

ARCHAEOLOGICAL RESOURCES MANAGEMENT PLAN

DIABLO CANYON SITE

DRAFT

PACIFIC GAS AND ELECTRIC CO.

April 1980

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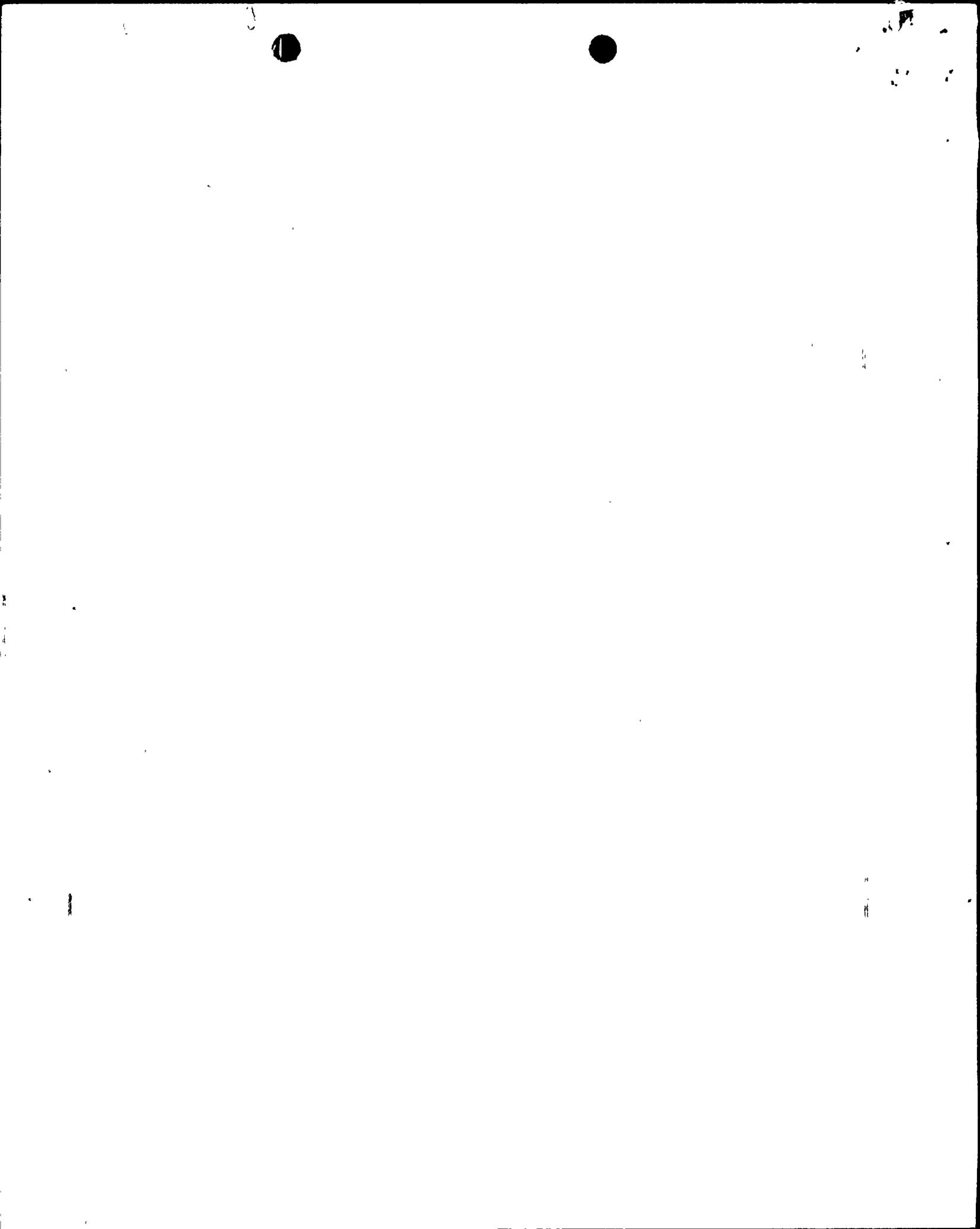


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1.0 INTRODUCTION

The purpose of this Management Plan is to detail the measures that have been, or will be, taken by Pacific Gas and Electric Company (PGandE) to ensure the protection of the archaeological resources present at the site of the Diablo Canyon Nuclear Generating Station Units 1 and 2. Section 2.0 presents a summary of the location and significance of the archaeological resources present. A brief history of PGandE site development, including photographic documentation, is provided in Section 3.0. Finally, Section 4.0 outlines the specific provisions of the Management Plan.



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2.0 RESOURCE DESCRIPTION

2.1 Location

The Diablo Canyon site is located on a coastal terrace representing an ancient wave-cut platform developed at least 100,000 years ago, with bedrock overlain by Pleistocene beach and marine deposits. The coast in this vicinity is rugged and rocky, marked by a high steep seacliff. The terrace is cut by canyons and drainages and backed by the San Luis Mountains. The nature of the coastline, the various landforms of the terrace, drainages, and slopes, and the interface of microenvironments combined to historically form a favoring habitat for an extensive list of marine mammals, shellfish, sea birds, land mammals, and plant foods. The creek has apparently been a dependable source of fresh water and lithic resources, for the evidence of manufactured stone tools is abundant.

Property in the area has been privately owned in large parcels since the early grants. Restrictions on public access and development have minimized alterations, construction, or disturbance of the cultural resources. The terrace has been used for grazing and cultivation, but the effects have been minimal and superficial. The only conspicuous structure is the new PGandE Diablo Canyon Generating Station, otherwise the landscape and the coastline closely resemble the probable appearance during the prehistoric era.

An area of approximately 90 acres was the subject of an intensive archaeological surface survey by R. S. Greenwood and V. G. Bente on September 19 and 20, 1978 (Appendices A and B). As directed by the Company, this area was bounded on the southeast by Diablo Creek, southwest by the shoreline and escarpment, on the northwest by the property boundary, and to the northeast generally by the 280-foot contour line.

The area surveyed in 1978 includes all visible portions of SLO-2, with boundaries and coordinates indicated in the appended documents. If the site should be attached by amendment to the existing archaeological NRHP District, the broadened District would also include recorded sites Diablo #3 and Diablo #5, as well as the locations of SLO-584 and SLO-61 which have been partly or totally destroyed.

2.2 Significance

Appendices A and B contain full documentation of the resources present. Generally, SLO-2 may be characterized as a shell midden. The site is vast in size with 130,235 square meters of visible surface remains. The lower levels have been radiocarbon dated to 9,000 years.

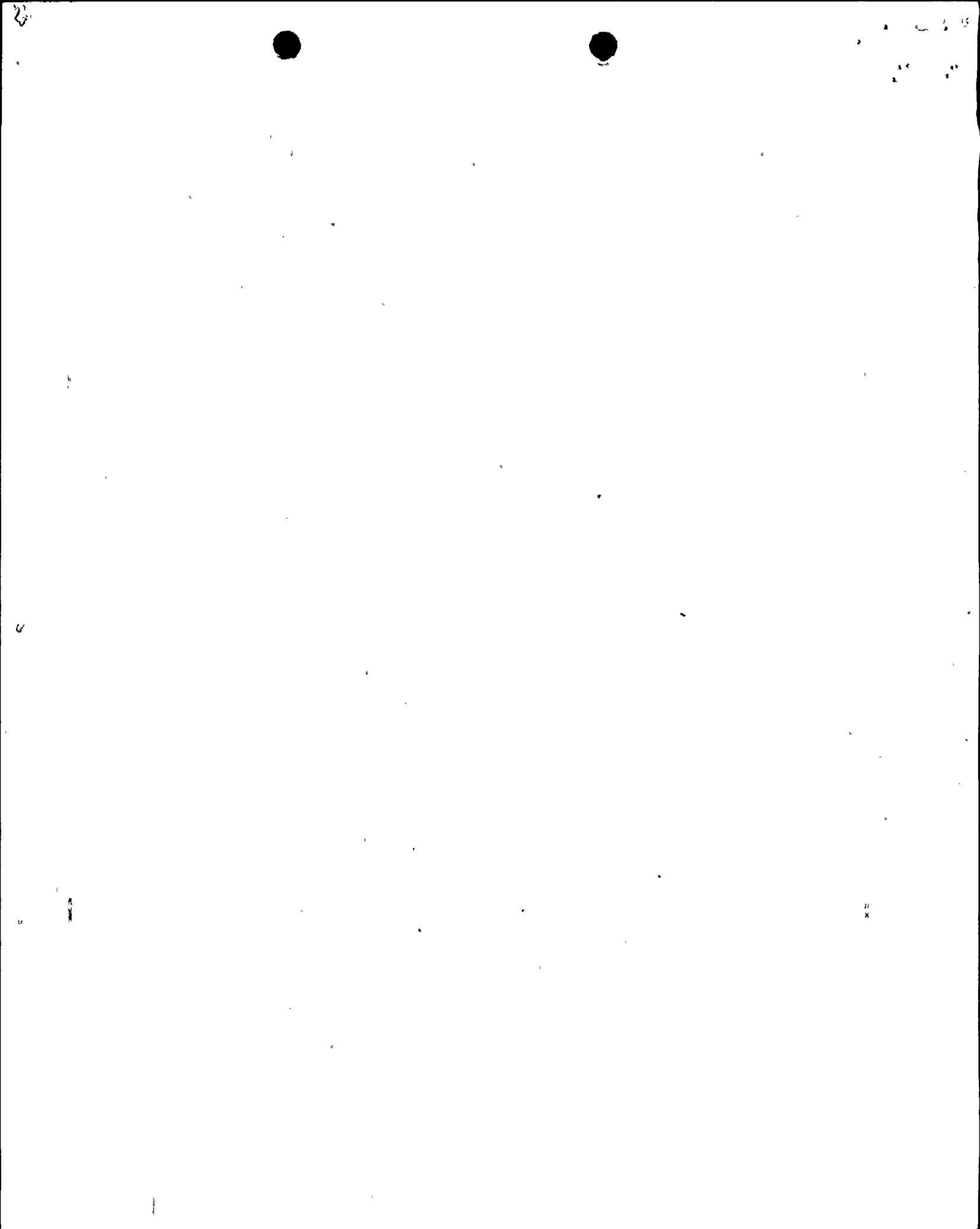


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Hypotheses have been developed that SLO-2 was the major focus of settlement and social organization along this coastline, and that at least some of the smaller sites represent special activity areas or the budding-off of satellite settlements in response to social or subsistence pressures in the later periods. The importance of the archaeological deposit is related in part to the very great density of prehistoric villages and occupations along the adjacent coast which includes among the concentration of population, the site of SLO-2. To date, this is the largest, deepest, and oldest community known in this region of central California. Villages of this size were uncommon between San Francisco Bay and the Santa Barbara Channel. In both of those areas, comparable foci of settlement have been largely destroyed, leaving the Pecho coast as one of the few relatively undisturbed concentrations of major archaeological sites in California.

The site is significant in prehistoric archaeology, for the period which begins about 9,000 years before present and extends at least until 930 years before present. This span is based upon the earliest and latest ^{14}C dates currently available for SLO-2, and could conceivably be extended in either or both directions on the basis of future research. The other sites tested in 1968 yielded absolute or relative dates within this time span. The boundaries as presently staked are based upon cultural remains observed in the course of an intensive surface survey.



3.0 PRIOR SITE USAGE

3.1 Discussion

During preconstruction and construction of Units 1 and 2, PGandE extensively utilized the SLO-2 site for storage of materials and equipment and for other construction-related activities. As a result, much of the SLO-2 site must be considered to have been altered and disturbed to some extent.

Despite alterations and prior disturbances, the site retains some archaeological integrity as a result of actions taken by PGandE concurrent with its evolving use of the area. PGandE has secured the exposed portion of the midden in the bluff by fencing the southeastern portion of the site as a protective measure against artifact looting. The eastern extreme of the site has been left intact under heavy vegetation.

The central part of the terrace between Diablo Canyon and the next drainage to the northwest has been subject to both grading and fill and was the area most extensively used in the past. The amount of resource loss in this area is unknown. On so deep a midden, however, disturbance has likely been limited to the upper levels. In addition, in the course of preparing for the construction of Units 1 and 2, the central portion of the terrace was used as a depository for soil removed from the plant site. Based on a comparison of maps prepared in 1966 and 1971, there is as much as 25 feet of fill presently concealing and protecting the midden in the center of the site.

The placement of the reservoir and an associated buried water line leading to it, at the upper end of the secondary drainage apparently did destroy a portion of the site. A temporary 230-kV substation was constructed in 1969. Some of the foundation work may have penetrated the midden. With the removal of the substation, however, these foundations were left intact and covered by fill, thereby protecting the resources. The power poles and access roads did intrude somewhat upon the deposit.

SLO-2 and the adjacent sites already contained within a NRHP District are located along a continuous coastal terrace with minimal or no disturbance to the site margins. It is assumed that evidence for the intersite relationships would still be intact. Restricted public access over the years has served to conserve the cultural resources, and the use of the land for agriculture is regarded as a non-significant level of impact. These conclusions are supported by the results of sampling at six sites in 1968.

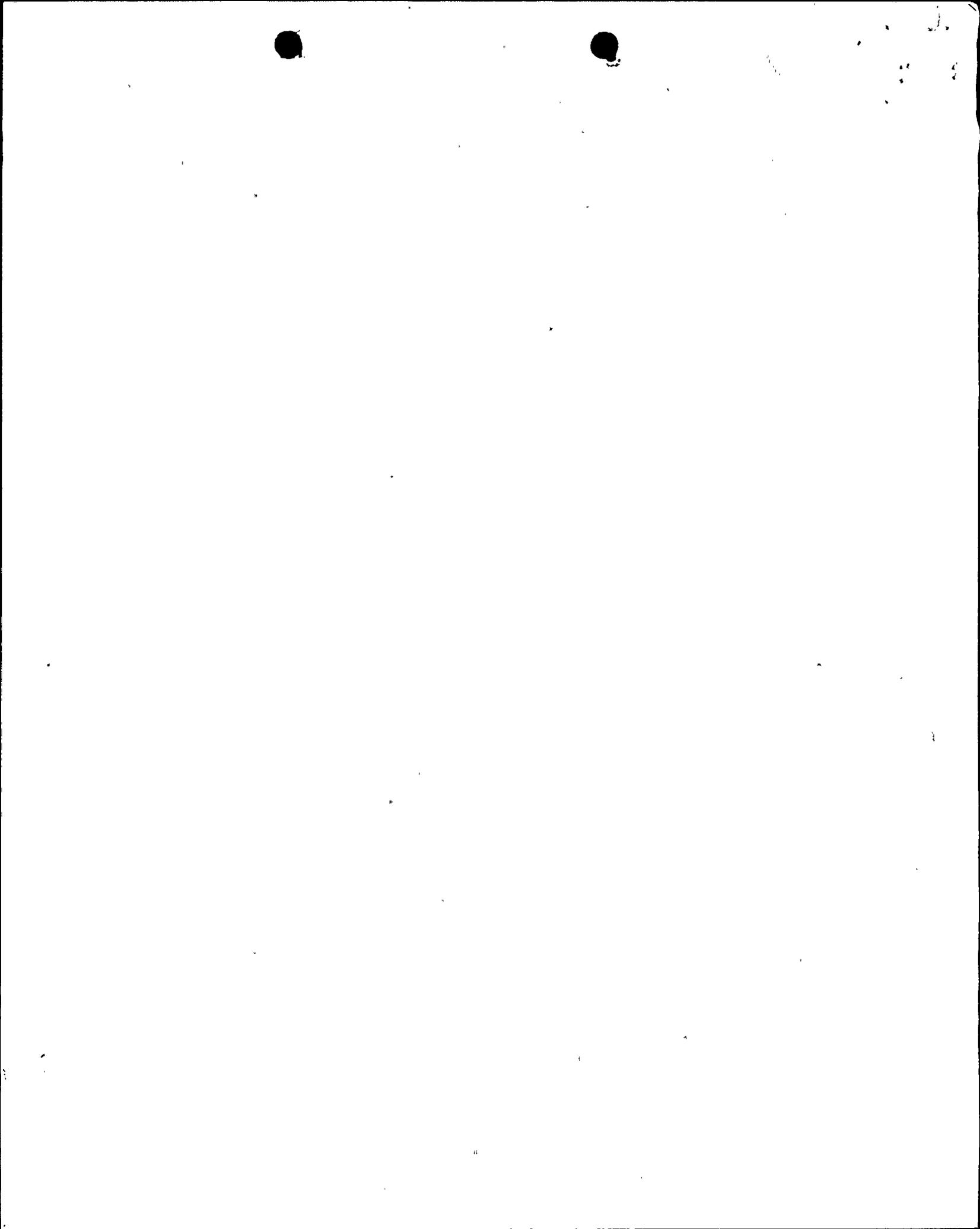
3.2 Photographic Documentation

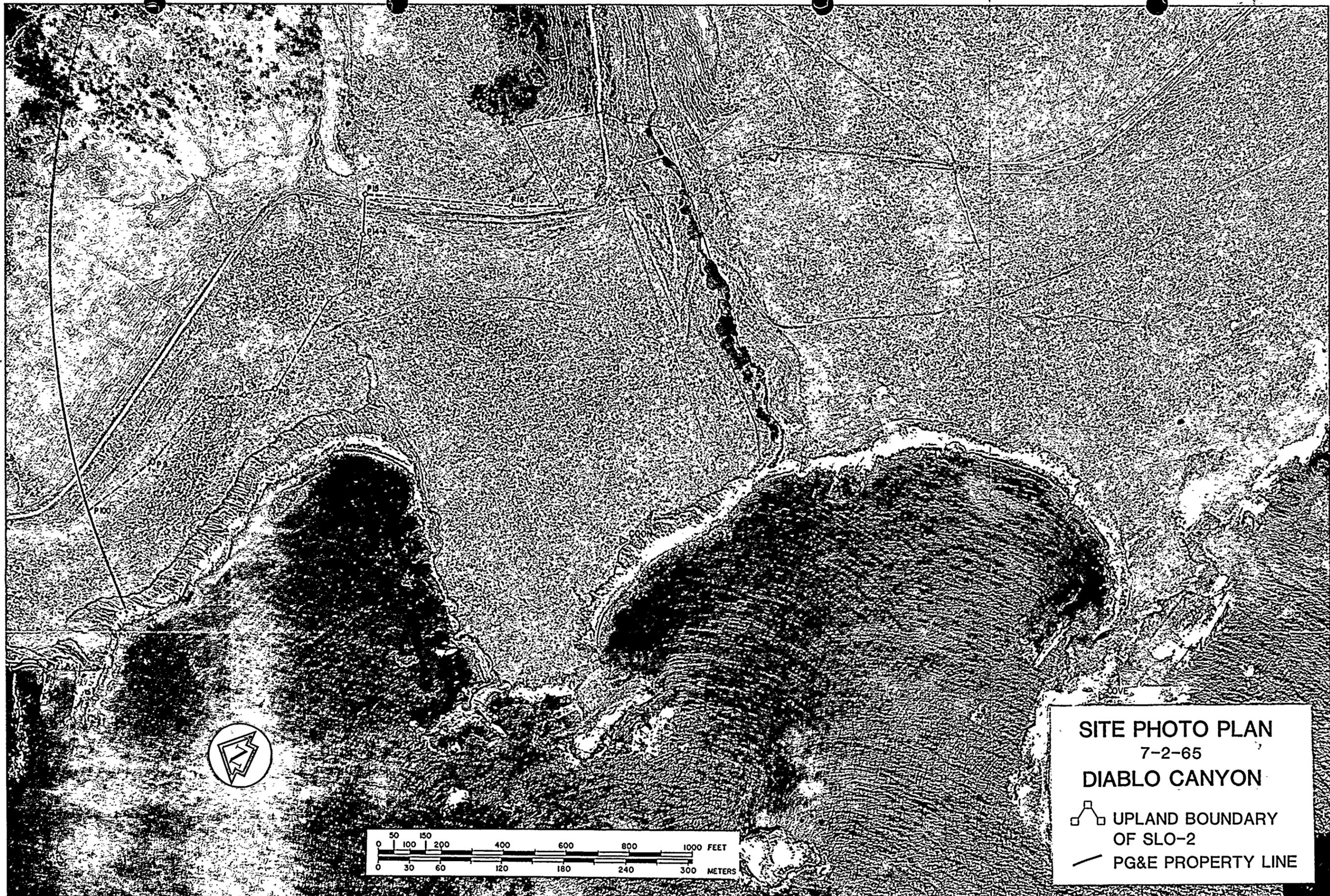
The following photographs present a synopsis of land use at, and adjacent to SLO-2 since 1966. On each photo, the approximate



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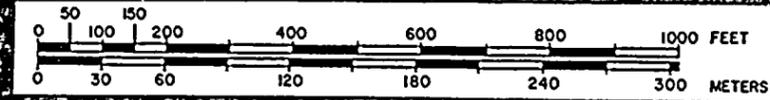
location of the PGandE property line and the upland boundary of SLO-2 have been marked. The November 29, 1979 photograph also shows the location of the fill covering the central part of SLO-2 and the temporary 230-kV substation.

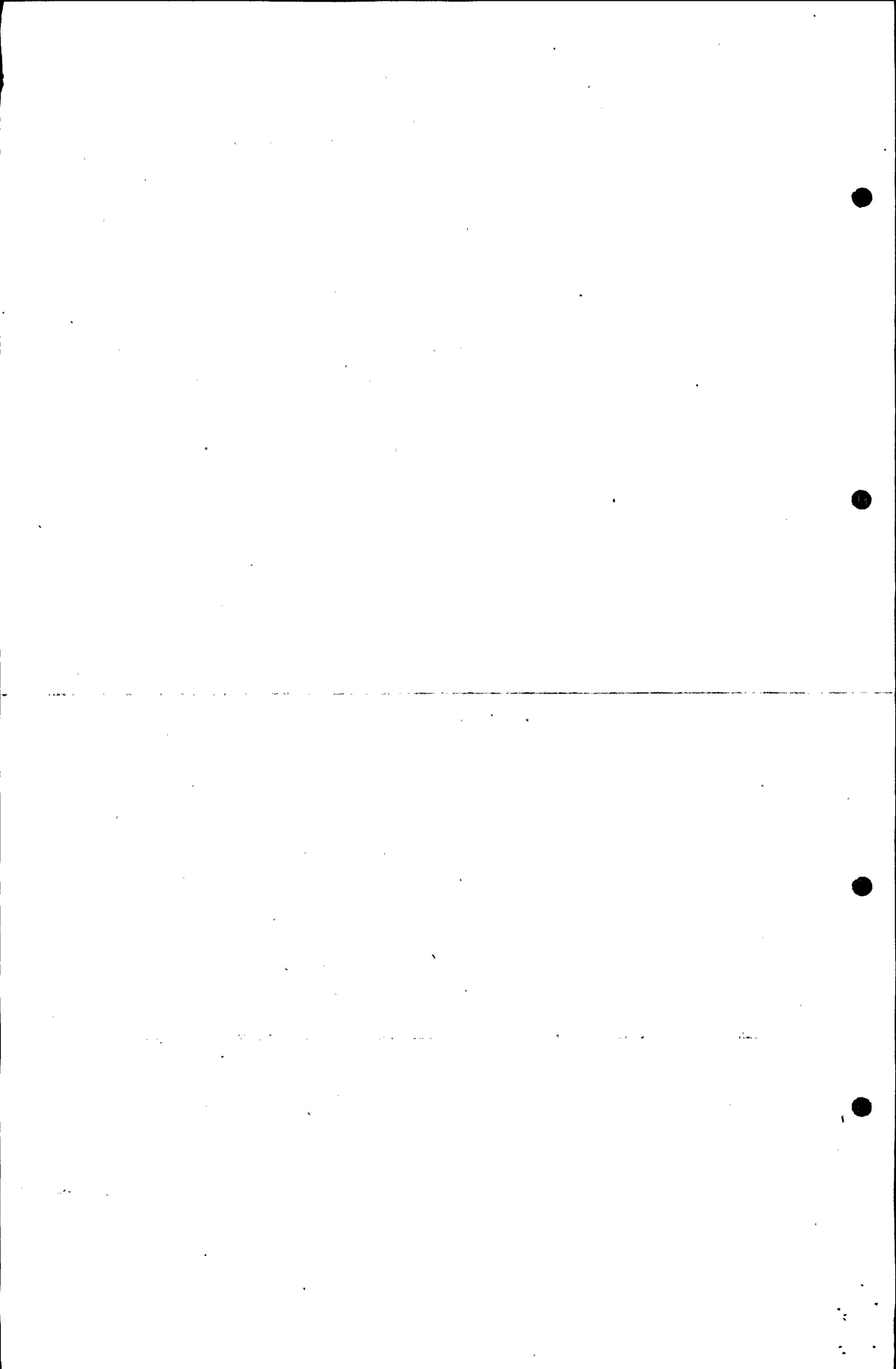


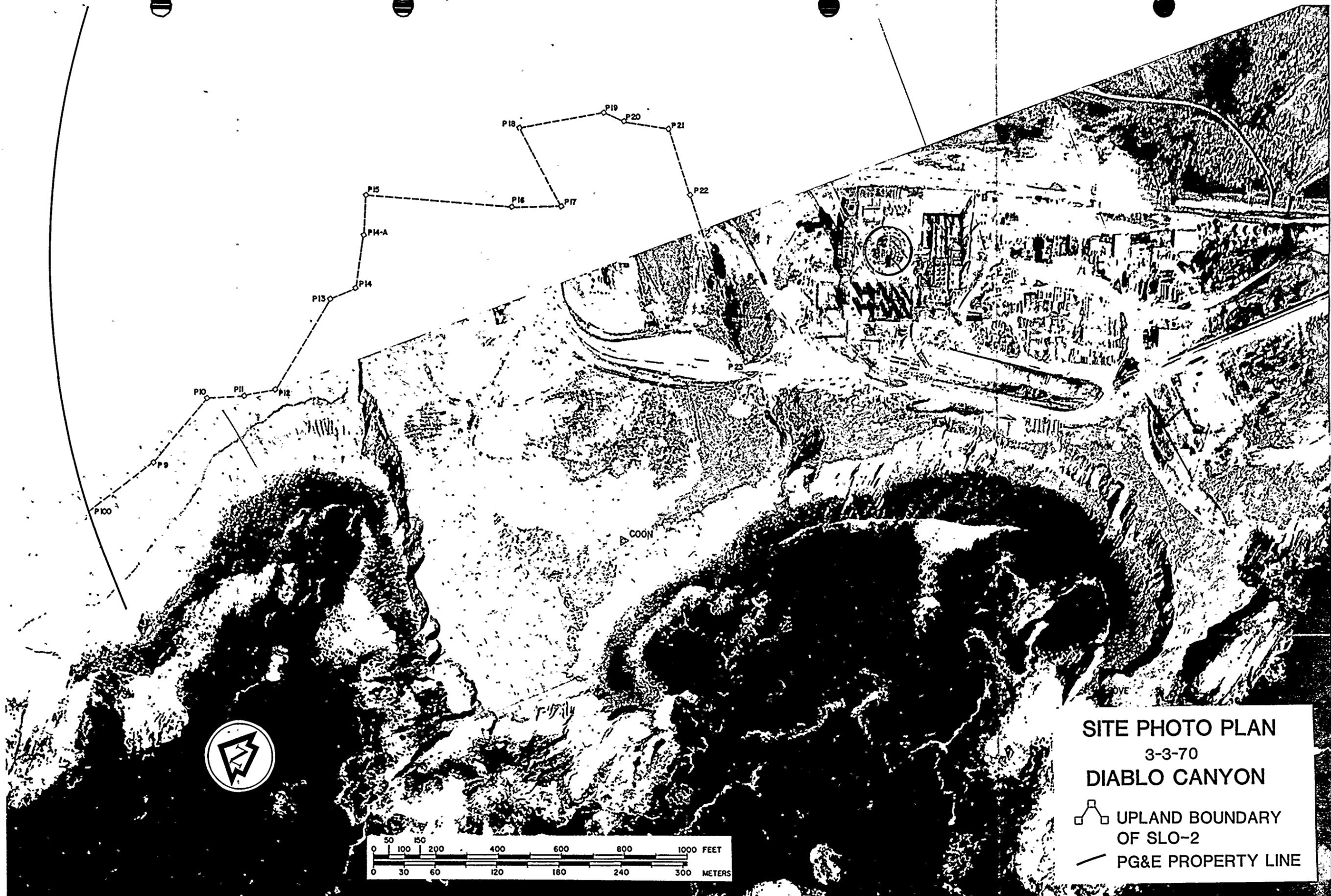


SITE PHOTO PLAN
7-2-65
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE



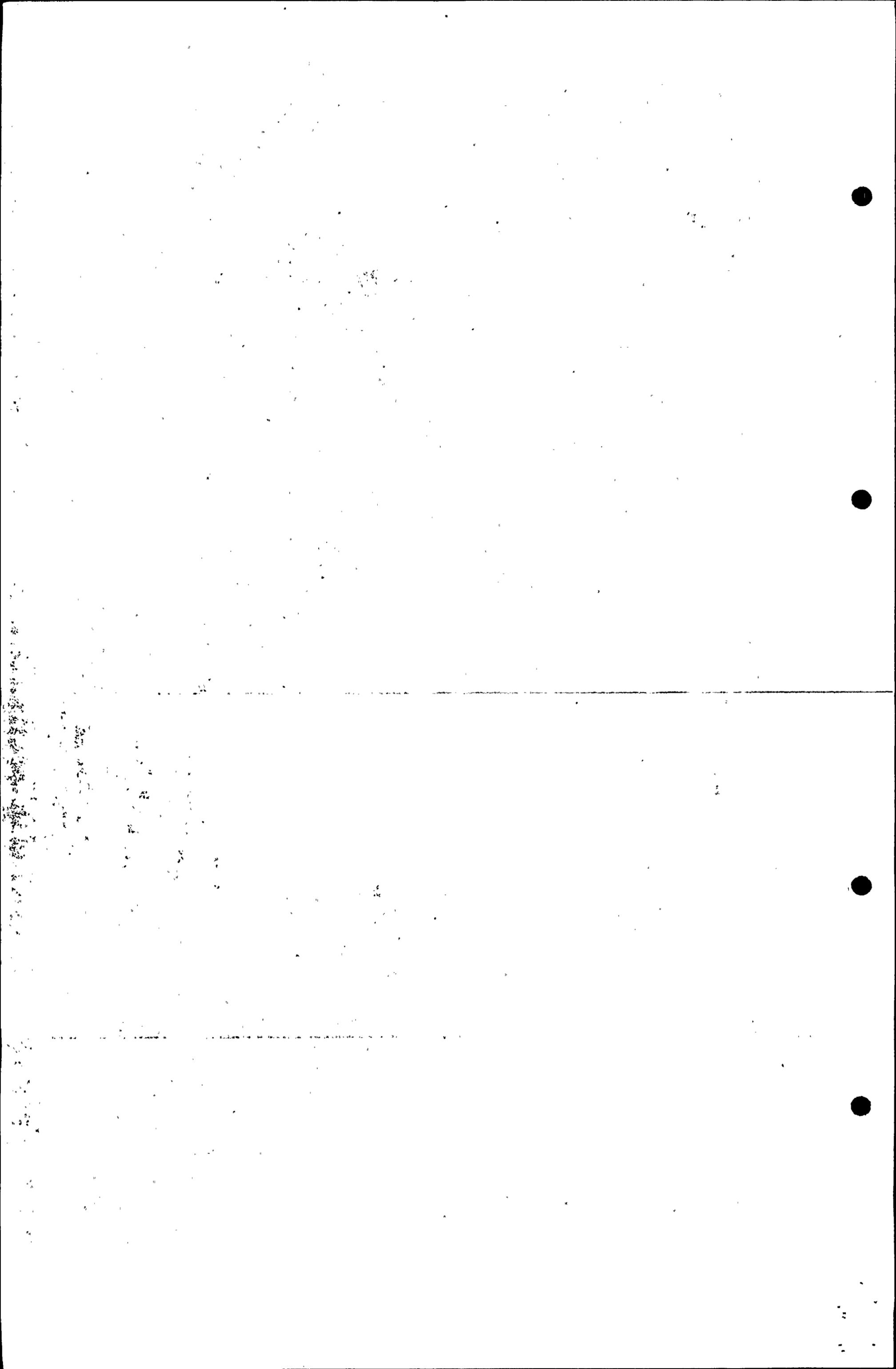




SITE PHOTO PLAN
3-3-70
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

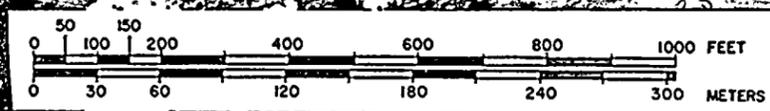


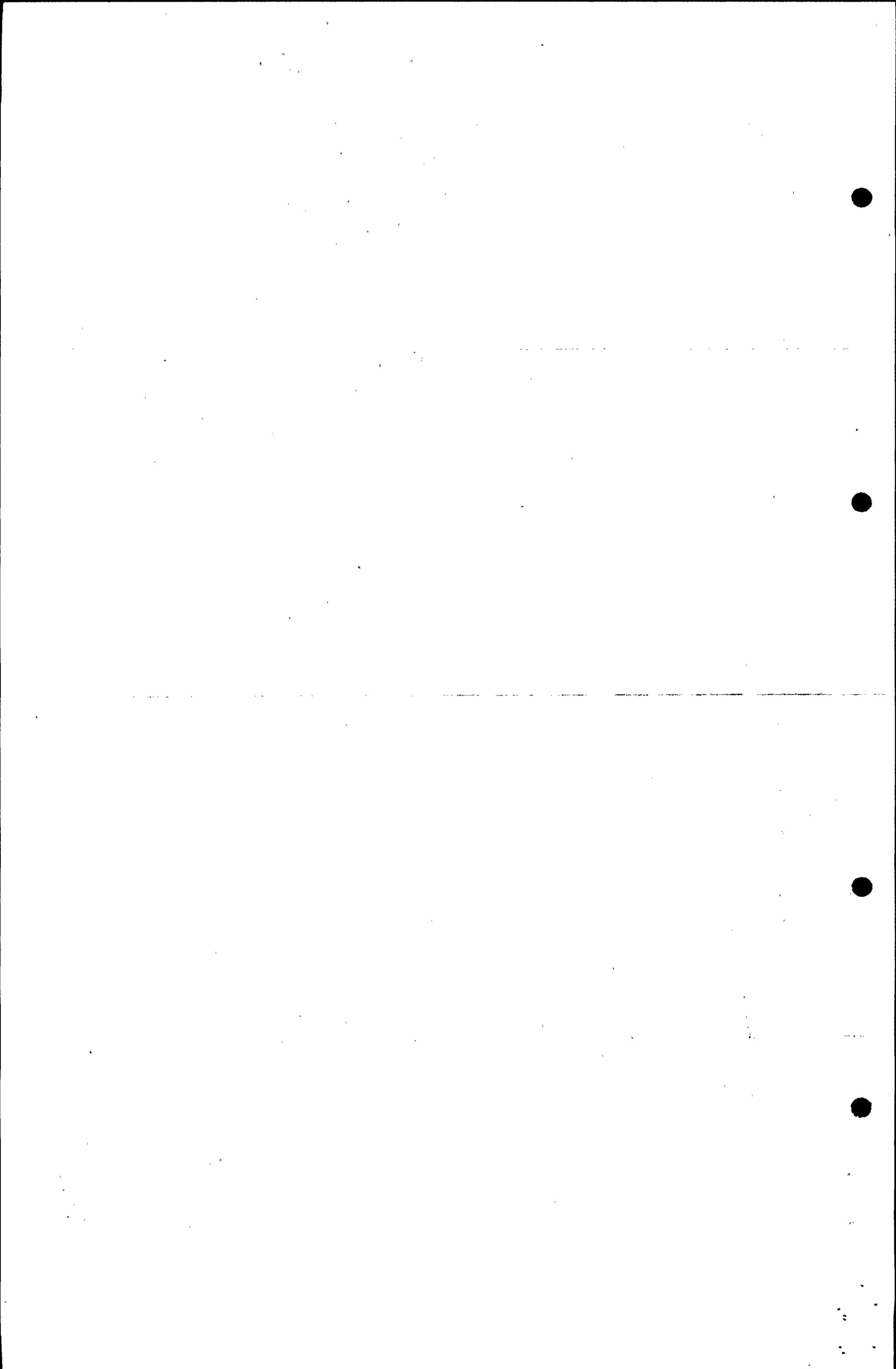


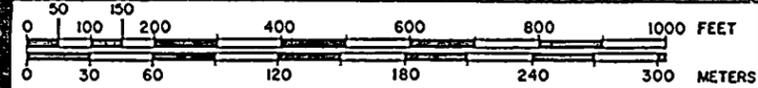
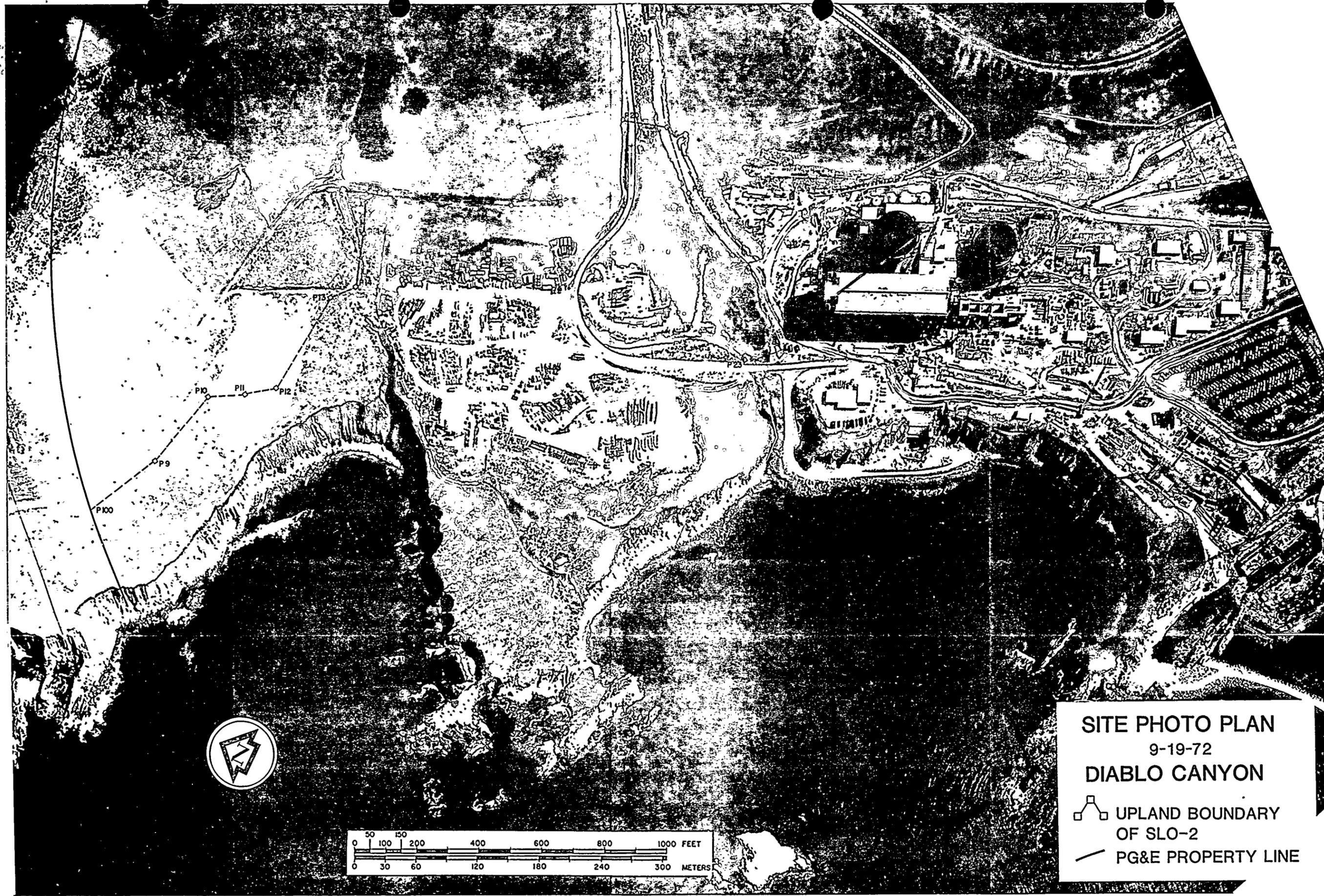


SITE PHOTO PLAN
4-21-71
DIABLO CANYON

- UPLAND BOUNDARY OF SLO-2
- PG&E PROPERTY LINE

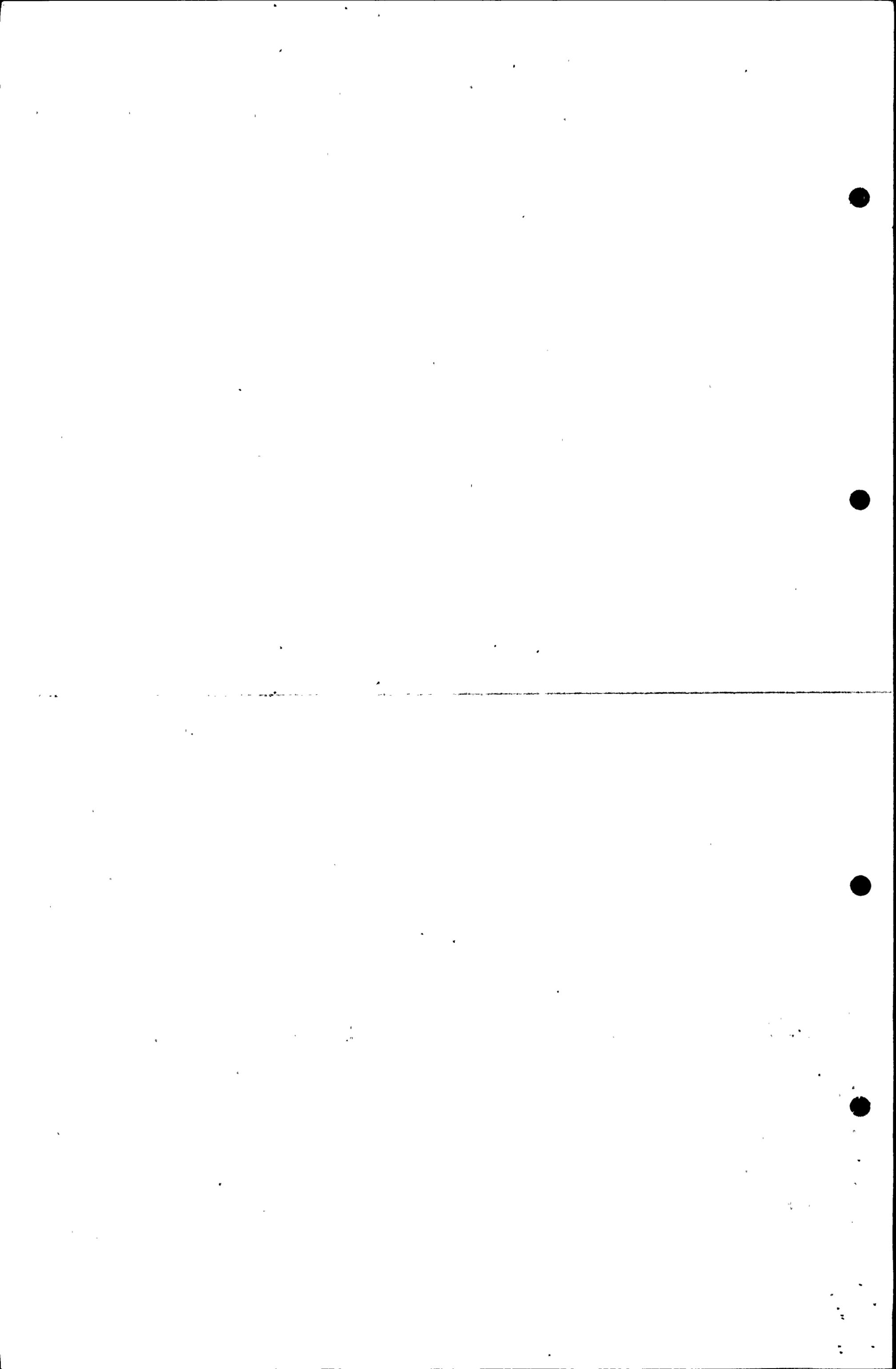


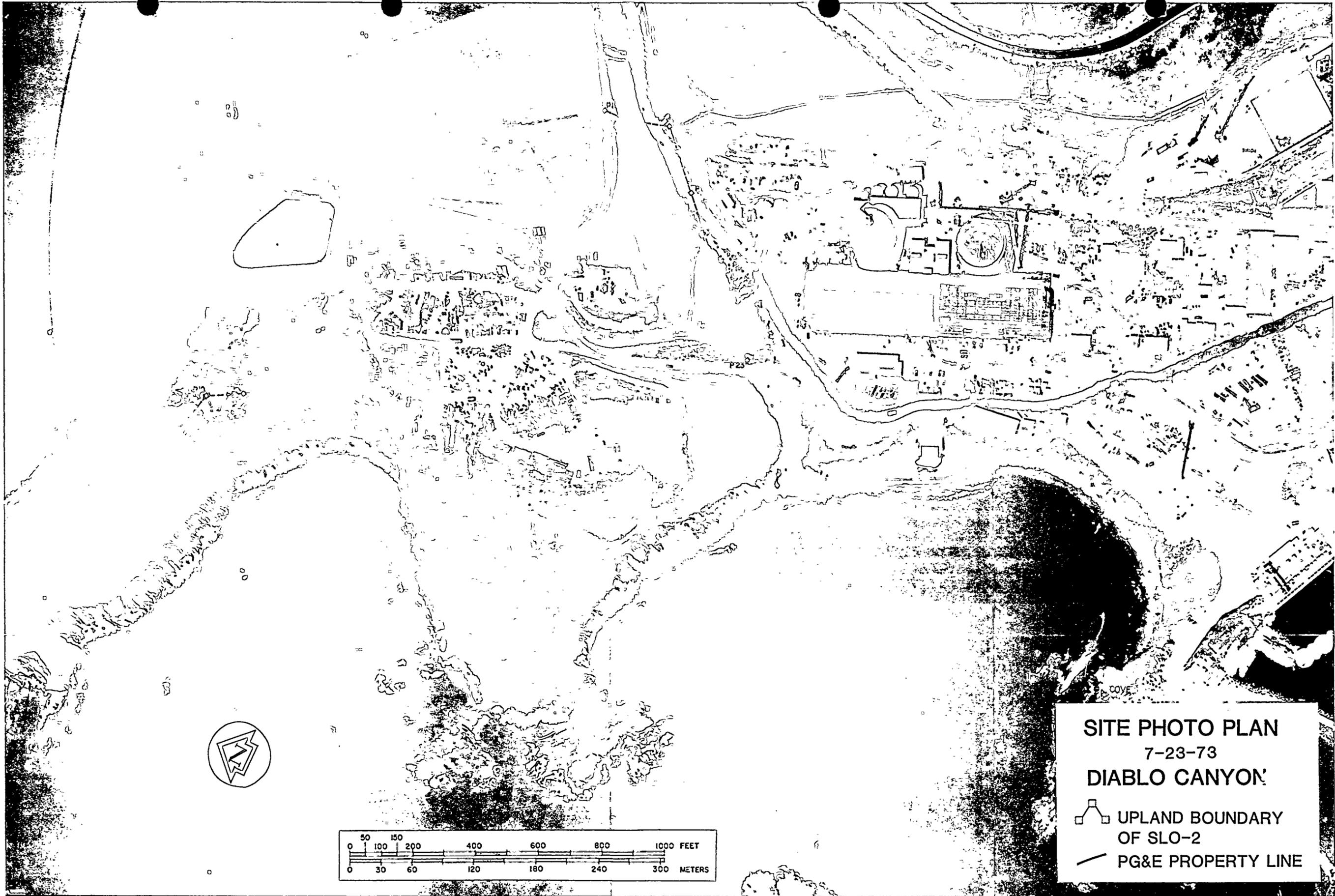




SITE PHOTO PLAN
9-19-72
DIABLO CANYON

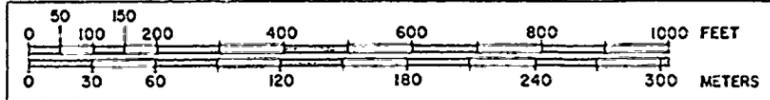
-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

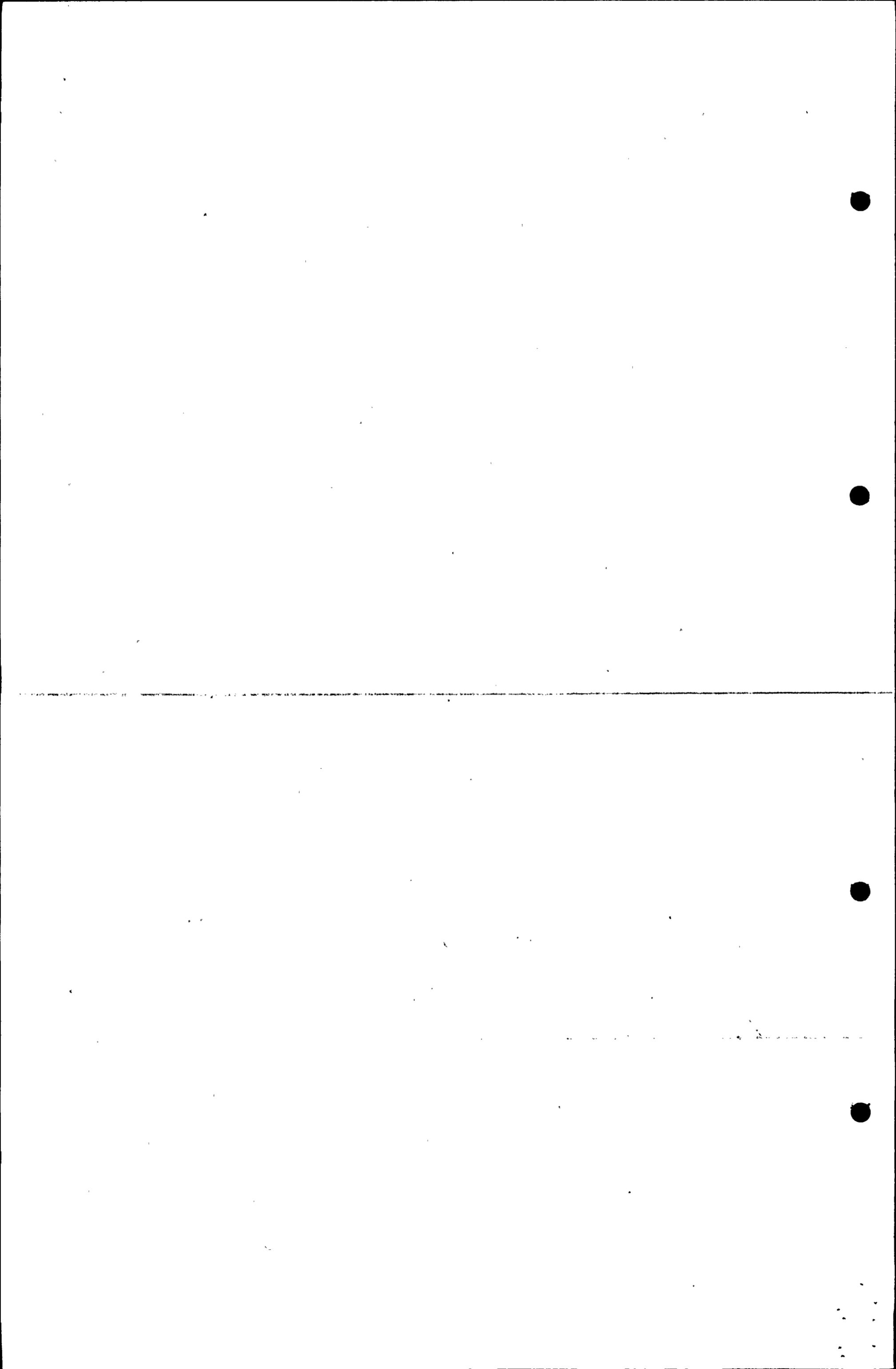


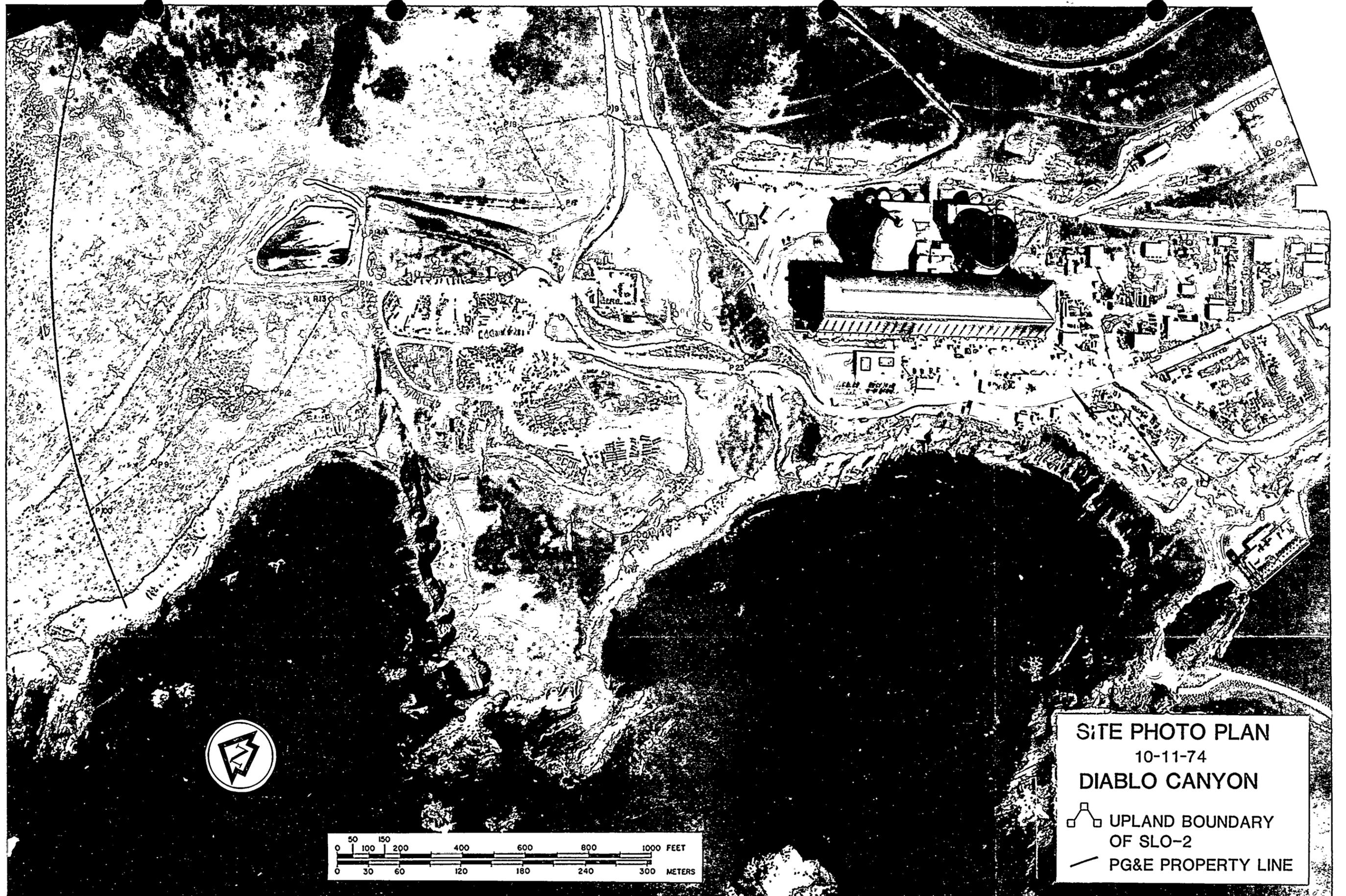


SITE PHOTO PLAN
7-23-73
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

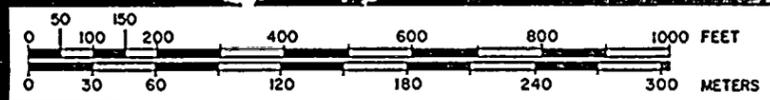


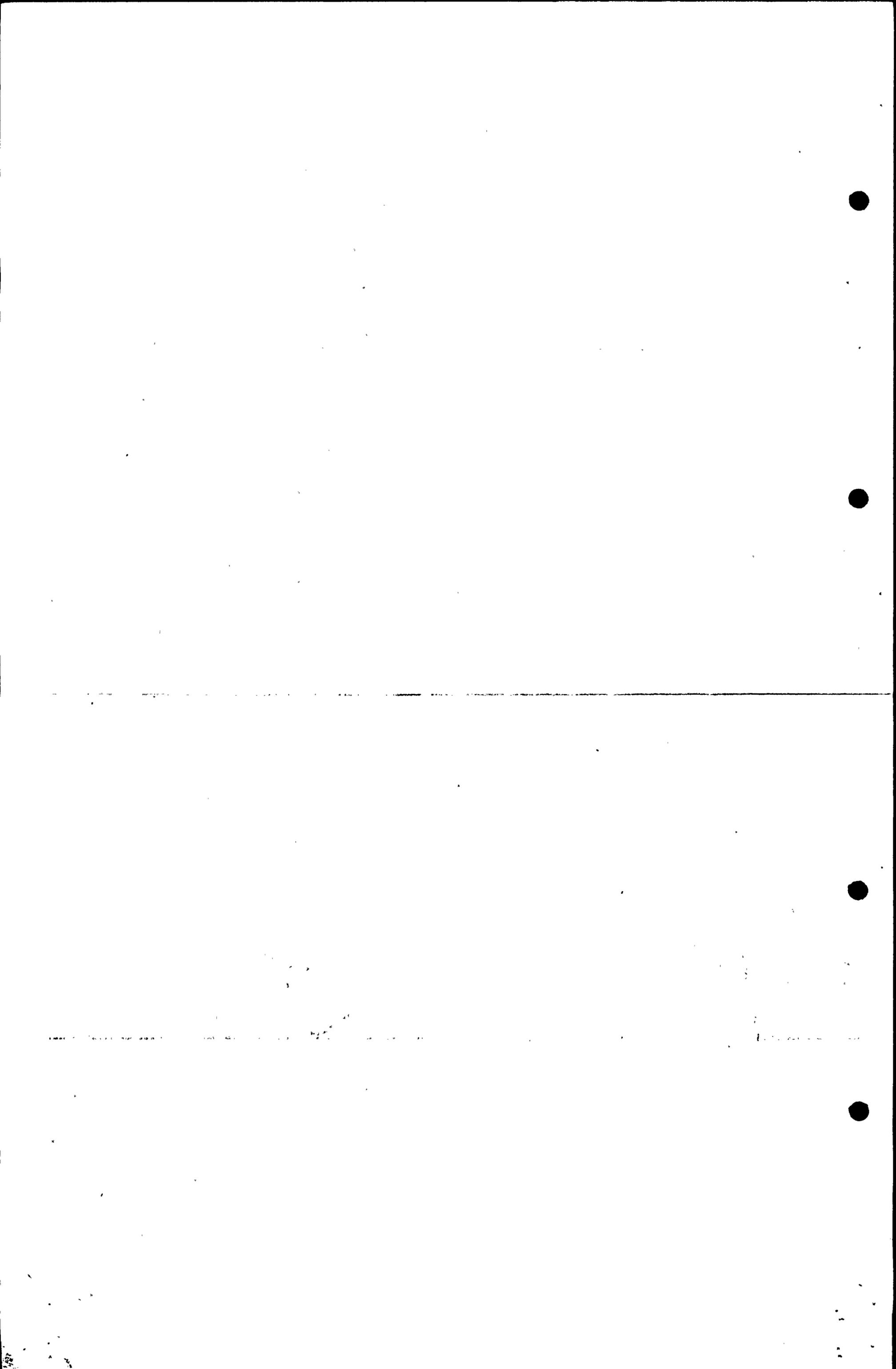




SITE PHOTO PLAN
10-11-74
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

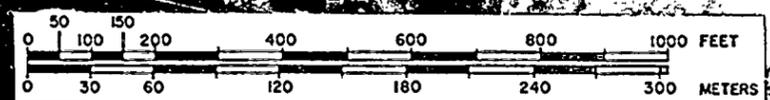


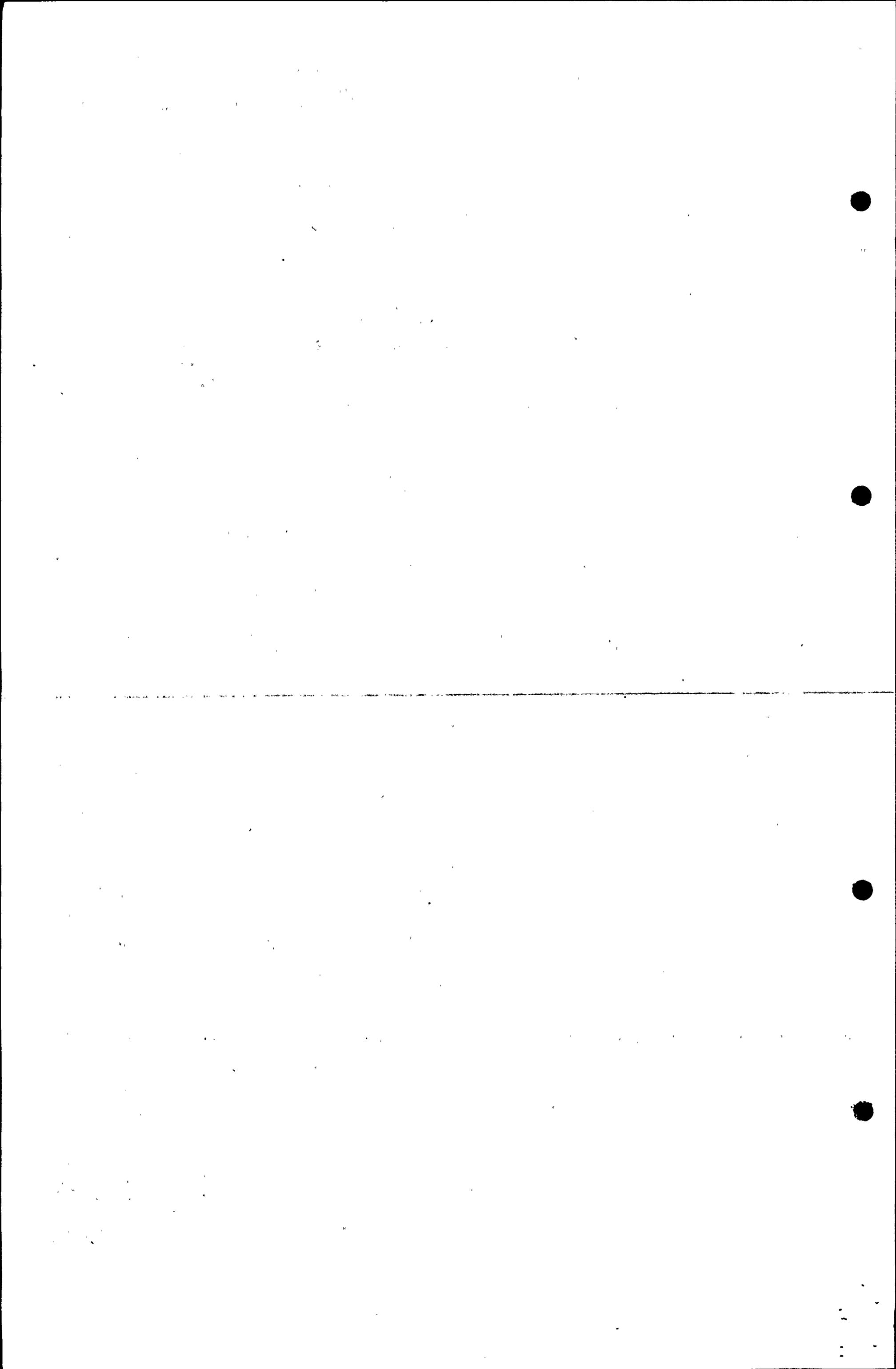


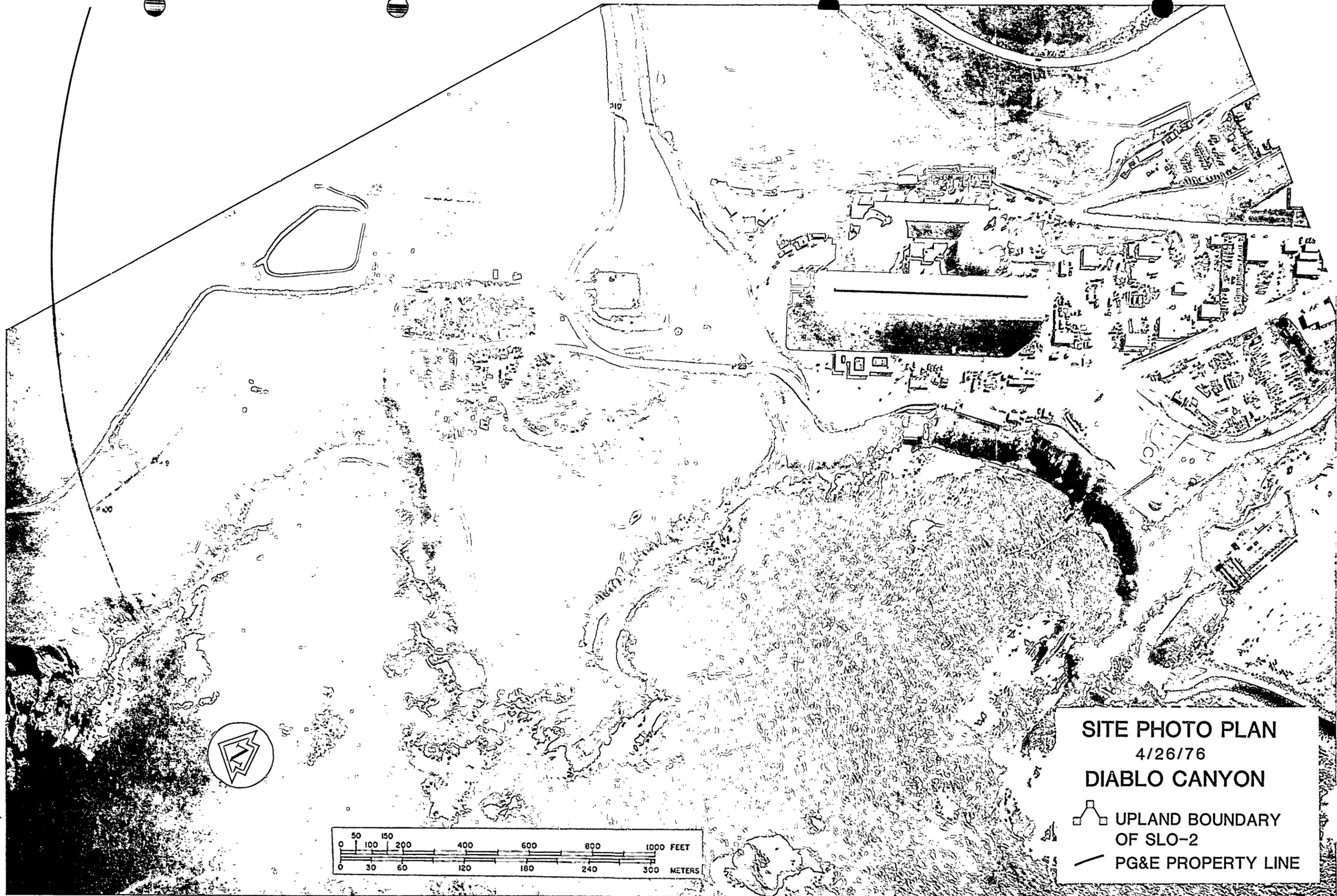


SITE PHOTO PLAN
11/26/75
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

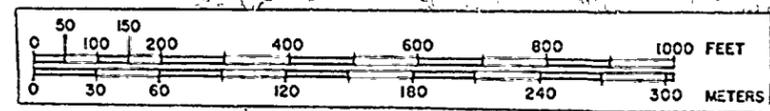


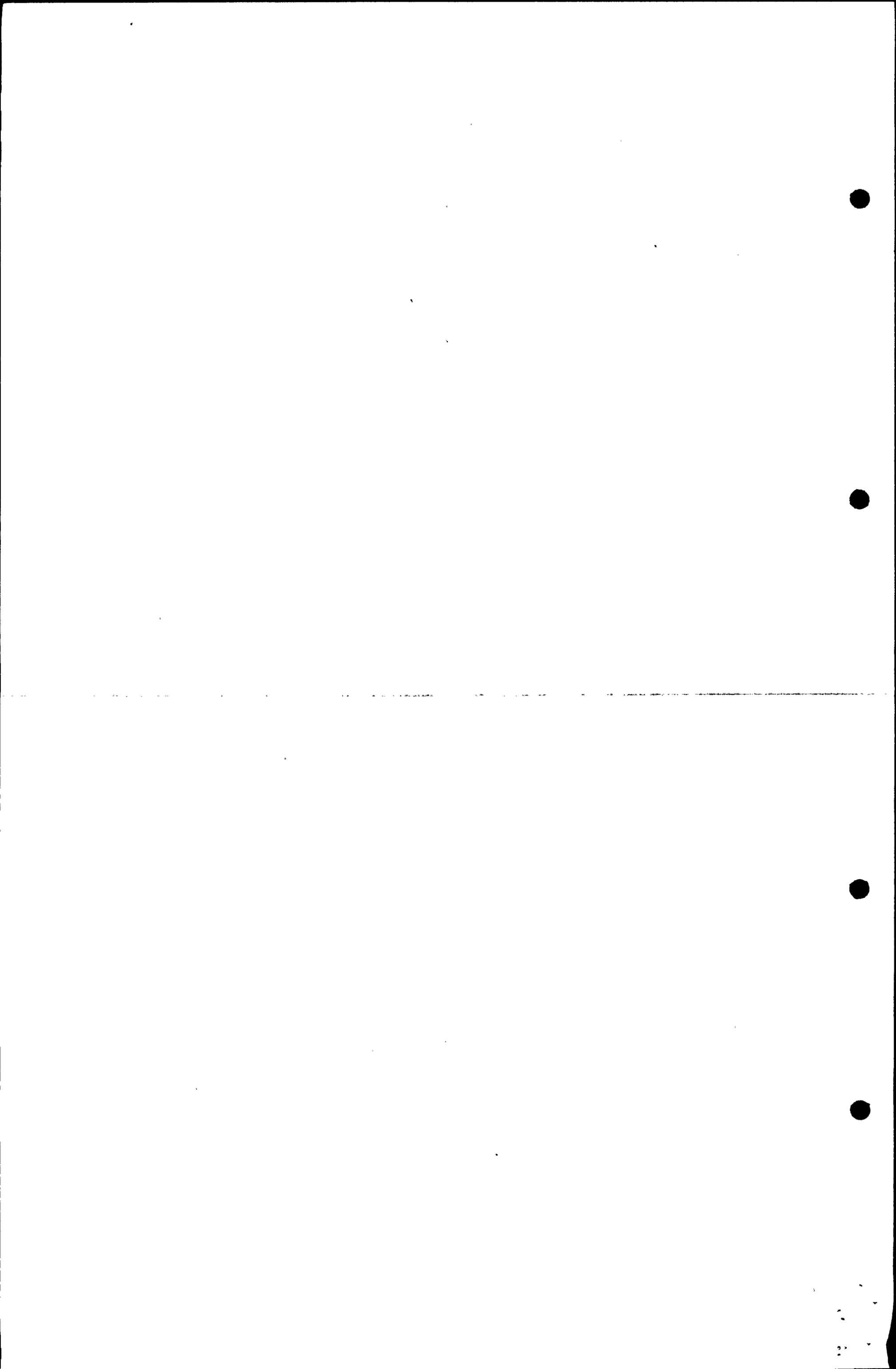




SITE PHOTO PLAN
4/26/76
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

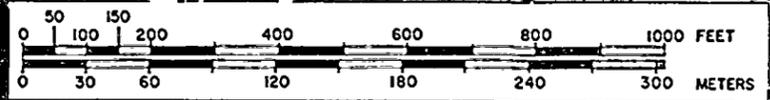


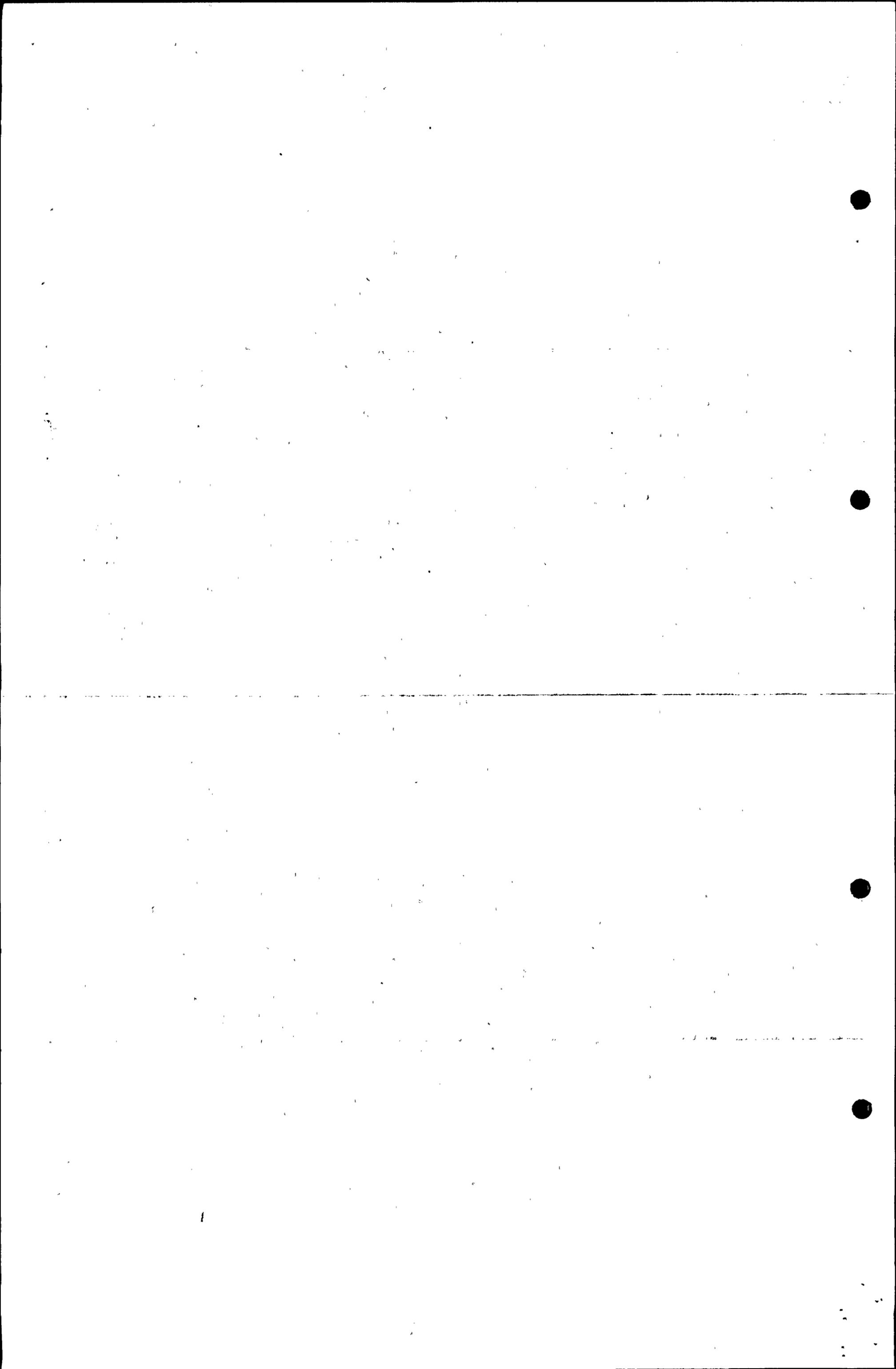


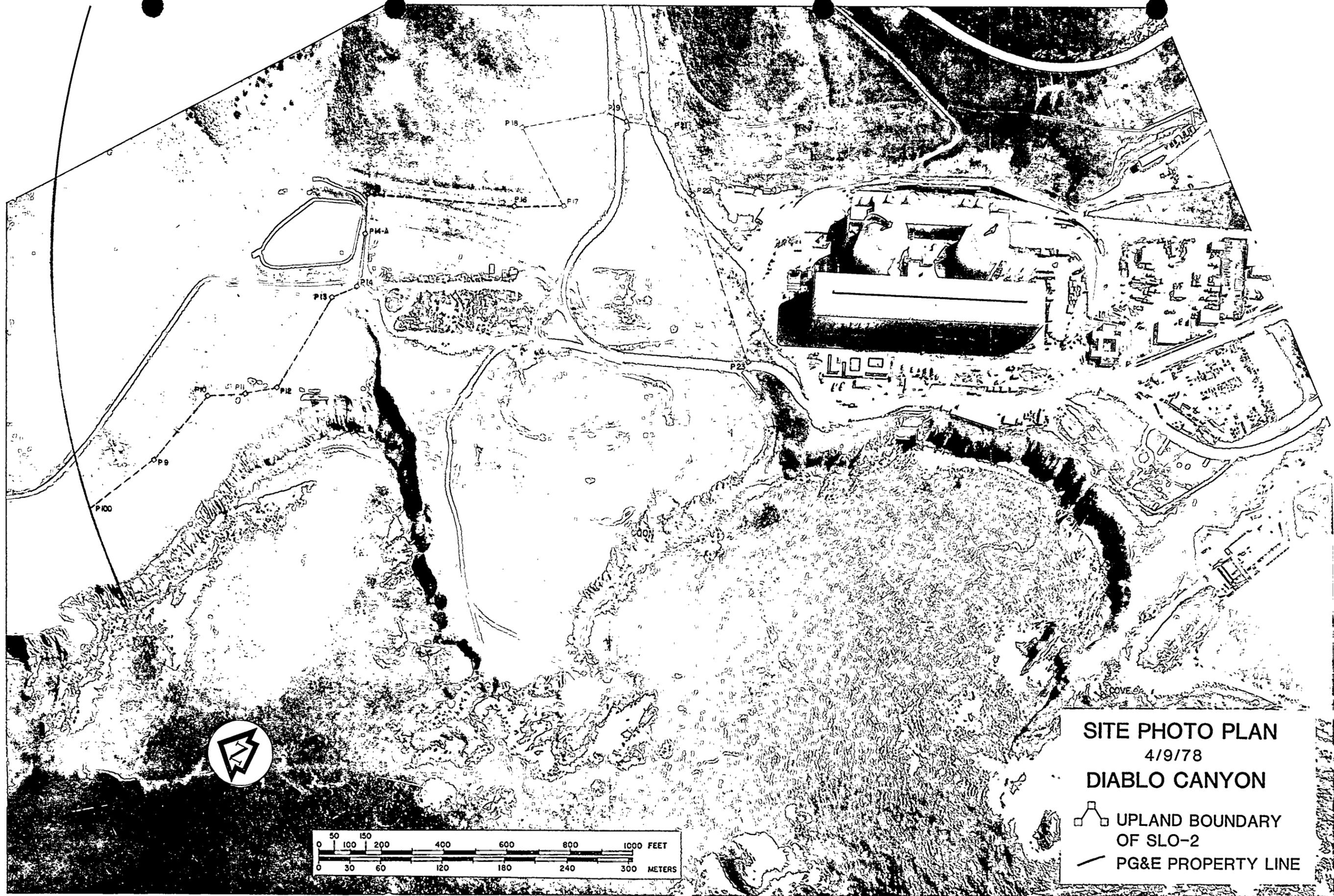


SITE PHOTO PLAN
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DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

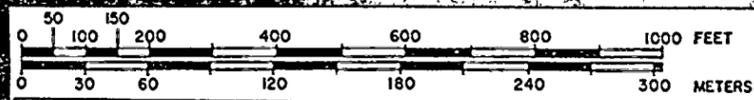


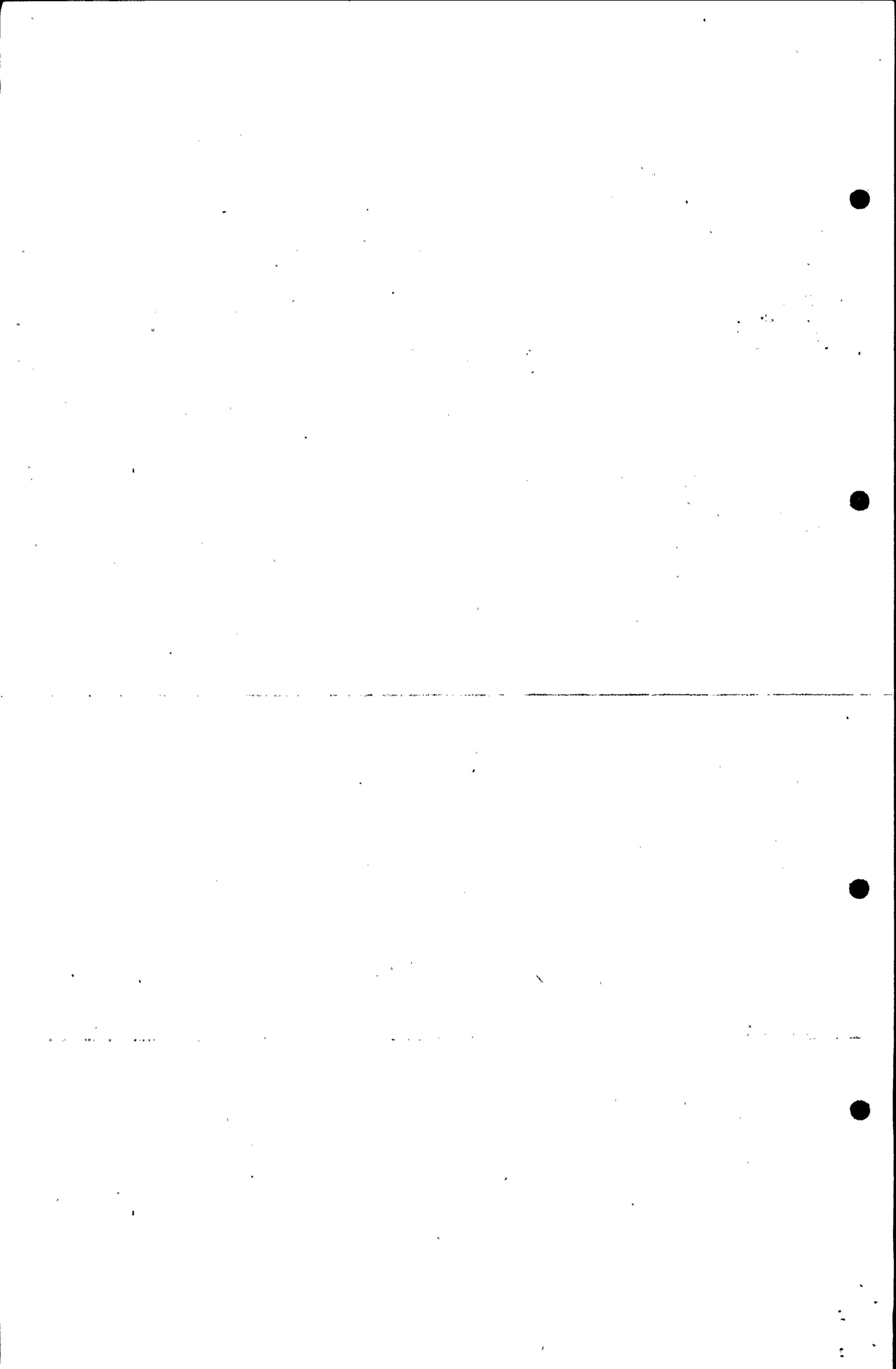




SITE PHOTO PLAN
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DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

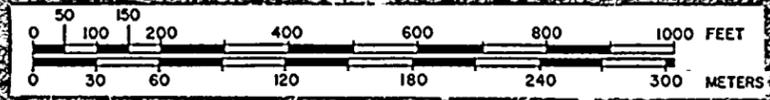


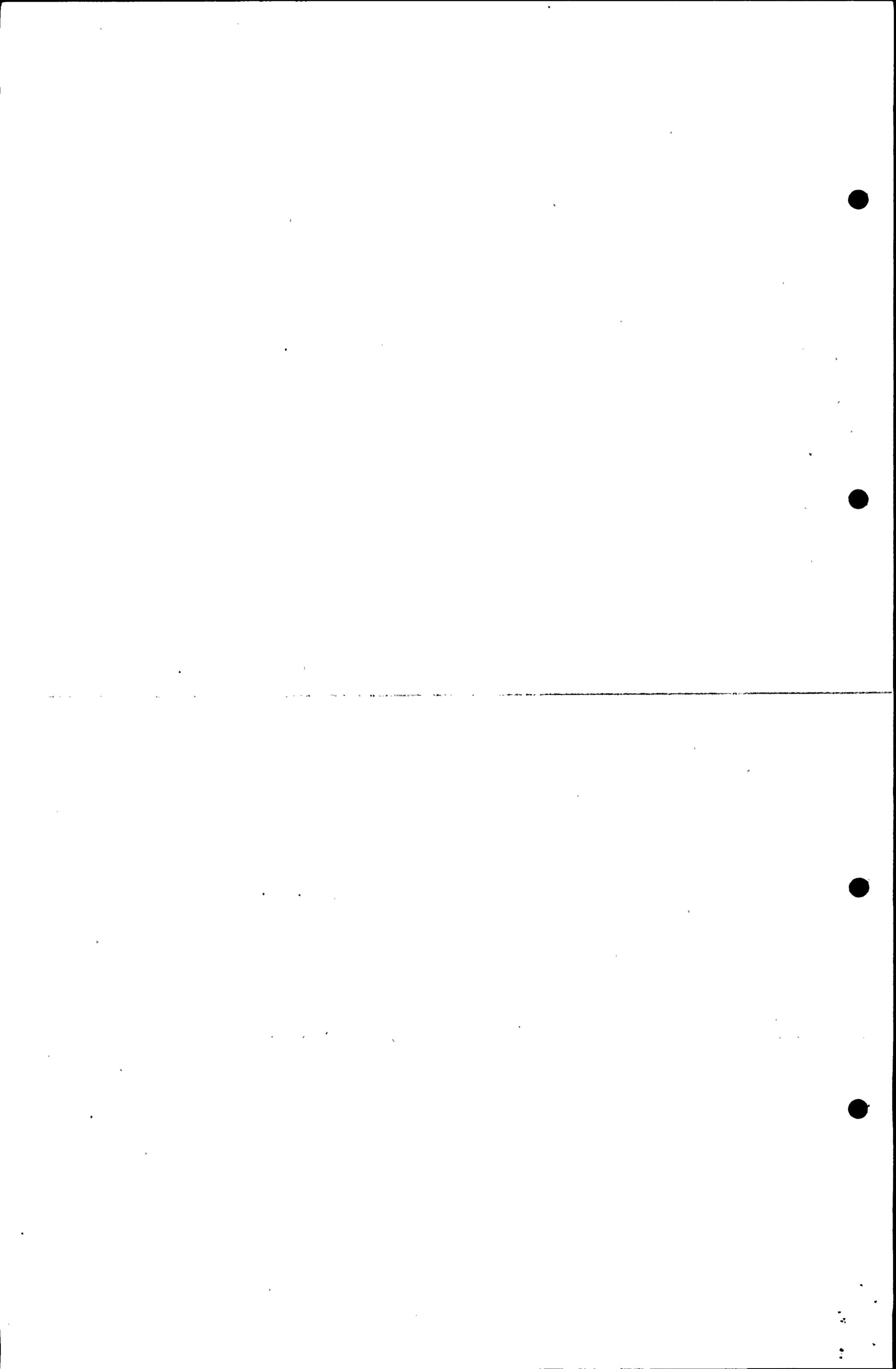


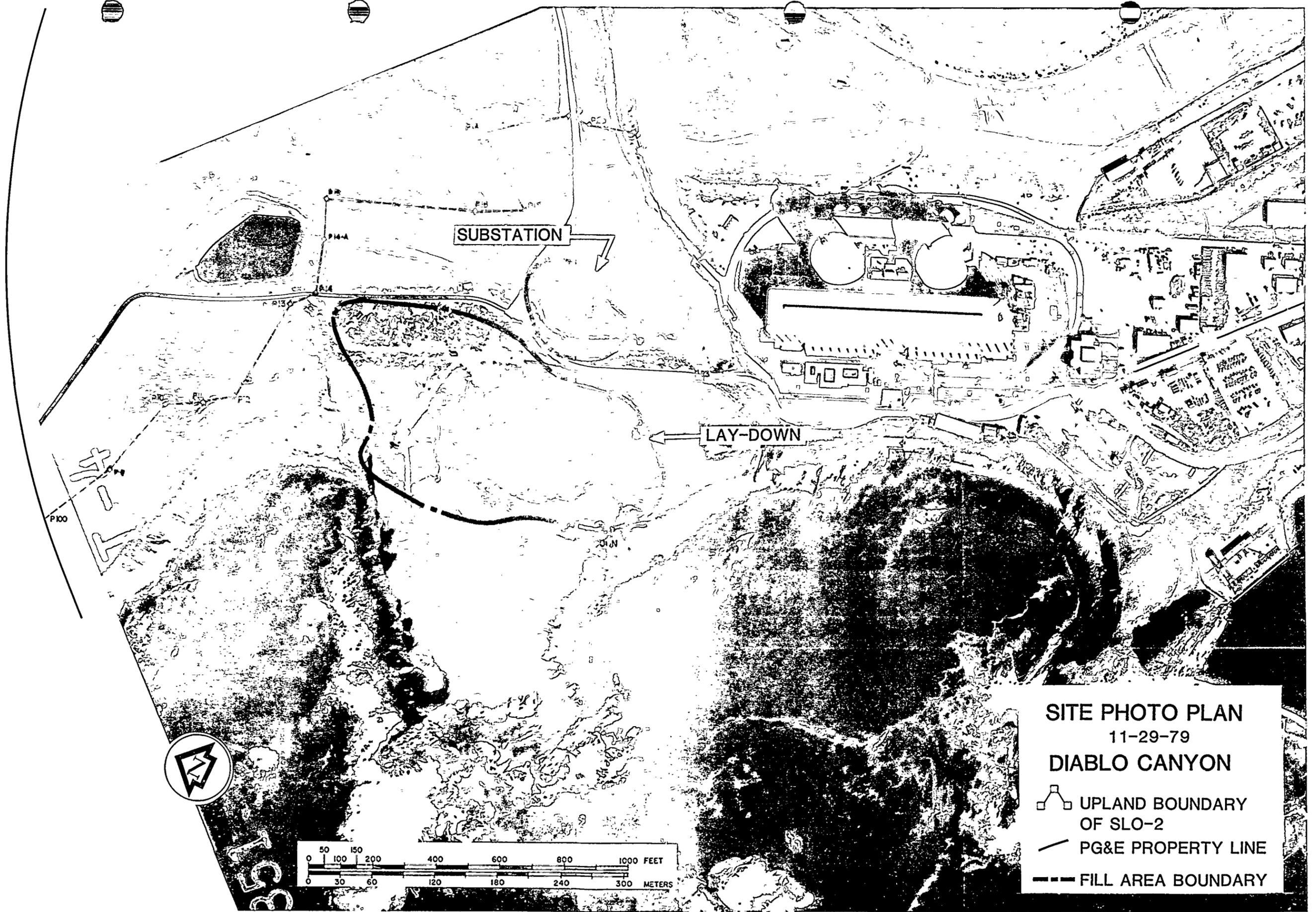


SITE PHOTO PLAN
4/29/79
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE

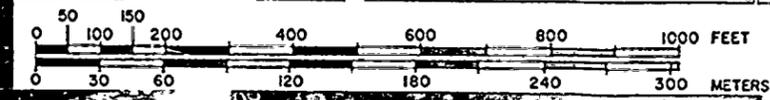


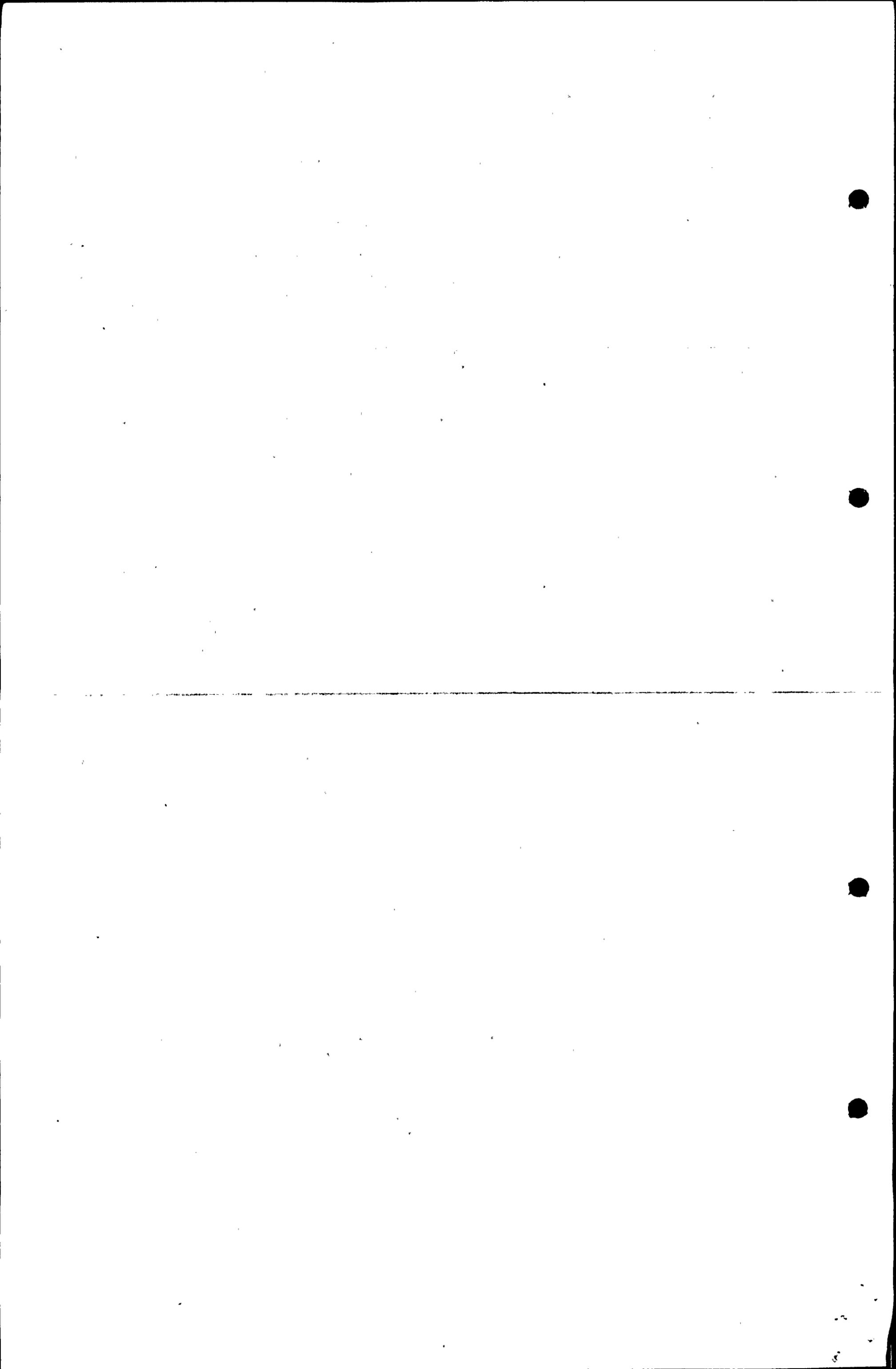




SITE PHOTO PLAN
11-29-79
DIABLO CANYON

-  UPLAND BOUNDARY OF SLO-2
-  PG&E PROPERTY LINE
-  FILL AREA BOUNDARY





4.0 SPECIFIC PLAN PROVISIONS

The following management plan outlines how PGandE will manage the SLO-2 site at Diablo Canyon. This plan must be viewed in relation to the history of PGandE's land management of the area. PGandE is committed to maintaining and protecting the archaeological integrity of the land in so far as it is able while continuing to implement whatever activities are imposed by the NRC in relation to the operation of the nuclear power plant.

4.1 Management Plan

Within the survey area, PGandE will restrict its activities to the following:

1. **Fire Protection:** The groundcover may be kept short, if required, by grazing or mowing. Harrowing or the use of herbicides will be prohibited.
2. **Storage:** The storage of materials will be confined to the areas protected by fill.
3. **Traffic:** Vehicular traffic and site usage shall be restricted to existing, paved or unpaved roads and to the fill area.
4. **Maintenance:** Any necessary maintenance of roads shall be limited to surface treatment. Maintenance of the wastewater holding pond and buried utilities will be limited to existing disturbed areas.

4.2 Compliance

Section 50.50, "Issuance of Licenses and Construction Permits," of 10 CFR Part 50, "Licensing of Production and Utilization Facilities," provides that each operating license for a nuclear power plant issued by the Nuclear Regulatory Commission will contain such conditions and limitations as the Commission deems appropriate and necessary. Certain conditions and limitations corresponding to key parameters of the NEPA environmental review are incorporated into facility operating licenses as environmental technical specifications (included as Appendix B of the operating license).

In order to demonstrate its continued compliance with the Management Plan, PGandE has prepared a draft Environmental Technical Specification Section 4.3 (attached to this report as Appendix D). Should a disturbance of the SLO-2 site inconsistent with the use provided for under Subsection 4.1 above occur, PGandE will consult with the Nuclear Regulatory Commission as to appropriate mitigation techniques and otherwise comply with Section 4.3 of the draft Environmental Technical Specification.



APPENDIX A
Surface Survey and Evaluation
SLO-2 at Diablo Canyon



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SURFACE SURVEY AND EVALUATION,
SLO-2 AT DIABLO CANYON

Report prepared for Pacific Gas and Electric Company

Roberta S. Greenwood

1978

GREENWOOD AND ASSOCIATES
725 JACON WAY
PACIFIC PALISADES, CALIFORNIA 90272
(213) 454-3091 OR 879-5791



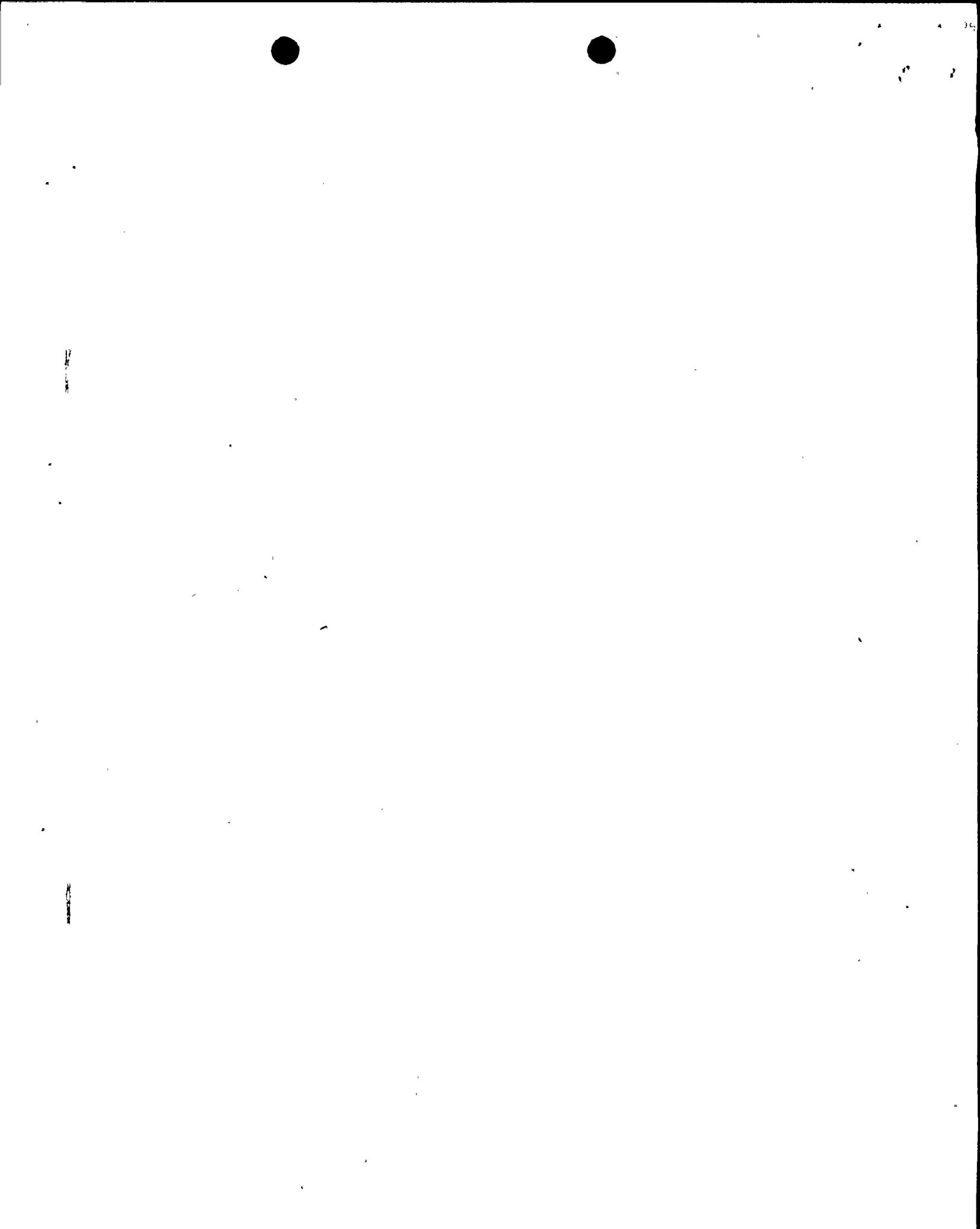
An investigation has been conducted to supply Pacific Gas and Electric Company with cultural resource information requested by the Nuclear Regulatory Commission staff. The specific goals were to define the boundaries of the known archaeological site Ca-SLO-2 and to compile information needed to support a determination of whether this site is eligible for nomination to the National Register of Historic Places. The approach adopted included an intensive surface survey of an area delimited by Pacific Gas and Electric Company and general background research into existing literature. There was no subsurface exploration or testing.

Survey

An area of approximately 90 acres was the subject of an intensive surface survey by R. S. Greenwood and V. G. Bente on September 19 and 20, 1978. As directed by the Company, this area was bounded on the southeast by Diablo Creek, southwest by the shoreline and escarpment, on the northwest by the property boundary, and to the northeast generally by the 280 foot contour line.

The investigation began at the northern end of the area where the regularity of the surface on the coastal side of the road suggests that the bench has been leveled for cultivation and it has been used as well for grazing. The area is currently covered with a thick mat of grasses which obscured the surface. Visibility of the ground was limited to natural erosional exposures, the road cut, and burrows and spoil from small animal activity; within these constraints, no cultural resources were observed between the property boundary and survey point 12.

The inspection continued southeasterly along the coastal bench towards the first arroyo/drainage north of Diablo Canyon. Evidence of past cultivation was continuous to an area southwest of the settling pond where many mounds of fill are surrounded by dense stands of Cirsium sp. and mustard. This fill may have originated in the construction of the reservoir. Southeast of the fill area, midden was observed in soils brought to the surface by small animal burrowing. The deposit is clearly profiled in the westerly bank of



the unnamed arroyo, and appears to be continuous all the way from the coastal bluff to the base of the reservoir. Upslope from the settling pond, boundary identification was hindered by extremely dense overgrowth and disturbance such as the concrete channel.

Similar midden was observed in the facing, southeasterly bank of the arroyo cut and on the surface of the contractors' storage area. Throughout the storage yard, the exposure of midden may have resulted from surface grading for roads and leveling, but the extent to which these modifications may have spread and dispersed the remains cannot be determined from the surface. Between the storage yard and the old ranch road, which is approximately 50 feet higher in elevation, the slope is covered with a stand of Cirsium sp. and mustard high and dense enough to obscure any evidence of midden. However, the deposit is once again visible along the higher terrace on both sides of the cut which resulted from construction of the access road to the switchyard. Again vegetation and slope wash prevented precise definition of the boundaries but intact midden was observed at an elevation of approximately 240 feet on the north side of the switchyard access road. Since this deposit was determined to be continuous along the terrace parallel to Diablo Creek, except where bisected by the main access road to the power plant, these remains are interpreted as part of SL0-2.

On that portion of the terrace bounded on the southwest by the main access road and on the northeast by Diablo Creek, thick stands of growth surround and cover the area where a 230 Kv sub-station had been located. There is midden exposed around the power poles along the bluff created by the access road sufficient to indicate that there is a substantial deposit in this area even though the surface is obscured at present.

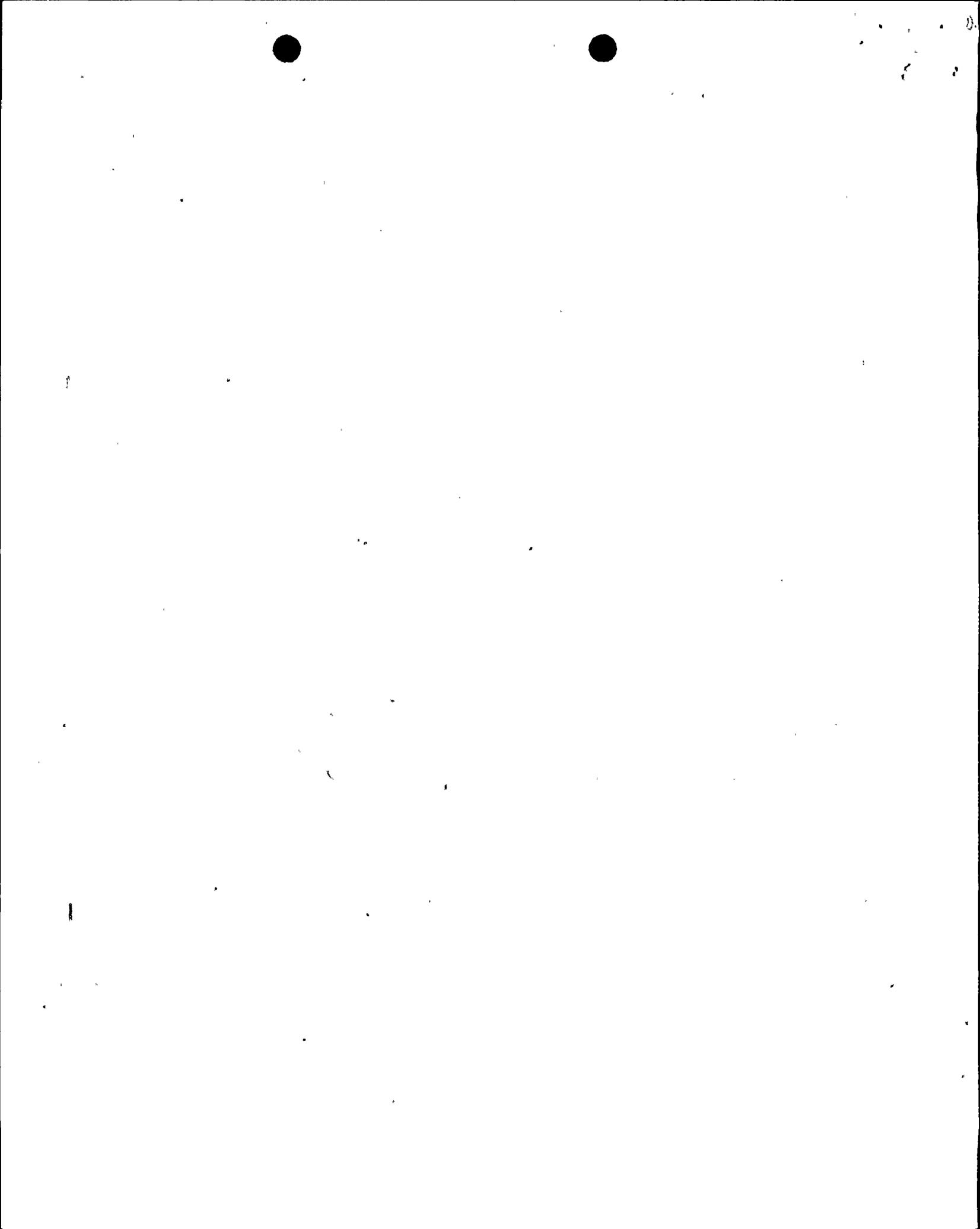
The part of SL0-2 which has been fenced as an archaeological area is located on the terrace southwest of the access road and on the northerly side of Diablo Creek. Human bone had been observed by Greenwood earlier, both on this terrace and in the bank exposed by sloughing of the escarpment, as described to PG & E in a report dated September 27, 1974. The slumping area facing the coast was inspected again during this investigation, and one human



mandible with dentition well ground down was observed in the profile; also noted in situ was one pitted sandstone cobble. The degradation of this area is continuing. Subjectively, the shell content as exposed in the bluff may even be more concentrated than in the area archaeologically tested in 1968. Exfoliation and slumping conceal the full measure of the profile, but the midden is a minimum of two meters deep along this bluff. The face of the escarpment was inspected by walking along the beach from Diablo Creek to the west end of Diablo Cove, to the stairway below the post marked Eco. 7. The midden was continuous for all of this distance; it has exfoliated and slumped from the escarpment, cascading to the rocky shoreline where it is scoured away by wave and tidal action.

On the point which forms the west end of Diablo Cove, midden was observed on the terrace wherever vegetation was sparse enough to reveal the surface, with the exception of the two rocky projections where no remains were present. On the easterly and more southern of these rocky spits, a small scatter of Tivela stultorum shells was noted on the bare bedrock near the Eco. 7 marker. There was no midden in the immediate vicinity, they did not appear to be eroding out of a cultural deposit, they were not mixed with any other shell or lithic remains, and they are not interpreted as part of the archaeological site. Moving northeasterly from the point at the west end of Diablo Cove, the midden thins and disappears from the surface until it is once again visible southwest of the contractors' storage area and along the main access road to the plant.

Observations in the broad portion of the terrace immediately north and west of Diablo Canyon were hindered by the dense vegetation, contractors' equipment, and prior disturbance. It appears that the main body of the point has been graded, leveled and filled as evidenced by the existing contours; new roads, presence of fill, and other alterations of surface which may be viewed from the upper hillside and confirmed by reference to earlier maps and aerial photographs. The absence of visible midden on the surface of the central area on the point is potentially a result of these conditions and modifications. Since the cultural remains are present on all sides of this central area, it is assumed that the site is continuous below the present surface.



Precise definition of the site boundaries other than those formed by natural landforms such as the coastal escarpment and canyons could not be achieved on the basis of surface inspection alone. High and dense vegetation, in places so thick as to be impenetrable, limited ground visibility to approximately 5 %, and in some places the surface was affected by human modification and natural deposition of soils by slope wash. Based on visible indications, the extent of the site is revealed as a minimum of 305 meters east-west by a minimum of 427 meters north-south, for a known area of 130,235 square meters. The up-slope or northeast boundary is the least well defined. Other borders are formed by Diablo Creek and the coastline. At the arroyo or drainage north of Diablo Canyon, there is visible midden in both bank profiles which is presently attributed to SL0-2. Another result of the survey was confirmation of the theory advanced earlier (Greenwood 1972: 5) that the locality recorded by Pilling as SL0-3 is actually within the boundaries of SL0-2, and a part of the larger site. Numbered stakes were placed to mark the perimeters of the area which was seen to contain cultural remains. The boundaries established during this surface survey should be regarded as a conservative minimum, based solely upon the presence of visible cultural materials.

Eligibility for Inclusion in the National Register

On the assumption that SL0-2 is eligible for nomination to the National Register of Historic Places, the following information is presented according to the format and outline of the Guidelines published in the Federal Register (42: 183, pp. 47666-47669).

II A. Historic name. Rancho Canada de Los Osos y Pecho y Islay

B. Common name. Diablo Canyon

III. Location. Central San Luis Obispo County, on the coastal terrace from the north bank of Diablo Canyon west to the PG. & E property line, and from the coastal bluff inland to an average elevation of 240 feet.

IV. Classification. 1A. A district is recommended, to include SL0-2 by amendment into the existing Rancho Canada de Los Osos y Pecho which was accepted into the National Register of Historic Places in 1975. This would comprise a significant concentration of archaeological sites which are united by past events.

Discussion: All elements within a District do not have to be physically contiguous. The area comprising SL0-2 may be added



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to the existing District without including the intervening property since this site is linked to those already on the Register through proximity, history, and cultural association.

V. Ownership. Private. SLO-2 is on PG & E property.

VI. Surveys. Archaeological surveys of varying intensity and scope have been conducted by Arnold R. Pilling for U. C. Berkeley (1947-1950); Francis A. Riddell for PG & E in 1966 and 1968; and Greenwood and Associates for PG & E in 1978.

VII. Description. The general area is a coastal terrace representing an ancient wave-cut platform developed at least 100,000 years ago, with bedrock overlain by Pleistocene beach and marine deposits. The platform was uplifted relative to sea level and covering soils were deposited over a lengthy period of time, partly through run-off from the adjacent slopes. Diablo Creek in geologically ancient times flowed at an altitude at least 100 feet above its present level and gradually trenched its way down through this alluvial fan over many years of time (Jahns 1966, 1967). The coast in this vicinity is rugged and rocky, marked by a high and steep seacliff. The terrace is cut by canyons and drainages and backed by the San Luis Mountains. In prehistoric times the terrace probably supported a growth of perennial bunch grasses with riparian communities in the drainages; Diablo Canyon contained a wide variety of flora including conifers, oak, and laurels. The nature of the coastline, the various landforms of the terrace, drainages, and slopes, and interface of microenvironments combined to form a favoring habitat for an extensive list of marine mammals, shellfish, sea birds, land mammals, and plant foods (North 1966, 1968). The Creek has apparently been a dependable source of fresh water (PG & E, n.d.), and lithic resources for the manufacture of stone tools are abundant.

Property of the area has been privately owned in large parcels since the early grants; restrictions on public access and development have minimized alterations, construction, or disturbance of the cultural resources. The terrace has been used for grazing and cultivation, but the effects have been minimal and superficial. The only conspicuous structure is the new PG & E nuclear power generating plant; otherwise the landscape and the coastline closely resemble the probable appearance



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during the prehistoric era.

VII 4 b. Pilling recorded SL0-2 as part of an intermittent survey between 1947 and 1950; Riddell closely inspected the area of the nuclear power plant in 1966. SL0-2 was sampled along the corridor of the access road in 1968 (Greenwood 1972), and the area indicated was intensively surveyed by Greenwood and Associates in 1978.

4 c. The area surveyed in 1978 includes all visible portions of SL0-2, with boundaries and coordinates indicated on the appended documents. If the site should be attached by amendment to the existing archaeological NRHP District, the broadened District would also include recorded sites Diablo # 3 and Diablo # 5, and the locations of SL0-584 and SL0-61 which are partly or totally destroyed.

SL0-2 may be characterized as a shell midden. It has been tested by excavation and found to be a minimum of 340 cm. deep, and to contain stratified levels representative of the Millingstone, Hunting, and Canalino cultures. It has one known cemetery, and the presence of human remains approximately .25 mile distant implies the potential for at least one other. The site is vast in size with 130,235 square meters of visible surface remains. The lower levels have been radiocarbon dated to 9,000 years.

4 d. At the time when the existing Rancho Canada de Los Osos y Pecho y Islay Archaeological District was nominated, it contained 15 known sites; it is our understanding that additional sites have since been added to the inventory during a survey at or near Rattlesnake Canyon. Riddell's earlier survey has located sites upcoast, or northerly, of Diablo Canyon as well. Data which have been recovered from five other sites (Greenwood 1972) strongly suggest that SL0-2 contains materials which are culturally related and chronologically contemporaneous with parts or all of the stratigraphic sequences illustrated in this broader aggregation of occupations. Hypotheses have been developed that SL0-2 was the major focus of settlement and social organization along this coastline, and that at least some of the smaller sites represent special activity areas or the budding-off of satellite settlements in response to social or subsistence pressures in the later periods. In



order to interpret any of the individual sites, it would be necessary to seek understanding of the entire system in terms of settlement pattern, variability, chronology, and all the other goals of modern anthropological investigation.

4 e. Despite certain alterations and disturbance, the site is seen to retain archaeological integrity. PG & E has fenced the southeastern portion of the deposit as a protective measure, and this area has now reverted to a dense natural groundcover. The eastern extreme of the site is also intact under heavy vegetation. The central part of the terrace between Diablo Canyon and the next drainage to the northwest has apparently been subject to both grading and fill. The amount of loss is unknown, since the presence or depth of overburden was not recorded but on so deep a midden, disturbance may be limited to the upper levels. Based on comparison of maps prepared in 1966 and 1971, there may be as much as 25 feet of fill presently concealing and accounting for the lack of visible midden in the center of the site.

The reservoir at the upper end of the secondary drainage apparently did destroy a portion of the site. The 230 Kv sub-station, now removed, may have caused disturbance depending on the method and depth of construction; the power poles and access roads did intrude upon the deposit. Natural slumping occurs at the escarpment, in addition to episodic landslides; the rate of cliff retreat has been estimated as approaching eight inches per year (Harding-Lawson 1974: 8-9). However regrettable these losses, the site is so vast and so deep that a substantial portion of the deposit is still intact, and it retains the potential to yield scientific information of great importance.

- 4 f. SLO-2 and the adjacent sites already contained within a NRHP District are located along a continuous coastal terrace with minimal or no disturbance with site margins. It is assumed that evidence for the intersite relationships would still be intact. Restricted public access over the years has served to conserve the cultural resources, and the use of the land for grazing is regarded as a non-significant level of impact; these conclusions are supported by the results of sampling at six sites in 1968 (Greenwood 1972).



VIII. Significance. The importance of the archaeological deposit is related in part to the very great density of prehistoric villages and occupations along the adjacent coast which includes among the concentration of population, the site of SL0-2. To date, this is the largest, deepest, and oldest community known in this region of Central California. Villages of this size were uncommon between San Francisco Bay and the Santa Barbara Channel; in both of these areas, comparable focuses of settlement have largely been destroyed, leaving the Pecho coast as one of the few relatively undisturbed concentrations of major archaeological sites in California. The established span of 9,000 years of occupation affords a unique opportunity to contribute to the understanding of the nature and processes of cultural change, both for this and also over a much broader geographical area. The immediate environment constitutes a viable economic unit from which the Indians derived their food, water, lithic and other resources, yet it is significant at the state level of importance through the demonstrated diffusion of cultural traits, material goods, and the actual trade and ceremonial networks and systems.

The area was one of the private land grants of the Mexican period for which United States patents were later issued. Canada de los Osos was granted by Governor Alvarado to Victor Linares in 1842, and the Rancho Pecho y Islay to Francisco Padillo in 1843 by Governor Micheltorena. The combined lands comprising 32,431 acres were granted in 1845 by Governor Pio Pico to Diego Scott and Juan Wilson, and the grant was patented to Wilson in 1869 (Robinson 1957: 51). The northern portion of the land containing SL0-2 was owned by the Spooner family from 1892 until 1942, and after that by Oscar Field. Land use was primarily for grazing, with some cultivation. That the area was archaeologically rich was well known for the last century. Early collectors included Leon de Cessac, Rev. R. W. Summers, Rev. S. C. Freer, Paul Schumacher, and Van Bergen, but there is no specific suggestion that the subject site had been excavated by any of these individuals.

- B. The site is significant in prehistoric archaeology, for the period which begins about 9,000 years before present and extends at least until 930 years before present. This span is based upon the earliest and latest



¹⁴C dates currently available for SL0-2, and could conceivably be extended in either or both directions on the basis of future research. The other sites tested in 1968 yielded absolute or relative dates within this time span.

- C 4. The unique and valuable attributes which make SL0-2 a highly significant site include size, depth, age, extremely long span of occupation, and the complete assemblages of material culture and faunal remains already demonstrated to be present within each of the three stratified components. As such, it may be regarded as a type site and the key chronological reference against which other sites along the Central California coastline may be interpreted. This site, together with the other sites already included within the existing National Register District, comprises a cohesive unit for study by reason of the close geographical proximity and the presumption of close cultural ties and relationships. Data contained within them would not be redundant or replicative; to investigate any of them alone, as if it existed in a vacuum, would fail to address such questions as variability, spatial organization, definitions of the social and economic relationships, possible effects of cultural or subsistence pressures which led to the enucleation, and other hypotheses which have been derived from the 1968 testing program and subsequent studies.

The earlier investigation demonstrated and dated the existence of an Early Millingstone Horizon on the coast of San Luis Obispo County, and led to the concept that a convergence of Hunting and Canalino elements was to produce the Chumash cultural climax as known on the Channel coast. This complex of sites provides the evidence that these traditions met in very early times at Diablo Canyon, and built upon an antecedent cultural base which was already long established in place. SL0-2 supplies the essential referential framework against which future investigations may test theories regarding the intra- and inter-site relationships and the questions of causation and mechanisms of adaptation and change.

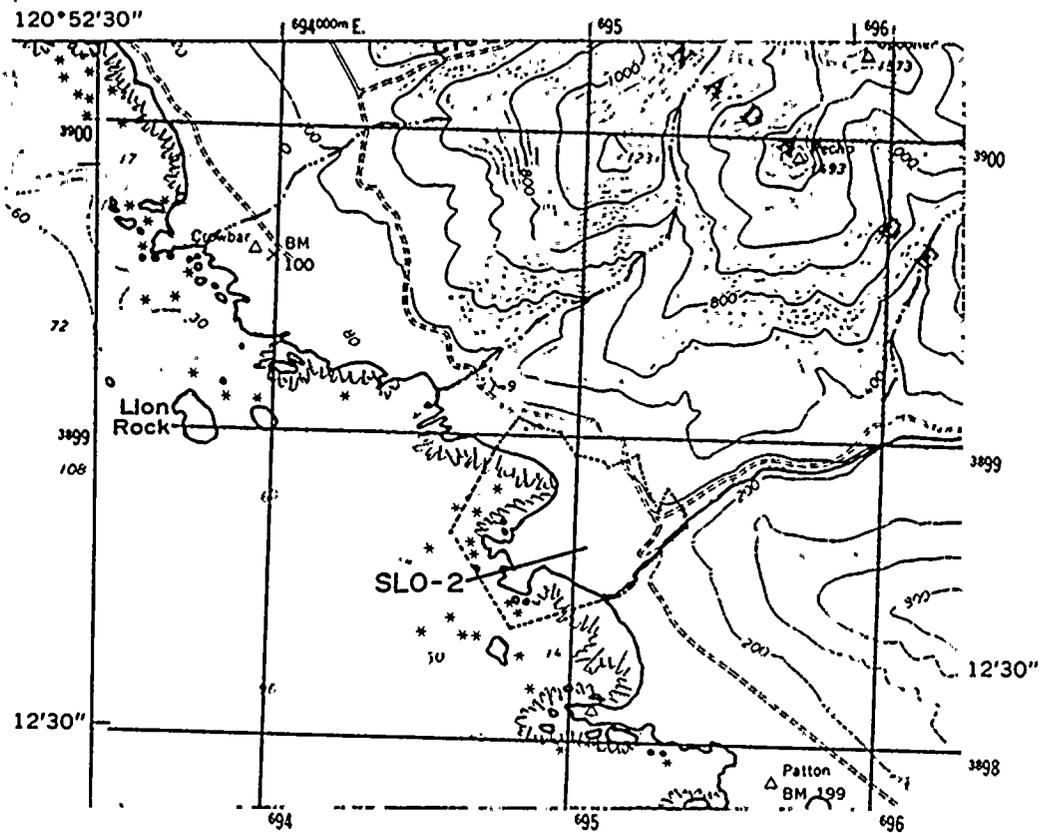
The boundaries as staked presently are based upon cultural remains observed in the course of an intensive surface survey. Two of the



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perimeters are formed by topographic features or barriers: the north bank of Diablo Canyon and the ocean bluff. The northeastern boundary cannot be established simply as the base of the foothills since the shell midden at SLO-2 is visible at least to the 240 foot contour in spite of dense covering vegetation. The area as now defined does not include - as the existing NRHP Archaeological District does - the hinterlands upstream and at higher elevations which may have been utilized by the Indians in the procurement of plant and faunal resources and which may contain additional sites.

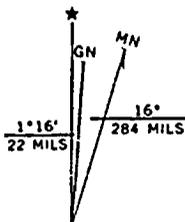




PORT SAN LUIS, CALIF.

N/2 PORT SAN LUIS 15' QUADRANGLE
N3508.5—W12045/6.5X7.5

1965

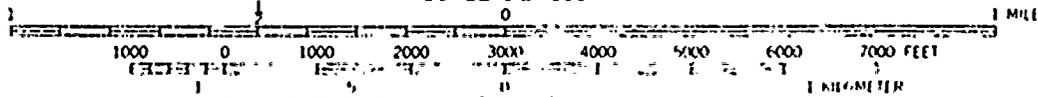


UTM GRID AND 1965 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET



QUADRANGLE LOCATION

SCALE 1:24,000



CONTOUR INTERVAL 40 FEET

DATUM IS MEAN SEA LEVEL

DEPTH CURVES AND SOUNDINGS IN FEET—DATUM IS MEAN LOWER LOW WATER

SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER

THE MEAN RANGE OF TIDE IS APPROXIMATELY 4 FEET

DIABLO CANYON ARCHAEOLOGICAL DISTRICT



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APPENDIX B

Table of Coordinates for Angle Points
in the Greenwood Surface Survey



Handwritten marks and characters in the top right corner, including what appears to be the number '2' and some illegible symbols.

A small, faint handwritten mark or signature located in the lower-left quadrant of the page.

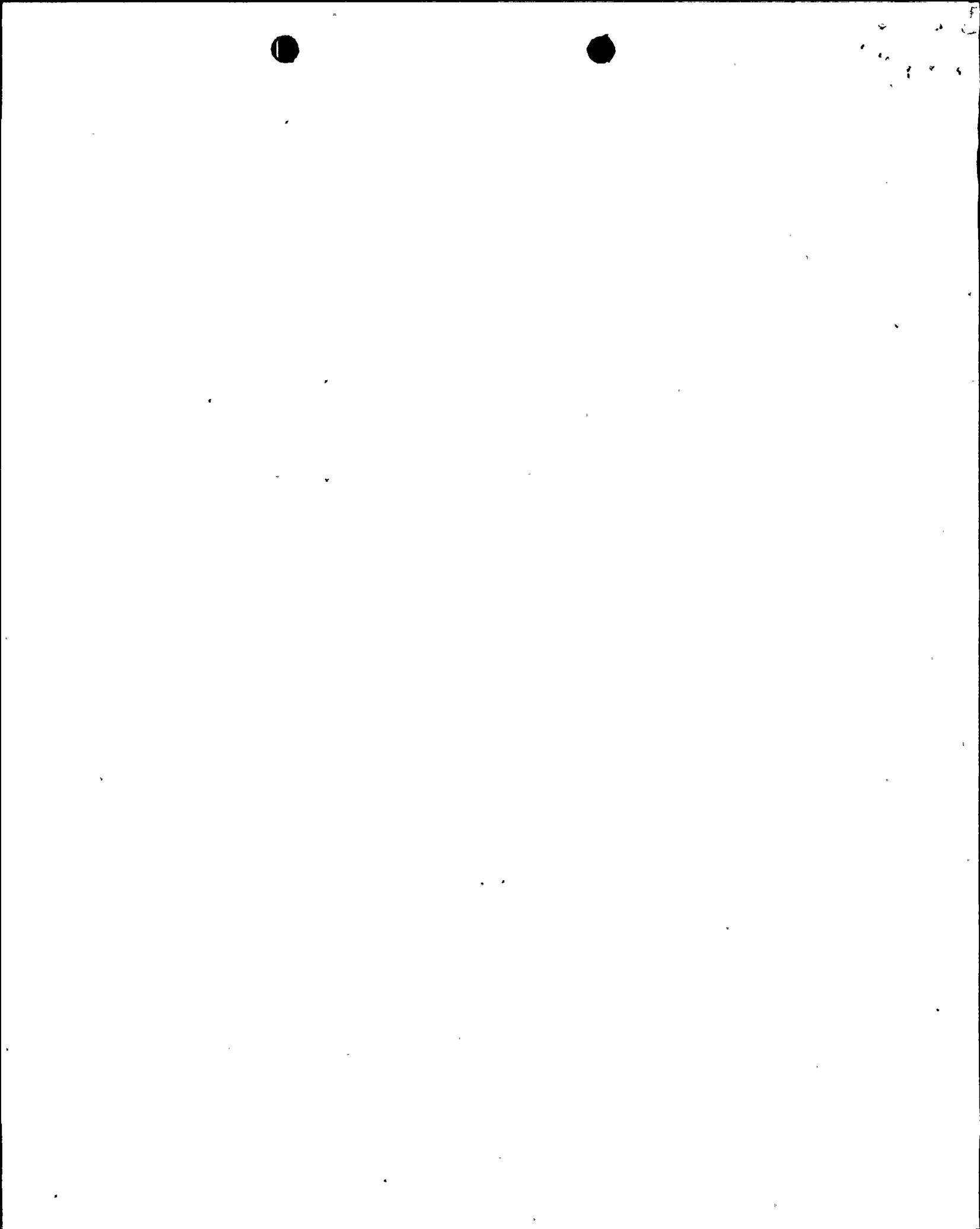
The following coordinates are based on the Universal Transverse Mercator System, Zone 10. The coordinates are listed in units of meters and are based on a line with the USC and GS control point "cove" at the southerly terminus and PGandE control point "coon" at the northerly terminus.

Point	Northing	Easting
P200	3899060	694810
P100	3898990	694740
P 9	3899026	694880
P10	3899005	694958
P11	3898973	694976
P12	3898947	694994
P13	3898937	695095
P14	3898919	695115
P15	3898948	695119
P16	3898815	695249
P17	3898773	695271
P18	3898840	695320
P19	3898774	695369
P20	3898752	695369
P21	3898711	695381
P22	3898666	695333
P23	3898549	695214
P24	3898480	695110



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APPENDIX C
Background Research and Evaluation
SLO-2 at Diablo Canyon



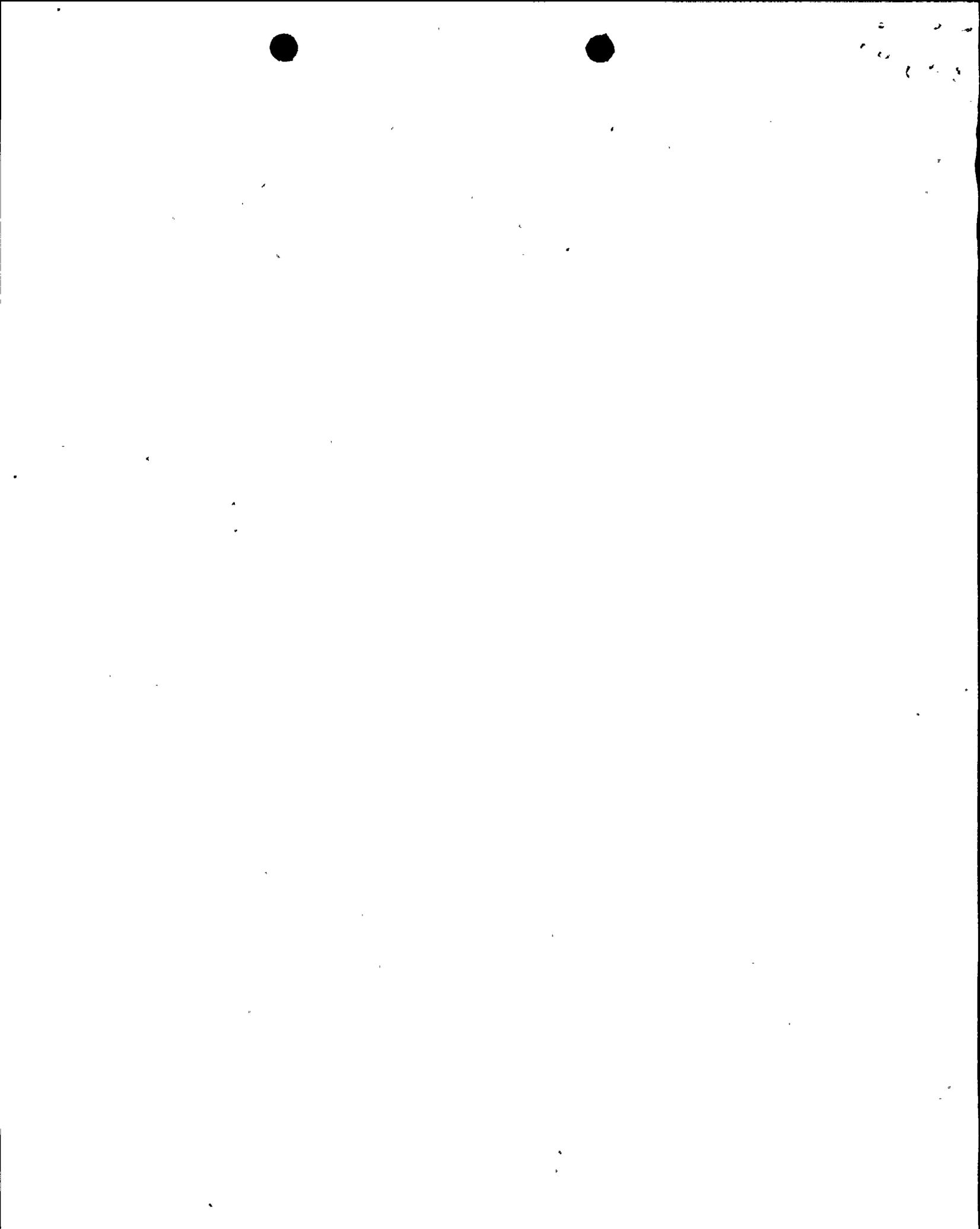
BACKGROUND RESEARCH REGARDING
DIABLO CANYON AND SLO-2

Report prepared for Pacific Gas and Electric Company

Roberta S. Greenwood

1978

GREENWOOD AND ASSOCIATES
725 JACON WAY
PACIFIC PALISADES, CALIFORNIA 90272
(213) 454-3091 OR 879-5791



BACKGROUND RESEARCH

In support of the ground survey reported separately, limited background research has been conducted to assist in the site evaluation required for the determination of eligibility for nomination to the National Register of Historic Places of archaeological site SLO-2.

Inquiries were directed to Dr. Robert L. Hoover, District Coordinator of the Society for California Archaeology, and Dr. Charles Dills, who maintains the local site record archives, to ascertain if any new surveys, cultural resource localities, or other relevant information had been obtained since the previous investigation. There were no new data for the area of study. South of Diablo Canyon, one survey was conducted by Greenwood (1973) of a portion of the Marre properties between the U.S. Coast Guard Reservation Lighthouse at Point San Luis and a point 1.5 miles south of the nuclear generating plant. The area covered extended along the immediate coastal terrace for a distance averaging 0.5 mile inland. This survey verified and mapped the locations of 14 archaeological sites previously recorded, and added eight new sites which had not previously been known.

This coastal terrace beginning approximately one mile northwest of Avila Beach and terminating short of Diablo Canyon was nominated to the National Register of Historic Places as an archaeological district by R. L. Hoover in May of 1974. It was accepted on June 20, 1975, under the historic name of Rancho Canada de Los Osos y Pecho y Islay. From the map included in the nomination (Hoover 1974), it appears that the inland boundary of this district is an arbitrary extension of the original land grant or rancho boundary, extended to the coastline at a point which includes Rattlesnake Canyon. The north corner as drawn extends to a point upstream in Diablo Canyon but then bears southwest to the coast instead of following Diablo Creek to its mouth. Although not available at this time, a report recently prepared for the Public Utilities Commission has indicated the presence of additional sites in the upper drainage of Rattlesnake Canyon not previously inspected.

Investigation was also directed to a letter dated September 21, 1977, from Mr. Stephen M. Rios, Native American Heritage Commission, to Mr. Robert M. Lazo, Nuclear Regulatory Commission, in which the claim is made that "the Diablo Canyon Nuclear Power Plant site," presumably SLO-2, is the Chumash Indian village of Tsuhanu. Mr. Rios asserts that Tsuhanu "is a well



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documented site of religious and social significance to Chumash Indian people." Dr. Dills, San Luis Obispo Archaeological Society, has written to Mr. Rios in an attempt to identify this documentation, but received no response.

Ethnographic research conducted at the time of the 1968 excavation located only three Obispeno Chumash place names anywhere near this general area. At that time, ts^{uh}anu was identified as located in the arroyo between Avila and the J. M. Soto ranch (Greenwood 1972: 83). Since then, many scholars have been working with the primary data contained in the field notes of J. P. Harrington. Dr. Richard B. Applegate, California State University at San Jose, regarded as an expert in Chumash place names, does not list this name or any of the possible phonetic/orthographic variants in either of his most recent publications (1974, 1975). Kathryn Klar, recognized linguist from the University of California, Berkeley, has compiled an additional list of place names which supplements Applegate's index. Also derived from Harrington's informant, Mrs. Rosario Cooper of Arroyo Grande, said to be the last speaker of Obispeno Chumash, this manuscript (1973) includes ch^hanu and identifies the place as "a canyon west of See Canyon."

In pursuit of this elusive identification, PG & E requested research in the San Luis Obispo County Recorder's Office, and Title Insurance and Trust Company reported on Jan. 6, 1978, that the only property in the vicinity acquired by Joseph M. Soto, Jose Maria Soto, or J. M. Soto which may be correlated to this general location was patented in 1892 and 1911. These lands overlap Davis Canyon, which is most likely the same as that "canyon west of See Canyon." Although not recorded, a site may very well be located on or near the Soto ranch; the location is approximately 6.8 miles east of SL0-2. Mrs. Cooper gave her information to Harrington in 1914-1916, at a time when this property did already belong to Soto. However it is described, "in the arroyo between Avila and the J. M. Soto ranch" or in "a canyon west of See Canyon," the most recent information available strongly suggests that Tshanu or ch^hanu was not at Diablo Canyon, and was in fact almost seven miles away. In Klar's manuscript, moreover, the word appears purely as the name for this canyon, and not as the name of a village.



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Condition

The site of SL0-2 is assessed as retaining its archaeological integrity, despite the alteration of the surrounding landscape and some degree of disturbance to the surface. The southeastern portion which has been fenced by PG & E as a protective measure has now reverted to a dense natural ground-cover, and the eastern extremity of the site is also intact under heavy vegetation.

In addition to the visual inspection, an effort has been made to trace and evaluate the area and degree of disturbance to the center of the site through comparison of available maps. Utilized as the basis for comparison is the Photo Contour Map of 1966 (R. M. Towill, No. 6607-2111, Sheet 5 of 10). From the time that this was prepared until the 1971 revision of PG & E Drawing No. 59451, surface modification by fill apparently resulted in moving the 100 foot contour line fully 400 feet to the west; what had approximated the 75 foot contour in 1966 became an elevation of 100 feet by 1971. There is thus the potential for as much as 25 feet of fill in an area central to SL0-2, where no midden was observed on the surface.

Prior use of the land for grazing or cultivation is demonstrated by testing as a very low level of impact for a site so great in horizontal extent and so deep. Greater disturbance has been caused by the access roads to the switchyard and to the generating plant, and the power poles; the 230 Kv substation, no longer present, may have contributed to data loss depending on the method and depth of construction. However regrettable these intrusions, the site still maintains the potential to yield information of great importance, and the greatest part of it is physically intact.

Evaluation

The excavation of 32 units each 1 x 2 meters in size was a test of less than .03 % of the total surface of SL0-2, yet the data recovered proved to be of profound importance in the prehistory not only of the Pecho coast alone, but to the entire south-central coastline of California for which this site has provided the key reference chronology for a period of some 9,000 years. The importance may be extended further through the relationships, processes, and directions of culture change which have been traced to the Bay Area on the north and to the Santa Barbara Channel on the south. The site provided for



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the first time dated evidence of the Millingstone Horizon in San Luis Obispo County, and an unbroken stratigraphic record which included abundant proof as well of the Hunting and Chumash occupations. The excavation revealed midden to a depth of 340 cm., full artifact assemblages for each of the cultures defined, and the analysis provided data on the molluscan and faunal remains, obsidian hydration measurements, and a suite of radiocarbon dates. The potential to yield important information has by no means been attained; the 1968 investigation was restricted to a narrow corridor which constituted the right-of-way for the proposed access road. There was no opportunity, therefore, to sample other parts of the site which might contain activity areas, features, or other evidence of spatial patterning, horizontal stratigraphy, or variability. The human remains observed along the bluff, for example, suggest at least one additional cemetery may be present. The depth of the midden exposed in the profile at the escarpment indicates that this area was intensively utilized, even though it is almost .25 mile from the test units, and the recent survey demonstrates that the site is far larger than anticipated.

It seems beyond dispute that SLO-2 abundantly meets Criterion 4 (or D) of eligibility for nomination to the National Register of Historic Places: that it has yielded, AND is likely to yield, information important to pre-history.

At a meeting in Santa Barbara on September 18, 1978, the nature, methodology, and purpose of this investigation was reviewed with Mr. Edward Olivas, Chairman of the General Council, Santa Ynez Indian Reservation. While Mr. Olivas did not have any specific information about particular Native American values or sensitivities at Diablo Canyon, he did strongly support and urge the preservation of the archaeological site and its nomination to the National Register of Historic Places.

11/14/23

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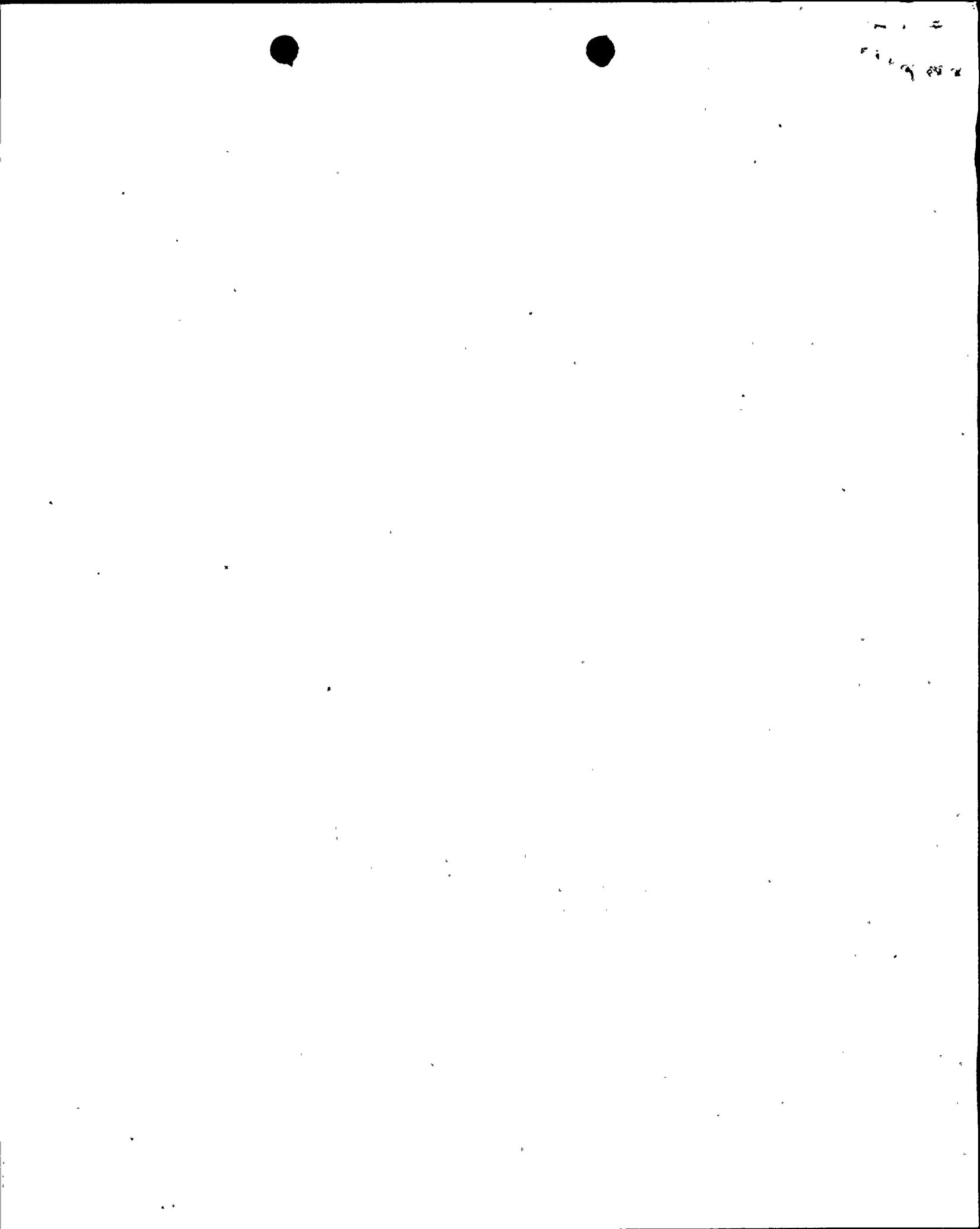
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Hoover, Dr. Robert L. California State Polytechnic University, San Luis Obispo.

Olivas, Edward. Chairman, Santa Ynez Indian Reservation.

APPENDIX D
Draft Environmental Technical Specification

11-11-52



4.3 Preservation of Archaeological Resources Requirements

The licensee shall avoid disturbances to the SLO-2 site in accordance with the Archaeological Resources Management Plan.

This special requirement shall commence with the date of issuance of the operating license and continue until approval for modification or termination is obtained from the NRC in accordance with Subsection 5.6.1.

Action

Should a disturbance of the SLO-2 site inconsistent with the allowable use of the site under the Archaeological Resources Management Plan occur, the licensee shall report the disturbance to the NRC in accordance with the routine report schedule for Subsection 5.5.1.

