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Staff: Melissa B. Kraemer
Staff Report: June 26, 2009
Hearing Date: July 10, 2009
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: **1-08-010**

APPLICANT: **Humboldt County Public Works Department (Attn: Hank Seemann)**

PROJECT LOCATION: At the Fields Landing Boat Ramp at the western end of Railroad Avenue, Fields Landing, Humboldt County (APNs 307-101-009 and 305-201-018).

PROJECT DESCRIPTION: Improve an existing public boat launching ramp facility by: (1) expanding the existing paved parking lot on APN 307-101-009 by approximately 12,200 square feet for a total parking capacity of 60,000 square feet (creating 15 new spaces for vehicles and trailers, including four new ADA spaces, for a total of 56 spaces); (2) creating a new approximately 21,800-square-foot paved parking area on APN 305-201-018 by grading, paving, and stripping the existing undeveloped surface (for a total of 19 new spaces for vehicles and trailers, including one new ADA space); (3) installing four new approximately 22-foot-high light standards in the area and one 29-foot-high light standard equipped with a tsunami warning siren; and (4) replace the existing concrete block restroom with a new one of equivalent size and type located approximately 25 feet to the southeast.

LAND USE PLAN DESIGNATION: APN 307-101-009 = split designation of Industrial/Coastal-Dependent (MC) & Public Recreation (PR); APN 305-201-018 = MC.

ZONING DESIGNATION:	APN 307-101-009 = split-zoned Industrial/Coastal-Dependent (MC) & Public Recreation (PR); APN 305-201-018 = MC.
OTHER PERMITS/APPROVALS:	Humboldt County Conditional Use Permit No. 07-12 Water Quality Order 99-08-DWQ (SWRCB General Permit for Stormwater Discharges Associated with Construction Activity)
SUBSTANTIVE FILE DOCUMENTS:	Initial Study & Negative Declaration, January 8, 2008 (SCH #2007122015); Humboldt County certified Local Coastal Program.

SUMMARY OF STAFF RECOMMENDATION

Staff recommends approval with special conditions of the proposed project.

The project is located at the County's Fields Landing Boat Ramp Facility at the western end of Railroad Avenue in the unincorporated area of Fields Landing, which is situated approximately six miles south of Eureka in Humboldt County (see Exhibit Nos. 1, 2, and 3). The project area is approximately 2.5 acres in size and abuts the eastern shoreline of Humboldt Bay. The southern parcel (APN 307-101-009), which contains an existing approximately 47,800-square-foot parking area, is owned by the County, and the northern parcel (APN 305-201-018), which is undeveloped, is owned by the Humboldt Bay Harbor, Recreation, and Conservation District.

The Fields Landing Boat Ramp facility provides boating access to Humboldt Bay for a variety of users including sport fishermen, clammers, crabbers, waterfowl hunters, canoeists, kayakers, birdwatchers, and others. The facility has many beneficial features including a central location within the county, convenient access from Highway 101, and limited wave action. The facility is used by residents from all over Humboldt County as well as many out-of-county visitors. No fee is charged for facility usage. The facility is equipped with a two-lane boat launch ramp and adjacent floating docks. The existing parking area has 14 pull-through and 29 back-in striped parking spaces, a public restroom, and one light pole (Exhibit No. 4). The total paved area is approximately 57,000 square feet, which includes 47,800 square feet for parking and 9,200 square feet for the ramp approach. The facility was first developed in 1958 with funding from the Wildlife Conservation Board. Since that time, various improvements and expansions to the facility have been made using funding from the Wildlife & Conservation Board, Department of Boating & Waterways, and a 1976 Park Bond. Despite these expansions and improvements, the capacity of the parking area is quickly exceeded during peak usage periods, and parking of vehicles and trailers overflows into adjacent residential areas, impacting local residents along Railroad Avenue, 2nd Street, and 3rd Street to as far as east as Fields Landing Drive.

Vegetation on the project site is relatively sparse. The southern, County-owned parcel contains an approximately 40-foot-wide by 250-foot-long strip of grassy vegetation between the western

side of the existing parking area and the bay. A picnic table is situated in this area. Additionally, two mature cypress trees, which will not be impacted by the proposed project, are also located at the northern end of the vegetated strip, just south of the boat launch approach ramp. The northern, Harbor District-owned parcel currently consists of mostly upland, ruderal, patchy, herbaceous vegetation and some gravel fill. Vehicle disturbance has contributed to much of the area being devoid of vegetation. There is an approximately 15-foot-wide strip of patchy vegetation along the western edge of the parcel adjacent to the bay mudflat.

The "Fields Landing Boat Ramp Parking and Public Safety Enhancement Project," which is funded in part by a grant from the Wildlife Conservation Board, proposes to (1) expand the existing paved parking lot on APN 307-101-009 by approximately 12,200 square feet for a total parking capacity of 60,000 square feet (creating 15 new spaces for vehicles and trailers, including four new ADA spaces); (2) create a new approximately 21,800-square-foot paved parking area on APN 305-201-018 by grading, paving, and stripping the existing undeveloped surface (for a total of 19 new spaces for vehicles and trailers, including one new ADA space); (3) install four new approximately 22-foot-high light standards in the area (two on each parcel) and one 29-foot-high light standard equipped with a tsunami warning siren on APN 307-101-009; and (4) replace the existing concrete block restroom with a new one of equivalent size and type located approximately 25 feet to the southeast. Additionally, four safety barrier islands and new signage would be installed in the parking facility to manage traffic circulation. Proposed project plans are attached as Exhibit No. 5.

The proposed project would result in an additional 0.5-acre of impermeable (paved) substrate in the area. The applicant prepared a Stormwater Management Plan (Exhibit No. 6) to address post-construction conditions on the site and to propose stormwater treatment Best Management Practices (BMPs) for all surfaces and activities at the facility. The project would make the four proposed parking islands within the expanded and new paved areas permeable (unpaved on the bottom, filled with soil, and seeded with grasses) to allow for infiltration of stormwater (see sheet 4 of Exhibit No. 5). Additionally, the project proposes to use and enhance the existing vegetation along the western site boundary to serve as biofiltration areas to treat stormwater runoff from the expanded and new parking areas. As shown on the plans (see sheets 4 and 5 of Exhibit No. 5; also see Exhibit No. 6), curbs along the western edge of the parking areas would have notches cut every 15 feet to allow stormwater to runoff in dispersed sheet flow to existing/enhanced vegetation buffers. The vegetation buffer along the western edge of the southern parcel would be approximately 40 feet wide, and the vegetation buffer along the western edge of the northern parcel would be approximately 15 feet wide. Because the buffer strip on the latter parcel currently is devoid of vegetation in some areas (due to vehicular disturbance), the applicant's restoration consultant prepared a Revegetation Plan (Exhibit No. 7), which calls for enhancing the buffer area with grasses (and other plants) native to Humboldt Bay coastal dunes.

Staff recommends the following special conditions, among others, to ensure that the proposed development adjacent to the bay is compatible with the continuance of the ESHA, would not significantly degrade the ESHA and to assure the biological productivity of coastal waters consistent with Sections 30240, 30230, and 30231 of the Coastal Act:

- Special Condition No. 2 would require submittal of final plans for stormwater pollution prevention during construction activities prior to commencement of construction;
- Special Condition No. 3 would require adherence to various construction-related responsibilities;
- Special Condition No. 4 would require, in part, that vegetation on the site be revegetated according to the proposed Revegetation Plan, that only native species be planted, and that all proposed plantings be maintained in good growing conditions throughout the life of the project, and whenever necessary, be replaced with new plant materials to ensure continued compliance with the revegetation plan;
- Special Condition No. 5 would require submittal of a revised stormwater management plan that, in part, includes provisions for monitoring and maintaining the vegetated filter strips for the life of the project and for the repair of damaged or denuded areas as necessary prior to the onset of each rainy season; and
- Special Condition No. 6 would require submittal of a plan for the installation and maintenance of an "environmentally sound boating practices" interpretive panel to help educate the public on practices to prevent pollution from boating activities and use of the site and how to prevent the spread of invasive aquatic species attached to boats to be launched at the boat launch ramp.

Staff believes that with the above recommended conditions, among others, the proposed project is consistent with all applicable Chapter 3 policies of the Coastal Act.

The Motion to adopt the Staff Recommendation is found on Pages 4-5.

STAFF NOTES

1. Jurisdiction & Standard of Review

The project site is located in the Commission's retained permit jurisdiction. The County of Humboldt has a certified Local Coastal Program (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. 1-08-010 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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

Resolution to Approve Permit with Conditions:

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. Timing of Construction

To avoid adverse impacts on public boating access and salmon fishing, no construction shall occur during the recreational salmon fishing season (which in 2009 is August 29 through September 7).

2. Final Plans

(A) **PRIOR TO COMMENCEMENT OF DEVELOPMENT AUTHROIZED BY COASTAL DEVELOPMENT PERMIT NO. 1-08-010**, the applicant shall submit, for the review and approval of the Executive Director, final Stormwater Pollution Prevention plans (SWPPP) to control erosion and sedimentation during construction activities that include all the BMP components of the plans submitted to the Commission titled "Erosion and Sedimentation Control Plan" (Sheet 8 of 9 and Sheet 9 of 9) and dated April 8, 2009 (attached to this staff report as Exhibit No. 8).

(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.

3. Construction Responsibilities

The permittee shall comply with the following construction-related requirements:

(A) No construction materials, debris, or waste shall be placed or stored where it may be subject to wave erosion and dispersion;

(B) Any and all debris resulting from construction activities shall be removed from the project site and disposed of at an authorized disposal location within 10 days of project completion and/or prior to the onset of the rainy season, whichever is earlier;

(C) Any debris discharged into coastal waters shall be recovered immediately and disposed of properly;

(D) 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;

(E) Upon completion of construction activities and prior to the onset of the rainy season, all bare soil areas shall be seeded in compliance with Special Condition No. 3;

(F) 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 100 feet of coastal waters; and

(G) 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.

4. Site Revegetation

Vegetation on the site shall be revegetated according to the Revegetation Plan prepared by Suzanne Isaacs, dated July 11, 2008 (Exhibit No. 7), 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 90 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.

(D) All proposed plantings shall be maintained in good growing conditions throughout the life of the project, and whenever necessary, shall be replaced with new plant materials to ensure continued compliance with the revegetation plan.

5. Revised Stormwater Management Plan

(A) **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit a revised stormwater management plan to the Executive Director for review and approval. The revised plan shall substantially conform to the plan prepared by Humboldt County Public Works Department titled "Stormwater Management Plan Fields Landing Boat Ramp Parking and Public Safety Enhancement Project" dated April 30, 2009 (Exhibit No. 6), except that it shall show the following changes to the project:

1. Ongoing maintenance shall include inspecting the facility on a weekly rather than bimonthly basis during the peak usage season (June 15 through October 15) for trash and debris. If trash or debris are observed, these shall be removed.

2. The vegetation filter strips on both the County and Harbor District-owned parcels shall be monitored and maintained for the life of the project and where necessary, repaired prior to the onset of the rainy season (October 15th each year) and at regular intervals as necessary between October 15th and April 15th of each year.

3. Should any of the project's surface or subsurface drainage/filtration structures or other BMPs fail or result in increased erosion, the applicant/landowner or successor-in-interest shall be responsible for any necessary repairs to the drainage/filtration system or BMPs and restoration of the eroded area. Should repairs or restoration become necessary, prior to the commencement of such repair or restoration work, the applicant shall submit a repair and restoration plan to the Executive Director to determine if an amendment or new coastal development permit is required to authorize such work.

(B) The permittee shall undertake development in accordance with the approval 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. Environmentally Sound Boating Practices Interpretive Panel

(A) **PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT**, the applicant shall submit a plan for the installation and maintenance of an "environmentally sound boating practices" interpretive panel to the Executive Director for review and approval. The interpretive panel shall be designed to inform facility users of environmentally sound boating practices and appropriate use of the site to prevent impacts to water quality and marine resources

1. The plan shall demonstrate that:
    a. The interpretive panel shall be posted conspicuously;
    b. The panel shall display public educational information on environmentally sound boating practices to reduce water pollution from boating and use of the boat launching facility and practices to prevent the spread of invasive aquatic organisms attached to boats to be launched;
    c. The panel shall be designed as an all-weather permanent facility;
    d. The panel shall be maintained and replaced as necessary over the life of the boat ramp facility; and
    e. The panel shall be installed prior to use of the authorized development.
2. The plan shall include, at a minimum, the following components:
    a. Site plan showing the location of the interpretive panel;
    b. Exhibits depicting the specific public education information to be displayed on the panel;
    c. A narrative description of the size and materials of the panel;
    d. Panel maintenance procedures; and
    e. A schedule for implementation of the interpretive panel.

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

7. <u>No Future Shoreline Protection Device</u>

(A) By acceptance of this permit, the applicant agrees, on behalf of himself and all successors and assigns, that no shoreline protective device(s) shall ever be constructed to protect the new and expanded parking lots, light standards, or restroom authorized pursuant to Coastal Development Permit No. 1-08-010, in the event that the new and expanded parking lots, light standards, or restroom are threatened with damage or destruction from waves, erosion, storm conditions, sea level rise, or other natural hazards in the future. By acceptance of this permit, the applicant hereby waives, on behalf of himself and all successors and assigns, any rights to construct such devices to protect the new and expanded parking lots, light standards, or restroom that may exist under Public Resources Code Section 30235.

(B) By acceptance of this Permit, the applicant further agrees, on behalf of himself and all successors and assigns, that the landowner shall remove the new and expanded parking lots, light standards, and restroom authorized by this permit if any government agency has ordered that the structures are not to be occupied due to any of the hazards identified

above. In the event that portions of the new and expanded parking lots, light standards, or restroom fall to the bay before they are removed, the landowner shall remove all recoverable debris associated with the development from the bay and shoreline and lawfully dispose of the material in an approved disposal site. Such removal shall require a coastal development permit.

(C) In the event that sea level rise results in tidal inundation of all or portions of the new and expanded parking lots, light standards, or restroom at a frequency of more than once per month on average, but no government agency has ordered that the structures not be occupied, a geotechnical investigation shall be prepared by a licensed geologist or civil engineer with coastal experience retained by the applicant, that addresses whether any portions of the structures are threatened by waves, erosion, storm conditions, or other natural hazards. The report shall identify all those immediate or potential future measures that could stabilize the new and expanded parking lots, light standards, or restroom without shore or bluff protection, including but not limited to, removal or relocation of portions of the new and expanded parking lots, light standards, or restroom. The report shall be submitted to the Executive Director and the appropriate local government official. If the report concludes that the new and expanded parking lots, light standards, or restroom is unsafe for use, the permittee shall, within 90 days of submitting the report, apply for a coastal development permit amendment to remedy the hazard which shall include removal of the threatened portion of the new and expanded parking lots, light standards, or restroom.

8. Assumption of Risk

By acceptance of this permit, the applicant acknowledges and agrees: (i) that the site may be subject to hazards from landslide, bluff retreat, erosion, subsidence, and earth movement; (ii) to assume the risks to the applicant and the property that is the subject of this permit of injury and damage from such hazards in connection with this permitted development; (iii) to unconditionally waive any claim of damage or liability against the Commission, its officers, agents, and employees for injury or damage from such hazards; and (iv) to indemnify and hold harmless the Commission, its officers, agents, and employees with respect to the Commission's approval of the project against any and all liability, claims, demands, damages, costs (including costs and fees incurred in defense of such claims), expenses, and amounts paid in settlement arising from any injury or damage due to such hazards.

9. Exterior Lighting Standards

All exterior lights shall be low-wattage, non-reflective, shielded, and have a directional cast downward such that no light will shine beyond the boundaries of the subject parcels or into the bay.

IV. FINDINGS & DECLARATIONS

The Commission hereby finds and declares as follows:

A. Background & Environmental Setting

The project is located at the County's Fields Landing Boat Ramp Facility at the western end of Railroad Avenue in the unincorporated area of Fields Landing, which is situated approximately six miles south of Eureka in Humboldt County (see Exhibit Nos. 1, 2, and 3). The project area is approximately 2.5 acres in size and abuts the eastern shoreline of Humboldt Bay. The southern parcel (APN 307-101-009), which contains an existing approximately 47,800-square-foot parking area, is owned by the County, and the northern parcel (APN 305-201-018), which is undeveloped, is owned by the Humboldt Bay Harbor, Recreation, and Conservation District. The County-owned parcel is split in its land use plan and zoning designations: it is planned and zoned PR (Public Recreation) on the northern half where the boat ramp launch is located, and MC (Industrial/Coastal-Dependent) on the southern half. The Harbor District-owned parcel is planned and zoned MC (Industrial/Coastal-Dependent). The applicant received a conditional use permit from the County in February of 2008 to allow for the proposed new and expanded parking facility on the parcels.

The Fields Landing Boat Ramp facility provides boating access to Humboldt Bay for a variety of users including sport fishermen, clammers, crabbers, waterfowl hunters, canoeists, kayakers, birdwatchers, and others. The facility has many beneficial features including a central location within the county, convenient access from Highway 101, and limited wave action. The facility is used by residents from all over Humboldt County as well as many out-of-county visitors. No fee is charged for facility usage. The facility is equipped with a two-lane boat launch ramp and adjacent floating docks. The existing parking area has 14 pull-through and 29 back-in striped parking spaces, a public restroom, and one light pole (Exhibit No. 4). The total paved area is approximately 57,000 square feet, which includes 47,800 square feet for parking and 9,200 square feet for the ramp approach. The facility was first developed in 1958 with funding from the Wildlife Conservation Board. Since that time, various improvements and expansions to the facility have been made using funding from the Wildlife & Conservation Board, Department of Boating & Waterways, and a 1976 Park Bond. Despite these expansions and improvements, the capacity of the parking area is quickly exceeded during peak usage periods, and parking of vehicles and trailers overflows into adjacent residential areas, impacting local residents along Railroad Avenue, 2nd Street, and 3rd Street to as far as east as Fields Landing Drive.

The topography of the project site is generally flat, with a uniform westerly slope (1-2%) toward the bay. Soils along the western edge of the site adjacent to the bay are sandy, and those to the east are poorly draining silty clay loam. Vegetation on the project site is relatively sparse. The southern, County-owned parcel contains an approximately 40-foot-wide by 250-foot-long strip of grassy vegetation between the western side of the existing parking area and the bay. A picnic table is situated in this area. Additionally, two mature cypress trees, which will not be impacted by the proposed project, are also located at the northern end of the vegetated strip, just south of the boat launch approach ramp. The northern, Harbor District-owned parcel currently consists of mostly upland, ruderal, patchy, herbaceous vegetation and some gravel fill. Vehicle disturbance has contributed to much of the area being devoid of vegetation. An approximately 15-foot-wide strip of patchy vegetation along the western edge of the parcel adjacent to the bay mudflat

(running for a length of approximately 150 feet) contains some salt-tolerant wetland species including dense-flowered cordgrass (*Spartina densiflora*), salt grass (*Distichlis spicata*), coastal gum weed (*Grindelia stricta*), and others. Although some wetland species are present, in general the area has sandy soils and lacks both wetland hydrology and a predominance of hydrophytic vegetation. The mudflat adjacent to the vegetation strip is within the bay's intertidal zone and is mostly devoid of vegetation.

B. Proposed Development

The "Fields Landing Boat Ramp Parking and Public Safety Enhancement Project," which is funded in part by a grant from the Wildlife Conservation Board, proposes to (1) expand the existing paved parking lot on APN 307-101-009 by approximately 12,200 square feet for a total parking capacity of 60,000 square feet (creating 15 new spaces for vehicles and trailers, including four new ADA spaces); (2) create a new approximately 21,800-square-foot paved parking area on APN 305-201-018 by grading, paving, and stripping the existing undeveloped surface (for a total of 19 new spaces for vehicles and trailers, including one new ADA space); (3) install four new approximately 22-foot-high light standards in the area (two on each parcel) and one 29-foot-high light standard equipped with a tsunami warning siren on APN 307-101-009; and (4) replace the existing concrete block restroom with a new one of equivalent size and type located approximately 25 feet to the southeast. Additionally, four safety barrier islands and new signage would be installed in the parking facility to manage traffic circulation. Proposed project plans are attached as Exhibit No. 5.

The proposed project would result in an additional 0.5-acre of impermeable (paved) substrate in the area. The applicant prepared a Stormwater Management Plan (Exhibit No. 6) to address post-construction conditions on the site and to propose stormwater treatment Best Management Practices (BMPs) for all surfaces and activities at the facility. The project would make the four proposed parking islands within the expanded and new paved areas permeable (unpaved on the bottom, filled with soil, and seeded with grasses) to allow for infiltration of stormwater (see sheet 4 of Exhibit No. 5). Additionally, the project proposes to use and enhance the existing vegetation along the western site boundary to serve as biofiltration areas to treat stormwater runoff from the expanded and new parking areas. As shown on the plans (see sheets 4 and 5 of Exhibit No. 5; also see Exhibit No. 6), curbs along the western edge of the parking areas would have notches cut every 15 feet to allow stormwater to runoff in dispersed sheet flow to existing/enhanced vegetation buffers. The vegetation buffer along the western edge of the southern parcel would be approximately 40 feet wide, and the vegetation buffer along the western edge of the northern parcel would be approximately 15 feet wide. Because the buffer strip on the latter parcel currently is devoid of vegetation in some areas (due to vehicular disturbance), the applicant's restoration consultant prepared a Revegetation Plan (Exhibit No. 7), which calls for enhancing the buffer area with grasses (and other plants) native to Humboldt Bay coastal dunes.

In addition to the stormwater management and revegetation plans, the applicant prepared an Erosion and Sedimentation Control Plan (Exhibit No. 8), which proposes to establish the construction materials storage and equipment staging area a minimum of 100 feet from the bay

shoreline as shown on the plans. Silt fencing, straw bales, and/or fiber rolls would be installed and maintained along the perimeter of the storage/staging areas as needed for erosion and sedimentation control. Silt fencing also would be erected and maintained along the western boundary of the work area to prevent sediment-laden runoff from entering the bay during construction. The applicant proposes to dispose of any excess soil and fill material resulting from the project, including accumulated sediment from the silt fencing, at the County's Table Bluff inert cell waste disposal site. The applicant states that the proposed Erosion and Sedimentation Control Plan will be used by the selected construction contractor as the basis for a formal Stormwater Pollution Prevention Plan (SWPPP) prepared in accordance with State Water Resources Control Board Water Quality Order 99-08-DWQ (construction activity general permit).

C. Boating Access

1. Applicable Coastal Act Policies and Standards

Coastal Act Section 30224 states as follows (emphasis added):

> *Increased recreational boating use of coastal waters shall be encouraged, in accordance with this division, by developing dry storage areas, increasing public launching facilities, providing additional berthing space in existing harbors, limiting non-water-dependent land uses that congest access corridors and preclude boating support facilities, providing harbors of refuge, and by providing for new boating facilities in natural harbors, new protected water areas, and in areas dredged from dry land.*

Coastal Act Section 30234 states, in applicable part, as follows:

> *Facilities serving the commercial fishing and recreational boating industries shall be protected and, where feasible, upgraded…*

2. Consistency Analysis

As discussed above in Finding IV-A, the Fields Landing Boat Ramp facility provides boating access to Humboldt Bay for a variety of users including sport fishermen, clammers, crabbers, waterfowl hunters, canoeists, kayakers, birdwatchers, and others. The facility has many beneficial features including a central location within the county, convenient access from Highway 101, and limited wave action. The facility is used by residents from all over Humboldt County as well as many out-of-county visitors. No fee is charged for facility usage. The facility is equipped with a two-lane boat launch ramp and adjacent floating docks.

The impetus for the project is the existing boat ramp facility's insufficient parking capacity during peak times. Parking for recreational users of the facility overflows into adjacent residential areas of Fields Landing, impacting community residents. The current parking facility consists of 41 spaces: 28 for vehicles only and 13 large enough to accommodate vehicles with boat trailers. The proposed project will add 34 new parking spaces to the facility for a total of 75 parking spaces. The parking improvements will result in the creation of 39 spaces large enough to accommodate vehicles with boat trailers (five of the currently vehicle-only spaces would be converted to larger spaces for vehicles with trailers). The expanded parking facility will have a

total of 52 spaces for vehicles with trailers, 18 spaces for regular vehicles, and 5 spaces sized to Americans with Disabilities Act standards (the existing lot currently supports no ADA spaces).

In addition to the proposed expanded parking capacity of the facility, the applicant proposes to avoid construction work from August 29 through September 7, 2009 to avoid conflicts with the recreational salmon fishing season. The Commission attaches **Special Condition No. 1** to ensure that the timing of construction does not impact public boating access.

Therefore, the Commission finds that as conditioned, the project will expand and improve parking for an existing public boat launching ramp facility that serves recreational boating and is consistent with Sections 30224 and 30234.

D. Protection of Water Quality, Marine Resources, and ESHA

1. Applicable Coastal Act Policies & 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.*

Coastal Act Section 30231 states as follows (emphasis added):

> *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.*

Coastal Act Section 30107.5 defines ESHA as follows:

> *"Environmentally sensitive area" means any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could be easily disturbed or degraded by human activities and developments.*

Coastal Act Section 30240 states, in applicable part, as follows:

…

> *(b) Development in areas adjacent to environmentally sensitive habitat areas and parks and recreation areas shall be sited and designed to prevent impacts which would significantly degrade those areas, and shall be compatible with the continuance of those habitat and recreation areas.*

2. Consistency Analysis

Sections 30230 and 30231 of the Coastal Act require the protection of coastal waters to ensure biological productivity and to protect public health and water quality. New development must not adversely affect these values and should help to restore them when possible. Section 30240(b) requires that development in areas adjacent to environmentally sensitive habitat areas (ESHA) shall be sited and designed to prevent impacts which would significantly degrade the ESHA and that development shall be compatible with the continuance of the adjacent ESHA.

Project activities are proposed to occur adjacent to the shoreline of Humboldt Bay's intertidal zone. Humboldt Bay contains an abundance of marine resources and marine environmentally sensitive habitat areas (ESHA) including various rare, threatened, and endangered fish species, eelgrass beds (considered "essential fish habitat"), and intertidal mudflats and coastal salt marsh habitats, which are habitat for numerous rare, threatened, and endangered plant and animal species.

The proposed activities could significantly degrade adjacent marine ESHA if (1) sediment-laden runoff from the construction site were to enter the bay, thereby decreasing water quality and adversely impacting marine habitats, or (2) the project were to result in an increase in polluted runoff from the site into the bay throughout the life of the project.

Excess sedimentation in coastal waters can have significant adverse effects on coastal resources including increased turbidity/reduction of light penetration; acceleration of conversion of wetlands to uplands; filling of estuaries; reduction of aquatic vegetation (e.g., eelgrass beds); smothering of aquatic spawning and feeding areas and benthic plants and animals (e.g., by impairing organism respiration or clogging the filtering capacity of filter feeders); and other effects. Cumulative impacts include long-term reduction of fish, shellfish, and plant populations, thereby decreasing the productivity and diversity of coastal waters and estuaries. Excess sediment loading also increases the need for maintenance dredging of recreational boat areas and ship channels. Moreover, sediments transports pollutants. For example, petroleum hydrocarbons accumulate in sediments, are highly persistent, are toxic to aquatic life at low concentrations, and are potential human carcinogens (U.S. EPA, 1993a). Acute and sublethal toxic effects on marine organisms include altered reproduction and feeding behavior.

As discussed above, the applicant has proposed an Erosion and Sedimentation Control Plan (Exhibit No. 8) to address erosion and sedimentation control during the construction process and a Stormwater Management Plan (Exhibit No. 6) and Revegetation Plan (Exhibit No. 7) to address post-construction Best Management Practices (BMPs).

The Erosion and Sedimentation Control Plan (Exhibit No. 8) proposes, in part, to (1) establish the construction materials storage and equipment staging area a minimum of 100 feet from the bay shoreline; (2) install and maintain silt fencing, straw bales, and/or fiber rolls along the perimeter of the storage/staging areas as needed for erosion and sedimentation control; (3) erect and maintain silt fencing along the western boundary of the work area to prevent sediment-laden runoff from entering the bay during construction; (4) retain vegetation buffers along the western side of the site as permanent erosion and sediment control measures; (5) establish a temporary concrete washout in an upland area on the eastern side of the parcel, over 100 feet from the bay

shoreline; and (6) dispose of any excess soil and fill material resulting from the project, including accumulated sediment from the silt fencing, at the County's Table Bluff inert cell waste disposal site. The applicant states that the proposed Erosion and Sedimentation Control Plan will be used by the selected construction contractor as the basis for preparing a formal Stormwater Pollution Prevention Plan (SWPPP) prepared in accordance with State Water Resources Control Board Water Quality Order 99-08-DWQ (construction activity general permit).

To ensure that the applicant incorporates the proposed construction Best Management Practices (BMPs) into the contractor SWPPP as proposed, the Commission attaches **Special Condition No. 2**. This condition requires that prior to commencement of construction, the applicant must submit final plans for stormwater pollution prevention during construction activities that include all the BMP components of the submitted Erosion and Sedimentation Control Plan (Exhibit No. 8).

To further ensure that construction protocols adequately protect water quality, the Commission attaches Special Condition No. 3. **Special Condition No. 3** lists several general construction responsibilities that must be adhered to, such as requirements that: (a) no construction materials, debris, or waste shall be placed or stored where it may be subject to wave erosion and dispersion; (b) any and all debris resulting from construction activities shall be removed from the project site and disposed of at an authorized disposal location within 10 days of project completion and/or prior to the onset of the rainy season, whichever is earlier; (c) any debris discharged into coastal waters shall be recovered immediately and disposed of properly; (d) 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; (e) upon completion of construction activities and prior to the onset of the rainy season, all bare soil areas shall be seeded in compliance with Special Condition No. 3; (f) any fueling and maintenance of construction equipment shall occur within upland areas outside of environmentally sensitive habitat areas or within designated staging areas; and (g) fuels, lubricants, and solvents shall not be allowed to enter the coastal waters or wetlands.

The applicant's Stormwater Management Plan (Exhibit No. 6) and Revegetation Plan (Exhibit No. 7) are proposed to address stormwater management of the site post-construction, for the life of the project. The project area is approximately 2.5 acres in size, is generally flat, has a shallow water table and mostly poorly-drained soils, and the site is not equipped with an on-site storm drain system (a stormwater pipe from the Fields Landing residential area passes under the northern part of the project area to a tide gate). The proposed project will result in an additional half-acre of impermeable substrate above existing conditions (currently there is approximately 1.3-acres of impermeable pavement).

In general, to address the resulting increased runoff, which is expected to potentially harbor pollutants such as sediment, petroleum hydrocarbons, and metals given that the site is a parking lot for a boat ramp facility, the applicant proposes flow-based (rather than volume-based) post-construction BMPs designed to treat the amount of stormwater runoff produced by a rain event equivalent to at least two times the 85th-percentile hourly rainfall intensity for the area. The

"85th-percentile, 1-hour" design goal is applicable to flow-based BMPs that remove pollutants primarily through filtering and limited settling, including media filters such as filter inserts in catch basins, oil/water separators, and biofilters such as vegetated filter strips. An appropriate safety factor of at least 2 is needed to deal with the reduced efficiency that occurs with flow-through BMPs that are not adequately maintained.

The applicant's Stormwater Management Plan (Exhibit No. 6) follows recommendations in the California Stormwater Quality Association's (CSQA) Stormwater BMP Handbook, which includes recommendations that flow-based BMPs are designed to provide sufficient treatment for the rain event equal to at least two times the 85th-percentile hourly rainfall intensity for the area (which equates to 0.18 inches per hour for the Eureka area). The applicant proposes to use "vegetation buffer strips" as the preferred treatment control BMP for post-construction stormwater management on the site. Vegetated buffer strips are vegetated surfaces designed to treat sheet flow from adjacent surfaces through biofiltration. The slow movement of runoff through the vegetation at shallow depths provides an opportunity for sediments and particulates to be filtered and degraded through biological activity, while soils infiltrate a percentage of the runoff, providing treatment of dissolved constituents. Buffer strips are reported to be most effective on gently sloping areas with small drainage catchments where the vegetative cover is robust and diffuse, and where shallow, uniformly distributed flow characteristics are possible.

The CSQA Handbook recommends that vegetated buffer strips be at least 15 feet wide (in the direction of flow), on slopes of 15 percent or less, and composed of either grass or a diversity of low-growing, drought tolerant native vegetation. The applicant's Stormwater Management Plan proposes to maintain vegetated buffer strips of at least 15 to 40 feet wide (in the direction of flow, which is westward). There is an existing 15-foot-wide strip of vegetation on the northern parcel (where the new parking area is proposed), which would be maintained and enhanced according to the proposed Revegetation Plan (Exhibit No. 7). Due to vehicle disturbance on the site, parts of the vegetated buffer strip area on the northern parcel are devoid of vegetation. These areas would be planted with native grass species and other species native to coastal dune habitats (a total of 500 plants is recommended for installation in the buffer area). Post revegetation monitoring is proposed to occur for two years following planting to ensure a survival rate of at least 60 percent and a combined coverage of least 50 percent native grass and dune mat species (some invasive weeds, such as dense-flowered cordgrass, currently occur in the buffer strip, and these are proposed to be removed prior to planting and during the monitoring period as needed). The proposed vegetated buffer strips would occur along the western length of the two parcels, between the parking areas and the bay, and would be separated from parking areas by an asphalt-concrete curb with cut-out openings every 15 feet to allow sheet flow to pass from the impervious (paved) to the pervious (vegetated buffer strip) areas for treatment.

To ensure that the applicant incorporates the proposed Revegetation Plan as proposed, the Commission attaches **Special Condition No. 4**. This condition requires, in part, that vegetation on the site shall be revegetated according to the proposed Revegetation Plan, that only native species be planted, and that all proposed plantings shall be maintained in good growing conditions throughout the life of the project, and whenever necessary, shall be replaced with new plant materials to ensure continued compliance with the revegetation plan.

According to the CSQA Handbook, vegetated buffer strips are rated as having high effectiveness for sediment, metals, and oil and grease, but only medium effectiveness for trash and organics and low effectiveness for nutrients and bacteria. The proposed Stormwater Management Plan proposes to maintain the stormwater BMPs on site by inspecting the site twice per month for trash and debris and removing any trash and debris found. The applicant also proposes to inspect and maintain the buffer strips regularly for signs of erosion, vegetation loss, or channelized flow.

Although the stormwater treatment BMPs and maintenance activities proposed by the Stormwater Management Plan are appropriate, they may not be sufficient or go far enough to ensure that stormwater runoff will be adequately treated prior to being discharged into the bay. For example, the County admits that vegetated filter strips are not very effective at treating trash, yet the Stormwater Management Plan's proposal to inspect the area only twice a month for trash and debris that could accumulate on the site may not be sufficient during peak usage periods (e.g., June through October). To ensure that the proposed post-construction stormwater BMPs operate effectively not only to prevent and control polluted runoff, but also to capture trash which could accumulate on the site and ultimately pollute the bay and harm marine resources, the Commission attaches Special Condition No. 5. **Special Condition No. 5** requires submittal of a revised stormwater management plan that includes a provision for ongoing maintenance of the site to include weekly rather than bimonthly site inspections for trash and debris during the peak usage season (June through October). The revised plan also shall include a provision for monitoring and maintaining the filter strips for the life of the project, and for the repair of damaged or denuded areas as necessary prior to the onset of each rainy season.

As discussed above in Finding IV-C, the current parking facility consists of 41 spaces: 28 for vehicles only and 13 large enough to accommodate vehicles with boat trailers. The proposed project will add 34 new parking spaces to the facility for a total of 75 parking spaces, including the creation of 39 spaces large enough to accommodate vehicles with boat trailers. Thus, the proposed improvements may result in higher intensity usage of the facility by recreational boaters. Recreational boating can have significant adverse effects on water quality and the biological productivity of coastal waters, such as an increase in plastics and debris dumped or inadvertently spilled into the marine environment, an increased potential for fuel, oil, oily wastes, and other hazardous substances to enter coastal waters, and the inadvertent spread of invasive aquatic organisms (e.g., Japanese eelgrass, zebra mussel, New Zealand mudsnail, etc.), among others. The discharge of pollutants associated with boating activities such as chemicals, petroleum, cleaning agents, and sewage to coastal waters can cause cumulative impacts such as eutrophication and anoxic conditions resulting in fish kills and diseases and the alteration of aquatic habitat, including adverse changes to species composition and size; excess nutrients causing algae blooms and sedimentation increasing turbidity which both reduce the penetration of sunlight needed by aquatic vegetation which provide food and cover for aquatic species; disruptions to the reproductive cycle of aquatic species; and acute and sublethal toxicity in marine organisms leading to adverse changes in reproduction and feeding behavior. These impacts reduce the biological productivity and the quality of coastal waters, reduce optimum populations of marine organisms, and have adverse impacts on human health.

Such cumulative impacts can be minimized through the implementation of boating BMPs such as performing boat maintenance above the waterline such that no debris falls into the water; having boaters regularly inspect and maintain engines, seals, gaskets, lines, and hoses in order to prevent oil and fuel spills, and disposing of all trash, recyclables, and hazardous wastes in a proper manner, among other BMPs. The spread of invasive aquatic organisms can be prevented by effectively washing boats and marine gear after leaving one water body and before entering the next. The Fields Landing Boat Ramp facility is not equipped with a boat wash station, nor is one proposed under the current application. The applicant has not proposed any measures to mitigate the potentially significant adverse impacts associated with the potential increase in boating use in the area.

The Commission finds that educating boaters on environmentally sound boating practices and appropriate use of the site is an effective means of preventing some of the boating-associated impacts to water quality and marine resources discussed above. The Commission's "Boating Clean and Green Campaign," in partnership with the Department of Boating and Waterways, has been conducting public education and outreach on boating BMPs for over 12 years. The program offers informational signage and various other resources to help inform the public on boating BMPs. These and other educational resources could be utilized to develop an interpretive panel at the County's boat ramp facility to educate users of the facility about practices to reduce boating pollution and the spread of invasive aquatic species attached to boats launched at the site. As installation of such an interpretive panel would help reduce boating pollution and the spread of invasive species and help maintain and enhance the biological productivity and the quality of coastal waters, the Commission attaches Special Condition No. 6. **Special Condition No. 6** requires that the applicant submit, prior to permit issuance, a plan for the installation and maintenance of an "environmentally sound boating practices" interpretive panel. The panel shall be sited in a conspicuous location at the boat ramp facility to help educate the public on practices to prevent pollution from boating activities and use of the site and how to prevent the spread of invasive aquatic species attached to boats to be launched at the boat launch ramp.

The Commission finds that the proposed development will be sited and designed to prevent impacts that would significantly degrade the adjacent bay ESHA and will be compatible with the continuance of this habitat. The Commission notes that the existing boat ramp launching facility has the potential to affect adjacent ESHA through polluted runoff, light pollution (from existing lighting), noise, the introduction of invasive plants, and other impacts. Most of these impacts are existing both in the existing parking lot (County-owned parcel) and with the existing use of the undeveloped Harbor District parcel (which is disturbed, harbors, invasive plants, and is subject to routine vehicles disturbance). However, Special Condition Nos. 2-5, as discussed above, will serve to protect the adjoining bay ESHA adequately from any increased intensity of use brought about by the project, consistent with Section 30240(b), by requiring that (1) the final SWPPP implement the proposed BMPs for erosion and sedimentation control during construction activities; (2) the site be revegetation and the vegetated buffer strips maintained according to the proposed Revegetation Plan; (3) a revised stormwater management plan include provisions for inspecting the site for trash on a weekly basis during the peak usage season; and (4) the permittee adhere to various construction responsibilities.

The Commission further finds that the use of non-invasive plant species adjacent to ESHAs 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. Although the County does not propose the planting of any nonnative invasive species on site, the Commission attaches Special Condition No. 3-A to ensure that no invasive plant species are seeded or planted in the project area. Special Condition No. 3-A 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.

Moreover, the Commission finds that although not proposed in the Revegetation Plan, 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. 3-C contains a prohibition on the use of such anticoagulant-based rodenticides.

Thus, as conditioned, the Commission finds that the proposed development adjacent to the bay is compatible with the continuance of the ESHA, would not significantly degrade the ESHA and the biological productivity of coastal waters will be assured consistent with Sections 30240, 30230, and 30231 of the Coastal Act.

E. Hazards

1. Applicable Coastal Act Policies and Standards:

Coastal Act Section 30253 states as follows:

> *New development shall do all of the following:*
>
> *(a) Minimize risks to life and property in areas of high geologic, flood, and fire hazard.*
>
> *(b) Assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area or in any way require the construction of protective devices that would substantially alter natural landforms along bluffs and cliffs.* [Emphases added.]

….

2. Consistency Analysis:

Section 30253 requires in part that new development minimize risk to life and property in areas of high flood hazard, assure structural integrity and stability, and neither create nor contribute

significantly to erosion or engender the need for protective devices that would alter natural landforms.

The proposed development will be located along the shoreline of Humboldt Bay. Finished elevations of the proposed parking facility will range between approximately 8.5 and 13 feet above mean sea level. In addition to the proposed new and expanded parking lots, the project proposes to install five new light standards, including one equipped with a tsunami warning siren. The tsunami warning siren will be linked to the tsunami readiness network operated cooperatively by the Humboldt County Office of Emergency Services and the National Weather Service.

Sea level rise is an important consideration for the planning and design of projects in coastal settings. Over time elevated sea level will have a significant influence on the frequency and intensity of wave energy received at shoreline sites, including both storm surge and tsunamis, resulting in accelerated coastal erosion and flooding in such locales.

There is much controversy and uncertainty about future global or local sea levels, and guidance on how to address sea level rise in the planning and permitting process is evolving as new information on climate change and related oceanic responses become available. The Commission, like many others permitting agencies, has undertaken past assessments of sea level rise effects using the principal of "uniformitarianism" as guidance — that natural processes such as erosion, deposition, and sea level changes occur at relatively uniform rates over time rather than in episodic or sudden catastrophic events. As a result, future ocean surface elevations have been extrapolated from current levels using historical rates of sea level rise measured over the last century. For much of the California coast, this equates to a rate of about 8 inches per 100 years. Rates of up to one foot per century have typically been used to account for regional variation and to provide for some degree of uncertainty in the form of a safety factor.

Several more recent references for sea level rise planning (e.g., a 2007 report prepared by Dr. Stefan Rahmstorf of the Potsdam Institute for Climate Impact Research) predict that as time increases, the rate of sea level rise will increase. Thus, it is projected that the second half of the 21st century will have a more rapid rise in sea level than the first half. The Rahmstorf report, for example, predicts that the increase in sea level from 1990 to 2050 will be from about 8 inches to 17 inches (for a rate of 0.13 to 0.28 inches/year); from 1990 to 2075, the increase in sea level would be from about 13 inches to 31 inches (for a rate of 0.15 to 0.36 inches/year) and that the most rapid change in sea level will occur toward the end of the 21st century.

Based on the fact the original Fields Landing boat ramp launching facility was constructed in the late 1950s, and the subject development involves a significant upgrade and redevelopment of the facility occurring approximately 50 years later, the projected economic lifespan of the proposed development is about 50 years. No evidence is before the Commission that the project's proposed finished elevations of at least 8.5 feet above mean sea level would not be sufficient to withstand flood hazards associated with sea level rise for the 50-year life expectancy of the project. Nevertheless, no guarantees can be made regarding the safety of the proposed development with respect to sea level rise. Although there are many useful records of historic sea

level change, there is little certainty about how these trends will change with possible large increases in atmospheric greenhouse gas emissions and air temperatures.

Therefore, the Commission finds that the proposed development could not be approved as being consistent with Section 30253 if future sea level rise exacerbates the frequency and intensity of wave energy received at the site, including both storm surge and tsunamis, resulting in accelerated erosion and flooding at the site, thereby affecting the proposed development and necessitating construction of a seawall to protect it.

The Commission thus finds that the proposed development is consistent with Section 30253 only if it is conditioned to provide that future shoreline protection will not be constructed. **Special Condition No. 7** prohibits the construction of shoreline protective devices on the project site, requires that the landowner provide a geotechnical investigation and remove the permitted parking facility, lighting standards, and restroom if sea level rise reaches the point where the permitted development is threatened, and requires that the landowners accept sole responsibility for the removal of any structural debris resulting from erosion of the site. These requirements are necessary for compliance with Section 30253, which states that new development shall minimize risk to life and property in areas of high flood hazard, assure structural integrity and stability, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding areas, nor in any way require the construction of protective devices that would substantially alter natural landforms. The Commission finds that the proposed development could not be approved as being consistent with Section 30253 if future sea level rise would affect the proposed development and necessitate construction of a seawall to protect it. Furthermore, because the proposed improvements are not habitable and do not require extensive grading or landform alteration, there is a reasonable expectation of their removal if and when the proposed improvements become endangered.

Special Condition No. 8 requires the County to assume the risks of extraordinary erosion and flood hazards of the property and waive any claim of liability on the part of the Commission. Given that the applicant has chosen to implement the project despite these risks, the applicant must assume the risks. In this way, the applicant is notified that the Commission is not liable for damage as a result of approving the permit for development. The condition also requires the applicant to indemnify the Commission in the event that third parties bring an action against the Commission as a result of the failure of the development to withstand hazards.

In addition, as noted above, some risks of an unforeseen natural disaster, such as a major storm accompanied by high tides and significant storm surge could result in destruction or partial destruction of the new and expanded parking lots, light standards, restroom or other development approved by the Commission. Furthermore, the development itself and its maintenance may cause future problems that were not anticipated. As a precaution, in case such an unexpected event occurs on the subject property, Special Condition No. 7-B requires the County to accept sole responsibility for the removal of any structural debris resulting from erosion on the site, and agree to remove the new and expanded parking lots, light standards, restroom, and other permitted development should sea level rise reach the point where a government agency has ordered that the facility not be occupied.

The Commission thus finds that the proposed development, as conditioned, is consistent with Section 30253, since the development as conditioned will not contribute significantly to the creation of any flood hazards, will not have adverse impacts on erosion, and will not require the construction of shoreline protective works. Only as conditioned is the proposed development consistent with Section 30253.

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 a public boat launching facility located on the shoreline of Humboldt Bay. The site also provides picnicking and birdwatching opportunities given its location on the bay and the existing picnic table on the site. The project will not effect the existing picnic facility on site. Moreover, the project will enhance public access from the standpoint that the existing concrete block restroom facility on site will be replaced in-kind with a new facility located approximately 25 feet to the southeast. 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. The applicant proposes to maintain access to the boat ramp and some parking throughout the project duration. Additionally, as discussed above, the applicant proposes not to perform work during the recreational salmon fishing season (i.e., between August 29 and September 7, 2009) to avoid conflicts with boaters and fishermen. To ensure that this is the case and public access is not adversely affected, the Commission attaches Special Condition No. 1. As discussed above, this condition protects public boating access by restricting the timing of work to avoid the recreational salmon fishing season.

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.

G. Protection of Visual Resources

1. Applicable Coastal Act Policies and Standards:

Coastal Act Section 30251 states, in applicable part, as follows:

> *The scenic and visual qua1ities of coastal areas shall be considered and protected as a resource of public importance. Permitted development shall be sited and designed to protect views to and along the ocean and scenic coastal areas, to minimize the alteration of natural land forms, to be visually compatible with the character of surrounding areas and, where feasible, to restore and enhance visual qua1ity in visually degraded areas. New development in highly scenic areas…shall be subordinate to the character of its setting.*

2. Consistency Analysis:

The subject property is not located within a highly scenic area. Additionally, the project will not result in the alteration of natural landforms, as the site is generally flat and will require only a minimal amount of grading. Moreover, the installation of four new 22-foot-high light standards and one new 29-foot-high tsunami warning siren as proposed will not significantly block views to the bay. For the five new structures, each will be no wider than a typical utility pole, and they will be widely separated across the 2.5-acre parking area. The proposed heights of the structures are in conformance with County's zoning regulations, which allow for a maximum structure height of 35 feet in the PR district and 75 feet in the MC district. The project is also generally visually compatible with the relatively open, industrial character of the surrounding area.

However, exterior lighting can impact visual resources by creating excessive glare (e.g., which would be out of character with an otherwise rural setting) and impact biological resources by disturbing nocturnal wildlife (e.g., many species avoid areas with excessive lighting, and some species simply stop reproducing if habitat destruction from overly bright lights becomes too severe). The new light standards propose to limit glare and sky glow by meeting the Illuminating Engineering Society of America classification for full cutoff or cutoff lights. To ensure that the effects of project's proposed lighting are minimized, the Commission attaches **Special Condition No. 9**. This condition requires that all exterior lights shall be low-wattage, non-reflective, shielded, and have a directional cast downward such that no light will shine beyond the boundaries of the subject parcels or into the bay.

Therefore, the Commission finds that the project, as conditioned, is consistent with Section 30251, as the project will not adversely affect views to or along the coast, result in major landform alteration, or be incompatible with the character of the surrounding area.

H. California Environmental Quality Act

The County of Humboldt, as the lead agency, adopted a Negative Declaration for the Fields Landing Boat Ramp Parking and Public Safety Enhancement Project on January 8, 2008 (SCH No. 2007122015).

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. Assessor's Parcel Map
4. Existing Site Features
5. Proposed Project Plans
6. Stormwater Management Plan
7. Revegetation Plan
8. Erosion & Sedimentation Control Plan

APPENDIX A

STANDARD CONDITIONS

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

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

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

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

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

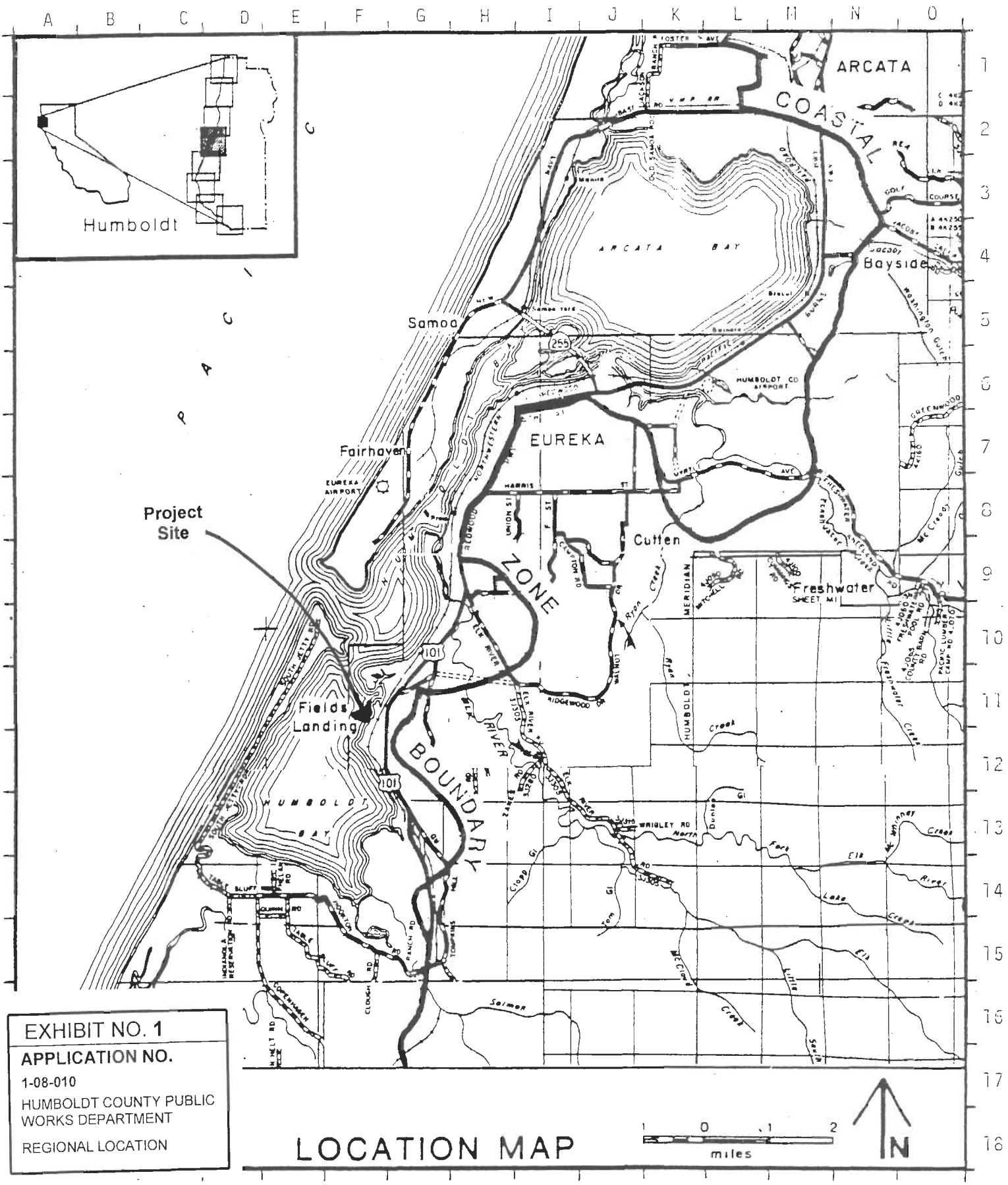


EXHIBIT NO. 1

APPLICATION NO.

1-08-010

HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT

REGIONAL LOCATION

LOCATION MAP

County of Humboldt

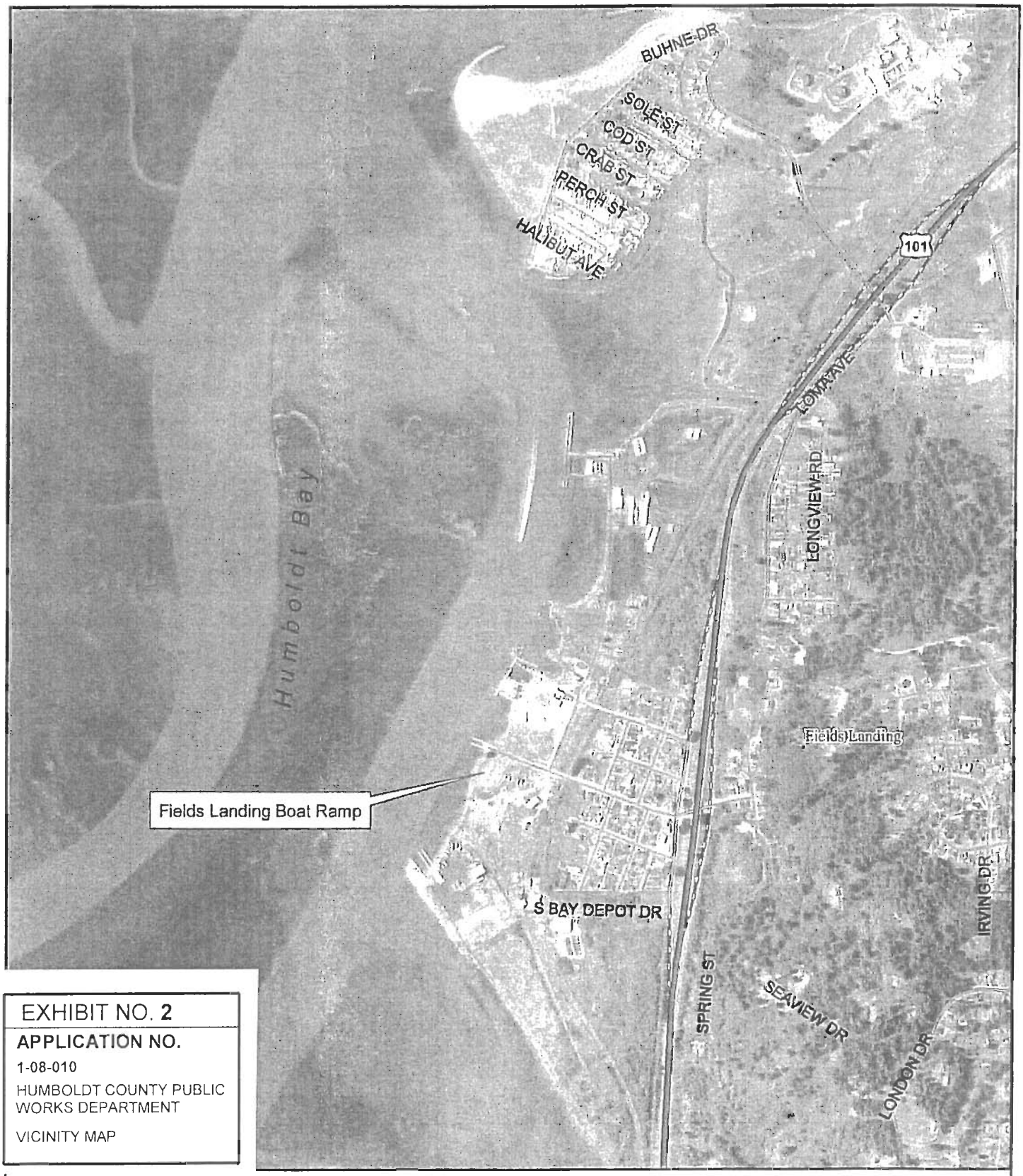


EXHIBIT NO. **2**

APPLICATION NO.

1-08-010

HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT

VICINITY MAP

FIGURE 1
SITE LOCATION MAP
FIELDS LANDING BOAT RAMP
FIELDS LANDING, HUMBOLDT COUNTY

1 inch equals 1,000 feet

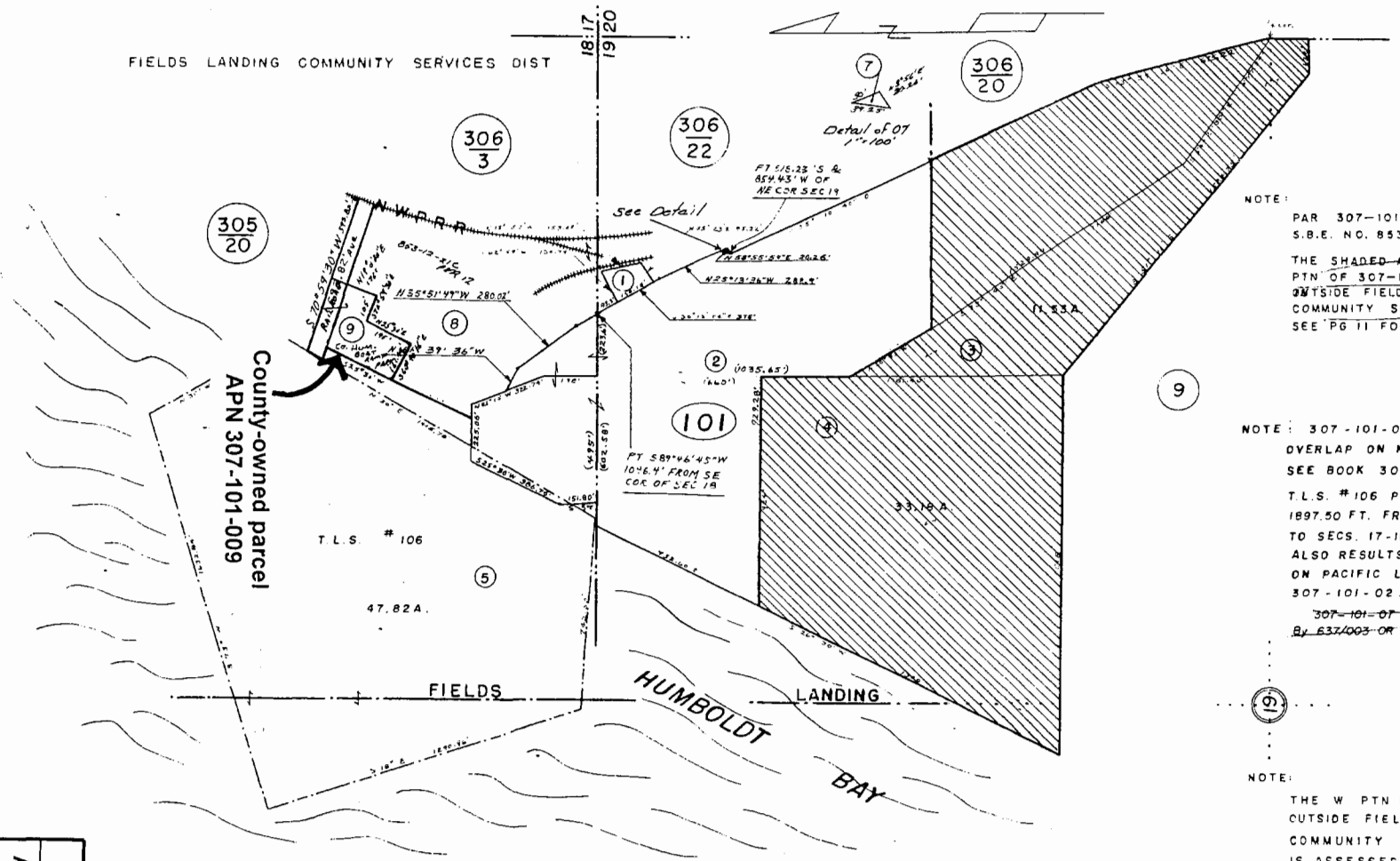
0 0.03 0.06 0.12 0.18 0.24 0.3
Miles

N
W E
S

PTN SECS 18 & 19, 4N, 1W

307-10

1" = 400'



NOTE:
PAR 307-101-06 = S.B.E. NO. 853-12-21C-12

THE ~~SHADED AREA IS~~ THAT PTN OF 307-10 ASSESSED ~~OUTSIDE~~ INSIDE FIELDS LANDING COMMUNITY SERVICES DIST. SEE PG 11 FOR DETAIL.

NOTE: 307-101-01 APPEARS TO OVERLAP ON N.W.P. PROPERTY. SEE BOOK 306 P 20.

T.L.S. #106 PT. OF BEG. IS 1897.50 FT. FROM COR. COMMON TO SECS. 17-18-19-20 WHICH ALSO RESULTS IN OVERLAP ON PACIFIC LUMBER CO. 307-101-02.

~~307-101-07 South Bay Sanitation Dist. By 637/003 OR~~

NOTE:
THE W PTN OF PAR 307-101-05 OUTSIDE FIELDS LANDING COMMUNITY SERVICES DIST IS ASSESSED INSIDE THE DIST.

EXHIBIT NO. 3

APPLICATION NO.
1-08-010

HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT

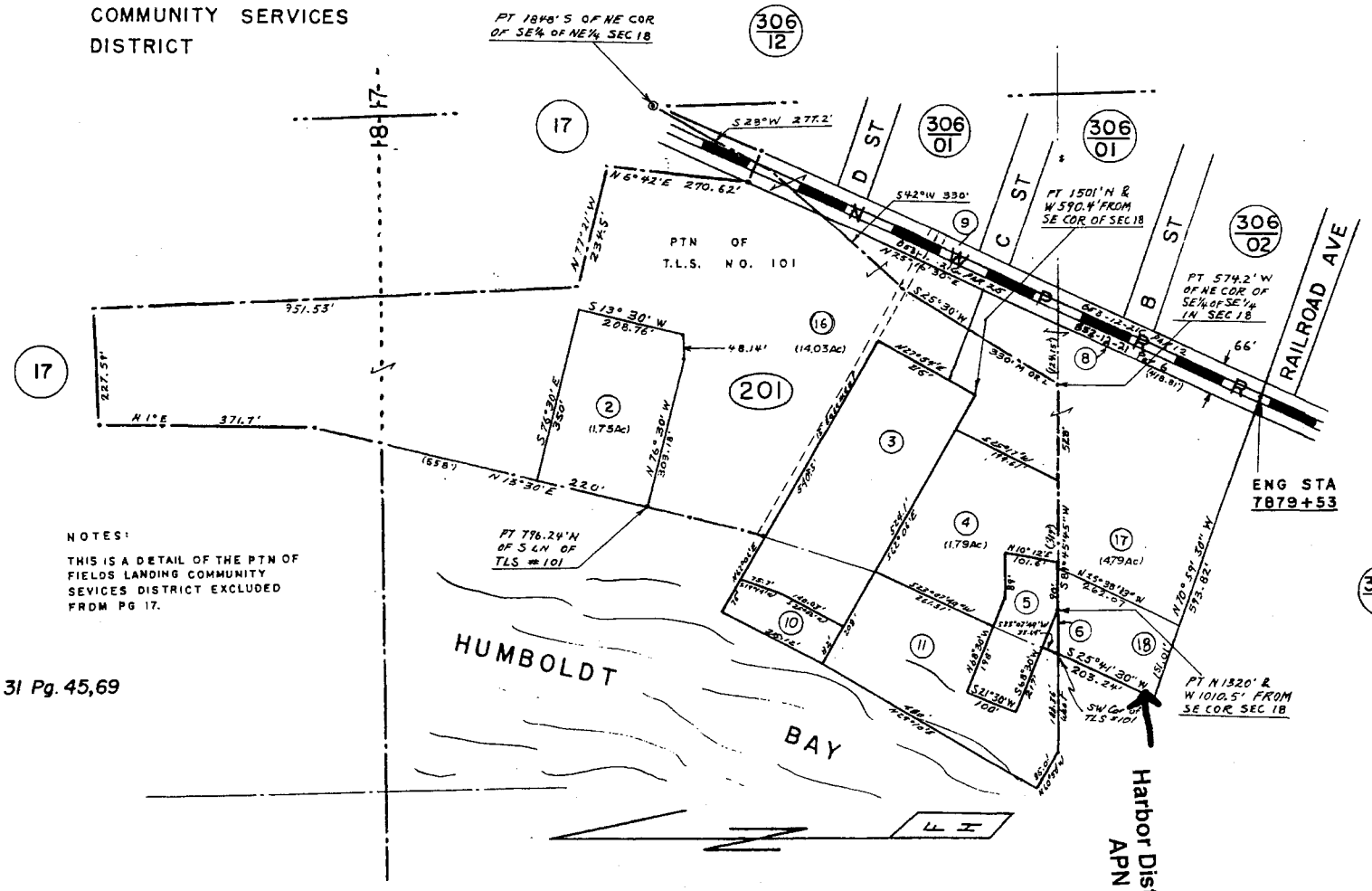
ASSESSOR'S PARCEL MAP
(1 of 2)

PTN OF SEC 18, 4N, 1W

305-20

1" = 200'

FIELDS LANDING
COMMUNITY SERVICES
DISTRICT



NOTES:

THIS IS A DETAIL OF THE PTN OF FIELDS LANDING COMMUNITY SEVICES DISTRICT EXCLUDED FROM PG 17.

O.S. Bk. 31 Pg. 45,69

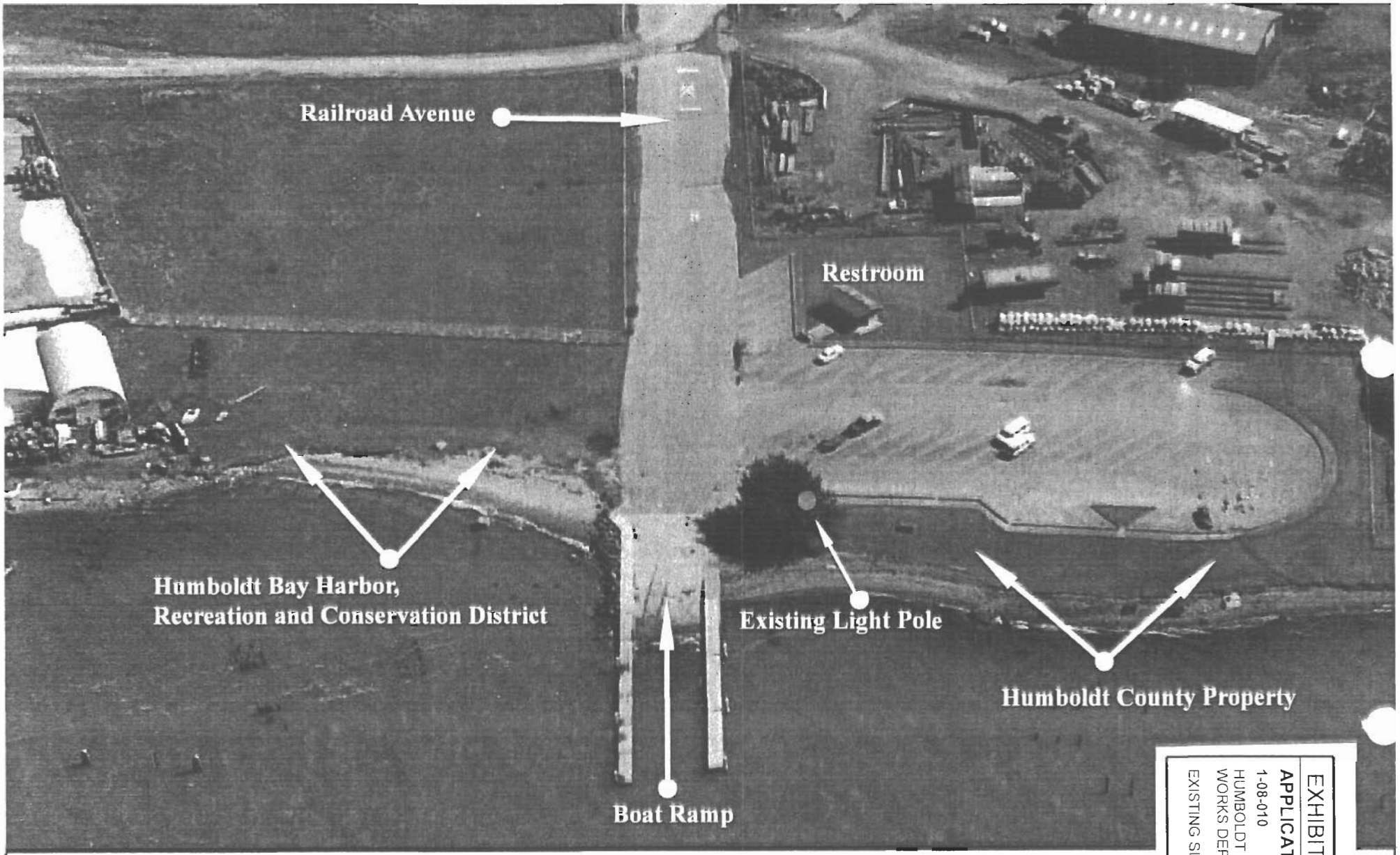


EXHIBIT NO. 4
APPLICATION NO.
1-08-010
HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT
EXISTING SITE FEATURES

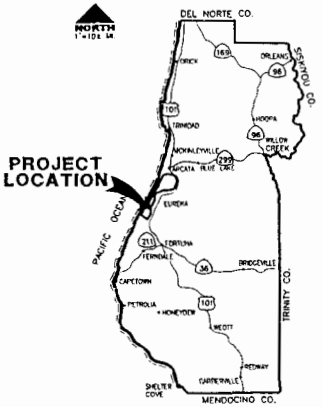
FIGURE 3 - SITE FEATURES

North

Parking and Public Safety Enhancement Project
Fields Landing Boat Ramp

Humboldt County Public Works Department

BAR IS ONE INCH ON ORIGINAL DRAWING	ROAD NAME: RAILROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 1 OF 9
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	ROAD NO: C3A740	MILE POST: N/A	DESIGNED BY: HS	FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT	
	PROJECT NO.: 713600	EA NO.: N/A	DRAWN BY: MDG		
	CONTRACT NO.: N/A	PPNO: N/A	REVIEWED BY: HS	COVER SHEET, SHEET INDEX AND DETAILS	
	DRAWING FILE NAME: L:\PROJECTS\713600 (Max landing - portion)\DWG\C2SHEET.DWG		APPROVED BY: HS		
	PLOT DATE: 4/8/09	REVISION DATE:			

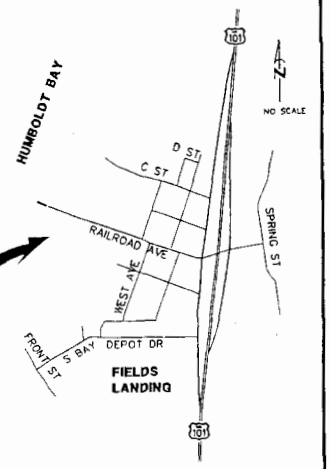


LOCATION MAP
SCALE: 1"=10± MILE

COUNTY OF HUMBOLDT
DEPARTMENT OF PUBLIC WORKS

PROJECT PLANS FOR CONSTRUCTION OF

FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT
CONTRACT NO. 713600



VICINITY MAP
N.T.S.

INDEX OF SHEETS

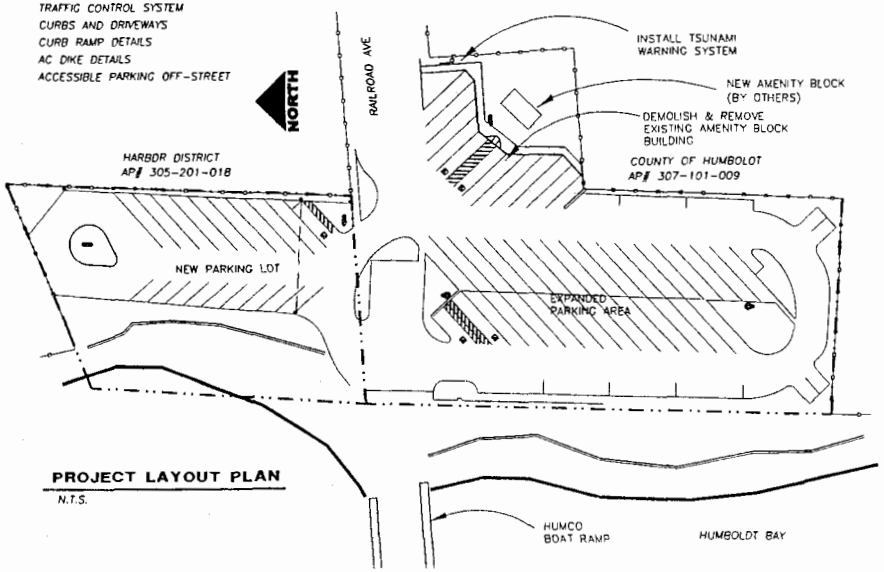
NOTES
THE CONTRACTOR SHALL HAVE A CLASS "A" FOR THIS PROJECT.

APPLICABLE STANDARD PLANS

REFERENCE TO CALTRANS STANDARD PLANS DATED MAY 2006.

A10A	
A10B	SYMBOLS
T1-T2	TEMPORARY CRASH CUSHION
T3	TEMPORARY RAILING (TYPE K)
T13	TRAFFIC CONTROL SYSTEM
A87A	CURBS AND DRIVEWAYS
A88A	CURB RAMP DETAILS
A87B	AC DIKE DETAILS
A9DA	ACCESSIBLE PARKING OFF-STREET

COUNTY OF HUMBOLDT · IN THE REDWOODS ·



PROJECT LAYOUT PLAN
N.T.S.

RECOMMENDED

ROBERT L. BURNETT
RCE 36210, EXP. 6/30/2010 — DATE

REGISTERED PROFESSIONAL ENGINEER · ROBERT L. BURNETT · NO. 36210 EXP. 06/30/10 · CIVIL · STATE OF CALIFORNIA

APPROVED

CHRISTOPHER J. WHITWORTH
RCE 51931, EXP. 6/30/2010 — DATE

REGISTERED PROFESSIONAL ENGINEER · CHRISTOPHER J. WHITWORTH · NO. 51931 EXP. 06/30/10 · CIVIL · STATE OF CALIFORNIA

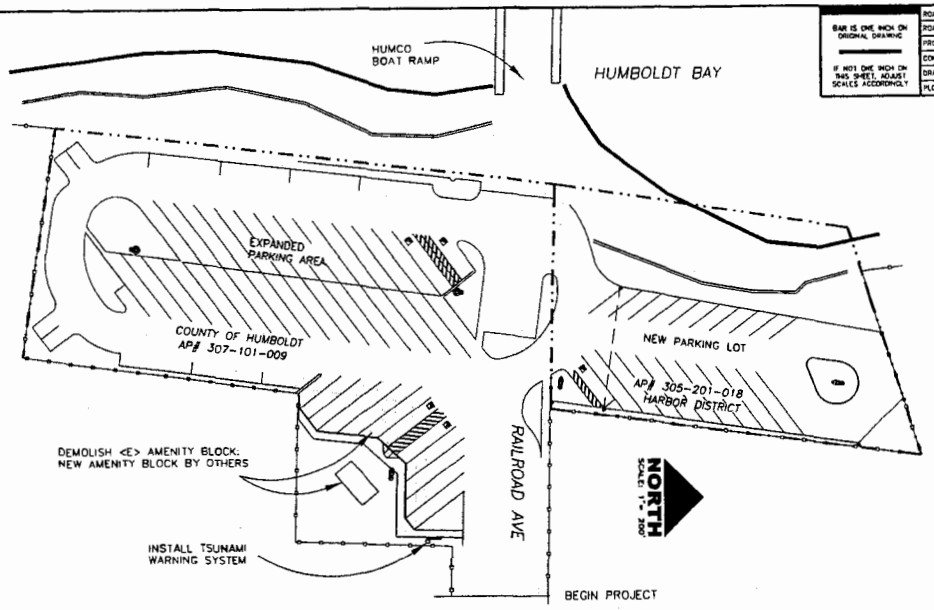
GRANT FUNDS PROVIDED BY:

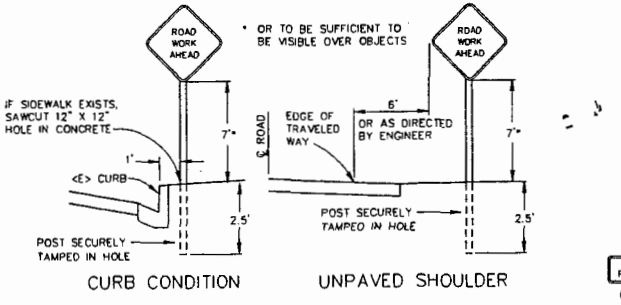
WCB State Wildli

EXHIBIT NO. 5
APPLICATION NO. 1-08-010
HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT
PROJECT PLANS (1 of 7)

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

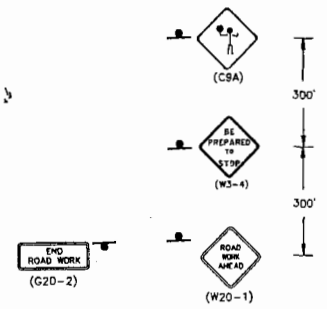
BAR IS ONE INCH ON ORIGINAL DRAWING	ROAD NAME: RAILROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 2 OF 9
	ROAD NO.: C3J740	MILE POST: N/A	DESIGNED BY: MS	FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT	
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	PROJECT NO.: 713600	EA NO.: N/A	DRAWN BY: MDG		
	CONTRACT NO.: N/A	PPNO: N/A	REVIEWED BY: MS	TYPICAL SECTIONS, QUANTITIES AND TRAFFIC CONTROL	
	DRAWING FILE NAME: L:\PROJECTS\700305\DWG\CDSH02.DWG		APPROVED BY: MS		
	PLOT DATE: 4/8/09	REVISION DATE:			





URBAN CONSTRUCTION AREA SIGN

- NOT TO SCALE -



TRAFFIC CONTROL PLAN

1"=200'±

QUANTITIES

ITEM NO.	ITEM CODE		ITEM DESCRIPTION	UNIT	BID QUANTITY
1	74016		CONSTRUCTION SITE MANAGEMENT	LS	1
2	74017		PREPARE STORMWATER POLLUTION PREVENTION PLAN	LS	1
3	74029		TEMPORARY SILT FENCE	LF	620
4	74033		TEMPORARY GRAVEL BAG BERM	LF	60
5	74035		TEMPORARY CONCRETE WASHOUT (PORTABLE)	EA	1
6	74041		STREET SWEEPING AND VACUUMING	LS	1
7	120090		CONSTRUCTION AREA SIGNS	EA	4
8	120100		TRAFFIC CONTROL SYSTEM	LS	1
9	150769		REMOVE ASPHALT CONCRETE	CY	34
10	150771		REMOVE ASPHALT CONCRETE DIKE	LF	950
11	160101		CLEARING AND GRUBBING	LS	1
12	160130		REMOVE BUILDING	LS	1
13	190101		ROADWAY EXCAVATION	CY	900
14	203015	S	EROSION CONTROL / LANDSCAPING	LS	1
15	260301	S	CLASS 3 AGGREGATE BASE	CY	650
16	390095		REPLACE ASPHALT CONCRETE SURFACING	CY	20
17	394001		PLACE ASPHALT CONCRETE DIKE	LF	2,150
18	390121	S	ASPHALT CONCRETE (TYPE A, 3/4" MAX GRADING)	TON	1,100
19	566011		ROADSIDE SIGN - ONE POST	EA	7
20	731627		MINOR CONCRETE (CURB, SIDEWALK AND CURB RAMP)	CY	20
21	840651		PAINTED STALL LINES AND PAVEMENT MARKINGS	LS	1
22	860407		LIGHTING (PARKING LOT)	LS	1
23	900000	S	TSUNAMI SIREN CONTROLLER	EA	1
24	900000	S	TSUNAMI SIREN PREPARATION / INSTALLATION	LS	1
25	999999		MOBILIZATION	LS	1

WORK SCHEDULE & SEQUENCE

1. ACCESS TO THE BOAT RAMP AND SOME PARKING SHALL BE MAINTAINED THROUGH OUT THE PROJECT DURATION.

2. NO WORK SHALL BE PERFORMED FROM AUGUST 29 THROUGH SEPTEMBER 7, 2009 TO ACCOMMODATE THE RECREATIONAL SALMON FISHING SEASON.

3. CONSTRUCTION OF NEW PARKING AREA ON THE HARBOR DISTRICT PARCEL SHALL BE COMPLETED PRIOR TO BEGINNING WORK ON THE PARKING AREA EXPANSION ON THE COUNTY PARCEL.

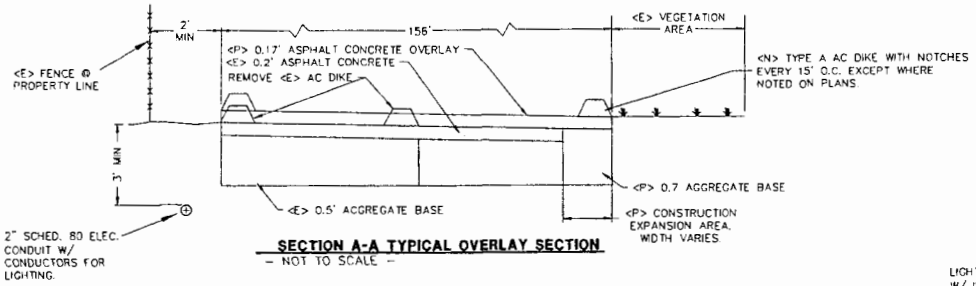
CONSTRUCTION AREA SIGN SUMMARY

SIGN TYPE	QTY	DESCRIPTION	SIZE	REMARKS	POST	NUMBER SIZE
W20-1	1	ROAD WORK AHEAD	36" x 36"	VISIBLE AT ALL TIMES	4" x 4"	1
C9-A	1	FLAGMAN AHEAD	36 x 36	COVERED WHEN NOT IN USE	4 x 4	1
G20-2	1	END ROAD WORK	36" x 18"	VISIBLE AT ALL TIMES	4 x 4	1
W3-4	1	BE PREPARED TO STOP	36" x 18"	COVERED WHEN NOT IN USE	4 x 4	1

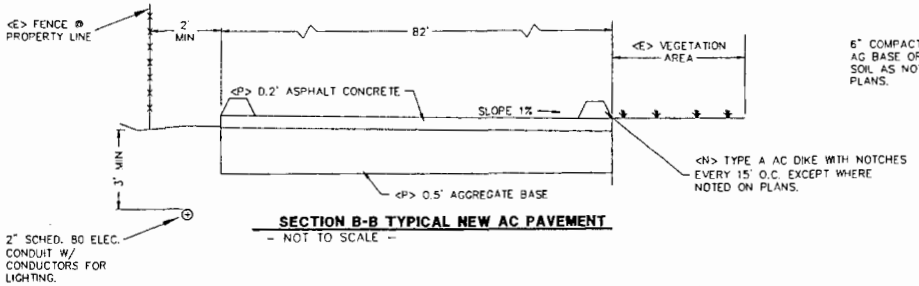
SIGN NOTES

1) SIGNS SHALL BE PLACED AS SHOWN ON PLAN OR AS DIRECTED BY THE ENGINEER.
2) FINAL PLACEMENT OF SIGNS SHALL BE APPROVED BY RESIDENT ENGINEER.
3) ADDITIONAL PORTABLE SIGNS SHALL BE USED AS REQUIRED FOR OTHER ROADSIDE WORK.
4) SEE STANDARD PLAN T13 FOR TRAFFIC CONTROL SYSTEM.
5) IN ADDITION TO CONSTRUCTION AREA SIGNS AND WHEN DIRECTED BY THE RESIDENT ENGINEER, THE CONTRACTOR SHALL UTILIZE FLAGMEN AS NECESSARY TO DIRECT TRAFFIC.
6) DISTANCE TO W20-1 AND G20-2 MAY BE EXTENDED TO ENCOMPASS SITES WITHIN ONE MILE OF EACH OTHER.

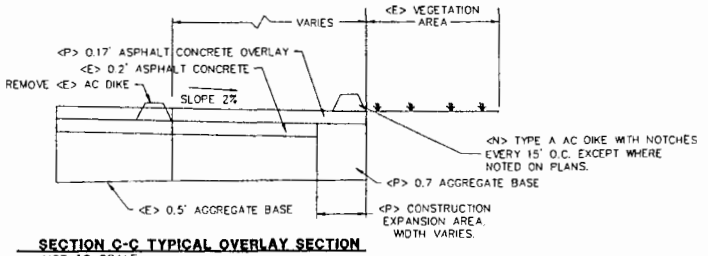
BAR IS ONE INCH ON ORIGINAL DRAWING	ROAD NAME: RAILROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 3 OF 9
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	ROAD NO: C3J740	MILE POST: N/A	DESIGNED BY: HS	FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT	
	PROJECT NO.: 713600	EA NO.: N/A	DRAWN BY: MDG		
	CONTRACT NO.: N/A	PPNO: N/A	REVIEWED BY: HS	TYPICAL SECTIONS, QUANTITIES AND TRAFFIC CONTROL	
	DRAWING FILE NAME: L:\PROJECTS\200305\DWG\CDSN02.DWG		APPROVED BY: HS		
	PLOT DATE: 4/8/09	REVISION DATE:			



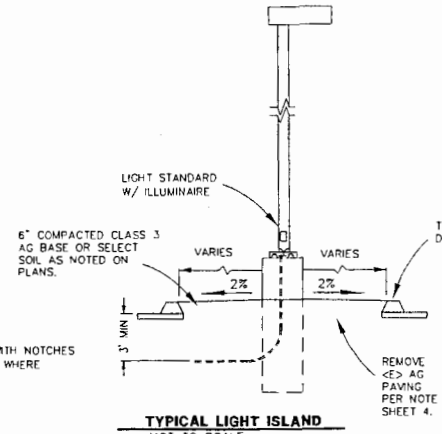
SECTION A-A TYPICAL OVERLAY SECTION
– NOT TO SCALE –



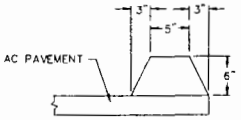
SECTION B-B TYPICAL NEW AC PAVEMENT
– NOT TO SCALE –



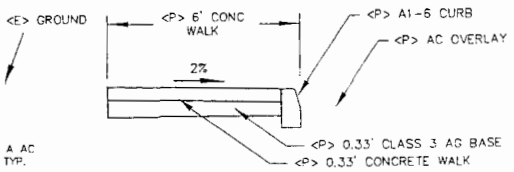
SECTION C-C TYPICAL OVERLAY SECTION
– NOT TO SCALE –



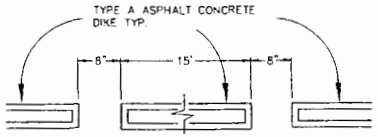
TYPICAL LIGHT ISLAND
– NOT TO SCALE –



TYPE "A" AC DIKE
– NOT TO SCALE –

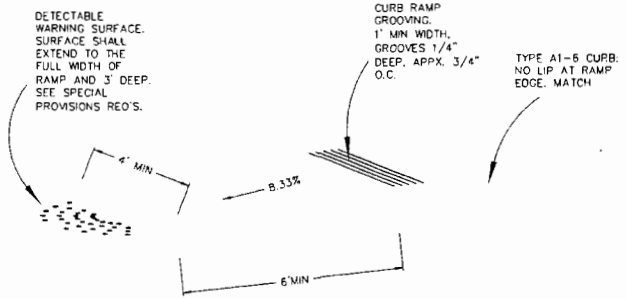


TYPICAL SECTION 6' CONCRETE WALK
– NOT TO SCALE –

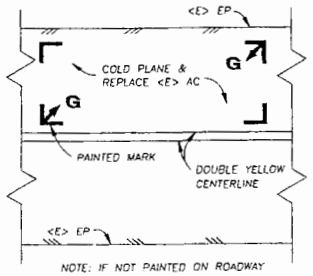


*SLOT TO BE INSTALLED EVERY 15' O.C. ON THE WESTERN PERIMETER UNLESS NOTED OTHERWISE ON PLANS.

AC CURB DETAIL
– NOT TO SCALE –

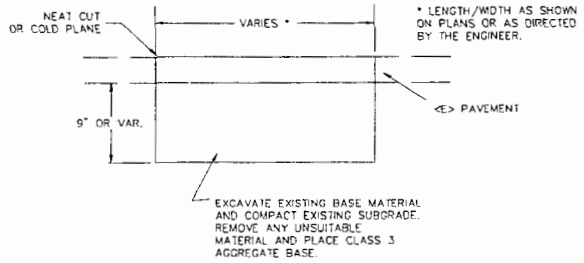


MODIFIED TYPE "C" ADA RAMP DETAIL
– NOT TO SCALE –



NOTE: IF NOT PAINTED ON ROADWAY AS DIRECTED BY ENGINEER

COLD PLANE LIMITS AS PAINTED ON THE ROADWAY
– NOT TO SCALE –



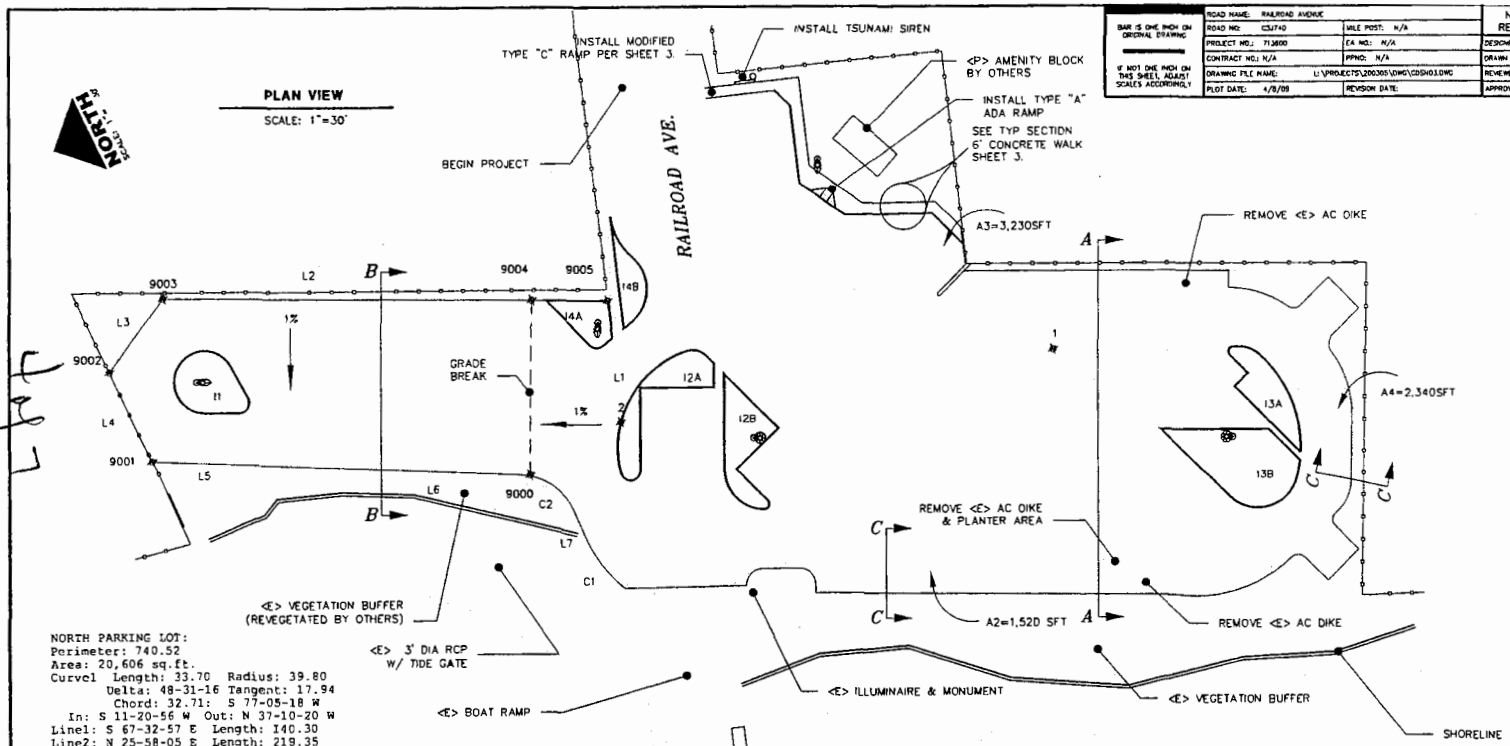
TYPICAL REPLACE A.C. SURFACING DETAIL
– NOT TO SCALE –

BAR IS ONE INCH ON ORIGINAL DRAWING	ROAD NAME: RAILROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	ROAD NO: CSUT40	MILE POST: N/A		FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT
	PROJECT NO.: 713000	EA NO.: N/A	DESIGNED BY: HS	
	CONTRACT NO.: N/A	PPNO: N/A	DRAWN BY: MDG	PLAN & PROFILE
	DRAWING FILE NAME: L:\PROJECTS\200305\DWG\CDSHO1.DWG		REVIEWED BY: HS	
	PLOT DATE: 4/8/09	REVISION DATE:	APPROVED BY: HS	

SHEET 4 OF 9

PLAN VIEW

SCALE: 1"=30'



NORTH PARKING LOT:
Perimeter: 740.52
Area: 20,606 sq.ft.
Curve1 Length: 33.70 Radius: 39.80
Delta: 48-31-16 Tangent: 17.94
Chord: 32.71: S 77-05-18 W
In: S 11-20-56 W Out: N 37-10-20 W
Line1: S 67-32-57 E Length: 140.30
Line2: N 25-58-05 E Length: 219.35
Line3: N 27-57-34 W Length: 44.07
Line4: S 89-55-22 W Length: 48.26
Line5: S 27-54-56 W Length: 58.85
Line6: S 27-54-56 W Length: 120.76
Curve2 Length: 33.45 Radius: 30.00
Delta: 63-52-58 Tangent: 18.70
Chord: 31.74: S 57-54-52 W
In: N 64-01-37 W Out: S 00-08-39 E
Line7: N 88-19-58 W Length: 13.93

SOUTH PARKING LOT:
<E> PAVED AREA: 57,906 sq.ft.
<E> UNPAVED AREA: 18,552 sq.ft.

DESIGN STANDARDS

1. CALIFORNIA STATE PARKS ACCESSIBILITY GUIDELINES, 2009
2. A POLICY ON GEOMETRIC DESIGNOF HIGHWAYS AND STREETS (2001), AMERICAN ASSOCIATION OF STATEHIGHWAY AND TRANSPORTATIONOFFICIALS.
3. LAYOUT, DESIGN AND CONSTRUCTION HANDBOOK (MARCH 1991), CALIFORNIA DEPARTMENT OF BOATING AND WATERWAYS.
4. SPECIFICATIONS FOR NEW LIGHTS: ENGINEERING SOCIETYOF AMERICA (IESNA) CLASSIFICATION. SEE SHEET 6 & 7 FOR DETAILS.

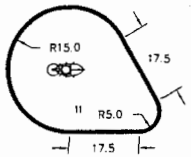
NOTES

1. DEMOLISH EXISTING AMENITY BLOCK. EXTEND EXISTING SEWER AND WATER SERVICE LATERALS 5' MINIMUM BEYOUND PROPOSED CONCRETE WALK. ELECTRICAL SERVICE TO BE RELOCATED PER SHEET 6 & 7.
2. CURBS ON WEST SIDE OF PARKINGAREAS WILL HAVE NOTCHES EVERY 15', EXCEPT WHERE NOTED ON THE PLANS,TO ALLOW STORMWATER TO RUNOFFIN DISPERSED SHEET FLOW TOEXISTING VEGETATION BUFFERS.
3. PARKING ISLANDS 11, 13, & 14 SHALL BE FILLED WITH SELECT SOIL AND SEEDED WITH APPROVED GRASS MIX. A MINIMUM OF 90% OF THE EXISTING ASPHALT PAVING SHALL BE REMOVED FROM UNDER ISLAND 13A AND 13B TO PERMIT INFILTRATION OF WATER.
4. PARKING ISLANDS 12A & 12B SHALL BE FILLED WITH A MINIMUM OF 6" COMPACTED CLASS 3 AG BASE OVER WEED CLOTH. A MINIMUM OF 90% OF THE EXISTING ASPHALT PAVING SHALL BE REMOVED FROM UNDER THE ISLANDS TO PERMIT INFILTRATION OF WATER.
5. ELEVATIONS SHOWN IN FEET (NAVD 88).ET

CONTROL COORDINATES

No.	Northing	Easting	Elev.	Description
1	10000.0000	20000.0000	12.23	cpmagnailtag
2	10205.6393	20059.9371	9.28	cpmagnailtag
3	10124.5910	20263.5893	9.85	cpmagnailtag
9000	10257.3865	20055.5829	8.65	LOT2
9001	10421.0478	20142.1832	8.71	LOT2
9002	10421.1128	20190.4468	9.13	LOT2
9003	10382.1906	20211.1069	9.47	LOT2
9004	10220.1081	20132.1656	9.47	LOT2
9005	10186.4785	20115.7864	9.84	LOT2
9006	10384.2608	20167.6685	0.00	ILLUM1
9007	10150.1449	20024.5367	0.00	ILLUM2
9008	9939.4615	19924.0463	0.00	ILLUM3
9009	10195.2836	20108.5305	0.00	ILLUM4
9010	10063.8538	20133.4856	0.00	ILLUM5

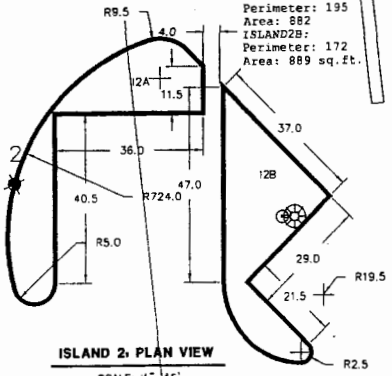
ISLAND1:
Perimeter: 108
Area: 844 sq.ft



ISLAND 1: PLAN VIEW

SCALE: 1"=15'

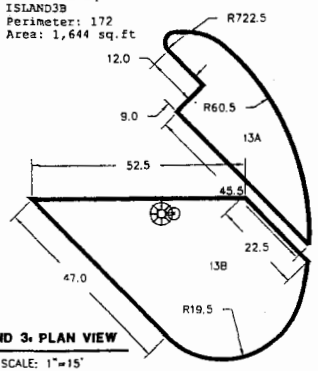
ISLAND2A:
Perimeter: 195
Area: 882
ISLAND2B:
Perimeter: 172
Area: 889 sq.ft.



ISLAND 2: PLAN VIEW

SCALE: 1"=15'

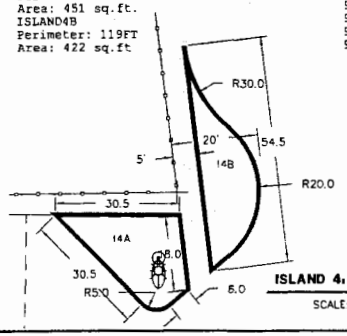
ISLAND3A
Perimeter: 140
Area: 742 sq.ft.
ISLAND3B
Perimeter: 172
Area: 1,644 sq.ft



ISLAND 3: PLAN VIEW

SCALE: 1"=15'

ISLAND4A
Perimeter: 93FT
Area: 451 sq.ft.
ISLAND4B
Perimeter: 119FT
Area: 422 sq.ft



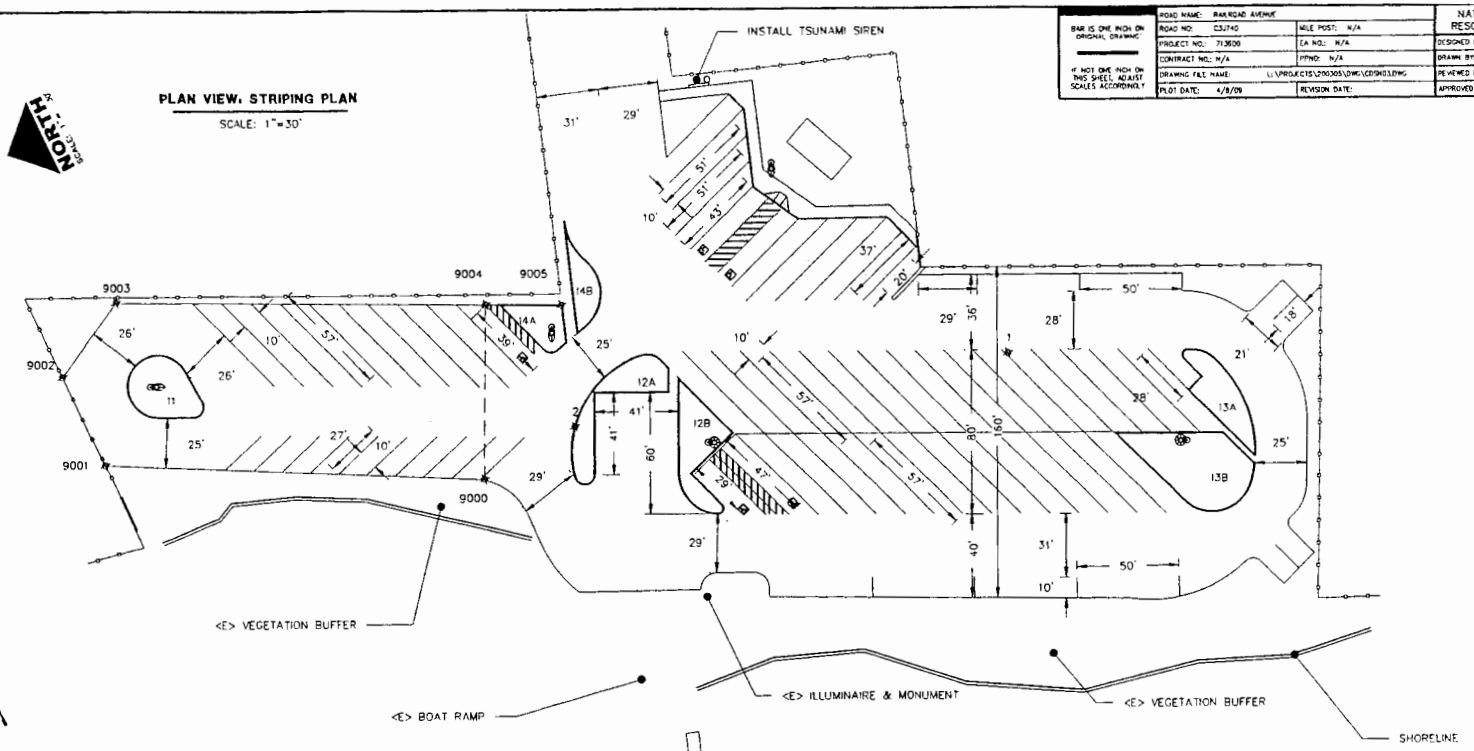
ISLAND 4: PLAN VIEW

SCALE: 1"=15'

BAR IS ONE INCH ON ORIGINAL DRAWING. IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	ROAD NAME: RAMROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 5 OF 9
	ROAD NO: 03J740	MILE POST: N/A	DESIGNED BY: HS	FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT	
	PROJECT NO.: 713600	EA NO.: N/A	DRAWN BY: MDC		
	CONTRACT NO.: N/A	PPNO: N/A	REVIEWED BY: HS	STRIPING PLAN	
	DRAWING FILE NAME:	L:\PROJECTS\200305\DWG\CDSHO3.DWG	APPROVED BY: HS		
	PLOT DATE: 4/8/09	REVISION DATE:			

PLAN VIEW, STRIPING PLAN

SCALE: 1"=30'



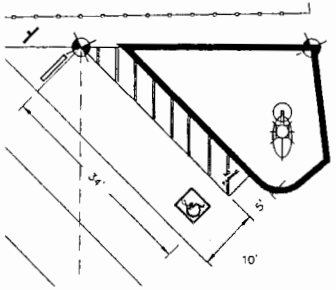
CAPACITY DATA

	EXISTING	NEW
VEHICLE & TRAILER	13	52
VEHICLE ONLY	28	18
ADA SPACES	0	5
	41	75

No.	PARKING SPACES
39	10x57
7	10x51
6	10x50
1	10x43
1	10x37
1	10x29
1	10x28
9	10x27
5	10x20
1	10x47 ADA
2	10x43 ADA
1	10x39 ADA
1	10x29 ADA

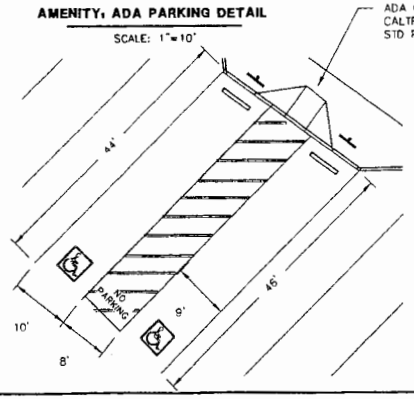
ISLAND 4, ADA PARKING DETAIL

SCALE: 1"=10'



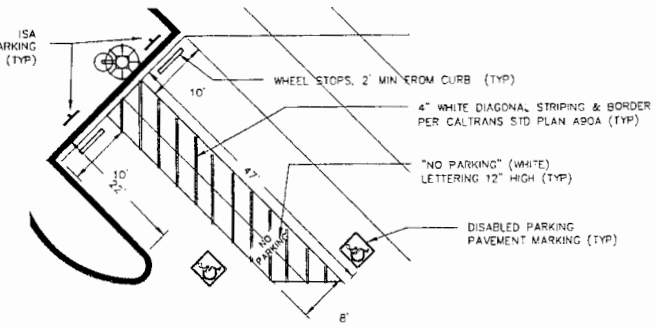
AMENITY, ADA PARKING DETAIL

SCALE: 1"=10'

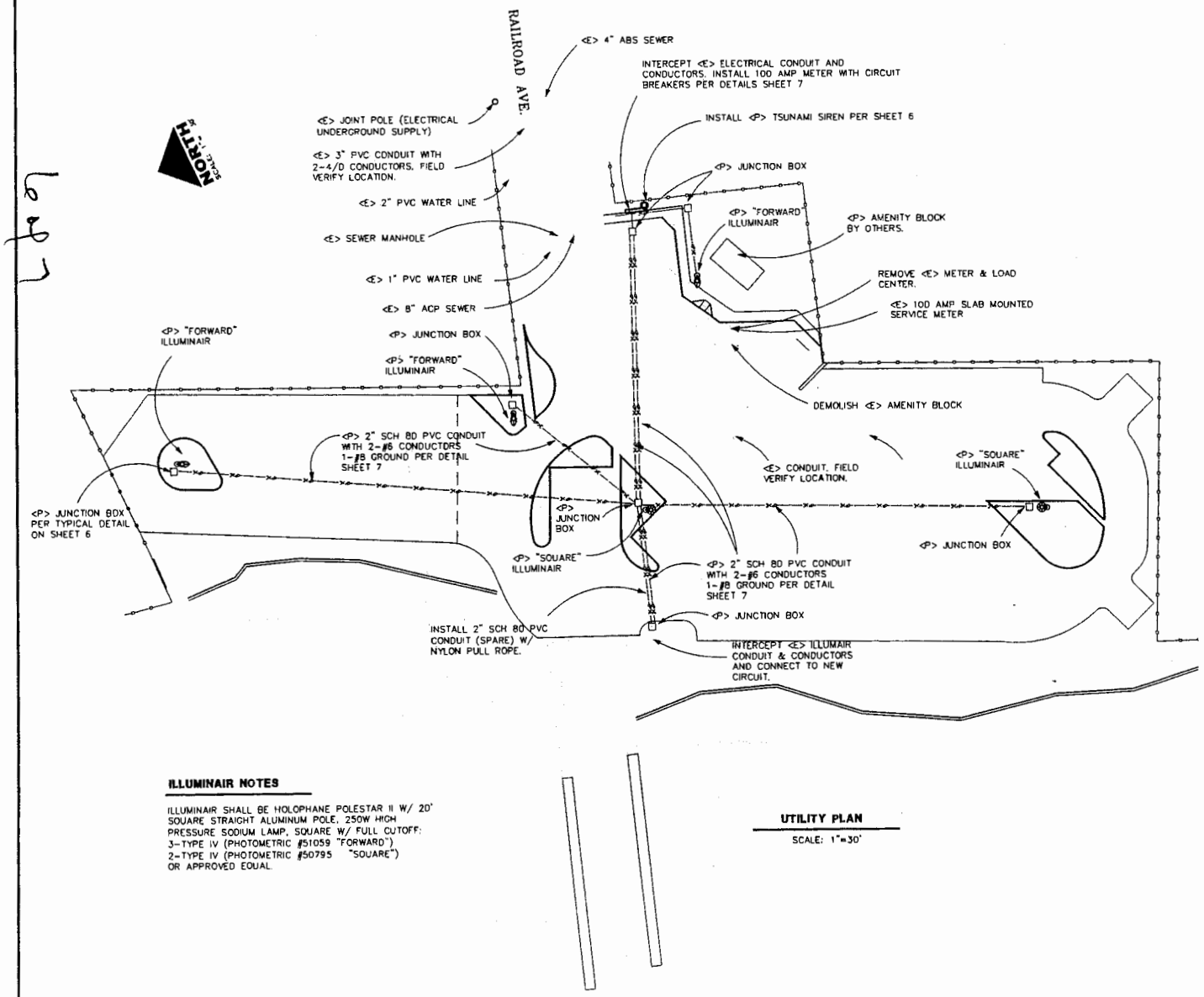


ISLAND 2, ADA PARKING DETAIL

SCALE: 1"=10'

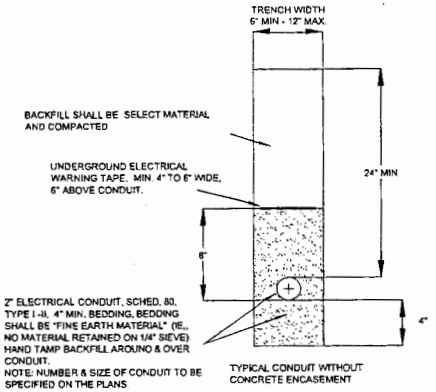


BAR IS ONE INCH ON ORIGINAL DRAWING	ROAD NAME: RAILROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 6 OF 9
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	ROAD NO: C3J740	MILE POST: N/A	DESIGNED BY: MS	FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT	
	PROJECT NO.: 713800	EA NO.: N/A	DRAWN BY: MDC		
	CONTRACT NO.: N/A	PPNO: N/A	REVIEWED BY: MS	UTILITY PLAN	
	DRAWING FILE NAME: C:\PROJECTS\713800\CDSHOB_UTL.DWG		APPROVED BY: MS		
	PLOT DATE: 4/8/09	REVISION DATE:			



UTILITY PLAN

SCALE: 1"=30'

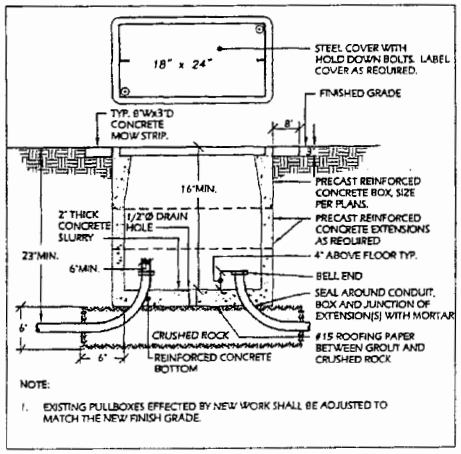


TYPICAL TRENCHING DETAIL

NOT TO SCALE

ILLUMINAIR NOTES

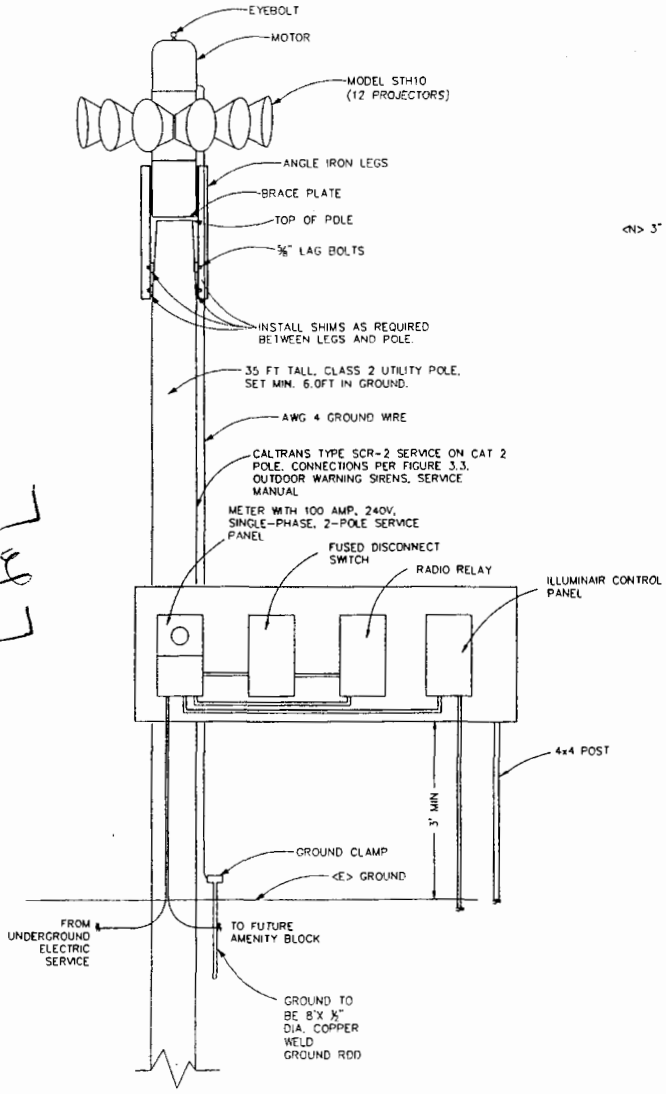
ILLUMINAIR SHALL BE HOLOPHANE POLESTAR II W/ 20' SQUARE STRAIGHT ALUMINUM POLE, 250W HIGH PRESSURE SODIUM LAMP, SQUARE W/ FULL CUTOFF:
3-TYPE IV (PHOTOMETRIC #51059 "FORWARD")
2-TYPE IV (PHOTOMETRIC #50795 "SQUARE")
OR APPROVED EQUAL



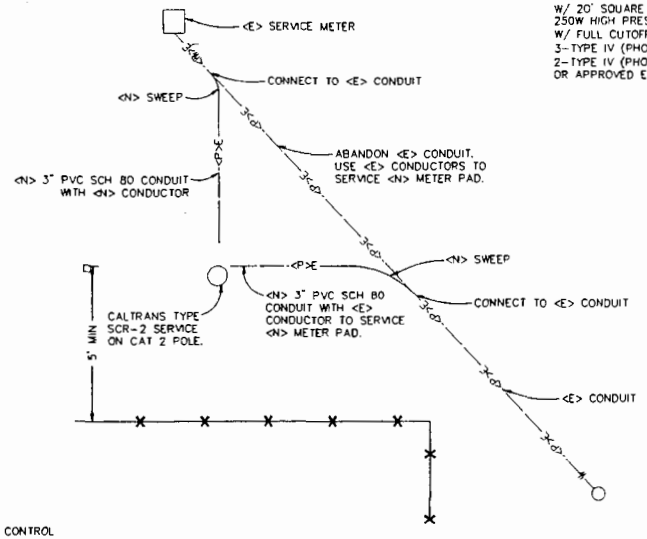
JUNCTION BOX DETAIL-SERVICE LINE

NOT TO SCALE

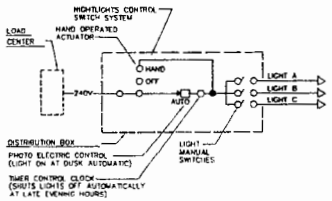
BAR IS ONE INCH ON ORIGINAL DRAWING	ROAD NAME: RAILROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 7
	ROAD NO: CJ7740	MILE POST: N/A			
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	PROJECT NO.: 713600	EA NO.: N/A	DESIGNED BY: MS	FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT	OF 9
	CONTRACT NO.: N/A	PPNO: N/A	DRAWN BY: MDC		
	DRAWING FILE NAME: L:\PROJECTS\713600\DWG\CDSND3LIGHTDET30B.DWG		REVIEWED BY: MS	LIGHTING AND TSUNAMI SIREN DETAILS	
	PLOT DATE: 4/8/09	REVISION DATE:	APPROVED BY: MS		



TYPICAL TSUNAMI SIREN (STH10)
FROM FIGURE 3.3, OUTDOOR WARNING SIRENS, SERVICE MANUAL
NOT TO SCALE

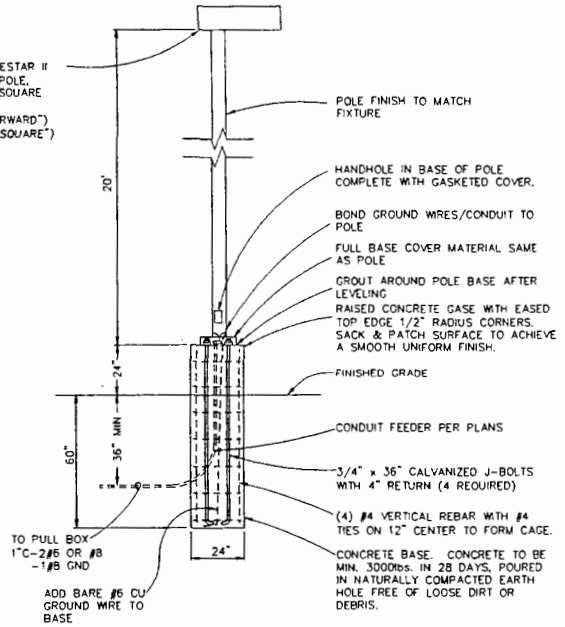


SERVICE METER PAD PLAN AND DETAIL
NOT TO SCALE



ILLUMINAIR CONTROL PANES
(LOCATED IN OUTDOOR WATER PROOF ELECTRICAL WATER BOX)
NO SCALE

ILLUMINAIR SHALL BE HOLOPHANE POLESTAR II W/ 20' SQUARE STRAIGHT ALUMINUM POLE, 250W HIGH PRESSURE SODIUM LAMP, SQUARE W/ FULL CUTOFF:
3-TYPE IV (PHOTOMETRIC #51059 "FORWARD")
2-TYPE IV (PHOTOMETRIC #50795 "SQUARE")
OR APPROVED EDUAL.



LIGHT POST FOOTING DETAIL
NOT TO SCALE

COUNTY OF HUMBOLDT

DEPARTMENT OF PUBLIC WORKS
NATURAL RESOURCES DIVISION

1106 SECOND STREET
EUREKA, CA 95501-0579
707.445.7741 / FAX 445-7409

STORMWATER MANAGEMENT PLAN

Fields Landing Boat Ramp Parking and Public Safety Enhancement Project

Humboldt County Department of Public Works
Coastal Development Permit No. 1-08-010

Date Prepared: April 30, 2009

EXHIBIT NO. 6
APPLICATION NO.
1-08-010
HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT
STORMWATER MANAGEMENT PLAN (1 of 8)

Overview

The purpose of the project is to enhance public access for recreation on Humboldt Bay and public safety at the Fields Landing Boat Ramp by expanding the parking area, installing new lights and a tsunami siren, and replacing the restroom. The project involves enhancements to the County-owned parcel where the existing facility is located, and an adjacent Harbor District-owned parcel which is currently undeveloped.

Stormwater quality can be adversely affected by construction activities and post-construction conditions. A site-specific Erosion and Sedimentation Control Plan for construction has been incorporated into the project plans, and will be used by the selected construction contractor as the basis for a formal Stormwater Pollution Prevention Plan prepared in accordance with State Water Resources Control Board Water Quality Order 99-08-DWQ (construction activity general permit). The purpose of this Stormwater Management Plan is to address post-construction conditions and document the selection and incorporation of appropriate stormwater treatment Best Management Practices (BMPs) for all surfaces and activities at the facility.

The facility's boat ramp is used for launching boats onto Humboldt Bay. Vehicles are parked in the parking area while individuals use boats on the bay and ocean, or less frequently when individuals visit the facility for non-boating use (picnicking, wildlife viewing, driving rest-stop). The facility is not equipped with boat washing or fish cleaning stations, and such stations are not currently proposed. Use of the facility is sporadic, and the facility is not heavily used outside the popular fishing and hunting seasons. Currently during high-use periods, vehicle parking overflows onto the undeveloped Harbor District parcel in an uncontrolled manner and onto the residential streets of Fields Landing. By its nature as a boat ramp, the facility is adjacent to Humboldt Bay. Humboldt Bay is a sensitive water body with many beneficial uses.

The facility is inspected and cleaned regularly by County Parks staff to pick up trash and debris. The additional lights are expected to reduce the amount of illegal dumping, especially on the

Harbor District parcel. The project will de-commission an unauthorized access road on the Harbor District parcel that is contributing to shoreline erosion and vegetation impacts from vehicle use.

Hydrologic calculations for pre-construction and post-construction conditions are summarized on Table 1.

Planning Approach

This Stormwater Management Plan was prepared based on the California Stormwater Quality Association's (CSQA's) Stormwater Best Management Practice Handbook for New Development and Redevelopment (CSQA, 2003). The plan was prepared to reduce pollutants in stormwater runoff from the facility and avoid impacting water quality in Humboldt Bay. Pollutants of concern associated with vehicle parking include sediment, oil and grease, and metals. In addition, the project was evaluated for potential effects on the quantity of stormwater runoff that could effect downstream erosion potential.

The CSQA Stormwater BMP Handbook recommends a strategy that includes the following elements:

1. Reduce the amount of runoff that needs to be captured, treated, or infiltrated (minimize impervious land coverage).
2. Control sources of pollutants with source control BMPs.
3. Implement treatment BMPs before discharging stormwater runoff to natural water bodies.

For treatment BMPs, the CSQA Stormwater BMP Handbook identifies BMP design criteria for volume-based and flow-based BMPs. The specific design standard depends on the type of BMP, whether the primary mode of pollutant removal relies on volumetric capacity of the BMP or the rate of flow of runoff through the BMP. According to the CSQA Stormwater BMP Handbook, "A key point to consider when developing, reviewing, or complying with requirements for the sizing of treatment control BMPs for stormwater quality enhancement is that BMPs are most efficient and economical when they target small, frequent storm events that over time produce more total runoff than the larger, infrequent storms targeted for design of flood control facilities" (pg. 5-12).

The CSQA Stormwater BMP Handbook recommends that flow-based BMPs be designed to capture and then to infiltrate or treat stormwater runoff equal to the flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths (pg. 5-19). As shown in Appendix D, the 85th percentile hourly rainfall intensity for Eureka is 0.09 inches per hour, and two times this amount is 0.18 inches per hour (CSQA, 2008). However, this criteria may not be appropriate in all cases. According to the Caltrans Statewide Storm Water Management Plan (2003), "To maximize vegetation and use of vegetated treatment BMPs, the Department currently does not use the WQV (Water Quality Volume) or WQF (Water Quality Flow) as a design parameter for strips and swales" (pg. B-43). Other design criteria may be applicable for landscape-based BMP controls such as swales and vegetated strips, which are often preferable due to their habitat and aesthetic benefits.

Site Features

Relevant features of the project site include the following:

- The project site has a combined total acreage of 2.5 acres, and is surrounded by private property.
- Groundwater is shallow due to the close proximity to Humboldt Bay and the low elevation of the site (10-12 feet NAVD 88).
- Site topography is generally flat, with a uniform westerly slope (1-2%) toward the bay.
- Site soils include sandy soil along the western edge of the site adjacent to the bay, and poorly draining silty clay loam to the east.
- An approximately 40-foot-long (parallel to runoff flow direction) landscaped vegetation strip is present on the west side of the County parcel along the shoreline.
- A strip of disturbed vegetation with native and non-native species is present on the west side of the Harbor District parcel along the shoreline. The strip has been impacted by vehicle traffic. The length (parallel to runoff flow direction) of the vegetation within the strip ranges from a few feet to over 15 feet.
- The site is not equipped with an on-site storm drain system (a stormwater pipe from the Fields Landing residential area passes under the Harbor District parcel to a tide gate).

Evaluation

Runoff Minimization

The nature of the project necessitates additional surface paving to enhance public access opportunities and reduce the existing parking impacts to the nearby residences. However, the total amount of new impermeable surface was kept to a practical minimum to reduce runoff discharges. The project design includes four islands within the parking areas to manage traffic circulation, and all are designed to have permeable surfaces. The total increase in paved area is 0.5 acres (Table 1).

The use of porous pavement was considered but not selected, as the site is not amenable to this feature due to the presence of shallow groundwater.

The increase in runoff was evaluated to determine if adverse downstream effects will result. Hydrologic calculations indicate that the magnitude of the flow increase is small (0.6 cubic feet per second for the 100-year recurrence interval maximum precipitation intensity) and will have no effect on Humboldt Bay. The maximum flow length across the parking areas is generally 80 feet on the Harbor District parcel and ranges from 150 to 240 feet on the County parcel. Due to the flat terrain, relatively small site size, and project design features, runoff is expected to remain as sheet flow across the parking areas and discharge to the bay before becoming concentrated flow. As described below, the vegetation strips will be maintained and enhanced along the down-slope edge of the site, and this vegetation will provide erosion and sediment control benefits. Therefore stormwater flows are not expected to induce scour or erosion, and the effects from the increased runoff will be negligible.

Source Controls

The CSQA Stormwater BMP Handbook describes specific source control BMPs to be considered for incorporation into newly developed infrastructure and retrofit of existing facilities. Planning for this project applied the source control BMP SD-10, Site Design & Landscape Planning. This BMP calls for integrating and incorporating appropriate landscape planning methodologies, including conserving natural areas to the extent possible, maximizing natural water storage and infiltration opportunities, and protecting slopes and channels.

Several considerations outlined in this BMP are not applicable because the site does not have natural drainage channels, does not have infiltration opportunities, and does not have steep or unstable slopes. Specific source control considerations that were incorporated into the project design include the following:

- Development in the final design is focused on the least-sensitive portions of the site (away from the shoreline). The natural area along the shoreline will be conserved and augmented. Preliminary design options included extending the parking areas closer to the shoreline.
- Native vegetation will not be removed, but rather will be enhanced along the western edge of the Harbor District parcel. The design takes advantage of the opportunity to enhance habitat in an industrial area where natural habitat is generally lacking.
- Natural vegetation is promoted by using landscaped parking lot islands. Three of the islands will be covered with topsoil and planted with turf grass, and the one island situated in a high-use zone will be covered with aggregate base rock.
- Runoff will be maintained in sheet flow to avoid flow concentration, slope disturbance, and erosion potential.

Treatment BMPs

The CSQA Stormwater BMP Handbook identifies a variety of treatment control BMPs to be considered for runoff prior to discharge. This project incorporates the treatment control BMP TC-31, Vegetated Buffer Strip. Vegetated buffer strips are vegetated surfaces designed to treat sheet flow from adjacent surfaces through biofiltration. The slow movement of runoff through the vegetation at shallow depths provides an opportunity for sediments and particulates to be filtered and degraded through biological activity, while soils infiltrate a percentage of the runoff, providing treatment of dissolved constituents. According to the CSQA Stormwater BMP Handbook, vegetated buffer strips are rated as having high effectiveness for sediment, metals, and oil and grease; medium effectiveness for trash and organics; and low effectiveness for nutrients and bacteria. Buffer strips are most effective for gently sloping areas with small drainage catchments where the vegetative cover is robust and diffuse, and where shallow, uniformly distributed flow characteristics are possible.

The site is not amenable to retention/detention techniques due to its small size and configuration, and not amenable to manufactured underground treatment units or advanced infiltration techniques due to shallow groundwater.

TC-31 recommends the following design and sizing guidelines for vegetated buffer strips:

- Maximum length (in the direction of flow towards the buffer) of the tributary area of 60 feet.
- Slopes should not exceed 15%.
- Minimum length (in the direction of flow) of 15 feet.
- Either grass or a diverse selection of other low growing, drought tolerant, native vegetation. Vegetation whose growing season corresponds to the wet season is preferred.

Another reference (Iowa State University, 2008) specifies similar design criteria which include the following:

- Maximum flow path of 75 feet for impervious surfaces, and 150 feet for pervious surfaces. For longer flow paths, special provisions should be made to ensure design flows spread evenly across the filter strip.
- Filter strips should be integrated within site designs.
- Preferred slopes of 2-6%.
- The filter strip should be at least 15 feet long to provide filtration and contact time for water quality treatment, with twenty-five feet preferred (where available).

The project design incorporates vegetated buffer strips by maintaining a minimum width of the existing landscaped vegetation along the western side of the County parcel, and expanding the vegetation strip along the western side of the Harbor District parcel to meet the TC-31 guideline. The County parcel vegetated buffer strip will be maintained with an average length of 40 feet, and the Harbor District parcel vegetated buffer strip will be re-vegetated as described in the attached Re-vegetation Plan (HFAC, 2008) to achieve an average length of 15 feet. Soils on the Harbor District buffer strip will be decompacted as needed to improve rooting conditions and enhance stormwater infiltration. Invasive species will be removed, and native dune and salt marsh plant species will be planted in the fall. Plant material will be a combination of nursery stock and wild collections. In addition, the curbs on the west side of the existing and new parking areas will have notches every fifteen feet to allow stormwater to run off in dispersed sheet flow to the vegetated buffer strips and maximize their effectiveness.

Vegetated buffer strips are considered a suitable treatment BMP for the project due to the small area, flat slope, presence of existing vegetation, and sandy soils along the down-slope portion of the site. The vegetation will serve to treat sediment and particulate-based contaminants, and the soils will serve to treat dissolved constituents.

The designed vegetated buffer strips meet the slope and length design guidelines, although the flow length upstream from the strips are longer than the design guideline. The flow length design parameter is a general guideline intended to ensure uniform distribution of runoff along the buffer strip. Sheet flow can be expected for lengths up to 300 feet depending on topography (NRCS, 1986), and with the site's flat slope and curb design, sheet flow is expected on both parcels. In addition, the longer flow length on the County parcel is off-set by the longer length of the buffer strip. Therefore the longer flow lengths are not considered significant, and the design is determined to be consistent with the CSQA Stormwater BMP Handbook guidelines.

As discussed previously, the CSQA Stormwater BMP Handbook recommends that flow-based BMPs are designed to provide sufficient treatment for the rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area. It follows that the design guidelines for flow-based treatment BMPs contained in the CSQA Stormwater BMP Handbook are based on this flow specification. By being consistent with the design guidance contained in the CSQA Handbook for vegetated buffer strips, the design for this project is presumed to satisfy this flow-based standard.

An equation for determining the minimum filter length for vegetated buffer strips provided in the Iowa State University Stormwater Management Manual (2008) can be used to validate the sufficiency of the design. This equation is based on the maximum rainfall over 24 hours for a two-year recurrence interval, which is a less frequent, more intense (more conservative) storm event scenario than the one used in the CSQA Handbook. The equation is:

$$Lf = \frac{Tt^{1.25} P_{2-24}{}^{0.625} S^{0.5}}{3.34 \times n}$$

where:

L_f = Length of filter strip parallel to flow path (ft)
T_t = Travel time through filter strip (minutes)
$P_{2\text{-}24}$ = Two-year, 24-hour rainfall depth (inches)
S = Slope of filter slope (%)
n = Manning's roughness coefficient

The two-year, 24-hour maximum rainfall for Eureka is 2.59 inches (DWR, 2008). For a travel time of five minutes, slope of two percent, and roughness coefficient of 0.35 (very dense grass), the minimum filter strip length is 16 feet. The vegetation buffer strips for both the County and Harbor District parcels meet this length.

Maintenance

The Re-vegetation Plan specifies short-term monitoring and maintenance for the enhanced vegetation strip on the Harbor District parcel. In addition, County Parks staff will perform ongoing maintenance for both vegetated strips. Maintenance activities will include the following:

- Inspect twice per month for trash and debris. If trash or debris are observed, these shall be removed.
- For the turf grass on the County parcel, mow and irrigate regularly during dry weather to the extent necessary to keep vegetation alive.
- For the native vegetation on the Harbor District parcel, inspect twice annually and seed bare areas.
- Inspect twice annually for signs of erosion or damaged vegetation. Keep strips free of gullies or rills.

- Pesticides and fertilizers shall not be used in the vegetation strips.

References

California Department of Transportation, May 2003. Statewide Storm Water Management Plan (CTSW-RT-02-008).

California Stormwater Quality Association (CSQA), January 2003 (Errata 9-04). Stormwater Best Management Practice Handbook.

Humboldt Fish Action Council (HFAC), 2008. Re-vegetation Plan, Fields Landing Boat Ramp.

Iowa State University, Center for Transportation Research and Education (December 2008). Stormwater Management Manual, Chapter 21-4, Vegetated Filter Strips.

Natural Resources Conservation Service, 1986. Urban Hydrology for Small Watersheds (TR-55).

Table 1 - Stormwater Calculations

Fields Landing Boat Ramp Parking and Public Safety Enhancement Project

Parcel	Land Use	Area (acres)	Runoff Coefficient (dimensionless)	Flow (cubic feet per second) i = 0.18 in./hr	i = 0.36 in./hr	i = 0.50 in./hr	i = 1.11 in./hr
Pre-Construction							
Harbor District	unpaved	0.55	0.20	0.020	0.040	0.055	0.12
	paved	0	-	-	-	-	-
			Subtotal:	0.020	0.040	0.055	0.12
County	unpaved	0.63	0.20	0.023	0.046	0.063	0.14
	paved	1.33	0.85	0.20	0.41	0.56	1.25
			Subtotal:	0.23	0.45	0.63	1.39
Total				0.25	0.49	0.68	1.52
	unpaved	1.18					
	paved	1.33					
Post-Construction							
Harbor District	parking area	0.44	0.95	0.076	0.15	0.21	0.47
	islands	0.03	0.20	0.0011	0.0021	0.0030	0.0066
	vegetation buffer	0.08	0.20	0.0028	0.0055	0.0077	0.017
			Subtotal:	0.080	0.16	0.22	0.49
County	parking area	1.39	0.95	0.237	0.47	0.66	1.46
	islands	0.11	0.20	0.004	0.0076	0.011	0.023
	border landscaping and vegetation buffer	0.47	0.20	0.017	0.034	0.047	0.10
			Subtotal:	0.26	0.52	0.72	1.59
Total				0.34	0.68	0.94	2.08
	unpaved	0.68					
	paved	1.83					

Notes:

- For this analysis, the County parcel includes the portion of Railroad Avenue adjacent to the boat ramp facility and the vegetated strip west of the parking area.
- 0.18 inches/hour is two times the 85th percentile hourly rainfall intensity shown in the CSQA Stormwater BMP Handbook (2003).
- 0.36 inches/hour is the rainfall intensity associated with the Water Quality Flow listed for Humboldt County in the Caltrans Statewide Storm Water Management Plan (2003).
- 0.50 inches/hour is the maximum one-hour precipitation for a two-year return period in Eureka (Department of Water Resources Bulletin No. 195, 2008).
- 1.11 inches/hour is the maximum one-hour preciptation for a 100-year return period in Eureka (DWR 2008).
- Islands:

Identification No.	Area (acres)	Location
I1	0.019	Harbor District
I2A	0.020	County
I2B	0.020	County
I3A	0.017	County
I3B	0.038	County
I4A	0.010	Harbor District
I4B	0.010	County

8 of 8

Native Plant Nursery
PO Box 154
Eureka, CA 95502-0154

Re-vegetation Plan

Fields Landing Boat Ramp
APNs 305-520-118
Fields Landing, Humboldt County CA

Prepared For: Humboldt County Public Works
1106 Second Street
Eureka, CA 95501

Prepared By: Suzanne Isaacs, Restoration Botanist
and Nursery Manager
Humboldt Fish Action Council (HFAC)
sli@reninet.com

Submitted: July 11, 2008

Table of Contents

List of Illustrations

297

Introduction

Humboldt Fish Action Council (HFAC) has prepared the following re-vegetation plan in response to a request by Humboldt County Public Works regarding the Fields Landing Boat Ramp Improvement Project. The project involves establishing a fifteen foot vegetated buffer between Humboldt Bay and a proposed parking area expansion to ensure sufficient treatment of storm water runoff. The existing parking lot, currently on County of Humboldt land, will expand onto adjacent Harbor District-owned property. The parking lot expansion includes construction of a curb between the vegetated buffer and the parking lot. The curb will be notched every fifteen to thirty feet to allow water accumulated across the parking lot to drain onto the buffer area.

1. Site Description

1.1 Buffer Area Description: The area which will serve as the vegetated buffer lies directly south of the boat ramp and will be approximately fifteen feet wide and 250 feet long.
1.2: Vegetation Currently in Buffer Area: The buffer currently encompasses a small area of relatively undisturbed salt marsh habitat close to the bay edge. Adjacent to the thin strip of salt marsh habitat is an area of sandy substrate which can best be described as dune habitat which is, in places, highly compacted due to vehicle use. Vegetation currently growing in the buffer area is composed of a mixture of native and non-native species including invasive species like Chilean cord grass (*Spartina densifolia*) and non native annual grasses including species of barley and *Bromus*. Native species include plants typical to salt marsh habitat like salt grass (*Distichlis spicata*), coastal gum weed (*Grindelia spicata*) and one species common to dune habitat, sea rocket (*Cakile maritima*).

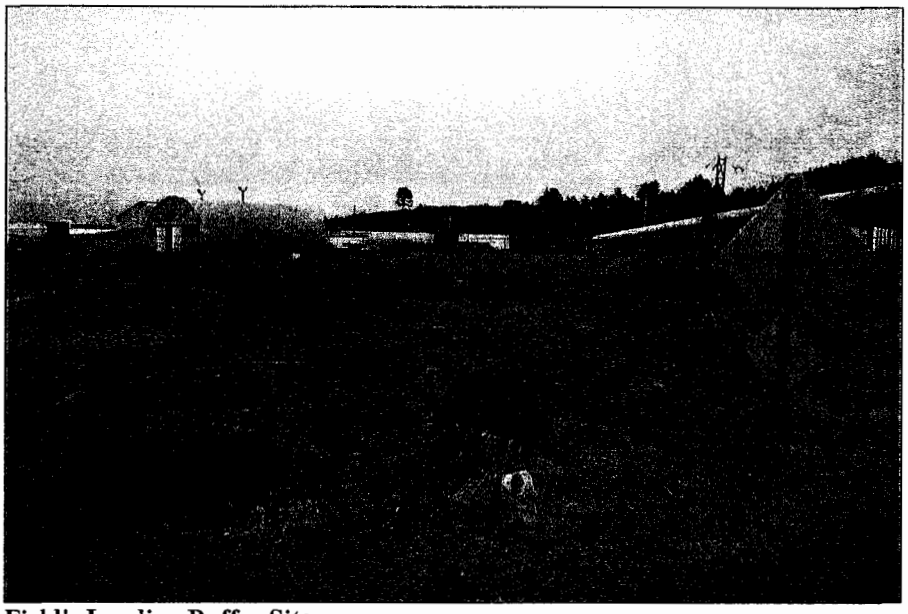
2. Site Preparation

2.1: Decompaction of Substrate. A dirt road runs through a portion of the buffer area. Planting in this area will be difficult without loosening the compacted sand. Ripping the dirt road would help parking lot storm water percolate and will improve rooting conditions necessary for plant establishment. Planting with a power auger is an alternative.
2.2: Invasive Species Removal.

2.2.1 Chilean Cord Grass: The California Invasive Plant Council (Cal-IPC) rates the invasiability of Chilean cord grass on to California wild lands as high. Many agencies managing wetlands around Humboldt Bay are focused on eradication of the grass.
2.2.2 Removal of Cord grass: The site currently has only two to three plants of cord grass. Total eradication is possible at this site.
2.2.3 Removal Method: The entire plant may be dug out using a shovel. If shoveling proves to be too destructive to the surrounding area, repeated

weed eating of the clump has proven effective. Three or four visits using the weed eater may be necessary but this method seems to be working on City of Arcata property.

2.3: Soil Stabilization. A two to three inch layer of straw covered with jute netting is an effective way to temporarily stabilize the moving sands of the dune habitat before planting. The jute netting can be anchored with irrigation staples.



Field's Landing Buffer Site

3. Planting Plan

3.1 Planting Season. Andrea Pickart in her book *Ecology and Restoration of Northern California Coastal Dunes* (110) recommends installing dune plant species in the fall. Soil temperatures are warm and fall rains will irrigate the plant material. Planting after two or three soaking rains would be optimum both for soil conditions and observation of the as-built conditions of parking lot drainage affecting the buffer area.

3.2 Planting Specifications.

3.2.1 Plant Palette Objectives. The role of the plant species utilized in this project is to slow and defuse the flow of run off from the parking area and to provide some removal of suspended solids and petroleum hydrocarbons.

3.2.2 Native Grasses: Two native grass species, salt grass and dune grass (leymus mollis) will be used to vegetate the buffer. Areas closest to the drainage notches in the berm will be revegetated primarily with salt grass. Areas which do not receive direct run off will be planted with dune grass.

3.2.3 Other Dune Species. To encourage some diversity within the dune habitat, other herbaceous perennials appropriate to the dune habitat are

encouraged if available from local nurseries. Refer to Table #1 for dune species suggestions and plant spacing specifications.

Table 1. Plant Species and Planting Specifications for Fields Landing Buffer

Species	% Plant Palette	On Center Spacing	# Plants for Buffer
Salt Marsh Species			
Salt grass (*Distichlis spicata*)	50%	3'	240
Dune Species			
Dune grass (*Leymus mollis*)	40%	3'	190
Other Prospective Dune Species	10%	2.5'	70
Dune buckwheat (*Eriogonum latifolium*)		2.5'	
Dune knotweed (*Polygonum paronychia*)		2.5'	
Beach bursage (*Ambrosia chamissonis*)		2.5'	
Dune sagebrush (*Artemisia pycnocephala*)		2.5'	
Sea side daisy (*Erigeron glaucus*)		2.5'	
Golden rod (*Solidage spathulata*)		2.5'	
Beach evening primrose (*Camissonia cheiranthifolia*)		2.5'	
Beach pea (*Lathyrus littoralis*)		2.5'	
Beach morning glory(*Calystegia soldnella*)		2.5'	
Sand Verbena (*Abronia latifolia*)		2.5'	
Total	100%		500

*Source: Ecology and Restoration of Northern California Coastal Dunes

3.3 Plant Material Availability. Availability of nursery stock for native dune species may be problematic. Fresh Water Farms and HFAC Nursery may carry some of these species. It is very likely that the salt grass and dune grass will have to be collected from the wild and grown up in a greenhouse setting. If this is necessary, collection and propagation should happen as soon as possible before plant growth slows in mid to late summer. Potential collection sites include Table Bluff and Mad River County Parks.

4. Success Criteria

4.1 Success Criteria. The success of the dune plantings shall be measured on the basis of a 60% survival rate for all transplanted plantings after the first year of planting. After a two-year period, there shall be at least 50% combined coverage of native grass species and dune mat species. A dune grass series has been described by the vegetation classification of Sawyer and Keeler-Wolf. Vegetation

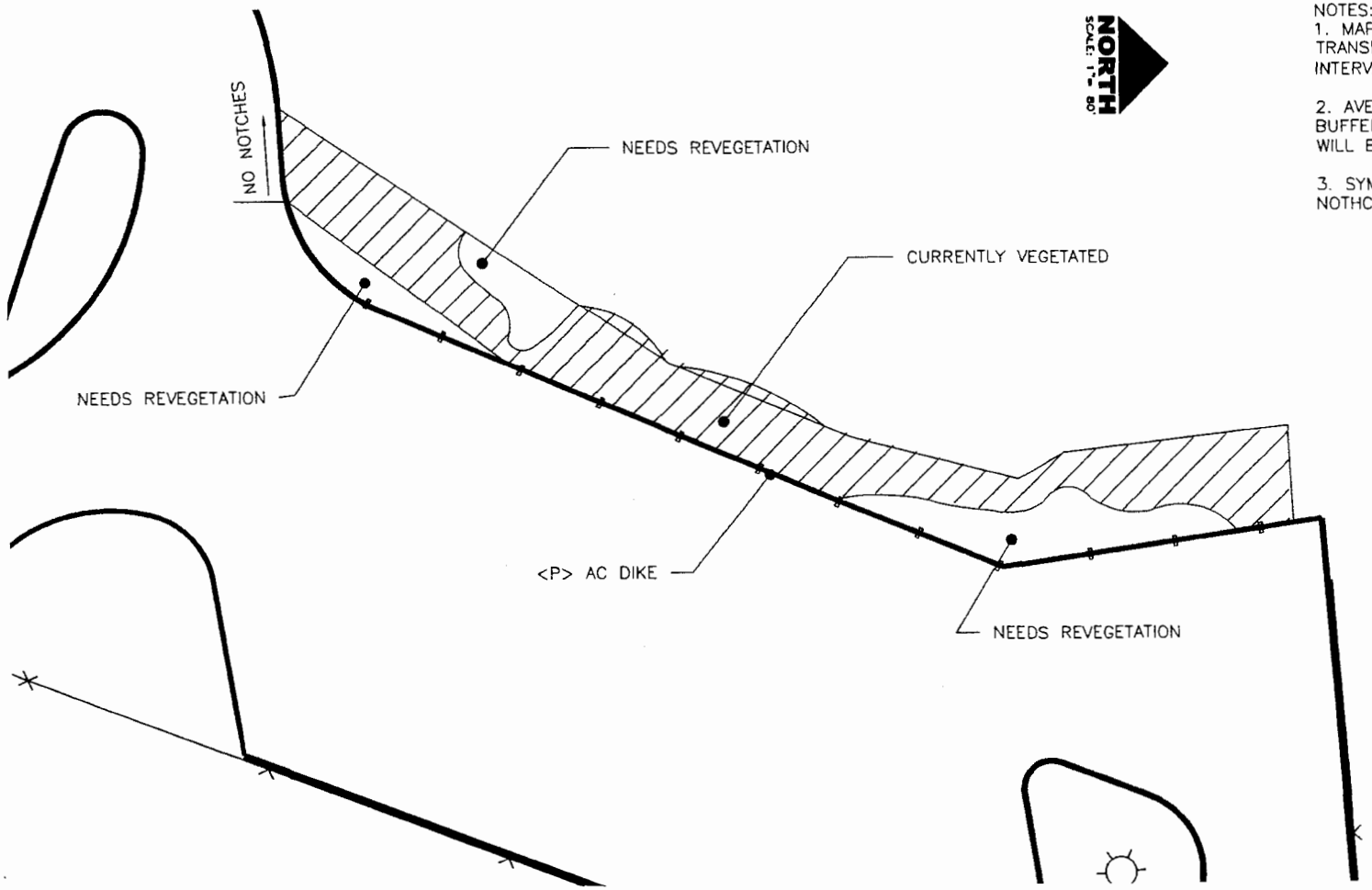
cover of this series is sparse. Vegetation cover can range from 25 to 75% (Pickart and Sawyer 1998).

4.2 Monitoring. The restoration site will be monitored by a qualified biologist for a minimum of two years following the initial planting to evaluate the health and vitality of the transplants. Site inspections will occur in the spring and fall after the restoration is implemented. Success of the restoration project will be fully assessed following the last field inspection. If, after two years, the number of established plants is not consistent with the success criteria, then additional planting will be implemented and an additional two years of monitoring will ensue.

5. References

Pickart, J. Andrea. 1998. *Ecology and Restoration of Northern California Coastal Dunes*. California Native Plant Society.

Cal-IPC. 2006. *California Invasive Plant Inventory*. Cal-IPC Publication 2006 02. California Invasive Plant Council: Berkeley CA. Available: www.Cal-IPC.org



NOTES:
1. MAP DEVELOPED BASED ON TRANSECTS MEASURED AT TEN FOOT INTERVALS (JUNE 2008).

2. AVERAGE LENGTH OF VEGETATED BUFFER AFTER REVEGETATION WORK WILL BE GREATER THAN 15 FEET.

3. SYMBOL ⊠ SHOWS 8 INCHES NOTHCHED SECTION EVERY 15 FOOT.

COUNTY OF HUMBOLDT
DEPARTMENT OF PUBLIC WORKS

FEILDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT

REVEGETATION PLAN

REVISED	DATE	SCALE
	7/3/08	1"=80'
	SHEET R OF 7	

BAR IS ONE INCH ON ORIGINAL DRAWING	ROAD NAME: RAILROAD AVENUE		NATURAL RESOURCES	COUNTY OF HUMBOLDT DEPARTMENT OF PUBLIC WORKS	SHEET 8 OF 9
	ROAD NO: CR1740	MILE POST: N/A			
IF NOT ONE INCH ON THIS SHEET, ADJUST SCALES ACCORDINGLY	PROJECT NO.: 713600	EA NO.: N/A	DESIGNED BY: HS	FIELDS LANDING BOAT RAMP PARKING AND PUBLIC SAFETY ENHANCEMENT PROJECT	
	CONTRACT NO.: N/A	PPNO: N/A	DRAWN BY: MDG		
	DRAWING FILE NAME: L:\PROJECTS\713600\DWG\CDSH03-DPLAN-EMV.DWG		REVIEWED BY: HS	EROSION AND SEDIMENTATION CONTROL PLAN	
	PLOT DATE: 4/8/09	REVISION DATE:	APPROVED BY: HS		

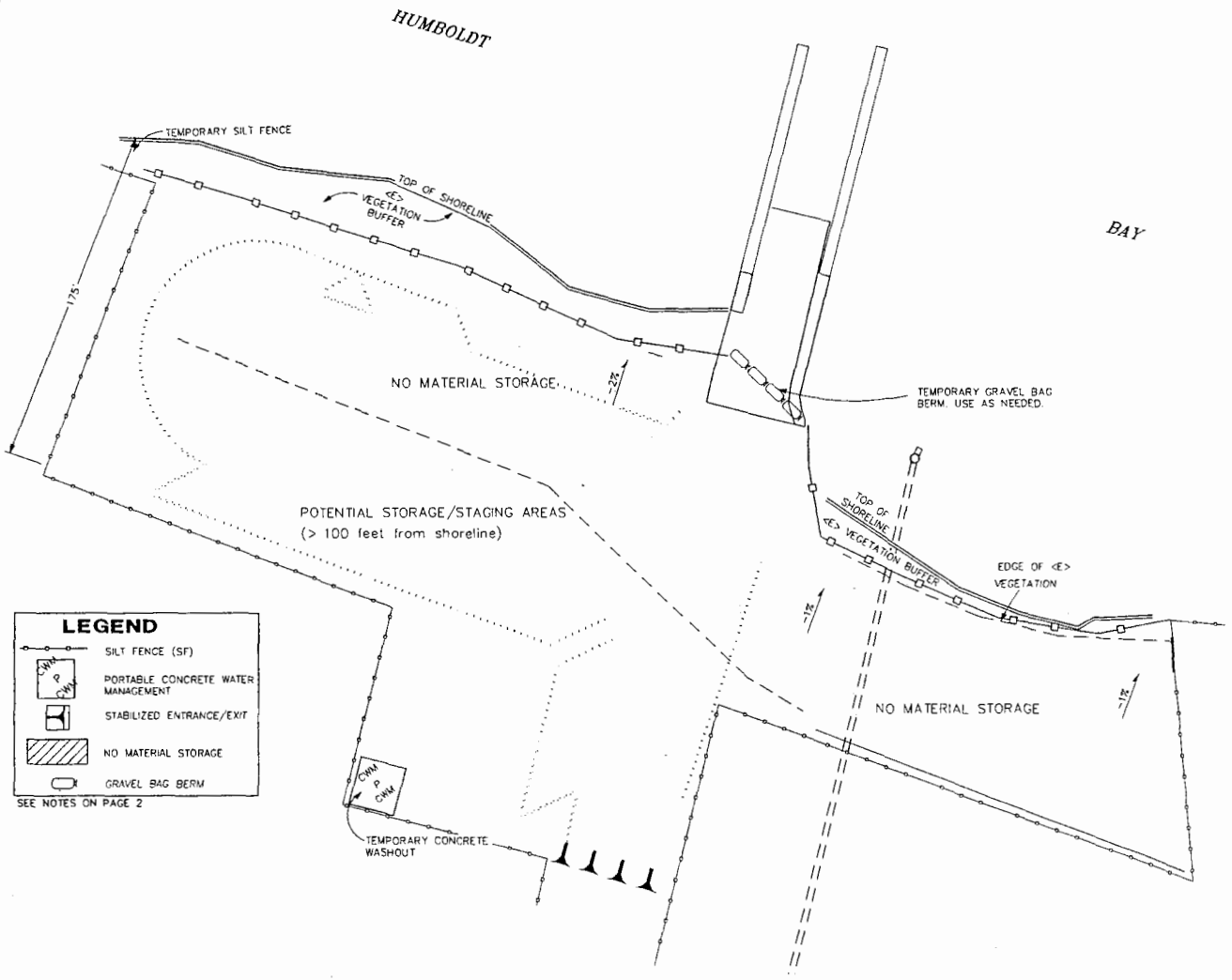
EXHIBIT NO. 8

APPLICATION NO.

1-08-010

HUMBOLDT COUNTY PUBLIC WORKS DEPARTMENT

EROSION & SEDIMENTATION CONTROL PLAN (1 of 2)



SEE NOTES ON PAGE 2

NOTES

1. Silt fence will be erected and maintained along the western boundary of the work area for erosion and sedimentation control in accordance with SC-1 of the Caltrans Construction Site Best Management Practices Manual (March 2003). The silt fence will be installed prior to the commencement of work, and will be removed after construction is complete.

2. Temporary storage/staging areas for imported raw materials and excavated materials will be located within the project area as needed. These storage/staging areas will be located at least 100 feet from the shoreline of Humboldt Bay. Silt fencing, straw bales, and/or fiber rolls will be placed around the perimeter of the storage/staging areas as needed for erosion and sedimentation control. The contractor will be directed to minimize the amount of storage and staging on site (i.e., to the extent feasible, implement "just-in-time" delivery of materials for the various stages of the project.) Storage/staging areas will be managed in accordance with WM-3 of the Caltrans Construction Site BMP Manual.

3. Excess soil and fill material and accumulated sediment from the silt fence that cannot be reused will be removed for disposal at the Humboldt County Public Works Department's Table Bluff inert cell waste disposal site.

4. All temporary erosion and sediment control components will be inspected daily when construction activities are being performed and maintained as needed. In addition, the contractor will inspect and maintain the control components during a storm event that delivers more than 0.5 inches of rain to the Woodley Island rain gauge over a 24-hour period, if the storm event does not occur on a work day.

5. The contractor will be required to implement all applicable working details from the Caltrans Construction Site BMP Manual including the following:
   - WE-1 (Wind erosion control)
   - NS-3 (Paving and grinding operations)
   - NS-8 through NS-10 (Vehicle and equipment cleaning, fueling, and maintenance)
   - WM-1 through WM-10 (Waste management and materials pollution control)

6. Vegetation buffers along the west side of the facility will be retained as permanent erosion and sediment control measures.

7. After construction is complete, the project area will be inspected for errant debris and waste. Any remaining debris or waste will be removed from the site within 30 days of project completion.

8. Unpaved portions of the islands created by safety barriers will be seeded with native species mix and covered by straw mulch, as part of permanent erosion control, immediately following construction.

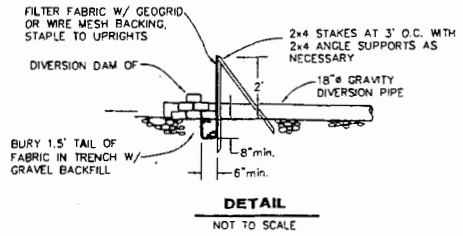
9. Visible tracking on Railroad Ave. will be minimized by the installation of a stabilized entrance/exit into the boat ramp. In addition, Railroad Ave. will be sweeped daily when there is visible sediment tracking on Railroad Ave.

10. For all concrete work, a Temporary Concrete Washout will be constructed as per details (WM -8 Concrete Waste Management) from the Caltrans Construction Site BMP Manual.

CONSTRUCTION SITE BMP SUMMARY

LOCATION	TEMPORARY SEDIMENT CONTROL	UNIT	QUANTITY	COMMENTS
WESTERN PERIMETER	SC-1 TEMPORARY SILT FENCE (SF)	LF	615	WATERWAY PROTECTION
RAILROAD AVE.	SC - 7 STREET SWEEPING AND VACUUMING	DAY	PD*	VISIBLE SEDIMENT TRACKING
BOAT RAMP	SC - 6 GRAVEL BAG BERM	LF	60	USE AS NEEDED
	TEMPORARY WASTE MANAGEMENT			
NEAR <N> RESTROOM	WM-8 TEMPORARY CONCRETE WASHOUT	EA	1	
	TRACKING CONTROL			
RAILROAD AVE.	TC-1 STABILIZED ENTRANCE/EXIT	EA	1	
	SOIL STABILIZATION			
SAFFETY BARRIER ISLANDS	SS-6 STRAW MULCH	SF	1	USE NATIVE SPECIES MIX; PERMANENT BMPS

*PROJECT DURATION



DETAIL
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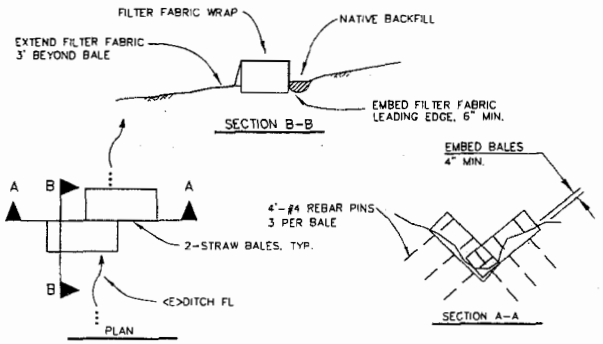

SILT DAM DETAIL
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