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Staff: Tiffany S. Tauber  
Staff Report: October 18, 2002  
Hearing on Revised Findings: November 7, 2002  
Commission Action on Revised Findings:

## STAFF REPORT: REVISED FINDINGS

APPLICATION NO.: **1-02-007**

APPLICANT: **CITY OF EUREKA**

PROJECT LOCATION: In grazed seasonal wetlands east of Highway 101 and west of Old Arcata Road from Arcata to Eureka in Humboldt County.

PROJECT DESCRIPTION: Construction of approximately 25,900 lineal feet of 24-inch-diameter water pipeline parallel to an existing water pipeline through the diked former tidelands between Arcata and Eureka.

LOCAL APPROVALS RECEIVED: Humboldt County Coastal Development Permit (for portions of the project within County jurisdiction)

OTHER APPROVALS RECEIVED: None

OTHER APPROVALS REQUIRED: (1) Army Corps of Engineers; (2) Department of Fish and Game 1603 Streambed Alteration Agreement; (3) Regional Water Quality Control Board 401 Water Quality Certification; (4) USFWS & NMFS Section 7 Endangered Species Act Consultation; (5) City of Arcata Coastal Development Permit

COMMISSIONERS ON THE PREVAILING SIDE: Commissioners Burke, Hart, Durazo, McClain-Hill, Reilly, Woolley, Wan

SUBSTANTIVE FILE DOCUMENTS: Final Environmental Impact Report: "Mad River Water Rehabilitation Project," City of Eureka, March 13, 2002.

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1. Revised Findings Procedure

The Commission held a public hearing and approved the permit application at the meeting of September 11, 2002. The adopted conditions of approval differ slightly from those contained in the written staff recommendation dated August 23, 2002.

First, the addendum to the August 23, 2002 staff report made various changes to Special Condition Nos. 2, 4, 6, and 10 to clarify condition requirements in response to comments submitted by the applicant prior to the hearing. Special Condition No. 2 was revised to clarify the locations where removing fish from the work area prior to construction is required, to clarify that temporary bypass culverts are only required at water crossings that contain flowing water, and to correct the number of the referenced exhibit. Special Condition No. 4 was revised to clarify the amount of total area permitted to be used for construction staging. Special Condition No. 6 was revised to clarify that monitoring of the wetland mitigation site is only required until the vegetative cover meets the identified success standard within five years. Lastly, Special Condition No. 10 was revised to clarify the level of residual chlorine that can be discharged into the grazed seasonal wetlands following flushing the pipeline consistent with requirements of the Regional Water Quality Control Board.

The Commission adopted the staff recommendation as modified by the addendum. As the Commission's actions on the project were not reflected in the written staff recommendation dated August 23, 2002, staff has prepared the following set of revised findings for the Commission's consideration as the needed findings to support its action

on the permit. The revised Special Condition Nos. 2, 4, 6, and 10 which were reflected in the addendum are integrated into the revised findings beginning on page 5. The primary changes to the findings regard Special Condition No. 10 and are found on page 54.

The Commission will hold a public hearing and vote on the revised findings at its November 7, 2002 meeting. The purpose of the hearing is to consider whether the revised findings accurately reflect the Commission's previous action rather than to reconsider the merits of the project or the appropriateness of the adopted conditions. Public testimony will be limited accordingly. The following resolution, conditions, and findings were adopted by the Commission on September 11, 2002 upon conclusion of the public hearing.

2. Standard of Review

A portion of the proposed project, which extends through incorporated areas of the City of Arcata as well as unincorporated areas of Humboldt County is located within the Commission's area of retained permit jurisdiction. Both the City of Arcata and Humboldt County have a certified LCP, but the proposed project 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.

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I. MOTION AND RESOLUTION:

Motion, Staff Recommendation and Resolution To Adopt Revised Findings:

The staff recommends that the Commission adopt the revised findings in Section IV below, in support of the Commission's actions on September 11, 2002 approving the project with conditions. The proper motion is:

**Motion:**

I move that the Commission adopt the revised findings dated October 18, 2002 in support of the Commission's action on September 11, 2002 approving Coastal Development Permit No. 1-02-007.

**Staff Recommendation of Approval:**

Staff recommends a YES vote. Passage of this motion will result in the adoption of revised findings as set forth in this staff report. Pursuant to Section 30315.1 of the Coastal Act, adoption of findings requires a majority vote of the members from the prevailing side present at the September 11, 2002 Commission hearing, with at least three of the prevailing members voting. Only those Commissioners on the prevailing side of the Commission's action on the permit are eligible to vote. See the listing of eligible Commissioners on Page 2.

**Resolution to Adopt Revised Findings:**

The Commission hereby adopts the findings set forth below for Coastal Development Permit No. 1-02-007 on the ground that the findings support the Commission's decision made on September 11, 2002 and accurately reflect the reasons for it.

**ADOPTED RESOLUTION TO APPROVE THE 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 feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment.

II. **STANDARD CONDITIONS:** See Attachment A.

III. **SPECIAL CONDITIONS:**

1. **Timing of Construction**

All development, as defined in Section 30106 of the Coastal Act, must be undertaken during the dry season between June 15 and October 15.

2. **Construction Methods**

All pipeline construction shall be performed consistent with the following provisions:

- A. Backfill within the pipeline trench in the grazed seasonal wetlands shall include only the native material excavated from the trench. In areas where the native substrate is of a composition that would not support the weight of the pipeline (e.g. organic material), engineered backfill may be placed to support the pipeline but shall be limited to the location(s) where it is specifically required. All

- required engineered backfill shall be placed below at least six inches of native topsoil.
- B. The top six inches (6") of excavated material within grazed seasonal wetlands (which contains the root masses, rhizomes, seeds, and accumulated organic material of the vegetation that dominates these seasonal wetlands) shall be separately stockpiled by the contractor, and the contractor shall assure that this stockpiled soil material is kept moist and that the material is restored to the trench as soon as is feasible. This topsoil material shall be reintroduced as the top fill material in the restored trench section.
  - C. Following the completion of backfilling and equipment removal, the contractor shall sow the construction corridor and any other disturbed sites, including any construction access routes within the grazed seasonal wetlands not following established roadways, with a commercially available seed mixture composed of the same grass species that dominate the perennial grasslands at the present time.
  - D. The contractor shall implement erosion control techniques around the temporarily stored spoil material and shall deploy artificial containment (such as coir rolls or straw bales) around temporary settling basins to which water from the trench will be pumped during dewatering activities.
  - E. At those watercourses where trenching is not prohibited by Special Condition No. 2(J) and which have standing or flowing water at the time of construction, the contractor shall deploy silt curtains within the water features on the eastern and western sides of the construction corridor, extending from the water surface to the channel bottom, anchored to the channel bottom and secured on each bank.
  - F. At those watercourses where trenching is not prohibited by Special Condition No. 2(J) and as identified on Exhibit No. 3 as Site Nos. 2, 3, 5, 7, 9, 10, 14, and 20, the water column within the work area shall be cleared of any fish by a qualified fisheries biologist prior to excavation activities by seining and/or electrofishing consistent with requirements of the Department of Fish and Game and the National Marine Fisheries Service. All captured fish shall be removed, transferred to a "live bucket," and transported to a location in the same water body away from the construction site.
  - G. At those watercourses where trenching is not prohibited by Special Condition No. 2(J) and which have flowing water at the time of construction, the contractor shall place oversized, temporary bypass culverts into the flowing stream courses, adequately sized to carry stream flows, which shall span the trench locations and shall have washed-sand sandbag deflector barriers at both ends. The installed culvert shall allow construction within the culverted section without impeding the

natural flow of the stream and without sedimentation resulting outside of the deflector walls.

- H. At those watercourses where trenching is not prohibited by Special Condition No. 2(J) and which have standing or flowing water at the time of construction, backfill within the pipeline trench shall include only the native material excavated from the trench. In areas where the native substrate is of a composition that would not support the weight of the pipeline (e.g. organic material), engineered backfill may be placed to support the pipeline but shall be limited to the location(s) where it is specifically required. All required engineered backfill shall be placed below at least six inches of native topsoil. In addition to replacing native material in the streambed and banks, the contractor shall place washed gravel of sizes adequate to withstand local water velocities on the streambed to prevent the pipeline from becoming exposed from erosion of the overlying backfill material.
- I. At those watercourses where trenching is not prohibited by Special Condition No. 2(J) and which have standing or flowing water at the time of construction, the top six inches (6") of excavated material (which contains the root masses, rhizomes, seeds, and accumulated organic material of the streambank vegetation) shall be separately stockpiled by the contractor, and the contractor shall assure that this stockpiled soil material is kept moist and that the material is restored to the streambanks as soon as is feasible. The contractor shall restore the original streambed and streambank contours following construction, before removing the culvert. The streambanks shall be revegetated to restore pre-construction conditions. Any coarse woody debris present at the crossing location prior to construction shall be replaced.
- J. The crossings under Washington Gulch, Fay Slough, and Freshwater Creek/Slough shall be constructed without trenching or other excavation activities within the aquatic environment of these streams, utilizing construction techniques generally known as "jack-and-bore" or "pipe-ramming." These techniques shall result in the placement of a "casing" under the waterways in which the HDPE water main will subsequently be placed. The excavated "bore pits" shall be restored consistent with the elements identified for construction in grazed seasonal wetlands as described in sections A-D above. Excess excavated soil material shall be disposed of only at approved locations outside the Coastal Zone consistent with Special Condition No. 5 below.
- K. If in-the-channel construction is required to remove obstructions that prevent the "jack-and-bore" or "pipe-ramming" technique from being implemented at the crossings under Washington Gulch, Fay Slough, and Freshwater Creek/Slough, the City shall utilize the following techniques to remove the obstruction and enable the implementation of the methodology required in Special Condition No. 2(J):

1. A preliminary evaluation shall identify the maximum extent of bottom disturbance necessary to remove the obstruction. The City shall inform the Executive Director, Department of Fish & Game, U. S. Fish & Wildlife Service, and the National Marine Fisheries Service of the extent of disturbance required;
2. If the channel contains flowing water, the area of disturbance shall be isolated from the water column using a barrier created with sheet-piling or sandbag cofferdams to separate the excavation location from any flowing water in the slough. The water column within the work area shall be cleared of any fish by a qualified fisheries biologist prior to excavation activities by seining and/or electrofishing consistent with requirements of the Department of Fish and Game and the National Marine Fisheries Service. All captured fish shall be removed, transferred to a "live bucket," and transported to a location in the same water body away from the construction site.
3. The top six inches of excavated material within the watercourses (which contains the root masses, rhizomes, seeds, and accumulated organic material of the streambed vegetation shall be separately stockpiled and kept moist. After the obstruction is removed, all water barriers shall be removed and the excavated area shall be backfilled to restore the original contours of the watercourse with the stockpiled six inches of excavated material used as the upper layer of backfill material. The banks and bed of each watercourse shall be revegetated to restore pre-construction conditions. Any coarse woody debris present at the crossing location prior to construction shall be replaced. Each area of affected watercourse shall be restored as soon as feasible following the completion of construction, but in no case later than October 15 of the year of disturbance of the affected area of watercourse.

The permittee shall remove the obstruction in accordance with the above procedures. Any proposed changes to these procedures to remove a particular obstruction including any changes required by the Department of Fish & Game, the U.S. Fish & Wildlife Service, or the National Marine Fisheries Service shall be reported to the Executive Director. No changes to the above procedures shall occur without a Commission amendment to this coastal development permit.

- L. All construction equipment required to cross cutoff sloughs and drainage ditches identified on Exhibit No. 3 as Site Nos. 1, 3, 4, 5, 6, 11, 12, 14, 15, 16, 18, 19, and 20 shall cross on temporary bridges installed to span the cutoff sloughs and drainage ditches entirely, unless the cutoff slough or drainage ditch is dry during construction, in which case no bridge need be constructed and construction equipment may drive across as

needed. No temporary fill shall be placed within cutoff sloughs or drainage ditches. The bridge(s) shall be completely removed following the completion of construction, and in no case later than October 15 of the year of bridge placement. The adjacent grazed seasonal wetlands disturbed during bridge placement shall be restored consistent with the restoration elements identified in Special Condition No. 2.

- M. Equipment crossings over temporary culverts at flowing waterways identified on Exhibit No. 4 as Site Nos. 2 and 10 shall be the minimum width required and all temporary fill shall be completely removed when the equipment access is no longer needed and the stream channel and banks shall be restored consistent with the restoration elements identified for flowing stream channels in section (I) above. Equipment crossings shall not be constructed at the waterways identified as Site Nos. 7, 8, 9, 13, and 17 on Exhibit No. 4 of the staff recommendation: Jacoby Creek, Rocky Gulch Creek North, Washington Gulch, Fay Slough, or Freshwater Slough.

**3. Soil Broadcasting and Site Grading**

A qualified engineer shall be on site during final grading and recontouring activities to ensure that the 60-foot-wide construction corridor is graded and recontoured consistent with the elevation of the adjacent grazed seasonal wetlands and that no depressions, ridges, or mounds result.

**4. Construction Access, Materials, and Equipment Staging Plan**

**PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit a plan for the review and approval of the Executive Director.

1. The plan shall demonstrate that:
  - (a) All construction materials and equipment staging areas shall be located in no more than four areas and in total shall be no greater than six acres in size. The staging areas shall be located (1) as close as possible to the established construction corridor, and (2) a minimum of 100 feet away from any watercourse;
  - (b) Any grazed seasonal wetland areas disturbed by construction materials and equipment staging shall be de-compacted and reseeded following project completion;
  - (c) Access routes shall be limited to the routes mapped and described in Exhibit No. 10 of the staff recommendation. Portions of access routes within wetlands that are excessively wet or soft shall be covered with:
    - (a) heavy synthetic mats or other acceptable non-toxic material that can be readily laid down along equipment access routes and immediately



removed following construction and (b) shall be the minimum width and length necessary to allow movement of equipment to and from the project site.

2. The plan shall include a site map, drawn to scale, that depicts, at a minimum, the following:
  - (a) location and limits of all proposed material and equipment staging areas relative to construction corridors and nearby watercourses;
  - (b) a narrative description of the methods to be used for decompacting disturbed areas and the seed mix to be utilized.
3. The plan shall include evidence to demonstrate that the applicant has obtained all legal right, interest, or entitlement to use the property that will be used for staging activities and access routes consistent with all conditions of CDP No. 1-02-007. The plan shall also include evidence demonstrating that all necessary state and local regulatory approvals have been obtained.

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.

**5. Debris Disposal Plan**

- 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 excess construction related debris, including excess soil from the relocation of the drainage ditch, and excess material from excavation of the bore pits. 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.

**6. Monitoring Wetland Mitigation for Pipeline Vaults**

- A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit, for review and written approval of the Executive Director, a final revised mitigation monitoring program that substantially conforms with the monitoring program submitted to the Commission entitled "*Mitigation at Ryan Slough Pump Station for Mad River Pipeline Vaults,*" prepared by Chad Roberts of Roberts Environmental Consulting except that it shall be revised to include the following:
- (1) A schedule for fill removal at the mitigation site that demonstrates the mitigation will occur prior to completion of the water pipeline project approved under CDP No. 1-02-007;
  - (2) Provisions for monitoring vegetative cover at the mitigation site for five years or until the vegetation success standard in subsection (4) below is achieved;
  - (3) Provisions for submittal of wetland mitigation monitoring reports to the Executive Director by November 1 of each of the five monitoring years following completion of the fill removal at the Ryan Slough Pump Station mitigation site or for each year until the vegetation success standard in subsection (4) below is achieved, whichever comes first; and
  - (4) Provisions for achieving 100% vegetative cover within five years.
- B. If the final report indicates that the mitigation project has been unsuccessful, in part, or in whole, based on the performance standard of achieving 100% ground cover of the wetland plant species composing the surrounding vegetation within five years, the applicant shall submit a revised or supplemental mitigation program to compensate for those portions of the original program which did not meet the performance standard. The revised mitigation program shall be processed as an amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.
- C. The permittee shall monitor and remediate the wetland mitigation site in accordance with the approved monitoring program. Any proposed changes from the approved monitoring program shall be reported to the Executive Director. No changes to the approved monitoring program shall occur without a Commission amendment to this coastal development permit.

**7. Grazed Seasonal Wetland Vegetation Monitoring**

The permittee shall submit a vegetation monitoring report for the review and written approval of the Executive Director within 18 months after completion of construction of the portion of the water pipeline approved under CDP No. 1-02-007. The monitoring report shall be prepared by a qualified biologist or botanist and shall evaluate whether the objective of reestablishing vegetation in any of the grazed seasonal wetland areas impacted by project construction to a level of coverage and density equivalent to vegetation coverage and density of the surrounding undisturbed areas has been achieved. If the report indicates that the revegetation of any of the disturbed areas including the construction corridor and staging areas identified pursuant to Special Condition No. 4 has not been successful, in part, or in whole, the permittee shall submit a revised revegetation program to achieve the objective. The revised revegetation program shall require an amendment to this coastal development permit.

**8. Lyngbye's Sedge Monitoring Plan**

- A. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, the permittee shall submit for the review and approval of the Executive Director a plan for monitoring Lyngbye's sedge (*Carex lyngbyei*) following project construction and restoration of the project area. The monitoring plan shall substantially conform with the recommendations set forth in the rare plant assessment prepared for the project entitled, "Rare Plant Assessment for the City of Eureka Mad River Pipeline Rehabilitation Project," prepared by Mad River Biologists and dated September 10, 2001 and shall be revised to include the following:
- i. provisions for submittal of annual monitoring reports to the Executive Director;
  - ii. provisions for remediating the site if mitigation is not determined to be successful after five years.
- 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.

**9. Implementation of Storm Water Pollution Prevention Plan**

The development shall be performed consistent with the requirements of the Stormwater Pollution Prevention Plan entitled, "*Storm Water Pollution Prevention Plan for the Mad*

*River Parallel Pipeline, Humboldt County, California,*” prepared by Oscar Larson and Associates and dated April 1, 2002.

**10. Disposal of Pipeline Flushing Water**

Water used for decontaminating and flushing the pipeline shall not be released into the grazed seasonal wetlands until the residual chlorine concentration is determined to be 0.5 mg/L or less. Holding tanks and/or retention basins shall be located a minimum of 100 feet from any surface waters and shall be removed immediately following pipeline flushing activities. No excavation for holding basins shall be allowed. All flushing water discharge locations shall be located a minimum of 100 feet from any surface waters.

**11. Conformance of Pipeline Construction Activities to Geotechnical Reports**

The permittee shall undertake the pipeline construction activities for the proposed water pipeline installation in accordance with all recommendations contained in the following Engineering Geologic Reports:

1. “*Engineering Geology and Geotechnical Engineering Report – Proposed Waterline for City of Eureka, Humboldt County, California,*” prepared by GeoEngineers dated August 29, 2001 and September 19, 2001.
2. “*Geologic Hazards Report – Mad River Pipeline Project, Humboldt County, California,*” prepared by Kleinfelder, Inc. dated January 12, 1999.

**12. Area of Archaeological Significance**

- A. The permittee shall comply with all recommendations and mitigation measures contained in the Cultural Resources Study prepared for the project by James Roscoe, dated September 2001. The permittee shall also comply with the following monitoring conditions during construction.
- B. If an area of cultural deposits is discovered during the course of the project all construction shall cease and shall not recommence except as provided in subsection (c) hereof; and a qualified cultural resource specialist shall analyze the significance of the find.
- C. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit a supplementary archaeological plan for the review and approval of the Executive Director.
  - (i) If the Executive Director approves the Supplementary Archaeological Plan and determines that the Supplementary

Archaeological Plan's recommended changes to the proposed development or mitigation measures are de minimis in nature and scope, construction may recommence after this determination is made by the Executive Director.

- (ii) If the Executive Director approves the Supplementary Archaeological Plan but determines that the changes therein are not de minimis, construction may not recommence until after an amendment to this permit is approved by the Commission.

**13. Department of Fish and Game Approval**

PRIOR TO COMMENCEMENT OF CONSTRUCTION, the applicant shall submit a copy of any necessary Section 1603 Streambed Alteration Agreement or other approval required by the Department of Fish and Game for the project, or evidence that no approval is required. The applicant shall inform the Executive Director of any changes to the project required by the Department of Fish and Game. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

**14. U.S. Fish and Wildlife Service Approval**

PRIOR TO COMMENCEMENT OF CONSTRUCTION, the permittee shall provide to the Executive Director a copy of any incidental take permit or other approval issued by the U.S. Fish & Wildlife Service or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the U.S. Fish & Wildlife Service. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

**15. National Marine Fisheries Service Approval**

PRIOR TO COMMENCEMENT OF CONSTRUCTION, the permittee shall provide to the Executive Director a copy of any incidental take permit or other approval issued by the National Marine Fisheries Service, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the National Marine Fisheries Service. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

**16. U.S. Army Corps of Engineers Approval**

PRIOR TO COMMENCEMENT OF CONSTRUCTION, the permittee shall provide to the Executive Director a copy of a permit issued by the U.S. Army Corps of Engineers, or letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the U.S. Army Corps of Engineers. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

**IV. FINDINGS AND DECLARATIONS**

**1. Site & Project Description**

The Mad River Pipeline transports water purchased from the Humboldt Bay Municipal Water District (HBMWD) from northern Arcata to Eureka. The water delivered by the pipeline is the City of Eureka's (City) primary water supply. The City accepts its delivered water at a metering vault located near Diamond Drive in the City of Arcata and the pipeline extends to the City's main 20-million-gallon reservoir near Sequoia Park in Eureka. The existing pipeline route extends through diked former tidelands south of Arcata until the pipeline joins Old Arcata Road where it extends through upland areas (i.e. filled and paved) for approximately one mile in the Indianola area. South of the Indianola area, the pipeline diverges to the west around the toe of Walker Point Ridge and again passes through diked former tidelands and through the Myrtle town area to the storage reservoir. A pump station west of Ryan Slough is sometimes operated in high-demand periods, but under normal demands, flow in the pipeline reaches the terrace surface without pumping assistance.

The City's Mad River Water Pipeline was constructed in 1938 and has substantially exceeded its design life. As a result, the pipeline has failed in the past on numerous occasions, leaving the City without a direct source of water. Recent documented pipeline failures include those in 1992 (one failure), 1993 (two failures), 1995 (four failures), 1996 (seven failures), 2000 (one failure), and 2001 (two failures). The pipeline was out of service for repair purposes for several days (up to a week) for each failure, during which the City relied upon conservation by users in combination with careful management of a partial secondary supply via a smaller Samoa Peninsula pipeline and in-system storage.

**Project Description**

The proposed 'Mad River Water Pipeline Rehabilitation Project' includes nine elements that involve construction along the entire length of the existing 24-inch-diameter steel pipeline from northern Arcata to Eureka (see Exhibit Nos. 1 & 2). The City proposes to

rehabilitate the pipeline in phases, which would be scheduled to take place over a period of ten or more years as funding allows. The pipeline rehabilitation project involves replacing some sections of the pipeline, lining other sections, and adding a second pipeline parallel to the existing pipeline. The portion of the overall rehabilitation project in the Commission's jurisdiction is the first phase of the overall project and involves placing a new, 24-inch-diameter water pipeline parallel to the existing pipeline through the grazed seasonal wetlands (diked former tidelands) between Arcata and Eureka.

The project objectives are to (1) assure the reliability of the primary water supply for residents of the City, (2) establish a redundant water supply line that would enable the City to take the existing Mad River Pipeline out of service for repairs and maintenance; and (3) establish an emergency water supply line should the existing pipeline fail at a time when repairs are not possible (i.e. when the seasonal wetlands are flooded). The City is not proposing to rehabilitate the entire existing steel pipeline at this time, although portions outside the Commission's jurisdiction are being rehabilitated and the City will continue to repair other sections of the line when breaks occur. The City may rehabilitate the remainder of the existing steel line in the future, or may eventually desire to abandon the steel line in place. The proposed pipeline would provide a new, more reliable pipeline that would work in parallel with the existing pipeline, and would immediately assume the entire water transmission role when the existing line fails.

The approximately 25,900 feet of a new 24-inch pipeline would be constructed of high-density polyethylene (HDPE) that would be heat-welded into one continuous pipe during the construction process to create a thick-walled, flexible, pipeline that is much more reliable and resistant to damage from seismically related events or internal pressure fluctuations than the existing pipeline. Cross-connections between the existing steel pipeline and the new HDPE pipeline would be installed at strategic locations, spaced approximately 2,000 feet to 4,000 feet apart. Valves would be installed in both pipelines at the cross-connection locations. The arrangement of four valves and paired cross-connections at each location would allow any given section of either pipeline to be bypassed. This arrangement would allow the City to temporarily bypass a line section experiencing a break, or to shut down a pipeline section to repair a failure.

The project also involves the placement of twelve concrete vaults at various locations along the pipeline alignment. The vaults are three feet high and six-feet in diameter. Nine of the twelve proposed vaults would be located in grazed seasonal wetlands and would result in 252 square feet of permanent wetland fill. The City proposes to mitigate for this permanent fill by removing a portion of historic fill at the Ryan Slough Pump Station near the south end of the pipeline. The City proposes to remove 504 square feet of existing fill material to provide wetland mitigation at a 2:1 ratio. The material would be removed along the southeastern side of the fill pad, most of which is located behind a fence that would be relocated to the newly created edge of the fill pad following excavation. The existing fill would be removed to a depth of approximately two feet to

expose the original soil and return the area to the same elevation as the existing adjacent wetlands.

The parallel pipeline would be placed by excavating a trench approximately four-feet-wide and six-feet-deep adjacent to the existing pipeline along the existing pipeline length through the grazed seasonal wetlands (see Exhibit No. 4). The new pipeline centerline would be located approximately thirteen feet west of the existing pipeline centerline, mostly within the existing pipeline easement (in a few locations the new pipeline is anticipated to be located outside the easement; at these locations new easement will be acquired prior to construction). The excavation may be conducted by backhoe, or a trenching machine. The City does not anticipate the need for bedding material to be placed in the trench; the pipe would be placed in the bottom of the trench and the trench would be backfilled with excavated material. The City proposes to construct the portion of the project in the Commission's jurisdiction during the dry summer season to minimize impacts to wetlands and fisheries.

#### **Relocation of Drainage Ditch**

A portion of the proposed pipeline alignment coincides with an existing 2,200-foot-long drainage ditch located south of Samoa Boulevard in the City of Arcata. The City of Eureka proposes to relocate the linear drainage ditch that would be impacted during pipeline construction to an existing natural meandering drainage swale adjacent to the ditch. The existing ditch is located along the easterly boundary of a property recently acquired by the City of Arcata with grant funds from the Wildlife Conservation Board. The City of Arcata has requested that the drainage ditch that needs to be relocated for purposes of the pipeline installation be done in a manner that restores the natural meander channel configuration at the site. Rather than reconstructing a linear feature within this wetland area, the City (Eureka) proposes to relocate the drainage function from the linear ditch to the natural historic tidal channel that has been cutoff from the bay and partially filled. The relocation of this drainage ditch to the meander channel would enhance wetland habitat values and would not alter drainage patterns in the area or result in changes to flood patterns, as an existing cutoff ditch would carry any excess flows to Gannon Slough.

#### **Site Description and Construction Restoration Details**

Except for a one mile-long section that lies within Old Arcata Road, the pipeline route lies within grazed seasonal wetlands (diked former tidelands) and would cross twenty (20) watercourses including 13 cutoff sloughs and drainage ditches, 3 freshwater creeks, 1 tidally-influenced creek, and 3 tidal sloughs (see Exhibit No. 3). The wetland features within the project area provide habitat for several federally listed fish species, including chinook salmon, coho salmon, steelhead, and tidewater goby. In addition, two sensitive plant species occur within the project area including Humboldt Bay owl's clover and Lyngbye's sedge. Humboldt Bay owl's clover is listed by the California Native Plant



Society as being rare or endangered in California and elsewhere (List 1B) and was identified as occurring in Freshwater Slough and Fay Slough. Lyngbye's sedge is listed by the California Native Plant Society as being rare or endangered in California, but more common elsewhere (List 2) and was identified as occurring in nearly all of the cutoff sloughs and tidally influenced brackish wetlands between Arcata and Eureka. The estimated lengths of pipeline construction and potential area of disturbance in wetland environments are shown in Table 1 shown on the following page.

**Table 1.** Lengths of Mad River Pipeline Project trench affecting wetland environments and areas potentially affected.

Aquatic Ecosystem Type	Affected Length (Feet)	Area Affected (Ft <sup>2</sup> / Acres) <sup>1</sup>
Seasonal Grazed Wetlands	24,210	1,452,600/33.35 <sup>3</sup>
Cutoff Sloughs/Ditches	290	17,400/0.40
Beith/Grotzman Creek	25	1,500/0.03
Rocky Gulch Creek	40	2,400/0.06
Jacoby Creek	35	2,100/0.05
Washington Gulch Slough	none <sup>2</sup>	None
Fay Slough	none <sup>2</sup>	None
Freshwater Slough	none <sup>2</sup>	None

Notes:

- 1 Assuming an average construction corridor width of 60 feet.
- 2 Crossings will involve subsurface casings without surface excavations.
- 3 Does not include up to six acres of seasonal grazed wetlands that might be affected by staging areas

***Grazed Seasonal Wetlands***

The majority of the proposed new pipeline would be located in grazed seasonal wetlands (diked former tidelands). Approximately 14,200 feet of pipeline construction would occur using trench excavation in seasonal wetlands north of Indianola and approximately 10,010 liner feet of construction would occur in seasonal wetlands south of Indianola. The designated average construction corridor for these elements is 60 feet wide. Up to six acres of additional grazed seasonal wetland may be utilized for construction staging areas. The width of the construction corridor is required to allow the new pipeline to be placed a sufficient distance away from the existing underground pipeline (13 feet) and to allow adequate area for equipment to maneuver without operating on top of the existing pipeline to prevent it from being damaged. However, it is likely that the pipeline corridor

would include sections that would not utilize the entire 60-foot-wide corridor and thus, actual areas affected by construction would be less than the areas identified in Table 1. Most of the excavated subsoil material from the approximately 26,000-foot-long, 4-foot-wide, and 6-foot-deep trench would be used to backfill the trench following placement of the pipeline. However, because the pipeline would occupy a volume within the trench that would no longer be available for soil, there would be some excess soil material (approximately 4.3 cubic feet of excess per linear foot of pipeline). The City proposes to broadcast the excess subsoil (approximately 4,880 cubic yards) across the 60-foot-wide construction corridor, which would result in a layer approximately 0.8 inches thick. The City also proposes to scarify the construction corridor to break up any clumps in the scattered subsoil materials and to de-compact any areas affected by construction before reseeding.

The proposed project involving the grazed seasonal wetlands includes restoration of the wetlands to pre-project conditions after installation of the pipeline by recontouring the construction corridor to approximate the original grade, restoring the original topsoil to the appropriate location, and replanting the area with a commercially prepared seed mixture composed of the same forage species that are currently present in the grassland.

#### ***Cutoff Sloughs and Drainage Ditches***

The pipeline would also cross several cutoff sloughs and man-made drainage ditches (site nos. 1, 3, 4, 5, 6, 11, 12, 14, 15, 16, 18, 19, 20 on Exhibit No. 3). The pipeline would be installed in a trench that would be excavated across these cutoff sloughs and ditches (see Exhibit No. 6). Presuming an average construction corridor width of 60 feet, there would be up to approximately 17,400 square feet (0.40 acre) of disturbance within these wetland features. The cutoff sloughs and drainage ditches range from approximately 4-foot-wide to 20-foot-wide. Most of these features are dry, or have scattered areas of ponded water during summer months. All of these features have a high groundwater table and thus, even the dry cutoff sloughs and ditches require dewatering during the proposed trench excavation. The actual area of cutoff sloughs and drainage features affected would also be much less than identified in Table 1, as the construction corridor within these wetland features is expected to be only 15 to 20-foot-wide. These areas would also be restored to pre-project conditions as part of the proposed construction process and sediment control measures including silt curtains and contained dewatering basins would be implemented to minimize potential sediment releases.

#### ***Freshwater and Tidally Influenced Streams***

The pipeline would also be trenched across non-tidal, flowing streams including Beith/Grotzman Creek, and Rocky Gulch Creek at two locations (sites 2, 9, & 10 on Exhibit No. 3), and Jacoby Creek, a flowing, tidal stream with coarse-grained sediment (site 7 on Exhibit No. 3). The proposed pipeline crossing location at Beith/Grotzman Creek is approximately 4-foot-wide and 1.5 inches deep. A construction corridor width

of 60 feet would result in a temporary disturbance of approximately 1,500 square feet (0.03 acre) of disturbance within the immediate corridor of Beith/Grotzman Creek. The pipeline would cross Rocky Gulch at two different locations; the northern pipeline crossing location is approximately 18-foot-wide and 3.5 feet deep, and the southern pipeline crossing location is approximately 1.5-foot-wide and 0.25 inches deep (see Exhibit No. 7). The area of disturbance for these crossings would be approximately 2,400 square feet (0.06 acre) in the immediate corridor of Rocky Gulch Creek. The Jacoby Creek pipeline crossing location is approximately 15-foot-wide and 0.5 feet deep. With a 60-foot-wide construction corridor, approximately 2,100 square feet (0.05 acre) within the Jacoby Creek channel would be affected by construction.

The proposed trench crossing sites at these flowing waterways would be dewatered by routing flows through temporary culverts placed longitudinally within the watercourses with water barriers such as sandbags placed across the creek around the upstream and downstream ends of each culvert. Any fish within the work area would be removed by a qualified fisheries biologist by seining and/or electrofishing and would be transferred to a "live bucket" and transported to a location in the same water body away from the construction site. Once each pipeline crossing site is dewatered, the trench would be excavated so as to place the pipeline underneath the culvert. The project proposes restoration of the channels to pre-project conditions, and implementation of sediment control measures.

### *Tidal Sloughs*

The pipeline would also cross three tidal sloughs including Washington Gulch, Fay Slough, and Freshwater Slough (site nos. 8, 13, and 17 on Exhibit No. 3). Washington Gulch functions as an arm of the Humboldt Bay estuary. The sediments in the channel are primarily mud, and both channel banks are levees. The crossing location is about 22 feet wide. The Fay Slough crossing is approximately 110 feet wide between vegetated banks. The substrate at the crossing location is fine-grained silt/mud and the channel is essentially empty of water around the low slack tide. The slough-side margins of the channel at the crossing location have elevated terraces with saltmarsh vegetation, including Humboldt Bay owl's clover. The Freshwater Creek / Slough (or Eureka Slough (there is no formal geographic distinction or demarcation between Eureka Slough and Freshwater Slough) crossing is the largest waterway crossing for the project. The channel width (perpendicular to the channel length) is approximately 140 feet at the crossing location. However, the crossing would be angled, and the actual pipeline length within the channel would be more than 160 feet, with an additional 15 to 20 feet of vegetated marshland between the channel margins and the levee slopes. City staff estimated that the high-tide water surface width at the crossing location for one observed event was 170 feet. Freshwater Slough has an estimated tidal elevation range at the crossing location of about eight feet. As with Fay Slough, the slough-side margins of the Freshwater Slough channel at the crossing location have elevated terraces with saltmarsh vegetation, including Humboldt Bay owl's clover.

The City proposes to cross each of these three tidal sloughs by using a “jack-and-bore,” or “pipe-ramming” technique that would place a casing approximately eight inches larger than the HDPE pipeline approximately five feet below the bottom of the slough (see Exhibit Nos. 5 & 8). The casing would be emplaced without excavating within the channel and would avoid impacts to the slough channel, adjacent salt marsh habitat, and sensitive plant populations. The jack and bore and pipe-ramming construction techniques require the excavation of bore pits on either side of the slough. The jack & bore method involves inserting the pipeline casing (through which the pipeline would be pulled) using a hydraulic auger to drill below the sloughs. The pipe ramming method is similar, but rather than using an auger, the pipe is ‘rammed’ below the surface using a percussive hammer from within the excavated pit. The bore pits are the areas in which the casing is inserted on one side of the slough and received on the other side. The pits on either side of the slough crossings would be 10’ x 10’ and 10’ x 30’ respectively and at least the depth of the pipeline placement (at least 5-foot-deep) to allow for casing installation and equipment maneuvering. The pits would be backfilled with the native material and any excess soil is proposed to be disposed of at an appropriate location outside of the coastal zone. The area disturbed by the pits would be restored to pre-project conditions and reseeded.

The “jack-and-bore” and “pipe-ramming” techniques require that the sediments not include any obstructions (such as buried logs, concrete, pilings, etc.). Should the alignment contain such obstructions, the City proposes the following measures to remove the obstructions; (1) a preliminary determination would be made of the maximum extent of bottom disturbance necessary to remove the obstruction and the City would inform the Department of Fish & Game, the U. S. Fish & Wildlife Service, and the National Marine Fisheries Service of the extent of disturbance required; (2) the location at which channel-bottom disturbance would be required would be isolated from the water column, using a barrier created with sheet-piling, sandbag cofferdams, and/or other means to separate the excavation location from any flowing water in the slough; and (3) any fish within the work area would be removed by a qualified fisheries biologist by seining and/or electrofishing and would be transferred to a “live bucket” and transported to a location in the same water body away from the construction site. After the obstruction had been removed, the barrier would be removed and the bottom restored to the original contours.

#### **Construction Access and Staging**

The City has identified construction access routes, through which construction equipment and materials would be delivered to the construction corridor (see Exhibit No. 10). These routes are primarily along existing roads and others, or portions of others, would be through the grazed seasonal wetlands. These locations include:

- From Samoa Boulevard south to Jacoby Creek – from PG&E or farm access roads leaving the Highway 101 R/W near Gannon Slough; secondarily from Samoa Boulevard southward along the pipeline R/W

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- From Jacoby Creek to Bayside Cutoff – northward along the pipeline R/W from Bayside Cutoff
- From Bayside Cutoff to Washington Gulch – southward along the pipeline R/W from Bayside Cutoff
- From Washington Gulch to Old Arcata Road north of Indianola – northward along the pipeline R/W from Old Arcata Road at Indianola; secondarily from farm road off Old Arcata Road
- From Myrtle Avenue south of Indianola to Fay Slough – southward along the pipeline R/W from Myrtle Avenue; secondarily from the end of Walker Point Road
- From Fay Slough to Freshwater Slough – from Myrtle Avenue by way of Devoy Road
- From Freshwater Slough to the Ryan Slough pump station – from Myrtle Avenue via the pump station access road near the Ryan Slough Bridge; secondarily on existing farm roads accessed via Park Street

The City proposes to install temporary stabilization materials in grazed seasonal wetlands along the pipe alignment or along designated access routes where soils are excessively wet or soft. These materials may be reinforced construction stabilization mats, or gravel temporarily placed on an underlying geotextile fabric. The width of the stabilization material applied along temporary project access routes and the pipeline corridor would be limited to the minimum necessary for construction purposes. The City proposes to remove all stabilization materials following project construction and to restore all grazed seasonal wetlands requiring stabilization materials be laid down to pre-project conditions.

Construction staging areas may include up to four areas located in grazed seasonal wetlands outside of the 60-foot-wide construction corridor. The total area to be utilized for staging is approximately six acres. These staging areas would be used for temporary pipe storage (as well as vaults, valves, and other equipment), and for short-term construction vehicle storage and parking. There would be a staging area near both the southern and northern terminus of the pipeline alignment and two staging areas located along the middle portion of the alignment. The City proposes to allow the contractor to determine the exact locations of staging areas, but they would generally be located as near the construction corridor as possible.

There are several locations along the pipeline alignment where the construction equipment would need to cross the watercourses described above. The City proposes to utilize existing culverted roads and bridges for equipment crossings as much as possible, or avoid equipment crossing the waterways entirely. However, there are some locations where access across waterways does not exist, and where equipment would need to access otherwise isolated “islands” along the alignment to lay the pipeline. At cutoff sloughs and drainage ditches that are dry during construction, the City proposes that equipment would drive through the channel to access the other side. For crossings that are wet, but not flowing, the City proposes to place a bridge structure in a manner that would span the crossing entirely. Two flowing waterways including Beith/Grotzman and

Rocky Creek South (shown as Site Nos. 2 and 10 on Exhibit No. 3) would have temporary culverts placed in the channel during trenching to maintain water flow as discussed above. The equipment crossing at these locations would involve leaving the temporary culvert in place for several days to several weeks to allow equipment to drive over the top of the culvert. The material excavated during trenching would be temporarily placed around the culvert and additional soil would be added as needed between the sandbags to create an access crossing the minimum width required. Once the access is no longer needed, the excess soil would be removed and the crossing would be restored to pre-project conditions as described above. The project does not include construction of equipment crossings at Jacoby Creek, Washington Gulch, Fay Slough, Freshwater Slough, or Rocky Gulch Creek North.

### **Pipeline Flushing**

The project involves flushing the pipeline with chlorinated water following construction to decontaminate it prior to placing it in service. Decontamination would occur at approximately twelve pipeline segments along the alignment and would result in the discharge of approximately 3 cubic feet of water per lineal foot of pipeline. The pipeline would be flushed with super-chlorinated water and then injected with sodium dioxide, sodium bisulfite, activated carbon, or other chemical to dechlorinate the water prior to releasing it from the pipeline. Discharge from pipeline flushing would be directed into a temporary retention basin within the grazed seasonal wetlands, which would be either a holding tank, or plastic lining contained by straw bales (not excavated ponds). A small amount of water would be released and tested to ensure that the dechlorination process was effective. The basins would be sized to hold the amount of water that would flow out during the time it would take for the pipe to be turned off if chlorine levels are determined to be too high for release. The City proposes to dechlorinate the water to a chlorine concentration of 0.5mg/L prior to releasing it into the grazed seasonal wetlands. When the water is sufficiently dechlorinated it would be gradually released from the temporary holding basin into the grazed seasonal wetlands for infiltration.

The City proposes to restore all access, staging, and flushing areas to pre-project conditions by recontouring disturbed areas to pre-project contours and revegetating all areas disturbed by construction activities.

## **2. Filling and Dredging in Coastal Waters and Wetlands**

The proposed project includes various activities that are a form of filling and dredging in wetlands. The main portion of the project involves excavating a trench within grazed seasonal wetlands for the installation of a water pipeline. The excavated trench would be backfilled with the native material following placement of the water line and the area restored to pre-project conditions as discussed below. The pipeline would also cross several watercourses including tidal and freshwater streams, tidal sloughs, cutoff sloughs, and drainage features requiring the placement of fill and dredging for trench excavation, temporary culverts, bore pits, and temporary construction access crossings. The project

also involves the restoration of a linear drainage ditch to a historic drainage channel. Additionally, the project involves approximately 252 square feet of permanent structural fill in the form of concrete vaults in nine locations within the seasonal wetlands. Finally, the project includes the broadcasting of excess excavated fill material in a thin layer on grazed seasonal wetlands which is also a form of filling in wetlands. In total, the proposed project involves the placement of 252 square feet of fill that would permanently displace wetland area and the temporary filling and dredging (excavating) of approximately 24,600 square feet (40 acres) of area for construction related activities, including six acres for construction staging. The areas to be temporarily disturbed by construction activities are proposed to be restored to wetlands upon completion of the pipeline installation work. Coastal Act Section 30233 allows filling and dredging in wetlands only where there is no feasible less environmentally damaging alternative, where feasible mitigation measures have been provided to minimize adverse environmental effects, and where the project is limited to one of eight specified uses. Additionally, Coastal Act Sections 30230 and 30231 address protection of the biological productivity and water quality of the marine environment from the impacts of development.

Section 30233 of the Coastal Act 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:*

...

*(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.*

Section 30230 of the Coastal Act states, in applicable part:

*Marine resources shall be maintained, enhanced, and where feasible, restored. Special protection shall be given to areas and species of special biological or economic significance. Uses of the marine environment shall be carried out in a manner that will sustain the biological productivity of coastal waters and that will maintain healthy populations of all species of marine organisms adequate for long-term commercial, recreational, scientific, and educational purposes.*

Section 30231 of the Coastal Act addresses the protection of coastal water quality and marine resources in conjunction with development and other land use activities. Section 30231 states:

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

The above policies set forth a number of different limitations on what development projects may be allowed in coastal wetlands. For analysis purposes, the limitations can be grouped into four general categories or tests. These tests are:

- a. that the purpose of the filling, diking, or dredging is for one of the eight uses allowed under Section 30233;
- b. that the project has no feasible less environmentally damaging alternative;
- c. that feasible mitigation measures have been provided to minimize adverse environmental effects; and
- d. that the biological productivity and functional capacity of the habitat shall be maintained and enhanced where feasible.

**A. Permissible Use for Fill**

The first test set forth above is that any proposed filling, diking or dredging in wetlands must be for an allowable purpose as specified under Section 30233 of the Coastal Act. The relevant category of use listed under Section 30233(a) that relates to the proposed construction of the water pipeline 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/dredging is for an incidental public service purpose, the Commission must first determine that the proposed filling/dredging is for a public service purpose. The project involves installing a water pipeline adjacent to an existing water line within an existing easement that serves the City of Eureka. The pipeline would be installed by the City parallel to the existing pipeline that has exceeded its design life to ensure the reliable and consistent delivery of the City's water supply. Therefore, since the proposed project would be undertaken by a public agency, to ensure the continued



delivery of municipal water along an existing public waterline, the Commission finds that the fill/dredging expressly serves a public service purpose consistent with Section 30233(a)(5).

The Commission must next determine if the fill/dredging is for an “incidental” public service purpose. The project would not result in an increase in the amount of water used, result in an expansion of the City’s service area, or the formation of a new special district. Rather, the project would only establish a redundant water supply line that would enable the City to take the existing Mad River Pipeline out of service for repairs and maintenance, and establish an emergency water supply line should the existing pipeline fail at a time when repairs are not possible (i.e. when the wetlands are flooded) so as to assure the reliability of the primary water supply for residents of the City. Therefore, the Commission finds that the installation of the pipeline is incidental to the existing water system as the pipeline construction will only improve the reliability of the existing water delivery system and does not expand service to areas not already served by the existing system.

Furthermore, because the proposed project involves temporary excavation and placement of a pipeline and associated temporary fill for watercourse crossings and construction staging activities necessary to construct the pipeline, the project constitutes burying pipe, which is an activity specifically listed in Section 30233(a)(5) as an incidental public service purpose for which filling and dredging in wetlands is allowed.

Therefore, the Commission finds that for the reasons discussed above, the dredging (excavation) and filling for the proposed project is for an incidental public service purpose, and thus, is an allowable use pursuant to Section 30233(a)(5) of the Coastal Act.

**B. Alternatives Analysis**

The second test set forth by the Commission’s fill policies is that the proposed fill project must have no feasible less environmentally damaging alternative. Coastal Act Section 30108 defines “feasible” as follows:

*‘Feasible’ means capable of being accomplished in a successful manner within a reasonable time, taking into account economic, environmental, social, and technological factors.’*

The City considered several pipeline alignment alternatives that would have placed the pipeline within or adjacent to road rights-of-way between Arcata and Eureka and an alternative that would locate the pipeline adjacent to an existing pipeline along the Samoa Peninsula. Alternatives that have been identified include (1) a Samoa Peninsula alignment, (2) an Old Arcata Road alignment, (3) a Highway 101 alignment, (4) repairing the existing pipeline, and (5) no project. As explained below, each of these alternatives are infeasible and/or do not result in a project that is less environmentally damaging than

the proposed project. In addition to alignment alternatives, the Commission must consider construction and design alternatives for the proposed alignment that could result in less environmental damage than the design proposed. Such construction and design alternatives include (6) using the jack and bore or pipe-ramming method for all watercourse crossings, (7) using bridges for all watercourse crossings, and (8) disposing of excess trench material off-site. The Commission finds, as discussed below, that there is no feasible less environmentally damaging alternative to the project as conditioned.

**(1) Samoa Peninsula Alignment**

The City's secondary water supply is provided by an existing Humboldt Bay Municipal Water District pipeline on the Samoa Peninsula, through which the District supplies potable water to the communities of Manila, Samoa, and Fairhaven, as well as to the two pulp mills. The water pipeline is located in an easement that extends from the West End Road area of Arcata, across the diked former tidelands west of Arcata, through the dunelands west of Manila and Samoa, and then under Humboldt Bay to an existing Humboldt Community Services District pump station at Truesdale Street in west Eureka. The existing HBMWD treated-water pipeline on the peninsula includes 27-inch, 15-inch, and 18-inch diameter segments. The 27-inch pipeline from Arcata to Manila and the 18-inch and 27-inch pipelines from the LP mill to the Truesdale Street pump station are adequate in conveyance capacity to meet the City's needs, should the City's Mad River Pipeline not be in service. However, the 15-inch-diameter segment is too constricted to provide a supply adequate to meet all City and Humboldt Community Services District demands for the periods of time necessary to take the Mad River Pipeline out of service for rehabilitation.

Therefore, the City considered an alternative pipeline alignment that would place the 24-inch pipeline extending approximately 19,600 feet from just north of the Manila Community Services District wastewater treatment facility to the Humboldt Bay Municipal Water District Terminal Reservoir south of Samoa. For the most part, this alternative would locate the pipeline within HBMWD easements and would largely be located within coastal dune habitat along the peninsula. This alternative would also involve constructing a new pump station at the foot of Truesdale Street in the City of Eureka and additional pipeline construction along Harris Street and Broadway in the City to connect the new water main to the existing City of Eureka system.

This alternative would not cross any streams or major sloughs that enter Humboldt Bay or the Pacific Ocean and would avoid impacts to grazed seasonal wetlands. However, the Samoa Peninsula alignment would result in significant adverse impacts to dune hollow wetlands. In evaluating this alternative, the City estimated that approximately 3,500 linear feet of the alignment would be located within woody dune hollows and approximately 2,845 linear feet would be located within herbaceous dune hollows, resulting in approximately 5.82 acres of significant adverse impacts to dune hollow wetlands.

The Samoa Peninsula alignment would also significantly adversely impact two federally and state-listed endangered plant species, the Humboldt Bay wallflower and Beach layia, and a CNPS List 1B plant species, the Pink sand-verbena. Of the 19,600 feet of pipeline length within the dunes, it was estimated following vegetation surveys that 4,460 feet of the alignment was identified as having existing occurrences of, or providing habitat for one or more of the listed plant species. This alignment would also require an access corridor over or adjacent to the pipeline such that any attempt to revegetate the area following the construction of the pipeline would continue to be impacted by accessing the pipeline for maintenance purposes.

The coastal dune habitat that would be significantly adversely affected by this alternative, including dune hollow wetlands and native plant species, is a far more complex habitat than the grazed seasonal wetland habitat that would be temporarily impacted by the proposed alignment. Mitigation adequate to restore the vegetation and functions of the dune hollow wetlands would be significantly more difficult to achieve. Establishment of sensitive coastal dune vegetation is complicated and significantly less likely to succeed than the proposed revegetation of the grazed seasonal wetlands along the proposed alignment. Furthermore, the coastal dune, dune hollow, and rare plant habitats affected by the Samoa Peninsula alignment are far less abundant than the grazed seasonal wetlands affected by the proposed alignment.

Therefore, the Commission finds that locating the pipeline along the Samoa Peninsula is not a less environmentally damaging feasible alternative.

## **(2) Old Arcata Road Alignment**

This alternative would locate the pipeline within the road right of way of Old Arcata Road in existing filled and paved areas, thereby avoiding crossing watercourses and traversing through seasonal wetlands with the likely exception of crossings at Jacoby Creek and Freshwater Creek.

In evaluating this alternative, the City has indicated that this alignment would locate the pipeline in an area where water availability is greatly lacking and that placing the pipeline through this area would result in significant growth inducement potential. There are two areas of Old Arcata Road/Myrtle Avenue that are presently lacking a water line within their alignments including: (1) an approximately 5,000-foot-long segment between Redmond Road and the point where the existing water line and Myrtle Avenue diverge near Blue Blossom Lane to the north, and (2) an approximately 1,500-foot-long segment between Stephens Lane and the point where the water line and Old Arcata Road diverge to the south, approximately 2,000 feet north of Indianola Road. Currently, the absence of water service is generally regarded as a constraint to development at higher intensity within these rural residential areas.

Locating the pipeline in an area where none currently exists would remove a control that the City and County currently maintain over the location and timing of future development in these areas. This area between the cities of Eureka and Arcata is currently designated and zoned in the City, and County's Local Coastal Programs (LCP) for low intensity land uses such as agriculture, natural resources, and low density single family residential uses in isolated areas. Additionally, the City of Arcata LCP, and the City of Eureka and Humboldt County LCPs, call for a distinct separation between the two cities by way of an open space or green belt buffer. The area between Arcata and Eureka is particularly susceptible to impacts from increased development, as the area contains abundant natural habitat including seasonal wetlands, freshwater creeks, and tidal sloughs. Currently, development pressure in the area is controlled and low density development is realized by the fact that much of the undeveloped area is not currently served with municipal water and sewer services. Eliminating constraints to development such as physically locating a water line where physically tapping into it would be relatively easy would make it difficult to protect the resources and maintain the low intensity land uses planned for this area in the certified LCPs.

The presence of a new water line in this location would result in an inducement to propose new development in the areas east of Old Arcata Road, which falls just outside of the coastal zone boundary. According to the EIR prepared for the project, development to the east of Humboldt Bay where water services are provided has been associated with adverse water quality impacts, in part, due to failed septic systems resulting from inadequate soils. As a consequence of having an adequate water supply, indirect effects associated with increased development, including failed septic systems and increased runoff from residential development would result in adverse water quality effects with far reaching impacts extending into the coastal zone. For example, surface water and shallow groundwater would demonstrate higher levels of coliform bacteria and nitrogenous wastes, and local streams would carry such high pollutant loads to Humboldt Bay.

Existing City policy prohibits the extension of water services beyond City limits and prohibits extension of urban services beyond the urban limit line as designated in the City's LCP. Despite the existing policies prohibiting connection, the physical presence of the water line in the road adjacent to many more parcels would be an inducement to growth. The presence of a water pipeline in this area would increase the pressure to accommodate higher intensity development that would have greater impacts on the coastal resources of the area.

Therefore, because of the potential for growth inducement and the resulting significant adverse secondary impacts on coastal resources, the Commission finds that the Old Arcata Road alignment is not a less environmentally damaging feasible alternative.

(3) Highway 101 Alignment

An additional alignment alternative considered involved constructing a new pipeline parallel to or within the Highway 101 right-of-way between Arcata and Eureka. The alignment considered most likely would have involved constructing a pipeline along the eastern margin of the highway right-of-way.

Locating the water line in or adjacent to the Highway right-of-way between Eureka and Arcata would also result in significant potential for growth inducement. Currently, there are no public services in this location and a water line in this vicinity would likely lead to greater development intensity and potential conversion of agricultural lands that provide wetland habitat and open space between Arcata and Eureka. Furthermore, Caltrans has indicated to the City that a longitudinal encroachment along the Highway 101 right-of-way would not be permitted. Placing utilities in the road paralleling the Highway 101 right-of-way would require a "longitudinal encroachment" permit from Caltrans.

According to Caltrans, these permits are generally granted only for emergency uses of the right of way or for placement of services that would directly serve the roadway in some manner (i.e. rest areas). The proposed pipeline is not an emergency service nor would it service the Highway in any way. Moreover, locating the pipeline parallel to the Highway would pose a major safety hazard should the pipeline leak or break, potentially flooding the highway. As the City would be dependent on Caltrans granting an encroachment permit to implement this alternative, Caltrans has indicated that they would not grant such an encroachment permit, and locating the pipeline parallel to the Highway would pose a flooding hazard, this alternative is not a less environmentally damaging feasible alternative.

In addition, there is no available specific pipeline alignment within the highway right-of-way other than underneath the highway pavement and shoulder that would not be located within wetlands. As a result, construction impacts for the alternative of constructing a new pipeline parallel to the right-of-way would be essentially the same as for the proposed project, as the pipeline would traverse seasonal wetlands and cross virtually the same watercourse features as the proposed project. Where the alignment would cross existing bridged waterways, the pipeline may be suspended within casements from existing bridge structures, thereby avoiding the need to trench directly within some waterways. However, the alternative alignment adjacent to and outside of the Highway 101 right of way would be approximately 10,000 feet longer than the proposed route and would affect a larger total area of wetlands.

Therefore, the Commission finds that the Highway 101 alignment is not a less environmentally damaging feasible alternative.

**(4) Rehabilitating the Existing Pipeline in Wetlands**

Another alternative to the construction of an additional pipeline through the grazed seasonal wetlands is to rehabilitate the existing pipeline. In evaluating this alternative, the City has indicated that to rehabilitate the existing pipeline, the entire pipeline must be taken out of service. A maximum length of approximately 1,000 feet of pipeline could be rehabilitated at one time. The work could only take place in the dry months when the pipeline is accessible for construction equipment, which is also the time when water demands from the system are at their peak. As a consequence, the pipeline could only be taken out of service for periods of one week or less at a time. At this rate of rehabilitation, it would take approximately four years to rehabilitate the two sections of pipeline through the grazed seasonal wetlands. Because of the degraded condition of the existing pipeline, the likelihood of a failure over the course of a four year rehabilitation process would be extremely high. This alternative would not meet the City's objective of ensuring a consistent, reliable water supply to its service area. Furthermore, rehabilitating the existing pipeline would require excavating within the grazed seasonal wetlands, resulting in wetland impacts similar to the proposed project.

Therefore, the Commission finds that rehabilitating the existing pipeline is not a less environmentally damaging feasible alternative.

**(5) No Project Alternative**

The no project alternative would maintain the current pipeline configuration and its susceptibility to failure since the existing pipeline has substantially exceeded its design life. The no project alternative would not meet the project goals of establishing a redundant water supply line that would enable the City to take the existing Mad River Pipeline out of service for repairs and maintenance and to assure the reliability of the primary water supply for residents of the City in the event of emergency interruption to the existing line. Therefore, the Commission finds that the no project alternative is not a less environmentally damaging feasible alternative.

**(6) Jack and Bore Construction Method for All Pipeline Watercourse Crossings**

The City proposes to use a trench-less construction technique, jack-and-bore, at the three large, tidal sloughs along the project alignment (see Exhibit No. 5). This construction method would place the pipeline underneath the sloughs to avoid direct impacts to the slough channel from excavating a trench to lay the pipeline as is proposed for the other watercourse crossings along the pipeline alignment. One alternative to the proposed project would be to use this trench-less construction method at all twenty watercourse crossings along the pipeline alignment to avoid impacts to wetlands, listed fish species, and Lyngbye's sedge.

*Wetland Area*

The jack and bore construction method requires the excavation of bore pits in grazed seasonal wetlands on either side of the watercourse, including a 10-foot x 30-foot jacking pit (300 square feet) and a 10-foot x 10-foot receiving pit (100 square feet). The pits are excavated below the level of the pipeline to be installed (approximately six feet deep) to allow for the operation of construction equipment within the pits. The jacking and receiving pits must be set back a minimum of 20 feet from the water's edge of any stream to be crossed. Therefore, the jack and bore method would require the excavation of approximately 400-square-feet of wetlands for each crossing.

Comparatively, the excavation required in wetlands for open trenching is four-square-feet for every lineal foot of trench. Considering the minimum surface excavation of 400 square feet required for jack and bore, the surface excavation of 100 lineal feet of open trench would equal the area of wetland excavation required for jack and bore. A minimum stream width of twenty feet is necessary for the surface excavation required for a jack and bore crossing to equal the amount of surface excavation required for 100 feet of trenching. That is because a trench going through the same alignment as the jack and bore site and spanning the same length of wetlands (both stream and grazed seasonal wetlands) spanned by the jack and bore method includes not only the trenching within the 20-foot stream crossing ( $20 \times 4 = 80$  square feet) but also the area of grazed seasonal wetlands that for the jack and bore method would be devoted to the 20-foot setbacks and pits (30 foot length of boring pit, 20-foot setback from one side of stream, the 20-foot setback from the other side of the stream, and the 10-foot length of the receiving pit, or 80 feet of additional length by 4 feet of width = 320 square feet of grazed seasonal wetlands). (See Exhibit No. 5). Therefore, any crossing less than 20 feet in width would require less dredging of wetlands by trenching than by the jack and bore method. All of the watercourse crossings other than the three tidal sloughs proposed to be constructed using jack and bore method, are less than 20 feet wide, and therefore, the amount of wetland area excavated using the jack and bore method would exceed the surface area of wetlands excavated using the proposed trenching method.

Additionally, the proposed trenching method would take approximately three days to complete the pipeline crossing through a waterway. The jack and bore method would take approximately three to four weeks because of the more involved processes of excavation, shoring the pits, mobilizing equipment, jacking the pipeline, and backfilling and restoring the pits. The jack and bore process also requires significantly more, larger, and heavier equipment and materials than the trenching method which would also result in greater disturbance to surrounding wetlands. Therefore, substituting the jack and bore method at the watercourses where the City proposes to utilize the trenching technique, would not be a less environmentally damaging feasible alternative with respect to disturbance of wetlands, as it would require a greater area of wetland disturbance than the proposed trenching method.

***Listed Fish Species***

The proposed project involves crossing watercourses that provide potential habitat and/or migration corridors for salmonids and tidewater goby. Based on physical and water quality characteristics of each of the watercourses along the pipeline alignment, the fisheries assessment prepared for the project determined that the tidal watercourses including Jacoby Creek, Washington Gulch, Fay Slough, and Freshwater Slough, provide rearing habitat for listed salmonid species at the proposed crossing locations. According to the fisheries assessment, none of the crossing locations are likely to provide spawning habitat for any of the sensitive species. Tidewater gobies are known to occur downstream of Jacoby Creek and according to the U.S. Fish and Wildlife Service, may be found upstream as well. The City is proposing to use the jack and bore construction method at the three tidal sloughs to avoid impacts to listed salmonids and tidewater gobies. The City and Commission staff considered the project alternative of using the jack and bore method to further minimize potential adverse impacts to listed fish species at the Jacoby Creek crossing as well as at other flowing waterways including Beith/Grozman Creek, Rocky Gulch Creek, and an unnamed slough south of Fay Slough. During the analysis of this alternative, the City's fisheries biologist provided additional information about the characteristics of each of these sites as discussed below.

The Beith-Grotzman Channel and the upper (southern) Rocky Gulch sites are both very small flowing channels composed of coarse-grained materials. Both channels are less than five feet wide and the City's fisheries biologist has indicated, and NMFS has concurred, that neither site appears to provide significant rearing or holding habitat for any listed species. The lower (northern) Rocky Gulch site is a relatively small channel composed of muddy substrate that lies upstream of a leaking tide gate. The near-marine salinity (31 parts per thousand) and marginal dissolved oxygen levels (5 parts per million) measured at this site during high tide preclude the use of this area as a rearing or holding area for local populations of listed salmonid or goby species. The unnamed cutoff slough south of Fay Slough was identified by the National Marine Fisheries Service biologist as being only marginal salmonid non-natal rearing habitat based upon the presence of a tide gate downstream and the ambient water quality parameters. This cutoff slough area possesses no salmonid spawning habitat, is not a migration corridor, and the measured salinity levels exceed tidewater goby tolerances. Therefore, the City's fisheries biologist determined, and NMFS concurred, that it is unlikely that this area supports any listed fish populations.

According to the City's fisheries biologist, the Jacoby Creek crossing site is a relatively narrow channel composed of coarse-grained substrates which would minimize the amount of sediment potentially mobilized in the water column and the site is located well downstream of known salmonid spawning areas. Jacoby Creek is known to support listed salmon species and tidewater goby.



Staff consulted with the Department of Fish and Game, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service and these resource agencies indicated that the long-term impacts to listed fish species would be insignificant and not appreciably different between the two construction methods. The proposed project incorporates construction measures that were developed in consultation with resource agencies and the National Marine Fisheries Service provided the City with technical assistance in preparing measures to address fisheries-related concerns and to minimize the potential for sediment disturbance and mobilization. These measures include removing any fish from the construction area using nets and/or electrofishing and maintaining stream flows and fish passage by installing temporary culverts in flowing waterways, including Jacoby Creek. Sediment mobilization would be minimized by installing sediment curtains at the upstream and downstream end of the crossing location and by containing all dewatering basins with straw bales and coils. Additionally, the stream channel and banks would be restored to pre-project conditions following placement of the pipeline. Furthermore, the City proposes to construct the project between June and October to avoid the rainy season and to avoid the late fall/winter upstream migration of adult salmonids and the winter/spring downstream migration of juvenile salmonids. The Commission has attached conditions to ensure that these mitigation measures are implemented as proposed.

Therefore, the Commission finds that substituting the jack and bore construction method at all of the flowing watercourses where the City proposes to utilize the trenching technique would not be a less environmentally damaging feasible alternative with respect to impacts to federally listed fish species than the proposed project as conditioned.

#### *Lyngbye's sedge*

Lyngbye's sedge occurs to some extent in nearly all of the cutoff sloughs and drainage features along the pipeline alignment and also at Rocky Gulch Creek-North. Only a small portion of the total area (population) would be impacted from the proposed trenching, as trenching would occur only at a single point of crossing of each watercourse and would affect only the four-foot-wide trench rather than the entire channel. Although the jack and bore method would essentially eliminate impacts to Lyngbye's sedge, as discussed above, the jack and bore method would cause greater impacts to adjacent pastoral wetlands than the trenching method. The City proposes to separately stockpile the top six inches of excavated material that contains the rhizomes, vegetative material, and seed bank during construction. This excavated soil would be replaced following construction to allow for the reestablishment of Lyngbye's sedge. The botanist who surveyed the pipeline route has indicated that long term impacts to Lyngbye's sedge caused by trenching are expected to be insignificant if restoration of the channel bank and bed is conducted in accordance with the proposed mitigation measures and that the sedge is expected to recover from transplantation and re-establish itself within the channel in a relatively short period of time. The Commission has attached special conditions to ensure that these mitigation measures are implemented as proposed.

Therefore, the Commission finds that because (1) the jack and bore method would result in greater disturbance to adjacent wetland areas, (2) the long term impacts to federally listed salmonids and tidewater goby would be insignificant and not appreciably different than the impacts from trenching, and (3) the sedge would become readily reestablished following trenching, substituting the jack and bore construction method at waterways where the City has proposed to use the trenching technique is not a less environmentally damaging feasible alternative to the proposed project as conditioned.

Additionally, the City has indicated that implementing the jack and bore construction method at any watercourse crossings other than the three tidal sloughs already proposed would be infeasible, as the jack and bore method costs approximately 900% more than the trenching method (\$100,000.00 per crossing to jack and bore compared to \$10,000.00 per crossing to trench). The City is selling bonds to fund the approximately 4.2 million dollar pipeline rehabilitation project. The City has indicated that the more expensive the project becomes, the longer it could potentially be delayed while the City looks for other funding. The revenue for repayment of the bonds comes from the water customers and the water rates have been raised twice in the past two years to provide the revenue required to pay back the bonds. The City claims that although an extra \$90,000 (the difference between the cost of a trenched and jacked crossing) would not necessarily cause additional bonds to be sold with a resulting project delay, the expenditure of an extra \$90,000 of public funds per crossing would be an unnecessary public expense, as the City has proposed mitigation measures to minimize adverse impacts from the proposed trenching construction method. The City also asserts that an additional \$450,000 (the additional cost to jack and bore the flowing waterways) could result in the need to sell more bonds, which could likely result in a delay in the project. Delays in the project schedule increase the jeopardy to the City's water supply, as there is more of a chance that the already deteriorating pipeline would suffer a catastrophic break. If the pipeline were to break, the City would need to repair the line immediately and in the quickest manner possible under emergency measures, or the City would be out of water within a matter of days. The City indicates that any emergency repairs may result in significantly more adverse impacts than those associated with the proposed project. Therefore, the City asserts that due to the significant increased cost of the jack and bore construction method which could preclude completion of the project within a reasonable time period, implementing the jack and bore construction method at waterways other than the three tidal sloughs would not be a feasible less environmentally damaging alternative.

Although the Commission notes the City's contentions regarding feasibility, the Commission need not determine whether the alternative is infeasible for these reasons, as the Commission has previously found that this alternative is not a less environmentally damaging alternative as discussed above.

**(7) Bridges to Span all Watercourse Crossings**

There are several locations along the pipeline alignment where the construction equipment would need to cross the watercourses described above. The City proposes to either utilize existing culverted roads and bridges for equipment crossings as much as possible, or avoid equipment crossing the waterways entirely. However, there are some locations where access across waterways does not exist, and where equipment would need to access otherwise isolated "islands" along the alignment to lay the pipeline. At cutoff sloughs and drainage ditches that are dry during construction, the City proposes that equipment would drive through the channel to access the other side. For crossings that are wet, but not flowing, the City proposes to place a bridge structure to span the channel. Two flowing waterways including Beith/Grotzman Creek and Rocky Gulch Creek South (Site Nos. 2 and 10 on Exhibit No. 3) would have temporary culverts placed in the channel during trenching to maintain water flow as discussed above. The equipment crossing at these locations would involve leaving the temporary culvert in place for several days to several weeks to allow equipment to drive over the top of the culvert. The material excavated during trenching would be temporarily placed around the culvert and additional soil would be added as needed between the sandbags to create an access crossing the minimum width required. The project does not include constructing equipment crossings for Jacoby Creek, Washington Gulch, Fay Slough, Freshwater Slough, or Rocky Gulch Creek North.

An alternative to the equipment crossing methods as proposed would be to use bridges to span all watercourses to minimize the amount of temporary fill placed in the channels and to minimize the potential for significant adverse impacts to the aquatic environment at these crossing locations. The City proposes to construct the project during the dry season (June – October) and several of the smaller, shallower crossing locations are dry during the summer months. These dry sloughs and drainage features do not provide habitat for sensitive fish species and because of the dry, hard condition of the substrate, driving equipment through the crossing would not result in sediment disturbance or mobilization. Additionally, crossing at the waterway locations where equipment is already mobilized would minimize the need for traversing through adjacent wetland areas. Therefore, placing a bridge at these locations would not be less environmentally damaging than driving equipment through the area to access the construction area on the other side.

The temporary culverted crossings at the two flowing waterways would utilize the culvert and excavated material from trenching of the channel. The culvert would have sandbags placed at either end to divert the stream flow through the culvert and the trench would be excavated under the culvert. Once the pipeline is placed, the trench would be backfilled with the soil that was originally removed from the trench. Prior to backfilling and compacting the soil in the channel, the soil from the trench and additional soil would be added as needed between the sandbags to create an access crossing that is no wider than the minimum required. These two stream crossings are very narrow. Beith/Grotzman Creek is approximately four-feet-wide and Rocky Gulch South is approximately 1.5-feet-

wide. Therefore, the temporary culverts would occupy the entire channel width and would allow the construction equipment to easily drive over the top of the culvert once it is in place with very little additional soil needed to be placed around or on top of the culvert. Placing a bridge to span these two crossings would avoid the need to place any additional temporary fill in the stream channel to construct a temporary access way. However, as discussed above, the culvert would already be in place to provide continued stream flow and fish passage during construction and the soil from a four-foot-wide trench would be excavated to place the pipeline. Use of this soil and the bypass culvert for an equipment crossing for several days or weeks would not increase the impacts to the stream. The only difference between the culvert and the bridge alternatives at these locations is that restoration of the stream channel would be delayed for a few days to a few weeks under the bridge alternative. Placing a bridge adjacent to the pipeline crossing location (i.e. trenched area below bypass culvert) would disturb additional area of adjacent wetlands from placement of the bridge and from the additional equipment maneuvering and operating area required. In comparison, impacts to the stream from equipment access would be minimized by placing sediment controls upstream and downstream of the crossing and by removing the crossing and restoring the channel and banks to pre-project conditions. The Commission has attached special conditions to ensure that these measures are implemented as proposed.

Therefore, the Commission finds that the use of bridges at all watercourse crossings is not a less environmentally damaging feasible alternative than the culverted crossings as proposed and conditioned.

**(8) Disposal of Excess Trench Material Off-Site**

The proposed project involves excavation of approximately 26,000 linear feet of a four-foot-wide, six-foot-deep trench. Most of the excavated subsoil material would be used to backfill the trench following placement of the pipeline. However, because the pipeline would occupy a volume within the trench that would no longer be available for soil, there would be some excess soil material (approximately 4.3 cubic feet of excess per linear foot of pipeline). The City proposes to broadcast the excess subsoil (approximately 4,880 cubic yards) across the 60-foot-wide construction corridor, which would result in a layer approximately 0.8 inches thick. The City also proposes to scarify the construction corridor to break up any clumps in the scattered subsoil materials and to de-compact any areas affected by construction before reseeding. An alternative to broadcasting the excess soil across the construction corridor in the grazed seasonal wetlands is to haul the material off-site to an appropriate disposal site. Disposing of the material off-site would require approximately 488 truck trips (10 cubic yards per truck) from the pipeline location to the disposal site. This would result in additional impacts to the grazed seasonal wetlands including soil compaction and vegetation disturbance from dump trucks needing to access the entire longitudinal pipeline alignment to remove excess trench material. The proposed broadcasting alternative would be performed with equipment already operating within the construction corridor and would be placed within

areas already proposed to be excavated and scarified. The addition of less than one inch of native material over the 26,000-foot long, 60-foot-wide construction corridor would be essentially imperceptible and would not adversely impact wetland habitat. The land surface elevation along the trench and construction corridor at the completion of construction would be approximately the same as the land surface elevation prior to construction, which would maintain the existing hydrological functions of the wetlands. The Department of Fish and Game staff has indicated that the less than one-inch rise of native soil along the construction corridor would not change the hydrology or other functions of the grazed seasonal wetlands. They point out that the impact would be similar to the effects of ranches placing soil amendments on those grazing lands as often occurs. Therefore, the Commission finds that removing the excess soil from the site would not be a less environmentally damaging feasible alternative.

**(9) Locating Staging Areas in Construction Corridor**

The City proposes to establish up to four equipment and construction material staging areas, totaling approximately six acres, along the pipeline alignment in grazed seasonal wetlands outside of the 60-foot-wide construction corridor. An alternative to establishing staging areas outside of the construction corridor is to require that all equipment and materials be located within the 60-foot-wide corridor to minimize impacts to grazed seasonal wetlands.

The proposed staging areas would provide storage for heavy equipment, and pipeline materials and tools. The equipment and materials need to be located near the construction work area, but the amount of equipment and materials needing to be stored near the site at any one time would exceed what would fit within the 60-foot-wide construction corridor while still maintaining sufficient room for equipment and construction workers to maneuver in an effective and efficient manner during construction.

If all materials and equipment were required to be located in the 60-foot-wide construction corridor, construction equipment working along the corridor would be obstructed by parked equipment, vehicles, and pipeline materials. This would require equipment and materials to be constantly relocated and 'shuffled' around to make way for the construction and would likely require operating equipment and moving materials around outside of the construction corridor.

Additionally, the new pipeline would be located approximately 13-feet from the existing pipeline. Heavy equipment is precluded from operating over the existing pipeline to prevent it from being damaged, thus further limiting the area available for equipment and vehicle maneuvering within the construction corridor. The contractor is also required to separately stockpile the upper 6-inches of soil from the material removed from the trench. The need to stockpile this material along the entire length of the pipeline further limits the area available for staging to occur within the construction corridor.

Therefore, the Commission finds that limiting staging of construction equipment and materials to the 60-foot-wide construction corridor is not a less environmentally damaging feasible alternative.

Therefore, the Commission finds that the proposed project, as conditioned, is the least environmentally damaging feasible alternative as required by Section 30233(a).

**C. Feasible Mitigation Measures**

The third test set forth by Section 30233 is whether feasible mitigation measures have been provided to minimize adverse environmental impacts. The pipeline would be located within grazed seasonal wetlands and would cross several watercourses including tidal sloughs, cutoff sloughs, and freshwater streams. These watercourse crossings are shown on the vicinity map included as Exhibit No. 3. Depending on the manner in which the proposed project is conducted, the project could have potential adverse impacts to (1) wetland habitats, (2) sensitive fish species, (3) sensitive plant species, and (4) water quality. The potential impacts and their mitigation are discussed in the following sections:

**(1) Wetland Habitat**

***(a) Seasonal Wetlands***

Approximately 25,900 linear feet of the proposed pipeline would be located within grazed seasonal wetlands adjacent to an existing water pipeline resulting in temporary impacts to the wetlands. The proposed pipeline centerline would be located approximately thirteen feet west of the existing pipeline centerline, within an approximately 60-foot-wide construction corridor. The pipeline would be placed within an excavated trench approximately four-feet-wide by six-feet-deep. Additionally, the proposed project involves the placement of nine concrete vaults along the pipeline route resulting in 252 square feet of permanent wetland fill. Furthermore, the City proposes to use areas adjoining the pipeline for construction staging activities such as storage of materials, stockpiling excavated material and vehicle maneuvering. Moreover, the City proposes to broadcast excess excavated soil material into the seasonal wetlands along the 60-foot-wide construction corridor to dispose of the material.

The project site was originally subject to tidal action, but like much of the land around Humboldt Bay, the site was diked off decades ago and reclaimed for agricultural use. Due to its low elevation, the project area is subject to seasonal ponding from rain and runoff and also has a high groundwater table. The wetland vegetation on the site is not particularly abundant or diverse in comparison with other wetland habitats around Humboldt Bay because of its current and historic use as pasture for cattle grazing.

Nonetheless, the area does provide some wetland habitat including foraging habitat for a diversity of water-associated wildlife including waterfowl, wading birds, and shorebirds. The wetlands also function to provide a certain degree of water quality protection, as they temporarily detain rainwater runoff and allow for the removal of impurities entrained in stormwater flowing over the pasture lands.

The City proposes to restore all of the grazed seasonal wetlands disturbed by project construction to pre-project conditions except for a total of 252 square feet of area covered by the nine proposed vaults, which would be permanent features within the wetlands. As discussed below, this 252 square feet of area covered by the vaults would be mitigated at an off-site location. All of the rest of the grazed seasonal wetlands affected by project construction would be restored by recontouring the construction corridor to approximate the original grade, replacing the original topsoil in the trench, and decompacting and reseeding the construction corridor as described below.

To ensure that seasonal wetland habitat and functions are restored following project construction, the City proposes to separately stockpile the top six inches of excavated material, which contains the root masses, rhizomes, seeds, and accumulated organic material of the vegetation that dominates the seasonal wetlands. The City also proposes to sow the completed pipeline trench location and all areas in which equipment and subsoil materials would be placed with a commercially prepared seed mixture composed of the same grass species that dominate the area to restore existing wetland foraging habitat. The grazed seasonal wetlands have been diked off from the tidal influence of Humboldt Bay and used for agricultural grazing for well over 100 years and thus, the dominant grass species in the area consist largely of introduced species that have a high value for livestock foraging. By restoring the native topsoil and reseeding the construction corridor, the vegetation common to the area would rapidly reestablish to pre-project conditions. The Commission attaches Special Condition No. 2 to ensure that these restoration measures are implemented.

Most of the excavated subsoil material would be replaced within the trench. However, because the pipeline would occupy a volume within the trench that would no longer be available for soil, there would be some excess soil material (approximately 4.3 cubic feet of excess per linear foot of pipeline). The excess subsoil (approximately 4,800 cubic yards) would be broadcast across the remaining width of the construction corridor, resulting in a layer less than one inch thick. The City also proposes to scarify the construction corridor to break up any clumps in the scattered subsoil materials and to decompact any areas affected by construction before reseeding. The land surface elevation along the trench at the completion of construction would be approximately the same as the land surface elevation prior to construction, which would maintain the existing hydrological functions of the wetlands. The Commission finds that if the material were not graded and scarified properly, variations in the topography and elevation of the construction corridor could occur relative to the adjacent wetlands that may result in alterations to the hydrology of the seasonal grazed wetlands. These wetlands are

essentially flat and are largely fed through a high groundwater table and seasonal rainfall. Depressions, mounds, or ridges could result in changes to water runoff and retention if graded improperly. Therefore, to ensure that the hydrology of the seasonal grazed wetlands is maintained, the Commission attaches Special Condition No. 3 which requires that a qualified engineer be on site during final grading and recontouring activities to ensure that the 60-foot-wide construction corridor is graded and recontoured consistent with the elevation of the adjacent grazed seasonal wetlands and that no depressions, ridges, or mounds result.

To ensure that the construction area through the seasonal wetlands is revegetated to pre-project conditions as proposed, the Commission attaches Special Condition No. 7 that requires the City to submit a monitoring report to the Executive Director within 18 months following completion of the water pipeline. The monitoring report must be prepared by a qualified biologist or botanist and must evaluate whether the objective of reestablishing vegetation in areas of project construction to a level of coverage and density equivalent to vegetation coverage and density of surrounding undisturbed areas has been achieved. If the report indicates that the revegetation of the disturbed areas following reseeding has not been successful, in part, or in whole, the applicant is required to submit for the review and approval of the Executive Director a revised reseeding program to achieve the objective. The revised reseeding program shall require an amendment to this coastal development permit.

Excavation of the trench and temporary stockpiling of the material has the potential to result in sediment mobilization, both at the time of construction and during the subsequent rainy season. The measures discussed in Finding (c)(4) below on protection of water quality and the proposed reseeding of the construction corridor would minimize sediment mobilization into adjacent wetlands both at the time of construction and following the onset of the fall rains.

To further minimize significant adverse impacts to the seasonal wetlands and the potential for sediment mobilization, the City proposes to limit project construction to the dry season, or June through October. This seasonal limit on construction is required by Special Condition No. 1 to ensure that no development occurs outside of the dry period identified as June 15 to October 15.

Construction staging areas may include up to four areas located in grazed seasonal wetlands outside of the 60-foot-wide construction corridor, and the City has indicated that based on the area needed to accommodate the pipeline materials and associated equipment, a minimum of six acres is required. These staging areas would be used for temporary pipe storage (as well as vaults, valves, and other equipment), and for short-term construction vehicle storage and parking. There would be a staging area near both the southern and northern terminus of the pipeline alignment and two staging areas located along the middle portion of the alignment. The City proposes to allow the contractor to determine the exact locations of staging areas, but they would generally be



located as near the construction corridor as possible. As proposed, it is possible that a large area of grazed seasonal wetlands would be used for staging, even though the City has indicated that it is in the contractor's best interest to consolidate staging areas as much as possible. Depending on how compactly the contractor distributes materials, stockpiles, and construction activities within the staging area, the total amount of wetland disturbed by staging activities could vary substantially. In addition, even compact staging areas could be located too close to other environmentally sensitive habitat areas (ESHA) without an appropriate buffer between the proposed staging areas and the ESHA to ensure that the ESHA is not adversely impacted by staging activities. The City proposes that staging areas would not be located where they would include a cutoff slough, stream, or any aquatic feature other than pastureland (grazed seasonal wetland). To ensure that all staging areas are located away from environmentally sensitive habitat areas other than the grazed seasonal wetlands and that the area of grazed seasonal wetlands disturbed by staging areas is minimized, Special Condition No. 4 requires the City to submit an equipment and construction materials staging plan prior to commencement of construction. The condition requires that all construction materials and equipment staging areas be located in no more than four areas and in total be no greater than six acres in size, the minimum total area that the City indicates is needed to accommodate the staging needs of the project. Additionally, the staging areas are required to be located as close as possible to the established construction corridor, and a minimum of 100 feet away from any watercourse. Special Condition No. 4 further requires that all equipment access routes be limited to the routes mapped and described by the City and shown in Exhibit No. 10.

Although project construction is proposed and conditioned to occur during the dry season, there may be areas along the pipeline alignment that may be excessively wet or soft and unable to support construction equipment. In the event that such areas are encountered during project construction, the City proposes to utilize temporary stabilization materials such as reinforced construction stabilization mats, or gravel temporarily placed on an underlying geotextile fabric. The use of stabilizing materials would minimize compaction impacts to the wetlands from construction equipment. Special Condition No. 4 requires that this construction method be implemented, that access routes be the minimum width necessary to allow movement of equipment to and from the project site, and that all stabilizing materials be removed entirely following project construction.

The City proposes to implement the same site restoration measures as discussed above for the pipeline construction corridor to similarly restore all staging areas to pre-project conditions. The plan required by Special Condition No. 4 is required to demonstrate that all areas disturbed by staging activities would be de-compacted and reseeded following project completion. Special Condition No. 4 further requires that the plan include evidence to demonstrate that the City has obtained all legal right, interest, or entitlement to use the property for the proposed staging activities and access routes and has obtained

the authority to comply with all conditions of CDP No. 1-02-007 and evidence demonstrating that all necessary regulatory approvals have been obtained.

The City proposes to place casings for the water pipeline under the streambeds of three tidal sloughs by using “jack-and-bore” or “pipe-ramming” construction techniques. According to the City, these related techniques are well-tested in the construction industry, and involve excavation of bore “pits” in the seasonal wetlands adjacent to the sloughs and the installation of pipe segments through the soft sediments under the three waterways. The “pits” excavated in the adjacent seasonal wetlands for the boring equipment would be restored to pre-project conditions as described above. The pits would be located in grazed seasonal wetlands which, following backfilling and reseeding, would readily reestablish with foraging cover that currently comprises the area. The Commission attaches Special Condition No. 2(J) to ensure that these measures are implemented.

As noted previously, the proposed project also involves the construction of nine concrete vaults that would result in 252 square feet of permanent fill within existing grazed seasonal wetlands. The City proposes to mitigate for the permanent fill from the vaults by removing a portion of historic fill at the Ryan Slough Pump Station near the south end of the pipeline. The proposed Ryan Slough Pump Station mitigation site is located in the County’s coastal permit jurisdiction. The County has processed and approved a coastal development permit for portions of the pipeline project in the County’s jurisdiction, including the mitigation site.

The City proposes to remove 504 square feet of existing fill material to provide wetland mitigation for the permanent fill at a 2:1 ratio. The material would be removed along the southeastern side of the fill pad, most of which is located behind a fence that would be relocated to the newly created edge of the fill pad following excavation. The existing fill would be removed to a depth of approximately two feet to expose the original soil and return the area to the same elevation as the existing adjacent wetlands.

The City proposes to allow the area to naturally colonize with native wetland vegetation that exists directly adjacent to the mitigation site. The site adjacent to the fill to be removed is comprised of wetland vegetation common to the area including small-fruit bulrush, spikerush, creeping bentgrass, curly dock, tufted hairgrass, and cattail. The wetlands restored at the mitigation site would likely provide greater wetland functions than the wetlands filled by the vaults, as the wetlands at the mitigation site are not grazed and trampled by cattle as the seasonal wetlands along the pipeline corridor are. The City proposes to perform the mitigation at the same time the pipeline construction through the seasonal wetlands commences.

In past North Coast permit actions, the Commission has generally required that wetland mitigation proposals provide (1) mitigation on-site whenever possible; (2) in-kind habitat replacement whenever possible; (3) restoration of former wetlands that have been filled

or diked as opposed to the more problematic creation of new wetlands out of purely upland habitat to ensure a greater chance of success; (4) habitat replacement adjacent to functioning wetland habitat of the same kind to increase the chances of success; (5) mitigation at ratios of habitat restoration or creation to habitat loss typically ranging from 2:1 to 4:1 or greater, in recognition that wetlands restoration projects are difficult to implement successfully and that there is often a significant lag time between the time when the wetlands are filled and the time when full habitat values are restored; and (6) that the mitigation proposal be adequately supported with appropriate success standards, a suitable monitoring program, and proposed remedial action. Wetland mitigation measures that more fully conform to these goals are more likely to provide adequate mitigation as required by the third test of Section 30233 of the Coastal Act, and better ensure that the biological productivity and the quality of coastal waters and wetlands are maintained and where feasible restored as is also required by Section 30233.

The City's proposed wetland mitigation plan conforms with the objectives above, as the proposed mitigation site is located near the project site where the permanent fill would occur and the proposed mitigation would restore an area of historic filled wetlands to functioning seasonal wetlands directly adjacent to an area where wetlands currently exist. The City proposes a mitigation ratio of 2:1, which is an appropriate ratio for this project. Although the City proposes to perform the mitigation work at the same time as the construction of the pipeline, the higher ratio would account for the temporal loss of habitat value, as it will take some time for the wetlands restored at the mitigation site to develop habitat values that will compensate for the loss of wetland habitat caused by installation of the vaults, especially given that the City proposes to allow plants to colonize the site naturally from surrounding areas rather than actively planting the site following excavation.

The City's biologist anticipates that the site would demonstrate successful natural colonization by wetland plants within the first year following construction. Due to the wet winter climate and the vigorous nature of the wetland vegetation growing contiguous to the proposed mitigation site, the site has a high likelihood of quickly establishing wetland vegetation. To ensure that natural colonization of wetland species occurs as proposed, the City's mitigation plan proposes to monitor the site during the second and third years following removal of the fill to identify the plant species at the site and estimate the percent of vegetative cover. The City proposes that if the mitigation site has attained a cumulative estimated cover of 50 percent of the ground surface by the plant species identified above as composing the surrounding vegetation, the site will be considered to be proceeding successfully. If the coverage does not meet or exceed 50 percent, the City would take measures to actively revegetate the site. In year three, the City would identify vegetation and estimate cover to attain at least 80 percent cover, or again, take measures to actively revegetate the site.

The Commission finds that to ensure that the mitigation site is successful and that the area of fill removal becomes fully established, functioning wetland habitat, the area must

achieve 100% vegetative cover. Therefore, Special Condition No. 6 requires submittal of a revised mitigation plan to include provisions for monitoring the site for five years, or until the site achieves 100% vegetative cover. Although as submitted, the City's mitigation plan calls for monitoring, the plan does not provide for the submittal of monitoring reports to the Commission to ensure the mitigation site becomes established with wetland vegetation as proposed. Therefore, Special Condition No. 6 also requires the revised mitigation plan to include provisions for submittal of monitoring reports to the Commission by November 1 of each monitoring year following removal of the fill at the site until the success standard of 100% vegetative cover is achieved. If the final report indicates that the mitigation project has been unsuccessful, in part, or in whole, based on the approved performance standards, the applicant is required to submit a revised or supplemental revegetation program to compensate for those portions of the original program which did not meet the approved performance standards. The revised revegetation program shall be processed as an amendment to this coastal development permit. The City proposes to remove fill at the mitigation site at the same time as pipeline construction near the Ryan Slough pump station occurs. To ensure that the mitigation occurs in a timely manner, Special Condition No. 6 also requires the revised mitigation plan to include a schedule for fill removal at the mitigation site that demonstrates that the mitigation will occur prior to completion of the water pipeline project approved under CDP No. 1-02-007.

*(b) Tidal Sloughs*

The pipeline crosses three tidal waterways open to Humboldt Bay including Washington Gulch, Freshwater Creek/Slough, and Fay Slough. The substrates in these three waterways are fine-grained silt and mud, which create a significant potential for sediment mobilization. To avoid direct disturbance to these watercourses, the City proposes a "trench-less" technique to place casings below the water features, through which the pipeline would be pulled. The proposed construction would involve driving a casing that is approximately eight inches (8") larger in diameter than the HDPE pipe to a depth of approximately five feet (5') underneath the slough bottom.

The City proposes to place the casings for the water pipeline under these watercourses by using "jack-and-bore" or "pipe-ramming" construction techniques. According to the City, these related techniques are well-tested in the construction industry, and involve excavation of bore "pits" in the seasonal wetlands adjacent to the sloughs and the installation of pipe segments through the soft sediments under the three waterways. Unlike the construction technique of directional drilling, the jack and bore technique does not require the use of lubricating fluids or drilling muds such as bentonite, which can create water quality impacts if discharged into wetlands. The "pits" excavated in the adjacent seasonal wetlands for the boring equipment would be approximately 10'x10' and 10'x30' on either side. The excavated bore pits would be backfilled and restored to pre-project conditions as described above. No equipment crossings would be constructed at these tidal sloughs.

Use of the “jack-and-bore” and “pipe-ramming” techniques requires that the sediments be free of any obstructions (such as buried logs, concrete, pilings, etc.). The City has indicated that any such obstructions may need to be removed. If work is required to occur in the slough channel to remove obstructions encountered during construction, the City proposes to prepare a preliminary determination of the maximum extent of bottom disturbance necessary to remove the obstruction. The City would inform the Department of Fish & Game (DFG), the U. S. Fish & Wildlife Service (USFWS), and the National Marine Fisheries Service (NMFS) of the extent of disturbance required. The location at which channel-bottom disturbance would be required would be isolated from the water column using a barrier created with sheet-piling, sandbag cofferdams, and/or other means to separate the excavation location from any flowing water in the slough. Any fish within the work area would be removed by a qualified fisheries biologist by seining and/or electrofishing and would be transferred to a “live bucket” and transported to a location in the same water body away from the construction site. After the obstruction had been removed, the barrier would be removed and the bottom restored to the original contours. The measures proposed for removing any obstructions encountered during pipeline construction in the tidal sloughs were prepared in conjunction with resource agencies and would be adequate to protect the watercourses from potential impacts for obstruction removal. The proposed procedure allows for further notification and opportunity for review by resource agencies should an obstruction be encountered and work in the slough required. The Commission attaches Special Condition No. 2(K) requiring that in addition to notifying NMFS, USFWS, and DFG, the City must notify the Executive Director of the Commission about the obstructions and that no changes to the obstruction removal procedures specified shall occur without a Commission amendment to this coastal development permit.

*(c) Cutoff Sloughs and Ditches*

The pipeline would cross thirteen former tidal slough channels and constructed drainage features that are cut off from tidal action by levees and tidegates (Site Nos. 1, 3, 4, 5, 6, 11, 12, 14, 15, 16, 18, 19, and 20 on Exhibit No. 4). These features hold water during the rainy season and either dry up completely during the summer dry season, or contain only ponded, or slow-flowing water. For these crossings, the City proposes to utilize a trenching construction process similar to that used in the seasonal wetlands and as described in section (C)(1)(a) above.

Construction activities in these crossings have the potential for mobilizing sediment from the existing channels. The City proposes to minimize sediment disturbance by deploying silt curtains on the eastern and western sides of all crossing locations within cutoff sloughs. The excavated trench in these locations would require dewatering due to high groundwater levels. Water that collects in the trenches would be pumped into temporary settling basins located adjacent to the trench and contained with coir rolls or straw bales.

These containment provisions are identified in the Stormwater Pollution Prevention Plan prepared for the project as discussed in section (C)(4) below.

The City proposes to restore the original contours of the cutoff sloughs and drainage ditches by replacing the substrate material removed from the trench. Similar to the technique that would be applied to construction within diked former tidelands, the top six inches of material from the trench would be stockpiled separately and then restored to the surface, as this material is more likely to contain seeds or other plant propagules than deeper sediment layers.

There are several locations along the pipeline alignment where the construction equipment would need to cross the cutoff sloughs and drainage features described above. The City proposes to utilize existing culverted roads and bridges for equipment crossings as much as possible, or to avoid the need for equipment crossing the waterways entirely. However, there are some locations where access across waterways does not exist, and where equipment would need to access otherwise isolated “islands” along the alignment to lay the pipeline. At cutoff sloughs and drainage features that are dry during construction, equipment would drive through the channel to access the other side. For crossings that are wet, but not flowing, the City proposes to place a bridge structure that would span the water feature. The temporary bridge crossings would be removed following project construction and any areas of grazed seasonal wetlands affected by their placement would be restored. The Commission attaches Special Condition No. 2(L) to ensure that these measures are implemented.

*(d) Freshwater Streams*

The pipeline alignment would cross two perennial streams; Grotzman/Beith Creek and two locations at Rocky Gulch Creek (sites 2, 9 & 10 on Exhibit No. 4). Neither of these waterways have extensive channel cross-sections or riparian vegetation. The City proposes to place the water pipeline across the stream courses by the same trenching method used for the seasonal wetlands as described in section (C)(1)(a) above. The proposed pipeline would be placed approximately one foot (1') below the bottom of the existing streambeds.

The City proposes to route the flowing streams through temporary culverts that would span the trench locations and have washed-sand sandbag deflector barriers at both ends placed within the channels prior to excavating the trench. Any fish within the work area would be removed by a qualified fisheries biologist by seining and/or electrofishing and would be transferred to a “live bucket” and transported to a location in the same water body away from the construction site. As with the cutoff sloughs, the City proposes to control runoff from temporary spoil deposits, route dewatering flow through sediment filters and install sediment curtains at the upstream and downstream ends of the work area. The City proposes to restore the pre-construction channel contours below the bypass culverts, remove the bypass culverts, recontour and revegetate the ditch where the

barriers were placed, and place erosion-control material. The Commission attaches Special Condition No. 2 to ensure that these measures are implemented as proposed.

As discussed previously, there are several locations along the pipeline alignment where the construction equipment would need to cross the watercourses described above. The City proposes to either utilize existing culverted roads and bridges for equipment crossings as much as possible or avoid equipment crossing the waterways entirely. However, there are some locations where access across waterways does not exist, and where equipment would need to access otherwise isolated “islands” along the alignment to lay the pipeline. Two flowing waterways including Beith/Grotzman Creek and Rocky Gulch Creek South, (site nos. 2 and 10 on Exhibit No. 3) would have temporary culverts placed in the channel to maintain water flow during construction. The equipment crossings at these locations would involve leaving the temporary culvert in place for several days to several weeks to allow equipment to drive over the top of the culvert. The material excavated during trenching would be temporarily placed around the culvert and additional soil would be added as needed between the sandbags to create an access crossing the minimum width required. Once the access is no longer needed, the excess soil would be removed and the crossing would be restored to pre-project conditions as described above. The Commission attaches Special Condition No. 2(M) to ensure that these measures are implemented.

*(e) Tidal Coarse-Grain Waterway (Jacoby Creek)*

The pipeline would also cross Jacoby Creek, a tidally-influenced perennial stream with sandy and/or gravelly substrate (Site No. 7 on Exhibit No. 4). Jacoby Creek is open to fish access from Humboldt Bay and is known to provide habitat for listed fish species.

As discussed in section (d) above, the City’s proposed construction method for this cross-section involves routing the active flow of Jacoby Creek through an oversized culvert placed in the Jacoby Creek channel, outside the existing wetted perimeter, using general size and placement guidelines suggested in the NMFS publication “Guidelines for Salmonid Passage at Stream Crossings” for the period during which pipeline trench construction and pipeline emplacement would occur (approximately 3 days). The stream cross-sectional or wetted-perimeter width during the non-rainy season is approximately fifteen feet wide. The stream flow would be routed into the culvert by placing washed sand in sandbags within the channel, arrayed as a barrier to guide flows into the culvert; a second sandbag barrier on the downstream end will protect the water pipeline trench from tidally influenced backwater flows by routing them upstream through the culvert.

When the bypass culvert is fully in place, a trench would be excavated for placing the water pipeline under the Jacoby Creek channel. The expected depth of the trench below the channel bed is approximately five feet to allow approximately two feet of native sediment to remain above the pipeline under normal stream flow conditions. This depth of native material would also assure that both natural sediment dynamics and fish habitat

conditions above the buried pipeline are restored. As in the cutoff sloughs and non-tidal flowing streams, temporary spoil deposits and dewatering-pump discharges would be contained to prevent potential sediment release and sediment curtains would be installed at the upstream and downstream ends of the work area.

Following trench closure, the Jacoby Creek channel section would be restored to pre-construction dimensions, the channel-bottom topography (under the direction of a qualified fisheries biologist) would be reconfigured, any coarse woody debris disturbed by the construction process would be replaced, and the streambanks would be revegetated. When the majority of the channel restoration has been completed, the bypass culvert would be removed and the channel would be recontoured. The Commission attaches Special Condition No. 2 to ensure that these measures are implemented as proposed.

The Commission finds that the proposed project, as conditioned, includes all feasible mitigation measures to minimize all significant adverse impacts to coastal wetland habitats consistent with Section 30233 of the Coastal Act. The mitigation measures required to minimize impacts to sensitive fish species, sensitive plant species, and water quality which will further minimize significant adverse impacts to the functional capacity of the wetlands are discussed in sections (2), (3) and (4) below would

## **(2) Sensitive Fish Species**

The proposed project would be constructed in stream courses that have been identified as providing habitat for federally listed fish species including chinook (king) salmon, coho (silver) salmon, steelhead, and tidewater goby. Other sensitive fish species include coastal cutthroat trout, longfin smelt, and eulachon. The City prepared a fisheries analysis report for the project prepared by a qualified fisheries biologist to evaluate fish habitat and species presence along the pipeline alignment.

The Southern Oregon/Northern California Coast Evolutionary Significant Unit (ESU) of coho salmon and the Coastal California ESU of chinook salmon are listed under the federal Endangered Species Act (ESA) as "threatened." According to the EIR prepared for the project, the chinook (or king) salmon (*Oncorhynchus tshawytscha*) spawns in upstream reaches of streams tributary to Humboldt Bay, but young fish are believed to spend several months during their first year "rearing" in the estuary. Coho (or silver) salmon (*Oncorhynchus kisutch*) also spawn in upstream reaches, and their young also spend time in the estuary before first entering the ocean. In addition, adults of both species spend time in the estuary when returning to the basin to spawn, "holding" there while waiting for fall rains to bring river levels up enough to allow upstream migration. The third salmonid species of concern in the project vicinity is steelhead (*Oncorhynchus mykiss*), a seagoing trout. Steelhead have a life history similar to that of chinook and coho, although the steelhead (which is closely related to non-seagoing rainbow trout), find appropriate habitat conditions in smaller streams, and in more upstream reaches than



do the larger salmonids. The Northern California steelhead ESU is presently listed under the federal Endangered Species Act as “threatened.”

An additional salmonid of concern in the project area is the coastal cutthroat trout (*Oncorhynchus clarki clarki*), a resident salmonid in coastal streams in northern California and southern Oregon. This species is a “species of special concern” for the Department of Fish and Game, but is not listed under either the federal or state Endangered Species Act. Coastal cutthroat trout have been documented in many streams in the Humboldt Bay basin, and are presumed to be present in all the perennially flowing tributary streams to Humboldt Bay. All of the life requisites for this species are provided by the conditions in the streams in which it resides.

Estuarine streams provide habitat for an additional federally listed fish species, the tidewater goby (*Eucyclogobius newberryi*), a species currently listed as “endangered” under the federal Endangered Species Act. Tidewater gobies occur in near-estuarine tidal stream bottoms, with varying salinities and substrates generally of fine (i.e., silty to clayey mud) materials. Estuarine tributaries to Humboldt Bay (particularly the tidal reaches of tributary streams) also provide habitat for two smelt species that are state “species of concern.” Longfin smelt (*Spirinichus thaleichthys*; this species is also a federal “species of concern”<sup>1</sup>) and eulachon (*Thaleichthys pacificus*) which have been observed in project-area streams.

The City has indicated that in discussions with the Department of Fish and Game, the National Marine Fisheries Service, and the U.S. Fish and Wildlife Service, these agencies expressed that their primary concern regarding the protection of these sensitive fish species was the potential for project construction activities to result in sediment mobilization in a manner that could harm listed species outside of the immediate project area. According to information provided in the EIR prepared for the project, sediment is considered a pollutant that affects visibility through the water, and affects plant productivity, animal behavior (such as foraging) and reproduction, and the ability of animals to obtain adequate oxygen from the water. With respect to potential effects on fish and fish habitat, sediment is often a major pollutant of concern, because fine sediments have been well documented to fill pore spaces between larger gravel and cobble clasts, eliminating the relatively coarse sediments required for egg and fry survival of many freshwater-spawning fish. Sediments may physically alter or reduce the amount of habitat available in a watercourse by replacing the pre-existing habitat structure with a stream-bottom habitat composed of substrate materials unsuitable for the pre-existing aquatic community. In addition, sediment is the medium by which many other pollutants are delivered to aquatic environments, as many pollutants are chemically or physically associated with the sediment particles.

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<sup>1</sup> This term refers to species formerly considered as candidates for listing under the federal ESA, but for which listing has been “precluded” by lack of funding.

The proposed project involves crossing watercourses that provide potential habitat and/or migration corridors for salmonids and tidewater goby. The tidal watercourses including Jacoby Creek, Washington Gulch, Fay Slough, and Freshwater Slough, provide rearing habitat for listed salmonid species at the proposed crossing locations. According to the fisheries analysis prepared for the project, none of the crossing locations are likely to provide spawning habitat for any of the sensitive species. The proposed project incorporates construction measures that were developed in consultation with resource agencies charged with protecting sensitive fish species. The National Marine Fisheries Service provided the City with technical assistance in preparing measures to address fisheries-related concerns and to minimize the potential for sediment disturbance and mobilization. The City proposes to construct the project between June and October to avoid the rainy season when stockpiled material would more likely become entrained in runoff. The proposed construction period would also avoid the late fall/winter upstream migration of adult salmonids and the winter/spring downstream migration of juvenile salmonids. The Commission attaches Special Condition No. 1 to ensure that the construction season limitations are implemented. The City proposes to install sediment curtains above and below crossing locations to localize any sediment disturbed by construction activities. All dewatering basins would be equipped with sediment traps or biofilters to localize temporary sediment storage outside of the aquatic environment. The City further proposes to maintain water flow in watercourses that bear "live" streams by installing culverts prior to construction to prevent damming streamflow and provide for continued fish passage. The City also proposes to restore streambed contours and revegetate disturbed stream banks. As discussed in Finding (C)(1) above, Special Condition No. 2 requires that these proposed construction measures be implemented consistent with the City's certified EIR. The Commission finds that these provisions for minimizing sediment mobilization, removing fish from the construction area, and restoring the channels and banks to pre-project conditions are feasible mitigation measures that would minimize significant adverse impacts to sensitive fish species.

The City has not yet initiated the formal Section 7 Endangered Species Act consultation with the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) as part of the Army Corps of Engineers permit required for the project. Therefore, the Commission attaches Special Condition Nos. 12, 13, and 14 that require that prior to commencement of construction, the City provide to the Executive Director a copy of any incidental take permit or other approval(s) issued by the U.S. Fish & Wildlife Service and the National Marine Fisheries Service, or evidence that no permit or permission is required. The City shall inform the Executive Director of any changes to the project required by the USFWS and NMFS and any such changes shall not be incorporated into the project until the applicants obtain a Commission amendment to the coastal development permit, unless the Executive Director determines that no amendment is legally required.

The project also requires a Section 1600 Streambed Alteration Agreement from the Department of Fish and Game. To ensure that the project incorporates any additional

terms and conditions imposed by the DFG permit, Special Condition No. 13 requires the City to submit a copy of the Section 1603 agreement obtained from the Department of Fish and Game prior to commencement of construction.

As conditioned, the project includes all feasible mitigation measures to minimize all significant adverse impacts consistent with Section 30233 of the Coastal Act.

### (3) Sensitive Plant Species

A rare plant assessment was prepared for the project entitled, "Rare Plant Assessment for the City of Eureka Mad River Pipeline Rehabilitation Project Humboldt County, California." According to the assessment, two sensitive plant species were identified as occurring within the project area, including Humboldt Bay owl's clover (*Castilleja ambigua* ssp. *humboldtensis*) and Lyngbye's sedge (*Carex lyngbyei*).

#### *Humboldt Bay owl's clover*

Humboldt Bay owl's-clover is associated with salt marsh habitats and is on the California Native Plant Society List 1B indicating plants that are rare, threatened, or endangered in California and elsewhere. Humboldt Bay owl's-clover is well established in remnant salt marshes along Eureka Slough and its tributaries, including Freshwater Slough, Fay Slough, and the three "number" sloughs draining the northern part of the Eureka terrace including portions of the project area. The botanical survey prepared for the project identified occurrences of Humboldt Bay owl's-clover in saltmarsh habitats outside the levees in both Freshwater Slough and Fay Slough.

As discussed above, the City proposes to implement a "trench-less" construction technique for placing the new pipeline under Fay Slough and Freshwater Slough (the locations at which Humboldt Bay owl's-clover occurs within the project alignment) that would avoid construction impacts to this species. The proposed trench-less construction method is an adequate and feasible mitigation measure to avoid impacts to Humboldt Bay owl's clover. The Commission attaches Special Condition No. 2 (K) to ensure that this measure is implemented as proposed.

#### *Lyngbye's sedge*

Lyngbye's sedge, has been documented in the Humboldt Bay – Eel River delta region only during recent years and is listed on the California Native Plant Society List 2 indicating plants that are rare, threatened, or endangered in California, but are more common elsewhere. Lyngbye's sedge is the dominant plant species in coastal salt marshes from southern Oregon to Alaska. This species is very tolerant of immersion in saltwater, and grows lower in the tidal column in sheltered locations than do other salt marsh species in the Humboldt Bay area. However, the botanical survey prepared for the project also documented Lyngbye's sedge as occurring abundantly in flowing creeks and

in other water features dominated by brackish salinities in the project area. According to the rare plant assessment prepared for the project, within Fay Slough, Freshwater Slough, and Washington Gulch, the sedge is the dominant species of the lower, intertidal zone, where it forms dense rhizomatous mats. It also occurs to a lesser extent in lower perennial wetland systems such as Rocky Gulch, Fickle Hill Creek, Old Washington Gulch channel, Little Jacoby Creek, and several remnant cutoff sloughs north of Jacoby Creek.

The City proposes various construction measures that would minimize potential impacts to this plant species, including separately stockpiling the top six inches (6") of excavated material within grazed seasonal wetlands which contains the root masses, rhizomes, seeds, and accumulated organic material of the vegetation that dominates these seasonal wetlands and restoring this topsoil material to the trench and reseeding the area. The recommendations set forth in the rare plant assessment suggests that City's proposal to separately stockpile the topsoil that contains the vegetative material and seed bank is considered adequate mitigation since the sedge is expected to resume its invasive role following project construction. As discussed in Finding section (C)(1) above, Special Condition No. 2 requires that these proposed construction measures be implemented consistent with the City's certified EIR.

The rare plant assessment prepared for the project also recommends that a five year monitoring program be implemented to ensure the successful reestablishment of Lyngbye's sedge following project construction. The City's biologist has provided information indicating that the 'sensitive' characterization of this species may be unwarranted because of its potential for invading and altering fresh and brackish marsh plant communities in the Humboldt Bay area. It is the biologist's opinion that Lyngbye's sedge is highly abundant in the Humboldt Bay region and has a clear potential to become a nuisance as demonstrated by its recent history of rapid increases in abundance in fresh and brackish wetlands near Humboldt Bay coupled with its capability for altering or occluding drainageways. It is for these reasons that the City does not consider this a sensitive species despite its status as a List 2 California Native Plant Society (CNPS) species and thus, does not consider monitoring of the reestablishment of this species to be necessary mitigation for the project. However, because of its status as a CNPS listed plant, the City evaluated impacts to the species in the EIR prepared for the project and the rare plant assessment incorporated in the City's EIR recommends a five year monitoring program. In the absence of additional information suggesting that the species is not 'sensitive' and should not be included on the CNPS list, the Commission finds that it must be treated as a sensitive species. Therefore, to ensure that the Lyngbye's sedge becomes reestablished following the project, the Commission attaches Special Condition No. 8 that requires the monitoring program set forth in the rare plant assessment prepared for the project be implemented. Success of the mitigation is defined as complete post-construction reestablishment of the sedge, measured by shoot density and total occupied area, to pre-construction levels. Shoot density data would be gathered prior to construction. If after three years, Lyngbye's sedge has not become reestablished

within the mitigation sites to the pre-construction condition, an additional two years of monitoring would be conducted. Remediation of the site would occur if the mitigation is not determined to be successful after a five-year monitoring period. Special Condition No.8 also requires that the Lyngbye's sedge monitoring plan include provision for submittal of annual monitoring reports to the Executive Director, and provisions for remediation if the success standard is not achieved after five years.

Therefore, the Commission finds that the project as conditioned, includes all feasible mitigation measures to minimize all significant adverse impacts to sensitive plant species consistent with Section 30233 of the Coastal Act.

#### **(4) Water Quality**

As discussed above, the proposed project involves construction in and adjacent to several watercourses along the pipeline alignment. Potential adverse impacts to the water quality of these water bodies could occur in the form of sediment disturbance and transport and from the discharge of groundwater and chlorinated pipeline flushing water.

As discussed above in section (C)(3) regarding sensitive fish species, the proposed project incorporates various construction measures to minimize the potential for sediment mobilization, which could result in significant adverse water quality impacts in the form of increased turbidity. The City proposes to install sediment curtains above and below crossing locations to localize any sediment disturbed by construction activities and all dewatering basins would be equipped with sediment traps or biofilters to localize temporary sediment storage outside of the aquatic environment. Furthermore, the proposed project involves the restoration of pre-project conditions by replanting areas disturbed by construction of the pipeline, which would stabilize any exposed soil and prevent sediment from becoming entrained in surface runoff. Furthermore, project construction is proposed to occur during the dry season to minimize the potential for sediment leaving the site as stormwater runoff.

Special Condition No. 2 requires that these proposed construction measures be implemented consistent with City's certified EIR. Special Condition No. 1 requires that all project construction occur during the non-rainy season between June 15 and October 15.

The proposed project requires a Notice of Intent (NOI) to comply with the National Pollutant Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction Activity (General Permit). This notice is required to be filed by the City with the State Water Resources Control Board prior to the start of construction. The procedure established by the NPDES General Permit requires that the responsible construction manager prepare a "Storm Water Pollution Prevention Plan" (SWPPP), which provides information about the project, the operator, and other regulatory information. The SWPPP must also identify specific management practices

that would be implemented to avoid discharging sediment and other non-point source pollutants from the construction site. The specific management practices are generally known as “Best Management Practices” or BMPs. The project owner and the construction operator are also required to monitor the planned activities, and the SWPPP must be modified if adequate NPS pollutant control is not maintained. The City submitted a Storm Water Pollution Prevention Plan as required by the Regional Water Quality Control Board (RWQCB) for any construction site that exceeds five acres in net area. The SWPPP includes general provisions for erosion and sediment control practices and detailed plans for proper installation of Best Management Practices including silt fences, hydroseeding, and sediment basins. To ensure that the Best Management Practices set forth in the SWPPP prepared for the project are implemented, the Commission attaches Special Condition No. 9 which requires all development to be performed consistent with the Storm Water Pollution Prevention Plan prepared for the project.

The project also involves flushing the pipeline with chlorinated water following construction to decontaminate it prior to placing it in service. Decontamination would occur at approximately twelve pipeline segments along the alignment and would result in the discharge of approximately three cubic feet of water per lineal foot of pipeline. According to City estimates, the longest anticipated segment to be flushed would be approximately 800,000 gallons of water. The pipeline would be flushed with super-chlorinated water and then injected with sodium dioxide, sodium bisulfite, activated carbon, or other chemicals to dechlorinate the water. Discharge from pipeline flushing would be directed into a temporary retention basin within the grazed seasonal wetlands which would be either a holding tank, or plastic lining contained by straw bales (not excavated ponds). A small amount of water would be released into the retention basin and tested to ensure that the dechlorination process was effective. The basins would be sized to hold the amount of water that would flow out during the time it would take for the pipe to be turned off if chlorine levels are determined to be too high for release. When the water is sufficiently dechlorinated it would be gradually released from the temporary holding basin into the grazed seasonal wetlands for infiltration.

Chlorine can be toxic to aquatic wildlife even in low concentrations. The City proposes to dechlorinate the water to a residual chlorine concentration of 0.5mg/L prior to releasing it into the grazed seasonal wetlands. Staff has consulted with the Regional Water Quality Control Board regarding appropriate limits for residual chlorine concentrations. The chief concern of the RWQCB is the direct discharge of chlorinated water into surface waters. As the City is not proposing to discharge flushing water directly into surface waters, but rather, to discharge the water onto grazed seasonal wetlands a minimum of 100 feet from any watercourse, the RWQCB has indicated that 0.5mg/L (which is the level of chlorine found in drinking water) is an acceptable level of residual chlorine. To ensure that the pipeline flushing water is not released into the seasonal wetland or surrounding surface waters at unacceptable chlorine concentrations that may be toxic to aquatic ecosystems, the Commission attaches Special Condition No.

10. Condition No. 10 requires that dechlorination should reduce total residual chlorine concentration to 0.5mg/L or less prior to discharging to seasonal grazed wetlands. The condition further requires that all retention basins be located at least 100 feet away from any surface waters, that no excavation for retention basins be allowed, that all flushing water discharge locations be located a minimum of 100 feet from any surface waters, and that all retention basins (i.e. plastic lining, straw bales, holding tanks) be removed entirely following pipeline flushing.

Section 30412 prevents the Commission from modifying, adopting conditions, or taking any action in conflict with any determination by the State Water Resources Control Board or any California Regional Water Quality Control Board in matters relating to water quality. Staff consulted with the Regional Water Quality Control Board (RWQCB) about permitting requirements and potential impacts resulting from the proposed project. The requirements of Special Condition Nos. 9 and 10 are consistent with the recommendations made to Commission staff by staff of the RWQCB during consultations on the project. The proposed project requires a Section 401 Water Quality Certification from the RWQCB. The RWQCB has not yet acted on this required approval at the time of the writing of this staff report, and therefore, conditions and/or BMPs required by the Commission to minimize adverse impacts to water quality from the proposed pipeline construction activities would not conflict with actions of the RWQCB pursuant to the requirements of Coastal Act Section 30412.

Therefore, as conditioned, the Commission finds that the biological productivity and quality of coastal waters will be maintained and the project, as conditioned, is consistent with Sections 30230 and 30231 of the Coastal Act.

**d. Maintenance and Enhancement of Marine Habitat Values**

The fourth general limitation set by Section 30233 and 30231 is that any proposed dredging or filling in coastal wetlands must maintain and enhance the biological productivity and functional capacity of the habitat, where feasible.

As discussed above in the section of this finding on least environmentally damaging feasible alternatives and mitigation, the conditions of the permit will ensure that the project will not have significant adverse impacts on the water quality of various watercourses within the project area and will ensure that the construction of the water pipeline will not adversely affect the biological productivity and functional capacity of the wetland environments through which the pipeline will be constructed. Therefore, the Commission finds that the project, as conditioned, will maintain the biological productivity and functional capacity of the habitat consistent with the requirements of Section 30233, 30230, and 30231 of the Coastal Act.

e. **Conclusion**

The Commission thus finds that the proposed dredging and filling is an allowable use under Section 30233(a) of the Coastal Act, that there is no feasible less environmentally damaging alternative, that feasible mitigation is required to minimize all significant adverse impacts associated with the dredging and filling of coastal wetlands, and that wetland habitat values will be maintained or enhanced. Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Sections 30233, 30230 and 30231 of the Coastal Act.

3. **Potential Growth Inducing Impacts**

Coastal Act Section 30250(a) states in applicable part:

*New residential, commercial, or industrial development, except as otherwise provided in this division, shall be located within, contiguous with, or in close proximity to, existing developed areas able to accommodate it or, where such areas are not able to accommodate it, in other areas with adequate public services and where it will not have significant adverse effects, either individually or cumulatively, on coastal resources. In addition, land divisions, other than leases for agricultural uses, outside existing developed areas shall be permitted only where 50 percent of the usable parcels in the area have been developed and the created parcels would be no smaller than the average size of surrounding parcels.*

Coastal Act Section 30254 states as follows:

*New or expanded public works facilities shall be designed and limited to accommodate needs generated by development or uses permitted consistent with the provisions of this division; provided, however, that it is the intent of the Legislature that State Highway Route 1 in rural areas of the coastal zone remain a scenic two-lane road. Special districts shall not be formed or expanded except where assessment for, and provision of, the service would not induce new development inconsistent with this division. Where existing or planned public works facilities can accommodate only a limited amount of permitted new development, services to coastal dependent land use, essential public services and basic industries vital to the economic health of the region, state, or nation, public recreation, commercial recreation, and visitor-serving land uses shall not be precluded by other development.*

Section 30250 of the Coastal Act encourages new development to occur where public services are available. Section 30254 of the Act provides that new public works facilities be designed and limited to accommodate needs generated by development consistent with the Act. Special districts are not to be formed except where the proposed service wouldn't induce new development inconsistent with the Act.



The installation of the proposed new water pipeline parallel to the existing water pipeline would increase the City's ability to reliably deliver water to its existing service area while the existing pipeline undergoes rehabilitation over the course of approximately ten years. The parallel pipeline between Arcata and Eureka would work with the existing pipeline to allow the City to bypass sections of the existing line when needed to undergo repairs and prevent interruptions to City water service from leaks and breaks in the existing pipeline.

Existing City policy prohibits the extension of water services beyond City limits and prohibits extension of urban services beyond the urban limit line as designated in the City's LCP. According to the EIR prepared for the project the City indicates that,

*"The City's anticipated adherence to the prohibition on allowing new connections to the water distribution system outside of the adopted service boundary, in combination with the location of the new and/or rehabilitated pipeline in essentially the same location as the existing pipeline are anticipated to be no more likely than the presence of the existing pipeline to elicit proposals to tie new development into the line. The City's existing pipeline has a conveyance capacity great enough to meet projected water needs within the service area for the foreseeable future, so the new line cannot be seen as removing an impediment to development; the new line will simply assure that the existing service is not interrupted under emergency conditions."*

When repairs to the existing line are completed in the future, the capacity of the pipeline in the areas where the approved new segment of pipeline is added would effectively double. However, the project as proposed would not extend new water service to any area, nor would it remove any impediment to growth that may exist now. As the EIR notes, the existing pipeline has a conveyance capacity great enough to meet projected water needs within the service area for the foreseeable future. Therefore, the capacity of this segment of pipeline to deliver water does not serve as an impediment to growth even now. In addition, the City is not increasing the amount of water it purchases from the supplier, the Humboldt Bay Water District, and is not increasing the capacity of other segments of its water delivery system, which would be essential for delivering more water to new areas. Furthermore, as the new pipeline would be located alongside the existing pipeline rather than routed through a new area, the pipeline will be no more feasible for developers seeking new water line connections to hook up to than the existing pipeline. Moreover, the project would not result in the formation of a new special district.

Therefore, the Commission finds that the proposed project is consistent with Coastal Act Sections 30250 and 30254 because the water line is designed and limited to only accommodate needs generated by development permitted consistent with the Act and would not increase the amount of water used, result in an expansion of the City's service area, or the formation of a new special district.

#### 4. Geologic Hazards

The Coastal Act contains policies to assure that new development minimizes risks to life and property from geologic hazard and assure stability and structural integrity. 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 land forms along bluffs and cliffs.*

The existing pipeline has exceeded its structural design life and is susceptible to failure from seismic activity. The City proposes to construct approximately 25,900 feet of a new 24-inch pipeline parallel to the existing pipeline through the diked former tidelands between Arcata and Eureka as the first phase of the overall pipeline rehabilitation project.

According to the EIR prepared for the project, the proposed pipeline alignment crosses an approximately 3,000-foot-wide zone of offsets for the Fickle Hill Fault, within which the geological assessment predicted potential offsets up to 12 inches in a likely seismic event. Additionally, approximately 1,000 to 1,500 feet of pipeline route immediately south of Samoa Boulevard was identified as having a potential for future failures related to liquefaction because of the fine-grained (sandy) sediments present in the diked former tidelands. The new pipeline would be constructed of high-density polyethylene (HDPE), a material that was selected in part because of these potential geologic hazards, as it is resistant to stretching, compression, and shearing forces associated with ground movement. The pipeline would be heat-welded into one continuous pipeline during the construction process to create a thick-walled, flexible pipeline that is much more reliable and resistant to damage from seismically related events or internal pressure fluctuations than the existing pipeline.

Several geotechnical reports were prepared for the project and provided recommendations for fault avoidance, soil stability, grading, and other concerns with respect to proposed trench excavation and pipeline construction. For example, the geologists' recommendations incorporate limitations for trench excavations such as: (1) no traffic, construction equipment, stockpiles or building supplies shall be allowed within a distance equal to half the depth of the trench or five feet, whichever is greater; (2) trenches shall not remain open longer than is required to install the pipeline; and (3) the trench shall be observed periodically by a geotechnical engineer or other qualified

professional who shall provide additional recommendations regarding trench and pipeline stability if needed.

The City proposes to construct the project consistent with the recommendations set forth by the geotechnical reports prepared for the project. To ensure that the new development would minimize risks to life and property from geologic hazard and assure stability and structural integrity as required by Section 30253 of the Coastal Act, the Commission attaches Special Condition No. 11 requiring that the City construct the pipeline in accordance with all of the recommendations of the engineering-geologic reports.

Therefore, as conditioned, the Commission finds that the project as conditioned is consistent with Section 30253 of the Coastal Act.

#### **5. Agricultural Resources**

The Coastal Act sets forth policies that relate to the protection of agricultural land and limit the conversion of agricultural lands to non-agricultural uses. Sections 30241 and 30242 address methods to be undertaken to maintain the maximum amount of prime agricultural land in production and to minimize conflicts between agricultural and urban land uses.

The proposed project involves the installation of a water pipeline parallel and adjacent to an existing pipeline through grazed seasonal wetlands between Arcata and Eureka. The majority of the land along and surrounding the pipeline alignment is used for cattle grazing. Construction of the pipeline would result in temporary disruption to agricultural activities within the 60-foot-wide construction corridor and construction staging areas. However, as the pipeline would be installed underground, it would not result in a conversion of agricultural lands to non-agricultural uses. The only above-ground structures to be installed are nine, six-foot-diameter by three-foot-high concrete vaults at various locations along the pipeline route. The total of 252 square feet of area displaced by all nine vaults does not constitute a conversion of agricultural land. The pipeline is proposed to be completed over the course of one construction season (June 15-November 1) and as discussed above, the proposed project involves restoration of the construction corridor to pre-project conditions. The required restoration involves reseeding the disturbed area with a mix of grass seeds composed of the same grass species that dominate the perennial grasslands in the area at the present time. Therefore, once restored, the project site will provide the same amount of forage and grazing capacity as the site currently provides.

Therefore, the Commission finds that the proposed project does not constitute a conversion of agricultural lands and is consistent with Sections 30241 and 30242 of the Coastal Act.

## 6. Archaeological and Cultural Resources

Coastal Act Section 30244 provides protection of archaeological and paleontological resources and requires reasonable mitigation where development would adversely impact such resources.

The diked former tidelands and surrounding areas are located within the ethnographic territory of the Wiyot Indians. Wiyot settlements existed along Humboldt Bay and along the banks of many of the streams and sloughs in this area.

A cultural resources study of the project area was prepared by a professional archaeologist. According to the report, the purpose of the investigation was to (1) identify all archaeological resources or sites of ethnic significance, (2) perform preliminary evaluations of site significance, (3) consider the potential adverse effects to cultural resources resulting from project implementation, (4) advance recommendations aimed at reduction or elimination of adverse impacts to significant cultural resources as needed. The methods employed by the investigation included (1) an examination of the archaeological site records, maps and project files of the Northwest Regional Information System, and (2) an archaeological field reconnaissance of the project area, and (3) consultation with a Wiyot tribal representative.

The cultural resources study prepared for the project identified one potential sensitive cultural resource site within the Commission's jurisdiction near the Indianola area. The report recommends that a cultural resources monitor be on site during project construction near this culturally sensitive area. Consistent with this recommendation, the City proposes to have a Wiyot tribal representative on site during project construction near these areas of potential cultural resources. The report also recommends that because of the possibility that buried cultural resources could be uncovered during construction activities not identified as being a cultural resources site, all ground-disturbing work shall be temporarily halted should archaeological materials be encountered during construction. Work near the archaeological finds will not be resumed until a qualified archeologist has evaluated the materials and offered recommendations for further action.

To ensure protection of any cultural resources that may be discovered at the site during construction of the proposed project, and to implement the recommendation of the archaeologist, the Commission attaches Special Condition No. 12 that requires the applicant to comply with all recommendations and mitigation measures contained in the report titled, "*A Cultural Resources Investigation of the Mad River Water Pipeline Reconstruction, Humboldt County, California,*" prepared for the project by Roscoe & Associates Consulting Archaeologists dated September 2001. The condition further requires that if an area of cultural deposits is discovered during the course of the project, all construction must cease and a qualified cultural resource specialist must analyze the significance of the find. To recommence construction following discovery of cultural deposits the applicant is required to submit a supplementary archaeological plan for the

review and approval of the Executive Director to determine whether the changes are de minimis in nature and scope, or whether an amendment to this permit is required.

Therefore, the Commission finds that the proposed project, as conditioned, is consistent with Section Coastal Act Section 30244, as the development will not adversely impact archaeological resources.

## **7. 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.

Furthermore, Section 30240(b) of the Coastal Act states that development in areas adjacent to parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those recreation areas.

The project site is located within agricultural lands between Highway 101 and Old Arcata Road and much of the pipeline alignment is visible from these public roads. The site is located in an area characterized by agricultural land use, open space, and rural residential development. The proposed pipeline would be located underground and no new permanent structures are proposed along the alignment with the exception of nine six-foot-diameter by three-foot-high concrete vaults. The vaults would be minor in scale and bulk, would rise no higher than three feet above the surrounding lands, and would not result in a significant adverse impact to visual resources. Although there may be temporary visual impacts associated with the project from the use of heavy equipment at the site and from soil and vegetation disturbance during the construction season (June 15-November 1), the project itself would not result in a permanent change to the site that would significantly adversely impact coastal views to or from Humboldt Bay.

Furthermore, the proposed project involves the restoration of the construction area to pre-project conditions following construction.

Therefore, the Commission finds that the proposed development is consistent with Section 30251 of the Coastal Act as the development would not block views to and along the coast, would not involve any permanent alteration of land forms, and the proposed pipeline would not result in any change to the visual character of the Humboldt Bay area.

## **8. Public Access**

Section 30210 of the Coastal Act requires that maximum public access shall be provided consistent with public safety needs and the need to protect natural resource areas from overuse. 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. Section 30214 of the Coastal Act provides that the public access policies of the Coastal Act shall be implemented in a manner that takes into account the capacity of the site and the fragility of natural resources in the area. In applying Sections 30210, 30211, 30212, and 30214 of the Coastal Act, 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 public access.

Although the project is located between the first public road and several tidal sloughs, inlets of the sea, it would not adversely affect public access. The project site is within a rural, agricultural area used primarily for cattle grazing. There are no trails or other public roads that provide shoreline access within the vicinity of the project that would be affected by the project. Furthermore, the proposed project would 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 significant adverse effect on public access, and that the project as proposed without new public access is consistent with the requirements of Coastal Act Sections 30210, 30211, 30212, and 30214.

**9. State Lands Commission**

The project site consists of former tidelands that may be subject to the public trust, but is within the boundaries of a legislative grant of tidelands to the Humboldt Bay Harbor District. The Humboldt Bay Harbor District has indicated that they do not need to issue any permit for the proposed project.

**10. Other Agency Approvals**

The project requires review and approval by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. As part of the Army Corps permit process, the ACOE is required to undergo formal Endangered Species Act Section 7 consultation with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS). Additionally, the project requires a Section 1600 Streambed Alteration Agreement from the Department of Fish and Game (DFG). To ensure that the project ultimately approved by the Corps, the

USFWS, the NMFS, and the DFG is the same as the project authorized herein, the Commission attaches Special Condition Nos. 13, 14, 15, and 16 which require the City to submit to the Executive Director evidence of these agencies' approval of the project prior to the commencement of construction. The conditions require that any project changes resulting from these other agency approvals not be incorporated into the project until the applicant obtains any necessary amendments to this coastal development permit.

**11. California Environmental Quality Act**

Section 13096 of the Commission's administrative regulations requires Commission approval of a coastal development permit application to be supported by findings showing that the application, as modified by any conditions of approval, is consistent with any applicable requirement 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 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. As discussed above, the proposed project has been conditioned to be found consistent with the policies of the Coastal Act. These 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. Mitigation measures that will minimize or avoid all significant adverse environmental impact have been required. 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 would 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.

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**EXHIBITS:**

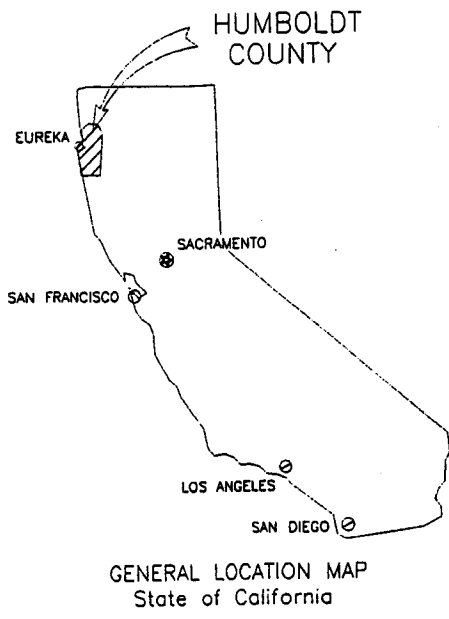
1. Regional Location Map
2. Proposed Pipeline Alignment
3. Watercourse Crossing Locations
4. Pipeline Trench Construction (Typical)
5. Water Crossing Construction Methods (Typical)
6. Water Crossing Detail (Typical)
7. Flowing Stream Crossing Plans
8. Jack and Bore Slough Crossing Plans
9. Wetland Mitigation Site Plan
10. Proposed Access Locations



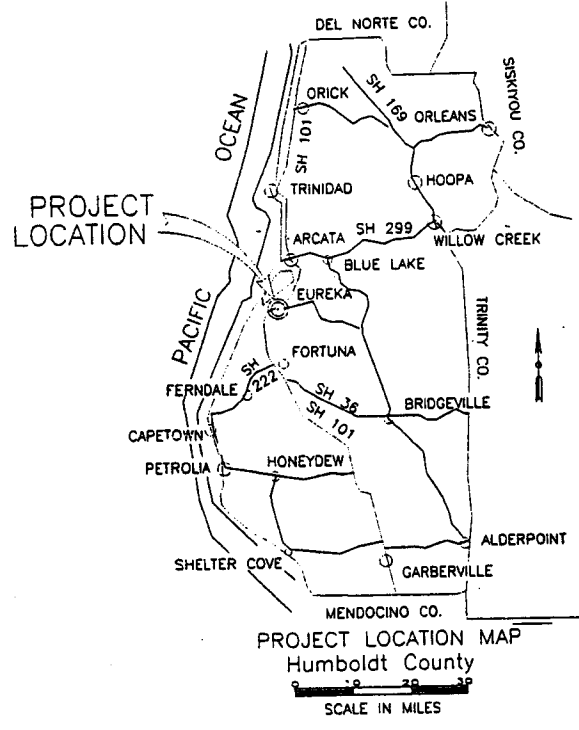
**ATTACHMENT A**

**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.



GENERAL LOCATION MAP  
State of California



PROJECT LOCATION MAP  
Humboldt County  
SCALE IN MILES

Project Location

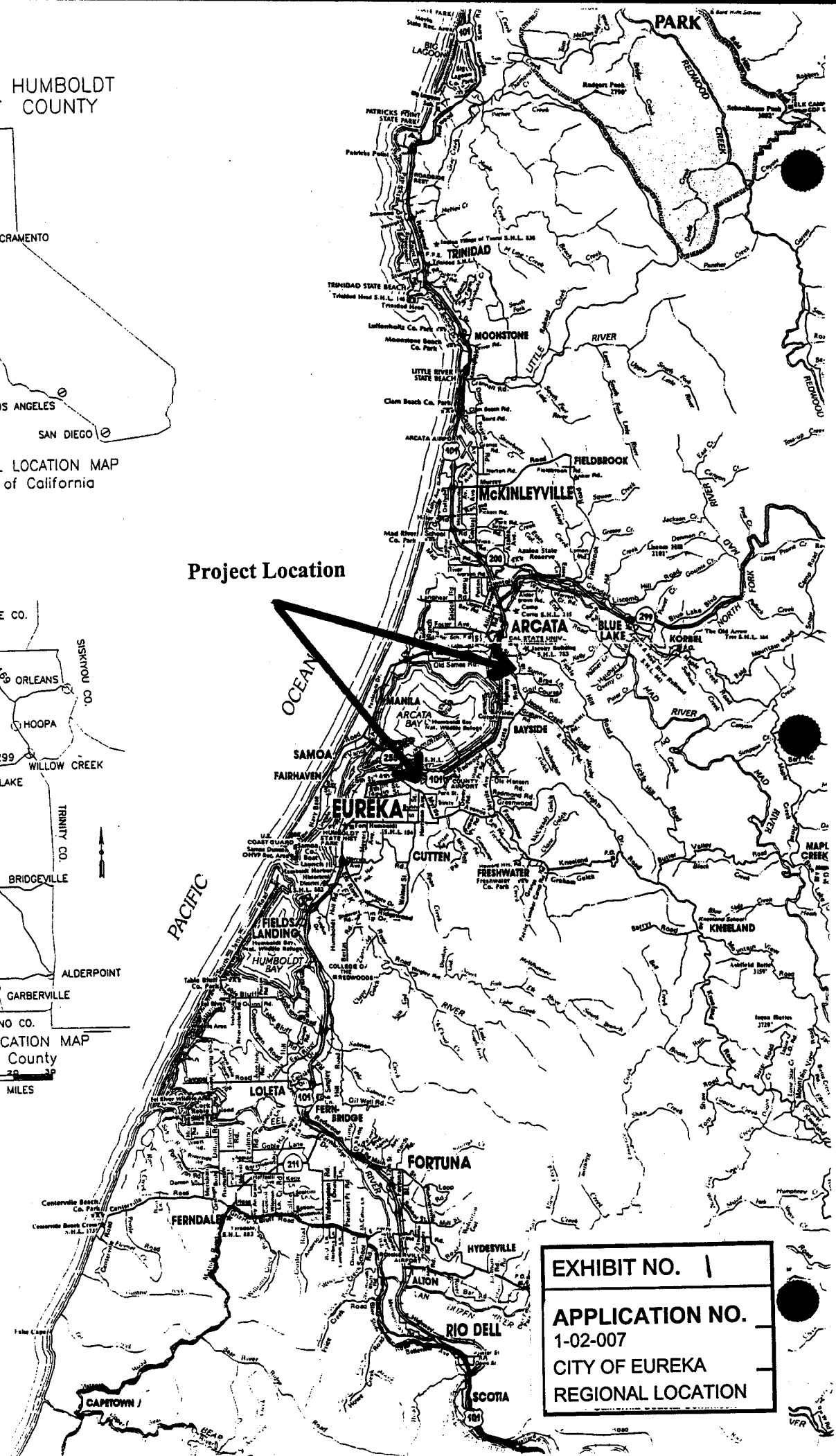


EXHIBIT NO.
APPLICATION NO.
1-02-007
CITY OF EUREKA
REGIONAL LOCATION

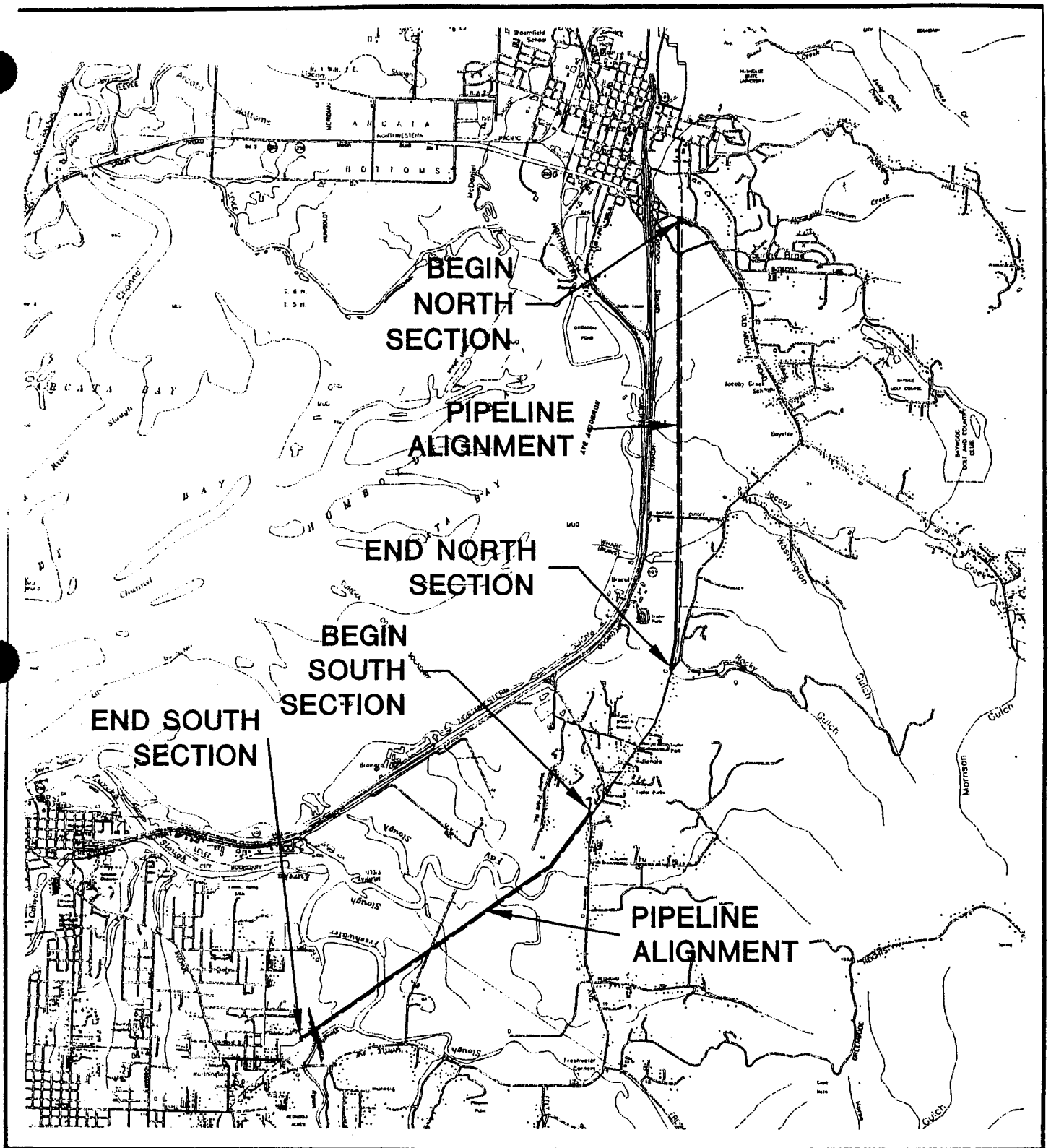
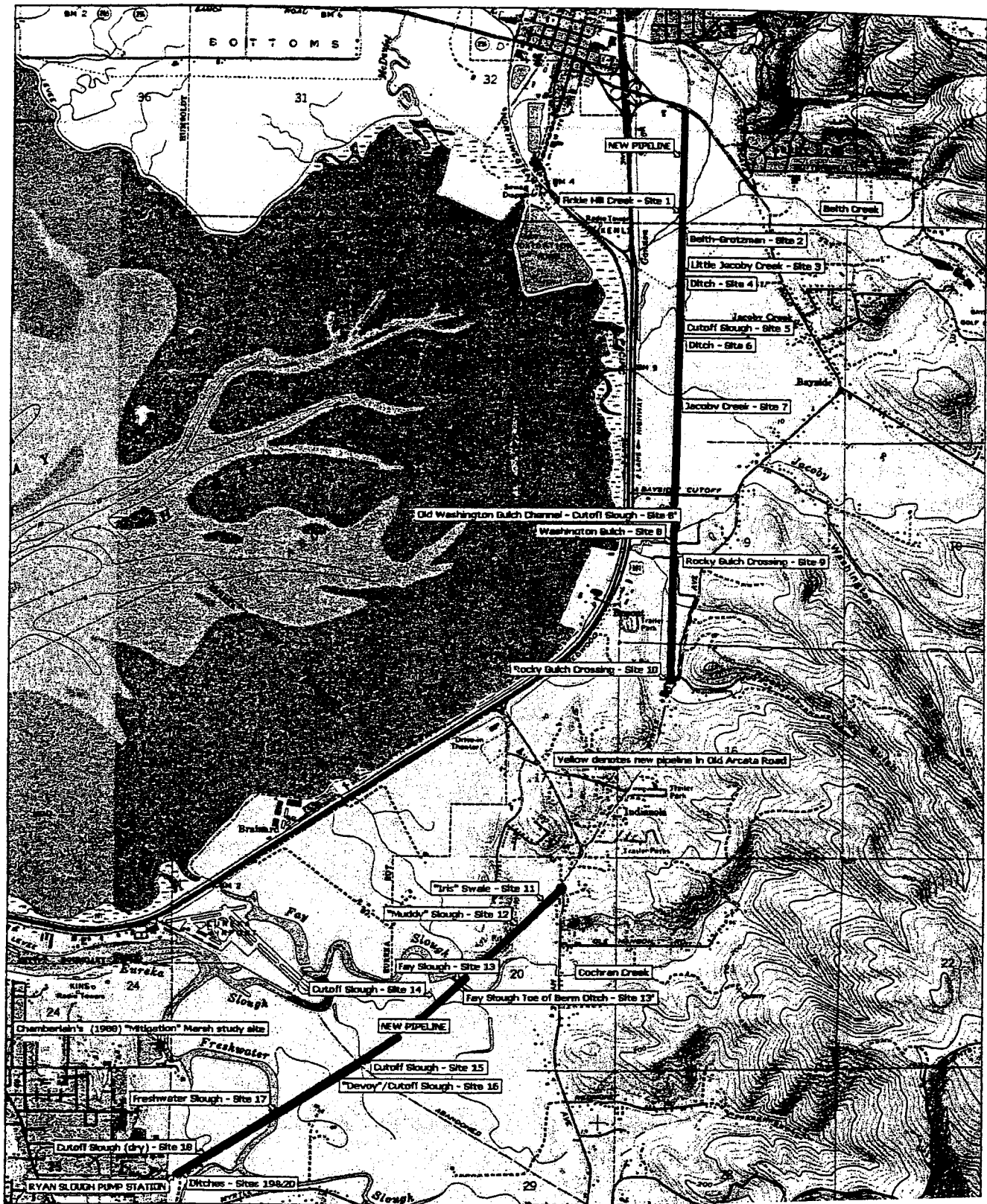


EXHIBIT NO. 2  
APPLICATION NO.  
1-02-007  
CITY OF EUREKA  
PROPOSED PIPELINE  
ALIGNMENT

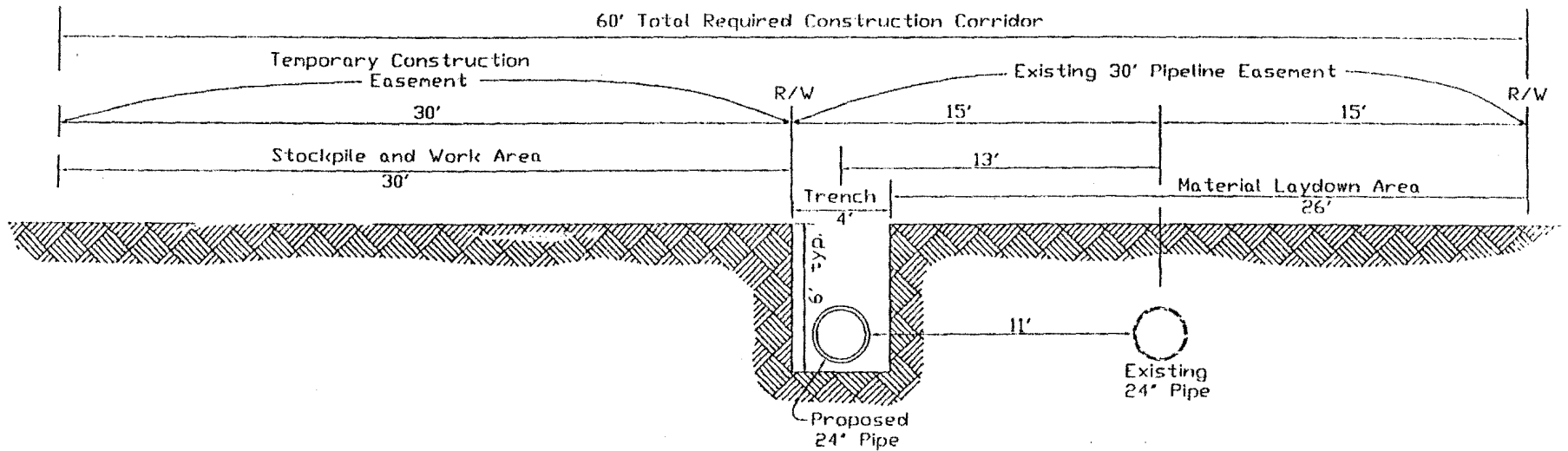


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160x

0 100 METERS 30 100 METERS

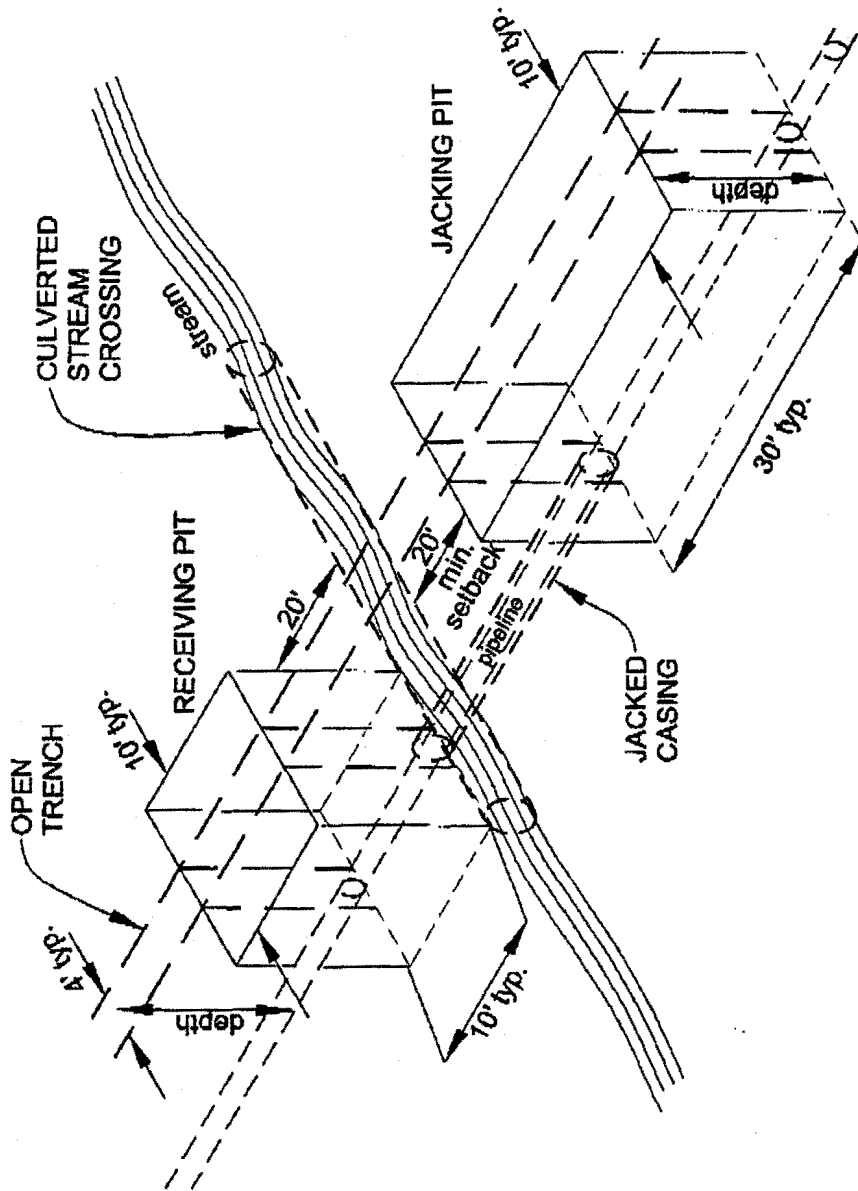
Printed from TOPOI ©2000 Wildflower Productions (www.topoi.com)

EXHIBIT NO. 3  
 APPLICATION NO.  
 1-02-007  
 CITY OF EUREKA  
 WATER CROSSING  
 LOCATIONS



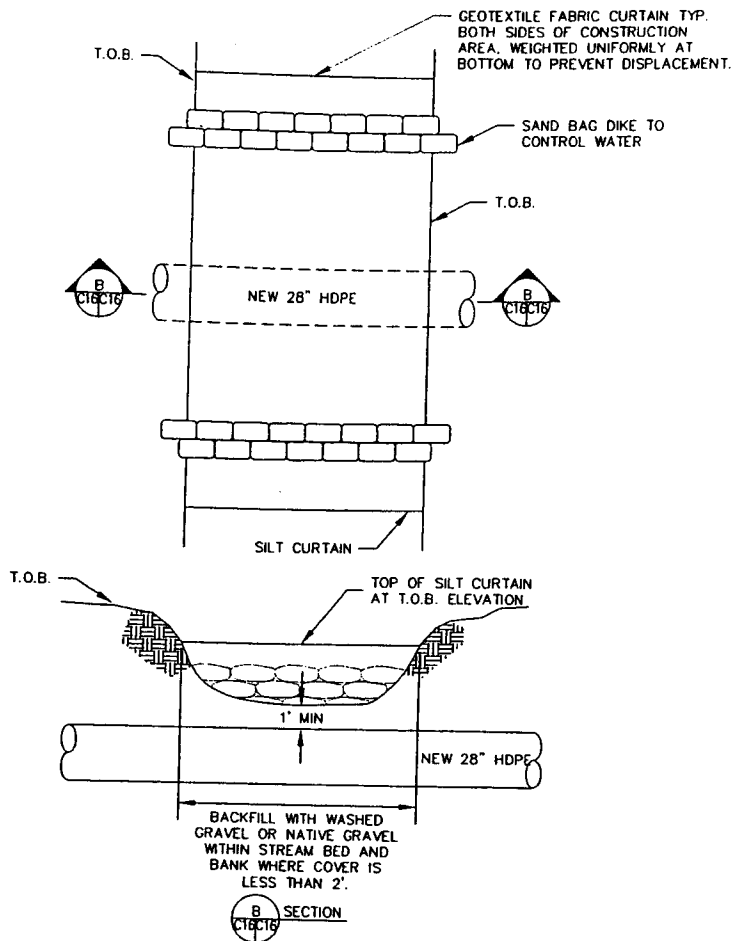
Typical Pipeline Construction  
Section through Diked Former Tidelands

EXHIBIT NO. 4
APPLICATION NO. 1-02-007
CITY OF EUREKA PIPELINE TRENCH DETAIL (typical)

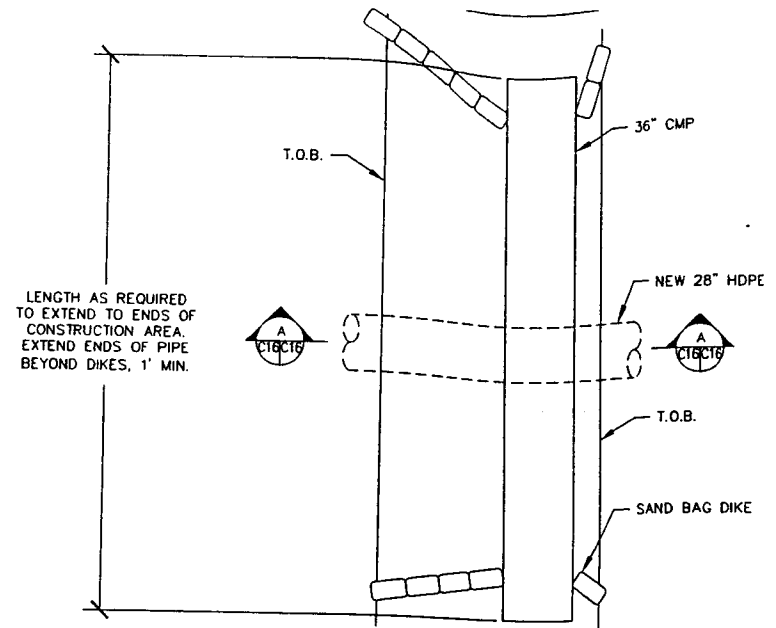


**STREAM CROSSINGS  
JACK & BORE vs. TRENCHING**

EXHIBIT NO.	5
APPLICATION NO.	1-02-007
WATER CROSSING CONSTRUCTION METHODS (typical)	

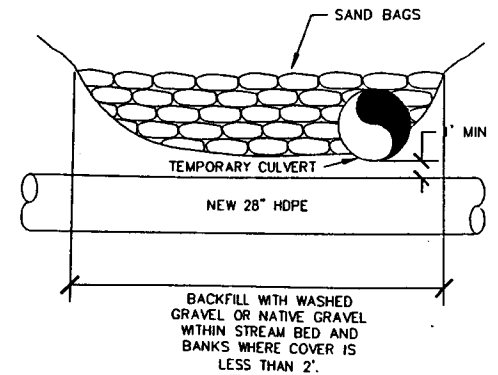


1 TYPICAL CUTOFF SLOUGH OR NON-FLOWING STREAM CROSSING  
 C5 C8 C9 C10 C11 C12 C19 NTS



NOTES:

1. AT JACOBY CREEK THE CULVERT IS TO BE PLACED OUTSIDE THE FLOWING STREAM UNDER THE DIRECTION OF A FISHERIES BIOLOGIST RETAINED BY THE OWNER. AT THE OTHER CROSSINGS THE CULVERT MAY BE PLACED DIRECTLY IN THE STREAM.
2. SAND BAGS ARE TO BE FILLED WITH WASHED SAND AND TO BE PLACED WITH CARE TO MINIMIZE SEDIMENTATION.
3. THE STREAM BED AND BANKS SHALL BE RESTORED TO THEIR ORIGINAL CONDITIONS PRIOR TO REMOVAL OF THE CULVERT.

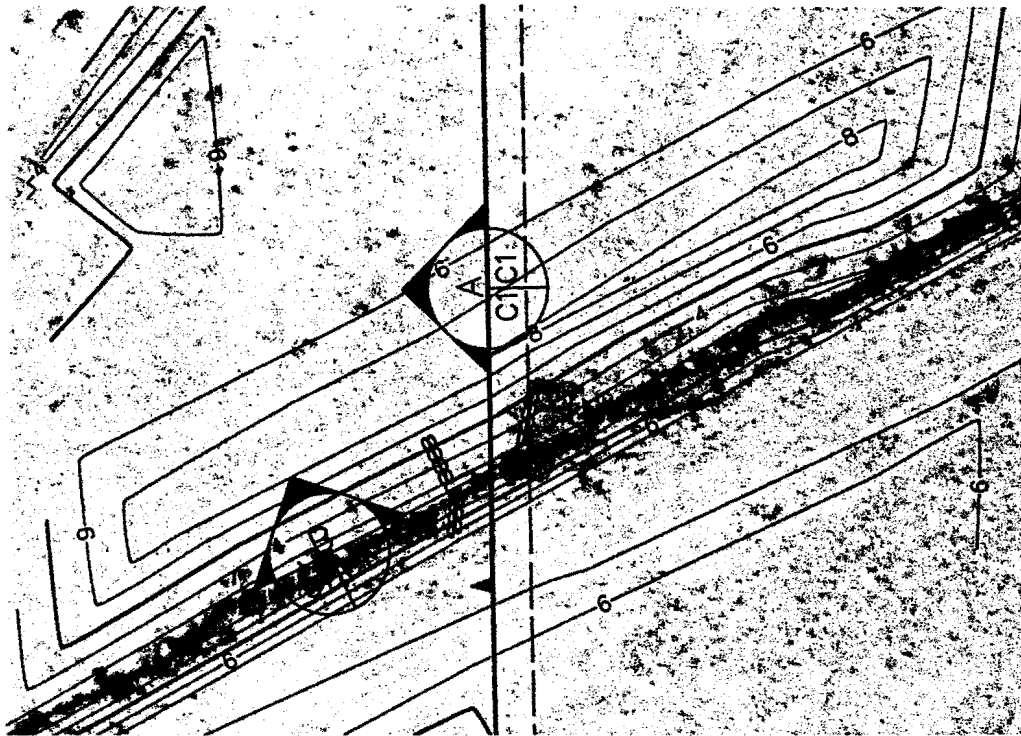


2 FLOWING OR TIDAL STREAM CROSSING  
 C2 C4 C6 C7 C16 NTS

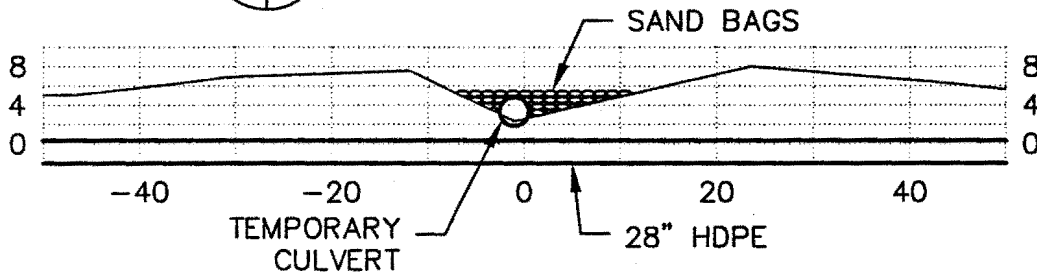
EXHIBIT NO. 6

APPLICATION NO. 1-02-007

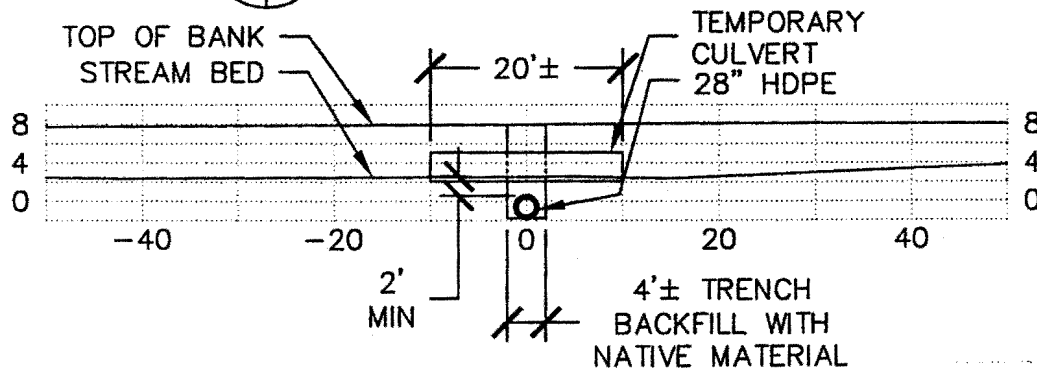
WATER CROSSINGS DETAIL (typical)



1 GROTZMAN/BEITH CREEK CROSSING  
C1 | C1 1" = 40'



A GROTZMAN/BEITH CREEK SECTION  
C1 | C1 1" = 20'



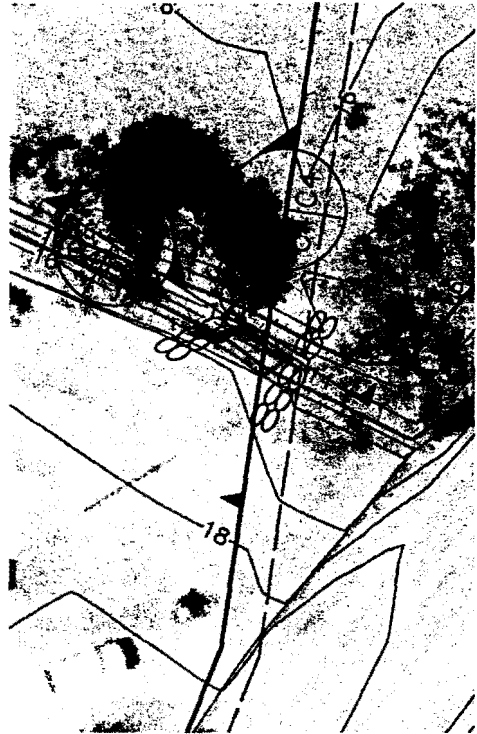
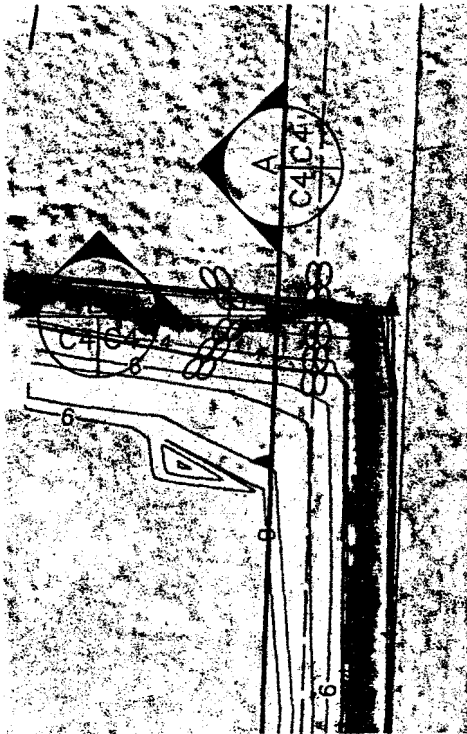
B GROTZMAN/BEITH CREEK SECTION  
C1 | C1 1" = 20'

NOTE:  
28" HDPE HAS 24" INSIDE DIAMETER

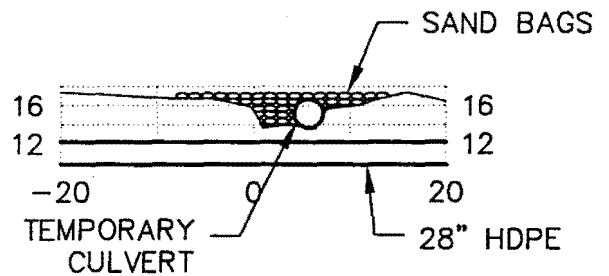
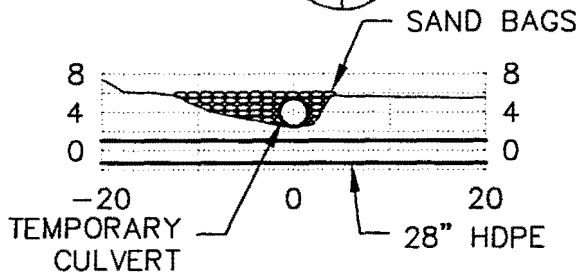
FIGURE 3  
GROTZMAN/BET  
OSCAR LARSON

EXHIBIT NO. 7  
APPLICATION NO.  
1-02-007  
FLOWING STREAM  
CROSSING PLANS  
(1 of 3)

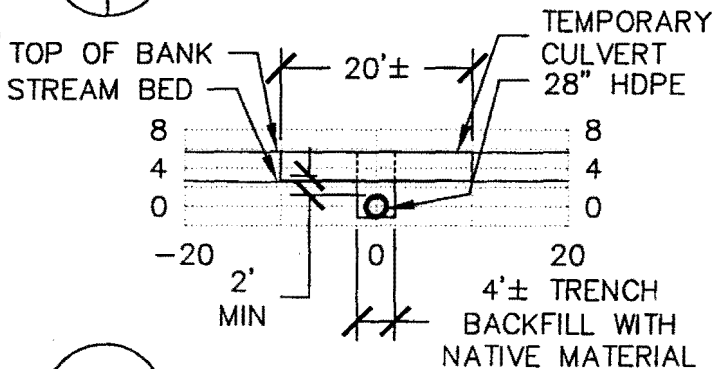




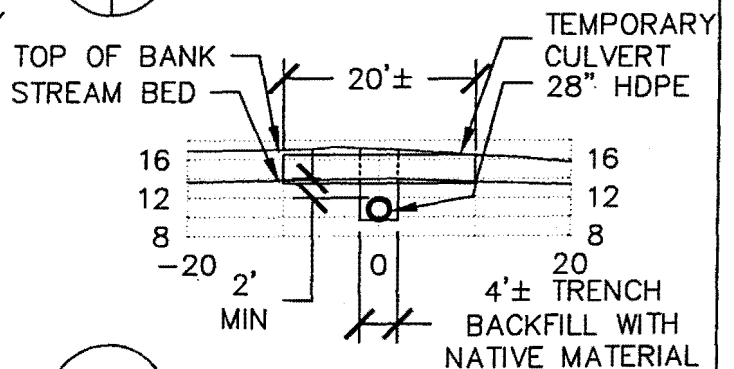
1 ROCKY GULCH CREEK CROSSINGS  
C4|C4 1"=40'



A ROCKY GULCH CREEK SECTION  
C4|C4 1"=20'



C ROCKY GULCH CREEK SECTION  
C4|C4 1"=20'

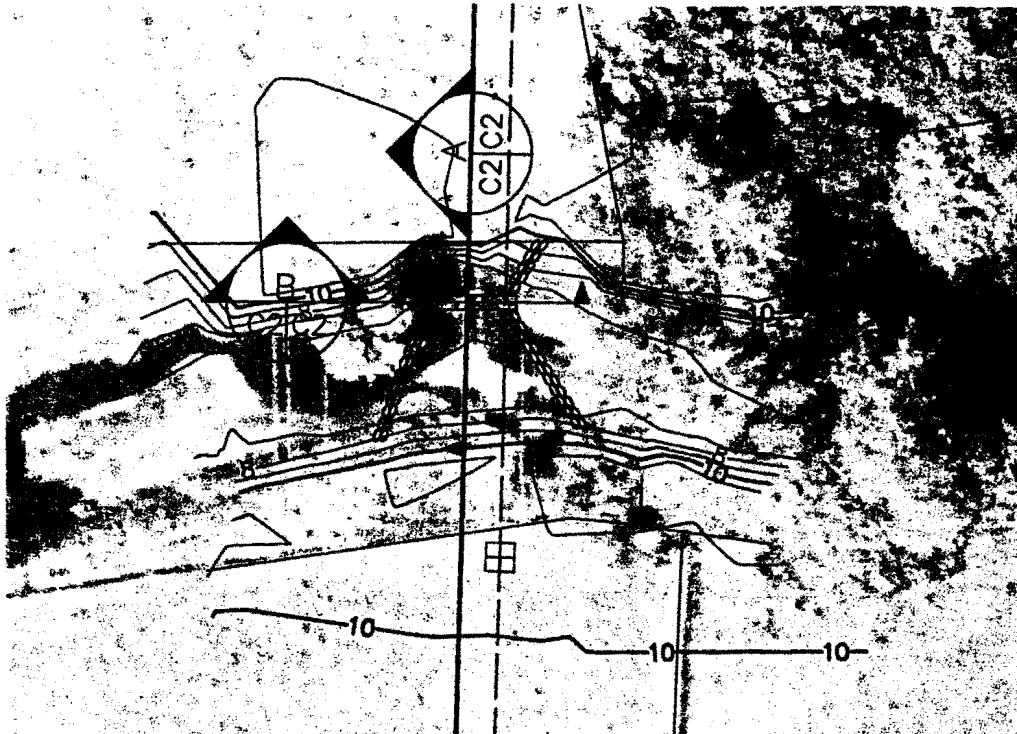


B ROCKY GULCH CREEK SECTION  
C4|C4 1"=20'

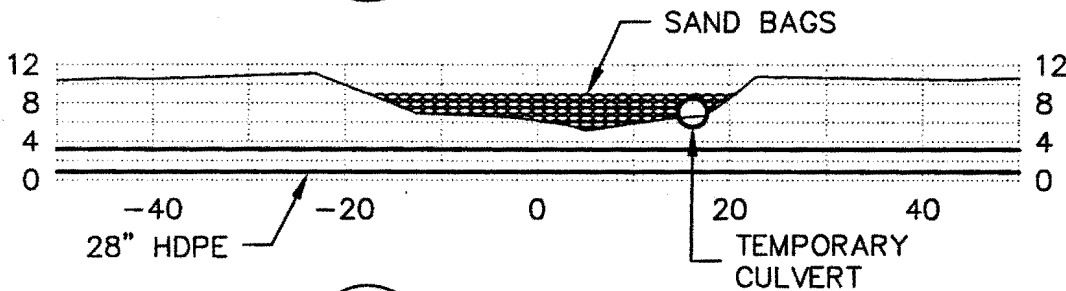
D ROCKY GULCH CREEK SECTION  
C4|C4 1"=20'

NOTE:  
28" HDPE HAS 24" INSIDE DIAMETER

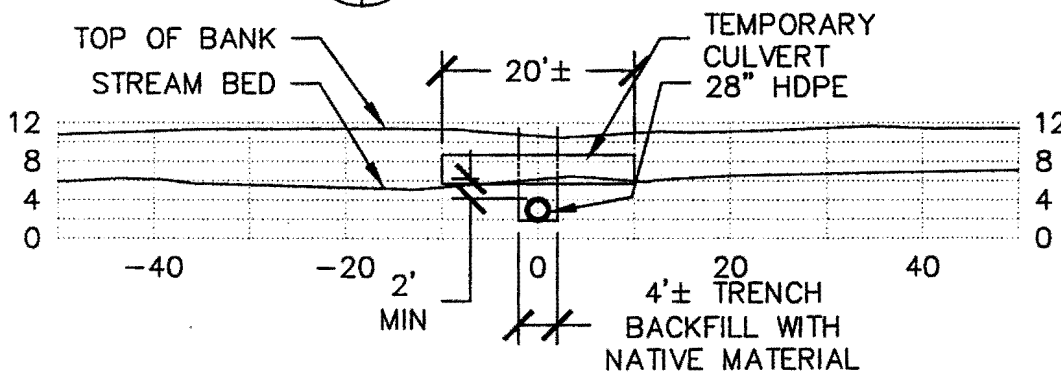
FIGURE 4  
ROCKY GULCH CREEK  
OSCAR LARSON & ASSOCIATES



1 JACOBY CREEK CROSSING  
C2|C2 1"=40'



A JACOBY CREEK SECTION  
C2|C2 1"=20'

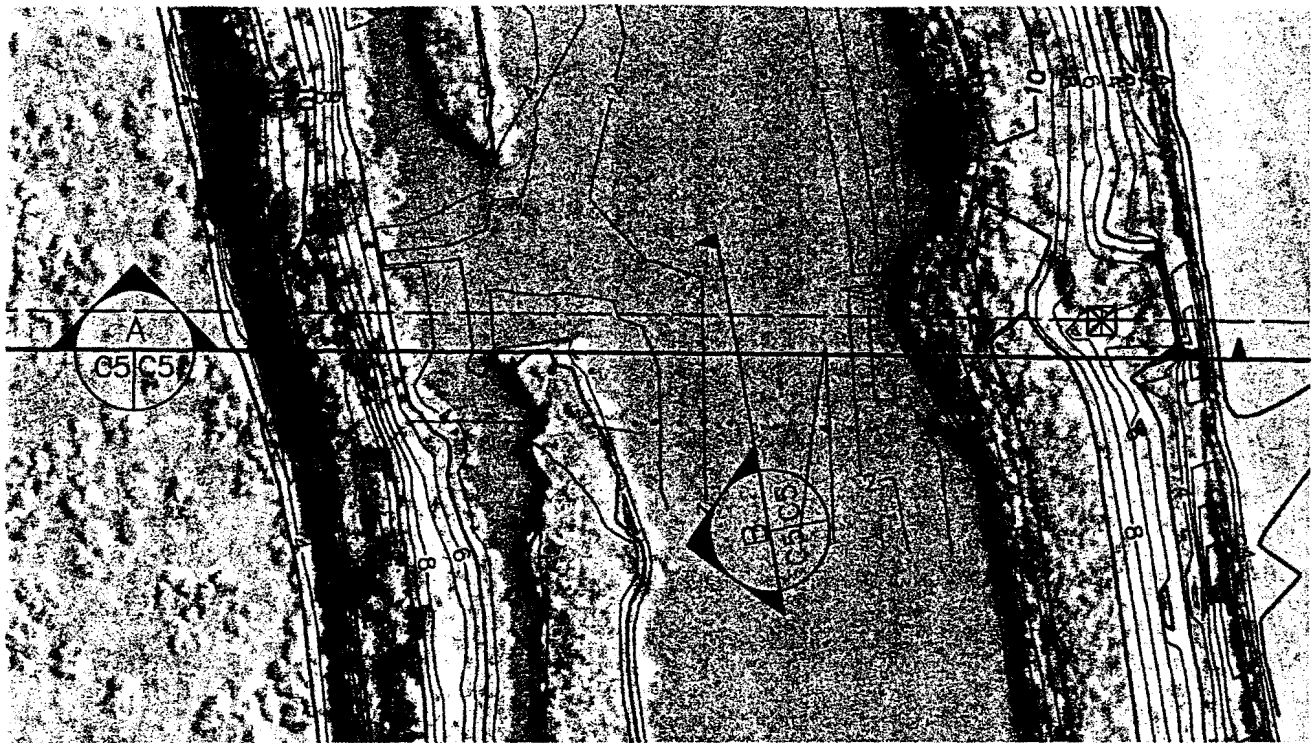


B JACOBY CREEK SECTION  
C2|C2 1"=20'

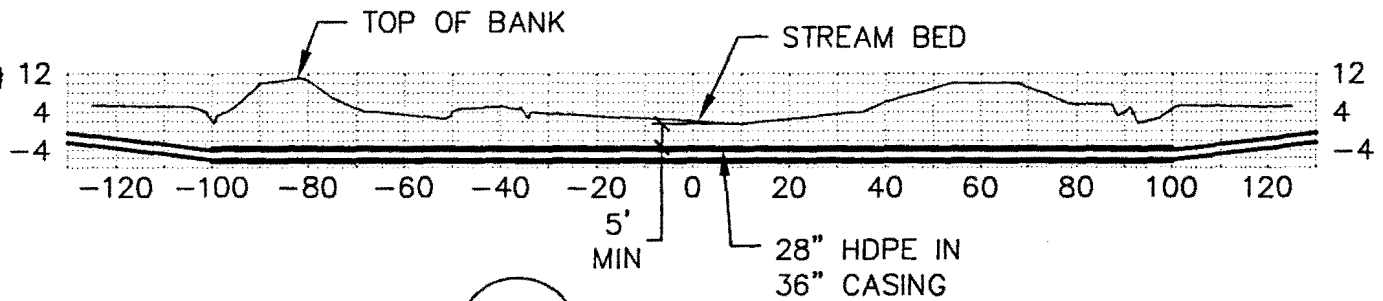
NOTE:  
28" HDPE HAS 24" INSIDE DIAMETER

FIGURE 5  
JACOBY CREEK  
OSCAR LARSON & ASSOCIATES

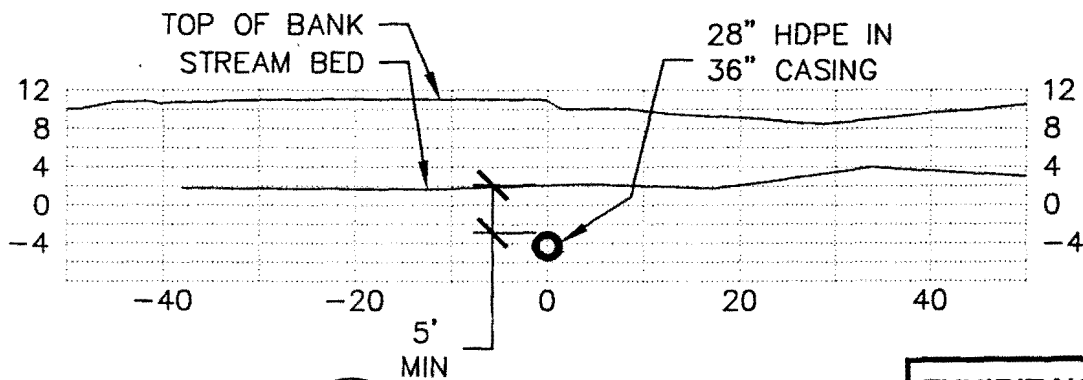
393



1 FAY SLOUGH CROSSING  
C5|C5 1"=40'



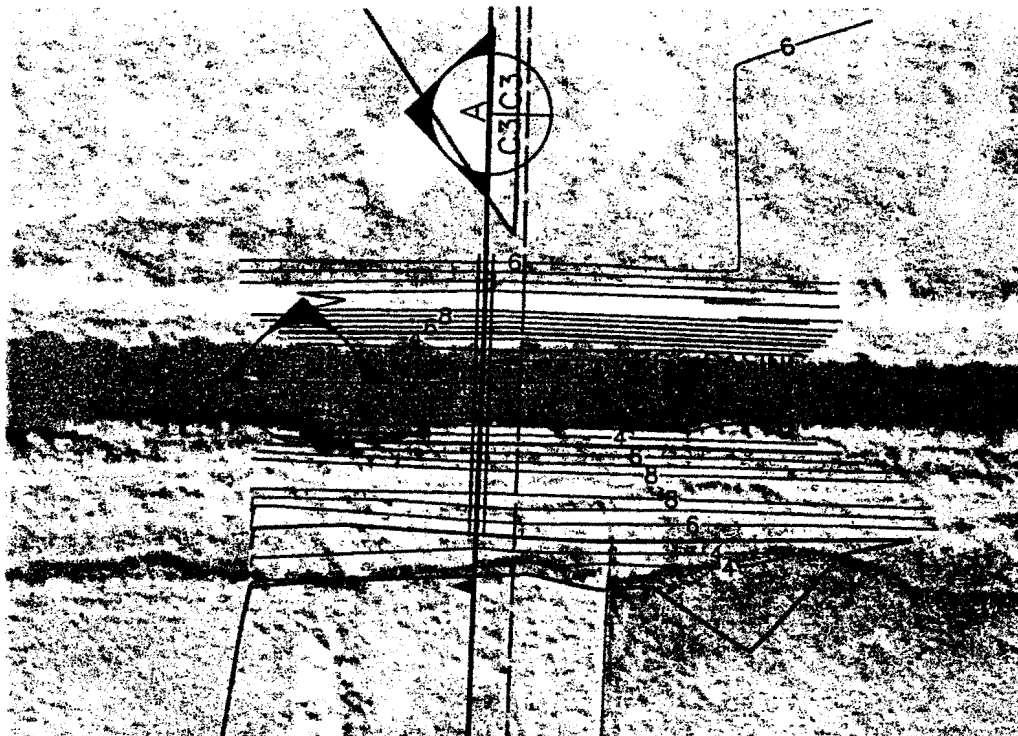
A FAY SLOUGH SECTION  
C5|C5 1"=40'



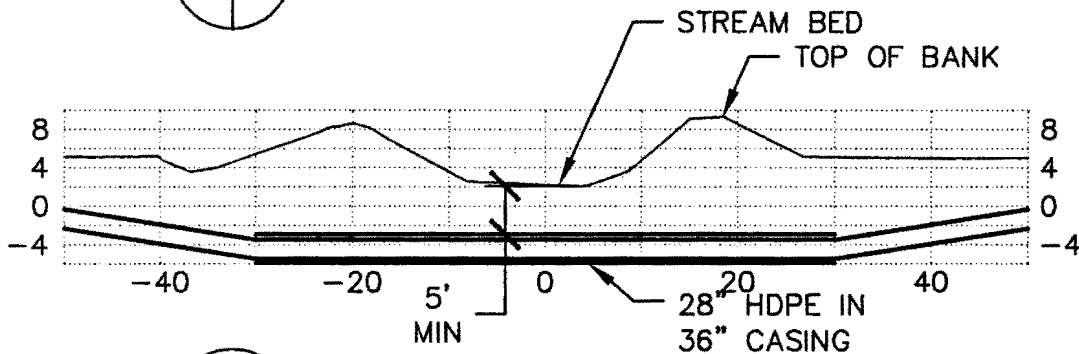
B FAY SLOUGH SECTION  
C5|C5 1"=20'

NOTE:  
28" HDPE HAS 24" INSIDE DIAMETER

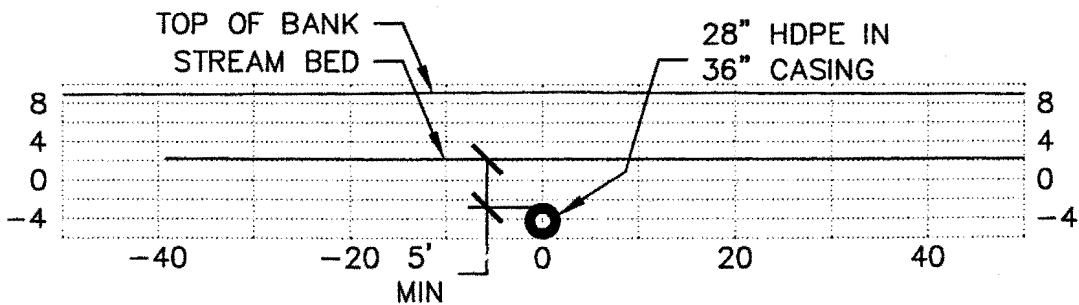
EXHIBIT NO.	6
APPLICATION NO.	1-02-007
JACK AND BORE SLOUGH CROSSINGS (1 of 3)	



1 WASHINGTON GULCH SLOUGH CROSSING  
 C3/C3 1"=40'



A WASHINGTON GULCH SLOUGH SECTION  
 C3/C3 1"=20'

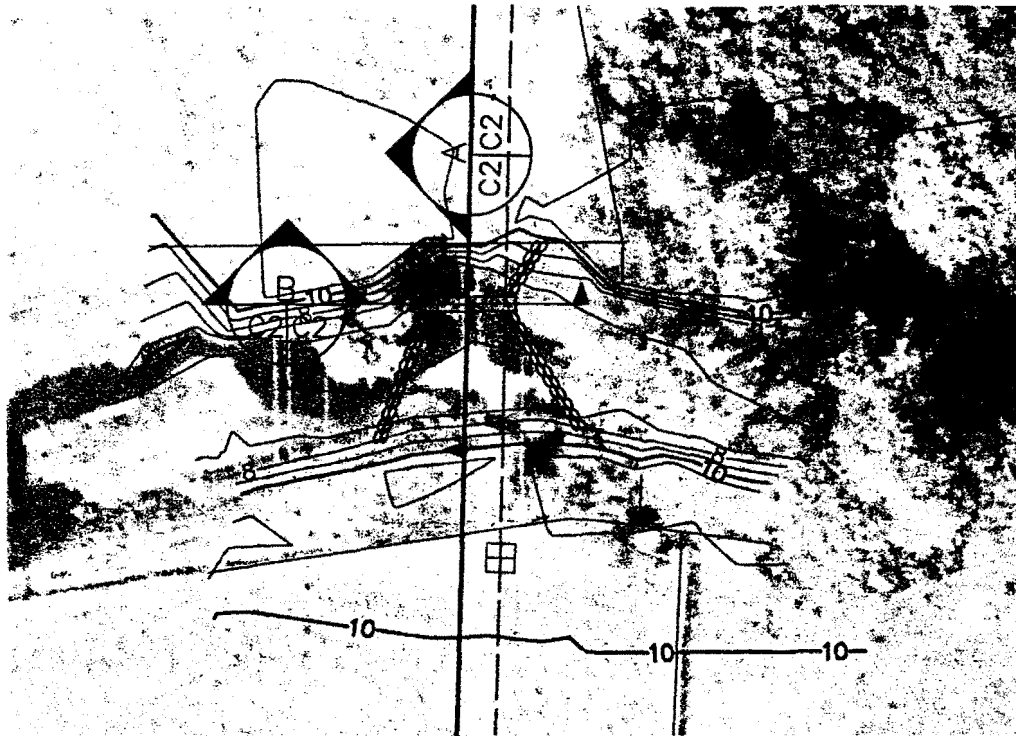


B WASHINGTON GULCH SLOUGH SECTION  
 C3/C3 1"=20'

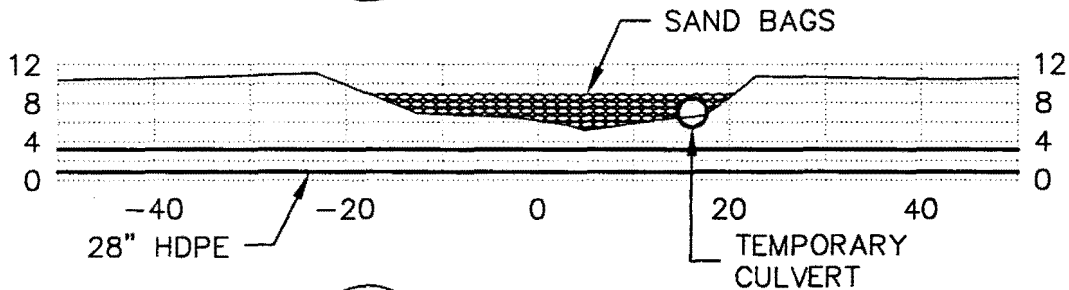
NOTE:  
 28" HDPE HAS 24" INSIDE DIAMETER

**FIGURE 6**  
**WASHINGTON GULCH SLOUGH**  
**OSCAR LARSON & ASSOCIATES**

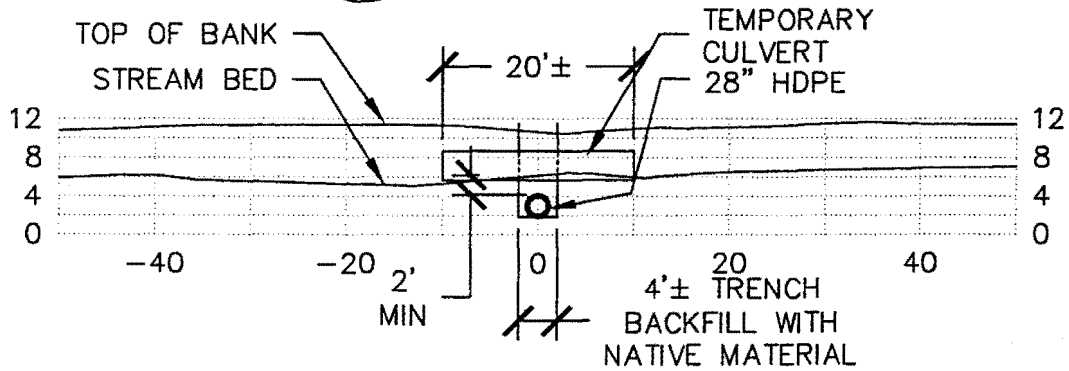
203



1 JACOBY CREEK CROSSING  
C2/C2 1"=40'



A JACOBY CREEK SECTION  
C2/C2 1"=20'



B JACOBY CREEK SECTION  
C2/C2 1"=20'

NOTE:  
28" HDPE HAS 24" INSIDE DIAMETER

FIGURE 5  
JACOBY CREEK  
OSCAR LARSON & ASSOCIATES

3 of 3



Approximate Pipeline Location

Access Road

Ryan Slough Pump Station

Mitigation Site

Note: The mitigation proposal includes removing existing fill from the Ryan Slough Pump Station fill pad over an area of 504 square feet. Fill removal will expose native, pre-fill soils. The proposal includes allowing native wetland vegetation to colonize the site, without planting. The existing fence line will be moved to exclude the mitigation area.

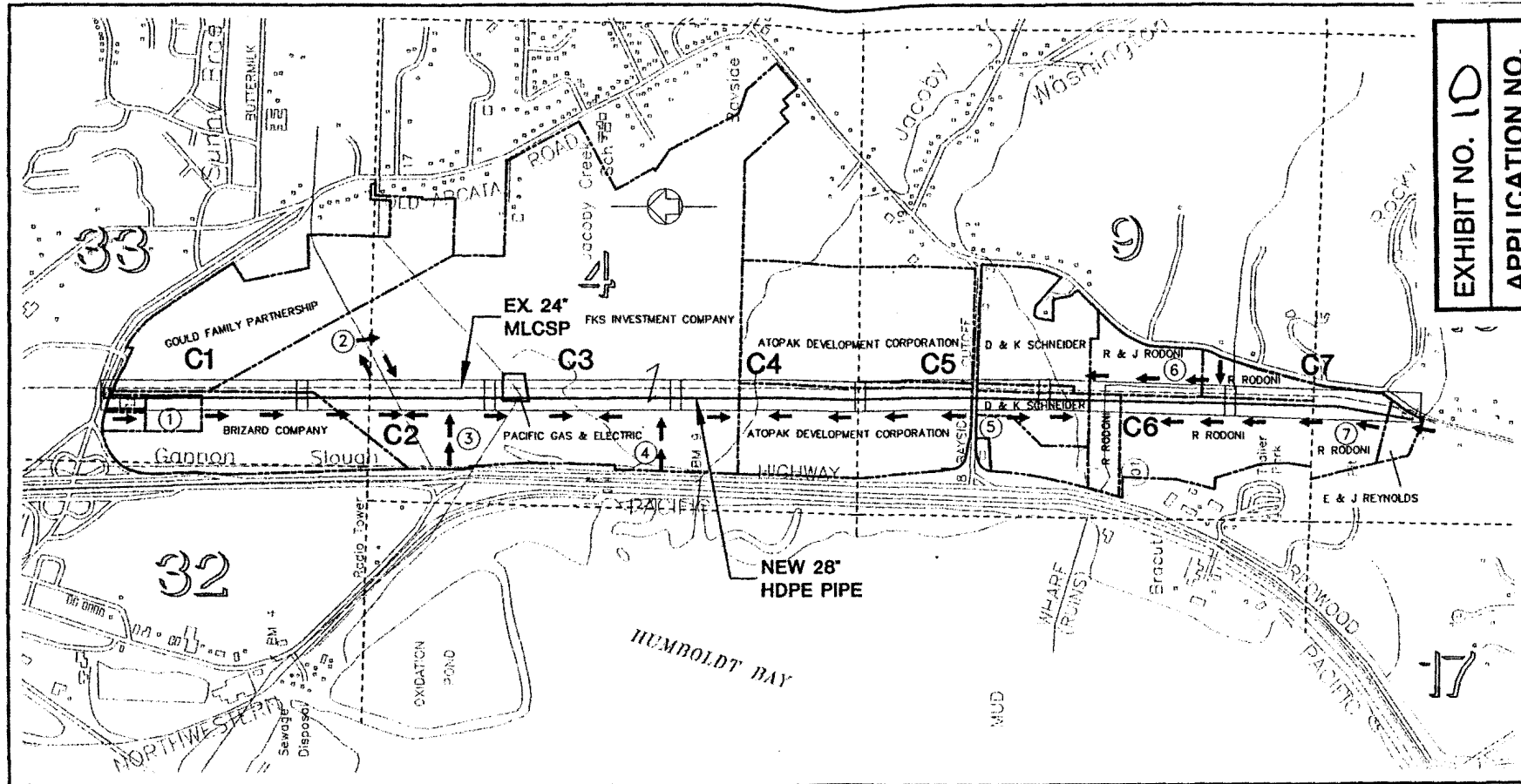
1" = 50'

Mitigation Plan for Mad River Pipeline Vaults, to be Constructed at the Ryan Slough Pump Station.

City of Eureka

EXHIBIT NO. 9  
APPLICATION NO.  
1-02-007  
WETLAND  
MITIGATION SITE  
PLAN

Ryan Slough



**EXHIBIT NO. 10**  
**APPLICATION NO.**  
**1-02-007**  
**PROPOSED ACCESS**  
**LOCATIONS (1 of 2)**

**ACCESS NOTES:**

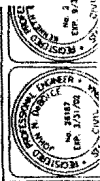
1. ACCESS TO SECTION FROM BEGINNING OF PROJECT UP TO BEITH/GROTZMAN CREEK ENTER FROM SAUMOA BOULEVARD.
2. ACCESS AROUND BEITH/GROTZMAN CREEK VIA EXISTING BRIDGE.
3. ACCESS TO SECTION FROM BEITH/GROTZMAN CREEK TO CUTOFF SLOUGH(S) VIA EXISTING FARM ROAD OFF U.S. HIGHWAY 101.
4. ACCESS TO SECTION FROM CUTOFF SLOUGH(S) TO JACOBY CREEK VIA HISTORICAL JACOBY CREEK RAILROAD ROADBED/PAGE ACCESS ROAD OFF U.S. HIGHWAY 101.
5. ACCESS TO SECTION FROM JACOBY CREEK TO BAYSIDE CUTOFF AND BAYSIDE CUTOFF TO WASHINGTON GULCH OFF BAYSIDE CUTOFF.
6. ACCESS TO SECTION FROM WASHINGTON GULCH TO ROCKY CREEK OFF OLD ARCATÁ ROAD VIA EXISTING ACCESS GATE.
7. ACCESS TO SECTION FROM ROCKY CREEK TO ROCKY CREEK OFF OLD ARCATÁ ROAD AT INMANOLA.

**AUTHORIZED CHANGES & USES:** The engineer preparing these plans will not be responsible for, or liable for, unanticipated changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

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Locations and elevations of utilities shown are provided for information only. Such information may not be complete or accurate. Contractor is responsible for contacting all agencies involved and locating all utilities that may be impacted by his work.

**PRELIMINARY**  
**NOT FOR CONSTRUCTION**



**Oscar Larson & Associates**  
 Consulting Engineers & Land Surveyors  
 317 Third Street's P.O. Box 3068 • Ukiah, CA 95501

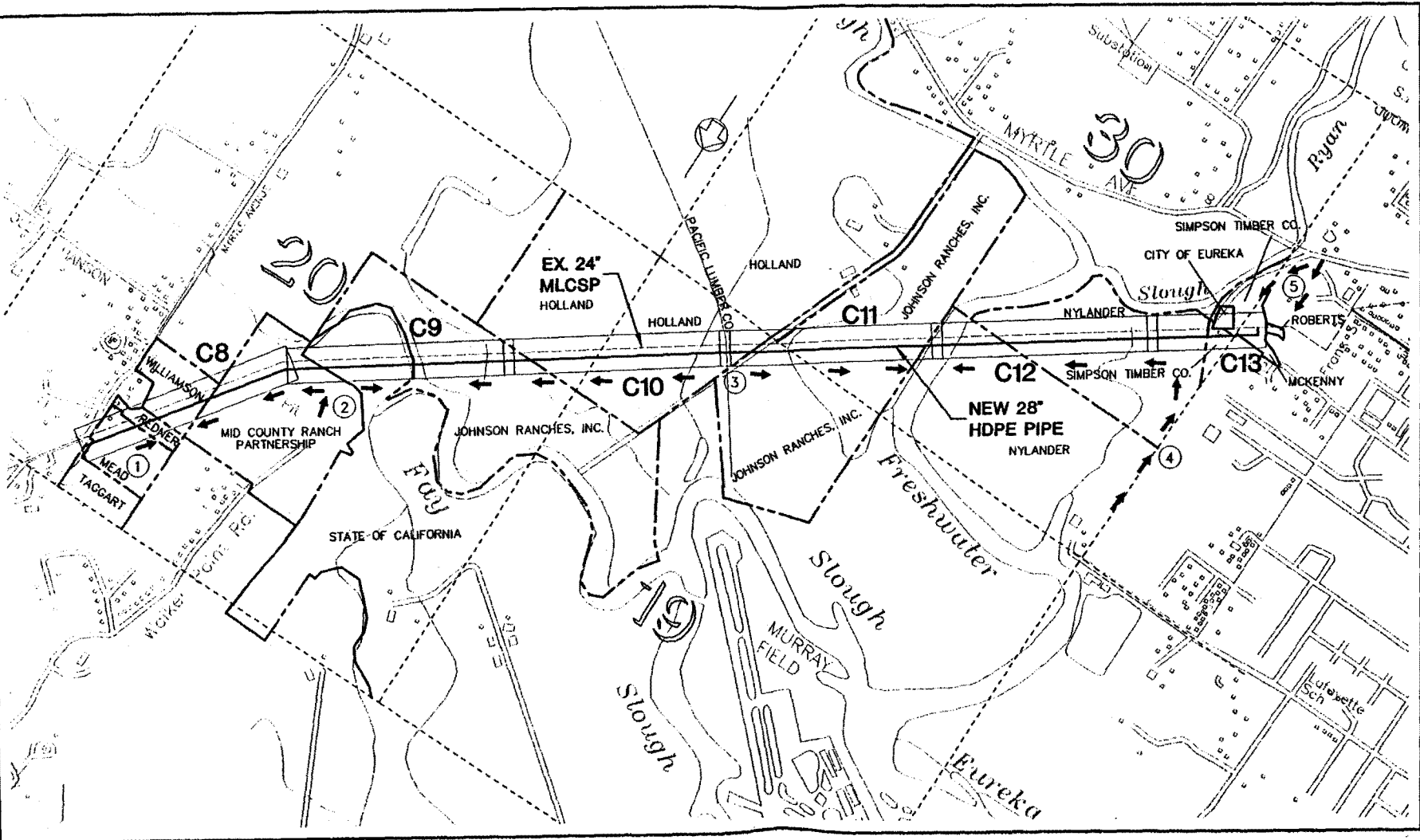
**KEY SHEET AND PROJECT**  
**ACCESS - NORTH SECTION**  
**MAD RIVER PARALLEL PIPELINE**

Scale: 1" = 600' ±  
 (DATE: 07/04/02)

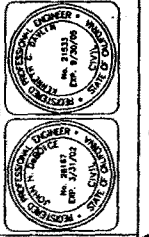
**G3**

ACCESS NOTES

1. ACCESS TO SECTION BETWEEN MYRTLE AVENUE AND MUDDY SLOUGH(12) FROM MYRTLE AVENUE.
2. ACCESS TO SECTION BETWEEN MUDDY SLOUGH(12) AND FAT SLOUGH FROM WALKER POINT ROAD.
3. ACCESS TO SECTION BETWEEN FAT SLOUGH AND FRESHWATER SLOUGH FROM DEVOTY ROAD.
4. ACCESS TO SECTION BETWEEN FRESHWATER SLOUGH AND RYAN SLOUGH PUMP STATION FROM PARK STREET OR FROM RYAN SLOUGH PUMP STATION VIA MYRTLE AVENUE.
5. ACCESS TO SECTION BETWEEN RYAN SLOUGH PUMP STATION AND THE END OF THE PROJECT FROM RYAN SLOUGH PUMP STATION.



DATE	1/23/25
DRAWN BY	MAH
CHECKED BY	MAH
SCALE	1" = 500'
PROJECT NO.	6771.3
SHEET NO.	3
TITLE	KEY SHEET AND PROJECT ACCESS - SOUTH SECTION
PROJECT	MAD RIVER PARALLEL PIPELINE SOUTH SECTION CITY OF EUREKA
CLIENT	CITY OF EUREKA



**Oscar Larson & Associates**  
 Consulting Engineers and Surveyors  
 317 Third Street • P.O. Box 3808 • Eureka, CA 95501

PRINT DATE: \_\_\_\_\_

**KEY SHEET AND PROJECT ACCESS - SOUTH SECTION**  
**MAD RIVER PARALLEL PIPELINE SOUTH SECTION CITY OF EUREKA**

PRELIMINARY 1" = 500' ± 6771.3

Designed by: MAH Date: 8/2/01 Drawn by: MAH Checked by: MAH Date: 1/23/25

2 of 2