

CALIFORNIA COASTAL COMMISSION

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Staff Report: July 29, 2004
Hearing Date: August 12, 2004
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 1-04-025

APPLICANT: County of Humboldt

PROJECT LOCATION: Culverted crossing of Stansberry Creek under Lighthouse Road (County Road No. 1D010) near the confluence of the Mattole River approximately 3.3 miles southwest of Petrolia, Humboldt County. APN 105-031-40

PROJECT DESCRIPTION: Replace the existing culvert by (1) excavating and removing the old culvert and approximately 2,000 cubic yards of gravel would be removed from the creek bed within a 250-foot reach upstream of the new culvert; (2) installing a new 60-foot-long by 16-foot-wide by 6-foot 9-inch-high corrugated metal box culvert mounted on a concrete base with rock grade control weirs inside; (3) installing six additional rock grade control weirs upstream of the new culvert, and one downstream of the new culvert; (4) placing 50 cubic yards of ½- to 1-ton rock slope protection as rock apron structures to prevent erosion at the new culvert inlet and outlet; and (5) planting alder seedlings, willow cuttings, and native seed mix to mitigate for the removal of

trees and/or trimming, and ground disturbance necessitated by the project.

APPROVALS RECEIVED: (1) Army Corps of Engineers Regional General Permit 1 for Fish Passage Sediment Reduction Projects at Water Crossings, pursuant to Section 404 of the Clean Water Act (33 U.S.C. Section 1344); and (2) California Department of Fish and Game CFGC Section 1601 Agreement.

OTHER APPROVALS REQUIRED: None

SUBSTANTIVE FILE DOCUMENTS: Humboldt County LCP

SUMMARY OF STAFF RECOMMENDATION

Staff recommends that the Commission approve with conditions this application for the proposed replacement of the County of Humboldt's culverted crossing for Stansberry Creek under Lighthouse Road (County Road No. 1D010) on the basis that, as conditioned by the Commission, the project is consistent with the Coastal Act.

The project site is located near the confluence of the Mattole River approximately 3.3 miles southwest of Petrolia. The project would involve excavation and removal of the existing culvert and replacement with a new approximately 60-foot-long, 16-foot-wide, 6-foot 9-inch-high corrugated metal box culvert mounted on a concrete base that would be installed with rock grade control weirs inside of it. Six additional rock grade control weirs would be installed upstream of the new culvert, and one would be installed downstream. Approximately fifty cubic yards of ½- to 1-ton rock slope protection would be placed as rock apron structures at the new culvert inlet and outlet to prevent scour erosion. Approximately 2,000 cubic yards of gravel would be removed from the creek bed within a 250-foot reach upstream of the new culvert. Alder seedlings, willow cuttings, and native seed mix would be planted to mitigate removal of trees and/or trimming, and ground disturbance necessitated by the project.

The project is an allowable use pursuant to Coastal Act Section 30236, because as conditioned, the project would incorporate the best mitigation measures feasible, and would be development where the primary function is the improvement of fish and wildlife habitat. Staff also has concluded that the proposed project, as conditioned, is consistent with Section 30231 requiring protection of biological productivity and water quality.

With the recommended special conditions, the significant adverse environmental impacts of the proposed project would be mitigated to a level of insignificance. All of the riparian vegetation temporarily disturbed by project construction would be replanted with alder seedlings and willow cuttings and native grasses. Although approximately 595 square feet of existing riparian ESHA area would be permanently usurped by structural components of the finished project, an additional approximately 1,860 square feet of area would be converted from non-ESHA upland area into riparian ESHA by the planting of alder and willow and seeding with native grass species where non-native species existed before. Potential significant adverse impacts to endangered and threatened salmonids would be avoided by limiting the construction period to times of the year when spawning salmonids are not present in the river. The project, as conditioned, would also incorporate a suite of water quality best management practices to ensure that coastal waters are not degraded during construction. The special conditions recommended by staff include the following:

Special Condition No. 1 confines development to the period of June 1 to October 15 to avoid significant adverse impacts on sensitive salmonid fish species during principal periods of migration.

Special Condition No. 2 is imposed to reduce impacts to water quality from the use and management of hazardous materials on the site for fueling and lubricating heavy equipment and pouring cement. The Special Condition requires that a hazardous materials management plan be submitted for the review and approval of the Executive Director that demonstrates among other things, that: 1) staging and storage areas for equipment, fuels, lubricants and solvents will be located outside of the stream's normal high water area and any fueling of construction equipment shall occur only during daylight hours, and occur a minimum of 100 feet from Stansberry Creek or the Mattole River; 2) hazardous materials management equipment shall be on-hand at the project site for immediate use in cleaning up accidental spills and any accidental spill shall be rapidly contained and cleaned up; and 3) provisions for preparing and pouring cement shall prevent discharges of wet cement into coastal waters.

Special Condition No. 3 would require that the applicant submit a revised erosion and sedimentation control plan that demonstrates among other things that: 1) no construction materials, debris, or waste originating from the project shall be placed or stored during construction where it may enter Stansberry Creek, the Mattole River, any wetlands, or other coastal waters; and 2) any and all debris resulting from construction shall be removed from the project site within 30 days of project completion.

Special Condition No. 4 requires that the applicant submit a revised monitoring plan that among other things, 1) evaluates the success of the culvert replacement project in opening access for salmonids to fishery habitat in Stansberry Creek as determined by the presence

of coho salmon (*Onchorhynchus kisutch*), and/or steelhead (*Onchorhynchus mykiss*), and/or coastal cutthroat trout (*Oncorhynchus clarki clarki*) upstream of the replacement culvert; and 2) provides that the trees to be planted for riparian restoration of disturbed areas shall be maintained so as to ensure a minimum of 80% survival after 5 years; 3) provides for an annual project monitoring report by August 1 each year for a period of (5) five years from the finish of construction; and 4) provides that the impacted site shall be remediated within a year of a determination by the permittee or the Executive Director that monitoring results indicate that the site does not meet the performance standards identified in sections 1) and 2) above.

Special Condition No. 5 requires the applicant to submit written evidence that the owners of the property affected by this CDP have provided the applicant with permission to develop the property as conditioned herein.

Staff recommends that the Commission find the project, as conditioned, is consistent with the Chapter 3 policies of the Coastal Act.

The Motion to adopt the Staff Recommendation of Approval with Conditions is found on page 4.

STAFF NOTES

1. Jurisdiction and Standard of Review.

The proposed project is located in the Commission's retained coastal development permit jurisdiction. Humboldt County has a certified LCP, but the site is within an area shown on State Lands Commission maps over which the State retains a public trust interest. Therefore, the standard of review that the Commission must apply to the project is the Chapter 3 policies of the Coastal Act.

I. MOTION, STAFF RECOMMENDATION, AND RESOLUTION

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-04-025 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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

Resolution to Approve Permit:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act. Approval of the permit complies with the California Environmental Quality Act because 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.

II. STANDARD CONDITIONS: See attached.

III. SPECIAL CONDITIONS:

1. Timing of Construction.

To avoid adverse impacts on sensitive salmonid fish species during principal periods of migration, no development shall occur between October 15 and June 1. Development shall instead be confined to the period between June 1 and October 15.

2. Hazardous Materials Management Plan.

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

- (1) Staging/storage areas for equipment, fuels, lubricants and solvents will be located outside of the stream's normal high water area. Any fueling of construction equipment shall occur only during daylight hours and at a minimum of 100 feet from the ordinary high water line of Stansberry Creek or the Mattole River;
- (2) Fuels, lubricants, and solvents shall not be allowed to enter the waters of Stansberry Creek or the Mattole River. Hazardous materials management

equipment including absorbent pads shall be available immediately on-hand at the project site. Any accidental spill shall be rapidly contained and cleaned up. All heavy equipment operating in or near the water's edge shall utilize vegetable oil as hydraulic fluid. Any equipment or vehicles operated within or adjacent to the stream shall be checked and maintained daily to prevent fuel, lubricant, or coolant leaks;

- (3) Provisions for preparing and pouring cement in a manner that will prevent discharges of wet cement into wetlands including, but not limited to, placement of measures such as catch basins, mats or tarps beneath the construction area to prevent spills or over-pours from entering coastal waters;
 - (4) Provisions for the handling, cleanup and disposal of any hazardous or non-hazardous materials used during the construction project including, but not limited to, paint, asphalt, cement, equipment fuel and oil, and contaminated sediments;
 - (5) A schedule for maintenance of containment measures on a regular basis throughout the duration of the project;
 - (6) Provisions for the containment of rinsate from the cleaning of equipment, including cement mixing equipment, and methods and locations for disposal off- site. Containment and handling shall be in upland areas and otherwise outside of any environmentally sensitive habitat area;
 - (7) A site map detailing the location(s) for hazardous material storage, equipment fueling and maintenance, and concrete wash-out facilities; and
 - (8) Reporting protocols to the appropriate public and emergency services agencies in the event of a spill.
- B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

3. Revised Erosion and Sedimentation Control Plan

- A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit a revised erosion and sedimentation control plan for the review and approval of the Executive Director. The plan shall substantially conform with the "Temporary Erosion Control & Water Management Plan"

submitted as part of the application and included as Exhibit No. 6 of the staff report except that the plan shall also provide for the following changes to the project.

- (1) The Erosion and Sedimentation Control plan shall demonstrate that:
 - (a) No construction materials, debris, or waste originating from the project shall be placed or stored during construction where it may be subject to entering Stansberry Creek, the Mattole River, any wetlands, or other coastal waters;
 - (b) Any materials placed in seasonally dry portions of the stream that could be washed downstream or could be deleterious to aquatic life, wildlife, or riparian habitat shall be removed from the project site prior to inundation by high flows;
 - (c) Any debris resulting from construction activities that inadvertently enters the creek or river shall be removed from the waters immediately;
 - (d) Disposal sites are located in upland areas where construction-related debris from the project may be lawfully disposed;
 - (e) Any and all debris resulting from construction activities shall be removed within 30 days following completion of construction and in accordance with the erosion and sedimentation control plan.
 - 2) The plan shall include, at a minimum, the following components:
 - (a) A site plan showing all proposed locations for stockpiling construction materials, debris, or waste during construction;
 - (b) A description of the manner by which the material will be removed from the construction site and identification of all debris disposal sites that will be used;
 - (c) A schedule for removal of all debris.
- B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.

4. **Revised Monitoring Plan.**

A. **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT,** the applicant shall submit a Revised Monitoring Plan to the Executive Director for review and approval. The revised plan shall substantially conform with the monitoring provisions contained in the project application received April 22, 2004, except that the plan shall also provide for the following changes to the project:

- (1) The plan shall provide that the success of the culvert replacement project in opening access for salmonids to fishery habitat in Stansberry Creek will be determined by the presence of coho salmon (*Onchorhynchus kisutch*), and/or steelhead (*Onchorhynchus mykiss*), and/or coastal cutthroat trout (*Oncorhynchus clarki clarki*) upstream of the replacement culvert;
- (2) The plan shall provide that the trees to be planted shall be maintained so as to ensure that 240 specimens of the willows and alders (approximately 80% of the 300 willow stakes and alder starts to be initially planted) are maintained in a healthy condition in the plating area during the entire 5-year monitoring period. Planted trees that die or are removed for any reason shall be replaced in-kind as necessary to ensure that at least 240 specimens of the approved tree species are maintained on site at any given time.
- (3) The plan shall provide a methodology for monitoring for the presence of the required fish species upstream of the replacement culvert that includes the use of a qualified biologist able to identify coho salmon (*Onchorhynchus kisutch*), steelhead (*Onchorhynchus mykiss*), and coastal cutthroat trout (*Onchorhynchus clarki clarki*).
- (4) The plan shall provide a methodology for monitoring for the survival of 80% of the planted willows and alders that includes counts of all of the surviving and dead or dying planted trees.
- (5) The applicant shall provide the Commission with an annual project monitoring report by August 1 each year for a period of (5) five years from the commencement of development.
- (6) The impacted site shall be remediated within a year of any determination by the permittee or the Executive Director that monitoring results indicate that the site does not meet the performance standards identified in sections (1) and (2) above, and in the approved final monitoring and mitigation

program. If the performance criteria have not been met at the end of five years following the commencement of the development, the applicant shall submit an amendment to the coastal development permit proposing additional mitigation to ensure all performance criteria are satisfied consistent with all terms and conditions of this permit.

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

5. **Written Permission.**

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and approval of the Executive Director, written evidence from the owner(s) of any property affected by this coastal development permit, indicating that they have provided permission to the applicant to develop their property as conditioned herein.

IV. **FINDINGS AND DECLARATIONS.**

A. **Site and Project Description.**

The proposed project is a fishery enhancement culvert replacement project located approximately 3.3 miles southwest of the town of Petrolia, Humboldt County, where Stansberry Creek crosses under Lighthouse Road (County Road No. 1D010). See Exhibit Nos. 1 and 2).

The proposed project would remove the existing culvert under Lighthouse Road that creates a complete fish migration barrier, and replace it with a new culvert designed to be "fish friendly," and thereby open up more than 3,600 linear feet of Stansberry Creek habitat for both salmonid spawning and juvenile out-migration.

Five counties in northern California--Humboldt, Del Norte, Siskiyou, Trinity and Mendocino--have joined together in a unique conservation planning project.

These five counties are within the "Transboundary Evolutionarily Significant Unit (ESU)" for the coho salmon. Thus, land use and development activities occurring within this area could be limited to achieve conformance to the requirements of the federal Endangered Species Act.

Soon after the listing of the coho salmon, elected supervisors from the five counties met and concluded that the economies of the counties were at stake unless they developed a

conservation plan that would meet the requirements of the National Marine Fisheries Service. A memorandum of understanding was developed to formally join the counties for the purposes of evaluating strategies for protecting anadromous fish and their habitats while minimizing disruptive impacts on local land uses and economies. The result is the ongoing five county salmon conservation planning effort.

The five county plan is a joint project of the University of California, Cooperative Extension and the five counties. Funding for the work has been provided by the State Resources Agency. The effort has two elements. Cooperative Extension is performing an assessment of existing county policies and procedures in terms of their potential impacts on anadromous (those who spend part of their lives in streams and part in the ocean such as salmon) fish and their habitats. This involves review of written policies (e.g., general plans, ordinances, etc.), review of development project case studies (e.g., subdivisions and commercial projects), and field assessment of county road and flood control maintenance practices. The field assessment is performed by a team consisting of county planning and public works personnel, fisheries biologist, geologist and UC scientists. The second element, which is being done by the counties and depends in part on Cooperative Extension's findings, is the development of inventory, management and educational programs for improving fish habitat conditions. The five county conservation plan is an innovative approach to solve endangered species management problems from the local level rather than from the top down. The plan is viewed by many observers as a model for other counties and states. In fact, a similar approach will be used in the five counties comprising the central California ESU: Sonoma, Marin, San Mateo, Santa Cruz and Monterey.

An inventory of the Humboldt County road system was conducted in the year 2000 to determine which County culverts were barriers to fish passage. The study was commissioned by the Five County Coho consortium. Funded by Senate Bill 271, the inventory resulted in a Humboldt County-wide priority listing of projects to improve fish passage. The inventory identified the Stansberry Creek culvert as a "jump and velocity" barrier to salmonids (including species listed under the Endangered Species Act) and adult coastal cutthroat trout. This means that the gradient differential presented to spawning salmonids by the greater than 8-foot jump required at the culvert would restrict access to fishery habitat in Stansberry Creek. The size and design of the existing culvert also creates a barrier for adult spawners during high water when the velocity of water traveling through the culvert prevents access upstream. The culverted stream crossing of Stansberry Creek at Lighthouse Road was placed 5th on the priority list of fishery passage enhancement projects for Humboldt County.

The Stansberry Creek watershed contains a 1.4-square-mile (896-acre) area, and is located on the northerly face of Prosper Ridge in the Mattole River watershed 1½ miles from its confluence with the Pacific Ocean. The forested watershed is steep, dropping from 2,165 feet to 30 feet in elevation within a distance of approximately two miles. Stansberry Creek provides potential high quality habitat for coho salmon, steelhead, and

cutthroat trout. Stansberry Creek has cool summer flows that would provide about 3,600 linear feet of excellent juvenile rearing habitat once the culvert is replaced. Upstream of the culvert, the creek's bedload consists of well-graded gravel and cobble (up to 10-inch diameter) suitable as spawning habitat, and exhibits a closed canopy of riparian vegetation. This well-developed riparian environmentally sensitive habitat area (ESHA) corridor of alder and willow undergoes a transition into coniferous Douglas-fir and grand-fir with associated tanoak and madrone up on the steeper slopes of the watershed. Vegetation at the project site includes mature alder and willow trees that form a canopy over the creek. Additionally, non-native Himalaya blackberry and European grasses occur. No rare plant or protected plant species have been found at the project site. Downstream of the culvert, the creek enters the mainstem of the Mattole River, within 50 feet, with no fish migration barriers or impediments.

The existing culvert that would be removed and replaced is a 5-foot diameter, 40-foot long corrugated metal pipe installed at a moderately steep 4.5% slope. The gradient and associated water velocities present difficulties for passage through the existing culvert for all ages of salmonids. The most significant problem is that the culvert outlet presents a greater than 8-foot drop. To pass through the culvert, spawning salmonids would have to complete an extreme jump, and there is no jump pool located at the outlet that would provide a resting spot from which to attempt the feat. Instead, the water splashes out of the culvert onto boulders, before cascading on down the creek toward the Mattole River.

The proposed project would excavate and remove the existing circular pipe and replace it with an approximately 16-foot-wide, 6-foot 9-inch high, 60-foot-long metal box culvert that would be set on a concrete base. The removal of approximately 2,660 cubic yards of gravel/soil from the creek bed would accommodate the installation of the culvert structure and construct the grade control structures upstream and downstream. The concrete base of the new culvert would contain weir grade controls within the structure. These internal weirs would fill with gravel to provide a natural bottom composed of native material of sufficient width to eliminate any artificial barriers to juvenile and adult salmonid migration. Using approximately fifty cubic yards of ½ to 1-ton rock, aprons would be placed at both the inlet and outlet of the new culvert as scour abatement. Some 2-ton boulders would also be used to buttress the embankments. Additional instream boulder grade control weirs would be installed both upstream and downstream of the new culvert to maintain the proper stream gradient as engineered for the project reach. Six of these grade controls would be placed upstream, and one would be placed downstream. These weirs would be sized to comply with velocity and depth limits set by NOAA-fisheries for juvenile and adult salmonids. For spawners, the maximum fish jump at all weirs would be only 8 inches, and velocities would not exceed 5-feet-per-second. The project to replace the culvert with a "fish friendly" design conforms to the National Marine Fisheries Service guidelines, which require that drainage basins be analyzed for expected returns of 100-year storm events, and culvert installations be sized adequately to prevent catastrophic failure of the fill prism during extreme events.

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The project would occur between August and October 15, 2004. Construction is proposed to end prior to the beginning of the upstream migration of any adult salmonids. Streamflows during the construction period would be minimal and are expected to be less than one cubic foot per second. A piped gravity bypass system would be installed to send the creek flows around the construction site and back into the creek downstream of the culvert. The Erosion Control Plan includes use of silt fencing at each end of the creek diversion bypass line, straw bale sedimentation dams where drainage or seepage enters the creek, straw mulching, native plant revegetation of disturbed areas, and rock facing of scour-prone sites such as aprons and adjacent slopes at the new culvert inlet and outlet. Upon project completion, all disturbed ground would be re-vegetated with native vegetation plantings. All earth, gravel, rock and debris to be removed from the site would be disposed at an existing County stockpile site or approved disposal site.

A temporary detour of Lighthouse Road over Stansberry Creek would be provided for automobile and pedestrian traffic by placement of a flatcar bridge at the site to maintain continuous access along the County road during implementation of the project.

B. Fishery Habitat Improvement

The proposed project involves development activities in, and in proximity to, Stansberry Creek, a major tributary to the Mattole River, an important North Coast fishery. These development activities would substantially alter a portion of the lower reaches of Stansberry Creek within 350 feet of its confluence with the Mattole River near the upper end of the Mattole River estuary.

Section 30236 of the Coastal Act in applicable part states:

...[S]ubstantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat (emphasis added).

Section 30236 states that substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to certain developments, including developments where the primary function is the improvement of fish and wildlife habitat. As discussed below, the project would be an allowable use because as conditioned it would employ the best mitigation measures feasible, and would improve fish and wildlife habitat as its primary function.

Allowable Use

The proposed project would remove the existing culvert under Lighthouse Road that creates a complete fish migration barrier, and replace it with a new culvert designed to be "fish friendly," and thereby open up more than 3,600 linear feet of Stansberry Creek habitat for both salmonid spawning and juvenile out-migration.

An inventory of the Humboldt County road system was conducted in the year 2000 to determine which County culverts were barriers to fish passage. The study was commissioned by the Five County Coho consortium. Funded by Senate Bill 271, the inventory resulted in a Humboldt County-wide priority listing of projects to improve fish passage. The inventory identified the Stansberry Creek culvert as a "jump and velocity" barrier to salmonids (including species listed under the Endangered Species Act) and adult coastal cutthroat trout. This means that the gradient differential presented to spawning salmonids by the greater than 8-foot jump required at the culvert would restrict fish access to habitat in Stansberry Creek. The size and design of the existing culvert also creates a barrier for adult spawners during high water when the velocity of water traveling through the culvert prevents access upstream. The culverted stream crossing of Stansberry Creek at Lighthouse Road was placed 5th on the priority list of fishery passage enhancement projects for Humboldt County.

As discussed above, the project's primary function in substantially altering a portion of the lower reaches of Stansberry Creek is not for road maintenance reasons, but for the improvement of fish and wildlife habitat. As applicant for the proposed project, Humboldt County has secured a grant from the California Department of Fish and Game (DFG) to perform the fishery improvement work, after first conducting an assessment of the entire County road network using a team consisting of County planning and public works personnel, fisheries biologists, geologists and UC scientists to identify the highest priority sites in the County for performing fishery enhancement work that would meet the requirements of the National Marine Fisheries Service.

Therefore, as (1) the need for the proposed project to improve fish habitat was identified by a study commissioned by the Five County Coho Consortium as a priority project for improving passage of threatened salmonid species, (2) the project proposal has been reviewed by fisheries biologists with the California Department of Fish and Game and complies with velocity and depth limits set by NOAA-Fisheries for juvenile and adult salmonids to ensure the design would be optimal for fish passage, and (3) the project is being funded by a DFG grant with Senate Bill 271 monies specifically intended for fish habitat enhancement projects, the Commission finds that the proposed project would clearly constitute a development where the primary function is the improvement of fish and wildlife habitat consistent with Section 30236 of the Coastal Act.

This finding that the primary purpose of the proposed culvert replacement project is the improvement of fish and wildlife habitat is based, in part, on the assumption that the proposed project will be successful in increasing access for spawning salmonids to the fishery habitat upstream of the existing culvert. Should the project be unsuccessful at increasing fish access to habitat upstream of Lighthouse Road, or worse, if the proposed project's channel modifications and other activities actually result in long term degradation of the habitat, the project would not really function as "improvement of fish and wildlife habitat." To ensure that the project achieves the fishery enhancement objectives for which the project is intended, the Commission attaches Special Condition No. 4, which requires the applicant to monitor the success of the new culvert installation by confirming salmonid use of Stansberry Creek fishery habitat upstream of Lighthouse road.

The Commission finds that as conditioned, allowing substantial alterations to occur to a coastal stream for the purposes of enhancing fishery habitat is consistent with Section 30236 of the Coastal Act because the primary function of the project would be to improve fish and wildlife habitat.

Best Mitigation Measures Feasible

The proposed project involves activities that if unmitigated, would have the potential of creating significant adverse environmental impacts to coastal resources. The process of removing the existing culvert and replacing it with a new "fish friendly" structure could cause adverse changes to the stream channel morphology resulting in accelerated erosion or aggradation. Removal of existing riparian ESHA could result in permanent loss of that resource. Section 30236 of the Coastal Act requires that substantial alterations of streams incorporate the best mitigation measures feasible to protect coastal resources.

Stream Alteration Impacts

As designed, the project would replace the existing 5-foot diameter, 40-foot-long, corrugated metal culvert at the Stansberry Creek crossing under Lighthouse Road with a new approximately 60-foot-long by approximately 16-foot-wide by approximately 6-foot 9-inch high metal box culvert. The new culvert is wider with a greatly increased capacity and has the advantage of providing a natural substrate bottom inside the structure, which would be an improvement preferred for habitat values as well as for better handling of high water during peak storm events. In fact, unlike the existing pipe culvert, the project is designed to accommodate a 100-year flood. The project has been engineered to eliminate the greater than 8-foot jump barrier for spawning salmonids that exists at the culvert outlet, and instead, provide gradient change jumps of no more than 8 inches at any one spot. This would be facilitated by installing seven grade control structures (one downstream of the culvert, and six upstream of the culvert) to set the channel gradient through the project reach at specified levels, and thereby distribute the total change in

channel gradient over a longer reach to help prevent future hydrologically-initiated adverse modifications. These grade control structures (composed of ½- to 1-ton boulders) are critical to protect the project from creating conditions that might lead to scour and or headcutting. Furthermore, as described above, rock aprons would be installed at the culvert inlet and outlet to help prevent scour at these locations. All of these project features have been designed to avoid potential significant adverse stream alteration impacts that might be initiated by construction of the project.

Riparian Impacts

As described previously, the vegetation existing at the project site and in the vicinity includes alder and willow trees, non-native Himalaya blackberry, and European grasses. No rare plant or protected plant species have been found at the project site or in the vicinity. The riparian ESHA canopy distribution by species is approximately 70% alder and 30% willow and contains about 105 mature alder and 45 willow trees. As proposed in the project application and indicated on the site plans, some removal of vegetation would occur during the site preparation phase of project implementation. Alder and willow trees and other vegetation would be removed to allow for heavy equipment access, existing culvert removal and installation of the new culvert structure, and streambed/bank excavation for construction of rock weirs upstream and downstream of the culvert location. Since the new culvert would be both wider and longer than the existing one, some amount of ESHA would be permanently displaced by the development. Additional riparian habitat area would also be permanently displaced by installation of rock slope protection at the inlet and outlet of the new culvert, and by placement of rock weirs that would provide instream grade control.

A total of 9,300 square feet of vegetation would be cleared within the project area as depicted on Sheet 3 of the project site plans. Of the total (9,300 square feet), approximately 80% (7,440 square feet) is composed of riparian ESHA. The remaining 20% of the vegetation to be cleared is composed of non-riparian species including non-native Himalaya blackberry and introduced European grasses not obligate to a creekside environment. Completion of the project would result in the permanent loss of a total of approximately 595 square feet of riparian ESHA. Approximately 120 square feet of the total riparian habitat loss would be attributable to space usurped by the larger culvert, approximately 160 square feet of riparian ESHA would be permanently claimed by rock slope protection installed at the inlet and outlet of the new culvert, and approximately 315 square feet would be permanently lost from placement of seven rock weir grade control structures.

During project implementation, the applicant states that every effort would be made to leave willow root wads in place. Stump sprouts from these willow clumps would expedite riparian reestablishment. If it is necessary to uproot willow trees during the construction of the project, every effort would be made to rebury the root wads so that

they too would resprout. Immediately following completion of the proposed project, the entire area from which vegetation was removed, excepting the approximately 595 square feet of permanently lost riparian habitat, would be replanted with a seed mix of fast-growing native grasses and mulched with straw for immediate ground cover and erosion control. Mitigation to reestablish temporarily cleared riparian ESHA would commence during the first rainy season following completion of the project after the onset of autumn rains. Approximately twice as many trees (210 alder and 90 willow) as were cleared would be replanted throughout the disturbed area (9,300 square feet) in order to provide adequate opportunity for a successful survival rate that would ensure replacement of the riparian canopy temporarily cleared for project implementation purposes. As previously stated, the project would result in the permanent loss of 595 square feet of riparian ESHA. The area previously occupied by non-riparian vegetation (1,860 square feet) would be part of the area planted with riparian canopy species where they didn't previously exist as a measure to mitigate riparian ESHA permanently lost from the development. This mitigation would result in a mitigation ratio of better than 3:1 riparian ESHA restored to that permanently lost ($1,860/595 = 3.12$). This relatively high 3:1 mitigation ratio would be even higher if one were to calculate the additional ESHA habitat area resulting from laying back both of the banks of the channel at 2:1 slopes throughout the project reach as shown on the site plans, thereby increasing the slope distance and actual area available for ESHA to reoccupy.

In addition to expanding the size of the riparian ESHA, the restoration work would enhance the riparian habitat through the removal of non-native species from 9,300 square feet of project area. As explained above, a certain amount of non-riparian ESHA vegetation would be cleared removing introduced European grasses and exotic invasive Himalaya blackberry. The grass clumps and root crowns of these non-native species would be transported offsite, and in their place only native species would be replanted.

Finally, it should be pointed out that the project itself will enhance the riparian ESHA in that it provides critical mitigation for restoring important spawning and rearing habitat for salmonid species listed under the Endangered Species Act. A return of salmonid spawners to the watershed of Stansberry Creek would provide a wide range of benefits, including benefits to the riparian ESHA in the project reach. Salmonids accumulate substantial nutrients in their bodies as they grow to adulthood at sea. These nutrients are carried to spawning reaches of streams (if they can make it through the culverts) where they are released through decomposition after spawning and dying, or after predation by mammals and birds that feed on the carcasses and then after digestion, distribute the nutrients in the riparian zone. In this way, marine-derived (MD) nutrients, which in studies have been identified by isotopic markers, pass from the carcasses of salmonids into the soil and then into the riparian ESHA significantly enhancing productivity of freshwater systems. Research over more than three decades has shown that the annual deposition of salmonid-borne MD nutrients is important for the productivity of freshwater communities. The nitrogen, phosphorus, and carbon delivered to rivers,

estuaries and riparian zones through salmonid predation and carcass decomposition are the biochemical building blocks of these ecosystems, and studies have shown that riparian vegetation near spawning reaches of streams derive 22-24% of their foliar nitrogen from MD nutrients. This fertilization process serves not only to enhance riparian production, but also acts as a positive feedback mechanism by which salmonid-borne nutrients improve spawning and rearing ESHA habitat for subsequent spawning generations and thereby maintain the long-term productivity of river and stream riparian corridors.

Although the proposed riparian revegetation plan would fully mitigate the impacts of the proposed project on the existing riparian ESHA habitat if successful, the proposed monitoring lacks certain elements that would better ensure that the mitigation would actually succeed. The proposed monitoring plan states that County staff would monitor the revegetation effort for several years, but does not include any criteria for judging the success of the revegetation effort. In addition, the monitoring plan does not indicate how or if any observed failing of the revegetation effort would be remediated. Therefore, the Commission attaches Special Condition No. 4, which requires among other things, that the applicant submit a revised monitoring plan that: 1) provides that the trees to be planted for riparian restoration of disturbed areas shall be maintained so as to ensure a minimum of 80% survival after 5 years; 2) provides for an annual project monitoring report by August 1 each year for a period of (5) five years from the finish of construction; and 3) provides that the impacted site shall be remediated within a year of any determination by the permittee or the Executive Director that monitoring results indicate that the site does not meet the performance standards identified in section 1) above.

The Commission finds that the proposed project employs the best mitigation measures feasible to avoid potential adverse stream alteration impacts that might be initiated by construction of the project as discussed above by 1) providing a wider culvert that would greatly increase capacity for handling high water during peak storm events, thereby significantly reducing the likelihood that Lighthouse Road would wash out; 2) using grade control structures that would distribute the gradient differential throughout the project reach, thereby reducing destructive scour that currently occurs from the high erosive force caused by the greater than 8-foot drop at the culvert outlet; and 3) using rock aprons that would be installed at the culvert inlet and outlet to prevent scour at these locations. The Commission further finds that the project as conditioned employs the best mitigation measures feasible to mitigate potential adverse impacts to riparian vegetation in the following ways by: 1) leaving willow rootwads in place or reburying the rootwads to expedite riparian reestablishment; 2) reseeding disturbed areas immediately after project construction with a native seed mix and mulching with straw for erosion control; and 3) replanting willow and alder trees at a replacement ratio of greater than 3:1 by providing more than 3 times the riparian ESHA area than was lost by performing the project.

Conclusion

Therefore, in consideration of the forgoing discussions, the Commission finds that the project as conditioned is consistent with Section 30236 of the Coastal Act because the project would incorporate the best mitigation measures feasible and would be a development where the primary function is the improvement of fish and wildlife habitat.

C. Water Quality.

Section 30231 of the Coastal Act states, in applicable part:

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 (emphasis added).

Section 30231 of the Coastal Act states that the biological productivity and quality of coastal streams shall be maintained and, where feasible, restored.

The primary objective of the proposed project is to replace the culvert at the Lighthouse Road stream crossing for the purpose of restoring coho salmon, steelhead and coastal cutthroat trout access to excellent spawning and rearing habitat in the Stansberry Creek watershed, and thereby enhance the biological productivity of this tributary to the Mattole River. As proposed by the applicant, certain measures would be taken during the construction phase of the project to protect water quality. As proposed, the project would be performed prior to the onset of the rainy season. In addition, all disturbed ground would be seeded with a seed mix of fast-growing native grasses and mulched with straw for immediate ground cover and erosion control. No exotic invasive species would be used during the revegetation activities. The site would be monitored by County Road personnel and the Natural Resources Division of the County during the winter following construction to determine if erosion occurs.

Although disturbed areas would be revegetated upon completion of construction, the proposed project does not include specific provisions for protecting water quality during construction activities. As significant excavation and grading would be performed during the project, and rain storms can and do occur prior to the start of the normal rainy season, disturbed soils would be subject to erosion and entrapment in runoff during construction. In addition, heavy equipment would be used during construction. This equipment uses

fuel and lubricants, which if accidentally discharged into the creek could significantly impair water quality. To ensure that erosion and sedimentation is controlled and that discharges of fuels, lubricants, hydraulic fluids and other hazardous materials are prevented, the Commission attaches Special Condition Nos. 2 and 3 to require that the applicant revise the proposed Water Quality Plan to include provisions for preventing construction materials that could be deleterious to aquatic life, wildlife, or riparian habitat from washing downstream. Special Condition No. 2 requires that the applicant submit a Hazardous Materials Management Plan that provides (1) that equipment staging areas, storage, and refueling/lubricating activities be located and conducted a safe distance from water bodies; and 2) requiring that hazardous materials management equipment including absorbent pads be available and used immediately to cleanup any spills that may occur.

The Commission finds that the project as conditioned is consistent with Section 30231 of the Coastal Act because (1) the project would restore the opportunity for a resumption of historical runs of anadromous salmonids to the Stansberry Creek watershed, and by so doing, restore the biological productivity of Stansberry Creek and the Mattole River, and (2) the project would incorporate best management practices to protect and maintain the quality of coastal waters, streams, and estuaries.

D. Public Access and Coastal Recreational Opportunities.

Coastal Act Sections 30210, 30211, and 30212 require the provision of maximum public access opportunities, with limited exceptions.

Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety.

In applying Sections 30210, 30211, and 30212, the Commission is limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential public access.

As discussed above, the proposed development entails removal and replacement of the Stansberry Creek culvert under Lighthouse Road, placement of grade control rock weirs both upstream and downstream of the new culvert, and revegetation of all disturbed ground. The project as conditioned would not increase the demand for public access. There is no existing

public access on the subject property that would be adversely affected. Lighthouse Road is a major County thoroughfare that leads to the coast located about 1½ miles to the west, and would remain open to the public during project implementation except for a very brief period of time during which a temporary flat car bridge would be installed while the existing culvert is removed. Because the proposed project as conditioned would not adversely affect any existing access to the shoreline, or increase the demand for access to the shoreline, the Commission finds that the proposed development as conditioned does not have any significant adverse impact on public access, and that the proposed development as conditioned without new public access is consistent with the coastal access requirements of Coastal Act Sections 30210, 30211, and 30212.

G. California Environmental Quality Act.

Section 13906 of the Commission's administrative regulation requires Coastal Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, is consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are any feasible alternatives or feasible mitigation measures available, which would substantially lessen any significant adverse effect the proposed development may have on the environment.

The Commission incorporates its findings on Coastal Act consistency at this point as if set forth in full. Those findings address and respond to all public comments regarding potential significant adverse environmental effects of the project that were received prior to preparation of the staff report. As discussed above, the proposed project has been conditioned to be consistent with the policies of the Coastal Act. As specifically discussed in these above findings, which are hereby incorporated by reference, mitigation measures that will minimize or avoid all significant adverse environmental impacts have been required. As conditioned, there are no other feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse impacts, which the activity may have on the environment. Therefore, the Commission finds that the proposed project, as conditioned to mitigate the identified impacts, can be found consistent with the requirements of the Coastal Act and to conform to CEQA.

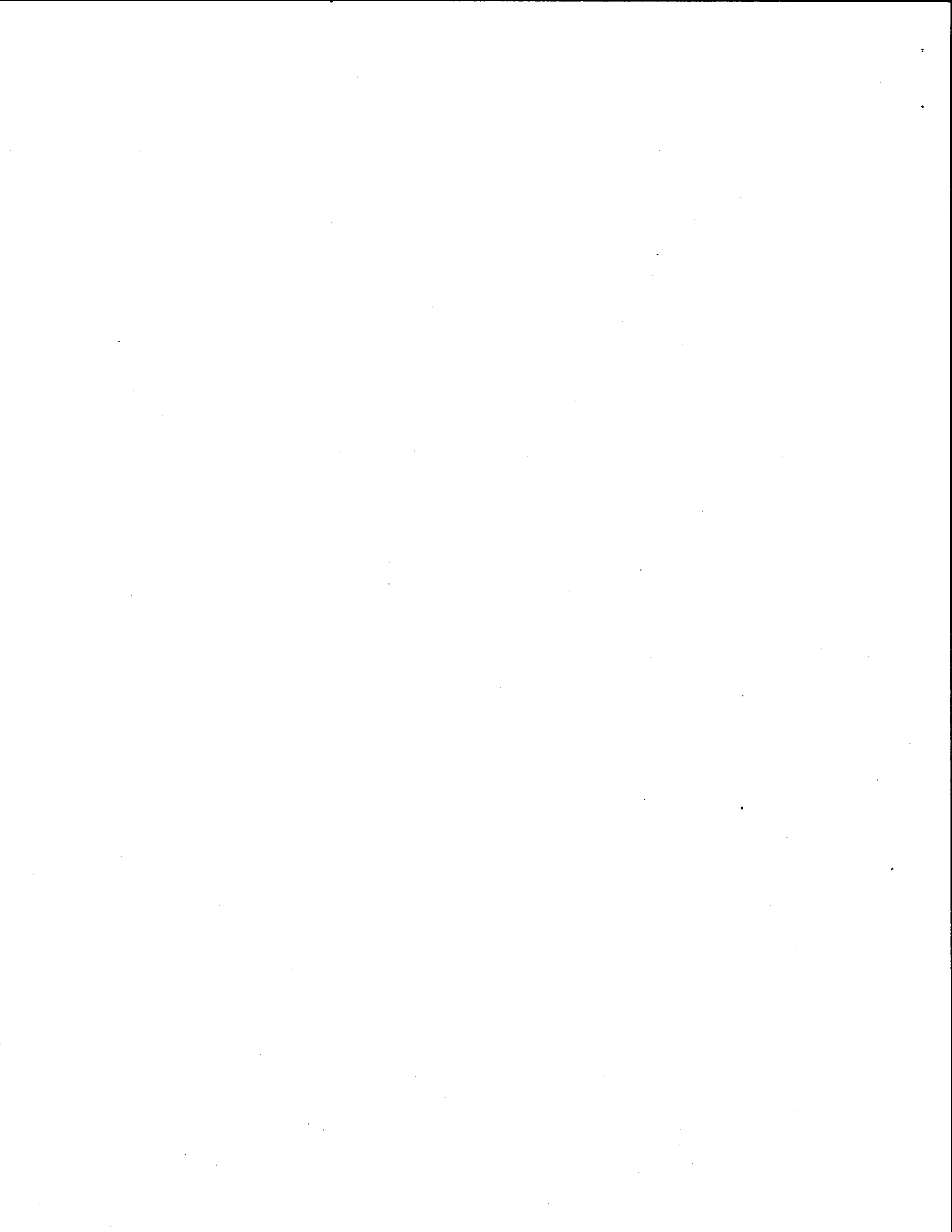
EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. Site Plans
4. Revegetation Plan
5. Monitoring Plan
6. Erosion Control & Water Management Plan

APPENDIX A

STANDARD CONDITIONS

1. Notice of Receipt and Acknowledgement. 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 amount of time. Application for extension of the permit must be made prior to the expiration date.
3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of the Commission.
4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.



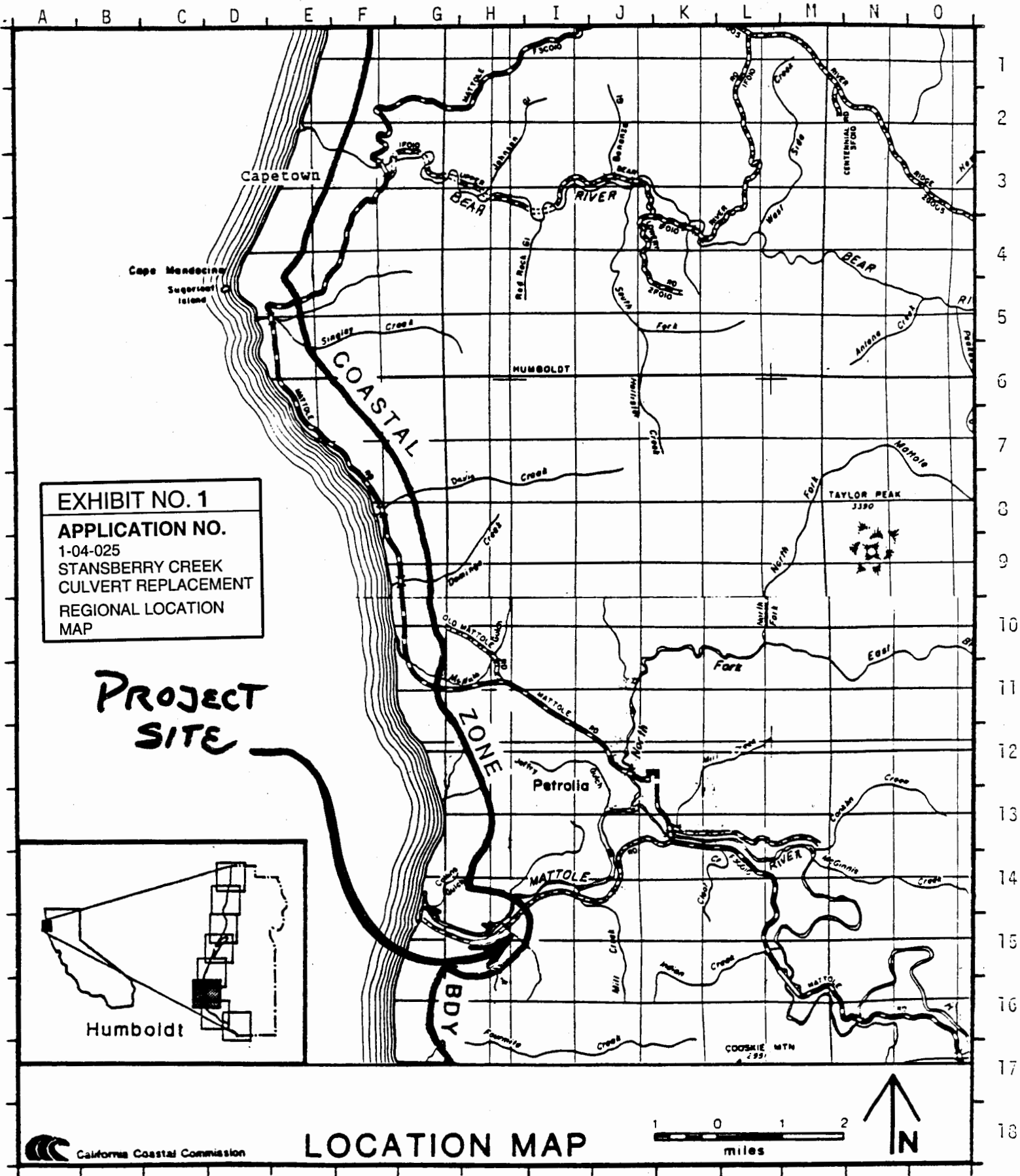
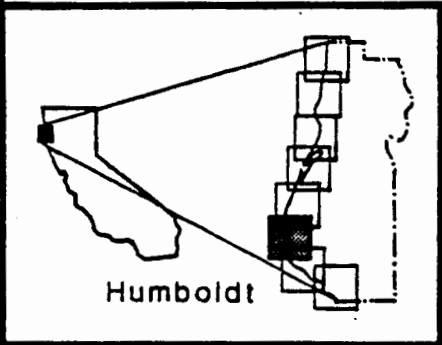


EXHIBIT NO. 1
APPLICATION NO.
 1-04-025
 STANSBERRY CREEK
 CULVERT REPLACEMENT
 REGIONAL LOCATION
 MAP

**PROJECT
 SITE**

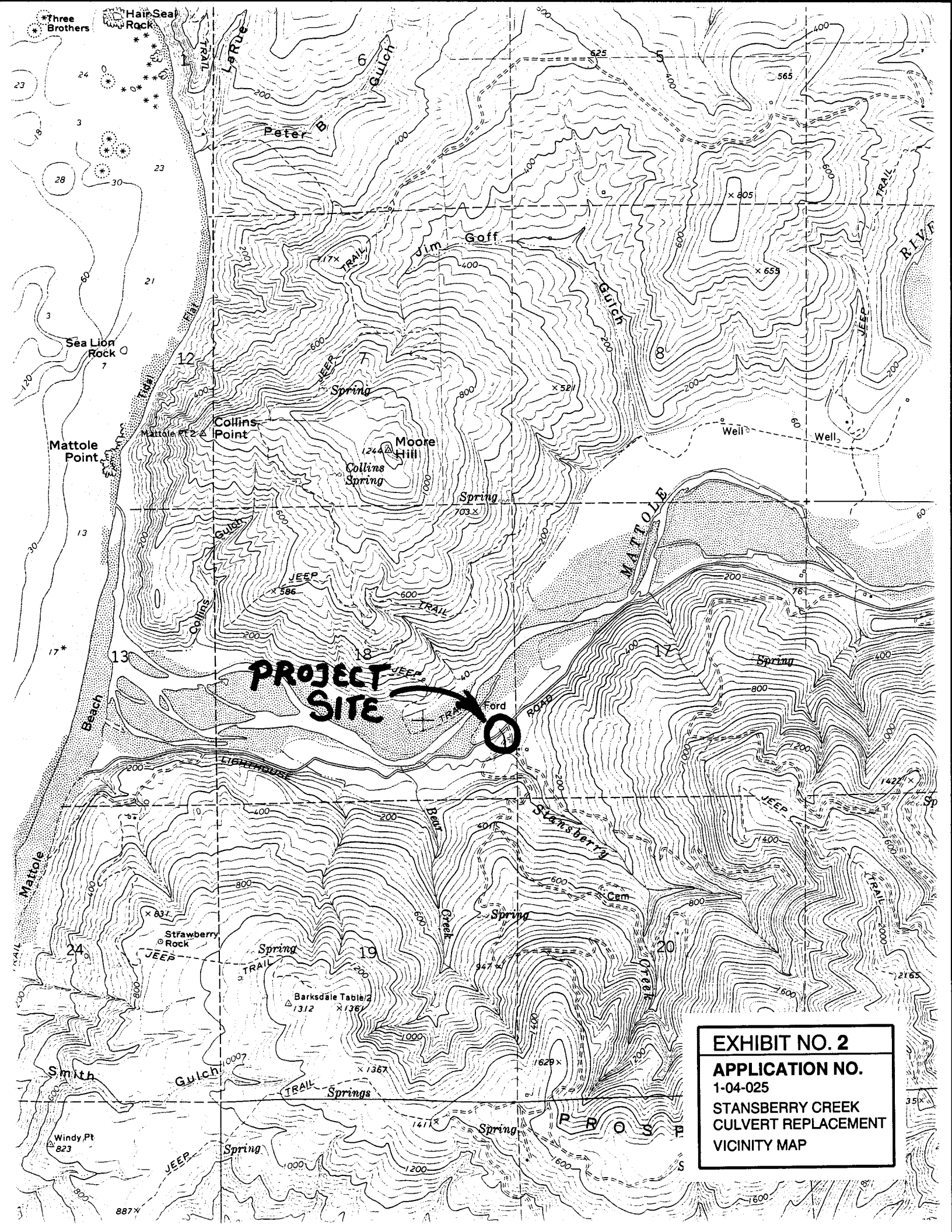


LOCATION MAP

California Coastal Commission



County of Humboldt



PROJECT SITE

EXHIBIT NO. 2
APPLICATION NO.
1-04-025
STANSBERRY CREEK
CULVERT REPLACEMENT
VICINITY MAP

ROAD NAME: LIGHTHOUSE ROAD	DESIGN SECTION: R. W. BRONKALL	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 1
ROAD NO: 10010	DATE PLOT: 08/29/2004	STANSBERRY CULVERT REPLACEMENT	OF 8
AGREEMENT NO: P0210531	DESIGNED BY: C.W.	COVER SHEET, SHEET INDEX AND DETAILS	
CONTRACT NO: 200305	DRAWN BY: JAB		
DRAWING FILE NAME: L:\PROJECTS\200305\HUMBOLDT\SHEDLING	REVIEWED BY: RWE		
PLOT DATE: 08/29/2004	APPROVED BY: C.W.		

**COUNTY OF HUMBOLDT
DEPARTMENT OF PUBLIC WORKS**

**PROJECT PLANS FOR CONSTRUCTION OF
CULVERT REPLACEMENT AT STANSBERRY CREEK
ON LIGHTHOUSE RD (1D010)
AGREEMENT NO. P0210531
CONTRACT NO. 200305**

INDEX OF SHEETS

- 1 COVER SHEET, SHEET INDEX AND DETAILS
- 2 CONSTRUCTION AREA SIGNS, QUANTITIES, SURVEY CONTROL, AND DETAILS
- 3 "C" LINE - PLAN & PROFILE STANSBERRY CREEK CULVERT
- 4 MULTI-PLATE BOX CULVERT SECTIONS AND DETAILS
- 5 "L" LINE - PLAN & PROFILE LIGHTHOUSE ROAD
- 6 DETOUR, EROSION CONTROL AND WATER MANAGEMENT PLAN
- 7 BOX CULVERT CROSS SECTIONS
- 8 RIGHT OF WAY ACQUISITION

APPLICABLE STANDARD PLANS

JULY 2002 CALTRANS STANDARD PLANS

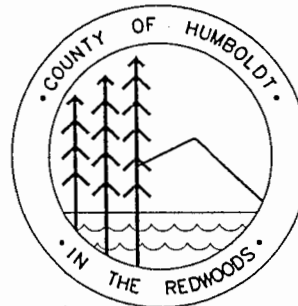
- A10A ABBREVIATIONS
- A10B SYMBOLS
- A62F EXCAVATION AND BACKFILL METAL & PLASTIC CULVERTS
- A73C DELINEATORS, CHANNELIZERS AND BARRICADES.
- (SUPERCEDED-SEE JULY 1999 ERRATUM NO. 99-1)
- DB8A STRUT DETAILS FOR STRUCTURAL STEEL PIPE
- T13 TRAFFIC CONTROL

FUNDING SOURCE

THIS PROJECT IS FUNDED BY DEPARTMENT OF FISH AND GAME, COASTAL SALMON RECOVERY PROGRAM FUNDS.



EXHIBIT NO. 3
APPLICATION NO.
1-04-025
**STANSBERRY CREEK
CULVERT REPLACEMENT
SITE PLANS (1 of 8)**



PROJECT LOCATION

LOCATION MAP
SCALE: 1"=10± MILE

RECOMMENDED

Robert W. Bronkall
ROBERT W. BRONKALL
RCE 55361, EXP. 12/31/2004

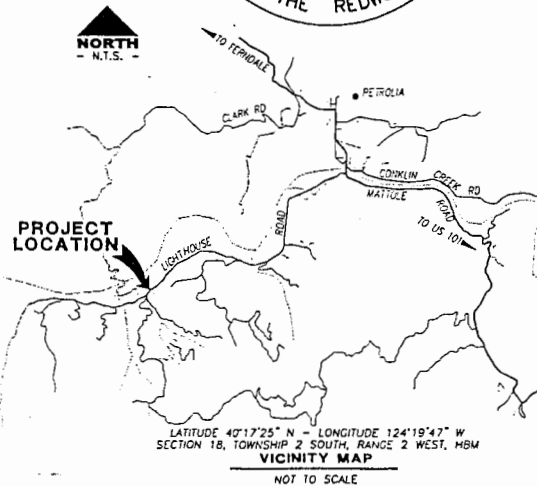
02/26/2004
DATE



APPROVED

Christopher J. Whitworth
CHRISTOPHER J. WHITWORTH
RCE 51931, EXP. 6/30/2006

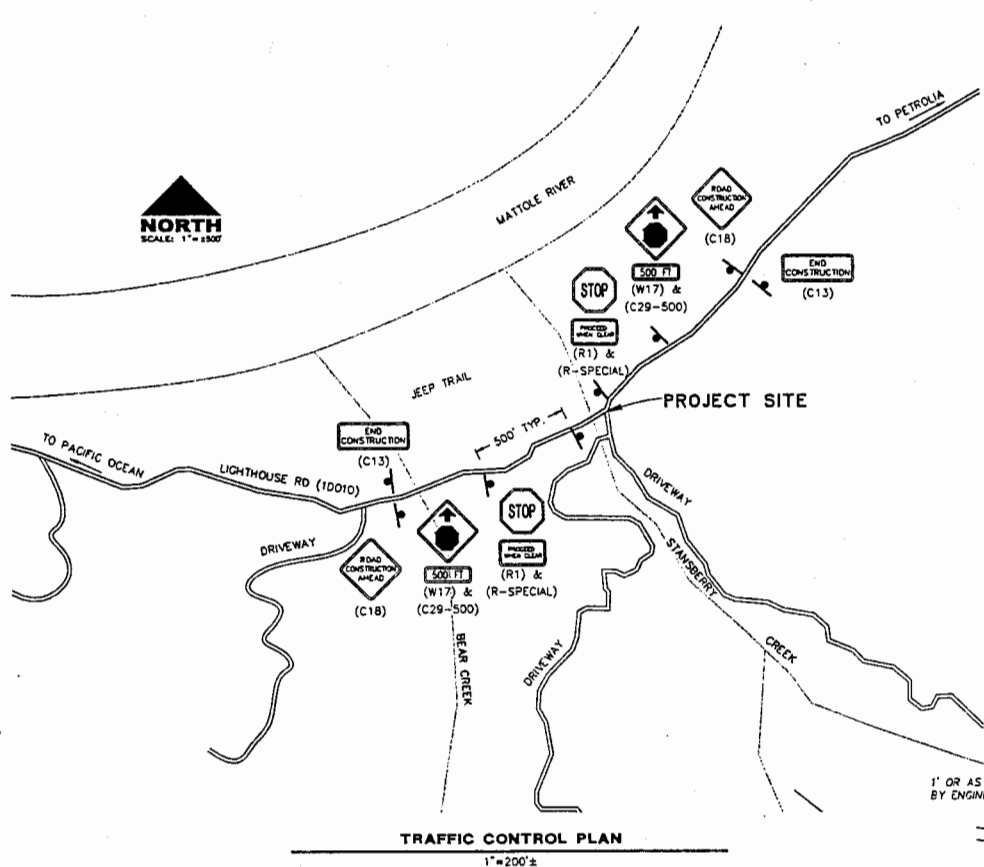
DATE



NOT TO SCALE

ORIGINAL LOW BID PRICE	CONSTRUCTED BY	RESIDENT ENGINEER
	PROJECT COMPLETED	CONSTRUCTION COST \$

HAS 8 ONE INCH OR ORIGINAL DRAWING IF NOT ONE INCH OR TWO SHEETS, ADJUST SCALES ACCORDINGLY	ROAD NAME: LIGHTHOUSE ROAD ROAD NO: 10010 AGREEMENT NO: P2019531 CONTRACT NO: 202308 DRAWING FILE NAME: U:\PROJECTS\202308\LH\CONSTRUCTION.DWG PLOT DATE: 07/01/2024	DESIGN SECTION & NO: B00411 DESIGNED BY: CM DRAWN BY: JAE CHECKED BY: RFB APPROVED BY: CM	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS STANSBERRY CULVERT REPLACEMENT CONSTRUCTION AREA SIGNS, QUANTITIES, SURVEY CONTROL AND DETAILS
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PHASE A QUANTITIES

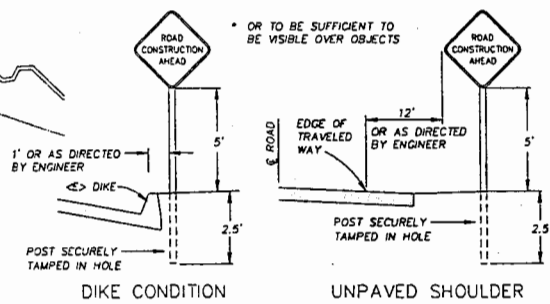
NO.	CODE	ITEM	UNIT	TOTALS
PHASE A - BASE BID				
1	120050X	CONSTRUCT DETOUR	LS	1
2	120090	CONSTRUCTION AREA SIGNS	EA	8
3	129000	TEMPORARY RAILING (TYPE K)	EA	6
4	150805	REMOVE CULVERT	EA	1
5	160101	CLEARING AND CRUBBING	LS	1
6	192025	F STRUCTURAL EXCAVATION (CULVERT)	CY	800
7	194001	F DITCH EXCAVATION (STANSBERRY CREEK)	CY	3200
8	720103	ROCK SLOPE PROTECTION OUTLET (2 TON, METHOD A)	CY	30
9	720104	ROCK SLOPE PROTECTION (1 TON, METHOD A)	CY	120

PHASE B QUANTITIES

NO.	CODE	ITEM	UNIT	TOTALS
PHASE B - BASE BID				
1	192025	F STRUCTURAL EXCAVATION (CULVERT)	CY	200
2	193004	F STRUCTURAL BACKFILL (CULVERT)	CY	115
3	197010	PLACE AND COMPACT EMBANKMENT	CY	310
4	203018	S EROSION CONTROL (TYPE D)	LS	1
5	260200	CLASS 3 AGGREGATE BASE	CY	28
6	390103	F ASPHALT CONCRETE (TYPE A)	TON	40
7	510104	S-F CLASS A CONCRETE (BOX CULVERT)	CY	57
8	520101	BAR REINFORCING STEEL	LB	11,900
9	678000X	16'-2" x 6'-7" STRUCTURAL STEEL PLATE BOX CULVERT	LF	60
10	120050X	REMOVE DETOUR	LS	1

ADDITIVE ALTERNATE (ALUMINUM BOX)
(REPLACE ITEM 9 WITH ITEM 9A)

9A	678001X	16'-6" x 6'-8" ALUMINUM BOX CULVERT	LF	60
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NOTES IN/A-SEE NOTE BELOW TABLE!

- SIGNS SHALL BE PLACED AS SHOWN ON PLAN OR AS DIRECTED BY THE RESIDENT ENGINEER.
- FINAL PLACEMENT OF SIGNS SHALL BE APPROVED BY RESIDENT ENGINEER.
- ADDITIONAL PORTABLE SIGNS SHALL BE USED AS REQUIRED FOR OTHER ROADSIDE WORK.
- SEE STANDARD PLAN T13 FOR TRAFFIC CONTROL SYSTEM.
- IN ADDITION TO CONSTRUCTION AREA SIGNS AND WHEN DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL UTILIZE FLAG MEN AS NECESSARY TO DIRECT TRAFFIC.
- DISTANCE TO C18 AND C13 MAY BE EXTENDED TO ENCOMPASS SITES WITHIN ONE MILE OF EACH OTHER.

SURVEY CONTROL & MONUMENT COORDINATES

PNT.#	NORTHING	EASTING	ELEV.	DESCRIPTION
1	10,000.000	20,000.000	500.00	CPKDPWTAG
2	10,092.687	20,333.599	496.11	CPSPIKE
3	9,868.184	20,061.001	502.33	CPSPIKE
4	9,717.574	20,089.111	503.26	CP4SPIKE
5	9,616.228	20,145.238	504.94	CP5SPIKE
6	9,929.919	19,565.340	495.63	CP6SPIKESHN

'L' LINE SURVEY COORDINATES

PNT.#	NORTHING	EASTING	ELEV.	DESCRIPTION
4002	9,987.772	19,963.113	499.51	10+70 CONFORM
4003	9,988.880	19,973.051	499.68	10+80
4004	9,991.691	19,992.852	499.89	11+00
4005	9,995.291	20,012.524	499.91	11+20
4006	9,999.675	20,032.036	499.75	11+40
4007	10,004.703	20,050.897	499.40	11+60 CONFORM

VERTICAL DATUM: ASSUMED ELEVATION 500.00' ON CONTROL POINT CP#1
 HORIZONTAL DATUM: BEARINGS SHOWN HEREON ARE ON AN "ASSUMED" BASIS. ROTATE BEARINGS SHOWN HEREON COUNTERCLOCKWISE 19°37'53" TO MATCH BEARINGS SHOWN ON BOOK 61 OF SURVEYS, PAGE 51

'C' LINE SURVEY COORDINATES

PNT.#	NORTHING	EASTING	ELEV.	DESCRIPTION
4000	10,024.837	19,395.045	486.62	CULVERT-OUTLET
4001	9,958.300	20,015.134	490.62	CULVERT-INLET

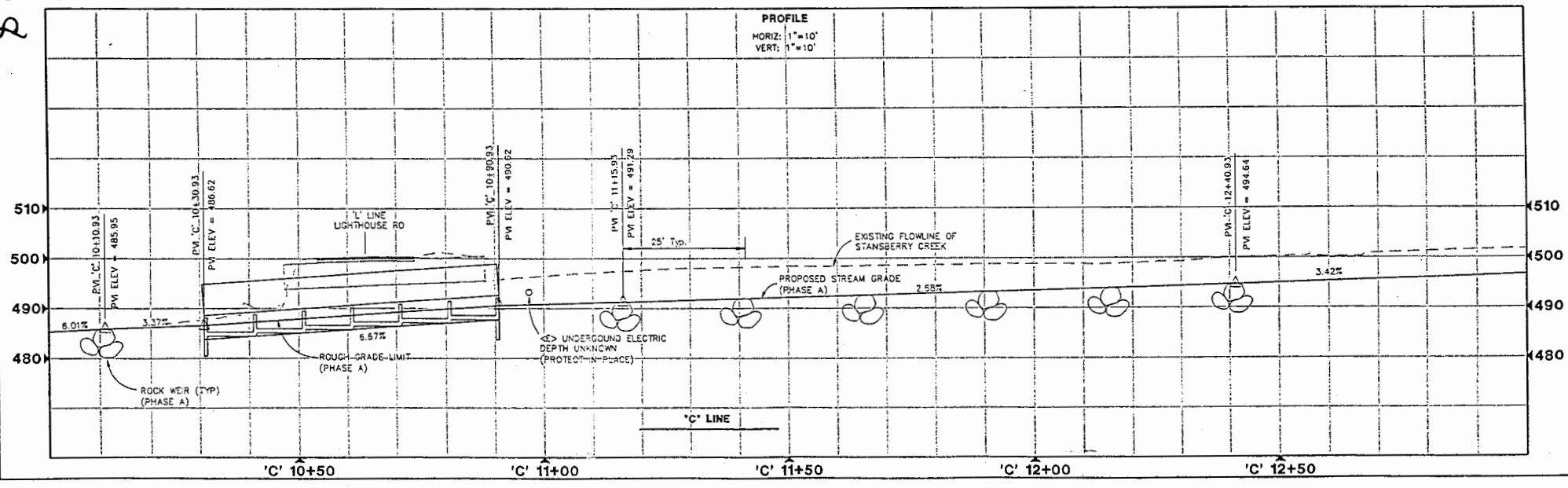
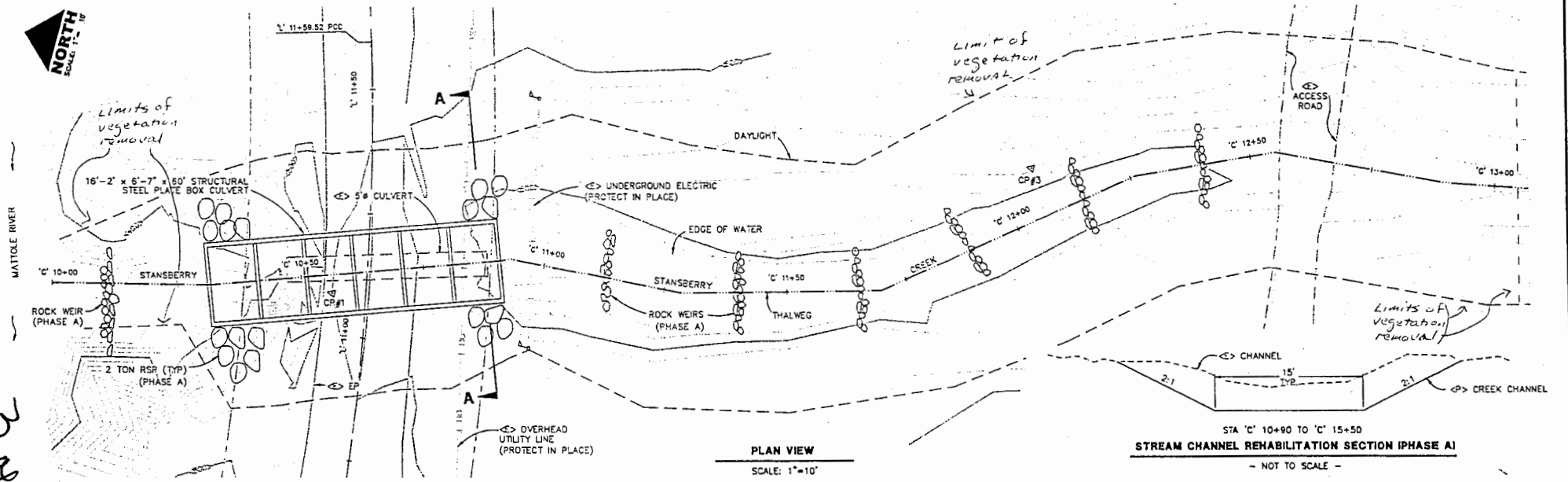
RURAL CONSTRUCTION AREA SIGN
- NOT TO SCALE -

CONSTRUCTION AREA SIGN SUMMARY

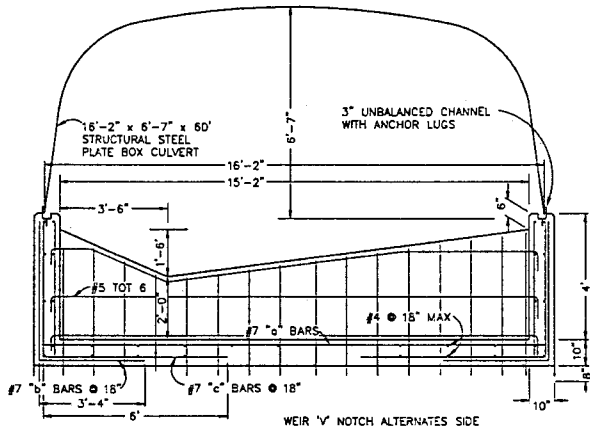
SIGN TYPE	QTY	DESCRIPTION	SIZE	REMARKS	POST SIZE	NUMBER
C18	2	ROAD CONSTRUCTION AHEAD	48" x 48"	VISIBLE AT ALL TIMES	4" x 4"	1
W17 C29	2	STOP AHEAD 500 FT	36 x 36 29 x 9	VISIBLE AT ALL TIMES	4 x 4	1
R1 R-SPECIAL	2	STOP PROCEED WHEN CLEAR	42 x 18 42 x 18	VISIBLE AT ALL TIMES	4 x 4	1
C13	2	END CONSTRUCTION	60 x 24	VISIBLE AT ALL TIMES	4 x 4	2

NOTE: CONSTRUCTION SIGNS WILL BE FURNISHED AND PLACED UNDER PHASE A. BOTH PHASE A AND PHASE B CONTRACTORS SHALL MAINTAIN EXISTING CONSTRUCTION AREA SIGNS DURING THE CONTRACT PERIOD.

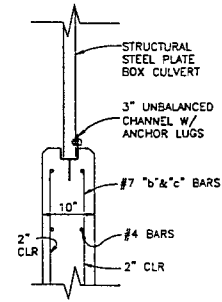
BAA IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ACROSS SCALE ACCORDINGLY	ROAD NAME: LIGHTHOUSE ROAD	DESIGN SECTION: R. W. BISHALL	COUNTY OF HUMBOLDT	SHEET 3 OF 8
	ROAD NO.: 00912	MILE POST:	DEPARTMENT OF PUBLIC WORKS	
	ACQUISITION NO.: 70319531		STANSBERRY CULVERT REPLACEMENT	
	CONTRACT NO.: 200308		'C' LINE - PLAN & PROFILE	
	DRAWING FILE NAME: C:\PROJECTS\200308\200308.DWG	REVIEWED BY: RMB	STANSBERRY CREEK - CULVERT	
	PLT DATE: 06/29/2004	APPROVED BY: CJA		



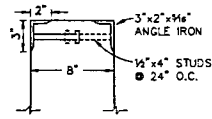
BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	ROAD NAME: LUDHOUSE ROAD ROAD NO.: 0000 ACRES/MI NO.: R2710331 CONTRACT NO.: 290326 DRAWING FILE NAME: L:\PROJECTS\290326\DWG\290326-04.DWG PLOT DATE: 06/29/2004	DESIGN SECTION: 2 X 8 BRIDGAL DESIGNED BY: CLF DRAWN BY: JAE CHECKED BY: RSB APPROVED BY: CLF	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS STANSBERRY CULVERT REPLACEMENT MULTI-PLATE BOX CULVERT SECTIONS AND DETAILS	SHEET 4 OF 8
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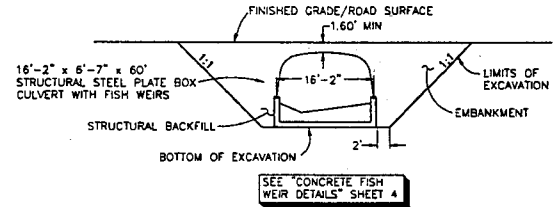
**SECTION A-A
CONCRETE FISH WEIR (PHASE BI)**
SCALE: 1"=2'



WALL DETAIL (PHASE BI)
SCALE: 1"=1'

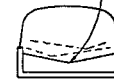


WEIR WALL DETAIL (PHASE BI)
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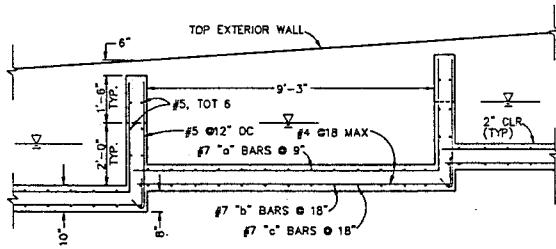


SECTION A-A (PHASE BI)
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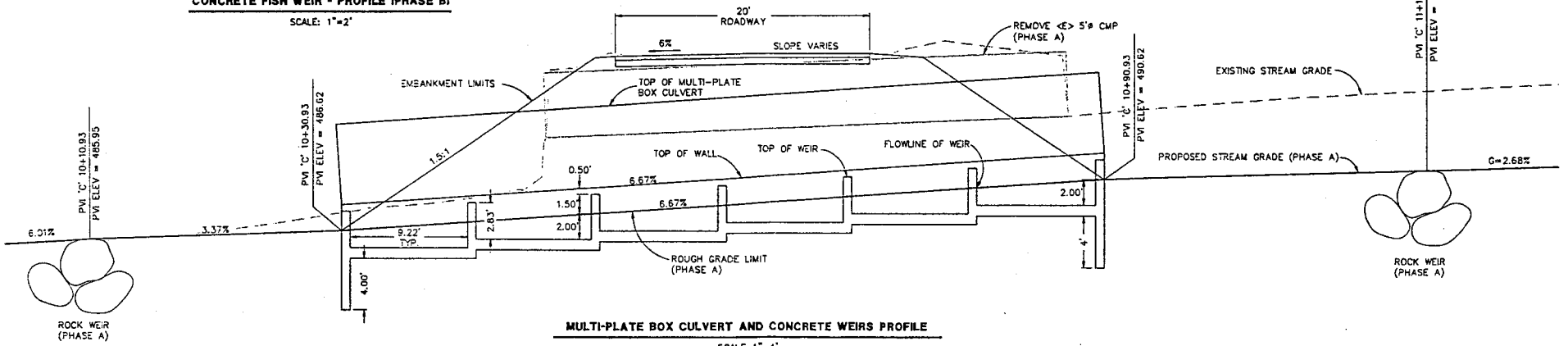
FLOWLINE DEPTH 2.0' ABOVE FLOOR & WEIR CENTERED IN BOX CULVERT AT EXIT WEIR ONLY.



**DOWNSTREAM END ONLY
WEIR CENTERED IN BOX CULVERT (PHASE BI)**
SCALE: 1"=10'



CONCRETE FISH WEIR - PROFILE (PHASE BI)
SCALE: 1"=2'

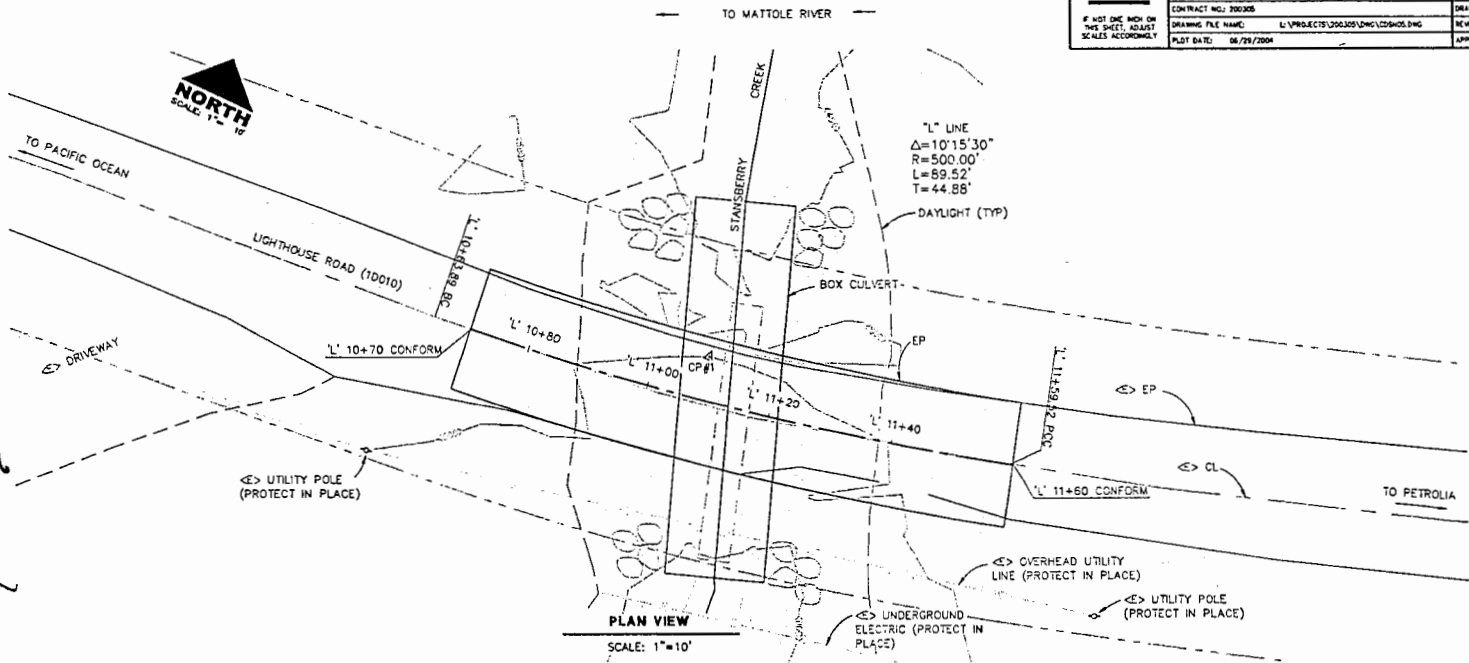


MULTI-PLATE BOX CULVERT AND CONCRETE WEIRS PROFILE
SCALE 1"=4'

1/2 ft

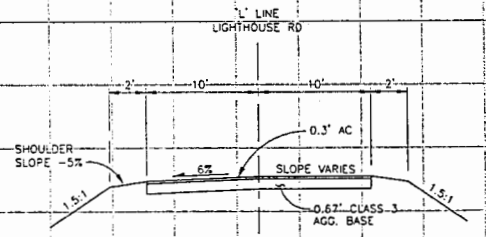
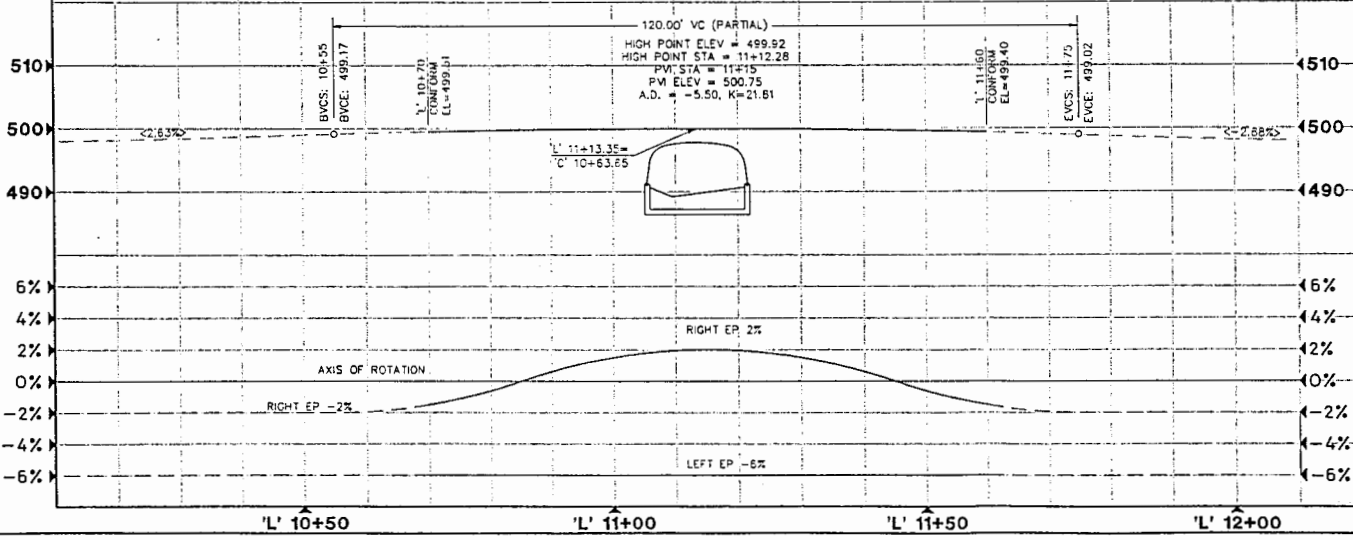
BAR IS ONE INCH ON ORIGINAL DRAWING IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	ROAD NAME: LIGHTHOUSE ROAD ROAD NO: 10010 ACQUISITION NO: P0210531 CONTRACT NO: 200205 DRAWING FILE NAME: L:\PROJECTS\200205\20020502.DWG PLOT DATE: 06/29/2004	DESIGN SECTION: E. W. BROWNALL DESIGNED BY: C.W. DRAWN BY: J.W. REVIEWED BY: B.W. APPROVED BY: C.W.
	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS STANSBERRY CULVERT REPLACEMENT 'L' LINE - PLAN & PROFILE LIGHTHOUSE ROAD	

SHEET
5
OF
8



5
2
2

PROFILE SCALE
 HORIZ: 1" = 10'
 VERT: 1" = 10'

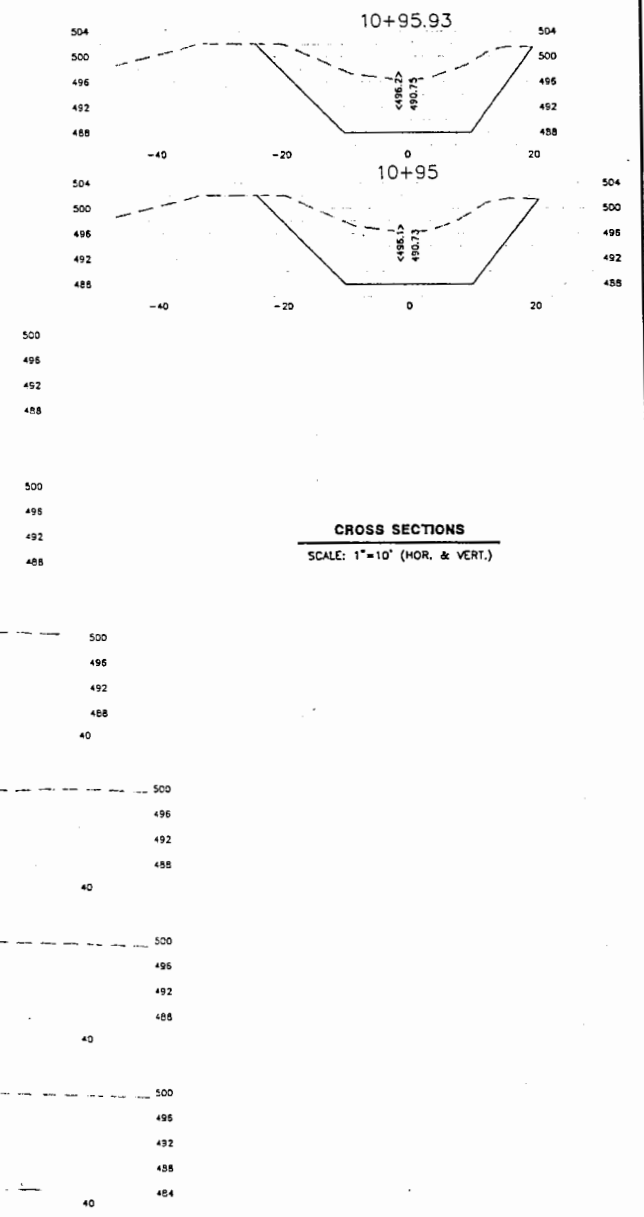
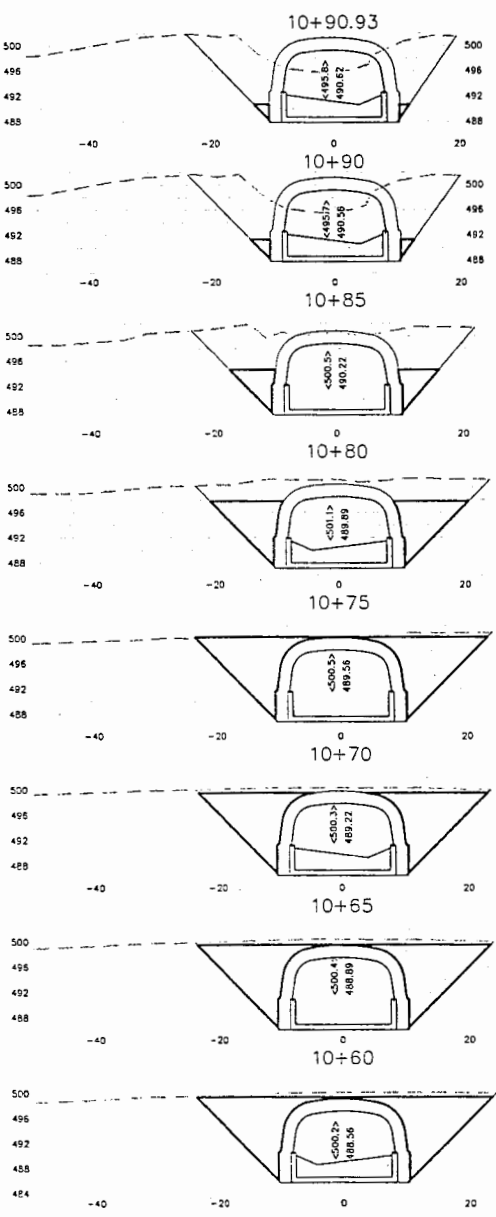
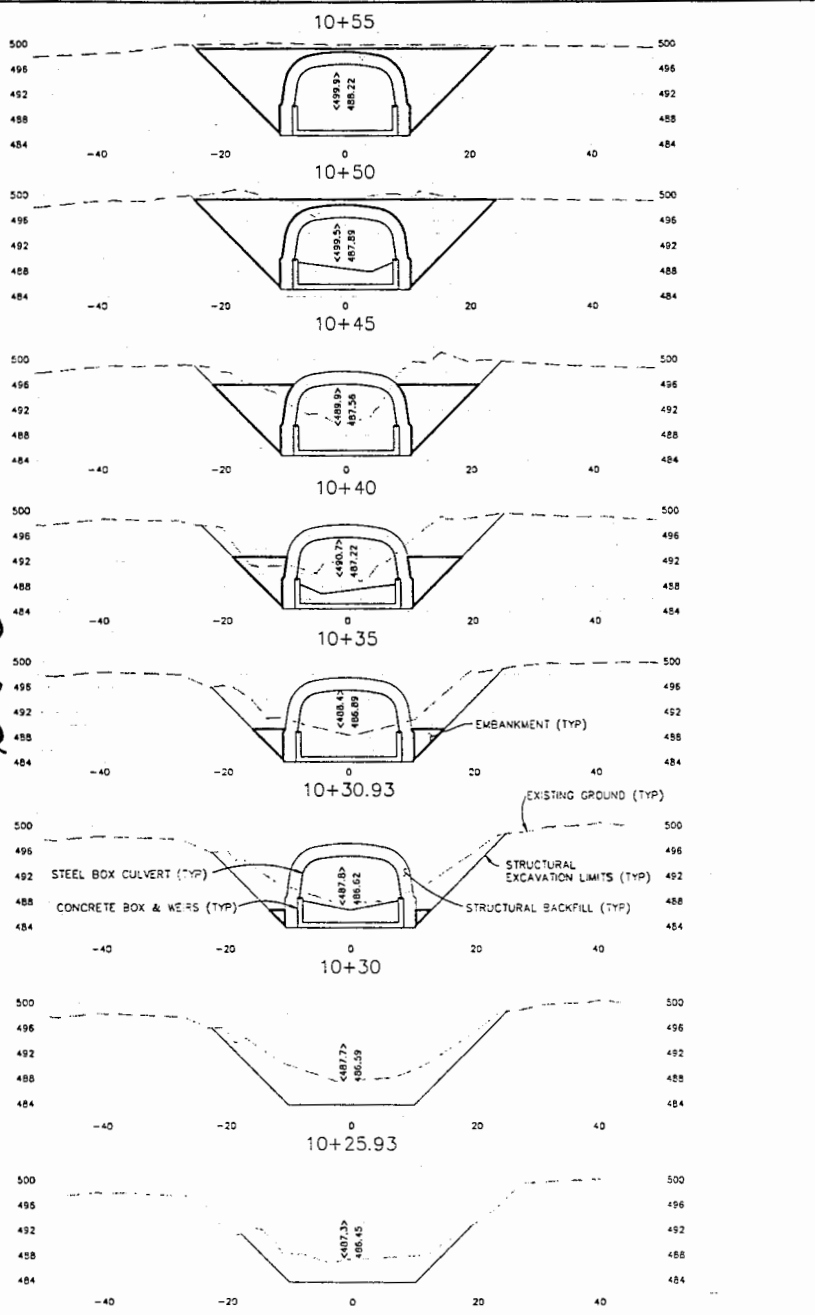


TYPICAL ROADWAY SECTION (PHASE B)
 NOT TO SCALE

ROAD NAME: LIGHTHOUSE ROAD	DESIGN SECTION: E & BISHOP
ROAD NO: 5000	MILE POST:
AGREEMENT NO: P2020528	DESIGNED BY: L.W.
CONTRACT NO: 200305	DRAWN BY: JAB
DRAWING FILE NAME: L:\PROJECTS\200305\DWG\CS0407.DWG	REVIEWED BY: FHE
PLOT DATE: 08/29/2004	APPROVED BY: L.W.

COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS STANSBERRY CULVERT REPLACEMENT BOX CULVERT CROSS SECTIONS
--

SHEET
7
OF
8



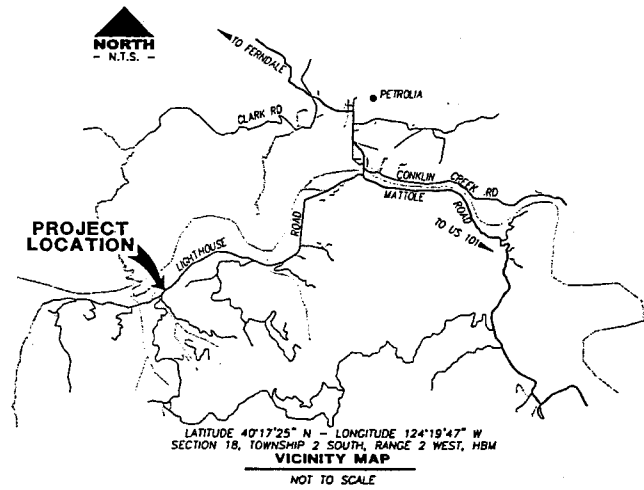
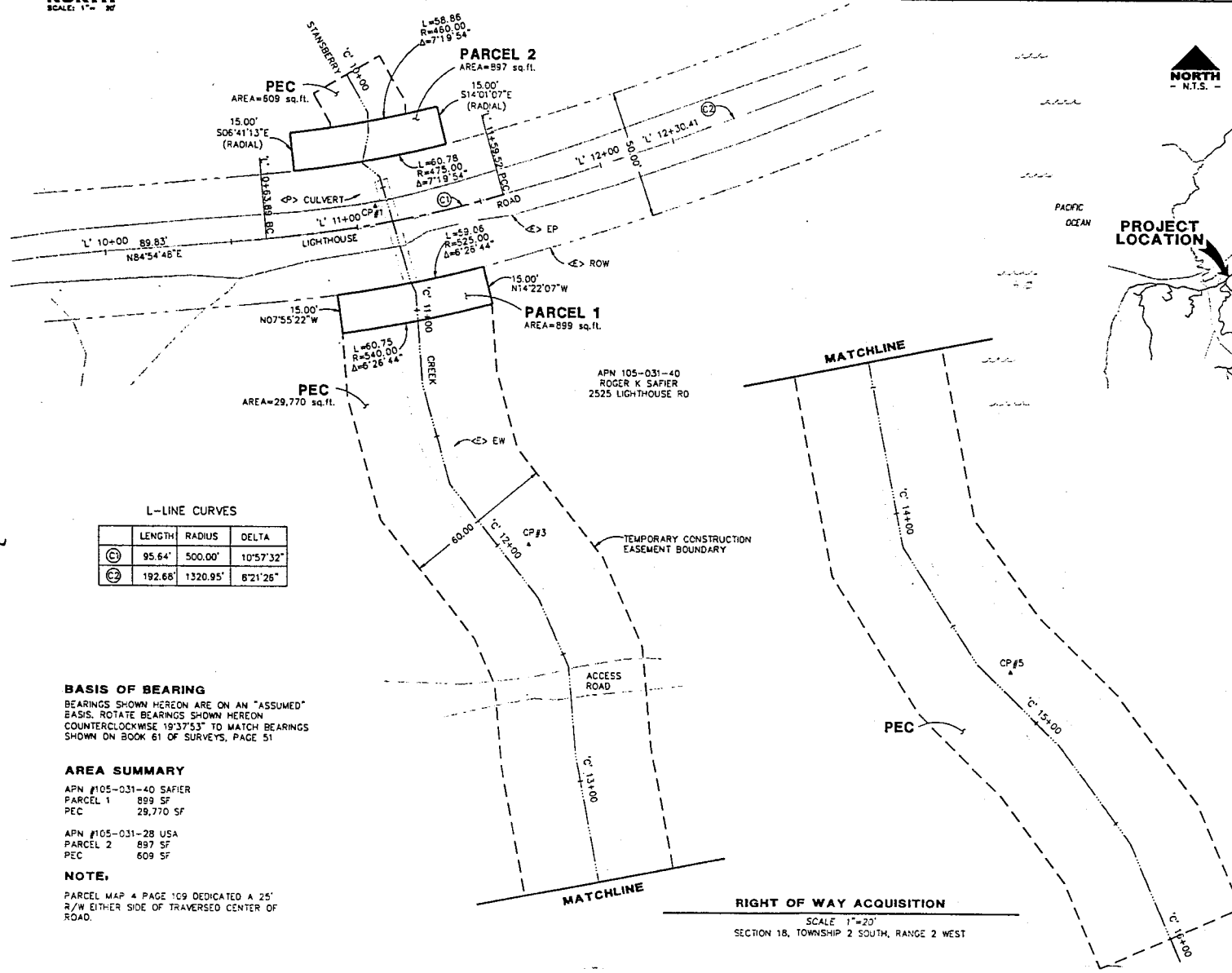
CROSS SECTIONS
SCALE: 1"=10' (HOR. & VERT.)

258

<small>BAR IS ONE INCH OR DIAGONAL BEARING</small> <small>IF NOT ONE INCH OR THE SHEET ADJUST SCALE ACCORDINGLY</small>	ROAD NAME: LIGHTHOUSE ROAD	DESIGN SECTION: 1 & BISHOPAL	COUNTY OF HUMBOLDT	SHEET 8
	ROAD NO.: 12016	MILE POST:	DEPARTMENT OF PUBLIC WORKS	
	AGREEMENT NO.: PD210531	DESIGNED BY: CLP	STANSBERRY CULVERT REPLACEMENT	OF 8
	CONTRACT NO.: 200308	DRAWN BY: JAB	RIGHT OF WAY ACQUISITION	
	DRAWING FILE NAME: L:\PROJECTS\100308\DWG\100308.DWG	REVIEWED BY: PWB		8
	PLOT DATE: 06/29/2004	APPROVED BY: CLP		



APN 105-031-28
UNITED STATES OF
AMERICA



L-LINE CURVES

	LENGTH	RADIUS	DELTA
Ⓒ	95.64'	500.00'	10°57'32"
Ⓓ	192.68'	1320.95'	8°21'26"

BASIS OF BEARING

BEARINGS SHOWN HEREON ARE ON AN "ASSUMED" BASIS. ROTATE BEARINGS SHOWN HEREON COUNTERCLOCKWISE 19°37'53" TO MATCH BEARINGS SHOWN ON BOOK 61 OF SURVEYS, PAGE 51

AREA SUMMARY

APN #105-031-40 SAFIER
PARCEL 1 899 SF
PEC 29,770 SF

APN #105-031-28 USA
PARCEL 2 897 SF
PEC 609 SF

NOTE:

PARCEL MAP 4 PAGE 109 DEDICATED A 25' R/W EITHER SIDE OF TRAVERSED CENTER OF ROAD.

RIGHT OF WAY ACQUISITION
SCALE 1"=20'
SECTION 18, TOWNSHIP 2 SOUTH, RANGE 2 WEST

2002

Revised Riparian Vegetation Loss/Revegetation Plan
Stansberry Creek/Lighthouse Road Culvert Replacement
Humboldt County Public Works Department
(July 21, 2004)

The total area of vegetation to be removed within the project area is 9,300 ft² (Sheet 3 of Project Plans). Vegetation removal is necessary for equipment access, existing culvert removal, and streambed/bank excavation for construction of rock weirs upstream and downstream of the culvert location. Of the total (9,300 ft²) approximately 80% (7,440 ft²) is composed of riparian tree species including about 70% alder (*Alnus* spp.) and 30% willow (*Salix* spp.). Vegetation within the remaining 30% of the area (1,860 ft²) is composed of non-riparian species including blackberry and various grass and herbaceous species. Completion of the proposed project will result in the "permanent" lose approximately 595ft² of riparian habitat. Approximately 120 ft² of riparian habitat lose is attributable the larger culvert, 160 ft² to the installation of rock slope protection at the inlet and outlet of the new culvert, and 315ft² from the placement of 7 rock weirs.

During construction activities every effort will be made to leave willow root wads in place during construction. This will result in stump sprouts from these willow root wads, which will further expedite riparian reestablishment. If it is nessesarry to uproot willow trees during construction of the project every effort will be made to rebury the root wads so that they will stump sprout.

Immediately following completion of the proposed project the entire area from which vegetation was removed, excepting the 595ft² of permanently lost riparian habitat, will be replanted with a seed mix of fast-growing native grasses and mulched with straw for immediate ground cover and erosion control. No exotic invasive species will be used during revegetation activities. Typical species contained in the native seed mix include:

- Cucamonga brome (*Bromus carinatus* "Cucamonga")
- Three weeks fescue (*Vulpia microstachys*)
- Tomcat clover (*Trifolium wildenovii*)

Riparian reestablishment and mitigation will commence following the onset of autumn rains, when approximately 300 willow stakes and alder starts, about 12-inches in length, will be planted throughout the disturbed area (9,300 ft²). As previously stated the proposed project will result in the lose of 595ft² of riparian habitat. The area (1,860 ft²) previously occupied by non-riparian vegetation will be part of the area planted with willow and alder therefore mitigating the "take" of riparian habitat at a ratio of approximately 3:1 (1,860/595=3.12). The mitigation effort will be monitored for a period of five years to determine its success. All seeding, planting, and mulching will be done by hand.

EXHIBIT NO. 4

APPLICATION NO.

1-04-025

**STANSBERRY CREEK
CULVERT REPLACEMENT
REVEGETATION PLAN**

RESTORATION, MITIGATION AND MONITORING PLAN:

The removal of vegetative ground cover during excavation will not create increased water temperatures or other adverse impacts to the creek habitat. The proposed project, and particularly the detour, may require the removal and limbing of some alder trees. The areas affected will be revegetated with alder seedlings.

The site will be monitored by County Road personnel and the Natural Resources Division during the winter following construction to assure that no adverse impacts to the waters of the U.S. result from this project.

A qualified biologist from the Humboldt County Natural Resources Department will perform monitoring of the finished installation. Monitoring will consist of visual observations of anadromous fish presence and the establishment of photo points at upstream and downstream locations from which pictures will be taken prior to and after construction. Turbidity measurements will be taken coincidentally with the photo documentation. The site photos and turbidity measurements will be taken in the late spring. The site information will be compiled into an annual letter report to be submitted to the California Fish & Game and the Army Corps of Engineers by June 1. The monitoring reports will continue for three years after the completion of the project.

EXHIBIT NO. 5
APPLICATION NO. 1-04-025
STANSBERRY CREEK CULVERT REPLACEMENT
MONITORING PLAN

EROSION CONTROL PLAN:

If permits can be obtained in a timely manner, the project will be constructed in mid or late summer, 2004. Construction needs to start no later than August to insure completion by October 15, 2004.

The erosion control plan has the following components: silt fencing, sedimentation dams, straw coverage, native plant revegetation and rock facing of susceptible slopes (Figure 5).

Sand bagged silt fences will be installed in the creek, both upstream and downstream of the construction site. All disturbed drainages flowing into the creek will have straw bale sediment dams installed on them. Any accumulated sediment at these installations will be removed and trucked to a County stockpile area or approved disposal site.

In addition to these measures, RSP will be placed at the inlet and outlet of the new culvert installation to prevent scour. Excavated material that is suitable for backfill will be temporarily stockpiled on the closed portions of Lighthouse Road adjacent to the work site. Unsuitable material will be trucked away to an approved disposal site.

WATER MANAGEMENT PLAN:

Water will continue to flow through the existing culvert during the excavation to remove it. Once most of the soil is removed from around the existing pipe, the creek will be pumped for the short period it takes to remove the old culvert and establish a gravity bypass. The gravity bypass will be a sand-bagged dam surrounding a 8-inch, 100-foot long pipe that will carry the creek flows beyond the construction area and deposit it back into the creek bed (Figure 5). This bypass flow will be gravity driven.

If it is necessary to pump water from the foundation excavations during construction, that water will be discharged onto an upland area at a sufficient distance to prevent any sediment from entering the creek.

Construction is proposed to end prior to the beginning of the upstream migration of any adult salmonids. Streamflows during the construction period will be minimal and are expected to be less than one cubic feet per second. A qualified fish biologist possessing a current collection permit will survey the project reach after placement of fish exclusion fencing and prior to initiation of construction. That biologist will be responsible for removing any salmonids present in the project reach.

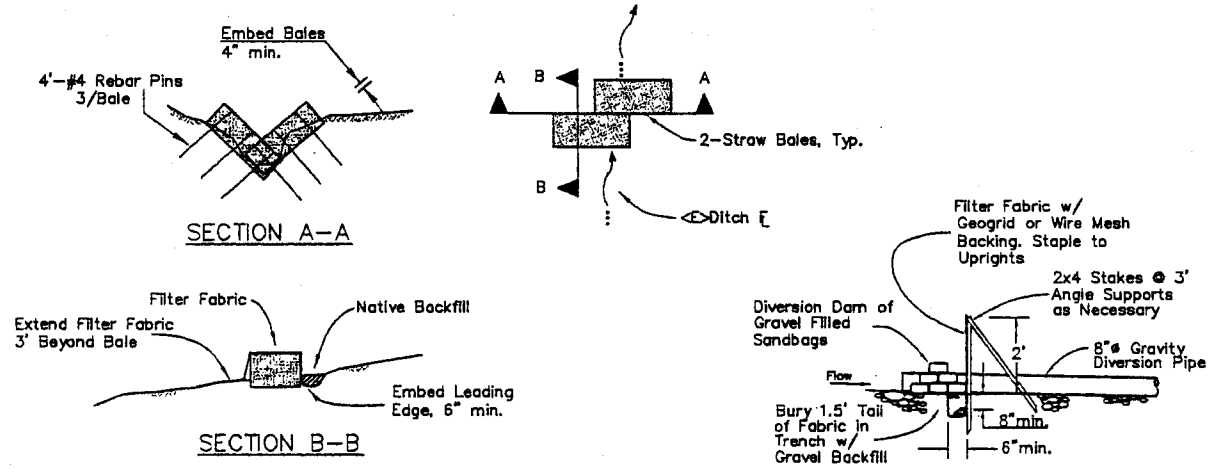
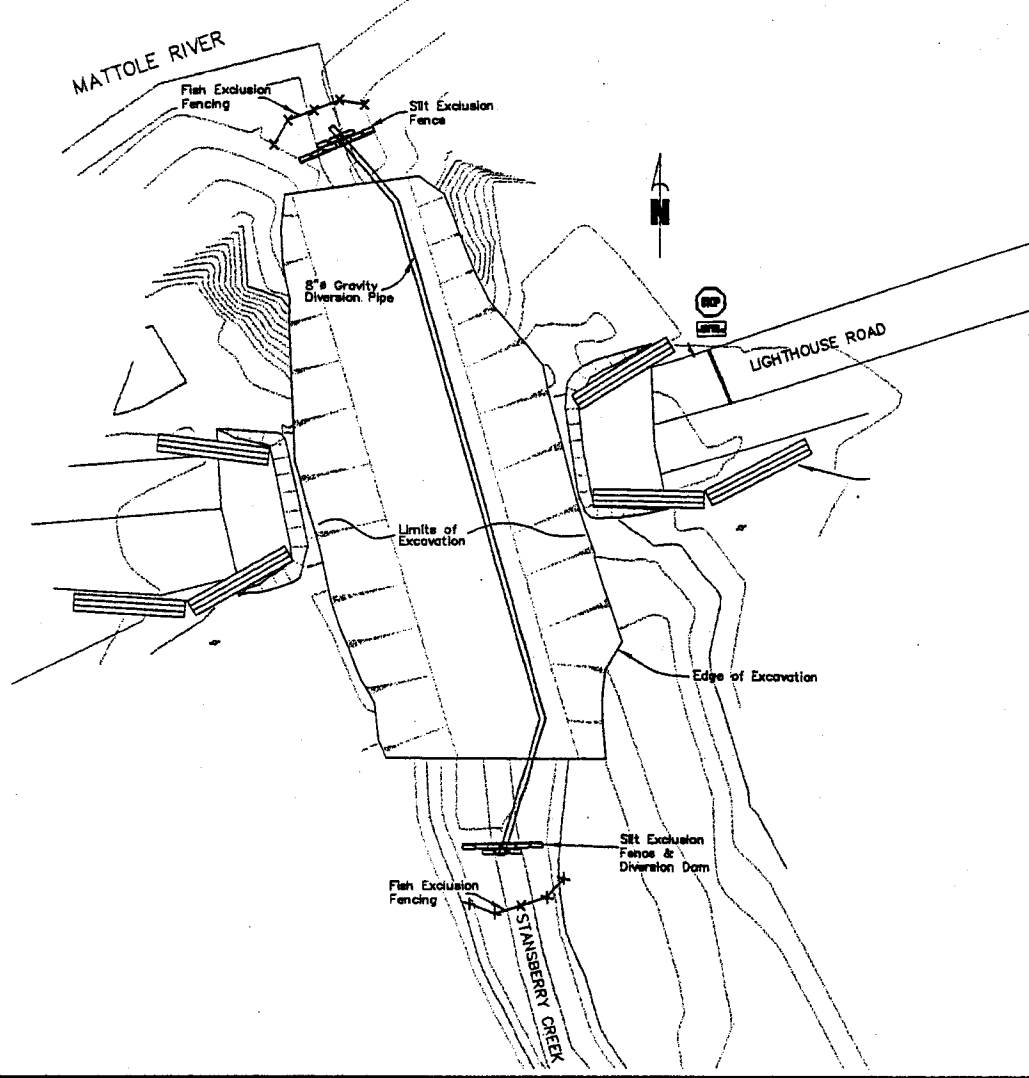
EXHIBIT NO. 6

APPLICATION NO.

1-04-025

STANSBERRY CREEK
CULVERT REPLACEMENT

EROSION CONTROL &
WATER MGMT. PLAN (1 of 2)



CHANNEL BARRIER DETAILS

TEMPORARY EROSION CONTROL & WATER MANAGEMENT PLAN

INSTREAM BARRIER MODIFICATION PROJECT:
 Culvert Replacement on Stansberry Creek
 Lighthouse Road (1D010), Humboldt County

FIGURE 5

2 of 2