with the staples placed along the edges

- Remove and dispose of blankets and mats before applying permanent soil stabilization measures

Maintenance and Inspection

- Routinely inspect areas treated with temporary soil stabilization before and after significant forecasted storm events. Immediately repair any failures. Maintain areas treated with temporary soil stabilization to provide adequate erosion control. Re-apply or replace temporary soil stabilization on exposed soils when greater than 10 percent of the previously treated area becomes exposed or exhibits visible erosion
- If washout or breakage occurs, reevaluate the original materials installation. Repair damage to the slope or channel. If appropriate, re-install the material or implement a revised BMP

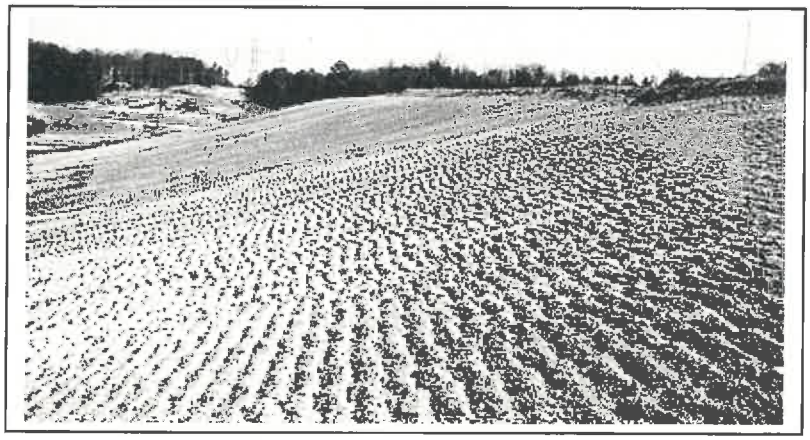
Several types of Erosion Control Blankets.

Remove all rocks, clods, vegetation, or other obstructions to install the blankets or mats.

Installed blankets or mats need to have direct contact with the soil in order to be effective.

Be sure to use enough staples to adequately secure the blankets or mats.

Soil Preparation/Roughening EC-15



Categories

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Targeted Constituents

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Nutrients	
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Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-5 Soil Binders

EC-7 Geotextiles and Mats

Description and Purpose

Soil Preparation/Roughening involves assessment and preparation of surface soils for BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil Preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.

Suitable Applications

Soil preparation: Soil preparation is essential to proper vegetative establishment. In particular, soil preparation (i.e. tilling, raking, and amendment) is suitable for use in combination with any soil stabilization method, including RECPs or sod. Soil preparation should not be confused with roughening.

Roughening: Soil roughening is generally referred to as track walking (sometimes called imprinting) a slope, where treads from heavy equipment run parallel to the contours of the slope and act as mini terraces. Soil preparation is most effective when used in combination with erosion controls. Soil Roughening is suitable for use as a complementary process for controlling erosion on a site. Roughening is not intended to be used as a stand-alone BMP, and should be used with perimeter controls, additional erosion control measures, grade breaks, and vegetative establishment for maximum effectiveness. Roughening is intended to only affect surface soils and should not compromise slope stability or overall compaction. Suitable applications for soil roughening include:

- Along any disturbed slopes, including temporary stockpiles, sediment basins, or compacted soil diversion berms and swales.

- Roughening should be used in combination with hydraulically applied stabilization methods, compost blanket, or straw mulch; but should not be used in combination with RECPs or sod because roughening is intended to leave terraces on the slope.

Limitations

- Preparation and roughening must take place prior to installing other erosion controls (such as hydraulically applied stabilizers) or sediment controls (such as fiber rolls) on the faces of slopes.

- In such cases where slope preparation is minimal, erosion control/revegetation BMPs that do not require extensive soil preparation - such as hydraulic mulching and seeding applications - should be employed.

- Consideration should be given to the type of erosion control BMP that follows surface preparation, as some BMPs are not designed to be installed over various types of tillage/roughening, i.e., RECPs (erosion control blankets) should not be used with soil roughening due to a "bridging" effect, which suspends the blanket above the seed bed.

- Surface roughness has an effect on the amount of mulch material that needs to be applied, which shows up as a general increase in mulch material due to an increase in surface area (Topographic Index -see EC-3 Hydraulic Mulching).

Implementation

- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

General

A roughened surface can significantly reduce erosion. Based on tests done at the San Diego State Erosion Research Laboratory, various roughening techniques on slopes can result in a 12 - 76% reduction in the erosion rate versus smooth slopes.

Materials

Minimal materials are required unless amendments and/or seed are added to the soil. The majority of soil roughening/preparation can be done with equipment that is on hand at a normal construction site, such as bull dozers and compaction equipment.

Installation Guidelines

Soil Preparation

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.

- Based upon soil testing conducted, apply additional soil amendments (e.g. fertilizers, additional seed) to the soil to help with germination. Follow EC-4, Hydroseeding, when selecting and applying seed and fertilizers.

Cut Slope Roughening:

- Stair-step grade or groove the cut slopes that are steeper than 3:1.
- Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-step grading.
- Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
- Do not make individual vertical cuts more than 2 feet (0.6 m) high in soft materials or more than 3 feet (0.9 m) high in rocky materials.
- Groove the slope using machinery to create a series of ridges and depressions that run across the slope, on the contour.

Fill Slope Roughening:

- Place on fill slopes with a gradient steeper than 3:1 in lifts not to exceed 8 inches (0.2 m), and make sure each lift is properly compacted.
- Ensure that the face of the slope consists of loose, uncompacted fill 4-6 inches (0.1-0.2 m) deep.
- Use grooving or tracking to roughen the face of the slopes, if necessary.
- Do not blade or scrape the final slope face.

Roughening for Slopes to be Mowed:

- Slopes which require mowing activities should not be steeper than 3:1.
- Roughen these areas to shallow grooves by track walking, scarifying, sheepsfoot rolling, or imprinting.
- Make grooves close together (less than 10 inches), and not less than 1 inch deep, and perpendicular to the direction of runoff (i.e., parallel to the slope contours).
- Excessive roughness is undesirable where mowing is planned.

Roughening With Tracked Machinery:

- Limit roughening with tracked machinery to soils with a sandy textural component to avoid undue compaction of the soil surface.
- Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.
- Seed and mulch roughened areas as soon as possible to obtain optimum seed germination and growth.

Costs

Costs are based on the additional labor of tracking or preparation of the slope plus the cost of any required soil amendment materials.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check the seeded slopes for signs of erosion such as rills and gullies. Fill these areas slightly above the original grade, then reseed and mulch as soon as possible.
- Inspect BMPs weekly during normal operations, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

When

A fiber roll consists of straw, flax, or other similar bio-degradable materials that are rolled and bound into a tight roll or stuffed in a photo-degradable open weave netting or burlap that is generally placed on the face of slopes at regular intervals to intercept runoff, reduce flow velocity, release the runoff as sheet flow, and provide the removal of sediment.

- May be used along the top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow
- May be used as check dams in unlined ditches
- May be used where flows are moderately concentrated, such as ditches, swales, and unpaved storm drain inlets (Storm Drain Inlet Protection to divert and/or detain flows)
- Are appropriate in unpaved areas for perimeter site control or along streams, channels, storm drain inlets, or around stockpiles to intercept sediment laden storm water and non-storm water runoff

How

Installation

Follow the manufacturer's recommendations for installation. In general:

- Locate fiber rolls on level contours spaced 8 to 20 feet apart along the face of the slope
- Key fiber rolls into a trench with a depth of ¼ to 1/3 the roll thickness and width equal to the diameter of the fiber roll
- Drive stakes at least 24 inches in length into fiber rolls at a minimum of 4-foot intervals
- If more than one fiber roll is placed in a row, fiber rolls should be overlapped and not abutted end to end to ensure no sediment escapes
- Install fiber rolls in contours starting at the toe of slope and moving up

Removal

- If used on slopes, leave fiber rolls in place
- If used as Storm Drain Inlet Protection, stockpile control, or other temporary control measures, remove fiber rolls at the completion of the construction project
- If removed, collect and dispose of fiber rolls and sediment accumulation as appropriate. Fill and compact holes, trenches, depressions, or any other ground disturbance to blend with adjacent ground

Maintenance and Inspection

- Repair or replace split, torn, unraveling, or slumping fiber rolls
- Inspect fiber rolls if rain is forecasted and perform maintenance as

needed

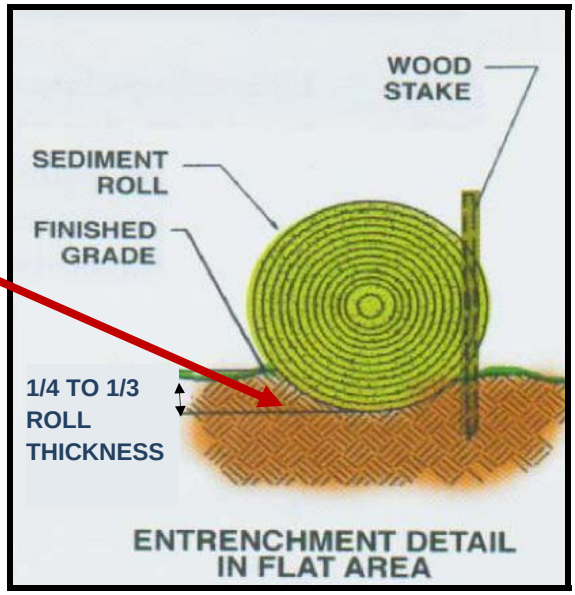
- Inspect fiber rolls before and after each storm event, and routinely during throughout the rainy season
- Sediment should be removed when sediment accumulation reaches 1/3 the distance from the top of the fiber roll and the adjacent ground surface. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at an appropriate location

Limitations

Fiber rolls are not effective unless trenched.

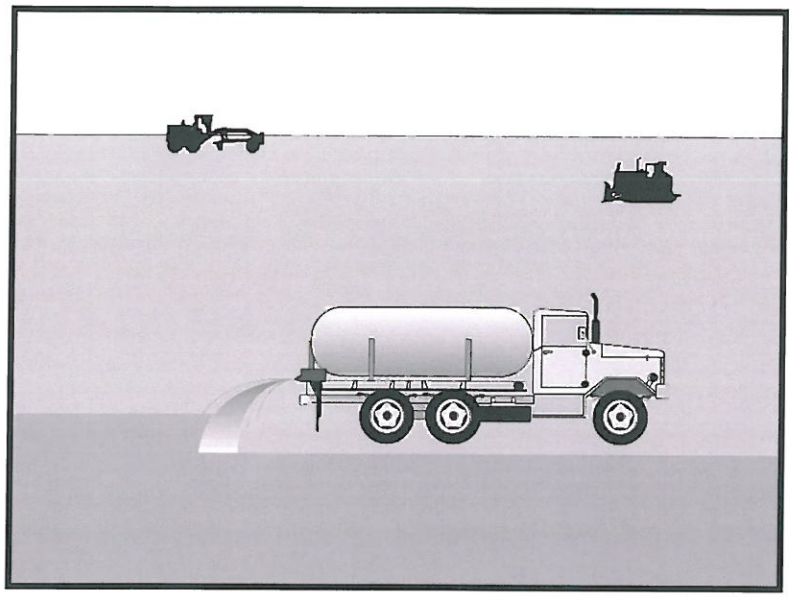
- When working in a habitat/species sensitive area:
  - Use 'certified weed free' wattles
  - Use burlap covered wattles in lieu of plastic netting

Fiber rolls need to be properly keyed in ¼ to 1/3 roll thickness into the ground surface to be effective.



Be sure to place stakes no more than 4 feet apart from each other.

Wind Erosion Control WE-1



Categories

EC	Erosion Control
SE	Sediment Control ◆
TC	Tracking Control
WE	Wind Erosion Control
NS	Non-Stormwater Management Control
WM	Waste Management and Materials Pollution Control

Legend:

❐ **Primary Category**

◆ **Secondary Category**

Targeted Constituents

Sediment
Nutrients
Trash
Metals
Bacteria
Oil and Grease
Organics

Potential Alternatives

EC-5 Soil Binders

Description and Purpose

Wind erosion or dust control consists of applying water or other chemical dust suppressants as necessary to prevent or alleviate dust nuisance generated by construction activities. Covering small stockpiles or areas is an alternative to applying water or other dust palliatives.

California's Mediterranean climate, with a short "wet" season and a typically long, hot "dry" season, allows the soils to thoroughly dry out. During the dry season, construction activities are at their peak, and disturbed and exposed areas are increasingly subject to wind erosion, sediment tracking and dust generated by construction equipment. Site conditions and climate can make dust control more of an erosion problem than water based erosion. Additionally, many local agencies, including Air Quality Management Districts, require dust control and/or dust control permits in order to comply with local nuisance laws, opacity laws (visibility impairment) and the requirements of the Clean Air Act. Wind erosion control is required to be implemented at all construction sites greater than 1 acre by the General Permit.

Suitable Applications

Most BMPs that provide protection against water-based erosion will also protect against wind-based erosion and dust control requirements required by other agencies will generally meet wind erosion control requirements for water quality protection. Wind erosion control BMPs are suitable during the following construction activities:

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- Construction vehicle traffic on unpaved roads
- Drilling and blasting activities
- Soils and debris storage piles
- Batch drop from front-end loaders
- Areas with unstabilized soil
- Final grading/site stabilization

Limitations

- Watering prevents dust only for a short period (generally less than a few hours) and should be applied daily (or more often) to be effective.
- Over watering may cause erosion and track-out.
- Oil or oil-treated subgrade should not be used for dust control because the oil may migrate into drainageways and/or seep into the soil.
- Chemical dust suppression agents may have potential environmental impacts. Selected chemical dust control agents should be environmentally benign.
- Effectiveness of controls depends on soil, temperature, humidity, wind velocity and traffic.
- Chemical dust suppression agents should not be used within 100 feet of wetlands or water bodies.
- Chemically treated subgrades may make the soil water repellant, interfering with long-term infiltration and the vegetation/re-vegetation of the site. Some chemical dust suppressants may be subject to freezing and may contain solvents and should be handled properly.
- In compacted areas, watering and other liquid dust control measures may wash sediment or other constituents into the drainage system.
- If the soil surface has minimal natural moisture, the affected area may need to be pre-wetted so that chemical dust control agents can uniformly penetrate the soil surface.

Implementation

Dust Control Practices

Dust control BMPs generally stabilize exposed surfaces and minimize activities that suspend or track dust particles. The following table presents dust control practices that can be applied to varying site conditions that could potentially cause dust. For heavily traveled and disturbed areas, wet suppression (watering), chemical dust suppression, gravel asphalt surfacing, temporary gravel construction entrances, equipment wash-out areas, and haul truck covers can be employed as dust control applications. Permanent or temporary vegetation and mulching can be employed for areas of occasional or no construction traffic. Preventive measures include minimizing surface areas to be disturbed, limiting onsite vehicle traffic to 15 mph or less, and controlling the number and activity of vehicles on a site at any given time.

Chemical dust suppressants include: mulch and fiber based dust palliatives (e.g. paper mulch with gypsum binder), salts and brines (e.g. calcium chloride, magnesium chloride), non-petroleum based organics (e.g. vegetable oil, lignosulfonate), petroleum based organics (e.g. asphalt emulsion, dust oils, petroleum resins), synthetic polymers (e.g. polyvinyl acetate, vinyls, acrylic), clay additives (e.g. bentonite, montimorillonite) and electrochemical products (e.g. enzymes, ionic products).

Site Condition	Dust Control Practices							
	Permanent Vegetation	Mulching	Wet Suppression (Watering)	Chemical Dust Suppression	Gravel or Asphalt	Temporary Gravel Construction Entrances/Equipment Wash Down	Synthetic Covers	Minimize Extent of Disturbed Area
Disturbed Areas not Subject to Traffic	X	X	X	X	X			X
Disturbed Areas Subject to Traffic			X	X	X	X		X
Material Stockpiles		X	X	X			X	X
Demolition			X			X	X	
Clearing/ Excavation			X	X				X
Truck Traffic on Unpaved Roads			X	X	X	X	X	
Tracking					X	X		

Additional preventive measures include:

- Schedule construction activities to minimize exposed area (see EC-1, Scheduling).
- Quickly treat exposed soils using water, mulching, chemical dust suppressants, or stone/gravel layering.
- Identify and stabilize key access points prior to commencement of construction.
- Minimize the impact of dust by anticipating the direction of prevailing winds.
- Restrict construction traffic to stabilized roadways within the project site, as practicable.
- Water should be applied by means of pressure-type distributors or pipelines equipped with a spray system or hoses and nozzles that will ensure even distribution.
- All distribution equipment should be equipped with a positive means of shutoff.
- Unless water is applied by means of pipelines, at least one mobile unit should be available at all times to apply water or dust palliative to the project.
- If reclaimed waste water is used, the sources and discharge must meet California Department of Health Services water reclamation criteria and the Regional Water Quality

Control Board (RWQCB) requirements. Non-potable water should not be conveyed in tanks or drain pipes that will be used to convey potable water and there should be no connection between potable and non-potable supplies. Non-potable tanks, pipes, and other conveyances should be marked, "NON-POTABLE WATER - DO NOT DRINK."

- Pave or chemically stabilize access points where unpaved traffic surfaces adjoin paved roads.
- Provide covers for haul trucks transporting materials that contribute to dust.
- Provide for rapid clean up of sediments deposited on paved roads. Furnish stabilized construction road entrances and wheel wash areas.
- Stabilize inactive areas of construction sites using temporary vegetation or chemical stabilization methods.

For chemical stabilization, there are many products available for chemically stabilizing gravel roadways and stockpiles. If chemical stabilization is used, the chemicals should not create any adverse effects on stormwater, plant life, or groundwater and should meet all applicable regulatory requirements.

Costs

Installation costs for water and chemical dust suppression vary based on the method used and the length of effectiveness. Annual costs may be high since some of these measures are effective for only a few hours to a few days.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check areas protected to ensure coverage.
- Most water-based dust control measures require frequent application, often daily or even multiple times per day. Obtain vendor or independent information on longevity of chemical dust suppressants.

References

Best Management Practices and Erosion Control Manual for Construction Sites, Flood Control District of Maricopa County, Arizona, September 1992.

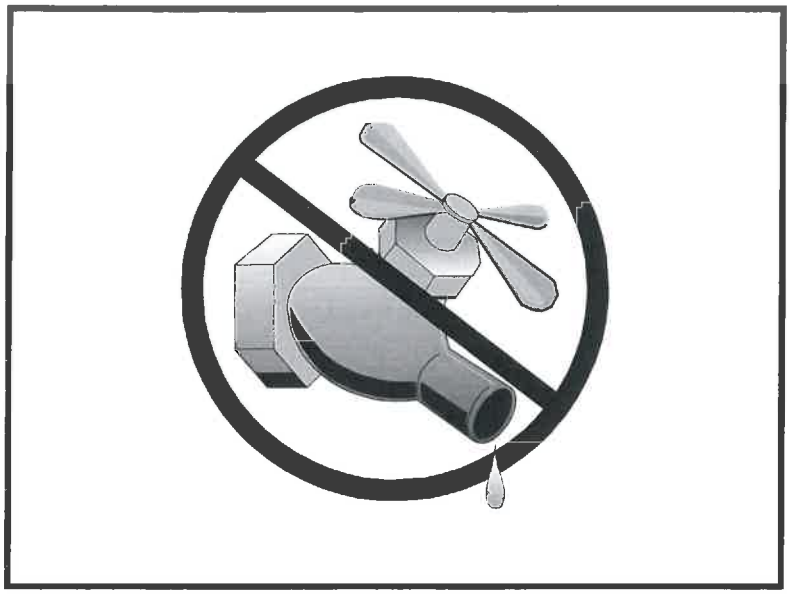
California Air Pollution Control Laws, California Air Resources Board, updated annually.

Construction Manual, Chapter 4, Section 10, "Dust Control"; Section 17, "Watering"; and Section 18, "Dust Palliative", California Department of Transportation (Caltrans), July 2001.

Prospects for Attaining the State Ambient Air Quality Standards for Suspended Particulate Matter (PM10), Visibility Reducing Particles, Sulfates, Lead, and Hydrogen Sulfide, California Air Resources Board, April 1991.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Water Conservation Practices NS-1



Categories		
EC	Erosion Control	☒
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☑
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Water conservation practices are activities that use water during the construction of a project in a manner that avoids causing erosion and the transport of pollutants offsite. These practices can reduce or eliminate non-stormwater discharges.

Suitable Applications

Water conservation practices are suitable for all construction sites where water is used, including piped water, metered water, trucked water, and water from a reservoir.

Limitations

- None identified.

Implementation

- Keep water equipment in good working condition.
- Stabilize water truck filling area.
- Repair water leaks promptly.
- Washing of vehicles and equipment on the construction site is discouraged.
- Avoid using water to clean construction areas. If water must be used for cleaning or surface preparation, surface should be swept and vacuumed first to remove dirt. This will minimize amount of water required.
- Direct construction water runoff to areas where it can soak

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into the ground or be collected and reused.

- Authorized non-stormwater discharges to the storm drain system, channels, or receiving waters are acceptable with the implementation of appropriate BMPs.
- Lock water tank valves to prevent unauthorized use.

Costs

The cost is small to none compared to the benefits of conserving water.

Inspection and Maintenance

- Inspect and verify that activity based BMPs are in place prior to the commencement of authorized non-stormwater discharges.
- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges are occuring.
- Repair water equipment as needed to prevent unintended discharges.
  - Water trucks
  - Water reservoirs (water buffalos)
  - Irrigation systems
  - Hydrant connections

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

When

Use this BMP when projects require stockpiled soil and paving materials. The stockpile management practices differ based on forecasted weather or terrain.

- Protection of stockpiles must be implemented whenever there is a potential for transport of materials by a water source (forecast precipitation, windy conditions, or any non-storm water runoff)

How

Use one or more of the following options to manage stockpiles and prevent stockpile erosion and sediment discharges for storm water and non-storm water runoff/run-on:

  - Return stockpile to the excavation if precipitation is forecast
  - Protect stockpiles from storm water run-on with temporary perimeter sediment barriers such as berms, silt fences, fiber rolls, covers, sand/gravel bags, or straw bale barriers, as appropriate
  - Remove or temporarily store stockpiles in a protected location offsite

- **Stockpiles should be covered, stabilized, or protected with a perimeter sediment barrier before the onset of precipitation**
- Secure plastic coverings tightly. Ensure no plastic is blown into electrical equipment
- Keep stockpiles organized and surrounding areas clean
- Protect storm drain inlets, watercourses, and water bodies from stockpiles, as appropriate
- Implement dust control practices as appropriate on all stockpiled material

Maintenance and Inspection

Repair and/or replace covers and perimeter containment structures as needed. Plastic sheeting requires frequent inspection for sun and wind damage.

This stockpile should have perimeter control around it. Such as, fiber rolls, a gravel bag berm, or silt fencing

Stockpile covered with plastic and secured with large rocks. Where more than one sheet of covering is required, overlap sheets and secure at seam.

This stockpile should be covered even though it has perimeter control.

Silt fence as stockpile perimeter control.

When

This BMP applies to all construction sites at all times. Implement spill control procedures any time chemicals and/or hazardous substances are stored. Substances may include, but are not limited to, fuels, lubricants, solvents, fertilizers, pesticides, herbicides, soil binders, coolants, paints, and sewage.

To the extent that work can be accomplished safely, contain spills of materials or chemicals and clean up immediately.

How

Stop the spillage of material if it can be done safely. Clean the contaminated area, and properly dispose of contaminated materials. For all spills, notify the project foreman and/or the Environmental Representative. Use the following spill prevention and controls when applicable:

- To the extent that it does not compromise cleanup activities, cover and protect spills from storm water run-on during rainfall
- Keep spill cleanup kits in areas where any materials are used and stored
- Clean up leaks and spills immediately
- Do not bury or dilute spills with wash water
- Use absorbent materials to clean up spills. Do not hose down a spill with water
- Collect and dispose of appropriately all water used for cleaning and decontamination of a spill. Do not wash it into storm drain inlets or watercourses. Coordinate disposal of these wastes with the Environmental Representative
- Store and dispose of used cleanup materials, contaminated materials, and recovered spill material in accordance with federal, state, and local regulations

Maintenance and Inspection

Routinely confirm that an ample supply of spill control cleanup materials is available near material storage, unloading, and use areas.

Keep a spill kit in or near work areas.

Be sure to wear appropriate personal protective equipment (PPE).

Use absorbent materials to soak up spilled liquids.

Store and dispose of spill cleanup materials and waste.

When

These BMPs should be used on all construction projects that generate solid waste. Solid wastes may include, but are not limited to, concrete, cement, asphalt rubble, masonry brick/block, vegetation debris, steel and scrap metals, pipe and electrical cuttings, non-hazardous equipment parts, Styrofoam, general trash, and other materials used to transport and package construction materials. BMP materials, like sand bags, gravel bags, and silt fence stock, should be separated for reuse or disposal.

Additional waste management and materials control BMPs may apply.

How

Practice good housekeeping and keep site clean.

- Use dry methods for site cleanup such as sweeping, vacuuming, and hand pick-up
- Designate a waste storage area onsite. If a designated waste storage area is not feasible, remove wastes from the site regularly
- Prohibit littering by employees, contractors, and visitors
- Keep trash receptacles available onsite and/or on construction vehicles
- Protect wastes from being washed away by rainfall, storm water run-on, or other waters (irrigation, water line breaks, etc.) or from being carried away by wind
- To prevent storm water run-on from contacting stored solid waste (stockpiled materials) use berms, secondary containment, covered dumpsters/roll-offs, or other temporary diversion structures or measures
- For materials with the potential for spills or leaks, stockpile on impervious surfaces or use plastic groundcovers to prevent spills or leaks from infiltrating the ground
- Prevent solid waste and trash from entering and clogging storm drain inlets
- As practical, incorporate any removed clean sediment and soil back into the project

Maintenance and Inspection

- Do not hose out or clean out dumpsters or containers at the construction site
- Collect site trash regularly, especially before rainy or windy conditions
- Perform routine inspections of site, including storage areas, dumpsters, stockpiles, and other areas where trash and debris are collected
- Close trashcan lids and dumpster covers before rainy or windy conditions
- Ensure waste collection is sufficiently frequent to avoid container overflow

At the end of each workday or prior to a rain event, solid waste bins are to be covered.

Covers are to be securely fastened.

Waste bin with a tarp cover.

Inspect the waste storage areas daily.

Service (empty) waste storage bins regularly.

Avoid microtrash or waste materials from overflowing or being blown onto the ground and surrounding area.

Improperly managed waste receptacle.

When

Use this BMP on all construction sites that use temporary or portable sanitary/septic waste systems.

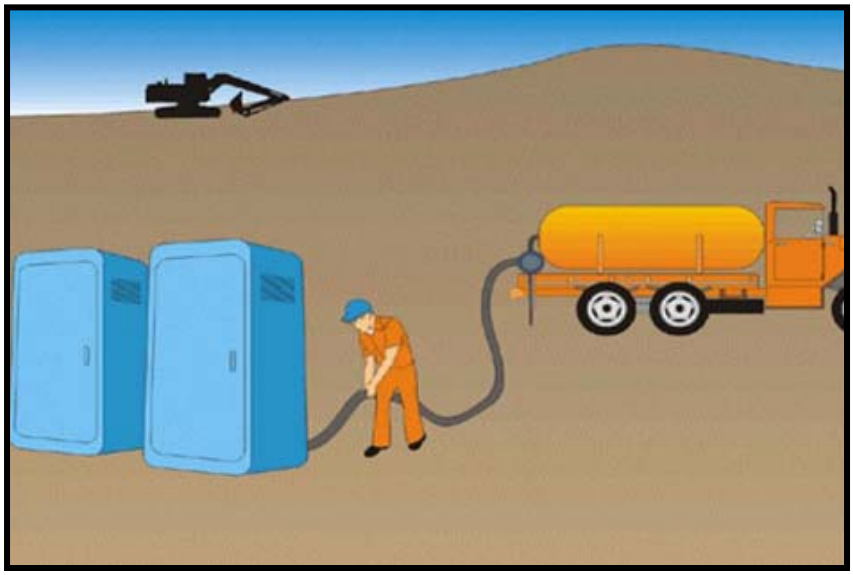
How

Manage sanitary/septic wastes in accordance with the following procedures:

- Incorporate into regular safety meetings the education of employees, contractors, and suppliers on:
  - Potential dangers to humans and the environment from sanitary/septic wastes
  - Approved sanitary/septic waste storage and disposal procedures
- When possible, locate temporary sanitary facilities at least 50 feet away from drainage facilities, watercourses, and traffic circulation. When subjected to high winds or risk of high winds, secure temporary sanitary facilities to prevent overturning
- Do not bury or discharge sanitary wastewater, except to a properly permitted sanitary sewer discharge facility. The local Sanitation District might require a permit
- Use only reputable, licensed sanitary/septic waste haulers
- Empty temporary sanitary facility's holding tanks before transport

Maintenance and Inspection

- Routinely inspect onsite sanitary/septic waste storage and disposal
- Ensure that sanitary/septic facilities are maintained in good working order and are routinely serviced by a licensed service



Good septic waste management.

Attachment C thru F: Place holder

Attachment C: Construction Site Inspection Checklist

Instructions: Review checklist and revise/delete/line out any items that are not applicable to the Project. Fill out/complete the revised checklist during inspections. At a minimum, the site should be inspected once a month. A copy of each completed Construction Site Inspection Checklist will be provided to the Storm Water Program Team within 3-days of an inspection that resulted in the implementation of a corrective action.

GENERAL INFORMATION	
Project Name	PG&E Moss Landing-Metcalf 500kV
Contractor	
Inspector's Name/Phone	
Signature	
Date of Inspection	

OTHER REQUIREMENTS				
Requirement	**Yes**	**No**	**N/A**	**Corrective Action**
Preservation of Existing Vegetation				
Is temporary fencing provided to preserve vegetation in areas where no construction activity is planned?				
Location:				
Location:				
Location:				
Location:				
Temporary Soil Stabilization				
Does the applied temporary soil stabilization provide 100% coverage for the required areas?				
Are any non-vegetated areas that may require temporary soil stabilization?				
Is the area where temporary soil stabilization required free from visible erosion?				
Location:				
Location:				
Location:				
Location:				
Temporary Linear Sediment Barriers				
Are temporary linear sediment barriers properly installed in accordance with the details, functional and maintained?				

OTHER REQUIREMENTS				
Requirement	**Yes**	**No**	**N/A**	**Corrective Action**
Are temporary linear sediment barriers free of accumulated litter?				
Is the built-up sediment less than 1/3 the height of the barrier?				
Are cross barriers installed where necessary and properly spaced?				
Are fiber rolls installed and maintained on required slopes in accordance with the details, functional and maintained?				
Location:				
Location:				
Location:				
Location:				
Location:				
Storm Drain Inlet Protection				
Are storm drain inlets internal to the project properly protected?				
Are storm drain inlet protection devices in working order and being properly maintained?				
Location:				
Location:				
Location:				
Location:				
Location:				
Desilting Basins				
Are basins maintained to provide the required retention/detention?				
Are basin controls (inlets, outlets, diversions, weirs, spillways, and racks) in working order?				
Location:				
Location:				
Location:				
Location:				
Stockpiles				
Are all locations of temporary stockpiles, including soil, hazardous waste, and construction materials in approved areas?				
Are stockpiles protected from run-on, run-off from adjacent areas and from winds?				
Are stockpiles located at least 50 ft from concentrated flows, downstream drainage courses and storm drain inlets?				
Are required covers and/or perimeter controls in place?				
Location:				
Location:				
Location:				

OTHER REQUIREMENTS				
Requirement	**Yes**	**No**	**N/A**	**Corrective Action**
Location:				
Concentrated Flows				
Are concentrated flow paths free of visible erosion?				
Location:				
Location:				
Location:				
Location:				
Tracking Control				
Are points of ingress/egress to public/private roads inspected, swept, and vacuumed daily?				
Are all paved areas free of visible sediment tracking or other particulate matter?				
Is rock at Temporary Construction Entrance(s) 12-inches or more in thickness?				
Does sediment need to be removed from the rock, or does the rock need to be replaced?				
For Type 2 Construction Entrance, does sediment need to be removed from ribbed plates?				
Location:				
Location:				
Location:				
Location:				
Wind Erosion Control				
Is dust control implemented in conformance with Section 10 of the Standard Specifications?				
Location:				
Location:				
Location:				
Location:				
Dewatering Operations				
Is dewatering handled in conformance with the dewatering permit issued by the RWQCB?				
Is required treatment provided for dewatering effluent?				
Location:				
Location:				
Location:				
Location:				
Vehicle & Equipment Fueling, Cleaning, and Maintenance				

OTHER REQUIREMENTS				
Requirement	**Yes**	**No**	**N/A**	**Corrective Action**
Are vehicle and equipment fueling, cleaning and maintenance areas reasonably clean and free of spills, leaks, or any other deleterious material?				
Are vehicle and equipment fueling, cleaning and maintenance activities performed on an impermeable surface in dedicated areas?				
If no, are drip pans used?				
Are dedicated fueling, cleaning, and maintenance areas located at least 15 m away from downstream drainage facilities and watercourses, and protected from run-on and runoff?				
Is wash water contained for infiltration/ evaporation and disposed of outside the highway right of way?				
Is on-site cleaning limited to washing with water (no soap, soaps substitutes, solvents, or steam)?				
On each day of use, are vehicles and equipment inspected for leaks and if necessary, repaired?				
Location:				
Location:				
Location:				
Location:				
Waste Management & Materials Pollution Control				
Are material storage areas and washout areas protected from run-on and runoff, and located at least 50 ft from concentrated flows and downstream drainage facilities?				
Are all material handling and storage areas clean; organized; free of spills, leaks, or any other deleterious material; and stocked with appropriate clean-up supplies?				
Are liquid materials, hazardous materials, and hazardous wastes stored in temporary containment facilities?				
Are bagged and boxed materials stored on pallets?				
Are hazardous materials and wastes stored in appropriate, labeled containers?				
Are proper storage, clean-up, and spill-reporting procedures for hazardous materials and wastes posted in open, conspicuous and accessible locations adjacent to storage areas?				
Are temporary containment facilities free of spills and rainwater?				
Are temporary containment facilities and bagged/boxed materials covered?				
Are temporary concrete washout facilities designated and being used?				
Are temporary concrete washout facilities functional for receiving and containing concrete waste and are concrete residues prevented from entering the drainage system?				
Do temporary concrete washout facilities provide sufficient volume and freeboard for planned concrete operations?				
Are the temporary concrete washout facilities' PVC liners free from punctures and holes?				

OTHER REQUIREMENTS				
Requirement	**Yes**	**No**	**N/A**	**Corrective Action**
Are concrete wastes, including residues from cutting and grinding, contained and disposed of off-site or in concrete washout facilities?				
Are spills from mobile equipment fueling and maintenance properly contained and cleaned up?				
Is the site free of litter?				
Are trash receptacles provided in the Contractor's yard, field trailer areas, and at locations where workers congregate for lunch and break periods?				
Is litter from work areas within the construction limits of the project site collected and placed in watertight dumpsters?				
Are waste management receptacles free of leaks?				
Are the contents of waste management receptacles properly protected from contact with storm water or from being dislodged by winds?				
Are waste management receptacles filled at or beyond capacity?				
Location:				
Location:				
Location:				
Location:				
Temporary Water Body Crossing or Encroachment				
Are temporary water body crossings and encroachments constructed as shown on the plans or as approved by the engineer?				
Does the project conform to the requirements of the 404 permit and/or 1601agreement?				
Location:				
Location:				
Location:				
Location:				
Illicit Connection/Illegal Discharge Detection and Reporting				
Is there any evidence of illicit discharges or illegal dumping on the project site?				
If yes, has the Construction Supervisor been notified?				
Location:				
Location:				
Location:				
Location:				
Discharge Points				
Are discharge points and discharge flows free from noticeable pollutants?				
Are discharge points free of any significant erosion or sediment transport?				

OTHER REQUIREMENTS				
Requirement	**Yes**	**No**	**N/A**	**Corrective Action**
Location:				
Location:				
Location:				
Location:				
ESCP Update				
Do the ESCP, Project Schedule and ESCDs adequately reflect the current site conditions and contractor operations?				
Are all BMPs shown on the ESCDs installed in the proper location(s) and according to the details for the plan?				
Location:				
Location:				
Location:				
Location:				
General				
Are there any other potential water pollution control concerns at the site?				
Location:				
Location:				
Location:				
Location:				
Storm Water Monitoring				
Does storm water discharge directly to a water body listed as impaired for sediment/sedimentation or turbidity in the General Construction Activity Permit?				
If yes, were samples for sediment/sedimentation or turbidity collected pursuant to the sampling and analysis plan, if required, during rain events?				
Were there any BMPs not properly implemented, or breaches, malfunctions, leakages or spills observed, which could result in the discharge of pollutants to surface waters that would not be visually detectable in storm water?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				
Were soil amendments (e.g., gypsum) used on the project?				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				
Did storm water contact stored materials or waste and resulted in a discharge from the construction site? (Materials not in watertight containers, etc.)				
If yes, were samples for non-visually detectable pollutants collected pursuant to the sampling and analysis plan during rain events?				

Attachment D: Notice of Discharge

Instructions: Contact the EFS immediately to ensure that all PG&E Spill Response Measures are followed as required. EFS 24-hour contact number is 800-874-4043.

This form will be used to report instances of discharges to the Storm Water Program Team. The completed form will be submitted to the Storm Water Program Team within 2 working days, of the assessment of discharge, written notice, or orders from a regulatory agency.

Submit photographs (before and after correction of the discharge) with this report.

To: Storm Water Program Team Date: Insert Date

Subject: Notice of Discharge

Project Name: PG&E Moss Landing-Metcalf 500kV

Project Manager Name: Brad Scheidecker

Project Manager Phone: 815-441-2295

The following instance of discharge is noted and corresponding actions taken.

Date/Time of Discharge	
Location of Discharge	
Material(s) Discharged	
Operation that Caused Discharge	
Initial assessment of any impact caused by discharge	
Assessment of Existing BMPs in place prior to discharge (provide photo-documentation)	
Actions Taken to Prevent Future Discharge	
Steps taken or planned to reduce, eliminate and/or prevent recurrence of the discharge	
BMPs Repaired or BMPs Deployed After discharge (list location, BMP type, and action taken)	
Implementation and maintenance schedule for affected BMPs	

Attachment E: Trained Personnel Log

Instructions *Use this sheet to record individuals attending formal training or informal tailgate on-site meetings on storm water management. Provide a copy of training material used to the PG&E Storm Water Program Team.*

Storm Water Management Training Log

Project Name: PG&E Moss Landing-Metcalf 500kV

Project Manager Name: Brad Scheidecker

Project Manager Phone: 815-441-2295

Storm Water Management Topic: (check as appropriate)

- ❑ Temporary Soil Stabilization
- ❑ Temporary Sediment Control
- ❑ Wind Erosion Control
- ❑ Tracking Control
- ❑ Non-storm water management
- ❑ Waste Management and Materials Pollution Control
- ❑ Discharge Reporting
- ❑ Sensitive Habitat Issues/Receiving Water Issues

Training provided by: PG&E or Contractor

Location: _____ Date: _____

Instructor: _____ Telephone: _____

Course Length (hours): _____

Attendee Roster (attach additional forms if necessary)

Name	Company	Phone

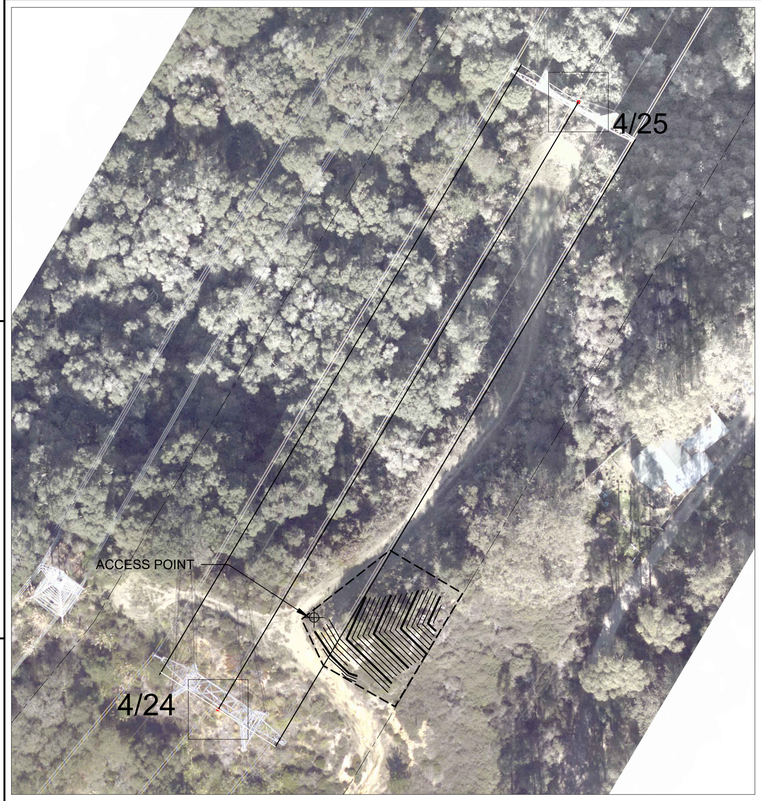
COMMENTS:

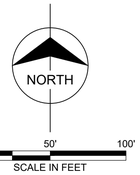
Attachment F: Final Site Inspection Checklist

Instructions: Review checklist and fill out the checklist for the final site inspection once construction has been completed and the site has been stabilized. All temporary BMPs must be removed, all construction equipment must be demobilized, and the site should be at least at 70% stabilization. A copy of the Final Site Inspection Checklist will be provided to the Storm Water Program Group within 48-hours of a final inspection. Provide photo-documentation of any areas that still require stabilization measures.

GENERAL INFORMATION	
Project Name	PG&E Moss Landing-Metcalf 500kV
Contractor	
Inspector's Name/Phone	
Signature	
Date of Final Site Inspection	

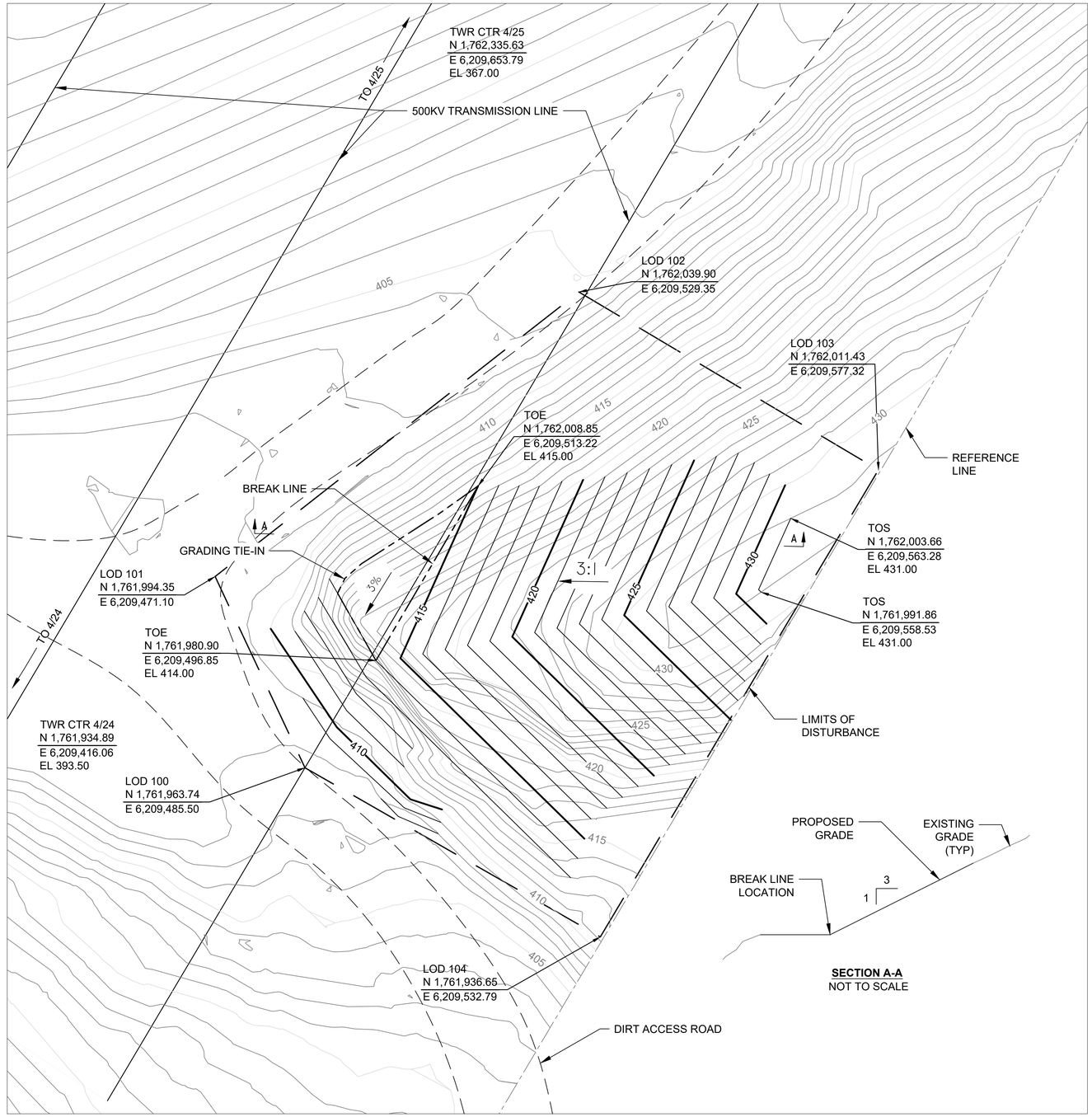
FINAL SITE INSPECTION CHECKLIST				
Requirement	**Yes**	**No**	**N/A**	**Notes**
Construction is complete and all construction equipment has been demobilized, and construction wastes and materials have been properly managed/disposed?				
All temporary BMPs have been removed?				
A minimum of 70% stabilization has been reached in all disturbed soil areas?				
There are NO remaining disturbed soil areas that would require stabilization measures? If no, then provide photo-documentation of all disturbed areas that require stabilization measures.				
If answered 'No' to any questions, what actions are required?				
List actions required:				





LEGEND:

LOD	LIMITS OF DISTURBANCE
TOS	TOP OF SLOPE
TOE	TOE OF SLOPE
— — —	GRADE BREAK
420	EXISTING MAJOR CONTOUR
	EXISTING MINOR CONTOUR
420	PROPOSED MAJOR CONTOUR
	PROPOSED MINOR CONTOUR



SECTION A-A
NOT TO SCALE

0 10' 20'
SCALE IN FEET

PG&E FINAL 9-17-21, PLN 160131

SPECIAL CONSTRUCTION NOTES:

1. THE PROJECT FOOTPRINT WILL BE MINIMIZED TO THE MAXIMUM EXTENT FEASIBLE AND AVOID UNNECESSARY DISTURBANCE TO NATIVE VEGETATION. WHERE FEASIBLE, SHRUBS SHALL BE CUT TO THE GROUND WITHOUT DISTURBING ROOTS TO ALLOW FOR POTENTIAL RESPROUTING BY SOME SHRUB SPECIES.
2. PRECONSTRUCTION SURVEYS FOR PAJARO MANZANITA, HOOKER'S MANZANITA AND EASTWOOD'S GOLDENBUSH WILL BE CONDUCTED WITHIN THE LIMITS OF DISTURBANCE (LOD) AND PLANTS WILL BE FLAGGED TO ASSIST CREWS WITH AVOIDANCE WHEN POSSIBLE. WHERE FEASIBLE, TEMPORARY FENCING (E.G., ORANGE CONSTRUCTION FENCING) SHOULD BE INSTALLED OUTSIDE A FIVE-FOOT BUFFER FROM THE CANOPY EDGE OF ANY SENSITIVE NATIVE SHRUB OR SHRUBS AND SHOULD REMAIN IN PLACE FOR THE DURATION OF GRADING AND CONSTRUCTION ACTIVITIES IN THE AREA. FENCING SHOULD BE SUPPORTED BY POSTS ON MINIMUM SIX-FOOT (1.8 M) CENTERS OR EQUIVALENT.
3. AFTER GRADING, THE ERODED SLOPE WILL BE STABILIZED AND THE HABITAT RESTORED AS DETAILED IN THE 'HABITAT RESTORATION PLAN, MOSS LANDING-METCALF 500 KV GRADING PROJECT'.
4. ANY WATER GENERATED FROM CONSTRUCTION OR ENTERS SITE FROM OTHER CAUSE MUST BE CONTAINED ON SITE.

NOTES:

1. EXISTING TRANSMISSION REFERENCE LINE SHOWN AT 100-FT OFF CENTERLINE OF THE 500KV LINE WITH A WIDTH OF APPROXIMATELY 200-FT.
2. ALL CUT SLOPES ARE SHOWN AT A 3:1 (H:V) MAX, UNLESS NOTED OTHERWISE.
3. ALL ELEVATIONS SHOWN INDICATE FINAL GRADES.
4. CONTRACTOR SHALL PROVIDE AS-BUILT SURVEY INFORMATION TO ENSURE GRADING HAS BEEN DONE IN ACCORDANCE WITH THE DRAWINGS.
5. MAXIMUM DISTURBED AREA IS TO BE LESS THAN 6,042 SQ FT.
6. ALL MATERIAL USED AS FILL SHALL BE COMPACTED TO AT LEAST 90% OF MAXIMUM DRY DENSITY PER THE LATEST REVISION OF ASTM D-1557. ALL EXCESS MATERIAL NOT NEEDED TO COMPLETE THE PROPOSED GRADING PLAN WITHIN THE LIMITS OF DISTURBANCE SHOWN SHALL BE HAULED OFF SITE AND DISPOSED OF PROPERLY.
7. APPROXIMATELY 400 CU YDS ARE TO BE EXCAVATED. DEPTH OF CUT RANGES FROM APPROXIMATELY 1.0-FT TO 7.5-FT.
8. CONTRACTOR SHALL INSTALL & MAINTAIN EROSION CONTROL MEASURES AS DETAILED IN THE 'HABITAT RESTORATION PLAN, MOSS LANDING-METCALF 500 KV GRADING PROJECT' TO CONTROL STORM WATER RUNOFF.
9. COORDINATES ARE CALIFORNIA STATE PLANE NAD83 ZONE III.

PG&E ACCEPTED FOR CONSTRUCTION
ENGINEERING DEPARTMENT
BY: Henry Ho on 04/26/2021

FOR QUESTIONS ON REV 2 OF THIS DWG
PE: NICK WUERTZ 816-276-1599
DE: MARSHALL BIRD 816-800-9662

REV	DATE	DESCRIPTION	JOB NO	DSG/DWN	CHKD	SUPV	APVD
2	4/14/21	REVISED GRADING PLAN	74004600	BM/HEC	BM/PNW	BM/PNW	BM/PNW
1	7/15/15	NERC MITIGATION GRADING	31106461	BM/AKT	BM/PNW	BM/SCC	BM/SCC

ORDER NO.	31106461
DSG	BMcD/SDM
DWN	BMcD/AKT
CHKD	BMcD/PNW
SUPV	BMcD/SCC
APVD	BMcD/SCC
APVD	
DATE	7/15/15

MOSS LANDING-METCALF 500kV
(MONTEREY COUNTY)
FINAL GRADING PLAN
SPAN 4/24-4/25

DEPARTMENT OF ENGINEERING
PACIFIC GAS AND ELECTRIC COMPANY
SAN FRANCISCO, CALIFORNIA

MICROFILM	
BILL OF MATL	
DWG LIST	
SUPSDS	
SUPSD BY	
SHEET NO	SHEETS
3014266	REV 2

F4350

ARCADIS Design & Consultancy for natural and built assets

Pacific Gas and Electric

HABITAT RESTORATION PLAN

Moss Landing-Metcalf 500kV Grading Project, Monterey County, California

September 2021

HABITAT RESTORATION PLAN

Moss Landing–Metcalf 500kV Grading Project, Monterey County, California

Prepared for:

Pacific Gas and Electric

Prepared by:

Arcadis U.S., Inc.

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California 94520

Tel 925 274 1100

Fax 925 726 0121

Our Ref.:

30027996

Date:

September 2021

CONTENTS

TABLES

FIGURES

ACRONYMS AND ABBREVIATIONS

Arcadis	Arcadis U.S., Inc
BMPs	best management practices
CCC	California Coastal Commission
CDFW	California Department of Fish and Wildlife
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rankings
GPS	global positioning system
HRP	Habitat Restoration Plan
LOD	limits of disturbance
PG&E	Pacific Gas and Electric
Project	Moss Landing–Metcalf 500 kilovolt (kV) Grading Project
RMA	Resource Management Agency
S-ESCP	Site Specific Erosion and Sediment Control Plan

1 PLAN OBJECTIVE

The objective of this Habitat Restoration Plan (HRP) is to restore the healthy, vibrant central maritime chaparral habitat that currently exists on a small knoll within Pacific Gas and Electric Company's (PG&E's) utility easement and to reestablish the three special-status plant species (Pajaro manzanita, Eastwood's goldenbush and Hooker's manzanita) and other native vegetation that must be removed within the grading area and limits of disturbance (LOD) as part of the utility safety project. To help accomplish this objective, the project will address existing erosion within the LOD by reducing the slope of the knoll from 2/1 to 3/1 and will remove invasive species within and adjacent to the knoll that could jeopardize the survival of the special-status plant species before the habitat has been reestablished.

2 INTRODUCTION

Pacific Gas and Electric (PG&E) proposes to remove the top of a knoll that exists beneath the Moss Landing-Metcalf 500 kV Circuit near Tower 004/024 by grading an approximately 2,855 square feet area (the grading area) within a larger habitat area (the limit of disturbance [LOD]) covering approximately 6,042 square feet. The Pacific Gas and Electric (PG&E) Moss Landing-Metcalf 500 kV Grading Project (Project) is located in Monterey County, California and includes the entire LOD (Figures 1, 2 and 3). The small knoll on which the Project occurs is dominated by central maritime chaparral vegetation that includes three special-status plant species with California Native Plant Society Rare Plant Ranks (CRPR) of 1B (CNPS 2021): Pajaro manzanita (*Arctostaphylos pajaroensis*), Eastwood's goldenbush (*Ericameria fasciculata*), and Hooker's manzanita (*Arctostaphylos hookeri* subsp. *hookeri*).

Grading activities will include the removal, stockpile, and salvage of the top six inches of topsoil from the grading area. Following grading, the topsoil will be replaced within the grading area; non-native plants will be removed throughout the LOD. All equipment maneuvering, stockpiling of reserved topsoil and plants, and redistribution will take place within the LOD or the adjacent, disturbed roadway. To complete the work, PG&E will use a rubber tire skid-steer loader, mini-excavator, and small dump truck (10 cubic yards). The Project will take approximately one week to complete.

Sensitive biological resources in the Project area have been previously summarized in the *Pacific Gas & Electric Biological Assessment: Moss Landing-Metcalf 500 kV Grading Project* (Arcadis 2016) and the revised Biological Assessment (BA; Arcadis 2018).

Arcadis U.S., Inc. (Arcadis) has prepared this PG&E Habitat Restoration Plan (HRP) to describe the activities that will be undertaken to restore the central maritime chaparral community and special-status plant species in the grading area that will be affected by the Project (Figures 2 and 3). Temporary disturbance areas supporting central maritime chaparral vegetation will receive an appropriate erosion control seed mix, installation of all available salvaged shrubs and container plantings, and maintenance and monitoring for five years, subject to achievement of quantifiable performance standards.

As indicated in Section 1, this HRP seeks to restore the plant communities within the grading area and LOD to approximate pre-project vegetative conditions. "Pre-project" refers to the site terrain and vegetation immediately prior to the commencement of field operations on the Moss Landing-Metcalf 500kV Grading Project. The restoration activities described in this HRP are designed to conserve soil and

reduce erosion, protect existing wildlife and native plants, reduce the potential for invasive species to spread into native vegetation areas, and reestablish native central maritime chaparral vegetation and special-status shrubs in the grading area.

Figures 1 through 3 show the site vicinity, habitat types, and the special-status shrubs in the proposed LOD and grading area likely requiring restoration under this HRP.

Table 1 presents the number of special-status shrub species currently present in the anticipated grading area and LOD. Table 2 provides a schedule for habitat restoration activities. Tables 3 and 4 present the erosion control seed mix and proposed container plantings. Table 5 presents the restoration performance criteria, and Table 6 summarizes the associated restoration performance criteria measuring methods. Table 7 documents the observed plant species within the Project area.

3 SITE DESCRIPTION

The grading area generally occurs on the top of a small knoll approximately 400 feet above mean sea level. The Project area is underlain by the Aromas Sands formation; these rusty-brown well-drained substrates initially formed from aeolian Pleistocene sand deposition and are cemented with iron oxides (Dibblee and Minch 2006).

The Moss Landing-Metcalf 500kV transmission line spans the Project area, with structure 004/024 located to the immediate west of the LOD at the bottom of the knoll, and associated access roads surround the grading area to the southeast and west. Central maritime chaparral vegetation predominates on the knoll within the grading area, with planted Tasmanian blue gum (*Eucalyptus globulus*) outside of the LOD to the northeast. To the west of the access road, a northwesterly slope descends from the road and consists of live oak woodland (*Quercus agrifolia*), which is outside of the LOD. No coast live oak woodland occurs within the LOD.

The Project area lies at the southern edge of the “Northwest Pacific Coast” climate class, which is characterized by variable precipitation concentrated between October and April, and a cool summer. The local climate is influenced by summer fog and predominant cool northwest winds. There is a sharp gradient in climate from the coast to inland areas, where summer temperatures may be much higher, especially during calm periods and/or in areas sheltered from the prevailing winds (Major 1988).

4 VEGETATION TYPES IN PROJECT AREA

Central maritime chaparral, which covers the grading area, is dominated by evergreen shrubs that form open stands to almost impenetrable thickets on sandy substrates in coastal locations, primarily between Santa Cruz County and Santa Barbara County. This woody chaparral vegetation ranges from three to twelve feet in height, although low-growing annuals and herbaceous perennials occur in exposed openings. The most common shrubs in central maritime chaparral vegetation vary by location but tend to include local endemic species of manzanita (*Arctostaphylos*) and ceanothus (*Ceanothus*) mixed with other widespread and endemic species (Holland 1986).

Vegetation within the Project area is characterized according to the National Vegetation Classification system as it has been applied to California by the California Native Plant Society (CNPS) and the California Department of Fish and Wildlife (CDFW) in the *California Manual of Vegetation*, *Second Edition*

(Sawyer et al. 2009), including the updated *California State Natural Communities List*, also called the *List of Vegetation Alliances and Associations* (CDFW 2021).

The grading area is dominated by a type of central maritime chaparral vegetation called Pajaro Manzanita Chaparral (*Arctostaphylos pajaroensis* Shrubland Alliance). Pajaro manzanita forms large patches on the knoll and along its margins. Smaller numbers of other shrubs are present, including scattered Eastwood's goldenbush, chamise (*Adenostoma fasciculatum*), shaggy-bark manzanita (*Arctostaphylos crustacea* subsp. *crustacea*), golden yarrow (*Eriophyllum confertiflorum*), black sage (*Salvia mellifera*), and bush monkey flower (*Diplacus aurantiacus*); round-fruited sedge (*Carex globosa*) is scattered between shrubs along with other grasses and forbs. Hooker's manzanita forms two broad patches on the eastern side of the grading area and dwarf ceanothus (*Ceanothus dentatus*) also occurs nearby.

Pajaro Manzanita Chaparral is characterized as Central Maritime Chaparral in the California Natural Diversity Database (CNDDB) community classification system (Holland 1986) and as the *Arctostaphylos pajaroensis* Shrubland Alliance in the CNPS Manual of California Vegetation (Sawyer et al. 2009). *Arctostaphylos pajaroensis* Shrubland Alliance has a G1 global rarity ranking and an S1 state rarity ranking (fewer than 6 viable occurrences worldwide, and/or up to 1,280 acres), according to Sawyer et al. (2009).

CDFW treats natural communities with a G1/S1 rarity ranking as critically imperiled in California because of extreme rarity (often five or fewer occurrences) or because of other factor(s), such as steep declines in acreage or habitat fragmentation (CDFW 2021).

There are three special-status shrub species within the LOD with California Native Plant Society (CNPS) California Rare Plant Rankings (CRPR); all have a CRPR of 1B, which signifies plants that are rare, threatened, or endangered in California and elsewhere. The numerical extension designates the threat rank, with 0.1 representing seriously threatened species in California and 0.2 representing moderately threatened species in California. Pajaro manzanita and Eastwood's goldenbush both have a CRPR of 1B.1, and Hooker's manzanita has a CRPR of 1B.2.

5 HABITAT PROTECTION AND AVOIDANCE MEASURES

The following general measures are proposed to avoid and minimize impacts to native trees, shrubs, and herbaceous species occurring immediately adjacent to but outside the disturbance area. The term "feasible" in this Plan shall mean capable of being achieved in a reasonably practicable manner. Whenever an action cannot feasibly be accomplished or a feasible alternative must be chosen, PG&E shall proceed in a manner consistent with the Plan Objective set forth in Section 1 and the general approach taken in this HRP.

- **Limit disturbance of central maritime chaparral habitat** – To the extent feasible, the grading area shall be minimized to impact the smallest area necessary to achieve project objectives. Where shrub removal is not necessary to achieve project purposes, shrubs shall be cut to the ground without disturbing roots to allow for potential resprouting by some shrub species.

- **Preconstruction surveys for special-status shrubs** – Preconstruction surveys for Pajaro manzanita, Hooker's manzanita, and Eastwood's goldenbush will be conducted within the LOD, and

plants will be flagged to assist crews with avoidance when possible. Seeds of all shrubs within the grading area will be collected and stored for subsequent sowing in the grading area. Details on topsoil salvaging and shrub salvaging are provided in Section 6.

- **Temporary fencing to protect sensitive biological resources** - Where feasible, temporary fencing (e.g., orange construction fencing) shall be installed outside a five-foot buffer from the canopy edge of any sensitive native shrub or shrubs, as well as along the margins of the oak woodland west of the access road adjacent to the LOD and shall remain in place for the duration that any heavy machinery and construction-related vehicle is at the site. Fencing shall be supported by posts on minimum six-foot centers or equivalent. No earth disturbance shall occur outside of the approved grading area other than on the disturbed roadway.

- **Avoid the nesting bird season** - Grading activities will be conducted outside of bird nesting season (February 15 to August 31), if feasible. Prior to initial ground disturbances if occurring between February 15 and August 31, a pre- construction survey for nesting birds shall be completed within 14 days of the initial ground disturbance. Any nesting activities identified will be communicated to the PG&E biologist and where feasible, a construction avoidance zone (buffer) from any active bird nests shall be established and maintained during construction activities within this timeframe in accordance with PG&E's Nesting Bird Management Plan.

- **Site Specific Erosion and Sediment Control Plan (S-ESCP)** - A site specific erosion and sediment control plan (S-ESCP) was prepared to ensure slope stability within and adjacent to the LOD. Best Management Practices to control soil migration during construction and proper stormwater management during and following construction shall be required in order to protect the water quality in the drainages and the watershed.

  Erosion control monitoring shall take place in accordance with the S-ESCP. The plan shall detail site-specific temporary erosion control measures to reduce discharge of any sediment from construction activities outside of the Project work area, such as installation of wattles, silt fences, and sterile rice straw bales. Strategic placement of temporary runoff-retaining structures such as silt fences and hay bales must be in place at the beginning of the rainy season. If erosion control material is moved during the day, it must be properly replaced before leaving the site. On-site control of sediment and pollution will help ensure that sediments generated during grading will remain on Site and will not migrate into nearby sensitive areas.

- **Staging and stockpiling** - All staging and stockpiling shall be limited to the existing paved or disturbed surfaces to the maximum extent feasible. No staging shall occur within the sensitive habitats or the designated buffer zones.

- **Equipment maintenance** – Equipment/vehicle maintenance/repairs shall be performed off-site.

- **Oil spill protection measures** – Engineering design shall include measures for spill containment such as berms and other structures to contain any released fluids or combinations of released fluids and stormwater from heavy equipment.

6 HABITAT RESTORATION PLAN

Native central maritime chaparral within the grading area (Figure 2) will be restored according to the methods outlined in this section. Within this HRP, the proposed restoration area, previously referred to as the grading area, will be referred to as the "Site" when referring to restoration efforts and performance. Habitat restoration goals, site preparation, appropriate seed mix, container plantings, topsoil and shrub salvaging, and site maintenance are detailed in the ensuing sections, along with restoration monitoring, reporting, and quantifiable performance standards and measuring methods.

The habitat restoration activities described in the following sections have been designed to conserve soil and reduce erosion, protect existing wildlife and native plants, restore areas temporarily disturbed to pre-project conditions to the extent feasible, and reestablish native vegetation that grows and survives without maintenance, and that reflects the characteristics of adjacent native vegetation.

Species chosen for seeding and/or planting are characteristic of the Site based on pre-project conditions, as described in the Biological Assessment (Arcadis 2016, 2018) and observed during site visits. The habitat restoration approach for the Project explicitly embraces adaptive management to facilitate restoration success based on site-specific situations.

6.1 Restoration Goals

Habitat restoration within temporary disturbance areas at the Site is based on the following goals:

- Restore temporary disturbance areas to pre-project conditions or better
- Restore special-status shrub species to the Site
- Provide functional habitat value for native plants and animals within the Site
- Eliminate post-construction erosion and off-site sediment transport caused by current project grading

Specific objectives and techniques to meet Project goals, performance criteria, monitoring requirements, and contingency measures are provided in the following sections and are also provided in Tables 1 through 7.

Implementation of this HRP shall be the responsibility of a designated Site Restoration Manager, acting on behalf of PG&E, who shall be a qualified restoration ecologist with experience establishing vegetation types similar to those proposed in this HRP. The major restoration-related tasks covered within this HRP to be carried out by the Restoration Manager include documentation of native species at the Site, oversight of site preparation, seed and propagule collection, biological resource protection during grading, oversight of shrub salvaging and seed collection, oversight of container plantings and hydroseeding, regular restoration monitoring and associated reporting, oversight of maintenance activities (including

irrigation and weed abatement), and implementation of adaptive management, if needed. PG&E, as the permit holder for the coastal development permits, is responsible for ensuring that the Site Restoration Manager fulfills the requirements of the HRP. Table 2 provides an overview of restoration tasks by season (summer, fall, spring, winter) over a five-year period after initial restoration implementation. Monitoring years are defined as January to December after restoration implementation has been initiated, unless otherwise specified.

6.2 Site Preparation

The exact configuration of the restoration area will be determined in the field by the Site Restoration Manager and marked with a GPS (global positioning system) unit and pin flags once grading is complete.

The primary tasks associated with Site preparation include topsoil salvaging, staking/marking of the restoration site, and installation of any needed erosion control BMPs, and weed abatement. A temporary irrigation system may be installed if needed and if conditions are particularly dry during the planting effort.

6.2.1 Topsoil Salvaging and Replacement

The top six inches of soil in the grading area may contain seeds of native species and beneficial soil microbes. Viable seeds are often concentrated in the top several inches of soil. During construction, soil salvaging will be conducted using heavy equipment at the time of grading. The top six inches of soil likely to contain viable seedbank will be removed and stockpiled nearby. During final grading, the area will be graded to a depth of six inches below surrounding grade to facilitate topsoil replacement. Salvaged soils shall be replaced in the order they were removed, with the deepest stored subsoil replaced first, followed by topsoil replacement.

6.2.2 Erosion Control Best Management Practices

To avoid impacts to sensitive habitats, species, and drainages, the S-ESCP will be implemented to reduce erosion and off-site sediment transport. Erosion control BMPs installed after grading is completed may include silt (sediment) fencing, erosion control blankets, and wattles and/or sterile rice straw bales.

If additional erosion control BMPs are required during the restoration and monitoring phase of the Restoration Program, the following guidelines shall be followed:

- Silt fencing shall have no gaps, shall be keyed (dug) into the substrate, and shall be regularly inspected and maintained.

- Areas that may be subject to erosion and off-site sediment transport shall be hydroseeded using the methods and seed mix outlined in Section 6 .3 and Table 3.

- Wattles and erosion control blankets shall be installed on slopes adjacent to or within the restoration area if there are signs of erosion or the slope is devoid of vegetation prior to placement of container plants and salvaged shrubs, as needed. Wattles and erosion control blankets shall be 100 percent biodegradable and will be left in place

- Installation procedures for erosion control blankets include:

  - Erosion control blankets shall be placed on the channel slopes at the Site within 3 to 5 days of completion of grading work and prior to the onset of rain. The erosion control blankets shall be installed prior to plant installation.

  - The slope surface should be smooth and free of debris that might prevent contact of the mat with the soil in all locations. The erosion control blankets shall be installed in such a manner that they will not be dislodged or damaged by flowing water.

  - Erosion control blankets shall be rolled down the banks, from the top of the banks to the toe of the slope, or to the top of fiber rolls, when present.

  - Erosion control blankets shall be secured properly (see manufacturer's recommendations) on upper and lower ends of the mat, secured with wood stakes at 1-foot centers, and have a minimum of 1.5 feet overlap. Metal staples shall not be used.

  - The installed blankets shall be inspected by the Restoration Manager for approval.

  - Erosion control blankets shall consist of 100 percent biodegradable coconut fiber mesh and natural fiber matrix (no plastic), such as North American Green SC-150BN or related product.

- In the event of heavy rains, additional sediment containment may consist of wattles and/or sterile rice straw bales in targeted areas.

Erosion control BMPs will be replaced, as needed, and adaptive management measures will be implemented when necessary. Everything that is not biodegradable, except gopher baskets, will be removed when no longer needed or at the end of the monitoring period.

6.2.3 Restoration Area Weed Abatement

All vegetation will be removed from the restoration area during grading, including all non-native weeds. Throughout this restoration plan, weeding efforts will focus on the "target weeds" and other invasive weeds that can most easily delay the restoration of the native plant community. "Target weeds" refers to all species rated as 'high' by the California Invasive Plant Council (Cal-IPC 2021). Currently, two target weed species occur within the LOD, pampas grass (*Cortaderia jubata and/or Cortaderia selloana*) and iceplant (*Carpobrotus edulis*), with a third, French broom (*Genista monspessulana*), in the access road outside of the LOD. Other weed species rated as "moderate" by Cal-IPC are also removed as described in Table 5.

In addition to removing all vegetation in the graded restoration area, weed abatement of all target weeds during construction will occur within the LOD to prevent these target weeds from immediately invading the Site. Target weeds shall be removed during weeding events and their cover shall be zero after weed removal events.

It is expected that weed removal prior to hydroseeding or container planting will be accomplished primarily by mechanical means, including pulling and shovelling. If target weeds bearing viable seeds occur in planting areas, they shall be pulled, bagged, and removed from the Site, including all portions of iceplant. If herbicides are used for weed abatement at any time during the monitoring period, the following guidelines shall be followed:

- A certified pesticide applicator will apply the herbicide and must provide written documentation verifying that the applicator is licensed to apply the herbicide(s) in question.

- Herbicides shall not be sprayed when winds exceed 15 miles per hour. Herbicide application may employ backpack units with a narrow spray to minimize drift and accidental spraying of native species, or a drip or wick application technique may be used to treat the weeds. Drip or wick application may be employed in windy conditions because this technique does not result in drift of material.

- A dye shall be included in all applied herbicide to facilitate tracking.

- Non-targeted plants shall not be mechanically removed, sprayed, or receive drift from nearby spraying. If necessary, plastic shields should be used to avoid overspray.

6.2.4 Access Road and Adjacent Tower Weed Abatement

In addition to the Restoration Area Weed Abatement (section 6.2.3) and prior to the Site grading work, a one-time weed abatement effort for target weeds (pampas grass, iceplant, and French broom (*Genista monspessulana*)) will be conducted along the gravel access road, starting from the property owner's gate (Latitude 36.826510°, Longitude -121.704937°) and continuing to and along the restoration area, a distance of approximately 900 linear feet. (See Figure 4.) Within the access road and extending 10-feet beyond either shoulder of the road, the three target weed species will be treated with herbicide as described above under "Restoration Area Weed Abatement," and/or mechanically/manually removed. Larger plants outside the roadway may be cut back, treated, and left in place in order to avoid large-scale soil disturbance. All removed plant material that could still grow a plant will be bagged and removed from the site, including seeds, pampas roots, and all portions of iceplant. Any areas of exposed soil outside the roadway caused by the removal will be seeded with the seed mix set out in Table 3.

A one-time weed abatement of the pampas grass growing around the bases of the 500 kV tower and 230 kV tower across the access road to the west and closest to the restoration area will also be conducted. (See Figure 4.) This will be accomplished by shovel and hand-pulling smaller plants and cutting, then treating larger plants with targeted use of herbicides as described above under "Restoration Area Weed Abatement." All plant material that could still grow a plant will be bagged and removed from the site. The one-time abatement of pampas grass will also include plants wherever the Site Restoration Manager feels they are an immediate threat to the restoration area. Any areas of exposed soil caused by the removal will be seeded with the seed mix set out in Table 3.

Yearly during the duration of the monitoring period, the section of the road immediately adjacent to the Restoration Area and beginning 10' away from the restoration site and ending 10' beyond it shall be cleared of the three target species (pampas grass, ice plant and French broom) if any have re-established

in this section of the roadway. All plant material that could still grow a plant will be bagged and removed from the site, including seeds, pampas roots, and all portions of iceplant. See also Section 6.2.3 above.

6.2.5 Temporary Irrigation System

The restoration area will require regular irrigation after salvaging, container plant installation, and hydroseeding if there have not been recent rains greater than 0.5 inch within a 7-day period. A water truck will be utilized to fill barrels and hand water plantings during salvaging, container plant installation, and container maintenance.

Initial irrigation guidelines are summarized in Section 6.5.2 and the frequency and duration of ongoing irrigation will be determined by the Site Restoration Manager, as described in Section 6.6.2.

6.3 Seed Mix (Collection, Storage, and Application)

A hydroseed mix has been prescribed for the Site that contains species characteristic of central maritime chaparral vegetation in the LOD. The seed mix includes native shrubs, subshrubs, perennial grasses, and forbs (Table 3). The collection, storage, and application of the seed mix are described in the subsections below.

6.3.1 Collection and Storage

Prior to grading activities, seed of all special-status plant species within the grading area will be collected and stored for later sowing. Seed of other native species may also be collected and stored at the same time. The Site Restoration Manager will order or arrange for the collection, storage, and purchase of all seed to be applied within the Site. Every effort shall be made to obtain purchased seed from native plants located in Monterey County within 20 miles of the Site to retain the genetic integrity of local plant populations.

Collected seed will be stored in a dry ventilated area in labeled paper bags identifying species, collection date, collection location, and personnel. Seeds of some species are not viable for long storage periods. For these species, collection shall occur in the summer and fall immediately prior to seeding, especially for species such as Eastwood's goldenbush. Seeds from special-status shrubs that are targeted for removal and salvaging will be collected and immediately scattered after work has been completed.

6.3.2 Seed Application

Seed shall be applied between October 1 and December 15 in order to maximize seed germination during the rainy season. Seeding will be accomplished primarily by hydroseed application and supplemented by broadcast seeding, if needed. Leguminous and other species included in the seed mix that require pretreatment in order to germinate shall receive the necessary pretreatment.

Seed may be applied as hydroseed in a two-step process to improve seed/soil contact and protect seed from bird predation.

- First Step: Apply seed mix with 500 pounds per acre of flexible growth medium (FlexTerra or similar), 1000 pounds per acre of compost, 500 pounds per acre of slow-release organic fertilizer

(Biosol 7-2-3 or similar), and 60 pounds per acre of mycorrhizal fungi (AM-120 or similar). Legumes shall be inoculated with appropriate inoculant at 2 pounds inoculant per 100 pounds of seed.

- Second Step: Apply second top-coating (without seed) of 2000 pounds per acre of flexible growth medium (FlexTerra or similar) and EarthGuard (or similar) tackifier. The second application shall provide consistent, uniform coverage of approximately 1/8 inch over all disturbed soil within the LOD, especially the tops and toes of any slopes.

The hydroseed work shall be conducted by a reputable hydroseed contractor, who will be required to hydroseed using the seed mix and application rate specified above, unless changes to the hydroseed mix are approved by the Restoration Manager. Mechanical agitation of hydroseed equipment is required in order to properly mix ingredients.

Hydroseeding shall be carried out in two passes in conjunction with recommendations by the hydroseed contractor. Unless otherwise specified and agreed by the Site Restoration Manager, a hose should be used for the first pass, working across the area by hand. For the second pass, a cannon may be aimed straight at the restoration seeding area. Because the first pass is by hand, it can be perpendicular to the cannon so that there is both a vertical and horizontal pass to increase coverage.

To avoid inadvertent introduction of weeds, the hydroseed contractor shall rinse the tank, all hoses, and all nozzles prior to arrival at the Site and shall present written documentation that this step has been successfully completed. The hydroseed contractor shall provide the Site Restoration Manager with the seed list from the contractor's prior job in case unusual species are noted during germination that may have been originated from a poorly cleaned tank or other application equipment.

The Site Restoration Manager or designee must be present during hydroseeding and shall check seed bag tags to verify that the appropriate seed mix is used and inspect the hydroseed tank (if possible) prior to seeding.

Broadcast seeding may be used to increase the diversity of native herbaceous species on the Site in targeted locations. Seed shall be hand broadcast and raked into soil by the Site Restoration Manager or qualified staff approved by the Restoration Manager; if needed, seed may be covered with a light mulch. Seeding shall occur prior to rain events to increase seed germination success.

6.4 Shrub Salvaging

Special-status shrubs targeted for removal within the grading area will be salvaged prior to grading, as feasible, under the oversight of the Site Restoration Manager. Salvaged shrubs will be removed with a shovel or may be removed mechanically using suitable heavy equipment under the direction of the Restoration Manager. During salvaging, root balls will be removed along with the surrounding soil, as feasible, in a manner that minimizes disturbance to soil structure and roots. The salvaged plants will be placed in containers large enough for the plant, root ball, and associated soil; containers will have drainage holes. Each salvaged shrub will be given a unique number during salvaging, and salvaged shrubs will be maintained near the restoration site in partial sun. Salvaged shrubs will be watered immediately after placement into containers and will be watered as needed to maintain soil moisture until installed in the restoration area. Since grading activities are anticipated to take one week, replanting of

salvaged shrubs is anticipated to occur within two weeks of removal. The salvaged shrub storage area should be protected from animal herbivory or equipment disturbance by using suitable fencing. Fencing to prevent deer exclusion will use 6-foot tall polypropylene deer fencing. Fencing to prevent equipment disturbance of natural vegetation will use 4-foot tall orange construction fencing made of polypropylene. Construction fencing will be removed upon completion of the post-grading restoration. Deer fencing will be removed once performance criteria have been met.

All salvaged plants will be reinstalled using container planting methods outlined below.

6.5 Container Plantings

Site-collected seeds and cuttings from special-status shrubs within the grading area are currently being propagated by a reputable restoration nursery for planting in containers once grading is complete (Table 4). Ideally, container plants will be installed during the rainy season, preferably between October and early January, when temperatures are low and sufficient rain is available to enhance plant survival and growth. Phased plantings may be required if some nursery stock is not mature at the time of initial planting. A temporary irrigation system or hand watering will be necessary for container plant survival during periods of low rainfall.

6.5.1 Container Plant Installation

Container plants may be installed in targeted planting locations as designated by the Restoration Manager and PG&E. At least 180 container plantings are proposed for installation at the Site (Table 4), following the guidelines outlined below.

- Shrubs shall be clumped in natural groupings, with openings for germination of native herbs and grasses.
- Container plants shall be installed using a shovel, auger, or similar hand tool that does not compact surrounding soil.
- Planting holes shall be dug as deep as the container and up to twice as wide. The bottom of the hole should be flat to minimize air pockets below the container plant when it is placed in the hole.
- If a hard-pan soil is reached at the bottom of the planting hole, it shall be loosened so that the plant roots do not rest directly on the hard-pan. See watering section below (Section 6.6.2).
- If dry soil is encountered in the planting hole, planting holes shall be filled with water and allowed to drain completely before planting. See watering section below (Section 6.6.2).
- Plants shall be removed from containers carefully to minimize root damage: roots shall not be pruned.
- Roots of root-bound plants shall be gently loosened.
- If an obvious tap root is present, it shall be directed to the deepest point in the hole.

- Plants shall be set plumb and braced in position until the backfill has been tamped solidly around the rootball.
- Add approximately one pint of fully hydrated dry water silica granules to the soil below each container plant.
- The planting holes shall be backfilled with the native soil from the hole so that the plant is level with adjacent ground. The root collar of installed plants shall be level with surrounding soil.
- Large rocks or clods shall not be used in the backfill soil.
- Soil shall be gently pressed around the plant, such that no air pockets exist between the planting and surrounding soil. Mulch and other native plant materials remaining after grading may be placed around the plantings.
- Herbivore deterrent fencing may be installed around container planting areas, if needed.

6.5.2 Irrigation Immediately after Planting

After planting, container plantings and salvaged shrubs shall be watered thoroughly by hand immediately after installation with a water truck or a provided water source and hoses. Each container plant or salvaged shrub shall be watered within 2 hours of placement in the planting hole. Each plant shall be checked after watering to verify that it received adequate water and to correct any soil settling during and after planting.

6.6 Site Maintenance

The Site shall be maintained in optimal condition for promoting the long-term viability and vigor of all restoration plantings and recolonization by native species. The maintenance and monitoring period is five years in duration or until performance targets are met and will begin immediately after seeding and planting.

The restoration areas shall be inspected and maintained by the Site Restoration Manager at least monthly during Year 1, at least every two months in Years 2 and 3, and at least quarterly in Years 4 and 5. Inspection and maintenance frequency shall be increased or reduced during the monitoring period at the direction of the Restoration Manager.

6.6.1 Site Maintenance Description

The Site Restoration Manager shall verify that plantings, weeding, and erosion control performance standards are met through maintenance activities during the maintenance period. These activities include weed eradication, as needed; irrigation; repairs and maintenance of erosion control materials and other materials, if needed; general housekeeping and cleanup; and the general care and nurturing of seedlings, salvaged shrubs, and native plants within the Site.

All access to the Site must be approved by the Site Restoration Manager prior to use. No off-road vehicles (including mules/gators/ATVs) will be permitted on the Site. Wheelbarrows or equivalent will be used to transport tools and other supplies within the Site.

6.6.2 Site Maintenance Watering

The need, frequency, and duration of watering shall depend on current weather patterns and Site-specific soil moisture conditions.

- Watering shall provide an adequate supply of moisture to the entire root zone of each plant during the normal growth period of the plant. Irrigation for plantings shall be supplied as infrequent, deep watering, as determined by the Restoration Manager.

- At no time shall water be applied in a manner that causes erosion, damage to plants, runoff, or damage to existing or newly growing vegetation.

- After the third year, the Site Restoration Manager will decide if supplemental watering is necessary.

6.6.3 Site Maintenance Weed Control

The Site Restoration Manager shall be responsible for keeping the Site and a 10-foot buffer free of target weeds for the duration of the Maintenance Period according to the specifications outlined in Section 6.2.3. Throughout the Maintenance Period, weeds shall be removed before reaching 4 inches in height or forming flower heads. Frequency of weeding events may depend on rainfall and/or season, with more weeding anticipated during spring and summer. Dead weed material containing seeds and/or fruits shall be bagged and removed from the Site during each weeding event.

6.7 Monitoring and Reporting

A long-term maintenance and monitoring program is required to assess progress on completion of tasks, to provide quality control, and to hasten implementation of corrective actions as needed. A robust maintenance and monitoring program can greatly increase the overall success and cost effectiveness of a restoration program.

The monitoring protocol includes monitoring prior to restoration implementation, during implementation activities, and after restoration implementation. Monitoring will address the progress of the Program and the various categories of established performance criteria.

Detailed daily field notes shall be completed for each visit that includes the specific task, date, observer(s), and monitoring details. Planting details, establishment of seeded native species, and weed presence all require monitoring. Field notes shall include comparisons of collected data to the performance criteria and recommendations to minimize future mortality, excessive weeds, slow plant growth, and unanticipated impacts to the restoration area. Weed treatment areas shall be monitored for cover by weeds and native species, as well as recruitment by natives as weed density diminishes. Presence of any new target weeds also requires careful documentation and immediate action.

Areas that are seeded and/or planted shall have two phases of monitoring, conducted during and after seeding and/or planting. Items to be documented during monitoring planting areas include seed germination rates and composition, survival of container plants and salvaged shrubs, indications of animal damage, weed establishment and control efforts, and potential erosion problems. Corrective measures shall be identified if needed.

Photographs will be taken from established photopoints once a year, in spring.

6.7.1 Monitoring Overview

Monitoring and reporting shall be conducted as follows:

1. **Monitoring during Site Preparation, Weed Control Efforts, and Other Initial Phases:** The Restoration Manager shall visit the Site as needed throughout the initial site preparation phases to verify that the steps outlined above are implemented correctly.

2. **Monitoring During Seeding, Salvaging and Planting:** The Site shall be inspected prior to planting (including seeding, shrub salvaging, and container plant installation) to locate seeding/planting areas, to document procedures, and to evaluate plant establishment.

3. **Monitoring after Seeding, Salvaging, Planting, and Weed Control Treatments**: Site visits shall be conducted every two weeks during the first month following initial weed control, seeding, and planting efforts, with monthly visits for the remaining eleven months of the first year. The restoration area shall be carefully monitored for germination, survival, and health and recruitment of new native and/or weed species, as well as maintenance issues. This monitoring is critical for adaptive management, a process in which the findings from direct monitoring provide the evidence and basis for rapid management change or support as needed. Monitoring will guide possible implementation of contingency measures if necessary, such as wind protection, erosion control, additional planting, and/or additional weed control. At the discretion of the Restoration Manager, monitoring frequency will be reduced to quarterly visits in subsequent years.

6.7.2 Restoration Monitoring Requirements

The restoration areas shall be monitored for the following criteria over a five-year period, utilizing the performance targets outlined in Table 5, as well as the performance measuring methods outlined in Table 6. Monitoring data include:

- Inventory of the flora
- Container and salvaged planting survival
- Plant health (qualitative)
- Plant size (qualitative)
- Evidence of erosion or burying of plants

- Non-native species density, location, phenology, and effectiveness of weed treatments
- Evidence of wildlife usage

If onsite conditions are not meeting performance targets at any point, the Site Restoration Manager shall take corrective steps. Where needed, the Site Restoration Manager may broadcast additional seed, conduct additional weed eradication, or install remedial erosion control measures. If unforeseen problems are encountered or there are significant deviations from performance criteria, the Site Restoration Manager shall consult with agencies having regulatory oversight for a discussion of contingency measures.

6.7.3 Reporting Requirements

Reporting is required for compliance with the restoration plan mitigation measures contained within this HRP. Once initial restoration implementation has been completed, an as-built report shall be provided. Following the initial report, yearly activities and monitoring shall be documented in annual reports. The annual reports shall summarize monitoring data collected each succeeding year and compare results against the performance criteria to evaluate restoration success. The annual reports shall include recommended maintenance activities and corrective measures, if needed, and specify when such measures will be implemented. Monitoring and reporting shall be conducted until performance criteria are met.

Restoration As-built Reporting. An as-built report will be prepared within 8 to 12 weeks of completion of planting, shrub salvaging, and seeding of the Site. A summary of container planting numbers, salvaged shrub numbers, and seeding activities will be provided along with figures showing the final grading area.

Annual Reporting. An annual report describing the work completed to date and the monitoring results shall be submitted by March 1 after each monitoring year, or two months after the end of the monitoring year.

Completion Reporting. A final annual report will be submitted after five years and when performance standards are met for the Site. This completion report shall document restoration success relative to the performance standards defined in this HRP to support formal regulatory closure (no further action) of the Site. If after five years the performance criteria have not been met, a normal (non-completion) annual report will be submitted and the completion report will be postponed a year and reassessed. If an aspect of the restoration has been unsuccessful, a revised or supplemental restoration plan shall be submitted within 90 days to address the identified restoration deficiencies.

The restoration as-built report, annual reports, completion report, and, if relevant, supplemental restoration plan(s) will be submitted to these regulatory agencies:

- Monterey County Resource Management Agency (RMA)-Planning
- California Coastal Commission (CCC)

A courtesy copy of the as-built report, annual reports, completion report, and, if relevant, supplemental restoration plan(s) will be emailed to the Monterey Bay chapter of the California Native Plant Society (nikki@ventanaview.net) and Friends and Artists of Elkhorn Slough (Erickson@stamplaw.us) when such reports are submitted to the regulatory agencies. In addition, CNPS can contact the Site Restoration Manager to obtain updates including electronic photographs or to arrange a site visit when the Site Restoration Manager will be onsite.

6.8 Restoration Performance Criteria

The general goals of this HRP are to restore temporary disturbance areas to pre-project conditions, restore special-status shrub species to the Site, provide functional habitat value for native plants and animals within the restoration areas, and reduce post-construction erosion and off-site sediment transport. Performance criteria are provided to measure progress toward these goals (Table 5), along with measurement methods (Table 6).

Progress towards achievement of these performance criteria shall be quantitatively measured by the Site Restoration Manager on an annual basis during the monitoring period.

Failure to meet the annual performance standards will result in an assessment of causative factors and potential remedial solutions. The Site Restoration Manager shall specify the activities necessary to achieve the performance standards, which may include installation of additional seed or container plants; herbivore deterrent measures, including fencing; increased weed control; or erosion control efforts. Adaptive management measures for failure to meet performance standards are provided in Section 3.9.

Performance targets may be modified with approval from pertinent agencies (Monterey County and/or CCC).

6.9 Adaptive Management

As with any restoration project, it is difficult to anticipate all potentially negative influences on restoration success. However, several issues are commonly problematic for restoration projects, and contingency measures have been developed to address these issues should they come up. These measures are intended to address issues specifically associated with this HRP and not to address regional issues that impact all plants in the area (e.g., major pest infestation, extreme heat, etc.). Potential issues that would require adaptive management include:

Predation by Vertebrate Animals:

Gophers/Ground Squirrels/Rabbits/Deer Deterrence – Metal gopher baskets will be installed to surround the roots of each container planting. Deer fencing will be erected around all the plantings. Other herbivore exclusion will be assessed and implemented dependent on signs of herbivory.

Predation by Insects:

Insect Treatments – No protection for the Site is currently proposed from predation by insects. If insect damage is a significant problem, an active treatment program may be developed. If an insecticide is used, it will consist of a natural substance, such as mint or pennyroyal oils.

Weeds:

Aggressive monitoring and maintenance – If continued weed infestation is occurring that could jeopardize the success of the restoration and or new weed species are invading the area, the frequency and type of weed maintenance will be increased or modified. Weed problems will be addressed through removal and or treatment of weeds depending on the species.

Erosion:

Erosion Control BMPs – If yearly targets set for erosion in the restoration areas are not met, the eroded areas shall be repaired and re-seeded as necessary. Erosion control measures may include installation of erosion control blankets, wattles, sterile rice straw bales, or other measures.

7 REFERENCES

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TABLES

Table 1
Special-status Plant Species in Project Area
Habitat Restoration Plan
Moss Landing-Metcalf 500 kV Grading Project
Pacific Gas and Electric
Monterey County, California

Scientific Name	Common Name	Number of Plants within Limits of Disturbance	Number of Plants within Restoration Area (Grading Area)
Arctostaphylos hookeri subsp. *hookeri*	Hooker's manzanita	17	17
Arctostaphylos pajaroensis	Pajaro manzanita	38	28
Ericameria fasciculata	Eastwood's goldenbush	31	27
	Totals	***86***	***72***

Table 2
Restoration Implementation and Monitoring Schedule
Habitat Restoration Plan
Moss Landing-Metcalf 500 kV Grading Project
Pacific Gas and Electric
Monterey County, California

Restoration Activity	Prior to Restoration Implementation and During Project Work				Restoration Implementation after Project Work is Complete				Monitoring Year 1				Monitoring Year 2				Monitoring Year 3				Monitoring Year 4				Monitoring Year 5			
	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W	S	Su	F	W
Document all special-status species in Project disturbance areas prior to construction																												
Inventory all species present in LOD																												
Collect seeds of special-status plant species and other seeds within grading area prior to project activities																												
Order seeds for erosion control mix																												
Container plant propagation in approved restoration nursery - ongoing monitoring of status at nursery																												
Install resource protection fencing around sensitive biological resources near the Project work area																												
Monitor Project work activities to ensure biological resource protection and impact minimization																												
Salvage special-status plant species individuals within work area and replant or take to nursery for holding until replanting																												
Install erosion control BMPs immediately after work is completed																												
Hydroseed grading area (now serving as the restoration area)																												
Flag all planting sites																												
Install container plantings and salvaged shrubs																												
Sow seeds of special-status species collected prior to construction																												
Install temporary irrigation system																												
Conduct initial weed treatments																												
Establish permanent photo points																												
Maintenance and monitoring (monthly Year 1, quarterly Years 2-5, or as needed)																												
Ongoing weed treatments and site maintenance, including irrigation																												
Monitor: Comprehensive Quantitative Annual Survey																												
Submit As-built Restoration Implementation Report																												
Submit Annual Monitoring Report																												

W = Winter; S = Spring; Su = Summer; F = Fall

* Monitoring years are defined as January to December after restoration implementation

Table 3
Erosion Control Seed Mix
Habitat Restoration Plan
Moss Landing-Metcalf 500 kV Grading Project
Pacific Gas and Electric
Monterey County, California

Scientific Name	Common Name	Pounds per Acre
Shrubs and Subshrubs		
Acmispon glaber	deerweed	4
Artemisia californica	California sagebrush	4
Baccharis pilularis subsp. *consanguinea*	coyote brush	3
Crocanthemum scoparium	rush-rose	2
Diplacus aurantiacus	bush monkeyflower	2
Eriophyllum confertiflorum	golden yarrow	2
Lupinus arboreus	bush lupine	2
Salvia mellifera	black sage	4
Shrubs and Subshrubs for Hand Sowing		
Arctostaphylos hookeri subsp. *hookeri*	Hooker's manzanita	site-collected seed before grading to be applied afterwards
Arctostaphylos pajaroensis	Pajaro manzanita	
Ericameria fasciculata	Eastwood's goldenbush	
Grasses		
Bromus carinatus	California brome	4.5
Elymus glaucus	western wildrye	4.5
Festuca microstachys	small fescue	3
Forbs		
Horkelia cuneata subsp. *cuneata*	coast horkelia	1
Lupinus bicolor	miniature lupine	1
Totals		37

Table 4
Proposed Container Plants
Habitat Restoration Plan
Moss Landing-Metcalf 500 kV Grading Project
Pacific Gas and Electric
Monterey County, California

Scientific Name	Common Name	Quantity	Container Size
Arctostaphylos hookeri subsp. *hookeri*	Hooker's manzanita	at least 20	1-gallon container
Arctostaphylos pajaroensis	Pajaro manzanita	at least 30	1-gallon container
Diplacus aurantiacus	bush monkeyflower	at least 25*	1-gallon container
Ericameria fasciculata	Eastwood's goldenbush	at least 80*	1-gallon container
Salvia mellifera	black sage	at least 25*	1-gallon container
Total		at least 180	

** At the request of California Native Plant Society, Monterey Bay, 25 bush monkeyflower, 25 black sage, and an additional 50 Eastwood's goldenbush have been added.*

Table 5
Performance Criteria
Habitat Restoration Plan
Moss Landing-Metcalf 500kV Grading Project
Pacific Gas and Electric
Monterey County, California

Category	Performance Criteria	Monitoring Frequency	Monitoring Findings	Actions
Erosion control and soil stabilization	Substrate stable, no movement of sediment into adjacent natural areas	Monthly; additional monitoring after large storm events (>1" precipitation in 24-hour period), as necessary	Criteria met	Continue monitoring
			Destabilization of soils; sedimentation into adjacent natural areas	Repair or install additional erosion control BMPs, as needed
Container plant survival	Survival of installed container plants in healthy growing condition will be 75% of initial numbers installed for Years 2 - 5	Census quarterly in Year 1; annually in Years 2 -5	Container plant survival equals 75% of initial container numbers in Year 2 - 5	Continue monitoring
			Container plant survival is less than 75% of initial container numbers in Year 2-5	Install additional container plantings
Weeds in restoration area and 10-foot buffer area	"Target weeds" are those with California Invasive Plant Council (Cal-IPC[1]) rating of "high". "Moderate Invasive weeds" are those with "moderate" invasiveness rating by the Cal-IPC[1]. At the end of each monitoring year aerial cover by target weeds will be zero. At the end of each monitoring year moderate invasive weeds will be less than 10%, except in dirt roadways.	Monthly in Year 1, every two months in Years 2 -5, or as needed	Moderate invasive weed cover less than 10%. Target weed cover is zero	Continue monitoring; note any target weeds or new target or moderate invasive weed infestations and remove
			Moderate invasive weed cover greater than or equal to 10%. Target weed cover more than zero	Conduct additional weed eradication within 3-months and before seed set

Table 5
Performance Criteria
Habitat Restoration Plan
Moss Landing-Metcalf 500kV Grading Project
Pacific Gas and Electric
Monterey County, California

Category	Performance Criteria	Monitoring Frequency	Monitoring Findings	Actions
Weeds in the approximately 900-foot site access road	Target weed cover in the 900-foot road to the restoration area and a 10-foot buffer of the road shall be zero or treated with herbicide prior to the restoration installation	One time at time of abatement	Criteria met	No further monitoring
			Target weeds present and untreated at time of abatement	Conduct additional weed eradication immediately until target weeds absent or treated.
Weeds below PG&E 500kV and 230kV towers adjacent to restoration area.	Pampas grass growing around the base of the PG&E 500kV and 230kV towers adjacent to the restoration area shall be zero or treated with herbicide at the end of a one-time abatement prior to grading	One time at time of abatement	Criteria met	No further monitoring
			Pampas grass present and untreated at time of abatement	Conduct additional weed eradication immediately until pampas grass absent or treated.
Weeds in the site access road immediately adjacent to restoration area.	Target weed cover in the road adjacent to the restoration area and extending 10-feet beyond, on either side, shall be zero at the end of each annual abatement	Yearly	Criteria met	Continue yearly monitoring.
			Target weeds present at time of abatement.	Conduct additional weed eradication until target weeds absent within 3-months and before seed set

Table 6
Performance Criteria Measurement Methods
Habitat Restoration Plan
Moss Landing-Metcalf 500kV Grading Project
Pacific Gas and Electric
Monterey County, California

Category	Measurement Methods
Container plant survival	Census of container plantings will occur each quarter in Year 1 and annually in Years 2-5 and will include a count of living special-status plant individuals as well as volunteer recruits.
Invasive weeds in restoration areas	Weed cover will be estimated within restoration area during each monitoring visit by species. If weed abatement is required, record and map weed treatment areas, along with weed treatment methods.
Erosion control and soil stabilization	Any area with the potential for erosion and/or sedimentation will be monitored using photopoints, at the discretion of the Revegetation Manager, both before and subsequent to remedial action, if required.

Table 7
Observed Plant Species
Habitat Restoration Plan
Moss Landing-Metcalf 500 kV Grading Project
Pacific Gas and Electric
Monterey County, California

Scientific Name	Common Name	Native or Non-native	CNPS Listing status (Rare Plant Ranking)	Cal-IPC Invasiveness Status
Trees				
Eucalyptus globulus	Tasmanian blue gum eucalyptus	Non-native	--	Limited
Quercus agrifolia	**coast live oak**	**Native**		
Shrubs and Sub-shrubs				
Arctostaphylos hookeri* subsp. *hookeri	**Hooker's manzanita**	**Native**	**1B.2**	
Arctostaphylos pajaroensis	**Pajaro manzanita**	**Native**	**1B.1**	
Ceanothus dentatus	**dwarf ceanothus**	**Native**		
Crocanthemum scoparium	**rush-rose**	**Native**		
Diplacus aurantiacus	**bush monkeyflower**	**Native**		
Ericameria fasciculata	**Eastwood's goldenbush**	**Native**	**1B.1**	
Eriophyllum confertiflorum	**golden yarrow**	**Native**		
Frangula californica* subsp. *californica	**California coffeeberry**	**Native**		
Heteromeles arbutifolia	**toyon**	**Native**		
Lupinus arboreus	**coastal bush lupine**	**Native**		
Rubus ursinus	**California blackberry**	**Native**		

Table 7
Observed Plant Species
Habitat Restoration Plan
Moss Landing-Metcalf 500 kV Grading Project
Pacific Gas and Electric
Monterey County, California

Scientific Name	Common Name	Native or Non-native	CNPS Listing status (Rare Plant Ranking)	Cal-IPC Invasiveness Status
Salvia mellifera	**black sage**	**Native**		
Herbaceous Species (Annuals, Biennials, Perennials, Graminoids)				
Achillea millefolium	**white yarrow**	**Native**		
Acmispon glaber	**deer weed**	**Native**		
Agrostis pallens	**thin grass**	**Native**		
Bromus carinatus	**California brome**	**Native**		
Cardionema ramosissimum	**sand mat**	**Native**		
Carex globosa	**round-fruited sedge**	**Native**		
Carpobrotus edulis	iceplant	Non-native		High
Claytonia perfoliata	**miner's lettuce**	**Native**		
Cortaderia jubata	pampas grass, jubata grass	Non-native		High
Elymus c.f. glaucus	**western ryegrass**	**Native**		
Gamochaeta ustulata	**purple cudweed**	**Native**		
Pseudognaphalium canescens	**white everlasting**	**Native**		
Rumex acetosella	sheep sorrel	Non-native		Moderate
Trifolium hirtum	rose clover	Non-native		Limited

Table 7
Observed Plant Species
Habitat Restoration Plan
Moss Landing-Metcalf 500 kV Grading Project
Pacific Gas and Electric
Monterey County, California

Scientific Name	Common Name	Native or Non-native	CNPS Listing status (Rare Plant Ranking)	Cal-IPC Invasiveness Status
Ferns				
Pentagramma triangularis* subsp. *triangularis	**goldenback fern**	**Native**		
Pteridium aquilinum* var. *pubescens	**western bracken fern**	**Native**		

FIGURES

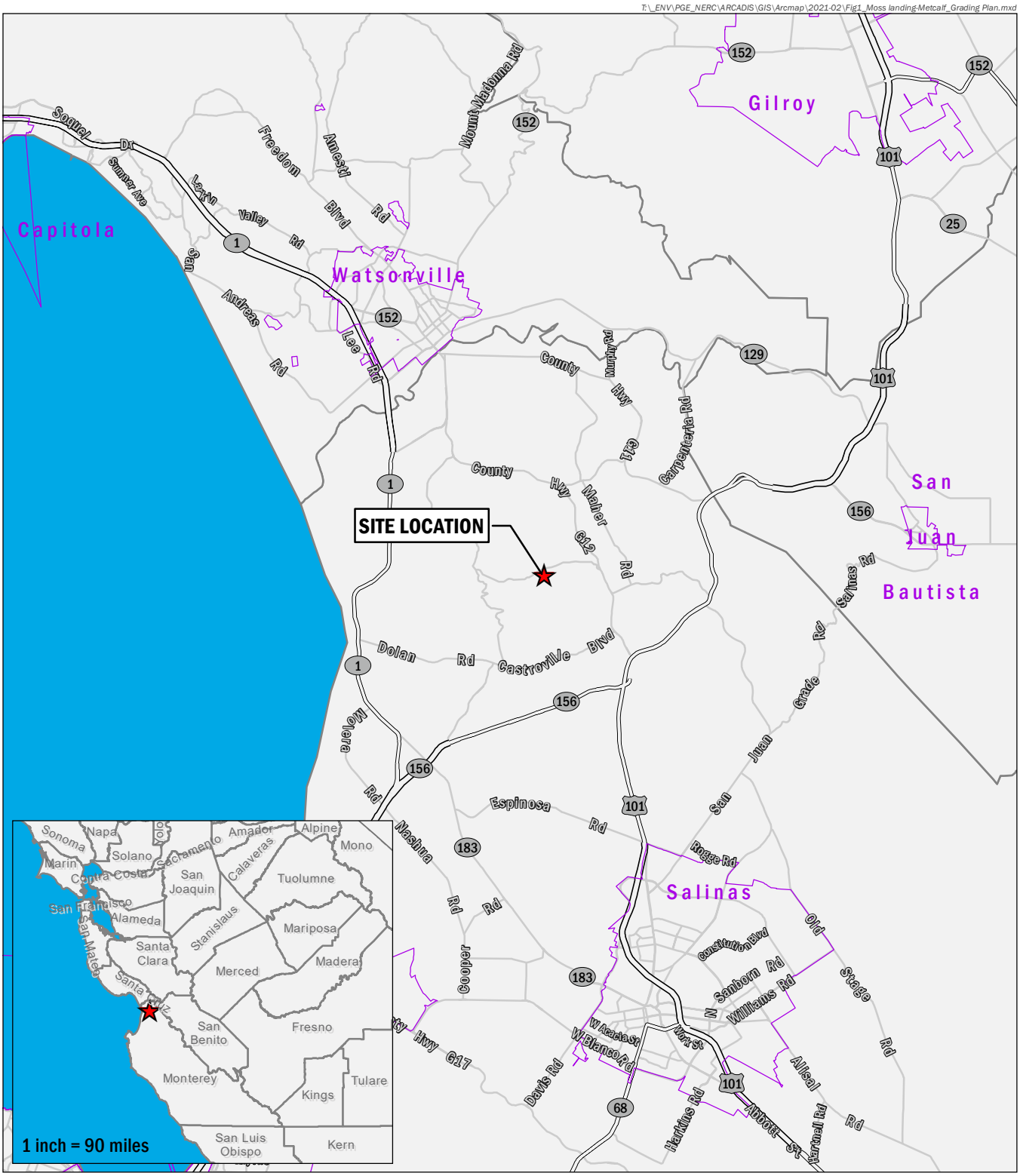


Figure 1

Site Vicinity

PG&E ARCADIS

T:_ENV\PGE_NERC\ARCADIS\GIS\Arcmap\2021-06\Figure 2 Project Work Areas.mxd

Central maritime chaparral
Limits of Disturbance
Property Line - Labeled with APN
Construction Fencing
Staging and Stockpiling (Only on existing roads)

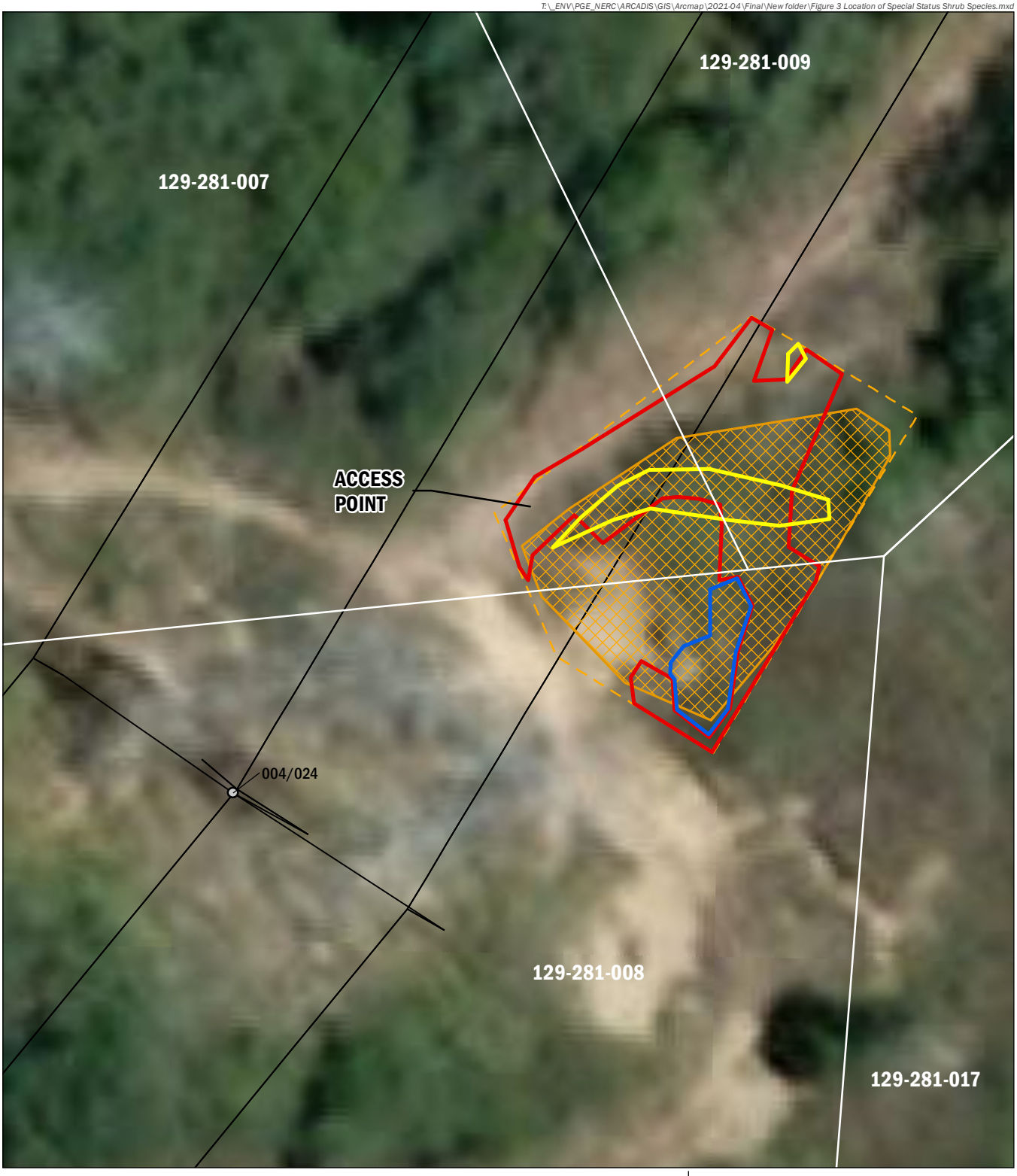
Moss Landing-Metcalf 500kV

0 50 Feet
1 inch = 50 feet
N

PG&E ARCADIS

Figure 2: Project Work Areas

T:_ENV\PGE_NERC\ARCADIS\GIS\Arcmap\2021-04\Final\New folder\Figure 3 Location of Special Status Shrub Species.mxd



Special Status Species Survey

- Eastwood's goldenbush *(Ericameria fasciculata)*
- Hooker's manzanita *(Arctostaphylos hookeri)*
- Pajaro manzanita *(Arctostaphylos pajaroensis)*

Grading Area

- Grading Area
- Limits of Disturbance
- Property Line - Labeled with APN
- Access Point

0 50 Feet
0 0.01 Miles
N

DATA SOURCE
Esri Imagery

PROJECTION
NAD 1983 California Teale Albers

CIRCUIT	NOTE
Moss Landing-Metcalf 500kV (Monterey County)	Biological Assessment for Towers 004/024-004/025 Span Proposed Grading

PG&E ARCADIS

FIGURE 3 : LOCATION OF SPECIAL-STATUS SHRUB SPECIES

PG&E NERC Program

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Legend

- Access Road Weed Abatement
- Tower Weed Abatement
- Restoration Area (Approximate)
- Restoration Area 10-foot buffer

0 100 Feet

N

DATA SOURCE
Esri Imagery
PROJECTION
NAD 1983 California Teale Albers

STRUCTURE
Grading Area near 004/024

FIGURE 4 : WEEDING AREAS ALONG ACCESS ROAD AND TOWERS

APPROXIMATE LOCATION OF WEEDING AREAS ALONG ACCESS ROAD AND AROUND TOWERS AS DESCRIBED IN THE HABITAT RESTORATION PLAN.

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