

CALIFORNIA COASTAL COMMISSION

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Hearing Date: 06/13/00
Commission Action (Vote): Approval with
conditions (9-2); concurrence (9-2)

REVISED FINDINGS

CDP Application No.: E-98-027

Consistency Certification CC-041-00

Project Applicants: PC Landing Corporation & PAC Landing Corporation

Location: Meadow Creek corridor and State and federal waters offshore of Grover Beach, San Luis Obispo County (Exhibits 1 and 2).

Project Description: Bore three conduits under the seabed from shore to terminate at seafloor portals approximately 1,127 meters west of the mean high tide line; thread fiber optic cable through conduits and bury cable to the 1,000-fathom depth in federal waters; bore under Meadow Creek; lay cable on Grand Avenue.

Related Approvals: State Lands Commission. Right of Way Permits and General Leases approved April 20, 2000.

California Regional Water Quality Control Board, Central Coast Region. Conditional Waiver of Water Quality Certification, May 3, 2000.

U.S. Army Corps of Engineers. Determination to process as a Nationwide Permit 12 on April 24, 2000.

**Commissioners on the
Prevailing Side:**

Daniels, Desser, Dettloff, Estolano, Kruer, McClain-Hill,
Woolley, Wan

SYNOPSIS

PC Landing Corporation and PAC Landing Corporation (hereinafter "the applicants"), subsidiaries of Global Crossing Ltd., propose to construct and operate three oceanic telecommunications fiber optic cables to land at Pismo State Beach, City of Grover Beach, in the County of San Luis Obispo.

The three cables have the following name identifiers: PC-1 Segment E (PC-1E); PC-1 Segment S (PC-1S); and PAC Segment 1 (PAC-1). PC-1E will connect Grover Beach to Harbour Point, Washington where it crosses the Pacific to Ajigaura, Japan. PC-1S takes a direct trans-Pacific route to Shima, Japan. The PAC-1 cable parallels the Pacific Coast south to link Grover Beach with Amador, Panama, with a branching unit in Tijuana, Mexico. The cables will be extended onshore approximately one mile to the applicants' existing fiber optic cable terminal building in Grover Beach and from there connect to the existing fiber optic cable network facilities near the City of San Luis Obispo.

The applicants propose to bury each cable to a target depth of 0.6 to 1 meter (2 to 3.3 feet) within State waters and out to the 1,000-fathom water depth in federal waters (a distance of about 70 nautical miles). Seaward of the 1,000- fathom depth contour, the cables will be laid on the ocean floor.

The portion of the project that lies within the Coastal Commission's retained coastal permit jurisdiction, and is the subject of coastal development permit application E-98-027, is the burial of the three cables from the mean high tide line to the territorial extent of the waters of the State of California, the excavation and burial of the three cables onshore along Grand Avenue adjacent to the cable landing site, and the drilling of one onshore conduit under Meadow Creek to house the three cables.

The project also requires a federal permit from the United States Army Corps of Engineers ("ACOE") and therefore requires a consistency certification pursuant to Section 307(c)(3)(A) of the Coastal Zone Management Act. For the portion of the project that lies in State waters, the consistency certification is redundant; the coastal development permit serves as a consistency certification. On April 21, 2000, and as amended on May 5, 2000, the applicants submitted a consistency certification to the Coastal Commission certifying that the proposed activity complies with California's approved coastal management program ("CCMP") and will be conducted in a manner consistent with the CCMP.

This staff report is a combined coastal development permit and consistency certification.

Major Coastal Act issues associated with this project include potential impacts to marine resources, environmentally sensitive habitat areas ("ESHA") and commercial fishing. Please see Table 1 for a summary of potential impacts and proposed mitigation measures. The applicants have committed in their consistency certification to implement the proposed mitigation measures (conditions of permit approval) for the portion of the cable project constructed in federal waters.

The Commission staff recommends approval of the revised findings.

Commission Actions

On June 13, 2000, by a vote of 9-2, the Coastal Commission approved the proposed project as conditioned.

On June 13, 2000, by a vote of 9-2, the Coastal Commission concurred with the applicants' federal consistency certification.

Table 1. Issue Summary: Potential Impacts and Proposed Conditions and Measures

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
Marine Resources: Marine Mammals	Issue: Whales may become entangled with the PC-1S cable. Abandoned trawl nets may entangle and drown marine mammals or other marine wildlife. Mitigation Measures: Special Condition 4 requires that PC-1S be buried to a depth of 1.0 meter except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, the applicants shall bury the cable to the maximum depth feasible. Special Condition 5 requires that within 30 days of cable installation, the applicants shall submit to the Executive Director the as-built plan, including cable burial depth. The cable location shall be obtained using an acoustic navigation system linked to a surface differential global positioning system. The transponder for the acoustical navigational system shall be mounted on the equipment used for cable burial. Special Condition 6 requires that every 18 to 24 months for the life of project, the applicants shall survey the PC-1S cable route from the mean high tide line to the seaward limit of the territorial waters of the State of California to verify that the cable has remained buried. A third party approved by the Executive Director with a remotely operated vehicle ("ROV") equipped with video and still cameras shall conduct the survey. Within 30 days of survey completion, the applicants shall submit to the Executive Director a report describing the results of the survey. If the survey shows that a segment(s) of the cable is no longer buried consistent with the as-built cable burial plan, the applicants shall, within 30 days of survey completion, submit to the Executive Director for approval a plan to re-bury the cable. Special Condition 7 requires that within 90 days of either taking the cable out of service or after the expiration or sooner termination of the applicants' State Lands Commission lease(s) or permit(s), the applicants shall apply for an amendment to this permit to remove the cable from the seafloor.

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
Marine Resources: Marine Mammals	Special Condition 9 requires that a trained marine mammal observer, to be approved by the Executive Director in consultation with the National Marine Fisheries Service, shall be on the cable lay or support vessel to monitor marine mammals that approach the project work area. In the event that, in the opinion of the observer, project operations have the potential to threaten the health or safety of marine mammals or have the potential to take, as defined by the Endangered Species Act, a marine mammal, the observer shall have the authority to terminate all project activities until there is no longer a threat. Special Condition 11 requires that in the event that trawlers snag and cut their trawl gear due to entanglement with the PC-1S cable, the applicants shall use all feasible measures to retrieve the trawl gear as soon possible but no later than six weeks after receiving notice of the incident. The applicants shall provide notice to the Executive Director within seven days of gear retrieval efforts.
Commercial Fishing	Issue: Trawlers may snag their gear on a cable that is insufficiently buried or exposed and thus lose gear and fishing time. Mitigation Measures: The Commission is requiring Special Conditions 4, 5, 6, and 7 (See above).
Marine Resources: Hard Bottom	Issue: Disturbance to sensitive, rare, and slow-growing epifaunal species that reside on rocky substrates. Mitigation Measures: Special Condition 12 requires that if the as-built cable plan required by Special Condition 5 shows a segment(s) where the PC-1S cable could not be buried, the area will be presumed to be hard substrate (<i>i.e.</i>, hard bottom). In this event, within 30 days of project completion, the applicants shall submit a report to the Executive Director quantifying the extent of exposed rocky substrate impacted by cable-laying operations. Special Condition 13 requires the applicants to compensate for all project-related impacts to hard bottom habitat through payment of a compensatory hard bottom mitigation fee to be used to construct a new artificial reef or augment an existing artificial reef in State waters within the Southern California Bight. The construction of a new artificial reef, or augmentation of an existing reef, shall be carried out pursuant to a Memorandum of Agreement by and between the Coastal Commission, the California Department of Fish and Game ("CDFG") and the United Anglers of Southern California. The amount of the hard bottom mitigation fee shall be calculated by multiplying the total square footage of impacted hard bottom (as determined in the survey conducted under Special Condition 12) by a compensation rate of \$27.31 per square foot. The fee shall be paid to the United Anglers of Southern California within 30 calendar days of the results of the hard bottom

Significant Issue Area	Proposed Special Conditions and Mitigation Measures
Environmentally Sensitive Habitat Areas	survey required by Special Condition 12. Issue: Potential risk to wetland and sensitive species at Meadow Creek due to cable boring activities. Mitigation Measures: Special Condition 15 requires that prior to boring under Meadow Creek, the applicants shall submit to the Executive Director the California Department of Fish and Game Section 1600 Stream Alteration Agreement, or evidence from the CDFG that no agreement is needed. Special Condition 16 requires that prior to issuance of this permit, the applicants shall submit to the Executive Director for approval the name and qualifications of the biologist who will undertake the pre-construction surveys for the red-legged frog (<i>Rana aurora draytonii</i>). A copy of the pre-construction survey shall be submitted to the Executive Director prior to commencement of construction. Special Condition 17 requires that prior to issuance of this permit, the applicants shall submit to the Executive Director for approval a copy of the geo-technical evaluation required by the Regional Water Quality Control Board ("RWQCB"). Special Condition 18 requires that prior to issuance of this permit, the applicants submit to the Executive Director for approval the name and qualifications of the field biological monitor that shall be present during all boring operations under Meadow Creek. Special Condition 19 requires the applicants to notify immediately the Executive Director and the CDFG if cable boring activity cause impacts to Meadow Creek or downstream wetlands (e.g., an accidental release of bentonite). Within 60 days of notification, the applicants shall submit to the Coastal Commission a restoration plan in the form of an amendment to this permit.
Cultural Resources	Issue: Potential impacts on cultural resources from onshore land disturbance. Mitigation Measures: Special Condition 20 requires submittal of the finalized Memorandum of Agreement between the applicants and the Chumash Council and a copy of the Construction Cultural Resource Monitoring Report within 30 days of completion of the project.

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Appendix A. Standard Conditions

Appendix B. Substantive File Documents

1.0 STAFF RECOMMENDATION: ADOPTION OF REVISED FINDINGS

1.1 Findings for Commission Action: Approval

On June 13, 2000, the Commission approved, subject to the conditions set forth in the staff recommendation, the proposed project in Coastal Development Permit Application No. E-98-027, as described in the staff report dated May 31, 2000.

Accordingly, the Commission adopted the following resolution on June 13, 2000:

"The Commission hereby **approves** Coastal Development Permit E-98-027 for the proposed project and adopts the findings set forth below on the grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because either (1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or (2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment."

Motion:

I move that the Commission adopt the revised findings set forth in this staff report dated June 22, 2000 in support of the Commission's action on June 13, 2000, approving that portion of the project proposed in Coastal Development Permit Application No. E-98-027, as described in the staff report dated May 31, 2000.

Staff recommends a **YES** vote on the foregoing motion. Pursuant to section 30315.1 of the Coastal Act, adoption of findings requires a majority vote of the members of the prevailing side present at the June 13, 2000 hearing, with at least three of the prevailing members voting. Only those Commissioners on the prevailing side of the Commission's action on the permit are eligible to vote. See the list on page 2. Approval of the motion will result in the adoption of revised findings as set forth in this staff report.

1.2 Findings for Commission Action: Concurrence

On June 13, 2000, the Commission concurred in that portion of consistency certification CC-041-00 which certifies that the proposed project is consistent with the enforceable policies of the California Coastal Management Program (CCMP).

Accordingly, the Commission adopted the following resolution:

The Commission hereby **concurs** in the consistency certification CC-041-00 for PC Landing Corporation/PAC Landing Corporation which certifies that the proposed project is consistent with the enforceable policies of the California Coastal Management Program (CCMP).

Motion:

I move that the Commission adopt the revised findings in support of its concurrence on June 13, 2000 with consistency certification CC-041-00 which certifies that the proposed project is consistent with the enforceable policies of the California Coastal Management Program (CCMP).

Staff recommends a **YES** vote on the motion. Passage of this motion will result in adoption of revised findings in support of the Commission's concurrence on June 13, 2000 with consistency certification CC-041-00 which certifies that the proposed project is consistent with the enforceable policies of the California Coastal Management Program (CCMP). Only those Commissioners on the prevailing side of the Commission's action on the consistency certification are eligible to vote. An affirmative vote of a majority of those Commissioners on the prevailing side of the Commission's action on the consistency certification is required to pass the motion.

2.0 STANDARD CONDITIONS Appendix A.

3.0 SPECIAL CONDITIONS

This permit is granted subject to the following special conditions:

General Conditions

1. **Scope of Project Approval.** This permit authorizes PC-1S cable construction and installation activities as specifically described in the applicants' September 8, 1998 coastal development permit application submittals, as amended June 2, 1999, except as otherwise modified by the conditions of this permit. Any modifications of or additions to the project, as described in the referenced documentation, shall require an amendment to this permit.
2. **Indemnification.** In addition to any immunities provided for by law, in exercising this permit, the applicants agree to hold harmless and indemnify the Coastal Commission, its officers, employees, agents, successors and assigns from any claims, demands, costs, expenses and liabilities for any damage to public or private properties or personal injury that may result directly or indirectly from the project.
3. **Liability for Costs and Attorneys Fees.** The applicants shall reimburse the Coastal Commission in full for all costs and attorneys fees --- including (1) those charged by the Office of the Attorney General, and (2) any court costs and attorneys fees that the Coastal Commission may be required by a court to pay --- that the Coastal Commission incurs in connection with the defense of any action brought against the Coastal Commission, its officers, employees, agents, successors and assigns challenging the approval or issuance of

this permit, the interpretation and/or enforcement of permit conditions, or any other matter related to this permit.

Mitigation Measures

4. **Cable Burial Depth.** The PC-1S cable shall be buried to a depth of 1.0 meter except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, the applicants shall bury the PC-1S cable to the maximum depth feasible.
5. **Cable Installation Documentation.** Within 30 days of cable installation, the applicants shall submit to the Executive Director of the Coastal Commission (hereinafter "Executive Director") an as-built plan, including the depth of burial, of the PC-1S cable. The PC-1S cable location shall be obtained by an acoustic navigation system linked to a surface differential global positioning system. The transponder for the acoustical navigational system shall be mounted on the equipment used for cable burial.
6. **Cable Surveys.** Every 18 to 24 months for the life of project, the applicants shall survey the PC-1S cable route from the mean high tide line to the seaward extent of the territorial waters of the State of California to verify that the cable has remained buried consistent with the as-built cable burial plan required by Special Condition 5. A third party approved by the Executive Director with a remotely operated vehicle ("ROV") equipped with video and still cameras shall conduct the survey. Within 30 days of survey completion, the applicants shall submit to the Executive Director a report describing the results of the survey. If the survey shows that a segment(s) of a cable is no longer buried consistent with the as-built cable burial plan required by Special Condition 5, the applicants shall, within 30 days of survey completion, submit to the Executive Director for approval a plan to re-bury those cable segments.
7. **Cable Removal.** Within 90 days of taking the PC-1S cable out of service or after the expiration or termination of the applicants' State Lands Commission lease(s) or permit(s), the applicants shall apply for an amendment to this permit to remove the cable from the seafloor. Cable removal shall occur from the mean high tide line to the seaward extent of the territorial waters of the State of California.
8. **Marine Discharge.** There shall be no marine discharge of sewage or bilge/ballast water from vessels either installing or repairing the PC-1S cable.
9. **Marine Mammals.** A trained marine mammal observer, to be approved by the Executive Director in consultation with the National Marine Fisheries Service, shall be on the cable lay or support vessel to monitor marine mammals that approach the project work area. In the event that, in the opinion of the observer, project operations have the potential to threaten the health or safety of marine mammals or have the potential to take, as defined by the Endangered Species Act, a marine mammal, the observer shall have the authority to terminate all project activities until the observer determines there is no longer a threat.

10. **Marine Mammal Report.** Within 30 days of completion of the cable installation activities, the applicants shall submit to the Executive Director a copy of the marine mammal monitoring report required by condition 15 of the applicants' State Lands Commission lease(s).
11. **Ghost Nets.** In the event that trawlers snag and sacrifice their trawl gear due to entanglement with any of the PC-1S cable, the applicants shall use all feasible measures to retrieve the trawl gear as soon as possible but no later than six weeks after receiving notice of the incident. The applicants shall provide notice to the Executive Director within seven days of gear retrieval efforts.
12. **Hard Bottom.** If the as-built cable plan required by Special Condition 5 shows a segment(s) where the PC-1S cable could not be buried, the area will be presumed to be hard substrate (*i.e.*, hard bottom). In this event, within 30 days of project completion, the applicants shall submit a report to the Executive Director quantifying the extent of exposed rocky substrate impacted by cable-laying operations.
13. **Hard Bottom Mitigation Fund.** The applicants shall compensate for all project-related impacts to hard bottom habitat through payment of a compensatory hard bottom mitigation fee to be used to construct a new artificial reef or augment an existing artificial reef in State waters within the Southern California Bight. The construction of a new artificial reef, or augmentation of an existing reef, shall be carried out pursuant to a Memorandum of Agreement by and between the California Coastal Commission, the California Department of Fish and Game and the United Anglers of Southern California.

The amount of the hard bottom mitigation fee shall be calculated by multiplying the total square footage of impacted hard bottom (as determined in the survey conducted under Special Condition 12) by a compensation rate of \$27.31 per square foot. The fee shall be paid to the United Anglers of Southern California within 30 calendar days of the results of the hard bottom survey required by Special Condition 12.

14. **Oil Spill Contingency Plan.** Prior to issuance of this permit, the applicants shall submit evidence that an oil spill contingency plan for non-tank vessels greater than 300 gross tons has been approved by the California Department of Fish and Game Office of Spill Prevention and Response ("OSPR"), pursuant to the non-tank vessel contingency plan regulations found at 14 CCR Sections 825.03-827.02.
15. **Department of Fish and Game.** Prior to boring under Meadow Creek, the applicants shall submit to the Executive Director the California Department of Fish and Game Section 1600 Agreement for Stream Alteration or evidence that no agreement is required.
16. **Biological Surveys.** Prior to issuance of this permit, the applicants shall submit to the Executive Director for approval the name and qualifications of the biologist who will undertake the pre-construction surveys for the red-legged frog (*Rana aurora draytonii*). A

copy of the pre-construction survey shall be submitted to the Executive Director prior to commencement of construction.

17. **Geo-technical Evaluation.** Prior to issuance of this permit, the applicants shall submit to the Executive Director for approval a copy of the geo-technical evaluation requested by the Regional Water Quality Control Board ("RWQCB"). The geo-technical evaluation shall be concurrently submitted to the Department of Fish and Game, Region 3, Yountville.
18. **Biological Monitor.** Prior to issuance of this permit, the applicants shall submit to the Executive Director for approval the name and qualifications of the field biological monitor who shall be present during all boring operations under Meadow Creek. The applicants shall submit the routine biological monitoring reports to the Executive Director and the Department of Fish and Game concurrent with submittal to the Regional Water Quality Control Board.
19. **Notification of Meadow Creek Impact.** The applicants shall notify immediately the Executive Director and California Department of Fish and Game if boring activities cause impacts to Meadow Creek or downstream wetlands (*e.g.*, an accidental release of bentonite). Within 60 days of notification, the applicants shall submit to the Coastal Commission a restoration plan in the form of an amendment to this permit. The restoration plan shall be developed in consultation with California Department of Fish and Game and California Department of Parks and Recreation.
20. **Cultural Resources.** Prior to issuance of this permit, the applicants shall submit to the Executive Director a copy of the finalized Memorandum of Agreement with the San Luis Obispo County Chumash Council and a copy of the Construction Cultural Resource Monitoring Report within 30 days of completion of the project.

4.0 FINDINGS AND DECLARATIONS

4.1 Project Description

PC Landing Corporation and PAC Landing Corporation (hereinafter "the applicants"), subsidiaries of Global Crossing Ltd., propose to construct and operate three oceanic telecommunications fiber optic cables that will land at Pismo State Beach in the City of Grover Beach in the County of San Luis Obispo. The cables will extend onshore approximately one mile to the applicants' existing fiber optic cable terminal building in Grover Beach and from there connect to the existing fiber optic cable network facilities near the City of San Luis Obispo (Exhibit 5).

The three cables have the following name identifiers: PC-1 Segment E (PC-1E); PC-1 Segment S (PC-1S); and PAC Segment 1 (PAC-1). The PC-1 system has a ring configuration consisting of two United States and two Japan landings. PC-1E will connect Grover Beach to Harbour Point, Washington, where it crosses the Pacific to Ajigaura, Japan. PC-1E was completed up to the

edge of the project area (1,000 fathom contour) on March 20, 2000. PC-1S takes a direct trans-Pacific route to Shima, Japan. PC-1S was completed to a point approximately 90 miles offshore of Grover Beach on April 28, 2000.

The PAC-1 cable parallels the Pacific Coast to link Grover Beach with Amador, Panama, with a branching unit in Tijuana, Mexico. Cable installation of PAC-1 which lands 0.54 miles south of the U.S.-Mexico border is underway and will lay cable to the project area (1,000 fathom contour). (Exhibit 3)

The PC-1E and PC-1S cables will be operated pursuant to Cable Landing License No. DA 98-2351 issued by the Federal Communications Commission ("FCC") that authorizes the PC cables to be operated as a private carrier with no obligation to offer its capacity to the public. The PAC-1 cable will be operated pursuant to a Cable Landing License (No. DA 99-510) issued by the FCC that authorizes the PAC cable to be operated as a private carrier with no obligation to offer its capacity to the public.

From the proposed landing site in an undeveloped lot in Pismo State Beach three individual conduits will be bored under the beach and terminate at seafloor portals approximately 1,127 meters (3,700 feet) west of the mean high tide line. Fiber optic cable will be pulled from a cable laying ship through the ducts into a beach manhole at the landing site. From the end of the ducts to a water depth of 1,000 fathoms (6000 feet) the applicants proposed to bury the cables 0.6 to 1 meter (2 to 3 feet) below the seafloor using a seaplow or remotely-operated vehicle ("ROV"). The cables will be armored the entire route from the boreholes to the 1,000 fathom contour to minimize damage from external contact. Unarmored cable will lie on the ocean floor for the remainder of the offshore route beyond the 1,000-fathom contour (Exhibit 4).

The proposed project will require the use of one cable laying vessel, the *Dock Express 20*; a seaplow, the *Seaplow VI*, for cable burial; and, a ROV, the *Scarab X*, for burial where the Seaplow cannot operate. Additional vessels and equipment that may be required include a vessel for the pre-lay grapnel run, a tugboat, a dive support vessel, a vessel to pull the cable from the boreholes to the *Dock Express 20* and small support vessels.

The drilling of conduits and burying of the cables located on tidelands, submerged lands, and public trust lands to the seaward limit of the territorial waters of the State of California are the subject of this permit. This includes an onshore area along Grand Avenue extending from 250 feet west of the southwest corner of the staging area at Pismo State Beach to 200-feet east of Meadow Creek, and a corridor, approximately 125 feet wide, along Meadow Creek. Proposed development in these areas includes directional drilling under Meadow Creek and cable burial along Grand Avenue.

4.1.1 Installation of Offshore Ducts

The work site for drilling is located in Pismo State Beach in an unpaved, undeveloped lot immediately east of the State Beach parking lot at the end of Grand Avenue. The lot is not

adjacent to or in direct contact with the beach habitat or surf zone. Installation of ducts will take place within a 200-foot by 200-foot staging area on the lot. This lot itself is within the coastal development permit jurisdiction of the City of Grover Beach.

The three 5.25-inch diameter, steel drill conduits will be drilled in succession, each at an angle such that the offshore ends of the bores are at least 46 meters (150 feet) apart to provide a designed separation between cables to facilitate installation and repair. Once below the seabed the boring will have a minimum depth of 10.7 meters (35 feet) and a proposed average depth of 15 meters below the seabed (49 feet) until the boring emerges from the seabed at a water depth of approximately 16 meters (52.5 feet) and at an approximate distance of 1,127 meters (3,700 feet) west of the mean high tide line. The steel drilling casings are left in place as the duct for the cable. According to the Mitigated Negative Declaration (MND), a typical bore rig has a bore head equipped with a probe with compass (magnetometer) and inclinometer to monitor direction and depth. The boring will be controlled and a digital log of the location and depth of the casing will be compiled to allow an accurate description for the State Lands easement. A mixture of bentonite clay and water will be used as a lubricant during drilling operations. The onshore portal becomes the splicing manhole. Installation of the conduits and manhole is estimated to take four weeks.

4.1.2 Fiber Optic Cable Installation

Following installation of the conduits and completion of the landing area the fiber optic cable will be laid. There are four phases of the cable-laying process: (1) route surveys; (2) pre-lay grapnel runs in which the route is cleared of debris; (3) cable laying or burying; and (4) post-lay cable burial.

Route Surveys

The proposed cable routes were selected using available data on seafloor characteristics and seabed uses and additional hydrographic surveys by the applicants. A July 1998 hydrographic survey (side scan sonar, bathymetric) was performed to 5.6 km (3 nautical miles) offshore. In December 1998 a hydrographic route survey (side scan sonar, bathymetric, core grab samples) was done from 5.6 km offshore to the 1,000 fathom contour. The cable routes cross several "pockmarks", areas of circular depressions in the sediments, indicative of buried gaseous sediments. A burial assessment survey to determine seaplow performance capability in the area of the pockmarks was done in March/April 1999. According to the MND the selected routes consist of soft sediments and an absence of hard bottom habitat. Sections through the pockmarks will require post-lay burial.

Pre-Lay Grapnel Run

Immediately prior to each plowing operation, a pre-lay grapnel run is conducted. A differential global positioning system (DGPS) is used to navigate the route to be used by the main lay vessel. A large grapnel, 1 meter (3.38 feet) wide, is dragged along the entire proposed burial route for

each cable. The grapnel penetrates the seabed by approximately 40 cm (1.3 feet) in order to clear the route of obstacles (*e.g.*, discarded trawl nets) not detected on sidescan imagery that the cable plow may encounter as the cable is being laid. A vessel, as yet unidentified, will be used to pull the grapnel. This operation is estimated to require three days of work per cable for a total of nine days.

Cable Laying

The three cables will be laid sequentially. For PC-1S the cable lay and burial proceeds from the 1,000- fathom (6000 feet) contour to near the borehole exit; the cable is connected to shore. Next PC-1E cable lay and burial commences from the borehole exit to the 1,000-fathom contour where it will be spliced to the existing cable. The *Dock Express 20* returns to the PAC-1 borehole, connects the cable to the shore and then lays and buries the final cable to the 1000-fathom contour.

A single-armored cable will be laid from the borehole to the 100-meter (328 feet) water depth; from 100 meters to 1800 meters double-armored cable will be laid. The type of cable proposed for use contains eight optical fibers. Armoring consists of galvanized steel wires with a polyethylene sheath, neither of which contains additives harmful to marine life. The cable is coated with bitumen (asphalt) that adheres to the outer polypropylene covering. The diameter of the cable ranges from 28.9 mm (1.14 inches) to 35.9 mm (1.41 inches). Beyond the 1000-fathom contour the cable is not armored.

Cable installation involves threading the cables through the conduit portals to the onshore beach manhole. The cable ship will be positioned approximately 300 meters (980 feet) seaward of the conduit portals located about 1,127 meters (3,700 feet) west of the mean high tide line. The landward end of the cable is floated towards the conduit portal. The ship, *Dock Express 20* or comparable vessel, and support vessels will be equipped with onboard dynamic positioning systems allowing them to remain stationary without the use of anchors. Before installation divers will hand-jet a total of approximately 0.5 cubic meter (2 cubic yards) of sediments from each conduit portal. Next, the divers will attach the cables to a nylon pull rope previously installed in the conduit. An onshore winch will then pull the cables through the conduit and into the beach manhole onshore where they will be spliced to onshore cables. This operation will take approximately six to eight hours per cable.

From that point, the cable laying ship will deploy cable out to the 1,000-fathom isobath, which is approximately 130 kilometers (70 nautical miles) offshore along each route. As part of the main lay the cables will be buried by a hydroplow deployed from the cable laying ship from approximately 300 meters seaward of the conduit ducts to a water depth of about 1,100 meters (3,608 feet). The cable will be laid on the seabed surface to the 1,000-fathom contour awaiting post lay burial.

Post lay burial follows. A free swimming ROV with a jetting device is used where burial by plow is infeasible, *e.g.*, areas not accessible to the plow, water depths greater than 1,100 meters and

steep gradients or uneven surfaces. The ROV will bury nearshore from the conduit ducts to the 300-meter water depth and from the 1,000-meter contour to a depth of about 1,800 meters (1000 fathom isobath). In the nearshore waters, divers will assist in burial. ROV burial will also be required in some areas (possibility as much as seven kilometers) of pockmarks where the surfaces are uneven and could topple the hydroplow.

As reported by the applicants plow burial disturbs a seabed corridor 3 feet wide (0.9 meters) and ROV retro-burial disturbs a seabed corridor 7.87 feet wide (2.4 meters). The PC-1E cable will be plowed 69.45 miles (60.27 nm), and retro-buried 5.06 miles (4.39 nm). The PC-1S will be plowed 69.36 miles (60.29 nm) and retro-buried 6.27 miles (5.4 nm). The PAC-1 will be plowed 70.41 miles (61.18 nm) and retro-buried 9.28 miles (8.06 nm). Assuming all cable-laying activities are exactly on target, the applicants estimate 95.76 acres of seabed will be disturbed.

Main-lay cable operations will take place around the clock and are estimated to take 7 to 9 days per cable, or approximately one month. Post-lay burial is estimated to take an additional month.

The applicants propose to bury the project cables to a target burial depth between 0.6 to 1.0 meter depending on the type of bottom sediments encountered.

The burial techniques are described below.

Cable Burial Method-Main Lay/Hydroplow

The primary means of burying cable is the hydroplow. The plow uses a 12-inch-wide, modified hollow-share blade that penetrates the seabed up to one-meter (3.3 feet); places cable and allow the sediments to settle back over the cable. The seaplow has raised skids that prevent the plow from sinking into the seafloor, and allow the share blade to dig into the seabed to the desired burial depth. Although the share blade is the only portion of the seaplow penetrating the sediments the temporary construction area is 5.8 meters wide (19 feet), the full width of the seaplow. Cable tension is measured both at the lay engine aboard the vessel and at the seaplow. The plow is able to confirm the depth to which the cable has been buried by acoustically or electronically measuring the length of the blade in the sediment. This method has a 1.0 to 1.5 inch measure of uncertainty. The seaplow is equipped with lights and a video camera with which to record cable location and burial depth as the burial proceeds.

Before being launched by the cable ship, the plow is first loaded with cable while on board and then lowered to the seafloor. Upon entry into the water, the plow tow wire is subsequently paid out as the cable ship proceeds on the cable route. As it follows the route, the ship feeds the cable to the machine as it is being buried. The plow is towed at speeds from 0.5 to 1.0 knots (1 to 2 mph).

Cable Burial Method-Post Lay Burial/Sediment Jetting by ROV

After completion of main lay, in those areas where the hydroplow cannot be used, the ROV straddles the cable on the seabed and with a high pressured jet of water liquefies the seabed below the cable to a depth of 1.0 meter. The cable settles to the bottom of the fluidized area and as the ROV moves forward along the cable the sediment settles out over the cable. Multiple passes over the cable can achieve deeper burial depths. The sediment in the trench re-consolidates or re-densifies over time, depending on the nature of the material. In most cases, burial by ROV does not leave an open trench.

From the 1,100-meter water depth to the 1,830-meter water depth, the estimated rate at which the ROV will accomplish burial is 0.5 to 1.0 kilometers per hour. Up to seven kilometers of cable burial by the ROV may be required in the pockmarked areas. The applicants estimate it will take 28 days to retro-bury the three cables.

Installation of the conduits and manhole is estimated to take 4 to 6 weeks, followed by offshore cable installation, which is estimated to take 8 weeks.

4.1.3 Cable Maintenance and Repair

The proposed project also includes repair and maintenance of damaged cable, if necessary. The applicants do not anticipate that any cable maintenance and repair will be required over the life of the project (25 years) since the cables are designed to operate maintenance-free. Nonetheless, if the cables were damaged, that portion of the cable length would be lifted from the seafloor to the surface for repair.

Based on estimates of historical submarine cable fault data on the west coast in the Draft EIR for the Global West Fiber Optic Cable Project, the MND reports that there have been no faults to buried fiber optic cables off the California coast, and all faults to date have involved unburied cable systems. Historically, faults most likely result from fishing or anchoring activities, normally causing the cable to be kinked or crushed, instead of completely breaking. The three existing AT&T fiber optic cables landing at Montana de Oro State Park have been buried to a target depth of 0.6 to 1.0 meter and have not experienced any faults since they were installed between 1989 to 1993.

If a cable does become unburied due to a fault, it can normally be hooked using a grapnel. A grapnel is deployed about two water depths to one side of the cable and then pulled perpendicular toward the cable. After the cable is secured, the damaged section is cut either on the seabed with a special grapnel or raised to the surface. If the cable has remained buried or if adjacent cables are too close or near hard bottom habitat, a ROV with a jetting tool is used to unbury the cable. Once found, the damaged cable section would be cut on the seafloor and then raised to the surface by a mechanical arm on a ROV. After a series of tests and inspections, new cable is spliced to both ends and the final splice is lowered. Because the repair is jointed on the surface and then laid on the seabed, there is a length of "excess" cable equal to approximately twice the water depth at the site of repair. In water depths of 1,000 fathoms or less the repaired segment will be reburied by ROV.

4.1.4 Cable Abandonment

The applicants' estimate the operational life of each cable to be about 25 years. Upon the expiration of the applicants' State Lands Commission leases and the right-of-way permits or when the cables are taken out of service, whichever is sooner, the applicants propose to inspect the length of the cable to a water depth of 1,000 fathoms. Exposed segments of cable would be removed. The remainder of the cables would be abandoned in place. Under CSLC lease conditions the applicants could be required to remove all of the cable. At that time the cable operator would submit a plan to abandon or remove the cable to the agencies with jurisdiction.

Removing the cable would involve similar techniques as repair operations. Sections of the cable would be unburied, cut, lifted from the seafloor and gathered on the cable ship. Removal operations are not proposed in this application and therefore will require a separate coastal development permit or an amendment to this permit.

4.1.5 Onshore Development

The coastal zone within the City of Grover Beach is relatively small, about 325 acres, or approximately one-quarter of the City's area. Highway One separates the beach frontage area, known as the Beach Neighborhood, from the rest of the City. The Beach Neighborhood is about 4,200 feet long and about 1,600 feet wide and is partly developed with Pismo Beach State Park parking lot and two concessions - a golf course and a restaurant. The south half is undeveloped sand dunes. The City has just over three-quarters of a mile of beach frontage that includes the Grand Avenue ramp by which vehicles can drive onto the beach.

Proposed onshore project activities at the cable landing site, adjacent to the State Parks parking lot, include directional drilling from two sites, one for directional drilling to the offshore and the other for directional drilling toward the east, or onshore, passing under Meadow Creek. The onshore directional bore will begin from a 50 by 50-foot level, staging area approximately 100 feet west of Meadow Creek. It will continue under Meadow Creek to a point 1,053 feet to the east passing under Highway 1 and Union Pacific Railroad. Upon completion of directional drilling, the steel drill pipe will be used to pull an 8 inch diameter steel pipe into the bore as the drill pipe is withdrawn. The bore will be a minimum of ten feet below the bed of the creek. Like the cable landing drilling operation, a bentonite/water slurry will be used to lubricate the drill and return drill cuttings to the surface. The slurry return flow will be contained in a slurry sump in the staging area. A silt fence and berm will be constructed around the bentonite slurry sump. All bentonite lubricant, excavation spoils, and construction debris will be removed from the site when construction is completed and the site will be restored.

To install cable between the two directional boring sites, a four-foot trench, 350 feet long, would be dug along the north side of Grande Avenue. Three 4 inch PVC ducts with 1.25-inch inner ducts encased in concrete would be installed a minimum of 4 feet deep. The boring under

Meadow Creek and the cable installation on this section of Grand Avenue is within the Commission's coastal development permit jurisdiction. (Exhibit 6).

4.2 Prior Fiber Optic Cable Projects Approved by Coastal Commission

Three undersea AT&T fiber optic cables extend from a landing site at the Montana de Oro State Park Sandspit Road parking lot. Two cables extend to Hawaii. The third cable travels north along the California coastline to Bandon, Oregon before heading west to Japan. The Coastal Commission approved the installation, operation, and maintenance of one cable and four conduits (4-91-61), HAW-5, in January 1992, and the remaining two cables, TPC5-T1 and TPC5-G (4-91-006-A1) in September 1994. The Coastal Commission approved installation, operation, and maintenance of two fiber optic cables, JUS1 and SC-D, and five conduits (E-99-011) in April 2000. Three of the conduits will ultimately be sold to AT&T. In May 2000 the Coastal Commission approved installation, operation and maintenance of one fiber optic cable, S7, and continued consideration of the proposed E1 cable to the June 2000 hearing (E-98-029).

Through its federal consistency authority, the Coastal Commission has also concurred with consistency certifications, consistency determinations, and negative determinations for a number of submarine fiber optic cable-related projects by, for example, the Navy, Coast Guard, Federal Aviation Administration, and AT&T.

4.3 The Coastal Commission's Permit and Federal Consistency Jurisdiction

The Coastal Commission has original coastal permit jurisdiction over project areas on public trust lands, tidelands, and submerged lands from the mean high tide line to three nautical miles offshore. The portion of the project that involves the burial of cable within State waters (*i.e.*, seaward of the mean high tide line to three nautical miles offshore) and that portion of the onshore project that includes directional boring under Meadow Creek and installation of cable line in Grand Avenue require issuance of a permit from the Coastal Commission and are the subject of this coastal development permit application.

The project also requires a federal permit from the United States Army Corps of Engineers ("ACOE") and therefore requires a consistency certification pursuant to Section 307(c)(3)(A) of the Coastal Zone Management Act. For the portion of the project that lies in State waters or on state lands, the consistency certification is redundant; the coastal development permit serves as a consistency certification. For the portion of the project that lies outside the coastal zone in federal waters, the applicants submitted a consistency certification to the Coastal Commission on April 21, 2000 and an amendment to the certification, May 5, 2000, which clarified that all conditions of permit approval would apply to activities in federal waters.

The applicants have certified that the proposed activity complies with California's approved coastal management program ("CCMP") and will be conducted in a manner consistent with the CCMP.

This staff report is a combined coastal development permit and consistency certification.

4.4 Related Approvals

4.4.1 City of Grover Beach

The City of Grover Beach has coastal development permit ("CDP") jurisdiction for the cable landing, the directional boring for the three conduits from the Pismo State Beach cable landing site to the mean high tide, the onshore cable route (with the exception of the boring under Meadow Creek) and those improvements on Grand Avenue adjacent to the landing site. The City Manager conditionally approved Coastal Development Permit No. 98-033 on May 5, 2000. On May 24, 2000, Commissioners Wan and Potter appealed the City's decision because the CDP did not address impacts to public access and recreation. The applicants are currently working with the City to amend their project description to include access and recreation mitigation measures negotiated with the California Department of Parks and Recreation.

4.4.2 California State Lands Commission (SLC)

On April 20, 2000, the California State Lands Commission ("SLC") approved a General Lease-Non Exclusive Right-of-Way (PRC 8141.1) for PAC Landing Corporation. Inc. and General Lease-Non Exclusive Rights-of-Way, (PRC 8151 and PRC 8152) for PC Landing Corporation for those portions of the proposed cable project within State waters and submerged lands, and certified a mitigated negative declaration ("MND") pursuant to the California Environmental Quality Act ("CEQA") for the proposed project.

4.4.3 U.S. Army Corps of Engineers ("ACOE")

The U.S. Army Corps of Engineers ("ACOE") has regulatory authority over the proposed project under Section 10 of the Rivers and Harbors Act of 1899 (33 U.S.C. 1344) and Section 404 of the Clean Water Act ("CWA") (33 U.S.C. 1344). Section 10 of the Rivers and Harbors Act regulates the diking, filling and placement of structures in navigable waterways. Section 404 of the Clean Water Act regulates disposal of dredge and fill materials into waters of the United States. The dredging of sediment for a utility line is regulated under the Rivers and Harbors Act, and the burying of cable is regulated under the Clean Water Act.

The applicants have applied for a Nationwide Permit 12 for Utility Line Discharges. The ACOE made a determination to process the application as a Nationwide Permit on April 24, 2000.

Pursuant to Section 307(c)(3)(A) of the Coastal Zone Management Act, any applicant for a federal permit to conduct an activity affecting any land or water use or natural resource in the coastal zone must obtain the Coastal Commission's concurrence in a certification to the permitting agency that the project will be conducted consistent with California's approved coastal management program. As discussed above in section 4.3 of this report, the applicants submitted a consistency certification on April 21, 2000 and an amendment to the certification on

May 5, 2000, which clarified that, all relevant mitigation measures would apply to federal waters as well as state waters.

The applicants have certified that the proposed activity complies with California's approved coastal management program ("CCMP") and will be conducted in a manner consistent with the CCMP.

4.4.4 Regional Water Quality Control Board – Central Coast Region ("RWQCB")

The California Regional Water Quality Control Board – Central Coast Region ("RWQCB") regulates waste discharges into receiving waters in the project area. The applicants applied for a water quality certification/waiver pursuant to Section 401 of the Clean Water Act on February 11, 2000. The Board issued a conditional Waiver of Water Quality Certification on May 3, 2000.

4.4.5 San Luis Obispo Air Pollution Control District ("APCD")

The San Luis Obispo Air Pollution Control District ("APCD") is the local air district responsible for implementing federal and State air quality standards in the project area. No air district permits are required for the proposed project. However, in consultation with APCD, the applicants have incorporated mitigation measures to reduce NO_x emissions to a less than a significant level.

4.4.6 California Department of Parks and Recreation

The project area that west of and including Meadow Creek to the mean high tide is public recreational property, part of Pismo State Beach. On May 22, 2000 the applicants submitted a draft easement and a draft temporary use permit issued by the California Department of Parks and Recreation.

4.5 Coastal Act Issues

4.5.1 Dredging and Placement of Fill in Coastal Waters

Coastal Act Section 30108.2 defines "fill" as "earth or any other substance or material, including pilings placed for purposes of erecting structures thereon, placed in a submerged area." The fiber optic cables constitute fill as defined in Coastal Act Section 30108.2. Burying each cable will also require dredging a 2.6 ft. to 8 ft. wide (depending on burial method) trench from a location about 1,127 meters (3,700 feet) west of the mean high tide line to the 1,000-fathom contour in federal waters (approximately 70 nautical miles in length) along each route. The applicants estimate that the area of disturbance is 95 acres.

Coastal Act Section 30233(a) states in part:

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.*
- (2) Maintaining existing, or restoring previously dredged depths on existing navigational channels, turning basins, vessel berthing and mooring areas, and boat launching ramps.*
- (3) In wetland areas only, entrance channels for new or expanded boating facilities; and in a degraded wetland, identified by the Department of Fish and Game pursuant to subdivision (b) of Section 30411, for boating facilities if, in conjunction with such boating facilities, a substantial portion of the degraded wetland is restored and maintained as a biologically productive wetland. The size of the wetland area used for boating facilities, including berthing space, turning basins, necessary navigation channels, and any necessary support service facilities, shall not exceed 25 percent of the degraded wetland.*
- (4) In open coastal waters, other than wetlands, including streams, estuaries, and lakes, new or expanded boating facilities and the placement of structural pilings for public recreational piers that provide public access and recreational opportunities.*
- (5) Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*
- (6) Mineral extraction, including sand for restoring beaches, except in environmentally sensitive areas.*
- (7) Restoration purposes.*
- (8) Nature study, aquaculture, or similar resource dependent activities.*

Coastal Act Section 30233(a) restricts the Coastal Commission from authorizing a project that includes fill or dredging in open coastal water unless it meets three tests. The first test requires that the proposed activity must fit into one of eight categories of uses enumerated in Coastal Act Section 30233(a)(1)-(8). The second test requires that there be no feasible less environmentally damaging alternative. The third and last test mandates that feasible mitigation measures be provided to minimize the project's adverse environmental effects.

PC-1S Cable

One of the eight allowable uses of fill under 30233(a)(1), of which the portion of the proposed project consisting of the PC-1S cable is defined as, is a coastal-dependent industrial facility. The proposed PC-1S cable, whose purpose is to directly connect the United States to Shima, Japan, is "coastal-dependent" since it requires "a site on, or adjacent to the sea to be able to function at all" as defined in Coastal Act Section 30101. The Commission thus finds that the portion of the proposed project consisting of the PC-1S cable meets the allowable use test of Coastal Act Section 30233(a).

The Commission must further find that there is no feasible less environmentally damaging alternative to the proposed project.

The MND evaluated three landing site and offshore alternatives (1) Chevron Estero Marine Terminal in Morro Bay, (2) Oceano Dunes Recreation Area and (3) AT&T Montana de Oro:

- Chevron Estero Marine Terminal: The project cables could land at the Chevron Estero Marine Terminal located off Highway 1. The facility is currently being decommissioned and contains two or three crude oil and other pipelines that could be converted into fiber optic cable conduit, pursuant to an application before San Luis Obispo County. This would avoid the need to drill ducts.

The MND found that this alternative would have greater impacts than the proposed Grover Beach development for several reasons: (a) the seabed at Estero Bay would be less likely than the seabed offshore of Grover Beach to facilitate burial of the cable at water depths at which fishing can occur; (b) existing subsurface piping could affect cable grounding and operation; (c) development activities could impact Highway 1 traffic flow; (d) the site is 20 miles from backbone facilities in San Luis Obispo compared to 0.5 in Grover Beach and therefore more extensive onshore routing would result in greater impacts; and (e) there is more hard substrate offshore that is unavoidable.

- Oceano Dunes Recreation Area. The site is located on Pier Avenue in the city of Oceano at a public beach access road and parking area. The applicants' design team eliminated this site because (a) there was limited area for the grounding bed and equipment staging for the drilling operation, and (b) no appropriately zoned and available industrial sites were identified in the City of Oceano. The site is 1.5 miles from the closest location for a cable station connection.
- AT&T Montana de Oro. The applicants considered and rejected a landing site near the AT&T site at Montana de Oro primarily for the following reasons: (a) routing cables to the north of the AT&T landing would locate them in area already rejected because of unsuitable seafloor conditions; (b) routing to the south would be between TPC5 and Hawaii 2 cable systems and the Santa Lucia Bank where there is a history of poor burial; and (c) due to the presence of hard bottom substrate, there would be no environmental benefit to this route.

The MND found that the proposed landing site and cable route were the superior alternative. They were selected based on the following criteria: the offshore environment has a sandy seafloor, a soft substrate, which typically has lower environmental sensitivity and allows complete burial which reduces interference with marine uses and marine life. The landing site has appropriate zoning and a sufficient land area without sensitive habitat. The Commission thus finds that the proposed PC-1S route is the least environmentally damaging route.

The final requirement of Coastal Act Section 30233(a) is that dredging and filling of coastal waters may be permitted if feasible mitigation measures have been provided to minimize any adverse environmental effects. In other sections of this report, the Commission has identified feasible mitigation measures that will minimize the adverse environmental effects of the PC-1S cable. With the imposition of the conditions of this permit, the Commission thus finds that the third test of Coastal Act Section 30233(a) has been met. The Commission therefore finds the development of the proposed PC-1S cable consistent with Coastal Act Section 30233(a).

PC-1E and PAC-1 Cables

Coastal-Dependency

The PC-1E cable is proposed to connect telecommunications facilities in Grover Beach to facilities in Harbour Point, Washington. The PAC-1 cable is to be routed from Grover Beach to Panama with secondary cables to Tijuana and Mazatlan, Mexico. As such, the proposed submarine cable segments are to parallel the California coastline. As evidenced by the applicants' "Evaluation of Potential Impacts of a Terrestrial Routing" found in the MND, these cables could feasibly be placed on land and inland of the coastal zone. The PC-1E and PAC-1 cables are therefore not coastal-dependent since they do not require "a site on, or adjacent to, the sea to be able to function at all as defined in Coastal Act Section 30101. Although a land-based cable system is not the applicants' preference, it is feasible to locate these proposed cables on land. Thus, the Commission finds that the proposed PC-1E and PAC-1 cables do not qualify as coastal-dependent industrial facilities pursuant to section 30233(a)(1).

Incidental Public Service Purposes

Coastal Act section 30233(a)(5) allows the filling of open coastal waters for "*Incidental public service purposes, including but not limited to, burying cables and pipes or inspection of piers and maintenance of existing intake and outfall lines.*" The two tests that must be met to qualify under this subsection include: (1) the use must be for incidental purposes including the burying of cables and; (2) the use must offer a public service.

The applicants propose to bury the PC-1E and PAC-1 cables to a target depth of 0.6 to 1.0 meter out to the 1000-fathom water depth. As expressly defined by section 30233(a)(5), the burying of the cables can be considered an "incidental public service." Therefore, the Commission finds that the proposed cable meets the first test under section 30233(a)(5).

According to the applicants, the proposed project will provide telecommunication services to the public. Both cable networks are majority-owned (approximately 60%) and controlled by Global Crossing Ltd. The other owner is Marubeni Pacific Cable Limited, a Japanese company that will handle sales in Japan only.

Pursuant to the Cable Landing License Act (47 U.S.C. § 34 *et. seq.*), no person shall land and operate a submarine cable in the United States unless a written license is issued by the President of the United States through the Federal Communications Commission ("FCC"). The Act authorizes the FCC to issue a Landing License "upon such terms as shall be necessary to assure just and reasonable rates and service in the operation and use of cables so licensed." An applicant for a landing license for an international telecommunications cable can seek approval as either a "common carrier" or a "private carrier". However, under the Act, the FCC has the authority to require the cable to be operated as a "common carrier" facility. The FCC's grant of a Landing License to a "private carrier" applicant reflects a determination by the FCC that, under the circumstances presented by a particular application, such a grant serves the public interest to no less a degree than would be served by granting the license to a "common carrier" applicant.

The difference under current FCC policy between the two operating regimes is that a private cable has potentially more flexibility in its pricing than does a common carrier cable. Pricing flexibility in practice generally means how much volume discount is given to investors or buyers who purchase larger ownership shares in the system, or to other common carriers who buy capacity on the system from the owners. The applicants have indicated that the FCC "has found private carrier status appropriate where capacity is made available to individual customers in the form of tailored and flexible arrangements, which enable customers to make long-term plans for the use of facilities with an assurance as to price and availability" (Cook, 2000). Conversely, common carriers are required to provide capacity on their systems under tariff and on non-discriminatory terms and conditions¹.

For both networks, the applicants requested a license under the FCC's private submarine cable policy. In both licenses, the FCC stated that its private submarine cable policy is intended to promote competition in the provision of international transmission facilities. According to the applicants, when the Japan-U.S. Cable Network license was granted, the FCC found that 'the public interest is best served by promoting the rapid expansion of capacity in order to promote facilities-based competition that will result in innovation and lower prices to consumers of international telecommunications services' (Cook, 2000). Ultimately, the FCC found that under the Cable Landing License Act, it was appropriate to license both networks as private carriers. The FCC issued the PC and PAC landing licenses in November 1998 and March 1999, respectively.

¹ According to the applicant, common carrier cables are also required to have an international common carrier facilities authorization, known as Section 214 authority, which is reference to section 214 of the Communications Act of 1934.

While the FCC found that the owners of the networks do not plan to offer capacity on a common carrier basis, it also found, as stated in the PC landing license, that "...it is not necessary to require that PC-1 be operated on a common carrier basis at this time". In the PAC license, the FCC found that "...it would not serve the public interest to impose common carrier regulation on the operations of PAC at this time." The following discussion in section 7 of the PAC license (nearly identical in the PC license) served as the basis for the above findings:

...[T]he Commission has stated that there will be no legal compulsion to serve the public indifferently where there is no public interest reason to require facilities to be offered on a common carrier basis. This public interest analysis has generally focused on whether an applicant will be able to exercise market power because of the lack of alternative facilities. Where there are sufficient alternatives, the Commission has found that the licensee will lack market power and will not be able to charge monopoly rates for cable capacity. The Commission has found that, in those circumstances, the public interest would be served by allowing a submarine cable to be offered on a non-common carrier basis.

The FCC continues in the PC license by citing other alternative submarine cables, including AT&T's China-U.S. and TPC 5, and satellite facilities between the U.S. and Japan. In the PAC license the FCC found that the PAC network "is not affiliated with any foreign carriers on the foreign ends of the cable system and therefore does not control any bottleneck facilities (e.g., those with potential monopoly-like control) in the markets PAC proposes to serve" (3). In other words, the FCC found that there is or will be sufficient competition within both routes to ensure fair pricing.

It should also be noted that, pursuant to section 19(6) of the Landing Licenses, the FCC retains the right to impose common carrier or common carrier-like obligations on the applicant if the public interest so requires. Moreover, the FCC has the authority to [re]classify both networks as common carrier facilities if the public interest requires.

The fact that the PC and PAC cables have been authorized by the FCC as private carriers does not necessarily distinguish its customer base from that of common carriers. The FCC has found, and the applicants have confirmed, that they will be offering capacity to, among other users, common carriers. With respect to the applicants' existing Atlantic Crossing (AC-1) cable, approximately 96% of its capacity activated in 1999 was for common carrier customers, who then use that capacity in their provision of services to the public. The applicants expect the PC-1 and PAC cables to carry the same customer base. By purchasing "global package" capacity in the AC-1 network, these same common carrier customers have purchased or have indicated their desire to purchase capacity on the PC-1 and PAC networks.

Thus, the Commission finds that the PC-1E and PAC-1 cables will provide a public service and therefore, meet the second "incidental public service" test. By satisfying both tests, the Commission finds that the PC-1E and PAC-1 cable systems are an allowable use under section 30233(a)(5).

No Feasible Less Environmentally Damaging Alternative

After qualifying as an allowable use under section 30233(a), the Commission must find that there is no feasible less environmentally damaging alternative to the proposed project.

The proposed PC-1E and PAC-1 submarine cables are to parallel the California coast and land at Harbour Point, Washington, and Tijuana, Mexico, respectively. The MND describes hypothetical land-based routes for the PC-1E and PAC-1 cables to provide a comparative analysis of the development requirements and environmental impacts of a land-based route as compared to an offshore route.

The hypothetical land route chosen by the applicants is approximately 970 miles in length, constructed along frontage roads to I-5 and US-101. In order to create a redundant system, four separate cable routes, two each for the PC-1E and PAC cable segments, would be required. However, only one state-long route was defined in the MND as the impacts would be representative of installation of the other cables.

The terrestrial cable system components consist of cable conduit, assist pull vaults, splice vaults, signal regeneration or amplification facilities and cable station (network interconnect facilities). Flexible, high-density polyethylene conduit used to house cable range from 1.5 to 2.0 inches in diameter. This conduit is buried in a trench 1.0 to 2.0 feet wide and roughly 4.0 feet deep. Assist-pull vaults or small manholes are installed every 2,000 to 5,000 feet along the route to provide access to cable for future repairs or upgrades. Long distance cable networks require data signals to be amplified or regenerated along the route every 50 to 75 miles along the route to boost the signal. These regeneration buildings are approximately 1,000 square feet in size. Marker poles, 3.0 to 10.0 feet in height are placed at intervals ranging from 500 to 1,000 feet to alert others of the buried cable.

Based on the criteria above, the MND estimates that approximately 450 assist-pull vaults and 40 regeneration stations would be required along each of the four terrestrial cable routes. Development activities would entail right of way preparation, plowing, trenching, duct placement, backfill, and vault installation. At roadway crossings either trenching or boring would be required; at waterway crossings use of existing conduit and bridge attachments, or trenching through intermittent streams and wetlands or directional boring under perennial streams and wetlands. In addition, the MND notes that a land-based route would require surface restoration, grading, pavement, curb and gutter repair, erosion control, and cable marking.

According to the applicants, the hypothetical land route would pass through 40 watersheds and within one mile of 67 rivers and streams. It would cross through the Santa Lucia, Sierra Madre, Tehachapi, San Gabriel and Santa Ana mountain ranges. Roughly 25 percent of the route traverses through agricultural land. The route may impact sensitive plant communities and 44 Significant Natural Areas (e.g., areas that support rare species and/or habitats and have high species-richness). However, according to the applicants' consultant, generally, any potential

significant impacts of this land-based route can be mitigated to insignificant levels by implementing all feasible mitigation measures (Johnson, 2000).

The Commission staff requested additional information on April 26, 2000 regarding the feasibility of installing multiple cables within a common trench and relying on a common regeneration facility, the estimated overall cost to develop a terrestrial cable, and federal and state policies on installing cable along highway rights-of-way. The applicants provided the following responses on May 2, 2000. Redundant paths cannot be constructed in the same trench or in any way share facilities with each other and retain redundancy for they would be subject to the same failures. The estimated overall cost to develop a terrestrial cable route is \$250,000 per mile. The Federal Highway Administration has delegated to state highway agencies discretionary authority to accommodate longitudinal utility installations. According to the California Department of Transportation, placement of longitudinal utilities encroachments within freeway ROW is prohibited except in extreme cases. New public utility facilities may be placed within the ROW of frontage roads or parallel roads outside the access control of the freeway ROW.

On May 23, 2000, Commission staff submitted another request to the applicants for additional information on terrestrial failure rates, the feasibility and potential impacts of installing cables on other land-based routes in their entirety such as along railroads and Highway 101, federal regulations governing use of highway right of ways, and the applicants ownership or interests in terrestrial based fiber optic cable systems. The Commission staff received an electronic mail response regarding federal regulations (May 24, 2000; see above) and discussed with the applicants their ownership interest in Frontier, a small, land-based system, but received the balance of the information on May 31, 2000. The Commission staff did not have sufficient opportunity to review and analyze this information before the publication of this report on June 1, 2000.

Subsequent to this date, staff has had an opportunity to review this response. In its response, the applicants state that they do not own or lease any existing ROW or infrastructure on the west coast from Grover Beach to Seattle. They do have rights to use capacity within an existing fiber optic cable network running from Grover Beach to Seattle, inherited in its purchase of Frontier Telecommunications in September 1999. However, according to the applicants, this capacity is not technologically or practically compatible with the capacity that PC-1 proposes to accommodate. With respect to using or acquiring ROW along railroad corridors, the applicant asserted that project construction within railroad ROWs is "hampered" by the presence of existing utilities and the potential for damage from construction to these existing utilities. Along Highway 101, adjacent steep slopes may not provide off-pavement ROW in which utilities can be constructed without risk of slope failure and resultant cable damage. Even though a terrestrial route to Mexico was addressed in the MND, the applicants maintain that "international politics and the internal culture and politics of each country it traverses" would render the route unreliable and thus infeasible. In response to the possibility of sharing trenches with other cable projects, the applicants state that this scenario "would provide an economical advantage to those companies that have pre-existing conduit...at the expense of newer telecommunications businesses." Finally, the applicants provided a cable failure rate analysis that concludes that the

rate of terrestrial failures are 6.3 to 37.8 times higher than submarine cable failure rates.²

In order to determine the least environmentally damaging alternative for the proposed project, a comparison of the degree of offshore impacts with onshore impacts is appropriate. This staff report identifies potential impacts of the proposed project to marine resources, including but not limited to, marine mammals and infauna and epifauna organisms that reside in or on seafloor substrates, water quality, commercial and recreational fishing, air quality, public access and recreation, and cultural resources. With respect to previously permitted fiber optic cable projects, the Commission has found that, as conditioned, the projects will be carried out in a manner that maintains marine resources and sustains the biological productivity and quality of coastal waters and therefore is consistent with sections 30230 and 30231 of the Coastal Act. The Commission also has found that the projects will protect against the spillage of petroleum products and be consistent with air pollution control district requirements.

The onshore route, however, may potentially impact sensitive or protected resources such as endangered or threatened wildlife species, wetlands, and riparian habitat. The possibility of bentonite blow-outs due to directionally drilling under streams and impacts to riparian vegetation and habitat may adversely affect protected anadromous fish and other species. No sensitive or protected species are anticipated to be impacted by the proposed project in the offshore routes. Additionally, due to the necessity of constructing redundant onshore routes to increase the reliability of the cable network, any potential onshore impacts may be exacerbated or increased to levels greater than those that may occur in the offshore routes. For example, onshore air quality emissions may increase two-fold and the potential to impact cultural and paleontological resources may be greater because those resources are commonly found on land. Because of the large number of streams and creeks proposed to be crossed, impacts to water quality due to erosion and sedimentation from trenching and boring operations near or adjacent to these streams may also be higher and have more deleterious effects than the offshore routes.

The dilemma faced by the Commission is that in the absence of route specific information (e.g., biological surveys, alternative stream crossing methods, sharing of existing cable "corridors") it is not possible for the Commission to determine that there is a "feasible, environmentally less damaging alternative" to the ocean alignment of the cable. Thus, in this case the Commission, relies on the general information provided by the applicant.

The applicants argue that land-based routes are infeasible, as defined by the Coastal Act. They cite temporal, economic, environmental, and reliability factors in their arguments. For example, they state that negotiating access rights for each cable could take 2.5 years, as would the associated field surveys and the public review process. According to the applicants, construction costs for both routes, including redundant routes, would reach approximately \$1.3 billion, ten times greater than the cost of the offshore route. They also maintain that a land-based route would be subject to higher rates of damage than offshore routes, rendering the route unreliable

² The applicant states that the assertion that terrestrial failures are 10 to 100 times more frequent than submarine failures was "a rough estimate". It should be noted that AT&T also cites and relies on this failure statistic.

from a system security perspective, and thus infeasible. Based on the above information regarding greater potential environmental impacts to resources along the proposed onshore route as compared to potential impacts to offshore resources, the Commission finds that the onshore route is infeasible.

Therefore, the Commission has determined that there is no feasible less environmentally damaging alternative to the proposed project. Accordingly, the Commission finds that the proposed project is consistent with Coastal Act section 30233.

4.5.2 Marine Resources and Water Quality

Coastal Act Section 30230 states:

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.

Coastal Act Section 30231 states:

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

The MND identifies the following potential marine biological resource and water quality impacts that could be caused by project operations in the offshore marine environment: (1) whale entanglement in exposed cable on the seafloor; (2) marine mammal collision or entanglement during installation; (3) vessel noise impacts on marine mammals; (4) direct harm/mortality to Pismo clams during installation; (5) direct harm/mortality to sand dollars, *Dendraster excentricus*; and (6) disturbance of benthic biota during offshore cable installation or repair.

4.5.2.1 Potential Whale Entanglement with the PC-1S Cable

There is the potential for some whales that migrate through coastal waters in the project area to become entangled in cables, especially cables that are unburied or insufficiently buried or become exposed over the life of the project. Although, to date, whale entanglement with fiber optic cables has not been reported offshore California, Heezen (1957) documents 14 examples of

sperm whale entanglements worldwide. Two whale species are known to migrate past the project area --the California gray whale (*Eschrichtius robustus*) and sperm whale (*Physeter macrocephalus*). Of these two species, the gray whale is more at risk of entanglement because it is far more common off the California coastline and more numerous. The majority of sperm whale sightings by Dohl et al. (1983) occurred at water depths exceeding 2000 meters. Because of their rarity within project waters, impacts to sperm whales are considered unlikely to occur.

Whales are protected by the Marine Mammal Protection Act of 1972. In addition, the sperm whale is federally listed as endangered species and therefore protected by the federal Endangered Species Act. Gray whales have been delisted from the federal endangered species list due to increased population numbers. Cable entanglement with other marine mammals such as pinnipeds (e.g., sea lions, harbor seals) and fissipeds (e.g., sea otters) is not expected to occur because these animals do not exhibit similar feeding behaviors in bottom sediments.

In the only study on whale entanglement, Heezen (1957) details 14 examples of sperm whale entanglement in areas around the world. Most of the entanglements evaluated by Heezen involved cases of deep-diving, bottom-feeding sperm whales that, he postulated, became entangled "...while swimming along in search of food, with their lower jaw skimming through the upper layer of sediment. It may also be that the whales attacked the cable mistaking it for prey." The research method of the Heezen study was a search of all available cable failure records of four cable companies; the record is considered complete for those companies for the years 1930-1955. The report documented fourteen instances of whales entangled in submarine cables that led to death. All whales positively identified were sperm whales, with possible entanglements of baleen (e.g., gray) whales in shallower water, and one humpback whale reported entangled in Alaskan waters.

The MND reports that other researchers have found that sperm whales make deep dives but do not forage in the sediments. A sperm whale will swim with its mouth open rather than dig or forage in sediments (Lockyer 1997).

The scope of the Heezen study was somewhat limited by the fact that, prior to 1930, cable failure reports generally lacked detail or were incomplete. Our current knowledge of whale entanglements is further limited by the lack of any contemporary and comparable analysis of this topic. Moreover, since many cables have been abandoned since first laid, and since the only basis for discovering entanglement --- interruptions to service -- is not possible for abandoned cables, the present rate of whale entanglement is unknown.³ Based upon the limited information

³ At the time of the study, there were nearly a half-million miles of cable laid on the sea floor in various parts of the world (Heezen 1957). By 1928 21 separate cables crossed the Atlantic to Canada and the United States, and by the mid 1950s, the British global network alone represented 155,000 nautical miles of cable. At present, 658,375 km of fiber optic cable is expected to be installed and operational by the year 2003, with an additional 164,106 km to be installed, but with no firm cutover date (Rampal 1998). That figure equates roughly to an additional 514,050 miles of cable in the marine environment, making a total of more than 1 million miles of cable in the marine environment, not including that which was installed between 1957 and the advent of fiber optic cable installation, and any which may have been removed since then.

available, it appears that the entanglement risk posed by submarine cables is affected by these factors: oceanic depth of the cables; burial depth of the cables; presence of suspended cables over submarine trenches; and the relative tautness of unburied cables. More specifically, shallow, unburied, looped or suspended cables pose more of a hazard than deeply buried cables.

There are approximately 20,000 gray whales migrating through California waters each year. Due to their abundance off the Pacific coast, their tendency to hug the shoreline during migration, and their bottom feeding patterns, the gray whales face the highest risk of entanglement with project cables that are insufficiently buried or are exposed.

The MND reports that a few resident seasonal gray whales (approximately 100) inhabit and feed in the waters off of Northern California, Oregon, and Washington all summer (Calambokidis 1999). The gray whale migrates along the western U.S. and Canadian coastlines from its feeding habitat in the Bering and Chukchi Seas to its winter breeding grounds in Baja California. The annual southward migration occurs from October to January; the northward migration from February to June. Ninety-four percent of the whales pass within 1.6 kilometers of shore (Ridgeway and Harrison 1985). During the northbound migration mother and calves have been reported within kelp beds and sometimes only yards from the shoreline.

The gray whale is primarily a bottom feeder. Benethic suction feeding behavior by gray whales is widely documented. The MND reports that maximum water depth of feeding noted in California is 63 meters (210 feet) (Calambokidis 1999), but the gray whale prefers shallower water. The maximum excavation created by the foraging through bottom sediments was 26 cm deep (10.2 inches) (Oliver 1984).

However, gray whales are not known to be intense feeders during migration and gray whales do not typically feed in Southern California where the project area is located (Calambokidis 1999; Taylor 1999; Heyning 1999). Experienced biologists who have conducted gray whale monitoring studies off central California locations report that they have never seen, nor heard of, gray whales bottom feeding during migration through this area (SAIC, 2000). While migrating, they are primarily opportunistic feeders, feeding at or near the surface on small fish or shrimp-like mysids. According to the MND, there are no documented cases of whale entanglement in submarine cables in California (Dr. John Heyning, Los Angeles County Museum; Joseph Cardero, the NMFS stranding network coordinator). There was one occurrence of a gray whale caught in trawling gear in the early 1990s. While gray whales in the project area may face the highest risk of cable entanglement, they are not expected to feed in the project area during migration and thus the likelihood of entanglement is low.

According to the applicants, the cable route has been designed to avoid all hard substrate. This will avoid the potential for cable suspensions between sections of high relief and the potential for whale entanglement in these areas.

Nonetheless, because marine mammals are protected under the Endangered Species Act or the Marine Mammal Protection Act, the MND found that entanglement or injury impacts due to

insufficiently buried cables are adverse and significant. Several conditions have been incorporated as a part of this permit to minimize any potential for whale interaction with the PC-1S cable.

During cable laying **Special Condition 9** requires a trained marine mammal observer, approved by the Executive Director in consultation with the National Marine Fisheries Service, be on the cable lay or support vessel to monitor the presence of marine mammals that approach the project area during cable installation. In the event that project operations have the potential to threaten the health or safety of marine mammals or have the potential to take, as defined by the Endangered Species Act, a marine mammal, the observer shall have the authority to cease all project activities until there is no longer a threat. **Special Condition 10** requires the applicants to submit within 30 days of completion of the installation activities a copy of a marine mammal monitoring report that the SLC is requiring as part of its lease.

Special Condition 4 requires the applicants to bury the PC-1S cable to a depth of 1.0 meter except where precluded by seafloor substrates. Where a 1.0-meter burial depth cannot be achieved, the applicants shall bury the PC-1S cable to the maximum depth feasible. At the one meter depth there would be protection factor of approximately 300% when compared to the .26 centimeter depth at which gray whales forage into bottom sediments. However, the 1.0-meter burial depth may not be achieved where there is localized higher sediment resistance, abrupt changes in bottom slope, or variations in cable ship speed.

In order to ensure that cable installation consistent with Special Condition 4 is carried out, **Special Condition 5** requires the applicants to submit to the Executive Director an as-built cable plan, including burial depth of the PC-1S cable.

As a preventive measure against potential entanglement impacts, **Special Condition 6** requires that every 18 to 24 months for the life of project, the applicants survey the PC-1S cable route from the mean high tide line to the seaward extend of the territorial waters of the State of California to verify that the cable has remained buried consistent with the as-built cable burial plan required by Special Condition 5. A third party approved by the Executive Director with a remotely operated vehicle ("ROV") equipped with video and still cameras shall conduct the survey. Within 30 days of survey completion, the applicants shall submit to the Executive Director a report describing the results of the survey. If the survey shows that a segment(s) of a cable is no longer buried consistent with the as-built cable burial plan required by Special Condition 5, the applicants shall, within 30 days of survey completion, submit to the Executive Director for approval a plan to re-bury those cable segments.

Special Condition 7 requires that within 90 days of taking the PC-1S cable out of service or after the expiration or termination of the applicants' State Lands Commission lease(s) or permit(s), the applicants shall apply for an amendment to this permit to remove the cable from the seafloor. Cable removal shall occur from the shoreline to the seaward limit of the territorial waters of the State of California. This condition will ensure that any potential whale impacts are completely eliminated after the useful life of the cable.

The applicants have committed in their consistency certification to implement the requirements of Special Conditions 4, 5, 6, 7, 9, and 10 for the portion of the project that lies within federal waters.

Ghost Nets

There is a potential scenario where a fisher snags his or her trawling gear on one of the project's cables causing a hazard to marine mammals. Pursuant to the Interim Agreement signed by the applicants and trawlers (see section 4.5.5 for further information on the Interim Agreement) if it appears that a fisher has snagged a cable, the gear is to be cut free instead of risking damage to the cable. If the fisher was operating consistent with established trawling procedures, the cable companies will reimburse the fisher for the gear lost. This abandoned gear and particularly the nets, however, become a hazard to marine life, potentially entangling marine mammals and fish, preventing them from feeding and causing them to drown.

Special Condition 11, therefore, requires that in the event that trawlers snag and cut their trawl gear due to entanglement with the applicants' PC-1S cable, the applicants shall use all feasible measures to retrieve the trawl gear as soon as possible but not later than six weeks after receiving notice of the incident. The applicants shall provide notice to the Executive Director within seven days of gear retrieval efforts.

The applicants have committed in their consistency certification to carry out the requirements of Special Condition 11 in federal waters.

4.5.2.2 Hard-Bottom Impacts

Hard substrate (or hard bottom) areas are exposed substrates that provide habitat for a diverse groups of plants and animals. Hard bottom is of concern because: (1) deepwater reefs are relatively rare along the central and southern California coast; (2) it supports a diverse assemblage of epifaunal invertebrates; (3) it attracts fish as a nursery ground, food source, and as shelter; and (4) epibiota are sensitive to mechanical disturbance and increased sediment loads. Fauna associated with rocky subtidal habitats include anemone, *Metridium senile*; cup coral, *Paracyathus stearnsi*; sea cucumber, *Parastichopus californicus*; sea star *Stylasterias forreti*; and many species of rockfish (Arthur D. Little, 1997).

Bathymetric surveys of the Santa Maria Basin conducted in 1984 identified only two rock outcrops between Point San Luis and Point Sal. The applicants' hydrographic survey conducted in December 1998 identified two areas of rock outcroppings in the vicinity of the cable routes. One outcropping extends from approximately 13.5 to 16.5 kilometers (8 to 10 miles) offshore at a water depth of 70 meters (230 feet) but the area is at least 100 meters (328 feet) north of PC-1E, the northern most cable route. Another rocky outcropping was identified 2,000 meters (6,560 feet) west of the route in 530 meters (1,740 feet) of water.

Hydrographic surveys, consisting of side scan sonar, bathymetry, and collection of core samples, were conducted from the cable duct exit locations out to the 1,000-fathom contour. The surveys indicate that the proposed route consists of sediment substrate. The applicants propose to bury the PC-1S cable to a target depth of 0.6 to 1 meter.

As part of the research conducted for the MND, a marine biological reconnaissance survey (November 1998) was done to characterize the physical and epibenthic biological characteristics of the habitat in the three (3) borehole endpoints located in 18 meters of water, along the three cable routes between 18 and 25 meters (52 to 82 feet) of water, specifically in areas that the previous (July 1998) geophysical survey identified as cobble, rock, or shallow bedrock or as being inhabited by macrophytes such as kelp. At all survey locations the seafloor substrate was observed to be composed of deep (greater than 33 cm) sediments with high fine sand, silt and clay fractions and no evidence of exposed bedrock, cobbles, or coarse sand. No hard substrate was found along the cable route.

Nevertheless, there is the possibility that hard substrate could be encountered during cable-laying operations. **Special Condition 12** requires that if a segment(s) of PC-1S cable could not be buried, the area will be presumed to be hard substrate. In this event, within 30 days of project completion, the applicants shall submit a report to the Executive Director quantifying the extent of exposed rocky substrate impacted by cable-laying operations.

Special Condition 13 requires the applicants to compensate for all project-related impacts to hard bottom habitat, if any, through payment of a compensatory hard bottom mitigation fee to be used to construct a new artificial reef or augment an existing artificial reef in State waters within the Southern California Bight. A hard bottom mitigation fund is currently in place to accept hard bottom mitigation fees from oil companies that received coastal development permits (E-95-09, E-95-10, E-95-11, E-95-12, E-95-13, E-95-14 and E-95-17) in 1996 to abandon 23 subsea oil and gas completion wells in the Santa Barbara Channel ("the Santa Barbara Channel Subsea Well Abandonment Program"). The well abandonment program caused some unavoidable damage to hard bottom and resulted in the permittees paying about \$13,000 to the hard bottom mitigation fund.

The construction of a new artificial reef, or augmentation of an existing reef, will be carried out pursuant to a Memorandum of Agreement ("MOA") by and between the California Coastal Commission, the California Department of Fish and Game (CDFG) and the United Anglers of Southern California (UASC) (Exhibit 7). The amount of the hard bottom mitigation fee will be calculated by multiplying the total square footage of impacted hard bottom (as determined in the survey conducted under Special Condition 12) by a compensation rate of \$27.31 per square foot. This rate is the sum of what will be individual costs associated with the construction of a one-meter high artificial reef. The costs include: purchasing artificial reef materials, transportation, engineering and placement of materials, insurance, a 10% project administration fee, and a 30% project contingency fee for unanticipated project-related changes in cost (see Table 2 below). The resultant fee shall be paid to the United Anglers of Southern California within 30 calendar days of the results of the hard bottom survey required by Special Condition 12.

The CDFG administers the California Artificial Reef Program in part for the purposes of (1) placing artificial reefs in State waters, and (2) determining the requirements for reef siting and placement. The CDFG has agreed to assume the lead responsibility for the planning, siting, design and permit requirements for the construction of any new artificial reef or augmentation of an existing artificial reef using the monies in the hard bottom mitigation fund. The UASC, a volunteer group of recreational anglers interested in preserving, protecting and enhancing marine resources and fishing opportunities, agreed in the 1996 MOA to accept any hard bottom mitigation fees. The funds are in an interest-bearing account. These funds including all earned interest are to be expended solely for reef materials, construction costs, and the UASC's administration of the fund (not to exceed 10% of the total collected fees). The CDFG will absorb any costs associated with the planning, siting, design, and permit requirements to construct a new artificial reef or augment an existing reef.

Table 2. Compensatory Hard Bottom Mitigation Fee

TASK	MITIGATION FEE ESTIMATE	COMMENT
Construction of Hard Bottom Habitat (year 2000 dollars) Cost of Materials (quarry rock, engineering, transportation, deposition, and insurance)	\$19.10	Assumptions: a) Estimate based on actual construction costs for one meter high artificial reef b) Cost = \$198/ton
Project Administration for UASC	\$1.91	Overhead to UASC not to exceed 10% of total funds collected.
SUB-TOTAL	\$21.01	
Project Contingency	\$6.30	Contingency of 30% for unanticipated project-related changes in cost of design/planning/permitting, materials, labor, or transportation
TOTAL	\$27.31	

4.5.2.3 Soft-Bottom Impacts

Soft bottom areas are unconsolidated sediments (*e.g.*, gravel, sand, and mud) that provide habitat to infaunal organisms. The MND reports that the Santa Maria basin supports a highly diverse and abundant array of benthic infauna (biota that live in the sediments) and epifauna (biota that reside on the substrate). Soft bottom epifaunal and infaunal assemblages in the nearshore and offshore regions are highly variable and can depend on depth, sediment type, nutrients, dissolved oxygen levels, temperature, and turbidity. Broad trends in species distribution and composition persist. Highest soft bottom densities occur in the nearshore habitat.

Infauna along the cable corridors are of concern because: (1) the proposed burial of cables will disturb their seafloor habitat; (2) many infaunal organisms have limited mobility and cannot easily escape habitat disturbance or rapidly repopulate regions of disturbance; and (3) they are a source of food for more-mobile epifaunal and pelagic marine organisms such as crabs, fin fish, and marine mammals.

The intertidal zone will not be directly impacted since the cable conduits have a minimum depth of 10.7 meters (35 feet) beneath the seafloor and the conduits will daylight in 16 meters (52.5 feet of water). The MND reports that the nearshore (less than 30 meters) soft bottom infaunal assemblages are predominantly composed of polychaetes, amphipods and molluscs. There are few filter feeders that may indicate a level of turbidity unsuitable for filter feeding. Echinoderms are the most common group of species. Sand dollars (*Dendraster excentricus*) have been reported in 20 to 30 meter depths. This depth marks the outer limit of their habitat and their presence is limited. The MND cites previous biological survey results in the Santa Maria Basin that reported the dominant soft bottom infaunal species assemblages in the nearshore and offshore habitats in the project area.

As discussed in Section 4.5.2.2 above, a marine biological reconnaissance survey (November 1998) was done to characterize the physical and epibenthic biological characteristics of the habitat in the three (3) borehole endpoints located in 18 meters of water, along the three cable routes between 18 and 25 meters (52 to 82 feet) of water, specifically in areas that the previous (July 1998) geophysical survey identified as cobble, rock, or shallow bedrock or as being inhabited by macrophytes such as kelp. At all survey locations the seafloor substrate was observed to be composed of deep (greater than 33 cm) sediments with high fine sand, silt and clay fractions and no evidence of exposed bedrock, cobbles, or coarse sand. The survey concluded that the epibenthic community in the survey area appears to be a low diversity, low abundance sediment substrate community consisting of the tube-building polychaete, *Diopatra ornata*, gastropods, Pagurid crabs, and the seastars *Pisaster brevispinus* and *Asterina miniata*. No evidence of giant kelp, *Macrocystis pyrifera*, was observed by divers or from the survey vessel. No beds of the sand dollar *Dendraster excentericus* were observed.

Impacts to soft bottom sediments and infauna will be limited to cable installation, repair and cable re-burial operations. The pre-grapnel run will impact a width of one-meter (3.38 feet) with a depth of 40 centimeters (1.3 feet), from the conduits to the 1,000 fathom contour, approximately 70 nautical miles along each route. As reported by the applicants, plow burial disturbs a seabed corridor 3 feet wide (0.9 meters) and ROV retro-burial disturbs a seabed corridor 7.87 feet wide (2.4 meters). The PC-1S cable will be plowed about 69 miles.

The applicants have estimated that repair operations in the near-shore and adjacent to hard bottom areas will require an ROV to jet the damaged section from the seafloor, assuming it is buried. In deeper waters, a de-trenching grapnel will be used to snag the cable and raise it to the surface. Both repair activities are also expected to disturb a 2.4-meter width of soft bottom. The MND reports that based on these data, activities associated with offshore cable installation will disturb soft substrate and its resident biota. Potential impacts to soft substrate organisms include physical burial and destruction of organisms and sediment suspension that would cause localized, increased turbidity. Fine sands are known to settle about 1 meter (3.3 feet) in a few minutes, depending on grain size. The fine silts found along most of the proposed cable route at waters depths of 90 meters would settle at a rate of 1.2 meters (4 feet) per day. The MND reports that recovery of buried benthic infauna begins almost immediately; recovery to near pre-

disturbance conditions can occur within one year depending upon the extent of burial and other environmental conditions.

The MND concludes that damage to the marine invertebrate community from cable installation and repair operations in soft-bottom habitats will be adverse but not significant. The extent of disturbance from the project is minimal, adjacent areas will be undisturbed, and recolonization of disturbed areas will be completed within a few months of project completion. In addition, the benthic communities affected have no special status under federal, state, or local policies, statutes, or regulations outside of the Pismo Invertebrate Reserve, which would not be affected by the cable installation.

4.5.2.4 Marine Water Quality Impacts

Turbidity Increases Due To Cable Burial

The principal impact on marine water quality due to the proposed project is increased turbidity during installation of the cables and drilling of the cable conduits. The two sources of turbidity analyzed in the MND include surficial sediments resuspended during cable installation and drill muds discharged during the surfacing of the three cable conduits.

Project activities that will cause sediments to be suspended within the water column immediately above the seafloor include: (1) pre-lay grapnel run to clear the plow path of debris; (2) cable burial by plow and ROV; and (3) cable repair.

According to the MND fine sands found nearshore are known to settle one meter in just a few minutes, depending on the grain size, and fine silts found along most of the route at water depths of 90 meters would probably settle at a rate of 1.2 meters per day. The MND, using modeling conducted for oil development projects offshore of San Luis Obispo County, estimated that for fine sands near the borehole exits the turbidity level would return to background levels in less than a day. Beyond 60 meters (197 feet) the finer sediments take longer to settle to the seafloor and the natural turbidity is lower but even the fine-grained sediments would settle within one week.

The MND concluded that because the impacts from sediment re-suspension will be brief and localized, they are adverse but insignificant. Specifically, the above activities will be temporary (roughly 60 days) and limited to an area a few meters above the seafloor and near the cable corridor.

Discharge of Drill Muds Offshore

The overall project includes the drilling of three offshore 4,690-foot directional bores or conduits that may contribute to increased turbidity and a decrease in marine water quality in the area where the conduits surface from the seafloor. During the drilling process, which will be initiated onshore and in the City of Grover Beach's coastal permitting jurisdiction, water based drill muds

(fluid) will be circulated through the borehole to remove drill cuttings, made up of rock fragments cut from the subsurface rock by the drill bit. In each borehole, approximately 34,000 gallons of bentonite, an absorbent aluminum-silicate clay formed from volcanic ash, are proposed to lubricate the drill bit and remove the muds. The drill muds are eventually recirculated through the borehole after the cuttings are removed onshore. The lubricant is a non hazardous drilling mud which is recycled through the system. Fifty to eighty percent of the lubricant is ultimately disposed of at an approved facility. The remainder will be absorbed by soil in direct contact with the lubricant and will form a lining within the borehole.

Once below the seabed the boring will have a minimum depth of 10.7 meters (35 feet) and a proposed average depth of 15 meters (49 feet) below the seabed. Ultimately, the drill bit daylights in offshore waters in 16 meters (52.5 feet) of water, 1,127 meters (3,700 feet) seaward of the mean high tide line, discharging some muds into the ocean. The MND reports that the use of seawater as a replacement may be possible during the last 9 to 15 meters of drilling. However, the use of seawater as a lubricant has several risks including loss of strength in the borehole causing collapse and abandonment of the hole. The MND provides that if it is determined by the on site directional drilling specialist that water replacement is not possible, a maximum of 1,800 gallons of bentonite and water per borehole could be discharged into the marine environment.

The MND reports that this portion of the Central California coastline experiences a high flux of wave energy, especially in winter when intense storm events occur (Arthur D. Little, 1997). Within a water depth of about 60 meters (197 feet), sediment resuspension occurs as a result of this energy. Upon release into the water column, the bentonite will disperse rapidly. In large offshore release from oil and gas well drilling, suspended solids concentrations from drilling fluid releases reduce to 1,000 milligrams per liter within two minutes of discharge and to below 10 milligrams per liter within one hour. The discharge would be in an area where water depth is 16 meters (52.5 feet) and wave energy is high which will result in additional dilution to the slurry. The resulting deposition will not cause extensive alteration or loss of the benthic community for more than one year, nor will it alter the benthic habitat in a way that would prevent re-establishment of organisms affected by installation of the boreholes.

The applicants conclude that the effect of bentonite released during installation will be adverse but not significant.

However, the applicants' SLC lease includes the additional following requirements to minimize the potential for bentonite release into the marine environment and to minimize the impacts of such a release should it occur: (1) no toxic compounds shall be added to the drill mud at any time; (2) the applicants shall implement reasonable engineering methods to ensure no drilling muds are discharged to the ocean environment; onshore mud circulation pumps should stop injection of drilling fluid into the borehole prior to daylighting. All drill muds and cuttings remaining in the bore should be collected onshore to the extent possible. Completion and any subsequent flushing of the borehole should use seawater, freshwater, or pressurized air to clear the borehole rather than drill mud or other potentially toxic material. Debris removed from the drill during pigging and brushing prior to commissioning the conduit shall be collected and

disposed of onshore. (3) none of the excess drill mud or drill cuttings collected onshore shall be discharged or dumped into the marine or intertidal environments; and (4) emergency spill cleanup equipment, including but not limited to sorbent booms, shall be staged onshore during borehole drilling.

With the implementation of the adopted conditions of the SLC lease, any remaining impacts will be temporary, of limited areal extent and of minor amplitude in relation to the natural background variability in the suspended sediment loads in the nearshore.

The RWQCB conditionally waived water quality certification on May 3, 2000 under Section 401 of the Clean Water Act, concluding that the proposed project pursuant to the mitigation measures discussed above and in conjunction with the conditions of their waiver, will not violate State water quality standards.

Pismo Clam

The Pismo clam (*Tivela stultorum*) was once abundant on the sandy beaches of Central and Southern California. Pismo clams burrow no more than six inches deep and are usually found in 1 to 3 feet of water at low tide (CCC 1991a; Hardy 1998).

The Pismo clam is harvested by recreational clammers and preyed upon by sea otters. Although the Pismo clam is not listed as threatened or endangered, CDFG regulates harvest levels with preserves and reserves. California sportfishing regulations identify several areas that are closed to harvesting of Pismo clams to allow clam populations to regenerate. In 1998, clam preserves were located south of Oso Flaco Creek to the San Luis Obispo-Santa Barbara line and in areas of Estero Bay north of Point Buchon (14 CCR 29.40). Preserve areas are subject to change to allow populations in different areas to regenerate. The CDFG has also designated 0.3 mile of the intertidal region north of the Grand Avenue ramp as the Pismo Invertebrate Reserve. The reserve was established to study the effect of sea otter population growth on the Pismo clam population. The taking of any invertebrate in the reserve is prohibited.

The Pismo Invertebrate Reserve extends 1,000 feet seaward almost directly offshore of the cable-landing site. The cable conduits will be drilled beneath the surface of the dry land and seabed from shore to a point offshore where they emerge from the seabed in 16 meters (52 feet) of water. As reported in the MND some sources have stated that Pismo clams have a water depth range of approximately 90 feet. However, biologists with expertise in the area of Grover Beach have stated that the greatest depth at which they have seen the Pismo clam is approximately 30 feet (Hardy 1999a). The applicants found that at water depths of 52 feet and greater Pismo clams would not be abundant.

Pismo clams bore no more than 6 inches into the sediment. Bore segment D, which is planned to pass under the southern edge of the Pismo Invertebrate Reserve, will be at a minimum 10.5 meters below the known sediment range. No invertebrates would be expected to reside within 10 meters of the sediment/water interface (Hardy 2000), and the Pismo clam population would not

be threatened. According to the MND, there is no "legal depth" to the reserve, only the depth at which invertebrates would reside.

The bores will terminate 1,127 meters (3,700 feet) west of the mean high tide line and 820 meters (2,700 feet) from the seaward boundary of the Reserve. The boreholes exit to the west-southwest of the Reserve. Sediment movement for nearshore currents is to the southeast. Therefore, drilling muds discharge or sediments disturbed by project activities would not be expected to be transported in such a way that they could affect organisms in the reserve.

The depth of the conduit below the seabed, the distance of the conduit portals from the Reserve boundary, and the low population of Pismo clams expected in the 16 meter water depth where the conduits daylight, indicate that the project activity would not result in substantial loss in populations. Pismo clams have no special status outside of the Pismo Invertebrate Reserve and harm or mortality would not constitute a 'take'. Therefore, with the mitigations proposed by the applicants and the conditions of approval on the SLC lease to minimize the risk of drilling mud discharge, the impact on the Pismo clam and Reserve is not found to be significant.

The Commission finds that the requirement of Special Conditions 4, 5, 6, 7, 9, 10, and 11 will substantially minimize the potential for marine mammals to become entangled with or adversely impacted by project cables or ghost nets. Special Conditions 12 and 13 will minimize potential impacts to hard bottom communities by cable installation activities. Based on the reasons discussed above, the Commission finds that, as conditioned, the proposed project will be carried out in a manner that maintains marine resources and sustains the biological productivity of and quality of coastal waters and streams and, therefore, is consistent with Coastal Act Sections 30230 and 30231.

4.5.3 Oil Spills

Coastal Act Section 30232 states:

Protection against the spillage of crude oil, gas, petroleum products, or hazardous substances shall be provided in relation to any development or transportation of such materials. Effective containment and cleanup facilities and procedures shall be provided for accidental spills that do occur.

The proposed project could potentially increase the chance of a vessel collision and a release of oil into marine waters. However, the chance of an oil spill due to project-related activities is very low.

The MND concludes that the cable-laying and the support vessels will not present a navigational hazard to fishing, recreational, or other vessels in the project area and the likelihood of an accident is very low. The fishing and recreational vessels that normally operate in the area are highly maneuverable, are generally equipped with navigational equipment, and will be informed of cable laying and support vessel locations and schedules. Under the Submarine Cable Act

(47USC21), fishing vessels and other ships must keep their equipment or vessels at the distance of one nautical mile from a vessel engaged in laying or repairing cable or at least a ¼ of a nautical mile from buoys intended to mark the position of a cable when being laid.

One requirement of Coastal Act section 30232 is for an applicant to undertake measures to prevent an oil spill from occurring. The applicants propose to provide a Notice to Mariners of the project operations, location and schedule so as to minimize the chance of a vessel collision. At least two weeks prior to commencement of offshore construction activities, the applicants will file an advisory of pending offshore construction operations with the local U.S. Coast Guard District Office for publication in the Local Notice to Mariners.

Notwithstanding all efforts to avoid a collision, there is always the possibility of an accident that could result in a spill. The applicants propose to provide a support vessel which will carry on board a minimum of 400 feet of sorbent boom, five bales of sorbent pads at least 18" x 18" square for rapid deployment to contain and clean up any small spill or sheen on the water surface.

The applicants are also required to submit to the California Department of Fish and Game Office of Spill Prevention and Response ("OSPR") an oil spill contingency plan for non-tank vessels greater than 300 gross tons pursuant to the non-tank vessel contingency plan regulations found at 14 CCR Sections 825.03-827.02. **Special Condition 14** requires the applicants to submit evidence to the Executive Director that the OSPR has approved the required oil spill contingency plan.

The applicants have agreed in their consistency certification that the oil spill contingency plan prepared pursuant to Special Condition 14 will also cover all project-related activities in federal waters.

With these measures in place, and the imposition of Special Condition 14, the Commission finds the project consistent with the requirements of Coastal Act Section 30232.

4.5.4 Environmentally Sensitive Habitat Area ("ESHA")

Coastal Act Section 30240 states:

(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.

The Coastal Commission's retained permit jurisdiction includes a portion of Meadow Creek. Meadow Creek is defined in Grover Beach's certified Local Coastal Program ("LCP") as an environmentally sensitive habitat area ("ESHA").

The LCP's Land Use Plan (p.18) describes present and potential uses for Meadow Creek:

The portion of Meadow Creek north of Grand Avenue between the golf course and a mobile home park has been channeled for flood control purposes and much of the original habitat value has been lost. A restoration and enhancement plan for this 0.5-mile portion of the creek could provide for planting of riparian and other native plants to help restore the resource value of the area. New development in the Beach Neighborhood shall incorporate restoration and enhancement of this portion of the creek.

Section 2.1.5.B Meadow Creek (Western Branch) of the Land Use Plan states:

That there shall be a minimum of a 50-foot buffer, or other appropriate buffer established by a habitat restoration plan approved by the Department of Fish and Game, on both sides of the portion of Meadow Creek north of Grand Avenue. The purpose of this buffer is to enhance the habitat values and filtration capabilities of Meadow Creek while recognizing that for most of its length north of Grand Avenue there is existing development on both sides of the creek.

Between Grand Avenue and Pismo Lake Ecological Reserve, Meadow Creek flows south along and within the eastern boundary of Pismo State Beach property. It borders a golf course, a California Department of Parks and Recreation ("CDPR") concession, and the landing site parcel, which is undeveloped CDPR land, proposed for coastal commercial use in the Grover Beach. This inland boundary of the park is ill defined and the degraded Meadow Creek corridor is not integrated into the larger park. The CDPR has a strong interest in restoring and enhancing this length of Meadow Creek to recreate its historic natural values as a link between the Oceano Marsh to the south and the Pismo State Ecological Reserve to the north (Mette, May 2000).

The cable route from the landing site to the inland cable station crosses beneath the western branch of Meadow Creek. Meadow Creek channels runoff from the urbanized portions of Grover Beach and adjacent communities. From the north water flows from Pismo Lake Ecological Reserve along the eastern boundary of the golf course and the proposed landing site lot under Grand Avenue and south through open marsh to Oceano Lagoon. Oceano Lagoon empties into Arroyo Grande Creek through tidegates that restrict the influence of the tides on water level and quality in both the lagoon and Meadow Creek.

Meadow Creek in the area of the proposed development is fenced on both sides and degraded by non-native vegetation, runoff and trash. However, the stream flows year round (Mette, May 2000). A wetland delineation performed by the applicants' field biologist found hydrophytic vegetation, wetland hydrology, and hydric soil parameters consistent with a positive wetland

determination. However, the CDPR biologist, Vince Cisero, confirmed (May 11, 2000) found no wetland indicators within 100 feet of the onshore bore staging area.

Some sensitive species are associated with Meadow Creek. The red-legged frog (*Rana aurora draytonii*) is listed as threatened by USFWS and is considered a species of special concern by the CDFG. According the CDPR biologist (Cisero, 1999), no red-legged frogs have been observed in or adjacent to Meadow Creek, though there are known occurrences more than three miles from the project site. The tidewater goby (*Eucyclogobius newberryi*), federally listed as endangered, is endemic to coastal California. It has been known to occur in San Luis Obispo and Pismo Creeks but not Oceano Lagoon or Meadow Creek. Tidewater goby and steelhead trout are unable to enter Meadow Creek or Oceano Lagoon due to the tidegate.

The applicants propose that a biological monitor conduct a pre-construction survey to confirm the absence of California red-legged frogs. **Special Condition 16** requires that prior to issuance of this permit, the applicants submit to the Executive Director for approval, in consultation with the U.S. Fish and Wildlife Service, the name and qualifications of the biologist who will undertake the pre-construction survey for the red-legged frog (*Rana aurora draytonii*). A copy of the pre-construction survey shall be submitted to the Executive Director prior to commencement of construction.

The cable will be installed by a 1,053 directional drill under Meadow Creek, Highway 1, and the railroad tracks from a 50 by 50-foot level staging area a minimum of 100 feet west of the creek. Upon completion of directional drilling, the steel drill pipe will be used to pull an 8 inch diameter steel pipe into the bore as the drill pipe is withdrawn. The bore will be a minimum of ten feet below the bed of the creek. Like the cable landing drilling operation, a bentonite/water slurry will be used to lubricate the drill and return drill cuttings to the surface. The slurry return flow will be contained in a slurry sump in the staging area. A silt fence and berm will be constructed around the bentonite slurry sump. All bentonite lubricant, excavation spoils, and construction debris will be removed from the site when construction is completed and the site will be restored to pre-construction condition. (Exhibits 5 and 8)

The CDFG manages impacts from stream or lake alterations through Section 1601 of the California Fish and Game Code. The CDFG Section 1601 stream alteration agreements contain provisions for drilling under creeks. The following is excerpted from a current 1601 agreement between the DFG and Pacific Fiber Link:

(The boring) process may result in unpredictable discharge of bentonite into streams by uncontrollable discharges through fissures and fractures (frac-out). Where such discharges occur where water velocities are insufficient to transport and disperse the material, it may produce a coating on aquatic invertebrates, aquatic plants, and other features of the stream channel; potentially smothering organisms (causing direct mortality), embedding the interstitial spaces in gravels, and filling rearing pools, which may decrease available habitat upon which these fish may depend. In the event of a bentonite spill, clean-up efforts may result in increased disturbance to the stream

channels, channel bed, riparian areas, and in-stream habitat as equipment, machinery, and personnel enter and conduct the clean-up work.

The Department is concerned regarding the potential impact an uncontrolled frac-out may have on sensitive resources (streams, wetlands associated threatened and endangered species) but agrees to the use of bentonite under....Directional Drilling Protocol. This protocol is intended to provide an operating framework to avoid impact completely or reduce all temporary and short term construction impacts to a less than significant level for streams, wetlands and associated threatened and endangered species. Directional drilling sites where no sensitive resources are in close proximity and are not at risk of impact, are not required to follow this protocol.

Special Condition 15 requires that prior to commencement of construction of the onshore directional bore under Meadow Creek, the applicants shall submit to the Executive Director for review and approval the Department of Fish and Game Section 1600 Agreement or evidence from the Department that no agreement is required.

When no failure occurs, directional boring under creeks avoids direct impacts to the stream and riparian vegetation. Potential construction related impacts that could affect water quality and the stream corridor habitat are erosion or runoff from the bore site into Meadow Creek, overland discharge of drilling muds into the creek, or a fracture in the earth at the borehole that allows the bentonite to move upward into the creek.

Fractures in the substrata and subsurface release of bentonite occur in ten (10%) of drilling operations. The MND reports that within 30 feet of the surface of the streambed is medium firm sand (GeoEngineers, 1999) in which fluid pressure is unlikely to build up, and a blowout is unlikely. CDFG boring design criteria include drilling a minimum of thirty (30) feet below the lowest point of the streambed or bottom of a wetland area when crossing stream channels or wetland areas where water is present. The minimum design depth at dry crossings is ten (10) feet. The applicants propose a minimum depth of ten (10) feet below the lowest point of Meadow Creek, which had flowing water on May 9, 2000. However, the safest depth at which to drill is determined by many factors including the geology and the experience and expertise of the drill operator.

To minimize the potential that during drilling the bentonite would follow a fracture upward to Meadow Creek and downstream to the marsh and adversely affect the water quality, a geo-technical evaluation of the boring locations is required as a condition of the Regional Water Quality Control Board (RWQCB) Waiver of Water Quality Certification. The investigation will identify the suitability of the proposed borehole locations as to depth and competency of earthen material to establish a safe drilling depth and avoidance of fissures where frac-outs are likely to occur. In addition, a qualified drilling specialist monitor must be present to oversee directional boring activities and have the authority to suspend drilling. The drilling specialist monitor is required to be onsite during all phases of the cable installation.

Special Condition 17 requires that prior to issuance of this permit, the applicants shall submit to the Executive Director for review and approval the geo-technical evaluation required by the RWQCB. The geo-technical investigation shall be concurrently submitted to the Environmental Services Department of the California Department of Fish and Game, Region 3, Yountville. The RWQCB has also required a field biologist to be on site for all phases of cable installation with biological monitoring reports submitted to the RWQCB on a routine basis. **Special Condition 18** requires that prior to issuance of this permit, the applicants shall submit to the Executive Director for approval, in consultation with the Department of Fish and Game, the name and qualifications of the field biological monitor who shall be present during all boring operations under Meadow Creek. The applicants shall submit routine biological monitoring reports to the Executive Director and the CDFG concurrent with submittal to the RWQCB.

The applicants propose many mitigation measures to prevent impacts to Meadow Creek, including continuously monitoring the bentonite slurry volume to confirm that no subsurface release is occurring and to cease drilling if any loss is detected or suspected. Hay bales or other barrier material shall be staged at locations downstream from construction to be used to trap bentonite if there is a bentonite release. In the event that bentonite enters the water, it is expected to settle to the bottom and will be removed by suction. Water collected behind the hay bales would be pumped off with a bypass or similar pump into a tank truck. To prevent sedimentation, runoff and infiltration impacts on Meadow Creek, the applicants propose erosion control measures including sedimentation fencing, hay bales, erosion control matting, filter fabric, seeding, and sod. The erosion control measures are to be inspected and maintained daily.

No impacts to wetlands are expected to occur since the staging area for boring is 100 feet west of delineated wetlands. However, **Special Condition 19** requires that in the event that boring activities cause impacts to Meadow Creek or downstream wetlands, the applicants shall immediately notify the Executive Director and the CDFG. Within 60 days of notification the applicants shall submit to the Coastal Commission a restoration plan in the form of an amendment to this permit. The restoration plan shall be developed in consultation with the CDFG and the CDPR.

The Commission thus finds the proposed project, in combination with Special Conditions 17, 18 and 19, will be designed to protect the Meadow Creek and therefore is consistent with Coastal Act Section 30240.

4.5.5 Commercial and Recreational Fishing

Coastal Act Section 30234.5 states:

The economic, commercial, and recreational importance of fishing activities shall be recognized and protected.

Commercial fishing, an important component of the regional economy in San Luis Obispo County, is conducted out of two ports: Morro Bay and Port San Luis. The bulk of the catch at

both ports is derived from trawling, but the fishing fleet is composed largely of non-trawling vessels. The commercial fleet in the San Luis Obispo region ranges from 100 to 200 vessels, approximately eighteen to fifty-two of which is trawlers, depending on the season and fishing conditions. The remaining vessels consist of trollers, long-liners, pot and trap fishers and various combinations of these.

Rockfish and dover sole accounted for more than half of the total catch in the area for the last four years. Other commercially important species include prawns, shrimp, rock crab, sablefish, salmon, albacore tuna, halibut, swordfish and cabezon. During the last four years, on average, fish landing of 3,740 tons reported for Morro Bay and Port San Luis/Avila had a value of \$6.8 million. Catch from trawls for both Morro Bay and Port San Luis/Avila made up approximately 50% and 70% of landing by weight and 40% and 60% of dollar value, respectively. Secondary economic impacts are substantial, and include seafood processing and the aesthetic and visitor-drawing qualities of working fishing ports.

The average commercial fisher (non-trawler) fishes 188 days/year, has fished commercially for twenty-one years and has a net operating annual income of \$31,200. The average trawler fishes 115 days/year, has fished commercially for thirty-four years and has a net operating annual income of \$59,541. The Morro Bay Commercial Fishermen's Association and the Port San Luis Commercial Fishermen's Association represent the interest of fishers in the project area.

Recreational fishing in the project area mostly occurs from charter or privately owned vessels. Six to ten charter vessels operate out of Morro Bay and Port San Luis, and recreational boat launches range from 200-300 per day during peak fishing seasons. Recreational fishing is seasonal in nature, peak seasons falling in April-July (salmon), all year (rockfish) and July - December (albacore tuna). The contribution of this economic sector is unknown, though sportfishing typically equals or exceeds the economic contribution of commercial fishing on a statewide basis. The majority of recreational fishing is accomplished by "jigging" baited hooks or lures that either rest on the seafloor or are trolled, depending on the species targeted.

Commercial trawlers face potential adverse impacts due to the fact that their bottom trawls may snag cable segments that are insufficiently buried or exposed on the seafloor. Commercial fishers face potential economic loss of being excluded from fishing during installation and repair of cables. Recreational fishers, on the other hand, are not likely to experience the same impacts because their gear pose little threat to bottom cables (Morro Group, 2000). Entanglement resulting in gear loss is possible, especially if the cables are suspended or exposed in hard bottom areas, but damage to the cable is not expected. The PC-1S cable route is in soft sediment and therefore will not be exposed or suspended.

Temporary economic impacts to trawlers and recreational fishers may result during installation of the cables. Pursuant to the federal Submarine Cable Act (47 U.S.C. 21 para. 24) all vessels are required to maintain a distance of at least one nautical mile from a cable vessel conducting repairs and one-quarter mile from the buoy of a vessel intended to mark the position of a cable when being laid or out of order. The MND reports that main cable lay will be completed within one month. Following main cable lay post burial of the cable in the area of the "pock marks"

may require an additional month. The preclusion area is temporary and once the cable is buried, unrestricted access is allowed.

To assess the impact of the exclusion zone on trawlers during installation and post-lay burial, the MND using California Department of Fish and Game fish block data (which is the only quantitative measure of catch taken from specific geographic areas), defined a regional study area (55 fish blocks) from Point Piedras Blancas to Point Conception, and, identified the blocks crossed by the proposed cable routes. As a worse case estimate the MND reported that 25 square nautical miles of the 164.6 square nautical miles in block 624 and 625 or 15 percent of the trawl ground in the study area would be excluded if all three proposed cables are buried. The assessment assumed that all fishing is excluded from the affected area and that fishers are unable to fish elsewhere. The MND estimated the annual reduced catch for peak shrimp trawlers (the fishery most concentrated in blocks 624 and 625) would be 1.5% with a revenue loss of 0.6% or \$5,497. For all gear types the estimated annual reduction would be 0.06% with a revenue loss of \$9,522. The MND found that the impacts from the exclusion area were temporary and not significant.

Bottom Trawl- Cable Entanglement

Commercial trawlers face potential adverse impacts due to the fact that their bottom trawls may snag cable segments that are insufficiently buried or exposed on the seafloor. Bottom trawls are designed to maintain contact with the seafloor. As they are towed over the seafloor, a rope or chain that precedes the net opening startle prey off the ocean bottom and into the net. However, the size of the trawls boards use to spread the trawl net on the largest vessels is such that they would normally skim the surface of the seafloor with a maximum estimated penetration of one (1) centimeter (0.394 inches) on sand and rock sediments and up to 30 centimeters (11.82 inches) in some mud substrates. Poorly rigged or broken trawl gear may dig more deeply into the seafloor. The applicants propose a burial depth between 60 centimeters (23.64 inches) to 1 meter (39.4 inches). This would provide a minimum protective factor of 11.82 inches or 100 percent in good conditions.

Nonetheless, if trawl gear is snagged and lost, fishers would occur financial losses from abandoned gear and lost fishing time. Trawl gear can cost as much as \$35,000 and requires custom manufacture, which can take up two weeks.

Measures to Reduce Fishery Conflicts

To minimize any potential conflicts with recreational and commercial boating or fishing activities, the applicants will provide notice of all vessel activities, work locations, and schedules of installation and repair with the U.S. Coast Guard two weeks in advance of installation. The applicants propose to further notify fishers through the Cable/Fisheries Committee, local fishing associations and the Harbor Masters at ports in the project area. For installation, informational packets on cable installation routes, schedules and means of identifying cable ships will be distributed. The packet will include a 24-hour toll-free informational number for interested

parties. The cable lay vessel will use all appropriate navigational and deck lights and communications to publicize project vessel location during installation and repair activities. A local fishing vessel will be hired as liaison to patrol during installation and during repairs in heavily fished areas.

Most importantly, the applicants propose to bury the cable to a target depth of .6-1 meter in State waters and out to the 1,000-fathom water depth in federal waters. The applicants believe the cable can be buried along 100% of the cable route. Buried cable will minimize potential gear entanglement and resultant loss experienced by fishers. Burial of cable will also allow fishers to continue to fish over the project area.

Special Condition 4 of this permit requires the PC-1S cable to be buried to a depth of 1.0 meter except where precluded by seafloor substrates. Where a 1.0 burial depth cannot be achieved, the applicants shall bury the cable to the maximum depth feasible. **Special Condition 5** requires the applicants within 30 days of cable installation to submit to the Executive Director an as-built burial plan for the PC-1S cable.

The Commission is also requiring in **Special Condition 6** that every 18-24 months for the life of the project, the applicants shall survey the cable route from the mean high tide line to the seaward limit of State waters to verify that the cable has remained buried consistent with the as-built burial plan required by Special Condition 5. The survey shall be conducted with a remotely operated vehicle ("ROV") equipped with video and still cameras and by a third party approved by the Executive Director. Within 30 days of project completion, the applicants are required to submit a report describing the results of the survey. If the survey shows that a segment(s) of the cable is no longer buried consistent with the as-built burial plan, the applicants shall, within 30 days of survey completion, submit to the Executive Director for approval a plan to re-bury those cable segments.

Within 90 days of either taking the cable out of service or after the expiration or termination of the applicants' SLC lease and permits, whichever is earlier, the Commission is also requiring the applicants in **Special Condition 7** to apply for an amendment to this permit to remove the cables from the seafloor.

The applicants propose in their consistency certification to implement the requirements of Special Conditions 4, 5, 6 and 7 in federal waters to the 1,000-fathom water depth.

To address cable snags that do occur and to compensate a fisher for his or her economic losses, the applicants propose the following:

- The cable operator will provide \$500 to each trawl fisher operating in the area in order to upgrade navigational equipment;
- The cable operator will maintain a 24-hour hotline to take calls from fishers who believe they have snagged their gear on the telecommunications cables owned or operated by the

particular cable company. If fishing gear is sacrificed to avoid damage to the cable, the applicants will report the incident to the SLC and the Coastal Commission and will retrieve the gear if the agencies determine that to be the best course of action.

- The cable operator will pay 100% of the costs of gear sacrificed by fishers as a result of snagging cable and 50% of the gear's value to settle claims for loss of business incurred by the fishers provided 1) the fisher has informed the 24-hour toll-free telephone hotlines of its situation; 2) compensation is contingent on positive identification of the cable, and 3) the fisher's conduct was consistent with the Fishing Vessel Operating Procedures established pursuant to the Interim Agreement (described below). Failure to gain pre-authorization to cut free from gear will not preclude a fisher from receiving compensation.
- Fishers will be held harmless for unintentional damage to a cable.
- Disputes regarding gear loss and cable damage would be resolved by the Joint Cable/Fisheries Liaison Committee or, failing that, an independent mediator would be contracted and the parties would submit to binding arbitration.

The applicants also participated in the development and implementation of the "Interim Agreement" (IA) with the trawlers operating out of Morro Bay and Port San Luis, and two mutual benefit associations: The Morro Bay Commercial Fisherman's Organization, and the Port San Luis Commercial Fisherman's Association. The Interim Agreement, signed into effect July 22, 1999, provides preventive and mitigation measures to avoid conflicts between the two industries. The IA covers the applicants' activities in State and federal waters out to the 1,000-fathom water depth (the seaward limit of trawling along this section of the coast). Components of the agreement that are not direct mitigation measures for the proposed project include:

- A Joint Cable/Fisheries Liaison Committee comprised of four fisher and four cable company representatives to "...was established to "facilitate inter-industry communication, coordination and cooperation between the commercial fishing industry of Central California and undersea fiber optic telecommunications companies operating in California;"
- Fund a Committee/Liaison Office Fund to the amount of \$50,000 annually per cable company, with funds in excess of \$150,000 being transferred to the Commercial Fishing Industry Improvement Fund. This fund will be used to reimburse Committee members for participation, to compensate any segments of the commercial fishing industry damaged as a result of the act of installing, repairing, replacing or maintaining the cable project;
- Release any claims they might otherwise have against individual fishers and refrain from taking any administrative, legal, or other action to sanction and/or recover damages against fishers who comply with terms and conditions of the IA;

- Assume all liability, responsibility, and risk for any damage which may occur to their cables resulting from their inability to construct, maintain, place, and continue those cables in a manner which does not interfere with traditional fishing operations.
- Annually deposit \$100,000 per project in a special fund for the enhancement of commercial fisheries and the commercial fishing industry and support facilities. The payment of such ordered mitigation shall be offset by funds paid pursuant to this paragraph;

Accordingly, the Commission finds that with mitigation measures proposed by the applicants and with the Interim Agreement in place, in combination with Special Conditions 4, 5, 6 and 7, the project is consistent with Coastal Act §30234.5 since the "economic" and "commercial" importance of fishing activities will be protected.

4.5.6 Public Access and Recreation

Coastal Act Section 30211 states that:

Development shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization, including, but not limited to, the use of dry sand and rocky coastal beaches to the first line of terrestrial vegetation.

Coastal Act Section 30220 states:

Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses.

The portion of the proposed cable project that lies within the Coastal Commission's retained permit jurisdiction includes lands seaward of the mean high tide line, an upland section of land along Grand Avenue and a corridor along Meadow Creek. (Exhibits 6 and 9). Proposed onshore project activities at the cable landing site include directional drilling from two sites, one for directional drilling to the offshore and the other for directional drilling toward the east, or onshore, passing under Meadow Creek. To install cable between the two directional boring sites, a four-foot trench, 350 feet long, would be dug along the north side of Grand Avenue. Three 4 inch PVC ducts with 1.25-inch inner ducts encased in concrete would be installed a minimum of 4 feet deep. This section of Grand Avenue is within the Commission's permit jurisdiction.

Grand Avenue is a main access to Pismo Beach State beach, its parking lot, and two state park concessions - a restaurant and a golf course. At peak use periods the Grand vehicle ramp becomes congested and contributes to traffic congestion farther inland on Grand Avenue and Highway 1. Access to the construction area will be restricted. Pedestrians will be directed to the east side of Grand Avenue. Construction vehicles and equipment will be located in a designated area that will not displace beach parking. According to the MND, construction on this segment of Grand Avenue will take one or two days, and impacts on public access and recreation will be temporary and not significant.

The directional drilling inland from the landing site to the cable station passes under Meadow Creek. Access to Meadow Creek will not be precluded due to drilling activities.

Offshore directional drilling from the landing site will pass under the beach and surf zone to the shallow water (approximately 16 meters) seafloor borehole exit. Because the ducts will be installed subsurface, there will be no direct impacts to the surf zone, beach, or dune areas.

Recreational activities common to State waters in this area are recreational boating and fishing. Sportfishing in the project areas consists of chartered party boats and individuals mainly of Port San Luis and Morro Bay. In the Morro Bay/San Luis Obispo area there are four to six full-time charter recreational fishing vessels, making roughly 1,000 to 1,200 trips per year. Several hundred private recreational fishing vessels operate out of the area with most activity occurring during the summer and fall. In the project area the predominant sportfishing catch is salmon. Rockfish are caught near rocky cliffs and rock piles. Shorefishing consists of rod and reel fishing from shore along Pismo State Beach.

Project vessels will be near-shore but never closer than 1,730 meters (5,670 feet) to the shoreline. Conflicts with shore fishing will not occur.

Pursuant to the federal Submarine Cable Act (47 U.S.C.21) the master of any vessel must keep a distance of at least one nautical mile from a vessel engaged in repairing a cable. In addition, the master of any vessel must also remain at least a quarter of a nautical mile from a buoy intended to mark the position of a cable when being laid or when out of service. These limitations will apply to recreational fishing vessels and boaters in the project area. However, the exclusion zone will be in constant motion as the cable is being laid and/or buried so there will be sufficient access to other fishing and boating areas in the project area. Moreover, once the cable is buried, the exclusion zone becomes ineffective, allowing unrestricted access to these areas.

To further minimize any potential conflicts with recreational boating or fishing activities, the applicants will provide notice of all vessel activities, work locations, and schedules for installation with the U.S. Coast Guard two weeks in advance of installation. The applicants propose to further notify fishers through the Cable/Fisheries Committee, local fishing associations and the Harbor Masters at ports in the project area. In addition, informational packets on cable installation routes, schedules and means of identifying cable ships will be distributed. The packet will include a 24-hour toll-free informational number for interested parties. The cable lay vessel will use all appropriate navigational and deck lights and communications to publicize project vessel location.

For the above reasons, the Commission finds that the proposed PC-1S cable will not interfere with the public's ability to access and recreate at the coast and is therefore consistent with Coastal Act Sections 30211 and 30220.

4.5.7 Cultural Resources

Coastal Act Section 30244 states:

Where development would adversely impact archaeological or paleontological resources as identified by the State Historic Preservation Officer, reasonable mitigation measures shall be required.

Offshore

Historical and cultural resources are defined as those areas of the land and marine environment that possess historical, cultural, archaeological or paleontological significance, including sites, structures, or objects significantly associated with, or representative of earlier people, cultures and human activities and events. Of concern is the potential for cable-laying activities to disturb or damage an ancient lagoon lying near the cable route or disturb or damage shipwrecks of potential cultural resource value.

According to the MND local archaeologists have predicted that due to the post-Washington sea level rise and the coastal settlement patterns throughout California, early prehistoric resources are located offshore. The continental shelf offshore from Point San Luis to Point Sal ranges from 17 to 20 kilometers (9.18 to 10.80 nautical miles) wide and is covered by a layer of post-Wisconsin sediments (i.e., sediments deposited during the last 18,000 years) that has a maximum thickness of 40 meters (131.2 feet).

The project area may traverse a possible historical lagoon. The lagoon was located between the 16,500 and 11,000-year-old shorelines at an approximate water depth of 183 meters (595 feet) with an estimated sediment cover of at least 20 meters (65.6 feet). Sediment disturbance in this area by project construction, operation and repair will be limited to the upper meter of the sediments. Side-scan imagery of the area was also performed by C&C Technologies in November and December of 1998 and did not discover any identifiable prehistoric features in this area. The MND concluded that there will be no impact to offshore pre-historic resources.

The MND reported that SLC's Shipwreck Database indicated the closest known shipwrecks are approximately 3 miles (4.84 kilometers) north of Grover Beach. The Mineral Management Service was contacted regarding the presence of shipwrecks along the route in federal waters and no known shipwrecks were identified. As part of the route selection process high-resolution digital side scan sonar with magnetometers were used to map the seabed topography along the project routes (November and December 1998). Marine archaeologists, approved by the Mineral Management Service, Gulf of Mexico region, for submerged cultural resource evaluations, were onboard the survey vessels and observed no sonar contacts identifiable as shipwrecks within the bounds of the survey corridor. The nearest unidentified sonar target was 775 meters south of the proposed PAC-1 cable.

The MND found that because no prehistoric or cultural resources were identified along the cable corridors, which would encompass both installation and repair activities, that the potential to destroy significant paleontological resources is very low.

The SLC, in conditions 18 and 19 of its lease approval, has required the applicants, prior to the pre-lay grapnel run and cable installation, to submit a detailed analysis of side scan sonar and magnetometer data for the proposed cable route between the shoreline and three nautical miles. The task is to identify and analyze all magnetic and side scan sonar anomalies that occur in the cable corridor, which is defined by a lateral distance of 1-kilometer (500 meters on each side of the proposed cable route). The analysis must also evaluate the potential cultural significance of each anomaly identified within the cable corridor.

If a previously unknown shipwreck of potential cultural resource value is discovered within a proposed cable route, the applicants are to modify the route to avoid the potentially significant cultural resource.

Prior to the pre-lay grapnel run and the laying of cable, and after receipt of the above-described analysis, the applicants must obtain final approval from the SLC for activities occurring within the three nautical miles of the shoreline. The ACOE will need to grant final approval of that area between the three-mile limit and the edge of the continental shelf.

Onshore

From about 8,000 to 150 years ago, the Chumash occupied the coastal region from San Luis Obispo to Malibu Canyon. Database searches and a Sacred Lands search of the project site did not indicate the presence of cultural resources onshore. However, the San Luis Obispo County Chumash Council (Chumash) expressed its opposition to the project with concern that the existing research was inadequate to protect Native American cultural resources. On April 17, 2000 the applicants and the Chumash negotiated a Memorandum of Agreement that provides the protocols for identification, treatment and disposition of Native American human remains, grave goods, and cultural artifacts found in the project area. The MOU requires a physical survey of the project route, a map consolidating route and cultural resource information and the presence of a Native American observer and archaeologists during all ground disturbing activities. Archaeological resources would be avoided, if possible.

Special Condition 20 requires that prior to issuance of this permit the applicants submit to the Executive Director a copy of the finalized Memorandum of Agreement with the San Luis Obispo County Chumash Council and a copy of the Construction Cultural Resource Monitoring Report within 30 days of completion of the project.

The Commission thus finds that the project with the provision of Special Condition 20 and in conjunction with SLC conditions 18 and 19 the project will be consistent with Coastal Act Section 30244, which requires that mitigation measures be in place in the event that a development would adversely impact a cultural resource.

4.5.8 Air Quality

Coastal Act Section 30253(3) states:

New development shall:

(3) Be consistent with the requirements imposed by an air pollution control district or the State Air Resources Control Board as to each particular development.

The San Luis Obispo Air Pollution Control District ("APCD") is the local air pollution control district responsible for implementing federal and State air quality standards in the project area. For regulatory purposes, air pollutants are generally recognized as "criteria pollutants" or as toxic air pollutants. Criteria pollutants include carbon monoxide ("CO"), nitrogen oxide ("NO₂"), sulfur dioxide ("SO₂"), particulate matter with a diameter of up to 10 microns ("PM₁₀"), lead, sulfates and hydrogen sulfide. Toxic air pollutants are those known or suspected to cause cancer, genetic mutations, birth defects, and other serious illness to people. Reactive organic gases ("ROG") are also of concern because of their role in forming ozone, a secondary pollutant.

Emissions of ROG, NO_x, SO₂, CO, and PM₁₀ will be generated from the following offshore construction activities: pre-lay surveys; grapnel runs, cable-laying, post-lay burials with ROV and jetting; and post-lay surveys.

Of particular concern is the release of NO_x emissions due to construction activities. Nitric oxide is a colorless gas formed during combustion processes, which rapidly oxidizes to form NO₂, a brownish gas. The APCD estimates that the project (both onshore and offshore segments) will produce NO_x emissions that slightly exceed APCD's quarterly emission threshold by about .03 tons.⁴ The APCD found that construction phase impacts had been mitigated to less than significant levels by use of emission abatement strategies on two pieces of equipment used for onshore installation. The applicants' proposed mitigation also includes that, if required by the APCD, four degree timing retard shall be applied to the cable lay vessel engines for operations conducted within the 3-nautical mile boundary which will reduce NO_x emissions by an estimated 25%. Based on the actual project schedule which will affect the level of emissions and availability of control devices, the applicants and the APCD may also consider the use of purchase of emission credits to substitute or supplement the above measures.

The APCD informed the Coastal Commission that implementation of the above measures will mitigate air emission impacts to less than significant levels.

The Commission thus finds that the proposed project will be carried out consistent with the rules and requirements of the local air district and therefore is consistent with Coastal Act Section 30253(3).

⁴ This is the only air pollutant that will be produced in amounts in excess of the APCD's thresholds.

5.0 California Environmental Quality Act

As "lead agency" under the California Environmental Quality Act ("CEQA"), the State Lands Commission on April 20, 2000 certified a mitigated negative declaration ("MND") for the proposed project.

The Commission's permit process has also been designated by the State Resources Agency as the functional equivalent of the CEQA environmental impact review process. The Commission's permit review process identified numerous impacts that were not resolved in the mitigated negative declaration. Pursuant to section 21080.5(d)(2)(A) of the CEQA and section 15252(b)(1) of Title 14, California Code of Regulations (CCR), the Commission may not approve a development project "if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impact which the activity may have on the environment." The Commission finds that only as conditioned are there no feasible less environmentally damaging alternatives or additional feasible mitigation measures that would substantially lessen any significant adverse impact which the activity may have upon the environment, other than those identified herein. Therefore, the Commission finds that the project as fully conditioned is consistent with the provisions of the CEQA.

APPENDIX A: STANDARD CONDITIONS

1. **Notice of Receipt and Acknowledgment.** The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. **Expiration.** If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. **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 of 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 development during construction, 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.

APPENDIX B: SUBSTANTIVE FILE DOCUMENTS

Coastal Development Permit Application Materials

Application for Coastal Development Permit E-98-27, September 8, 1998, as amended by subsequent submittals and a revised project description incorporated into the Mitigated Negative Declaration as adopted by the California State Lands Commission on April 20, 2000.

California Coastal Zone Management Program

Federal Consistency Certification submitted by PC Landing Corporation/PAC Landing Corporation on April 21, 2000, as amended by email from Denise Toombs dated May 5, 2000.

Agency Permits and Orders

State Lands Commission General Lease-Right of Way Use Exhibit A, State Lands Commission Lease Conditions; Exhibit B, Land Description; Exhibit C, Mitigation Monitoring Program, approved April 20, 2000.

USACOE, Pre-Construction Notification PCN-095050200, Temporary Diversion of Stream Flow, dated April 26, 2000.

Section 401 Conditional Waiver of Water Quality Certification for Pacific Crossing and Pan-American Crossing Fiber Optic Cable Systems Project Landing at Grover Beach, San Luis Obispo issued by Roger W. Briggs, Executive Officer, California Regional Water Quality Control Board, Central Coast Region, dated May 3, 2000.

City of Grover Beach Coastal Development Permit No. 98-033, Findings and Conditions, as approved by Tom A. Odom, City Manager, May 5, 2000.

Environmental Documents/Reports

Ecology and Environment, Inc. January 2000, Draft Negative Declaration for Consideration of a New Lease for Submarine Telecommunication Cable Systems. Prepared for the California State Lands Commission.

Lease Documents

State Lands Commission General Lease-Non Exclusive Rights-of-Way PRC 8141.1 (PAC Landing Corporation, Inc.); PRC 8151 (PC Landing Corporation); PRC 8152 (PC Landing Corporation).

Letters and Electronic Mail

Letter from Lee Otter, CCC, to Denise Toombs, E&E, re: advising applicants of incomplete Coastal Development Permit Application, October 7, 1998

Letter from Commission to E&E, Requesting information on project and advising of incomplete Status of Coastal Development Permit Application, dated January 20, 1999.

Email from Chris Kern, CCC, to Denise Toombs, E&E: July 14, 1999 re: scheduling inquiries.

Email from Michael Bowen, CCC, to Karen Johnson, E&E: March 2000 re: a CSLC late April hearing pushes CCC hearing to June at earliest.

Email from Michael Bowen, CCC, to Denise Toombs, E&E: March 29, 2000 re: status of agency approvals.

Email from Denise Toombs, E&E, to Michael Bowen, CCC: March 29, 2000 re: no agency approvals, pending State Lands action.

Email from Denise Toombs, E&E, to Michael Bowen, CCC: April 5, 2000 re: response to most of 38 earlier questions.

Email from Joy Chase, CCC, to Sandra Bierdenski, Grover Beach, April 11, 2000 re: Local Government approval status.

Email from Denise Toombs, E&E to Joy Chase, CCC, April 14, 2000 re: PC-1 and PAC carrier types

Email from Joy Chase, CCC, to Sandra Bierdenski, Grover Beach: April 18, 2000 re: wetland delineation.

Email from Denise Toombs, E&E, to Joy Chase, CCC: April 21, 2000 re: FCC license, plow equipment, distance to mean high tide from sea portal, federal consistency, State Parks.

Email from Joy Chase, CCC, to Denise Toombs, E&E: April 24, 2000 re: cable burial depth, bentonite impacts to Pismo Clam, quantify area of disturbance.

Email from Joy Chase, CCC, to Denise Toombs, E&E: April 24, 2000 re: responses to negative declaration, Essential Fish Habitat Assessment.

Emails from Joy Chase, CCC, to Denise Toombs, E&E: April 25, 2000 re: DFG 1601, State Parks Lease, land route alternative.

Email from Denise Tombs, E&E to Joy Chase, CCC: April 25, 2000 re: DFG 1601, width of sediment disturbance, Essential Fish Habitat Assessment, status of cables at 1000 fathom.

FAX from Attorney Collins, Chumash Council, to Joy Chase, CCC: April 25, 2000 re: Memorandum of Agreement between Chumash and PC Corporation and PAC Corporation dated April 18, 2000.

Email from Joy Chase, CCC, to Denise Toombs, E&E: April 26, 2000 re: consistency certification.

Emails from Karen Johnson, E&E, to Joy Chase, CCC: May 2, 2000 re: area of disturbance; land route alternative; coastal dependency; May 1, 2000 re: ROW.

Letter from Sherri Cook, PC Landing, to Dan Chia, CCC: May 31, 2000 re: FCC Landing License issues

Other

Johnson, K. May 31, 2000. Personal Communication by Dan Chia, CCC.

Coastal Commission Staff Report: Combined Consistency Certification and Coastal Development Permit Application E-99-11/CC-028-00 MFS Globenet Corporation/MCI WorldCom Network Services, dated March 30, 2000.

National Oceanic and Atmospheric Administration, Draft Proposed Principles for Laying Submarine Cables in the Marine and Coastal Environment (for discussion only), February 2000.

Letter William Douros, Superintendent, Monterey Bay National Marine Sanctuary to Kathleen Connell, chair, State Lands Commission, re: Global Photon Project, dated April 19, 2000.

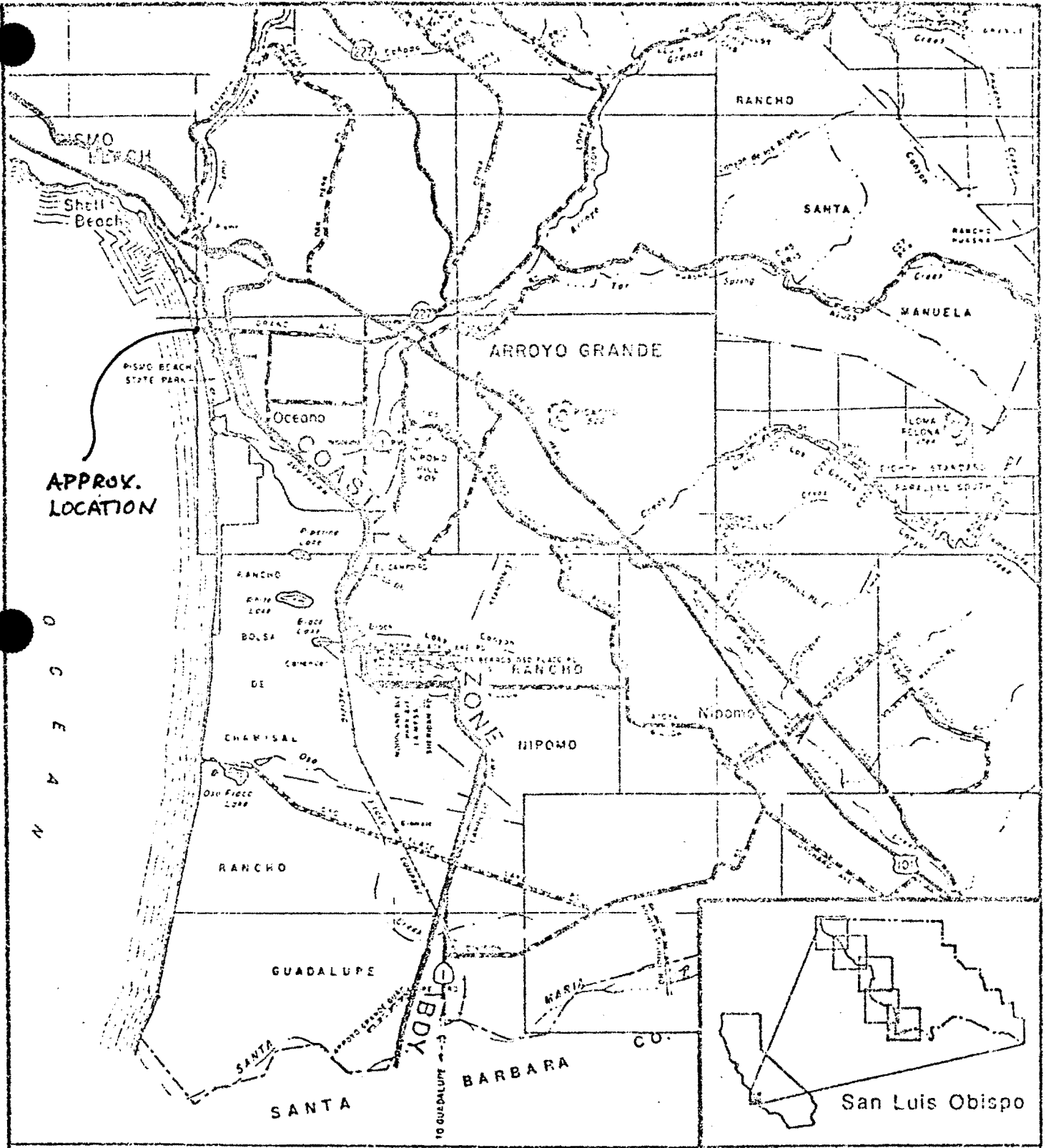
Heezen, B.C. 1957. *Whales entangled in deep sea cables*. Deep-Sea Research 4:105-115.

Department of Fish and Game, Agreement Regarding Proposed Stream or Lake Alteration Fish and Game Code Sec. 1600 et Seq., between Department of Fish and Game and Pacific Fiber Link. (unsigned)

Public Utilities Commission, Application A.99-06-028, Application for Modification of a Certificate of Public Convenience and Necessity (CPCN) for the Level (3) Communications Infrastructure Project, Subsequent Mitigated Negative Declaration, April 10, 2000.

PC Landing Corporation. 1998. Cable Landing License, File No. SCL-98-006. Federal Communications Commission Order DA 98-2351.

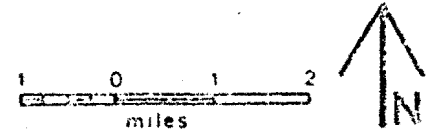
PAC Landing Limited. 1999. Cable Landing License, File No. SCL-LIC-98-1103-00022. Federal Communications Commission Order DA 99-510.



APPROX.
LOCATION

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LOCATION MAP



County of San Luis Obispo

Sheet : EXHIBIT 1
E-98-27
CC-041-00

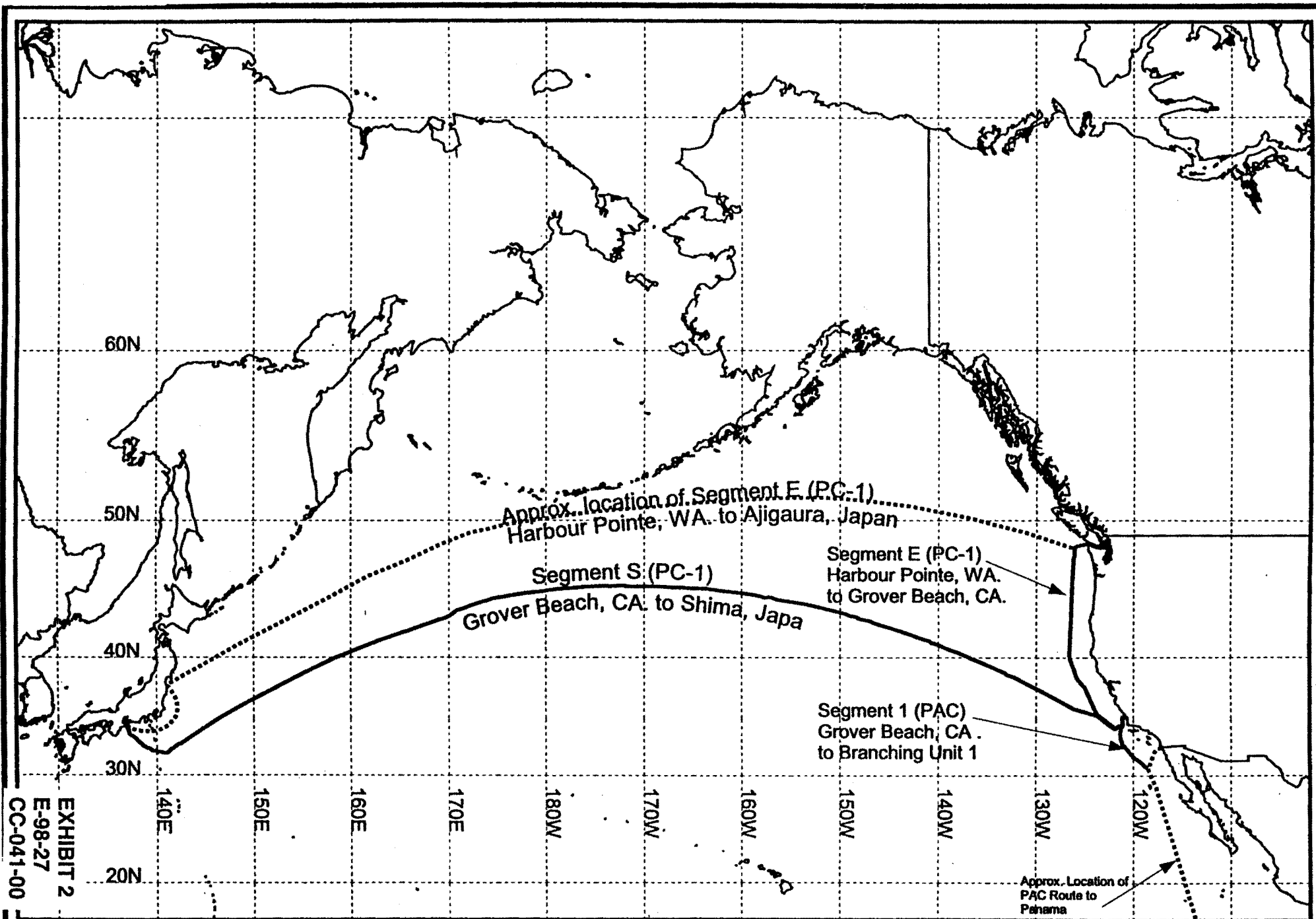
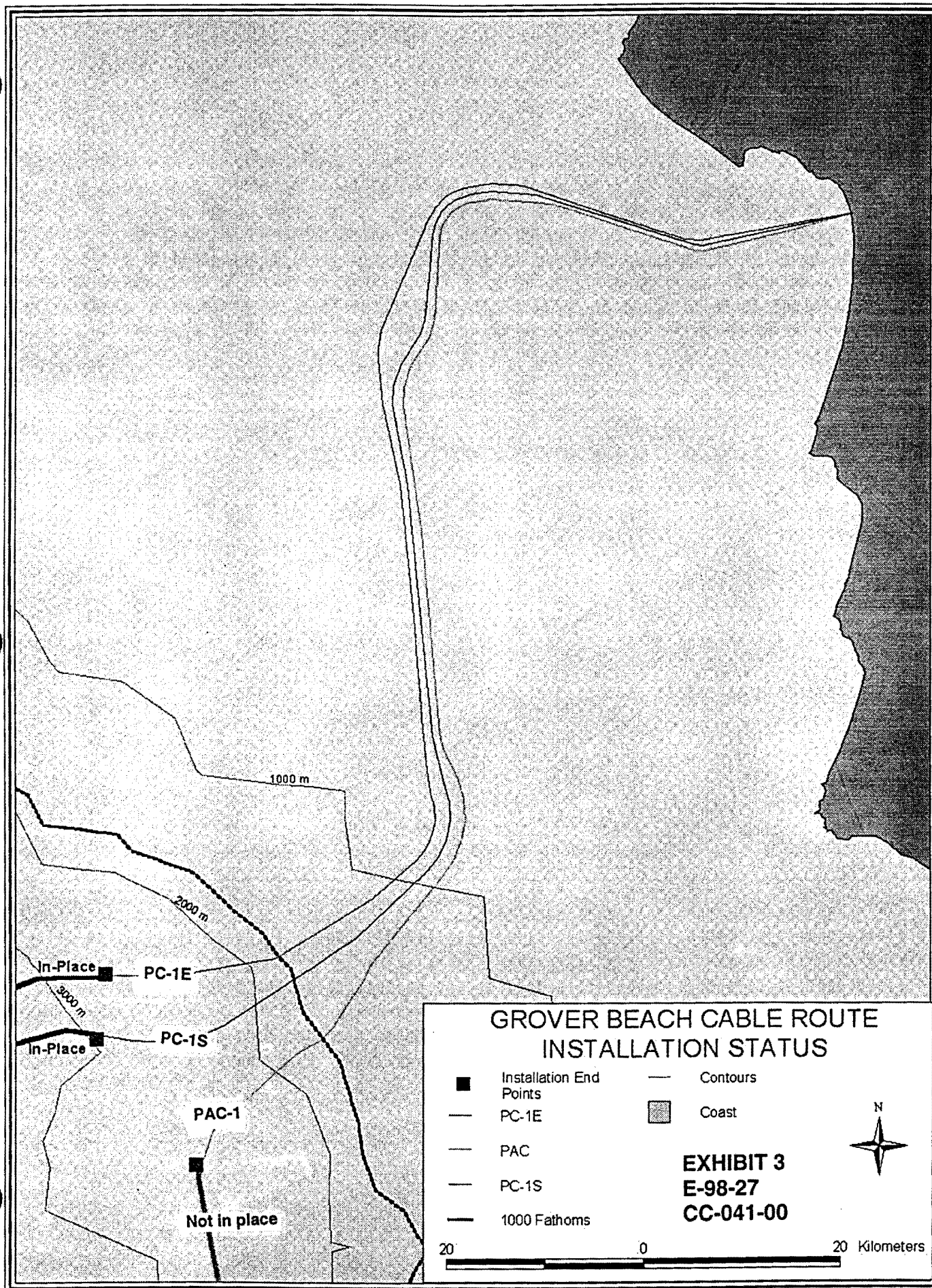


Figure 2-2
PC-1 and PAC Submarine Cable Systems



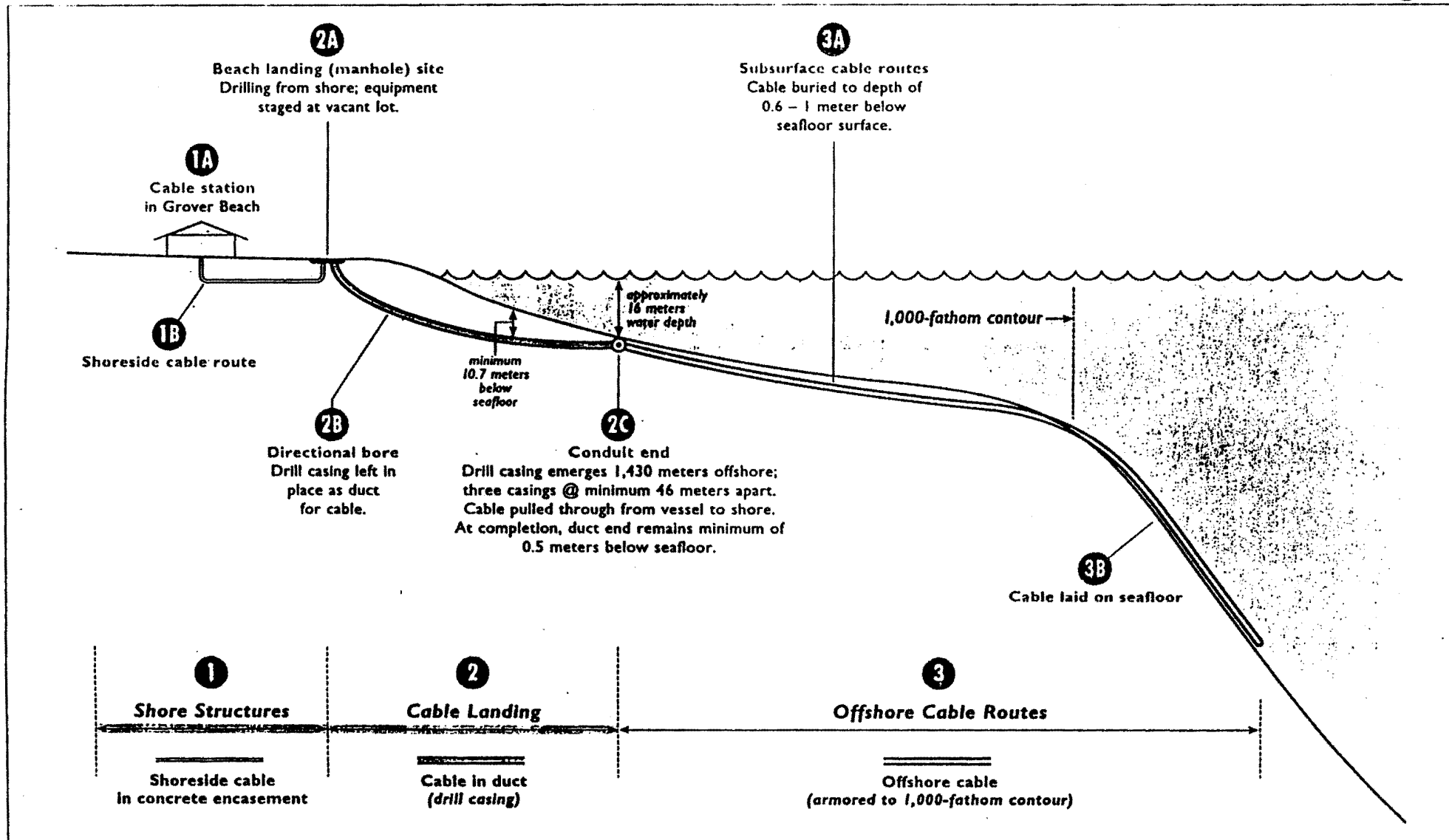


Figure 2-3

Grover Beach Cable Landing - Overview of Project Segments



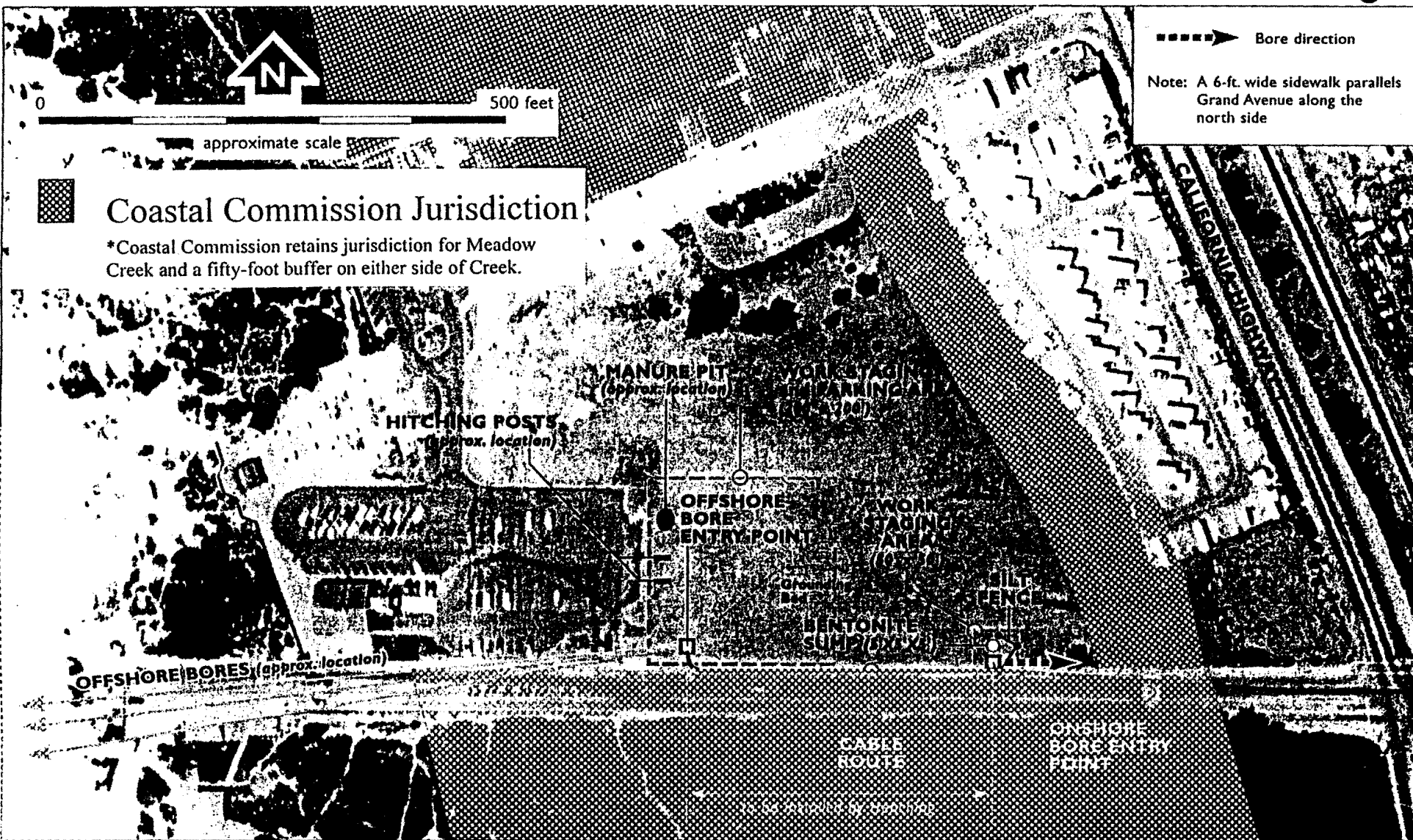


Figure 2-4

**Cable Landing, Bore Entry Point, and Staging Area
Pismo State Beach**

EXHIBIT 6
E-98-27
CC-041-00

CALIFORNIA COASTAL COMMISSION

45 FREMONT, SUITE 2000
SAN FRANCISCO, CA 94105-2219
VOICE AND TDD (415) 904-5200
FAX (415) 904-5400



EXHIBIT 7
E-98-27
CC-041-00

DRAFT
Memorandum of Agreement
Between the
California Coastal Commission,
California Department of Fish and Game
and
United Anglers of Southern California

This Memorandum of Agreement (Agreement or MOA) is by and between the California Coastal Commission (the Commission), the California Department of Fish and Game (DFG), and the United Anglers of Southern California (UASC), sometimes referred to as the Parties. The Parties agree as follows:

WHEREAS, _____ (hereinafter referred to collectively as "the Applicants") have applied to the Coastal Commission to obtain coastal development permits to install fiber optic cables offshore California.

WHEREAS, on _____, the Commission granted to the Applicants coastal development permit _____ to install fiber optic cables offshore _____.

WHEREAS, as a condition (Special Condition __) of their approvals, the Commission has required the Applicants to compensate for all project-related adverse impacts to hard bottom habitat through payment of a compensatory mitigation fee (hereinafter "the fee") which will be used to fund the construction of a new artificial reef or augmentation of an existing artificial reef in state waters within the Southern California Bight. The condition provides that the amount of the fee shall be calculated by multiplying by a compensation rate of \$27.31 per square foot the total area of disturbed or lost hard bottom.

WHEREAS, the condition further requires that, should impacts occur, the Applicants shall pay their fee to the UASC within 30 calendar days of review and written determination by the Commission's Executive Director of the results of the Hard Bottom Seafloor Survey.

WHEREAS, the DFG is the principal State agency responsible for the establishment and control of fishery management programs. The DFG is the State trustee agency with jurisdiction over the conservation, protection and management of fish, and habitat necessary for biologically sustainable populations of fish species (Fish and Game, section 1802, 711.7).

WHEREAS, the DFG administers the California Artificial Reef Program for the purposes of (1) placing artificial reefs in state waters; (2) studying existing artificial reefs and all new reefs to determine the design criteria needed to construct artificial reefs capable of increasing fish and invertebrate production in waters of the state; and (3) determining the requirements for reef siting

and placement (Fish and Game Code, sections 6420-6425).

WHEREAS, the DFG desires to assume the lead responsibility for the planning, siting, design and permit requirements for the construction of any new artificial reef or augmentation of an existing artificial reef in state waters using the fee(s) obtained from the Applicants.

WHEREAS, the UASC are a volunteer group of recreational anglers interested in preserving, protection and enhancing marine resources and fishing opportunities.

WHEREAS, the UASC desires to secure and enter into construction contract with a contractor to construct any new artificial reef or augment an existing artificial reef using the fee(s) obtained from the Applicants.

NOW, THEREFORE, in consideration of the benefits to marine resources of the State of California, the Commission, the DFG and the UASC agree as follows:

1. The UASC agrees to receive any fee paid by the Applicants. Within 30 calendar days of receipt of any fee, the UASC shall deposit the funds in an interest-bearing account ("the compensatory hard bottom mitigation fund" or "fund"). These funds including all earned interest shall be expended by the UASC solely for reef materials, construction costs, and the UASC's administration of the fund (not to exceed 10% of the total collected fees).
2. Within 180 days of the date on which all fees have been paid to the UASC, the DFG shall develop and submit for review and approval by the Commission's executive director, a plan to spend the monies within the fund on either the construction of a new artificial reef or augmentation of an existing artificial reef within the Southern California Bight.
3. Within one year of approval by the Commission's executive director of a plan to spend the compensatory hard bottom mitigation fund, the DFG shall secure all necessary governmental approvals, including a coastal development permit, to construct a new artificial reef or augment an existing artificial reef within the Southern California Bight.
4. Within 90 days of either: (1) the granting of all necessary governmental approvals to construct a new artificial reef or augment an existing reef, or (2) approval by the Commission's Executive Director of a plan to spend the monies in the fund, whichever occurs later, the UASC shall secure and enter into a construction contract (the "Contract") with a contractor to construct either a new artificial reef or augment an existing artificial reef within the Southern California Bight. The Commission's executive director may for good cause grant an extension of the time deadline imposed by this section.
5. The Contract shall: (1) provide that the contractor will assume all liability for the reef material (e.g., quarry rock) until its placement in the designated location(s), and (2) specify that when the reef material touches the ocean floor at such location(s), the reef material shall become the property of the DFG.

6. Within two years of approval by the Commission's executive director of a plan to spend the monies in the fund, the UASC shall spend these monies to complete the construction of either a new artificial reef or augmentation of an existing artificial reef within the Southern California Bight.
7. The UASC and the contractor(s) must maintain Generally-Accepted Accounting Principles (GAAP), financial management, and accounting system and procedures which provide for (1) accurate, current and complete disclosure of all financial activity for the reef project, (2) effective control over, and accountability for all funds, property and other assets, related to the project, (3) comparison of actual outlays with budgeted amounts, and (4) accounting records supported by source determination. Annual financial reports showing current and cumulative financial activity must be provided to the Commission. All project records must be made available at any time for examination by the Commission.

The UASC shall retain all pertinent books, documents and papers, including financial transactions and supporting documents, and policies and procedures for the general accounting system, internal controls, and management practices for a period of three years following the date(s) of all final payment(s) under the Contract.

8. A failure on the part of any of the Parties to carry out the terms of this Agreement shall result in the following process. The party that believes another party is failing to carry out the terms of the Agreement shall bring the issue to the Executive Director of the Commission. If the Executive Director of the Commission cannot resolve the issue, the matter shall be referred to the Commission for resolution. The Commission may choose to seek (1) judicial enforcement of the terms of this MOA; (2) a full refund of any unexpended funds; or (3) other appropriate remedies.
9. This Agreement may be amended only in writing executed by all Parties.

IN WITNESS WHEREOF, the Parties have executed this MOA to this effect as of the date last signed below.

CALIFORNIA COASTAL COMMISSION

By: _____
PETER M. DOUGLAS
Executive Director

Date

CALIFORNIA DEPARTMENT OF FISH AND GAME

By: _____
ROBERT HIGHT
Executive Director

Date

UNITED ANGLERS OF SOUTHERN CALIFORNIA

By: _____

Date