

CALIFORNIA COASTAL COMMISSION

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 Commission Action:

STAFF REPORT REGULAR

APPLICATION NUMBER: 3-95-75

APPLICANT: **CAMBRIA COMMUNITY SERVICES DISTRICT**

PROJECT LOCATION: Pacific Ocean offshore of San Simeon Creek, two miles north of Cambria, San Luis Obispo County

PROJECT DESCRIPTION: Proposal to construct seawater intake structure, brine discharge diffuser, and associated intake and discharge pipelines, to supply seawater to proposed on-shore desalination plant and to return concentrated brine to the ocean.

LOCAL APPROVALS RECEIVED: None required for work seaward of mean high tide line; County has issued permit for on-shore desalination facility

SUBSTANTIVE FILE DOCUMENTS: Cambria Desalination Facility Final EIR and Addendum, Draft NPDES Permit No. CA0049921, Draft State Lands Commission Lease

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Commission, after public hearing, approve the proposal with conditions regarding discharge pipeline emergency shutoff provisions, ocean water column monitoring, benthic biological monitoring, seafloor sediment monitoring, final engineering and construction drawings, and US Army Corps of Engineers approval. The principal issue involved with this permit application is maintaining the quality and biological productivity of open coastal waters as required by Coastal Act sections 30230 and 30231.

EXHIBITS

1. Vicinity map
 2. Site map
 3. Intake structure
 4. Diffuser portion of discharge pipe
 5. Salinity dilution diagram
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STAFF RECOMMENDATION

The staff recommends that the Commission adopt the following resolution:

I. APPROVAL WITH CONDITIONS

The Commission hereby grants a permit, subject to the conditions below, for the proposed development on the grounds that the development will be in conformity with the provisions of chapter 3 of the California Coastal Act of 1976, will not prejudice the ability of the local government having jurisdiction over the area to implement its Local Coastal Program conforming to the provisions of Chapter 3 of the Coastal Act, and will not have any significant adverse impacts on the environment within the meaning of the California Environmental Quality Act.

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 this permit is reported to the Commission. 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. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent or interpretation of any condition will be resolved by the Executive Director or the Commission.

5. Inspections. The Commission staff shall be allowed to inspect the site and the project during its development, subject to 24-hour advance notice.
6. 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.
7. 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.

B. Special Conditions

1. Permit Authorization

This permit authorizes the Cambria Community Services District to construct the intake and discharge structures and pipelines appurtenant to the on-shore desalination facility, as described in this staff report and the Final EIR and Addendum prepared for the project. The total potable water production capability of this facility is 1.15 million gallons per day when all three phases of the facility are in operation. Total brine discharge to the Pacific Ocean is limited to 1.73 million gallons per day. Total seawater intake is limited to 2.88 million gallons per day.

2. Marine Resource Monitoring Program

PRIOR TO TRANSMITTAL OF THE COASTAL DEVELOPMENT PERMIT the permittee shall submit for review and approval by the Executive Director a detailed outline of monitoring products (e.g., reports) to be produced and frequency of monitoring, including monitoring during construction. The outline shall be approved by the Department of Fish and Game and the Monterey Bay National Marine Sanctuary prior to submittal to the Executive Director. The monitoring plan shall include the monitoring as described in the Marine Biological Impact Reduction Plan submitted by the applicant in the FEIR and the Addendum, monitoring requirements of the Department of Fish and Game and of the Monterey Bay National Marine Sanctuary, and shall incorporate the following:

- a. Final filtration method chosen, i.e., sand filtration or disk filtration and corresponding types and amounts of additives to the brine stream.
- b. Conductivity, temperature, and density measurements collected in a grid arrangement or along transects at the locations specified below:
 - i. Between the north and south kelp beds (an approximate 1,000 foot distance from the diffuser outfall) and between the 20 foot and 50 foot depth contour. Stations shall be evenly spaced to ensure adequate coverage taking into account local current and tidal circulation.
 - ii. Inside the kelp beds at depths in-line with the diffuser.

- iii. At a control station along the same isobath as the diffuser, at Pico Creek.
- c. At each station, water column measurements will be collected at 3 ft (1 m) depth intervals. Measurements shall be made with an internally recording CTD unit, following the procedures used during pre-construction ocean monitoring surveys (Marine Resource Consultants, Inc., 1995).
- d. Measurements shall be collected monthly at all stations within the sampling areas identified above. Monitoring shall begin at least 2 months prior to commencement of operation of the desalination plant and 2 months prior to commencement of Phase II and Phase III operations as applicable. Monitoring shall continue for a period of two years following commencement of Phase I, Phase II, and Phase III operations.
- e. Within 10 working days following each monthly collection of the data specified above, the permittee shall submit a tabular data report to the Executive Director in written form and a digital copy in Microsoft Excel 5.0 format. Final data reports of data collected during each 26-month survey period (for Phase I, Phase II, and Phase III operations) shall be submitted to the Executive Director within 30 days following completion of the last monthly survey. At the end of all monitoring, the permittee shall submit a comprehensive report that describes the data collected throughout the monitoring program and provide a comprehensive analysis of the full data set.
- f. Aerial surveys shall be flown over the kelp beds in the vicinity of the diffuser outfall and over the pre-construction control site offshore of Pico Creek to provide controlled low-altitude infrared photography for mapping of near-surface kelp canopy. Aerial photography shall be conducted four times per year at times optimal for photography (early morning hours, low tide, low current flows) for a period of two years following commencement of Phase I, Phase II, and Phase III operations as applicable. The photographs shall be digitized and copies of the digitized information and the photographs shall be submitted to the Executive Director within 30 days following survey completion.
- g. Timeline for constructing an extension of diffuser pipe or taking other appropriate action, including reducing production and discharge to the level of the previous phase, if monitoring indicates a decline of 20 percent or more in the population or density of the kelp forest flora and fauna or of benthic organisms inhabiting the sand channel between the kelp beds, that is attributable to the discharge.
- h. Method for shutting off the brine discharge if the discharge line is ruptured or destroyed.
- i. The monitoring and data collection shall be conducted by a consultant acceptable to the permittee, the Executive Director, the Department of Fish and Game, and the Monterey Bay National Marine Sanctuary.

PRIOR TO CONSTRUCTION the permittee shall complete and submit for review and approval by the Executive Director a baseline monitoring report indicating by text and map the density and diversity of the kelp forest on both sides of the sand channel where the diffuser is proposed to be located and of organisms occurring in the benthic environment within the kelp forest and

within the sand channel. The report shall be approved by the Department of Fish and Game, and the Monterey Bay National Marine Sanctuary prior to submittal for Executive Director review and approval.

SUBSEQUENT TO CONSTRUCTION the permittee shall complete and submit for review and approval by the Coastal Commission a post-construction report indicating by text and map the density and diversity of the kelp forest on both sides of the sand channel where the diffuser is proposed to be located and of organisms occurring in the benthic environment within the kelp forest and within the sand channel. The report shall be approved by the Department of Fish and Game, the Monterey Bay National Marine Sanctuary, and the National Marine Fisheries Service prior to submittal for Commission review and approval.

3. Survey of Discharge Diffuser

- a. A dive video survey of the discharge diffuser shall be conducted quarterly (four times per year) to verify that all diffuser ports are operating as designed and are in the same condition as installed and/or identify the changes. Within 10 working days following the dive survey, the permittee shall submit to the Executive Director for review and approval a report that shall include the following information: (1) the date and time the survey was conducted, and (2) the number of diffuser ports buried by sediment and/or fouled by marine growth, and (3) a description of the condition of the pipe.
- b. In the event that any diffuser ports are buried or fouled, the permittee shall include in the report to the Executive Director the following information:
 - i. A revised plume modeling study using worst-case conditions (full plant operation, percent recovery, observed number of operational ports, maximum discharge velocity, and measured salinity of brine discharge) that shows the salinity at the outer edge of the Zone of Initial Dilution (ZID) and within the kelp beds upcoast and downcoast of the discharge;
 - ii. A plan, to be implemented upon approval of the Executive Director, to clear the diffuser ports of sediment or marine growth if the revised model shows that the dilution factor exceeds 26:1 or if the ambient salinity within either kelp bed could exceed 34.6 parts per thousand (105 percent of ambient salinity).
 - iii. Evaluation of the pipe condition and any proposed or needed maintenance.

4. Environmental Monitor

An environmental monitor, contracted with and paid for by the permittee, and acceptable to the Executive Director, shall submit semi-annual reports to the Executive Director describing the permittee's conformity with permit requirements, beginning six months after the date of Commission action on this permit and continuing during the construction of the facility and during the monitoring periods specified in the Marine Resource Monitoring Program. The

environmental monitor shall be empowered to halt construction if necessary to prevent damage to the kelp forest beyond that identified in the Marine Biological Impact Reduction Plan.

5. Underwater Concrete Placement

PRIOR TO TRANSMITTAL OF THE COASTAL DEVELOPMENT PERMIT the permittee shall submit information to the Executive Director for review and approval detailing the method of placing concrete in seawater on the seafloor while maintaining the pH of the seawater. The permittee shall submit evidence that the method of placement has been approved by the Department of Fish and Game and the Monterey Bay National Marine Sanctuary.

6. Final Engineering and Construction Drawings, Construction Timeline

PRIOR TO TRANSMITTAL OF THE COASTAL DEVELOPMENT PERMIT the permittee shall submit to the Executive Director for review and approval two copies of the final engineering and construction drawings bearing the stamp of the engineer and including 1) information indicating that the seafloor structures, including the discharge pipe and diffuser are capable of withstanding sea conditions during a 100 year storm and, 2) a construction timeline clearly showing duration of each portion of the construction, any overlapping time periods, the total construction time, and the operational method of construction.

7. Reporting Requirements of Other Agencies

The permittee shall submit to the Executive Director for review a copy of reports and notices required to be submitted to the Regional Water Quality Control Board or any other agencies, at the same time that such reports or notices are required by the Regional Water Quality Control Board or other agencies.

8. Regional Water Quality Control Board Permit

PRIOR TO TRANSMITTAL OF THE PERMIT the permittee shall submit to the Executive Director for review a copy of the final, approved NPDES permit and Clean Water Act section 401 water quality certification issued by the Regional Water Quality Control Board.

9. State Lands Commission Permit

PRIOR TO TRANSMITTAL OF THE PERMIT the permittee shall submit to the Executive Director for review a copy of the final, approved lease issued by the State Lands Commission.

10. US Army Corps of Engineers, National Marine Sanctuary, Coast Guard Approval

PRIOR TO COMMENCEMENT OF CONSTRUCTION the permittee shall submit to the Executive Director for review and approval documentation from the US Army Corps of Engineers that the project has been reviewed for conformance with Federal agency

requirements, including the Monterey Bay National Marine Sanctuary regulations and US Coast Guard requirements and that the project is permitted, or that no Corps, Sanctuary, or Coast Guard permits are necessary.

II. FINDINGS AND DECLARATIONS

The commission hereby finds and declares:

A. Project Description and Background

1. Description. The applicant proposes to construct a seawater intake and discharge junction structure and associated pipelines to supply seawater to a proposed on-shore desalination plant and to construct a discharge pipe with diffuser to dispose of the concentrated brine resulting from the desalination plant operation. All of the structures included in this permit application are located seaward of the mean high tide line where the Commission has original permit authority. San Luis Obispo County approved a permit for the portions of the desalination facility landward of the mean high tide line. That County permit has been appealed to the Commission. Please see appeal number A-3-SLO-95-69 for complete information about the land portion of the facility.

The applicant proposes to construct a reverse osmosis (RO) type desalination plant about one-half mile inland from the ocean on land it now utilizes for well fields and percolation ponds. From the plant site, intake and discharge lines are proposed to be placed in County and State road rights-of-way and along an easement on a bluff-top parcel west of the plant site. Approximately 75 feet inland from the westerly edge of the bluff-top parcel, the applicant proposes to drill a caisson a minimum of 6 feet in diameter and approximately 80 feet deep. According to the applicant, the caisson will be concrete lined and "will be fitted with the intake and discharge pipes and associated equipment. Once the necessary piping is installed at the bottom of the shaft, it will be backfilled with gravel to within approximately 10 feet of the ground surface. Sitting on top of the shaft, just below ground level, an equipment and control area will be constructed." Pumps at the top of the caisson would pump the seawater to the desalination plant. Pumps at the plant would pump the brine discharge out to the diffuser.

Directional drilling would be used to create a tunnel approximately 2,000 feet long, which would be lined with a 30 inch diameter pipe, from the caisson to the off-shore intake and discharge junction structure site. According to the applicant "This casing pipe will house the two 10 inch feedwater pipelines and the single 10 inch brine reject water pipeline. Both the casing pipe and the main transport pipes will be constructed of non-toxic, non-corrosive plastic piping." Additionally, there would be a small diameter air line through which air would be supplied to an air accumulator on the intake structure. According to the applicant, "The air backwash system

will provide a 3 to 5 second burst of air released inside of and dispersed by the screen to clear the external surface of any accumulated debris and fouling organism larvae."

The intake structure is proposed to consist of two cylindrical intake screens approximately 36 inches in diameter and 38 inches high. According to the applicant the intake screens will serve to prevent the entrainment of fish, large invertebrates, and algae from entering the intake pipes, by utilizing a small mesh (0.125 inch square) and low intake velocity (0.2 foot/second). The screens would each be housed within a protective concrete structure approximately 8 feet tall, 10 feet wide, and 10 feet long, which would allow for the passage of seawater but would prevent large objects and sunlight from contacting the screens.

Approximately 230 cubic yards of seafloor sediments would be excavated by clamshell to allow placement of the intake structure anchors which would consist of two 8 foot wide, 8 foot long, 6 foot high precast concrete pads. The excavated material would be placed on a barge with a portion used as backfill and the rest shipped to an onshore disposal site. After the anchors are emplaced from a barge, the excavated area around them would be backfilled with approximately 100 cubic yards of concrete to approximately one foot below natural grade; some of the excavated material would be used as backfill over the concrete to natural grade. According to the applicant, "The design engineer may require driven concrete piles to support the precast structure." Because of the uncertainty at this time, this permit is conditioned to require the submittal of final engineering and construction plans showing if, and how, this is to be done.

The third component of the off-shore facilities is the brine discharge pipe and diffuser. The brine discharge line is proposed to come to the intake structure as a separate 10 inch diameter pipe within the same 30 inch diameter pipe which also would carry the two 10 inch diameter intake lines. From the intake structure, the discharge line would extend approximately 220 feet on the seafloor surface at an angle seaward of the intake structure. The final 100 foot section of discharge pipe is proposed to be a diffuser. It would have 21 ports each fitted with a 1.5 inch diameter by 3 foot long riser. A butterfly valve would be attached to the end of each riser and would be in the closed position until such time as brine was discharged. Then the valves would open allowing the brine to be discharged into the surrounding seawater. The diffusion would be carried out at a ratio of 26 parts ambient seawater to 1 part brine which is calculated to result in a dilution of 3 percent above the ambient salinity. The discharge line, including the diffuser section would be placed on the seafloor and held there utilizing pipe saddles through which 10 foot long tiedown anchors would be placed on either side of the pipe, at 20 foot intervals. The "normal" maximum brine discharge would be 1.73 million gallons per day with the plant operating at maximum capacity. The discharge would create a brine plume that would initially travel upward and outward from the diffuser and then drop down toward and flow along the seafloor, all the while being more and more diluted. According to the applicant, the brine plume would be diluted to ambient seawater salinity within approximately 650 feet laterally and 20 feet vertically from the diffuser, depending on wave and current conditions.

2. Background. The community of Cambria, like most along the central California coast, relies on groundwater. Historically, Cambria pumped water from wells in the Santa Rosa Creek basin and, more recently, in the San Simeon Creek basin.

In 1977, the Commission, in permit 132-18, limited groundwater deliveries from the San Simeon Creek groundwater basin to certain assessment districts and subdivision tracts until certification of a Local Coastal Program for the area. Additionally, to ensure that the groundwater basin would not be overdrawn and to restrict growth to levels that would not prejudice the future LCP planning process, that permit limited the number of water connections to a total of 3800 dwelling units and limited the number of annual hookups initially to 84 per year "Unless and until a Local Coastal Program is certified specifically approving an increase in water supply beyond that provided by this permit." It was assumed that the future LCP would address the issue of water supply as well as other infrastructure needs to accommodate the buildout of Cambria as ultimately approved through the LCP planning process.

Subsequently, the Commission issued permit 428-10, in 1981, to allow for hookups to 5200 dwelling units, at 125 permits per year. The Commission found that such an amendment could be approved based on a decreased per capita water consumption from 140 gallons per day to 105 gallons per day and that the consumption would not be increased nor would the long term growth period be decreased. That permit stated "One of the major concerns of the Commission is that the community have adequate time to develop additional water resources in an environmentally sensitive manner and to allow the community sufficient time to implement a resource based land use plan." The staff report went on to say "The growth management system in the original permit was based on the need to mitigate the impacts of growth accommodated by the water system over a sufficient time period, based on assumptions of known water supplies available to the community."

Those pre-LCP certification actions by the Commission limiting hookups were based on protecting the groundwater basins by pacing growth at a rate which would not deplete the then known available water supplies. Those actions were not meant to limit the number of hookups or buildout population of Cambria *after* certification of an LCP for the area or if additional water supplies were developed.

Over the years, the Cambria Community Services District has investigated various potential additional water supplies, including importing water from Nacimiento Reservoir on the east side of the Santa Lucia Mountains east of Cambria, building dams on coastal streams in the Cambria vicinity, and utilizing groundwater recharge. All of these were rejected, due to environmental, financial, or engineering concerns. In 1993, the district began investigating the possibility of desalination of seawater.

B. Applicable Coastal Act Policies

Section 30230. *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. *The biological productivity and quality of coastal waters, streams, wetlands, estuaries, and lakes appropriate to maintain optimum populations of marine organism and for the protection of human health shall be maintained*

This proposal by the Cambria Community Services District could potentially affect marine resources two ways, during construction of the intake and discharge structures and during operation of the plant.

Construction impacts include increased turbidity which could foul the breathing and feeding organs of marine invertebrates and could reduce sunlight necessary for marine plant growth, potential spillage of lubricants from the barge-based equipment, introduction into the benthic environment of drilling fluids from the on-shore directional drilling, and improper handling of the concrete backfill around the intake structure which could result in altered pH of the surrounding waters. However, these are comparatively straightforward impacts in that they are limited to a small area and are of limited duration, with the construction taking only a couple of weeks. Although the applicant has submitted a preliminary construction schedule, it needs to be updated to include, for example, how long the pile driving, if needed, would take and to indicate any changes in probable start date of each portion of the construction. For these reasons, it is appropriate to require a detailed construction schedule.

Desalination plant operation could adversely impact marine invertebrates and marine plants by increasing the ambient salinity and introducing various chemicals utilized in the reverse osmosis process into the brine stream and the ocean and benthic environment with potentially toxic effects. Unlike the construction impacts, the brine discharge would be an on-going operation. CCSD anticipates using the desalination plant only during drought periods or during the late summer through early winter. Under that scenario, the discharge and its effects would be seasonally limited, but there may come the day when the desalination plant would need to be operated on a regular, year round basis. In any case, very little is known experientially about *in situ* impacts from this type of discharge into sand channel and kelp bed marine environments. There simply have been too few facilities of this size and type discharging unmixed brine directly into an open ocean environment to have been able to sufficiently understand the effects of such a discharge on the marine environment. The Commission has approved two other municipal desalination plants in the recent past, for the cities of Santa Barbara and Morro Bay. The discharge from those plants is handled in a fundamentally different way than that proposed here. The Santa Barbara plant discharges through the sewer facility and so the brine is already diluted upon discharge into the sea. The Morro Bay plant discharges through the cooling water outfall from the PG & E power plant and is extremely diluted, constituting less than one percent of PG & E's cooling water outfall volume. It is unknown exactly what short-term and long-term effects a discharge such as that proposed by CCSD will have on marine plant and animal life near the outfall. Because of this, it is appropriate to require a monitoring program to detect any adverse effects the discharge may have on the marine environment.

The EIR and EIR Addendum have discussed these issues, although perhaps not as adequately as might be desired, and the applicant has modeled the *potential* behavior of the brine discharge plume. The applicant has met with staff of the Commission, the Department of Fish and Game, and the Monterey Bay National Marine Sanctuary, and has presented information to the Sanctuary's scientific advisors in an effort to address concerns and potential adverse impacts to the marine environment. While these efforts have been informative, there is still little "hard" data; the monitoring program will supply such data.

Contrasted to these unknowns is the fact that Cambria has been experiencing and will continue to experience water supply problems unless a new water source is developed or development restricted. As described earlier, various additional water supplies have been investigated and rejected for various reasons. Although staff does have concerns about development of desalination plants, there is enough information about them to enable the development of conditions that can require further information that will build on existing information and require monitoring to ensure that any adverse impacts are discovered early and steps taken to eliminate them. Given this, the proposal can be found consistent with Coastal Act sections 30230 and 30231.

Section 30233. *(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: (1) New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*

The excavation proposed by CCSD to allow placement of the intake structure and the placement of that structure along with the laying of the discharge pipe are, respectively, dredging and filling and so are subject to a finding of consistency with Coastal Act section 30233. Originally, CCSD proposed a buried infiltration gallery which would have required excavation, laying a gallery of perforated infiltration pipes, and backfilling with native seafloor sediments, in addition to placement of an outfall discharge line. Both that work and the currently proposed open intake system were discussed in the EIR, although the former was more thoroughly discussed than the latter. Subsequent to certification of the EIR by the CCSD Board of Directors, CCSD proposed a different type of intake structure, which had not been discussed in the EIR. That involved excavating a circle 90 feet in diameter on the seafloor and constructing a concrete infiltration gallery structure which would have been backfilled with native material. Since that was an entirely new kind of structure, Commission staff and staff of other agencies notified CCSD that if that was in fact going to be the intake structure proposed, it would require at least a Supplemental EIR. After further discussions, CCSD settled on the current design proposal which had been discussed in concept in the EIR.

CCSD considered other means of obtaining seawater and discharging brine, including brackish water wells on the beach at San Simeon State Park. The Department of Parks and Recreation objected to that proposal, thus rendering it infeasible. Another alternative investigated was brackish water wells at Shamel County Park south of the project site in Cambria. That alternative would have included constructing the desalination plant next to the District's wastewater treatment plant, near a residential area, which would have resulted in construction and operational impacts to the residential area. Access to the County park and beach for construction purposes was explored but indications were that the County Parks Department was not willing to allow access. Additionally, there was concern that the wells would lower the water level in the Santa Rosa Creek lagoon which lies on the north side of the County park. For all of those reasons, that alternative proved infeasible.

As discussed above under Coastal Act Sections 30230 and 30231, conditions have been developed for this permit that, coupled with the mitigation measures contained in the EIR and Addendum, will minimize any potential adverse environmental effects. Additionally, the proposed seawater desalination project is coastal-dependent. As defined in the Coastal Act, a coastal-dependent development is one *"which requires a site on, or adjacent to, the sea to be able to function at all."*

Given the foregoing, the proposal can be found consistent with Coastal Act section 30233.

Section 30240. (a) *Environmentally sensitive habitat areas shall be protected against any significant disruption of habitat values, and only uses dependent on those resources shall be allowed within those areas.*

(b) *Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

According to the Coastal Act, an environmentally sensitive area *"means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments."* The Coastal Act defines the coastal zone to include the *'land and water area of the State of California . . . extending seaward to the state's outer limit of jurisdiction . . .'* In Section 30001 of the Coastal Act, the Legislature found and declared *"That the California coastal zone is a distinct and valuable natural resource of vital and enduring interest to all the people and exists as a delicately balanced ecosystem."*

Among the species which occur in the nearshore environment in and adjacent to where the construction will take place and which will be subject to the brine discharge are the Steller's sea lion and the southern sea otter, both of which are listed by the Federal government as threatened species, various benthic invertebrates, and two species of kelp. Neither the kelp nor the benthic organisms are listed by the Federal or State as threatened. Kelp is, however, considered an important "keystone" species which performs important functions to the marine community including providing areas for fish and invertebrate breeding, feeding, and shelter. Disruption of the kelp forest can have adverse effects on other species.

Construction impacts would likely have no effect on the sea lion or the sea otter as individuals of those species could easily swim away from the construction area. Neither would they be likely to be affected directly by the brine discharge as the brine plume is expected to stay well below the surface. Kelp, on the other hand, could be directly affected by the construction if barge anchors or anchor lines scour the kelp beds and by increased turbidity from excavation, which would tend to diminish sunlight necessary for growth. Those are short-term effects and are not likely to be significant.

More problematic is the potential long-term effects of the discharge on the kelp. Depending on the exact behavior of the brine discharge plume based on currents and other sea conditions, there may or may not be any adverse effect on the kelp. As discussed above, conditions have been developed to protect the marine environment from "significant disruptions" due to the construction and operation of the project. Although the Coastal Act does not contain a

definition of "significant disruption," the monitoring required by the conditions will allow for analysis of trends and early warning if the construction or operation results in degradation of habitat and/or loss of life forms. Because of these reasons, the proposal can be found consistent with Coastal Act section 30240.

Section 30253. *(a) New development shall: (1) Minimize risks to life and property in area 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 landforms along bluffs and cliffs.*

The seafloor is in a permanently flooded state and storm waves up to five meters high can constitute a high geologic hazard. The proposed intake structure and discharge pipe would be subject to permanent immersion in seawater and seasonal fluctuations in current directions and speeds as well as seasonal storm waves and periodic sand erosion and accretion. CCSD has indicated that the design of the facility and the type of materials proposed would withstand permanent submersion in seawater as well as the forces exerted by 100 year currents and waves and that the movement of sediment would not endanger operation of the intake and discharge facilities.

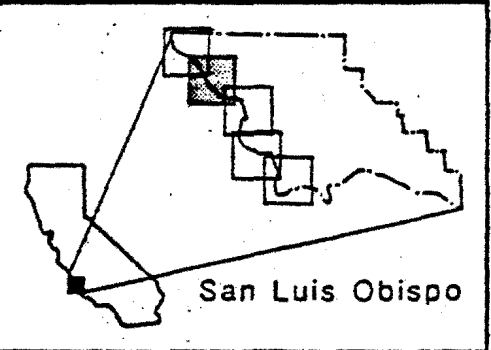
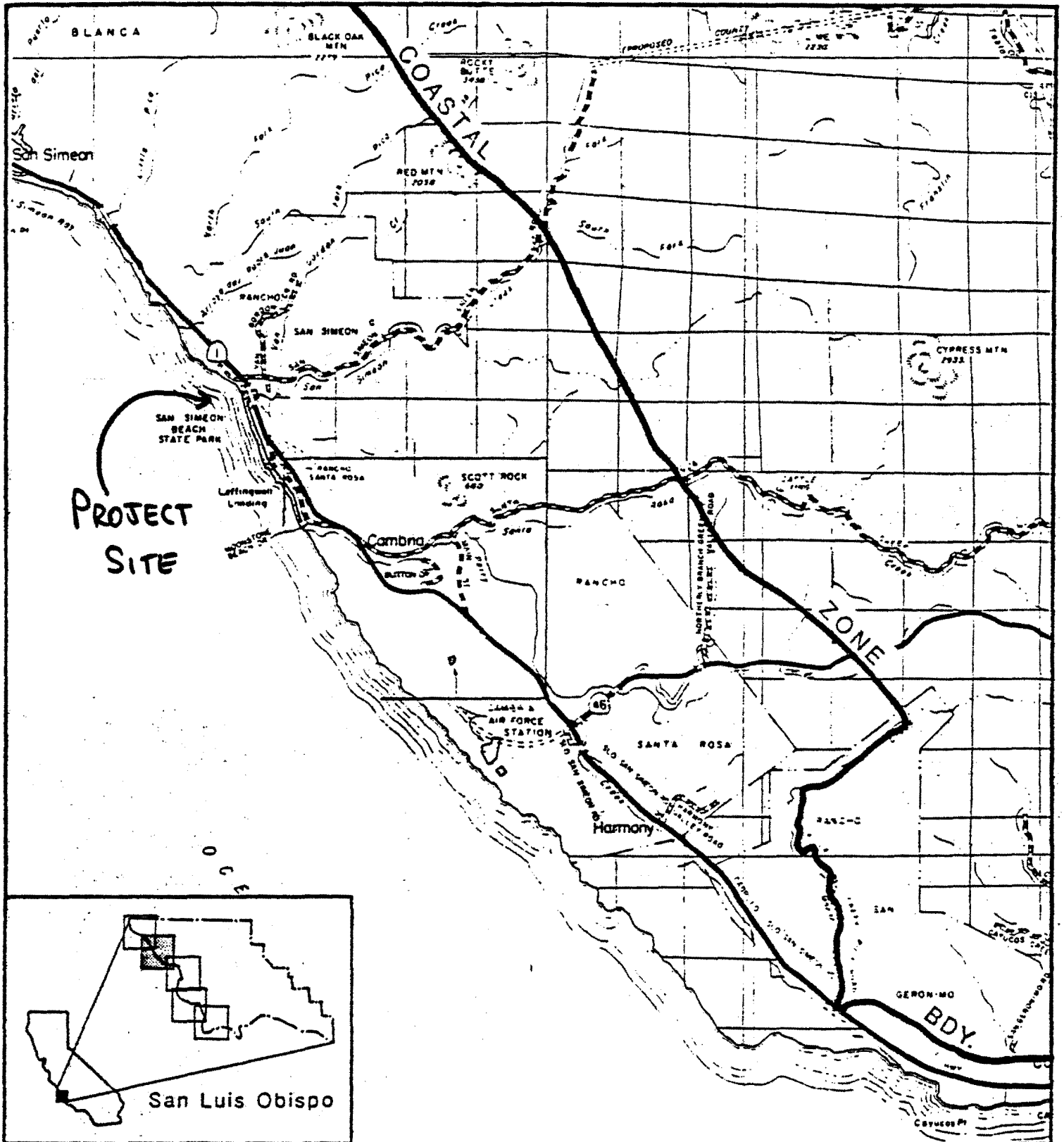
During the storms of this past winter, the current meter and the wave/tide meter which were located seaward of the proposed seafloor facilities, were destroyed. A wave buoy off Morro Bay, some 15 miles south of the project site, measured five meter waves at 13 second intervals during the winter storms. It is unknown exactly what velocities and forces were acting on the seafloor at the project site at that time, since no current data was recovered for almost one and one-half months and no wave/tide data was recovered for over two months because of the damage to the meters. Since the proposed intake/discharge facilities site is in shallower water than the site of the meters, it is likely that seafloor conditions, especially during storms, will be harsher and that the facilities will experience greater forces than the meters did. This is because waves steepen and break as they encounter progressively shallower water. Because of the lack of data, it is appropriate to require that prior to construction the applicant provide final construction drawings with full engineering information describing the expected forces and certifying, by engineer's stamp, that the proposed facilities will withstand those forces. With that condition, the proposal can be found consistent with Coastal Act section 30253.

Section 30255. *Coastal-dependent developments shall have priority over other developments on or near the shoreline.*

As defined in the Coastal Act, a coastal-dependent development is one "which requires a site on, or adjacent to, the sea to be able to function at all." Although the on-shore portion of a desalination plant need not be on or adjacent to the sea in order to function, a seawater intake facility and a brine discharge facility necessarily must be located on or adjacent to the sea. Clearly, these facilities are coastal-dependent. As such they have priority over other developments on or near the shoreline. In this case, there is no possibility of them displacing some other development since they are beneath the sea in an area where there is little development existing or proposed on the land or allowed by the County's LCP.

C. California Environmental Quality Act (CEQA)

The CCSD certified an environmental impact report for the proposed project. That EIR was conducted in compliance with CEQA and mitigation measures were recommended to reduce significant impacts to a level of insignificance. Because of continuing uncertainties about details of the project description, CCSD prepared an Addendum to the EIR clarifying technical details. It is the Commission's finding that the mitigation measures specified in the EIR and Addendum may not be sufficient, without the conditions developed for this permit, to ensure that any impacts from the proposal will be reduced to a level of significance. Conversely, it is the Commission's finding that with the conditions, this proposal can be found consistent with CEQA in that all significant impacts will be reduced to a level of insignificance.



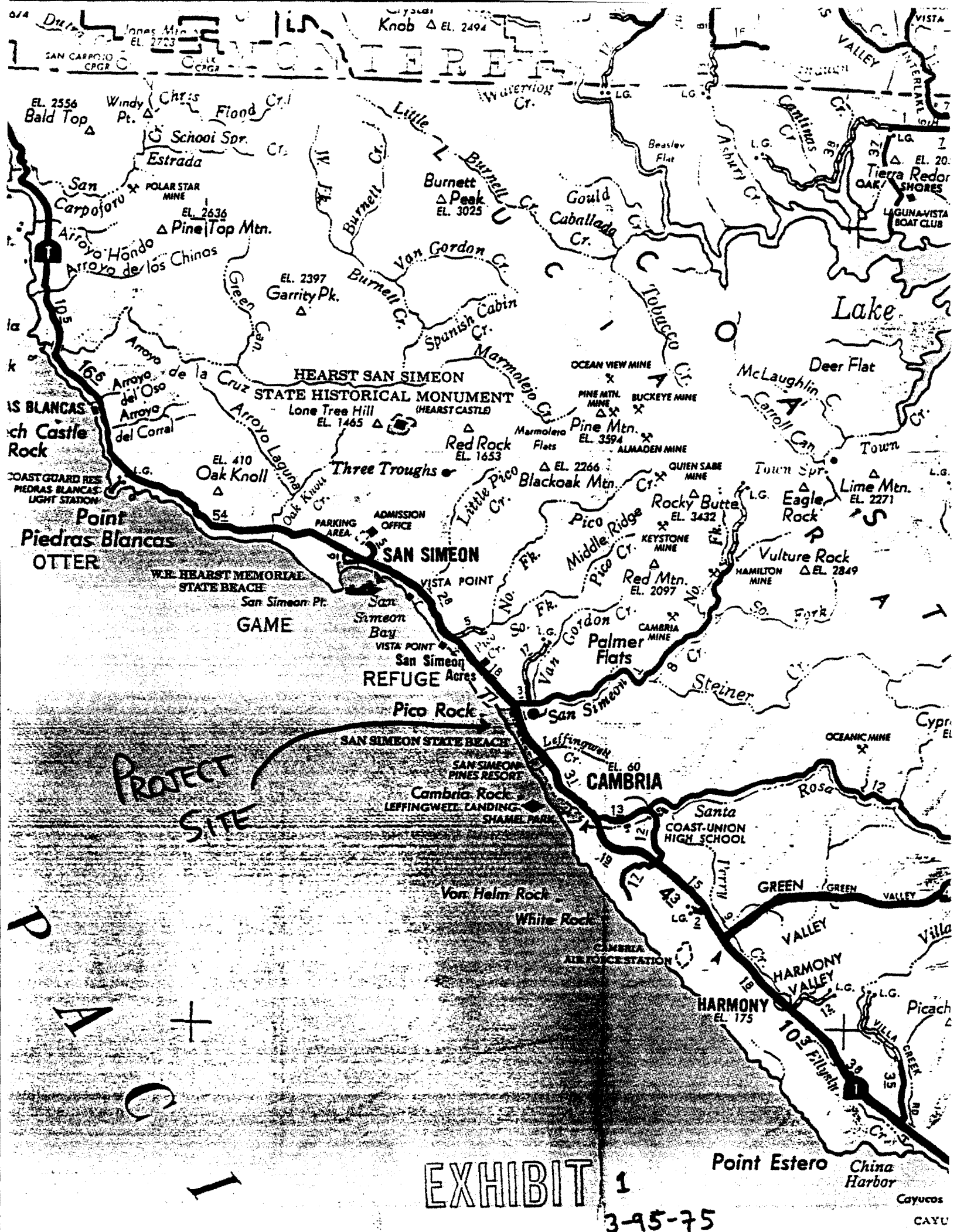


EXHIBIT 1

3-95-75

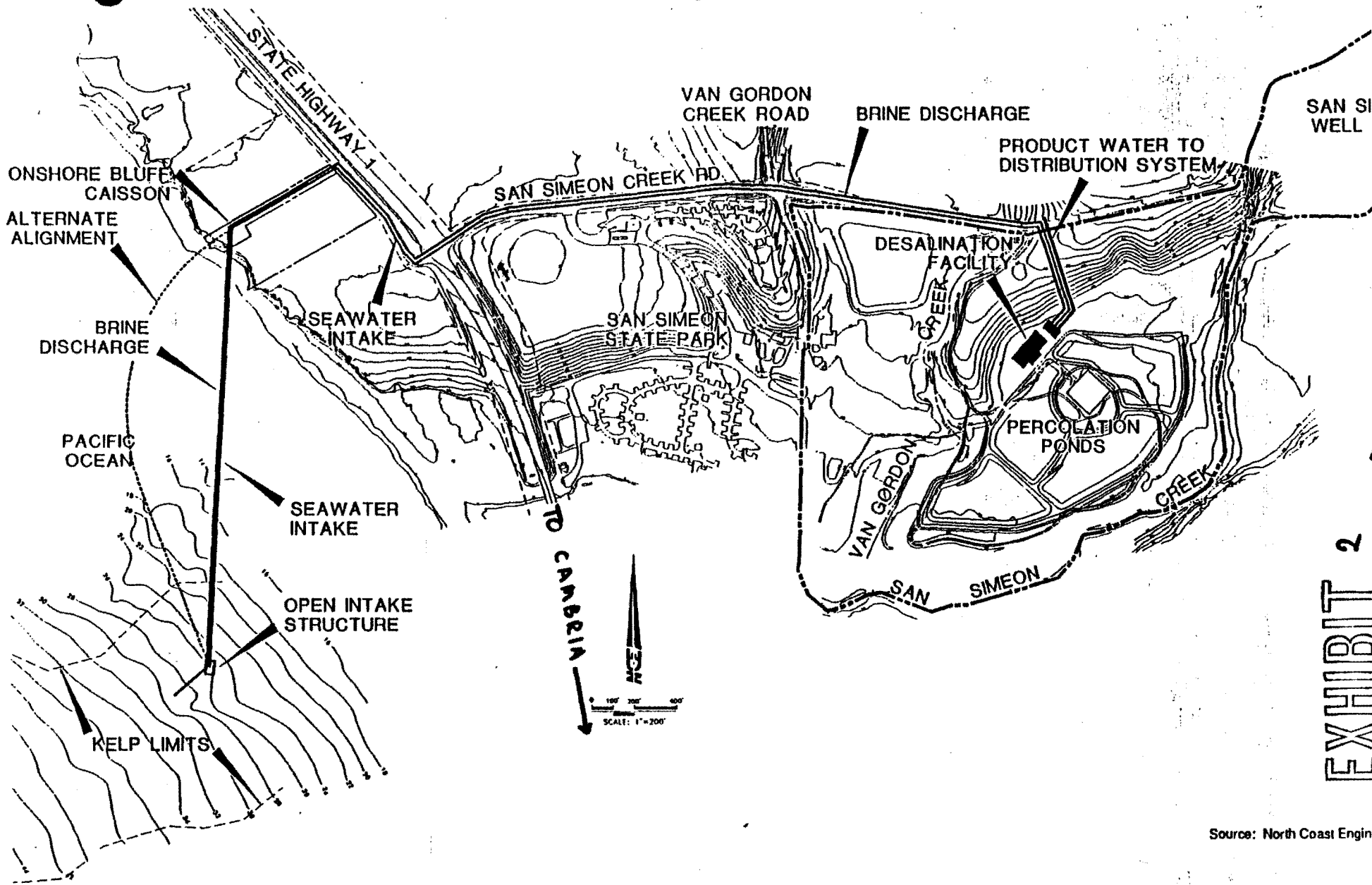
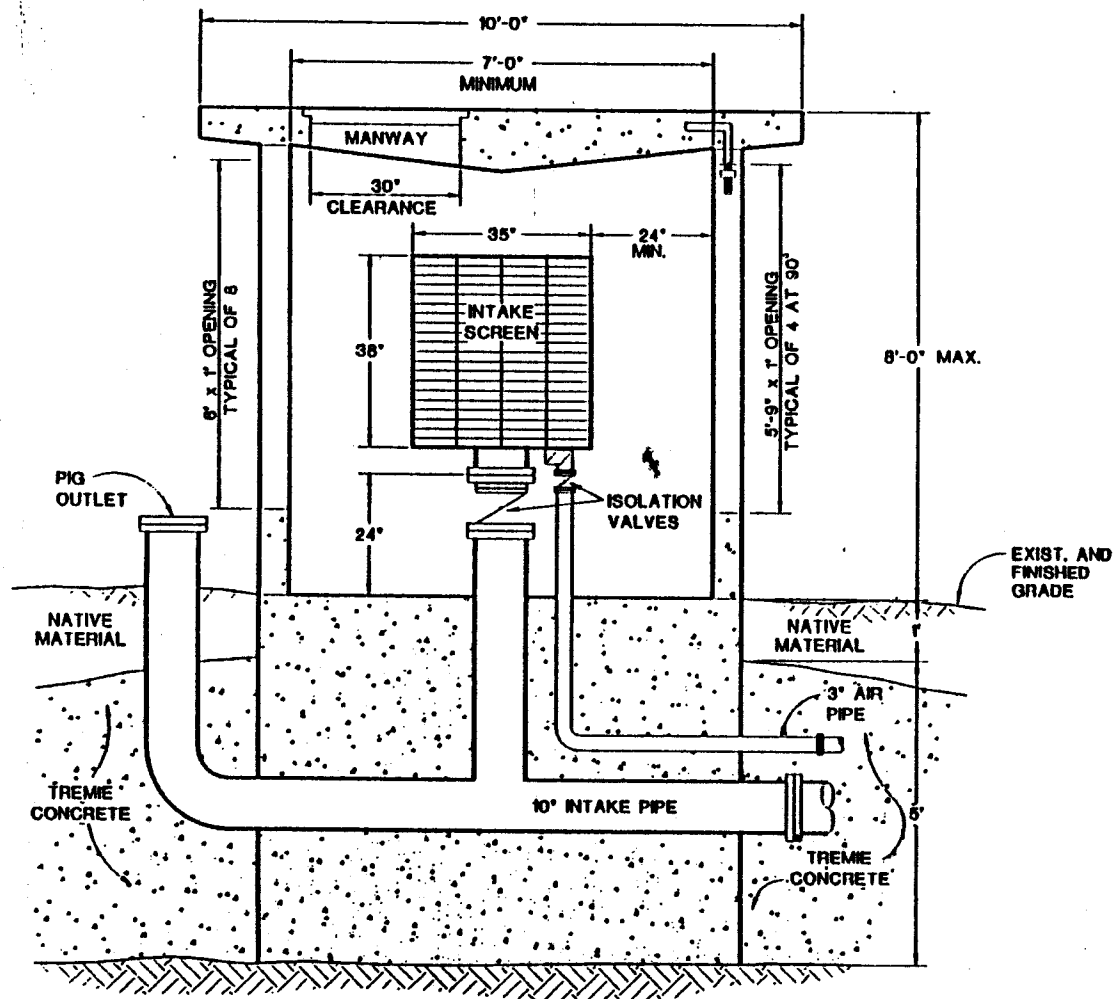


EXHIBIT 2

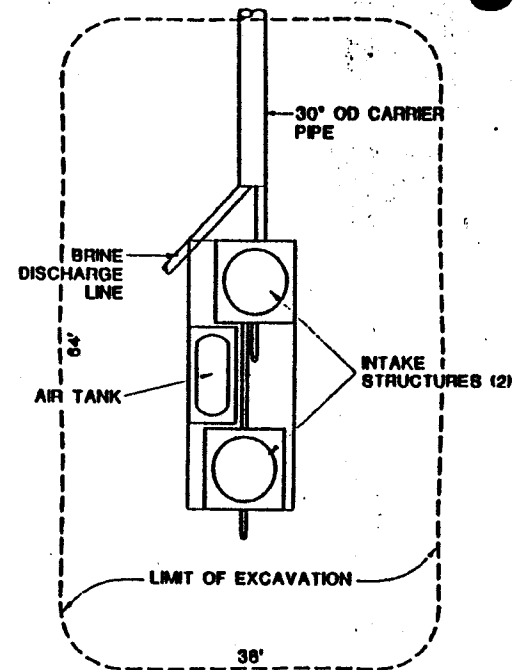
Source: North Coast Engineering

CAMBRIA DESALINATION FACILITY
Project Schematic

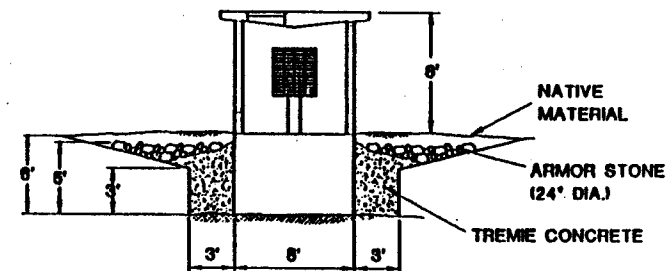




PROFILE



PLAN
SCALE: 1'-8"



CROSS SECTION

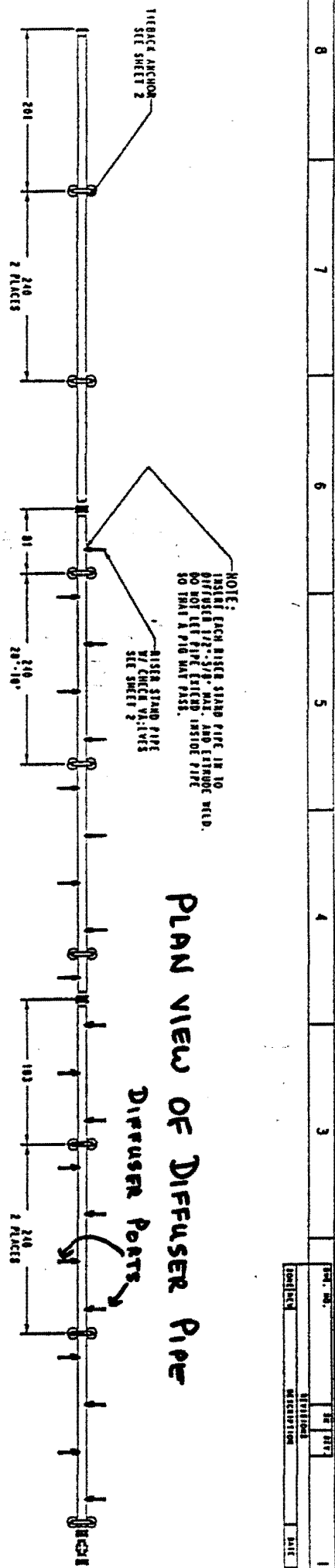
Source: North Coast Engineering

Not to scale.

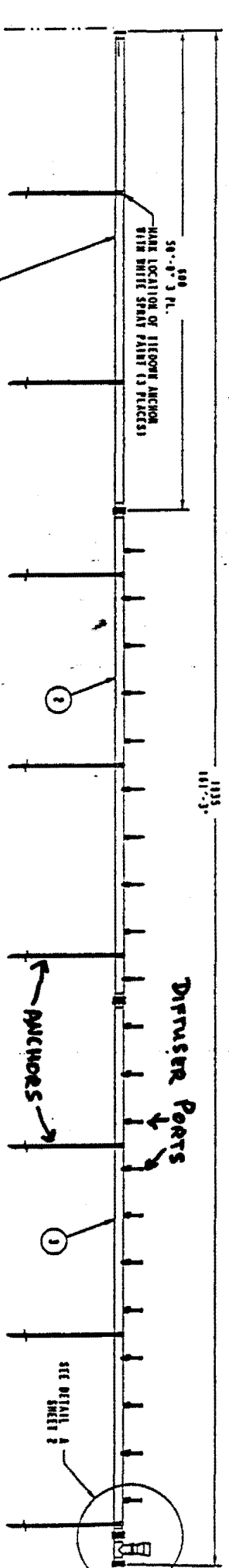
CAMBRIA DESALINATION FACILITY
Feedwater Intake Structure

Exhibit 3

EXHIBIT 3 3-95-75



PLAN VIEW OF DIFFUSER PIPE



ELEVATION VIEW OF DIFFUSER PIPE

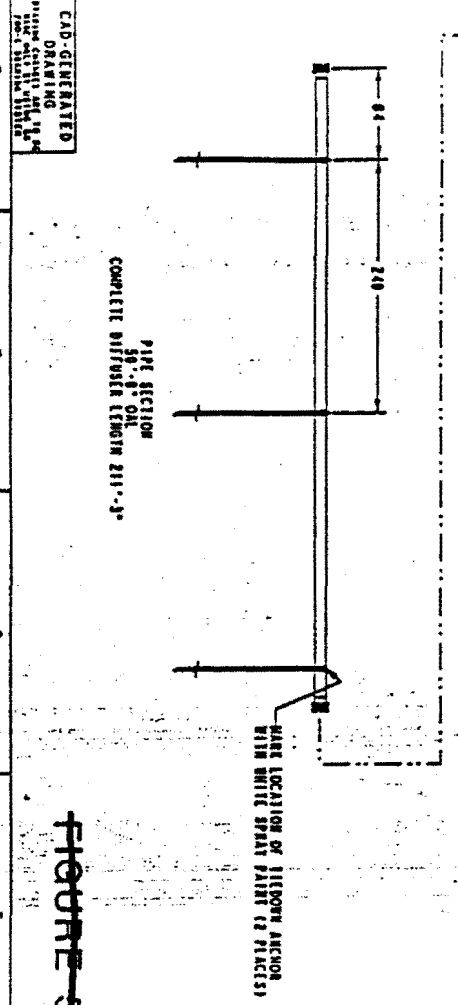
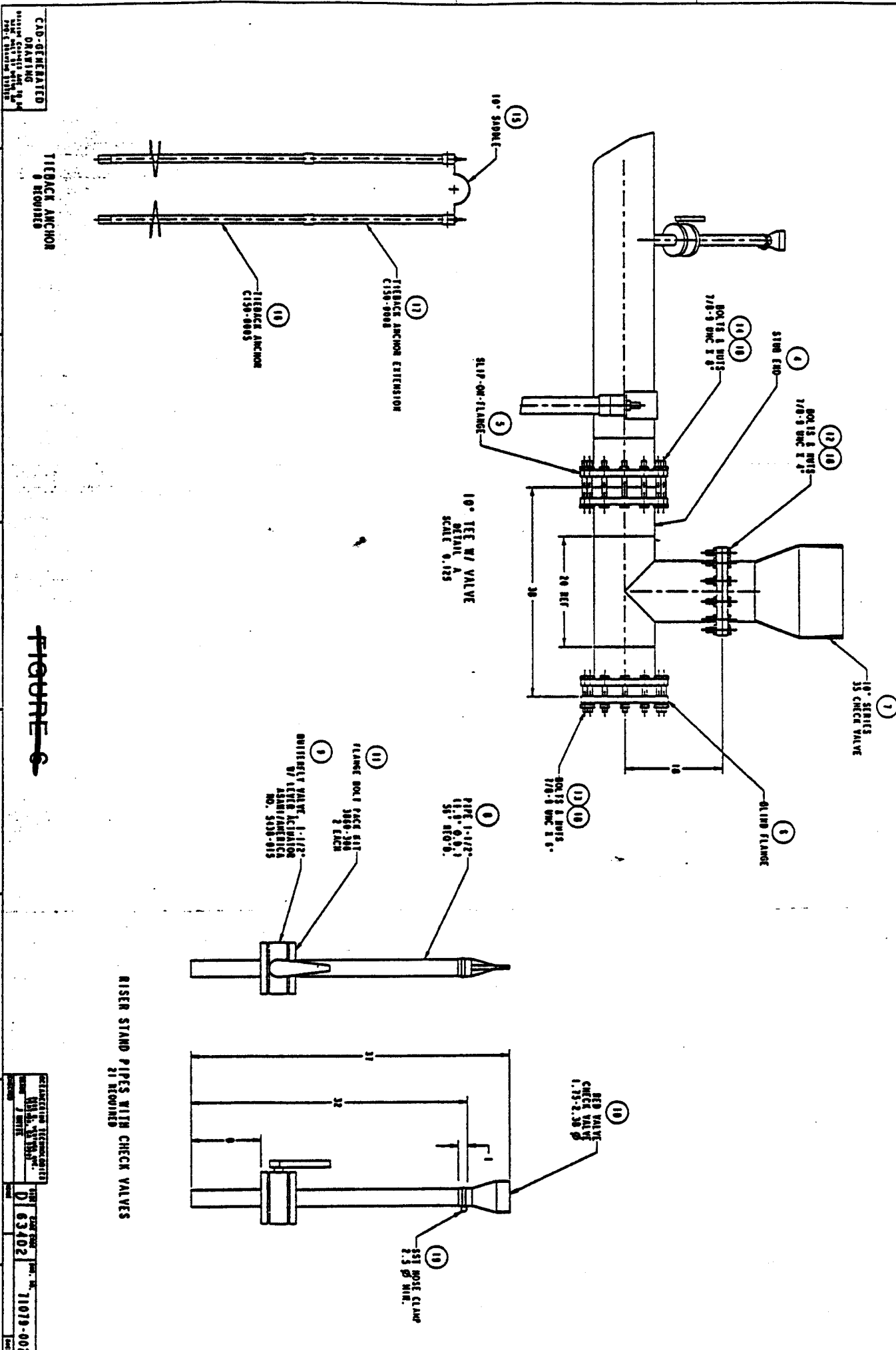


FIGURE 5

NO.	DESCRIPTION	QUANTITY	UNIT	REMARKS
1	PIPE SECTION 50'-0\"/>			

DATE	BY	CHKD.	APP'D.
10/15/75	J.M.	J.M.	J.M.

PROJECT	CAMBRIA DESALINATION FACILITY
SHEET NO.	1
TOTAL SHEETS	1
DATE	10/15/75



CAD-GENERATED
DRAWING
DESIGNED BY: J. W. B. / J. W. B.
DATE: 01/15/02

SCALE: 1/8" = 1'-0"
DATE: 01/15/02
DRAWN BY: J. W. B. / J. W. B.
CHECKED BY: J. W. B. / J. W. B.
PROJECT NO.: 71070-002
SHEET NO.: 1

FIGURE 6




RISER STAND PIPES WITH CHECK VALVES
 21 REQUIRED

EXHIBIT 4, p2
3-95-75

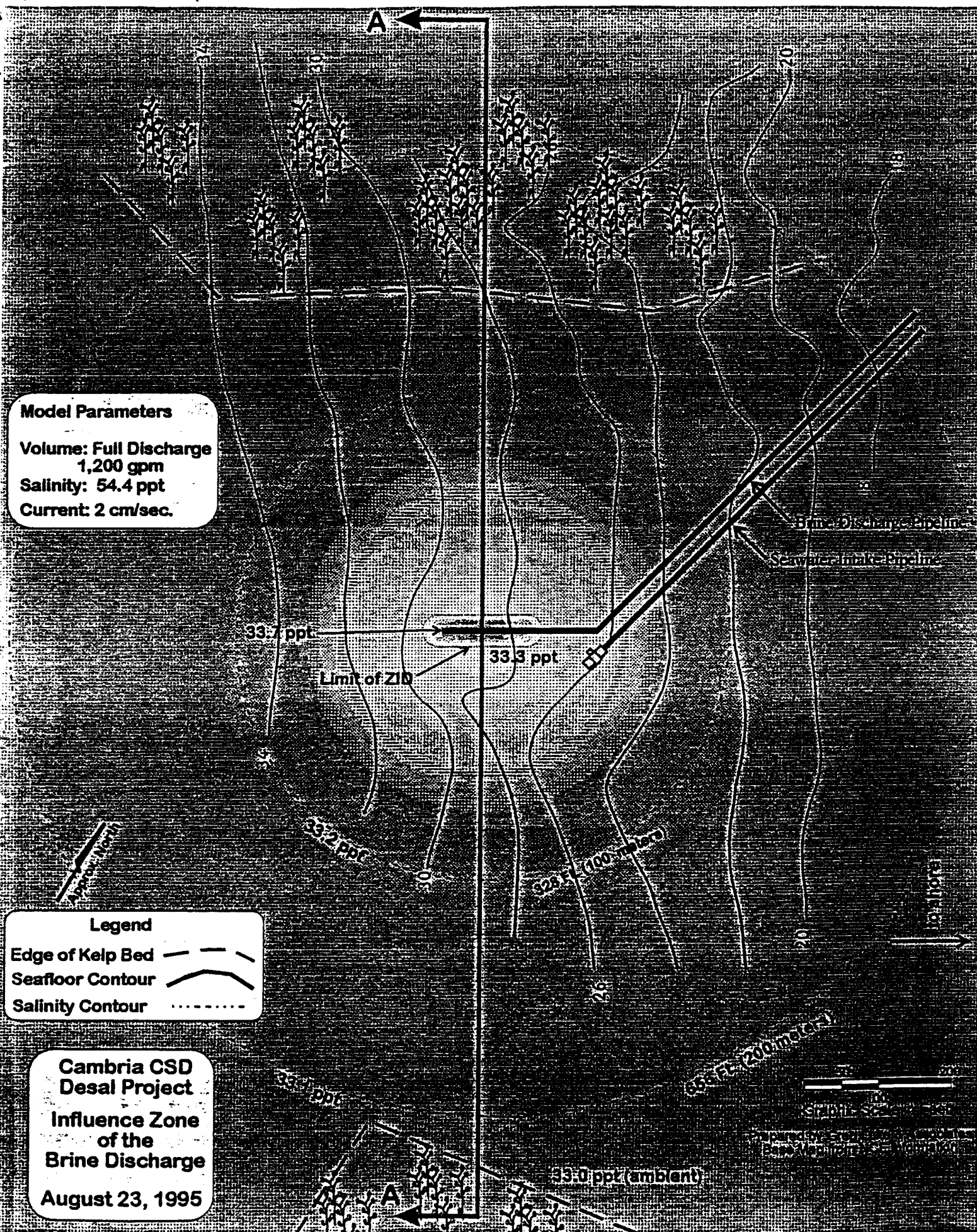
Model Parameters

Volume: Full Discharge
1,200 gpm
Salinity: 54.4 ppt
Current: 2 cm/sec.

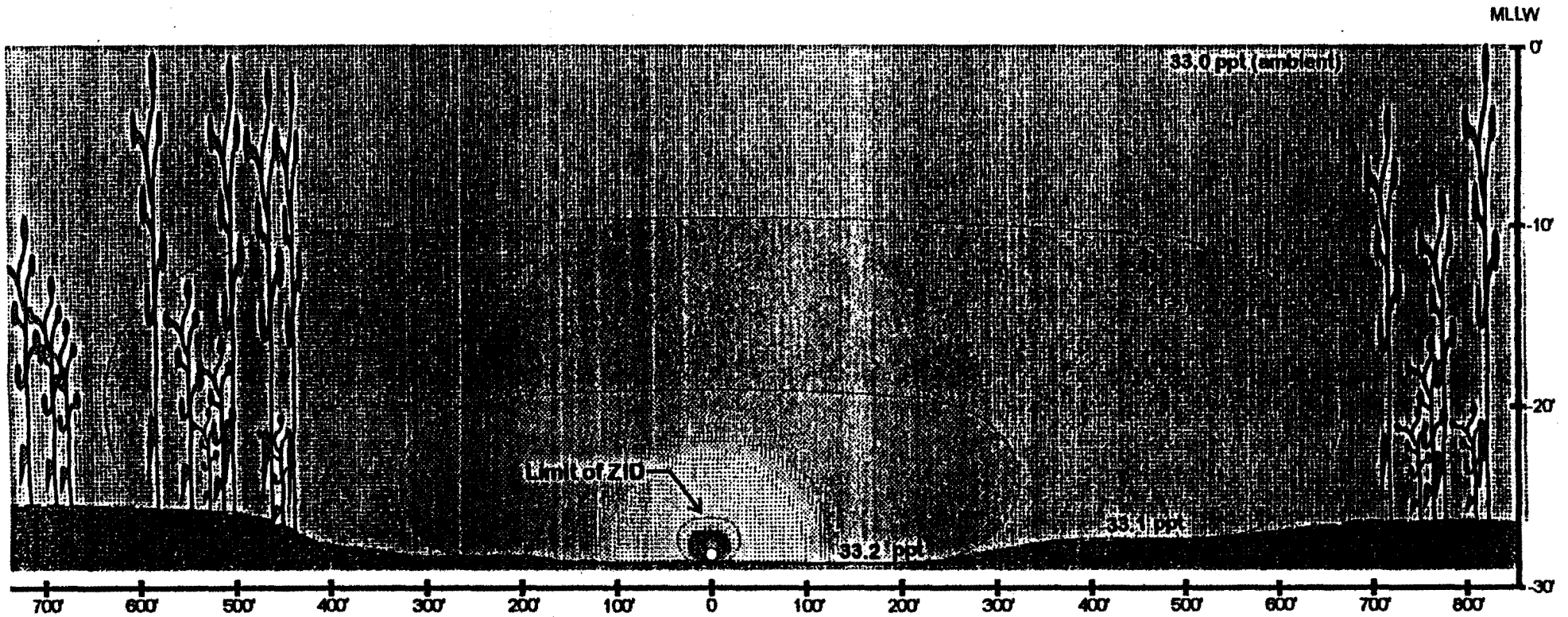
Legend

- Edge of Kelp Bed 
- Seafloor Contour 
- Salinity Contour 

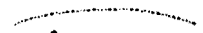
**Cambria CSD
Desal Project**
Influence Zone
of the
Brine Discharge
August 23, 1995




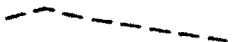
Section A-A



Legend

Salinity Contour 

Kelp 

Seafloor 

Model Parameters

Volume: Full Discharge
1,200 gpm

Salinity: 54.4 ppt

Current: 2 cm/sec.

**Cambria CSD
Desal Project**

**Influence Zone
of the
Brine Discharge**

August 23, 1995

Prepared by Greg Luke & Associates
Base Map from NCE information

EXHIBIT 5