CALIFORNIA COASTAL COMMISSION
NORTH COAST DISTRICT OFFICE
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F 7c

MEMORANDUM

Date: September 11, 2008

To: Commissioners and Interested Parties

From: Peter Douglas, Executive Director
Robert S. Merrill, District Manager – North Coast District
Melissa B. Kraemer, Coastal Program Analyst – North Coast District

Subject: **Addendum to Commission Meeting for Friday, September 12, 2008**
North Coast District Item F 7c, CDP No. 1-08-020
(Dick & Joan Miller and the U.S. Fish & Wildlife Service)

STAFF NOTE

Staff is proposing to make certain changes to the August 28, 2008 staff recommendation on Coastal Development Permit Application No. 1-08-020. Since publication of the staff report, the applicants have changed the project description to change the development proposed along the south side of Mad River Slough. As a result, staff has revised the staff recommendation to reflect the changes made to the project. As the changes to the project description necessitated changes throughout the staff recommendation, rather than describing all changes to the staff recommendation in this addendum, staff has instead attached a revised version of the report text with changes shown in ~~strikethrough~~ (for deleted text) and **bold double-underline** (for added text). Additionally, lines of text that have been changed are marked by a vertical line in the left margin of the page.

In the original project description discussed in the August 28, 2008 staff report, the applicants proposed to relocate the levee along the south side of Mad River Slough 25 feet back from the edge of the slough to allow salt marsh habitat to establish between the slough edge and the new levee. The applicants also originally proposed constructing the levee with a wider base to accommodate raising the levee to a higher elevation to protect against flooding from projected sea level rise. As explained in the September 11, 2008 revised staff report, the applicants now are proposing to repair the existing levee along the south side of the slough in-kind as a repair and maintenance project without any new wetland fill. Prior to this project revision, the overall

project would have resulted in a net loss of 0.8 acres of wetlands. By not relocating and expanding the size of the south levee, the revised project description reduces the amount of fill associated with the overall project so that there is no net loss of wetland acreage. As a result, staff has revised the staff recommendation to eliminate originally recommended Special Condition No. 5 which would have required the applicant to submit a plan for the review and approval of the Executive Director to mitigate for the loss of 0.8 acres of wetlands.

Please see the attached revised staff recommendation dated September 11, 2008 and the attached letter from the applicants' agent revising the project description (attached to the revised staff report as Exhibit No. 6).

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Filed: August 12, 2008
49th Day: September 30, 2008
180th Day: February 8, 2009
Staff: Melissa B. Kraemer
Revised Staff Report: ~~August 28~~ **September 11**, 2008
Hearing Date: September 12, 2008
Commission Action:

REVISED STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-08-020**

APPLICANTS: **Dick & Joan Miller and the U.S. Fish & Wildlife Service (Attn: Paula Golightly)**

AGENT: Trinity Associates (Attn: Aldaron Laird)

PROJECT LOCATION: Along Mad River Slough in the Mad River bottomlands off of Mad River Road, approximately 1 mile northwest of Arcata, Humboldt County (APN 506-312-004).

PROJECT DESCRIPTION: Restore wetlands and protect existing agricultural uses by (1) **repairing and maintaining approximately 1,540 feet of existing dike located along the south bank of the slough and** rehabilitating **approximately** ~~4,020~~**2,480** feet of existing dikes along ~~both~~ the north ~~and south~~ banks of the slough to protect agricultural uses on lands adjacent to and down slope of the slough; (2) restoring ~~2~~ **1.1** acres of coastal salt marsh habitat **along the north side of Mad River Slough** by relocating the **north** dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland species; (4) restoring 4.4 acres of riparian

	habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms; (5) renovating the existing tidegate that drains the northern pastureland; (6) upgrading culverts along the eastern access road; and (7) installing temporary exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts.
GENERAL PLAN DESIGNATION:	Agricultural Exclusive (AE) and Natural Resources (NR).
ZONING DESIGNATION:	Agricultural Exclusive, 60-acre minimum with Flood Hazard and Transitional Agricultural Combining Zones (AE-60/F,T); also Natural Resources with a Coastal Wetland Combining Zone (NR/W).
LOCAL APPROVALS RECEIVED:	Humboldt County Conditional Use Permit No. 07-20
OTHER APPROVALS REQUIRED:	North Coast Regional Water Quality Control Board Water Quality Certification and Waste Discharge Requirements, WDID No. 1B08128WNHU (pending); U.S. Army Corps of Engineers CWA Section 404 Nationwide Permit No. 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities).
SUBSTANTIVE FILE DOCUMENTS:	Miller Family's Mad River Slough Dike Rehabilitation and Wetlands Enhancement Project Mitigated Negative Declaration, March 2008 (State Clearinghouse Number 2008032072); Humboldt County certified Local Coastal Program.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval with special conditions of the proposed wetland enhancement project.

The project area is located along Mad River Slough in the Mad River bottomlands off of Mad River Road, approximately 1 mile northwest of Arcata. The approximately 18-acre project area is located on the northern half of the approximately 77-acre ranch property. The proposed project has a dual purpose of both restoring wetland habitat and protecting

agricultural lands from further inundation of tidal waters caused by the degraded nature of the dikes and the apparent increase in the frequency of peak high tides over-topping the dikes in the area. The Miller family's descendents homesteaded the land over a century ago by diking, draining, and clearing the area adjacent to Mad River Slough. The property has supported agricultural uses for over a century and is currently used to graze cattle approximately eight months of the year (the land is too wet for cattle grazing during the winter months). However, the proposed project is primarily a habitat restoration project because the agricultural lands could be protected from further tidal inundation by simply rebuilding the degraded dikes in place without moving the dikes and converting ~~6.4~~**5.6** acres of existing pasture land into ~~2~~ **1.1** acres of salt marsh habitat and 4.4 acres of riparian habitat.

Since publication of the staff report dated August 28, 2008, the applicants have amended the project description with respect to the improvements along the south side of Mad River Slough. Originally, the applicants proposed to relocate the levee 25 feet back from the edge of the slough to allow salt marsh habitat to establish between the slough edge and the new levee. The applicants also originally proposed constructing the levee with a wider base to accommodate raising the levee to a higher elevation to protect against flooding from projected sea level rise. As revised, the applicants have chosen to repair the existing levee along the south side of the slough in-kind without any new wetland fill as a repair and maintenance project. Prior to this change, the overall project would have resulted in a net loss of 0.8 acres of wetlands. By not relocating and expanding the size of the levee, the revised project description reduces the amount of fill associated with the overall project so that there is no net loss of wetland acreage. As a result, staff has revised the staff recommendation to eliminate originally recommended Special Condition No. 5 which would have required the applicant to submit a plan for the review and approval of the Executive Director to mitigate for the loss of 0.8 acres of wetlands.

The proposed project **as revised** has four main components: (1) **repairing and maintaining approximately 1,540 feet of existing dike located along the south bank of the slough and** rehabilitating **approximately** ~~4,020~~ **2,480** feet of existing dikes along ~~both~~ the north ~~and south~~ banks of Mad River Slough to protect agricultural uses on lands adjacent to and downslope of the slough; (2) restoring ~~2~~ **1.1** acres of coastal salt marsh habitat **along the north side of Mad River Slough** by relocating the **north** dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland plant and wildlife species; and (4) restoring 4.4 acres of riparian habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms. Additional project components include renovating the existing tidegate that drains the northern pastureland, upgrading culverts along the eastern access road, and installing temporary exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts.

Prior to the construction of the dikes along Mad River Slough and the establishment of agricultural uses on the property more than 100 years ago, the project area previously

supported diverse wetland habitats that included tidal sloughs, tidally inundated salt marsh habitat, and riparian and other freshwater wetlands. All of the original habitat except for the tidal slough itself was obliterated and largely replaced with grazed seasonal wetlands that provide far less habitat values and functions than those provided by the array of wetland habitat types that originally existed at the site. The habitat values and functions of the tidal slough itself were greatly compromised by the elimination of the adjacent supporting habitat types, even though the tidal slough remained. For example, in the absence of salt marsh restoration at the subject site, the channel of Mad River Slough in this location lacks a transitional buffer between the tidal channel and the upland dikes. As a result, dike materials continually erode into coastal waters over time, adversely affecting water quality while depriving marine resources that depend on the salt marsh environment of suitable habitat along this stretch of slough. The proposed project will move the **north** dikes back from the channel margins to create **a** ~~2~~ **1.1** acres of salt marsh "benches **along the north side of Mad River Slough**," which will restore marine resources and sustain the biological productivity of coastal waters to maintain healthy populations of marine organisms.

As further discussed in Finding IV-C, the restoration of the 4.4 acres of riparian habitat in the project area is integral to maintaining optimum populations of marine organisms within the slough and for the protection of human health. Riparian areas contribute important organic debris that is transformed into nutrients, which support the marine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation also supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. Riparian areas capture contaminants; by absorbing or filtering contaminated stormwater runoff, soils and vegetation in marine riparian areas can prevent pollutants from entering coastal waters. Healthy riparian areas support rich and diverse communities of animals that depend on the areas for feeding, breeding, refuge, movement, and migration. Salmonids and many other fish species feed on insects from marine riparian areas. When the riparian habitat was eliminated during reclamation of the land to agriculture, the food supply and, thus, the abundance of nearshore fish was greatly reduced. Importantly, the marine riparian functions of protecting water quality, maintaining soil stability, and absorbing the impacts of storm surges to reduce flooding were eliminated from the site with the removal of the riparian areas. Restoration of the 4.4 acres of riparian habitat on the site will restore these habitat values and functions to the site and thereby restore the biological productivity and the quality of coastal waters appropriate to maintain optimum populations of marine organisms and the protection of human health.

Although the proposed wetland enhancements will not reestablish the exact same configuration of wetland habitat that historically existed in the area prior to the diking of the former tidelands for agricultural use, the proposed creation of salt marsh and riparian and other freshwater wetlands will re-establish wetland habitat types that did previously exist at the site and the proposed wetland enhancements in converted or degraded natural wetlands will result in the reestablishment of landscape-integrated ecological processes associated with wetland habitats. Therefore, staff believes that the proposed wetland enhancements are consistent with the definition of restoration and constitute filling and

dredging for restoration purposes consistent with Section 30233(a)(6). In addition, staff believes the proposed restoration of salt marsh and riparian habitat is consistent with the mandate of Section 30230 of the Coastal Act that marine resources shall be maintained and enhanced, and where feasible, restored and with the mandate of Section 30231 that the biological productivity and quality of coastal waters and wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored.

Although the project offers overall habitat restoration benefits, the project would convert ~~6.4~~**5.6** acres of agricultural (grazing) land inconsistent with the provisions of Sections 30241 and 30242 of the Coastal Act. However, staff believes that to not approve the project would result in a failure to restore marine resources and the biological productivity of coastal wetlands and waters that would be inconsistent with the mandates of Sections 30230 and 30231. In addition, it is the very essence of the project, not an ancillary amenity offered as a trade-off, that is both inconsistent with certain Chapter 3 policies and yet also necessary restoration. Finally, staff examined alternatives to the proposed project including (1) the no-project alternative; (2) alternative sites; and (3) ~~rebuilding dikes in kind~~**alternative configurations of project features**. Staff believes that there is no less environmentally damaging feasible alternative to the development as conditioned, as required by Section 30233(a) of the Coastal Act.

Therefore, staff believes the proposed project presents a true conflict between Sections 30241 and 30242 and Sections 30230 and 30231 of the Coastal Act, and staff believes that it is appropriate for the Commission to invoke the conflict resolution policies of Section 30007.5 of the Coastal Act. Staff believes that the impacts on coastal resources from not constructing the project would be more significant than the project's agricultural impacts and would be inconsistent with the mandates of Sections 30230 and 30231 to maintain and restore coastal water quality and marine resources. Denying the project because of its inconsistency with Sections 30241 and 30242 would avoid the conversion of ~~6.4~~ **5.6** acres of agricultural grazing land. However, it must be noted that a benefit of the project is the protection of a much greater acreage of surrounding agricultural land, both on the Miller's property and adjacent properties downstream, from salt water intrusion and overtopping of dikes that are expected to be overtopped with greater frequency with the projected sea level rise for the area.

As discussed above, to ensure that the habitat restoration benefits of the project that would enable the Commission to use the balancing provision of Section 3007.5 are achieved, staff recommends Special Condition Nos. 1 through ~~7~~**6**. Staff believes that without Special Condition Nos. 1 through ~~7~~**6**, the proposed project could not be approved pursuant to Section 30007.5 of the Coastal Act.

The finding that the proposed project constitutes "restoration purposes" is based, in part, on the assumption that the proposed project will be successful in increasing salt marsh and riparian habitat values. Should the project be unsuccessful at increasing these habitat values, or worse, if the proposed dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not

actually be for "restoration purposes." To ensure that the proposed project achieves the objectives for which it is intended (*i.e.*, for the restoration and retention of ~~2.5~~**1.1** acres of salt marsh and 4.4 acres of riparian habitat), staff recommends Special Condition No. 1, which would require the applicants to submit a final monitoring plan to outline a method for measuring and documenting the improvements in habitat value and diversity at the site over the course of five years following project completion. Furthermore, Special Condition No. 1 would require the monitoring plan to include provisions for remediation to ensure that the goals and objectives of the restoration project are met.

Depending on the manner in which the proposed project is conducted, the significant adverse impacts of the project may include (1) impacts to marine resources and wildlife habitat from water pollution in the form of sedimentation or debris entering coastal waters and wetlands; (2) introduction (through re-planting) of exotic invasive plants species that could compete with native vegetation and negate the habitat improvements they would provide; (3) use of certain rodenticides that could deleteriously bio-accumulate in predator bird species; ~~(4) net loss of wetland habitat;~~ and (~~5~~**4**) impacts to sensitive salt marsh plant species (Humboldt Bay owl's-clover and Point Reyes bird's-beak). Overall, the project would restore and enhance wetland habitat values and would produce generally beneficial environmental effects. However, staff recommends various special conditions to ensure that habitat restoration and enhancement results and that potentially significant adverse impacts are minimized. These include Special Condition No. 2, which would require the applicants to undertake the development pursuant to certain construction responsibilities; Special Condition No. 3, which would require the applicants to submit an erosion and runoff control plan that is to include certain specified water quality best management practices for minimizing impacts to coastal waters; Special Condition No. 4, which would prohibit the planting of any plant species listed as problematic and/or invasive and contains a prohibition on the use of anticoagulant-based rodenticides; ~~Special Condition No. 5, which would require that the applicants submit a wetland mitigation plan to compensate for the 0.8-acre of wetlands to be filled by the expanded base footprint of the southern dike and ensure that this impact on wetland resources is feasibly mitigated to minimize adverse environmental effects consistent with Section 30233(a);~~ and Special Condition No. ~~6~~**5**, which would require the submittal of a final mitigation plan that demonstrates that all occurrences of sensitive plant species shall be avoided and protected.

Therefore, staff believes that as conditioned, the proposed development is consistent with all applicable Chapter 3 policies of the Coastal Act.

The motion to adopt the staff recommendation of approval with conditions in found on page 6~~7~~.

STAFF NOTES

1. Jurisdiction and Standard of Review

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

I. MOTION, STAFF RECOMMENDATION, & RESOLUTION:

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-08-020 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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

Resolution to Approve Permit:

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

II. STANDARD CONDITIONS: See Appendix A.

III. SPECIAL CONDITIONS:

1. Final Restoration & Enhancement Monitoring Program

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020**, the applicant shall submit for review and approval of the Executive

Director, a final detailed restoration and enhancement monitoring program designed by a qualified biologist for monitoring of the wetland restoration and enhancement sites (i.e., salt marsh, riparian, and enhanced seasonal freshwater wetland habitats). The monitoring program shall at a minimum include the following:

1) Performance standards that will assure achievement of the restoration goals and objectives set forth in Coastal Development Permit (CDP) Application No. 1-08-020 **as modified by the revised project description submitted September 9, 2008** as described in the Findings IV.B, "Project Description;"

2) Provisions for submittal within 30 days of completion of the initial restoration and enhancement work of (a) "as built" plans demonstrating that the initial restoration and enhancement work has been completed in accordance with the approved restoration and enhancement program, and (b) an assessment of the initial biological and ecological status of the "as built" restoration/enhancements. The assessment shall include an analysis of the attributes that will be monitored pursuant to the program, with a description of the methods for making that evaluation;

3) Provisions to ensure that the restoration and enhancement sites will be remediated within one year of a determination by the permittee or the Executive Director that monitoring results indicate that the sites do not meet the goals, objectives, and performance standards identified in the approved restoration/enhancement program and in the approved final monitoring program;

4) Provisions for monitoring and remediation of the restoration and enhancement sites in accordance with the approved final restoration and enhancement program and the approved final monitoring program for a period of five (5) years;

5) Provisions for submission of annual reports of monitoring results to the Executive Director by November 1 each year for the duration of the required monitoring period, beginning the first year after submission of the "as-built" assessment. Each report shall include copies of all previous reports as appendices. Each report shall also include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the wetland restoration/enhancement project in relation to the performance standards;

6) Provisions for submission of a final monitoring report to the Executive Director at the end of the five-year reporting period. The final report must be prepared in conjunction with a qualified wetlands biologist. The report must evaluate whether the enhancement site conforms with the goals, objectives, and performance standards set forth in the approved final restoration and enhancement program. The report must address all of the monitoring data collected over the five-year period.

B. If the final report indicates that the restoration and enhancement project has been unsuccessful, in part, or in whole, based on the approved goals and objectives set forth in CDP Application No. 1-08-020 **as modified by the revised project description submitted September 9, 2008** as described in Findings IV.B "Project Description," the applicant shall submit a revised or supplemental restoration and enhancement program to compensate for those portions of the original program which did not meet the approved goals and objectives set forth in CDP Application No. 1-08-020 **as modified by the revised project description submitted September 9, 2008** as described in Finding IV.B "Project Description." The revised enhancement 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 restoration and enhancement sites 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 unless the Executive Director determines no amendment is legally required.

2. Construction Responsibilities

The permittee shall comply with the mitigation measures listed in the Mitigated Negative Declaration completed for the project (SCH No. 2008032072), except as modified herein. Construction-related requirements shall include, but shall not be limited to, the following Best Management Practices (BMPs):

A. No construction materials, debris, or waste shall be placed or stored where it may be subject to entering coastal waters or wetlands;

B. Any and all debris resulting from construction activities shall be removed from the project site within 10 days of project completion and disposed of at an authorized location;

C. All grading activities shall be conducted during the dry season period of June 1 through November 15; any grading activity conducted between October 16 and November 15 shall be subject to the following conditions:

1) All work shall cease upon the onset of precipitation at the project site and shall not recommence until the predicted chance of rain is less than 50 percent for the Arcata area portion of the Redwood Coast segment of the National Weather Service's forecast for Northwestern California;

2) The work site(s) shall be winterized between work cessation periods by installing stormwater runoff and erosion control barriers around the perimeter of the construction site to prevent the entrainment of sediment into coastal waters; and

3) Adequate stocks of stormwater runoff and erosion control barrier materials shall be kept onsite and made available for immediate use.

D. Construction activities adjacent to the slough shall only be performed during low tide and when soils are sufficiently dry so that sediment is not discharged into coastal waters;

E. If rainfall is forecast during the time construction activities are being performed, any exposed soil areas shall be promptly mulched or covered with plastic sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation;

F. Any debris discharged into coastal waters shall be recovered immediately and disposed of properly;

G. Any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas. Mechanized heavy equipment and other vehicles used during the construction process shall not be stored or re-fueled within 300 feet of coastal waters; and

H. Fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or wetlands. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call. Any accidental spill shall be rapidly contained and cleaned up.

3. <u>Final Erosion & Runoff Control Plan</u>

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020**, the applicant shall submit, for review and approval of the Executive Director, a final plan for erosion and run-off control.

1) The run-off, spill prevention and response plan shall demonstrate the following:

(a) Run-off from the project site shall not increase sedimentation in coastal waters or wetlands;

(b) Run-off from the project site shall not result in pollutants entering coastal waters or wetlands;

(c) The plan is consistent with the requirements of Special Condition No. 2 and the other conditions of approval of CDP No. 1-08-020.

(d) Best Management Practices (BMPs) shall be used to prevent the entry of polluted stormwater runoff into coastal waters or adjacent wetlands during construction, including use of relevant best management practices (BMPs) as detailed in the "California Storm Water Best Management (Construction and Industrial/

Commercial) Handbooks, developed by Camp, Dresser & McKee, *et al.* for the Storm Water Quality Task Force (i.e., BMP Nos. EC-1 – *Scheduling*, EC-2 – *Preservation of Existing Vegetation*, EC-12 – *Streambank Stabilization*, SE-1 – *Silt Fence* and/or SE-9 – *Straw Bale Barrier*, NS-8 – *Vehicle and Equipment Cleaning*, NS-9 – *Vehicle and Equipment Fueling*, NS-10 – *Vehicle and Equipment Maintenance and Repair*, WM-1 – *Material Delivery and Storage*, WM-3 – Stockpile Management, WM-4 – *Spill Prevention and Control*; see http://www.cabmphandbooks. com); and

(e) An on-site spill prevention and control response program, consisting of best management practices (BMPs) for the storage of clean-up materials, training, designation of responsible individuals, and reporting protocols to the appropriate public and emergency services agencies in the event of a spill, shall be implemented at the project to capture and clean-up any accidental releases of oil, grease, fuels, lubricants, or other hazardous materials from entering coastal waters or wetlands.

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

(a) A schedule for installation and maintenance of appropriate construction source control best management practices (BMPs) to prevent entry of stormwater run-off into the construction site and the entrainment of excavated materials into run-off leaving the construction site; and

(b) A schedule for installation, use and maintenance of appropriate construction materials handling and storage best management practices (BMPs) to prevent the entry of polluted stormwater run-off from the completed development into coastal waters.

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

4. Site Revegetation

The wetland restoration and enhancement sites shall be revegetated as proposed and shall comply with the following standards and limitations:

A. Only native plant species shall be planted. All proposed plantings shall be obtained from local genetic stocks within Humboldt County. If documentation is provided to the Executive Director that demonstrates that native vegetation from local genetic stock is not available, native vegetation obtained from genetic stock outside of the local area may be used. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive

Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property;

B. All planting shall be completed within 60 days after completion of construction;

C. The use of rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone, Brodifacoum or Diphacinone shall not be used.

~~**5. Final Wetland Mitigation Plan**~~

~~A. **WITHIN 90 DAYS OF ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020**, the applicant shall submit, for the review and written approval of the Executive Director, a final wetland mitigation plan which provides adequate mitigation compensation for the 0.8 acre of wetland fill impacts associated with the development.~~

~~1) The wetland mitigation plan shall demonstrate the following:~~

~~(a) A minimum of 0.8 acre of seasonal freshwater wetlands will be created either on site or at an off site location elsewhere in Humboldt County;~~

~~(b) Revegetation shall achieve a standard for success of at least 80 percent survival of plantings or at least 80 percent ground cover for broadcast seeding after a period of 3 years;~~

~~(c) Only regionally appropriate native vegetation shall be used. The vegetation to be replanted shall be of local genetic stock, if available. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be installed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property;~~

~~(d) Rodenticides containing any anticoagulant compounds, including but not limited to Bromadiolone or Diphacinone, shall not be used;~~

~~(e) All excess excavated material will be disposed of in an authorized location; and~~

~~(f) The wetland mitigation plan shall be implemented within 1 year of the date of approval by the Executive Director of the final wetland mitigation plan.~~

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

~~(a) Specified goals of the plan and performance criteria for evaluating the success of the wetland mitigation plan;~~

~~(b) A site plan of the mitigation area accompanied by a description of existing conditions on the site in terms of vegetation, hydrology, and soils;~~

~~(c) A plant list showing the plant species to be used in the newly created wetland area;~~

~~(d) A description of the disposal location for all excess excavated material and evidence that the disposal site may lawfully accept such material;~~

~~(e) A schedule for implementation of the plan;~~

~~(f) A maintenance plan and 5-year monitoring plan to ensure that the specified goals and performance criteria have been satisfied; and~~

~~(g) Provisions for submittal of a final monitoring report to the Executive Director at the end of the 5-year reporting period. The final report must be prepared in conjunction with a qualified wetlands biologist and include a final wetland delineation. The report must evaluate whether the mitigation site conforms to the goals, objectives, and performance standards set forth in the approved final mitigation plan.~~

~~B. If the final monitoring report indicates that the mitigation plan has been unsuccessful, in part or in whole, based on the approved goals, objectives, and performance standards set forth in the approved final wetland mitigation plan, the applicant shall submit a revised or supplemental plan to compensate for those portions of the original plan which did not meet the approved goals and objectives. The revised plan 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 undertake development in accordance with the approved final plans. Any proposed changes to the approved final plans shall be reported to the Executive Director. No changes to the approved final plans shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is legally required.~~

~~6~~5. Salt Marsh & Sensitive Plant Species Protection Plan

A. **PRIOR TO COMMENCEMENT OF CONSTRUCTION**, the permittee shall submit, for the review and approval of the Executive Director, a plan prepared by a qualified botanist for the protection of salt marsh and sensitive plant species in the project area.

1) The plan shall demonstrate that all existing salt marsh habitat in the project area shall be avoided and protected; and

2) The plan shall include at a minimum the following components: (a) a map that locates all existing salt marsh habitat in the project area; and (b) a

narrative and site plan map that describes avoidance measures proposed, including but not limited to, (1) flagging and staking for avoidance the upper elevational boundary limit of the salt marsh vegetation on the site; and (2) limiting excavation work and other disturbance to areas outside of the staked area.

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 an amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

~~7~~6. Protection of Archaeological Resources

A. If an area of historic or prehistoric cultural resources or human remains are discovered during the course of the project, all construction shall cease and shall not recommence except as provided in subsection (B) hereof, and a qualified cultural resource specialist shall analyze the significance of the find.

B. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit an archaeological plan for the review and approval of the Executive Director.

1) If the Executive Director approves the Archaeological Plan and determines that the 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.

2) If the Executive Director approves the 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.

~~8~~7. Regional Water Quality Control Board Approval

PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020, the applicant shall provide to the Executive Director a copy of a permit issued by the North Coast Regional Water Quality Control Board, or evidence that no permit is required. The applicant shall inform the Executive Director of any changes to the project required by the Board. 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.

~~9~~8. U.S. Army Corps of Engineers Approval

PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, the permittee shall provide to the Executive Director a copy of a permit issued by the 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 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 legally required.

~~10~~9. State Lands Commission Review

PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020, the applicant shall submit to the Executive Director, a written determination from the State Lands Commission that:

A. No State lands are involved in the development; or

B. State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or

C. State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

IV. FINDINGS & DECLARATIONS

The Commission hereby finds and declares as follows:

A. Environmental Setting

The project area is located along Mad River Slough in the Mad River bottomlands off of Mad River Road, approximately 1 mile northwest of Arcata (Exhibit Nos. 1 and 2). The project area involves 17.8 acres located on a coastal plain known as the Mad River bottom (Exhibit Nos. 3 and 4). This area drains to the Mad River Slough (formerly Turners Slough), which bisects the southern end of the project area (see Exhibit No. 5). The subject site encompasses approximately one half mile of the slough, which is lined with deteriorating historic dikes (built over a century ago) and surrounded by seasonal agricultural wetlands ("farmed wetlands"). The project area can be characterized as low-lying, poorly drained, salt water intruded, and flood prone. The lands behind both the dikes become inundated – often with several feet of water – during extended periods of winter precipitation or by over-bank flows either from the Mad River (which is located approximately one half mile to the northeast) or by peak high tides overtopping Mad River Slough. There is an existing top-hinged tidegate that drains the north pasture into the slough (see 6 of Exhibit No. 5).

The dikes along both banks of the slough in the project area (which comprise approximately 2 acres of disturbed upland habitat) originally were constructed nearly on top of the banks of the slough (see Sheet 7 of Exhibit No. 5). The dikes are severely eroded and were overtopped by 0.5-to-2-feet during the December 23, 2003 peak high

tide of 9.85 feet (as measured at the North Spit). The south bank dike is from 1- to 2-feet above the elevation of the surrounding pasture, and the north bank dike is from 2- to 4-feet above the elevation of the surrounding pasture.

Currently, the primary use of the area is cattle grazing during the dry months (about 8 months out of the year). The approximately 18 acre project area is located on the northern half of the approximately 77-acre ranch property (see Exhibit Nos. 3 and 4). Aleutian Cackling Geese also use the land for grazing each spring. No land classified as "prime farmland" occurs in the area.

The applicants' consultant, McBain & Trush, Inc., produced a vegetation map for the project area in 2004, which mapped various cover types (see Sheet 5 of Exhibit No. 5). These include approximately 0.5-acre of salt marsh habitats along the south bank of the slough along the slough margin and the north bank of the slough along the dike dominated by native species such as saltgrass (*Distichlis spicata*) and/or pickleweed (*Salicornia virginica*), salt marsh habitats dominated by nonnative species such as dense-flowered cordgrass (*Spartina densiflora*) and/or sicklegrass (*Parapholis strigosa*), and grazed wetland habitats dominated by native and nonnative grasses and herbs (e.g., velvet grass *Holcus lanatus*, water foxtail *Alopecurus geniculatus*, sweet vernal grass *Anthoxanthum odoratum*, ryegrass *Lolium* sp., bentgrasses *Agrostis* spp., dandelion *Taraxacum officinale*, bird's-foot trefoil *Lotus corniculatus*, creeping buttercup *Ranunculus repens*, curly dock *Rumex crispus*, white clover *Trifolium repens*, Pacific silverweed *Potentilla anserina* ssp. *pacifica*, etc.).

Two sensitive plant species were mapped in 2004 in the salt marsh habitats both along the south bank of the slough along the slough margin and the north bank of the slough along the dike. These include Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*) and Point Reyes' bird's-beak (*Cordylanthus maritimus* ssp. *palustris*). Both plant species are considered rare by the California Native Plant Society (List 1B.2)[1] and the California Department of Fish and Game (S2.2)[2].

The project site is not located within a designated highly scenic area and is not visible from any public road or vantage point except from the waters of the upper reaches of Mad River Slough.

B. Project Description

The approximately 18-acre project area is located on the northern half of the approximately 77-acre ranch property (see Exhibit Nos. 3 and 4). The proposed project has a dual purpose of both restoring wetland habitat and protecting agricultural lands from further inundation of tidal waters caused by the degraded nature of the dikes and the

[1] CNPS List 1B.2 = "1B" signifies "Rare, threatened, or endangered in California and elsewhere." The "threat code" extension (.2) signifies "fairly endangered in California."
[2] The State rank (S2.2) = "S2" signifies 6-20 "element occurrences" OR 1,000-3,000 individuals OR 2,000-10,000 acres. The "threat code" extension (.2) signifies "threatened."

apparent increase in the frequency of peak high tides (8 feet and greater above mean lower low water, MLLW) over-topping the dikes in the area. The Miller family's descendents homesteaded the land over a century ago by diking, draining, and clearing the area adjacent to Mad River Slough. The property has supported agricultural uses for over a century and is currently used to graze cattle approximately eight months of the year (the land is too wet for cattle grazing during the winter months). However, the **portion of the** proposed project **along the north side of Mad River Slough** is primarily a habitat restoration project because the agricultural lands could be protected from further tidal inundation by simply rebuilding the degraded **north** dikes in place without moving the dikes and converting ~~6.4~~ **5.6** acres of existing pasture land into ~~2~~ **1.1** acres of salt marsh habitat and 4.4 acres of riparian habitat.

The proposed project has four main components: (1) **repairing and maintaining approximately 1,540 feet of existing dike located along the south bank of the slough and** rehabilitating **approximately** ~~4,020~~**2,480** feet of existing dikes along both the north and south banks of Mad River Slough to protect agricultural uses on lands adjacent to and downslope of the slough; (2) restoring ~~2~~ **1.1** acres of coastal salt marsh habitat **along the north side of Mad River Slough** by relocating the **north** dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland plant and wildlife species; and (4) restoring 4.4 acres of riparian habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms. Additional project components include renovating the existing tidegate that drains the northern pastureland, upgrading culverts along the eastern access road, and installing temporary exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts. See Exhibit No. 5 for project plans.

Approximately ~~21,000~~**17,375** cubic yards of fill will be needed for the proposed reconstruction of approximately 4,020 feet of dikes on the north and south sides of the slough. The fill material will be obtained from the existing dikes ~~(~3,600 yds^3)~~, which will be either ~~reconstructed~~ **repaired** in place where appropriate (e.g., **the entire southern dike and** much of the northern dike, as shown on Sheet 6 of Exhibit No. 5) or relocated back from the slough margins as shown on Exhibit No. 5, as well as additional material dredged from approximately 8 acres of the adjacent seasonal freshwater wetlands ~~(~19,500 yds^3)~~. The relocated **and/or rehabilitated** dikes **along the north side of Mad River Slough** are proposed to have elevations raised to 5 feet above mean higher high water (MHHW) and an expanded base footprint (from the existing base footprint of 1.93 acres to a proposed ~~3.57~~ **2.77** acres) to address the projected future sea level rise of 3 feet for the area. The proposed elevation of the rehabilitated dikes **along the north side of Mad River Slough** will be one foot higher than a recent extreme high tide elevation recorded in December of 2003 (recorded at 9.85 feet at the North Spit), which caused a breach in a dike along the eastern shore of **another portion of** Mad River Slough that flooded a large area of the Mad River bottom.

The approximately ~~800~~**2,480**-foot-long north bank dike in the project area (comprised of ~1,100 cubic yards of fill covering ~1 acre) will be restored in place (where appropriate)

or relocated eastward as shown on Exhibit No. 5 (Sheet 6) to create a 1.43-acre bench designed to become high elevation (~MHHW) salt marsh. Combined with the 0.36-acre of existing salt marsh in the area which is to be retained, the project will result in 1.79 acres of salt marsh habitat on the north bank.

The approximately 1,540-foot-long south bank dike in the project area (comprised of ~2,500 cubic yards of fill covering ~0.86-acre) will be ~~relocated 25 feet southward as shown on Exhibit No. 5 (Sheet 6) to create a 1.03-acre bench designed to become high elevation salt marsh~~ **rebuilt in place 2 feet to 3 feet higher than existing elevation to between 3.75 feet to 5 feet above the adjacent agricultural pasture**. ~~As a~~ **A** 0.12-acre band of existing salt marsh will be retained along the south bank~~, the project will result in approximately 1.15 acres of salt marsh habitat in this area~~.

The wetland enhancement proposed for 8.1 acres of pastureland (seasonal freshwater wetland or "farmed" wetland) on the north side of the slough will involve excavating approximately 13,400 cubic yards of material to increase topographic relief, collect and retain surface runoff, increase water depth, extend the duration of seasonal inundation, and enhance wetland plant diversity. The excavated material will be used to restore the levees as described above. A network of "channels" will be graded into the area to drain stormwater runoff southward to the existing tidegate. The wetland enhancement area will be designed to dry out annually to allow for continued seasonal agricultural grazing.

The elevation of the tidegate inlet will be increased (by extending and elevating the connecting culvert) to promote the seasonal inundation of 16.7 acres on the north side of the slough, including 12.3 acres of enhanced seasonal freshwater wetlands (an area greater than the proposed enhancement area described above) and 4.4 acres of restored riparian habitat (see Exhibit No. 5, Sheet 6). A 0.5-acre "island" (designed to be higher in elevation than the surrounding wetlands but still low enough to flood repeatedly during winter and spring) will be created in the midst of the 12.3-acre enhanced wetland area to provide an area for resting waterfowl and shorebirds as well as to function as a wind-break from prevailing winds during the winter.

The proposed project also involves replacing two undersized, collapsed culverts located beneath the ranch road (eastern access road) north of the slough with one 24-inch diameter by 20-foot-long culvert. The new culvert will direct and increase runoff from properties to the east into the enhanced wetland area. An additional undersized or collapsed culvert beneath the ranch road south of the slough also will be replaced with a 24-inch diameter by 20-foot long culvert to maintain drainage of adjacent agricultural lands. See Exhibit No. 5 for details.

Finally, the applicants propose to install exclusionary cattle fencing to facilitate the success of the restoration efforts in the project area. Approximately 2,340 lineal feet of high-tensile, single-strand, 12.5-gauge electrical wire fencing will be installed to exclude cattle from the 17.8-acre project area. As the new fencing will be installed along the edge of the existing ranch road and along or on the toe of the south bank dike, no wetlands will

be impacted by fence post placement. Table 1 below summarizes the existing and proposed habitats in the project area.

Table 1. Summary of existing and proposed habitats/uses of the project area.

Project Area Habitats/Uses	Existing	Proposed	Notes
DIKES	~2 acres (combined base footprint)	~~3.6~~ **2.77** acres (combined base footprint)	The rehabilitated dikes **along the north side of the slough** will be designed to withstand 3 feet of sea level rise with 2.5:1 side slopes and will have an elevation 1 foot higher than a recent extreme high tide elevation recorded in December of 2003. **The south dike would be repaired in place and raised 2-3 feet in height.**
North bank dike	1,100 yds^3 of fill	12,100 yds^3 of fill	
South bank dike	2,500 yds^3 of fill	~~7,400~~**3,775** yds^3 of fill	
AGRICULTURAL (GRAZING) LAND	17.3 acres (including ~2 acres of existing dikes; excluding 0.5-acre of salt marsh)	~~10.9~~**11.7** acres (including ~3.6 acres of expanded dikes; excluding 4.4 acres of riparian and 2.5 acres of salt marsh)	Overall net loss of ~~6.4~~ **5.6** acres (0.97 animal unit months); 4.4 acres will be converted to riparian habitat and an additional 2 acres to salt marsh.
UPLANDS	2 acres (combined footprint of existing dikes)	~~2.8~~ **2** acres **(combined footprint of rehabilitated dikes)**	~~Wetland conversion will result from the expanded footprint of the south dike (0.8-acre), while t~~**T**he 0.8-acre expanded footprint of the north dike is expected to function as a seasonal wetland
WETLANDS	15.8 acres	15**.8** acres	~~There will be a net loss of 0.8-acre of freshwater seasonal wetlands, which will be converted to uplands due to the expanded footprint of the south dike.~~
"Farmed" wetlands (seasonal freshwater)	15.3 acres	8.1 acres (including a 0.5-acre "island" and a 0.8-acre "bench" on the inboard side of the north dike footprint)	The tidegate inlet elevation will be adjusted to promote seasonal inundation (fresh-water wetland enhancement) of up to 16.7 acres.
Riparian wetlands	0 acres	4.4 acres	This area is proposed to be planted with native trees and shrubs such as willow, red alder, and Sitka spruce.
Salt marsh	0.5 acres (0.36-ac. along north	~~2.5~~**1.6** acres (1.79 ac. along north	There will be an overall net gain of ~~2~~ **1.1** acres of salt

Project Area Habitats/Uses	Existing	Proposed	Notes
	bank & 0.12-acre along south bank)	bank ~~& 1.15 acres along south bank~~)	marsh in the project area.
SUMMARY:	The existing habitats in the 17.8-acre project area consist of the following: 15.3 acres of freshwater seasonal ("farmed") wetland, 2 acres of upland dikes, and 0.5-acre of salt marsh. The proposed habitats will include 8.1 acres of freshwater seasonal wetlands (including a 0.5-acre "island" for resting waterfowl), 4.4 acres of riparian habitat, 2~~.8~~ acres of upland dikes, and ~~2.5~~ **1.6** acres of salt marsh.		

The applicants have outlined general revegetation goals/plans for the four proposed habitat areas (dike/upland, salt marsh, riparian, and enhanced seasonal freshwater wetland) as follows:

- The revegetation goal for the rehabilitated dikes is 100 percent ground cover for erosion control in the short-term and to provide forage for grazing in the long-term. The dike surfaces are proposed to be mulched and seeded at 10 pounds per acre with commercially available grass seed.
- The existing narrow bands of salt marsh habitat (0.12-acre along the south bank and 0.36-acre along the north bank) will be protected so that the existing pickleweed-salt grass vegetation of the areas can colonize the newly graded salt benche~~s~~ **along the north slough**. The vegetation goal for the salt marsh areas will rely on tidewater exchange to passively establish high elevation salt marsh vegetation. All exposed areas are proposed to be mulched and seeded with a blend of a minimum of three locally native grass species.
- The riparian area will be mulched and seeded with native annual grass seed at 10 pounds per acre for erosion control. The area will be planted in clumps with willow (*Salix* sp.) sprigs/stakes obtained from the applicant's nearby property on the Mad River (outside of the coastal zone). The applicants also propose to plant red alder (*Alnus rubra*) and Sitka spruce (*Picea sitchensis*) trees to increase diversity and habitat values. A 50 percent survival rate will be considered successful, and if necessary, subsequent planting will occur to achieve the desired density and coverage.
- Passive revegetation is proposed for the seasonal freshwater wetland area. If needed, the applicants propose to plant a native smartweed (*Polygonum*) species along some areas, which is a preferred waterfowl food.

In addition, the applicants propose to implement the following "best management practices" (BMPs) for erosion and sediment control and for the protection of sensitive plant species (Humboldt Bay owl's-cover and Point Reyes bird's-beak in the existing salt marsh habitats):

- Construction activities will be limited to the dry season (July 1-October 31);

- Excavation and grading adjacent to Mad River Slough will occur during low tide only;
- During construction, the tidegate will be sealed to prevent stormwater runoff with suspended sediment from discharging to slough;
- During construction, a combination of silt fence or fiber rolls will be deployed upslope of the construction site and tidegate inlet to trap suspended sediment from entering or leaving the site in stormwater runoff;
- Disturbed areas will be seeded with grass and mulched immediately following construction;
- Temporary exclusionary fencing will be erected around the project area to prevent grazing until desired vegetation and percent ground cover are established; and
- The upper elevational boundary for the two rare plant species (between MHW and MHHW) will be staked and flagged, and no construction activities will occur within the rare plant exclusion area.

Other proposed mitigation measures are outlined in the Mitigated Negative Declaration prepared for the project (see "Substantive File Documents," page 2).

C. Restoration of Marine Resources, Biological Productivity, and Permissible Filling, Dredging, & Diking of Wetlands

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30230 states as follows:

> *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.* [Emphasis added.]

Coastal Act Section 30231 states as follows:

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

Coastal Act Section 30233 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:*
>
> ...
>
> *(6) Restoration purposes*
>
> ...
>
> *(c) In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary*... [Emphasis added.]

2. Consistency Analysis

Coastal Act Sections 30230 and 30231 require, in part, that marine resources and coastal wetlands be maintained and enhanced. These policies also call for restoration of marine resources, coastal waters, streams, wetlands, and estuaries where feasible.

When read together as a suite of policy directives, Sections 30230, 30231, and 30233 set forth a number of different limitations on what types of projects may be allowed in coastal wetlands. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories or tests. These tests require that projects that entail the dredging, diking, or filling of wetlands demonstrate that:

a. That the purpose of the filling, diking, or dredging is for one of the seven 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.

Each category is discussed separately below.

a. Permissible Use for Fill

The first test set forth 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 project is subcategory (6), "restoration purposes."

The project proposes to restore 6.4 acres of grazing land to wetland habitat and enhance an additional 8.1 acres of grazed seasonal wetland habitat by (1) **repairing and maintaining approximately 1,540 feet of existing dike located along the south bank of the slough and** rehabilitating **approximately** ~~4,020~~**2,480** feet of existing dikes along ~~both~~ the north ~~and south~~ banks of Mad River Slough to protect agricultural uses on lands

adjacent to and downslope of the slough; (2) restoring ~~2~~ **1.1** acres of coastal salt marsh habitat **along the north side of Mad River Slough** by relocating the **north** dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland species; and (4) restoring 4.4 acres of riparian habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms. Additional project components include renovating the existing tidegate that drains the northern pastureland, upgrading culverts along the eastern access road, and installing temporary exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts.

Neither the Coastal Act nor the Commission's administrative regulations contain a precise definition of "restoration." The dictionary defines "restoration" in terms of actions that result in returning an article "back to a former position or condition," especially to "an unimpaired or improved condition."[3] The particular restorative methods and outcomes vary depending upon the subject being restored. For example, the Society for Ecological Restoration defines "ecological restoration" as "the process of intentionally altering a site to establish a defined indigenous, historical ecosystem. The goal of the process is to emulate the structure, function, diversity, and dynamics of the specified ecosystem."[4] However, within the field of "wetland restoration," the term also applies to actions taken "in a converted or degraded natural wetland that result in the reestablishment of ecological processes, functions, and biotic/abiotic linkages and lead to a persistent, resilient system integrated within its landscape"[5] that may not necessarily result in a return to historic locations or conditions within the subject wetland area.

Implicit in all of these varying definitions and distinctions is the understanding that the restoration entails returning something to a prior state. Wetlands are extremely dynamic systems in which specific physical functions such as nutrient cycles, succession, water levels and flow patterns directly affect biological composition and productivity. Consequently "restoration," as contrasted with "enhancement," encompasses not only reestablishing certain prior conditions but also reestablishing the processes that create those conditions. In addition, most of the varying definitions of restoration imply that the reestablished conditions will persist to some degree, reflecting the homeostatic natural forces that formed and sustained the original conditions before being artificially altered or degraded, and will not promptly return to the pre-restored state.

Moreover, finding that proposed diking, filling, and dredging constitutes "restoration purposes" must be based, in part, on evidence that the proposed project will be successful in restoring habitat values. Should the project be unsuccessful at increasing and/or enhancing habitat values, or worse, if the proposed diking, filling, and dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually be for "restoration purposes." These two

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[3] Merriam-Webster's Collegiate Dictionary, Tenth Edition

[4] "Definitions," *Society of Ecological Restoration News*, Society for Ecological Restoration; Fall, 1994

[5] *Position Paper on the Definition of Wetland Restoration*, Society of Wetland Scientists, August 6, 2000

characteristics are particularly noteworthy to restoration grant program administrators in reviewing funding requests to ensure that the return on the funding investment is maximized and liabilities associated with unwanted side effects of the project are minimized.

Thus, to ensure that the project achieves its stated habitat restoration or enhancement objectives, and therefore be recognized as being for "restoration purposes," the project must demonstrate that: (1) it either entails (a) a return to, or re-establishment of, former habitat conditions, or (b) entails actions taken in a converted or degraded natural wetland that will result in the reestablishment of landscape-integrated ecological processes, and/or abiotic/biotic linkages associated with wetland habitats; (2) there is a reasonable likelihood that the identified improvements in habitat value and diversity will result; and (3) once re-established, it has been designed to provide the desired habitat characteristics in a self-sustaining, persistent fashion independent of the need for repeated maintenance or manipulation to uphold the habitat function.

Each component of project as it relates to the proposed restoration or enhancement is discussed below:

- Rehabilitation of 4,020 feet of existing dikes and Restoration of 2 acres of salt marsh habitat:

The project proposes to relocate (or restore in place where appropriate) the approximately 800-foot-long north bank dike in the project area, which is severely eroded and frequently overtopped, eastward to create a 1.43-acre bench designed to become high elevation (~MHHW) salt marsh. Combined with the 0.36-acre of existing salt marsh in the area which is to be retained, the project will result in 1.79 acres of salt marsh habitat on the north bank. Additionally, the project proposes to ~~relocate~~ **rebuild in place, without filling additional wetlands,** the approximately 1,540-foot-long, degraded south bank dike in the project area ~~25 feet southward to create a 1.03-acre bench designed to become high elevation salt marsh~~. ~~As a~~ **A** 0.12-acre band of existing salt marsh will be retained along the south bank~~, the project will result in approximately 1.15 acres of salt marsh habitat in this area~~. In the case of ~~both~~ **the northern** dikes, the rehabilitated portions will be relocated (i.e., fill placed) onto seasonal freshwater ("farmed") wetlands (~0.8-acre of fill placement for the north dike relocation/expansion ~~and ~0.8 acre of fill placement for the south dike relocation/expansion~~).

The proposed restoration of approximately ~~2~~ **1.1** acres of salt marsh habitat in the project area is within an area that was historically subject to the tidal influence of Humboldt Bay. The existing dikes are located immediately adjacent to the slough banks, which historically supported more extensive salt marsh benches along its margins. The proposed project would involve, in part, relocating existing **northern** dikes back from the margin of Mad River Slough to expand the existing salt marsh benches ~~(totaling 0.5 acre)~~ and restore an additional ~~2~~ **1.1** acres of salt marsh habitat. In addition to the restoration benefit, the salt marsh benches also will function to buffer the rehabilitated dikes from the erosive effects of the adjoining tidal slough.

In the absence of salt marsh restoration at the subject site, the channel of Mad River Slough in this location lacks a transitional buffer between the tidal channel and the upland dikes. As a result, dike materials continually erode into coastal waters over time, and marine resources that depend on the salt marsh environment are deprived of suitable habitat along this stretch of slough.

According to information from the U.S. Fish and Wildlife Service (FWS), in the Humboldt Bay region it is estimated that between 7,000 and 8,700 acres of salt marsh were present prior to human development. Since the mid-1800's, most of what was likely to have been historic salt marsh has been diked or filled and has been reduced to a total area of around 900 acres, a reduction of at least 87 percent. The FWS has indicated that restoration of salt marsh habitats around the Bay is a high priority, as salt marsh restoration is important for the protection, enhancement, and restoration of native fish, wildlife, and plant communities, some of which are dependent on salt marsh for their existence. In past permit actions on wetland restoration projects around Humboldt Bay, the Commission has acknowledged that, in general, restoring areas that have historically supported tidal salt marsh is preferable when the physical conditions of a site present such an opportunity.

Therefore, the Commission finds that the proposed dredging and filling of ~~1.6~~**0.8** acres of seasonal wetlands for the restoration of ~~2~~ **1.1** acres of salt marsh is permissible under Section 30233(a)(6) for "restoration purposes."

As discussed above, this finding that the proposed project constitutes "restoration purposes" is based, in part, on the assumption that the proposed project will be successful in increasing salt marsh habitat values. Should the project be unsuccessful at increasing salt marsh habitat values, or worse, if the proposed dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually be for "restoration purposes." To ensure that the proposed project achieves the objectives for which it is intended (*i.e.*, for the restoration and retention of ~~2.5~~ **1.1** acres of salt marsh), the Commission attaches Special Condition No. 1. Special Condition No. 1 requires the applicants to submit a final monitoring plan for review and approval by the Executive Director prior to the issuance of the coastal development permit. The monitoring plan is required to outline a method for measuring and documenting the improvements in habitat value and diversity at the site over the course of five years following project completion. Furthermore, Special Condition No. 1 requires the monitoring plan to include provisions for remediation to ensure that the goals and objectives of the salt marsh restoration project are met.

- Enhancement of 8.1 acres of seasonal freshwater wetlands and Restoration of 4.4 acres of riparian habitat

The project proposes to enhance approximately 8.1 acres of seasonal freshwater wetlands on the north side of the slough by dredging approximately 13,400 cubic yards of material to increase topographic relief, collect and retain surface runoff, increase water depth,

extend the duration of seasonal inundation, and enhance wetland plant and wildlife habitat diversity. The elevation of the tidegate inlet will be increased (by extending and elevating the connecting culvert) to promote the seasonal inundation of 16.7 acres on the north side of the slough, including 12.3 acres of seasonal freshwater wetlands (an area greater than the proposed enhancement area described above) and 4.4 acres of restored riparian habitat. The enhanced wetland habitat will be designed to impound shallow (<18 inches) water for an extended period of the winter and spring for the benefit of waterfowl such as dabbling ducks and other water-associated wildlife.

Additionally, the applicants propose to restore 4.4 acres of riparian habitat on the north side of the slough by excavating existing seasonal freshwater wetlands as described above and planting a diversity of native, regionally appropriate riparian plant species including willow, red alder, and Sitka spruce trees. The restored riparian habitat is intended to increase and maintain the biological productivity of the area for the benefit of terrestrial and marine organisms.

Although much of the agricultural pasturelands in the Humboldt Bay area are diked former tidelands, the areas proposed for wetland enhancement and riparian restoration are located in areas that historically supported freshwater wetland habitats. According to soil data from the Natural Resources Conservation Service (NRCS) for the subject area, the soils of the site are mapped as Arlynda. Natural vegetation for Arlynda soils is estimated by the NRCS to have been rushes and sedges in marshland or under a redwood canopy on the lower reaches of rivers and streams. Additionally, according to Soils of Western Humboldt County (McLaughlin and Harradine 1965), the area contains mostly Ferndale silt loam soils (Fe7). This soil type historically was covered with willows, elderberry, firs, and spruce. Additional evidence that the area historically supported freshwater wetland habitat is the presence of submerged tree roots visible along the banks of the slough in the project area.

The proposed 8.1-acre wetland enhancement area and 4.4-acre riparian restoration area (where the proposed dredging is to occur) both are located within existing seasonal ("farmed") wetlands that currently serve as grazing land for cattle during the summer months and also provide open, relatively deep water habitat (primarily through the impoundment of stormwater) during the winter and spring. Existing vegetation in the area consists of a single-strata mix of native and nonnative grasses and herbs, and in general the existing wetland habitat is considered degraded and low quality (in terms of ecological function and value) due to decades of grazing and agricultural use.

The proposed dredging in the 8.1-acre seasonal wetland area is expected to result in greater wetland plant diversity as well as increased habitat value for a diversity of species such as dabbling ducks and other water-associated wildlife. Currently the depth of the stormwater runoff that is impounded in the area during the winter and spring favors Aleutian Cackling Geese, which prefer the more deeply ponded areas. Raising the tidegate inlet elevation as proposed is expected to provide, on a seasonal basis, the more shallow (<18 inches) water habitat preferred by a greater diversity of waterfowl (especially dabbling ducks) across a greater area (up to 16.7 acres) while still providing

habitat for the geese, which graze the new grasses in the spring as the seasonal wetland dries out.

Planting the 4.4-acre riparian restoration area as proposed (with willows, red alder, and Sitka spruce trees) will benefit both terrestrial and marine-associated organisms. Riparian zones are just one of the many habitat elements in the marine nearshore environment, and one that is extremely restricted and reduced in the Humboldt Bay area. Riparian zones around Humboldt Bay today are only a fraction of their size compared to 150 years ago, as land has been drained, logged, and cleared for agriculture and residential, commercial, and industrial development. Humboldt Bay and its surrounding habitats are an important stopover point for hundreds of species of birds as they travel the Pacific Flyway, an "aerial highway" used by birds that nest in the far north and migrate to wintering areas in North and South America. Riparian habitat in particular is crucial habitat for many migratory and resident bird species that need the habitat for nesting, roosting, and foraging. Additionally, the wetland habitats around Humboldt Bay, including riparian zones, are important for over 40 species of mammals and over 100 species of fish and marine invertebrates.

The riparian restoration is proposed adjacent to tidally-influenced Mad River Slough. Marine riparian zones serve similar functions to those described for freshwater systems and are likely to provide additional functions unique to nearshore ecosystems (Brennan & Culverwell 2004). Riparian areas contribute important organic debris that is transformed into nutrients, which support the marine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation also supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. Riparian areas capture contaminants; by absorbing or filtering contaminated stormwater runoff, soils and vegetation in marine riparian areas can prevent pollutants from entering coastal waters. Healthy riparian areas support rich and diverse communities of animals that depend on the areas for feeding, breeding, refuge, movement, and migration. Salmonids and many other fish species feed on insects from marine riparian areas. If these areas are altered or eliminated, the food supply and, thus, the abundance of nearshore fish is likely to be reduced. Importantly, riparian areas serve as buffers for human health and safety. The marine riparian functions of water quality, soil stability, and the ability to absorb the impacts of storm surges and other natural, physical assaults on shorelines have direct benefits to humanity. Flooding and storm events can be exacerbated in the absence of marine riparian areas, which can serve as protective buffers.

Thus, the restoration of riparian habitat in the Humboldt Bay area is integral to maintaining optimum populations of marine organisms and for the protection of human health, as is mandated by Section 30231.

Although the proposed wetland enhancements and riparian restoration will not necessarily reestablish the exact same configuration of freshwater wetland habitat (enhanced seasonal wetlands and restored riparian habitat) that historically existed in the area, the proposed enhancements and restoration of freshwater wetlands entail actions

taken in converted or degraded natural wetlands that will result in the reestablishment of landscape-integrated ecological processes associated with wetland habitats. Therefore, the Commission finds that the proposed wetland enhancements are consistent with the definition of restoration and constitute filling and dredging for restoration purposes consistent with Section 30233(a)(6).

As discussed above, this finding that the proposed project constitutes "restoration purposes" is based, in part, on the assumption that the proposed project will be successful in enhancing seasonal wetland habitat values. Should the project be unsuccessful at increasing seasonal wetland habitat values, or worse, if the proposed dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually be for "restoration purposes." To ensure that the proposed project achieves the objectives for which it is intended (*i.e.*, for the enhancement of at least 8.1 acres of seasonal freshwater wetlands), the Commission attaches Special Condition No. 1, which (as described above) requires the applicants to submit a final monitoring plan to outline a method for measuring and documenting the improvements in habitat value and diversity at the site over the course of five years following project completion.

b. Alternatives Analysis

The second test set forth by the Commission's dredging and fill policies is that the proposed dredging or 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.*

Alternatives to the proposed project that were examined include (1) the no-project alternative; **and** (2) alternative sites; and (3) rebuilding **the north** dikes in-kind. As explained below, each of these alternatives analyzed in the alternatives analysis are infeasible and/or do not result in a project that is less environmentally damaging than the proposed project:

(1) No-Project Alternative

The "no project" alternative would maintain the *status quo* of the site and would not restore ~~2~~ **1.1** acres of salt marsh and 4.4 acres of riparian habitat or enhance 8.1 acres of seasonal freshwater wetlands as proposed. Existing conditions on the project site consist of actively used agricultural land (farmed seasonal wetlands) used for seasonal cattle grazing. Under the "no project" alternative, the land would continue to be used for seasonal agricultural grazing (as it would under the proposed project), but there would be no restored and improved habitat for marine resources, and the biological productivity of the coastal wetlands and waters would not be improved. **In addition, the deteriorated levees will continue to allow high tides and storm surge to flood the agricultural**

fields. Accordingly, taking into consideration the economic, environmental, and social factors, the no project option is not a feasible less environmentally damaging alternative.

(2) Alternative Sites

Restoration and enhancement could occur on other parcels located near the project site if there were willing landowners. However, at this time the co-applicant (Miller) is the only landowner who has proposed the project and who is willing to match the federal grant funds available for the project. The Millers, in cooperation with the U.S. Fish and Wildlife Service (FWS), are integrating the project components of dike rehabilitation and restoration to simultaneously restore high elevation salt marsh habitat, enhance degraded seasonal freshwater wetlands, restore riparian habitat, which has been drastically reduced in the Arcata-Mad River bottomland, and protect agricultural uses on surrounding lands. Furthermore, the majority of the land in immediate proximity to Humboldt Bay and its tributaries where restoration of these habitat types is possible is itself wetland by nature. Therefore, implementing the project at an alternative location is not a feasible less environmentally damaging alternative.

(3) Rebuilding **North** Dikes In-Kind

The proposed **north** dike rehabilitation will result in **an** expanded dike footprints ~~and a~~ **but no** net loss of ~~0.8 acre of~~ wetland habitat. **The expanded base footprint of the north dike (from the existing 25-35 feet to the proposed 43 feet) is expected to function as freshwater seasonal (grazed) wetland habitat.** The rehabilitated **north** dikes will be designed to withstand the projected 3 feet of sea level rise for the Humboldt Bay area with 2.5:1 side slopes. The proposed rehabilitated dikes will have an elevation 1 foot higher than a recent extreme high tide elevation recorded in December of 2003 and 5 feet above Mean Higher High Water (MHHW). In future phases, the dike elevation could be increased if necessary without increasing the dike footprint. The project has been designed so that the increased footprint of the northern dike will be subjected to seasonal inundation from stormwater runoff and support seasonal freshwater wetland habitat. As described above, rehabilitating the dikes as proposed will not only restore ~~2~~ **1.1** acres of historic salt marsh habitat, but through the construction of salt marsh "benches" the relocated/rehabilitated dikes will be buffered from the erosive effects of the slough.

If the existing **north** dikes ~~were~~ **was** to be rehabilitated in place, there would be no opportunity for the wetland restoration and enhancements that have been proposed. If the rehabilitated dikes ~~were~~ **was** designed to have a smaller base footprints (i.e., less wetland fill), ~~they~~ **it** would not serve ~~their~~ **its** additional function of protecting productive agricultural land and surrounding infrastructure. As discussed above, the current size of the dikes is not sufficient to prevent salt water intrusion and overtopping during extreme high tide events, which have become more frequent over the years and are expected to increase in frequency with the projected sea level rise for the area. Therefore, rebuilding the **north** dikes in ~~their~~ **its** present location without expansion of the dike width is not a feasible less environmentally damaging alternative.

Conclusion

For all of the reasons discussed above the Commission finds that there is no less environmentally damaging feasible alternative to the development as conditioned, 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 proposed development would be located within and around coastal waters and wetlands. Depending on the manner in which the proposed project is conducted, the significant adverse impacts of the project may include (1) impacts to marine resources and wildlife habitat from water pollution in the form of sedimentation or debris entering coastal waters and wetlands; (2) introduction (through re-planting) of exotic invasive plants species that could compete with native vegetation and negate the habitat improvements they would provide; (3) use of certain rodenticides that could deleteriously bio-accumulate in predator bird species; ~~(4) net loss of wetland habitat~~; and (~~5~~4) impacts to sensitive salt marsh plant species (Humboldt Bay owl's-clover and Point Reyes bird's-beak). Overall, the project would restore and enhance wetland habitat values and would produce generally beneficial environmental effects. However, the proposed project has been conditioned to ensure that habitat restoration and enhancement results and that potentially significant adverse impacts are minimized. The potential impacts and their mitigation are discussed below in the following sections.

(1) Sedimentation Impacts to Aquatic Habitat & Water Quality

The proposed restoration and enhancements are being undertaken to restore and enhance marine resources and the biological productivity of seasonal wetlands. The existing salt marsh in and around the project area provides habitat for sensitive plant species such as Humboldt Bay owl's-clover and Point Reyes' bird's-beak. Mad River Slough provides habitat for the environmentally sensitive eelgrass (*Zostera marina*), sensitive fish species, and a suite of macro-invertebrates and other marine organisms. The seasonal wetlands provide habitat to a wide assortment of terrestrial organisms, most notably several environmentally sensitive avian species such as the Northern harrier (*Circus cyaneus*), White-tailed kite (*Elanus leucurus*), Great blue heron (*Ardea herodias*), and Snowy egret (*Egretta thula*).

Potential adverse impacts to both existing and to-be-restored/enhanced fish and wildlife habitat-related water quality could occur in the form of sedimentation or debris from project dredging. Although the project description states that such impacts would be prevented and minimized by conducting the ground-disturbing work during the dry weather season and through incorporating various other best management practices, the application provides few details as to precisely how this excavation would be performed relative to (1) the potential for causing slough bank soil materials to enter into the Mad River Slough during project work; and (2) the potential for materials to become entrained into coastal waters during the construction of the seasonal freshwater "enhancements."

To ensure that adverse impacts to water quality do not occur from construction activities or from entrainment of sediment into stormwater runoff from bare, disturbed ground in and around the project area, the Commission attaches Special Condition Nos. 2 and 3. Special Condition No. 2 requires the applicants to undertake the development pursuant to certain construction responsibilities. These include, but are not limited to, the following: (a) no construction materials, debris, or waste are to be placed or stored where they may enter coastal waters; (b) all construction debris is to be removed and disposed of in an approved location; (c) the construction window shall be limited to the dry season (June 1-November 15), and any grading between October 16 and November 15 shall only be conducted if conditions remain dry, the predicted chance of rain is less then 30 percent, and appropriate BMPs are in place; (d) construction activities adjacent to the slough shall only be performed at low tide and when soils are sufficiently dry so that sediment is not discharged into streams; (e) if rainfall is forecast during the time construction activities are being performed, any exposed soil areas shall be promptly mulched or covered with plastic sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation; (f) any debris discharged into coastal waters shall be recovered immediately and disposed of properly; (g) any fueling and maintenance of construction equipment shall occur within upland areas only outside of environmentally sensitive habitat areas or within designated staging areas; and (h) fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or wetlands, hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and any accidental spill shall be rapidly contained and cleaned up. Special Condition No. 3 similarly requires the applicants to submit, for the Executive Director's review and approval, an erosion and runoff control plan that is to include certain specified water quality best management practices for minimizing impacts to coastal waters. The applicants do not propose to stockpile material on site, but if a stockpiling site for spoils material is necessary, the applicants propose to use the corner of the eastern ranch road (northeast corner of the project, see sheet 5 of 16, Exhibit No. X) where there is a wide spot as the road crosses the railroad grade. The erosion and runoff control plan required by Special Condition No. 3 must include BMPs for stockpiling sites to minimize the potential for stockpiled spoils to become entrained in stormwater runoff.

(2) Introduction of Exotic Invasive Plants

The use of non-invasive plant species adjacent to environmentally sensitive habitat areas (ESHAs) (such as Mad River Slough, seasonal wetlands, sensitive plant habitat, etc.) is critical to protecting such areas from disturbance. If invasive species are planted adjacent to an ESHA they can displace native species and alter the composition, function, and biological productivity of the ESHA.

The applicants are proposing to mulch and seed the rehabilitated dikes at 10 pounds per acre with commercially available grass seed. The restored riparian area will be mulched and seeded with native annual grass seed at 10 pounds per acre for erosion control. And planted in clumps with willow sprigs/stakes (obtained from the applicant's nearby

property on the Mad River), red alder, and Sitka spruce. For the restored salt marsh area, all exposed areas are proposed to be mulched and seeded with a blend of a minimum of three locally native grass species. Passive revegetation is proposed for the seasonal freshwater wetland area. If needed, the applicants propose to plant a native smartweed (*Polygonum*) species along some areas, which is a preferred waterfowl food.

To assure that no invasive plant species are seeded in the project area, Special Condition No. 4 prohibits the planting of any plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. Furthermore, no plant species listed as a "noxious weed" by the governments of the State of California or the United States are to be utilized in the revegetation portion of the project.

(3) Use of Anticoagulant-based Rodenticides

To help in the establishment of vegetation, rodenticides are sometimes used to prevent rats, moles, voles, and other similar small animals from eating the newly planted saplings. Certain rodenticides, particularly those utilizing blood anticoagulant compounds such as brodifacoum, bromadiolone and diphacinone, have been found to pose significant primary and secondary risks to non-target wildlife present in urban and urban/wildland areas. As the target species are preyed upon by raptors or other environmentally sensitive predators and scavengers, these compounds can bio-accumulate in the animals that have consumed the rodents to concentrations toxic to the ingesting non-target species.

To avoid this potential cumulative impact to environmentally sensitive wildlife species, Special Condition No. 4 contains a prohibition on the use of such anticoagulant-based rodenticides.

~~(4)Net Loss of Wetlands~~

~~The project, as proposed will result in a net loss of 0.8 acre of wetlands. Although the project involves 2 acres of salt marsh restoration, 4.4 acres of riparian restoration, and 8.1 acres of seasonal freshwater wetland enhancement, these restoration and enhancement activities will occur mostly within existing seasonal wetlands. In the process of these restoration and enhancement activities, the project involves expanding the base footprints of the existing dikes, as they are relocated or rehabilitated in place, by approximately 1.6 acres. Approximately 0.8 acre of expanded dike on the north side of the slough, which will be placed atop existing seasonal wetlands, is expected to remain as seasonal wetland habitat. Approximately 0.8 acre of expanded dike on the south side of the slough, however, will be converted to upland habitat. Thus, the project, as proposed, will result in a net loss of 0.8 acre of wetlands from the placement of wetland fill.~~

~~The specific wetland habitat that will be filled and converted to upland dike consists of grazed seasonal wetland. As discussed above, the 0.8 acre of seasonal wetland vegetation on the south side of the slough 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 birds and mammals. 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.~~

~~Therefore, the Commission attaches Special Condition No. 5. This condition requires that the applicant submit, for the review and approval of the Executive Director, a wetland mitigation plan to compensate for the 0.8 acre of wetlands to be filled by the expanded base footprint of the southern dike and ensure that this impact on wetland resources is feasibly mitigated to minimize adverse environmental effects consistent with Section 30233(a) of the Coastal Act.~~

~~The Commission finds that in this case a 1:1 mitigation ratio and not a higher ratio is appropriate. First, the habitat to be mitigated is grazed seasonal wetlands with a history of disturbance and relatively little ecological complexity. Second, the chances of success for recreating this kind of habitat in a relatively short timeframe are high in comparison to other more complex kinds of wetland habitat, and thus there is not as much need for a higher mitigation ratio to make up for potential failure of the mitigation and for as much temporal loss. Finally, the enhancement of habitat values associated with the overall project in restoring wetland habitat and function will offset the temporal loss that does occur between the time the fill for the new dikes is placed and the mitigation site can be restored. The project proposes to restore 2 acres of salt marsh and 4.4 acres of riparian habitat along a tidally influenced slough connected to Humboldt Bay. As discussed above, the Commission acknowledges that restoring areas that have historically supported tidal salt marsh is preferable when the physical conditions of a site present such an opportunity. Furthermore, the restoration of riparian habitat in the Humboldt Bay area, and particularly along tidally influenced Mad River Slough, is integral to maintaining optimum populations of marine organisms and for the protection of human health.~~

~~There may still be a possibility of mitigating the wetland fill immediately adjacent to the project site to the east by removing some of the old railroad embankment fill. The old railroad grade is a separate parcel owned by the McKinleyville Community Services District. The Commission notes that the applicants have raised concerns about this approach, since the area is owned by the District, not the applicants, and it is unclear whether or not the embankment is be considered an historic structure. However, this alternative has not been completely evaluated at this point and may be an option. If not, Special Condition No. 5 allows the mitigation to be provided offsite elsewhere within Humboldt County.~~

~~(5)~~(4) Impacts to Sensitive Plant Species

Two rare plant species occur in existing salt marsh habitat in the project area: Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*) and Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*). As discussed above, both plants are considered

"rare" by the California Native Plant Society and the California Department of Fish and Game.

Both Humboldt Bay owl's-clover and Point Reyes bird's-beak are annual, hemiparasitic species in the Broom-rape family (Orobanchaceae) that grow in coastal salt marsh habitats primarily along the North Coast of California. In addition to photosynthesizing, these hemiparasites supplement their nutrient intake by parasitizing the live roots of adjacent salt marsh species. Humboldt Bay owl's-clover plants typically germinate in late winter to spring and bloom sometime between April and August (often peaking in June). Point Reyes bird's-beak plants are slightly later: on average, germination is in spring and flowering is approximately in July (CNPS 2008). Population numbers of each species normally fluctuate from year to year since, as annuals, germination rates are dependent on a number of environmental factors.

Surveys conducted by the applicants' consultant in 2004 located a band of Humboldt Bay owl's-clover and Point Reyes bird's-beak plants on the banks of the slough along both the north and south dikes between approximately MHW and MHHW.

The applicants propose measures to avoid impacts to sensitive plant species in the project area including (1) prior to construction flagging and staking for avoidance the upper elevational boundary limit of the sensitive plant populations on site; and (2) avoiding ground disturbance within the rare plant exclusion area by leaving tidally influenced remnants of the old dikes within the rare plant exclusion area in place.

As the populations of Humboldt Bay owl's-clover and Point Reyes bird's-beak within the salt marsh habitat fluctuates from year to year, the only way to ensure avoidance of all sensitive plants is to avoid disturbance of all salt marsh habitat in the project vicinity. To ensure that all feasible mitigation measures designed to avoid impacts to the sensitive plant habitat in the project area are followed, staff recommends Special Condition No. ~~6~~**5**. This condition requires the submittal of a final mitigation plan prepared by a qualified botanist for the review and approval of the Executive Director that demonstrates that all existing salt marsh habitat on the site shall be avoided and protected and provides for implementation of the mitigation measures listed above. Furthermore, as discussed above, Special Condition No. 4 prohibits the planting of any invasive species on the site and the use of anticoagulant-based rodenticides, both of which could adversely impact sensitive plant species and habitat.

Conclusion

The Commission finds that, as conditioned, feasible mitigation measures have been provided to minimize adverse environmental effects consistent with Section 30233 of the Coastal Act.

d. Maintenance & Enhancement of Biological Productivity & Functional Capacity

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, the conditions of the permit will ensure that the project will not have significant adverse impacts on the water quality of any of the coastal waters in the project area and will ensure that the project construction will not adversely affect the biological productivity and functional capacity coastal waters or wetlands. The project's stated purpose is to restore and enhance the biological productivity of coastal wetlands, and conditions of the permit will ensure that the site is monitored for achievement of these goals. Therefore, the Commission finds that the project, as conditioned, will maintain and enhance the biological productivity and functional capacity of the habitat consistent with the requirements of Sections 30233, 30230, and 30231 of the Coastal Act.

D. Permit Authority, Extraordinary Methods of Repair & Maintenance

Coastal Act Section 30610(d) generally exempts from Coastal Act permitting requirements the repair or maintenance of structures that does not result in an addition to, or enlargement or expansion of the structure being repaired or maintained. However, the Commission retains authority to review certain extraordinary methods of repair and maintenance of existing structures that involve a risk of substantial adverse environmental impact as enumerated in Section 13252 of the Commission regulations. Section 30610 of the Coastal Act provides, in relevant part, the following:

> ***Notwithstanding any other provision of this division, no coastal development permit shall be required pursuant to this chapter for the following types of development and in the following areas: . . .***
>
> ***(d) Repair or maintenance activities that do not result in an addition to, or enlargement or expansion of, the object of those repair or maintenance activities; provided, however, that if the commission determines that certain extraordinary methods of repair and maintenance involve a risk of substantial adverse environmental impact, it shall, by regulation, require that a permit be obtained pursuant to this chapter.*** **[Emphasis added]**

Section 13252 of the Commission administrative regulations (14 CCR 13000 et seq.) provides, in relevant part, the following:

> ***(a) For purposes of Public Resources Code section 30610(d), the following extraordinary methods of repair and maintenance shall require a coastal development permit because they involve a risk of substantial adverse environmental impact:...***
>
> ***(3) Any repair or maintenance to facilities or structures or work located in an environmentally sensitive habitat area, any sand area, within 50 feet of the edge of a***

coastal bluff or environmentally sensitive habitat area, or within 20 feet of coastal waters or streams that include:

(A) The placement or removal, whether temporary or permanent, of rip-rap, rocks, sand or other beach materials or any other forms of solid materials;

(B) The presence, whether temporary or permanent, of mechanized equipment or construction materials.

All repair and maintenance activities governed by the above provisions shall be subject to the permit regulations promulgated pursuant to the Coastal Act, including but not limited to the regulations governing administrative and emergency permits. The provisions of this section shall not be applicable to methods of repair and maintenance undertaken by the ports listed in Public Resources Code section 30700 unless so provided elsewhere in these regulations. The provisions of this section shall not be applicable to those activities specifically described in the document entitled Repair, Maintenance and Utility Hookups, adopted by the Commission on September 5, 1978 unless a proposed activity will have a risk of substantial adverse impact on public access, environmentally sensitive habitat area, wetlands, or public views to the ocean.... [Emphasis added.]

The proposed relocation and reconstruction of the dike along the north bank of Mad River Slough is not repair and maintenance project pursuant to Section 30610(d) of the Coastal Act and Section 13252 of the Commission's regulations because the north bank dike will be built along a different alignment set back from the sough bank and will be enlarged at its base to facilitate increasing the height of the dike in the future to account for sea level rise. The width of the base of the levee increases from approximately 25-35 feet to 43 feet. Unlike the proposed changes to the north bank dike, the proposed rehabilitation of an approximately 1,540-foot-long stretch of the south dike in the project area is a repair and maintenance project because it does not involve an addition to or enlargement of the levee. Although certain types of repair projects are exempt from CDP requirements, Section 13252 of the regulations requires a coastal development permit for extraordinary methods of repair and maintenance enumerated in the regulation. The proposal to raise the elevation of the south dike 1-foot to 2-feet (to 3.75 feet to 5 feet above the adjacent pasture) involves the placement of solid materials within 20 feet of coastal waters. The proposed work will occur adjacent to environmentally sensitive habitat areas (rare plant and slough habitats). Therefore, this component of the proposed project requires a coastal development permit under Sections 13252(a)(1) of the Commission regulations.

In considering a permit application for a repair or maintenance project pursuant to the above-cited authority, the Commission reviews whether the proposed method of repair or maintenance is consistent with the Chapter 3 policies of the Coastal Act. The Commission's evaluation of such repair and maintenance projects does not extend to an evaluation of the conformity with the Coastal Act of the underlying existing development.

The repair and maintenance of levees can have adverse impacts on coastal resources, in this case primarily the quality of slough waters and rare plant habitat, if not properly undertaken with appropriate mitigation. The applicants propose to maintain the south levee in its existing footprint by repairing eroded areas and raising the dike elevation. The proposed elevation of the rehabilitated dike will be one foot higher than a recent extreme high tide elevation recorded in December of 2003. The methods proposed for maintaining the existing system are typical of levee maintenance statewide. As discussed above, various conditions have been included to avoid or minimize project impacts to water quality, wetlands, ESHAs, and cultural resources. Therefore, as conditioned in these Findings, the Commission finds that the proposed project is consistent with the Chapter 3 policies of the Coastal Act.

~~D~~E. Protection of Archaeological Resources

1. Applicable Coastal Act Policies and Standards

Section 30244 of the Coastal Act states the following:

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

2. Consistency Analysis

The project area is 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.

According to information submitted by the applicants, there were no Wiyot village or archeological sites between Mad River Slough and east to the Humboldt Meridian according to Loud's Ethnogeography and Archaeology of the Wiyot Territory (1918). Additionally, according to 1854 Township Plat survey notes, the project area has historically been wetlands, including tidelands, prairie, riparian, and Sitka spruce habitat. Furthermore, the 1921 USDA soil survey (Watson 1925) indicates that the project area had soils associated with riparian-floodplain habitat and transitional wetlands from freshwater-salt marsh-tidal channels.

Nevertheless, to ensure protection of any archaeological or cultural resources that may be unearthed at the site during construction of the proposed project, the Commission attaches Special Condition No. ~~7~~6. This condition 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 Coastal Act Section 30244, as the development will include mitigation measures to ensure that the development will not adversely impact archaeological resources.

~~E~~F. Public Access

1. Applicable Coastal Act Policies and Standards

Coastal Act Sections 30210, 30211, and 30212 require the provision of maximum public access opportunities, with limited exceptions. Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety. In applying Sections 30211 and 30212, the Commission is limited by the need to show that any denial of a permit application based on these sections or any decision to grant a permit subject to special conditions requiring public access is necessary to avoid or offset a project's adverse impact on existing or potential public access.

2. Consistency Analysis

The project site is located between the first public road (Mad River Road) and the sea. No existing public access to a beach or shoreline is available in the project area, which is private land that currently supports and will continue to support seasonal agricultural grazing. The proposed project does not involve any changes or additional restrictions to existing public access that would interfere with or reduce the amount of area public access and recreational opportunities. In fact, birdwatching from the surrounding public roadways (Mad River Road) may increase, as the proposed enhancements are expected to benefit waterfowl and other water-associated wildlife.

Therefore, the Commission finds that the proposed project would not have an adverse effect on public access and that the project as proposed is consistent with the requirements of Coastal Act Sections 30210, 30211, and 30212.

~~F~~G. Conversion of Agricultural Lands

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30241 states:

The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:

(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.

(b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.

(c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.[6]

(d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.

(e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.

(f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.

Coastal Act Section 30242 states:

All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (l) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.

In addition, Coastal Act Section 30250 requires consideration of the cumulative impacts of development (defined in Coastal Act Section 30105.5) as follows:

"Cumulatively" or "cumulative effect" means the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

Coastal Act Section 30250 states in pertinent part:

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[6] The portion of referenced Section 30250 applicable to this project type and location [sub-section (a)] requires that, "*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.*"

(a) 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.

2. Consistency Analysis

Coastal Act Sections 30240 and 30241 require the protection of prime agricultural lands[7] and sets limits on the conversion of all agricultural lands to non-agricultural uses.

The subject property has been continually used for agricultural purposes, primarily animal husbandry uses, since its reclamation from Humboldt Bay over a century ago. Given the fine sediment size generally associated with fluvially deposited soil materials within bays and estuaries, the low relief of the area, the relatively shallow water table, and the limited amount of tillage and organic material or other soils component amendments made to the site over the last century since their reclamation, these seasonally waterlogged soils and their high bulk density severely limit the types of agricultural activities that may be feasibly undertaken at the site. As a result, the primary use pattern for the site has mainly been low intensity cattle grazing land and dry season fodder production in the form of hay cropping.

a. Maintaining Maximized Production of Prime Agricultural Land

Based on information derived from the Natural Resources Conservation Service (NRCS), the soils of the project site are mapped as Arlynda (north of slough) and Swainslough (south of slough), both with 0-2 percent slopes. Both of these soil series consist of very poorly drained soils on mixed alluvium often on flood plains. They are identified as hydric soils and recognized as having several impediments to extensive agricultural uses. According to the Natural Resources Conservation Service (NRCS), natural vegetation for Arlynda soils is estimated to have been rushes and sedges in marshland or under a redwood canopy on the lower reaches of rivers and streams, and natural vegetation for Swainslough soils was Pacific silverweed, rushes, and other hydrophytic vegetation. As a result, the NRCS has assigned Class VII classification to the project site soils as a locale which has "severe limitations that reduce the choice of plants or require special conservation practices, or both." Thus, under the NRCS land capability classification

[7] Coastal Act Section defines "prime agricultural land" through incorporation-by-reference of paragraphs (1) through (4) of Section 51201(c) of the California Government Code. Prime agricultural land entails land with any of the follow characteristics: (1) a rating as class I or class II in the Natural Resource Conservation Service land use capability classifications; or (2) a rating 80 through 100 in the Storie Index Rating; or (3) the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture; or (4) the ability to normally yield in a commercial bearing period on an annual basis not less than two hundred dollars ($200) per acre of unprocessed agricultural plant production of fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years.

system, the soils at the project site do not meet the first criterion for the definition of prime agricultural soils.

According to Soils of Western Humboldt County, California (McLaughlin and Harradine 1965), the project site contains mostly Ferndale silt loam (Fe7), which is a poorly drained soil with a Storie Index rating of 65. The project site also contains the poorly to imperfectly drained Bayside silty clay loam soils with 0-3% slopes. The Bayside soils have a Storie Index rating between 36 and 49. Thus, the project area does not qualify as prime agricultural land under the second prong of the Coastal Act's definition.

The third potential qualifying definition of prime agricultural land – the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal-unit per acre as defined by the United States Department of Agriculture – similarly does not apply to the project site. Based on correspondence from, Gary Markegard, County Farm Advisor for the U.C. Cooperative Extension, the low-lying, poorly drained, saltwater intruded, and flood-prone soils along the northern reclaimed fringes of Humboldt Bay typically require three acres per animal-unit. The applicants have estimated that the project site supports only 0.33 Animal Unit Months per acre.

Finally, with regard to the site's potential qualification as prime agricultural land based upon its potential for commercial fruit or nut crop production at specified minimal yields, the project area similarly fails to meet the criterion. Due to the maritime-influenced climate of the western Humboldt County, commercial nut production is precluded along the immediate coastal areas by the significant precipitation and limited number of warm, overcast-free days to allow for full seed maturation. In addition, due to the high bulk density of the soils underlying the project site and the relatively shallow water table, fruit and berry crops suitable for the North Coast's temperate setting are similarly restricted to areas further inland, primarily on uplifted marine terraces and within well developed river floodplain areas with improved drainage and more friable soil characteristics. As a result, fruit and nut production on an economically successful commercial basis is not currently, nor has ever been historically pursued in open coastal environs, such as the project area.

Conclusion

Therefore, based upon the above discussed set of conditions at the project site, the Commission finds that the subject site does not contain prime agricultural soils or livestock and/or crop productivity potential that would otherwise qualify the subject property as "prime agricultural land."

b. Minimizing Conflicts Between Agricultural and Urban Land Uses

Currently, seasonal livestock grazing occurs on the approximately 77-acre property, including within the majority of the ~18-acre project area. The proposed project would result in coverage of portions of the project site with habitat not suitable for grazing (riparian and salt marsh habitats) that would prevent the future agricultural use of ~~6.4~~**5.6** acres of the property. The 8.1-acre area proposed for seasonal wetland enhancement will

be designed to dry out in the summer months to allow for continued seasonal grazing, so the enhancements proposed in this area will not result in agricultural conversion. Therefore, the project will result in the conversion of ~~6.4~~**5.6** acres of agricultural land to another use, habitat restoration.

The proposed conversion of the ~~6.4~~**5.6** acres of grazing land would occur on productive agricultural lands. The Miller family's descendents homesteaded the land, and the land has been in agricultural use for over a century. The approximately 77-acre parcel currently supports agriculture (grazing) and will continue to support agriculture into the future. However, the proposed restoration activities will reduce the productivity of the agricultural land by ~~approximately~~ **less than** 1 animal unit month (an "animal unit month" is the amount of forage needed to support a mature cow or its equivalent for one month).

Section 30241 requires that conflicts between urban and agricultural land uses be minimized through, among other things, limiting conversions of agricultural lands. Section 30241(b) limits conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development. Section 30241(c) permits the conversion of agricultural lands surrounded by urban uses where the conversion of the land would be consistent with Section 30250. Finally, Section 30241(d) requires the development of available lands not suited for agriculture prior to the conversion of agricultural lands.

The proposed conversion of ~~6.4~~**5.6** acres of agricultural lands in the project area constitutes a conversion of agricultural land in an area that is neither located around the periphery of urban areas nor surrounded by urban uses, and the viability of existing agricultural use at the site is not limited by conflicts with urban uses. The project site is located approximately 1 mile northwest of the developed portions of Arcata, the nearest urban area, and all of the lands surrounding the project site are undeveloped and used primarily either for agricultural uses or natural resources uses. In addition, there are many areas of undeveloped land within the coastal zone around the Humboldt Bay region that are not suitable for agriculture that have yet to be developed. Thus, given this location relative to adjoining land uses, development of the restoration and enhancement project on the currently grazed portions of the site would not be consistent with the limitation on conversion of agricultural lands of Section 30241(b), (c), and (d) and would not serve to minimize conflicts between agricultural and urban land uses.

Conclusion:

For all of the reasons stated above, the Commission finds the permanent loss of the subject ~~6.4~~**5.6** acres of agricultural land is not consistent with the provisions of Section 30241 cited above.

c. Conversion of "All Other Lands" Suitable for Agricultural Use

Coastal Act Section 30242 protects lands suitable for agricultural use that are not prime agricultural lands or agricultural lands on the periphery of urban areas from conversion to non-agricultural use unless continued agricultural use is not feasible, or such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. In the case of the Miller parcel, although the land is not considered "prime," cattle grazing (though limited by seasonal inundation and general pasture quality) has been the primary use of the subject site for decades, and this use is proposed to continue in the future. Thus, continued agricultural use is feasible, and conversion of the land to non-agricultural use under the proposed project would not preserve prime agricultural land or concentrate development, which the Coastal Act prescribes as the basis for allowing conversion. For these reasons, the proposed conversion of agricultural lands in the project area would be inconsistent with the requirements of Coastal Act Section 30242.

~~G~~H. Conflict Resolution

As noted above, the proposed restoration of ~~2~~ **1.1** acres of grazing land to salt marsh habitat and 4.4 acres of grazing land to riparian habitat would convert agricultural land inconsistent with the provisions of Sections 30241 and 30242. However, as also noted above, to not approve the project would result in a failure to restore marine resources and the biological productivity of coastal wetlands and waters that would be inconsistent with the mandates of Sections 30230 and 30231 of the Coastal Act. Section 30230 mandates that marine resources shall be maintained and enhanced, and where feasible, restored. Section 30231 mandates that the biological productivity and quality of coastal waters and wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored.

1. The Identification of a True Conflict is Normally a Condition Precedent to Invoking a Balancing Approach

As is indicated above, the standard of review for the Commission's decision whether to approve a coastal development permit in the Commission's retained jurisdiction is whether the project as proposed is consistent the Chapter 3 policies of the Coastal Act. In general, a proposal must be consistent with all relevant policies in order to be approved. Put differently, consistency with each individual policy is a necessary condition for approval of a proposal. Thus, if a proposal is inconsistent with one or more policies, it must normally be denied (or conditioned to make it consistent with all relevant policies).

However, the Legislature also recognized that conflicts can occur among those policies (Coastal Act Section 30007.5). It therefore declared that, when the Commission identifies a conflict among the policies in Chapter 3, such conflicts are to be resolved "*in a manner which on balance is the most protective of significant coastal resources* (Coastal Act Sections 30007.5 and 30200(b))." That approach is generally referred to as the "balancing approach to conflict resolution." Balancing allows the Commission to approve proposals that conflict with one or more Chapter 3 policies, based on a conflict among the Chapter 3 policies as applied to the proposal before the Commission. Thus,

the first step in invoking the balancing approach is to identify a conflict among the Chapter 3 policies.

2. Identification of a Conflict

For the Commission to use the balancing approach to conflict resolution, it must establish that a project presents a substantial conflict between two statutory directives contained in Chapter 3 of the Coastal Act. The fact that a proposed project is consistent with one policy of Chapter 3 and inconsistent with another policy does not necessarily result in a conflict. Virtually every project will be consistent with some Chapter 3 policy. This is clear from the fact that many of the Chapter 3 policies prohibit specific types of development. For example, section 30211 states that development "*shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization . . .*," and subdivision (2) of section 30253 states that new development "*shall . . . neither create nor contribute significantly to erosion . . . or in any way require the construction of protective devices . . . .*" Almost no project would violate every such prohibition. A project does not present a conflict between two statutory directives simply because it violates some prohibitions and not others.

In order to identify a conflict, the Commission must find that, although approval of a project would be inconsistent with a Chapter 3 policy, the denial of the project based on that inconsistency would result in coastal zone effects that are inconsistent with some other Chapter 3 policy. In most cases, denial of a proposal will not lead to any coastal zone effects at all. Instead, it will simply maintain the *status quo*. The reason that denial of a project can result in coastal zone effects that are inconsistent with a Chapter 3 policy is that some of the Chapter 3 policies, rather than prohibiting a certain type of development, affirmatively mandate the protection and enhancement of coastal resources, such as sections 30210 ("*maximum access . . . and recreational opportunities shall be provided . . .*"), 30220 ("*Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses*"), and 30230 ("*Marine resources shall be maintained, enhanced, and where feasible, restored*"). If there is ongoing degradation of one of these resources, and a proposed project would cause the cessation of that degradation, then denial would result in coastal zone effects (in the form of the continuation of the degradation) inconsistent with the applicable policy. Thus, the only way that denial of a project can have impacts inconsistent with a Chapter 3 policy, and therefore the only way that a true conflict can exist, is if: (1) the project will stop some ongoing resource degradation and (2) there is a Chapter 3 policy requiring the Commission to protect and/or enhance the resource being degraded. Only then is the denial option rendered problematic because of its failure to fulfill the Commission's protective mandate.

With respect to the second of those two requirements, though, there are relatively few policies within Chapter 3 that include such an affirmative mandate to enhance a coastal resource. Moreover, because the Commission's role is generally a reactive one, responding to proposed development, rather than affirmatively seeking out ways to protect resources, even policies that are phrased as affirmative mandates to protect

resources more often function as prohibitions. For example, Section 30240's requirement that environmentally sensitive habitat areas "*shall be protected against any significant disruption of habitat values*" generally functions as a prohibition against allowing such disruptive development, and its statement that "*only uses dependent on those resources shall be allowed within those areas*" is a prohibition against allowing non-resource-dependent uses within these areas. Similarly, section 30251's requirement to protect "*scenic and visual qualities of coastal areas*" generally functions as a prohibition against allowing development that would degrade those qualities. Section 30253 begins by stating that new development shall minimize risks to life and property in certain areas, but that usually requires the Commission to condition projects to ensure that they are not unsafe. Even Section 30220, listed above as an affirmative mandate, can be seen more as a prohibition against allowing non-water-oriented recreational uses (or water-oriented recreational uses that could be provided at inland water areas) in coastal areas suited for such activities. Denial of a project cannot result in a coastal zone effect that is inconsistent with a prohibition on a certain type of development. As a result, there are few policies that can serve as a basis for a conflict.

Similarly, denial of a project is not inconsistent with Chapter 3, and thus does not present a conflict, simply because the project would be less inconsistent with a Chapter 3 policy than some alternative project would be, even if approval of the proposed project would be the only way in which the Commission could prevent the more inconsistent alternative from occurring. For denial of a project to be inconsistent with a Chapter 3 policy, the project must produce tangible, necessary enhancements in resource values over existing conditions, not over the conditions that would be created by a hypothetical alternative. In addition, the project must be fully consistent with the Chapter 3 policy requiring resource enhancement, not simply less inconsistent with that policy than the hypothetical alternative project would be. If the Commission were to interpret the conflict resolution provisions otherwise, then any proposal, no matter how inconsistent with Chapter 3, that offered even the smallest, incremental improvement over a hypothetical alternative project would necessarily result in a conflict that would justify a balancing approach. The Commission concludes that the conflict resolution provisions were not intended to apply based on an analysis of different potential levels of compliance with individual policies or to balance a proposed project against a hypothetical alternative.

In addition, if a project is inconsistent with at least one Chapter 3 policy, and the essence of that project does not result in the cessation of ongoing degradation of a resource the Commission is charged with enhancing, the project proponent cannot "create a conflict" by adding on an essentially independent component that does remedy ongoing resource degradation or enhance some resource. The benefits of a project must be inherent in the essential nature of the project. If the rule were to be otherwise, project proponents could regularly "create conflicts" and then demand balancing of harms and benefits simply by offering unrelated "carrots" in association with otherwise-unapprovable projects. The balancing provisions of the Coastal Act could not have been intended to foster such an artificial and manipulatable process. The balancing provisions were not designed as an invitation to enter into a bartering game in which project proponents offer amenities in exchange for approval of their projects.

Finally, a project does not present a conflict among Chapter 3 policies if there is at least one feasible alternative that would accomplish the essential purpose of the project without violating any Chapter 3 policy. Thus, an alternatives analysis is a condition precedent to invocation of the balancing approach. If there are alternatives available that are consistent with all of the relevant Chapter 3 policies, then the proposed project does not create a true conflict among Chapter 3 policies.

In sum, in order to invoke the balancing approach to conflict resolution, the Commission must conclude all of the following with respect to the proposed project before it: (1) approval of the project would be inconsistent with at least one of the policies listed in Chapter 3; (2) denial of the project would result in coastal zone effects that are inconsistent with at least one other policy listed in Chapter 3, by allowing continuing degradation of a resource the Commission is charged with protecting and/or enhancing; (3) the project results in tangible, necessary resource enhancement over the current state, rather than an improvement over some hypothetical alternative project; (4) the project is fully consistent with the resource enhancement mandate that requires the sort of benefits that the project provides; (5) the benefits of the project are not independently required by some other body of law; (6) the benefits of the project are a function of the very essence of the project, rather than an ancillary component appended to the project description in order to "create a conflict; " and (7) there are no feasible alternatives that would achieve the objectives of the project without violating any Chapter 3 policies.

An example of a project that presented such a conflict is a project approved by the Commission in 1999 involving the placement of fill in a wetland in order to construct a barn atop the fill, and the installation of water pollution control facilities, on a dairy farm in Humboldt County (CDP #1-98-103, O'Neil). In that case, one of the main objectives of the project was to create a more protective refuge for cows during the rainy season. However, another primary objective was to improve water quality by enabling the better management of cow waste. The existing, ongoing use of the site was degrading water quality, and the barn enabled consolidation and containment of manure, thus providing the first of the four necessary components of an effective waste management system. Although the project was inconsistent with Section 30233, which limits allowable fill of wetlands to eight enumerated purposes, the project also enabled the cessation of ongoing resource degradation. The project was fully consistent with Section 30231's mandate to maintain and restore coastal water quality and offered to tangibly enhance water quality over existing conditions, not just some hypothetical alternative. Thus, denial would have resulted in impacts that would have been inconsistent with Section 30231's mandate for improved water quality. Moreover, it was the very essence of the project, not an ancillary amenity offered as a trade-off, that was both inconsistent with certain Chapter 3 policies and yet also provided benefits. Finally, there were no alternatives identified that were both feasible and less environmentally damaging.

3. <u>The Proposed Project Presents a Conflict</u>

The Commission finds that the proposed project presents a true conflict between Chapter 3 policies of the Coastal Act. The proposed restoration of ~~2~~ **1.1** acres of salt marsh and 4.4 acres of riparian habitat would convert agricultural land in a manner inconsistent with the provisions of Sections 30241 and 30242 of the Coastal Act. However, to not approve the project would result in a failure to restore marine resources and the biological productivity of coastal wetlands and waters that would be inconsistent with the mandates of Sections 30230 and 30231 of the Coastal Act. Section 30230 mandates that marine resources shall be maintained and enhanced, and where feasible, restored. Section 30231 mandates that the biological productivity and quality of coastal waters and wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored.

As discussed above in Finding IV-C, prior to the construction of the dikes along Mad River Slough and the establishment of agricultural uses on the property more than 100 years ago, the project area previously supported diverse wetland habitats that included tidal sloughs, tidally inundated salt marsh habitat, and riparian and other freshwater wetlands. All of the original habitat except for the tidal slough itself was obliterated and largely replaced with grazed seasonal wetlands that provide far less habitat values and functions than those provided by the array of wetland habitat types that originally existed at the site. The habitat values and functions of the tidal slough itself were greatly compromised by the elimination of the adjacent supporting habitat types, even though the tidal slough remained. For example, in the absence of salt marsh restoration at the subject site, the channel of Mad River Slough in this location lacks a transitional buffer between the tidal channel and the upland dikes. As a result, dike materials continually erode into coastal waters over time, adversely affecting water quality while depriving marine resources that depend on the salt marsh environment of suitable habitat along this stretch of slough. The proposed project will move the **north** dikes back from the channel margins to create ~~2~~ **1.1** acres of salt marsh "benches," which will restore marine resources and sustain the biological productivity of coastal waters to maintain healthy populations of marine organisms.

As further discussed above in Finding IV-C, the restoration of the 4.4 acres of riparian habitat in the project area is integral to maintaining optimum populations of marine organisms within the slough and for the protection of human health. Riparian areas contribute important organic debris that is transformed into nutrients, which support the marine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation also supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. Riparian areas capture contaminants; by absorbing or filtering contaminated stormwater runoff, soils and vegetation in marine riparian areas can prevent pollutants from entering coastal waters. Healthy riparian areas support rich and diverse communities of animals that depend on the areas for feeding, breeding, refuge, movement, and migration. Salmonids and many other fish species feed on insects from marine riparian areas. When the riparian habitat was eliminated during reclamation of the land to agriculture, the food supply and, thus, the abundance of nearshore fish was greatly reduced. Importantly, the marine riparian functions of protecting water quality, maintaining soil stability, and

absorbing the impacts of storm surges to reduce flooding were eliminated from the site with the removal of the riparian areas. Restoration of the 4.4 acres of riparian habitat on the site will restore these habitat values and functions to the site and thereby restore the biological productivity and the quality of coastal waters appropriate to maintain optimum populations of marine organisms and the protection of human health.

Although the proposed project is inconsistent with the requirements of Sections 30241 and 30242 that protect productive agricultural land and limit the conversion of agricultural land, denial would preclude achieving Section 30230's and 30231's mandates for protection and restoration of marine resources, biological productivity, and water quality. In addition, it is the very essence of the project, not an ancillary amenity offered as a trade-off, that is both inconsistent with certain Chapter 3 policies and yet also provides benefits. Finally, as discussed below, there are no alternatives identified that were both feasible and less environmentally damaging.

a. Alternatives Analysis

As noted above, a true conflict among Chapter 3 policies would not exist if there are feasible alternatives available that are consistent with all of the relevant Chapter 3 policies. Alternatives that have been identified include (a) alternative sites, (b) alternative configuration of project features, and (c) the "no project" alternative. These various alternatives are discussed below.

(1) Alternative Sites

Restoration of the former habitat conditions that existed on a site prior to manipulation by humans within the meaning of Sections 30230, 30231, and 30233(a) of the Coastal Act is inherently site specific. As discussed previously in Finding IV-C(2)(a) above, implicit in the common definition of restoration is the understanding that the restoration entails returning something to a prior state. A site cannot be returned to a prior state by performing wetland enhancement or creation work at some other site. However, as also discussed previously in Finding IV-C(2)(a) above, restoration is also defined as reestablishing ecological processes, functions, and biotic/abiotic linkages that lead to a persistent, resilient system integrated within its landscape that may not necessarily result in a return to historic locations or conditions with the subject wetland area. Thus, restoration of ecological processes, functions, and biotic/abiotic linkages at an alternative location within the landscape of the particular wetland system involved could under certain circumstances be found to be consistent with Sections 30230, 30231, and 30233(a) of the Coastal Act. However, no such feasible alternative location other than the project site exists in this case. Nearly the entire 77-acre project parcel is agricultural land, so there is no other location on the parcel where the restoration could be carried out that would not result in a conversion of agricultural land inconsistent with Sections 30241 and 30242 of the Coastal Act. Similarly, if restoration of another site to restore a combination of salt marsh and riparian habitats was considered, no feasible off-site locations that would not result in conversions of agricultural land inconsistent with Sections 30241 and 30242 have been identified. Much of the land surrounding Humboldt Bay that could support the habitat types to be restored (salt marsh and riparian) has been

diked, drained, and cleared for agricultural purposes. Furthermore, much of the historic habitat around Humboldt Bay supported tideland habitats such as salt marsh, but not necessarily riparian habitat as well. The subject property historically supported both habitat types, and thus the proposed site is one of the few locations where the proposed restoration project could occur consistent with Section 30233(a)(6) as discussed above (Finding IV-C). Therefore, implementing the project at an alternative location is not a feasible alternative that is consistent with all relevant Chapter 3 policies.

(2) Alternative Configuration of Project Features

Feasible restoration of the site is not dependent on the exact site plan or configuration of dikes, salt marsh restoration, and riparian habitat restoration proposed by the applicant. Other configurations of these features could be successful at reestablishing ecological processes, functions, and biotic/abiotic linkages that lead to a persistent, resilient system integrated within its landscape consistent with the definition of restoration for which diking, dredging, and filling is allowed pursuant to Section 30233 of the Coastal Act and which Sections 30230 and 30231 mandate to occur if feasible. For example, the proposed new dikes could be positioned a greater distance back from Mad River Slough, resulting in somewhat greater restoration of salt marsh habitat, and the riparian habitat could be extended further back on to the property achieving a similar amount of riparian habitat restoration. This alternative configuration or layout of the project, and many similar alternative configurations, would achieve similar results. However, none of these alternative configurations would avoid conversion of agricultural lands to habitat in a manner inconsistent with Sections 30241 and 30242 of the Coastal Act. No feasible use of salt marsh habitat or riparian habitat for agricultural purposes has been identified. As (1) all of the existing project site except for the slough itself is used agriculturally, and (2) the use of any portion of these areas for restoration of salt marsh or riparian habitat would preclude agricultural use and convert agricultural land, no alternative configuration of the project site would avoid conversion of agricultural land inconsistent with Sections 30241 and 30242 of the Coastal Act. Therefore, none of the alternative configurations of the restoration project are a feasible alternative that is consistent with all Chapter 3 policies.

(3) "No Project" Alternative

The "no project" alternative would maintain the status quo of the site and would not restore ~~2~~ **1.1** acres of salt marsh and 4.4 acres of riparian habitat or enhance 8.1 acres of seasonal freshwater wetlands as proposed. Existing conditions on the project site consist of actively used agricultural land (farmed seasonal wetlands) used for seasonal cattle grazing. Under the "no project" alternative, the land would continue to be used for seasonal agricultural grazing (as it would under the proposed project), but there would be no restored and improved habitat for marine resources, and the biological productivity of the coastal wetlands and waters would thus not be restored. Existing dikes built too close to the slough margin would continue to erode into the slough, and there would be no riparian buffer functions of water quality, soil stability, contribution of organic debris to the marine food web, and the ability to absorb the impacts of storm surges. Therefore, the Commission finds that the "no project" alternative would have significant impacts to coastal resources that would be inconsistent with Section 30230's and 30231's mandate

to restore marine resources and maintain and improve biological productivity and water quality for the protection of organisms and human health. Therefore, the "no project" alternative is not a feasible alternative that is consistent with all relevant Chapter 3 policies.

b. Conclusion

As discussed above, none of the identified alternatives to the proposed project would be both feasible and consistent with all relevant Chapter 3 policies. The Commission further finds that based on the alternatives analysis above, the proposed project as conditioned is the least environmentally damaging feasible alternative, and therefore the project is consistent with the requirements of Section 30233(a) that the proposed fill project has no feasible less environmentally damaging alternative.

4. Conflict Resolution

After establishing a conflict among Coastal Act policies, Section 30007.5 requires the Commission to resolve the conflict in a manner that is on balance most protective of coastal resources.

In this case, the Commission finds that the impacts on coastal resources from not constructing the project would be more significant than the project's agricultural conversion impacts. Denying the project because of its inconsistency with Sections 30241 and 30242 would avoid the conversion of ~~6.4~~**5.6** acres of agricultural grazing land. However, it must be noted that the project will protect of a much greater acreage of surrounding agricultural land, both on the Miller's property and adjacent properties downstream, from salt water intrusion and overtopping of dikes that are expected to be overtopped with greater frequency with the projected sea level rise for the area.

Approving the development would restore habitats around Humboldt Bay that have been tremendously reduced over the past century. The Commission finds that the restoration of ~~2~~ **1.1** acres of salt marsh habitat and 4.4 acres of riparian habitat, which would restore and enhance marine resources necessary to maintain the biological productivity of existing degraded wetlands, would be more protective of coastal resources than the impacts of the conversion of ~~6.4~~**5.6** acres of agricultural land and the loss of ~~approximately~~ **less than** 1 animal unit month (i.e., the amount of forage needed to feed a mature cow or its equivalent for one month).

As discussed above in Finding IV-C, to ensure that the habitat restoration benefits of the project that would enable the Commission to use the balancing provision of Section 3007.5 are achieved, the Commission attaches Special Condition Nos. 1 through ~~7~~**6**. These conditions require that the applicant submit various final plans, including a final restoration and enhancement monitoring plan, a final erosion and runoff control plan, ~~a final wetland mitigation plan,~~ and a sensitive plant species protection plan. Additionally, Special Condition No. 2 requires that the applicant carry out the project in accordance with various construction protocols to ensure the protection of coastal waters and wetlands, Special Condition No. 4 requires revegetation of the site to be carried out

according to specified standards and limitations, and (as discussed in Finding X), Special Condition No. ~~7~~ 6 requires that archaeological resources shall be protected. The Commission finds that without Special Condition Nos. 1 through ~~7~~6, the proposed project could not be approved pursuant to Section 30007.5 of the Coastal Act.

~~H~~I. Other Agency Approvals

The project requires review and authorization 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. The project also requires a CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board. To ensure that the project ultimately approved by the Corps and the Board is the same as the project authorized herein, the Commission attaches Special Condition Nos. ~~8~~ 7 and ~~9~~8, which require the City to submit to the Executive Director evidence of these agencies' approvals of the project prior to commencement of construction and prior to permit issuance, respectively. 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.

~~I~~J. Public Trust Lands

The project site is located in an area subject to the public trust. Therefore, to ensure that the applicant has the necessary authority to undertake all aspects of the project on these public lands, the Commission attaches Special Condition No. ~~10~~9, which requires that the project be reviewed and where necessary approved by the State Lands Commission prior to the issuance of the coastal development permit.

~~J~~K. California Environmental Quality Act

The County of Humboldt, as the lead agency, adopted a Mitigated Negative Declaration for the "Miller Family's Mad River Slough Dike Rehabilitation and Wetlands Enhancement Project" (SCH No. 200803202) on May 1, 2008.

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

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

V. EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. Parcel Map
4. Aerial Photo
5. Site Plans & Project Plans
6. **Revised Project Description dated September 9, 2008**

APPENDIX A

STANDARD CONDITIONS

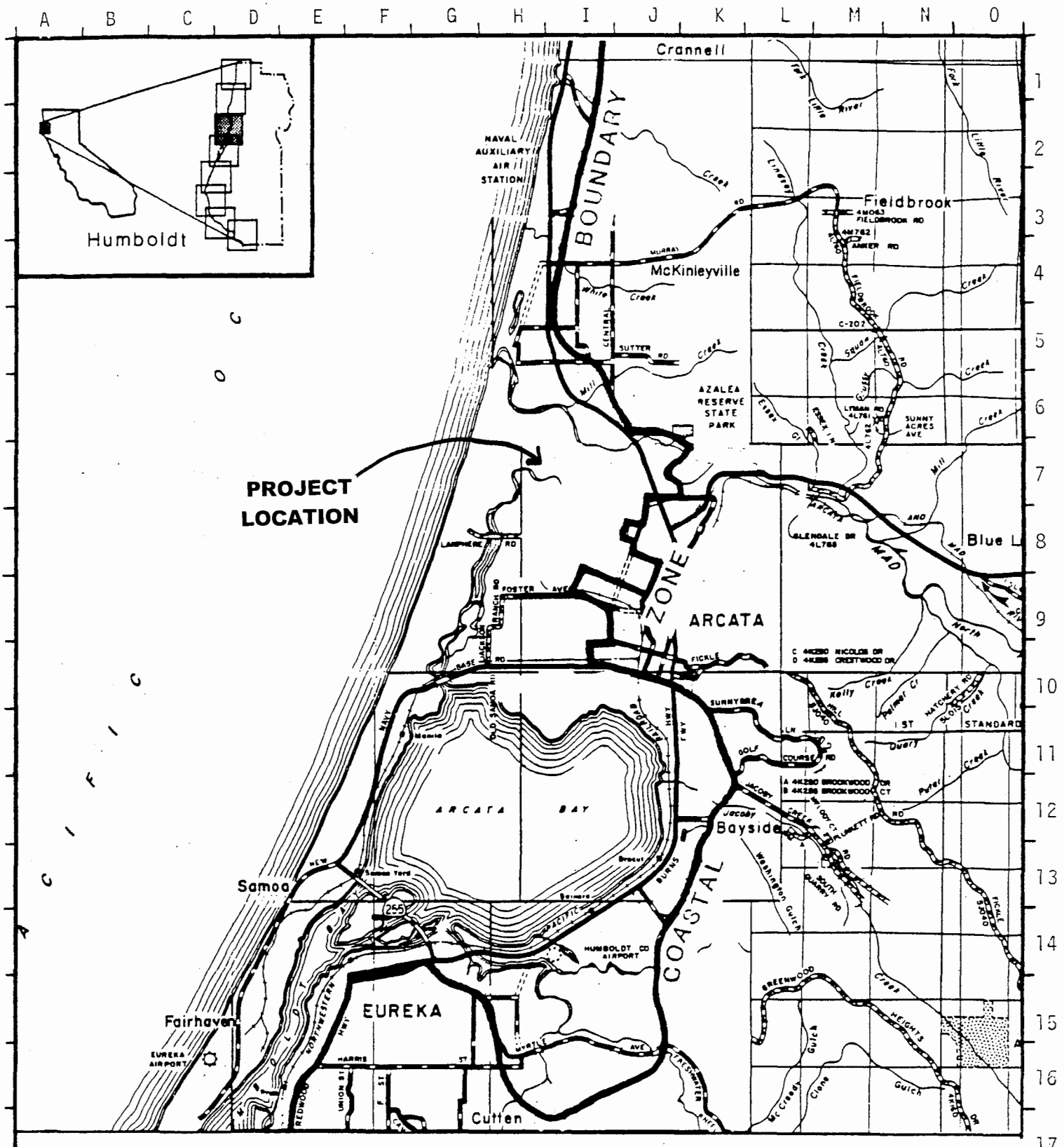
1. Notice of Receipt and Acknowledgement. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable amount of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.



California Coastal Commission

LOCATION MAP

1 0 m

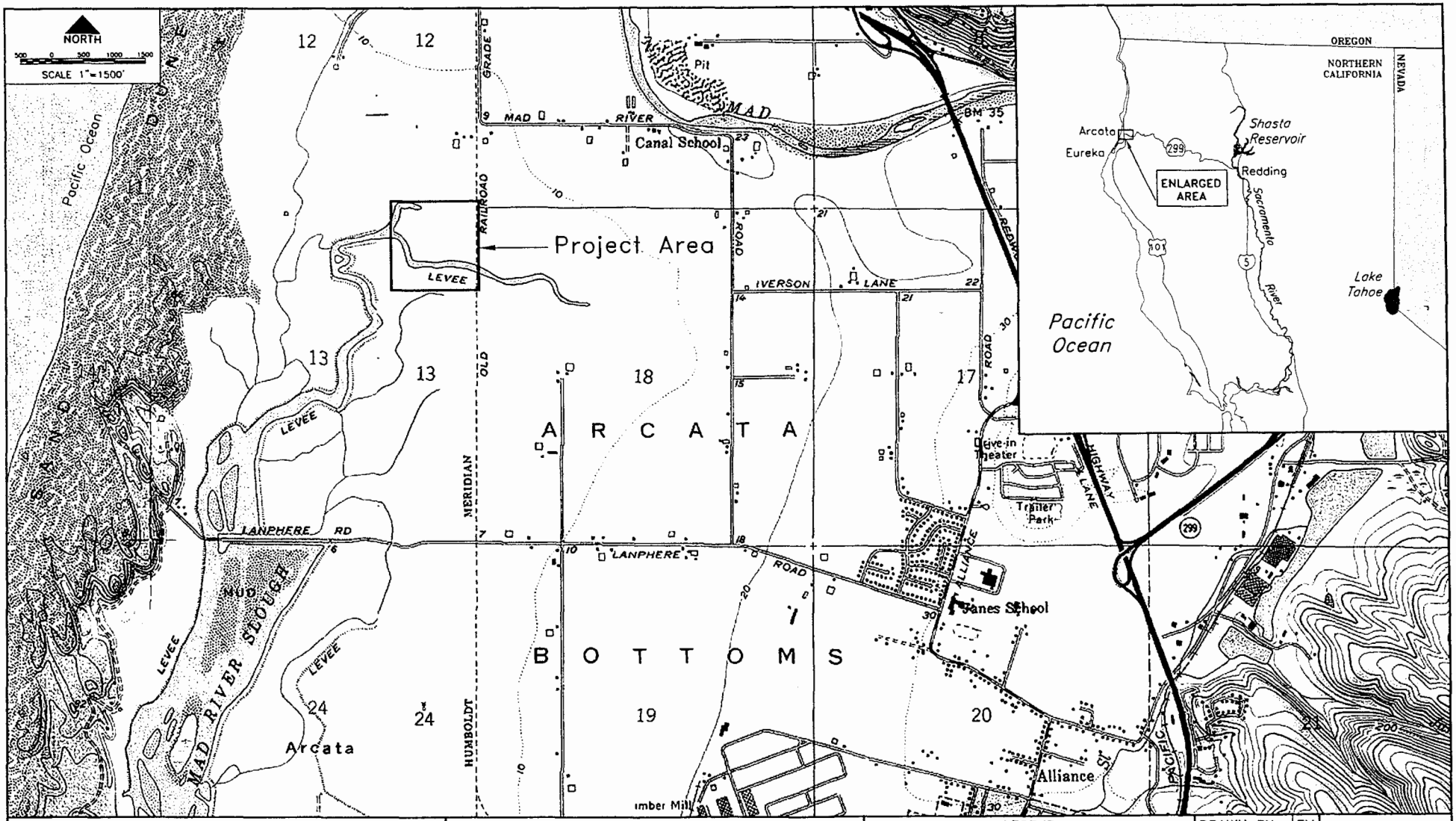
County of Humboldt

EXHIBIT NO. 1

APPLICATION NO.
1-08-020

MILLER & U.S. FISH & WILDLIFE SERVICE

REGIONAL LOCATION MAP



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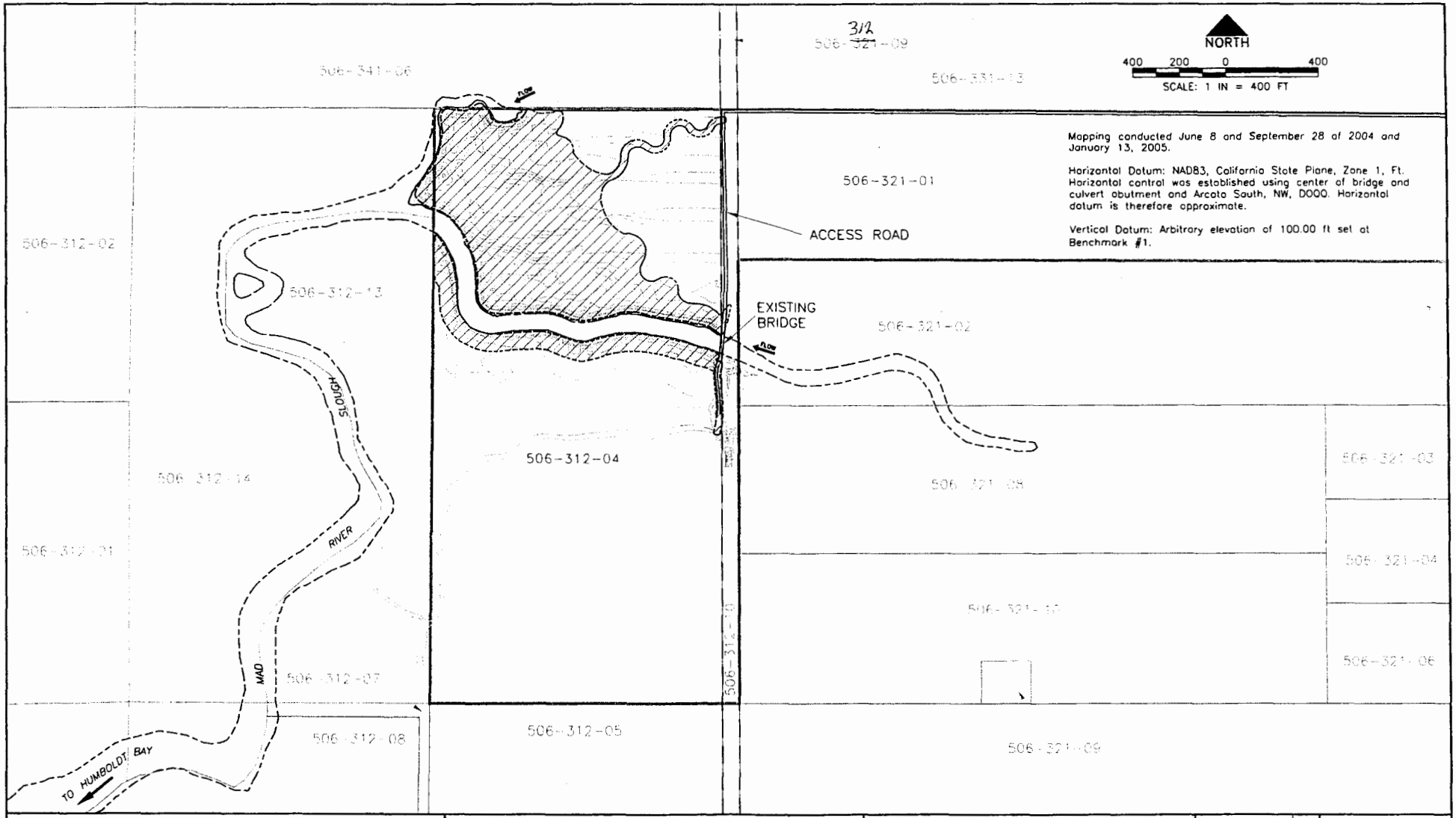
MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Location Map

LEGEND
PROJECT AREA

DRAWN BY	FM
CHECKED BY	SM
DATE	12/17/07
Sheets	1-3
REVISION	C

SHEET 2 of 16

EXHIBIT NO. 2
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
VICINITY MAP



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Assessor Parcel Map

LEGEND
- APPROXIMATE EXISTING GROUND (1 FT CONTOURS)
- APPROXIMATE PARCEL LINES
- PARCELS WITHIN PROJECT FOOTPRINT
- PROJECT BOUNDARY
- ACCESS ROADE
- SLOUGH CHANNEL

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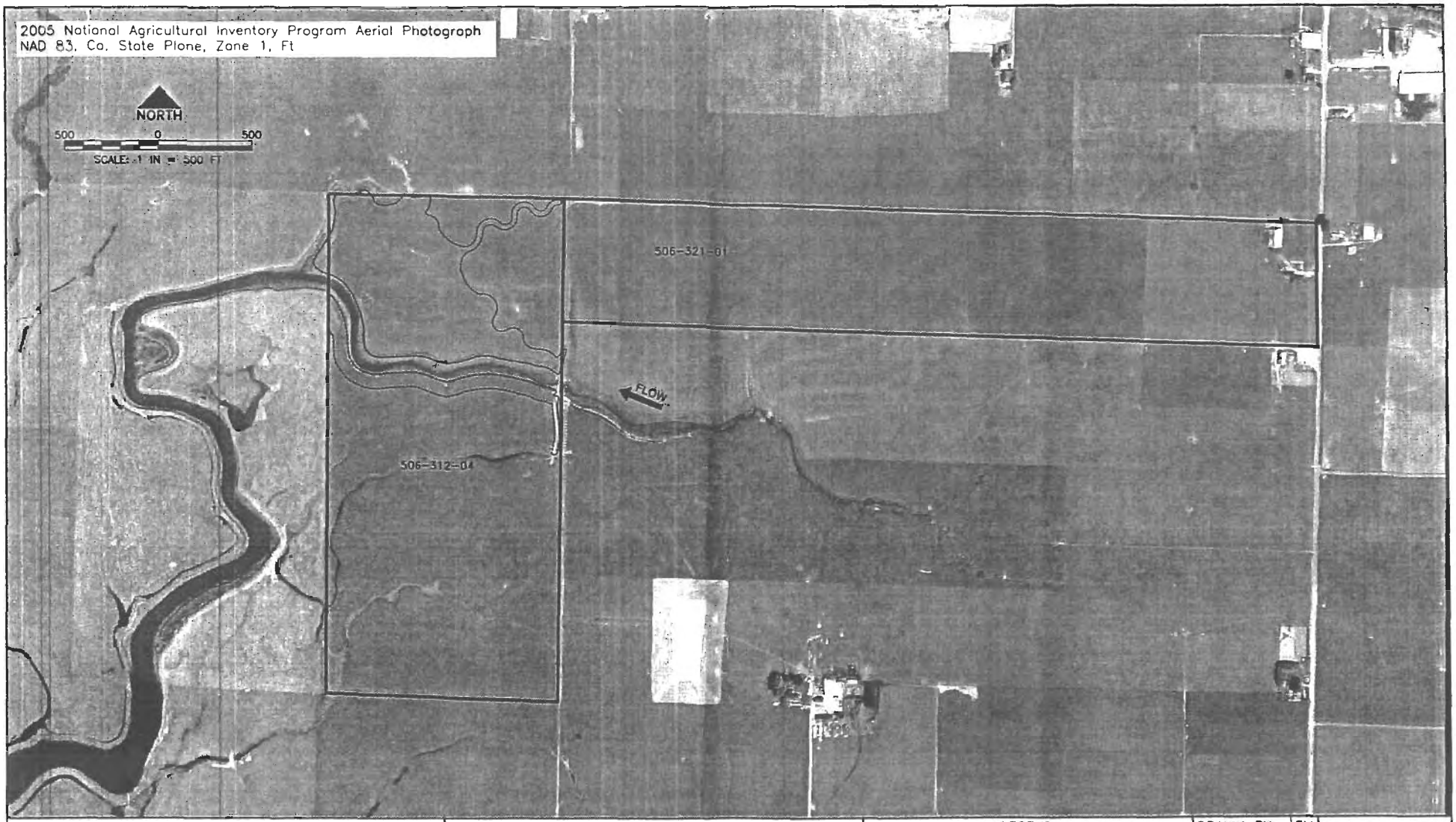
DATE	12/17/07
Sheets	1-3
REVISION	E

SHEET 3 of 16

EXHIBIT NO. 3
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
PARCEL MAP



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
2005 Aerial Photograph

LEGEND
PROJECT BOUNDARY
ASSESSOR PARCEL BOUNDARY

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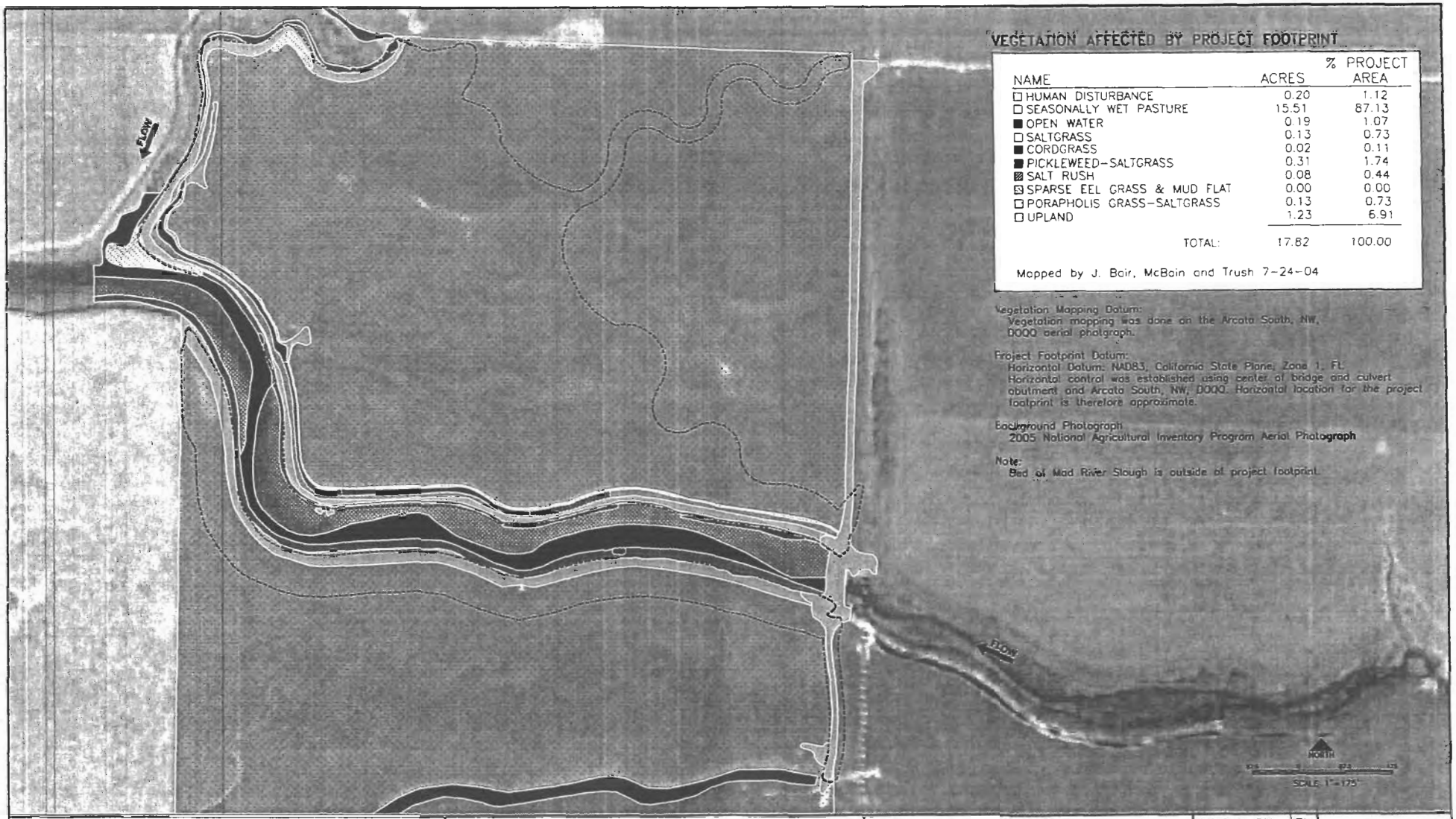
SHEET 4 of 16

EXHIBIT NO. 4
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
AERIAL PHOTO



VEGETATION AFFECTED BY PROJECT FOOTPRINT

NAME	ACRES	% PROJECT AREA
HUMAN DISTURBANCE	0.20	1.12
SEASONALLY WET PASTURE	15.51	87.13
OPEN WATER	0.19	1.07
SALTGRASS	0.13	0.73
CORDGRASS	0.02	0.11
PICKLEWEED-SALTGRASS	0.31	1.74
SALT RUSH	0.08	0.44
SPARSE EEL GRASS & MUD FLAT	0.00	0.00
PORAPHOLIS GRASS-SALTGRASS	0.13	0.73
UPLAND	1.23	6.91
TOTAL:	17.82	100.00

Mapped by J. Bair, McBain and Trush 7-24-04

Vegetation Mapping Datum:
Vegetation mapping was done on the Arcata South, NW, DOQQ aerial photograph.

Project Footprint Datum:
Horizontal Datum: NAD83, California State Plane, Zone 1, Ft.
Horizontal control was established using center of bridge and culvert abutment and Arcata South, NW, DOQQ. Horizontal location for the project footprint is therefore approximate.

Background Photograph:
2005 National Agricultural Inventory Program Aerial Photograph

Note:
Bed of Mad River Slough is outside of project footprint.

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Existing Vegetation Map

LEGEND
PROJECT FOOTPRINT/CONSTRUCTION BOUNDARY
VEGETATION MAPPING BOUNDARY

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DATE	12/18/07
Sheet	5
REVISION	A

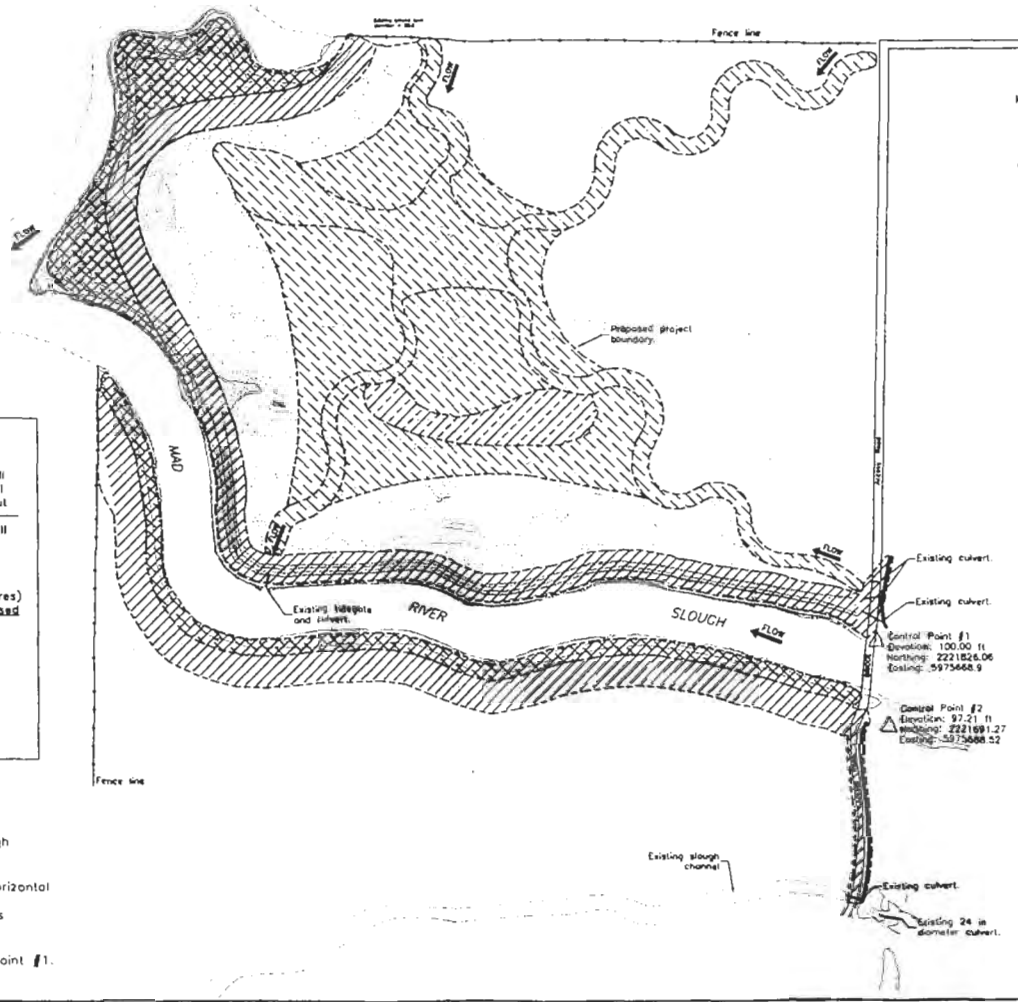
SHEET 5 of 16

EXHIBIT NO. 5
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
PROJECT PLANS (1 of 12)

NORTH

200 100 0 200

SCALE: 1 IN = 200 FT



Mad River Slough Freswater Wetland Area and Cummulative Storage Estimates for Water Surface Elevations Ranging from 94 ft to 96.5 ft

Water surface Elevation	Open Water Area	Open Water Area	Less Island Area	Cum. Avg. Adjusted for Island
ft	acre	ft²	ft²	ft²
96.50	16.66	725760.35	21017.65	609000.81
96.00	7.82	340631.33	N/A	347664.81
95.50	4.71	205377.49	N/A	211170.53
95.00	3.66	159534.77	N/A	119942.74
94.50	2.73	118727.60	N/A	50377.46
94.00	1.90	82786.10	N/A	0.00

VOLUME ESTIMATES FOR PROJECT (Cu. Yds.)

Description	Cut	Fill	20% on Fill	Net
South Bank Dike:	2,500	6,200	1,200	4,900 Fill
North Bank Dike:	1,100	10,100	2,000	11,000 Fill
Wetland:	13,400	1,300	200	11,900 Cut
Total	17,000	17,600	3,400	4,000 Fill

AREAS AND LENGTHS FOR EXISTING AND PROPOSED CONDITIONS

	Length (ft)		Project Area (acres)	
	Existing	Proposed	Existing	Proposed
South bank dike	1,540	1,540	0.86	1.64
South bank salt marsh	1,540	1,540	0.12	1.03
North bank dike	2,480	2,140	1.07	1.93
North bank salt marsh	2,480	2,480	0.36	1.43
Inboard ditch	2,400	0	0.98	0.25
Freshwater wetland	–	–	0.00	6.63
Riparian area	–	–	0.00	4.37
Island area	–	–	0.00	0.54

Project Area = 17.82 acres

General Notes:

1) These drawings are for planning purposes only, to provide rough volume estimates and identify project disturbance areas.

2) Horizontal Datum: NAD83, California State Plane, Zone 1, Ft Horizontal control was established using bridge and tide gate surveyed on 6-8-04 and 1993 Arcata North SW DOQQ. Horizontal control is therefore approximate.

3) Vertical Datum: Arbitrary elevation of 100.0 ft set at Control Point #1. Mapping is relative to Control Point #1.

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT

Site Overview

LEGEND

- EXISTING GROUND (1 FT CONTOURS)
- PROJECT BOUNDARY
- SLOUGH CHANNEL
- ACCESS ROAD
- DIKE FOOTPRINT
- SALT MARSH
- FRESHWATER MARSH
- ISLAND
- RIPARIAN CORRIDOR
- MISC. GRADING

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DATE	12/18/07
Sheets	6–16
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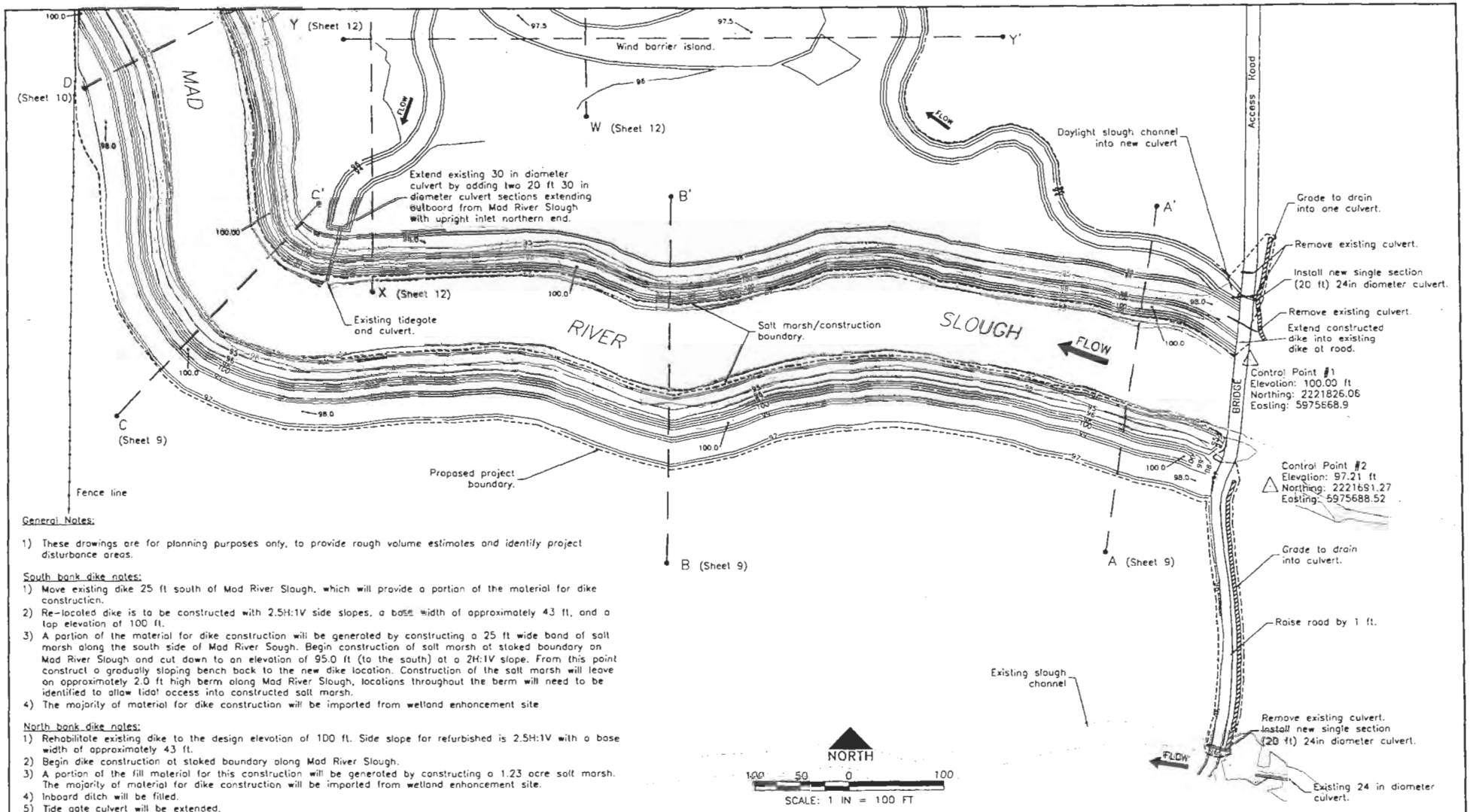
SHEET 6 of 16



General Notes:

1) These drawings are for planning purposes only, to provide rough volume estimates and identify project disturbance areas.

South bank dike notes:

1) Move existing dike 25 ft south of Mad River Slough, which will provide a portion of the material for dike construction.
2) Re-located dike is to be constructed with 2.5H:1V side slopes, a base width of approximately 43 ft, and a top elevation of 100 ft.
3) A portion of the material for dike construction will be generated by constructing a 25 ft wide band of salt marsh along the south side of Mad River Sough. Begin construction of salt marsh at staked boundary on Mad River Slough and cut down to an elevation of 95.0 ft (to the south) at a 2H:1V slope. From this point construct a gradually sloping bench back to the new dike location. Construction of the salt marsh will leave an approximately 2.0 ft high berm along Mad River Slough, locations throughout the berm will need to be identified to allow tidal access into constructed salt marsh.
4) The majority of material for dike construction will be imported from wetland enhancement site

North bank dike notes:

1) Rehabilitate existing dike to the design elevation of 100 ft. Side slope for refurbished is 2.5H:1V with a base width of approximately 43 ft.
2) Begin dike construction at staked boundary along Mad River Slough.
3) A portion of the fill material for this construction will be generated by constructing a 1.23 acre salt marsh. The majority of material for dike construction will be imported from wetland enhancement site.
4) Inboard ditch will be filled.
5) Tide gate culvert will be extended.

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT

Planform

LEGEND

- EXISTING GROUND (1 FT CONTOURS)
- FINISHED GROUND (1 FT CONTOURS)
- CROSS SECTION
- PROJECT BOUNDARY
- SLOUGH CHANNEL
- ACCESS ROAD
- MISC GRADING

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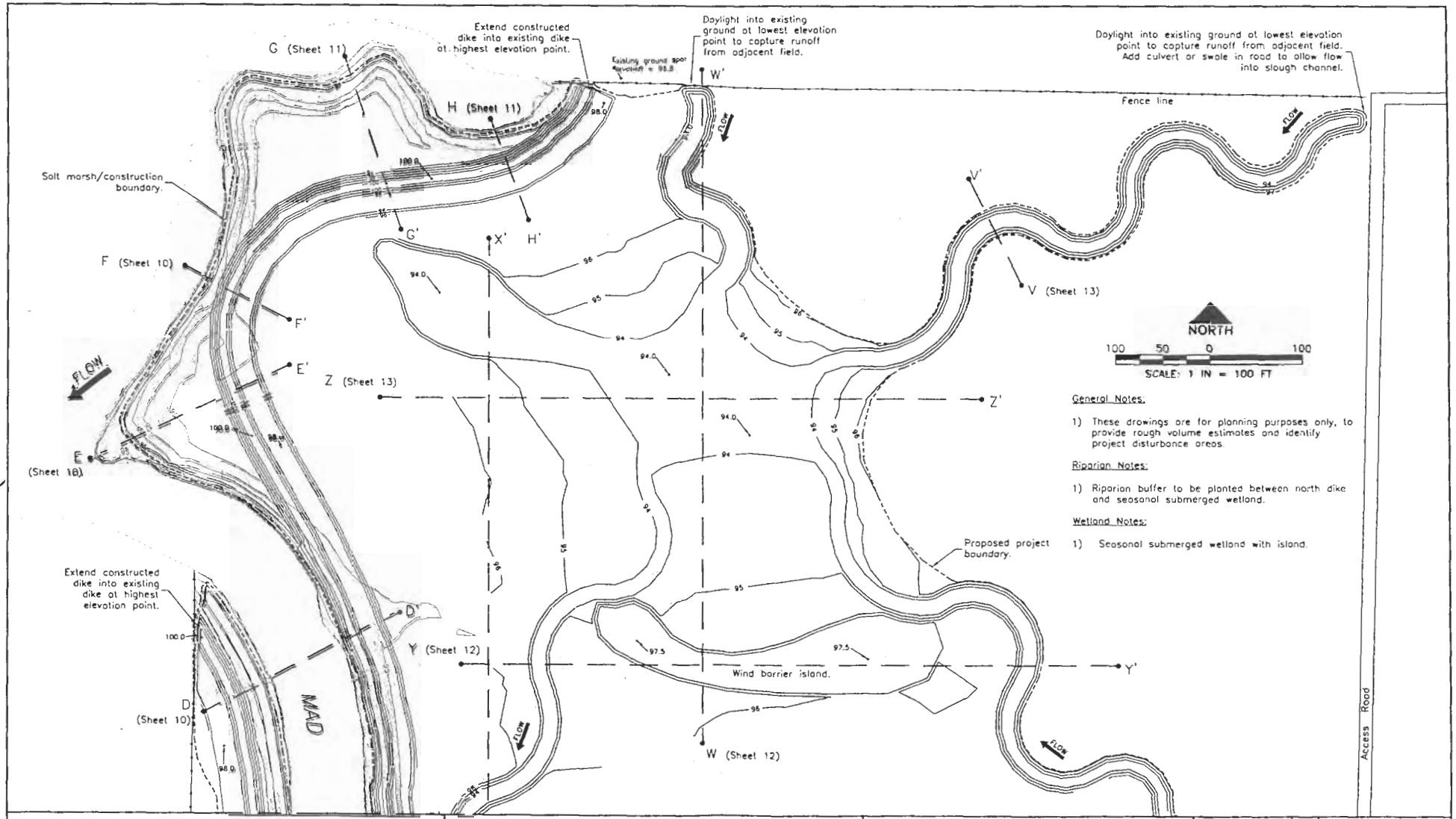
SHEET 7 of 16



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Planform

LEGEND

EXISTING GROUND (1 FT CONTOURS)
FINISHED GROUND (1 FT CONTOURS)
CROSS SECTION
PROJECT BOUNDARY
SLOUGH CHANNEL
ACCESS ROAD
MISC GRADING

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DATE	12/18/07
Sheets	6–16
REVISION	A

SHEET 8 of 16

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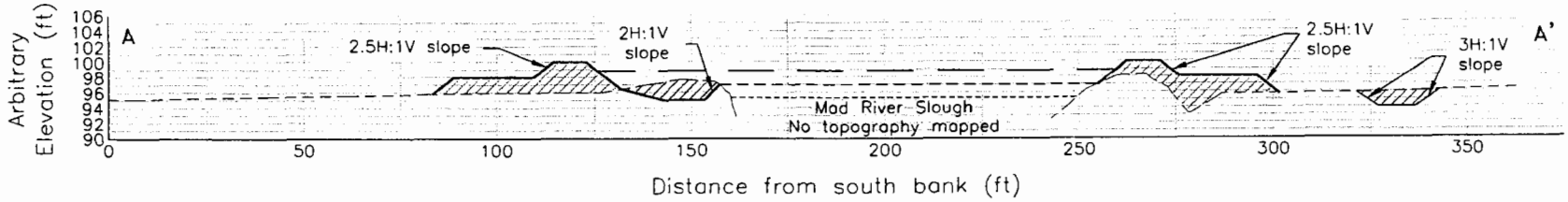

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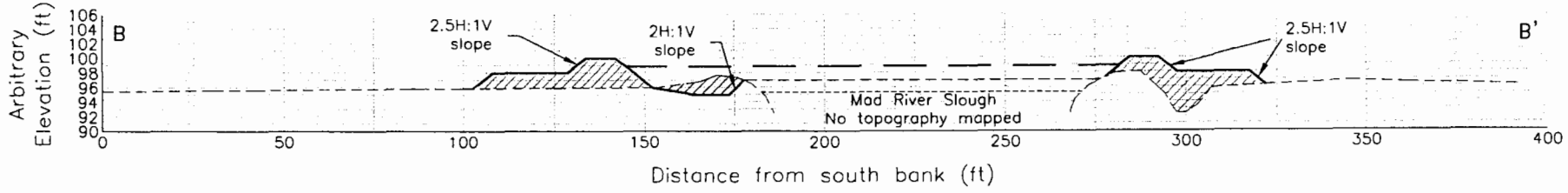

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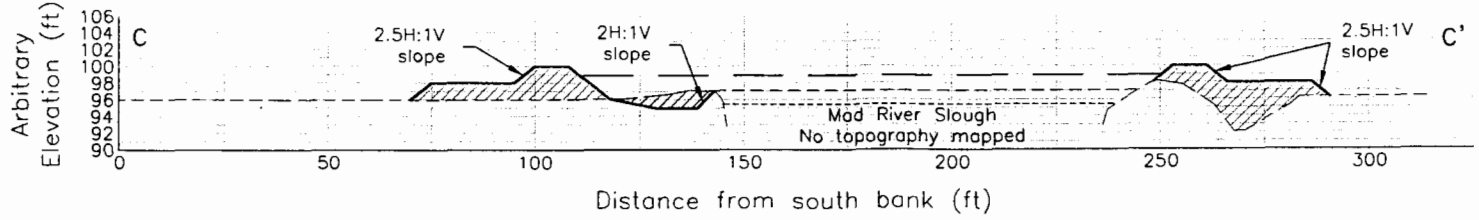

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Transects

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- 12-12-03 ESTIMATED HIGH WATER
- MEAN HIGHER HIGH WATER
- SALT/FRESH WATER VEG TRANSITION
- PROPOSED CUT
- PROPOSED FILL

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DATE	12/18/07
Sheets	6-16
REVISION	A

SHEET 9 of 16

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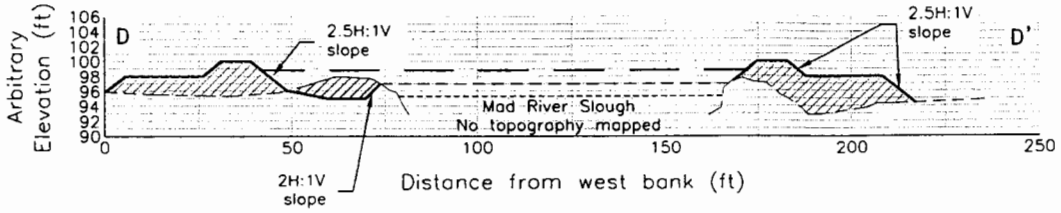
TRANSECT D



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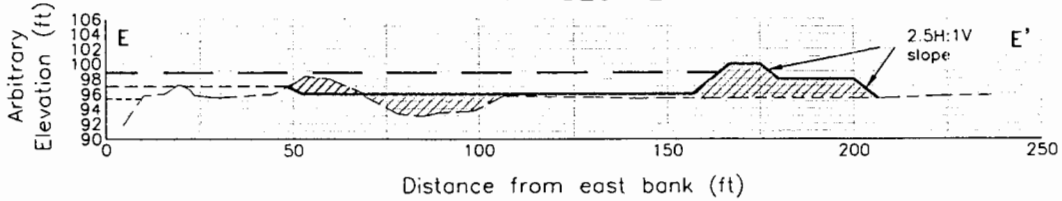

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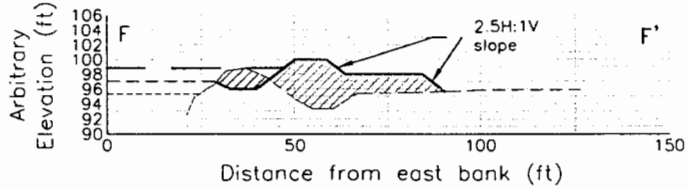

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Transects

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- 12-12-03 ESTIMATED HIGH WATER
- MEAN HIGHER HIGH WATER
- SALT/FRESH WATER VEG TRANSITION
- PROPOSED CUT
- PROPOSED FILL

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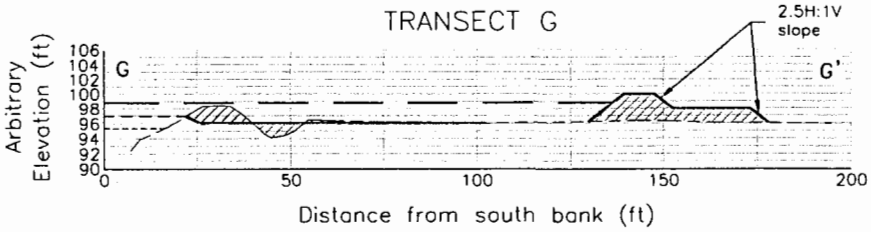
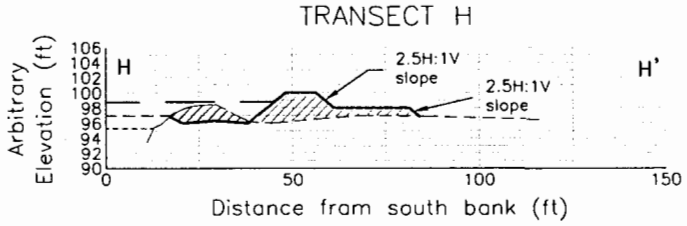
DATE	12/18/07
Sheets	6–16
REVISION	A

SHEET 10 of 16





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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Transects

LEGEND
- EXISTING GROUND
- FINISHED GROUND
- 12-12-03 ESTIMATED HIGH WATER
- MEAN HIGHER HIGH WATER
- SALT/FRESH WATER VEG TRANSITION
- PROPOSED CUT
- PROPOSED FILL

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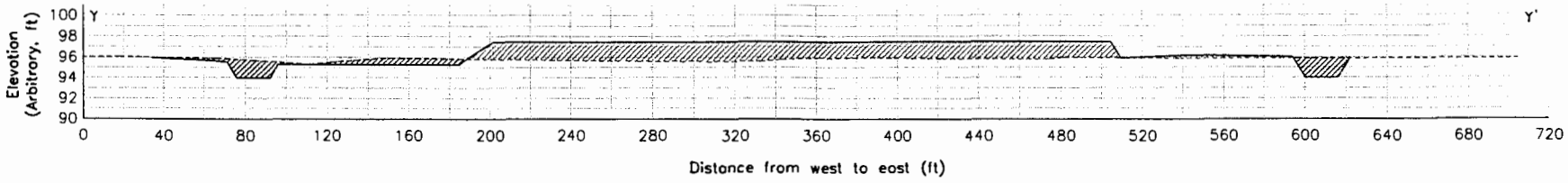
DATE	12/18/07
Sheets	6-16
REVISION	A

SHEET 11 of 16

TRANSECT Y



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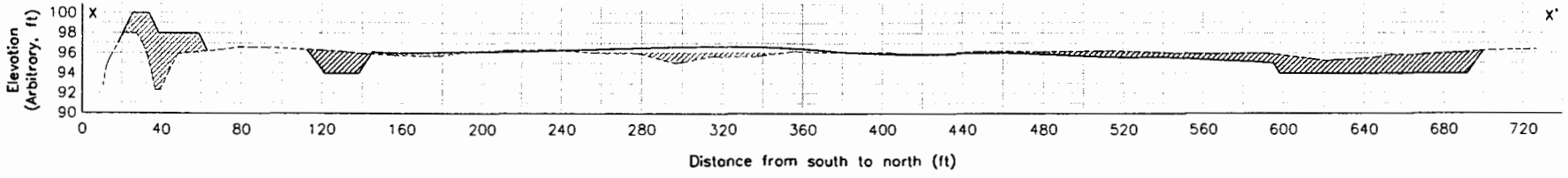

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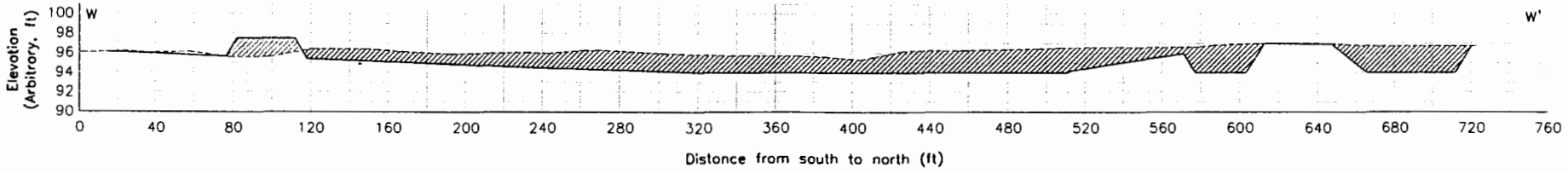

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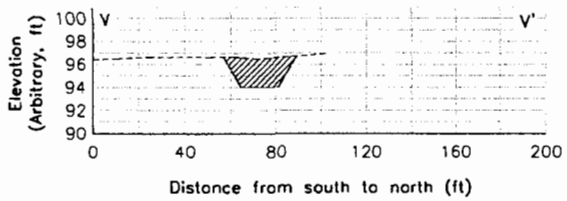
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Transects

LEGEND
EXISTING GROUND
FINISHED GROUND
PROPOSED CUT
PROPOSED FILL

DRAWN BY	FM
CHECKED BY	SM
DATE	12/18/07
Sheets	6-16
REVISION	A

TRANSECT V



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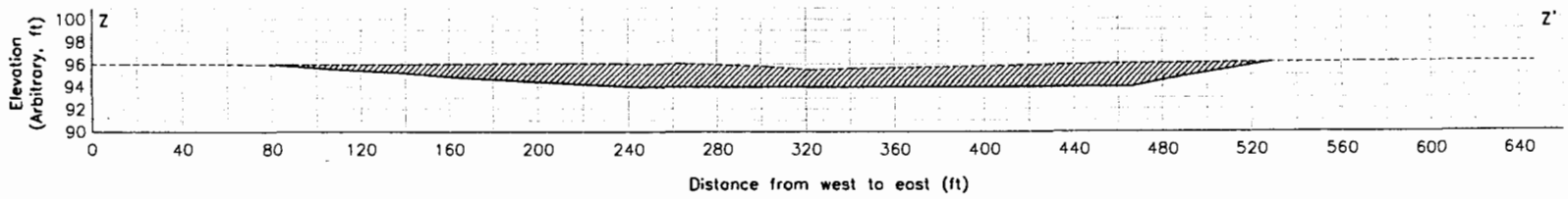

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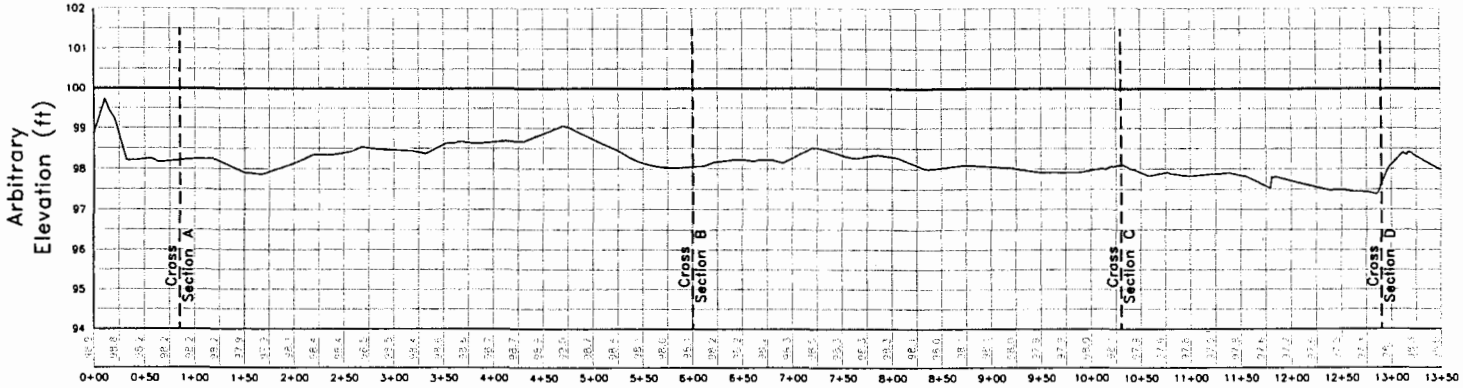
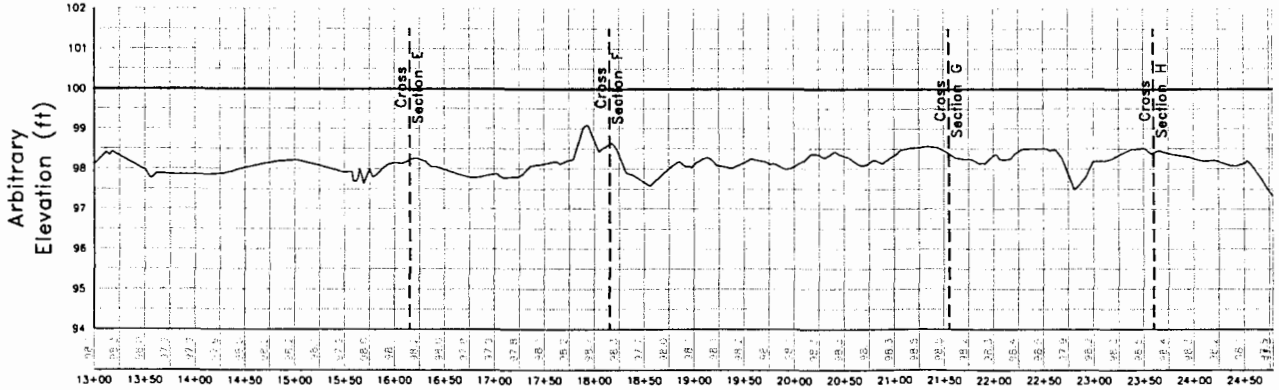
TRINITY ASSOCIATES 980 7th Street, Suite K Arcata, CA 95521 (707) 825-8770 McBain &Trush P.O. BOX 663 ARCATA, CA 95518 (707)826-7794	MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT Transects	LEGEND EXISTING GROUND FINISHED GROUND PROPOSED CUT PROPOSED FILL	DRAWN BY FM CHECKED BY SM DATE 12/18/07 Sheets 6-15 REVISION A	SHEET 13 of 16

Longitudinal Profile Along Alignment of Existing North Bank Dike (Station 0+00 to 13+50)



Longitudinal Profile Along Alignment of Existing North Bank Dike (Station 13+50 to 24+50)



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Longitudinal Profile Comparing Existing and Proposed Dike

LEGEND
EXISTING GROUND
FINISHED GROUND

DRAWN BY	FM
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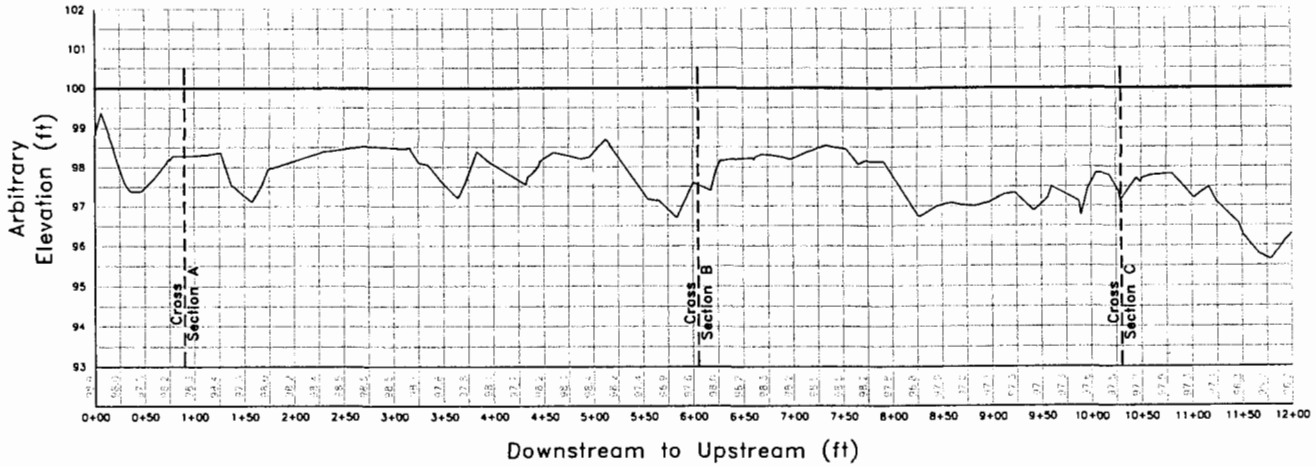
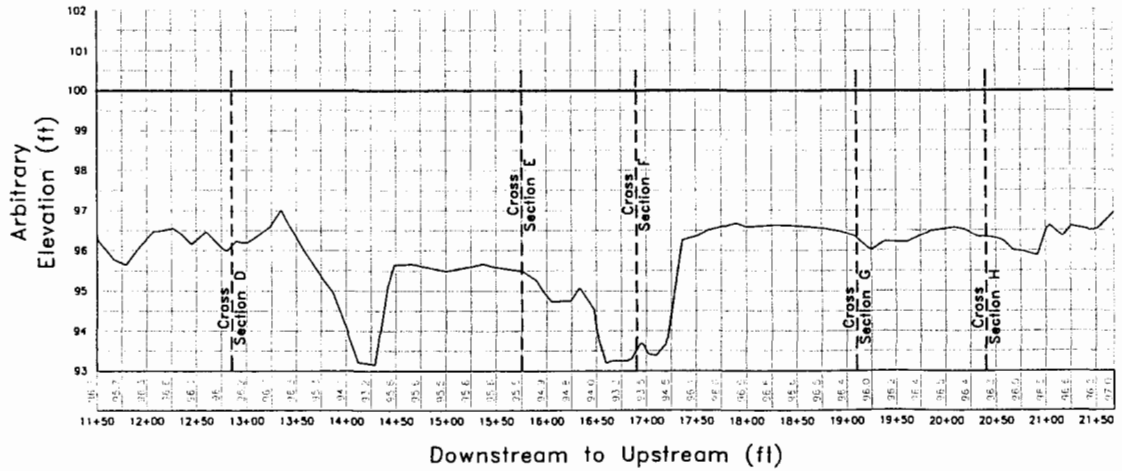
DATE	12/18/07
Sheets	6–16
REVISION	A

Longitudinal Profile Along Alignment of Proposed North Bank Dike (Station 0+00 to 12+00)



Longitudinal Profile Along Alignment of Proposed North Bank Dike (Station 12+00 to 21+50)



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Longitudinal Profile Along Proposed Dike Alignment

LEGEND
EXISTING GROUND
FINISHED GROUND

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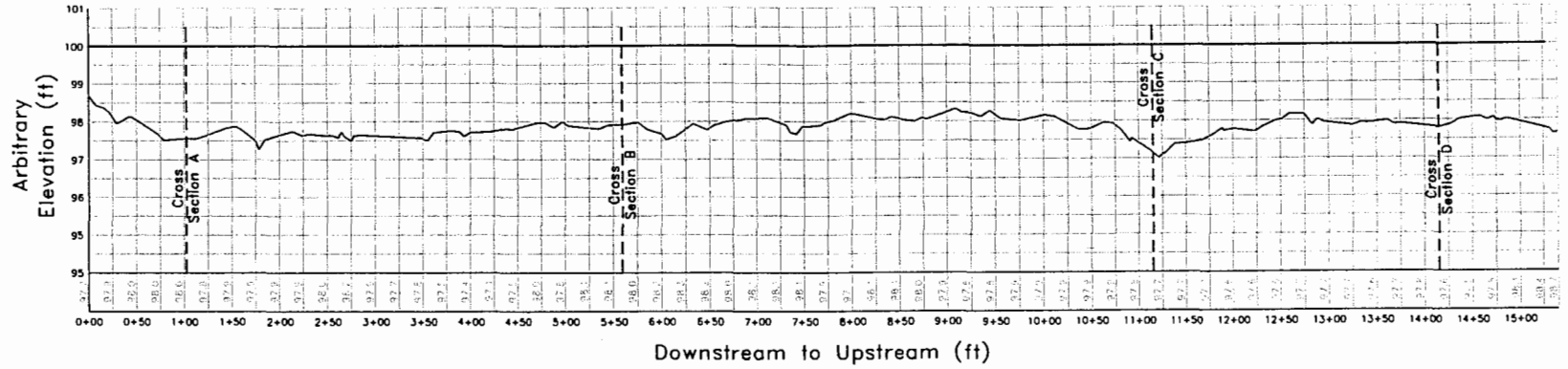
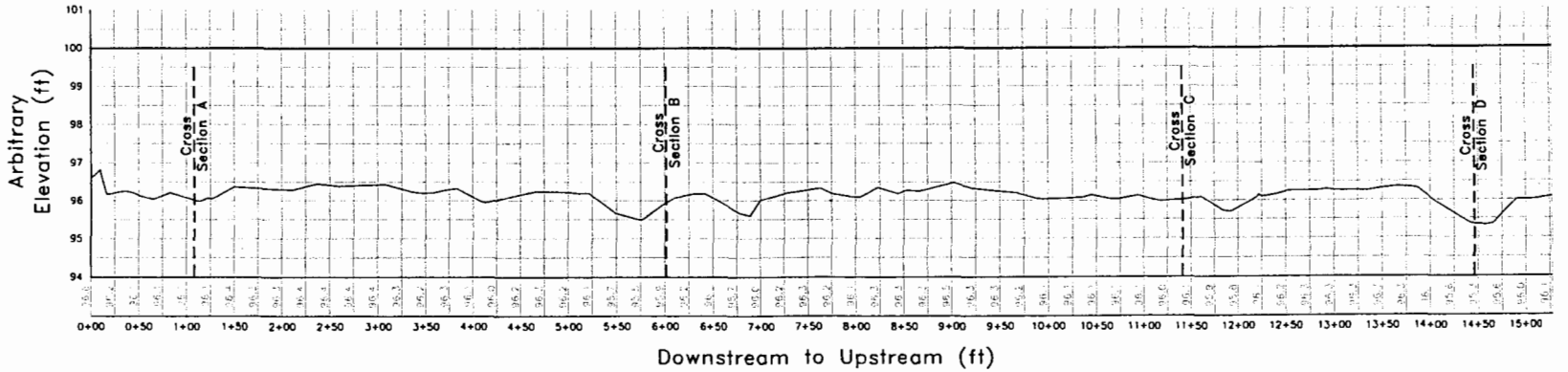
DATE	12/18/07
Sheets	6-16
REVISION	A

Longitudinal Profile Along Alignment of Existing South Bank Dike



Longitudinal Profile Along Alignment of Proposed South Bank Dike



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Longitudinal Profile Along Existing and Proposed Dike

LEGEND
EXISTING GROUND
FINISHED GROUND

DRAWN BY	FM
CHECKED BY	SM
DATE	12/18/07
Sheets	6-16
REVISION	A

Aldaron Laird

Environmental Planner

www.riverplanner.com

Robert Merrill
California Coastal Commission
North Coast District
710 E Street, Suite 200
Eureka, CA 95501-1865

September 8, 2008

Subject: Modification of project description for application 1-08-020, F7c.

Dear Bob,

After reviewing the Staff Report (F7c) for the Miller Family's Mad River Slough Dike Rehabilitation and Wetlands Enhancement Project we are revising the project description to avoid a net loss of seasonal grazed wetland area. The south bank dike is the upper terminus of a continuous dike extending the length of Mad River Slough; the proposed dike rehabilitation involves less than 50 percent of the existing dike volume.

- The south bank dike will now be rehabilitated in place and not relocated, the dike footprint will not expand 0.86 acres, there will be no-net loss of wetland area, and a salt marsh bench will not be constructed on the south bank.
- The surface elevation of the existing south bank dike will be raised 2 to 3 feet; resulting in the dike being 3.75 to 5.0 feet above the adjacent pasture.
- The existing dike foot print ranges from 25 to 35 feet in width and will not be increased.

Sincerely,

Aldaron Laird
Environmental Planner

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F 7c

Filed:	August 12, 2008
49th Day:	September 30, 2008
180th Day:	February 8, 2009
Staff:	Melissa B. Kraemer
Staff Report:	August 28, 2008
Hearing Date:	September 12, 2008
Commission Action:	

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-08-020**

APPLICANTS: **Dick & Joan Miller and the U.S. Fish & Wildlife Service (Attn: Paula Golightly)**

AGENT: Trinity Associates (Attn: Aldaron Laird)

PROJECT LOCATION: Along Mad River Slough in the Mad River bottomlands off of Mad River Road, approximately 1 mile northwest of Arcata, Humboldt County (APN 506-312-004).

PROJECT DESCRIPTION: Restore wetlands and protect existing agricultural uses by (1) rehabilitating 4,020 feet of existing dikes along both the north and south banks of the slough to protect agricultural uses on lands adjacent to and down slope of the slough; (2) restoring 2 acres of coastal salt marsh habitat by relocating the dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland species; (4) restoring 4.4 acres of riparian habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms; (5) renovating the existing tidegate that drains the northern pastureland; (6) upgrading culverts along the eastern access road; and (7) installing temporary

	exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts.
GENERAL PLAN DESIGNATION:	Agricultural Exclusive (AE) and Natural Resources (NR).
ZONING DESIGNATION:	Agricultural Exclusive, 60-acre minimum with Flood Hazard and Transitional Agricultural Combining Zones (AE-60/F,T); also Natural Resources with a Coastal Wetland Combining Zone (NR/W).
LOCAL APPROVALS RECEIVED:	Humboldt County Conditional Use Permit No. 07-20
OTHER APPROVALS REQUIRED:	North Coast Regional Water Quality Control Board Water Quality Certification and Waste Discharge Requirements, WDID No. 1B08128WNHU (pending); U.S. Army Corps of Engineers CWA Section 404 Nationwide Permit No. 27 (Aquatic Habitat Restoration, Establishment, and Enhancement Activities).
SUBSTANTIVE FILE DOCUMENTS:	Miller Family's Mad River Slough Dike Rehabilitation and Wetlands Enhancement Project Mitigated Negative Declaration, March 2008 (State Clearinghouse Number 2008032072); Humboldt County certified Local Coastal Program.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval with special conditions of the proposed wetland enhancement project.

The project area is located along Mad River Slough in the Mad River bottomlands off of Mad River Road, approximately 1 mile northwest of Arcata. The approximately 18-acre project area is located on the northern half of the approximately 77-acre ranch property. The proposed project has a dual purpose of both restoring wetland habitat and protecting agricultural lands from further inundation of tidal waters caused by the degraded nature of the dikes and the apparent increase in the frequency of peak high tides over-topping the dikes in the area. The Miller family's descendents homesteaded the land over a century ago by diking, draining, and clearing the area adjacent to Mad River Slough. The property has supported agricultural uses for over a century and is currently used to graze cattle approximately eight months of the year (the land is too wet for cattle grazing

during the winter months). However, the proposed project is primarily a habitat restoration project because the agricultural lands could be protected from further tidal inundation by simply rebuilding the degraded dikes in place without moving the dikes and converting 6.4 acres of existing pasture land into 2 acres of salt marsh habitat and 4.4 acres of riparian habitat.

The proposed project has four main components: (1) rehabilitating 4,020 feet of existing dikes along both the north and south banks of Mad River Slough to protect agricultural uses on lands adjacent to and downslope of the slough; (2) restoring 2 acres of coastal salt marsh habitat by relocating the dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland plant and wildlife species; and (4) restoring 4.4 acres of riparian habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms. Additional project components include renovating the existing tidegate that drains the northern pastureland, upgrading culverts along the eastern access road, and installing temporary exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts.

Prior to the construction of the dikes along Mad River Slough and the establishment of agricultural uses on the property more than 100 years ago, the project area previously supported diverse wetland habitats that included tidal sloughs, tidally inundated salt marsh habitat, and riparian and other freshwater wetlands. All of the original habitat except for the tidal slough itself was obliterated and largely replaced with grazed seasonal wetlands that provide far less habitat values and functions than those provided by the array of wetland habitat types that originally existed at the site. The habitat values and functions of the tidal slough itself were greatly compromised by the elimination of the adjacent supporting habitat types, even though the tidal slough remained. For example, in the absence of salt marsh restoration at the subject site, the channel of Mad River Slough in this location lacks a transitional buffer between the tidal channel and the upland dikes. As a result, dike materials continually erode into coastal waters over time, adversely affecting water quality while depriving marine resources that depend on the salt marsh environment of suitable habitat along this stretch of slough. The proposed project will move the dikes back from the channel margins to create 2 acres of salt marsh "benches," which will restore marine resources and sustain the biological productivity of coastal waters to maintain healthy populations of marine organisms.

As further discussed in Finding IV-C, the restoration of the 4.4 acres of riparian habitat in the project area is integral to maintaining optimum populations of marine organisms within the slough and for the protection of human health. Riparian areas contribute important organic debris that is transformed into nutrients, which support the marine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation also supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. Riparian areas capture contaminants; by absorbing or filtering contaminated stormwater runoff, soils and vegetation in marine riparian areas can prevent pollutants from entering coastal waters.

Healthy riparian areas support rich and diverse communities of animals that depend on the areas for feeding, breeding, refuge, movement, and migration. Salmonids and many other fish species feed on insects from marine riparian areas. When the riparian habitat was eliminated during reclamation of the land to agriculture, the food supply and, thus, the abundance of nearshore fish was greatly reduced. Importantly, the marine riparian functions of protecting water quality, maintaining soil stability, and absorbing the impacts of storm surges to reduce flooding were eliminated from the site with the removal of the riparian areas. Restoration of the 4.4 acres of riparian habitat on the site will restore these habitat values and functions to the site and thereby restore the biological productivity and the quality of coastal waters appropriate to maintain optimum populations of marine organisms and the protection of human health.

Although the proposed wetland enhancements will not reestablish the exact same configuration of wetland habitat that historically existed in the area prior to the diking of the former tidelands for agricultural use, the proposed creation of salt marsh and riparian and other freshwater wetlands will re-establish wetland habitat types that did previously exist at the site and the proposed wetland enhancements in converted or degraded natural wetlands will result in the reestablishment of landscape-integrated ecological processes associated with wetland habitats. Therefore, staff believes that the proposed wetland enhancements are consistent with the definition of restoration and constitute filling and dredging for restoration purposes consistent with Section 30233(a)(6). In addition, staff believes the proposed restoration of salt marsh and riparian habitat is consistent with the mandate of Section 30230 of the Coastal Act that marine resources shall be maintained and enhanced, and where feasible, restored and with the mandate of Section 30231 that the biological productivity and quality of coastal waters and wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored.

Although the project offers overall habitat restoration benefits, the project would convert 6.4 acres of agricultural (grazing) land inconsistent with the provisions of Sections 30241 and 30242 of the Coastal Act. However, staff believes that to not approve the project would result in a failure to restore marine resources and the biological productivity of coastal wetlands and waters that would be inconsistent with the mandates of Sections 30230 and 30231. In addition, it is the very essence of the project, not an ancillary amenity offered as a trade-off, that is both inconsistent with certain Chapter 3 policies and yet also necessary restoration. Finally, staff examined alternatives to the proposed project including (1) the no-project alternative; (2) alternative sites; and (3) rebuilding dikes in-kind. Staff believes that there is no less environmentally damaging feasible alternative to the development as conditioned, as required by Section 30233(a) of the Coastal Act.

Therefore, staff believes the proposed project presents a true conflict between Sections 30241 and 30242 and Sections 30230 and 30231 of the Coastal Act, and staff believes that it is appropriate for the Commission to invoke the conflict resolution policies of Section 30007.5 of the Coastal Act. Staff believes that the impacts on coastal resources from not constructing the project would be more significant than the project's agricultural

impacts and would be inconsistent with the mandates of Sections 30230 and 30231 to maintain and restore coastal water quality and marine resources. Denying the project because of its inconsistency with Sections 30241 and 30242 would avoid the conversion of 6.4 acres of agricultural grazing land. However, it must be noted that a benefit of the project is the protection of a much greater acreage of surrounding agricultural land, both on the Miller's property and adjacent properties downstream, from salt water intrusion and overtopping of dikes that are expected to be overtopped with greater frequency with the projected sea level rise for the area.

As discussed above, to ensure that the habitat restoration benefits of the project that would enable the Commission to use the balancing provision of Section 3007.5 are achieved, staff recommends Special Condition Nos. 1 through 7. Staff believes that without Special Condition Nos. 1 through 7, the proposed project could not be approved pursuant to Section 30007.5 of the Coastal Act.

The finding that the proposed project constitutes "restoration purposes" is based, in part, on the assumption that the proposed project will be successful in increasing salt marsh and riparian habitat values. Should the project be unsuccessful at increasing these habitat values, or worse, if the proposed dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually be for "restoration purposes." To ensure that the proposed project achieves the objectives for which it is intended (*i.e.*, for the restoration and retention of 2.5 acres of salt marsh and 4.4 acres of riparian habitat), staff recommends Special Condition No. 1, which would require the applicants to submit a final monitoring plan to outline a method for measuring and documenting the improvements in habitat value and diversity at the site over the course of five years following project completion. Furthermore, Special Condition No. 1 would require the monitoring plan to include provisions for remediation to ensure that the goals and objectives of the restoration project are met.

Depending on the manner in which the proposed project is conducted, the significant adverse impacts of the project may include (1) impacts to marine resources and wildlife habitat from water pollution in the form of sedimentation or debris entering coastal waters and wetlands; (2) introduction (through re-planting) of exotic invasive plants species that could compete with native vegetation and negate the habitat improvements they would provide; (3) use of certain rodenticides that could deleteriously bio-accumulate in predator bird species; (4) net loss of wetland habitat; and (5) impacts to sensitive salt marsh plant species (Humboldt Bay owl's-clover and Point Reyes bird's-beak). Overall, the project would restore and enhance wetland habitat values and would produce generally beneficial environmental effects. However, staff recommends various special conditions to ensure that habitat restoration and enhancement results and that potentially significant adverse impacts are minimized. These include Special Condition No. 2, which would require the applicants to undertake the development pursuant to certain construction responsibilities; Special Condition No. 3, which would require the applicants to submit an erosion and runoff control plan that is to include certain specified water quality best management practices for minimizing impacts to coastal waters; Special Condition No. 4, which would prohibit the planting of any plant species listed as

problematic and/or invasive and contains a prohibition on the use of anticoagulant-based rodenticides; Special Condition No. 5, which would require that the applicants submit a wetland mitigation plan to compensate for the 0.8-acre of wetlands to be filled by the expanded base footprint of the southern dike and ensure that this impact on wetland resources is feasibly mitigated to minimize adverse environmental effects consistent with Section 30233(a); and Special Condition No. 6, which would require the submittal of a final mitigation plan that demonstrates that all occurrences of sensitive plant species shall be avoided and protected.

Therefore, staff believes that as conditioned, the proposed development is consistent with all applicable Chapter 3 policies of the Coastal Act.

The motion to adopt the staff recommendation of approval with conditions in found on page 6.

STAFF NOTES

1. Jurisdiction and Standard of Review

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

I. MOTION, STAFF RECOMMENDATION, & RESOLUTION:

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-08-020 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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

Resolution to Approve Permit:

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

II. STANDARD CONDITIONS: See Appendix A.

III. SPECIAL CONDITIONS:

1. Final Restoration & Enhancement Monitoring Program

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020**, the applicant shall submit for review and approval of the Executive Director, a final detailed restoration and enhancement monitoring program designed by a qualified biologist for monitoring of the wetland restoration and enhancement sites (i.e., salt marsh, riparian, and enhanced seasonal freshwater wetland habitats). The monitoring program shall at a minimum include the following:

1) Performance standards that will assure achievement of the restoration goals and objectives set forth in Coastal Development Permit (CDP) Application No. 1-08-020 as described in the Findings IV.B, "Project Description;"

2) Provisions for submittal within 30 days of completion of the initial restoration and enhancement work of (a) "as built" plans demonstrating that the initial restoration and enhancement work has been completed in accordance with the approved restoration and enhancement program, and (b) an assessment of the initial biological and ecological status of the "as built" restoration/enhancements. The assessment shall include an analysis of the attributes that will be monitored pursuant to the program, with a description of the methods for making that evaluation;

3) Provisions to ensure that the restoration and enhancement sites will be remediated within one year of a determination by the permittee or the Executive Director that monitoring results indicate that the sites do not meet the goals, objectives, and performance standards identified in the approved restoration/enhancement program and in the approved final monitoring program;

4) Provisions for monitoring and remediation of the restoration and enhancement sites in accordance with the approved final restoration and enhancement program and the approved final monitoring program for a period of five (5) years;

5) Provisions for submission of annual reports of monitoring results to the Executive Director by November 1 each year for the duration of the required monitoring period, beginning the first year after submission of the "as-built" assessment. Each report shall include copies of all previous reports as appendices. Each report shall also include a "Performance Evaluation" section where information and results from the monitoring program are used to evaluate the status of the wetland restoration/enhancement project in relation to the performance standards;

6) Provisions for submission of a final monitoring report to the Executive Director at the end of the five-year reporting period. The final report must be prepared in conjunction with a qualified wetlands biologist. The report must evaluate whether the enhancement site conforms with the goals, objectives, and performance standards set forth in the approved final restoration and enhancement program. The report must address all of the monitoring data collected over the five-year period.

B. If the final report indicates that the restoration and enhancement project has been unsuccessful, in part, or in whole, based on the approved goals and objectives set forth in CDP Application No. 1-08-020 as described in Findings IV.B "Project Description," the applicant shall submit a revised or supplemental restoration and enhancement program to compensate for those portions of the original program which did not meet the approved goals and objectives set forth in CDP Application No. 1-08-020 as described in Finding IV.B "Project Description." The revised enhancement 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 restoration and enhancement sites 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 unless the Executive Director determines no amendment is legally required.

2. <u>Construction Responsibilities</u>

The permittee shall comply with the mitigation measures listed in the Mitigated Negative Declaration completed for the project (SCH No. 2008032072), except as modified herein. Construction-related requirements shall include, but shall not be limited to, the following Best Management Practices (BMPs):

A. No construction materials, debris, or waste shall be placed or stored where it may be subject to entering coastal waters or wetlands;

B. Any and all debris resulting from construction activities shall be removed from the project site within 10 days of project completion and disposed of at an authorized location;

C. All grading activities shall be conducted during the dry season period of June 1 through November 15; any grading activity conducted between October 16 and November 15 shall be subject to the following conditions:

1) All work shall cease upon the onset of precipitation at the project site and shall not recommence until the predicted chance of rain is less than 50 percent for the Arcata area portion of the Redwood Coast segment of the National Weather Service's forecast for Northwestern California;

2) The work site(s) shall be winterized between work cessation periods by installing stormwater runoff and erosion control barriers around the perimeter of the construction site to prevent the entrainment of sediment into coastal waters; and

3) Adequate stocks of stormwater runoff and erosion control barrier materials shall be kept onsite and made available for immediate use.

D. Construction activities adjacent to the slough shall only be performed during low tide and when soils are sufficiently dry so that sediment is not discharged into coastal waters;

E. If rainfall is forecast during the time construction activities are being performed, any exposed soil areas shall be promptly mulched or covered with plastic sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation;

F. Any debris discharged into coastal waters shall be recovered immediately and disposed of properly;

G. Any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas. Mechanized heavy equipment and other vehicles used during the construction process shall not be stored or re-fueled within 300 feet of coastal waters; and

H. Fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or wetlands. Hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and a registered first-response, professional hazardous materials clean-up/remediation service shall be locally available on call. Any accidental spill shall be rapidly contained and cleaned up.

3. <u>Final Erosion & Runoff Control Plan</u>

A. **PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020**, the applicant shall submit, for review and approval of the Executive Director, a final plan for erosion and run-off control.

1) The run-off, spill prevention and response plan shall demonstrate the following:

(a) Run-off from the project site shall not increase sedimentation in coastal waters or wetlands;

(b) Run-off from the project site shall not result in pollutants entering coastal waters or wetlands;

(c) The plan is consistent with the requirements of Special Condition No. 2 and the other conditions of approval of CDP No. 1-08-020.

(d) Best Management Practices (BMPs) shall be used to prevent the entry of polluted stormwater runoff into coastal waters or adjacent wetlands during construction, including use of relevant best management practices (BMPs) as detailed in the "California Storm Water Best Management (Construction and Industrial/ Commercial) Handbooks, developed by Camp, Dresser & McKee, *et al.* for the Storm Water Quality Task Force (i.e., BMP Nos. EC-1 – *Scheduling*, EC-2 – *Preservation of Existing Vegetation*, EC-12 – *Streambank Stabilization*, SE-1 – *Silt Fence* and/or SE-9 – *Straw Bale Barrier*, NS-8 – *Vehicle and Equipment Cleaning*, NS-9 – *Vehicle and Equipment Fueling*, NS-10 – *Vehicle and Equipment Maintenance and Repair*, WM-1 – *Material Delivery and Storage*, WM-3 – Stockpile Management, WM-4 – *Spill Prevention and Control*; see http://www.cabmphandbooks. com); and

(e) An on-site spill prevention and control response program, consisting of best management practices (BMPs) for the storage of clean-up materials, training, designation of responsible individuals, and reporting protocols to the appropriate public and emergency services agencies in the event of a spill, shall be implemented at the project to capture and clean-up any accidental releases of oil, grease, fuels, lubricants, or other hazardous materials from entering coastal waters or wetlands.

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

(a) A schedule for installation and maintenance of appropriate construction source control best management practices (BMPs) to prevent entry of stormwater run-off into the construction site and the entrainment of excavated materials into run-off leaving the construction site; and

(b) A schedule for installation, use and maintenance of appropriate construction materials handling and storage best management

practices (BMPs) to prevent the entry of polluted stormwater run-off from the completed development into coastal waters.

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

4. Site Revegetation

The wetland restoration and enhancement sites shall be revegetated as proposed and shall comply with the following standards and limitations:

A. Only native plant species shall be planted. All proposed plantings shall be obtained from local genetic stocks within Humboldt County. If documentation is provided to the Executive Director that demonstrates that native vegetation from local genetic stock is not available, native vegetation obtained from genetic stock outside of the local area may be used. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property;

B. All planting shall be completed within 60 days after completion of construction;

C. The use of rodenticides containing any anticoagulant compounds, including, but not limited to, Bromadiolone, Brodifacoum or Diphacinone shall not be used.

5. Final Wetland Mitigation Plan

A. **WITHIN 90 DAYS OF ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020**, the applicant shall submit, for the review and written approval of the Executive Director, a final wetland mitigation plan which provides adequate mitigation compensation for the 0.8-acre of wetland fill impacts associated with the development.

1) The wetland mitigation plan shall demonstrate the following:

(a) A minimum of 0.8-acre of seasonal freshwater wetlands will be created either on-site or at an off-site location elsewhere in Humboldt County;

(b) Revegetation shall achieve a standard for success of at least 80 percent survival of plantings or at least 80 percent ground cover for broadcast seeding after a period of 3 years;

(c) Only regionally appropriate native vegetation shall be used. The vegetation to be replanted shall be of local genetic stock, if

available. No plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be installed or allowed to naturalize or persist on the site. No plant species listed as a "noxious weed" by the governments of the State of California or the United States shall be utilized within the property;

(d) Rodenticides containing any anticoagulant compounds, including but not limited to Bromadiolone or Diphacinone, shall not be used;

(e) All excess excavated material will be disposed of in an authorized location; and

(f) The wetland mitigation plan shall be implemented within 1 year of the date of approval by the Executive Director of the final wetland mitigation plan.

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

(a) Specified goals of the plan and performance criteria for evaluating the success of the wetland mitigation plan;

(b) A site plan of the mitigation area accompanied by a description of existing conditions on the site in terms of vegetation, hydrology, and soils;

(c) A plant list showing the plant species to be used in the newly created wetland area;

(d) A description of the disposal location for all excess excavated material and evidence that the disposal site may lawfully accept such material;

(e) A schedule for implementation of the plan;

(f) A maintenance plan and 5-year monitoring plan to ensure that the specified goals and performance criteria have been satisfied; and

(g) Provisions for submittal of a final monitoring report to the Executive Director at the end of the 5-year reporting period. The final report must be prepared in conjunction with a qualified wetlands biologist and include a final wetland delineation. The report must evaluate whether the mitigation site conforms to the goals, objectives, and performance standards set forth in the approved final mitigation plan.

B. If the final monitoring report indicates that the mitigation plan has been unsuccessful, in part or in whole, based on the approved goals, objectives, and performance standards set forth in the approved final wetland mitigation plan, the applicant shall submit a revised or supplemental plan to compensate for those portions of the original plan which did not meet the approved goals and

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

6. <u>Salt Marsh & Sensitive Plant Species Protection Plan</u>

A. **PRIOR TO COMMENCEMENT OF CONSTRUCTION**, the permittee shall submit, for the review and approval of the Executive Director, a plan prepared by a qualified botanist for the protection of salt marsh and sensitive plant species in the project area.

1) The plan shall demonstrate that all existing salt marsh habitat in the project area shall be avoided and protected; and

2) The plan shall include at a minimum the following components: (a) a map that locates all existing salt marsh habitat in the project area; and (b) a narrative and site plan map that describes avoidance measures proposed, including but not limited to, (1) flagging and staking for avoidance the upper elevational boundary limit of the salt marsh vegetation on the site; and (2) limiting excavation work and other disturbance to areas outside of the staked area.

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 an amendment to this coastal development permit, unless the Executive Director determines that no amendment is legally required.

7. <u>Protection of Archaeological Resources</u>

A. If an area of historic or prehistoric cultural resources or human remains are discovered during the course of the project, all construction shall cease and shall not recommence except as provided in subsection (B) hereof, and a qualified cultural resource specialist shall analyze the significance of the find.

B. A permittee seeking to recommence construction following discovery of the cultural deposits shall submit an archaeological plan for the review and approval of the Executive Director.

1) If the Executive Director approves the Archaeological Plan and determines that the 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.

2) If the Executive Director approves the 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.

8. Regional Water Quality Control Board Approval

PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020, the applicant shall provide to the Executive Director a copy of a permit issued by the North Coast Regional Water Quality Control Board, or evidence that no permit is required. The applicant shall inform the Executive Director of any changes to the project required by the Board. 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.

9. U.S. Army Corps of Engineers Approval

PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION, the permittee shall provide to the Executive Director a copy of a permit issued by the 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 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 legally required.

10. State Lands Commission Review

PRIOR TO ISSUANCE OF COASTAL DEVELOPMENT PERMIT NO. 1-08-020, the applicant shall submit to the Executive Director, a written determination from the State Lands Commission that:

A. No State lands are involved in the development; or

B. State lands are involved in the development and all permits required by the State Lands Commission have been obtained; or

C. State lands may be involved in the development, but pending a final determination an agreement has been made with the State Lands Commission for the project to proceed without prejudice to that determination.

IV. FINDINGS & DECLARATIONS

The Commission hereby finds and declares as follows:

A. Environmental Setting

The project area is located along Mad River Slough in the Mad River bottomlands off of Mad River Road, approximately 1 mile northwest of Arcata (Exhibit Nos. 1 and 2). The project area involves 17.8 acres located on a coastal plain known as the Mad River bottom (Exhibit Nos. 3 and 4). This area drains to the Mad River Slough (formerly Turners Slough), which bisects the southern end of the project area (see Exhibit No. 5). The subject site encompasses approximately one half mile of the slough, which is lined with deteriorating historic dikes (built over a century ago) and surrounded by seasonal agricultural wetlands ("farmed wetlands"). The project area can be characterized as low-lying, poorly drained, salt water intruded, and flood prone. The lands behind both the dikes become inundated – often with several feet of water – during extended periods of winter precipitation or by over-bank flows either from the Mad River (which is located approximately one half mile to the northeast) or by peak high tides overtopping Mad River Slough. There is an existing top-hinged tidegate that drains the north pasture into the slough (see 6 of Exhibit No. 5).

The dikes along both banks of the slough in the project area (which comprise approximately 2 acres of disturbed upland habitat) originally were constructed nearly on top of the banks of the slough (see Sheet 7 of Exhibit No. 5). The dikes are severely eroded and were overtopped by 0.5-to-2-feet during the December 23, 2003 peak high tide of 9.85 feet (as measured at the North Spit). The south bank dike is from 1- to 2-feet above the elevation of the surrounding pasture, and the north bank dike is from 2- to 4-feet above the elevation of the surrounding pasture.

Currently, the primary use of the area is cattle grazing during the dry months (about 8 months out of the year). The approximately 18 acre project area is located on the northern half of the approximately 77-acre ranch property (see Exhibit Nos. 3 and 4). Aleutian Cackling Geese also use the land for grazing each spring. No land classified as "prime farmland" occurs in the area.

The applicants' consultant, McBain & Trush, Inc., produced a vegetation map for the project area in 2004, which mapped various cover types (see Sheet 5 of Exhibit No. 5). These include approximately 0.5-acre of salt marsh habitats along the south bank of the slough along the slough margin and the north bank of the slough along the dike dominated by native species such as saltgrass (*Distichlis spicata*) and/or pickleweed (*Salicornia virginica*), salt marsh habitats dominated by nonnative species such as dense-flowered cordgrass (*Spartina densiflora*) and/or sicklegrass (*Parapholis strigosa*), and grazed wetland habitats dominated by native and nonnative grasses and herbs (e.g., velvet grass *Holcus lanatus*, water foxtail *Alopecurus geniculatus*, sweet vernal grass *Anthoxanthum odoratum*, ryegrass *Lolium* sp., bentgrasses *Agrostis* spp., dandelion *Taraxacum officinale*, bird's-foot trefoil *Lotus corniculatus*, creeping buttercup *Ranunculus repens*, curly dock *Rumex crispus*, white clover *Trifolium repens*, Pacific silverweed *Potentilla anserina* ssp. *pacifica*, etc.).

Two sensitive plant species were mapped in 2004 in the salt marsh habitats both along the south bank of the slough along the slough margin and the north bank of the slough along the dike. These include Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*) and Point Reyes' bird's-beak (*Cordylanthus maritimus* ssp. *palustris*). Both plant species are considered rare by the California Native Plant Society (List 1B.2)[1] and the California Department of Fish and Game (S2.2)[2].

The project site is not located within a designated highly scenic area and is not visible from any public road or vantage point except from the waters of the upper reaches of Mad River Slough.

B. Project Description

The approximately 18-acre project area is located on the northern half of the approximately 77-acre ranch property (see Exhibit Nos. 3 and 4). The proposed project has a dual purpose of both restoring wetland habitat and protecting agricultural lands from further inundation of tidal waters caused by the degraded nature of the dikes and the apparent increase in the frequency of peak high tides (8 feet and greater above mean lower low water, MLLW) over-topping the dikes in the area. The Miller family's descendents homesteaded the land over a century ago by diking, draining, and clearing the area adjacent to Mad River Slough. The property has supported agricultural uses for over a century and is currently used to graze cattle approximately eight months of the year (the land is too wet for cattle grazing during the winter months). However, the proposed project is primarily a habitat restoration project because the agricultural lands could be protected from further tidal inundation by simply rebuilding the degraded dikes in place without moving the dikes and converting 6.4 acres of existing pasture land into 2 acres of salt marsh habitat and 4.4 acres of riparian habitat.

The proposed project has four main components: (1) rehabilitating 4,020 feet of existing dikes along both the north and south banks of Mad River Slough to protect agricultural uses on lands adjacent to and downslope of the slough; (2) restoring 2 acres of coastal salt marsh habitat by relocating the dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland plant and wildlife species; and (4) restoring 4.4 acres of riparian habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms. Additional project components include renovating the existing tidegate that drains the northern pastureland, upgrading culverts along the eastern access road, and installing temporary exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts. See Exhibit No. 5 for project plans.

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[1] CNPS List 1B.2 = "1B" signifies "Rare, threatened, or endangered in California and elsewhere." The "threat code" extension (.2) signifies "fairly endangered in California."

[2] The State rank (S2.2) = "S2" signifies 6-20 "element occurrences" OR 1,000-3,000 individuals OR 2,000-10,000 acres. The "threat code" extension (.2) signifies "threatened."

Approximately 21,000 cubic yards of fill will be needed for the proposed reconstruction of approximately 4,020 feet of dikes on the north and south sides of the slough. The fill material will be obtained from the existing dikes (~3,600 yds^3), which will be either reconstructed in place where appropriate (e.g., much of the northern dike, as shown on Sheet 6 of Exhibit No. 5) or relocated back from the slough margins as shown on Exhibit No. 5, as well as additional material dredged from approximately 8 acres of the adjacent seasonal freshwater wetlands (~19,500 yds^3). The relocated dikes are proposed to have elevations raised to 5 feet above mean higher high water (MHHW) and an expanded base footprint (from the existing base footprint of 1.93 acres to a proposed 3.57 acres) to address the projected future sea level rise of 3 feet for the area. The proposed elevation of the rehabilitated dikes will be one foot higher than a recent extreme high tide elevation recorded in December of 2003 (recorded at 9.85 feet at the North Spit), which caused a breach in a dike along the eastern shore of Mad River Slough that flooded a large area of the Mad River bottom.

The approximately 800-foot-long north bank dike in the project area (comprised of ~1,100 cubic yards of fill covering ~1 acre) will be restored in place (where appropriate) or relocated eastward as shown on Exhibit No. 5 (Sheet 6) to create a 1.43-acre bench designed to become high elevation (~MHHW) salt marsh. Combined with the 0.36-acre of existing salt marsh in the area which is to be retained, the project will result in 1.79 acres of salt marsh habitat on the north bank.

The approximately 1,540-foot-long south bank dike in the project area (comprised of ~2,500 cubic yards of fill covering ~0.86-acre) will be relocated 25 feet southward as shown on Exhibit No. 5 (Sheet 6) to create a 1.03-acre bench designed to become high elevation salt marsh. As a 0.12-acre band of existing salt marsh will be retained along the south bank, the project will result in approximately 1.15 acres of salt marsh habitat in this area.

The wetland enhancement proposed for 8.1 acres of pastureland (seasonal freshwater wetland or "farmed" wetland) on the north side of the slough will involve excavating approximately 13,400 cubic yards of material to increase topographic relief, collect and retain surface runoff, increase water depth, extend the duration of seasonal inundation, and enhance wetland plant diversity. The excavated material will be used to restore the levees as described above. A network of "channels" will be graded into the area to drain stormwater runoff southward to the existing tidegate. The wetland enhancement area will be designed to dry out annually to allow for continued seasonal agricultural grazing.

The elevation of the tidegate inlet will be increased (by extending and elevating the connecting culvert) to promote the seasonal inundation of 16.7 acres on the north side of the slough, including 12.3 acres of enhanced seasonal freshwater wetlands (an area greater than the proposed enhancement area described above) and 4.4 acres of restored riparian habitat (see Exhibit No. 5, Sheet 6). A 0.5-acre "island" (designed to be higher in elevation than the surrounding wetlands but still low enough to flood repeatedly during winter and spring) will be created in the midst of the 12.3-acre enhanced wetland area to

provide an area for resting waterfowl and shorebirds as well as to function as a wind-break from prevailing winds during the winter.

The proposed project also involves replacing two undersized, collapsed culverts located beneath the ranch road (eastern access road) north of the slough with one 24-inch diameter by 20-foot-long culvert. The new culvert will direct and increase runoff from properties to the east into the enhanced wetland area. An additional undersized or collapsed culvert beneath the ranch road south of the slough also will be replaced with a 24-inch diameter by 20-foot long culvert to maintain drainage of adjacent agricultural lands. See Exhibit No. 5 for details.

Finally, the applicants propose to install exclusionary cattle fencing to facilitate the success of the restoration efforts in the project area. Approximately 2,340 lineal feet of high-tensile, single-strand, 12.5-gauge electrical wire fencing will be installed to exclude cattle from the 17.8-acre project area. As the new fencing will be installed along the edge of the existing ranch road and along or on the toe of the south bank dike, no wetlands will be impacted by fence post placement. Table 1 below summarizes the existing and proposed habitats in the project area.

Table 1. Summary of existing and proposed habitats/uses of the project area.

Project Area Habitats/Uses	Existing	Proposed	Notes
DIKES	~2 acres (combined base footprint)	~3.6 acres (combined base footprint)	The rehabilitated dikes will be designed to withstand 3 feet of sea level rise with 2.5:1 side slopes and will have an elevation 1 foot higher than a recent extreme high tide elevation recorded in December of 2003.
North bank dike	1,100 yds^3 of fill	12,100 yds^3 of fill	
South bank dike	2,500 yds^3 of fill	7,400 yds^3 of fill	
AGRICULTURAL (GRAZING) LAND	17.3 acres (including ~2 acres of existing dikes; excluding 0.5-acre of salt marsh)	10.9 acres (including ~3.6 acres of expanded dikes; excluding 4.4 acres of riparian and 2.5 acres of salt marsh)	Overall net loss of 6.4 acres (0.97 animal unit months); 4.4 acres will be converted to riparian habitat and an additional 2 acres to salt marsh.
UPLANDS	2 acres (combined footprint of existing dikes)	2.8 acres	Wetland conversion will result from the expanded footprint of the south dike (0.8-acre), while the 0.8-acre expanded footprint of the north dike is expected to function as a seasonal wetland
WETLANDS	15.8 acres	15 acres	There will be a net loss of 0.8-acre of freshwater seasonal wetlands, which will be converted to uplands due to the expanded

Project Area Habitats/Uses	Existing	Proposed	Notes
			footprint of the south dike.
"Farmed" wetlands (seasonal freshwater)	15.3 acres	8.1 acres (including a 0.5-acre "island" and a 0.8-acre "bench" on the inboard side of the north dike footprint)	The tidegate inlet elevation will be adjusted to promote seasonal inundation (fresh-water wetland enhancement) of up to 16.7 acres.
Riparian wetlands	0 acres	4.4 acres	This area is proposed to be planted with native trees and shrubs such as willow, red alder, and Sitka spruce.
Salt marsh	0.5 acres (0.36-ac. along north bank & 0.12-acre along south bank)	2.5 acres (1.79 ac. along north bank & 1.15 acres along south bank)	There will be an overall net gain of ~2 acres of salt marsh in the project area.
SUMMARY:	The existing habitats in the 17.8-acre project area consist of the following: 15.3 acres of freshwater seasonal ("farmed") wetland, 2 acres of upland dikes, and 0.5-acre of salt marsh. The proposed habitats will include 8.1 acres of freshwater seasonal wetlands (including a 0.5-acre "island" for resting waterfowl), 4.4 acres of riparian habitat, 2.8 acres of upland dikes, and 2.5 acres of salt marsh.		

The applicants have outlined general revegetation goals/plans for the four proposed habitat areas (dike/upland, salt marsh, riparian, and enhanced seasonal freshwater wetland) as follows:

- The revegetation goal for the rehabilitated dikes is 100 percent ground cover for erosion control in the short-term and to provide forage for grazing in the long-term. The dike surfaces are proposed to be mulched and seeded at 10 pounds per acre with commercially available grass seed.
- The existing narrow bands of salt marsh habitat (0.12-acre along the south bank and 0.36-acre along the north bank) will be protected so that the existing pickleweed-salt grass vegetation of the areas can colonize the newly graded salt benches. The vegetation goal for the salt marsh areas will rely on tidewater exchange to passively establish high elevation salt marsh vegetation. All exposed areas are proposed to be mulched and seeded with a blend of a minimum of three locally native grass species.
- The riparian area will be mulched and seeded with native annual grass seed at 10 pounds per acre for erosion control. The area will be planted in clumps with willow (*Salix* sp.) sprigs/stakes obtained from the applicant's nearby property on the Mad River (outside of the coastal zone). The applicants also propose to plant red alder (*Alnus rubra*) and Sitka spruce (*Picea sitchensis*) trees to increase diversity and habitat values. A 50 percent survival rate will be considered successful, and if necessary, subsequent planting will occur to achieve the desired density and coverage.

- Passive revegetation is proposed for the seasonal freshwater wetland area. If needed, the applicants propose to plant a native smartweed (*Polygonum*) species along some areas, which is a preferred waterfowl food.

In addition, the applicants propose to implement the following "best management practices" (BMPs) for erosion and sediment control and for the protection of sensitive plant species (Humboldt Bay owl's-cover and Point Reyes bird's-beak in the existing salt marsh habitats):

- Construction activities will be limited to the dry season (July 1-October 31);
- Excavation and grading adjacent to Mad River Slough will occur during low tide only;
- During construction, the tidegate will be sealed to prevent stormwater runoff with suspended sediment from discharging to slough;
- During construction, a combination of silt fence or fiber rolls will be deployed upslope of the construction site and tidegate inlet to trap suspended sediment from entering or leaving the site in stormwater runoff;
- Disturbed areas will be seeded with grass and mulched immediately following construction;
- Temporary exclusionary fencing will be erected around the project area to prevent grazing until desired vegetation and percent ground cover are established; and
- The upper elevational boundary for the two rare plant species (between MHW and MHHW) will be staked and flagged, and no construction activities will occur within the rare plant exclusion area.

Other proposed mitigation measures are outlined in the Mitigated Negative Declaration prepared for the project (see "Substantive File Documents," page 2).

C. Restoration of Marine Resources, Biological Productivity, and Permissible Filling, Dredging, & Diking of Wetlands

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30230 states as follows:

> *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.* [Emphasis added.]

Coastal Act Section 30231 states as follows:

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

Coastal Act Section 30233 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:*
>
> …
>
> *(6) Restoration purposes*
>
> …
>
> (*c*) *In addition to the other provisions of this section, diking, filling, or dredging in existing estuaries and wetlands shall maintain or enhance the functional capacity of the wetland or estuary*… [Emphasis added.]

2. Consistency Analysis

Coastal Act Sections 30230 and 30231 require, in part, that marine resources and coastal wetlands be maintained and enhanced. These policies also call for restoration of marine resources, coastal waters, streams, wetlands, and estuaries where feasible.

When read together as a suite of policy directives, Sections 30230, 30231, and 30233 set forth a number of different limitations on what types of projects may be allowed in coastal wetlands. For analysis purposes, the limitations applicable to the subject project can be grouped into four general categories or tests. These tests require that projects that entail the dredging, diking, or filling of wetlands demonstrate that:

a. That the purpose of the filling, diking, or dredging is for one of the seven 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.

Each category is discussed separately below.

a. Permissible Use for Fill

The first test set forth 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 project is subcategory (6), "restoration purposes."

The project proposes to restore 6.4 acres of grazing land to wetland habitat and enhance an additional 8.1 acres of grazed seasonal wetland habitat by (1) rehabilitating 4,020 feet of existing dikes along both the north and south banks of Mad River Slough to protect agricultural uses on lands adjacent to and downslope of the slough; (2) restoring 2 acres of coastal salt marsh habitat by relocating the dikes back from the slough margins; (3) enhancing 8.1 acres of existing seasonal freshwater wetlands by excavating material to increase the retention of stormwater runoff and habitat value for a greater diversity of wetland species; and (4) restoring 4.4 acres of riparian habitat integral to maintaining the biological productivity of the area for the benefit of terrestrial and marine organisms. Additional project components include renovating the existing tidegate that drains the northern pastureland, upgrading culverts along the eastern access road, and installing temporary exclusionary cattle fencing around the project area to facilitate the success of the restoration efforts.

Neither the Coastal Act nor the Commission's administrative regulations contain a precise definition of "restoration." The dictionary defines "restoration" in terms of actions that result in returning an article "back to a former position or condition," especially to "an unimpaired or improved condition."[3] The particular restorative methods and outcomes vary depending upon the subject being restored. For example, the Society for Ecological Restoration defines "ecological restoration" as "the process of intentionally altering a site to establish a defined indigenous, historical ecosystem. The goal of the process is to emulate the structure, function, diversity, and dynamics of the specified ecosystem."[4] However, within the field of "wetland restoration," the term also applies to actions taken "in a converted or degraded natural wetland that result in the reestablishment of ecological processes, functions, and biotic/abiotic linkages and lead to a persistent, resilient system integrated within its landscape"[5] that may not necessarily result in a return to historic locations or conditions within the subject wetland area.

Implicit in all of these varying definitions and distinctions is the understanding that the restoration entails returning something to a prior state. Wetlands are extremely dynamic systems in which specific physical functions such as nutrient cycles, succession, water levels and flow patterns directly affect biological composition and productivity. Consequently "restoration," as contrasted with "enhancement," encompasses not only reestablishing certain prior conditions but also <u>reestablishing the processes that create those conditions</u>. In addition, most of the varying definitions of restoration imply that the reestablished conditions will persist to some degree, reflecting the homeostatic natural

[3] Merriam-Webster's Collegiate Dictionary, Tenth Edition
[4] "Definitions," *Society of Ecological Restoration News*, Society for Ecological Restoration; Fall, 1994
[5] *Position Paper on the Definition of Wetland Restoration*, Society of Wetland Scientists, August 6, 2000

forces that formed and sustained the original conditions before being artificially altered or degraded, and will not promptly return to the pre-restored state.

Moreover, finding that proposed diking, filling, and dredging constitutes "restoration purposes" must be based, in part, on evidence that the proposed project will be successful in restoring habitat values. Should the project be unsuccessful at increasing and/or enhancing habitat values, or worse, if the proposed diking, filling, and dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually be for "restoration purposes." These two characteristics are particularly noteworthy to restoration grant program administrators in reviewing funding requests to ensure that the return on the funding investment is maximized and liabilities associated with unwanted side effects of the project are minimized.

Thus, to ensure that the project achieves its stated habitat restoration or enhancement objectives, and therefore be recognized as being for "restoration purposes," the project must demonstrate that: (1) it either entails (a) a return to, or re-establishment of, former habitat conditions, or (b) entails actions taken in a converted or degraded natural wetland that will result in the reestablishment of landscape-integrated ecological processes, and/or abiotic/biotic linkages associated with wetland habitats; (2) there is a reasonable likelihood that the identified improvements in habitat value and diversity will result; and (3) once re-established, it has been designed to provide the desired habitat characteristics in a self-sustaining, persistent fashion independent of the need for repeated maintenance or manipulation to uphold the habitat function.

Each component of project as it relates to the proposed restoration or enhancement is discussed below:

- <u>Rehabilitation of 4,020 feet of existing dikes and Restoration of 2 acres of salt marsh habitat</u>:

The project proposes to relocate (or restore in place where appropriate) the approximately 800-foot-long north bank dike in the project area, which is severely eroded and frequently overtopped, eastward to create a 1.43-acre bench designed to become high elevation (~MHHW) salt marsh. Combined with the 0.36-acre of existing salt marsh in the area which is to be retained, the project will result in 1.79 acres of salt marsh habitat on the north bank. Additionally, the project proposes to relocate the approximately 1,540-foot-long, degraded south bank dike in the project area 25 feet southward to create a 1.03-acre bench designed to become high elevation salt marsh. As a 0.12-acre band of existing salt marsh will be retained along the south bank, the project will result in approximately 1.15 acres of salt marsh habitat in this area. In the case of both dikes, the rehabilitated portions will be relocated (i.e., fill placed) onto seasonal freshwater ("farmed") wetlands (~0.8-acre of fill placement for the north dike relocation/expansion and ~0.8-acre of fill placement for the south dike relocation/expansion).

The proposed restoration of approximately 2 acres of salt marsh habitat in the project area is within an area that was historically subject to the tidal influence of Humboldt Bay. The existing dikes are located immediately adjacent to the slough banks, which historically supported more extensive salt marsh benches along its margins. The proposed project would involve, in part, relocating existing dikes back from the margin of Mad River Slough to expand the existing salt marsh benches (totaling 0.5-acre) and restore an additional 2 acres of salt marsh habitat. In addition to the restoration benefit, the salt marsh benches also will function to buffer the rehabilitated dikes from the erosive effects of the adjoining tidal slough.

In the absence of salt marsh restoration at the subject site, the channel of Mad River Slough in this location lacks a transitional buffer between the tidal channel and the upland dikes. As a result, dike materials continually erode into coastal waters over time, and marine resources that depend on the salt marsh environment are deprived of suitable habitat along this stretch of slough.

According to information from the U.S. Fish and Wildlife Service (FWS), in the Humboldt Bay region it is estimated that between 7,000 and 8,700 acres of salt marsh were present prior to human development. Since the mid-1800's, most of what was likely to have been historic salt marsh has been diked or filled and has been reduced to a total area of around 900 acres, a reduction of at least 87 percent. The FWS has indicated that restoration of salt marsh habitats around the Bay is a high priority, as salt marsh restoration is important for the protection, enhancement, and restoration of native fish, wildlife, and plant communities, some of which are dependent on salt marsh for their existence. In past permit actions on wetland restoration projects around Humboldt Bay, the Commission has acknowledged that, in general, restoring areas that have historically supported tidal salt marsh is preferable when the physical conditions of a site present such an opportunity.

Therefore, the Commission finds that the proposed dredging and filling of 1.6 acres of seasonal wetlands for the restoration of 2 acres of salt marsh is permissible under Section 30233(a)(6) for "restoration purposes."

As discussed above, this finding that the proposed project constitutes "restoration purposes" is based, in part, on the assumption that the proposed project will be successful in increasing salt marsh habitat values. Should the project be unsuccessful at increasing salt marsh habitat values, or worse, if the proposed dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually be for "restoration purposes." To ensure that the proposed project achieves the objectives for which it is intended (*i.e.*, for the restoration and retention of 2.5 acres of salt marsh), the Commission attaches Special Condition No. 1. Special Condition No. 1 requires the applicants to submit a final monitoring plan for review and approval by the Executive Director prior to the issuance of the coastal development permit. The monitoring plan is required to outline a method for measuring and documenting the improvements in habitat value and diversity at the site over the course of five years following project completion. Furthermore, Special Condition No. 1

requires the monitoring plan to include provisions for remediation to ensure that the goals and objectives of the salt marsh restoration project are met.

- Enhancement of 8.1 acres of seasonal freshwater wetlands and Restoration of 4.4 acres of riparian habitat

The project proposes to enhance approximately 8.1 acres of seasonal freshwater wetlands on the north side of the slough by dredging approximately 13,400 cubic yards of material to increase topographic relief, collect and retain surface runoff, increase water depth, extend the duration of seasonal inundation, and enhance wetland plant and wildlife habitat diversity. The elevation of the tidegate inlet will be increased (by extending and elevating the connecting culvert) to promote the seasonal inundation of 16.7 acres on the north side of the slough, including 12.3 acres of seasonal freshwater wetlands (an area greater than the proposed enhancement area described above) and 4.4 acres of restored riparian habitat. The enhanced wetland habitat will be designed to impound shallow (<18 inches) water for an extended period of the winter and spring for the benefit of waterfowl such as dabbling ducks and other water-associated wildlife.

Additionally, the applicants propose to restore 4.4 acres of riparian habitat on the north side of the slough by excavating existing seasonal freshwater wetlands as described above and planting a diversity of native, regionally appropriate riparian plant species including willow, red alder, and Sitka spruce trees. The restored riparian habitat is intended to increase and maintain the biological productivity of the area for the benefit of terrestrial and marine organisms.

Although much of the agricultural pasturelands in the Humboldt Bay area are diked former tidelands, the areas proposed for wetland enhancement and riparian restoration are located in areas that historically supported freshwater wetland habitats. According to soil data from the Natural Resources Conservation Service (NRCS) for the subject area, the soils of the site are mapped as Arlynda. Natural vegetation for Arlynda soils is estimated by the NRCS to have been rushes and sedges in marshland or under a redwood canopy on the lower reaches of rivers and streams. Additionally, according to Soils of Western Humboldt County (McLaughlin and Harradine 1965), the area contains mostly Ferndale silt loam soils (Fe7). This soil type historically was covered with willows, elderberry, firs, and spruce. Additional evidence that the area historically supported freshwater wetland habitat is the presence of submerged tree roots visible along the banks of the slough in the project area.

The proposed 8.1-acre wetland enhancement area and 4.4-acre riparian restoration area (where the proposed dredging is to occur) both are located within existing seasonal ("farmed") wetlands that currently serve as grazing land for cattle during the summer months and also provide open, relatively deep water habitat (primarily through the impoundment of stormwater) during the winter and spring. Existing vegetation in the area consists of a single-strata mix of native and nonnative grasses and herbs, and in general the existing wetland habitat is considered degraded and low quality (in terms of ecological function and value) due to decades of grazing and agricultural use.

The proposed dredging in the 8.1-acre seasonal wetland area is expected to result in greater wetland plant diversity as well as increased habitat value for a diversity of species such as dabbling ducks and other water-associated wildlife. Currently the depth of the stormwater runoff that is impounded in the area during the winter and spring favors Aleutian Cackling Geese, which prefer the more deeply ponded areas. Raising the tidegate inlet elevation as proposed is expected to provide, on a seasonal basis, the more shallow (<18 inches) water habitat preferred by a greater diversity of waterfowl (especially dabbling ducks) across a greater area (up to 16.7 acres) while still providing habitat for the geese, which graze the new grasses in the spring as the seasonal wetland dries out.

Planting the 4.4-acre riparian restoration area as proposed (with willows, red alder, and Sitka spruce trees) will benefit both terrestrial and marine-associated organisms. Riparian zones are just one of the many habitat elements in the marine nearshore environment, and one that is extremely restricted and reduced in the Humboldt Bay area. Riparian zones around Humboldt Bay today are only a fraction of their size compared to 150 years ago, as land has been drained, logged, and cleared for agriculture and residential, commercial, and industrial development. Humboldt Bay and its surrounding habitats are an important stopover point for hundreds of species of birds as they travel the Pacific Flyway, an "aerial highway" used by birds that nest in the far north and migrate to wintering areas in North and South America. Riparian habitat in particular is crucial habitat for many migratory and resident bird species that need the habitat for nesting, roosting, and foraging. Additionally, the wetland habitats around Humboldt Bay, including riparian zones, are important for over 40 species of mammals and over 100 species of fish and marine invertebrates.

The riparian restoration is proposed adjacent to tidally-influenced Mad River Slough. Marine riparian zones serve similar functions to those described for freshwater systems and are likely to provide additional functions unique to nearshore ecosystems (Brennan & Culverwell 2004). Riparian areas contribute important organic debris that is transformed into nutrients, which support the marine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation also supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. Riparian areas capture contaminants; by absorbing or filtering contaminated stormwater runoff, soils and vegetation in marine riparian areas can prevent pollutants from entering coastal waters. Healthy riparian areas support rich and diverse communities of animals that depend on the areas for feeding, breeding, refuge, movement, and migration. Salmonids and many other fish species feed on insects from marine riparian areas. If these areas are altered or eliminated, the food supply and, thus, the abundance of nearshore fish is likely to be reduced. Importantly, riparian areas serve as buffers for human health and safety. The marine riparian functions of water quality, soil stability, and the ability to absorb the impacts of storm surges and other natural, physical assaults on shorelines have direct benefits to humanity. Flooding and storm events can be exacerbated in the absence of marine riparian areas, which can serve as protective buffers.

Thus, the restoration of riparian habitat in the Humboldt Bay area is integral to maintaining optimum populations of marine organisms and for the protection of human health, as is mandated by Section 30231.

Although the proposed wetland enhancements and riparian restoration will not necessarily reestablish the exact same configuration of freshwater wetland habitat (enhanced seasonal wetlands and restored riparian habitat) that historically existed in the area, the proposed enhancements and restoration of freshwater wetlands entail actions taken in converted or degraded natural wetlands that will result in the reestablishment of landscape-integrated ecological processes associated with wetland habitats. Therefore, the Commission finds that the proposed wetland enhancements are consistent with the definition of restoration and constitute filling and dredging for restoration purposes consistent with Section 30233(a)(6).

As discussed above, this finding that the proposed project constitutes "restoration purposes" is based, in part, on the assumption that the proposed project will be successful in enhancing seasonal wetland habitat values. Should the project be unsuccessful at increasing seasonal wetland habitat values, or worse, if the proposed dredging impacts of the project actually result in long term degradation of the habitat, the proposed diking, filling, and dredging would not actually be for "restoration purposes." To ensure that the proposed project achieves the objectives for which it is intended (*i.e.*, for the enhancement of at least 8.1 acres of seasonal freshwater wetlands), the Commission attaches Special Condition No. 1, which (as described above) requires the applicants to submit a final monitoring plan to outline a method for measuring and documenting the improvements in habitat value and diversity at the site over the course of five years following project completion.

b. Alternatives Analysis

The second test set forth by the Commission's dredging and fill policies is that the proposed dredging or 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.*

Alternatives to the proposed project that were examined include (1) the no-project alternative; (2) alternative sites; and (3) rebuilding dikes in-kind. As explained below, each of these alternatives analyzed in the alternatives analysis are infeasible and/or do not result in a project that is less environmentally damaging than the proposed project:

(1) No-Project Alternative

The "no project" alternative would maintain the *status quo* of the site and would not restore 2 acres of salt marsh and 4.4 acres of riparian habitat or enhance 8.1 acres of

seasonal freshwater wetlands as proposed. Existing conditions on the project site consist of actively used agricultural land (farmed seasonal wetlands) used for seasonal cattle grazing. Under the "no project" alternative, the land would continue to be used for seasonal agricultural grazing (as it would under the proposed project), but there would be no restored and improved habitat for marine resources, and the biological productivity of the coastal wetlands and waters would not be improved. Accordingly, taking into consideration the economic, environmental, and social factors, the no project option is not a feasible less environmentally damaging alternative.

(2) Alternative Sites

Restoration and enhancement could occur on other parcels located near the project site if there were willing landowners. However, at this time the co-applicant (Miller) is the only landowner who has proposed the project and who is willing to match the federal grant funds available for the project. The Millers, in cooperation with the U.S. Fish and Wildlife Service (FWS), are integrating the project components of dike rehabilitation and restoration to simultaneously restore high elevation salt marsh habitat, enhance degraded seasonal freshwater wetlands, restore riparian habitat, which has been drastically reduced in the Arcata-Mad River bottomland, and protect agricultural uses on surrounding lands. Furthermore, the majority of the land in immediate proximity to Humboldt Bay and its tributaries where restoration of these habitat types is possible is itself wetland by nature. Therefore, implementing the project at an alternative location is not a feasible less environmentally damaging alternative.

(3) Rebuilding Dikes In-Kind

The proposed dike rehabilitation will result in expanded dike footprints and a net loss of 0.8-acre of wetland habitat. The rehabilitated dikes will be designed to withstand the projected 3 feet of sea level rise for the Humboldt Bay area with 2.5:1 side slopes. The proposed rehabilitated dikes will have an elevation 1 foot higher than a recent extreme high tide elevation recorded in December of 2003 and 5 feet above Mean Higher High Water (MHHW). In future phases, the dike elevation could be increased if necessary without increasing the dike footprint. The project has been designed so that the increased footprint of the northern dike will be subjected to seasonal inundation from stormwater runoff and support seasonal freshwater wetland habitat. As described above, rehabilitating the dikes as proposed will not only restore 2 acres of historic salt marsh habitat, but through the construction of salt marsh "benches" the relocated/rehabilitated dikes will be buffered from the erosive effects of the slough.

If the existing dikes were to be rehabilitated in place, there would be no opportunity for the wetland restoration and enhancements that have been proposed. If the rehabilitated dikes were designed to have smaller base footprints (i.e., less wetland fill), they would not serve their additional function of protecting productive agricultural land and surrounding infrastructure. As discussed above, the current size of the dikes is not sufficient to prevent salt water intrusion and overtopping during extreme high tide events, which have become more frequent over the years and are expected to increase in frequency with the projected sea level rise for the area. Therefore, rebuilding the dikes in

their present location without expansion of the dike width is not a feasible less environmentally damaging alternative.

Conclusion

For all of the reasons discussed above the Commission finds that there is no less environmentally damaging feasible alternative to the development as conditioned, 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 proposed development would be located within and around coastal waters and wetlands. Depending on the manner in which the proposed project is conducted, the significant adverse impacts of the project may include (1) impacts to marine resources and wildlife habitat from water pollution in the form of sedimentation or debris entering coastal waters and wetlands; (2) introduction (through re-planting) of exotic invasive plants species that could compete with native vegetation and negate the habitat improvements they would provide; (3) use of certain rodenticides that could deleteriously bio-accumulate in predator bird species; (4) net loss of wetland habitat; and (5) impacts to sensitive salt marsh plant species (Humboldt Bay owl's-clover and Point Reyes bird's-beak). Overall, the project would restore and enhance wetland habitat values and would produce generally beneficial environmental effects. However, the proposed project has been conditioned to ensure that habitat restoration and enhancement results and that potentially significant adverse impacts are minimized. The potential impacts and their mitigation are discussed below in the following sections.

(1) Sedimentation Impacts to Aquatic Habitat & Water Quality

The proposed restoration and enhancements are being undertaken to restore and enhance marine resources and the biological productivity of seasonal wetlands. The existing salt marsh in and around the project area provides habitat for sensitive plant species such as Humboldt Bay owl's-clover and Point Reyes' bird's-beak. Mad River Slough provides habitat for the environmentally sensitive eelgrass (*Zostera marina*), sensitive fish species, and a suite of macro-invertebrates and other marine organisms. The seasonal wetlands provide habitat to a wide assortment of terrestrial organisms, most notably several environmentally sensitive avian species such as the Northern harrier (*Circus cyaneus*), White-tailed kite (*Elanus leucurus*), Great blue heron (*Ardea herodias*), and Snowy egret (*Egretta thula*).

Potential adverse impacts to both existing and to-be-restored/enhanced fish and wildlife habitat-related water quality could occur in the form of sedimentation or debris from project dredging. Although the project description states that such impacts would be prevented and minimized by conducting the ground-disturbing work during the dry weather season and through incorporating various other best management practices, the application provides few details as to precisely how this excavation would be performed

relative to (1) the potential for causing slough bank soil materials to enter into the Mad River Slough during project work; and (2) the potential for materials to become entrained into coastal waters during the construction of the seasonal freshwater "enhancements."

To ensure that adverse impacts to water quality do not occur from construction activities or from entrainment of sediment into stormwater runoff from bare, disturbed ground in and around the project area, the Commission attaches Special Condition Nos. 2 and 3. Special Condition No. 2 requires the applicants to undertake the development pursuant to certain construction responsibilities. These include, but are not limited to, the following: (a) no construction materials, debris, or waste are to be placed or stored where they may enter coastal waters; (b) all construction debris is to be removed and disposed of in an approved location; (c) the construction window shall be limited to the dry season (June 1-November 15), and any grading between October 16 and November 15 shall only be conducted if conditions remain dry, the predicted chance of rain is less then 30 percent, and appropriate BMPs are in place; (d) construction activities adjacent to the slough shall only be performed at low tide and when soils are sufficiently dry so that sediment is not discharged into streams; (e) if rainfall is forecast during the time construction activities are being performed, any exposed soil areas shall be promptly mulched or covered with plastic sheeting and secured with sand bagging or other appropriate materials before the onset of precipitation; (f) any debris discharged into coastal waters shall be recovered immediately and disposed of properly; (g) any fueling and maintenance of construction equipment shall occur within upland areas only outside of environmentally sensitive habitat areas or within designated staging areas; and (h) fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or wetlands, hazardous materials management equipment including oil containment booms and absorbent pads shall be available immediately on-hand at the project site, and any accidental spill shall be rapidly contained and cleaned up. Special Condition No. 3 similarly requires the applicants to submit, for the Executive Director's review and approval, an erosion and runoff control plan that is to include certain specified water quality best management practices for minimizing impacts to coastal waters. The applicants do not propose to stockpile material on site, but if a stockpiling site for spoils material is necessary, the applicants propose to use the corner of the eastern ranch road (northeast corner of the project, see sheet 5 of 16, Exhibit No. X) where there is a wide spot as the road crosses the railroad grade. The erosion and runoff control plan required by Special Condition No. 3 must include BMPs for stockpiling sites to minimize the potential for stockpiled spoils to become entrained in stormwater runoff.

(2) Introduction of Exotic Invasive Plants

The use of non-invasive plant species adjacent to environmentally sensitive habitat areas (ESHAs) (such as Mad River Slough, seasonal wetlands, sensitive plant habitat, etc.) is critical to protecting such areas from disturbance. If invasive species are planted adjacent to an ESHA they can displace native species and alter the composition, function, and biological productivity of the ESHA.

The applicants are proposing to mulch and seed the rehabilitated dikes at 10 pounds per acre with commercially available grass seed. The restored riparian area will be mulched and seeded with native annual grass seed at 10 pounds per acre for erosion control. And planted in clumps with willow sprigs/stakes (obtained from the applicant's nearby property on the Mad River), red alder, and Sitka spruce. For the restored salt marsh area, all exposed areas are proposed to be mulched and seeded with a blend of a minimum of three locally native grass species. Passive revegetation is proposed for the seasonal freshwater wetland area. If needed, the applicants propose to plant a native smartweed (*Polygonum*) species along some areas, which is a preferred waterfowl food.

To assure that no invasive plant species are seeded in the project area, Special Condition No. 4 prohibits the planting of any plant species listed as problematic and/or invasive by the California Native Plant Society, the California Invasive Plant Council, or as may be identified from time to time by the State of California, shall be employed or allowed to naturalize or persist on the site. Furthermore, no plant species listed as a "noxious weed" by the governments of the State of California or the United States are to be utilized in the revegetation portion of the project.

(3) Use of Anticoagulant-based Rodenticides

To help in the establishment of vegetation, rodenticides are sometimes used to prevent rats, moles, voles, and other similar small animals from eating the newly planted saplings. Certain rodenticides, particularly those utilizing blood anticoagulant compounds such as brodifacoum, bromadiolone and diphacinone, have been found to pose significant primary and secondary risks to non-target wildlife present in urban and urban/wildland areas. As the target species are preyed upon by raptors or other environmentally sensitive predators and scavengers, these compounds can bio-accumulate in the animals that have consumed the rodents to concentrations toxic to the ingesting non-target species.

To avoid this potential cumulative impact to environmentally sensitive wildlife species, Special Condition No. 4 contains a prohibition on the use of such anticoagulant-based rodenticides.

(4) Net Loss of Wetlands

The project, as proposed will result in a net loss of 0.8-acre of wetlands. Although the project involves 2 acres of salt marsh restoration, 4.4 acres of riparian restoration, and 8.1 acres of seasonal freshwater wetland enhancement, these restoration and enhancement activities will occur mostly within existing seasonal wetlands. In the process of these restoration and enhancement activities, the project involves expanding the base footprints of the existing dikes, as they are relocated or rehabilitated in place, by approximately 1.6 acres. Approximately 0.8-acre of expanded dike on the north side of the slough, which will be placed atop existing seasonal wetlands, is expected to remain as seasonal wetland habitat. Approximately 0.8-acre of expanded dike on the south side of the slough, however, will be converted to upland habitat. Thus, the project, as proposed, will result in a net loss of 0.8-acre of wetlands from the placement of wetland fill.

The specific wetland habitat that will be filled and converted to upland dike consists of grazed seasonal wetland. As discussed above, the 0.8-acre of seasonal wetland vegetation on the south side of the slough 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 birds and mammals. 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.

Therefore, the Commission attaches Special Condition No. 5. This condition requires that the applicant submit, for the review and approval of the Executive Director, a wetland mitigation plan to compensate for the 0.8-acre of wetlands to be filled by the expanded base footprint of the southern dike and ensure that this impact on wetland resources is feasibly mitigated to minimize adverse environmental effects consistent with Section 30233(a) of the Coastal Act.

The Commission finds that in this case a 1:1 mitigation ratio and not a higher ratio is appropriate. First, the habitat to be mitigated is grazed seasonal wetlands with a history of disturbance and relatively little ecological complexity. Second, the chances of success for recreating this kind of habitat in a relatively short timeframe are high in comparison to other more complex kinds of wetland habitat, and thus there is not as much need for a higher mitigation ratio to make up for potential failure of the mitigation and for as much temporal loss. Finally, the enhancement of habitat values associated with the overall project in restoring wetland habitat and function will offset the temporal loss that does occur between the time the fill for the new dikes is placed and the mitigation site can be restored. The project proposes to restore 2 acres of salt marsh and 4.4 acres of riparian habitat along a tidally-influenced slough connected to Humboldt Bay. As discussed above, the Commission acknowledges that restoring areas that have historically supported tidal salt marsh is preferable when the physical conditions of a site present such an opportunity. Furthermore, the restoration of riparian habitat in the Humboldt Bay area, and particularly along tidally-influenced Mad River Slough, is integral to maintaining optimum populations of marine organisms and for the protection of human health.

There may still be a possibility of mitigating the wetland fill immediately adjacent to the project site to the east by removing some of the old railroad embankment fill. The old railroad grade is a separate parcel owned by the McKinleyville Community Services District. The Commission notes that the applicants have raised concerns about this approach, since the area is owned by the District, not the applicants, and it is unclear whether or not the embankment is be considered an historic structure. However, this alternative has not been completely evaluated at this point and may be an option. If not, Special Condition No. 5 allows the mitigation to be provided offsite elsewhere within Humboldt County.

(5) Impacts to Sensitive Plant Species

Two rare plant species occur in existing salt marsh habitat in the project area: Humboldt Bay owl's-clover (*Castilleja ambigua* ssp. *humboldtiensis*) and Point Reyes bird's-beak (*Cordylanthus maritimus* ssp. *palustris*). As discussed above, both plants are considered "rare" by the California Native Plant Society and the California Department of Fish and Game.

Both Humboldt Bay owl's-clover and Point Reyes bird's-beak are annual, hemiparasitic species in the Broom-rape family (Orobanchaceae) that grow in coastal salt marsh habitats primarily along the North Coast of California. In addition to photosynthesizing, these hemiparasites supplement their nutrient intake by parasitizing the live roots of adjacent salt marsh species. Humboldt Bay owl's-clover plants typically germinate in late winter to spring and bloom sometime between April and August (often peaking in June). Point Reyes bird's-beak plants are slightly later: on average, germination is in spring and flowering is approximately in July (CNPS 2008). Population numbers of each species normally fluctuate from year to year since, as annuals, germination rates are dependent on a number of environmental factors.

Surveys conducted by the applicants' consultant in 2004 located a band of Humboldt Bay owl's-clover and Point Reyes bird's-beak plants on the banks of the slough along both the north and south dikes between approximately MHW and MHHW.

The applicants propose measures to avoid impacts to sensitive plant species in the project area including (1) prior to construction flagging and staking for avoidance the upper elevational boundary limit of the sensitive plant populations on site; and (2) avoiding ground disturbance within the rare plant exclusion area by leaving tidally influenced remnants of the old dikes within the rare plant exclusion area in place.

As the populations of Humboldt Bay owl's-clover and Point Reyes bird's-beak within the salt marsh habitat fluctuates from year to year, the only way to ensure avoidance of all sensitive plants is to avoid disturbance of all salt marsh habitat in the project vicinity. To ensure that all feasible mitigation measures designed to avoid impacts to the sensitive plant habitat in the project area are followed, staff recommends Special Condition No. 6. This condition requires the submittal of a final mitigation plan prepared by a qualified botanist for the review and approval of the Executive Director that demonstrates that all existing salt marsh habitat on the site shall be avoided and protected and provides for implementation of the mitigation measures listed above. Furthermore, as discussed above, Special Condition No. 4 prohibits the planting of any invasive species on the site and the use of anticoagulant-based rodenticides, both of which could adversely impact sensitive plant species and habitat.

Conclusion

The Commission finds that, as conditioned, feasible mitigation measures have been provided to minimize adverse environmental effects consistent with Section 30233 of the Coastal Act.

d. Maintenance & Enhancement of Biological Productivity & Functional Capacity

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, the conditions of the permit will ensure that the project will not have significant adverse impacts on the water quality of any of the coastal waters in the project area and will ensure that the project construction will not adversely affect the biological productivity and functional capacity coastal waters or wetlands. The project's stated purpose is to restore and enhance the biological productivity of coastal wetlands, and conditions of the permit will ensure that the site is monitored for achievement of these goals. Therefore, the Commission finds that the project, as conditioned, will maintain and enhance the biological productivity and functional capacity of the habitat consistent with the requirements of Sections 30233, 30230, and 30231 of the Coastal Act.

D. Protection of Archaeological Resources

1. Applicable Coastal Act Policies and Standards

Section 30244 of the Coastal Act states the following:

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

2. Consistency Analysis

The project area is 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.

According to information submitted by the applicants, there were no Wiyot village or archeological sites between Mad River Slough and east to the Humboldt Meridian according to Loud's Ethnogeography and Archaeology of the Wiyot Territory (1918). Additionally, according to 1854 Township Plat survey notes, the project area has historically been wetlands, including tidelands, prairie, riparian, and Sitka spruce habitat. Furthermore, the 1921 USDA soil survey (Watson 1925) indicates that the project area had soils associated with riparian-floodplain habitat and transitional wetlands from freshwater-salt marsh-tidal channels.

Nevertheless, to ensure protection of any archaeological or cultural resources that may be unearthed at the site during construction of the proposed project, the Commission attaches Special Condition No. 7. This condition 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 Coastal Act Section 30244, as the development will include mitigation measures to ensure that the development will not adversely impact archaeological resources.

E. Public Access

1. Applicable Coastal Act Policies and Standards

Coastal Act Sections 30210, 30211, and 30212 require the provision of maximum public access opportunities, with limited exceptions. Coastal Act Section 30210 requires in applicable part that maximum public access and recreational opportunities be provided when consistent with public safety, private property rights, and natural resource protection. Section 30211 requires in applicable part that development not interfere with the public's right of access to the sea where acquired through use (i.e., potential prescriptive rights or rights of implied dedication). Section 30212 requires in applicable part that public access from the nearest public roadway to the shoreline and along the coast be provided in new development projects, except in certain instances, such as when adequate access exists nearby or when the provision of public access would be inconsistent with public safety. In applying Sections 30211 and 30212, the Commission is limited by the need to show that any denial of a permit application based on these sections or any decision to grant a permit subject to special conditions requiring public access is necessary to avoid or offset a project's adverse impact on existing or potential public access.

2. Consistency Analysis

The project site is located between the first public road (Mad River Road) and the sea. No existing public access to a beach or shoreline is available in the project area, which is private land that currently supports and will continue to support seasonal agricultural grazing. The proposed project does not involve any changes or additional restrictions to existing public access that would interfere with or reduce the amount of area public access and recreational opportunities. In fact, birdwatching from the surrounding public roadways (Mad River Road) may increase, as the proposed enhancements are expected to benefit waterfowl and other water-associated wildlife.

Therefore, the Commission finds that the proposed project would not have an adverse effect on public access and that the project as proposed is consistent with the requirements of Coastal Act Sections 30210, 30211, and 30212.

F. Conversion of Agricultural Lands

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30241 states:

> *The maximum amount of prime agricultural land shall be maintained in agricultural production to assure the protection of the areas agricultural economy, and conflicts shall be minimized between agricultural and urban land uses through all of the following:*
>
> *(a) By establishing stable boundaries separating urban and rural areas, including, where necessary, clearly defined buffer areas to minimize conflicts between agricultural and urban land uses.*
>
> *(b) By limiting conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development.*
>
> *(c) By permitting the conversion of agricultural land surrounded by urban uses where the conversion of the land would be consistent with Section 30250.*[6]
>
> *(d) By developing available lands not suited for agriculture prior to the conversion of agricultural lands.*
>
> *(e) By assuring that public service and facility expansions and nonagricultural development do not impair agricultural viability, either through increased assessment costs or degraded air and water quality.*
>
> *(f) By assuring that all divisions of prime agricultural lands, except those conversions approved pursuant to subdivision (b), and all development adjacent to prime agricultural lands shall not diminish the productivity of such prime agricultural lands.*

Coastal Act Section 30242 states:

> *All other lands suitable for agricultural use shall not be converted to nonagricultural uses unless (l) continued or renewed agricultural use is not feasible, or (2) such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. Any such permitted conversion shall be compatible with continued agricultural use on surrounding lands.*

In addition, Coastal Act Section 30250 requires consideration of the cumulative impacts of development (defined in Coastal Act Section 30105.5) as follows:

> *"Cumulatively" or "cumulative effect" means the incremental effects of an individual project shall be reviewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.*

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[6] The portion of referenced Section 30250 applicable to this project type and location [sub-section (a)] requires that, "*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.*"

Coastal Act Section 30250 states in pertinent part:

> *(a) 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.*

2. Consistency Analysis

Coastal Act Sections 30240 and 30241 require the protection of prime agricultural lands[7] and sets limits on the conversion of all agricultural lands to non-agricultural uses.

The subject property has been continually used for agricultural purposes, primarily animal husbandry uses, since its reclamation from Humboldt Bay over a century ago. Given the fine sediment size generally associated with fluvially deposited soil materials within bays and estuaries, the low relief of the area, the relatively shallow water table, and the limited amount of tillage and organic material or other soils component amendments made to the site over the last century since their reclamation, these seasonally waterlogged soils and their high bulk density severely limit the types of agricultural activities that may be feasibly undertaken at the site. As a result, the primary use pattern for the site has mainly been low intensity cattle grazing land and dry season fodder production in the form of hay cropping.

a. Maintaining Maximized Production of Prime Agricultural Land

Based on information derived from the Natural Resources Conservation Service (NRCS), the soils of the project site are mapped as Arlynda (north of slough) and Swainslough (south of slough), both with 0-2 percent slopes. Both of these soil series consist of very poorly drained soils on mixed alluvium often on flood plains. They are identified as hydric soils and recognized as having several impediments to extensive agricultural uses. According to the Natural Resources Conservation Service (NRCS), natural vegetation for Arlynda soils is estimated to have been rushes and sedges in marshland or under a redwood canopy on the lower reaches of rivers and streams, and natural vegetation for Swainslough soils was Pacific silverweed, rushes, and other hydrophytic vegetation. As a result, the NRCS has assigned Class VII classification to the project site soils as a locale which has "severe limitations that reduce the choice of plants or require special

[7] Coastal Act Section defines "prime agricultural land" through incorporation-by-reference of paragraphs (1) through (4) of Section 51201(c) of the California Government Code. Prime agricultural land entails land with any of the follow characteristics: (1) a rating as class I or class II in the Natural Resource Conservation Service land use capability classifications; or (2) a rating 80 through 100 in the Storie Index Rating; or (3) the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal unit per acre as defined by the United States Department of Agriculture; or (4) the ability to normally yield in a commercial bearing period on an annual basis not less than two hundred dollars ($200) per acre of unprocessed agricultural plant production of fruit- or nut-bearing trees, vines, bushes or crops which have a nonbearing period of less than five years.

conservation practices, or both." Thus, under the NRCS land capability classification system, the soils at the project site do not meet the first criterion for the definition of prime agricultural soils.

According to Soils of Western Humboldt County, California (McLaughlin and Harradine 1965), the project site contains mostly Ferndale silt loam (Fe7), which is a poorly drained soil with a Storie Index rating of 65. The project site also contains the poorly to imperfectly drained Bayside silty clay loam soils with 0-3% slopes. The Bayside soils have a Storie Index rating between 36 and 49. Thus, the project area does not qualify as prime agricultural land under the second prong of the Coastal Act's definition.

The third potential qualifying definition of prime agricultural land – the ability to support livestock used for the production of food and fiber with an annual carrying capacity equivalent to at least one animal-unit per acre as defined by the United States Department of Agriculture – similarly does not apply to the project site. Based on correspondence from, Gary Markegard, County Farm Advisor for the U.C. Cooperative Extension, the low-lying, poorly drained, saltwater intruded, and flood-prone soils along the northern reclaimed fringes of Humboldt Bay typically require three acres per animal-unit. The applicants have estimated that the project site supports only 0.33 Animal Unit Months per acre.

Finally, with regard to the site's potential qualification as prime agricultural land based upon its potential for commercial fruit or nut crop production at specified minimal yields, the project area similarly fails to meet the criterion. Due to the maritime-influenced climate of the western Humboldt County, commercial nut production is precluded along the immediate coastal areas by the significant precipitation and limited number of warm, overcast-free days to allow for full seed maturation. In addition, due to the high bulk density of the soils underlying the project site and the relatively shallow water table, fruit and berry crops suitable for the North Coast's temperate setting are similarly restricted to areas further inland, primarily on uplifted marine terraces and within well developed river floodplain areas with improved drainage and more friable soil characteristics. As a result, fruit and nut production on an economically successful commercial basis is not currently, nor has ever been historically pursued in open coastal environs, such as the project area.

Conclusion

Therefore, based upon the above discussed set of conditions at the project site, the Commission finds that the subject site does not contain prime agricultural soils or livestock and/or crop productivity potential that would otherwise qualify the subject property as "prime agricultural land."

b. Minimizing Conflicts Between Agricultural and Urban Land Uses

Currently, seasonal livestock grazing occurs on the approximately 77-acre property, including within the majority of the ~18-acre project area. The proposed project would result in coverage of portions of the project site with habitat not suitable for grazing (riparian and salt marsh habitats) that would prevent the future agricultural use of 6.4

acres of the property. The 8.1-acre area proposed for seasonal wetland enhancement will be designed to dry out in the summer months to allow for continued seasonal grazing, so the enhancements proposed in this area will not result in agricultural conversion. Therefore, the project will result in the conversion of 6.4 acres of agricultural land to another use, habitat restoration.

The proposed conversion of the 6.4 acres of grazing land would occur on productive agricultural lands. The Miller family's descendents homesteaded the land, and the land has been in agricultural use for over a century. The approximately 77-acre parcel currently supports agriculture (grazing) and will continue to support agriculture into the future. However, the proposed restoration activities will reduce the productivity of the agricultural land by approximately 1 animal unit month (an "animal unit month" is the amount of forage needed to support a mature cow or its equivalent for one month).

Section 30241 requires that conflicts between urban and agricultural land uses be minimized through, among other things, limiting conversions of agricultural lands. Section 30241(b) limits conversions of agricultural lands around the periphery of urban areas to the lands where the viability of existing agricultural use is already severely limited by conflicts with urban uses or where the conversion of the lands would complete a logical and viable neighborhood and contribute to the establishment of a stable limit to urban development. Section 30241(c) permits the conversion of agricultural lands surrounded by urban uses where the conversion of the land would be consistent with Section 30250. Finally, Section 30241(d) requires the development of available lands not suited for agriculture prior to the conversion of agricultural lands.

The proposed conversion of 6.4 acres of agricultural lands in the project area constitutes a conversion of agricultural land in an area that is neither located around the periphery of urban areas nor surrounded by urban uses, and the viability of existing agricultural use at the site is <u>not</u> limited by conflicts with urban uses. The project site is located approximately 1 mile northwest of the developed portions of Arcata, the nearest urban area, and all of the lands surrounding the project site are undeveloped and used primarily either for agricultural uses or natural resources uses. In addition, there are many areas of undeveloped land within the coastal zone around the Humboldt Bay region that are not suitable for agriculture that have yet to be developed. Thus, given this location relative to adjoining land uses, development of the restoration and enhancement project on the currently grazed portions of the site would not be consistent with the limitation on conversion of agricultural lands of Section 30241(b), (c), and (d) and would <u>not</u> serve to minimize conflicts between agricultural and urban land uses.

<u>Conclusion</u>:

For all of the reasons stated above, the Commission finds the permanent loss of the subject 6.4 acres of agricultural land is not consistent with the provisions of Section 30241 cited above.

c. <u>Conversion of "All Other Lands" Suitable for Agricultural Use</u>

Coastal Act Section 30242 protects lands suitable for agricultural use that are not prime agricultural lands or agricultural lands on the periphery of urban areas from conversion to non-agricultural use unless continued agricultural use is not feasible, or such conversion would preserve prime agricultural land or concentrate development consistent with Section 30250. In the case of the Miller parcel, although the land is not considered "prime," cattle grazing (though limited by seasonal inundation and general pasture quality) has been the primary use of the subject site for decades, and this use is proposed to continue in the future. Thus, continued agricultural use is feasible, and conversion of the land to non-agricultural use under the proposed project would not preserve prime agricultural land or concentrate development, which the Coastal Act prescribes as the basis for allowing conversion. For these reasons, the proposed conversion of agricultural lands in the project area would be inconsistent with the requirements of Coastal Act Section 30242.

G. Conflict Resolution

As noted above, the proposed restoration of 2 acres of grazing land to salt marsh habitat and 4.4 acres of grazing land to riparian habitat would convert agricultural land inconsistent with the provisions of Sections 30241 and 30242. However, as also noted above, to not approve the project would result in a failure to restore marine resources and the biological productivity of coastal wetlands and waters that would be inconsistent with the mandates of Sections 30230 and 30231 of the Coastal Act. Section 30230 mandates that marine resources shall be maintained and enhanced, and where feasible, restored. Section 30231 mandates that the biological productivity and quality of coastal waters and wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored.

1. The Identification of a True Conflict is Normally a Condition Precedent to Invoking a Balancing Approach

As is indicated above, the standard of review for the Commission's decision whether to approve a coastal development permit in the Commission's retained jurisdiction is whether the project as proposed is consistent the Chapter 3 policies of the Coastal Act. In general, a proposal must be consistent with all relevant policies in order to be approved. Put differently, consistency with each individual policy is a necessary condition for approval of a proposal. Thus, if a proposal is inconsistent with one or more policies, it must normally be denied (or conditioned to make it consistent with all relevant policies).

However, the Legislature also recognized that conflicts can occur among those policies (Coastal Act Section 30007.5). It therefore declared that, when the Commission identifies a conflict among the policies in Chapter 3, such conflicts are to be resolved "*in a manner which on balance is the most protective of significant coastal resources* (Coastal Act Sections 30007.5 and 30200(b))." That approach is generally referred to as the "balancing approach to conflict resolution." Balancing allows the Commission to approve proposals that conflict with one or more Chapter 3 policies, based on a conflict among the Chapter 3 policies as applied to the proposal before the Commission. Thus,

the first step in invoking the balancing approach is to identify a conflict among the Chapter 3 policies.

2. Identification of a Conflict

For the Commission to use the balancing approach to conflict resolution, it must establish that a project presents a substantial conflict between two statutory directives contained in Chapter 3 of the Coastal Act. The fact that a proposed project is consistent with one policy of Chapter 3 and inconsistent with another policy does not necessarily result in a conflict. Virtually every project will be consistent with some Chapter 3 policy. This is clear from the fact that many of the Chapter 3 policies prohibit specific types of development. For example, section 30211 states that development "*shall not interfere with the public's right of access to the sea where acquired through use or legislative authorization . . .,*" and subdivision (2) of section 30253 states that new development "*shall . . . neither create nor contribute significantly to erosion . . . or in any way require the construction of protective devices . . . .*" Almost no project would violate every such prohibition. A project does not present a conflict between two statutory directives simply because it violates some prohibitions and not others.

In order to identify a conflict, the Commission must find that, although approval of a project would be inconsistent with a Chapter 3 policy, the denial of the project based on that inconsistency would result in coastal zone effects that are inconsistent with some other Chapter 3 policy. In most cases, denial of a proposal will not lead to any coastal zone effects at all. Instead, it will simply maintain the *status quo*. The reason that denial of a project can result in coastal zone effects that are inconsistent with a Chapter 3 policy is that some of the Chapter 3 policies, rather than prohibiting a certain type of development, affirmatively mandate the protection and enhancement of coastal resources, such as sections 30210 ("*maximum access . . . and recreational opportunities shall be provided . . .*"), 30220 ("*Coastal areas suited for water-oriented recreational activities that cannot readily be provided at inland water areas shall be protected for such uses*"), and 30230 ("*Marine resources shall be maintained, enhanced, and where feasible, restored*"). If there is ongoing degradation of one of these resources, and a proposed project would cause the cessation of that degradation, then denial would result in coastal zone effects (in the form of the continuation of the degradation) inconsistent with the applicable policy. Thus, the only way that denial of a project can have impacts inconsistent with a Chapter 3 policy, and therefore the only way that a true conflict can exist, is if: (1) the project will stop some ongoing resource degradation and (2) there is a Chapter 3 policy requiring the Commission to protect and/or enhance the resource being degraded. Only then is the denial option rendered problematic because of its failure to fulfill the Commission's protective mandate.

With respect to the second of those two requirements, though, there are relatively few policies within Chapter 3 that include such an affirmative mandate to enhance a coastal resource. Moreover, because the Commission's role is generally a reactive one, responding to proposed development, rather than affirmatively seeking out ways to protect resources, even policies that are phrased as affirmative mandates to protect

resources more often function as prohibitions. For example, Section 30240's requirement that environmentally sensitive habitat areas "*shall be protected against any significant disruption of habitat values*" generally functions as a prohibition against allowing such disruptive development, and its statement that "*only uses dependent on those resources shall be allowed within those areas*" is a prohibition against allowing non-resource-dependent uses within these areas. Similarly, section 30251's requirement to protect "*scenic and visual qualities of coastal areas*" generally functions as a prohibition against allowing development that would degrade those qualities. Section 30253 begins by stating that new development shall minimize risks to life and property in certain areas, but that usually requires the Commission to condition projects to ensure that they are not unsafe. Even Section 30220, listed above as an affirmative mandate, can be seen more as a prohibition against allowing non-water-oriented recreational uses (or water-oriented recreational uses that could be provided at inland water areas) in coastal areas suited for such activities. Denial of a project cannot result in a coastal zone effect that is inconsistent with a prohibition on a certain type of development. As a result, there are few policies that can serve as a basis for a conflict.

Similarly, denial of a project is not inconsistent with Chapter 3, and thus does not present a conflict, simply because the project would be less inconsistent with a Chapter 3 policy than some alternative project would be, even if approval of the proposed project would be the only way in which the Commission could prevent the more inconsistent alternative from occurring. For denial of a project to be inconsistent with a Chapter 3 policy, the project must produce tangible, necessary enhancements in resource values over existing conditions, not over the conditions that would be created by a hypothetical alternative. In addition, the project must be fully consistent with the Chapter 3 policy requiring resource enhancement, not simply less inconsistent with that policy than the hypothetical alternative project would be. If the Commission were to interpret the conflict resolution provisions otherwise, then any proposal, no matter how inconsistent with Chapter 3, that offered even the smallest, incremental improvement over a hypothetical alternative project would necessarily result in a conflict that would justify a balancing approach. The Commission concludes that the conflict resolution provisions were not intended to apply based on an analysis of different potential levels of compliance with individual policies or to balance a proposed project against a hypothetical alternative.

In addition, if a project is inconsistent with at least one Chapter 3 policy, and the essence of that project does not result in the cessation of ongoing degradation of a resource the Commission is charged with enhancing, the project proponent cannot "create a conflict" by adding on an essentially independent component that does remedy ongoing resource degradation or enhance some resource. The benefits of a project must be inherent in the essential nature of the project. If the rule were to be otherwise, project proponents could regularly "create conflicts" and then demand balancing of harms and benefits simply by offering unrelated "carrots" in association with otherwise-unapprovable projects. The balancing provisions of the Coastal Act could not have been intended to foster such an artificial and manipulatable process. The balancing provisions were not designed as an invitation to enter into a bartering game in which project proponents offer amenities in exchange for approval of their projects.

Finally, a project does not present a conflict among Chapter 3 policies if there is at least one feasible alternative that would accomplish the essential purpose of the project without violating any Chapter 3 policy. Thus, an alternatives analysis is a condition precedent to invocation of the balancing approach. If there are alternatives available that are consistent with all of the relevant Chapter 3 policies, then the proposed project does not create a true conflict among Chapter 3 policies.

In sum, in order to invoke the balancing approach to conflict resolution, the Commission must conclude all of the following with respect to the proposed project before it: (1) approval of the project would be inconsistent with at least one of the policies listed in Chapter 3; (2) denial of the project would result in coastal zone effects that are inconsistent with at least one other policy listed in Chapter 3, by allowing continuing degradation of a resource the Commission is charged with protecting and/or enhancing; (3) the project results in tangible, necessary resource enhancement over the current state, rather than an improvement over some hypothetical alternative project; (4) the project is fully consistent with the resource enhancement mandate that requires the sort of benefits that the project provides; (5) the benefits of the project are not independently required by some other body of law; (6) the benefits of the project are a function of the very essence of the project, rather than an ancillary component appended to the project description in order to "create a conflict; " and (7) there are no feasible alternatives that would achieve the objectives of the project without violating any Chapter 3 policies.

An example of a project that presented such a conflict is a project approved by the Commission in 1999 involving the placement of fill in a wetland in order to construct a barn atop the fill, and the installation of water pollution control facilities, on a dairy farm in Humboldt County (CDP #1-98-103, O'Neil). In that case, one of the main objectives of the project was to create a more protective refuge for cows during the rainy season. However, another primary objective was to improve water quality by enabling the better management of cow waste. The existing, ongoing use of the site was degrading water quality, and the barn enabled consolidation and containment of manure, thus providing the first of the four necessary components of an effective waste management system. Although the project was inconsistent with Section 30233, which limits allowable fill of wetlands to eight enumerated purposes, the project also enabled the cessation of ongoing resource degradation. The project was fully consistent with Section 30231's mandate to maintain and restore coastal water quality and offered to tangibly enhance water quality over existing conditions, not just some hypothetical alternative. Thus, denial would have resulted in impacts that would have been inconsistent with Section 30231's mandate for improved water quality. Moreover, it was the very essence of the project, not an ancillary amenity offered as a trade-off, that was both inconsistent with certain Chapter 3 policies and yet also provided benefits. Finally, there were no alternatives identified that were both feasible and less environmentally damaging.

3. <u>The Proposed Project Presents a Conflict</u>

The Commission finds that the proposed project presents a true conflict between Chapter 3 policies of the Coastal Act. The proposed restoration of 2 acres of salt marsh and 4.4 acres of riparian habitat would convert agricultural land in a manner inconsistent with the provisions of Sections 30241 and 30242 of the Coastal Act. However, to not approve the project would result in a failure to restore marine resources and the biological productivity of coastal wetlands and waters that would be inconsistent with the mandates of Sections 30230 and 30231 of the Coastal Act. Section 30230 mandates that marine resources shall be maintained and enhanced, and where feasible, restored. Section 30231 mandates that the biological productivity and quality of coastal waters and wetlands appropriate to maintain optimum populations of marine organisms and for the protection of human health shall be maintained and, where feasible, restored.

As discussed above in Finding IV-C, prior to the construction of the dikes along Mad River Slough and the establishment of agricultural uses on the property more than 100 years ago, the project area previously supported diverse wetland habitats that included tidal sloughs, tidally inundated salt marsh habitat, and riparian and other freshwater wetlands. All of the original habitat except for the tidal slough itself was obliterated and largely replaced with grazed seasonal wetlands that provide far less habitat values and functions than those provided by the array of wetland habitat types that originally existed at the site. The habitat values and functions of the tidal slough itself were greatly compromised by the elimination of the adjacent supporting habitat types, even though the tidal slough remained. For example, in the absence of salt marsh restoration at the subject site, the channel of Mad River Slough in this location lacks a transitional buffer between the tidal channel and the upland dikes. As a result, dike materials continually erode into coastal waters over time, adversely affecting water quality while depriving marine resources that depend on the salt marsh environment of suitable habitat along this stretch of slough. The proposed project will move the dikes back from the channel margins to create 2 acres of salt marsh "benches," which will restore marine resources and sustain the biological productivity of coastal waters to maintain healthy populations of marine organisms.

As further discussed above in Finding IV-C, the restoration of the 4.4 acres of riparian habitat in the project area is integral to maintaining optimum populations of marine organisms within the slough and for the protection of human health. Riparian areas contribute important organic debris that is transformed into nutrients, which support the marine food web. Wood, leaf litter, and other organic matter from riparian areas provide nutrients for life at the base of the food web. Riparian vegetation also supports insects and other prey resources, which are eaten by juvenile salmon and other fish and wildlife. Riparian areas capture contaminants; by absorbing or filtering contaminated stormwater runoff, soils and vegetation in marine riparian areas can prevent pollutants from entering coastal waters. Healthy riparian areas support rich and diverse communities of animals that depend on the areas for feeding, breeding, refuge, movement, and migration. Salmonids and many other fish species feed on insects from marine riparian areas. When the riparian habitat was eliminated during reclamation of the land to agriculture, the food supply and, thus, the abundance of nearshore fish was greatly reduced. Importantly, the marine riparian functions of protecting water quality, maintaining soil stability, and

absorbing the impacts of storm surges to reduce flooding were eliminated from the site with the removal of the riparian areas. Restoration of the 4.4 acres of riparian habitat on the site will restore these habitat values and functions to the site and thereby restore the biological productivity and the quality of coastal waters appropriate to maintain optimum populations of marine organisms and the protection of human health.

Although the proposed project is inconsistent with the requirements of Sections 30241 and 30242 that protect productive agricultural land and limit the conversion of agricultural land, denial would preclude achieving Section 30230's and 30231's mandates for protection and restoration of marine resources, biological productivity, and water quality. In addition, it is the very essence of the project, not an ancillary amenity offered as a trade-off, that is both inconsistent with certain Chapter 3 policies and yet also provides benefits. Finally, as discussed below, there are no alternatives identified that were both feasible and less environmentally damaging.

a. Alternatives Analysis

As noted above, a true conflict among Chapter 3 policies would not exist if there are feasible alternatives available that are consistent with all of the relevant Chapter 3 policies. Alternatives that have been identified include (a) alternative sites, (b) alternative configuration of project features, and (c) the "no project" alternative. These various alternatives are discussed below.

(1) Alternative Sites

Restoration of the former habitat conditions that existed on a site prior to manipulation by humans within the meaning of Sections 30230, 30231, and 30233(a) of the Coastal Act is inherently site specific. As discussed previously in Finding IV-C(2)(a) above, implicit in the common definition of restoration is the understanding that the restoration entails returning something to a prior state. A site cannot be returned to a prior state by performing wetland enhancement or creation work at some other site. However, as also discussed previously in Finding IV-C(2)(a) above, restoration is also defined as reestablishing ecological processes, functions, and biotic/abiotic linkages that lead to a persistent, resilient system integrated within its landscape that may not necessarily result in a return to historic locations or conditions with the subject wetland area. Thus, restoration of ecological processes, functions, and biotic/abiotic linkages at an alternative location within the landscape of the particular wetland system involved could under certain circumstances be found to be consistent with Sections 30230, 30231, and 30233(a) of the Coastal Act. However, no such feasible alternative location other than the project site exists in this case. Nearly the entire 77-acre project parcel is agricultural land, so there is no other location on the parcel where the restoration could be carried out that would not result in a conversion of agricultural land inconsistent with Sections 30241 and 30242 of the Coastal Act. Similarly, if restoration of another site to restore a combination of salt marsh and riparian habitats was considered, no feasible off-site locations that would not result in conversions of agricultural land inconsistent with Sections 30241 and 30242 have been identified. Much of the land surrounding Humboldt Bay that could support the habitat types to be restored (salt marsh and riparian) has been

diked, drained, and cleared for agricultural purposes. Furthermore, much of the historic habitat around Humboldt Bay supported tideland habitats such as salt marsh, but not necessarily riparian habitat as well. The subject property historically supported both habitat types, and thus the proposed site is one of the few locations where the proposed restoration project could occur consistent with Section 30233(a)(6) as discussed above (Finding IV-C). Therefore, implementing the project at an alternative location is not a feasible alternative that is consistent with all relevant Chapter 3 policies.

(2) Alternative Configuration of Project Features

Feasible restoration of the site is not dependent on the exact site plan or configuration of dikes, salt marsh restoration, and riparian habitat restoration proposed by the applicant. Other configurations of these features could be successful at reestablishing ecological processes, functions, and biotic/abiotic linkages that lead to a persistent, resilient system integrated within its landscape consistent with the definition of restoration for which diking, dredging, and filling is allowed pursuant to Section 30233 of the Coastal Act and which Sections 30230 and 30231 mandate to occur if feasible. For example, the proposed new dikes could be positioned a greater distance back from Mad River Slough, resulting in somewhat greater restoration of salt marsh habitat, and the riparian habitat could be extended further back on to the property achieving a similar amount of riparian habitat restoration. This alternative configuration or layout of the project, and many similar alternative configurations, would achieve similar results. However, none of these alternative configurations would avoid conversion of agricultural lands to habitat in a manner inconsistent with Sections 30241 and 30242 of the Coastal Act. No feasible use of salt marsh habitat or riparian habitat for agricultural purposes has been identified. As (1) all of the existing project site except for the slough itself is used agriculturally, and (2) the use of any portion of these areas for restoration of salt marsh or riparian habitat would preclude agricultural use and convert agricultural land, no alternative configuration of the project site would avoid conversion of agricultural land inconsistent with Sections 30241 and 30242 of the Coastal Act. Therefore, none of the alternative configurations of the restoration project are a feasible alternative that is consistent with all Chapter 3 policies.

(3) "No Project" Alternative

The "no project" alternative would maintain the status quo of the site and would not restore 2 acres of salt marsh and 4.4 acres of riparian habitat or enhance 8.1 acres of seasonal freshwater wetlands as proposed. Existing conditions on the project site consist of actively used agricultural land (farmed seasonal wetlands) used for seasonal cattle grazing. Under the "no project" alternative, the land would continue to be used for seasonal agricultural grazing (as it would under the proposed project), but there would be no restored and improved habitat for marine resources, and the biological productivity of the coastal wetlands and waters would thus not be restored. Existing dikes built too close to the slough margin would continue to erode into the slough, and there would be no riparian buffer functions of water quality, soil stability, contribution of organic debris to the marine food web, and the ability to absorb the impacts of storm surges. Therefore, the Commission finds that the "no project" alternative would have significant impacts to coastal resources that would be inconsistent with Section 30230's and 30231's mandate

to restore marine resources and maintain and improve biological productivity and water quality for the protection of organisms and human health. Therefore, the "no project" alternative is not a feasible alternative that is consistent with all relevant Chapter 3 policies.

b. Conclusion

As discussed above, none of the identified alternatives to the proposed project would be both feasible and consistent with all relevant Chapter 3 policies. The Commission further finds that based on the alternatives analysis above, the proposed project as conditioned is the least environmentally damaging feasible alternative, and therefore the project is consistent with the requirements of Section 30233(a) that the proposed fill project has no feasible less environmentally damaging alternative.

4. Conflict Resolution

After establishing a conflict among Coastal Act policies, Section 30007.5 requires the Commission to resolve the conflict in a manner that is on balance most protective of coastal resources.

In this case, the Commission finds that the impacts on coastal resources from not constructing the project would be more significant than the project's agricultural conversion impacts. Denying the project because of its inconsistency with Sections 30241 and 30242 would avoid the conversion of 6.4 acres of agricultural grazing land. However, it must be noted that the project will protect of a much greater acreage of surrounding agricultural land, both on the Miller's property and adjacent properties downstream, from salt water intrusion and overtopping of dikes that are expected to be overtopped with greater frequency with the projected sea level rise for the area.

Approving the development would restore habitats around Humboldt Bay that have been tremendously reduced over the past century. The Commission finds that the restoration of 2 acres of salt marsh habitat and 4.4 acres of riparian habitat, which would restore and enhance marine resources necessary to maintain the biological productivity of existing degraded wetlands, would be more protective of coastal resources than the impacts of the conversion of 6.4 acres of agricultural land and the loss of approximately 1 animal unit month (i.e., the amount of forage needed to feed a mature cow or its equivalent for one month).

As discussed above in Finding IV-C, to ensure that the habitat restoration benefits of the project that would enable the Commission to use the balancing provision of Section 3007.5 are achieved, the Commission attaches Special Condition Nos. 1 through 7. These conditions require that the applicant submit various final plans, including a final restoration and enhancement monitoring plan, a final erosion and runoff control plan, a final wetland mitigation plan, and a sensitive plant species protection plan. Additionally, Special Condition No. 2 requires that the applicant carry out the project in accordance with various construction protocols to ensure the protection of coastal waters and wetlands, Special Condition No. 4 requires revegetation of the site to be carried out

according to specified standards and limitations, and (as discussed in Finding X), Special Condition No. 7 requires that archaeological resources shall be protected. The Commission finds that without Special Condition Nos. 1 through 7, the proposed project could not be approved pursuant to Section 30007.5 of the Coastal Act.

H. Other Agency Approvals

The project requires review and authorization 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. The project also requires a CWA Section 401 Water Quality Certification from the Regional Water Quality Control Board. To ensure that the project ultimately approved by the Corps and the Board is the same as the project authorized herein, the Commission attaches Special Condition Nos. 8 and 9, which require the City to submit to the Executive Director evidence of these agencies' approvals of the project prior to commencement of construction and prior to permit issuance, respectively. 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.

I. Public Trust Lands

The project site is located in an area subject to the public trust. Therefore, to ensure that the applicant has the necessary authority to undertake all aspects of the project on these public lands, the Commission attaches Special Condition No. 10, which requires that the project be reviewed and where necessary approved by the State Lands Commission prior to the issuance of the coastal development permit.

J. California Environmental Quality Act

The County of Humboldt, as the lead agency, adopted a Mitigated Negative Declaration for the "Miller Family's Mad River Slough Dike Rehabilitation and Wetlands Enhancement Project" (SCH No. 200803202) on May 1, 2008.

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

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

V. EXHIBITS:

1. Regional Location Map
2. Vicinity Map
3. Parcel Map
4. Aerial Photo
5. Site Plans & Project Plans

APPENDIX A

STANDARD CONDITIONS

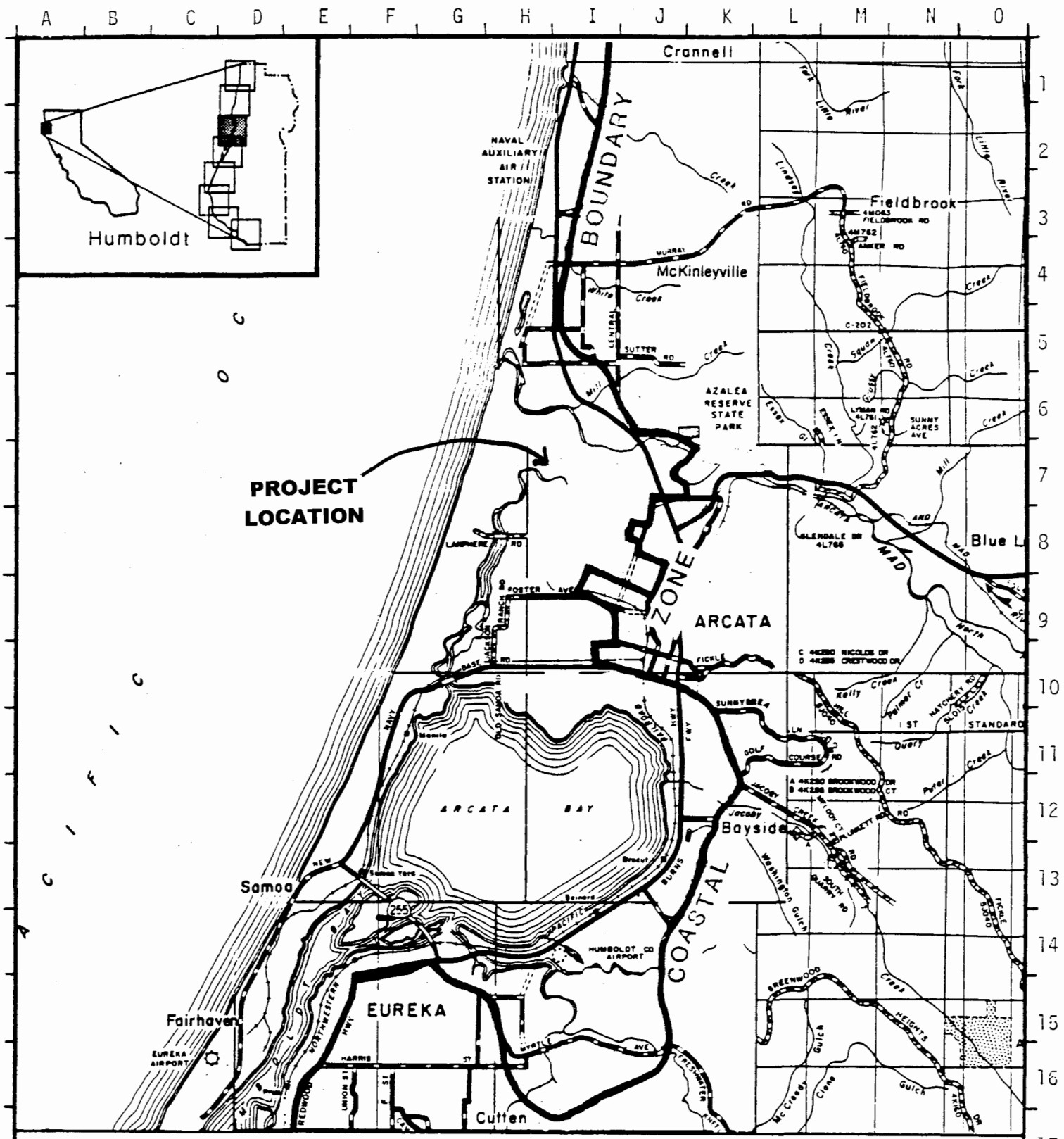
1. Notice of Receipt and Acknowledgement. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.

2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable amount of time. Application for extension of the permit must be made prior to the expiration date.

3. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director of the Commission.

4. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.

5. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.



California Coastal Commission

LOCATION MAP

County of Humboldt

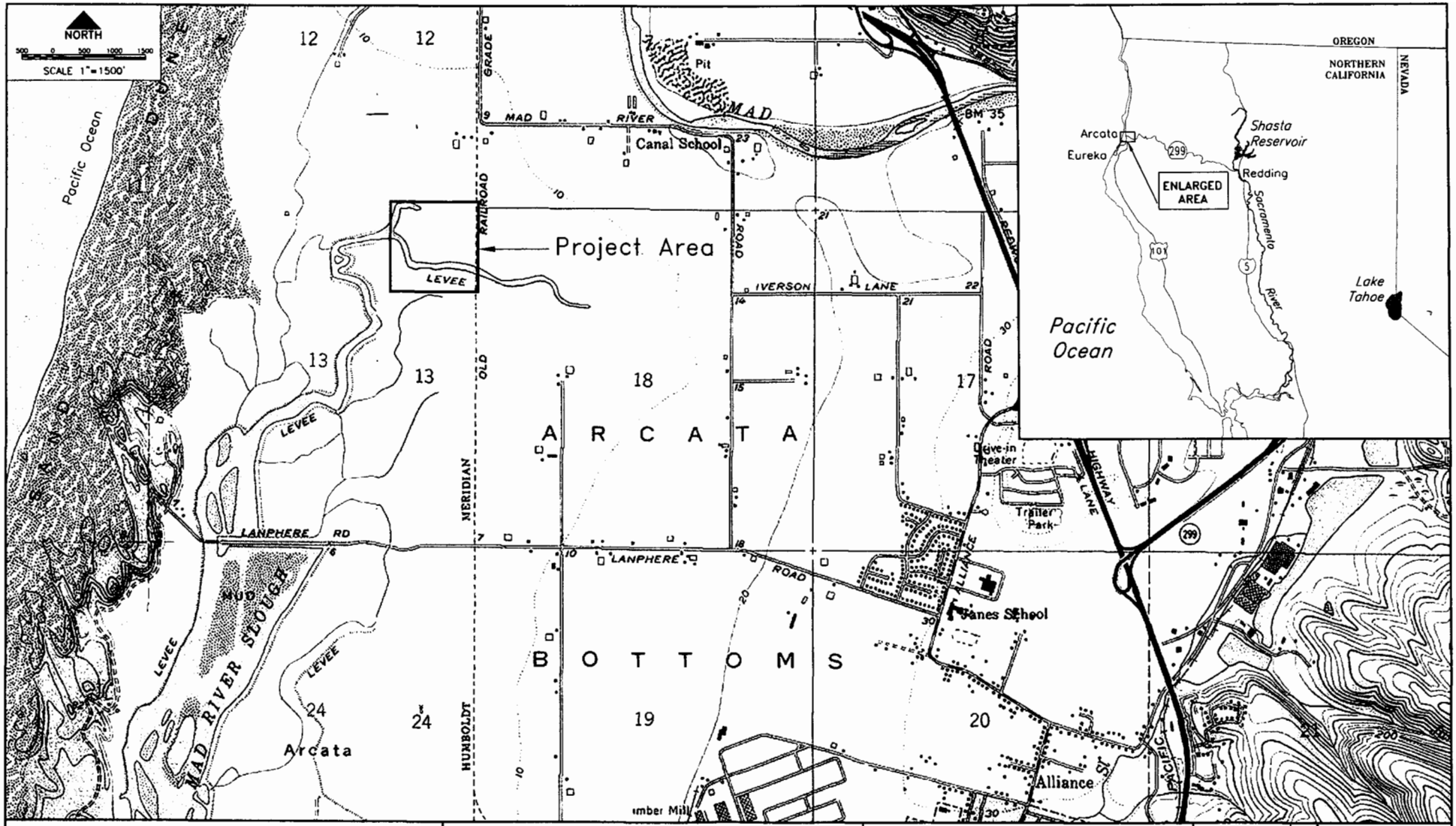
EXHIBIT NO. 1

APPLICATION NO.

1-08-020

MILLER & U.S. FISH & WILDLIFE SERVICE

REGIONAL LOCATION MAP



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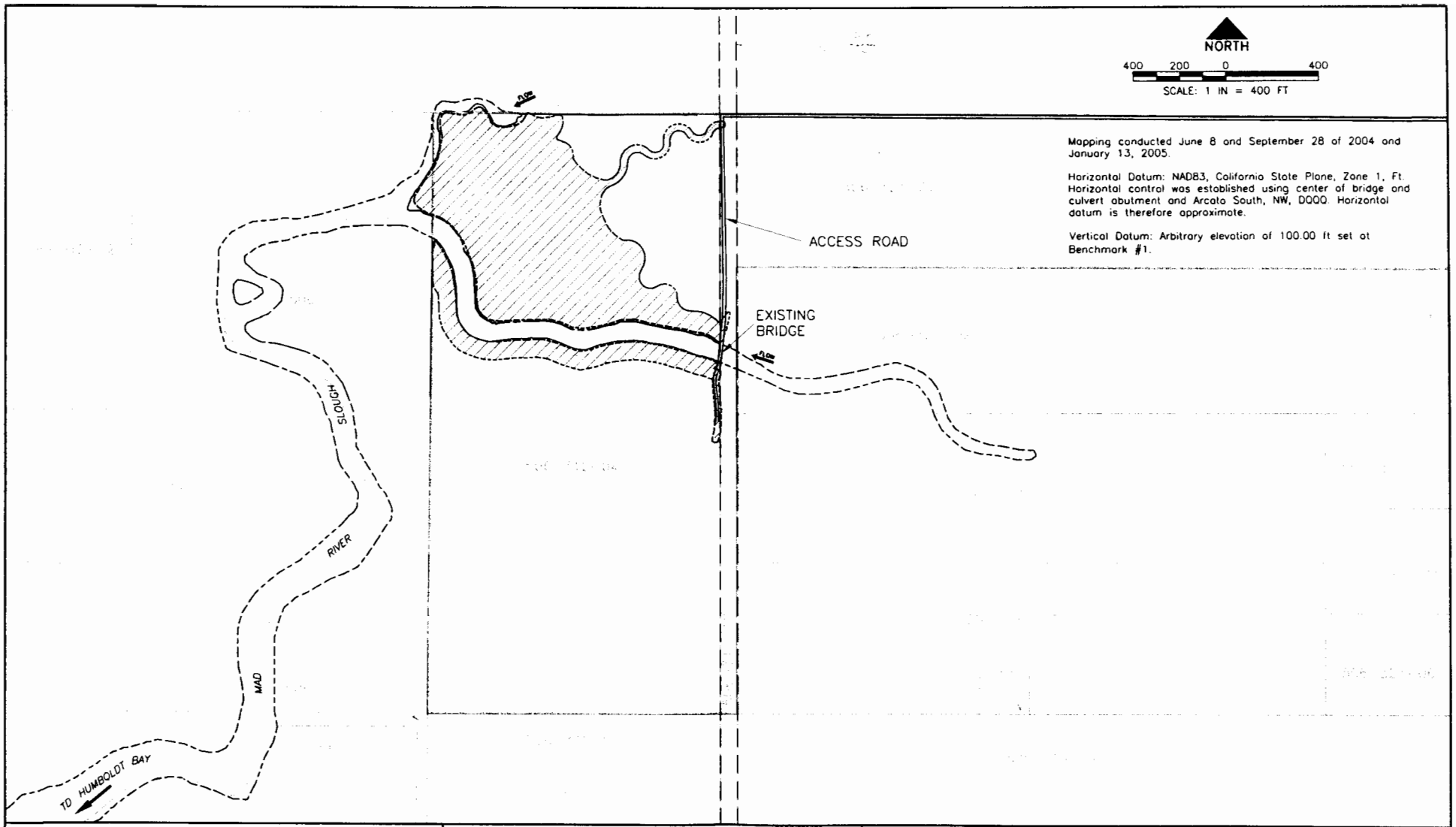
MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Location Map

LEGEND
PROJECT AREA

DRAWN BY	FM
CHECKED BY	SM
DATE	12/17/07
Sheets	1-3
REVISION	C

SHEET 2 of 16

EXHIBIT NO. 2
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
VICINITY MAP



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Assessor Parcel Map

LEGEND
- APPROXIMATE EXISTING GROUND (1 FT CONTOURS)
- APPROXIMATE PARCEL LINES
- PARCELS WITHIN PROJECT FOOTPRINT
- PROJECT BOUNDARY
- ACCESS ROADE
- SLOUGH CHANNEL

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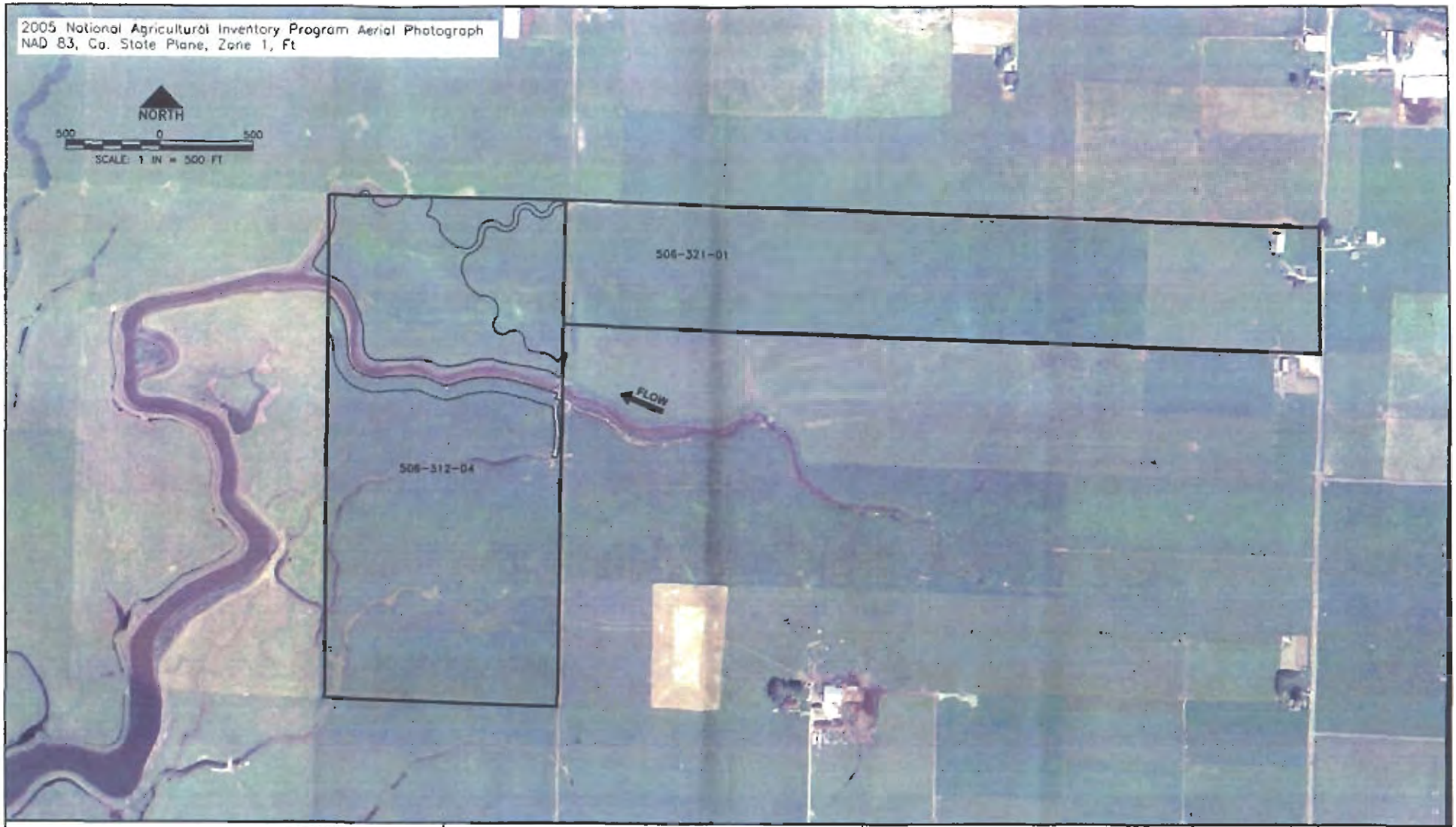
CHECKED BY	SM
DATE	12/17/07
Sheets	1-3
REVISION	E

SHEET 3 of 16

EXHIBIT NO. 3
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
PARCEL MAP



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
2005 Aerial Photograph

LEGEND
PROJECT BOUNDARY
ASSESSOR PARCEL BOUNDARY

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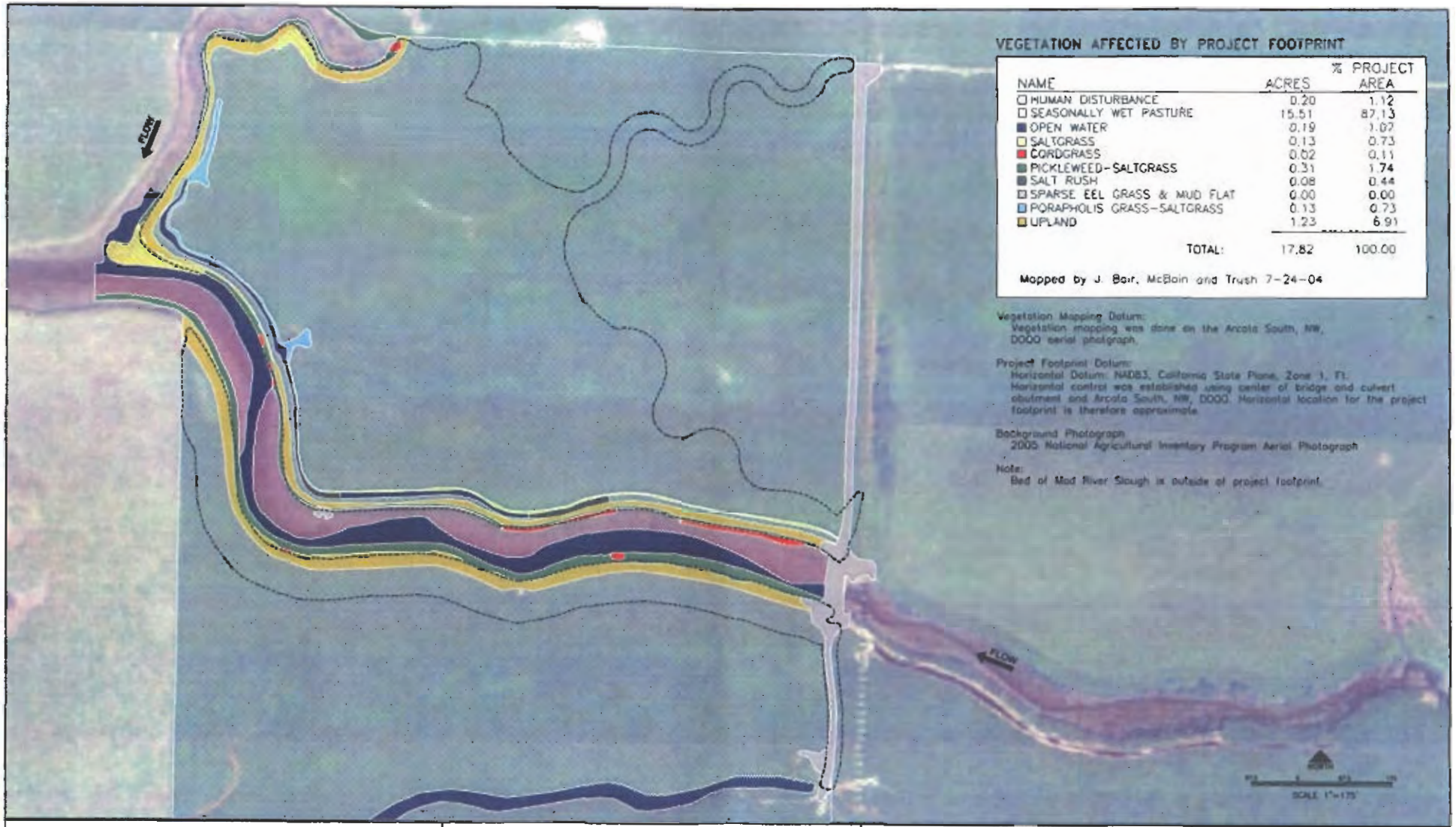
CHECKED BY	SM
DATE	12/18/07
Sheet	4
REVISION	A

SHEET 4 of 16

EXHIBIT NO. 4
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
AERIAL PHOTO



VEGETATION AFFECTED BY PROJECT FOOTPRINT

NAME	ACRES	% PROJECT AREA
HUMAN DISTURBANCE	0.20	1.12
SEASONALLY WET PASTURE	15.51	87.13
OPEN WATER	0.19	1.07
SALTGRASS	0.13	0.73
CORDGRASS	0.02	0.11
PICKLEWEED-SALTGRASS	0.31	1.74
SALT RUSH	0.08	0.44
SPARSE EEL GRASS & MUD FLAT	0.00	0.00
PORAPHOLIS GRASS-SALTGRASS	0.13	0.73
UPLAND	1.23	6.91
TOTAL:	17.82	100.00

Mapped by J. Bair, McBain and Trush 7-24-04

Vegetation Mapping Datum:
Vegetation mapping was done on the Arcata South, NW, DOQQ aerial photograph.

Project Footprint Datum:
Horizontal Datum: NAD83, California State Plane, Zone 1, FI.
Horizontal control was established using center of bridge and culvert abutment and Arcata South, NW, DOQQ. Horizontal location for the project footprint is therefore approximate.

Background Photograph:
2005 National Agricultural Inventory Program Aerial Photograph

Note:
Bed of Mad River Slough is outside of project footprint.

SCALE 1"=175'

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Existing Vegetation Map

LEGEND
PROJECT FOOTPRINT/CONSTRUCTION BOUNDARY
VEGETATION MAPPING BOUNDARY

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CHECKED BY	SM
DATE	12/18/07
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REVISION	A

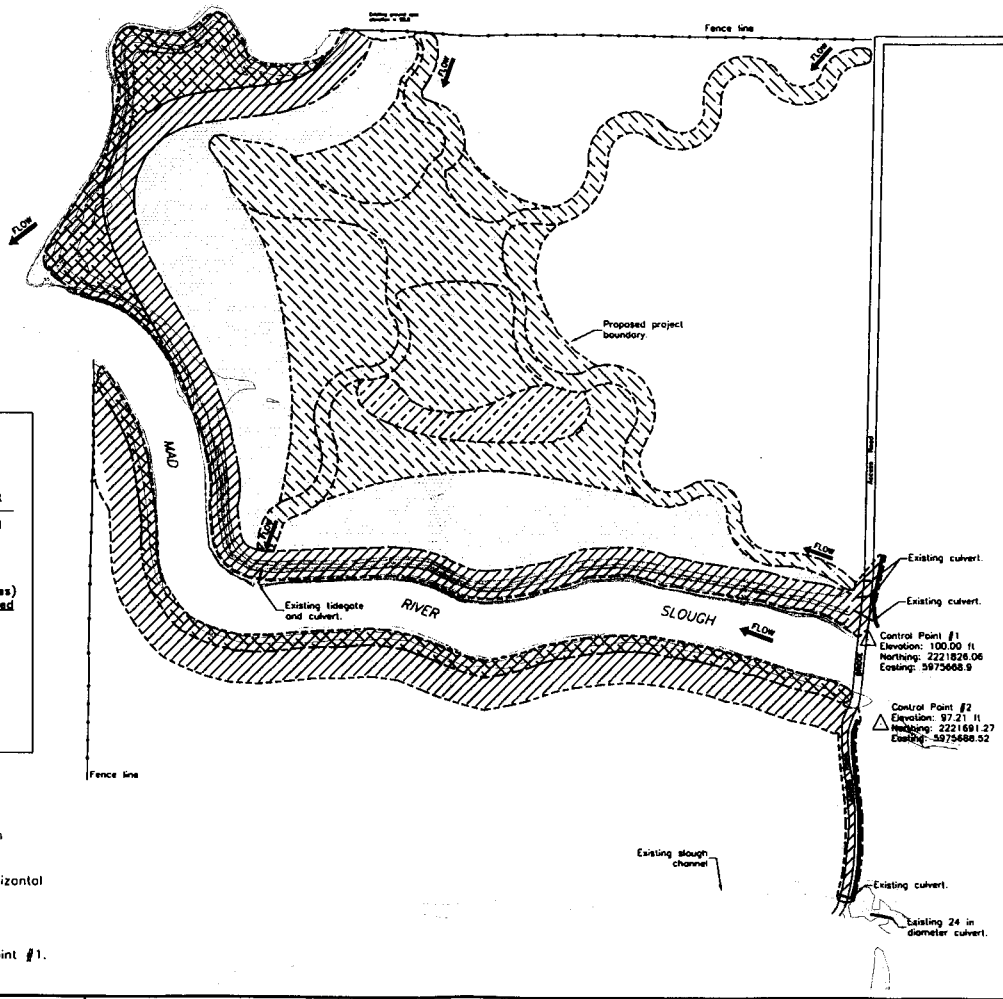
SHEET 5 of 16

EXHIBIT NO. 5
APPLICATION NO. 1-08-020
MILLER & U.S. FISH & WILDLIFE SERVICE
PROJECT PLANS (1 of 12)

NORTH

200 100 0 200

SCALE: 1 IN = 200 FT



Mad River Slough Freswater Wetland Area and Cummulative Storage Estimates for Water Surface Elevations Ranging from 94 ft to 96.5 ft

Water surface Elevation	Open Water Area	Open Water Area	Less Island Area	Cum. Avg. Adjusted for Island
ft	acre	ft²	ft²	ft²
96.50	16.66	725760.35	21017.65	609000.81
96.00	7.82	340601.33	N/A	347664.81
95.50	4.71	205377.49	N/A	211170.53
95.00	3.66	159534.77	N/A	119942.74
94.50	2.73	118727.60	N/A	50377.46
94.00	1.90	82786.10	N/A	0.00

VOLUME ESTIMATES FOR PROJECT (Cu. Yds.)

Description	Cut	Fill	20% on Fill	Net
South Bank Dike:	2,500	6,200	1,200	4,900 Fill
North Bank Dike:	1,100	10,100	2,000	11,000 Fill
Wetland:	13,400	1,300	200	11,900 Cut
Total	17,000	17,600	3,400	4,000 Fill

AREAS AND LENGTHS FOR EXISTING AND PROPOSED CONDITIONS

	Length (ft)		Project Area (acres)	
	Existing	Proposed	Existing	Proposed
South bank dike	1,540	1,540	0.86	1.64
South bank salt marsh	1,540	1,540	0.12	1.03
North bank dike	2,480	2,140	1.07	1.93
North bank salt marsh	2,480	2,480	0.36	1.43
Inboard ditch	2,400	0	0.98	0.25
Freshwater wetland	–	–	0.00	6.63
Riparian area	–	–	0.00	4.37
Island area	–	–	0.00	0.54

Project Area = 17.82 acres

General Notes:

1) These drawings are for planning purposes only, to provide rough volume estimates and identify project disturbance areas.

2) Horizontal Datum: NAD83, California State Plane, Zone 1, Ft Horizontal control was established using bridge and tide gate surveyed on 6-8-04 and 1993 Arcata North SW DOQQ. Horizontal control is therefore approximate.

3) Vertical Datum: Arbitrary elevation of 100.0 ft set at Control Point #1. Mapping is relative to Control Point #1.

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT

Site Overview

LEGEND

EXISTING GROUND (1 FT CONTOURS)
PROJECT BOUNDARY
SLOUGH CHANNEL
ACCESS ROAD
DIKE FOOTPRINT
SALT MARSH
FRESWATER MARSH
ISLAND
RIPARIAN CORRIDOR
MISC GRADING

DRAWN BY	FM
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DATE	12/18/07
Sheets	6-16
REVISION	A

SHEET 6 of 16

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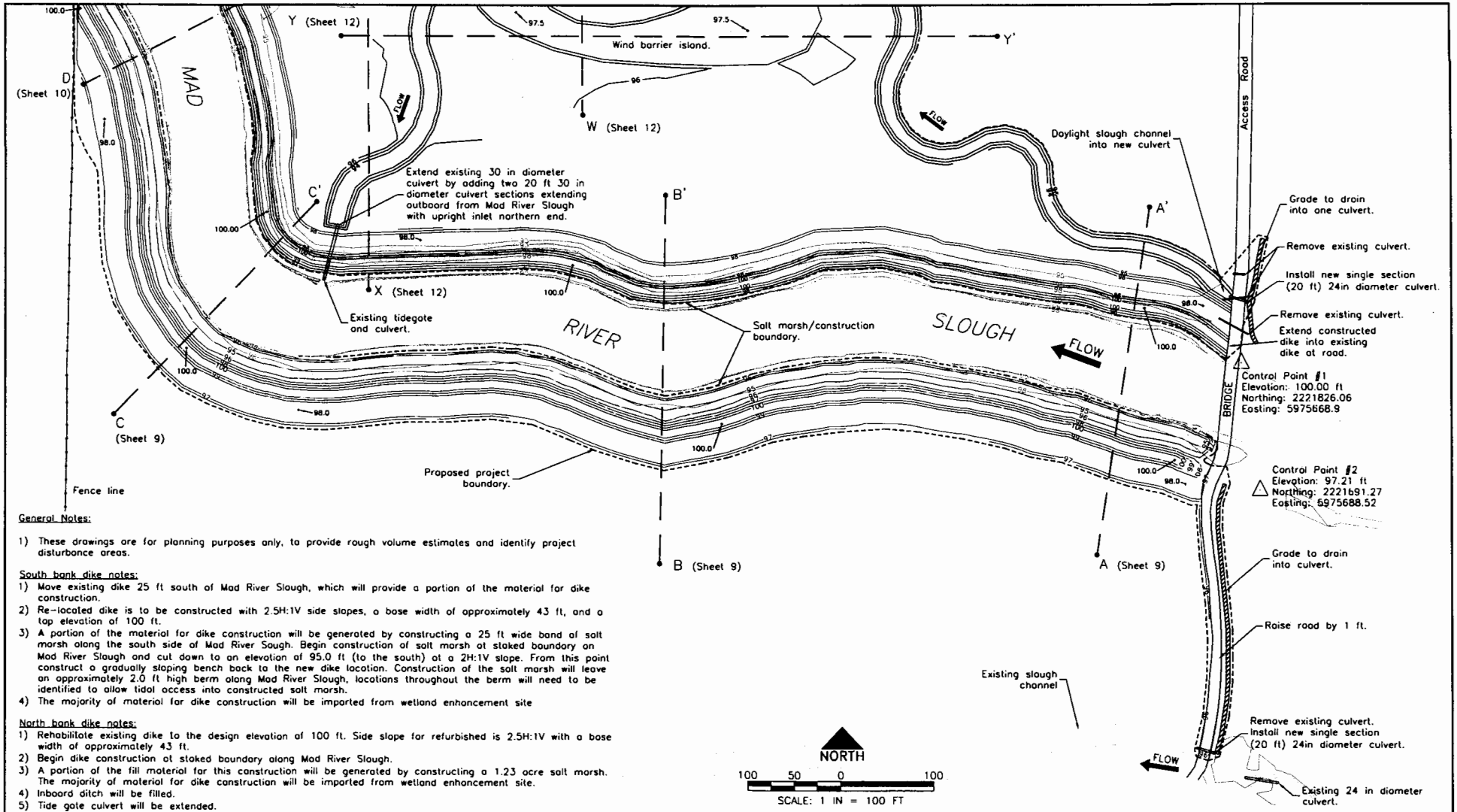

General Notes:

1) These drawings are for planning purposes only, to provide rough volume estimates and identify project disturbance areas.

South bank dike notes:

1) Move existing dike 25 ft south of Mad River Slough, which will provide a portion of the material for dike construction.
2) Re-located dike is to be constructed with 2.5H:1V side slopes, a base width of approximately 43 ft, and a top elevation of 100 ft.
3) A portion of the material for dike construction will be generated by constructing a 25 ft wide band of salt marsh along the south side of Mad River Sough. Begin construction of salt marsh at staked boundary on Mad River Slough and cut down to an elevation of 95.0 ft (to the south) at a 2H:1V slope. From this point construct a gradually sloping bench back to the new dike location. Construction of the salt marsh will leave an approximately 2.0 ft high berm along Mad River Slough, locations throughout the berm will need to be identified to allow tidal access into constructed salt marsh.
4) The majority of material for dike construction will be imported from wetland enhancement site

North bank dike notes:

1) Rehabilitate existing dike to the design elevation of 100 ft. Side slope for refurbished is 2.5H:1V with a base width of approximately 43 ft.
2) Begin dike construction at staked boundary along Mad River Slough.
3) A portion of the fill material for this construction will be generated by constructing a 1.23 acre salt marsh. The majority of material for dike construction will be imported from wetland enhancement site.
4) Inboard ditch will be filled.
5) Tide gate culvert will be extended.

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT

Planform

LEGEND

- EXISTING GROUND (1 FT CONTOURS)
- FINISHED GROUND (1 FT CONTOURS)
- CROSS SECTION
- PROJECT BOUNDARY
- SLOUGH CHANNEL
- ACCESS ROAD
- MISC GRADING

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DATE	12/18/07
Sheets	6-16
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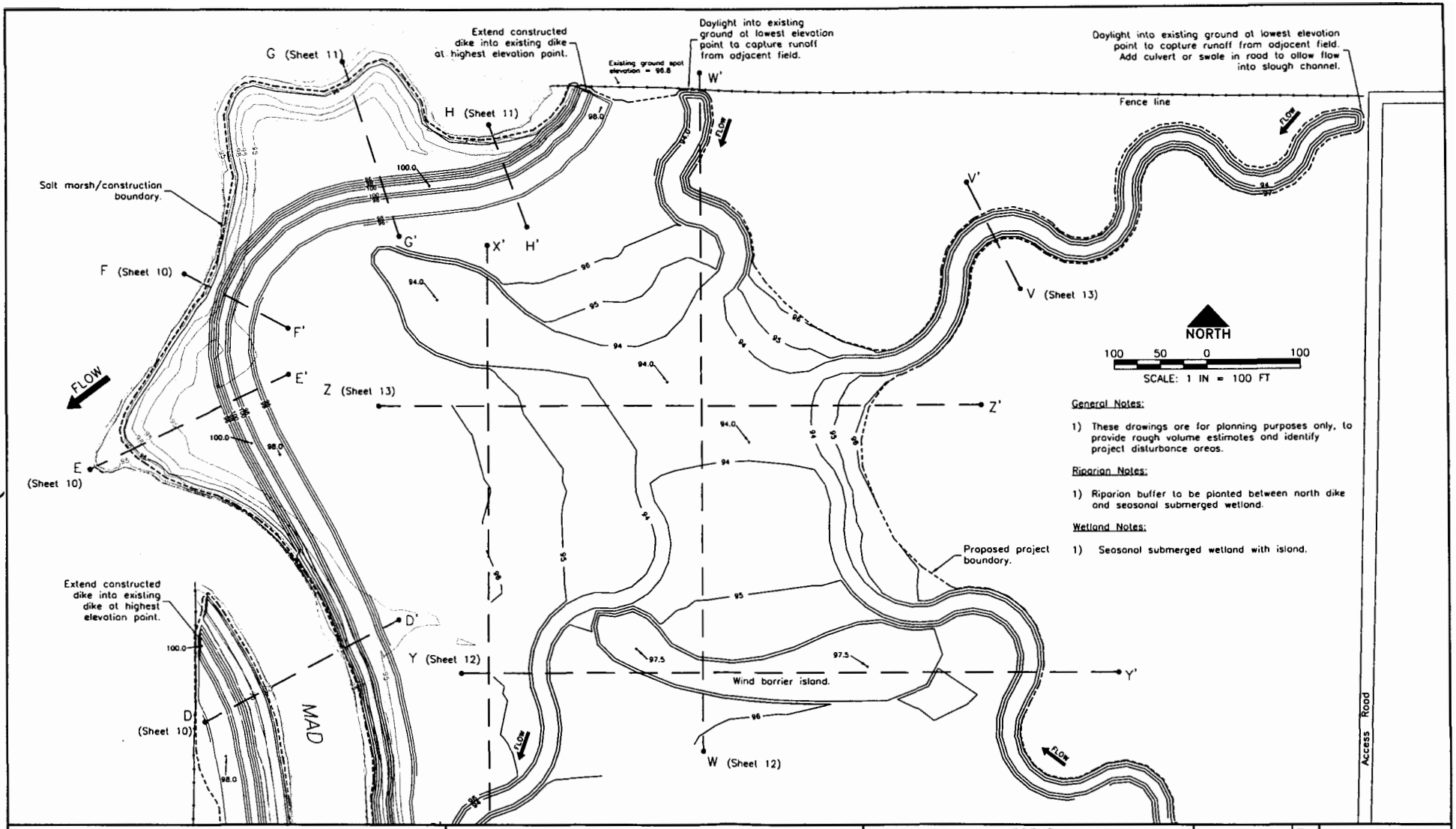

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT

Planform

LEGEND

- EXISTING GROUND (1 FT CONTOURS)
- FINISHED GROUND (1 FT CONTOURS)
- CROSS SECTION
- PROJECT BOUNDARY
- SLOUGH CHANNEL
- ACCESS ROAD
- MISC GRADING

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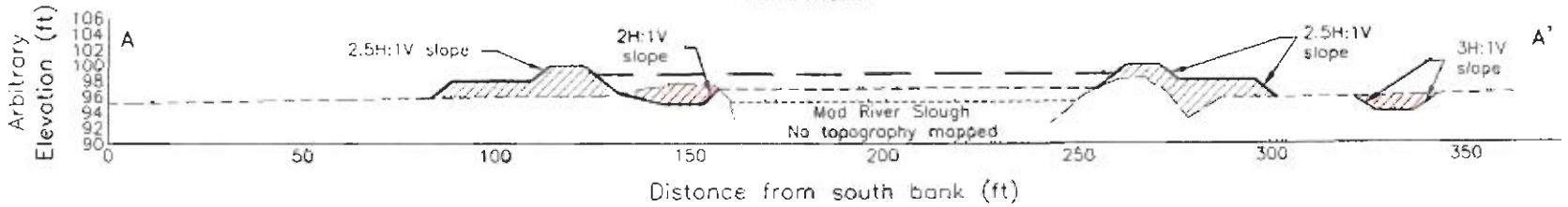
DATE	12/18/07
Sheets	6–16
REVISION	A

SHEET 8 of 16

TRANSECT A



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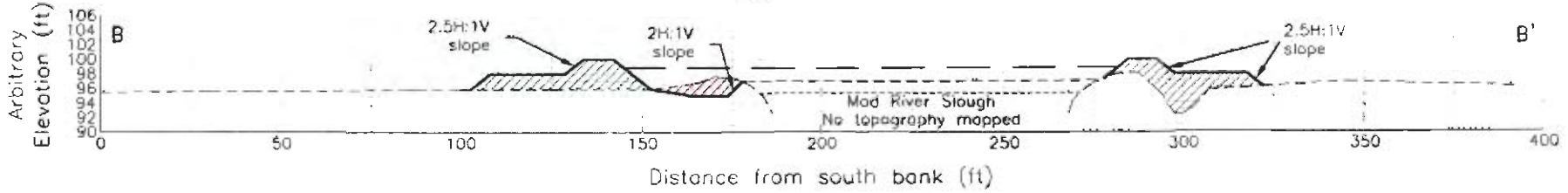

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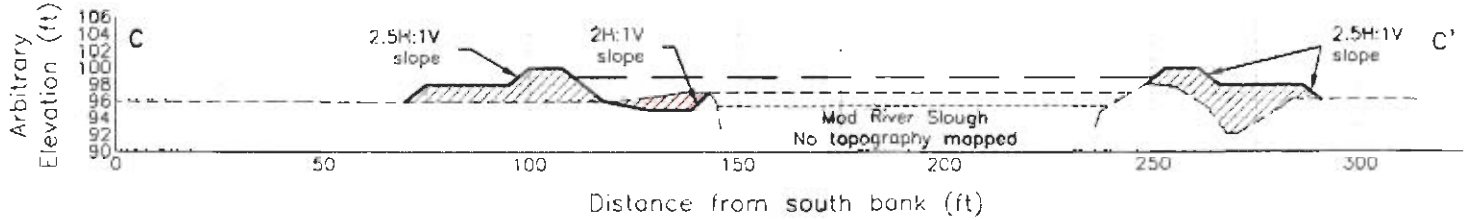

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Transects

LEGEND

- EXISTING GROUND
- FINISHED GROUND
- 12-12-03 ESTIMATED HIGH WATER
- MEAN HIGHER HIGH WATER
- SALT/FRESH WATER VEG TRANSITION
- PROPOSED CUT
- PROPOSED FILL

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CHECKED BY	SM
DATE	12/18/07
Sheets	6-16
REVISION	A

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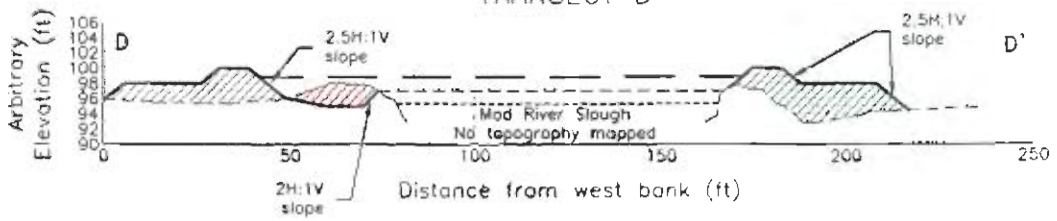
TRANSECT D



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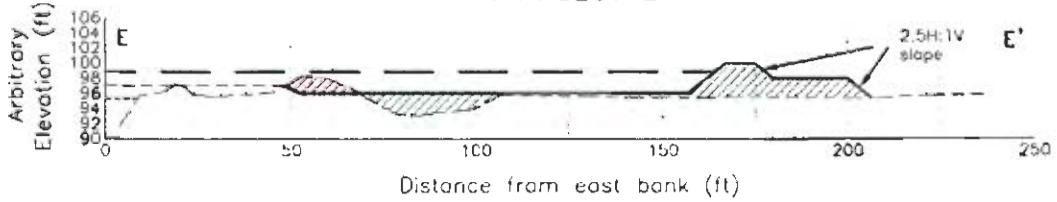

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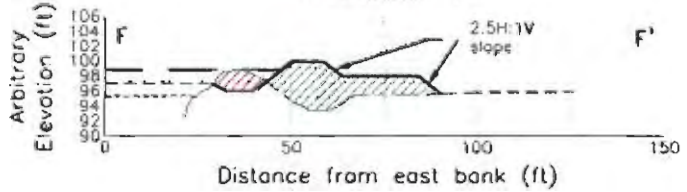

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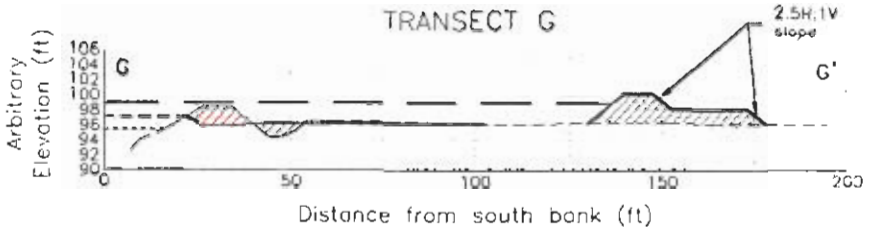
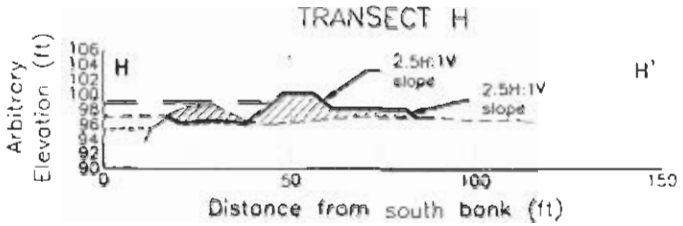
TRINITY ASSOCIATES 980 7th Street, Suite K Arcata, CA 95521 (707) 825-8770	McBain & Trush P.O. BOX 663 ARCATA, CA 95518 (707)826-7794	MILLER FAMILY'S MAD RIVER SLOUGH DIKE REHABILITATION AND WETLANDS ENHANCEMENT PROJECT Transects	LEGEND EXISTING GROUND FINISHED GROUND 12-12-03 ESTIMATED HIGH WATER MEAN HIGHER HIGH WATER SALT/FRESH WATER VEG TRANSITION PROPOSED CUT PROPOSED FILL	DRAWN BY FM CHECKED BY SM DATE 12/18/07 Sheets 6-16 REVISION A	SHEET 10 of 16





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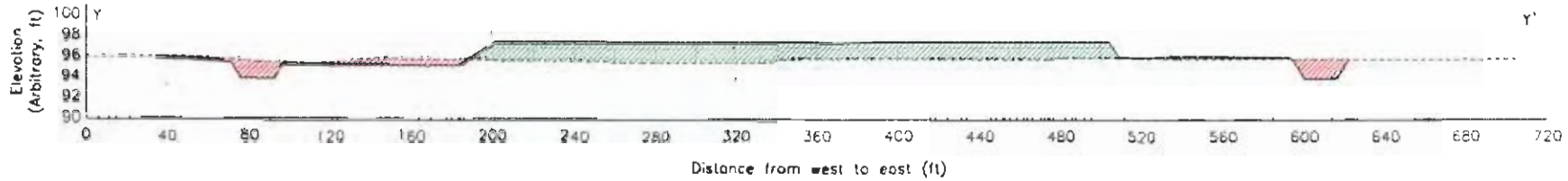

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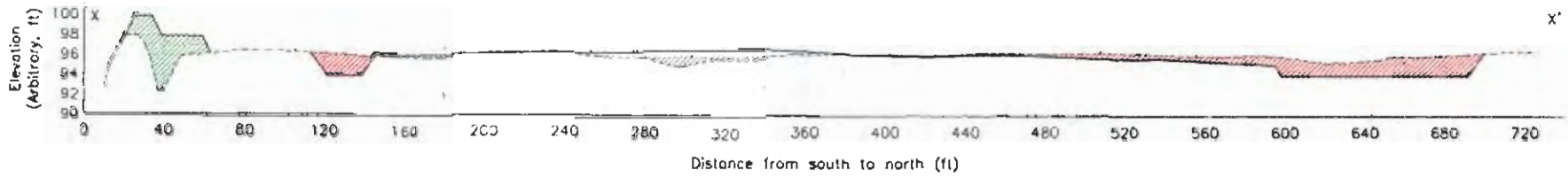

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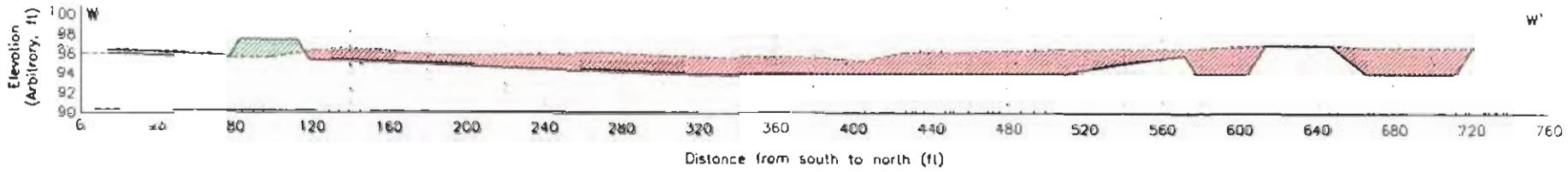

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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Transects

LEGEND
EXISTING GROUND
FINISHED GROUND
PROPOSED CUT
PROPOSED FILL

DRAWN BY	FM
CHECKED BY	SM
DATE	12/18/07
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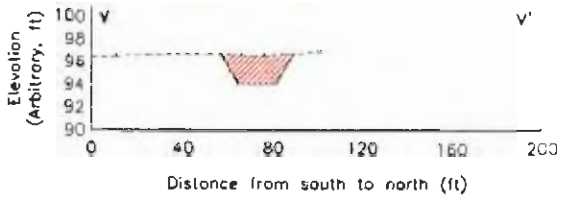
TRANSECT V



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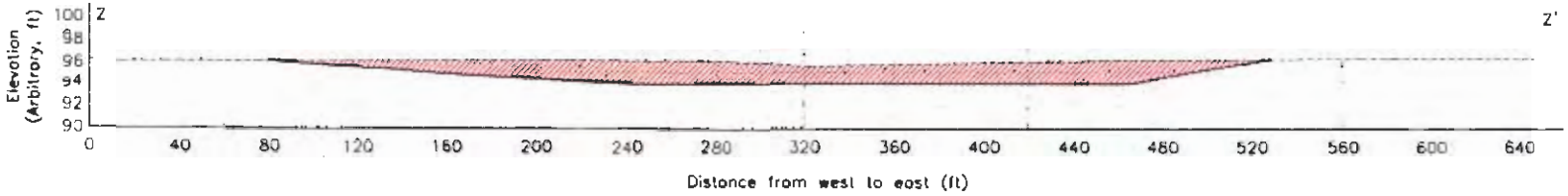

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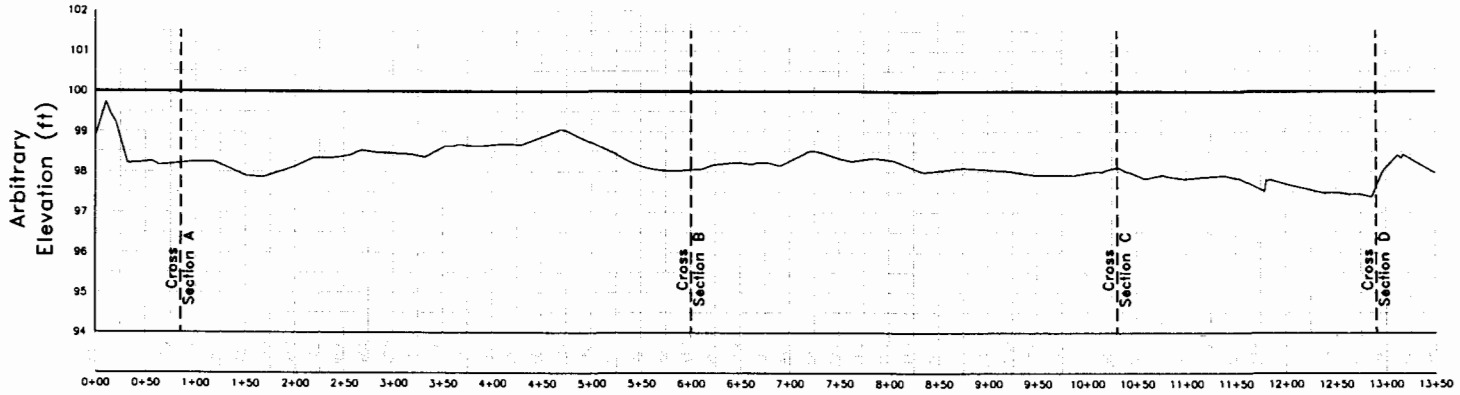
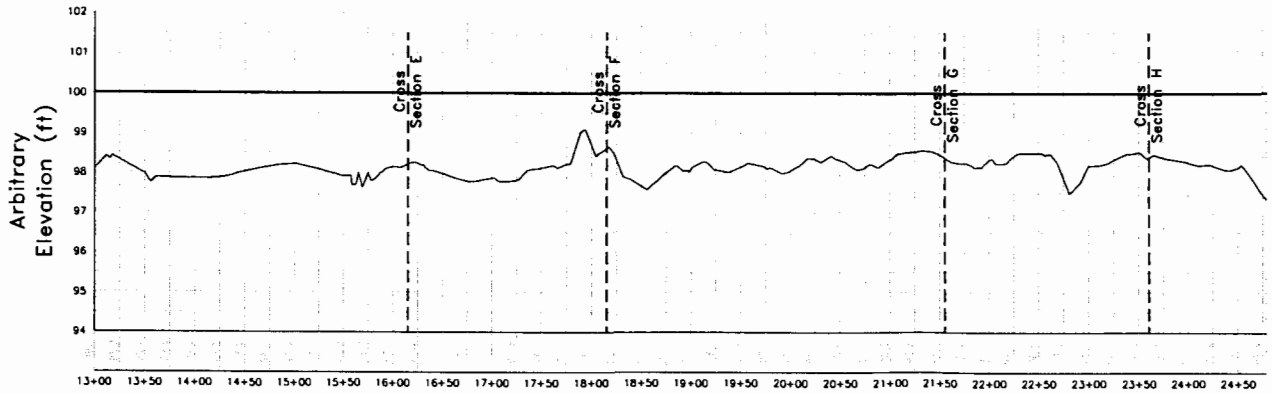
Longitudinal Profile Along Alignment of Existing North Bank Dike (Station 0+00 to 13+50)



Longitudinal Profile Along Alignment of Existing North Bank Dike (Station 13+50 to 24+50)



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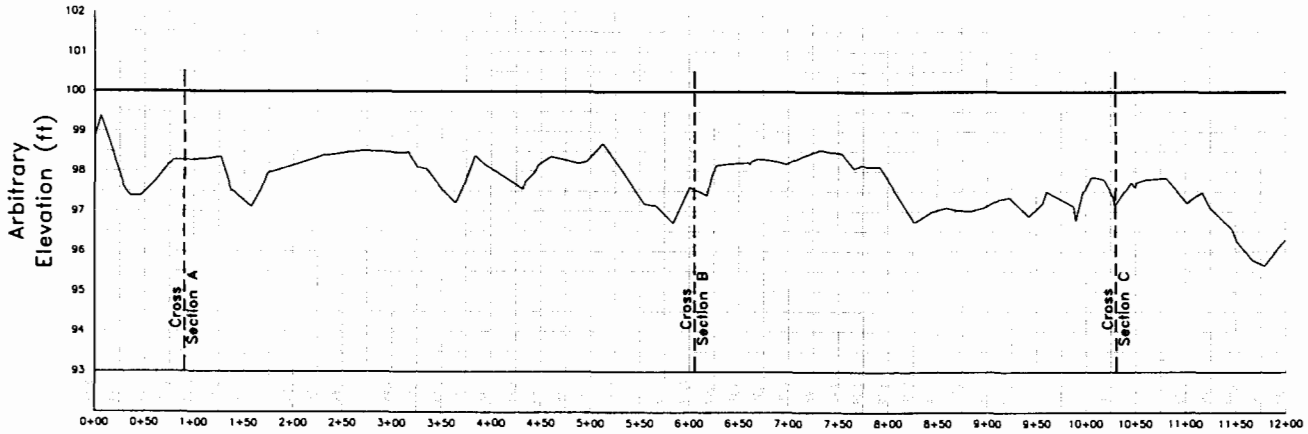
MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Longitudinal Profile Comparing Existing and Proposed Dike

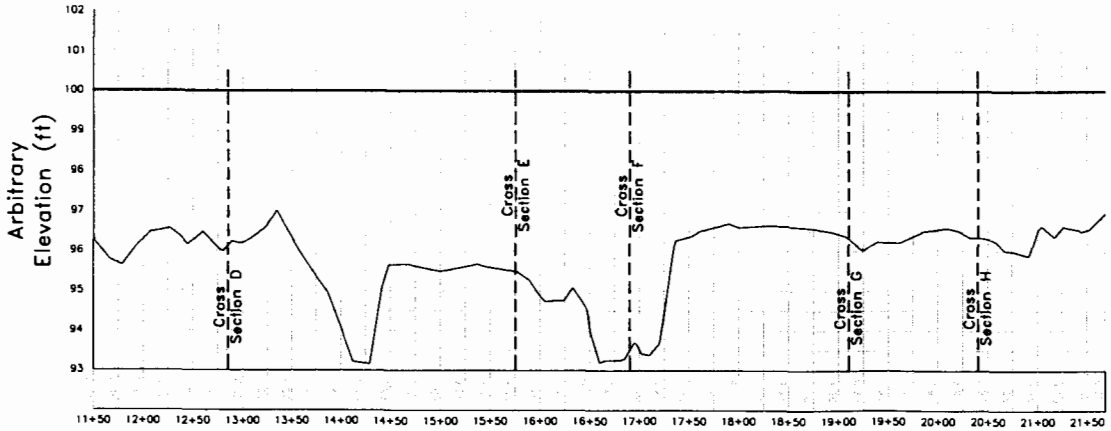
LEGEND
EXISTING GROUND
FINISHED GROUND

DRAWN BY	FM
CHECKED BY	SM
DATE	12/18/07
Sheets	6–16
REVISION	A

Longitudinal Profile Along Alignment of Proposed North Bank Dike (Station 0+00 to 12+00)



Longitudinal Profile Along Alignment of Proposed North Bank Dike (Station 12+00 to 21+50)



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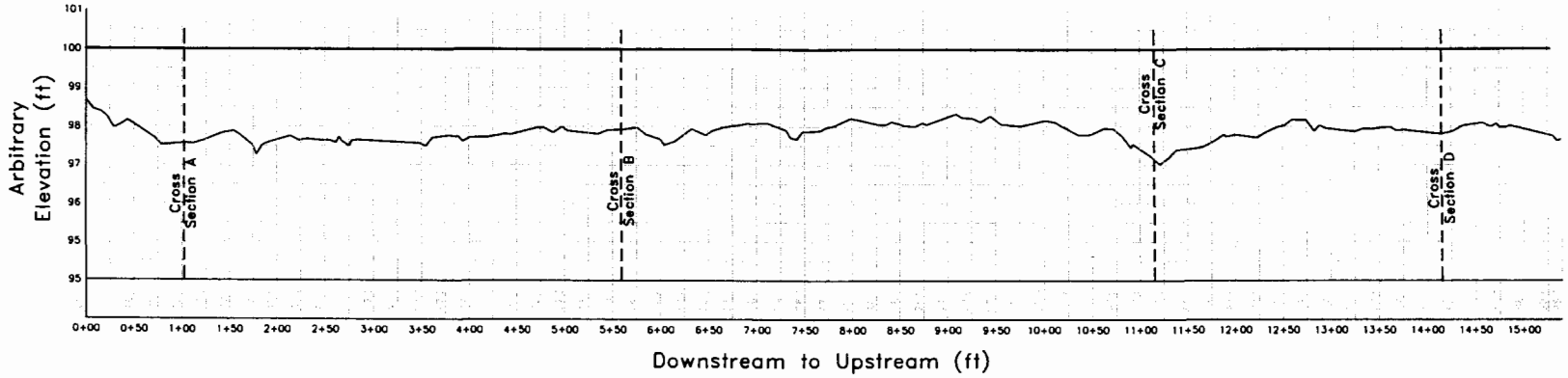
MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Longitudinal Profile Along Proposed Dike Alignment

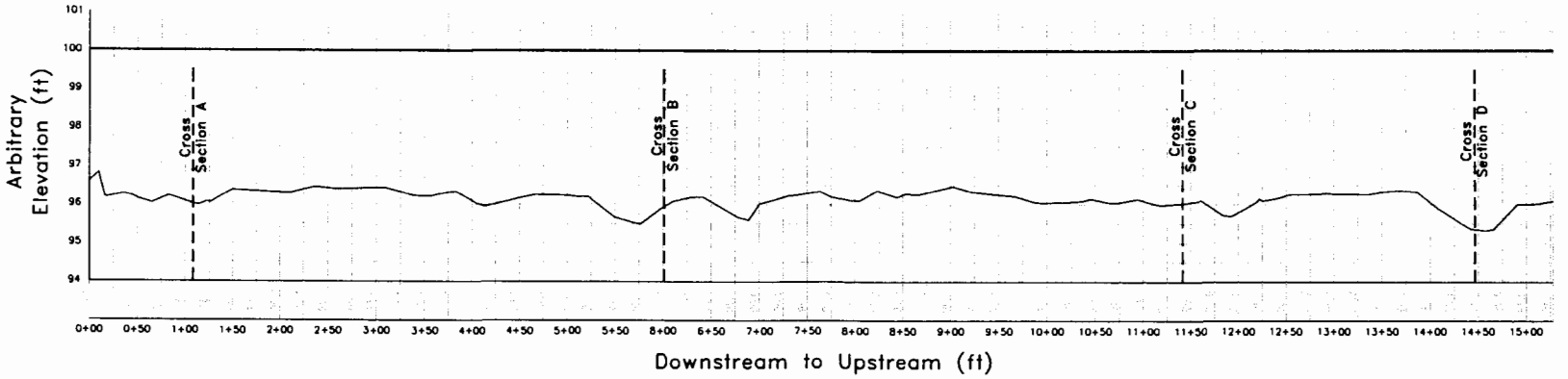
LEGEND
EXISTING GROUND
FINISHED GROUND

DRAWN BY	FM
CHECKED BY	SM
DATE	12/18/07
Sheets	6-16
REVISION	A

Longitudinal Profile Along Alignment of Existing South Bank Dike



Longitudinal Profile Along Alignment of Proposed South Bank Dike



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MILLER FAMILY'S MAD RIVER SLOUGH DIKE
REHABILITATION AND WETLANDS ENHANCEMENT PROJECT
Longitudinal Profile Along Existing and Proposed Dike

LEGEND
EXISTING GROUND
FINISHED GROUND

DRAWN BY	FM
CHECKED BY	SM
DATE	12/18/07
Sheets	6-16
REVISION	A

SHEET 16 of 16