

## CALIFORNIA COASTAL COMMISSION

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Staff:	T. S. Tauber
Staff Report:	February 2, 2000
Hearing Date:	February 18, 2000
Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 1-99-076

APPLICANT: Caltrans

PROJECT LOCATION: Along the north bank of the Mad River immediately upstream of the Highway 101 bridge in the McKinleyville area of Humboldt County, (APN 507-282-01, -02, -03, -04, -05).

PROJECT DESCRIPTION: Excavation of approximately 1,046-cubic-yards of riverbank material, placement of approximately 1,300-cubic-yards of ¼ Tonne rock slope protection along approximately 185 feet of the north bank of the Mad River, placement of 2-ton rock groupings intermittently spaced along the river channel, construction of a temporary gravel berm in the channel near the toe of the north bank to dewater work area, and planting of willow cuttings among the rock slope protection.

GENERAL PLAN DESIGNATION: Agricultural Exclusive/Prime Lands (AEP), McKinleyville Area Plan.

ZONING DESIGNATION: Agriculture Exclusive, 60-acre minimum parcel size with Flood Hazard, Alquist-Priolo Fault Hazard Regulations, and Streams and Riparian Corridor Protection combining zones (AE/F,A,R).

LOCAL APPROVALS RECEIVED: Humboldt County CDP No. 98-12, approved August 19, 1999.

OTHER APPROVALS RECEIVED: Army Corps of Engineers, Regional Water Quality Control Board, Department of Fish and Game, and National Marine Fisheries Service.

SUBSTANTIVE FILE DOCUMENTS: Humboldt County Local Coastal Program.

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SUMMARY OF STAFF RECOMMENDATION:

Staff recommends approval with special conditions of the proposed placement of rock slope protection (RSP) to repair storm damage along the north bank of the Mad River at a location immediately upstream of the U.S. 101 bridge over the Mad River, Humboldt County. This recommendation is based, in part, on an analysis of Coastal Act Sections 30233(a) and 30235 which address the placement of fill within coastal waters and the construction of revetments and similar shoreline structures. The proposed fill within coastal waters includes placement of 1,300-cubic-yards of rock slope protection along approximately 185 feet of riverbank, placement of 2-ton rock groupings spaced intermittently along the toe of the revetment for 185 feet, and construction of a temporary gravel berm within the channel to dewater the development site during project construction. The project is an allowable use of fill in coastal waters pursuant to Coastal Act Section 30233(a)(5), because it is an incidental public service intended to repair storm damage and prevent the undermining of the structural integrity of the Highway 101 Mad River Bridge footings. Furthermore, approval of the shoreline revetment is required by Section 30235 because the revetment is intended to protect the Mad River Bridge, an existing structure, and the project will not have an adverse impact on local sand supply.

Significant adverse impacts are often associated with the placement of fill in coastal waters. Some of the potential impacts associated with the proposed project include: the coverage of bottom habitat and the loss of estuary surface area and volume, impacts to riparian vegetation, impacts to fisheries and fish habitat, water pollution in the form of sedimentation or debris entering the river, and impacts to visual resources. The staff recommendation includes a number of conditions to minimize these types of potential adverse impacts.

These recommended conditions require that: (1) the work season be limited to the period of year between July 1 and September 15, to avoid migrating fish and minimize sedimentation, (2) the applicant maintain the rock slope protection, (3) all construction debris, including floating debris

allowed to enter the waters of the Mad River be retrieved and lawfully disposed of, (4) Caltrans apply for an amendment to the coastal development permit for any changes or additions to the design of the project, (5) the area in and among the RSP be revegetated with willow and black cottonwood cuttings, (6) the temporary gravel berm be constructed from the bank outward utilizing local river-run gravel, properly sized to minimize turbidity during placement in the channel and the pad be properly graded to avoid any impoundment of water or fish, and (7) large rock-groupings be placed intermittently along the base of the RSP to facilitate revegetation and provide fish habitat as proposed by the applicant. As conditioned, staff has determined the proposed development would be consistent with the Coastal Act.

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STAFF NOTES:

1. Standard of Review

The proposed development is located on the north bank of the Mad River in Humboldt County, along a portion of the river that is subject to tidal action. Humboldt County has a certified LCP, but the project site is bisected by the boundary between the Commission's jurisdiction and the coastal development permit jurisdiction of Humboldt County. The portion of the development that is the subject of Coastal Development Permit Application 1-99-076 is in tidal areas within the Commission's retained jurisdiction. Therefore, the standard of review is the Chapter 3 policies of the Coastal Act.

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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. 1-99-076 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 Amendment:

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 and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. 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 Attachment A.

III. Special Conditions:

1. Timing of Construction

To avoid adverse impacts to fish and fish habitat, construction shall be limited to the period of year between July 1 and September 15. However, the permittee may undertake construction outside of this period upon obtaining a written statement of the Executive Director authorizing construction on specified dates. To obtain such a determination, the permittee must submit a declaration from the Department of Fish and Game or the National Marine Fisheries Service stating that construction on the specific dates proposed will not cause adverse impacts to any sensitive or endangered species. The declaration must contain an assessment of fish migration patterns of anadromous fish found in the area and a statement that the construction activity on the specific dates proposed will not interfere with any fish migration patterns.

2. Maintenance

The permittee shall be responsible for removing or redepositing any debris, rock or material that becomes dislodged after completion of the approved shoreline protection as soon as possible after such displacement occurs. The permittee shall contact the Coastal Commission District Office immediately to determine whether such activities require a coastal development permit.

3. Construction Debris Removal

A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the permittee shall submit for the review and approval of the Executive Director a plan for the disposal of construction-related debris. The plan shall describe the manner by which the material will be removed from the construction site and identify a disposal site that is in an upland area where materials may be lawfully disposed.

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 required.

4. Future Development

This permit is only for the development described in coastal development permit No. 1-99-076. Except as provided in Public Resources Code section 30610 and applicable regulations, any future development as defined in PRC section 30106, including but not limited to, a change in the density or intensity of use land shall require an amendment to Permit No. 1-99-076 from the California Coastal Commission or shall require an additional coastal development permit from the California Coastal Commission or from the applicable certified local government.

5. Landscape Plan

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for the review and written approval of the Executive Director, a plan for landscaping to soften the appearance of the shoreline revetment along the north bank of the Mad River. The plan shall be prepared by a qualified professional with expertise in the fields of landscaping or botany.

1. The plan shall demonstrate that:

- (a) the species of cuttings to be planted shall be willow (*Salix spp.*) and black cottonwood (*Populus balsamifera*) collected from adjacent trees or nearby sites,
- (b) the willow and black cottonwood cuttings shall be planted on 1.0 m centers along the area of reconstructed slope above Ordinary High Water Elevation (OHWE),
- (c) all willow and black cottonwood planting shall be completed during the first rainy season after project completion,
- (d) the required plantings will be maintained in good growing conditions through-out the life of the project. When total survival falls below 50% of cuttings planted, the permittee shall replant new willow and black cottonwood cuttings as necessary to ensure continued compliance with the landscape plan, and ensure that at any given time, trees are surviving in at least 50% of the locations where trees were originally planted.

- (e) the terrace above the north bank revetment used for access and staging will be replanted in a mixture of clover and orchard grass at a rate of 40-50 lbs./acre.

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

- (a) a narrative description demonstrating how each of the above criteria will be met,
- (b) a map showing the type, size, and location of all plant materials that will be on the developed site, topography of the developed site, and all other landscape features, and
- (c) a schedule for installation of plants.

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 required.

6. Construction of Gravel Berm

The gravel berm shall be constructed from the bank outward utilizing local river-run gravel, properly sized to minimize turbidity during placement in the channel. After project construction, the berm shall be properly graded to avoid any impoundment of water or fish, and will be left in the channel to dissipate.

7. Placement of Rock Clusters

As proposed by the applicant, irregular clusters of two-ton or larger rock shall be placed at either end of the RSP and spaced intermittently along the toe of the RSP. The rock groupings will provide structural diversity, collect woody debris, facilitate revegetation at the river edge, and create potential salmon and steelhead rearing habitat.

IV. Findings and Declarations

The Commission hereby finds and declares:

1. Site Description & Project Description

The proposed development site is located about two miles east of the ocean in a rural area between Arcata and McKinleyville on the north bank of the Mad River upstream from the Highway 101 bridge, Humboldt County.

The proposed project involves the placement of rock slope protection (RSP) to repair riverbank erosion caused by a combination of river stage draw down and direct current impingement, primarily occurring during storms in the winters of 1996 and 1997. The objective of the project is to protect the bridge piers and abutments from scour due to continued bank erosion.

Vegetation within the project area consists of three types: 1) scattered vegetation covering the eroded slope between the Ordinary Higher High Water (OHHW) and top of slope, dominated by mostly aggressive, introduced species; 2) a narrow band of black cottonwood/ red alder riparian forest occurring on the intact terrace above the eroded slope; and 3) the disturbed pasture in which the existing access road is located. The riparian vegetation will not be affected by the proposed project.

The project involves four elements including 1) construction of a temporary gravel berm within the channel, 2) excavation of riverbank material, 3) placement of rock slope protection, and 4) placement of rock groupings within the channel along the riverbank. These project elements are described in detail below.

- (1) A temporary gravel berm is proposed to be constructed a minimum of 3.0 meters from the RSP toe to dewater the work area and control sediment resulting from excavation and placement of RSP. The RSP will be placed by Caltrans "Method B" to minimize void spaces, using machinery located at the top of the slope and an excavator operated from the de-watered channel bottom near the toe of the north bank. The gravel berm would be constructed from the bank outward utilizing local river-run gravel, properly sized to minimize turbidity during placement in the channel. After construction of the RSP, the berm would be properly graded to avoid any impoundment of water or fish, and would be left in the channel to dissipate.
- (2) Approximately 1,046-cubic-yards of riverbank material would be excavated. The excavated material would consist of loosely consolidated sand, gravel, and floodplain deposits. Most of this material would be used as top dressing of the rock slope protection. The proposed excavation would clear the eroded material along the north bank and prevent the rock slope protection from extending further into the stream channel than the contour of the original slope.
- (3) Approximately 1,300-cubic-yards of ¼ ton rock slope protection is proposed to be placed beginning at the east edge of the Highway 101 bridge over the Mad River proceeding upstream along the north bank for approximately 185 feet. The top of the rock elevation would be between the Ordinary High Water Elevation (OHWE) of 4.0 meters and the 10-year storm elevation of 6.5 meters. The RSP will be placed at a 1:1 ½ slope after the minor excavation. The RSP would be 1.0 meters thick except for the footing (toe) which will have a dimension of not less than 1.5 m deep x 2.5 m wide. The total area of RSP is .675 acres. Imported topsoil or salvaged river silt would be used to top-dress the RSP located above OHWE to facilitate natural vegetation and support the planting of black cottonwood and willow cuttings.

According to the written project description submitted by Caltrans, the portion of the restructured slope above the OHWE would be revegetated with cuttings collected from adjacent trees or nearby sites. The cuttings would be planted on approximately 1.0 m spacing during the rainy season when the soil is moist.

- (4) Additionally, 2-ton rock groupings would be placed at each end of the RSP as well as spaced intermittently. The rock groupings would collect woody debris, facilitate revegetation at the river edge, and potentially create salmon and steelhead rearing habitat.

The project would be accessed from North Bank Road via an existing dirt road constructed across an adjacent pasture. The staging area for equipment and material stockpiles would occupy the terrace above the north bank of the RSP site. Approximately 20 working days would be required to complete the in-stream construction portion of the project. At project completion, the pasture area used for equipment and materials stockpiles will be planted with an erosion control mix composed of clover and orchard grass spread at a rate of 40-50 lbs. per acre. All activities in the channel of the Mad River would be conducted between July 1 and September 15, unless a time extension is authorized by the National Marine Fisheries Service (NMFS) and other regulatory agencies.

## 2. Fill in Coastal Waters and Protection of Marine Resources

The Coastal Act defines fill as including "earth or any other substance or material ... placed in a submerged area." The proposed project includes the placement of fill in coastal waters in the form of rock slope protection placed along the riverbank and a temporary gravel berm and operations pad to be placed on the bottom of the river channel.

Sections 30233 and 30235 of the Coastal Act address the placement of fill within coastal waters and the construction of revetments and similar shoreline structures.

Section 30233(a) provides as follows, in applicable part:

- (a) *The diking, filling, or dredging of open coastal waters, wetlands, estuaries, and lakes shall be permitted in accordance with other applicable provisions of this division, where there is no feasible less environmentally damaging alternative, and where feasible mitigation measures have been provided to minimize adverse environmental effects, and shall be limited to the following:*
  - (1) *New or expanded port, energy, and coastal-dependent industrial facilities, including commercial fishing facilities.*
  - (2) *Maintaining existing, or restoring previously dredged, depths in 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.*

Section 30235 provides, in applicable part:

*Revetments, breakwaters, groins, harbor channels, seawalls, cliff retaining walls, and other such construction that alters natural shoreline processes shall be permitted when required to serve coastal-dependent uses or to protect existing structures or public beaches in danger from erosion, and when designed to eliminate or mitigate adverse impacts on local sand supply.*

The above policies set forth a number of different limitations on what types of shoreline protection fill projects may be allowed in coastal waters. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories or tests. These tests are:

1. The purpose of the fill is either for one of the eight uses allowed under Section 30233, to serve coastal dependent uses, or to protect existing structures or public beaches in danger from erosion; and
2. the project is designed to eliminate or mitigate adverse impacts on local sand supply; and
3. the project has no feasible less environmentally damaging alternative; and

4. adequate mitigation measures are provided to minimize the adverse impacts of the proposed project on habitat values.

Purpose of Shoreline Revetment Fill

The relevant category of use listed under Section 30233(a) that relates to the proposed erosion control project is subcategory (5), stated as follows:

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

To determine if the proposed fill is an incidental public service, the Commission must first determine that the proposed fill is for a public service purpose. Since this project would be constructed by a public agency to protect the existing Highway 101 Mad River Bridge from structural damage, the Commission finds the project expressly serves a public service purpose under Section 30233(a)(5).

The Commission must next determine if the fill is "incidental." For a public service purpose to be incidental, it must not be the primary part of the project or the impacts must have a temporary duration. In the present case, the Commission finds the erosion control purpose of the proposed rock slope protection project is incidental to "something else as primary", that is, the transportation service provided by the existing bridge.

The primary purpose and need for the project is to stabilize the riverbank and protect the bridge piers and abutments from scour, thereby ensuring the continued safe passage of vehicles across the bridge along State Route 101, the heaviest traveled highway in Humboldt County.

The Commission notes that the Statewide Interpretive Guidelines on Wetlands adopted by the Commission February 4, 1981 (Wetlands and Other Wet Environmentally Sensitive Habitat Areas, - Section IV(A)(5)) discussed "incidental" as follows:

*Incidental public services purposes which temporarily impact the resources of the area, which include, but are not limited to, burying cables and pipes, inspection of piles, and maintenance of existing intake and outfall lines (roads do not qualify.)<sup>3</sup>*

Footnote 3, elaborating on the limited situations where the Commission would consider a road or bridge as an exception to this policy, states:

*When no other alternatives exist, and when consistent with the other provisions of this section, limited expansion of roadbeds and bridges necessary to maintain existing traffic capacity may be permitted.*

The proposed project does not result in widening the existing bridge or expanding traffic capacity across the bridge. Rather, the project will stabilize the riverbank adjacent to the bridge footings to prevent scouring and undermining the structural integrity of the bridge.

Therefore, the Commission finds that for the reasons discussed above, the proposed fill in coastal waters for the proposed project constitutes an incidental public service, and thus is an allowable use pursuant to Section 30233(a)(5) of the Coastal Act.

#### Necessary to Protect Existing Structure

The proposed project is also necessary to protect an existing structure as required by Section 30235 because the project is necessary to stabilize the riverbank adjacent to the bridge footings to prevent scouring and undermining the structure. Because the shoreline revetment is necessary to protect an existing structure, and as discussed below, will not significantly impact shoreline sand supply, the shoreline revetment must be approved pursuant to Section 30235.

#### Protection of Sand Supply

The project also meets Section 30235 criteria regarding the protection of local shoreline sand supply because there is no evidence that the project will have any effect on existing local shoreline sand supplies. The river shoreline in the vicinity of the project site consists of loosely consolidated eroded material including sand, gravel, and floodplain deposits. The sand supplies for the sandy beaches just outside the river's mouth are strongly affected by ocean wave dynamics, and not primarily by river currents or the occasional wave action against the river's banks. Furthermore, the proposed rock slope protection extends along only 185+/- feet of the north bank of the Mad River. Therefore, the revetment is not significant enough to impact local shoreline sand supply and the project will not affect ocean wave dynamics. Because the shoreline revetment will not significantly impact shoreline sand supply, and as discussed above, is necessary to protect an existing structure, the shoreline revetment must be approved pursuant to Section 30235.

#### Alternatives Analysis

The applicant has submitted an alternatives analysis and has determined that there are no feasible, less environmentally damaging alternatives to the proposed project. The applicant provided discussion of four project alternatives including (1) the no build alternative, 2) a larger application of RSP, 3) a timber bulkhead, and 4) sheet piling.

The "no build" alternative would result in continued erosion and scour of the riverbank, thereby threatening the bridge supports for the Highway 101 Mad River Bridge. Thus, without the project, erosion threatens the safety and integrity of the Route 101 bridge over the Mad River. State Route 101 is the most important and most traveled highway in Humboldt County. Therefore, the no project alternative is not feasible, as it will not accomplish the project objective of protecting the existing bridge from erosion.

Another alternative considered by the applicant would be to place 510 +/- lineal feet of rock slope protection along the riverbank rather than the proposed 185 +/- feet. To protect the integrity of the RSP from future scour and bank destabilization, this alternative would extend the RSP farther upstream so that the leading edge of the RSP would be well protected from scour. This alternative would require the removal of significant riparian vegetation and require even more fill in coastal waters. This alternative was Caltrans' original project proposal. However, due to concerns expressed by other resource agencies, this alternative was scaled down to the size of the proposed project to lessen resource impacts. Although the project has been scaled back considerably from its originally proposed size, Caltrans believes that the project involving less RSP is still sufficient from an engineering perspective to provide erosion control at the site and thus is a feasible alternative. Therefore, the originally proposed project to apply 510 lineal feet of RSP along the bank is not the least environmentally damaging feasible alternative.

Another alternative discussed by the applicant would be the use of timber piles in the form of a bulkhead to control erosion along the riverbank. By establishing a vertical wall along the riverbank, this method could conceivably require less encroachment into the river than the proposed project. However, this method was used in a previous attempt to control bank erosion with limited success because it creates a blockage in the river that impairs fish passage. Placement of pilings could also present a recreational conflict for rafts and boats on the river, as they would be placed within the riverbed to collect wood debris and form a blockage in the river. Therefore, because of the adverse impacts to fish and public recreation along the Mad River, this alternative is not the least environmentally damaging feasible alternative.

Similar to the bulkhead alternative, the use of sheet piling would create a vertical wall along the riverbank which could potentially result in less encroachment into the river than the proposed project. However, the use of sheet piling was not considered as a feasible alternative because the hard, smooth surface of the sheet pile would increase river velocities, thus increasing scour at the bridge footings. This alternative would require expansion of the work limits and the use of RSP at the terminal sections of the sheet piling. Vegetative coverings could not be used to adequately cover the exposed steel surface. Therefore, the steel surface would be visible to traveling motorists and recreational users of the river. Thus, the sheet piling alternative would have a more adverse impact on visual resources than the proposed project. Therefore, the Commission finds that the use of sheet piling is not a feasible less environmentally damaging alternative.

Based on the alternatives analysis above, the Commission concludes that the proposed 1,300-cubic-yards of rock slope protection along 185 feet of the riverbank is the least environmentally damaging, feasible alternative for providing erosion control at the subject site.

#### Adequate Mitigation Measures

The fourth test set forth by Sections 30233 and 30235 is that adequate mitigation must be provided for the adverse impacts of the proposed project on habitat values. Coastal Act Section 30231 provides in applicable part that the biological productivity and the quality of coastal waters be maintained by

protecting natural vegetation buffer areas near riparian habitats and by minimizing alteration of natural streams.

Significant adverse impacts are often associated with the placement of fill in coastal waters. Some of the potential impacts associated with the proposed project include: the coverage of bottom habitat and the loss of estuary surface area and volume, impacts to riparian vegetation, impacts to fisheries and fish habitat, and water pollution in the form of sedimentation or debris entering the river. As discussed below, the proposed project has been conditioned to minimize these types of potential adverse impacts.

The area to receive the rip rap fill would be approximately .675 acres consisting primarily of eroded riverbank material including loosely consolidated sand, gravel, and floodplain deposits. This eroded material would be excavated prior to placement of the RSP (approximately 1,046-cubic-yards). Therefore, the rip rap along the bank would not protrude riverward of the contour of the original slope. The toe of the RSP will be placed in a trench below the original level of the streambed. The gravel berm placed in the stream channel would cause a temporary loss of estuary surface area and volume. However, following construction, the gravel berm would be leveled and allowed to dissipate naturally with high river flows. Furthermore, the gravel berm is necessary to dewater the work area in the channel and avoid adverse impacts to water quality and fisheries as further discussed below. Therefore, loss of estuary surface area and volume due to the proposed erosion control project would be minimal and temporary.

The only vegetation that would be impacted by the placement of the RSP includes the scattered vegetation covering the eroded slope between the OHHW and top of slope, which is dominated by aggressive, introduced species. The proposed placement of RSP would not result in the removal or disturbance of the riparian vegetation along the riverbank. The channel bottom in the location of the proposed gravel berm is comprised of eroded materials and is void of vegetation because of the river scouring that has given rise to the need for the project. Therefore, no loss of bottom or riparian habitat would result from the proposed project. Furthermore, the applicant proposes to use imported topsoil or salvaged river silt to topdress the RSP located above the OHWE, to facilitate natural revegetation. The applicant also proposes to plant willow and black cottonwood cuttings in and among the RSP on approximately 1.0 m centers during the rainy season to facilitate the regrowth of riparian vegetation.

The access and staging area on the pasture terrace above the north bank consists of some ruderal vegetation. The staging area would be used for equipment and material stockpiles during construction. The applicant proposes to revegetate the staging area and provide erosion control by using a seed mix of clover and orchard spread at 40-50 lbs./acre.

In addition to impacts to surrounding vegetation, the proposed fill project could also potentially have an adverse impact on water quality and fisheries habitat. The project could degrade the water quality of the river by releasing large quantities of sediment into the water column if grading and filling activities occurred during either the rainy season when stormwater runoff could wash sediment into

the river or when water levels rise above the toe of the excavation and fill area. Such increased sedimentation of the river could result in certain fishery habitat impacts.

According to the Biological Assessment prepared by SHN Consulting Engineers & Geologists, Inc., the Mad River supports viable populations of coho salmon, a federally listed threatened species, and other salmon species. Increased sedimentation can interfere with fish passage, spawning, and other aspects of fish life cycles. The applicant proposes to limit construction to the low flow period in the river between July 1 and September 15, and to construct a gravel berm in the channel to dewater the toe trench work area, control erosion, and prevent adverse impacts to fish during excavation and placement of the RSP.

According to the Biological Assessment by SHN:

"Construction of the toe trench below the OHWE will impact critical habitat for the coho and chinook salmon and cause a temporary increase in turbidity. Potential direct impacts (e.g., mortality) on any sensitive fish species present in the channel (the most likely being steelhead) will be avoided by constructing a gravel pad from the shoreline outward in order to isolate the construction zone from the active channel. Any fish present are expected to leave the immediate construction zone as soon as activities begin. In addition, the project will be constructed in late summer when the fish are least likely to be present. If any fish are encountered in the active channel during the project, the minor short term increase in turbidity is not likely to have an adverse effect."

The Commission therefore attaches Special Condition Nos. 1 and 6 to assure that impacts to fish and fish habitat will be minimized by limiting the work season, and by ensuring proper construction of the proposed gravel berm. Special Condition No. 1 limits project construction to July 1 and September 15 as proposed by the applicant and recommended in the Biological Assessment when the river flow is low and fish are least likely to be present.

Special Condition No. 6 assures that the proposed gravel berm will be constructed and utilized pursuant to the applicant's project description and recommendations incorporated in the submitted Biological Assessment. This condition assures that the gravel berm will be constructed to dewater the channel in the work area by end-dumping river run fill from the shore outward, carefully avoiding any impoundment of water. Furthermore, the gravel will be obtained from an approved, local source, and properly selected in order to minimize the composition of fines, and minimize channel turbidity created during the placement. After construction, the berm will be graded in order to avoid any impoundment of water or fish, and left to dissipate with the winter flows.

To further minimize impacts to fish and fish habitat, the applicant proposes to place irregular clusters of two-ton rock at the toe of the RSP. The intermittently spaced rock groupings will enhance the structural diversity of the revetment, collect woody debris, facilitate revegetation at the river edge, and potentially create salmon and steelhead rearing habitat. Special Condition No. 7 assures that the

rock groupings will be placed pursuant to the applicant's project description to enhance fish habitat and riparian vegetation in this manner.

In addition to potential adverse impacts from sedimentation, the water quality of the Mad River could be adversely impacted by construction debris remaining on site that might later be carried away by river waters during periods of high winter flows. The Commission therefore attaches Special Condition No. 3 which requires the applicant to submit for review and approval by the Executive Director, a plan for the disposal of construction-related debris in an upland area where materials may be lawfully disposed. The applicant proposes to use a portion of the excavated material to top-dress the RSP. Any additional excavated material not used for this purpose should be included in the debris-disposal plan.

### Conclusion

The Commission finds that the project is an allowable use of fill in coastal waters under Section 30233(a) and that the shoreline revetment must be approved pursuant to Section 30235 because the shoreline revetment is required to protect existing structures under Section 30235 and will not result in adverse impacts on local shoreline sand supplies. Furthermore, the project is the least environmentally damaging feasible alternative, and includes adequate mitigation for impacts to habitat and water quality. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Sections 30231, 30233 and 30235 of the Coastal Act.

### 3. Hazards and New Development

The Coastal Act contains policies to assure that new development provides structural integrity, minimizes risks to life and property in areas of high flood hazard, and does not create or contribute to erosion.

Section 30253 of the Coastal Act states in applicable part:

*New development shall:*

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

The applicant plans to place the proposed rock slope protection utilizing Caltrans "Method B" which involves placement of the rock in a manor that will minimize void spaces. The proposed design also provides for a toe at the foot of the revetment which will provide structural stability and prevent settling of the RSP into the river channel. The revetment will be keyed into the riverbank by

excavating the loosely consolidated eroded material and will be placed at a 1:1 ½ (horizontal : vertical ) slope. The RSP will be 1.0 meter thick except for the toe which will have a dimension of not less than 1.5m x 2.5m wide. According to SHN Consulting Engineers and Geologists, Inc., the project will not impact the existing bridge footings.

Although the proposed project has been designed to be structurally stable, it is still possible that individual pieces of the rock revetment could occasionally become dislodged and eventually make their way into river waters. Any such migration of rock from the revetment construction could adversely affect the structural integrity of the revetment and diminish its ability to protect the site against erosion hazards. The Commission therefore attaches Special Condition No. 2, which requires that the rock slope protection be maintained over time to prevent such adverse impacts from migrating rock.

To further assure maintained structural integrity of the revetment, the Commission attaches Special Condition No. 4 which requires that any change in the design of the project, including but not limited to future additions to reinforcement of the project, changes in revetment materials, or configuration will require an amendment to Coastal Development Permit No. 1-99-076.

As conditioned, the Commission finds that the proposed project consistent with Section 30253 of the Coastal Act.

#### 4. Visual Resources

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

The project site is largely hidden from view from most public vantage points, but the proposed RSP would be visible for brief periods of time to northbound motorists on Highway 101 as they approach and cross the bridge. In addition, the site would be very visible to kayakers and other recreationists on the river itself.

The proposed rock slope protection project will not result in the blockage of any public views to or along the ocean as the elevation of the revetment does not extend beyond the top of the bank. The proposed rip rap will not substantially alter existing site landforms since it will be keyed into the riverbank and not protrude beyond the contour of the natural slope. Furthermore, to soften any potential visual impact the revetment may have to recreationists along the river, or northbound motorists over the Mad River Bridge, the Commission attaches Special Condition No. 5. This condition requires that willow and black cottonwood cuttings be planted in and among the RSP to facilitate natural revegetation. The condition also requires that as proposed, the staging and access area will be revegetated with clover and orchard grass, compatible with the surrounding area. The



applicant is required to submit for the review and approval of the Executive Director, a landscape plan that provides for such planting and maintenance of the vegetation so that at least 50% of the plantings survive to ensure that the vegetation will continue to soften the appearance of the revetment over the life of the project.

To further protect visual resources, the Commission attaches Special Condition No. 4 which states that any changes in the design of the project, including future additions to the revetment or changes in revetment materials or configuration will require an amendment to Coastal Development Permit No. 1-99-076. This condition will enable the Commission to review any such changes for conformance with the visual resources policies of the Coastal Act.

Therefore, the Commission finds the proposed project will not have any adverse impacts to scenic and visual qualities of coastal areas and is consistent with Section 30251 of the Coastal Act.

5. Public Access

Section 30212 of the Coastal Act requires that access from the nearest public roadway to the shoreline be provided in new development projects except where it is inconsistent with public safety, military security, or protection of fragile coastal resources, or adequate access exists nearby. Section 30211 requires that development not interfere with the public's right to access gained by use or legislative authorization. In applying Section 30211 and 30212, the Commission is also limited by the need to show that any denial of a permit application based on these sections, or any decision to grant a permit subject to special conditions requiring public access, is necessary to avoid or offset a project's adverse impact on existing or potential access.

Although the project is located between the first public road, State Route 101, and the Mad River, an arm of the sea, it will not adversely affect public access. There are no public trails or roads within the vicinity of the project that will be blocked or eliminated by the proposed development. The Mad River is accessed by the public in other locations for recreation activities such as kayaking and canoeing. The construction of the rock slope protection will not protrude riverward from the bank and therefore, will not interfere with recreation opportunities on the river itself.

Furthermore, the proposed shoreline protection project will not change the nature or intensity of use of the site, and thus will not create any new demand for public access or otherwise create any additional burdens on public access. Therefore, the Commission finds that the proposed project does not have any adverse effect on public access, and that the project as proposed is consistent with the requirements of Coastal Act Sections 30210, 30211, and 30212.

6. California Environmental Quality Act (CEQA)

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be 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 feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect that the activity may have on the environment. As discussed above, the project has been conditioned to avoid any adverse impacts to water quality and habitat of the Mad River from the construction of the erosion control project. As conditioned, there are no feasible alternatives or feasible mitigation measures available, beyond those required, which would substantially lessen any significant adverse impact that the activity 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
2. Vicinity Map
3. Area Map
4. Site Map
5. Project Plans

ATTACHMENT 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.



A B C D E F G H I J K L M N O

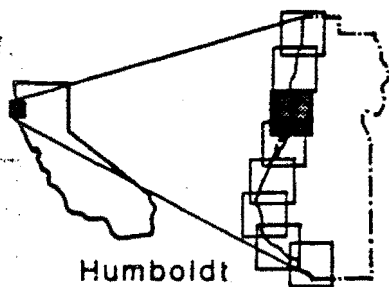


EXHIBIT NO. 1

APPLICATION NO.  
1-99-076

CALTRANS

REGIONAL LOCATION

PROJECT SITE

G  
1  
4  
G

Fairhaven

EUREKA

Cullen

Crannell

NAVAL  
AUXILIARY  
AIR  
STATION

BOUNDARY

McKinleyville

AZALEA  
RESERVE  
STATE PARK

ARCATA

ARCATA BAY

Bayside

COASTAL

Fieldbrook

Blue L



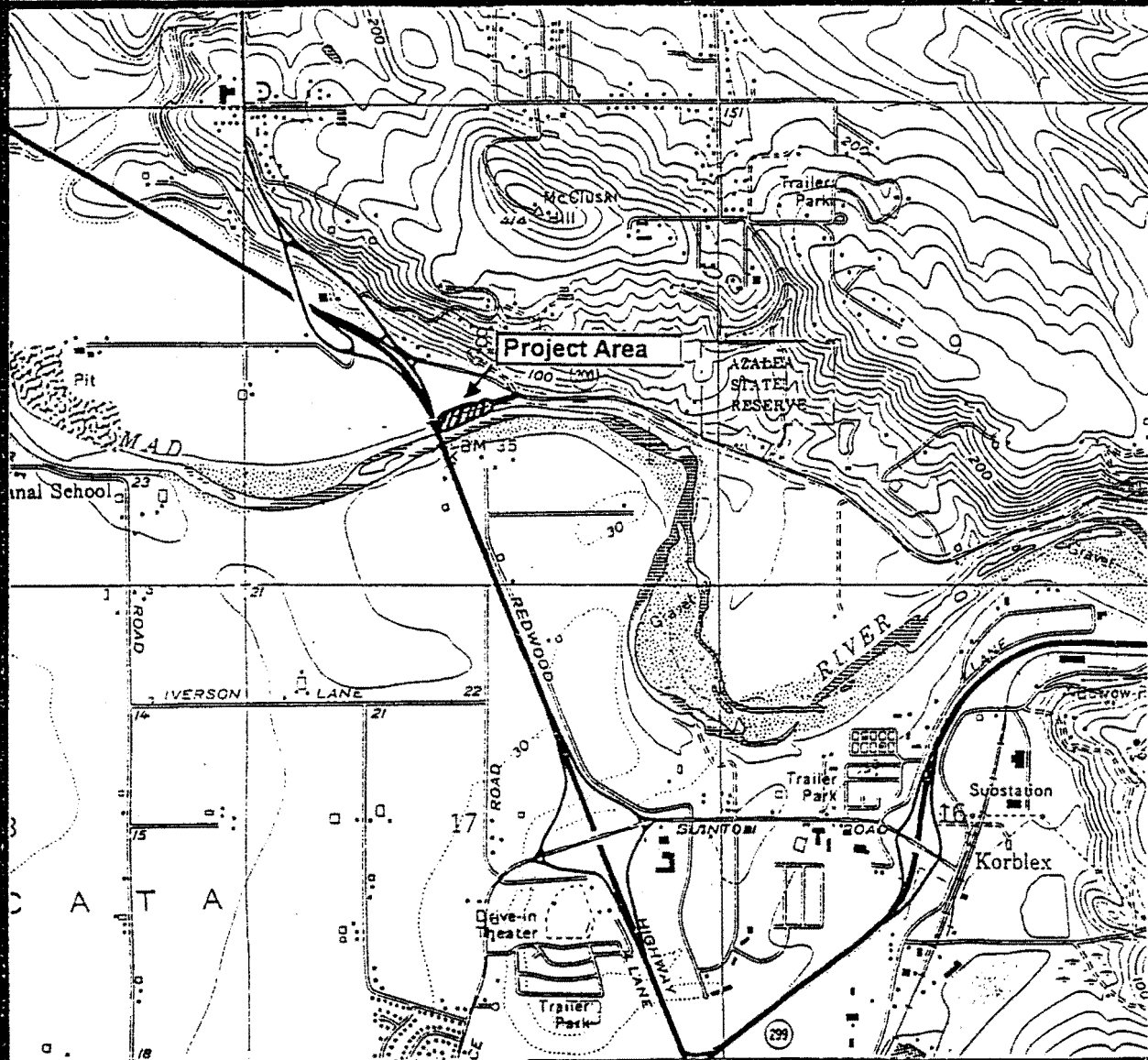
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LOCATION MAP

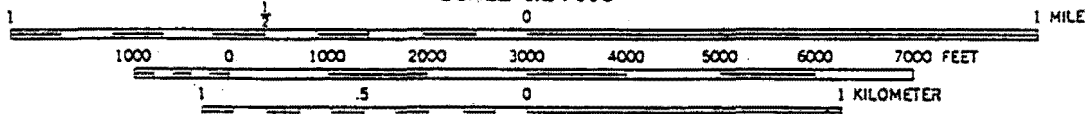
County of Humboldt

Sheet 3 of 8

# Project Area Location Map Site # 10



SCALE 1:24 000



CONTOUR INTERVAL 20 FEET  
 DOTTED LINES REPRESENT 10-FOOT CONTOURS  
 DATUM IS MEAN SEA LEVEL  
 SHORELINE SHOWN REPRESENTS THE APPROXIMATE LINE OF MEAN HIGH WATER  
 THE MEAN RANGE OF TIDE IS APPROXIMATELY 4 FEET

ARCATA NORTH, CALIF.

NE/4 EUREKA 15' QUADRANGLE  
 40124-H1-TF-024

1959  
 PHOTOREVISED 1972  
 DMA 1165 I NE-SERIES Y895



QUADRANGLE LOCATION

EXHIBIT NO. 2

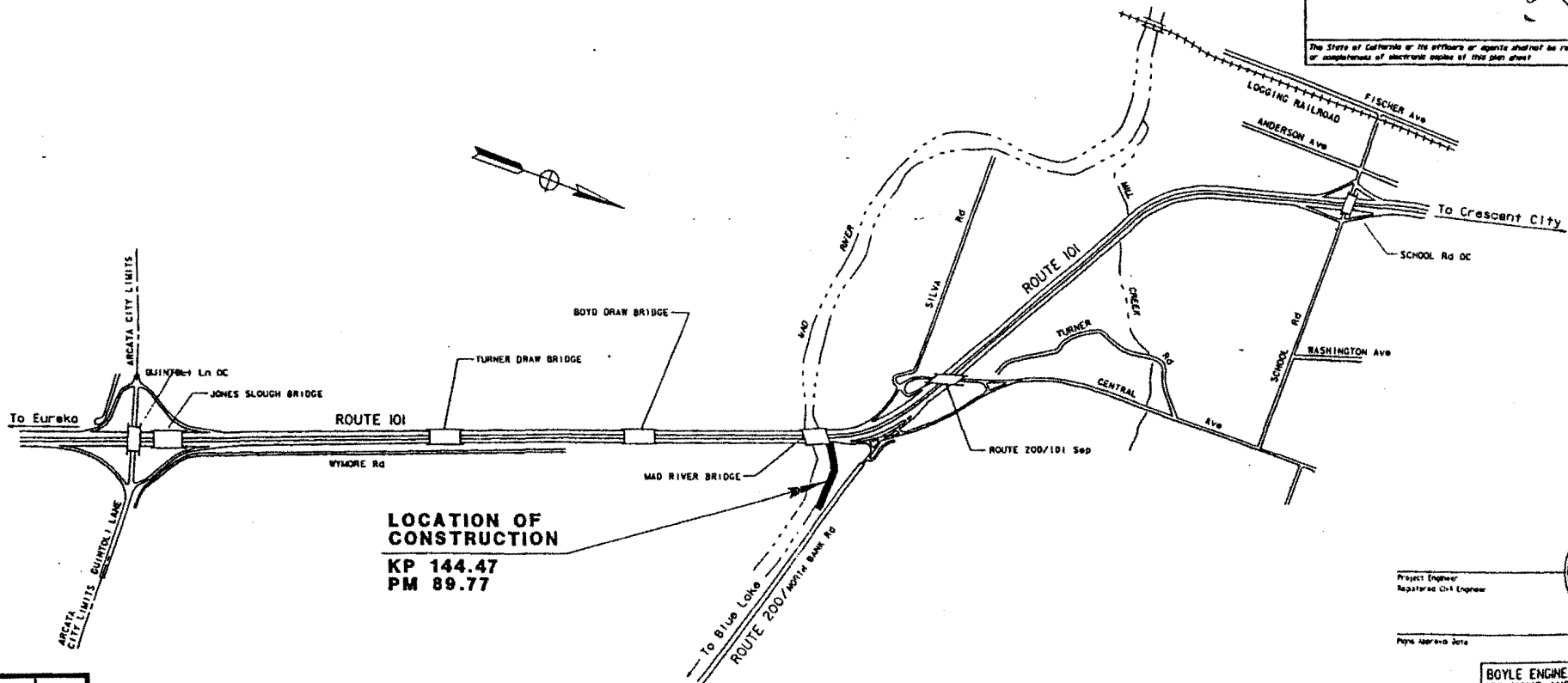
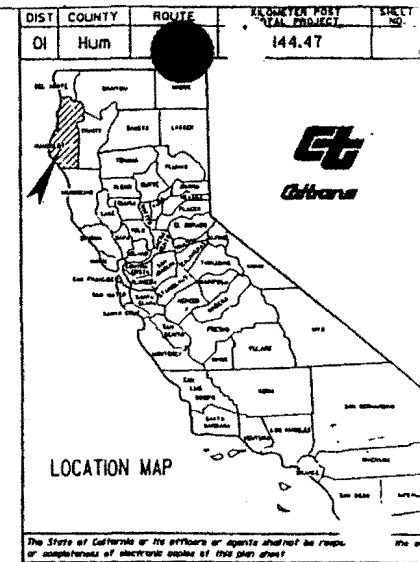
APPLICATION NO.  
 1-99-076

CALTRANS

VICINITY MAP

**PROJECT PLANS FOR CONSTRUCTION ADJACENT TO  
STATE HIGHWAY  
IN HUMBOLDT COUNTY  
NEAR ARCATA AT MAD RIVER BRIDGE**

To be supplemented by Standard Plans dated July, 1995



Project Engineer  
Registered Civil Engineer

Page Approved Date



**FIGURE 1. PROJECT LOCATION MAP**

BOYLE ENGINEERING CORPORATION  
100 HOWE AVE., SUITE 250 N.  
SACRAMENTO, CA 95825  
Contract No. 01-369724

shall possess the Class (or Classes) of license  
the 'Notice to Contractors' on page 1 of the Special Provisions

PROJECT File No: 23874N  
SHEET 1 OF 3  
ENCLOSURE 1.

EXHIBIT NO. 3

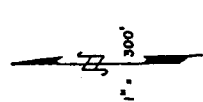
APPLICATION NO.  
1-99-076

CALTRANS

PROJECT AREA MAP

PTN OF S½ SEC 8 6N1E

507-28



O.S. Bk. 18 Pg. 82  
O.S. Bk. 21 Pg. 98, 99 & 100  
O.S. Bk. 23 Pg. 51  
P.M. Bk. 6 Pg. 49 = PM 701  
P.M. No. 1514 of PM Bk. 7 54

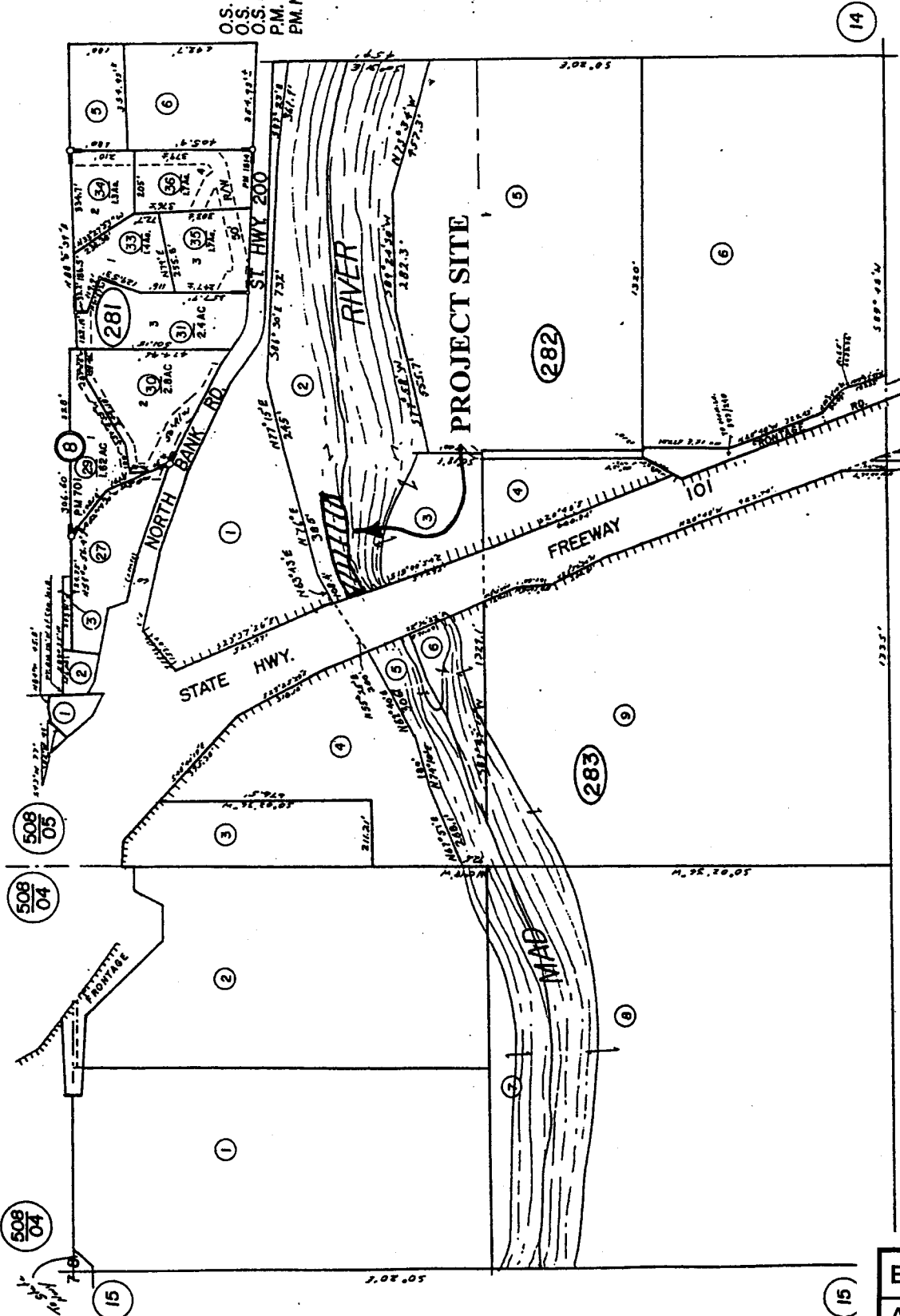


EXHIBIT NO.	4
APPLICATION NO.	1-99-076
CALTRANS	
SITE MAP	





PROJECT NO.	144.47
REGISTERED CIVIL ENGINEER	
PLANS APPROVAL DATE	
BOYLE ENGINEERING CORPORATION 800 HOME AVE., SUITE 250 N. SACRAMENTO, CA 95825	
The State of California or its officers or agents shall be held responsible for the accuracy or misstatements of any and all data of this plan.	

STATE OF CALIFORNIA - DEPARTMENT OF TRANSPORTATION  
PROJECT ENGINEER  
James A. Labanowski Jr.  
DATE DESIGNED BY TL 9/91  
DATE REVISION BY BP 9/91  
DATE 4/99

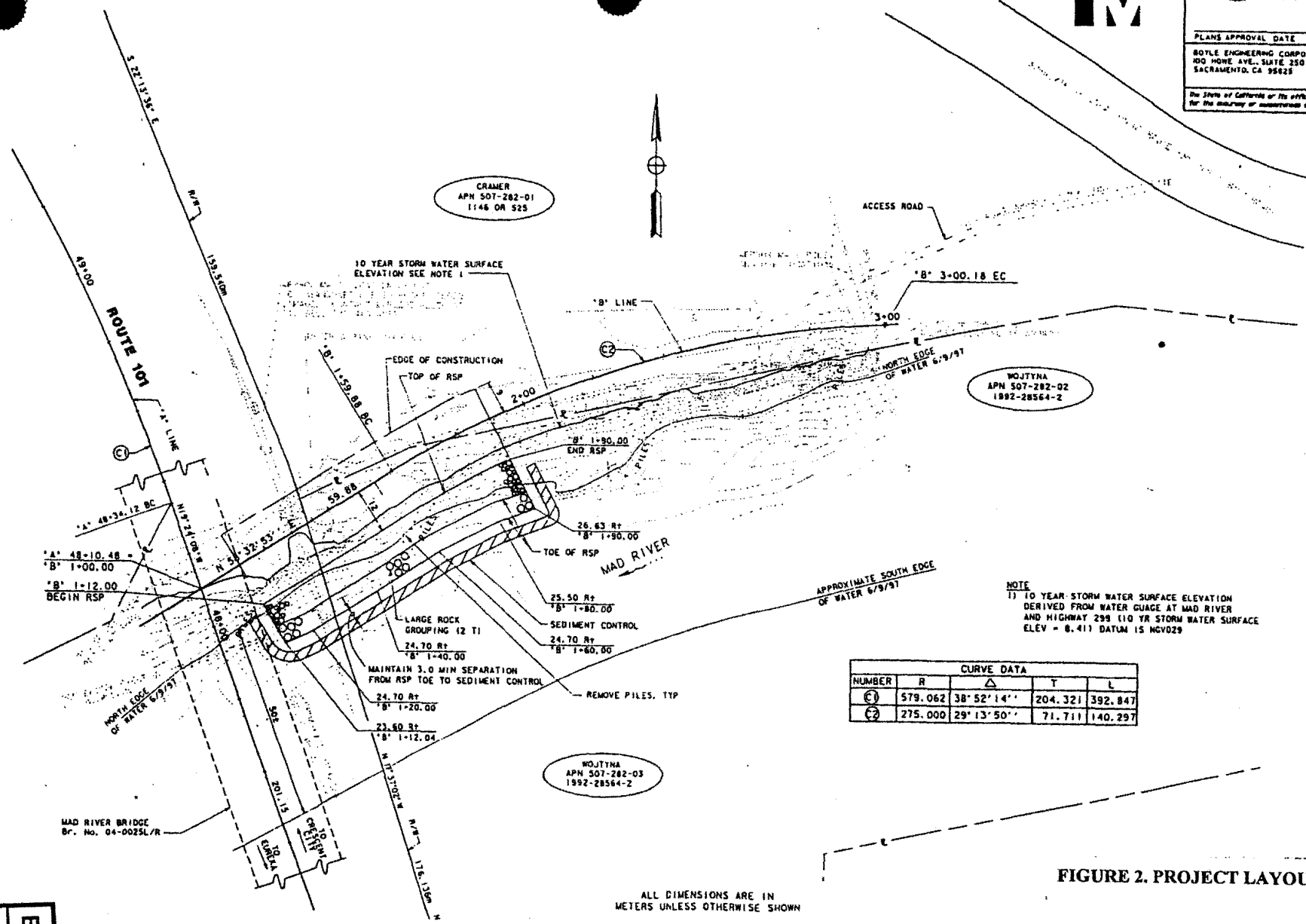


FIGURE 2. PROJECT LAYOUT

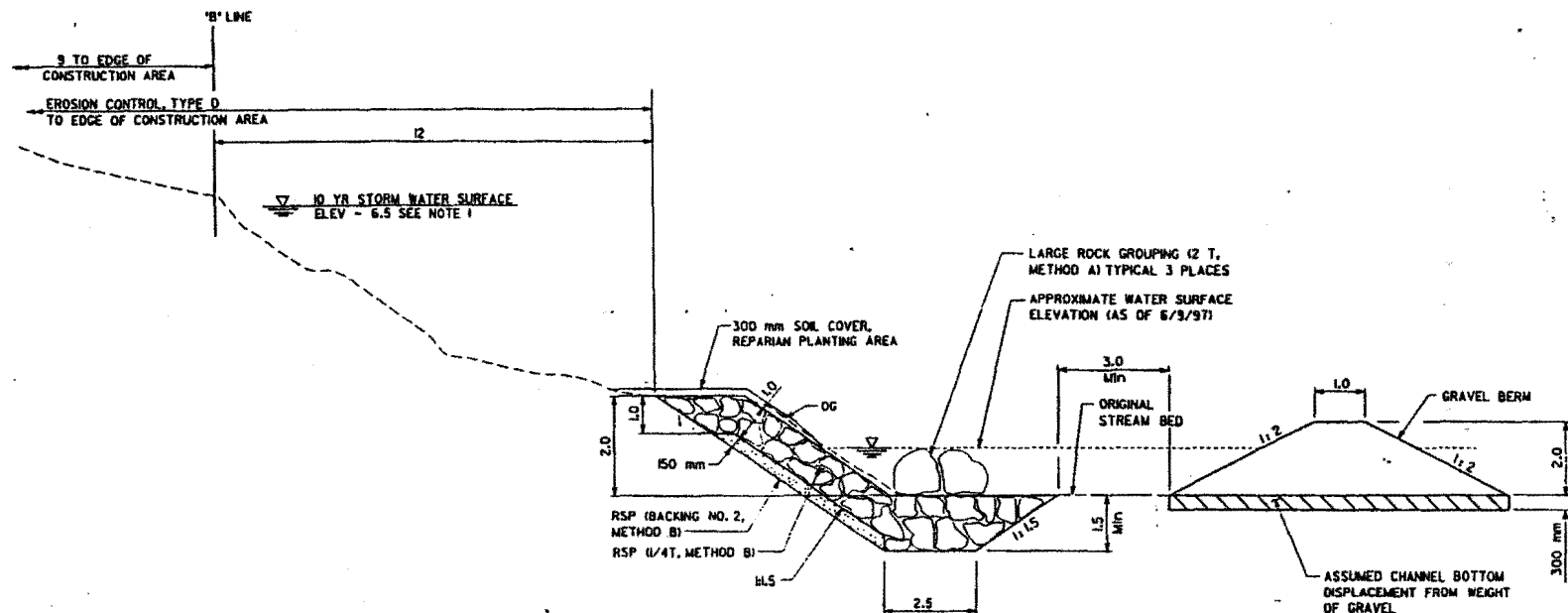
EXHIBIT NO.	5
APPLICATION NO.	1-99-076
PROJECT PLANS	(1 OF 2)

PROJECT FILE No: 23874 N  
SHEET 2 OF 3  
ENCLOSURE 1



DIST	COUNTY	ROUTE	ALGHESTER POST	SHEET
01	Hum	10	TOTAL PROJECT	144.47
REGISTERED CIVIL ENGINEER				
PLANS APPROVAL DATE				
BOYLE ENGINEERING CORPORATION 100 HOME AVE., SUITE 250 SACRAMENTO, CA 95825				
DATE 6/30/00				
CIVIL				
SITE OF CALIF.				

The State of California or its officers or agents shall be responsible for the accuracy or completeness of electronic copies of this plan set.



STA 'B' 1+12.04 TO 1+90.00

NOTE  
D 10 YEAR STORM WATER SURFACE DERIVED  
FROM WATER GAUGE AT MAD RIVER AND  
HIGHWAY 299 10 YR STORM WATER  
SURFACE ELEV = 8.40 DATUM IS NGVD29

FIGURE 3. TYPICAL CROSS SECTIONS  
NO SCALE

ALL DIMENSIONS ARE IN  
METERS UNLESS OTHERWISE SHOWN

FOR REDUCED PLANS ORIGINAL 0 20 40 60 80 100 USERNAME P. Jimenez-Meseros

PROJECT FILE 23874N

SHEET 3 OF 3

ENCLOSURE 1

X-1

EXHIBIT NO.

APPLICATION NO.  
1-99-076

CALTRANS

PROJECT PLANS  
(2 of 2)