



US Army Corps
of Engineers

SAN FRANCISCO DISTRICT

PUBLIC NOTICE

NUMBER: 24824N DATE: DECEMBER 27, 1999
RESPONSE REQUIRED BY: JANUARY 27, 2000

Regulatory Branch
333 Market Street
San Francisco, CA 94105-2197

PERMIT MANAGER: David Ammerman PHONE: 707-443-0855 dammerman@spd.usace.army.mil

1. INTRODUCTION: The Humboldt Bay Municipal Water District, P.O. Box 95, Eureka, California 95502, (Contact Arthur Bolli, General Manager at 707-443-5018) has applied for a Department of the Army permit to discharge approximately 25,000 cubic yards (CY) of fill (estimated fill maximum) each year over a five-year period, in connection with conducting on-going maintenance of the Humboldt Bay Municipal Water District's (herein referred to as the "District") water supply and diversion operations on the Mad River between the Railroad Bridge near Blue Lake to the Highway 299 Bridge, in the Essex area of Humboldt County, California. The service area for the above water supply and diversion operations include industrial customers on the Samoa Peninsula and communities within the greater Humboldt Bay area (Eureka, Arcata, Blue Lake, McKinleyville, Fieldbrook, Manila, and the Humboldt Community Services District)(See Sheets 1, 2, and 3). This project would be a renewal of activities previously authorized under Department of the Army Permit No. 20389N on March 11, 1994. This application is being processed pursuant to the provisions of Section 404 of the Clean Water Act (33 U.S.C. 1344).

2. PROJECT DESCRIPTION: As shown in the attached drawings, the applicant proposes the following activities below the Ordinary High Water mark of the Mad River:

(A) Annual activities (Activity # 1) - Channel dredging and sidelaying of river-bed material for approximately 500 feet from the District's direct

diversion inlet (Station # 6) across the river to the north bank (Sheets 2,5,8, and 12). The material derived from this excavation is placed adjacent to the low water's right margin and shaped into a berm parallel to the direction of flow (Sheets 5,8, and 12). The excavation and fill starts at the end of the existing rock jetty on the north bank of the river and parallels the low flow channel terminating at the existing rock weir grade control structure. This work is done each year to ensure the proper flow of water into the forebay of the surface diversion facility during low river flow periods. Total estimated fill volume discharged in the Mad River for the above diversion berm is 2,000 cubic yards (CY).

(B) Activities on an as-needed basis only - Construction and maintenance of temporary access roads, and platforms or ramps to Water Collectors Nos. 1,2, or 4 to allow the District to repair and maintain the pumps housed within these Collectors. These temporary access structures are constructed by pushing river material from the surrounding area by backhoe. The ramps are constructed during low-flow periods, out of the low-flow channel. No filling of the active low-flow channel would occur. Below are specific activities:

Activity 2a - Construction of gravel access road from the top of the bank to the riverbed and along the river bed to the location where the maintenance activities are to be performed (estimated fill volume a maximum of 8,000 CY). The portion of the temporary road that allows access from the river bank to the river bed is a ramp that is approximately

120 feet long and 17 feet wide (see Sheet 14 for typical cross sections). The portion of the temporary road along the river bed ranges in length from approximately 100 to 250 yards, and is graded only as necessary to allow vehicles to traverse to the maintenance location. These temporary roads are constructed by pushing river-run gravel from the surrounding river bed by back hoe or tractor. The roads are constructed only during low-flow periods, out of the low-flow channel - no filling of the active low-flow channel would occur. The construction roads include access to Collector No.s 2 and 4 (see Sheets 4,6, and 7).

Activity 2b - Construction of a gravel access platform at Collector 1 or 2 (Sheets 5 and 6). The platform is 3 to 4 feet in height and covers a 40 foot by 40 foot area adjacent to the Collector. Estimated fill volume is 250 CY.

Activity 2c - Construction of a gravel access ramp at Collector 4 (Sheets 7 and 13). The ramp extends from the elevation of the bed to two feet below the valve deck of the Collector. The ramp ranges in length from 75 to 200 feet and in height from 10 feet to 20 feet, depending on channel topography. It is about 17 feet wide and includes a flattened 25 foot by 25 foot area at the top for crane placement. Estimated fill volume is 1,600 to 2,600 CY.

Activity 3 - Construction of a berm adjacent to Collectors No. 1,2, or 4 to allow occasional flushing of the Collector (sheets 5,6, and 7). The berm would be constructed by pushing river bed material three to four feet high around a portion of the Collector. The length and exact configuration of the berm would depend on the location of the river shoreline in relation to the Collector flushing discharge. The berm would be removed when flushing is complete and the discharged river water has percolated back through the riverbed. Estimated fill volume would be 50-100 CY.

Activity 4a - Maintenance or repair of existing dike downstream of Station No. 6 (3,500 to 5,000 CY of 1/4 ton to 4 ton rock and gravel)(Sheets 5,9, and 10). The dike ensures adequate water surface elevation in the forebay of the direct diversion

facility (Station # 6).

Activity 4b - Maintenance or repair of existing rock jetties in the vicinity of Collector No. 1 and Station # 6 (3,500 to 5,000 CY of 1/4 ton rock and gravel per jetty)(Sheets 5 and 11).

Activity 4c - Maintenance or repair of existing bank revetments on the right and left banks near Station # 6 and the right bank Collector No. 3 (Sheets 6,7, and 15). The revetments are approximately 200 to 800 feet in length and consist of 1/4 ton to 4 ton rocks.

Activity 4d - Maintenance or repair of existing rip-rap around Collector No. 1 and its discharge line, around Collector No. 2, and at the hydraulic control structures near Station # 6 (Sheets 5 and 6).

Fill volumes for all activities 4a-4d would vary based on extent of damage or degradation.

Total estimated fill volumes for the entire project are estimated at approximately 25,000 CY.

For cross-sections of the river along the project reach, see Sheets 16-24. The cross sections start from the downstream end of the project adjacent to an existing overhead trolley system (used by the District to access structures at high water; this structure is not in Corps jurisdiction and not part of the proposed project) labeled as "Section 1" and ends at "Section 8" near Collector No. 5.

(C) Activity not regulated by the Corps of Engineers, but part of District's maintenance activities:

On an annual basis, the district removes approximately 40,000 CY (or amounts depending on winter accumulation) of river gravel from the forebay of direct diversion facility Station # 6 and disposes the excavated material at an upland site adjacent to Collector No. # 3 (Sheets 5 and 6). This activity does not constitute discharge of fill and does not require a permit from the Corps of Engineers.

CHANGES

3. **STATE APPROVALS:** Under Section 401 of the Clean Water Act (33 U.S.C. Section 1341), an applicant for a Corps permit must obtain a State water quality certification or waiver before a Corps permit may be issued. The applicant has provided the Corps with evidence that he has previously obtained State water quality certification from the California Regional Water Quality Board (RWQCB), North Coast Region for Bank Stabilization and Rock Dike activities in 1991 and 1992; and for Maintenance Activities around the Collectors and surface diversion facility in 1993. The Corps of Engineers has confirmed during November, 1999 telephone contacts with RWQCB that the water quality certifications or waivers of such certifications are still valid for the above described activities. Those parties concerned with any water quality issues that may be associated with this project should write to the Executive Officer, California Regional Water Quality Control Board, North Coast Region, 5550 Skylane Boulevard, Suite A, Santa Rosa, California 95403, by the close of the comment period of this public notice.

4. **PRELIMINARY ENVIRONMENTAL ASSESSMENT:** The Corps of Engineers has assessed the environmental impacts of the action proposed in accordance with the requirements of the National Environmental Policy Act of 1969 (Public Law 91-190), and pursuant to Council on Environmental Quality's Regulations, 40 CFR 1500-1508, and Corps of Engineers' Regulations, 33 CFR 230 and 325, Appendix B. Unless otherwise stated, the Preliminary Environmental Assessment describes only the impacts (direct, indirect, and cumulative) resulting from activities within the jurisdiction of the Corps of Engineers.

The Preliminary Environmental Assessment resulted in the following findings:

a. IMPACTS ON THE AQUATIC ECOSYSTEM

(1) PHYSICAL/CHEMICAL CHARACTERISTICS AND ANTICIPATED

Substrate - Substrate on the project reach between Highway 299 and the Railroad Bridge near the town of Blue Lake is predominantly gravel and cobble riverbed with intermittent boulder and hard rock cliffs along the banks. In addition, there is some fine sand and sediment mixed in with the gravel substrate depending on the previous winter's accumulations.

Activity # 1 - Channel dredging and sidecasting of riverbed material adjacent to the direct diversion inlet (Station # 6) will have the most impact on substrate over the other activities of this project. The channel dredging and sidecasting would cover approximately 25,000 square feet for the gravel berm and approximately 10,000 square feet for the channel.

Activity # 2 - The coverage of substrate under this activity (access roads and ramps to Collectors) would be approximately 8,000 square feet plus an estimated 1,000 square feet for the access road across from Station # 6. The access roads would be washed out by winter storms. The other activities(2b-2c) are also temporary structures that would be removed before the onset of winter rains. Impacts on substrate would be recurring, but short-term and minor.

Activity # 3 - The coverage of substrate under this activity (placement of three to four foot high temporary berms adjacent to three collectors to allow flushing activity) would vary depending on location of the river shoreline in relation to the flushing discharge. The amount of substrate coverage would be probably no more than half again the existing footprint of the existing collector structures or about a 15-20 foot radius beyond the total collector width and length (about 20 feet in diameter). The impacts to substrate from this activity would be short-term and minor.

Activity # 4 - After each winter, structures described in 4a through 4d (repair of existing rock jetties/dikes, revetment and miscellaneous rip-rap placements) occasionally need refilling/rebuilding of

rock material. Maintenance and repair would involve rebuilding these structures to their original dimensions. Therefore, the impact on river substrate due to the maintenance and repair of these structures would be minor as there would be no additional substrate impacts beyond the structures' original dimensions. Portions of the repair would be long-term or short-term depending on the power of high water during winter.

Currents/Circulation - Activities 2 through 4 (as-needed access pads, repairs, and gravel platforms) would be constructed away from the low flow channel (summer, fall conditions) and would therefore cause little or no effect on river currents. However, Activity 1 (diversion berm) would redirect low flow river currents to the left bank of the river in order to ensure minimum flow into the direct diversion inlet at Station # 6. This berm and channel is constructed on an annual basis. The applicant would allow winter high flows to washout the berm and fill the channel. The impact on river currents would be an annual, recurring, moderate impact on river currents and circulation.

Erosion/Sedimentation - All berm and road/pad access activities would cause minor, short-term sedimentation into the river, with the exception of moderate, short-term sedimentation during channel excavation and construction of the berm in Activity 1. After construction of Activity 1 berm, low flow against the berm may cause minor, short-term sedimentation for the duration of installation of the berm (summer season). High winter flows would remove the berm naturally and cause moderate, short-term impacts on sediment flow into the river. Since high winter flows have high sediment load, the extra load from the berm washing out would add relatively minor amounts to overall sediment load. Repair activities under Activity 4 would prevent erosion of streambanks and prevent damage to District facilities. Under Activity 3, the flushing discharge of the Collector on an as-needed basis would cause a minor, short-term increase in sediment input to the river. The berms constructed prior to the flushing action would prevent damage to

the Collector during the discharge and keep impacts of sedimentation into the low flow channel as minor, and short-term.

Water Quality - There would be short-term, minor, adverse impacts to river water quality due to implementation of the above maintenance, repair and diversion due to temporary increases in sediment to the low flow channel.

(2) BIOLOGICAL CHARACTERISTICS AND ANTICIPATED CHANGES

Pool and Riffle Areas (Special Aquatic Site) - Construction of the temporary access roads, access ramps, and repair of existing dikes/jetties would have little (certainly short-term, minor) or no impact on existing pool and riffle complexes within the Mad River. Although Activity 1 (diversion berm near Station # 6) would have no effect on fall/winter locations of pools and riffles, the summer diversion would dry up any remaining pools and riffles located near the north bank of the river in favor of low-flow pools and riffles on the south bank. There would be minor, short-term, adverse impacts on pools and riffles in the low flow regime.

Endangered Species - The Mad River supports Coho salmon (Oncorhynchus kisutch), and several runs of Chinook salmon (O. tshawytscha), with both species listed by the National Marine Fisheries Service (NMFS) as threatened pursuant to the Endangered Species Act (ESA) of 1973. In addition, the Mad River is designated in the Federal Register in 1999 by NMFS as Critical Habitat for the Coho salmon, including the project reach. In addition to wild salmon populations, the California Department of Fish and Game operates the Mad River Fish Hatchery (located in the town of Blue Lake on the north bank of the river). Purpose of this hatchery is enhancement of anadromous fish population including Coho and Chinook salmon. Trinity Associates states (Trinity Associates, November 1999) the return of adult coho and chinook salmon to CDF&G's Mad River hatchery has declined significantly since 1988. Coho have declined 87% and Chinook 95%. Since 1989, the total run of Coho salmon in the Mad River could be

as low as 150 adults of which 49 return to the hatchery and 111 are "naturalized".

The spawning migrations begin when heavy fall rains overcome wave power and breach the sand bars at the mouths of coastal streams, allowing the fish amassing offshore to move into the streams. The fish move quickly upstream but stop if streamflow suddenly drops. Coho salmon are known to migrate up and spawn in any coastal stream accessible to them regardless of stream size (Trinity Associates, 1999).

There is scant information about the distribution of Coho salmon in the Mad River. Adult migration generally peaks during mid-November to mid-December when high water makes observation and access difficult. Tributaries near the project reach (especially Lindsay Creek and its tributaries) have been regarded as the most important Coho salmon watershed in the system. Coho salmon have also been observed in Mill Creek, North Fork Mad River and other tributaries (Trinity Associates, 1999).

The range of chinook salmon in the Mad River watershed was a spawning run high of 1,519 adults down to a low of 19 adults between 1938 and 1964 with an average annual of 807 adults. The only fish counts for chinook salmon since 1964 are those for Mad River Hatchery beginning in 1971. Adult chinook salmon returns to Mad River Hatchery between 1971 and 1988 averaged 256 fish, and since 1989, averaged 22 fish, a 95% decline (Trinity Associates, 1999).

Project impacts to Coho salmon and Chinook salmon would be limited to minor, short-term, adverse impacts to possible juvenile salmon downstream runs due to minor increases in sediment from construction of protection berms, access roads, access pads to the Collectors, flushing discharge of the Collectors, repair of rip-rap structures, and annual construction of the diversion berm at Station # 6. There would be little or no impacts to fish passage (no obstructions unless the diversion channel gradient is not maintained in a downstream direction) due to the diversion berm or any other maintenance feature of the project.

The Corps of Engineers will initiate Section 7 Consultation as required under the ESA with the National Marine Fisheries Service regarding possible project impacts to the threatened Coho salmon, it's critical habitat, and to the Chinook salmon.

Habitat for Fish, and Other Aquatic Organisms - In addition to the Coho salmon and Chinook salmon runs described above, the Mad River supports spawning and migration runs of steelhead trout (O. mykiss) and coastal cutthroat trout (Salmo clarkii). Steelhead trout in the project reach have a winter run spawning migration from mid-August to mid-April, with a peak in December through February. Steelhead summer run migration is mid-March to mid-July. Spawning occurs late December to mid-April. Juvenile outmigration occurs between May and August. The Mad River has a long history of receiving non-native stocks of steelhead as early as 1917. Price Creek Hatchery (on the Eel River) planted 250,000 steelhead on a regular basis. The primary steelhead hatchery in this area has been operated by the California Department of Fish and Game on the Mad River since 1971 as an enhancement operation. Adult steelhead returns to Mad River Hatchery from 1971-1998 has averaged 3,077 fish. Approximately 233,000 juvenile steelhead of various stock origins are released annually into the Mad River (Trinity Associates).

Cooperative multi-party surveys of steelhead between 1994 and 1999 indicate a decline in steelhead. The 1999 summer steelhead count of 82 is the smallest population estimate since complete river counts began in 1994. The average number of adult summer steelhead observed in 1994 was 323 fish. The average number of fish observed between 1938 and 1964 was 3,218 fish.

Coastal cutthroat trout adults migrate between August and November with peak migration in September and spawn between November and June with a peak in January. Juvenile outmigration is March through June with a peak in April. Anadromous cutthroat trout reproduce in the lower Mad River, especially the tributaries Lindsay Creek and North Fork of the Mad River. The run is small but of unknown magnitude.

The migration and spawning periods of the above described anadromous fish in the Mad River may overlap. There is the potential for impacts to some of these fish from the proposed project. However, most of the project activity, especially jetty or bank protection repair, construction of access roads and pads would be away from the low flow channel of the Mad River, and thus would have at the most, a minor, short-term adverse impact on adult or juvenile runs of a particular species, such as summer run steelhead. Construction of the diversion berm near Station # 6 may have minor, short-term adverse impacts to juvenile outmigration to all anadromous summer-run fish species and no impact on winter run species. What is unknown is the impact on summer run steelhead and outmigration of juvenile cutthroat trout with their respective runs that may occur during the construction phase of the project (early summer construction of access roads, diversion berms and maintenance work). The construction work may be delayed by late high water, in which case the steelhead summer run, outmigration and cutthroat trout outmigration, may have already been complete by the time construction occurs.

b. IMPACTS ON RESOURCES OUTSIDE THE AQUATIC ECOSYSTEM

(1) PHYSICAL CHARACTERISTICS AND ANTICIPATED CHANGES

Air Quality - Project activity would have minor, short-term impacts on air quality in the vicinity of the project site. Based on the relative minor size of the proposed project and limited to an evaluation of air quality impacts only within Corps of Engineers' (Corps) jurisdictional areas, the Corps has determined that the total direct and non-direct project emissions would not exceed the de minimis threshold levels of 40 CFR 93.153. Therefore, the proposed project would conform to the State air quality implementation Plan (SIP) for California.

Noise Conditions - The proposed project would have short-term, minor adverse impacts on ambient noise conditions on an annual or as-needed basis for the work.

(2) SOCIOECONOMIC CHARACTERISTICS AND ANTICIPATED CHANGES

Aesthetic Quality - There would be short-term, minor adverse impacts on project area aesthetics due to the recurring presence of heavy equipment constructing the project and the sight of unnatural diversion berms, access roads, and access pads remaining in the river during the low water season. The diversion berm, the largest feature of the project being 500 feet long across the river, would have a moderate, short-term but recurring impact on river area aesthetics.

Employment - The proposed project would have recurring, minor, beneficial impacts on local area employment for equipment operators constructing the project features under contract or directly employed by the Water District along with those employees performing direct maintenance on water diversion structures.

Public Health and Safety - If the project were not approved, and maintenance of the water diversion structures could not take place, the water supply that may be intended for use for public health and safety may be severely curtailed or cut off. Examples of public health and safety uses of water delivered from Water District facilities are fire protection and domestic water supply for drinking water and hygiene. The proposed project would have a long-term, major, beneficial impact on public health and safety.

Recreational Opportunities - This reach of the Mad River has shoreline access for the public, including fishing activity where permitted. The proposed project would have minor, short-term adverse impacts on recreational opportunities while construction is in progress. The public would avoid areas where equipment is working.

Recreational Fishing - See "Recreational Opportunities" above.

Water Supply (M&I) - The Water District obtains water for municipal and industrial use through a direct diversion facility at Station # 6. This station

draws surface and in turn this water is pumped by pipeline to water consumers. The District also maintains a series of large Ranney well collectors that draw subterranean water from beneath the riverbed through perforated collector pipes. In addition to serving residential, commercial, and other municipal water supplies, the District's water system supplies large volumes of water necessary for operation of the forest products pulp mills located on the Samoa Peninsula and along the west Humboldt Bay shoreline. The District maintains a water pipeline that begins at the Mad River diversion facilities and extends across or under Humboldt Bay, and terminated near the Louisiana-Pacific and Simpson pulp mills. Water usage by pulp mills has dropped in the last several years due to the closing of one of the mills (Simpson pulp mill). The project overall would have a major, long term beneficial impact on availability of water for the remaining municipal and industrial uses. The project would ensure uninterrupted supply of water for the above uses.

(4) HISTORIC - CULTURAL CHARACTERISTICS AND ANTICIPATED CHANGES

A Corps of Engineers archaeologist will be conducting an assessment of the permit area, involving review of published and unpublished data on file with city, State, and Federal agencies. If, based upon assessment results, a field investigation of the permit area is warranted, and cultural properties listed or eligible for listing on the National Register of Historic Places are identified during the inspection, the Corps of Engineers will coordinate with the State Historic Preservation Officer to take into account any project effects on such properties.

c. SUMMARY OF INDIRECT IMPACTS

None have been identified

d. SUMMARY OF CUMULATIVE IMPACTS

The proposed project is one of many

activities that occur in the lower Mad River area. Gravel extraction activities occur both upstream and downstream of the project site. Immediately downstream of the project site (downstream from Highway 299 bridge), the Arcata Readymix Company extracts gravel each year through the skimming process (Johnson-Spini and O'Neill gravel bars). Upstream from the project site there are gravel extraction operations conducted at ten additional locations on the Mad River (Mercer-Fraser Company, Mad River Sand and Gravel, Redwood Empire Aggregates, and Eureka Readymix). In 1998, the total volume of gravel extracted for commercial use on the Mad River by the above operators was approximately 223,362 CY (Klein, Jager, Trush, and Lehre, 1999). The County of Humboldt (through conditional use permits) and Corps of Engineers (through Letter of Permission 96-1) authorized larger amounts than actually extracted. If accumulation of gravel from winter storms exceeds amount of gravel extracted from the gravel bars, the County and the Corps of Engineers would consider requests to extract gravel amounts larger than the 1998 total. In addition to the gravel extraction activity, the California Department of Fish and Game constructs a small diversion berm partway across the Mad River adjacent to the Mad River Fish Hatchery for fish management purposes. The Fish Hatchery is located near the town of Blue Lake about five miles upstream from the Water District project site.

The District project site would have a cumulative impact on river substrate, streamflow, water quality, and fish habitat on a smaller scale than the total gravel extraction operations and other activities within the Mad River. While other activities would have recurring cumulative impacts on river bed elevations, bedload content, sedimentation effects, and fish habitat; the proposed Water district project would have cumulative impacts on a recurring basis on waterflow diversion, turbidity, and sedimentation.

e. CONCLUSIONS AND RECOMMENDATIONS

Based on an analysis of the above identified impacts, a preliminary determination has been made that it will not be necessary to prepare an

Environmental Impact Statement (EIS) for the subject permit application. The Environmental Assessment for the proposed action has however, not yet been finalized and this preliminary determination may be reconsidered if additional information is developed.

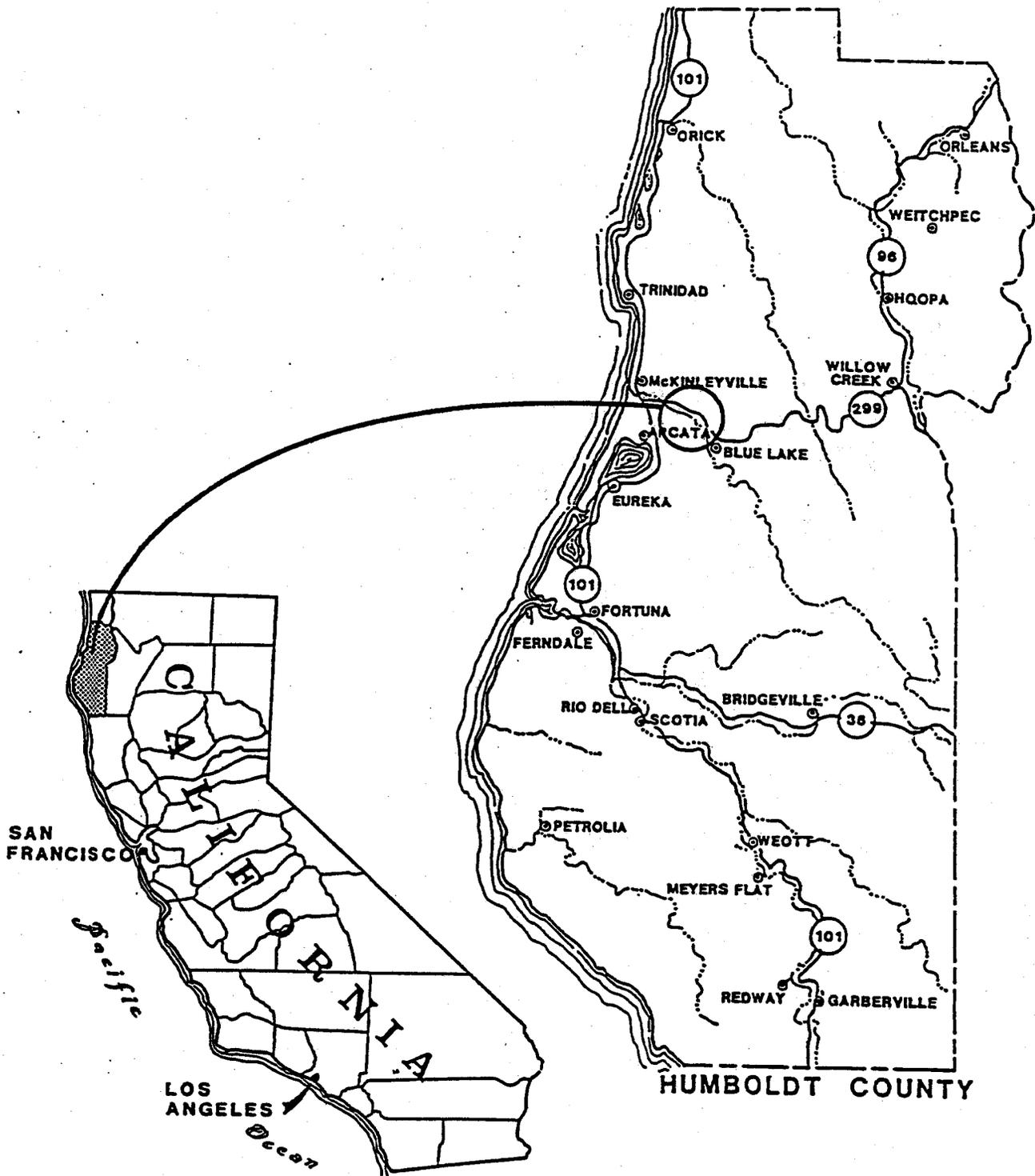
5. EVALUATION OF ALTERNATIVES: An evaluation was made by this office under the 404(b)(1) guidelines and it was determined that the proposed project is water dependent.

6. PUBLIC INTEREST EVALUATION: The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity and its intended use on the public interest. Evaluation of the probable impacts which the proposed activity may have on the public interest requires a careful weighing of all those factors which become relevant in each particular case. The benefits which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. The decision whether to authorize a proposal, and if so the conditions under which it will be allowed to occur, are therefore determined by the outcome of the general balancing process. That decision will reflect the national concern for both protection and utilization of important resources. All factors which may be relevant to the proposal must be considered including the cumulative effects thereof. Among those are conservation, economics, aesthetics, general environmental concerns, wetlands, cultural values, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shore erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people.

7. CONSIDERATION OF COMMENTS: The Corps of Engineers is soliciting comments from the public, Federal, State and local agencies and officials, Indian Tribes, and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be

considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

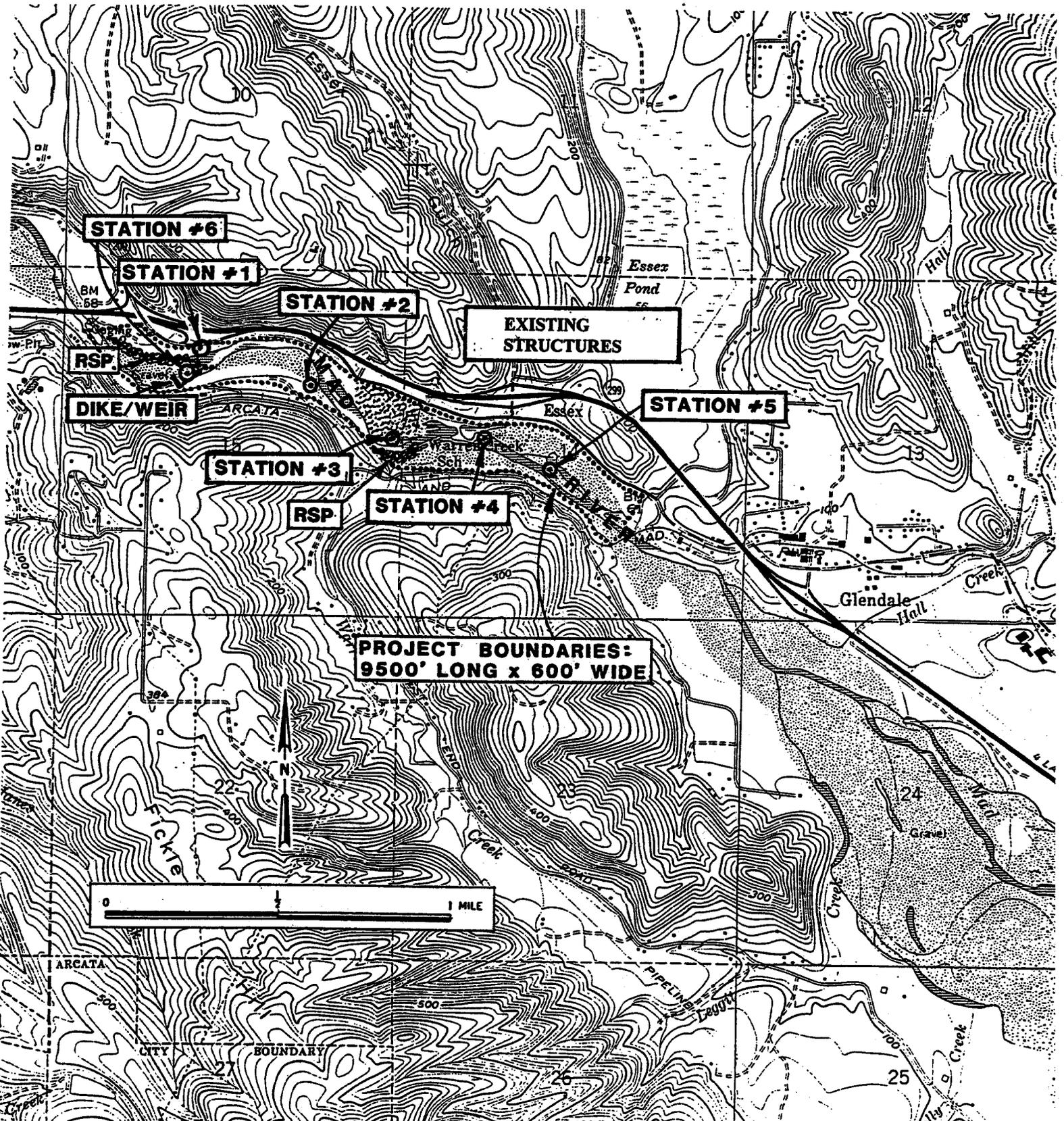
8. SUBMISSION OF COMMENTS: Interested parties may submit in writing any comments concerning this activity. Comments should include the applicant's name, the number, and the date of this notice and should be forwarded so as to reach this office within the comment period specified on page one of this notice. Comments should be sent to the Regulatory Branch. It is Corps policy to forward any such comments which include objections to the applicant for resolution or rebuttal. Any person may also request, in writing, within the comment period of this notice that a public hearing be held to consider this application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Additional details may be obtained by contacting the applicant whose address is indicated in the first paragraph of this notice, or by contacting David A. Ammerman of our office at telephone 707-443-0855 or by electronic mail at dammerman@spd.usace.army.mil. Details on any changes of a minor nature which are made in the final permit action will be provided on request.



PURPOSE: Maintenance of Existing Public Water System
DATUM NGVD

LOCATION MAP

IN Mad River
 AT Essex
 COUNTY OF Humboldt STATE CA
 APPLICATION BY
 Humboldt Bay Municipal Water District

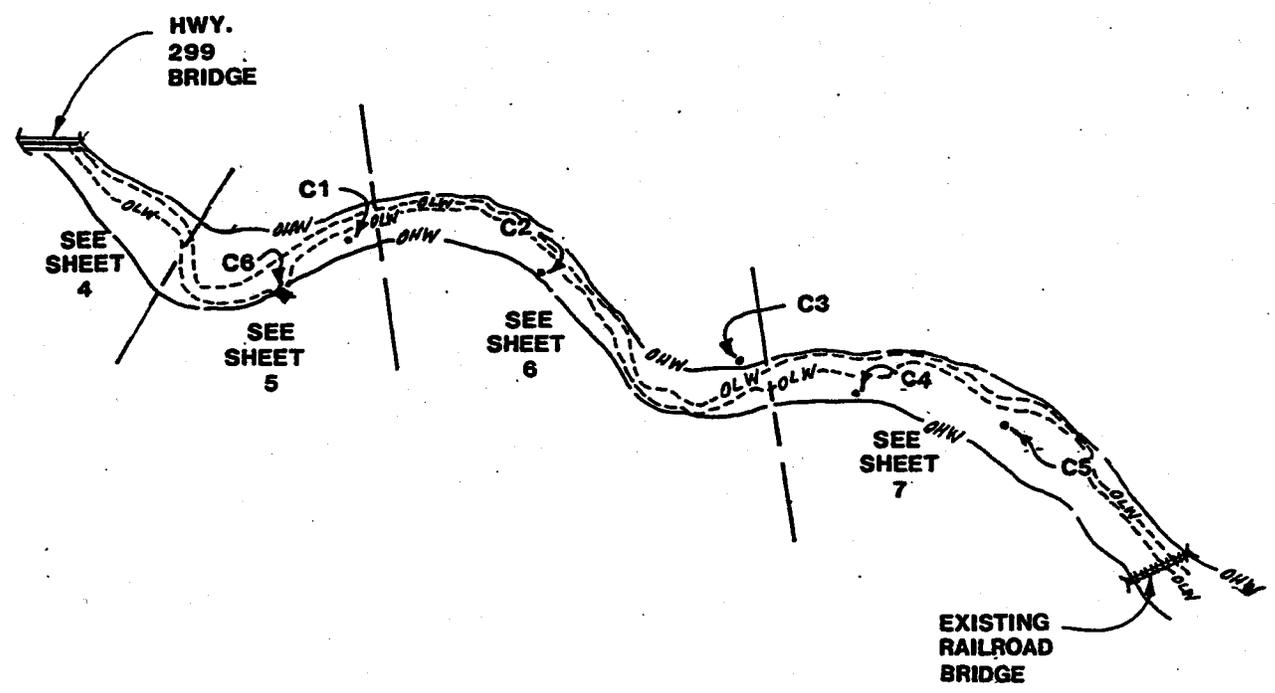


PURPOSE: Maintenance of Existing Public Water System
DATUM MSL
ADJACENT PROPERTY OWNERS: See Block 24

SITE LOCATION
 IN Mad River
 AT Essex
 COUNTY OF Humboldt STATE CA
 APPLICATION BY
 Humboldt Bay Municipal Water District



Scale: 1" = 1500±

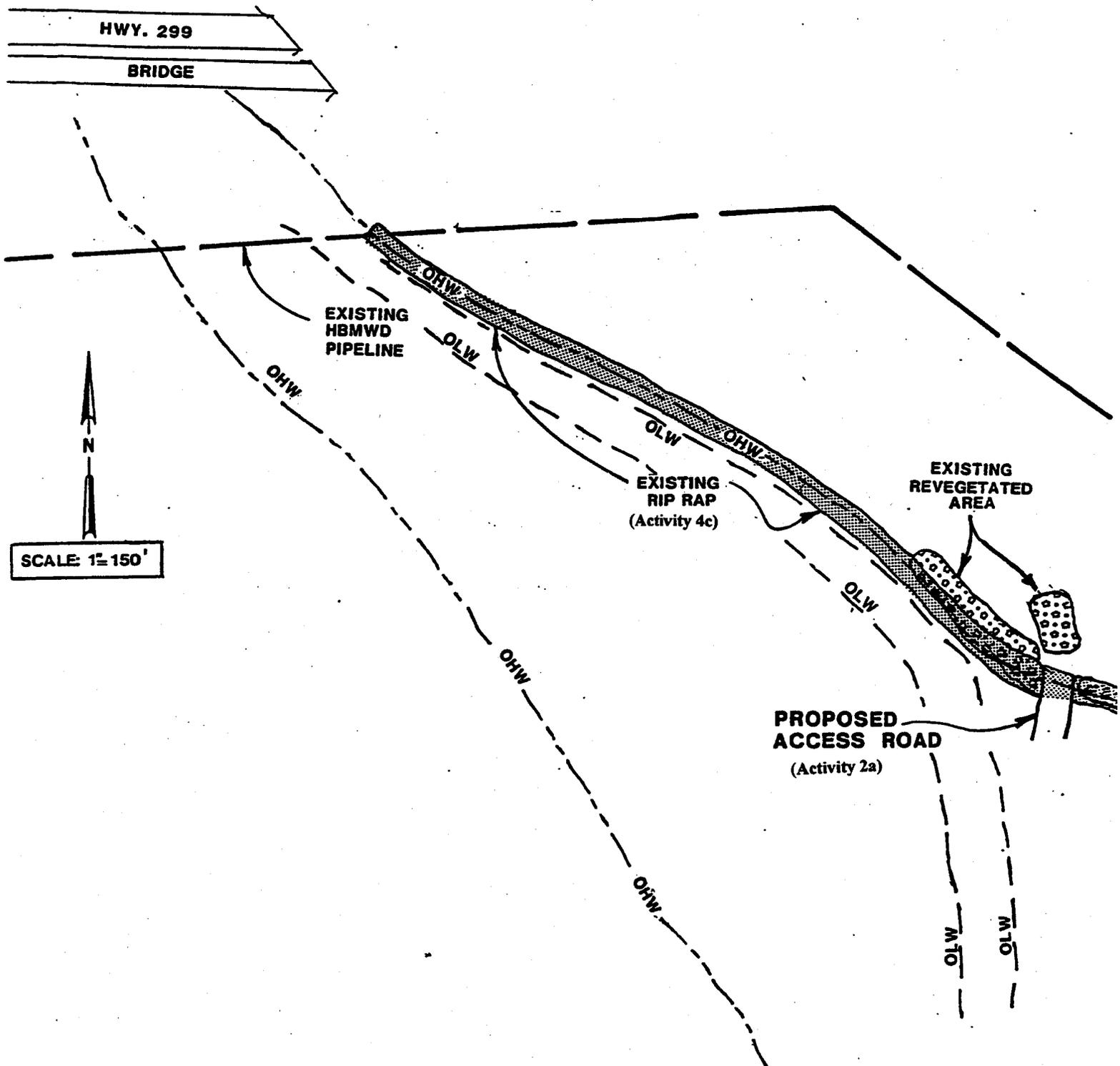


C1^o Collector Location

PLAN VIEW OF PROJECT

PURPOSE: Maintenance of Existing Public Water System
DATUM N/A
ADJACENT PROPERTY OWNERS: See Block 24

IN Mad River
AT Essex
COUNTY OF Humboldt **STATE** CA
APPLICATION BY
Humboldt Bay Municipal Water District



PLAN VIEW DOWNSTREAM OF STATION NO. 6

PURPOSE: Ramp to Provide Maintenance Access to Rip-Rap, Dike and Channel
DATUM Rip-Rap to Provide Permanent Bank Protection

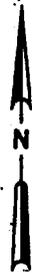
ADJACENT PROPERTY OWNERS: See Block 24

IN Mad River
AT Essex

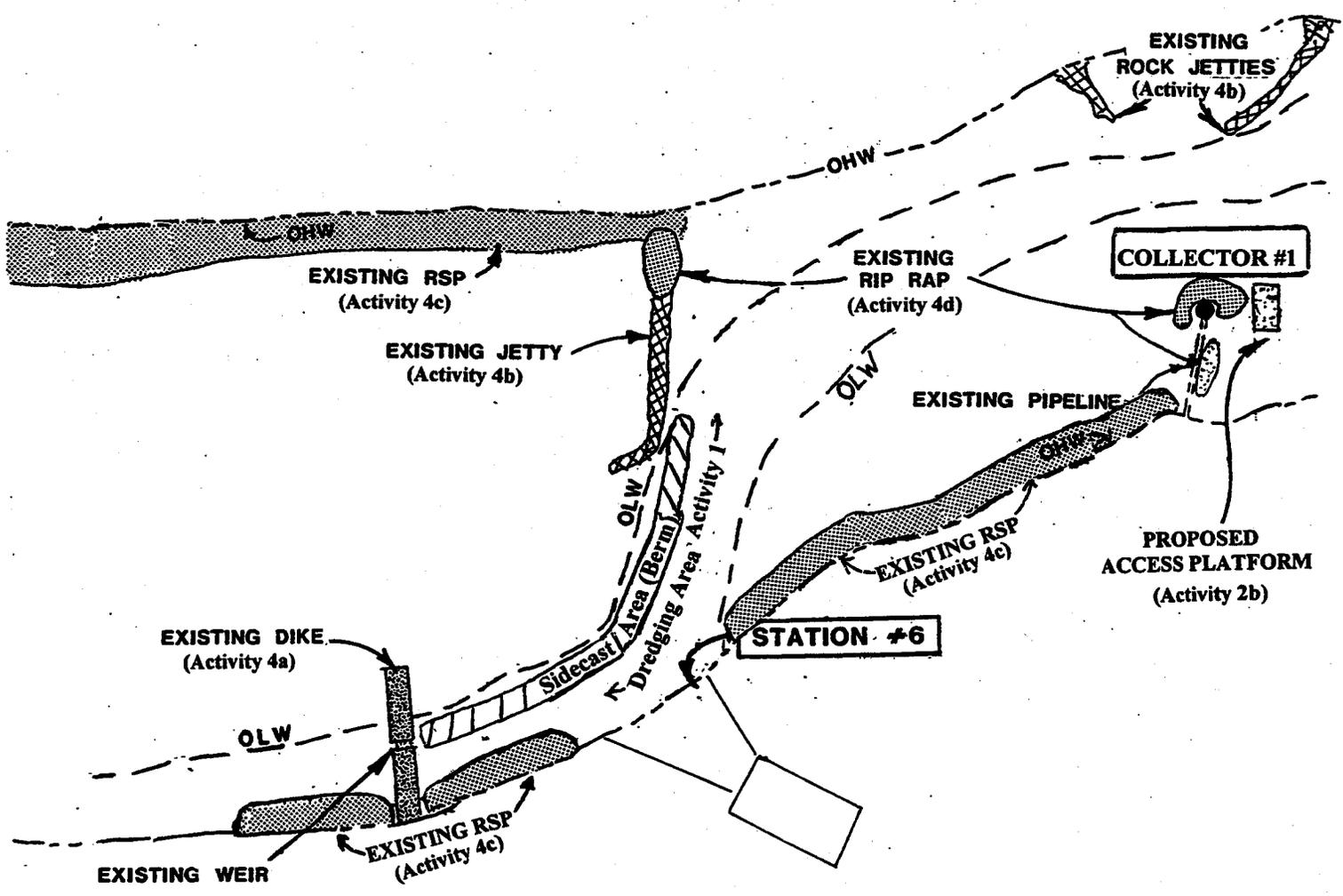
COUNTY OF Humboldt

STATE CA

APPLICATION BY
 Humboldt Bay Municipal Water District



SCALE 1" = 150'



PLAN VIEW OF STATIONS NO. 1 & NO. 6

PURPOSE: Maintain Proper Flow and Water Surface Elevation at Station #6

DATUM N/A

ADJACENT PROPERTY OWNERS: See Block 24

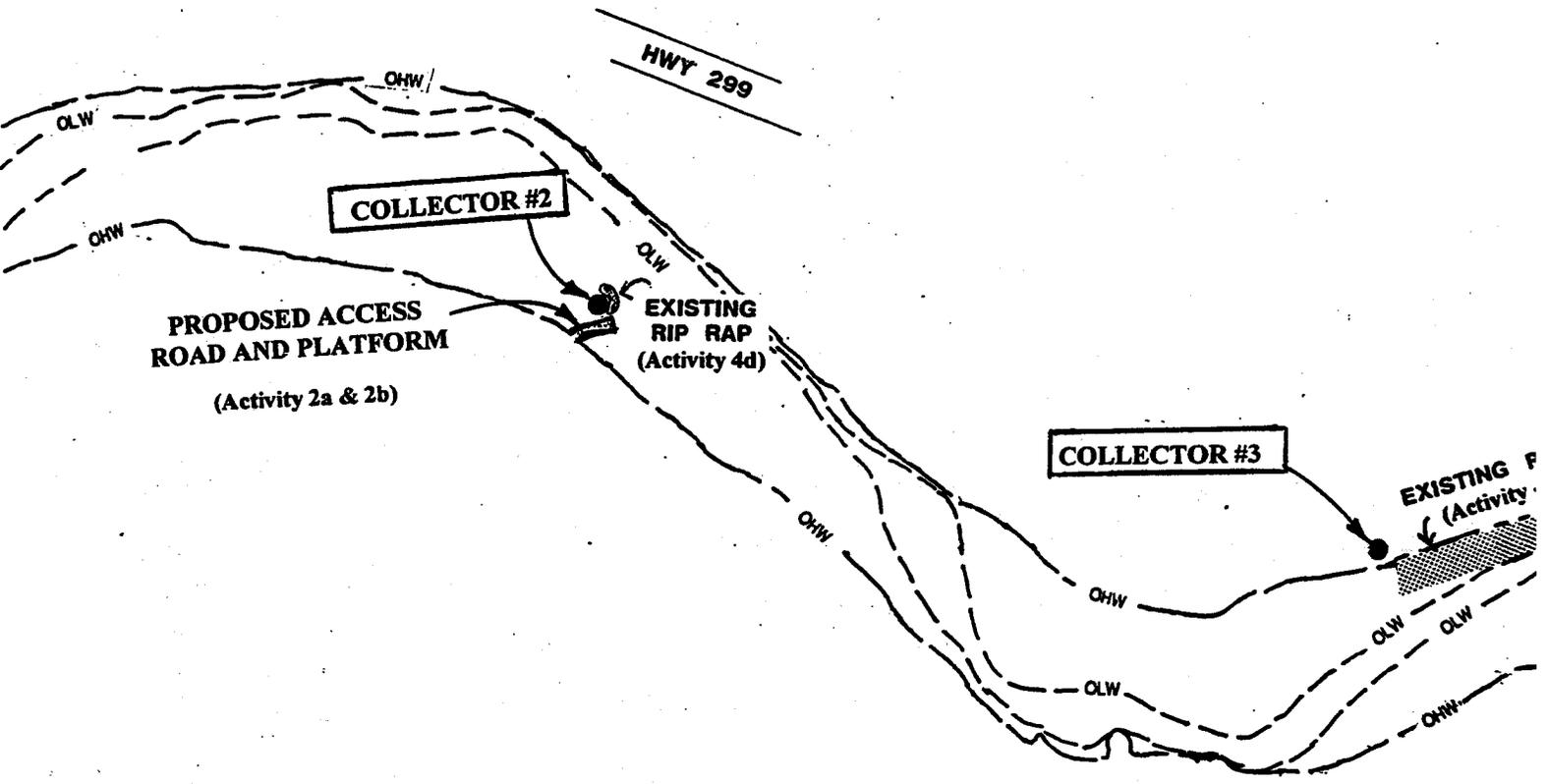
IN Mad River

AT Essex

COUNTY OF Humboldt

STATE CA

APPLICATION BY
Humboldt Bay Municipal Water District



Scale: 1"=400'

PLAN VIEW OF STATIONS NO. 2 & NO. 3

PURPOSE: Public Water Supply

DATUM N/A

ADJACENT PROPERTY OWNERS: See Block 24

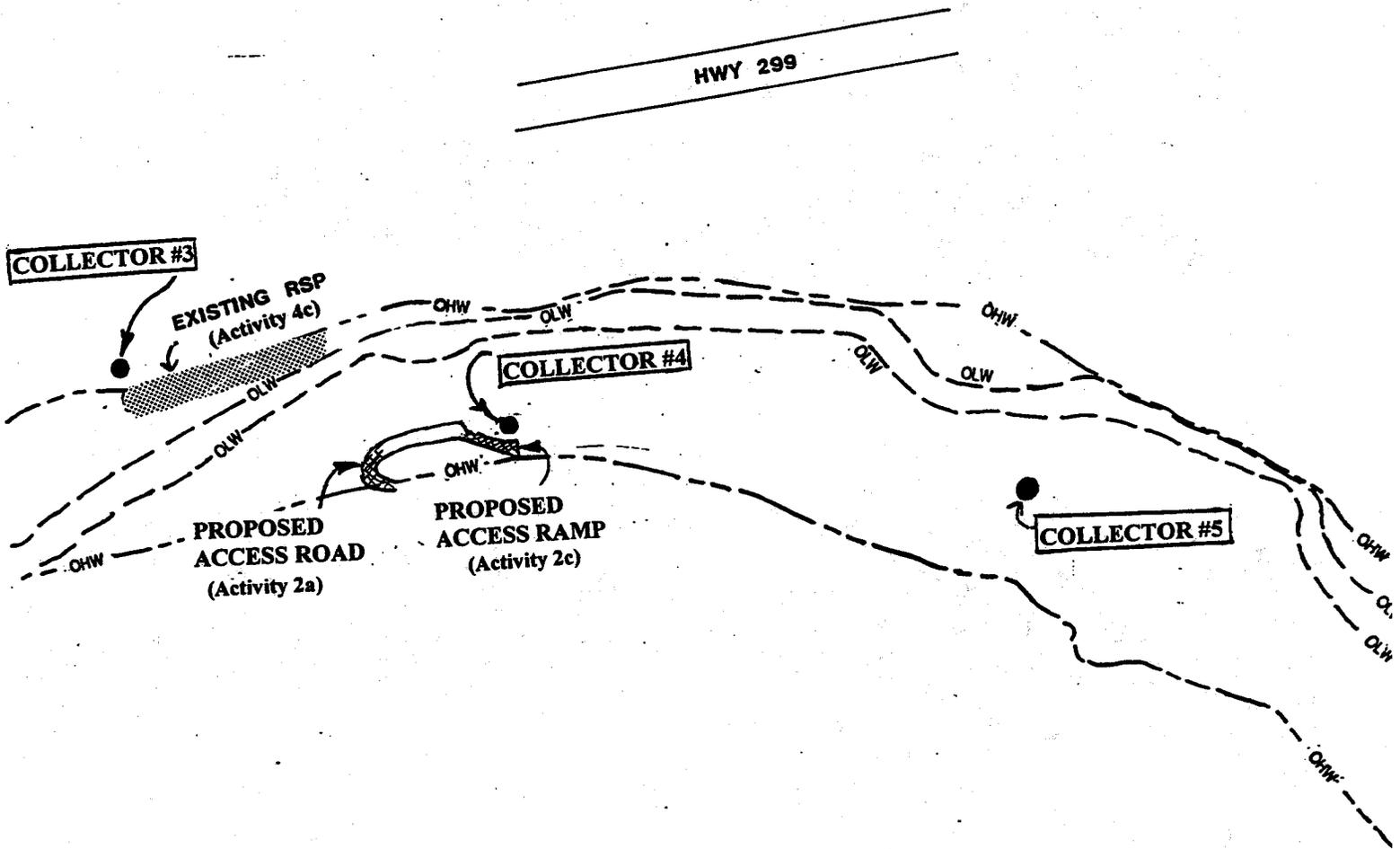
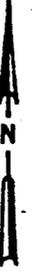
IN Mad River

AT Essex

COUNTY OF Humboldt

STATE CA

APPLICATION BY
Humboldt Bay Municipal Water District



Scale: 1" = 400'

PLAN VIEW OF STATIONS NO. 3, NO. 4 & NO. 5

PURPOSE: Public Water Supply

DATUM N/A

ADJACENT PROPERTY OWNERS: See Block 24

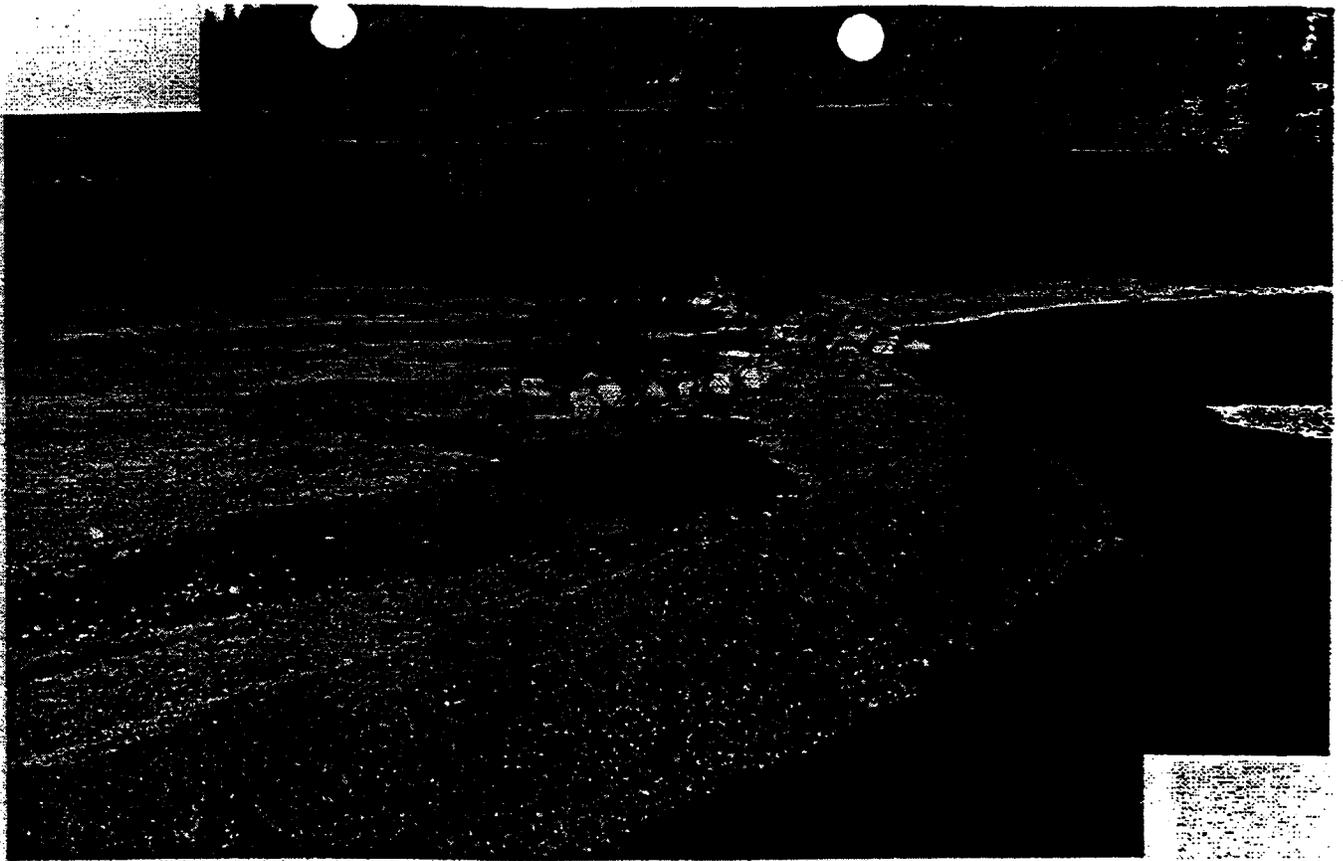
IN Mad River

AT Essex

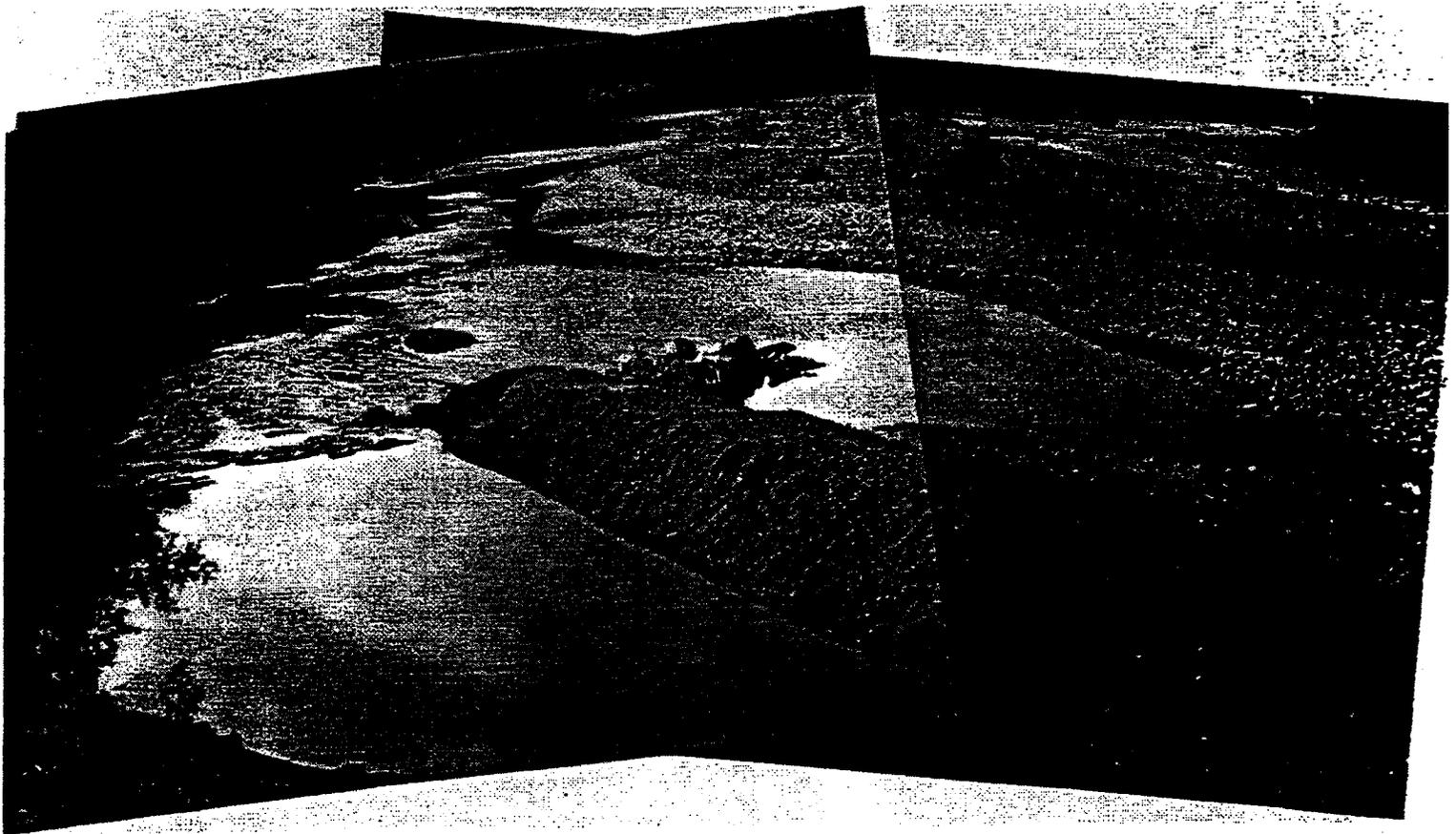
COUNTY OF Humboldt

STATE CA

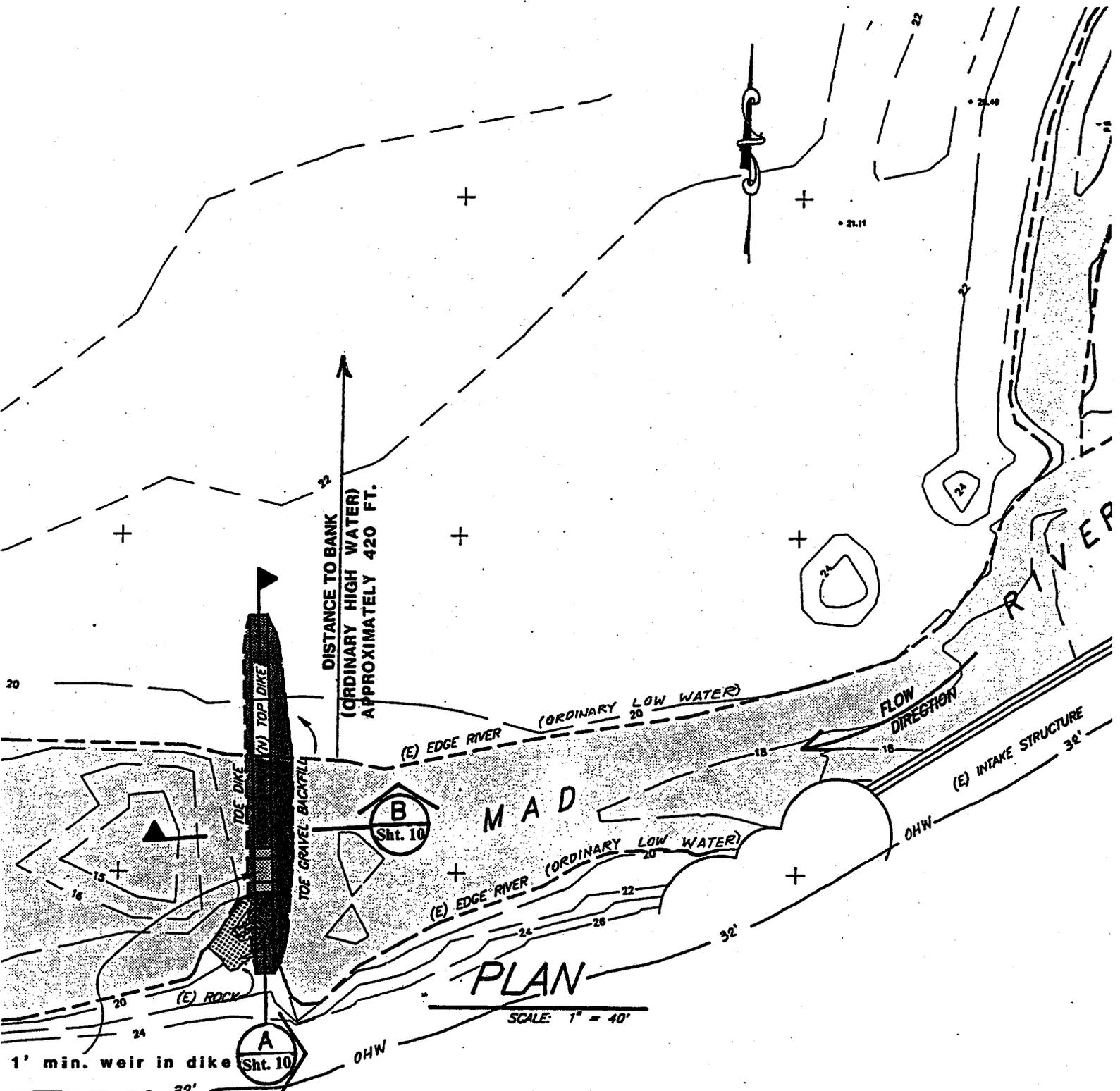
APPLICATION BY
Humboldt Bay Municipal Water District



Low Flow Berm Near Station No. 6
(Activity 1)



Mad River at Essex
HBMWD



LOW FLOW CHANNEL DIKE WITH WEIR - PLAN VIEW (Activity 4

PURPOSE: Maintain Proper Flow to Surface Diversion Station #6

DATUM NGVD

ADJACENT PROPERTY OWNERS: See Block 24

IN Mad River

AT Essex

COUNTY OF Humboldt

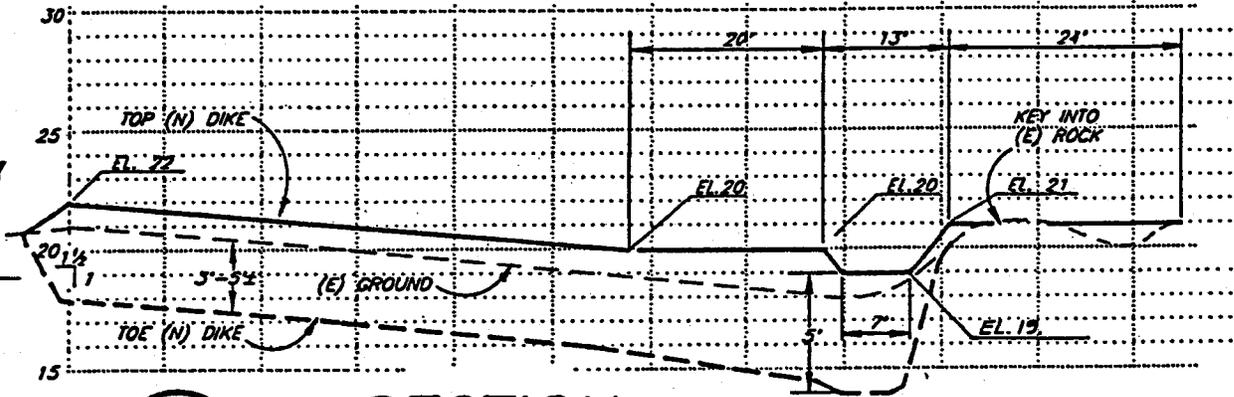
STATE CA

APPLICATION BY

Humboldt Bay Municipal Water District

**ORDINARY
HIGH WATER
32.3'**

**ORDINARY
LOW WATER
19.1**



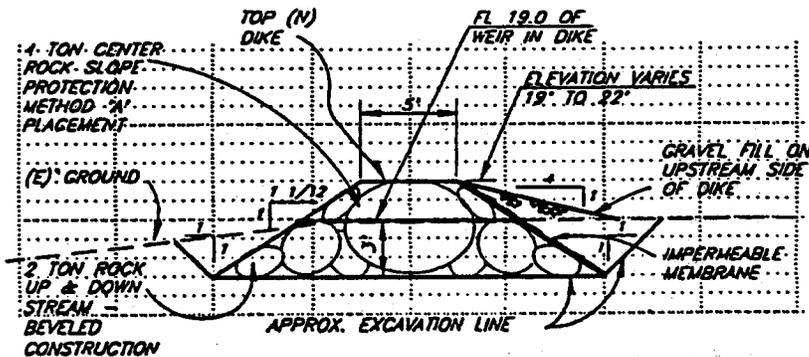
A
Sht. 9

SECTION

SCALE: HORIZ. 1" = 20'
VERT. 1" = 8'

**ORDINARY
HIGH WATER
32.3'**

**ORDINARY
LOW WATER
19.1'**



B
Sht. 9

TYPICAL DIKE SECTION

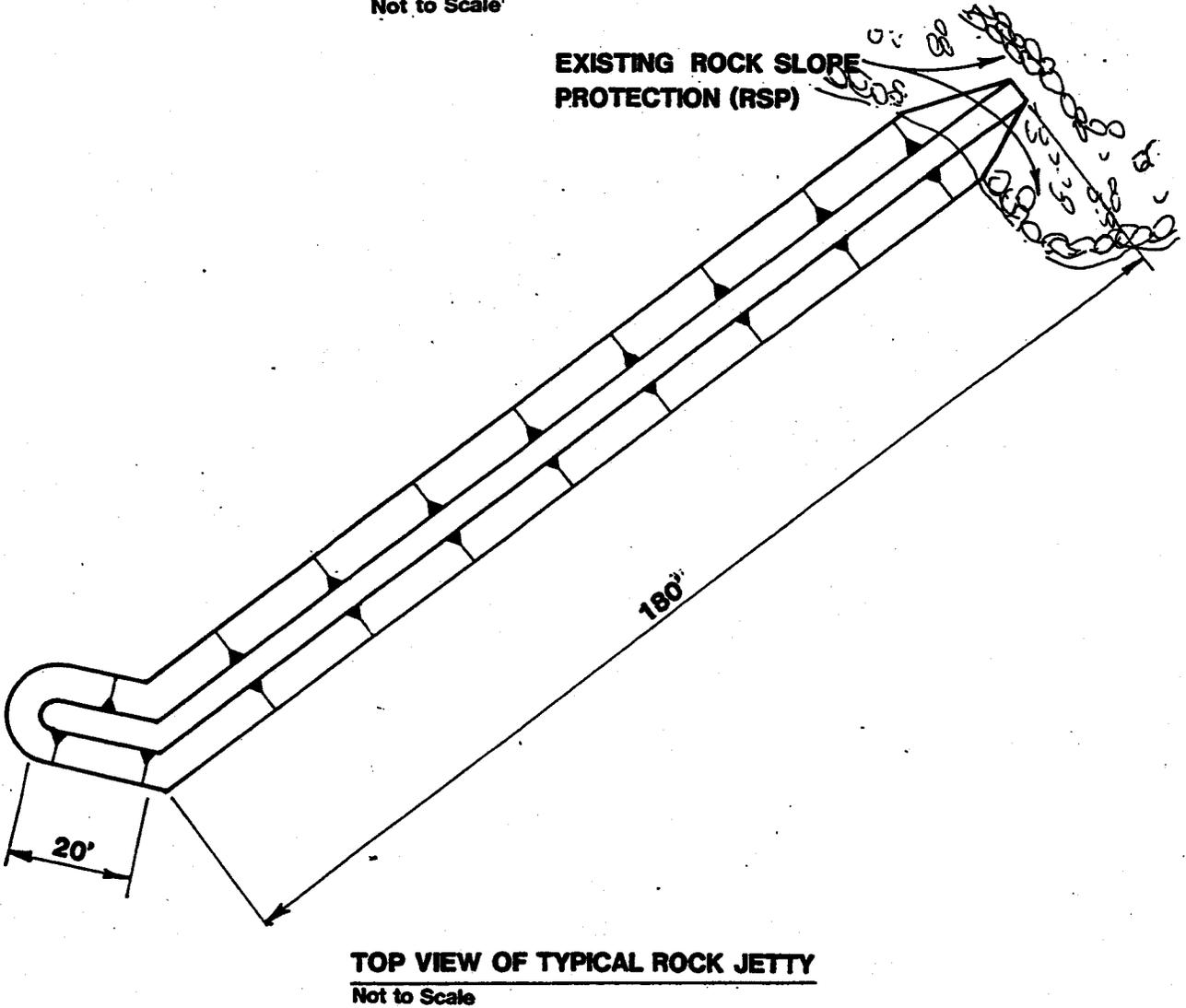
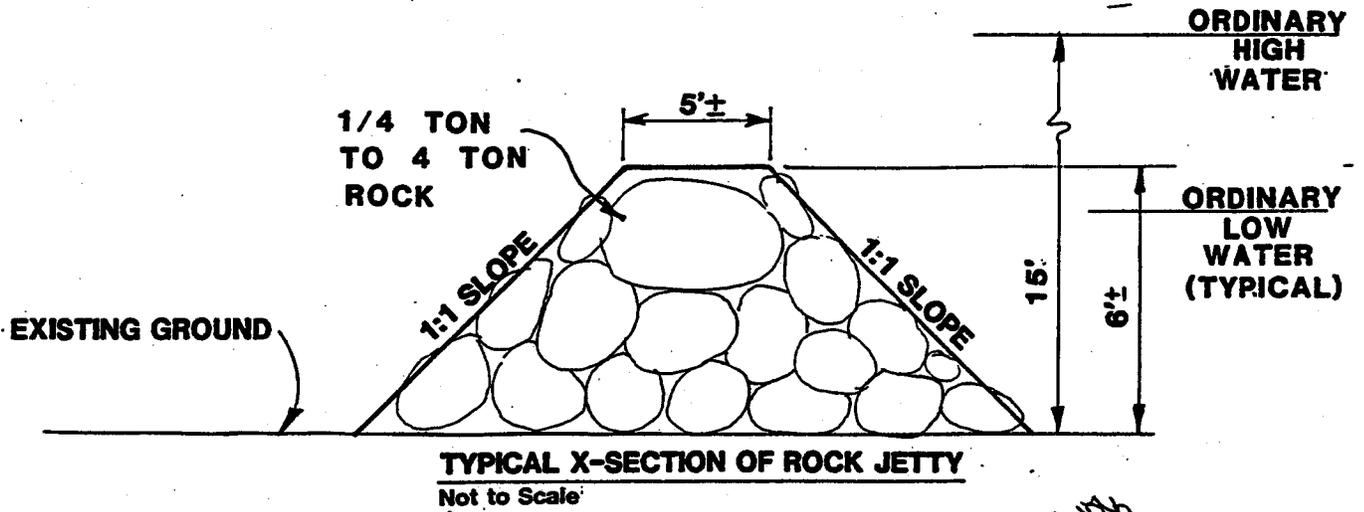
SCALE: 1" = 10'

PURPOSE: Maintain Proper Flows to Surface Diversion Station #6
DATUM NGVD
ADJACENT PROPERTY OWNERS: See Block 24

**LOW FLOW CHANNEL DIKE
DIKE / WEIR (Activity 4a)**

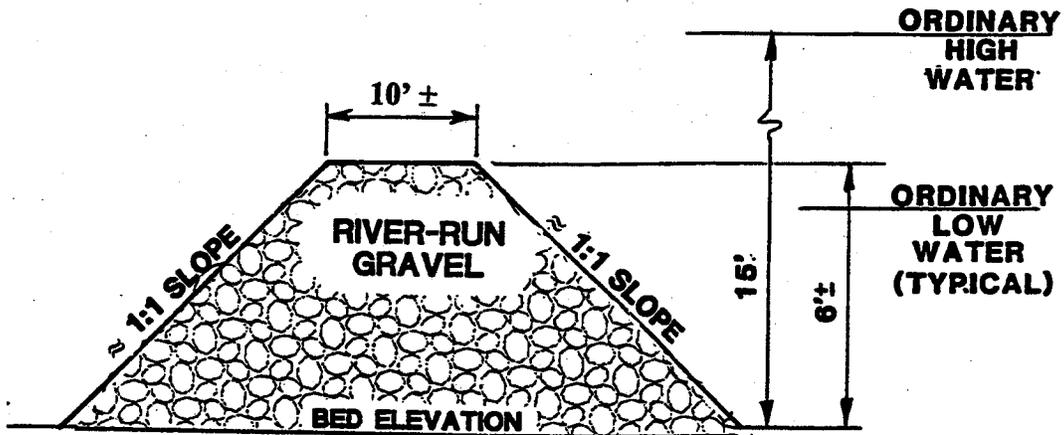
IN Mad River
AT Essex
COUNTY OF Humboldt
APPLICATION BY
Humboldt Bay Municipal Water District

STATE CA



PURPOSE: To Assure Proper Flow of Water into Forebay of Station #6
DATUM MSL
ADJACENT PROPERTY OWNERS: See Block 24

TYPICAL ROCK JETTY (Activity 4b)
 IN Mad River
 AT Essex
 COUNTY OF Humboldt STATE CA
 APPLICATION BY
 Humboldt Bay Municipal Water District



Typical Cross-Section of Berm
Not to scale

TYPICAL LOW-FLOW BERM (Activity 1)

PURPOSE: To Assure Proper Flow of Water into Forebay of Station #6

DATUM MSL

ADJACENT PROPERTY OWNERS: See Block 24

IN Mad River

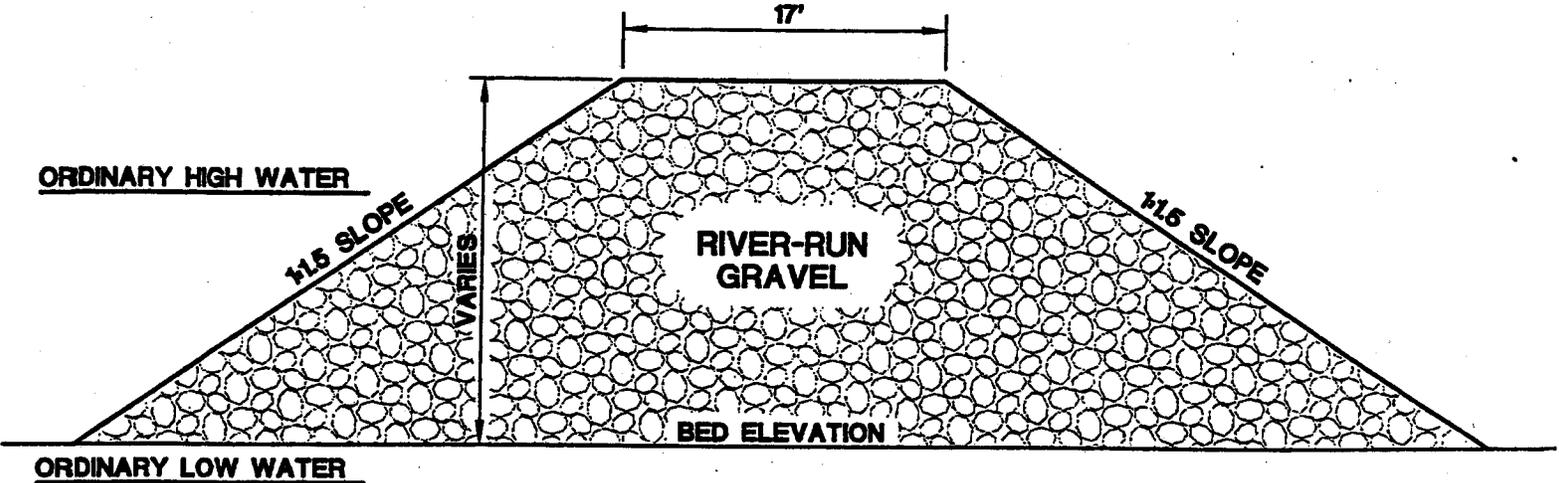
AT Essex

COUNTY OF Humboldt

STATE CA

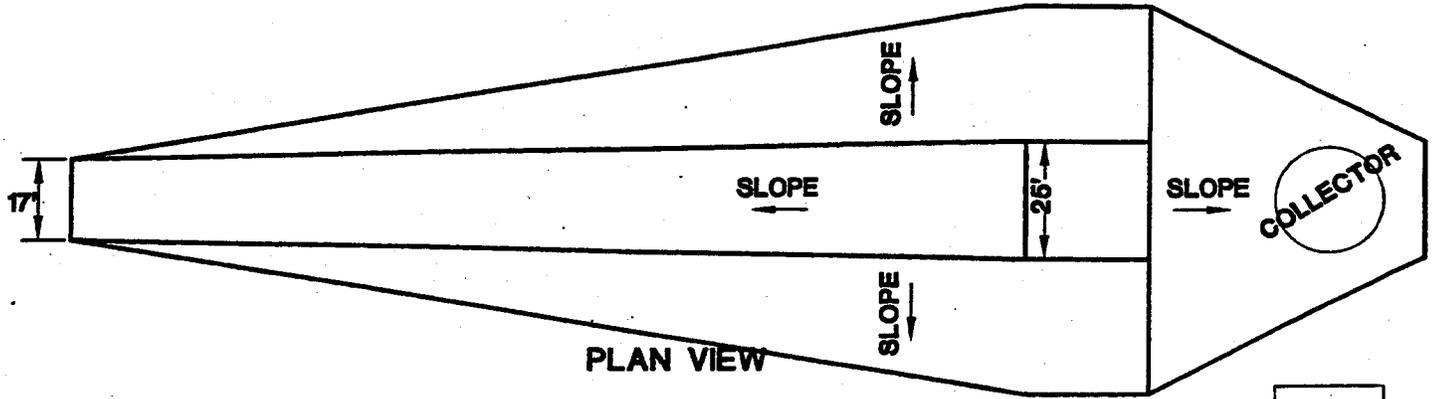
APPLICATION BY

Humboldt Bay Municipal Water District

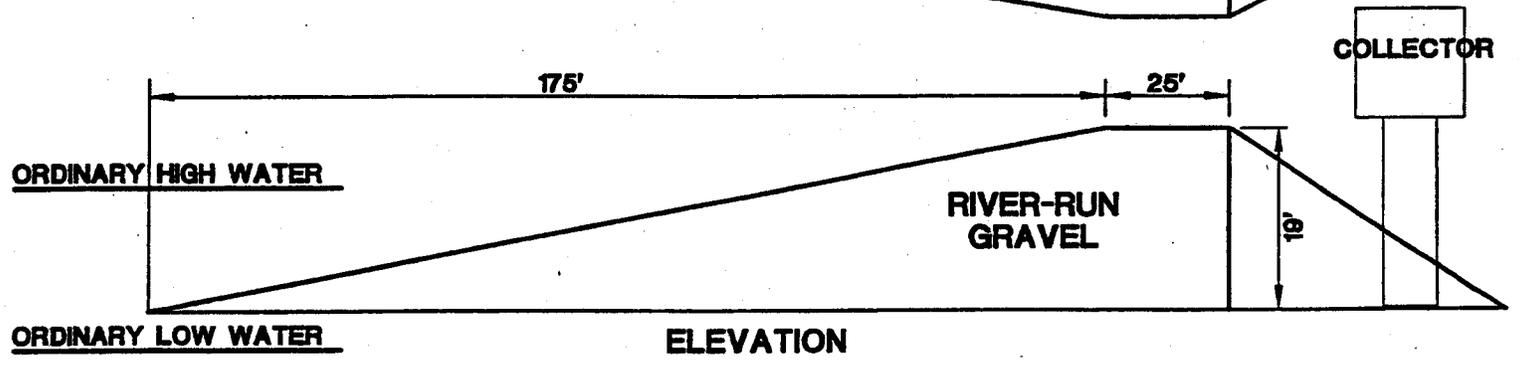


TYPICAL CROSS SECTION OF ACCESS RAMP

SCALE: 1"-10'



PLAN VIEW



ELEVATION

NOTE:

SCALE: 1"-40'

RAMPS ARE CONSTRUCTED BY PUSHING RIVER-RUN GRAVEL FROM THE SURROUNDING RIVER BED. CONSTRUCTION OCCURS IN THE DAY, AT LOW-FLOW CONDITIONS OUTSIDE THE LOW-FLOW CHANNEL. NO EQUIPMENT IS STORED ON RIVER BED.

TYPICAL ACCESS RAMP (Activity 2c)

PURPOSE: Maintenance of Collectors

DATUM NGVD

ADJACENT PROPERTY OWNERS: See Block 24

IN Mad River

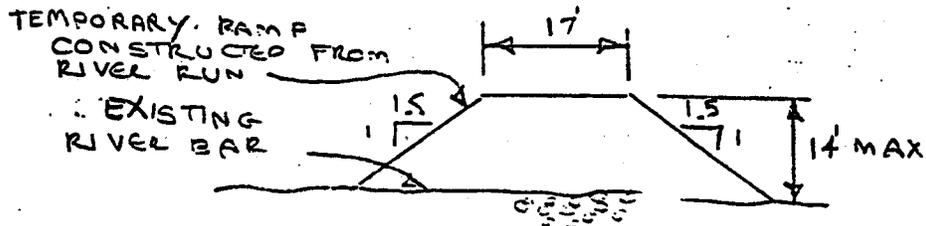
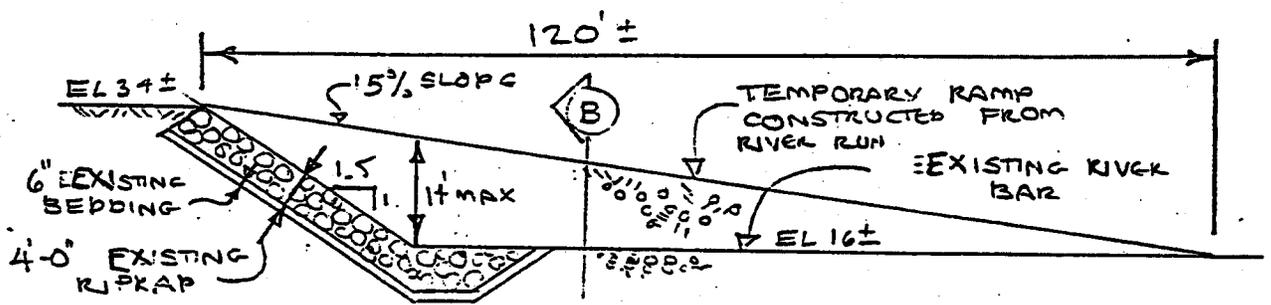
AT Essex

COUNTY OF Humboldt

STATE CA

APPLICATION BY

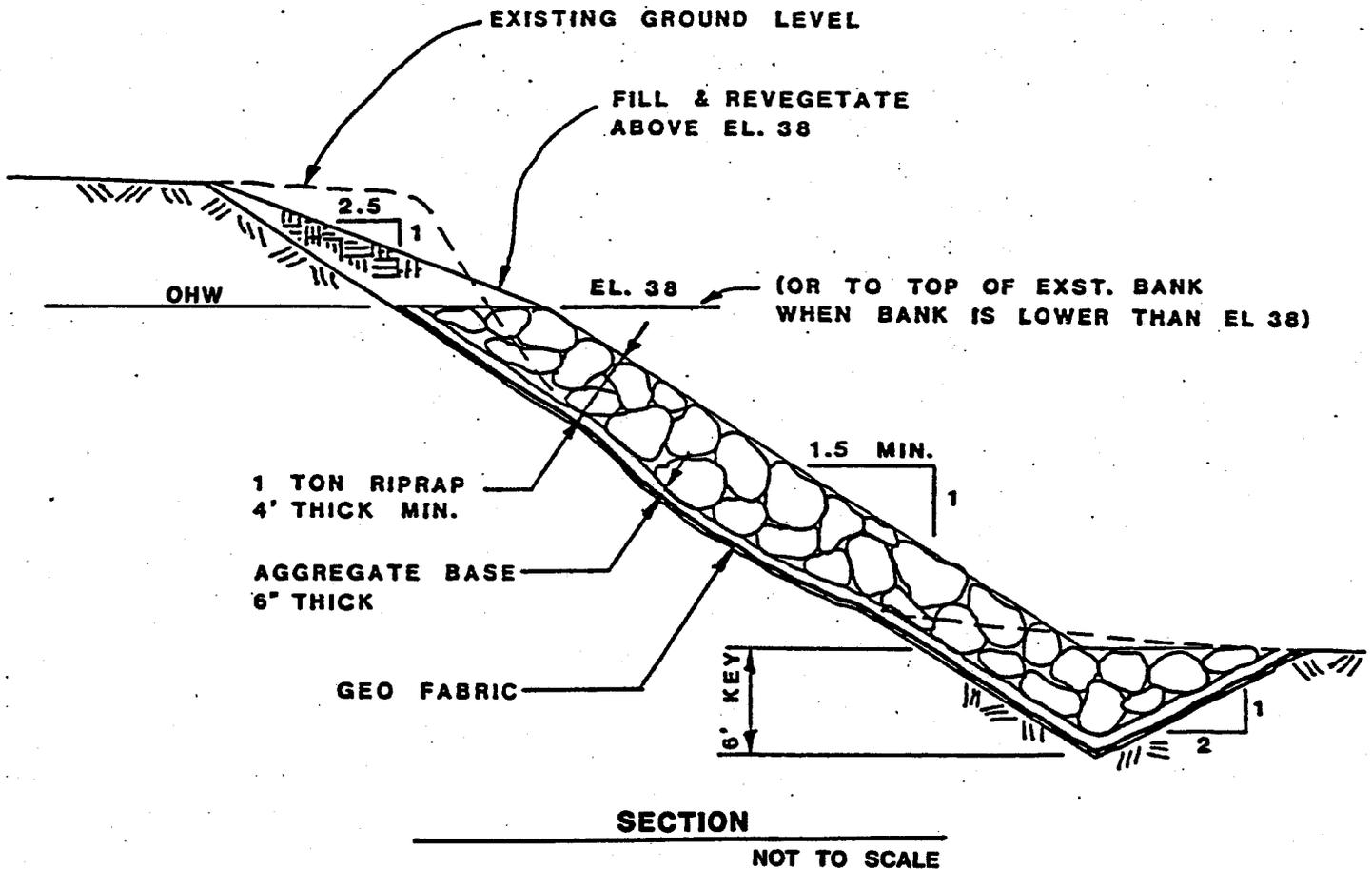
Humboldt Bay Municipal Water District



PURPOSE: To Provide Vehicle Access to River Bed
 DATUM NGVD
 ADJACENT PROPERTY OWNERS: See Block 24

TYPICAL SECTION - ACCESS ROAD (Activity 2a)

IN Mad River
 AT Essex
 COUNTY OF Humboldt STATE CA
 APPLICATION BY
 Humboldt Bay Municipal Water District



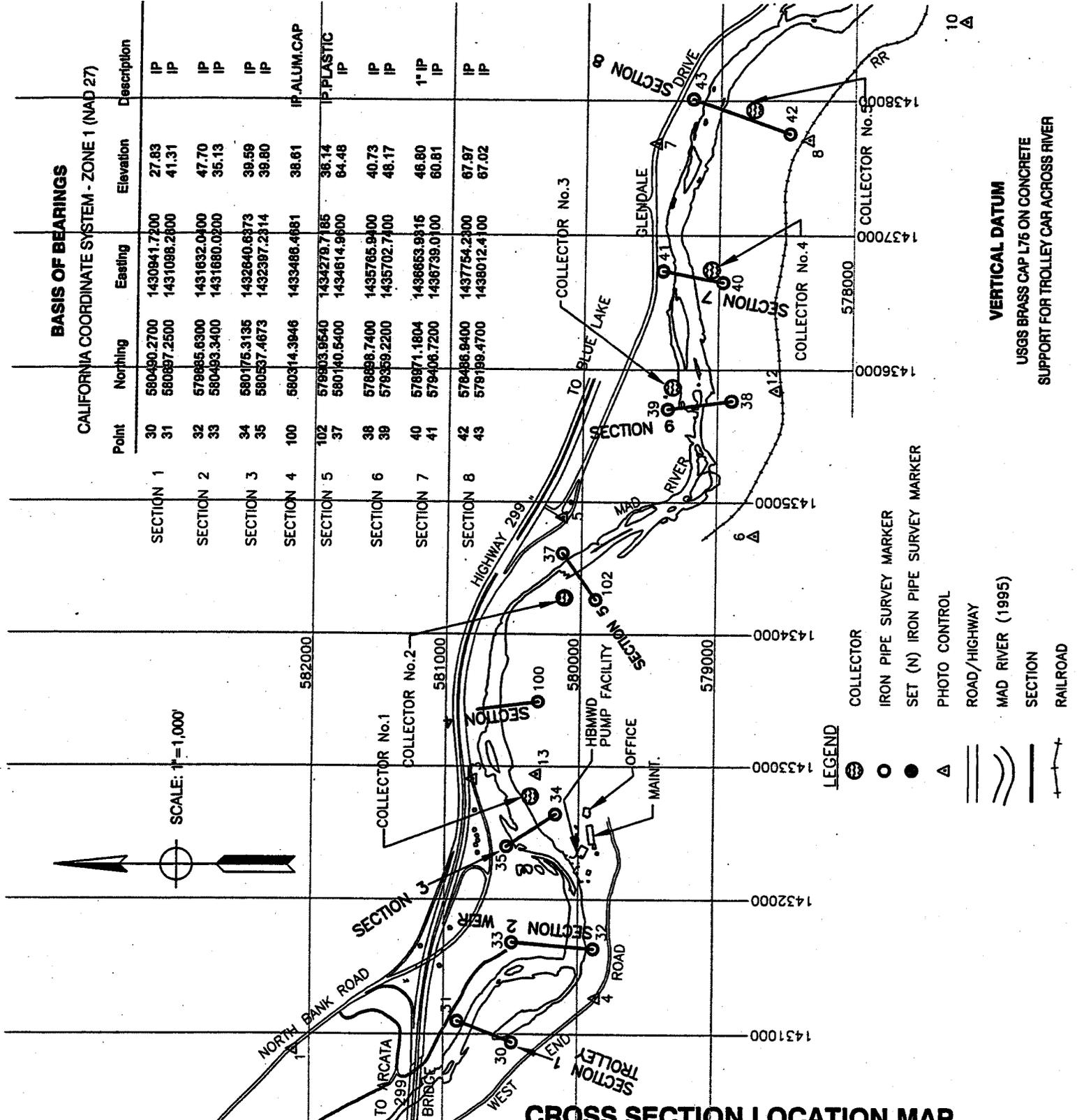
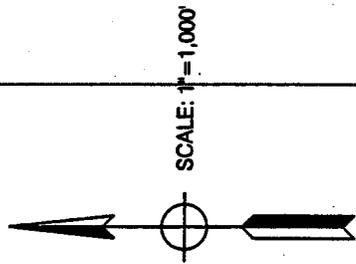
PURPOSE: To Provide Bank Protection Where Necessary
DATUM NGVD
ADJACENT PROPERTY OWNERS: See Block 24

TYPICAL SECTION - ROCK SLOPE PROTECTION
 (Activity 4c)
 IN Mad River
 AT Essex
 COUNTY OF Humboldt STATE CA
 APPLICATION BY
 Humboldt Bay Municipal Water District

BASIS OF BEARINGS

CALIFORNIA COORDINATE SYSTEM - ZONE 1 (NAD 27)

Point	Northing	Easting	Elevation	Description
SECTION 1				
30	580490.2700	1430841.7200	27.83	IP
31	580897.2500	1431098.2800	41.31	IP
SECTION 2				
32	579885.8300	1431632.0400	47.70	IP
33	580493.3400	1431680.0200	35.13	IP
SECTION 3				
34	580175.3135	1432840.6373	39.59	IP
35	580537.4673	1432397.2314	39.80	IP
SECTION 4				
100	580314.3946	1433486.4681	38.61	IP ALLUM.CAP
SECTION 5				
102	579803.9540	1434278.7185	36.14	IP PLASTIC
37	580140.8400	1434614.9600	64.48	IP
SECTION 6				
38	578898.7400	1435765.9400	40.73	IP
39	579359.2200	1435702.7400	48.17	IP
SECTION 7				
40	579871.1804	1438653.9315	46.80	1" IP
41	579408.7200	1436739.0100	60.81	IP
SECTION 8				
42	578488.9400	1437754.2300	67.97	IP
43	578199.4700	1438012.4100	67.02	IP



VERTICAL DATUM

USGS BRASS CAP L75 ON CONCRETE
SUPPORT FOR TROLLEY CAR ACROSS RIVER

LEGEND

- COLLECTOR
- IRON PIPE SURVEY MARKER
- SET (N) IRON PIPE SURVEY MARKER
- △ PHOTO CONTROL
- ||| ROAD/HIGHWAY
- ||| MAD RIVER (1995)
- SECTION
- RAILROAD

CROSS SECTION LOCATION MAP

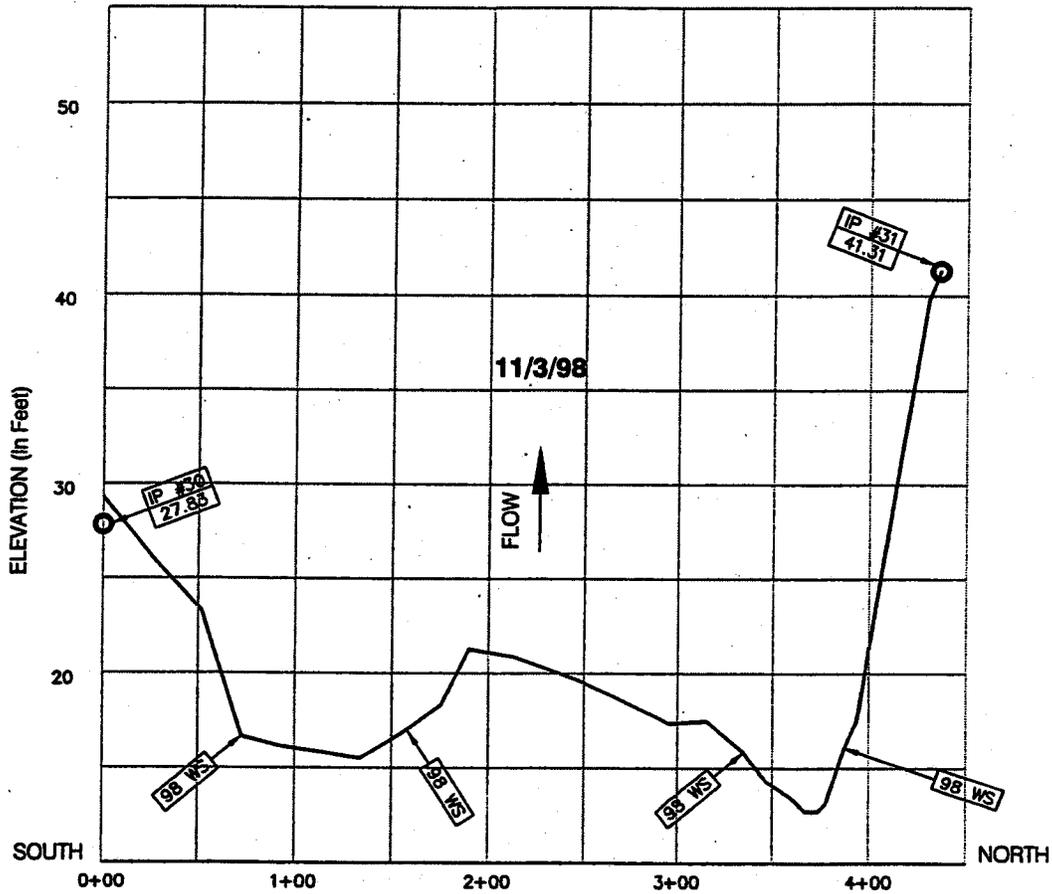
PURPOSE: Maintenance of Existing Public Water System
DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River
AT Essex
COUNTY OF Humboldt
APPLICATION BY
Humboldt Bay Municipal Water District

STATE CA



SECTION 1
CROSS SECTION: TROLLEY
 SEE SHEET 16 FOR CROSS SECTION LOCATION

SCALE:

HORIZ: 1" = 100'
 VERT: 1" = 10'

LEGEND

- NOV. 1998 WATER SURFACE
- IRON PIPE & SURVEY CONTROL NUMBER ELEVATION IN FEET
- IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River

AT Essex

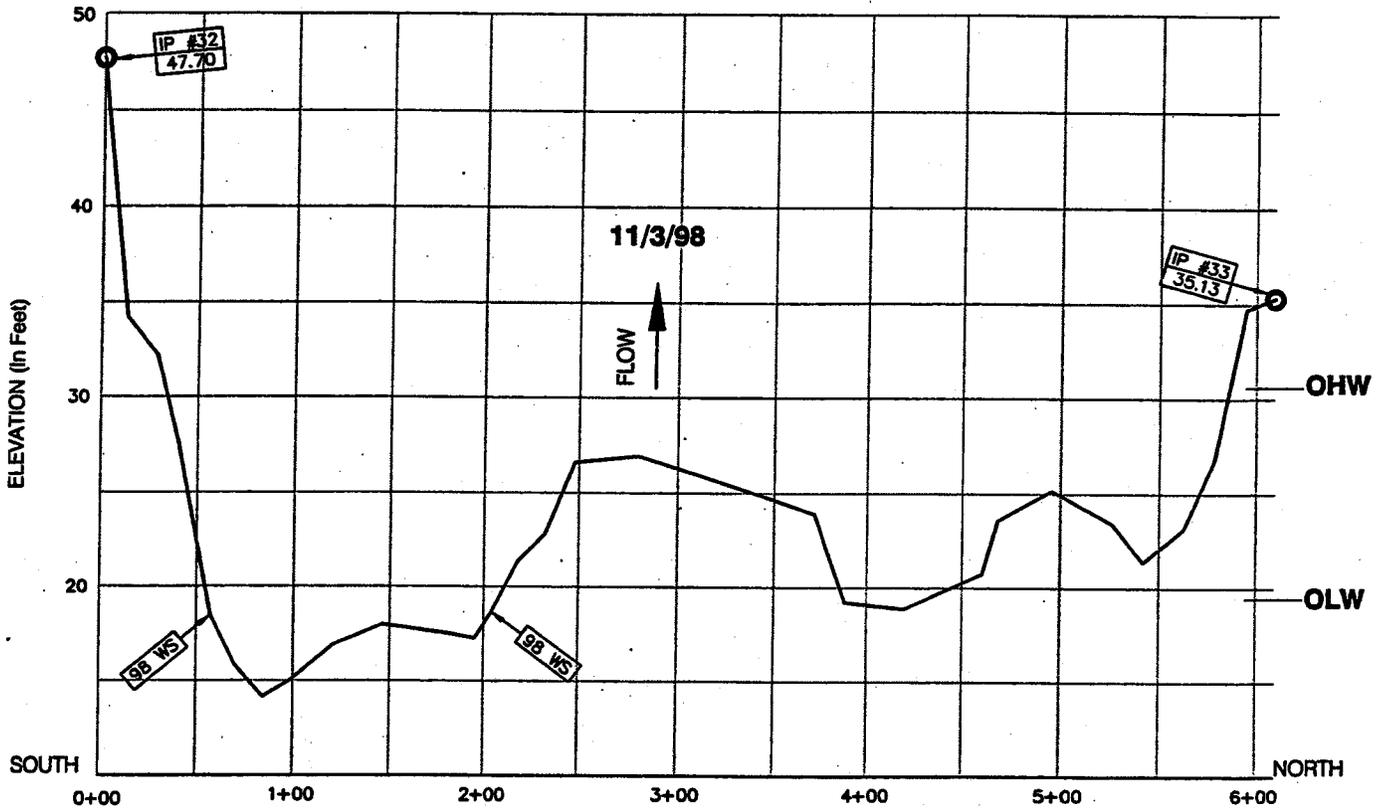
COUNTY OF Humboldt

APPLICATION BY

Humboldt Bay Municipal Water District

STATE CA

Sheet 17



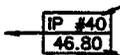
**SECTION 2
CROSS SECTION: DOWNSTREAM OF WEIR**

SEE SHEET 13 FOR CROSS SECTION LOCATION

SCALE:

HORIZ: 1" = 100'
VERT: 1" = 10'

LEGEND

-  NOV. 1998 WATER SURFACE
-  IRON PIPE & SURVEY CONTROL NUMBER
-  ELEVATION IN FEET
-  IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River

AT Essex

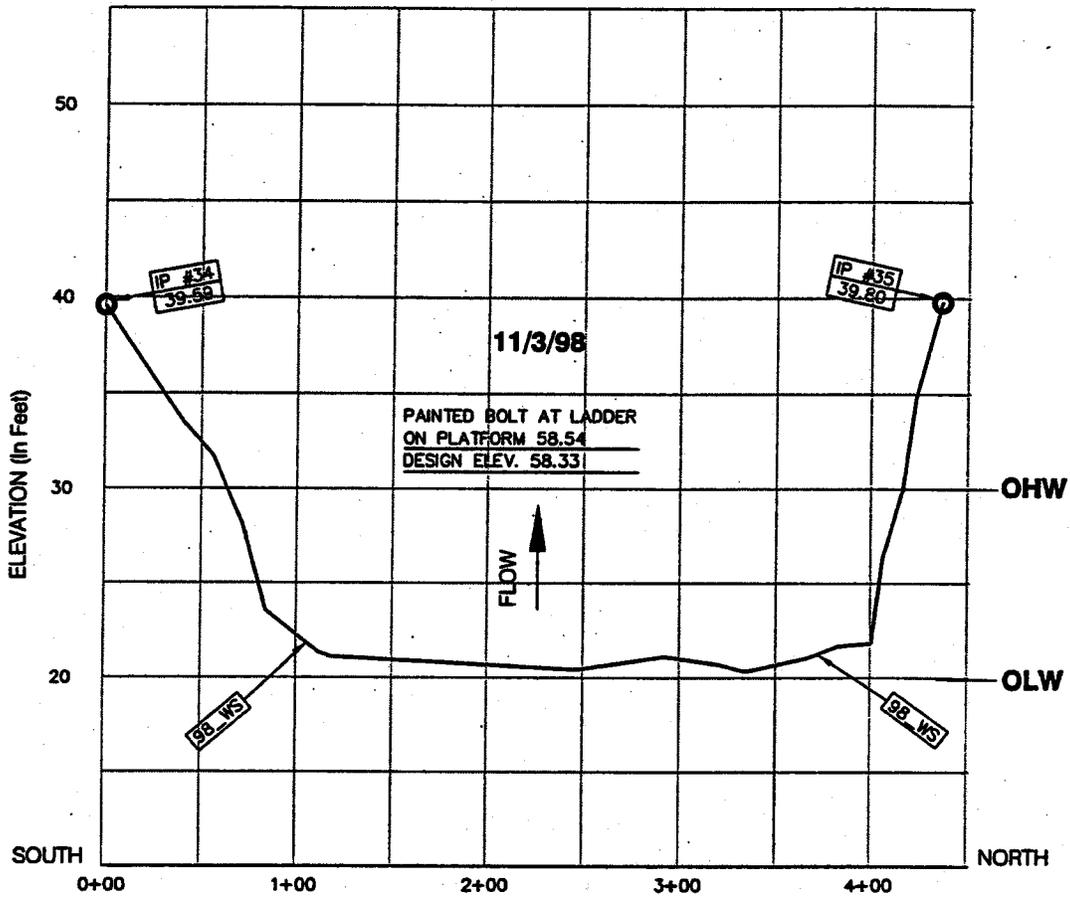
COUNTY OF Humboldt

STATE CA

APPLICATION BY

Humboldt Bay Municipal Water District

Sheet 18



SECTION 3
CROSS SECTION: PUMP STATION No. 1
 SEE SHEET 13 FOR CROSS SECTION LOCATION

SCALE:

HORIZ: 1" = 100'
 VERT: 1" = 10'

LEGEND

- NOV. 1998 WATER SURFACE
- IRON PIPE & SURVEY CONTROL NUMBER ELEVATION IN FEET
- IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River

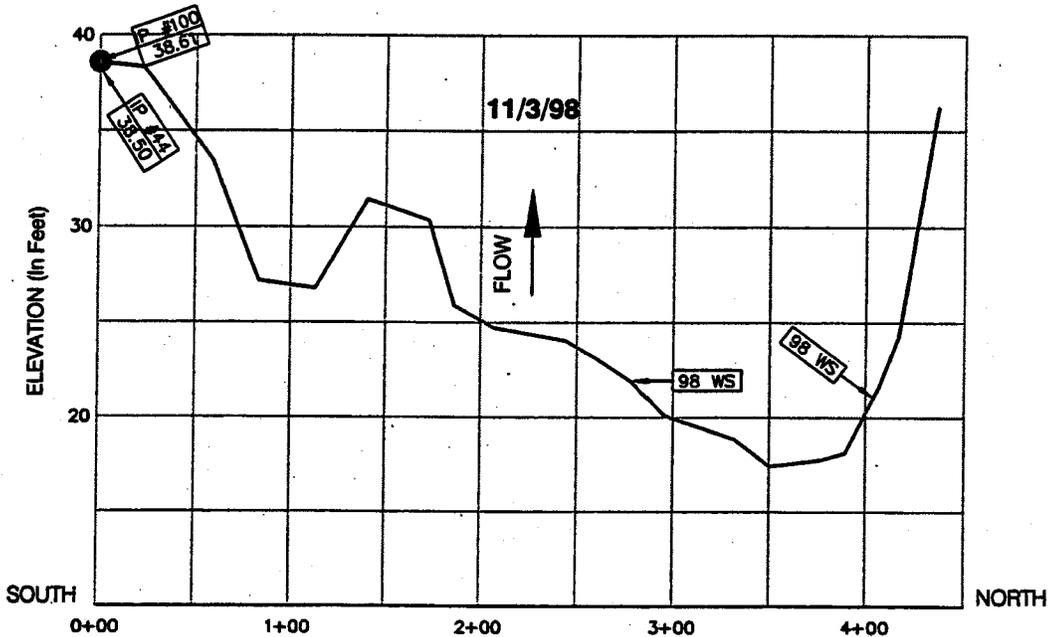
AT Essex

COUNTY OF Humboldt

APPLICATION BY

Humboldt Bay Municipal Water District

STATE CA



SECTION 4

SEE SHEET 13 FOR CROSS SECTION LOCATION

SCALE:

HORIZ: 1" = 100'
 VERT: 1" = 10'

LEGEND

- 98 WS — NOV. 1998 WATER SURFACE
- IP #440 — IRON PIPE & SURVEY CONTROL NUMBER
- 46.80 — ELEVATION IN FEET
- — IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River

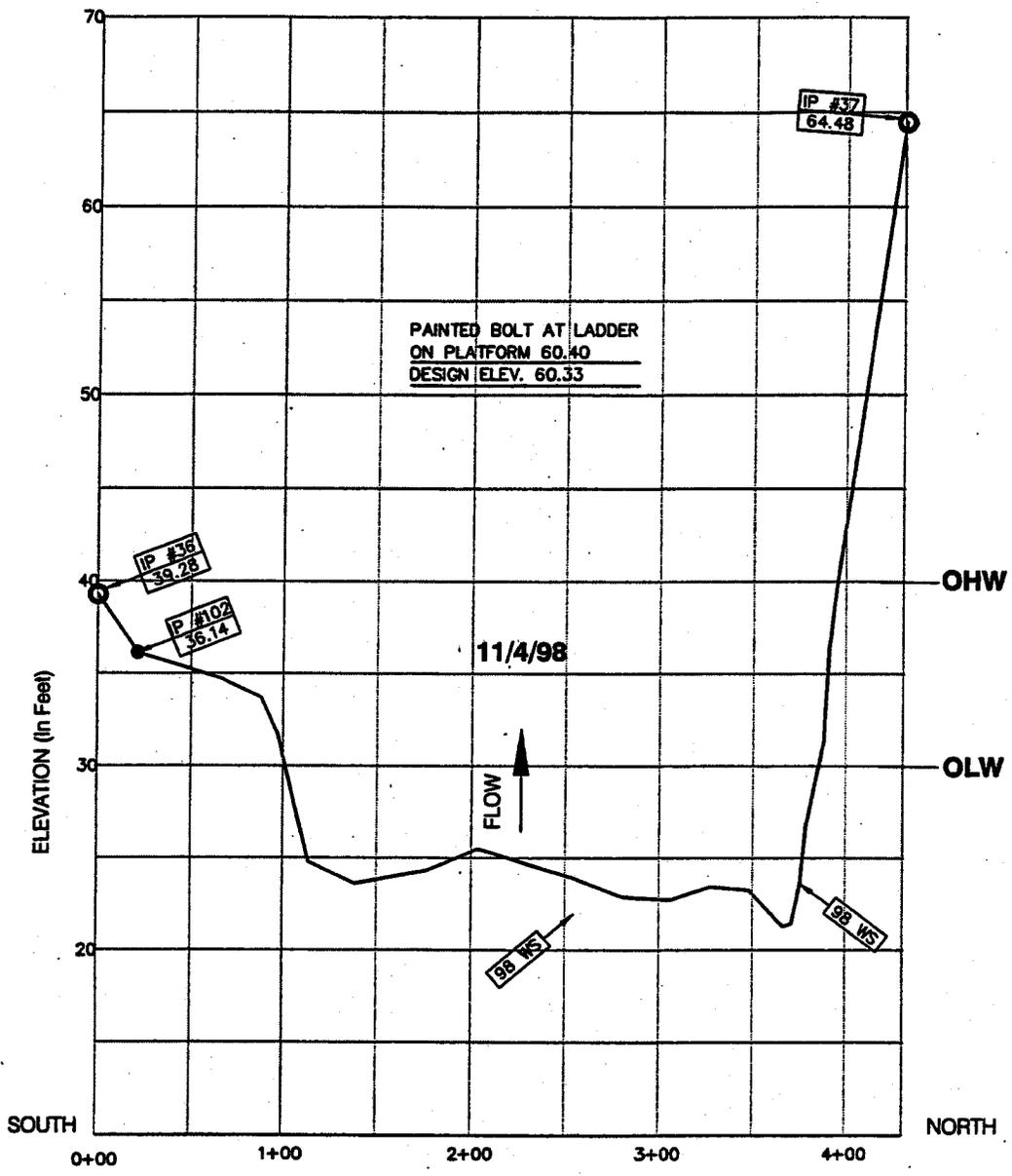
AT Essex

COUNTY OF Humboldt

APPLICATION BY

Humboldt Bay Municipal Water District

STATE CA



SECTION 5
CROSS SECTION: PUMP STATION No. 2
SEE SHEET 13 FOR CROSS SECTION LOCATION

SCALE:

HORIZ: 1" = 100'
 VERT: 1" = 10'

LEGEND

- NOV. 1998 WATER SURFACE
- IRON PIPE & SURVEY CONTROL NUMBER
ELEVATION IN FEET
- IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

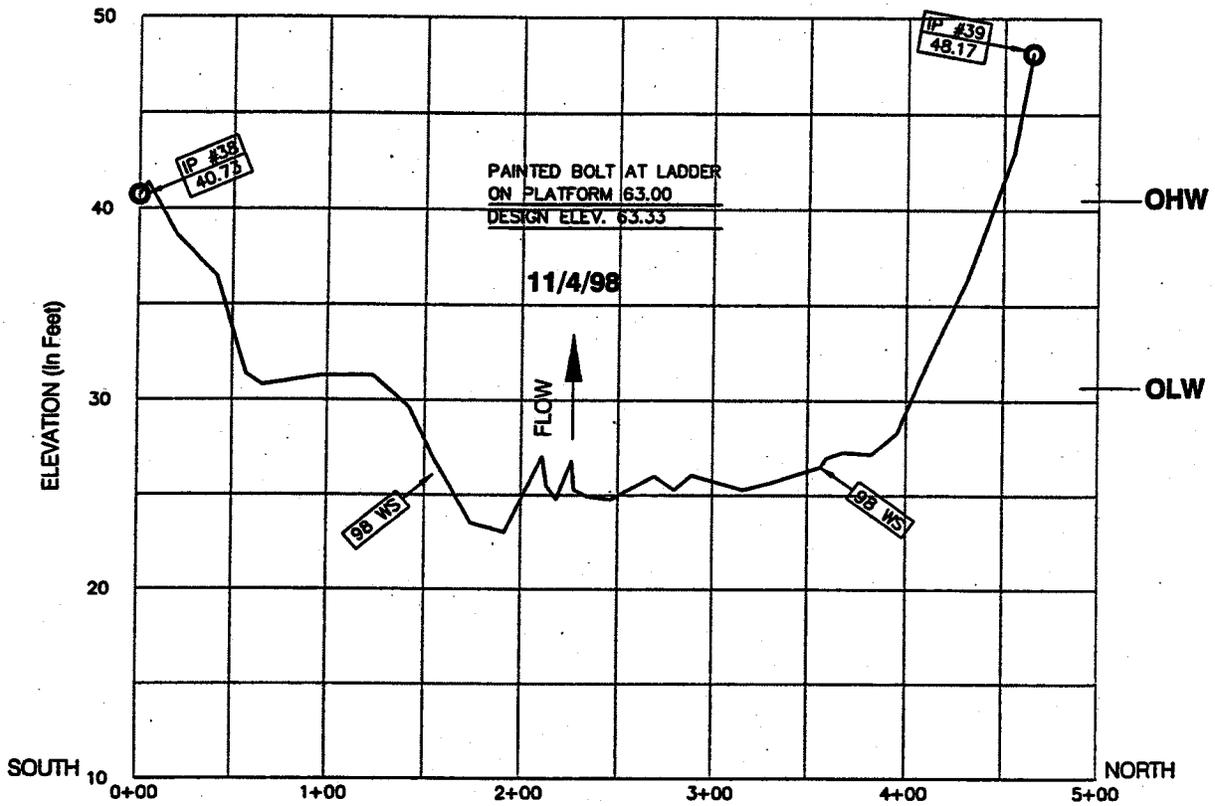
DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River
AT Essex
COUNTY OF Humboldt
APPLICATION BY
 Humboldt Bay Municipal Water District

STATE CA



**SECTION 6
CROSS SECTION: PUMP STATION No.3
SEE SHEET 13 FOR CROSS SECTION LOCATION**

SCALE:

HORIZ: 1" = 100'
VERT: 1" = 10'

LEGEND

- NOV. 1998 WATER SURFACE
- IRON PIPE & SURVEY CONTROL NUMBER ELEVATION IN FEET
- IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River

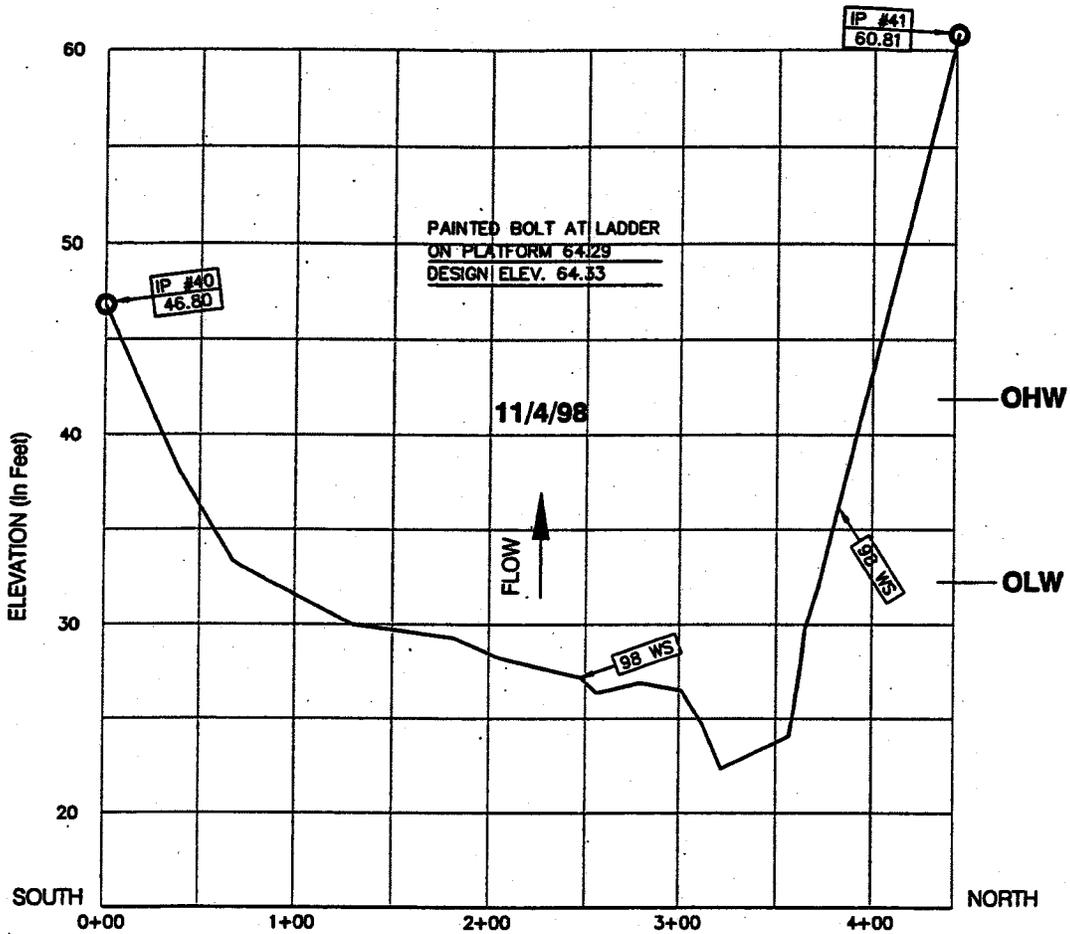
AT Essex

COUNTY OF Humboldt

APPLICATION BY

Humboldt Bay Municipal Water District

STATE CA



SECTION 7
CROSS SECTION: PUMP STATION No.4

SEE SHEET 13 FOR CROSS SECTION LOCATION

SCALE:

HORIZ: 1" = 100'
VERT: 1" = 10'

LEGEND

- 98 WS → NOV. 1998 WATER SURFACE
- IP #40 46.80 → IRON PIPE & SURVEY CONTROL NUMBER
ELEVATION IN FEET
- IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River

AT Essex

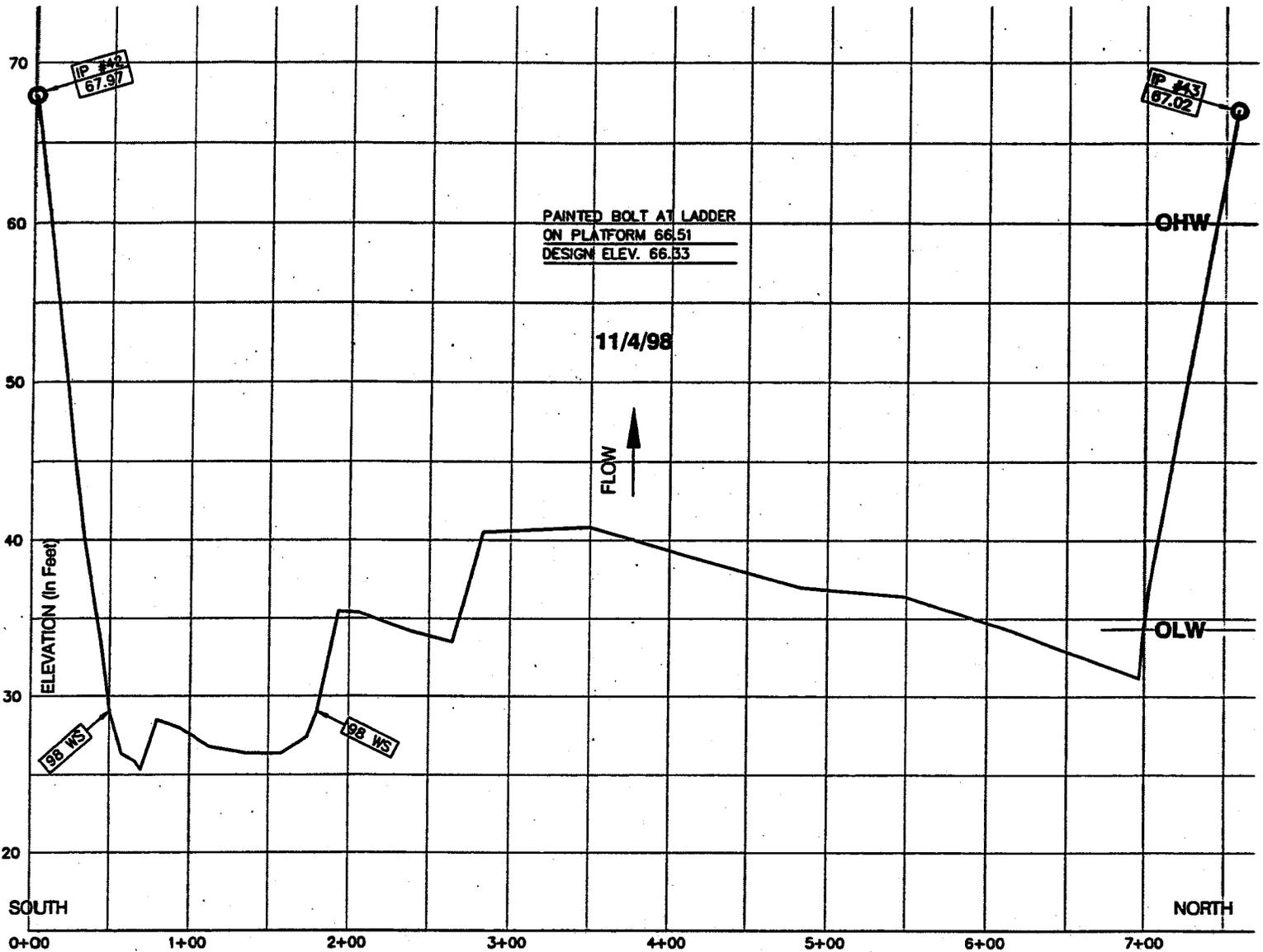
COUNTY OF Humboldt

APPLICATION BY

Humboldt Bay Municipal Water District

STATE CA

Sheet 23



**SECTION 8
CROSS SECTION: PUMP STATION No.5**

SEE SHEET 13 FOR CROSS SECTION LOCATION

SCALE:

HORIZ: 1" = 100'
VERT: 1" = 10'

LEGEND

- 98 WS — NOV. 1998 WATER SURFACE
- IP #40
46.80 — IRON PIPE & SURVEY CONTROL NUMBER
ELEVATION IN FEET
- — IRON PIPE SURVEY MARKER

PURPOSE: Maintenance of Existing Public Water System

DATUM: NGVD 1929 L75 Monument 58.88

ADJACENT PROPERTY OWNERS:

① See Block 24

IN Mad River

AT Essex

COUNTY OF Humboldt

APPLICATION BY

Humboldt Bay Municipal Water District

STATE CA