

CALIFORNIA COASTAL COMMISSION

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RSM

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Date Filed: March 25, 1999
49th Day: May 13, 1999
180th Day: Sept. 21, 1999
Staff: T. S. Tauber
Staff Report: February 2, 2000
Hearing Date: February 16, 2000
Commission Action:

STAFF REPORT: REGULAR CALENDAR

APPLICATION NO.: 1-99-019

APPLICANT: RANDALL YOUNGER

PROJECT LOCATION: Along a drainage channel to the Elk River at 4866 Elk River Road, south of Eureka, Humboldt County (APN 303-131-22)

PROJECT DESCRIPTION: Installation of 60 cubic yards of concrete rubble rock slope protection along approximately 65 feet of the north bank of a drainage channel.

GENERAL PLAN DESIGNATION: Agriculture Exclusive (AE)

ZONING DESIGNATION: Agricultural Exclusive, 60-acre minimum parcel size with Flood Hazard, and Transitional Agricultural Lands combining zones (AE/F,T).

LOCAL APPROVALS: None Required

OTHER APPROVALS REQUIRED: Department of Fish and Game, Army Corps of Engineers, State Lands Commission

SUBSTANTIVE FILE DOCUMENTS: (1) "Coastal Protection Structures and their Effectiveness" by Kim Fulton-Bennett and Gary Griggs, Marine Sciences Institute, University of California at Santa Cruz in conjunction with the California Department of Boating and Waterway, (2) Humboldt County Local Coastal Program.

SUMMARY OF STAFF RECOMMENDATION:

Staff recommends approval with special conditions of the proposed concrete rubble revetment along the north bank of the Eel River drainage channel. The revetment will prevent bank scouring and thereby keep the adjacent levee and the ranch road built on top of the levee from breaching and flooding a well, other ranch buildings, and pasture lands that contain seasonal freshwater wetlands. This recommendation is based on an analysis of Coastal Act Section 30236. The proposed development is allowable under Coastal Act Section 30236 as a channelization, dam, or other substantial alteration of rivers and streams that is a flood control project where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary to protect existing development. The proposed development is allowable as a flood control project intended to protect the adjacent road and other existing structures. As modified by the conditions recommended by staff, the proposed project would be the least environmentally damaging, feasible method for providing flood control at the site.

The recommended special conditions would require that (1) the applicant submit for the review and approval of the Executive Director, a revised project plan prepared by a qualified engineer that incorporates certain necessary engineering features to insure structural integrity, (2) the concrete rubble used to stabilize the channel be sized appropriately and be in clean condition to prevent pollution and to maintain the biological productivity of the river, (3) the applicant be responsible for the maintenance of the revetment, (4) all construction debris be disposed of lawfully to prevent pollution of the river, (5) the applicant submit evidence of approval by the Department of Fish & Game, Army Corps of Engineers, and the State Lands Commission.

STAFF NOTES:

1. Standard of Review:

The proposed development is located along a drainage channel of the Elk River in a location that is partially subject to tidal action and all within an area shown on State Lands Commission maps over which the state retains a public trust interest. Thus, the

proposed development is within the Commission's retained coastal development permit jurisdiction. Thus, the standard of review for the permit application is the Coastal Act.

I. MOTION, STAFF RECOMMENDATION AND RESOLUTION:

The staff recommends that the Commission adopt the following resolution:

Motion:

I move that the Commission approve Coastal Development Permit No. 1-99-019 pursuant to the staff recommendation.

Staff Recommendation of Approval:

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

Resolution to Approve Permit Amendment:

The Commission hereby approves a coastal development permit for the proposed development and adopts the findings set forth below on grounds that the development as conditioned will be in conformity with the policies of Chapter 3 of the Coastal Act and will not prejudice the ability of the local government having jurisdiction over the area to prepare a Local Coastal Program conforming to the provisions of Chapter 3. Approval of the permit complies with the California Environmental Quality Act because either 1) feasible mitigation measures and/or alternatives have been incorporated to substantially lessen any significant adverse effects of the development on the environment, or 2) there are no further feasible mitigation measures or alternatives that would substantially lessen any significant adverse impacts of the development on the environment.

II. Standard Conditions See Attachment A.

III. Special Conditions

1. Revised Project Plans

A. PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall submit revised plans to the Executive Director for review and approval. The revised plans shall show the following changes to the project:

(1) An engineered toe at the base of the revetment able to withstand potential settling.

(2) Filter fabric or erosion cloth placed between the channel bank and the concrete rubble to prevent accelerated sedimentation of the channel.

- B. The revised plans shall, prior to submittal to the Executive Director, be reviewed and certified by a qualified professional to ensure that they are consistent with the Commission's approval and with the recommendations of any required technical reports.
- C. 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 required.

2. Condition of Concrete Rubble Material

The concrete rubble material to be used to repair the drainage channel shall be in a clean condition that is free of asphalt and waste materials. The concrete rubble material shall not be greater than 3-feet in any one direction or smaller than 1-cubic-foot in size. All exposed re-enforcement bar shall be removed prior to the installation of the rubble rip-rap.

3. Maintenance

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

4. Construction Debris Removal

- A. PRIOR TO ISSUANCE OF THE PERMIT, the applicant shall submit for the review and approval of the Executive Director a plan for the disposal of construction-related debris. The plan shall describe the manner by which the material will be removed from the construction site and identify a disposal site that is in an upland area where materials may be lawfully disposed.
- B. The permittee shall undertake development in accordance with the approved final plan. Any proposed changes to the approved final plan shall be reported to the Executive Director. No changes to the approved final plan shall occur without a Commission amendment to this coastal development permit unless the Executive Director determines that no amendment is required.

5. U.S. Army Corps of Engineers Approval

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

6. Department of Fish and Game Approval

PRIOR TO ISSUANCE OF THE COASTAL DEVELOPMENT PERMIT, the applicant shall provide to the Executive Director a copy of a permit issued by the Department of Fish and Game, or letter of permission, or evidence that no permit or permission is required. The applicant shall inform the Executive Director of any changes to the project required by the Department of Fish and Game. Such changes shall not be incorporated into the project until the applicant obtains a Commission amendment to this coastal development permit, unless the Executive Director determines that no amendment is required.

7. State Lands Commission Approval

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

8. Condition Compliance

WITHIN 90 DAYS OF COMMISSION ACTION ON THIS CDP APPLICATION, or within such additional time as the Executive Director may grant for good cause, the applicant shall satisfy all requirements specified in the conditions hereto that the applicant is required to satisfy prior to issuance of this permit. Failure to comply with this requirement may result in the institution of enforcement action under the provisions of Chapter 9 of the Coastal Act.

IV. Findings and Declarations

The Commission hereby finds and declares:

1. Site Description & Project Description

The subject property is located adjacent to the Elk River, off of Elk River Road, Humboldt County (APN 303-131-22) (ExhibitS 1-3). The project site is located along the north bank of a small drainage channel that drains the applicant's property and surrounding areas into the Elk River, which then drains into Humboldt Bay. The Elk River in this location is subject to tidal action and the mouth of the river is approximately 1.5 miles downstream. The subject property and much of the surrounding area was diked off from the tidal action of the river many decades ago and reclaimed for agricultural purposes. These lands contain transitional wetlands historically used for grazing. Existing structures adjacent to the drainage channel on the applicant's property include a railyard building, a barn, and a road to access the existing artesian well and water tank. The road adjacent to the channel also functions as a levy to prevent high channel flows from inundating the property and surrounding pastureland.

The drainage channel flows west from a 4.5-foot-high box culvert adjacent to the applicant's property for approximately 80 feet. The channel currently varies in width from 24 feet measured 10 feet downstream from the culvert outfall to 35 feet approximately 30 feet downstream from the culvert outfall.

Recent storm events and increased river flow have resulted in extensive scouring of the north bank of the drainage channel. The scouring is undercutting the adjacent road used by the applicant to access the wells and water tank on his property. The bank erosion has resulted in a narrowing of the road and the inability for vehicles to safely access a portion of the applicant's property. Furthermore, the undercutting of the road is decreasing its ability to function effectively as a levy and prevent flooding of the site.

The applicant proposes to place 60-cubic-yards of concrete rubble along approximately 65-linear-feet of the north bank of the drainage channel to prevent further bank scouring (Exhibit 4). The high tide line of the drainage channel is approximately five feet and the proposed elevation of the rip-rap is approximately seven feet above the channel bottom. The concrete rubble that would be used for stabilizing the bank is currently stockpiled in an upland area on the applicant's property. The rubble was stockpiled without benefit of a coastal development permit. The concrete rubble revetment would be placed using an excavator.

2. Alterations of Rivers and Streams

The proposed project includes the alteration of a drainage channel to the Elk River by placing 60-cubic-yards of concrete rubble along approximately 65 feet of the north bank. Coastal Act Section 30236 states that channelizations, dams, or other substantial alterations of rivers and streams shall be limited to three specific types of projects.

Section 30236 of the Coastal Act states:

Channelizations, dams, or other substantial alterations of rivers and streams shall incorporate the best mitigation measures feasible, and be limited to (1) necessary water supply projects, (2) flood control projects where no other method for protecting existing structures in the floodplain is feasible and where such protection is necessary for public safety or to protect existing development, or (3) developments where the primary function is the improvement of fish and wildlife habitat.

The proposed project is an allowable river alteration under Section 30236 because it is a flood control project where no other method for protecting existing structures in the floodplain is feasible and where such alteration is necessary to protect an existing development. Furthermore, the proposed concrete rubble revetment along the drainage channel of the Elk River is the most feasible and least environmentally damaging method of stabilizing the channel bank, controlling flooding, and preventing the undercutting of the applicant's adjacent access road.

The road adjacent to the drainage channel is used to access the applicant's well and water tank. The road also functions as a levy along the channel and prevents inundation of the existing structures and pastureland on the applicant's property during high channel flows. The proposed concrete rubble revetment would repair the levy function of the road to prevent flooding and would allow for safe vehicular access to a portion of the applicant's property.

Other possible methods of channel bank stabilization include (1) sheetpile revetment, (2) bulkhead revetment, and (3) extension of the box culvert. Although a sheetpile revetment method may be effective in preventing scouring of the channel bank and undercutting of the road, the smooth surface of a sheetpile revetment could result in increased channel flow velocities which could direct the scouring elsewhere along the channel creating further erosion. Thus, this alternative is not a feasible less environmentally damaging alternative. A bulkhead revetment may also be effective for eliminating erosion and protecting the road. However, this method would be far more costly for a relatively small area of stabilization and structurally, may not withstand vehicles passing over the top. Thus, this alternative is not a feasible less environmentally damaging alternative. Another method to prevent bank erosion and flooding would be to extend the culvert the length of the drainage channel toward the Elk River. However, this method would be more environmentally damaging than the proposed method, as it would require a greater amount of fill and channel alteration than the concrete rubble revetment. Therefore, the proposed concrete rubble revetment is the least environmentally damaging, feasible flood control method to protect the existing structures.

Upon consulting with staff of the Department of Fish & Game, it was determined that the subject site is a highly disturbed area and the habitat value of the site is minimal to none. The channel bottom is silty mud, void of any vegetation, and the channel bank is being scoured away and therefore, is also void of any significant vegetation. To ensure that no adverse impacts will result from the proposed revetment, the Commission attaches Special Condition No. 2 which requires all of the concrete rubble used to stabilize the channel bank to be in clean condition, free of asphalt, reinforcement bar, or other foreign materials that may potentially contaminate the water or

organisms within the channel. The Commission also attaches Special Condition No. 4 which requires the applicant to submit a plan for the disposal of construction-related debris to ensure that it will be disposed of lawfully.

Therefore, the Commission finds that the proposed development, as conditioned, is consistent with Section 30236 of the Coastal Act as it is an allowable river alteration because it will provide flood control to protect existing structures where no other method for protecting existing structures is feasible. Furthermore, the proposed concrete rubble revetment is the least environmentally damaging method for providing flood control at the site.

3. Hazards and New Development

Coastal Act Section 30253 requires in applicable part that new development minimize risks to life and property in areas of high flood hazard and that new development assure stability and structural integrity, and neither create nor contribute significantly to erosion, geologic instability, or destruction of the site or surrounding area.

Construction of the proposed revetment raises two types of hazard concerns including (1) constriction of the channel which would limit its capacity to perform the function of conveying drainage water from the surrounding area to the Elk River to prevent flooding and (2) the structural integrity of the revetment itself.

The revetment could pose a flooding hazard if the concrete rubble extended far enough into the channel so that it constricted the flow. This would cause the drainage to back up and potentially flood areas upstream of the revetment during periods of high flow. However, according to the investigation by LACO Associates Consulting Engineers, it was determined that there will be no adverse impact to channel flow as a result of placing the concrete rubble along the north bank of the drainage channel. The LACO report states:

“Based on our calculations and on the visible effects of scour on the north bank of the subject drainage channel, we recommend that the proposed concrete rubble bank protection be placed. A minimum channel bottom width of 20 feet should be maintained.”

Therefore, the Commission finds that the revetment will not pose an increased flooding hazard, because the revetment will not confine the channel to a width of less than 20 feet.

Furthermore, the Commission finds that any structure or facility that is designed to prevent flooding should require design and engineering expertise. It is clear that the more stable the concrete rip rap revetment, the less likely that it will collapse into the drainage channel. A 2 to 1 (horizontal to vertical) slope is generally recommended for rip rap revetments on page 41 of substantive file document “Coastal Protection Structures and Their Effectiveness.” However, local site conditions must also be taken into account. As discussed above, the revetment must be designed so as not to encroach significantly into the drainage channel, thereby reducing its capacity to convey drainage

waters away from the surrounding area to the Elk River and prevent flooding. Constructing the revetment at a relatively steep slope is necessary to avoid such encroachment. In addition, the subject project is not located on an ocean beach that is subject to strong wind and wave attack. Furthermore, the substantive document also indicates that rip-rap revetments will inevitably settle downward into soft sands and muds and that this settlement can be minimized by designing a proper toe to help stabilize the concrete revetment. Moreover, a filter fabric or erosion cloth placed between the bank of the channel and the concrete rubble revetment can prevent excess erosion of sediment from behind the revetment that would destabilize the revetment.

To assure stability and structural integrity of the revetment, the Commission attaches Special Condition No. 1 which requires that prior to permit issuance, the applicant submit revised project plans prepared by a licensed engineer for review and approval by the Executive Director. In addition to showing the placement of the concrete rubble, the plans shall include a toe able to withstand settling at the bottom of the revetment, and a filter fabric or erosion cloth between the bank and the concrete rubble. Special Condition No. 1 also requires that any change in the design of the project, including but not limited to future additions to reinforcement of the project, changes in revetment materials, or configuration will require an amendment to Coastal Development Permit No. 1-99-019.

Although Special Condition No. 1 assures stability and structural integrity by requiring revised plans prepared by an engineer, it is still possible that individual pieces of concrete rubble could occasionally become dislodged and eventually make their way into river waters. Any such migration of rock from the revetment construction could adversely affect the structural integrity of the revetment and diminish its ability to protect the site against flooding and erosion hazards. The Commission therefore attaches Special Condition No. 3, which requires that the rip rap revetment be maintained over time to protect the integrity of the revetment.

Furthermore, the Commission attaches Special Condition No. 2 which requires the concrete rubble to be a certain size to assure structural integrity. Special Condition No. 2 states that the pieces of rubble material shall not be greater than 3 feet in any direction or any smaller than one cubic foot in size. This condition will further enhance the structural stability of the revetment as misshapen or inappropriately sized material would cause weakened void areas.

As conditioned, the Commission finds that the project will assure the stability and structural integrity of the proposed revetment per Section 30253 of the Coastal Act.

4. Visual Resources

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

The concrete rubble rip-rap project will not result in the blockage of any public views to the ocean as the elevation of the rip-rap is seven feet from the toe of the slope and does not extend higher than the top of the bank. The proposed rip rap will not substantially alter existing site landforms since it will be placed along the riverbank's existing slope, rather than as a protrusion beyond the riverbank. To ensure that the appearance of the revetment will not be unsightly and be more compatible with the character of the area, Special Condition No. 2 requires that the concrete rubble rip-rap material to be used to repair the dike be free of all exposed reinforcement bar and other foreign material. The Commission therefore finds that the project as conditioned is consistent with Section 30251 coastal visual resources protection requirements.

5. Public Access

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

Although the project is located between the first public road, and the Elk River, an arm of the sea, it will not adversely affect public access. There are no trails or other public roads that provide shoreline access within the vicinity of the project. Furthermore, the proposed shoreline protection project will not change the nature or intensity of visitor-serving commercial use, and thus will not create any new demand for public access or otherwise create any additional burdens on public access.

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

6. U.S. Army Corps of Engineers Approval

The project requires review and approval by the U.S. Army Corps of Engineers. Pursuant to the Federal Coastal Zone Management Act, any permit issued by a federal agency for activities that affect the coastal zone must be consistent with the coastal zone management program for that state. Under agreements between the Coastal Commission and the U.S. Army Corps of Engineers, the Corps will not issue a permit until the Coastal Commission approves a federal consistency certification for the project or approves a permit. To ensure that the project ultimately approved by the Corps is the same as the project authorized herein, the Commission attaches Special Condition No. 5 which requires the permittee to submit to the Executive Director evidence of U.S. Army Corps of Engineers approval of the project prior to the commencement of work.

7. Department of Fish and Game Review

The project requires a streambed alteration agreement from the Department of Fish and Game. Therefore, to ensure that the project reviewed by the Department of Fish and Game is the same project that was reviewed by the Commission, the Commission attaches Special Condition No. 6 which requires that the applicant submit to the Executive Director a copy of an approved streambed alteration agreement from the Department prior to issuance of the permit.

8. State Waters

Portions of the project site are in areas that are State-owned waters or were otherwise subject to the public trust. Therefore, to ensure that the applicant has the necessary permission to undertake all aspects of the project on these public lands, the Commission attaches Special Condition No. 7, which requires that the project be reviewed and where necessary approved by the State Lands Commission prior to the issuance of a permit.

9. Alleged Violation

Concrete rubble material has been placed within an upland area of the property without the benefit of a coastal development permit. Although development has taken place prior to approval of this permit application, consideration of the application by the Commission has been based solely upon the Chapter 3 policies of the Coastal Act. Approval of the permit does not constitute a waiver of any legal action with regard to the alleged violation nor does it constitute an admission as to the legality of any development undertaken on the subject property without a coastal development permit.

10. California Environmental Quality Act (CEQA)

Section 13096 of the Commission's administrative regulations requires Commission approval of Coastal Development Permit applications to be supported by a finding showing the application, as modified by any conditions of approval, to be consistent with any applicable requirements of the California Environmental Quality Act (CEQA). Section 21080.5(d)(2)(A) of CEQA prohibits a proposed development from being approved if there are feasible alternatives or feasible mitigation measures available which would substantially lessen any significant adverse effect which the activity may have on the environment. As discussed above, the project has been mitigated to avoid any significant impacts to the drainage channel and the Elk River from construction of the concrete rubble revetment. There are no other feasible mitigation measures or alternatives available which would lessen any significant adverse impact the project would have on the environment. The project, as conditioned, therefore will not have a significant adverse effect on the environment within the meaning of CEQA.

Exhibits:

1. Regional Map
2. Vicinity Map
3. Site Map
4. Project Plans

ATTACHMENT A

Standard Conditions:

1. Notice of Receipt and Acknowledgment. The permit is not valid and development shall not commence until a copy of the permit, signed by the permittee or authorized agent, acknowledging receipt of the permit and acceptance of the terms and conditions, is returned to the Commission office.
2. Expiration. If development has not commenced, the permit will expire two years from the date on which the Commission voted on the application. Development shall be pursued in a diligent manner and completed in a reasonable period of time. Application for extension of the permit must be made prior to the expiration date.
3. Compliance. All development must occur in strict compliance with the proposal as set forth in the application for permit, subject to any special conditions set forth below. Any deviation from the approved plans must be reviewed and approved by the staff and may require Commission approval.
4. Interpretation. Any questions of intent of interpretation of any condition will be resolved by the Executive Director or the Commission.
5. Inspections. The Commission staff shall be allowed to inspect the site and the development during construction, subject to 24-hour advance notice.
6. Assignment. The permit may be assigned to any qualified person, provided assignee files with the Commission an affidavit accepting all terms and conditions of the permit.
7. Terms and Conditions Run with the Land. These terms and conditions shall be perpetual, and it is the intention of the Commission and the permittee to bind all future owners and possessors of the subject property to the terms and conditions.



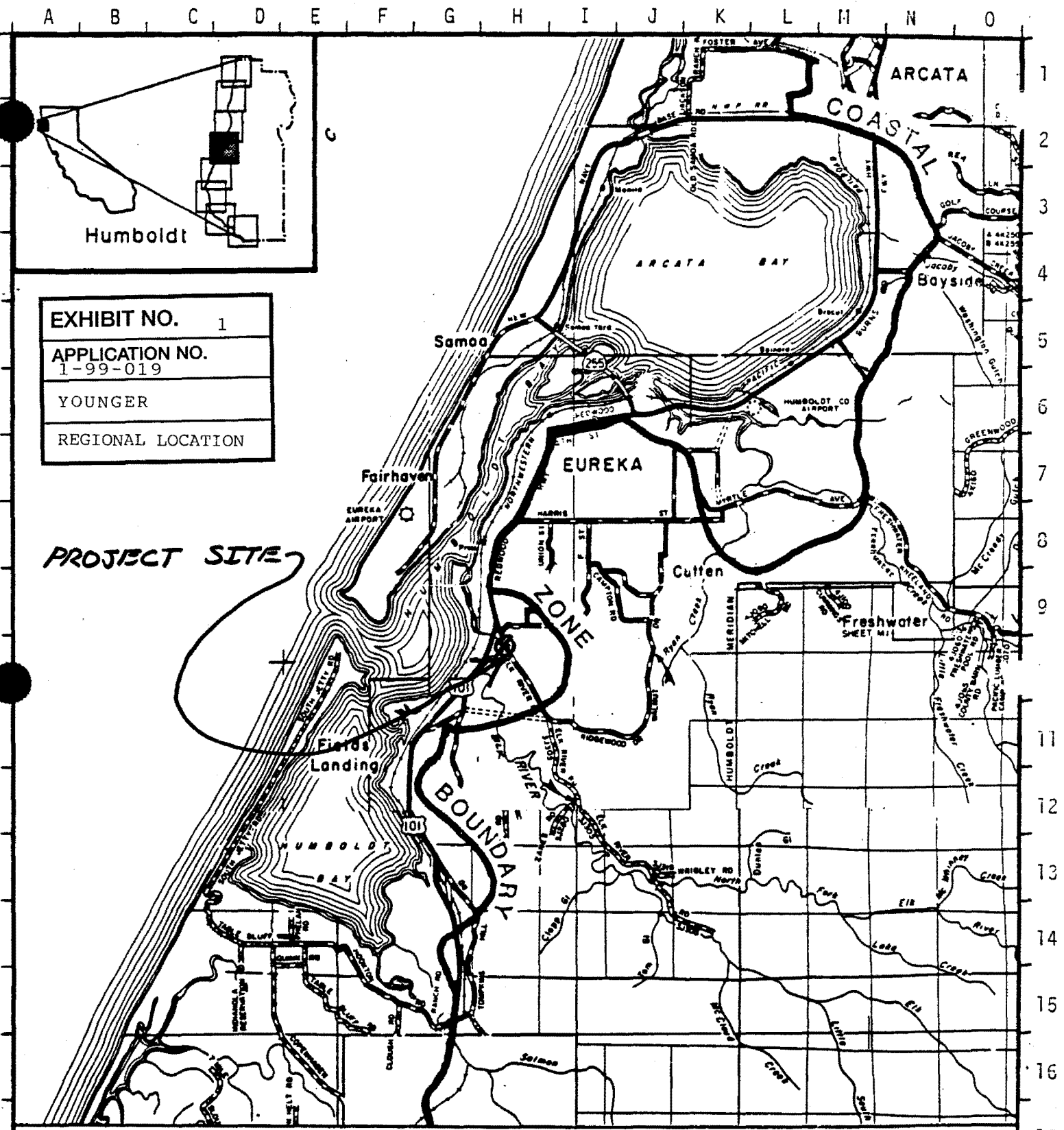


EXHIBIT NO.	1
APPLICATION NO.	1-99-019
YOUNGER	
REGIONAL LOCATION	

PROJECT SITE

BOUNDARY



LOCATION MAP





LAGO ASSOCIATES
 CONSULTING ENGINEERS
 21 W 4TH ST. EUREKA, CA 95501 (707)443-0084

PROJECT: RANDY YOUNGER
 CLIENT: ELK RIVER ROAD
 LOCATION:

CHECK: [Signature]
 SCALE: 1" = 500'
 JOB NO.: 4532.01

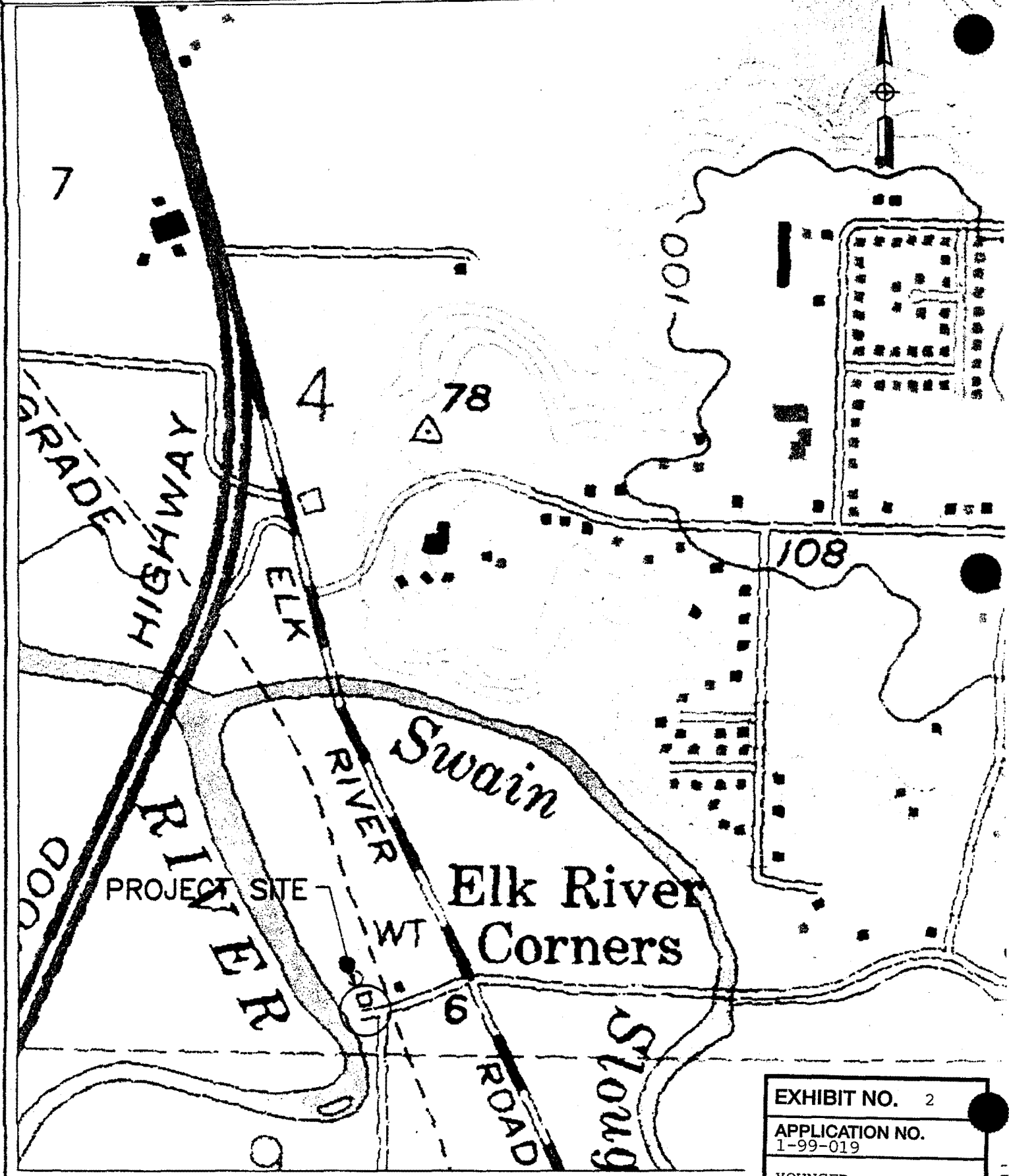
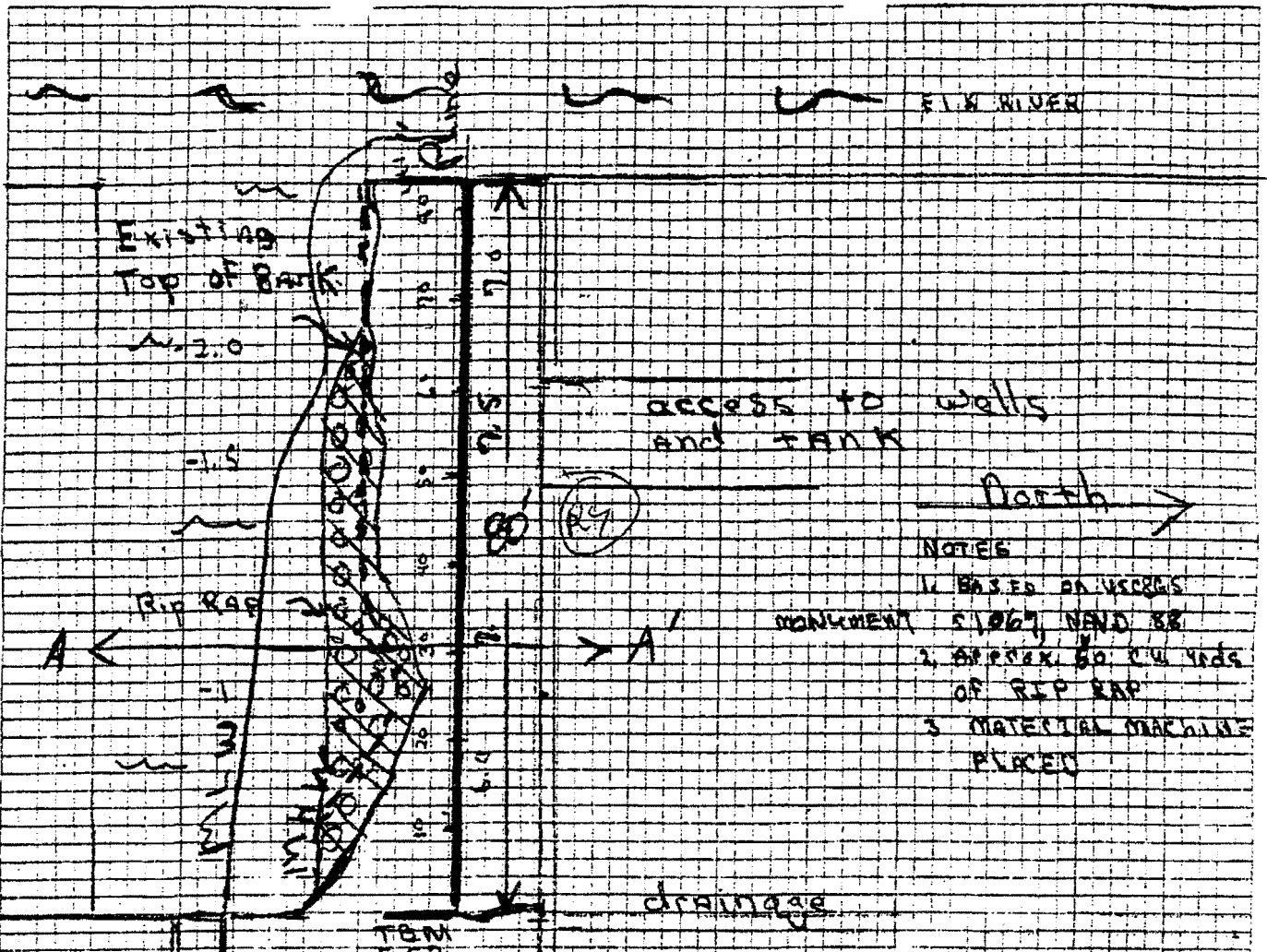


EXHIBIT NO.	2
APPLICATION NO.	1-99-019
YOUNGER	
PROJECT SITE MAP	



E.I.R. RIVER

Existing Top of Bank

~2.0

-1.5

Rip Rap

A ←

access to wells and tank

North →

NOTES

1. BASED ON VIDEOS
2. APPROX. 50 CY Yards OF RIP RAP
3. MATERIAL MACHINE PLACED

MONUMENT 5.1067, NVD 88

drainage

TBM 5.871

EACH SQUARE = 2' ON SIDE

Box Culvert
Tide gate

PLAN VIEW
1" = 20'

RANDALL YOUNGER
2158 WOODCREST
EMERY CA 95503

Purpose: prevent erosion restore access to wells adjacent property owner.

1. H.C.S.D.
2. Calif. Dept. Fish and Game

Proposed riprap and fill in drainage channel at E.I.R. River

Application by: RANDALL YOUNGER
sheet 2 of 3

drainage ditch

drainage ditch

EXHIBIT NO.	3
APPLICATION NO.	1-99-019
YOUNGER	
SITE PLANS	

NAVD 1929

A'

SECTION 30.00 P LINE
SCALE 1" = 2'

Section View

RANDALL YOUNGER
2116 WOODRIDGE
EUGENE OREGON 97403

HTL 2511

Purpose: prevent erosion

PROPERTY OWNERS
1. H. C. S. D. I.
2. CALIF. Dept Fish Game

PROPOSED RIP RAP AND FILL
TO DRAINAGE CHANNEL
AT ELK RIVER
APPLICATION BY:

RANDALL YOUNGER
SHEET 3 of 3

A

-1 1929 NAVD

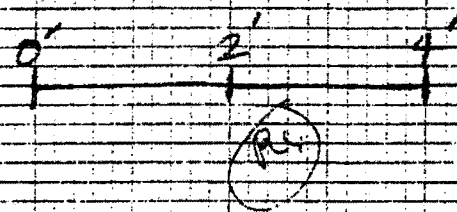
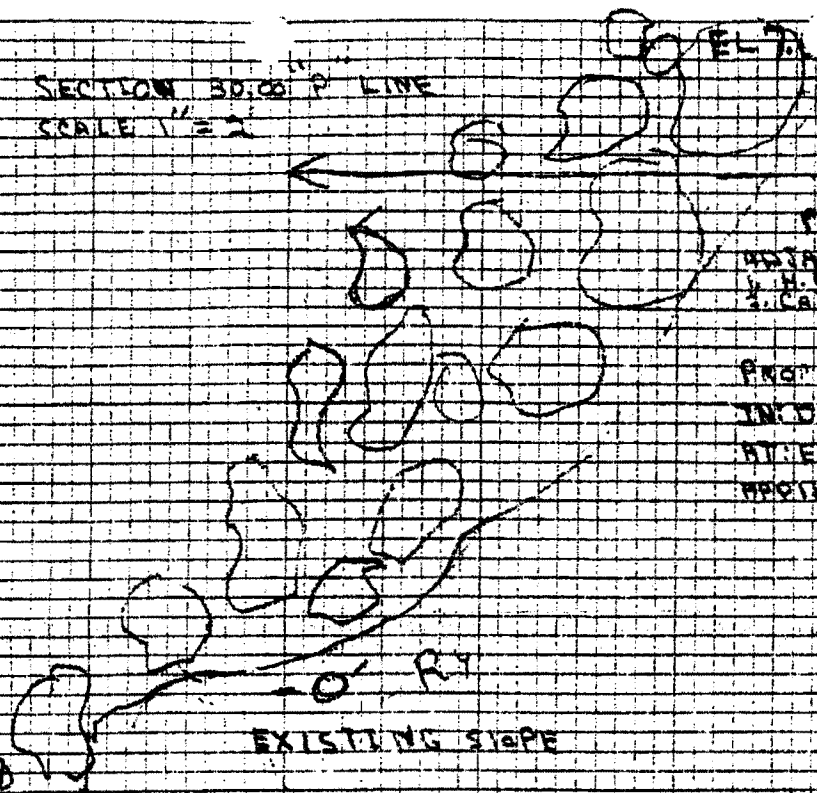


EXHIBIT NO.	4
APPLICATION NO.	1-99-019
YOUNGER	
CROSS-SECTION	