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Staff:	Robert S. Merrill
Staff Report:	September 30, 2004
Hearing Date:	October 14, 2004
Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.:	**1-04-009**
APPLICANT:	**Pacific Gas and Electric**
PROJECT LOCATION:	East of Highway 101 and west of Old Arcata Road along a 5.5 mile right-of-way between the Humboldt Substation on Mitchell Heights Drive near Eureka and the Arcata Junction, one mile south of Samoa Boulevard, in Humboldt County.
PROJECT DESCRIPTION:	Rebuild a 5.5-mile single-circuit 60-kilovolt (kV) wood pole line with taller wood and steel poles and add an additional 3-wire electrical circuit.
LOCAL APPROVALS RECEIVED:	Humboldt County Coastal Development Permit (for portions of the project within County jurisdiction)

OTHER APPROVALS RECEIVED:	(1) Army Corps of Engineers; (2) Regional Water Quality Control Board 401 Water Quality Certification.
OTHER APPROVALS REQUIRED:	None
SUBSTANTIVE FILE DOCUMENTS:	Humboldt County Local Coastal Program

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SUMMARY OF STAFF RECOMMENDATION:

Staff recommends that the Commission approve with conditions the coastal development permit for reconstruction of a 60-kV electrical power transmission line between Eureka and Arcata in the area east of Highway 101 and west of Old Arcata Road, in Humboldt County.

Staff believes that the project, as conditioned by the nine special conditions set forth below, is the least environmentally damaging alternative, will provide feasible mitigation for the temporary and permanent impacts to seasonal wetlands, and will not result in significant visual impacts. As conditioned, staff believes that the proposed project is fully consistent with the Coastal Act.

The Motion to adopt the Staff Recommendation of Approval with Conditions is found on page 2.

STAFF NOTES:

1. Standard of Review

A portion of the proposed project which extends through incorporated areas of the City of Arcata as well as unincorporated areas of Humboldt County is located within the Commission's area of retained permit jurisdiction. Both the City of Arcata and Humboldt County have a certified LCP, but the proposed project is within an area shown on State Lands Commission maps over which the state retains a public trust interest. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

2. Local Coastal Development Permits Required

The majority of the 5.5-mile long project is located within the Coastal Commission's retained permit jurisdiction and is the subject of this permit application (CDP No. 1-04-009). Portion of the line are located within the County's coastal development permit jurisdiction. The County has already approved a coastal development permit for portions of the project within County jurisdiction.

3. Commission Action Necessary

The Commission must act on the application at the October 14, 2004 meeting to meet the requirements of the Permit Streamlining Act.

4. Addendum

Portions of Finding 2, "Filling and Dredging in Coastal Waters and Wetlands," were not completed prior to the mailing of the staff report. Staff will present the recommended findings for approval of the project as part of an addendum at the Commission meeting.

I. MOTION, STAFF RECOMMENDATION AND RESOLUTION:

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-04-009 pursuant to the staff recommendation.

STAFF RECOMMENDATION OF APPROVAL:

Staff recommends a **YES** vote. Passage of this motion will result in approval of the permit as conditioned and adoption of the following resolution and findings. The motion passes only by affirmative vote of a majority of the Commissioners present.

RESOLUTION TO APPROVE THE PERMIT:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment.

II. STANDARD CONDITIONS: See Attachment A.

III. SPECIAL CONDITIONS:

1. Final Wetland Mitigation Plan

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit for review and written approval of the Executive Director, a final wetland mitigation plan for all wetland impacts associated with the proposed project. The program shall be developed in consultation with the California Department of Fish & Game and at a minimum shall include:

1. A detailed revised site plan of the wetland impact areas. The final plan must delineate all impact areas (such as on a map that shows elevations, surrounding landforms, etc.), the types of impact (both permanent and temporary), and the exact acreage of each impact so identified.

2. A detailed final site plan of the mitigation areas.

3. The following goals, objectives, and performance standards for the mitigation areas:

    a. Areas of temporary disturbance within seasonal wetlands including the construction corridor and any other disturbed sites, including any construction access routes within the grazed seasonal wetlands not following established roadways shall be (i) restored to before-impact elevations in a manner that does not result in depressions, ridges, or mounds, (ii) decompacted, and (iii) replanted with locally with a commercially available seed mixture composed of the same grass species that dominate the perennial grasslands at the present time to a level of coverage and density equivalent to

vegetation coverage and density of the surrounding undisturbed areas

a. An area of seasonal wetland habitat to mitigate for the net permanent loss of seasonal wetland habitat from the installation of larger transmission line poles shall be created from non-wetland areas within the PG&E right-of-way of a size in accordance with a 2:1 ratio of wetland creation to permanent loss of wetland area. The mitigation site shall (i) be contoured to elevations at or below the elevations of surrounding seasonal wetland areas, (ii) decompacted, and (iii) replanted with a commercially available seed mixture composed of the same grass species that dominate the perennial grasslands in the seasonal wetlands at the present time to a level of coverage and density equivalent to vegetation coverage and density of the surrounding undisturbed areas.

4. The final design and construction methods that will be used to ensure the mitigation site achieves the defined goals, objectives, and performance standards.

5. Provisions for submittal, within 30 days of completion of initial restoration work, of "as built" plans demonstrating that the wetland mitigation site for the permanent wetland fill has been established in accordance with the approved design and construction methods.

6. Permission for the Coastal Commission staff to enter and inspect for purposes of determining compliance with Coastal Development Permit No. 1-04-009.

B. The permittee shall undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

2. <u>Erosion and Sedimentation Control Plan</u>

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit for review and approval of the Executive Director, a plan for erosion and sedimentation control.

(1) The erosion control plan shall demonstrate that:

(a) During construction, erosion on the site shall be controlled to avoid adverse impacts on adjacent properties and coastal resources;

(b) Temporary erosion control measures shall be implemented during construction including, but not limited to: preserving existing vegetation surrounding the construction areas as much as possible; installing silt fences, fiber rolls, and weed free rice straw barriers on the down slope side of the construction areas and maintaining these barriers in place throughout the construction period; stabilization and containment of stockpiles; and replanting or seeding any disturbed areas with a commercially available seed mixture composed of the same grass species that dominate the perennial grasslands in the seasonal wetlands at the present time

(2) The plan shall include, at a minimum, the following components:

(a) A narrative report describing all temporary runoff and erosion control measures to be used during construction;

(b) A site plan showing the location of all temporary erosion control measures; and

(c) A schedule for installation and removal of the temporary erosion control measures.

B. The permittee shall undertake development in accordance with the approved plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

3. <u>Hazardous Materials Management Plan</u>

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit, for the review and written approval of the Executive Director, a plan to reduce impacts to water quality from the use and management of hazardous materials on the site. The plan shall be prepared by a licensed engineer with experience in hazardous material management.

1. The plan, at a minimum, shall provide for the following:

(a) Equipment fueling shall occur only during daylight hours in designated fueling areas;

(b) Oil absorbent booms and/or pads shall be on site at all times during project construction. All equipment used during construction shall be free of oil and fuel leaks at all times;

(c) Provisions for the handling, cleanup and disposal of any hazardous or non-hazardous materials used during the construction project including, but not limited to, paint, asphalt, cement, equipment fuel and oil, and contaminated sediments;

(d) A schedule for maintenance of containment measures on a regular basis throughout the duration of the project;

(f) Provisions for the containment of rinsate from the cleaning of equipment and methods and locations for disposal off- site. Containment and handling shall be in upland areas and otherwise outside of any environmentally sensitive habitat area;

(g) A site map detailing the location(s) for hazardous material storage, equipment fueling and maintenance, and any concrete wash-out facilities; and

(h) Reporting protocols to the appropriate public and emergency services agencies in the event of a spill.

B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

4. <u>Debris Disposal Plan</u>

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, a plan for the disposal of excess construction related debris, including excess soil from the installation of the larger diameter poles and the old poles and transmission line materials to be removed. The plan shall describe the manner by which the material will be removed from the construction site and identify a disposal site that is in an upland area where materials may be lawfully disposed.

The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development.

5. Construction Access, Materials, and Equipment Staging.

(a) All construction materials and equipment staging areas shall be limited to the locations and sizes specified in the permit application.

(b) Access routes and the watercourse crossing shall be limited to the routes mapped and described in Exhibit No. 4 of the staff recommendation. Portions of access routes within wetlands that are excessively wet or soft shall be covered with: (a) heavy synthetic mats or other acceptable non-toxic material that can be readily laid down along equipment access routes and immediately removed following construction and (b) shall be the minimum width and length necessary to allow movement of equipment to and from the project site.

(c) The single watercourse crossing authorized shall consist of steel plates placed over the watercourse in a manner that requires no fill in the water course for abutments or other purposes.

6. Construction Methods

All pipeline construction shall be performed consistent with the following provisions:

B. The top eight to ten inches (8-10") of excavated material within grazed seasonal wetlands (which contains the root masses, rhizomes, seeds, and accumulated organic material of the vegetation that dominates these seasonal wetlands) shall be separately stockpiled by the contractor, and the contractor shall assure that this stockpiled soil material is kept moist and that the material is reintroduced as soon as possible to excavation as the top fill material.

C. Prior to the commencement of construction, the work area would be delineated, limiting the potential area affected by construction and workers shall be educated about the limitations on construction;

D. A qualified biologist shall monitor the site during all ground disturbing activities to avoid impacts to sensitive species;

E. All vehicles and equipment shall be restricted to pre-established work areas and established or designated access routes;

F. All trash and waste items shall be contained;

G. The contractor shall implement erosion control techniques around the temporarily stored spoil material.

7. Conformance of Pipeline Construction Activities to Geotechnical Reports

The permittee shall undertake the electrical transmission line construction activities in accordance with all recommendations contained in with the recommendations of the Engineering Geologic Reports entitled, Geotechnical Investigation Five Tube Steel Power Pole Locations, Arcata-Humboldt 115kv Transmission Line, Eureka, California," *prepared by Kleinfelder, Inc. dated July 21, 2003.*

8. Area of Archaeological Significance

A. If an area of cultural deposits is discovered during the course of the project all construction shall cease and shall not recommence except as provided in subsection (c) hereof; and a qualified cultural resource specialist shall analyze the significance of the find.

B. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit a supplementary archaeological plan for the review and approval of the Executive Director.

(i) If the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary Archaeological Plan's recommended changes to the proposed development or mitigation measures are de minimis in nature and scope, construction may recommence after this determination is made by the Executive Director.

(ii) If the Executive Director approves the Supplementary Archaeological Plan but determines that the changes therein are not de minimis, construction may not recommence until after an amendment to this permit is approved by the Commission.

9. Grazed Seasonal Wetland Vegetation Monitoring

The permittee shall submit a vegetation monitoring report for the review and written approval of the Executive Director within 18 months after completion of construction of the portion of the electrical transmission line improvements approved under CDP No. 1-04-009. The monitoring report shall be prepared by a qualified biologist or botanist and shall evaluate whether the objective of reestablishing vegetation in any of the grazed seasonal wetland areas impacted by project construction to a level of coverage and density equivalent to vegetation coverage and density of the surrounding undisturbed areas has been achieved. If the report indicates that the revegetation of any of the disturbed areas including the construction corridor and staging areas identified pursuant to Special Condition No. 1 has not been successful, in part, or in whole, the permittee shall submit a revised revegetation program to achieve the objective. The revised revegetation program shall require an amendment to this coastal development permit.

IV. FINDINGS AND DECLARATIONS

The Commission hereby finds and declares:

1. Site Description

Pacific Gas and Electric Company (PG&E) proposes to replace an existing 5.5-mile long single-circuit, 60-kilovolt (kV) electrical transmission line along the east side of Arcata Bay in Humboldt County with a new double-circuit, 60 kV pole line to increase electric service reliability in the northern coastal area of the County. (See Exhibits 1-4.)

The line extends from the Humboldt Substation located on Mitchell Heights Drive in an unincorporated area just east of the City of Eureka to PG&E's Arcata Junction facility, located about one mile south of Samoa Boulevard within the city limits of Arcata. The route traverses through seasonal wetlands and across numerous waterways in the bottomland areas east of Highway 101.

The 5.5-mile right-of-way is bisected by the boundary between the Commission's coastal development permit jurisdiction and that of Humboldt County. The line enters and leaves the Commission's jurisdiction along the east side of Arcata Bay in five separate locations. Two parallel lines run along the right-of-way a short distance apart.

Vegetation in the grazed seasonal wetland area is dominated by exotic perennial grasses such as sweet vernal grass, orchard grass, velvet grass, tall fescue and perennial ryegrass.

Two sensitive plant species are located within the area, Humboldt Bay owl's-clover and Lyngbye's sedge. However, the populations are found along the margins of several watercourses which can be avoided by project construction activities.

The existing and proposed pole lines are visible from Highway 101 (view inland from Arcata Bay) and from many parts of Myrtle Avenue/Old Arcata Road (view seaward). Although the area is not designated as highly scenic, the majority of the line is within the view shed to bay from Myrtle Avenue/Old Arcata Road. The pole lines appear isolated in the middle of the seasonal wetland areas.

2. Project Description

The development involves adding three new wires to one of the two existing three-wire lines to support the additional circuit. To accommodate the additional wires, the overall project would replace 27 wood poles with guy wires with taller and stronger tubular steel poles without guy wires and replace 52 wood poles with taller and stronger wood poles. The stronger poles are needed to accommodate the extra weight of the additional wires and insulators. Within the Commission's jurisdiction, a total of 52 wood poles would be replaced by 39 new wood poles and 10 tubular poles. Three of the existing pole positions would be eliminated. The new wood poles would be approximately 32 inches in diameter at the base, and the foundation for the tubular steel poles would be 72 inches in diameter. The existing wood poles are generally 55 feet high. The new wood poles would extend to a height of 65 feet. The new tubular steel poles would range in height from 61 to 101 feet, with a median height of 78 feet. A second existing pole line within the PG&E right-of-way containing three wires that runs parallel to the line to be replaced would not be affected by the project.

Construction of the project would require the use of certain heavy equipment, including a crane, aerial lift, utility and crew vehicles. Existing farm roads would be used to the greatest extent possible to provide construction access. However, travel across grazed seasonal wetlands is necessary and proposed for certain locations (see Exhibit 4). Only one drainage course would need to be crossed by the access routes. This drainage course is within the northern portion of the line just north of Bracut. The drainage course would be spanned by steel plates for construction access and would not required any wetlands fill.

The principal equipment staging area would be located within the paved parking lot of the old State Theatre, located outside of the Commission's jurisdiction near Indianola. Construction vehicles would affect an approximately 20-foot wide area within the right-of –way. In addition, construction would affect a 25-foot radius around each of the wooden poles to be installed and affect a 35-foot radius around each of the tubular steel poles. Furthermore, heavy equipment used to pull conductor wire will be staged at

various locations along the right-of-way. Light and heavy-duty helicopters may be used to transport crew and materials to work sites as well as installing pull cable/conductor.

The application includes certain mitigation measures to minimize adverse impacts. As proposed, the project includes the following measures:

A. Low intensity re-vegetation of areas affected by construction;
B. Removal of excavated material containing top soil and organic material for later reintroduction at excavation locations to be filled;
C. Erosion control measures;
D. Mechanical soil aeration would be utilized to combat soil compaction from heavy equipment;
E. Prior to the commencement of construction, the work area would be delineated, limiting the potential area affected by construction;
F. A pre-project worker education program;
G. Use of a qualified biological monitoring on site during all ground disturbing activities to avoid impacts to sensitive species.
H. Restricting all vehicles and equipment to pre-established work areas and established or designated access routes.
I. Containment of trash and waste items;
J. Periodic Monitoring after project construction to ensure any seeded areas establish vegetative cover.

3. Filling and Dredging in Coastal Waters and Wetlands

The proposed project includes various activities that are a form of filling and dredging in wetlands. The main portion of the project that affects wetlands involves removing existing transmission line poles and installing new poles within grazed seasonal wetlands for the installation of the replacement transmission line. The removal and installation of poles involves excavation at the pole locations and recontouring the surrounding area once the poles have either been removed or installed. The excavated areas not occupied by the new poles would be backfilled with the native material following installation of the new poles and the area restored to pre-project conditions as discussed below. No poles would be installed within the various watercourses that are spanned by the aerial electrical transmission line. Seasonal wetlands along the PG&E right-of-way would be temporarily disturbed for construction related activities. The areas to be temporarily disturbed by construction activities are proposed to be restored to wetlands upon completion of the pipeline installation work. As proposed, only one drainage course would be temporarily bridged for construction access. The temporary crossing would consist of steel plates placed across the drainage course in manner that would not result in any fill in the drainage course.

The proposed replacement of transmission line poles would permanently displace a net total of approximately 324 square feet of seasonal wetlands within the Commission's jurisdiction. Currently there are 52 existing wood poles in seasonal wetlands within the Commission's jurisdiction. The proposed project would eliminate three pole positions and replace the remaining 49 with 39 new wood poles and 10 new tubular steel poles. The existing wood poles are an average of about 25 inches in diameter at the base, and together the existing poles displace a total of 177 square feet of former seasonal wetlands. The new wood poles would be an average of approximately 32 inches in diameter at the base, and the foundations for the new tubular steel poles would 72 inches in diameter. The proposed new poles together would displace a total of 501 square feet of seasonal wetlands. Therefore, in net, the project would increase the total displacement of seasonal wetlands by 324 (501-177) square feet, or 0.007 acres.

Coastal Act Section 30233 allows filling and dredging in wetlands only where there is no feasible less environmentally damaging alternative, where feasible mitigation measures have been provided to minimize adverse environmental effects, and where the project is limited to one of eight specified uses. Additionally, Coastal Act Sections 30230 and 30231 address protection of the biological productivity and water quality of the marine environment from the impacts of development.

Section 30233 of the Coastal Act provides as follows, in applicable part:

> *(a) The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
>
> ...
>
> *(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

Section 30230 of the Coastal Act states, in applicable part:

> *Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act addresses the protection of coastal water quality and marine resources in conjunction with development and other land use activities. Section 30231 states:

> *The biological productivity and the quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organisms and the protection of human health shall be maintained and, where feasible, restored through, among other means, minimizing adverse effects of wastewater discharges and entrainment, controlling runoff, preventing depletion of ground water supplies and substantially interference with the surface water flow, encouraging, wastewater reclamation, maintaining natural vegetation buffer areas that protect riparian habitats, and minimizing alteration of natural streams.* (emphasis added)

The above policies set forth a number of different limitations on what development projects may be allowed in coastal wetlands. For analysis purposes, the limitations can be grouped into four general categories or tests. These tests are:

a. that the purpose of the filling, diking, or dredging is for one of the eight uses allowed under Section 30233;

b. that the project has no feasible less environmentally damaging alternative;

c. that feasible mitigation measures have been provided to minimize adverse environmental effects; and

d. that the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

A. Permissible Use for Fill

The first test set forth above is that any proposed filling, diking or dredging in wetlands must be for an allowable purpose as specified under Section 30233 of the Coastal Act. The relevant category of use listed under Section 30233(a) that relates to the proposed construction of the water pipeline is subcategory (5), stated as follows:

> *(5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*

To determine if the proposed fill/dredging is for an incidental public service purpose, the Commission must first determine that the proposed filling/dredging is for a public service

purpose. The project involves the replacement of an existing electrical transmission line within an existing PG&E right of way to increase electric service reliability in the northern coastal communities of Humboldt County. Therefore, since the proposed project would be undertaken to ensure the continued delivery of electrical service to the public, the Commission finds that the fill/dredging to replace the transmission line expressly serves a public service purpose consistent with Section 30233(a)(5).

The Commission must next determine if the fill/dredging is for an "incidental" public service purpose. The project would replace an existing single-circuit 60-kV electric transmission line with a new double-circuit, 60-kV pole line with three additional electrical wires within an existing PG&E right-of-way where transmission lines have existed for many years. The right-of-way includes one other parallel transmission line that would be unaffected by the project. The project would not result in an expansion of electrical service area. Rather, the project would establish a redundant electric transmission supply line that would provide backup service in the event that one circuit is disabled by a storm or other event so as to assure the reliability of the primary electric service for certain North Coast communities. Therefore, the Commission finds that the installation of the replacement electric transmission line is incidental to the existing electric transmission system as the replacement transmission line will serve to improve the reliability of the existing electricity delivery system.

Therefore, the Commission finds that for the reasons discussed above, the dredging (excavation) and filling for the proposed project is for an incidental public service purpose, and thus, is an allowable use pursuant to Section 30233(a)(5) of the Coastal Act.

D. Maintenance and Enhancement of Marine Habitat Values

The fourth general limitation set by Section 30233 and 30231 is that any proposed dredging or filling in coastal wetlands must maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

As discussed above in the section of this finding on least environmentally damaging feasible alternatives and mitigation, the conditions of the permit will ensure that the project will not have significant adverse impacts on the water quality of various watercourses within the project area and will ensure that the construction of the replacement electric transmission line will not adversely affect the biological productivity and functional capacity of the wetland environments through which the replacement line will be constructed. Therefore, the Commission finds that the project, as conditioned, will maintain the biological productivity and functional capacity of the habitat consistent with the requirements of Section 30233, 30230, and 30231 of the Coastal Act.

E. Conclusion

The Commission thus finds that the proposed dredging and filling is an allowable use under Section 30233(a) of the Coastal Act, that there is no feasible less environmentally damaging alternative, that feasible mitigation is required to minimize all significant adverse impacts associated with the dredging and filling of coastal wetlands, and that wetland habitat values will be maintained or enhanced. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Sections 30233, 30230 and 30231 of the Coastal Act.

4. Geologic Hazards

The Coastal Act contains policies to assure that new development minimizes risks to life and property from geologic hazard and assure stability and structural integrity. Section 30253 of the Coastal Act states in applicable part:

> *New development shall:*
>
> *(1) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(2) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural land forms along bluffs and cliffs.*

According to the geotechnical report prepared for the project, the proposed replacement electric transmission line alignment is within a "high potential" liquefaction zone (see Exhibit 6). Borings drilled as part of the geotechnical investigation and published geologic data verifies that the typical soils underlying the site are soft estuarine sediments, of which the relatively clean sand layers/lenses within the upper 30 to 50 feet are considered prone to liquefaction during moderate to strong seismic events.

The geotechnical report concludes that the proposed new tubular steel poles may be adequately supported by case-in-place concrete drilled pier foundation systems. The geotechnical report makes a number of recommendations with regard to the construction of these foundations. PG&E proposes to construct the project consistent with the recommendations set forth by the geotechnical report prepared for the project. To ensure that the new development would minimize risks to life and property from geologic hazard and assure stability and structural integrity as required by Section 30253 of the Coastal Act, the Commission attaches Special Condition No. 7 requiring that PG&E construct the

pipeline in accordance with all of the recommendations of the engineering-geologic report.

Therefore, as conditioned, the Commission finds that the project as conditioned is consistent with Section 30253 of the Coastal Act.

5. Agricultural Resources

The Coastal Act sets forth policies that relate to the protection of agricultural land and limit the conversion of agricultural lands to non-agricultural uses. Sections 30241 and 30242 address methods to be undertaken to maintain the maximum amount of prime agricultural land in production and to minimize conflicts between agricultural and urban land uses.

The proposed project involves the reconstruction of a electrical transmission line along an existing PG&E right-of-way largely through grazed seasonal wetlands between Arcata and Eureka. The majority of the land along and surrounding the transmission line alignment is used for cattle grazing. Construction of the replacement transmission line would result in temporary disruption to agricultural activities within the construction corridor and construction staging areas. However, as the transmission line would be installed overhead with a net reduction in the number of supporting poles, the project would not result in a conversion of agricultural lands to non-agricultural uses. The pipeline is proposed to be completed over the course of one or two construction seasons and as discussed above, the proposed project involves restoration of the construction corridor to pre-project conditions. The required restoration involves reseeding the disturbed area with a mix of grass seeds composed of the same grass species that dominate the perennial grasslands in the area at the present time. Therefore, once restored, the project site will provide the same amount of forage and grazing capacity as the site currently provides.

Therefore, the Commission finds that the proposed project does not constitute a conversion of agricultural lands and is consistent with Sections 30241 and 30242 of the Coastal Act.

6. Archaeological and Cultural Resources

Coastal Act Section 30244 provides protection of archaeological and paleontological resources and requires reasonable mitigation where development would adversely impact such resources.

The diked former tidelands and surrounding areas are located within the ethnographic territory of the Wiyot Indians. Wiyot settlements existed along Humboldt Bay and along the banks of many of the streams and sloughs in this area.

A cultural resources study of the project area was prepared by a professional archaeologist as part of another development in the same area, the replacement of the Mad River pipeline by the City of Eureka which has been performed over the last two years. The pipeline traverses much of the same area as the proposed transmission line project. According to the cultural resources study report for that project, the purpose of the investigation was to (1) identify all archaeological resources or sites of ethnic significance, (2) perform preliminary evaluations of site significance, (3) consider the potential adverse effects to cultural resources resulting from project implementation, (4) advance recommendations aimed at reduction or elimination of adverse impacts to significant cultural resources as needed. The methods employed by the investigation included (1) an examination of the archaeological site records, maps and project files of the Northwest Regional Information System, and (2) an archaeological field reconnaissance of the project area, and (3) consultation with a Wiyot tribal representative.

The cultural resources study prepared for the Mad River pipeline project identified one potential sensitive cultural resource site in the area within the Commission's jurisdiction near the Indianola area. The report recommends that because of the possibility that buried cultural resources could be uncovered during construction activities not identified as being a cultural resources site, all ground-disturbing work shall be temporarily halted should archaeological materials be encountered during construction. Work near the archaeological finds will not be resumed until a qualified archeologist has evaluated the materials and offered recommendations for further action.

To ensure protection of any cultural resources that may be discovered at the site during construction of the proposed project, and to implement the recommendation of the archaeologist, the Commission attaches Special Condition No. 8 that requires that if an area of cultural deposits is discovered during the course of the project, all construction must cease and a qualified cultural resource specialist must analyze the significance of the find. To recommence construction following discovery of cultural deposits the applicant is required to submit a supplementary archaeological plan for the review and approval of the Executive Director to determine whether the changes are de minimis in nature and scope, or whether an amendment to this permit is required.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section Coastal Act Section 30244, as the development will not adversely impact archaeological resources.

7. Visual Resources

Section 30251 of the Coastal Act states that the scenic and visual qualities of coastal areas shall be considered and protected as a resource of public importance, and requires in applicable part that permitted development be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, and to be visually compatible with the character of surrounding areas.

The project site is located within agricultural lands between Highway 101 and Old Arcata Road, in an area that is not designated as a highly scenic. However, much of the transmission alignment is visible from Highway 101 and Old Arcata Road. The two existing parallel electric transmission lines are visible from these roads as the lines traverse through the area characterized by agricultural land use, open space, and rural residential development. The views of the transmission lines are distant. The lines are located a minimum of 900 feet away to the east of Highway 101 and in the southern part of the line more than a mile away. Views towards the facility from Highway 101 are in the direction opposite of views from the highway towards Arcata Bay. Although from Old Arcata Road the views of the transmission lines are generally towards the west in the direction of Arcata Bay, views of the Bay from Old Arcata Road are generally distant and often screened by roadside trees and other vegetation.

The proposed project would alter the visual appearance of the transmission line right-of-way to some degree. The most significant change is that the poles on the one transmission line that is being reconstructed would be taller. The existing wood poles on this line are generally 55-feet tall. The 39 proposed new wood poles would be approximately 65 feet tall, and the 10 proposed new tubular steel poles would range in height from 61 to 101 feet, with a median height of 78 feet. The two 101-foot-high tubular steel poles would be installed in the Freshwater Slough area where existing wood poles were eliminated to provide a larger unobstructed area for an unrelated proposed habitat restoration project. Taller poles are necessary to accommodate the larger span. In addition, the reconstructed line would now support six electrical wires, as opposed to the three wires the current line supports. On the other hand, the total number of poles would be reduced by three poles.

The changes to the transmission line would not have significant adverse impacts on visual resources. As noted above, the view affected from the main public road, Highway 101, is a distant view to the east away from Arcata Bay and the coast. While the view from Old Arcata Road is towards the coast, views toward the Bay and coast are very distant and in many places screened by roadside vegetation. The Commission notes that even if the reconstructed transmission line were placed underground, the second existing wood pole transmission line within the relatively narrow PG&E right-of-way would still be present and affect the views that are afforded towards the coast from public places. Most of the new poles will only be 10 feet higher than the existing poles. Only ten of the

49 poles that will be replaced within the Commission's jurisdiction will be taller. While the extra height of some of these poles may be noticeable, the extra height would not block additional view. Views from Old Arcata Road towards the Bay in this largely flat area generally are at a more or less horizontal angle in a line of sight generally below the tops of the existing poles of the two transmission lines.

The project may result temporary visual impacts associated with the project from the use of heavy equipment at the site and from soil and vegetation disturbance during construction. However, the proposed project involves the restoration of the construction area to pre-project conditions following construction with no alteration of existing landforms.

The project would not significantly affect the visual character of the area. As noted above, two parallel transmission lines already exist, and the project would replace one of the lines, albeit with three more electric wires. Two transmission lines would continue to be part of the visual character of the area upon project completion.

Therefore, the Commission finds that the proposed development is consistent with Section 30251 of the Coastal Act as the development would be sited and designed to protect views to and along the coast, would not involve any permanent alteration of land forms, and the proposed pipeline would not result in any change to the visual character of the Humboldt Bay area.

8. Public Access

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214 of the Coastal Act, the Commission is also limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on public access.

Although the project is located between the first public road and several tidal sloughs, inlets of the sea, it would not adversely affect public access. The project site is within a

rural, agricultural area used primarily for cattle grazing. There are no trails or other public roads that provide shoreline access within the vicinity of the project that would be affected by the project. Furthermore, the proposed project would not create any new demand for public access or otherwise create any additional burdens on public access.

Therefore, the Commission finds that the proposed project does not have any significant adverse effect on public access, and that the project as proposed without new public access is consistent with the requirements of Coastal Act Sections 30210, 30211, 30212, and 30214.

9. California Environmental Quality Act

Section 13906 of the California Code of Regulation requires Coastal Commission approval of a coastal development permit application to be supported by findings showing that the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Public Resources Code Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available, which would significantly lessen any significant effect that the activity may have on the environment.

The Commission incorporates its findings on conformity with Coastal Act policies at this point as if set forth in full. These findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed herein in the findings addressing the consistency of the proposed project with the Coastal Act, the proposed project has been conditioned in order to be found consistent with the policies of the Coastal Act. As specifically discussed in these above findings which are hereby incorporated by reference, mitigation measures which will minimize all adverse environmental impact have been required. These required mitigation measures include requirements that limit extraction to avoid environmentally sensitive habitat areas, rare and endangered species, migratory fish, and extractions that could lead to changes in river morphology. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity would have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. Site Plan
4. Construction Access Routes
5. Pole Elevations
6. Excerpts From Geotech Report

APPENDIX A

STANDARD CONDITIONS

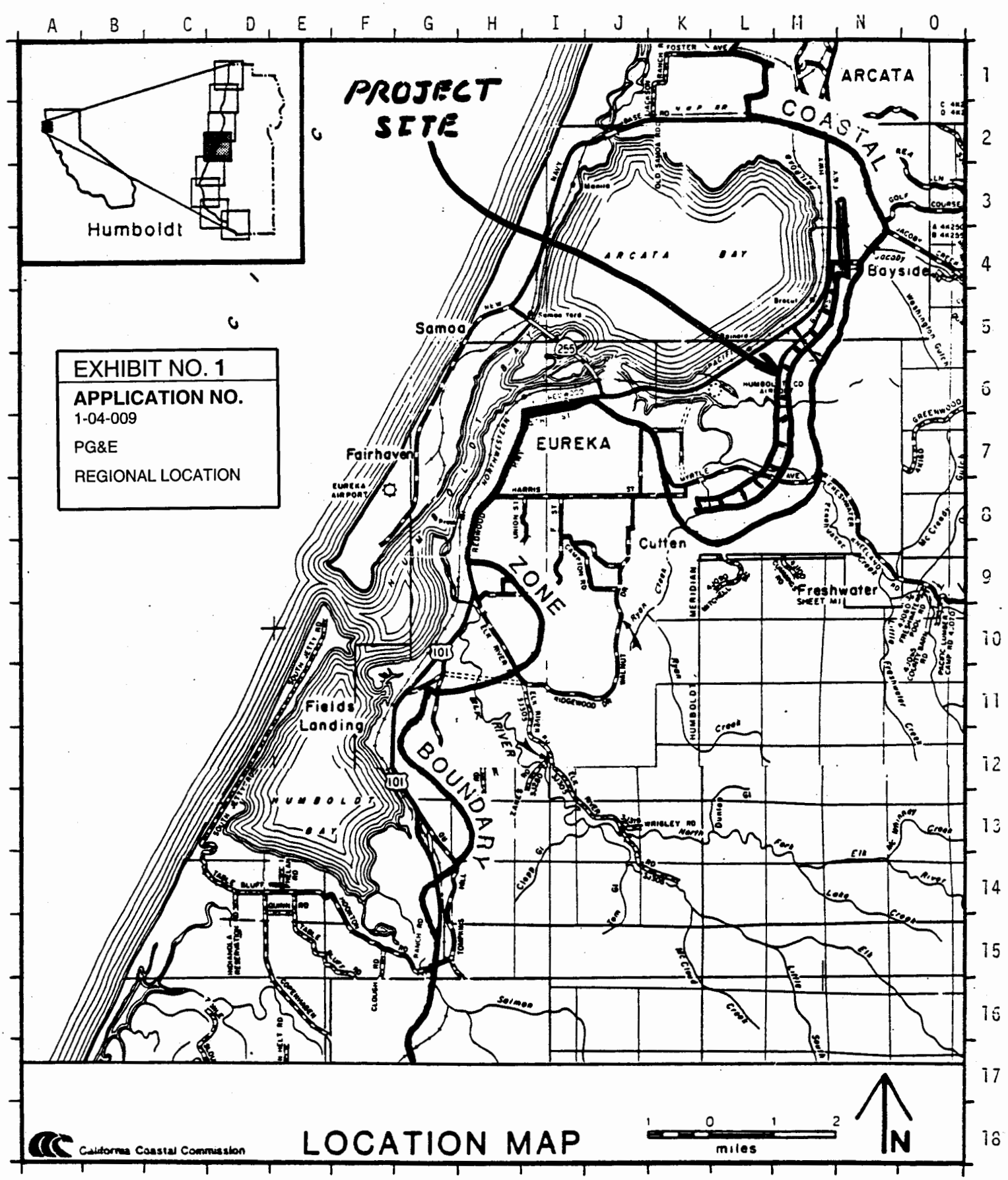
1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.



County of Humboldt

Sheet 4 of 8

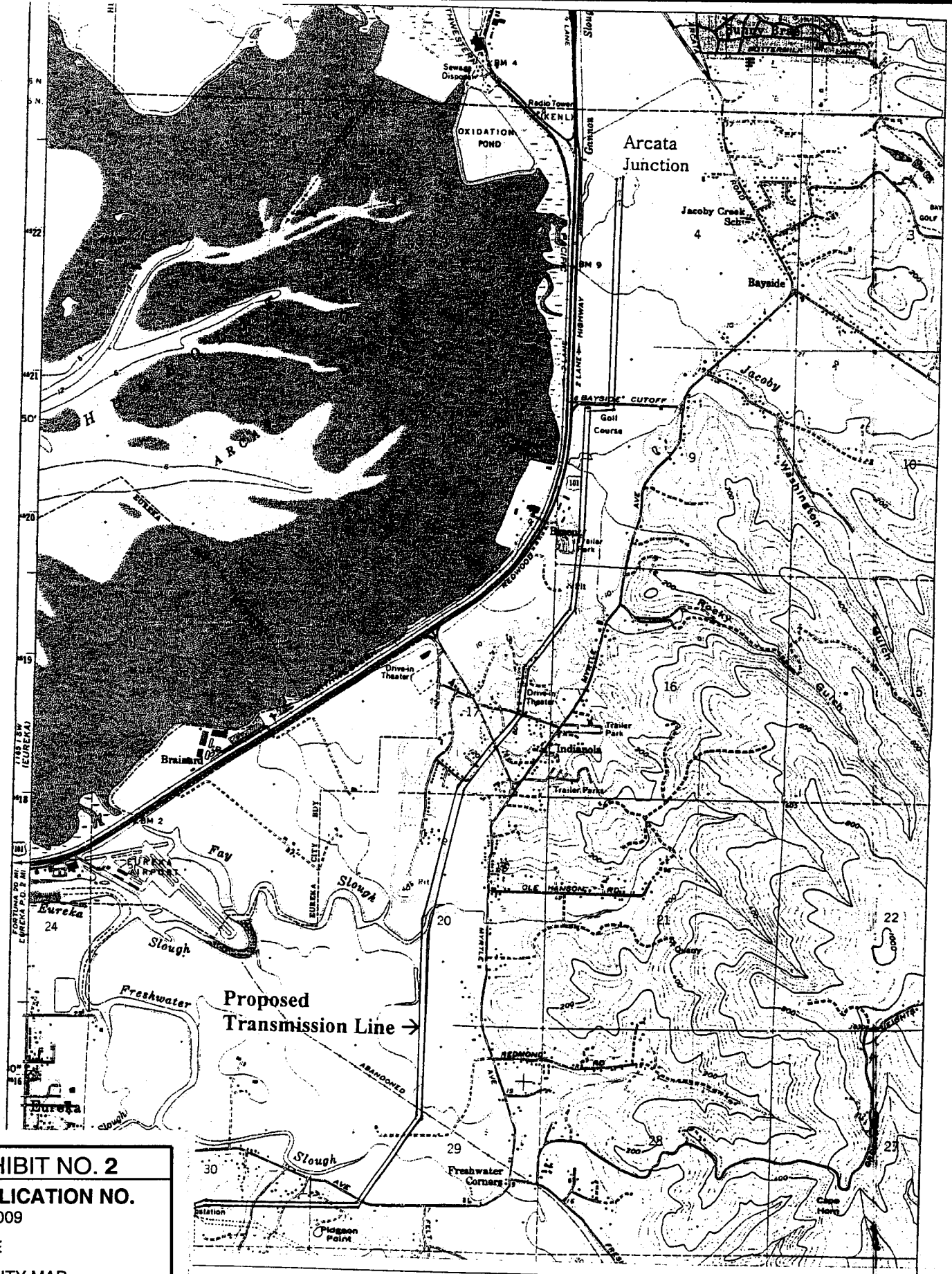


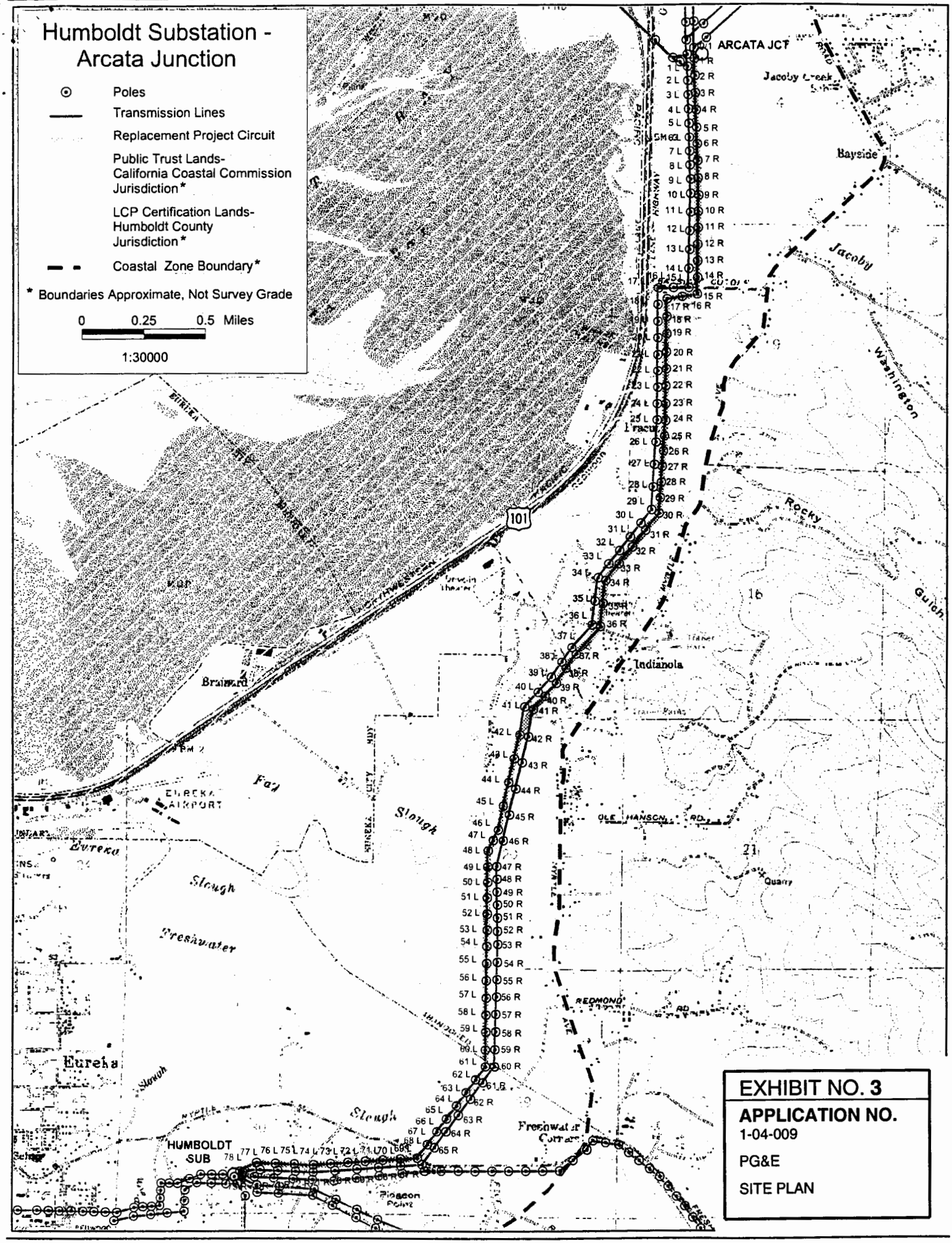
EXHIBIT NO. 2
APPLICATION NO. 1-04-009
PG&E
VICINITY MAP

Vicinity Map

PG&E Humboldt–Arcata 60kV Transmission Line Project

Matrix Environmental Planning – Feb04

Arcata South USGS 7.5' Quad


Humboldt Substation - Arcata Junction
Poles
Transmission Lines
Replacement Project Circuit
Public Trust Lands- California Coastal Commission Jurisdiction*
LCP Certification Lands- Humboldt County Jurisdiction*
Coastal Zone Boundary*
* Boundaries Approximate, Not Survey Grade
0 0.25 0.5 Miles
1:30000
ARCATA JCT
Bayside
Jacoby Creek
Jacoby
Washington
Rocky Gulch
Indianola
Brainard
Eureka
Slough
Freshwater
Freshwater Corners
HUMBOLDT SUB
Pigeon Point
Quarry
101
EXHIBIT NO. 3
APPLICATION NO. 1-04-009
PG&E
SITE PLAN

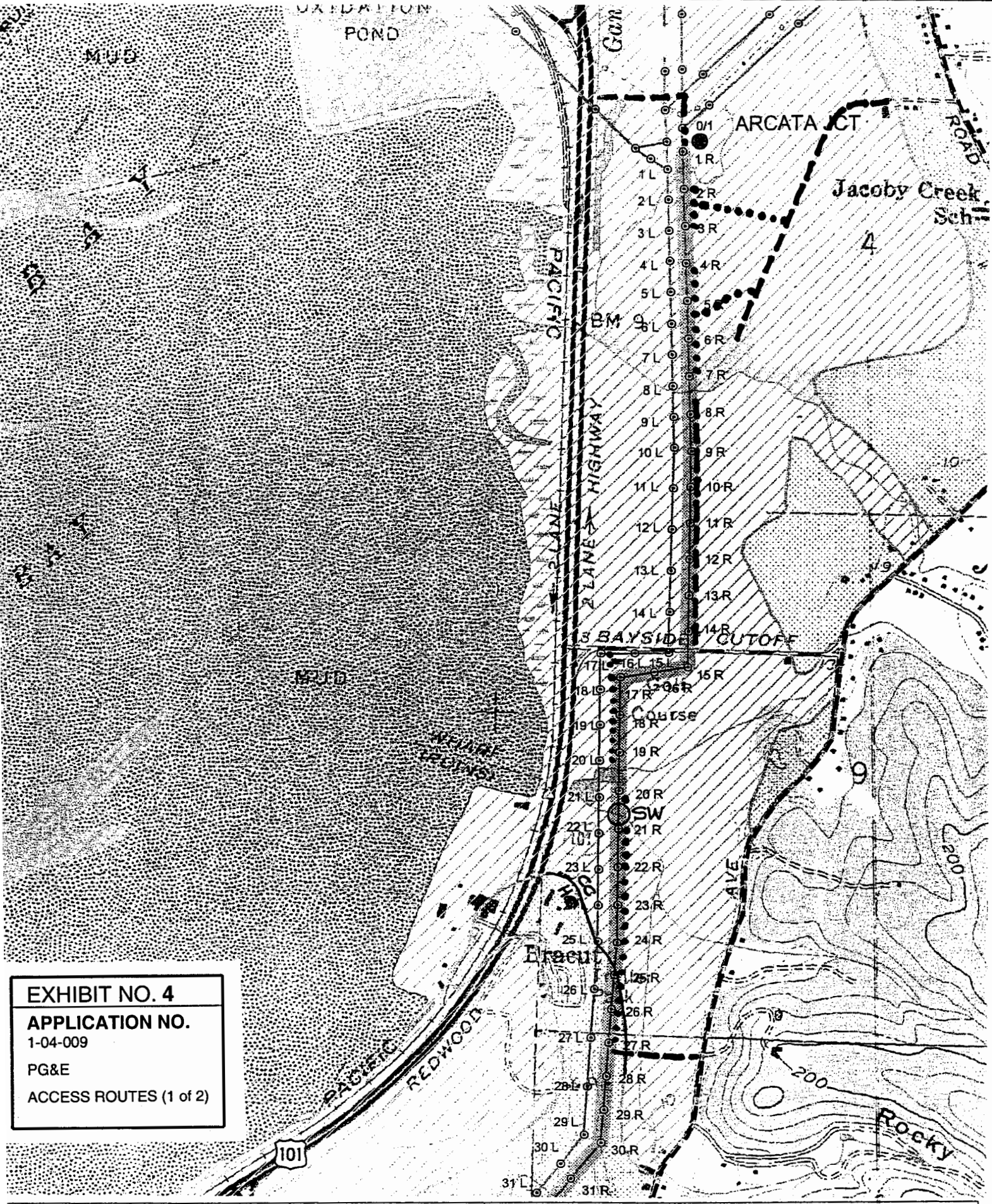


EXHIBIT NO. 4

APPLICATION NO.
1-04-009

PG&E

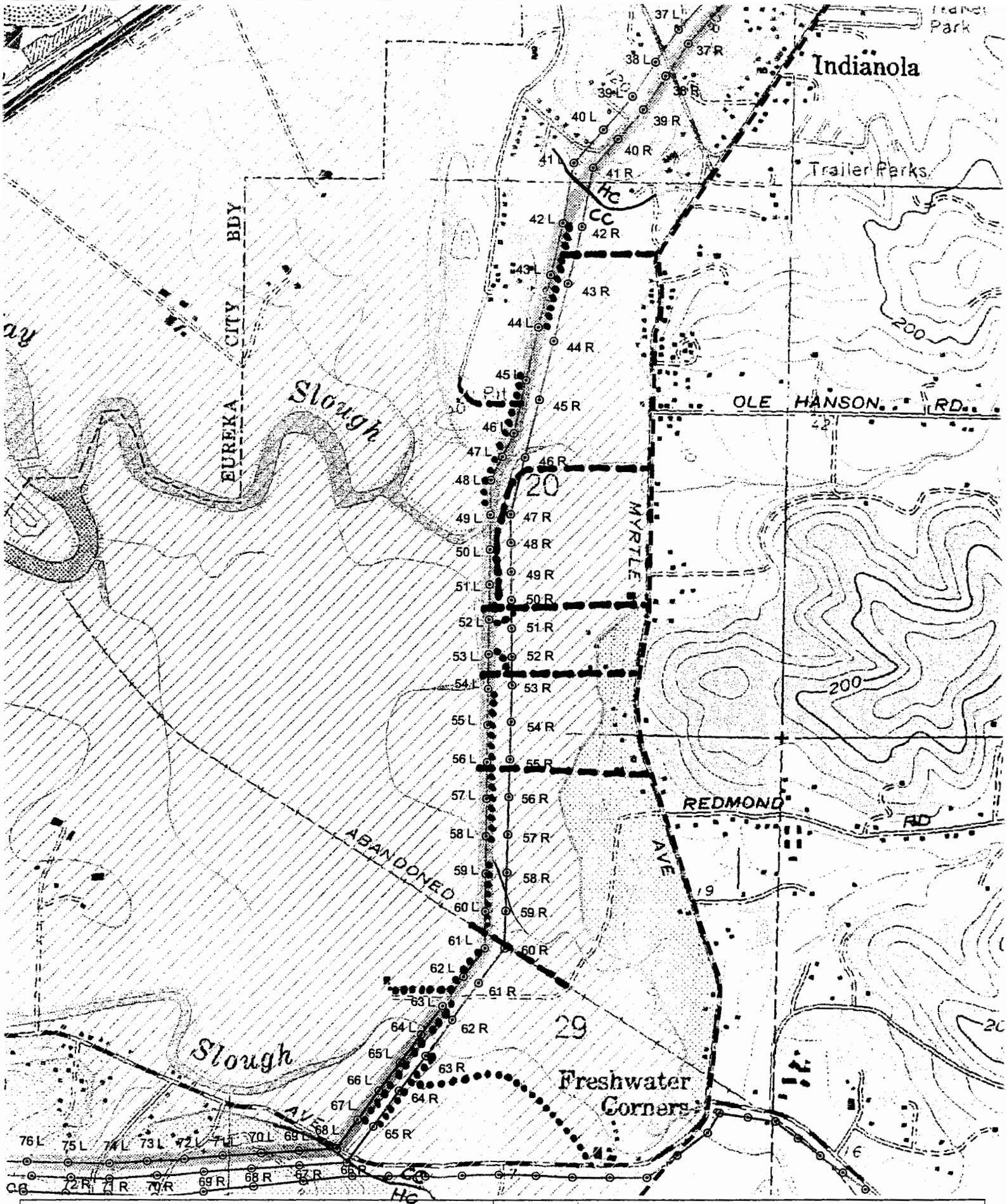
ACCESS ROUTES (1 of 2)

Existing Farm Roads — — — Swale Crossing SW
Cross-Pasture Access Routes ••••••

Construction Access Routes

PG&E Humbodt-Arcata 60kV Transmission Line Project

Matrix Environmental Planning – September 2004 | **Northern Portion** | Arcata South USGS 7.5' Quad



Existing Farm Roads ▬▬▬ Swale Crossing SW
Cross-Pasture Access Routes •••••

Construction Access Routes

PG&E Humbodt-Arcata 60kV Transmission Line Project

Matrix Environmental Planning – September 2004 **Southern Portion** Arcata South USGS 7.5' Quad

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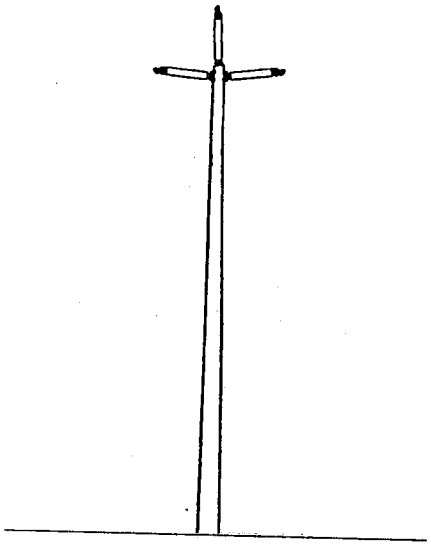
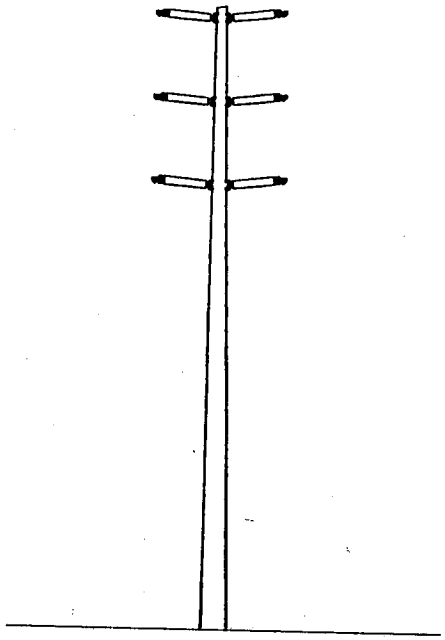
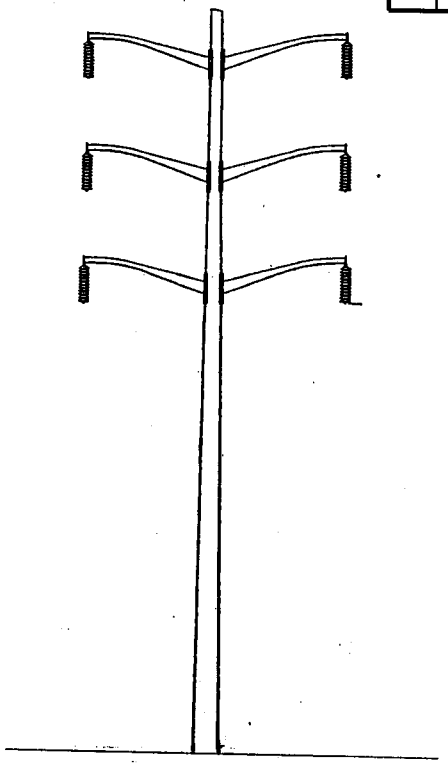
EXHIBIT NO. 5
APPLICATION NO.
1-04-009
PG&E
POLE ELEVATIONS



Existing Wood Poles
Height = 55 feet



Proposed Wood Poles
Height = 65 feet



Proposed Tubular Steel Poles
Median Height = 78 feet
(Height Range 61' to 101')

California Coastal Commission CDP
Matrix Environmental Planning – September 2004

Pole Heights and Configurations
PG&E Humboldt-Arcata 60kV Transmission Line Project

KLEINFELDER
An employee owned company

July 21, 2003
File: 28524/001

EXHIBIT NO. 6
APPLICATION NO.
1-04-009
PG&E
EXCERPTS FROM GEOTECH REPORT
(1 of 11)

Dr. James Gamble
Pacific Gas and Electric Company
Geosciences Department, Mail Code N4C
P.O. Box 770000
San Francisco, California 94177

Subject: Geotechnical Investigation for Five Tube Steel Power Pole Locations on the Arcata-Humboldt 115 kV Transmission Line, Eureka, California

Dear Dr. Gamble:

Kleinfelder, Inc. is pleased to submit four copies of our Geotechnical Investigation for planned tube steel power poles at five locations along the Arcata-Humboldt 115 kV Transmission Line, which traverses the lowlands adjacent to Arcata Bay between Eureka and Arcata, California. The five planned tube steel power pole locations addressed in the report are pole numbers 1/5 and 2/4 of the west line and 4/8, 4/10 and 5/12 of the east line. The enclosed report provides a description of the investigation performed and our recommendations for design of foundations.

The purpose of this report is to provide the client with parameters for geotechnical design and a better understanding of the potential foundation design and construction difficulties that might be expected due to site soil conditions. In summary, it is our opinion that the five sites are geotechnically suitable for the proposed tube steel power poles. The anticipated loads for the new poles can be supported on drilled piers. Foundation design of the pole at location 2/4 can be per the PG&E standard for soft to weak bedrock conditions. Design and construction for the other four poles will need to account for soft soil, flowing sands and the potential effects of liquefaction. The contractor should plan on casing the pierholes and locations 1/5, 4/8, 4/10 and 5/12. Additionally, the steel and concrete should be placed within these pierholes immediately following drilling to limit potentially adverse impacts of heaving sands.

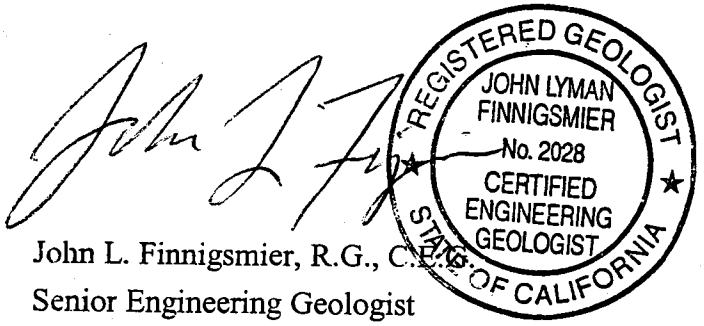
KLEINFELDER 9530 Crossroads Drive, Redding, CA 96003-1423 (530) 222-7203 (530) 222-3053 fax

It should be noted that the conclusions and recommendations presented herein are predicated upon a limited subsurface investigation at specific transmission tower locations and may not be applicable to other portions of the Arcata-Humboldt 115 kV transmission line alignment.

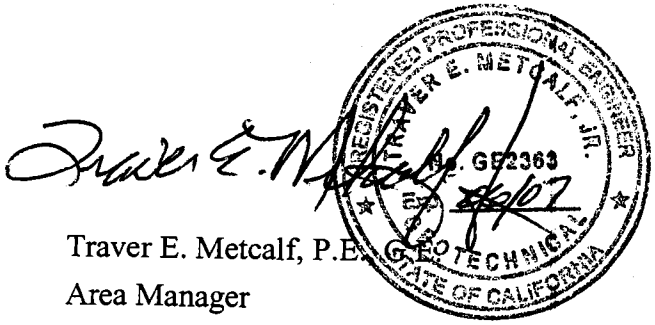
We appreciate the opportunity of providing our services to you on this project and trust this report meets your needs at this time. If you have any questions concerning the information presented, please contact John or Corky at (530) 222-7203.

Sincerely,

KLEINFELDER, INC.



John L. Finnigsmier, R.G., C.E.G.
Senior Engineering Geologist



Traver E. Metcalf, P.E.
Area Manager

cc: Kris Johnson, Kleinfelder

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KLEINFELDER 9530 Crossroads Drive, Redding, CA 96003 (530) 222-7203 (530) 222-3053 fax

GEOTECHNICAL INVESTIGATION REPORT
FOR FIVE TUBE STEEL POWER POLE LOCATIONS
ARCATA-HUMBOLDT 115 KV TRANSMISSION LINE
EUREKA, CALIFORNIA

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APPENDIX C - Liquefaction Analysis Data
N1(60) Corrections (5 pages)
Liquefaction Analysis Data (1 page)

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GEOTECHNICAL INVESTIGATION REPORT
FOR FIVE TUBE STEEL POWER POLE LOCATIONS
ARCATA-HUMBOLDT 115 KV TRANSMISSION LINE
EUREKA, CALIFORNIA

1. INTRODUCTION

This report presents the results of our Geotechnical Investigation performed for five proposed tube steel power poles (TSPs) along the Pacific Gas and Electric Company's Arcata-Humboldt 115 kV transmission line at Eureka, California. The Geologic Map, Plate 1 shows the five TSP locations relative to each other and surrounding topographic/cultural features. Plates 2a, 2b, and 2c show the locations of borings drilled for this study relative to the planned TSP locations and the transmission line alignment.

1.1 Project Description

The project involves the design and construction of 5 TSPs planned to replace existing wood poles at bend points along the existing PG&E Arcata-Humboldt 115 kV alignment connecting Arcata Junction with the Humbolt Substation. The tube steel poles will be approximately 2 feet in diameter at the base and about 40 feet tall. Foundations for this type of power pole typically consists of a cast-in-place drilled concrete pier, the depth and diameter of which varies primarily depending upon soil/bedrock conditions. We understand that the diameter is typically in the range of 5 to 9 feet and the depth may vary from 15 to 50 feet.

The existing Humboldt Substation is located at the east end of Mitchell Heights Drive just east of the City of Eureka, while Arcata Junction is located about 1000 feet east of U.S. Highway 101 just south of the City of Arcata. The majority of the transmission line traverses the lowlands adjacent to Arcata Bay that are primarily used for cattle and dariy cow grazing.

The project description above is based on the information available to us at this time. If the project conditions or description differ, we should be promptly notified.

1.2 Purpose and Scope of Services

As outlined in our March 21, 2003, Proposal for Geotechnical Engineering Services (Kleinfelder Document RED3P127), our scope of services included drilling permit preparation, a preliminary site meeting to locating drilling sites and asses access constraints, coordinating and overseeing the field investigation, disposal of drilling wastes, laboratory testing, engineering analyses, and

preparation of this geotechnical report. As discussed in our proposal, the field investigation included drilling and sampling of 5 mud rotory borings.

1.3 Authorization

This investigation was authorized by Contract Work Authorization Number 38 effective March 28, 2003, approved by James C. Gamble.

5. CONCLUSIONS AND RECOMMENDATIONS

5.1 General

Based on the results of our investigation the proposed transmission line towers may be adequately supported by cast-in-place concrete drilled pier foundation systems. A the sites of the planned tube steel poles designated 1/5 (west line) and 4/8, 4/10 and 5/12 (east line), clay deposits encountered were generally soft to medium stiff to depths of about 21 to 28 feet. The underlying materials were generally medium dense to dense granular soils with variable cohesive constituents. Medium dense, but potentially liquefiable sand was encountered at about 16 to 30 feet below existing grade within boring B-4/8. Additionally, potentially liquefiable sand was encountered between the detphs of about 23 and 50 feet within boring B-4/10. Design of the foundations will need to take into account the potential effects of liquefaction. However, since none of the poles will be located on slopes, near free faces or incised channels, lateral spreading is not considered to be a potential hazard.

The planned tube steel pole at location 2/4 (west line) is underlain by about 5 feet of loose sandy soil overlying soft bedrock (equivalent to very dense sandy soil). As such the standard PG&E pier design driteria for soft rock sites can be utilized at this location provided the upper 5 feet of soil is not relied upon for lateral support.

Construction issues likely to be encountered during the installation of the drilled pier foundations include shallow fluctuating groundwater, and the presence of soft clay and loose or cohesionles sand layers. The contractor for this project should be prepared to advance casing through any loose sands, soft clays and/or cohesionless soils beneath the water table. In our opinion such soil conditions were encountered in borings B-1/5, B-4/8, B-4/10 and B-5/12. As such, casing of these pierholes during drilling is should be performed. Piers should not bottom in liquefiable sand layers. As such, the piers for locations 1/5 and 5/12 should be a minimum of 25 feet deep. However, at locations 4/8 and 4/10 the piers should be a minimum of 32 and 50 feet deep, respectively. For those piers that bottom into saturated granular soils there is a potential for heaving of these soils into the bottom of the cased pier excavation. This potential for heaving sand may be increased due to changes in hydrostatic pressures that resulting from diurnal tide fluxuation. The contractor should consider this potential condition and be prepared to mitigate heaving, i.e. throught the use of a bentonite drilling fluid. Groundwater may also complicate construction of the piers by saturating the disturbed soils and causing mud to build up in the

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bottom of the drilled excavation. The contractor should be prepared to use a mud bucket to clean the bottoms of the pierholes. Immediate placement of reinforcing steel and concrete is recommended to reduce the impact of these potentially adverse conditions.

General soil strength parameters for use in designing pier foundations are presented in Tables 4, and 5 below. Table 4 presents strength values for clay and plastic silt soils based on relative stiffness. Table 5 presents strength values of granular soils based on their relative density. Please note that loose sand values are omitted. Instead, we have presented estimated residual strengths of liquefied sands based on our assumption that liquefaction of the sand layers will occur. Blow count information is presented on the boring logs.

Table 4: Soil Strength Parameters for Cohesive Soils

Clay/Silt Soil Type	N* (Blows/foot)	Cohesion (PSF)	Cohesion (PSI)	Friction Angle	Adhesion (Ca/C)	Modulus of Deformation (ksi)
Very Soft	<2	200	1.4	0	1.00	0.10-0.16
Soft	2-4	400	2.8	0	1.00	0.16-0.32
Medium Stiff	4-8	750	5.2	0	0.85	0.32-0.60
Stiff	8-15	1500	10	0	0.65	0.60-1.30
Very Stiff	15-30	2500	17	0	0.45	1.30-2.40
Hard	30 – 100	3000	21	0	0.40	2.40-5.00

Table 5: Soil Strength Parameters for Sandy Soils

Sand/Gravel Soil Type	N (Blows/ foot)	Cohesion (PSF)	Cohesion (PSI)	Friction Angle	Adhesion (Ca/C)	Modulus of Deformation (ksi)
Loose Above Water Table	4-10	0	0	30	N/A	0.6-1.6
Medium Dense Above Water Table	10-30	0	0	34	N/A	1.6-4.3
Dense Above Water Table	>30	0	0	38	N/A	10.0
Liquefiable Sand Layer	0-30	200	1.4	0	1.0	0.1-0.2
Medium Dense Below Water Table	10-30	0	0	34	N/A	1.6-4.3
Dense Below Water Table	30-50	0	0	38	N/A	4.3-10.0
Very Dense Below Water Table	30 -100	0	0	42	N/A	5.0-10.0

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5.2 Drilled Piers

We recommend steel reinforcement and concrete be placed immediately following completion of each drilled hole. Steel reinforcement should be centered in the drilled hole. Concrete used for pier construction should be discharged vertically into the holes to reduce aggregate segregation. Under no circumstances should concrete be allowed to free-fall against either the steel reinforcement or the sides of the excavation during construction. Groundwater will be encountered within the pier holes. If water more than 10 inches deep is present during concrete placement, either the water needs to be pumped out or the concrete placed into the hole using tremie methods. If tremie methods are used, the end of the tremie pipe must remain below the surface of the in-place concrete at all times. In order to develop the design skin friction value previously provided, concrete used for pier construction should have a slump of 6 to 8 inches. Casing is anticipated due to the nature of the soils. Unit prices for dewatering and/or tremie placement methods, and for casing should be obtained during bidding process.

Potenially liqufiable sands were encountered in our exploration. Drilled piers should be advanced through these sands and bear into dense granular soil, where the corrected blow count exceeds 30 blows per foot, or into a stiff fine grained soil such as clay.

The bottom of the drilled holes should be clean such that no more than 3 inches of loose soil remains in the hole prior to placement of concrete. A representative from Kleinfelder should be present to observe drilled holes to confirm bottom conditions prior to placing steel reinforcement and concrete.

5.3 Corrosion Potential

Our previous experience working with the soil types in this area has shown that the soils commonly have relatively high sulfate and chloride ion content as well as low minium resistivity. As such they can be considered moderately to highly corrosive to buried steel, concrete and steel embedded in concrete.

9-9-11

6. ADDITIONAL SERVICES AND LIMITATIONS

6.1 Additional Services

A review of plans and specifications and field observations and testing during construction by Kleinfelder are an integral part of the conclusions and recommendations made in this report. If Kleinfelder is not retained for these services, the client will be assuming Kleinfelder's responsibility for any potential claims that may arise during or after construction. Further investigation, engineering, tests, observations, and consultation by Kleinfelder during design and construction include, but are not limited to:

- review of plans and specifications,
- observations of foundation construction, and
- in-place density testing of fills, backfills, and finished subgrades (if any).

6.2 Limitations

The services provided under this contract as described in this report include professional opinions and judgments based on the data collected. These services have been performed according to generally accepted geotechnical engineering practices that exist in the Humboldt Coutny area at the time the report was written. No other warranty is expressed or implied. This report is issued with the understanding that the owner chooses the risk they wish to bear by the expenditures involved with the construction alternatives and scheduling that is chosen.

The conclusions and recommendations of this report are for five TSP locations along the Arcata-Humboldt 115kV transmission line at Eureka, California, as described in the text of this report. The data, conclusions and recommendations in this report are invalid if:

- the proposed TSPs, as described, change,
- the TSPs are relocated,
- the report is used for adjacent or other property,
- the Additional Services section of this report is not followed, or
- any other change is implemented which materially alters the project from that proposed at the time this report is prepared.

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The conclusions and recommendations presented in this report are based on information obtained from the following:

- 5 exploratory borings,
- the observations of our geologists and geotechnical engineers,
- the results of laboratory tests, and
- our experience in the area of the proposed project.

The boring logs do not provide a warranty as to the conditions which may exist at the entire site. The extent and nature of subsurface soil and groundwater variations may not become evident until construction begins. It is possible that variations in soil conditions outside of our drilled boring could exist beyond the point of exploration or that groundwater elevations may change, both of which may require additional studies, consultation, and possible design revisions. If conditions are encountered in the field during construction which differ from those described in this report, our firm should be contacted immediately to provide any necessary revisions to these recommendations.

It is the client's responsibility to see that all parties to the project including the designer, contractor, subcontractors, etc., are made aware of this report in its entirety, including the Additional Services and Limitations sections.

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