

US Army Corps  
of Engineers

# PUBLIC NOTICE

NUMBER: 24393N

DATE: January 5, 2000

RESPONSE REQUIRED BY: February 4, 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 County of Del Norte, Community Development Department, 700 Fifth Street, Crescent City, California 95531, (Contact: Jay Sarina, County Planner, at [707] 464-7254) has applied for a Department of the Army permit to place approximately 2,700 cubic yards (CY) of rock slope protection and gravel fill along 1,250 lineal feet of Rowdy Creek, a tributary of the Smith River, between the Rowdy Creek Mobilehome Park and White Rose Inn, in the community of Smith River, Del Norte County, California (Sheet 1 of 9). 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 plans to construct what is also known as the Rowdy Creek Disaster Recovery Project at three reaches of Rowdy Creek using conventional rock slope protection (RSP) and incorporating wood debris and revegetation as part of the primary structural component. The three areas have been categorized into phases of priority:

Phase 1 - The applicant would place 450 cubic yards of one ton RSP below Ordinary High Water along 450 lineal feet of the west bank of Rowdy Creek between the confluence of Domini Creek with Rowdy Creek and ending at the southeastern edge of the Rowdy Creek Mobilehome Park (See Sheets 2 of 9, 3 of 9, and 4 of 9). The mobilehome park has previously used RSP to control stream bank erosion. In addition, three wood digger logs (cut tree log and stump placed stump outward into the channel as shown on Sheet 2 of 9) would be placed in this reach. The primary use of the digger logs is to dampen the stream velocities and to scour the

channel, creating or expanding pool habitat for anadromous fish. The digger logs would be placed in accordance with the California Salmonid Stream Habitat Restoration manual. Heavy boulders would be placed in areas of the existing rip-rap that need repairs. An excavator with a long reach would be used for boulder placement. The boulders may also enhance fish pool habitat. Revegetation would consist of inserting willow sprigging within the cavities of the RSP.

Phase 2 - The applicant would place 425 cubic yards of one ton RSP along 300 lineal feet of the west bank of Rowdy Creek between the northeastern edge of the White Rose Inn property to the southeastern edge of the White Rose Inn property. A temporary silt fence would be constructed along the water edge of Rowdy Creek next to the RSP toe trench during the construction period (See Sheet 2 of 9, 5 of 9, and 6 of 9). Revegetation of the site would be conducted as described in Phase 1.

Phase 3 - The applicant would place 450 CY of one ton RSP and 1,100 CY of river run gravel along 500 lineal feet of the east bank of Rowdy Creek between the southeastern edge of the White Rose Inn property and ending approximately two hundred feet north of the southeastern edge of the McLennan Mobilehome park property. The river run gravel would be extracted from the adjacent gravel bar where the RSP toe trench would be created and where an approximately 80-90 foot wide surface of the riverbed would be lowered to an elevation approximately even with the adjacent low flow channel or to within 0.15 feet above the existing low flow stream level (See Sheets 2 of 9, 7 of 9, 8 of 9, and 9 of 9). Excavation of the toe trench

would occur several feet from the water edge of Rowdy Creek, and thus, no silt fence is planned for this reach as it would be for Phase 2. The gravel extracted for both the toe trench and the lowering of the gravel bar would be placed against the east bank of Rowdy Creek. The RSP would be placed on top of that gravel base. In addition, digger logs (as described in Phase 1) would be placed in four sites along this reach as described previously (See Sheet 2 of 9).

The purpose of the above project is to restore channel and bank stability of Rowdy Creek; and protect adjacent private property from erosion damage and loss of property. A hydrology report by La Rue (La Rue, Gerald, 1999), states the right bank of Rowdy Creek was protected by rip-rap in the decade of the 1950's. This bank protection extended from the confluence of Domini Creek downstream for approximately 400 feet. This work started soon after the flood of December 22, 1955. The Rowdy Creek Fish Hatchery (non-profit operated anadromous fish hatchery) began construction immediately upstream from the project reach in 1976, the first year of an extreme drought period for California. The hatchery raises coho salmon, chinook salmon, and steelhead trout. La Rue states problems with erosion become apparent after the high water periods that occurred in December 1996 and January 1997. The rainfall record at Big Flat (located on the South Fork of the Smith River upstream from the project site) showed 50.24 inches of rain fell in December 1964 while 60.95 inches fell in December 1996. The period 1995 to the present had annual rainfall totals between 150 and 163 (1998) inches, which exceed any period since 1947, averaging 158 inches. Since 1995, an average of approximately 30 feet of streambank has been eroded back landward along approximately 1,400 lineal feet of Rowdy Creek (pers. comm., Art Reeve, Del Norte Co.). La Rue (La Rue, 1999) states an estimated 4,000 cubic yards of sand, gravel, and cobble have been eroded and transported out of the 600 foot reach of the channel below the Fish Hatchery Weir due to high flow.

The applicant states the reason for the proposed

lowering of the gravel bar at Phase 3 is to (1) decrease the stream velocity by increasing the cross-sectional area, and (2) replenish the southern embankment in the Phase 3 area which has been eroded during several winters of high stream flows.

**3. STATE APPROVALS:** Under Section 401 of the Clean Water Act (33 U.S.C. Section 1341), an applicant for a Corps of Engineers (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 submitted a valid request for State water quality certification to the California Regional Water Quality Board. No Corps permit will be granted until the applicant obtains the required certification or waiver. A waiver shall be explicit, or it will be deemed to have occurred if the State fails or refuses to act on a valid request for certification within 60 days after the receipt of a valid request, unless the District Engineer determines a shorter or longer period is reasonable for the State to act.

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 above project is being funded through a Community Development Block Grant from the U.S. Housing and Urban Development (HUD). The County of Del Norte Community Development Department has been delegated as the lead agency by HUD to prepare an environmental assessment in accordance with the National Environmental Policy Act (NEPA) for the above project. The Corps of Engineers has transferred information from Del Norte County's Draft Environmental Assessment (dated September 23, 1999) to the Corps of Engineers' format for a preliminary environmental assessment in this Public Notice, in order to ensure environmental impacts of the action proposed are assessed 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. Information from Del Norte County's Draft Environmental Assessment is incorporated by reference where indicated. The Del Norte County Environmental Assessment is on file with the Eureka Field Office of the U.S. Army Corps of Engineers in Eureka, California. Copies of Del Norte County's Draft Environmental Assessment may be obtained by contacting David Ammerman of the Corps of Engineers at telephone 707-443-0855, or by contacting Jay Sarina, of the County of Del Norte, at 707-464-7254.

The Preliminary Environmental Assessment resulted in the following findings:

a. IMPACTS ON THE AQUATIC ECOSYSTEM

(1) PHYSICAL/CHEMICAL CHARACTERISTICS AND ANTICIPATED CHANGES

Substrate - Downstream of the Rowdy Creek Fish Hatchery, Rowdy Creek has a narrow channel. The creek narrows during summer low flow periods at an outcropping of bedrock, then widens again (See Sheet 1 of 9, survey stations 0+00 to 7+49). At approximately survey station 7+49, on the east bank a large deposit of gravel creates a wide gravel bar of large cobbles and rock, edged by a steep bank of the same parental material. The dominant substrate is large cobble.

The following impacts to substrate would occur by project feature:

Phase 1 - The placement of 450 CY of RSP would replace approximately 13,500 square feet of streambank eroded in past winters. About a third of the proposed fill would cover what is now active stream channel only at high water levels (at or

above Ordinary High Water to flood stage). Since this is repair of a streambank, this is a minor, but possibly recurring impact on river substrate and streambank, as high creek flows could dislodge portions of the new RSP, requiring periodic maintenance of the RSP.

Phase 2 - The placement of 425 CY of one ton RSP would replace approximately 9,000 square feet of riverbank lost to erosion. About a third of the proposed fill would cover what is now active stream channel only at high water levels (at Ordinary High Water up to flood stage). In addition, a silt fence would be installed near the toe of the proposed RSP and would be removed after construction. Impacts to substrate at this location would be minor, but possibly recurring as high water may dislodge portions of the RSP structure, requiring periodic maintenance of the RSP.

Phase 3 - The placement of 450 CY of one ton RSP and 1,100 CY of river run gravel would replace approximately 15,000 square feet of riverbank lost to erosion. About one-third of the proposed fill would cover what is now active stream channel only at high water levels (at Ordinary High Water up to flood stage). In addition, 1,100 CY of river run gravel (used as fill as described above) would be removed from an existing gravel bar over an area of approximately 37,500 square feet or 0.86 acre of river bed. The gravel bar substrate would be lowered to an elevation approximately even with the adjacent low flow channel or to within 0.15 feet above the existing low flow stream level (See Sheet 8 of 9). The above impacts to substrate at Phase 3 would be moderate and probably short-term, as high river flows may, over several winters, fill in the excavated channel adjacent to the RSP. The intent of the excavation is partly to slow water velocity along the Phase 3 reach. Slower velocity reaches tend to deposit bedload and sediment while higher velocity reaches tend to erode or scour stream beds and banks. Over time, the excavated area would fill in, decreasing the cross sectional area of the stream bed, and increasing water velocities again.

Currents/Circulation - Phase 3 of the proposed overall project, including lowering of an existing

gravel bar, would initially direct main river flow down the center of the riverbed and keep flow from hugging either bank. It is unclear whether this re-channeling of flow would be a permanent effect. High flows in Rowdy Creek may eventually re-direct flows toward the banks depending on the amount and distribution of river gravel and sediment being deposited from upstream of Phase 3. The placement of RSP for bank protection along the overall project area would confine flow to the armored bank and may assist in confining flow to the center of the riverbed until scouring begins to occur at the toe of the RSP.

Erosion/Sedimentation Rate - A cumulative total of approximately 40,000 square feet of river front land has been lost to river bank erosion along 1,400 lineal feet of Rowdy Creek since 1995. Landowners estimate the river bank has been eroded back toward their properties an average distance of 30 feet from the original river bank location since 1995. The proposed project would have a major and long-term impact on preventing further river bank erosion, but future high flows may eventually dislodge portions of the RSP and gravel bank protection, causing the project proponent to implement occasional repair and maintenance of the armored banks. In addition, Galea (Galea, 1999) states that RSP placement along the project reach (between confluence of Domini Creek 1,100 feet downstream to end of the mobile home park) would cause water velocity to transfer at a high rate down stream creating erosion problems for the left bank. Adding woody structures such as stumps with the root balls facing upstream and cut ends buried into the banks, would reduce the downstream erosion effect.

During project construction, the proposed project would have short-term, minor sedimentation impacts into Rowdy Creek. In addition, a silt fence would be placed along Phase 2, to reduce production of sediment into Rowdy Creek from the highly eroded bank at this location.

Water Quality - Minor turbidity increases may occur during excavation of a toe trench (and during excavation to lower the gravel bar adjacent to Phase 3). Silt baffles are incorporated into the project to

prevent significant turbidity (Del Norte Co. EA, 1999).

## (2) BIOLOGICAL CHARACTERISTICS AND ANTICIPATED CHANGES

Pool and Riffle Areas (Special Aquatic Site) - The lower end of Rowdy Creek that flows into the project area is described by Galea (Galea, 1999) as a low gradient, meandering riffle/pool sequence. Flatwater habitat is common in Rowdy Creek. The only habitats containing fish within the project area were pools. Riffle and flatwater habitat units were devoid of aquatic life (Galea, 1999). Other than the man-made pool below Rowdy Creek Hatchery and the bedrock created pool 1300 feet downstream, pool habitats were relatively shallow. The proposed project, with the addition of woody debris and "digger" logs (see "Erosion/Sedimentation" previously discussed in this EA) to RSP locations would slow water velocity and increase the frequency of pools and complex habitat features (Galea, 1999). Lowering of the substrate adjacent to Phase 3 RSP may create temporary shallow pool habitat during low flow periods. High winter flows may fill in this excavated area. Overall project impacts to pool and riffle habitat would be moderate, beneficial, and long-term provided digger logs, woody debris and other habitat features recommended by Galea (such as boulder weirs) are installed and maintained.

Endangered Species - The Corps of Engineers is initiating consultation under Section 7 of the Endangered Species Act (ESA) with the National Marine Fisheries Service regarding potential impacts to the Federally-listed coho salmon and its critical habitat. The applicant, Del Norte County, has submitted a biological assessment entitled, Habitat Assessment for Rowdy Creek Rehabilitation Project, prepared by Galea Wildlife Consulting, July 27, 1999. The biological assessment is on file and available for review at the Eureka Field Office of the Corps of Engineers or at the County of Del Norte Community Development Department.

Habitat for Fish, and Other Aquatic Organisms - The majority of habitat types within the project area

are riffle and flatwater units. Pool habitat is limited and there is no cover formed by large wood or undercut banks. Pockets of smaller gravel and cobble are located along some stream margins (Galea, 1999). Galea states the majority of Rowdy Creek provides excellent habitat for juvenile rearing of coastal cutthroat trout even though only pool habitat is supporting cutthroat trout in the project area. Galea states chinook salmon are well distributed in available pool habitats and found in large numbers within the project area, after conducting a dive survey July, 1999. Flatwater habitat units and riffle did not contain chinook salmon. Rowdy Creek is considered one of the best fall chinook spawning areas on the Smith River watershed. One large pool below Rowdy Creek hatchery and one created by bedrock scour are the most stable habitat present for summer chinook rearing. Spawning substrate is readily available for the chinook salmon in the project area. Steelhead trout have been observed in the project area as well as pacific lamprey, although spawning/rearing habitat for both is limited.

The proposed project, with incorporation of Galea recommendations such as digger logs, woody debris, and boulder weirs, along with planting of riparian tree species within RSP areas in accordance with the California Department of Fish and Game's Stream Restoration Manual, would have a moderate, beneficial, and mostly long-term impact on fish habitat, which is of degraded quality at present.

#### b. IMPACTS ON RESOURCES OUTSIDE THE AQUATIC ECOSYSTEM

##### (1) PHYSICAL CHARACTERISTICS AND ANTICIPATED CHANGES

Air Quality - Emissions from construction equipment and dust would occur during the construction period. All equipment would be required to have emissions devices. Frequent wetting of the project site would occur as needed (Del Norte County EA). The 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 - There would be minor, short-term, adverse impacts on ambient noise conditions during project construction.

##### (2) BIOLOGICAL CHARACTERISTICS AND ANTICIPATED CHANGES

Riparian Habitat (Not in Corps Jurisdiction)  
Impacts from project construction on mature riparian vegetation would be avoided. During excavation of the toe trench and lowering of the gravel bar, there is sparse and very young riparian shrubs growing on the gravel bar and some on the banks that may be destroyed by the excavation activity. These shrubs (mostly willows) are usually destroyed anyway during winter storms, and grow back onto the gravel bar each spring. Willow plantings are proposed as part of the revegetation plan, particularly for riprapped stream banks (County of Del Norte EA). The overall project would, with replanting of streambanks after construction (See Sheets 2 of 9 and 9 of 9), have minor, short-term, adverse impacts on riparian vegetation.

##### (3) SOCIOECONOMIC CHARACTERISTICS AND ANTICIPATED CHANGES

Aesthetic Quality - There would be short-term, minor adverse impacts on Rowdy Creek aesthetics due to the presence of construction equipment working adjacent to the river. The proposed work is expected to be completed in one construction season.

Economics - If no action were taken regarding erosion of streambanks in the project area, owners of the mobile home parks and a bed and breakfast business may face further loss of property or

damage to property from high water events in Rowdy Creek. This loss or damage could have adverse impacts on the property owners' economic livelihood. The proposed RSP and channel work would have a major, long-term, beneficial impact on the economy of streamside landowners.

Employment - The proposed project would have a minor, short-term, beneficial impact on employment for equipment operators and contractors conducting erosion control work.

Traffic/Transportation - The project is located adjacent to two bridge structures (including Highway 101). No work would occur that would affect these structures (County of Del Norte EA).

Water Supply (M&I) - Mitigation is proposed to reduce impacts to the adjacent community water wells. Structures designed to reduce erosion are incorporated into the project design (County of Del Norte EA).

Wild & Scenic Rivers - The Smith River and its tributaries, including Rowdy Creek, is within the National Wild and Scenic River System. Wild and Scenic Rivers administration and management is delegated to the U.S. Forest Service, Six Rivers National Forest and the State of California. Rowdy Creek is recognized for recreational values. Wild and Scenic River values that would be impacted by the proposed project include minor, short-term losses of riparian vegetation; minor, short-term adverse impacts to stream water quality, but moderate, long-term, beneficial impacts on anadromous fisheries. Recreational use within the project area is restricted due to private landownership along the creek, thus there would no effect on recreational values. The Rowdy Creek Fish Hatchery is open for public viewing and provides some recreational benefit. The hatchery would likely benefit from the project due to enhanced habitat construction for anadromous fisheries.

(4) HISTORIC - CULTURAL CHARACTERISTICS AND ANTICIPATED CHANGES

In a letter dated August 6, 1999, the Office of Historic Preservation (SHPO), California Department of Parks and Recreation acknowledged receipt of Del Norte County's determination that the above proposed project would not affect historic properties. SHPO concurred with this finding and stated Del Norte County's responsibilities under Section 106 of the National Historic Preservation Act are now fulfilled in accordance with 36 CFR 800.4(d).

c. SUMMARY OF INDIRECT IMPACTS

None have been identified.

d. SUMMARY OF CUMULATIVE IMPACTS

At Phase 1, the north bank adjacent to the mobile home park was previously rip-rapped decades ago. Phase 1 is partly repair of that earlier rip-rap work. Below Highway 101 on Rowdy Creek, two moderate-sized in-stream projects took place within the last three years. Corps Permit No. 23811, dated September 2, 1998 authorized (through Nationwide Permit No. 37) the placement of 1,900 cubic yards of rock slope protection to form weirs in the channel and banks of Rowdy Creek adjacent to the Rowdy Creek Fish Hatchery, located immediately upstream of Phase 1. In addition, Del Norte County Public Works conducted gravel extraction in lower Rowdy Creek at the Maris Pit and lower Rowdy Creek extraction area, both located downstream of Phase 3. Total extraction of gravel is 10,000 cubic yards from both sites, although actual amounts taken were much less than the maximum (2,000 to 5,000 cubic yards for each site). Each site also is extracted only periodically based on county need. Extraction is performed by excavator or scraper and hauled to waiting trucks to a processing site located above Ordinary High Water of Rowdy Creek. Above Rowdy Creek, additional cumulative impacts to the waterway include road-building and timber harvest. A Simpson Timber Company timber harvest area is visible from Highway 101 or Fred Haight Drive which parallels Rowdy Creek. Additional timber harvest areas are located upstream on Rowdy Creek within Six Rivers National Forest lands. The proposed RSP and gravel bar lowering by Del Norte

County would have cumulative adverse, minor impacts on sedimentation, water quality, noise, aesthetics on Rowdy Creek. With completion of the project including revegetation and implementing fish habitat structures into the toe of the RSP areas, the proposed project would have a cumulative beneficial impact on fish habitat (which has been degraded) and fish populations on Rowdy Creek, augmented by Rowdy Creek Fish Hatchery operations.

#### 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, however, has not yet been finalized and this preliminary determination may be reconsidered if additional information is developed. No decision regarding the need for an Environmental Impact Statement (EIS) can, therefore, be made until the Final Environmental Assessment (EA) has been completed.

#### 5. EVALUATION OF ALTERNATIVES:

The following discussion of alternatives is taken directly from the Del Norte County Environmental Assessment/Initial Study of September 23, 1999:

1. PROPOSED ACTION - The proposed project includes the replacement and placement of rip-rap on the north bank of Rowdy Creek, a tributary to the Smith River. Rowdy Creek is the first significant tributary on the Smith River. Rowdy Creek has been subject to high winter water flows that have resulted in damage to existing bank protection structures and adjacent unprotected property. The County proposed to correct the damage incurred with bank stabilization that will include excavation of a toe trench to firmly anchor smaller boulders and rocks to prevent storm damage along a 500 foot plus stretch of bank. Also proposed is excavation of overburden (sand and gravel) deposited during the January 1997 storms that has created a diversion of waters that have

resulted in massive bank erosion. Complex structures that will enhance fisheries values of this stretch of stream, as well as help control flow dynamics of water during flood events, is proposed as part of the project design. The project will include specific mitigation to reduce the potential for adverse effects on threatened and endangered species that occur within the area during the construction period. A biological survey of the area has been completed with recommendations for implementing mitigation measures to reduce potential impacts to the threatened, endangered, or candidate species. Also consulted in this proposed action is a hydrology report outlining the cause of the problem, and corrective action recommendations.

#### 2. ALTERNATIVES -

A) Modified Project: The project could be revised in such a way as to prohibit any work within the stream channel. This would result in a considerably smaller project that would likely protect adjacent property temporarily. No materials would be moved within the channel, only new imported material would be used to back fill a portion of the land that has been lost to erosion. No fisheries enhancement/mitigation structure would be placed, and habitat conditions would continue to deteriorate. Adjacent properties will continue to be threatened by erosion of stream banks, and potential for flooding will increase.

B) Alternative Location of Activities: An alternative location would not reduce the future impact of floodwaters on the properties that have been damaged. An alternative location would not affect the current problems associated with the flood damage.

C) No Project: A no project alternative would result in further bank erosion and potential significant loss of property including damage to residential structures, raw land, and the Community Service wells that serve the Smith River community. Habitat of threatened, endangered or candidate species will continue to deteriorate.

Other Reasonable Courses of Action: A larger

project could be considered including excavation of historically deep holes that are now filled with sand and rock as well as filling of exposed holes that were scoured by the extremely high flood flows. Preliminary consultation with agencies that would have permitting authority or concern over adjacent structures (e.g., the bridge over Highway 101) have consequently resulted in the proposed alternative.

Note: Not addressed in the County EA is a discussion of alternative methods of erosion control such as bio-engineering on eroded slopes or the use of other structures such as retaining walls or gabions. Also not considered is relocation of mobile homes away from the flood plain.

Evaluation of this activity's impact on the public interest will also include application of the guidelines promulgated by the Administrator of the Environmental Protection Agency under Section 404(b) of the Clean Water Act, 33 U.S.C. Section 1344(b).

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**CITATIONS:**

1) LaRue, Gerald W., 1999, Rowdy Creek Erosion at Smith River, California, Hydrologist Report for Del Norte County, California.

2) Galea Wildlife Consulting, July 27, 1999, Habitat Assessment for Rowdy Creek Rehabilitation Project.

**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.

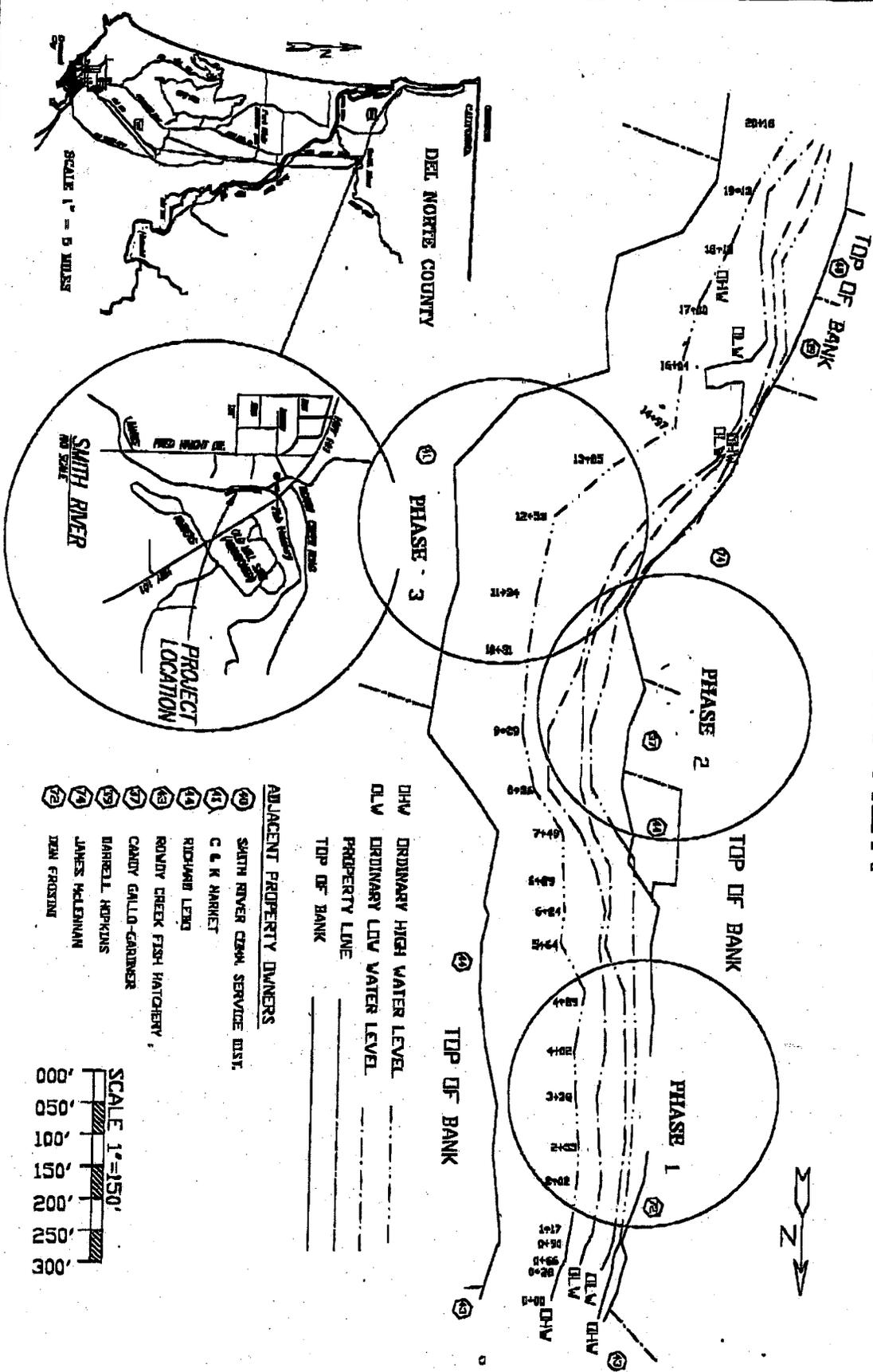
**7. CONSIDERATION OF COMMENTS:**

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.

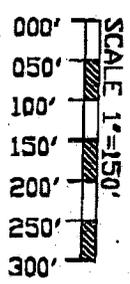
**8. SUBMISSION OF COMMENTS:** Interested parties may submit in writing any comments concerning this activity. Comments should include the applicant's name, the number, and the date of this notice and should be forwarded so as to reach this office within the comment period specified on page one of this notice. Comments should be sent to the Eureka Field Office, U.S. Army Corps of Engineers, P.O. Box 4863, Eureka, California

95502. 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.

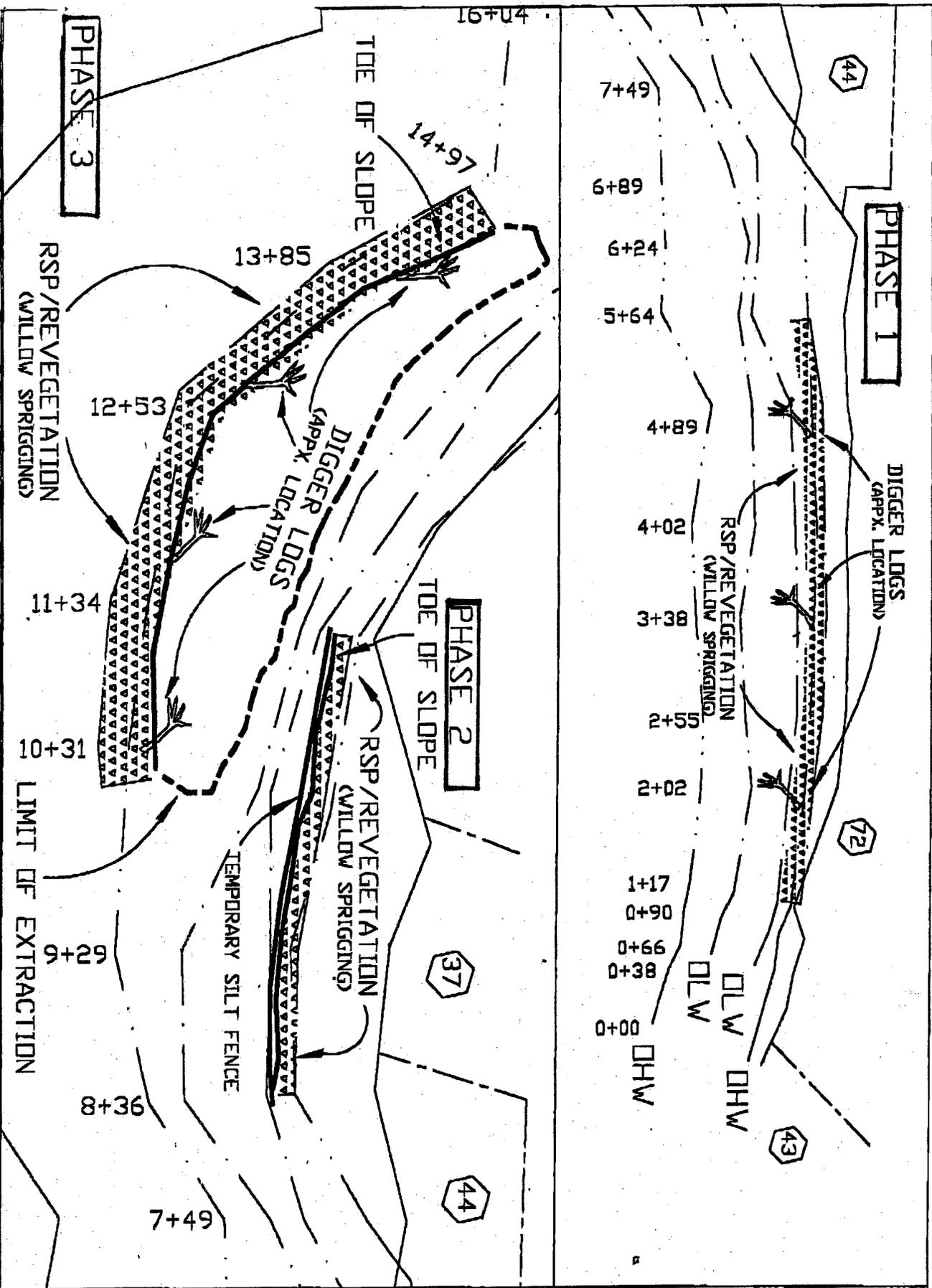
# ROWDY CREEK REMEDIATION PROJECT PLAN VIEW



- ADJACENT PROPERTY OWNERS**
- ⑩ SMITH RIVER CEM. SERVICE DIST.
  - ⑪ C. & K. MARKET
  - ⑫ RICHARD LENO
  - ⑬ ROWDY CREEK FISH HATCHERY
  - ⑭ CANDY GALLO-GARDNER
  - ⑮ BARRETT HOPKINS
  - ⑯ JAMES McLEMAN
  - ⑰ DEAN CRISTIAN



	<p><b>ROWDY CREEK REMEDATION PROJECT</b></p>	<p><b>DEL NORTE COUNTY</b> Engineering &amp; Surveying Division 700 Fifth Street Crescent City, CA 95531 Ph. (707) 464-7229 Fax 465-0340</p>	<table border="1"> <tr> <td> </td> </tr> <tr> <td> </td> </tr> </table>																				
<p>DATE: 07/28/99</p> <p>JOB NO. _____</p> <p>SHEET 1 OF 9</p>	<p>BY: _____</p> <p>CHECKED: _____</p> <p>DATE: _____</p>	<p> </p>	<p> </p>																				



R. L. ...  
 ...  
 Date: 0/22/99  
 Job No.

  
**ROWDY CREEK  
 REMEDIATION PROJECT**

**DEL NORTE COUNTY**  
 Engineering & Surveying Division  
 700 Fifth Street  
 Crescent City, CA 95531  
 Ph. (707) 464-7228 Fax 465-0340



**PROJECT TITLE** ROWDY CREEK REHABILITATION PROJECT

**PREPARED FOR** DEL NORTE COUNTY GRANTS & HOUSING

DEL NORTE COUNTY ENGINEERING & SURVEY  
700 5TH STREET  
CRESCENT CITY, CA 95531 TEL: 707 464-7229

**DRAWN BY** R. BURNETT  
**CHECK BY** W. A. REEVE

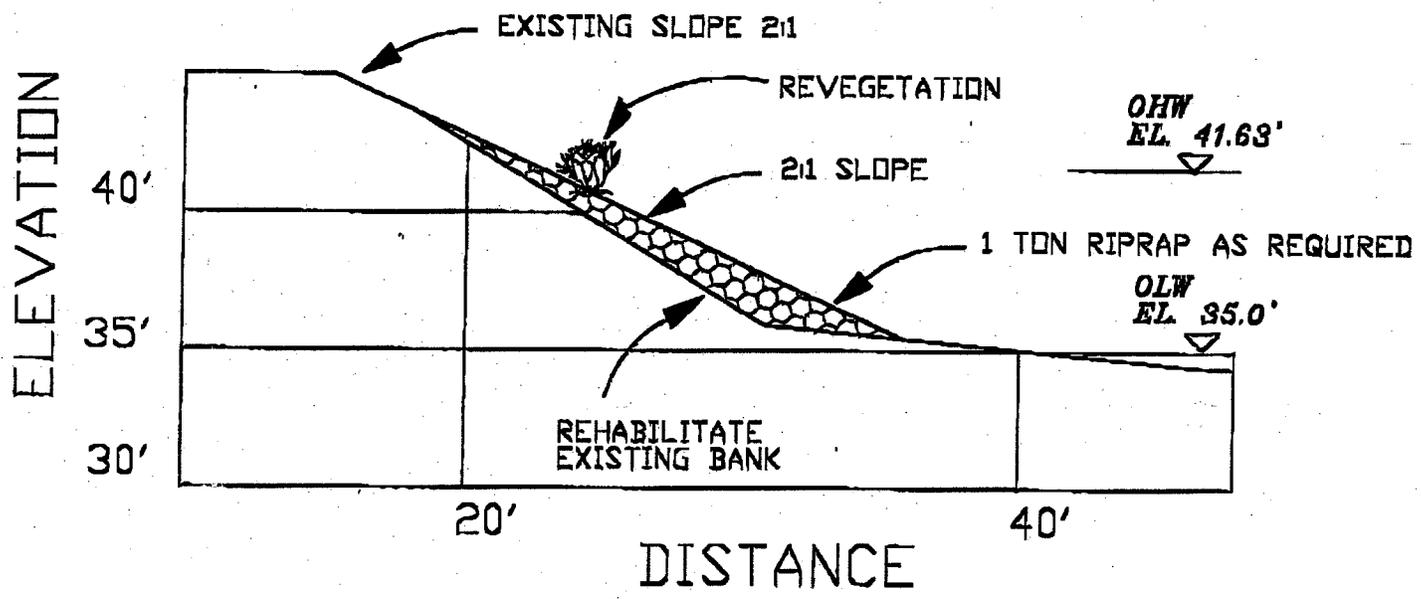
ASSISTANT COUNTY ENGINEER

GRANTSC.DWG

File No. 24393N

# PHASE 1: FILL DETAIL

NO SCALE





**PROJECT TITLE** ROWDY CREEK REHABILITATION PROJECT

**PREPARED FOR** DEL NORTE COUNTY GRANTS & HOUSING

DEL NORTE COUNTY ENGINEERING & SURVEY  
700 5TH STREET  
CRESCENT CITY, CA 95531 TEL: 707 464-7229

**DRAWN BY** R. BURNETT

**CHECK BY** W. A. REEVE

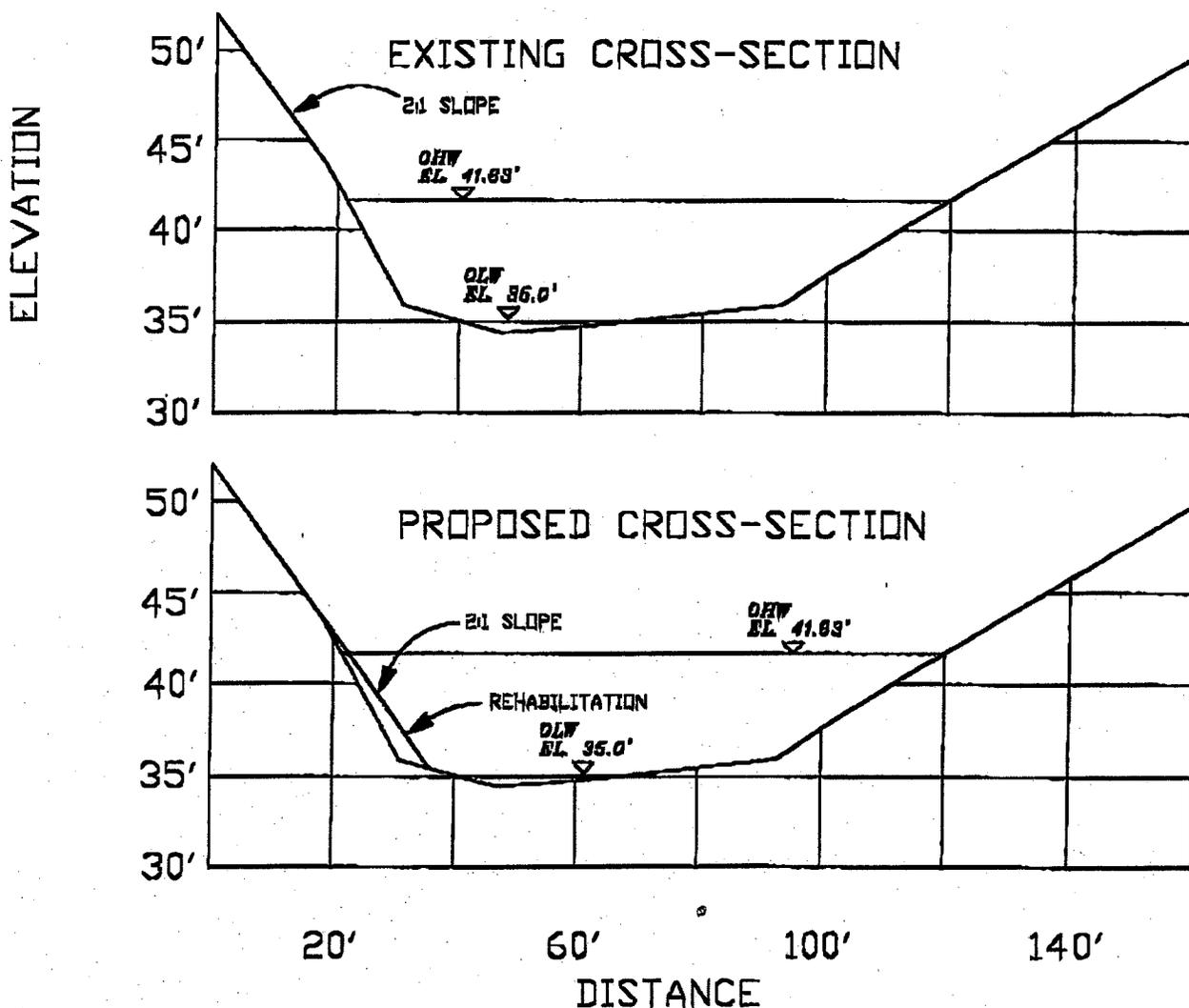
ASSISTANT COUNTY ENGINEER

GRANTSC.DWG

File No. 24393N

STATION 4+02  
BEARING S88d11'56"E  
NAD 83 (92), NAVD 88

SCALE  
1" = 30' HORIZONTAL  
1" = 10' VERTICAL





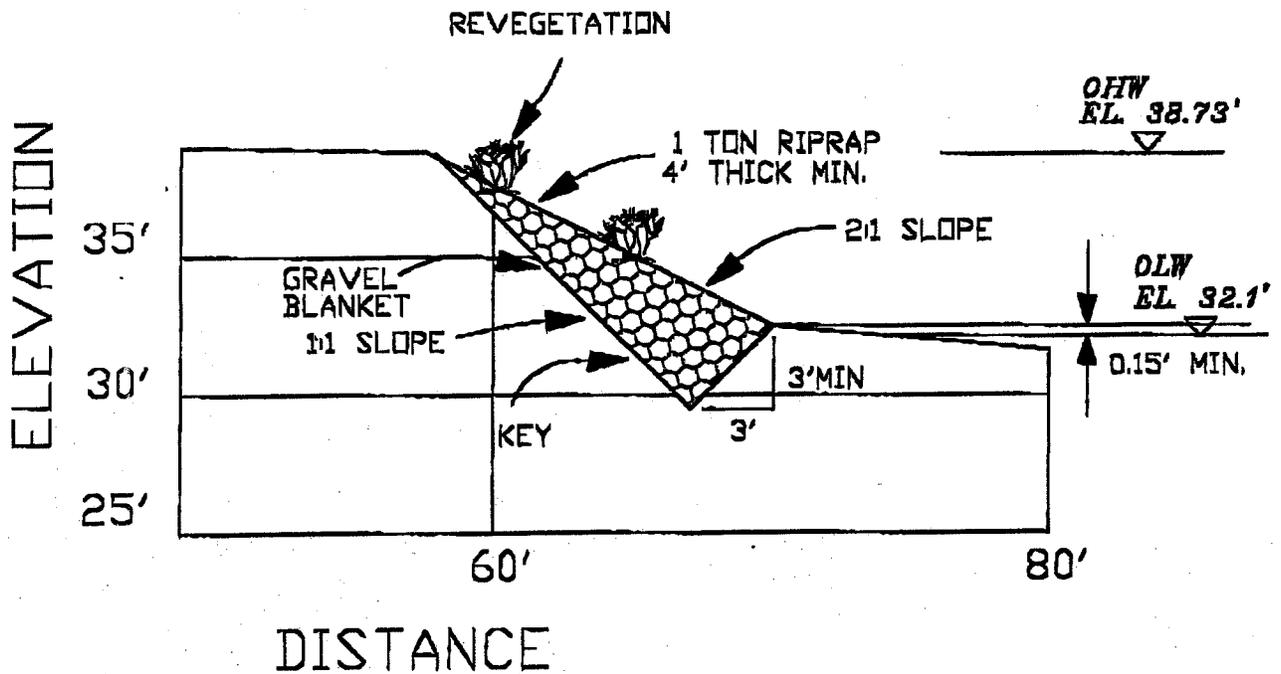
**PROJECT TITLE** ROWDY CREEK REHABILITATION PROJECT  
**PREPARED FOR** DEL NORTE COUNTY GRANTS & HOUSING  
DEL NORTE COUNTY ENGINEERING & SURVEY  
700 5TH STREET  
CRESCENT CITY, CA 95531 TEL: 707 464-7229

**DRAWN BY** R. BURNETT  
**CHECK BY** W. A. REEVE  
**ASSISTANT COUNTY ENGINEER**  
**GRANTSC.DWG**

File No. 24393N

# PHASE 2: FILL DETAIL

NO SCALE





**PROJECT TITLE** ROWDY CREEK REHABILITATION PROJECT  
**PREPARED FOR** DEL NORTE COUNTY GRANTS & HOUSING  
DEL NORTE COUNTY ENGINEERING & SURVEY  
700 5TH STREET  
CRESCENT CITY, CA 95531 TEL: 707 464-7229

**DRAWN BY** R. BURNETT

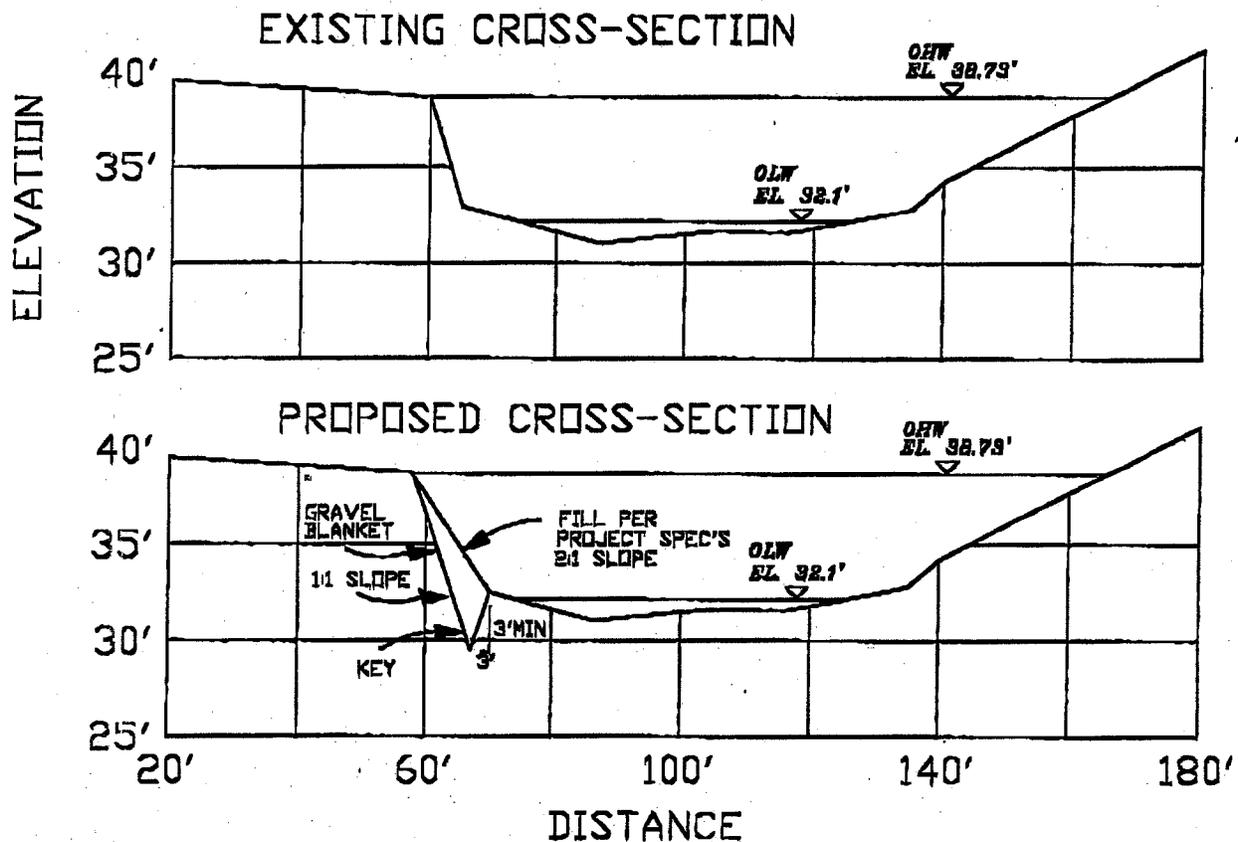
**CHECK BY** W. A. REEVE

ASSISTANT COUNTY ENGINEER

GRANTSC.DWG

File No. 24393N

**STATION** 9+29 **SCALE**  
**BEARING** N88d11'50"E **1" = 30' HORIZONTAL**  
**NAD 83 (92), NAVD 88** **1" = 10' VERTICAL**





PROJ. TITLE **ROWDY CREEK REHABILITATION PROJECT**

PREPARED FOR **DEL NORTE COUNTY GRANTS & HOUSING**

**DEL NORTE COUNTY ENGINEERING & SURVEY  
700 5TH STREET  
CRESCENT CITY, CA 95531 TEL: 707 464-7229**

DRAWN BY **R. BURNETT**

CHECK BY **W. A. REEVE**

**ASSISTANT COUNTY ENGINEER**

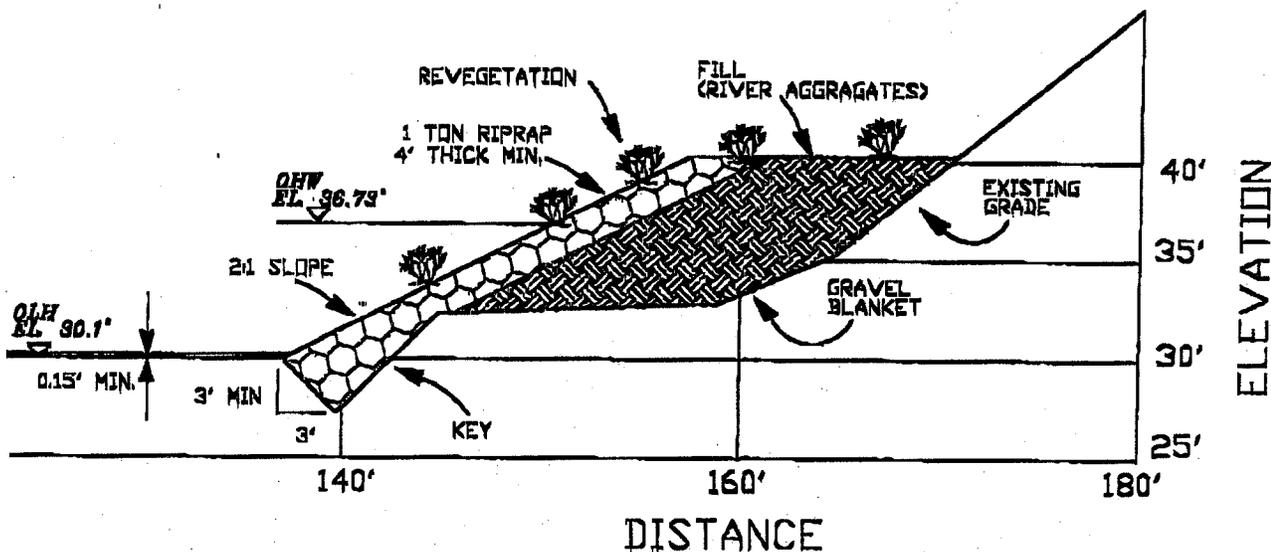
**GRANTSC.DWG**

File No. 24393N

**PILASE**

NO SCALE

**3:1 FILL DETAIL**





**PROJECT TITLE** ROWDY CREEK REHABILITATION PROJECT  
**PREPARED FOR** DEL NORTE COUNTY GRANTS & HOUSING  
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**DRAWN BY** R. BURNETT

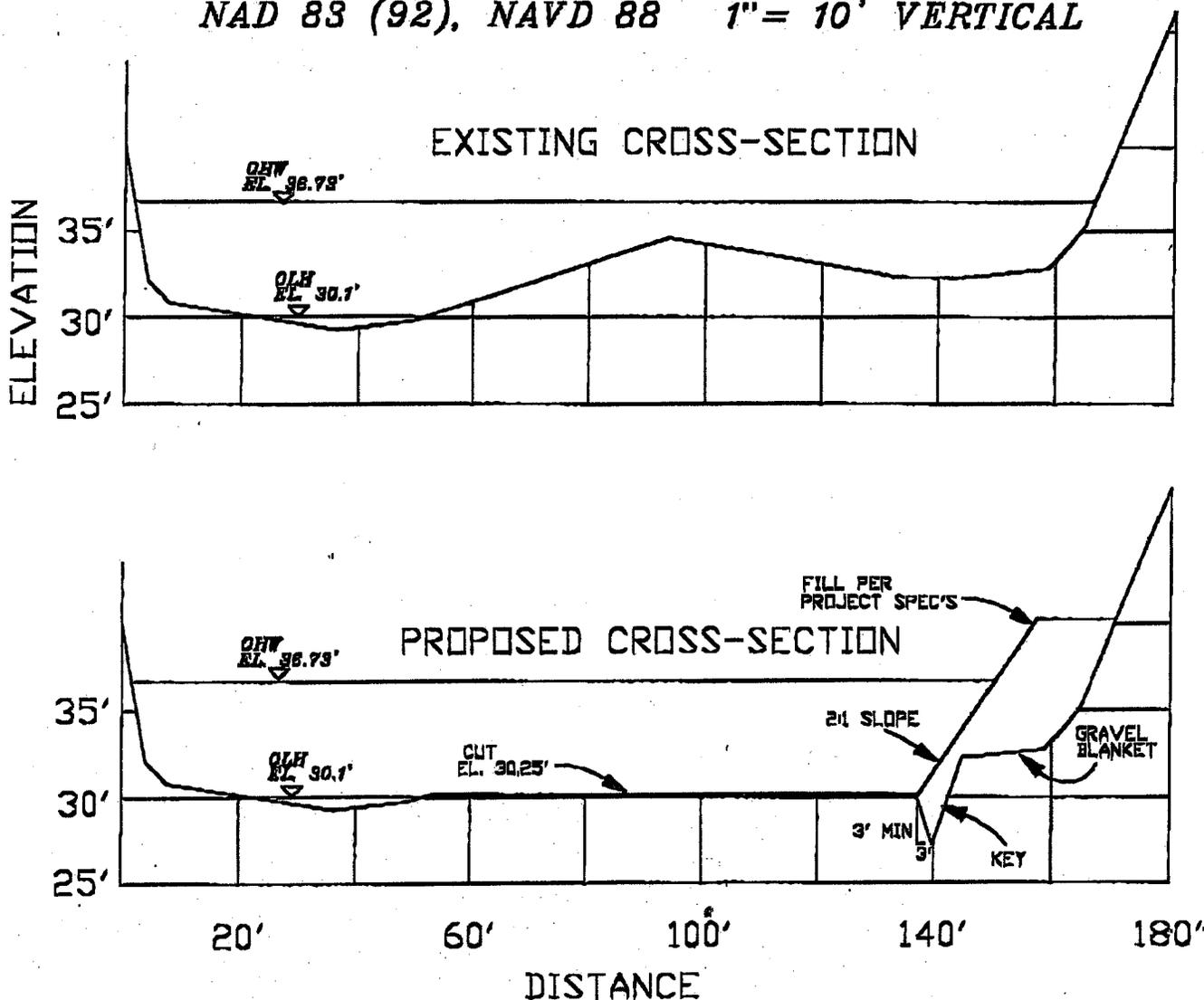
**CHECK BY** W. A. REEVE

ASSISTANT COUNTY ENGINEER

GRANTSC.DWG

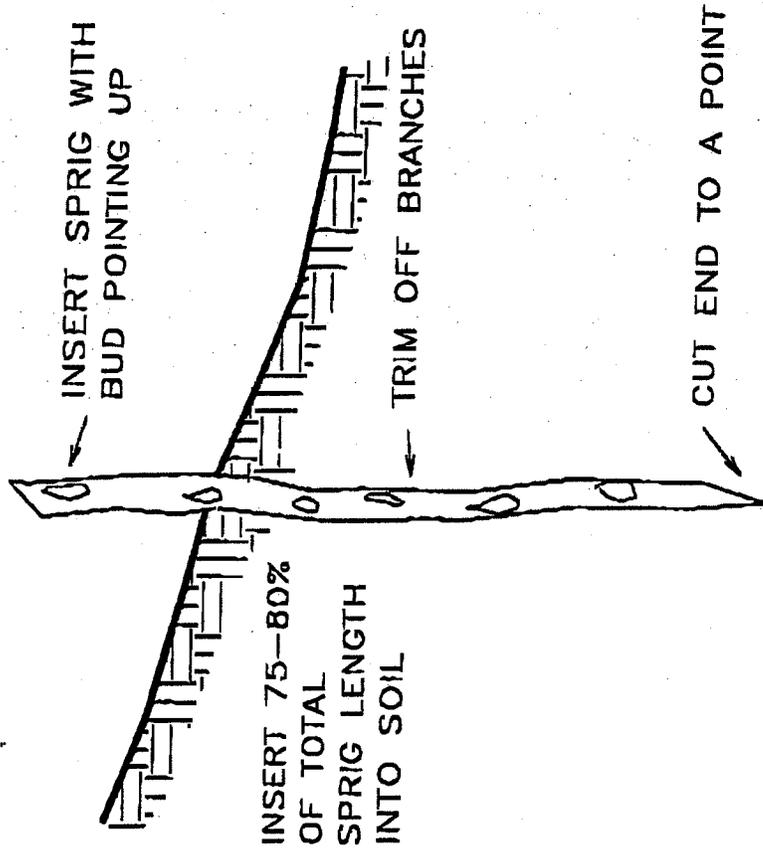
File No. 24393N

**STATION 12+53** **SCALE**  
**BEARING S63d02'05"E** **1" = 30' HORIZONTAL**  
**NAD 83 (92), NAVD 88** **1" = 10' VERTICAL**



**CALIFORNIA SALMONID STREAM  
HABITAT RESTORATION MANUAL**

File No. 24393N



Sheet 9 of 9

Figure VII-57. Willow sprigging. (Prunuske, 1987).