
DEPARTMENT OF
PUBLIC WORKS

GOVERNMENTAL CENTER

JOHN A. FANTHAM
DIRECTOR OF PUBLIC WORKS



AGENDA: JUNE 9, 1998

COUNTY OF SANTA CRUZ ¹⁶⁹

701 OCEAN STREET, SANTA CRUZ, CALIFORNIA 950604070

(408) 454-2160

FAX (408) 454-2385

June 2, 1998

SANTA CRUZ COUNTY BOARD OF SUPERVISORS

701 Ocean Street
Santa Cruz, California 95060

SUBJECT: AMESTI ROAD AT CROW ROAD DEWATERING PROJECT
STATE OFFICE OF EMERGENCY SERVICES DSR 001
EMERGENCY PROTECTIVE MEASURES, REQUESTS FOR PROPOSALS

Members of the Board:

On April 9, 1998, at the request of U. S. Representative Sam Farr and the County Administrative Office, representatives of the Federal Emergency Management Agency (FEMA) and the State Office of Emergency Services (OES) met with County staff to discuss in addition to other topics, the long history of damage to Amesti Road and the possible repair or mitigation of the continuing storm damage along Amesti Road. During the meeting, while both FEMA and OES representatives maintained that it was beyond the scope of their policies to fund the full and immediate repair of the Amesti Road landslide damage, County staff argued that it was necessary to undertake some form of emergency protective measures to the damage sites to prevent further sliding and property damage. These concerns were related to not only Amesti Road, but also Crow Road (County maintained), which lies just above the slide area, as well as numerous private homes along Crow Road and the nearby Watsonville City water storage facility. All agreed that they could eventually be placed in jeopardy if the landslide were to continue to migrate.

The objective of this April meeting was to determine under what circumstances either FEMA or OES might agree to participate in some kind of mitigation of damages along the roadway. Of the solutions discussed for emergency protective measures, hillside dewatering (pumping down the high groundwater in the slip area) was considered the most effective application in this type of situation. This is consistent with the recommendation by the various geologists, geotechnical engineers and staff who have studied this location over the past three years. While FEMA representatives still maintained they could not help reimburse any such proposal, OES authorized the preparation of an Emergency Protective Measures Damage Survey Report (DSR) in the amount of \$500,000 (based upon the very preliminary estimate provided by Public Works). A copy of the approved DSR is attached. This DSR still requires that the County fund a 25% local share. This amount (\$125,000) is currently programed into the proposed 1998/99 Public Works Road Program. In a related action, Public Works has also requested that FEMA and OES prepare a new DSR, under the February 1998 FEMA Event #1203, for final repair of the entire damaged roadway, as advised by FEMA and OES.

Due to the emergency nature of the circumstances, in order to expedite the installation of these critical protective measures, County Counsel, Public Works and Planning have determined that the most expeditious way to proceed with these emergency measures is by hiring a consultant qualified to provide “turn key” services. As you know, under normal contracting procedures, the bidding process specifies that the County would develop plans and specifications and send the project out to bid. This process would be problematic in this instance for two reasons. First, timing is of the essence. This project should be undertaken at the earliest possible time. Second, this project cannot be designed with the currently available technical information. Engineering and geotechnical data which will be developed as a part of this project will allow the detailed design to be identified. Contracting for services in the manner proposed will allow for the project to expeditiously proceed as data is developed. Under such an arrangement, the County would hire one firm to test, engineer and construct the entire dewatering project, including completion of any necessary permit processing.

Public Works is therefore requesting the Board’s authorization to proceed with this project as an emergency project, and to seek formal Request for Proposals (**RFPs**) from three qualified engineering firms (see attachment 2) whom both Public Works and Planning believe could process the engineering, subconsultant project plans, and construction for dewatering the Amesti Road storm damage sites. This proposed RFP will cover the following three-phase scope of work.

PHASE I - GROUNDWATER STUDIES

In addition to reviewing all existing available **geotechnical/groundwater** studies, the consultant’s initial **groundwater** research is expected to include the drilling of six to ten test wells to allow the consultant to map groundwater movement within the road along the intact pavement area of Amesti Road above the damage area (adjacent to Crow Road).

PHASE 2 - GROUNDWATER EXTRACTION

Once the consultant has determined where and at what depth to intercept the slip plane groundwater, they would then engineer project plans and specifications for the installation of drilled dewatering wells and pump-down system installations. We anticipate drilling between fifteen and thirty extraction wells over some 1,500 lineal feet along Amesti Road with a span width between wells at around fifty to one hundred feet. The extraction system would be expected to deposit groundwater at a preapproved detention area (exact location to be determined) prior to discharging to the creek. The consultant will be required to seek all necessary permits for the operation based upon Planning and Public Works criteria and procedures.

PHASE 3 - GROUNDWATER MONITORING

At start up of the dewatering system, a specific procedure of monitoring the installation will be provided by the consultant to County personnel (along with appropriate training) to record the system results. We anticipate at least one to two years of monitoring in order to determine if the extraction system has effectively halted the overall slide mechanism and prevented any further hillside rotation.

SANTA CRUZ COUNTY BOARD OF SUPERVISORS

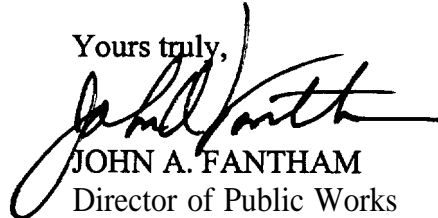
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If at the completion of the groundwater extraction process, the dewatering wells prove to be successful in stabilizing the damage area, the County would then ask FEMA to activate its Amesti Road **DSRs** (in process at this time) in order to provide for reimbursement of the eligible portion of the roadway repair costs involved in reconstructing that segment of Amesti Road now closed to traffic (typically in the range of 75% of the total costs).

It is therefore recommended that the Board of Supervisors take the following action:

1. Authorize Public Works to request proposals for the Amesti Road Emergency Protection Measures from the three firms listed on Attachment 2 whom we believe have the overall expertise to investigate, design and construct the entire project as identified above.
2. Direct Public Works to return to your Board on or before August 4, 1998, with a proposed contract with the firm selected for the subject project.

Yours truly,



JOHN A. FANTHAM
Director of Public Works

WBW:bbs

Attachments

RECOMMENDED FOR APPROVAL:



County Administrative Officer

copy to: D. A. Christian, Office of Emergency Services
Neil England, Federal Emergency Management Agency
City of Watsonville Public Works
Browns Valley Road Association
County Counsel
Public Works Department

Application No.: OES 98-01-040	DSR NO.: 001	Category: () A (X) B () C () D () E () F () G
Inspection Date: 04-08-98	Supplemental to DSR No.	Final Report () Yes (x) No 172
State Disaster # 98-01		
State Only, no Federal		

DAMAGE SURVEY REPORT

STATE NATURAL DISASTER ASSISTANCE ACT PROGRAM

Applicant's Name County of Santa Cruz	Damaged Facility Location Amesti Road. , at Crow Ave. northwest of Watsonville in Santa Cruz County.	Percentage of Work Completed 0% County Santa Cruz
Description of Damage As a result of the February, 1998 Winter Storms, an approx. 50 +/- acre, slide has caused an imminent threat to 9 homes along Crow Ave., a 1,000,000 gallon water storage tank, & damaged/destroyed approx. 600 + LF of Amesti Rd., and 9 homes along Amesti Rd.		Work to be Accomplished by: (x) Force Account (x) Contract
Scope of Work to Be Completed Provide preliminary & final engineering, design, geotechnical services, prepare plans, specifications, bid documents, construction inspection, & monitoring, Drill test wells, Drill 30 +/- wells & install shafts, at various locations, Purchase & install pumping system, & disposal facility, by Contract and Force Account		FEMA Eligible () Yes (x) No Federal DSR No. N/A

LABOR, EQUIPMENT AND MATERIAL	Quantity	Unit of Measure	Unit Price	Cost
Engineering (design, geotechnical serv., plans & specs)	1	LS	\$ 140,000.00	\$ 140,000.00
Contract (wells, purchase & install pump & disposal)	1	LS	\$ 360,000.00	\$ 360,000.00
Existing Insurance () Yes (X) No Premium \$ _____ Deductable _____	Subtotal from Continuation Sheets		0	
			TOTAL COSTS	\$500,000.00

Name of Inspector (9917) David Gillings <i>[Signature]</i>	Agency OES	Date 04/09/98	Eligible (x) Yes () No
Name of Local Representative Bill Williamson P.E.	Title Senior Design Engineer	Signature <i>[Signature]</i>	Date 04/09/98
Reviewer Signature <i>[Signature]</i>	Date	Approved (X) Yes () No	PAQ Signature <i>[Signature]</i>
			Date 9/10/98
			Approved (X) Yes () No

STATE OF CALIFORNIA DAMAGE SURVEY REPORT

Applicant: County of Santa Cruz

NDAAs No. O.E.S. 98 - 01 - 040

Date: 04/08/98

DSR No.: 0 0 1

STATE INSPECTOR: DAVID GILLINGS

INSPECTOR NO. 9917

NARRATIVE

SUBJECT : (Category "B")

Title 19 Sub-chapter 5. Natural Disaster Assistance Act. section 2930

& in accordance with NDAAs 1997.03 nolicv clarification dated November 6. 1997

The subject covered under this DSR, is the associated costs of emergency protective measures to be taken, at what is known as the Amesti Road failure, located north west of the City of Watsonville, in an unincorporated area of the county. The Amesti Road failure is approximately 50 +/- acres, and as a result of the February 1998 winter storms is now encroaching on, and created an imminent threat to nine (9) residences along Crow Avenue, a one million (1,000,000) gallon water storage tank, owned by the City of Watsonville, as well as residences along the south west end of Amesti Road. The slide mass has presently consumed/damaged approximately 600 + LF of Amesti Road, and nine (9) residences along the western side or down slope of Amesti Road.

SCOPE OF EMERGENCY PROTECTIVE MEASURES :

Title 19 Sub-chapter 5. Natural Disaster Assistance Act 2920 (a) (1)

The County of Santa Cruz is proposing the placement of a ground water extraction system to dewater the hillside mass, which will include thirty (30) vertical wells to an approximate depth of sixty (60) feet below current road levels, spread over fifteen hundred (1,500) feet of Amesti Road. The ground water extraction system will be constructed in three (3) phases, which are briefly described below, the applicant has provided a more descriptive explanation of the proposed scope of work, and cost estimate, which is attached on page. 8

PHASE I: Ground water studies and plan preparation to include

- A. Drilling of 6 to 10 test wells along the periphery of the slide to determine the locations of the wells.
- B. Design of the dewatering system, mechanical equipment, and disposal conduit
- C. Preparation of plans and **specifications**, bidding, and awarding of construction contract

PHASE II: Ground water extraction system installation to include

- A. Drilling of wells, and placement of shafts
- B. Purchase of pump system
- C. Installation of pumping system, and disposal facilities
- D. Construction Inspection

PHASE III: Ground water extraction and monitoring to include

- A. Monitor dewatering progress,
- B. Develop schedule to monitor the rate of movement, ground water levels, water quality, and determine if the hillside mass has been halted

Applicant: County of Santa Cruz

NDA No. O.E.S. 98 - 01 - 040
DSR No.: 0 0 1

FORCE ACCOUNT Note:

The applicant has indicated that much of the Engineering, Design, Geotechnical, and Monitoring may be completed with the county's own forces depending on the complexity, or time constraints of this project. The applicant's representative, Mr. Bill Williamson has been notified that in accordance with Title 19 Sub-chapter 5 section 29 10 (b) the regular time costs for county personnel are not eligible for reimbursement. However in accordance with Title 19 Sub-chapter 5 section 29 10 (e)(1-4) & section 29 10 (g) (3) the costs of equipment, and materials, utilized by the applicant in the performance of the work is an eligible cost.

It should be noted that contained in the county's Scope of Work under PHASE III it is the county's expectation that the ground water extraction system shall operate indefinitely to prevent further movement at this site. It is the intent of this note to notify the applicant that in accordance with Title 19 Sub-chapter 5 section 2910 (i)(3) expenditures on normal maintenance activities are not eligible for reimbursement.

AUDIT:

In accordance with Title 19 Sub-chapter 5. section 2980. (c)(1) The applicant has been notified that all contracts, invoices, labor, equipment, and materials, records are subject to audit by the State Controllers Office.

STATE INSPECTOR: David **Gillings** (9917)

OES PRELIMINARY ENVIRONMENTAL REVIEW QUESTIONNAIRE

APPLICANT: Santa Cruz County
 LEAD AGENCY: Department of Public Works
 PROJECT CONSULTANT: MR. Bill Williamson PL: 408-454-2807
 FACILITY: Amest Road Slide
 PROJECT LOCATION: Amest Road At Crow Ave.

Part A - Environmental Concerns Checklist (check one box for each concern)

Y/N

1. Toxic or Hazardous Materials
 2. Special Status Land (Parks/Open Space)
 3. Unique Geologic or Physical Features (Steep Slopes/Slides)
 4. In or Near a River, Stream, or Lake
 5. Proximity to Endangered or Threatened Species or Habitat
 6. Effects Floodplain or Wetland
 7. Building is Over Fifty Years Old
 8. Archaeological Resources, Relics, or Human Remains
 9. Significant Social or Economic Effects

Part B - Exemptions (to be completed by applicant)

- Statutory Exemption: Emergency Projects, CEQA § 15269
 Applicant will forward copy of a Notice of Exemption per CEQA § 15062
 Categorical Exemption: Existing Facilities, CEQA § 15301
 Applicant will forward copy of a Notice of Exemption per CEQA § 15062
 Potential Significant Effect on the Environment - Applicant will transmit copies of environmental documents (Negative Declaration, Environmental Impact Report) to OES.

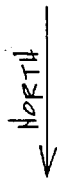
Part C - Regulatory Requirements (to be completed by applicant)

Y/N

- Coastal Development Permit
 Dept. of Fish and Game (DFG) Stream Alteration Agreement (1601/1603 Permit)
 DFG Endangered Species Consultation
 Corps of Engineers 404 permit

Bill Williamson PE
 Applicant/Lead Agency

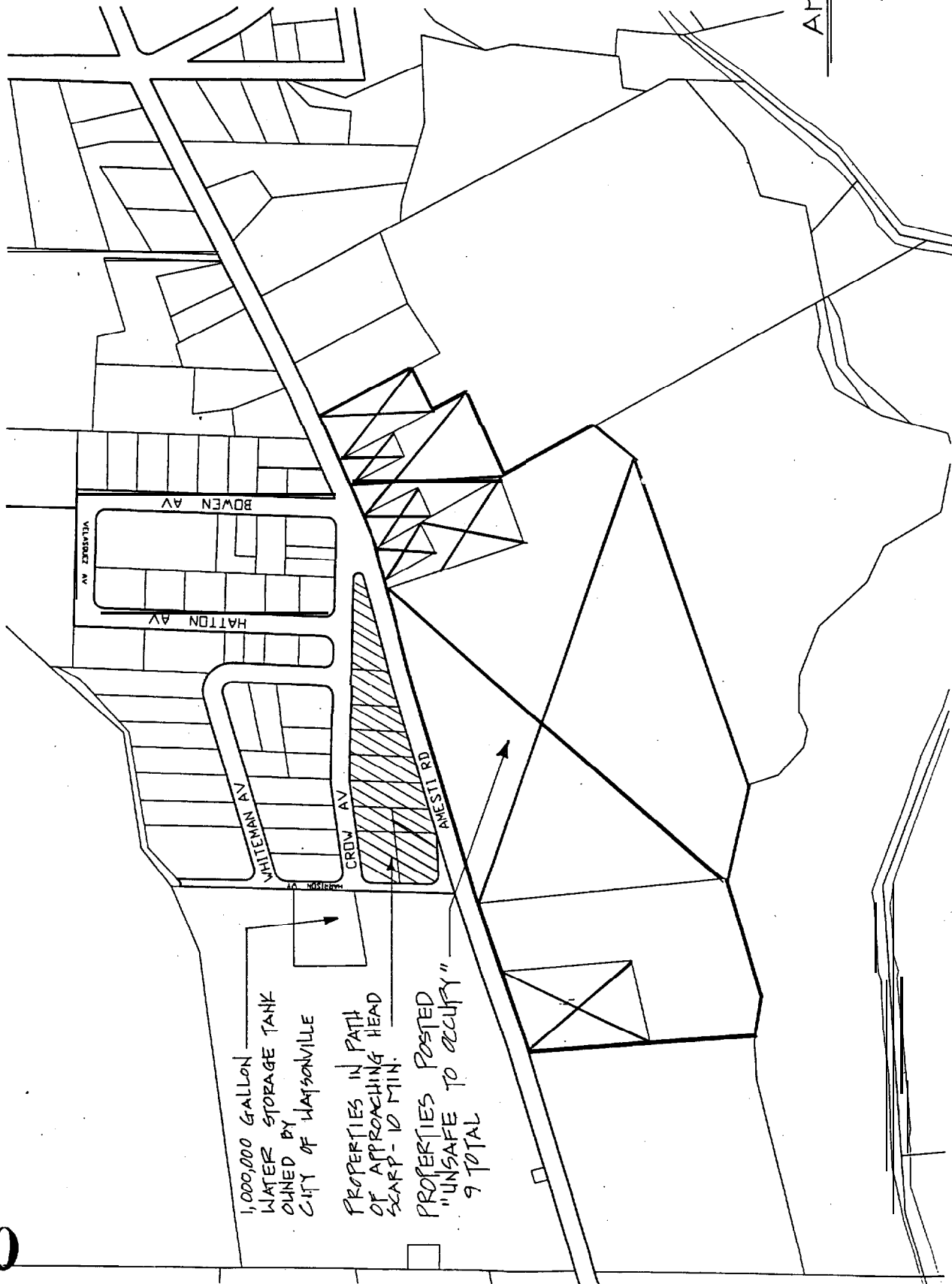
DAVID Gillings (9917)
 OES Applicant Services Representative



AMESI ROAD

1" = 200'

APRIL 9, 1998

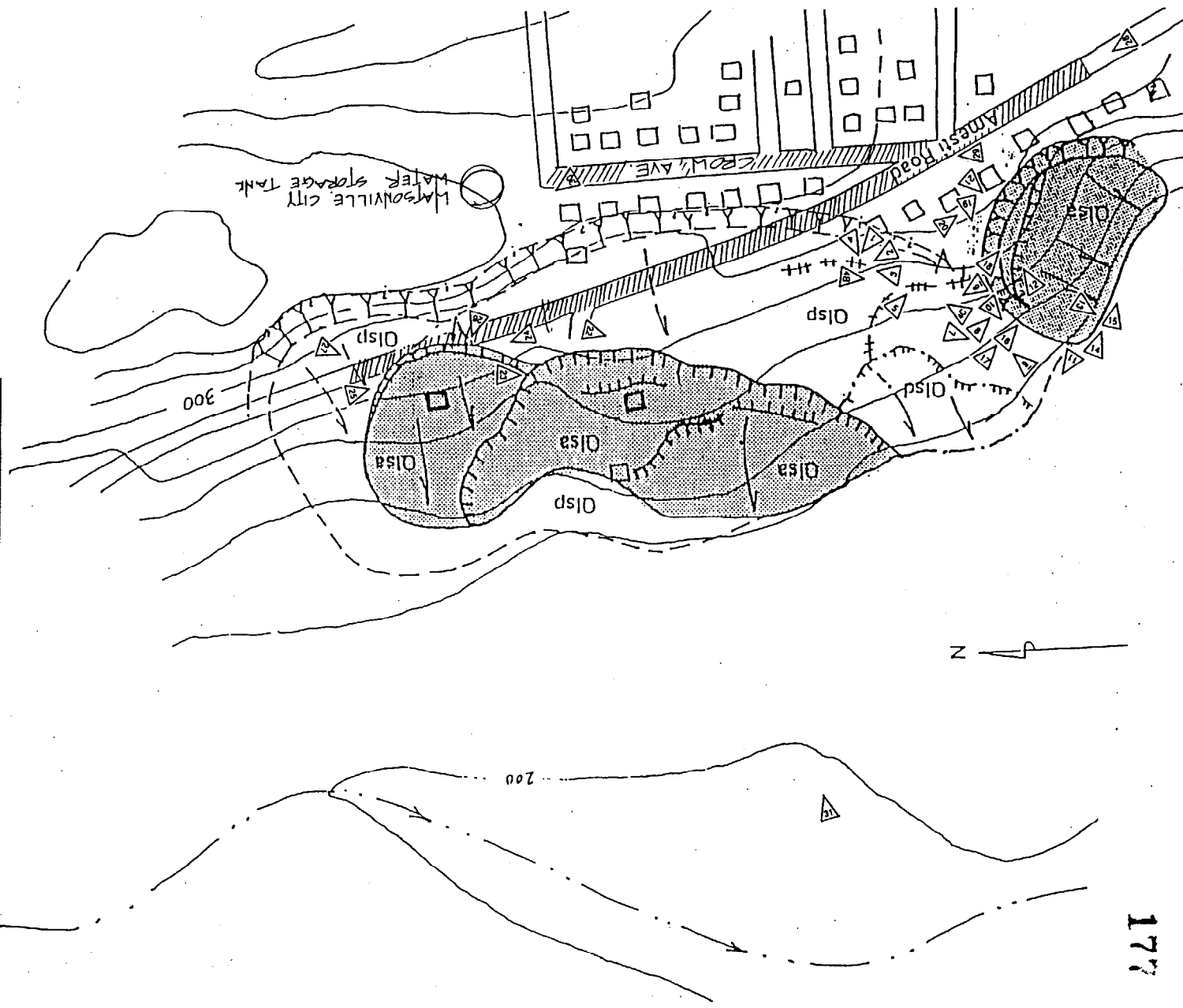


1,000,000 GALLON
WATER STORAGE TANK
OWNED BY
CITY OF WATSONVILLE

PROPERTIES IN PATH
OF APPROACHING HEAD
SCARP - 10 MIN.

PROPERTIES POSTED
"UNSAFE TO OCCUPY"
9 TOTAL

A-69



EXPLANATION

- Olsa - Active landslide
- Olsp - Dormant landslide (Active 1983-88)
- Olsp - Paleo landslide

- Active ground cracks
- Existing Residences

Contour Interval = 20 feet

- Main scarp (Active)
- Main scarp (Dormant)
- Main scarp (Paleo)

Approximate location, Direction and View of Photo Number (as indicated)

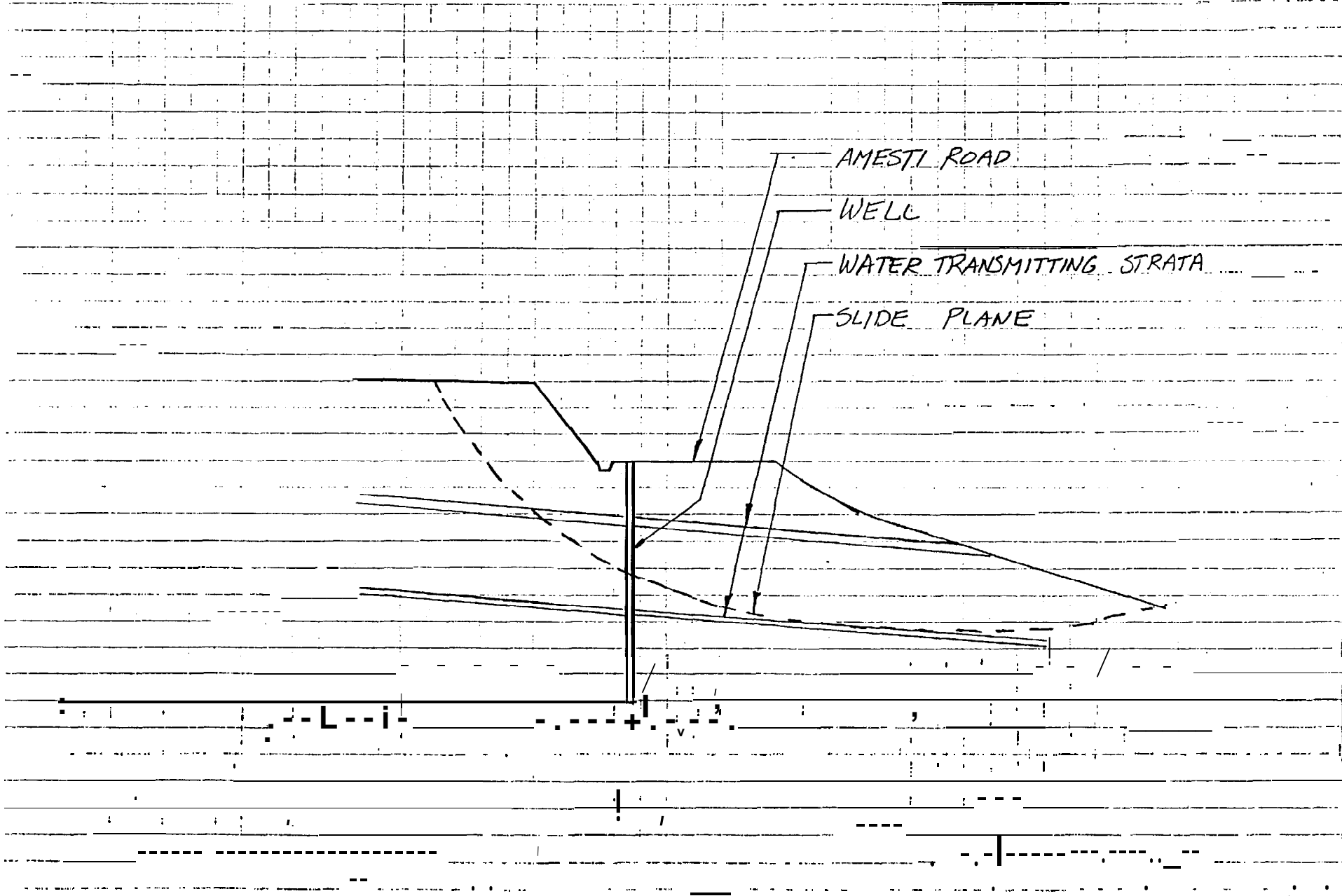
COUNTY OF SANTA CRUZ
DEPARTMENT OF PUBLIC WORKS

Santa Cruz County

NDA 98-01-010

ISS# 001

178/9



Amesti Road Groundwater Removal Scope of Work

The scope of work shall be divided into three phases, namely:

Phase I -- GROUND WATER STUDIES AND PLAN PREPARATION

The County geologist will oversee the drilling of 6 to 10 test wells located at the periphery of the slide mass. The drilling will be continuously logged. Information collected during drilling and subsequent monitoring will allow for efficient placement of permanent wells. Data collection includes, but is not limited to:

- soil samples indicate soil type and depth
- saturation levels of soil
- location of water transmitting strata
- soil density
- permeability of soil
- rate of movement of slide mass (using inclinometer installed in well)
- water quality

See attached site plan for zone of test wells. The exact placement will be made in the field by the County geologist.

Phase I will also include design of the dewatering system. The design and specifications for the mechanical equipment (pumps and compressors) shall be done by a mechanical engineer. Phase I also includes plan and specification preparation, bidding, and award of construction contract.

Phase I tasks will be performed or coordinated by the County geologist or County civil engineers. A drilling firm shall be contracted to drill test wells. Continuous logging shall be performed by County planning staff. An independent contractor agreement shall be executed for the mechanical design of the pumping system by a mechanical engineer. Plans and specifications shall be prepared by and under the guidance of the County civil engineers.

Phase II -- GROUND WATER EXTRACTION SYSTEM INSTALLATION

A groundwater extraction system shall be constructed, based on the plans and specifications developed in Phase I. Initial estimates by geologists and civil engineers include 30 vertical wells to a depth approximately 60 feet below current road levels. They would be spread over 1500 feet of Amesti Road. The construction contract will include drilling the wells and placing shafts, installation of a pumping system, and disposal facilities. The pumping system will have the ability to run efficiently at low flowrates.

One option includes a centralized system that consists of a pair of compressors. Centralizing the mechanical devices may reduce initial installation costs, operating expenses, and long-term maintenance. Providing two compressors instead of a single unit allows for continuous operation during maintenance and breakdown. Initially the central compressors would be mobile. When the slide mass stabilizes and the roadway reconstructed, a permanent facility would be constructed. The mobile unit would be locked and encased to discourage vandalism. The system operates by injecting compressed air into the wells, bubbling the water up to the level of the discharge conduits

A second option would be to install individual pumps in each well. The options will be evaluated and the most cost-effective system installed.

Phase II tasks shall be performed by a contractor. The construction engineering shall be administered by County Department of Public Works.

Phase III -- GROUND WATER EXTRACTION AND MONITORING

This phase begins when the extraction system starts up. The slide mass and the wells shall be monitored to determine stabilization of the material. The County geologist and civil engineers shall develop a schedule of monitoring including, but not limited to:

- inclinometer reading will indicate movement and the movement rate
- ground water levels

The County plans to monitor the slide mass a minimum of one year before judging the stability of the slide mass. The groundwater extraction system shall operate indefinitely to prevent future movement at this site.

Phase III monitoring shall be performed by the County geologist and civil engineers.

Estimated Expenses

Phase I -- ground water studies and plan preparation	\$60,000
Phase II -- ground water extraction system installation	400,000
Phase III -- ground water extraction and monitoring	40,000
 Total	 \$500,000

CH2M HILL

Attn.: Sangeeta Lewis
P.O. Box 12681,
Oakland, CA. 94604-268 1
(510) 251-2888
fax: (5 10) 893-8205

GEOMETRIX CONSULTANTS

Attn.: Nick Johnson
100 Pine Street
San Francisco, CA. 94111
(415) 434-9400
fax:(415) 434-1365

EMCON ASSOCIATES

Attn.: Rich Haughey
192 1 Ringwood Avenue
San Jose, CA. 95131
(408) 453-7300
fax: (408) 437-9526

**ROAD DESIGN AND ENGINEERING DIVISION
REQUEST FOR PROPOSAL FOR
ENGINEERING AND CONSULTING SERVICES
ON THE AMESTI ROAD DEWATERING PROGRAM
AT THE AMESTI ROAD STORM DAMAGE SITE**

OBJECTIVE

Under an State Office of Emergency Services (OES) Damage Survey Report (DSR, attached as Exhibit A) written for Emergency Protective Measures for the mitigation of private and public property, the County of Santa Cruz, Department of Public Works is requesting the assistance of a consulting engineering firm who is expert in the process of groundwater extraction or hillside dewatering for the purpose of ground stabilization.

PROPOSAL SUMMARY

The Department of Public Works is requesting proposals **from** firms for the subject services. Based on qualifications and references your firm has been chosen for participation in this selection process which includes submittal of a written proposal for engineering and consulting services and an oral presentation with a selected review panel. This proposal is for a single contract encompassing all the work listed under the following Scope of Work.

EVALUATION AND SELECTION PROCESS

Three firms have been selected to submit written proposals for Engineering and Consulting Services for the Santa Cruz County Public Works Department under the attached scope. All written proposals will be reviewed and rated by a panel of engineering professionals. Once the review of written proposals is complete, each consultant will be invited to orally present their proposal to the panel. Each consultant will be given a predetermined time allotment (approx. 45 minutes) to present their proposal and upon completion, the panel members will be given time to ask specific questions. We will be selecting the consultant who can best demonstrate their understanding of the project and who is most capable of bringing together the appropriate resources necessary to complete the work in a timely manner and is capable of interacting directly with County staff at all levels of project design and the hiring of a mechanical design and construction firm for the installation of the complete dewatering system.

The following information should be included in your written proposal, as actual selection will be based on careful consideration of all written and oral data presented to the panel:

1. Consultant History: Provide a brief history of your firm including how your firm has developed and/or currently manages its groundwater and dewatering engineering and consulting services.

2. Qualifications: Provide a list of employees and consultants/contractors, along with their qualifications, who would be involved with completing this project. A flow chart indicating chain of responsibility from contract manager to individual project staff is mandatory. Include a statement of your firms financial capabilities and ability to meet minimum County insurance requirements.

3. Experience: Briefly describe one to two projects similar to the work requested.

4. Approach: Provide a description of how your firm would approach each of the projects listed below and the basic scope of work approach you propose. Please include the following information:
 - o Summarize basic design criteria needed to initiate project.

 - o List staffing assignments for each project.

 - o List available resources necessary for project, i.e., Sub-consultants, laboratories, equipment, etc.

 - o Provide time lines for completion including milestones for deliverables and interim County reviews.

 - o List QA/QC procedures, if required of project.

 - o List all applicable regulatory requirements, if required of project.

 - o Outline how your firm plans to interact with County during the course of this project.

 - o List any customer service related issues relative to the project including, but not limited to: billing and cost tracking mechanisms, transmission of information, and types and styles of deliverables.

· SCOPE OF WORK/PROPOSAL

The following Scope of Work is a summary of the three phase project planned by the Public Works Road Design Division. The intent of this proposal is to assess the selected

consultants experience, qualifications, creativity, responsibility, regulatory knowledge and skills as they pertain to this specific project. 184

PHASE 1- GROUND WATER STUDIES, Initial groundwater research is to be provided by the drilling of 6 to 10 test wells to allow the consultant to map groundwater movement within the road along the intact pavement area of Amesti Road above the damage area. This operation must be performed with little or no disturbance to the existing slide area. Public Works engineers have anticipated that the drilling will take place along the inside edge of existing and remaining pavement.

PHASE 2- GROUND WATER EXTRACTION, Once the Consultant has determined where and at what depth we may best intercept the ground water, the firm is to engineer project plans and specifications for the installation of a dewatering system. Public Works will request that the consultant hire a qualified mechanical engineering firm who is experienced with ground water extraction processes and procedures. We foresee preparation of plans which require the drilling of between 15 and 30 extraction wells over an approximate length of 1500 lineal feet measured along Amesti Road with a span width between wells proposed at around 50 to 100 feet. The construction contract will provide for the extraction system to deposit ground water at a pre-approved contiguous (currently undetermined) detention area. The Consultant will be required to seek all permits for the operation. County Planning and Public Works will be available for assistance in this task and to support the consultant on current County administrative and engineering criteria or procedures.

PHASE 3- GROUND WATER MONITORING, At start up of the dewatering system, a specific procedure of monitoring the installation will be provided by the Consultant to County personnel (with training) to record the system results. Public Works currently anticipate at minimum a single year of monitoring in order to determine if the extraction system has effectively halted the overall slide mechanism and further hillside rotation. It will also be necessary to include a system of piezometer for County personnel to record and analysis.

INSURANCE

The following types of insurance will be required. Please review these and comment on your firms ability to provide the required coverage.

- A. Workers Compensation Insurance and Employer's Liability Insurance in compliance with the laws of the State of California.
- B. Automobile Liability Insurance in the minimum amount of \$500,000 combined single limit per accident for bodily injury and property damage.

C. Comprehensive General Liability Insurance coverage in the minimum amount of \$1,000,000 combined single limit, including bodily injury, personal injury and property damage. Such insurance coverage shall include, without limitation: **185**

1. Contractual Liability coverage adequate to meet the indemnification obligations under this contract;
2. Full Body and Personal Injury coverage;
3. Broad Form Property Damage Coverage; and
4. A cross-liability clause in favor of the COUNTY.

D. Professional Liability Insurance (including coverage for errors and omissions) in the minimum amount of \$1,000,000 combined single limit. Please note that the professional Liability limit may be raised at the discretion of the Department of Public Works in accordance with and in relationship to the projects proposed in any given one year contract.

Consultants must provide proof of insurance meeting the above requirements for all sub-consultants and contractors working on behalf of the consultant in conjunction with any tasks or projects relating to the contract described herein. A copy of the County's standard contract is attached to this RFP for your reference.

Contract negotiations with the selected consultant will include development of a detailed Scope of Work, compensation, project budget, development of detailed schedules and completion/deliverable dates, and staff assignments for each project.

To be considered, **five(5) copies** of your proposal must be received in the Santa Cruz County Public Works Department, 701 Ocean Street, Room 410, Santa Cruz, CA. 95060, **no later than 5:00 p.m. on Monday, July 6, 1998**. Oral presentations will be scheduled within two weeks of receipt of the written proposals. The exact date, time and location has yet to be determined. If you have any questions concerning this Request for Proposal please contact **Patrice Johnson, P. E.**, Civil Engineer for Road Design at **(408)454-2160**.

REQUEST FOR PROPOSAL - ORAL INTERVIEW PANEL MEMBERS

Tom Bolich, P.E.	Assistant Director of Public Works Santa Cruz County Public Works Dept.
Bill Williamson, P.E.	Senior Design Engineer Santa Cruz County Public Works Dept.
Patrice Johnson, P. E.	Civil engineer, Project Manager Santa Cruz County Public Works Dept.
Joe Hanna	County Geologist Santa Cruz County Public Works Dept.