19-75

Final Environmental Impact Report

RUNNING FENCE

County of Sonoma, California

Draft Environmental Impact Report,

Comments and Responses

Environmental Science Associates, Inc.

ESA-EIR-1975
October, 1975
Volumes 1 and 2

Final Environmental Impact Report

RUNNING FENCE

Prepared under contract to the
SONOMA COUNTY PLANNING DEPARTMENT
Santa Rosa, California

Volume I: Draft Environmental Impact Report

Volume II: Comments and Responses

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Delta Printing, Santa Clara, California

Environmental Science Associates, Inc.

1291 E. Hillsdale Boulevard Foster City, California 94404 415/573-8500
1390 Market Street San Francisco, California 94102 415/552-4775
8725 Venice Boulevard Los Angeles, California 90034 213/838-2221

ARTIST'S DRAWING: DISTANT VIEW

ESA-EIR-1975
October, 1975
Volume 1 of 2

Draft Environmental Impact Report

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8725 Venice Boulevard Los Angeles, California 90034 213/838-2221

SONOMA COUNTY RETAINED ENVIRONMENTAL SCIENCE ASSOCIATES TO ASSESS THE POTENTIAL ENVIRONMENTAL IMPACT OF THE PROPOSED RUNNING FENCE WHICH HAS BEEN PROPOSED BY THE RUNNING FENCE CORPORATION.

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Encourage public participation from the beginning in an open, frank and productive atmosphere to stimulate democratic consensus;

Write in a clear and accurate manner, to achieve and remove all possible bias;

List all study participants, their qualifications and affiliations;

Cite all sources, written and oral.

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Paul E. Zigman
Signature

Paul Zigman, President

ASSOCIATION of ENVIRONMENTAL PROFESSIONALS

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SUMMARY

INTRODUCTION

The *Running Fence* is planned by the artist, Christo, as a temporary construction, in place for a maximum of two weeks. It is proposed by the applicant, the Running Fence Corporation, to be 18 feet high and more than 24 miles long. The structure would be essentially an assembly of 18-feet by 62-feet white nylon panels, supported by cables and poles, the latter anchored in soil or rock. The ocean portion would consist of one nylon panel 300 feet long, tapering from 18 feet high at the land end to 2 feet "high" at the anchored seaward end.

The route starts in the vicinity of Penngrove in Sonoma County, and follows a curving westerly path to the vicinity of, or into, the Pacific Ocean at a point about midway between the Estero Americano and the Estero de San Antonio, in northwestern Marin County. The land portion of the *Fence* proper would be on private property only, with one possible exception (Estero Road right-of-way, in Marin County).

Construction is proposed to start in April 1976, with the distribution of materials on the properties along the route. The *Fence* would be in place for viewing during a maximum of two weeks in September 1976; it would then be disassembled within 4-5 weeks, so that no trace of the construction *per se* would remain after October 31, 1976.

Many mitigating features have been designed into the current plans, some as part of the original design, others resulting from conditions set by public agencies, particularly Sonoma and Marin Counties, at an earlier stage of approval. Mitigation plans and further suggestions for mitigation appear here at the appropriate points in the summary of project impacts.

IMPACTS AND MITIGATION

In this summary, the emphasis is not on the *potential* adverse impacts (which are discussed in detail in the text of the EIR), but rather on the *residue* of significant adverse impacts remaining after the implementation of the applicant-accepted mitigation features. Beneficial impacts also are summarized. Residual impacts and mitigation features are generally presented in the order in which they are discussed in the text. In general, the major significant adverse impacts arise from the large numbers of visitors expected to be attracted to the area during the two-week viewing period.

There are no known archaeological sites along the route. Since construction activities include no excavation, they are not likely to damage any unknown sites. Nevertheless, the permits authorizing the project should

contain conditions or safeguards, such as a performance bond, to assure that potential sites are protected from damage or destruction, should artifacts or other evidence be discovered during construction.

The major increased burden on local community services due to the presence of the *Running Fence* will arise from the impacts of visitors attracted to the area. Additional police services will be required, to control traffic and thus minimize congestion, and also to prevent trespass on private property, with its risk of fire initiation. Additional fire-protection services will also be required. The applicant has developed a program for training and deploying civilian monitors, who would guide visitors onto any private property made available, and discourage trespass in general. The applicant also plans to hire off-duty police/sheriff personnel, for traffic control. In the event of major problems, the Sheriff's Departments of both Marin and Sonoma Counties would have the responsiblity to lend aid. The applicant has agreed to pay the cost of all such services, including those of the California Highway Patrol. Potential fire initiation during construction is mitigated by a series of measures planned by the applicant. These include the provision of fire extinguishers, spark arresters, and skid plates on construction vehicles. The aforementioned monitors will be trained by the California State Division of Forestry in the control of small grass fires. The applicant has agreed to pay the cost of additional fire-fighting services provided by local fire departments. However, costs of any services provided by the California State Division of Forestry cannot be reimbursed by the applicant, unless he is directly responsible for them. Potential interference with bus transportation to the local schools, particularly during the children's return home in the afternoons, will be partially mitigated by the traffic-control measures above. The Running Fence Corporation plans to provide for the stationing of an ambulance in the Valley Ford area at such times and location as will be determined by further consultation with public-safety authorities. It is suggested that, in order to keep litter to a minimum, plans include placement of waste containers at stopping points along the roadway network; also, the *Fence* removal phase could include roadside clean-up by the monitors. The Sonoma County conditions include posting of a $150,000 bond by the applicant "...to insure compliance with the conditions of this permit...".

The proposed project is expected to have no adverse net impact on the finances of local governments or local public-service agencies. In addition, the project would provide employment for local people. *Fence* materials would be given to property owners who have easement agreements with the applicant. One of the trucks with flotation tires would be given to Sonoma County, while a bio-kinetic machine (which converts animal wastes into animal feed) would be given to Marin County. Christo's past practice has been to use funds from his personal sales of drawings (generated as a result of his large-scale projects) to support later projects. Thus, the project cannot be considered to be a commercial venture in the usual sense. Nevertheless, there is no legal guarantee that all future income, for example from the sale of drawings of the *Running Fence* project, will go to the Running Fence
S-2 Corporation or its successors for future large-scale projects, nor is it certain that the net worth of the Corporation at any time will not revert to its principal stockholders, including the Christos.

The chief potential adverse visual and aesthetic impact is the blockage, or the partial blockage, of close-in and panoramic views from residences along the *Fence* route. Another is the dominance (as opposed to view blockage) of the *Fence* as an element of the close-in views from some residences. Areas where these can occur include the Penngrove sections on the eastern flank of Meacham Hill and the Happy Acres subdivision, on the southeast side of Meacham Road.

Traffic attracted by the *Fence* is the main source of unavoidable adverse environmental impact. Although most of the direct and secondary effects (which include congestion, air-quality impairment, noise and energy consumption) are temporary, those associated with congestion and the potential interference with emergency traffic can be significant. As many as 270,000 visitors might be expected (probability significantly less than 50-50) during the two-week display period; on the peak day, 30,000 people (10,000 autos) might be expected. Overloading of the access and viewing road network, including sections of U.S. Highway 101, could occur, particularly on the second (peak) Sunday of the display period. Such overloading could lead to stop-and-go flow, traffic backups onto the freeway, cars running out of gasoline, boiling radiators, traffic accidents, and entrapment of emergency vehicles. Highway 101 appears to be the controlling element of the road network. On the reasonable assumption that interest will develop as the display period proceeds, so that visitor traffic on the first days of display (planned to be weekdays) will be relatively light, there appears to be time, after the erection of the *Fence*, to assess the likelihood that visitor traffic will reach capacity levels, and thus to implement one or more contingency plans for handling high volumes of visitor traffic. The applicant has agreed to be responsible for the costs of developing such plans, and of their implementation. Some elements have already been agreed to; these include, as noted, the provision of monitors, the hiring of off-duty Sheriff's deputies, and the reimbursement of the costs of provision of traffic-control services by the County Sheriff's Departments and the California Highway Patrol. The Santa Rosa Area Office of the California Highway Patrol has the ultimate responsibility for decisions about traffic mitigation. Captain Eric Denton of that Office has the authority to require removal of the *Running Fence*, or any portion thereof, should he deem it necessary. The applicant has agreed to honor such a request immediately.

The principal consumption of energy will result from travel by the visitors to the *Fence*. A worst-case analysis, assuming maximum reasonably possible visitor volume for the full two-week display period, with all visitor autos traversing the full length of the *Fence* route in both directions, indicated total fuel consumption of about 1.4 million gallons of gasoline and about 350,000 gallons of jet fuel (the latter based on the assumption that one percent of the visitors would travel to the area by air, with an average one-way trip of 1500 miles). No allowance was made for dual-purpose trips, or for the possibility that local drivers would be using their autos for other recreational purposes if they were not traveling to the *Fence*.

Implications of the *Fence* for ecological resources are discussed first with respect to the intertidal portions of the coastal zone part of the route. Intertidally, the area is similar to many hundreds of like sites located along the California coastline. It is not of unique biological significance. The changes to take place are all of short duration and should impact only the deeper waters where the anchors are to be set, and perhaps a small portion of the offshore surface waters. This impact will be minor as well as temporary The presence of two sea anchors for a two-week period is likely to have no long-term biological effect, relative to the natural phenomena which occur all of the time. While the placement of the final on-shore support pole might possibly cause some erosion and sloughing of rock or dirt onto the upper intertidal area, there already is and has been considerable erosion and sloughing of cliff material onto the intertidal. The area,biologically, is one in which the present communities have either adjusted to this natural phenomenon or are displaced as a result of it. The possible addition of a minuscule amount of additional erosion is considered to be irrelevant. The conclusions as to the insignificance of long-term effects on the biotic communities apply even in the unlikely event of storm damage during the September display period.

On the land portion of the *Fence* route (including that within the Coastal Zone boundary), no rare or endangered plants were found during the September 1975 field visit; this does not prove that such species do not exist along the route. Potentially sensitive areas include the coastal bluff and its immediate vicinity; freshwater marshy or vernally wet areas; and rocky outcrops which have been protected from grazing. The major potential for damage to sensitive areas would occur during the construction and removal phases. This has been partially mitigated by features built into the applicant's design, including use of trucks with flotation tires and special techniques (winching of equipment, use of hand tools) on the steeper slopes, plus plans for extensive training of construction and removal crews, and agreement to abide by decisions of County-approved biologists and geologists accompanying the crews. Potential biological damage from failure of the *Fence* during its display period is partially mitigated by extensive design and testing, including full-scale tests, of the panel/pole/cable/anchor system. The terrestrial-biology consultants strongly recommend a subsequent field survey to be carried out in the spring of 1976, when rare or endangered plant species would become evident, if present along the route. They recommend also that hillside seep areas, especially along the coastal bluff, be avoided, even by foot traffic during construction. Similar recommendations apply to rocky outcrops further inland. Methods for operating near such areas are detailed. In general, they recommend the avoidance of work in any area while it is still damp following the winter rains. With respect to the protection of animal life, the terrestrial-biology consultants recommend that passages be left at certain specific points in the route so that deer and other vertebrates can continue their normal movements during the two-week display period. They recommend also that the *Fence* panels not be put in place across certain creeks; in fact, that not even the top cable be suspended at such locations. Further recommendations include the attachment of visible strips to *Fence* cables before the mounting of panels, to

prevent danger to birds (along likely flyways), and the delay of the display period until the end of the Coastal Deer Season. A final recommendation is that construction be begun last, and the *Fence* removed earliest, in the portion of the route between Valley Ford and the coast. This is actually part of the applicant's plan. The terrestrial-biology consultants conclude that because of the ephemeral nature of the *Fence*, and on the assumption that the mitigation suggestions will be followed, the biological effects of the *Fence* will be only temporary, aside from possible erosion damage.

Potential effects on soils have been presented under biological impacts above. It should be pointed out that field reconnaissance by the applicant's engineers led to a new alignment of the route at *Fence* Segment 11, to avoid an existing landslide. Aside from energy consumption, associated principally with visitor travel, there will be little consumption of resources, since most of the materials for the *Fence* are surplus, and all will be supplied to the easement providers, for further use or for sale. Also, plans are to cut all anchor cables at ground level and drive them at least 18 inches below grade, backfilling the holes with sand, so that little visible evidence of the *Fence* will remain along the route.

Mitigation measures designed into the project plan appear to minimize surface-soil erosion, even in the sensitive coastal bluff area. There appears to be little likelihood of runoff (sedimentation) problems. Thus, surface-water quality is unlikely to be adversely effected.

Air-quality impacts are expected to be minimal. In no event are area suspended-particulate (dust) standards likely to be exceeded because of the project. A worst-case analysis of pollutants produced by visitor traffic on the peak viewing day indicated that it is highly unlikely that such traffic will cause local violations of the national standards for carbon monoxide. This judgment holds even if there are intermittent traffic jams along area roadways. It appears, further, that such traffic will have only a very small, and probably unmeasurable, impact on the smog level in the air basin.

Construction noise would be perceivable at many of the residences along the *Fence* route. It could produce levels that would strongly interfere with both outdoor and indoor residential activities at some homes along the route. For a (hypothetical) residence immediately next to the *Fence*, such levels would persist for a maximum of three days. For most of the 20 to 30 residences affected, such interference would persist for less than one day. A worst-case analysis of noise produced by visitor traffic indicated that noise levels along local roads could increase by up to 23 decibels (dBA), about a 5-fold increase in perceived noise. The greatest increases would occur in the now most-quiet areas. The effect on the Pepper Road portion of the *Fence* route, for example, would be to raise noise levels to about those now experienced along Petaluma/Valley Ford Road west of the Highway 1 intersection (near Valley Ford).

RELATIONSHIP BETWEEN LOCAL SHORT-TERM IMPACT AND THE MAINTENANCE OF LONG-TERM PRODUCTIVITY

As noted, increased traffic, a local short-term impact, will affect the local road network for a maximum of two weeks, producing the most significant of all the impacts of the proposed project. Noise may increase with traffic increase during the viewing phase, and air quality will change (but not significantly) with addition of fuel pollutants. In addition, vegetation, if damaged by the construction and removal activities and by the movement of the *Fence's* materials when in place, is expected to return to normal state within a few years. Therefore, the above impacts can be considered as local short-term impacts, which would not interfere in the long-term with the land and its use, the functioning of the road network, or the lives of local residents.

IRREVERSIBLE ENVIRONMENTAL CHANGES

Soil cores removed for placement of *Fence* poles and replaced with sand (as well as anchor holes backfilled with sand) create an irreversible environmental change; one that is somewhat comparable to the usual farm operation of digging post holes for fences. Grasses and herbs are expected to grow back to normal within a few years. If further landsliding should be induced in the coastal bluff area, this would represent an irreversible change; however, its effect on life in the intertidal areas below would be temporary, in the context of the natural processes now occurring in those zones.

GROWTH-INDUCING IMPACT

The event of the viewing of the *Running Fence*, together with the associated media publicity, will have brought much attention (both nationwide and worldwide) to the Sonoma/Marin dairy-farm landscape. The viewing phase will also bring many visitors (possibly as many as 30,000 on a peak day), some of whom may be attracted by the numerous FOR SALE signs in the area. The low-quality agricultural soil, lack of water and sewer service, high land price, high taxes for non-agricultural-preserve land, and restrictions on building in the coastal zone, will tend to discourage land sales beyond the normal rate of such transactions. Thus growth, beyond current rates, is not a likely outcome of the project.

I. PROJECT DESCRIPTION

A. APPLICANT

The applicant for Christo's *Running Fence* is the Running Fence Corporation (formerly the Valley Curtain Corporation)*, the officers of which are:

- Jeanne-Claude Javacheff, President and Treasurer
- Christo Javacheff, Assistant Secretary
- Scott Hodes, Secretary and Legal Counsel

The business activity of the Running Fence Corporation is to foster public appreciation of fine art.** The products of service are works of art.** The artist of the works is Christo Javacheff, known generally as "Christo".

*Incorporated January 8, 1971.
**U.S. Corporation Income Tax Return, 1974, for Running Fence Corporation.

B. STATEMENT OF APPLICANT'S OBJECTIVES

Christo, speaking for the Running Fence Corporation, provides the following:

"The *Running Fence* is a work of art. It can be described in quite simple terms: 24 miles of white, translucent fabric, running over the hills, both emerging from and disappearing into the sea. But the *Running Fence* project is more complex than this. It exists in time--three years of shared life experience. And it exists in space--a particular space in Northern California.

The choice of California for the project was inevitable, born with the project itself. California has the richest variety of texture of anywhere in the United States. Our site was carefully chosen after we explored the coast-line from Mexico to Oregon. The path of the *Fence* runs from 101, a major highway, and it runs in the vicinity of many small roads from which the *Fence* can be seen without trespass or traffic hazard. The path includes urban areas and suburban, and cattle ranches, and dairy farms, and the Pacific shore along which so much of California living is done.

I would like people to understand that the *Running Fence* represents not just three years of my life, but three years of team-work, three years of study with engineers, surveyors, botanists, geologists. The *Running Fence* project also involves politicians and businessmen, supervisors and artists, students and--especially--the local ranchers and landowners. Often their first approach to the project was one of caution, distrust; but in the great majority of cases, the feelings have become enthusiasm and support. This communal energy has become an important part of the *Running Fence* project.

The financing has been generated by the project, and has been raised in its entirety from the sale of drawings and collages. And the financing will, as with projects in the past, be spent on the project. But what is important is the people, and the land. The *Running Fence* will bring out the contours of the Sonoma hills and the seashore, the changing of the weather. The *Running Fence* is a celebration of the landscape.

The physical reality of the *Running Fence* will be a beautiful one. The fabric is a fragile material, like clothing or skin. And, like the structures the nomads built in the desert, it will have the special beauties of impermanence. The fabric is a light-conductor for the sunlight, and it will give shape to the wind. It will go over the hills and into the sea, like a ribbon of light."

C. LOCATION

Sonoma County and Marin County, on the coast of northern California, are two of the nine counties that comprise the San Francisco Bay Area. Sonoma and Marin Counties are known for their scenic coast, forests, dairy land, and other agricultural areas.

Christo's *Running Fence* has been proposed by the applicant, the Running Fence Corporation, to reach from Meacham Hill*, east of U.S. Highway 101 and north of Petaluma, to Valley Ford in southern Sonoma County; then across Americano Creek* and northern Marin County into the Pacific Ocean--a total of about 24 miles. The currently proposed route is shown in Figures 1, 2, and 3. More specifically, the *Fence* project would be located upon 48 private parcels (under 42 signatures**) within Sonoma County (about 20 miles of route) in the vicinity of Highway U.S. 101, south and north of Railroad Avenue; Stony Point Road; Meacham Road*; Pepper Road; Walker Road; Petaluma/ Valley Ford Road; and upon eight private parcels (under ten signatures**) in Marin County (about four miles of route) in the vicinity of Franklin School Road, Marsh Road, and Estero Road.

The original routing of the Marin County portion of the project has been revised; this Environmental Impact Report discusses the new alignment. The routing of the project in Sonoma County, and the properties which it traverses, remain essentially as originally proposed.

At the time of preparation of this Draft EIR, the final locations of two segments of the project route in Marin County have not been defined with certainty. These two segments are:

(1) The location of the *Running Fence* over, or around, the Gaver property which has frontage on Estero Road;

(2) The western terminus of the *Running Fence*.

The alternate locations of the two segments of the project are shown on Figure 3. These alternatives are discussed at the appropriate places in the EIR text.

---

*The spelling of "Meacham" used in the U.S.G.S. topographic (quadrangle) maps (for both Meacham Hill and Meacham Road) has been adopted here. The Road is spelled "Mecham" on some road maps and in official Sonoma County records. Strictly speaking, "Estero" refers to the estuarine (tidal-influenced) portion of the creek. In this EIR, the portions of the waterways outside the coastal zone (1000 yards upstream of the tidal influence) will be referred to as Americano Creek and San Antonio (Stemple) Creek, while the coastal-zone portions will be referred to as Estero Americano and Estero de San Antonio.

**Several parcels may be owned by one owner, whereas several owners may own only one parcel; therefore, the number of parcels does not coincide with the number of signatures. Christo, personal communication, August 25, 1975.

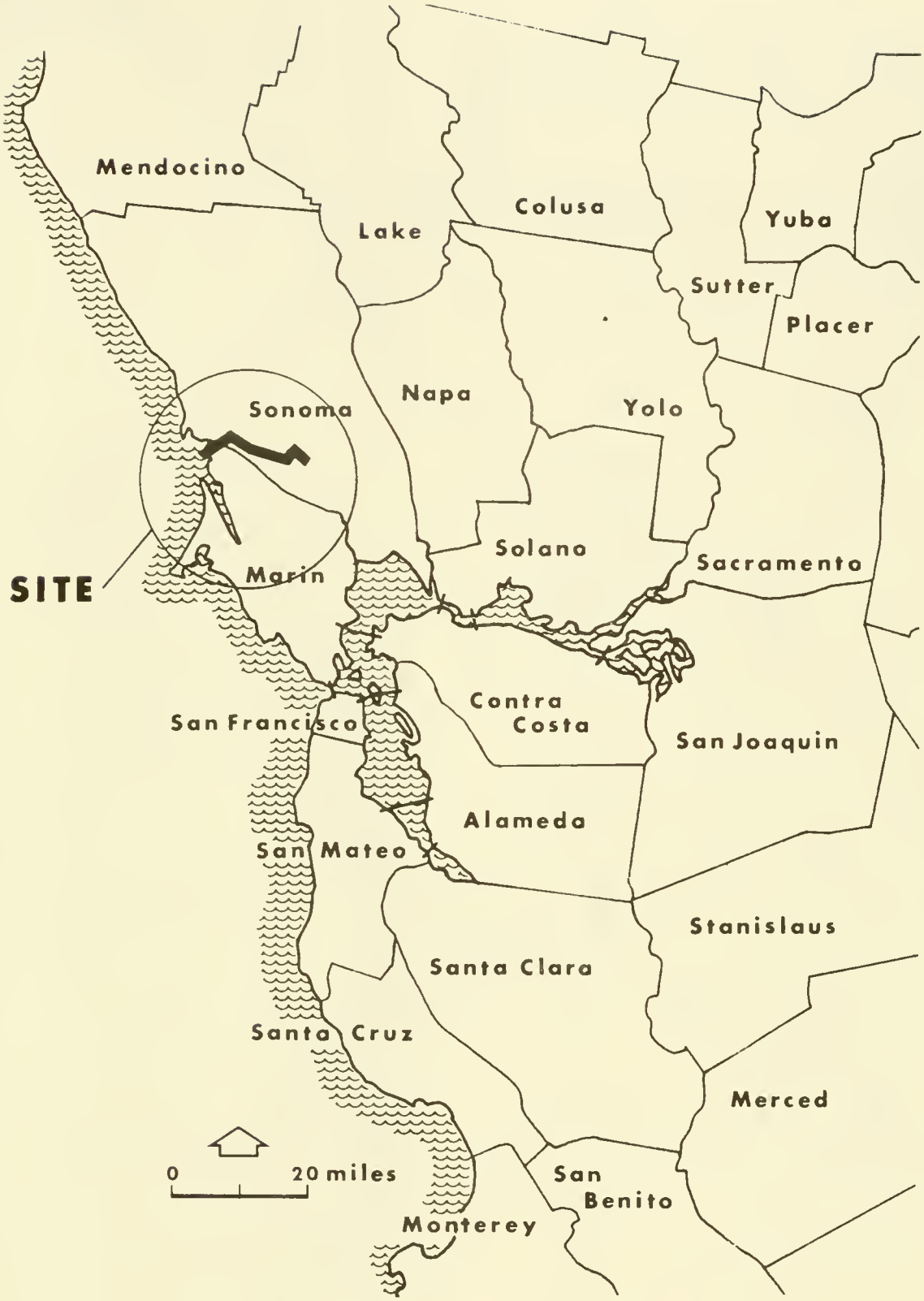
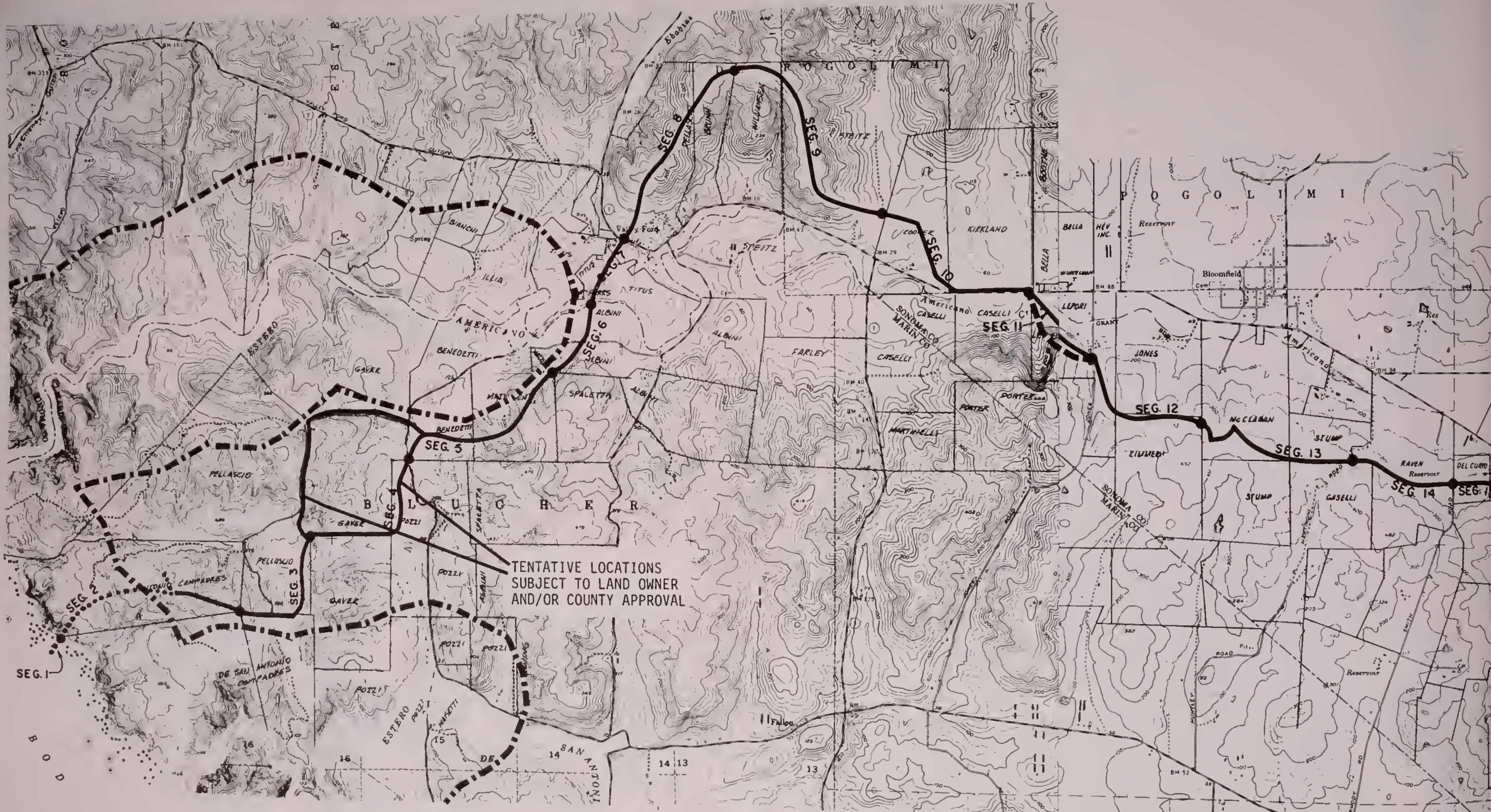


FIGURE 1 AREA LOCATION

FIGURE 2 PROJECT LOCATION

Source: USGS, SF Bay Region

FIGURE 3


SEG. 1
SEG. 2
SEG. 3
SEG. 4
SEG. 5
SEG. 6
SEG. 7
SEG. 8
SEG. 9
SEG. 10
SEG. 11
SEG. 12
SEG. 13
SEG. 14
TENTATIVE LOCATIONS
SUBJECT TO LAND OWNER
AND/OR COUNTY APPROVAL
B L U C H E R
P O G O L I M I
Bloomfield
SONOMA CO
MARIN CO
Americano
ESTERO
KIRKLAND
FARLEY
CASELLI
JONES
PORTER
McCLABAN
STUMP
ZIMMER
BENEDETTI
BIANCHI
TITUS
ALBINI
STEITZ
PELLASCIO
GAVER
POZZI
SPALETTA
LEPORI
Reservoir
Fallon
B O D
14
13
15
16

Proposed location *Running Fence* (Marin and Sonoma Counties shown in 23 segments)

Tentative location subject to permit

Corrected alignment (Segment 11)

Boundary of California Coastal Zone Conservation Commission

Existing property lines

0 2000′

FIGURE 3 PROPOSED *RUNNING FENCE* ROUTE

D. TECHNICAL DESCRIPTION

The *Running Fence*, a temporary construction (two weeks maximum duration), is proposed to be 18 feet high and more than 24 miles long, with its white nylon panels following an undulating inland path through Sonoma and Marin Counties to the vicinity of, or into, the ocean. Some of the relevant facts relating to this project are as follows.

ALIGNMENT

The general location of the *Fence* route was chosen after a survey of the entire Pacific Coast by the artist.* His criteria included artistic considerations, such as visual impact and relation to terrain, as well as the presence of a cross-county road network to provide for visual access. This area was chosen from among several candidate areas.

It is the intention of the applicant that the *Running Fence* be visible from public roads. No stopping or parking area has been proposed as part of the project. However, some of the ranchers involved with the project have indicated an intention to provide parking facilities. It is *not* the intent of the applicant to encourage maximum visitation to the *Running Fence*.*

Alignment of the *Running Fence* will be, with one possible exception, entirely on private property (with easement agreements)**. The easement upon which the *Fence* is to be constructed is 40 feet wide. The one possible exception to this alignment principle--an alternative proposal of location within the Estero Road (Marin County) right-of-way, to substitute for the route traversing the Gaver property, on the *Fence's* way to the coast in Marin County (see Figure 3).

The *Fence* will break at roads, stopping before reaching public right-of-way and continuing again on private property. It will also break at farm roads and animal crossings (but the top cable will continue over private farm roadways at 15-18 feet above ground), and span streams, providing animal access corridors under the *Fence*. Little space is expected beneath the *Fence* except in very uneven ground or over ravines.

The *Fence* route has been designed to avoid sensitive or hazardous areas.* Furthermore, field inspection has resulted in modifications in the specific location of the structure, to avoid additionally discovered sensitive areas (i.e., landslides)+ (see Figure 3, Seg. 11).

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*Christo, personal communication, July 28, 1975.

**See sample Easement Agreement in Appendix N.

++Field reconnaissance with Mr. Burr Heneman, August 11, 1975.

MATERIAL

The *Running Fence* panels will consist of a heavy, white nylon fabric [165,000 (square) yards, or 2270 fabric sections, each 18 feet high, and about 68 feet wide], hung from a 9/16 inch steel cable strung between steel poles (2270 poles, each 3½ inches in diameter, 160 pounds). The poles (21 feet long), generally 62 feet apart, will be embedded three feet in the ground and braced laterally with guywires and earth (or rock) anchors at approximately right angles to the line of the *Fence*, using no concrete. The grommeted woven nylon panels will be suspended from the top cable and the upright poles by clips that are designed to release at winds in the neighborhood of 60 mph while heavier clips on the bottom cable will hold the panel at ground level. The lower edge of the fabric will be attached to a bottom cable (9/16 inch) anchored to the ground at about twenty foot intervals, and at each pole. Construction details are shown in Figures 4 and 5.

The fabric is white "Nylon 6,6", manufactured by J.P. Stevens & Company, Inc., New York, from synthetic fiber produced by E.I. Dupont de Nemours and Company, Wilmington, Delaware. The "Textile World Manmade Fiber Chart 1972" (McGraw-Hill, Inc. 1972) describes the effects of heat upon this fabric as follows: "Sticks at 445°F. Melts at 480°F to 500°F. Yellows slightly at 300°F when held for five hours". According to the manufacturer, the fabric is self-extinguishing in that it melts away from flame. Although the fabric may remain ignited temporarily, it is consumed relatively slowly, and in the case of the *Running Fence* might create a fire break rather than a fire hazard.*

PHASES**

According to the applicant's plans, construction will take about five months, and will commence in April 1976. It will require a number of trips over the easement by the trucks carrying equipment, men, and materials. Viewing of the completed *Running Fence* will be during two weeks in September 1976.+ Removal will be during late September and the month of October 1976.

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*California State Division of Forestry (Sonoma Ranger Unit) letter of January 21, 1975 to Mr. George Kovatch, Planning Director, Sonoma County. Also, H.E. (Marty) Abell, URS Research Company, personal communication, July 24, 1975.

**Burr Heneman, A & H Builders, Project Coordinator for *Running Fence*.

+After the Labor Day weekend.

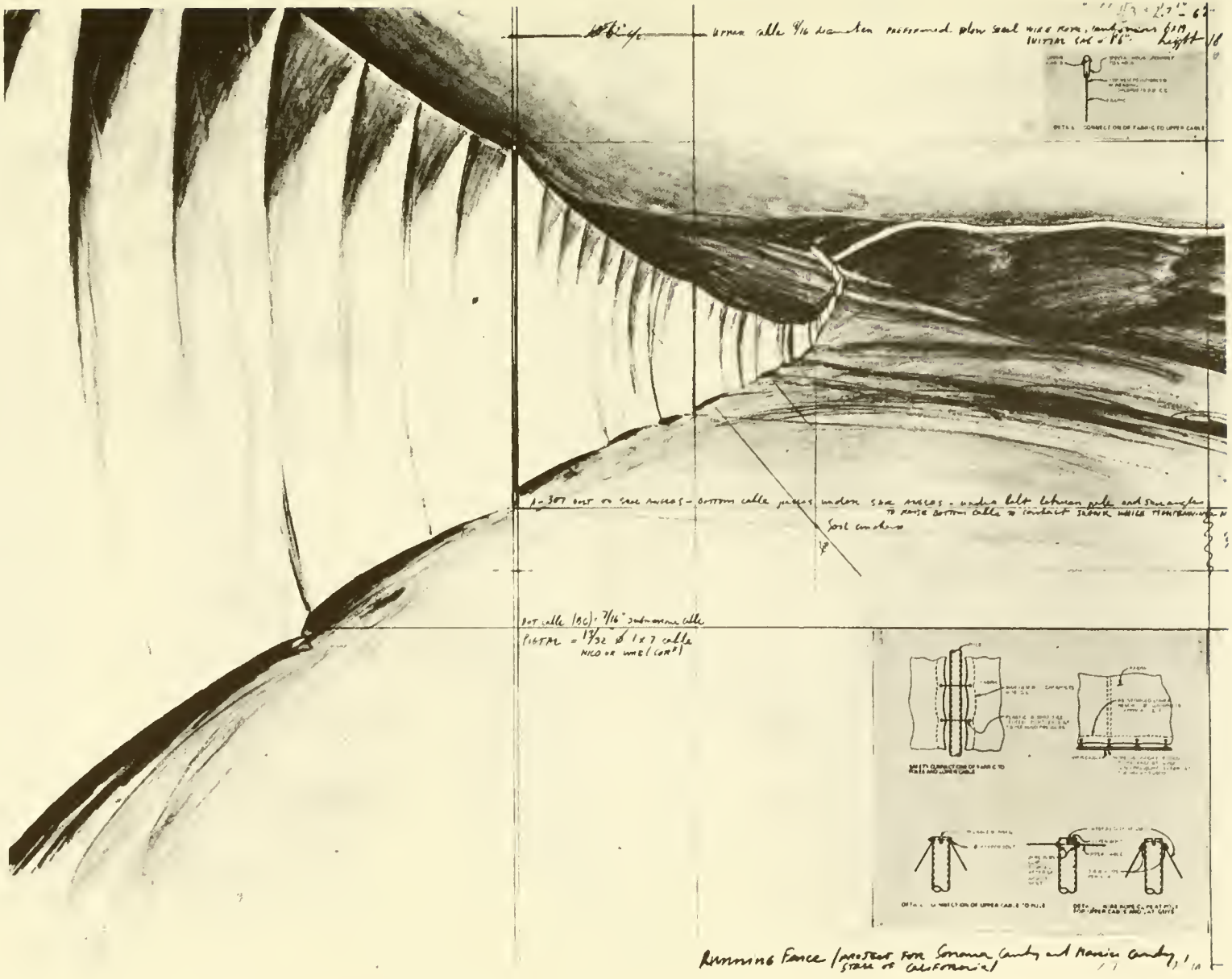

FIGURE 4 ARTIST'S DRAWING: CLOSE-UP

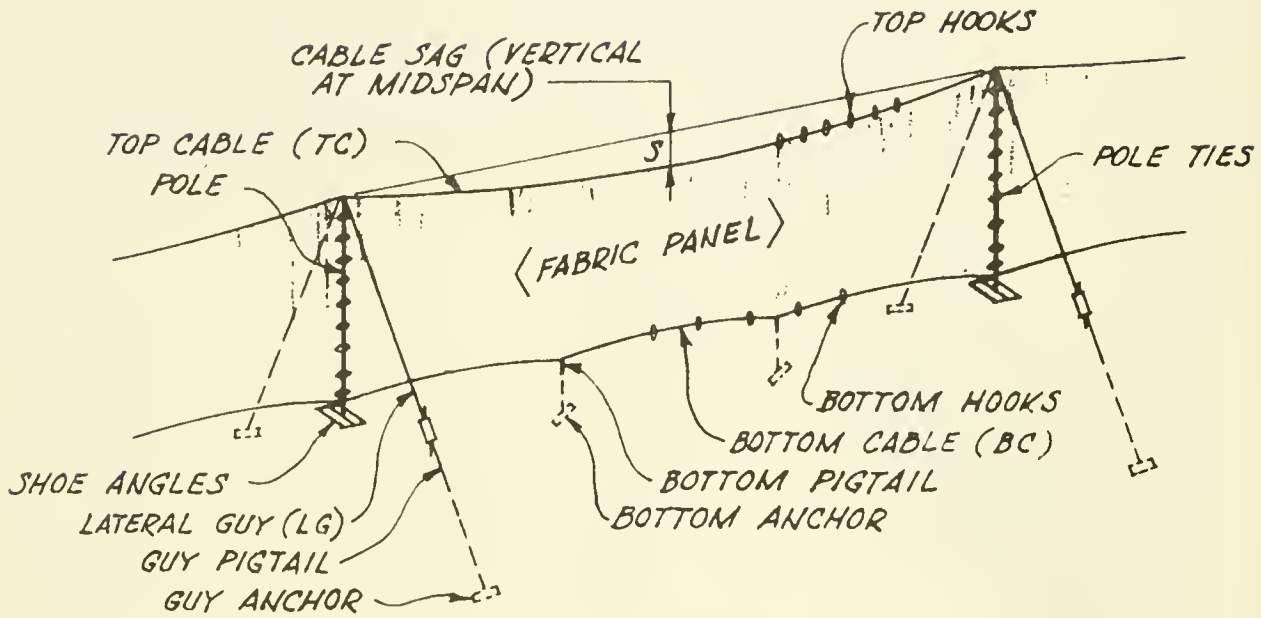

FIGURE 5 TYPICAL INTERIOR SPAN: NOMENCLATURE

April + Phase I - Distribution of Materials:

Poles, guywires, anchors, upper and lower cables, and shoe angles will be distributed starting in April and continuing for several months. Work will begin in the drier areas, generally in the eastern portion of the *Fence* route, and progress to the wetter areas, which are generally in the coastal portion.

April + Phase II - Anchor-driving and Hole punching:

Anchor-driving and hole-punching will begin in April. To protect holes before poles are erected, holes will be covered with two shoe angles (two-foot lengths of steel angle which are to be fastened to the poles at ground level to distribute the weight of the materials on the surface of the ground in order to keep the poles from sinking)* (see Figure 5).

June + Phase III - Placement of Poles and Cables:

In June, erection of poles and simultaneous placement of top, bottom, and guy cables will begin.

September Phase IV - Distribution and Hanging of Fabric Panels:

Distribution of fabric panels, folded and enclosed in bags made of the same fabric, will begin about three days before the display period. Hanging of the fabric panels, furled on the poles, will begin two days before the display period. All panels will be unfurled on the first day of the display period.

October Phase V - Cleanup and Removal:

Dismantling will begin at the ocean to minimize disturbances in that sensitive area. All materials and litter will be removed (except for anchor cables, which will be cut off near ground level, then driven under ground to a minimum depth of 18 inches below the surface of the ground). All holes will be backfilled. This phase will take 4-5 weeks through about October 31, 1976, starting with the

*Equipment to be used would include six three-quarter-ton trucks, four of which are equipped with hole-punching and anchor-installing equipment; one flat-bed truck, and several moto-mules. In some areas, much of this work must be done by men without the aid of trucks.

sensitive areas (coastal area, wet areas, and Meacham Hill/Highway 101 area) and finishing with the less sensitive areas. The reverse sequence will have been used in the construction phase.

The viewing phase comes between Phases IV and V, of course. In case of emergency (such as traffic blockage), fabric and cables can be dismantled in one day by crews of the Running Fence Corporation starting with the most-sensitive areas. Each fabric panel can be removed in 2-3 minutes, based on recent testing (at Jameson Trucking, Santa Rosa, August 1975)*. In case of strong winds, the panels will detach from poles at winds of 45 mph and top hooks will detach at winds of 60 mph. In the coastal water portion of the route, panels are designed to fasten by top hooks only (see below).

SUMMARY OF CONSTRUCTION DETAILS**

Christo's *Running Fence* was engineered by URS/The Ken R. White Company under the direction of Ernest C. Harris, Ph.D., Registered Professional Engineer, State of Colorado; Sargis S. Safarian, Registered Civil Engineer, State of California; and Gernot D. Appelt, Registered Civil Engineer, State of California. Engineers representing the engineering firm, Unipolycon, include: James Fuller, John Thomson, and D. Zagoroff. The final design has been developed through several stages of structural design and analysis, laboratory tests and full-scale field tests. This testing and analysis allowed the design to be approved by the artist, the engineers and the contractor (A & H Builders).

Evaluation of the design determined not only at what wind speed the system failed but, more importantly, *how* the system would fail. Thus, the final design incorporates points of controlled weakness to insure "safe" failure.

In this situation, "safe" connotes protection of the environment and protection of the structure. The designed failure mode would simply allow the fabric to disconnect from both the poles and the overhead support cable and to lie on the ground at gusts of slightly above 60 mph. This would significantly reduce the wind resistance to permit the structure to withstand the 20 psf wind loading required by the Sonoma County Building Code. Fabric and

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*Mr. Burr Heneman, A & H Builders, telephone communication, August 21, 1975.

**This section is based on engineering details provided by the project engineer. (See Appendix N.) and on information provided by the applicant and by the contractor (Personal communication, Mr. Burr Heneman, October 17, 1975).

structure would remain intact, allowing the fabric panel to be put back in place to complete the viewing period. Failure at the lateral and upper hooks will prevent overloading of anchors and poles, which could otherwise disrupt the soil. Even if some poles were lost, their strength is less than that of the soils so that they would bend before disrupting the soil. Also, the anchors and guys are the strongest structural elements; thus, anchor withdrawal is extremely unlikely. Each anchor will have been tested to working load when driven.

The final structure design for Christo's *Running Fence* is in principle quite simple. Newly developed equipment will punch out cores of soil about 3½ to 4 inches in diameter and 3 feet deep. Steel pipe 3½ inches in diameter will be placed 3 feet into the ground to stand 18 feet above grade. Standard spacing of poles will be 62 feet. These poles will be guyed laterally with cables attached to soil anchors driven 36 inches below the surface and tested to working load. A top cable supported on the poles will be adjusted to match the curve designed into the top of each panel. The bottom of the *Fence* will be secured by a bottom cable attached to the bases of the poles and by soil anchors every 20 feet. Calculated and tested component strength and performance have been verified and/or modified to give the structure the required performance characteristics. For example, free-standing poles were found to sink into the ground under design loads, so shoe angles were added and tested for load-carrying capacity. A simple change in assembly sequence corrected another deficiency; lifting of the top cable occurred under certain wind loading, but placing the lateral guy cable over the top of the top cable provided the required hold down. All of these problems were discovered and corrected during the engineering testing phase.

A different design will be used in the ocean segment of the *Running Fence*. There is no construction within the intertidal itself. In addition, the pole closest to the ocean will be located near the bottom of a grassy slope which ends at a lip approximately 20 feet above the high tide line of the study area. That pole will be situated far enough on the landward side of the lip so that the guy anchors running seaward from the pole will be set in solid ground. These anchors will be set back from the lip so as not to contribute to sloughing. The anchors will be tested to working load. No anchors or anchor cables will be any closer to the intertidal zone than the top of the lip.

From the top of the last pole (approximately 40 feet above the intertidal), the top cable (7/8ths inch wire rope) will run seaward approximately 550 feet, where it is attached to the apex of a V-shaped bridle. The legs of the bridle extend seaward another 450 feet to anchors, the type of anchor to be determined by the type of bottom (Danforth 200-H, if the bottom is sand). The bridle is also of 7/8ths inch wire rope. A flotation buoy at the junction of the top

cable and bridle will be used to give the top cable the proper sag for display of the fabric panel. The top cable and bridle will be marked with any buoys required by the Corps of Engineers or the Coast Guard.

During the maximum two-week display period in September, a 300-foot long nylon panel, tapered from a width of 18 feet where it is attached to the first pole at the top of the cliff to a width of about two feet at the seaward end, will be pulled out on the top cable on blocks. The bottom of this loose-footed panel will be weighted to keep it vertical in normal winds. The bottom of the fabric panel will be under water a maximum of two feet below MLLW* toward the seaward end. Crossing the intertidal zone, the bottom of the fabric panel will be several feet above the water at high tide.

In short, the only changes to be made to the subtidal area are 1) the deposition of two sea anchors 1000 feet offshore; 2) the presence of a wire rope through a small portion of the offshore water column; and 3) the suspension of a nylon panel into the surface waters of the offshore area. No changes are planned for the intertidal area itself. The fail-safe features of the ocean segment are summarized by the Engineers as follows:**

- "The ocean portion is attached at the top edge only, so that it can withstand 20 psf pressure on structure.

- The main water loads will be longitudinal drag on the fabric. The fabric being unrestrained, will 'bunch' next to the cable, thus reducing surface area subject to drag and reducing drag force."

Other protective features designed into the project include:

- In-place soil strength tests for each anchor.

- Provision for multiple anchors where soil conditions dictate.

- Three types of guy and bottom anchors, depending on soil (bottom) materials and condition.**

*Mean lower low water.

**This summary is based on work performed before the ocean engineering work presented in Appendix M. The recommendations of the latest work will supersede the earlier plans.

- Longitudinal anchors, where necessary.

- Vehicle slope limits and alternate vehicle use methods: winch the vehicles (trucks or moto-mules) down steep slopes, and use hand installation (no vehicles) on particularly sensitive or steep slopes.

A biologist and a geologist approved by the respective counties and the Coastal Zone Conservation Commission will provide field supervision of construction in sensitive areas.

Prior to construction, Petaluma Fairgrounds will be rented by Running Fence Corporation for training of crews for hanging and unfurling *Fence* fabric (where crews will have the advantage of a large area for "dry runs" of *Fence* installation) and for training of monitors in crowd control by the Sonoma County Sheriff's office and the Sonoma County District Attorney's office.*

A bus to be rented by Running Fence Corporation will bring crews to the *Fence* route in order to avoid inefficiency and additional traffic of individual transportation.*

Monitors hired at the expense of Running Fence Corporation will guide visitors away from trespassing on private property. When they are in need of assistance in protecting property from trespassing, the monitors' 2-way communication system with *Running Fence* communications center can bring the necessary aid from the County Sheriff's office (from either Sonoma or Marin Counties, depending on location of need). Additional assistance from the California Highway Patrol or the Sheriff's offices of Sonoma or Marin Counties may be called in for solving potential *Fence*-induced traffic problems on public roads.

All crews and monitors will be trained in fire fighting techniques by the Division of Forestry.** Other fire-prevention measures will include the following:

- Motorcycle monitors will have fire extinguishers.

- Smoking by all crews will be restricted to designated safe areas.

- All construction trucks will be equipped with fire-fighting tools (two shovels, two McLeods), as well as fire extinguishers.

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*Burr Heneman, A & H Builders, Telephone Communication, October 13, 1975.

**The Division of Forestry can be reimbursed for its fire protection services only if the reimburser is the party directly responsible for the fire.

- All construction trucks and monitors will be in 2-way communication with *Running Fence* communication center.

- *Running Fence* communication center will be equipped with Thomas Bros. maps (used by fire agencies) for ease of communication with fire agencies in the event of fire.*

- All appropriate fire agencies will be provided with maps of *Fence* route with *Fence* segment numbers and locations of gates in ranch fences.

*Burr Heneman, A & H Builders, Telephone Communication, October 13, 1975

E. LEGAL HISTORY OF THE PROJECT*

The applicant, Running Fence Corporation, applied to Sonoma County in November 1974 for permits to erect the *Running Fence* over private property (with easement agreements). Although the Zoning Ordinance did not have zoning districts that specifically permitted or prohibited a temporary 18 foot high fence (the authors of the Zoning Ordinance could not be expected to have conceived of such a need), the *Running Fence* was interpreted to be in compliance with the Zoning Ordinance. A Use Permit was required.

The Sonoma County Board of Supervisors in its official action to require a Use Permit declared that an EIR was not required according to the Board's interpretation of State requirements under the California Environmental Quality Act of 1970, due to the temporary nature of the *Running Fence*, and to its apparent lack of environmental impact.**

Subsequently, both the State Lands Commission and the U.S. Army Corps of Engineers granted permits for those portions of the originally proposed project under their jurisdictions (coastal end).

In the late spring of 1975, the North Central Coastal Conservation Zone Commission approved the coastal zone portion of the *Fence* (original Estero de San Antonio routing). The local Commission was then overruled, in June 1975, by the California State Coastal Conservation Zone Commission. A new coastal routing has subsequently been proposed, as noted earlier in this EIR; it terminates about one mile north of Estero de San Antonio, and about the same distance south of Estero Americano. A minimum of the route (less than one mile) is in the coastal zone. The new routing is subject to approval by the Commission.

In June 1975, just following the disapproval action by the State Coastal Zone Commission, the earlier action of the Sonoma County Board of Supervisors in denying the need for an EIR was reversed in Sonoma County Superior Court. Judge Golden of Lake

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*Much of the written record of the project, used as background material in the preparation of this EIR, is based upon applications to various regulatory agencies during the course of project development. Only those elements of the project legal history that bear upon discussions in this EIR are included in this summary.

**Marin County approved its portion of the project as originally routed, on the same basis. Both counties imposed a series of conditions for environmental protection.

County ruled in favor of Committee to Stop the *Running Fence, et al.*, who had sued the County, holding that an EIR should have been required. The EIR process was therefore started, and the planned construction of *Running Fence* postponed from 1975 to 1976.

In September 1975, the California District Court of Appeals reversed the Superior Court ruling and, thus, the EIR was no longer legally required to complete processing of the Use Permit in Sonoma County.

Conditions of the various agencies concerned are to be met by the applicant. The original Sonoma County and Marin County conditions follow. Note that the Marin County conditions were set for a different *Fence* route than is now proposed. Conditions are, of course, subject to revision during the forthcoming deliberations of Sonoma County and Marin County Commissions and Boards.

Consultations by the Sonoma County Planning Department with other responsible agencies are documented in a letter to ESA from that Department. See Appendix B.

THIS USE PERMIT SHALL BE SUBJECT TO THE FOLLOWING CONDITIONS:

1. That this permit shall expire on November 1, 1975.

2. That the location of the project shall substantially conform to the location map on file with the Planning Department marked, "File 7772, Running Fence Corporation, February 13,1975," and in any case, the project shall only be located on those parcels made a part of the permit application, and the project shall only be conducted in a manner authorized by the written agreements with the owners of said parcels and on file with the Planning Department.

3. That the size, composition and design of elements of the fence project shall substantially conform to the Construction Details Summary on file with the Planning Department marked, "File 7772, Running Fence Corporation, February 13, 1975;" minor alterations required by other conditions of this permit or to improve the safety of the project are permitted.

4. That the fence panels shall be constructed of white fabric which is fire retardent to the satisfaction of local fire agencies.

5. That all costs of public agencies resulting from this project, other than ordinary services associated with the issuance of required permits, shall be borne by the applicant; these costs shall include, but not be limited to, special or emergency police or fire service, and enforcement of the conditions of this permit.

6. That prior to the issuance of Building Permits, a bond in the minimum amount of $150,000 shall be posted to insure compliance with the conditions of this permit to correct damages and for compensation to any property affected by this project or to the County of Sonoma or other public agencies; said bond shall be acceptable to the County Counsel.

7. That prior to the issuance of Building Permits, the applicant shall furnish the County of Sonoma with evidence that an insurance policy has been obtained providing combined single limit for bodily injury and property damage of not less than $1,000,000 and naming the County of Sonoma as additional insured, said insurance policy shall be acceptable to County Counsel.

8. That a qualified biologist shall be retained by the County at applicant's expense, to oversee construction and removal of the project to insure that the project will be constructed in a manner which mitigates adverse impact on wildlife, plant life, riparian zones and marshes; the Planning Director may, prior to issuance of Building Permits, require a cash deposit in an amount sufficient to reimburse the County for anticipated costs of the biologist's services.

9. That construction within or over public rights-of-way shall be subject to review by the issuance of Encroachment Permits by the County Public Works Department or other applicable agency.

10. That the project shall not cause or contribute to blockage of any public or private rights-of-way except as may be allowed by written authorization of the affected owners or agencies.

11. That all applicable County Building Permits shall be obtained prior to the commencement of work.

12. That all other applicable permits (local, State and Federal) shall be obtained and resultant conditions met and copies of said permits shall be placed on file with the Sonoma County Planning Department prior to the issuance of County Building Permits.

13. That fabric fence panels shall not be erected or displayed without written authorization of the Planning Director; and that prior to issuance of said authorization, the applicant shall consult with the following agencies for the safe conduct of the display period:

California Highway Patrol
California Division of Forestry
Penngrove Fire Protection District
County Public Health Department
County Sheriffs Department
Cotati Fire Protection District
California Department of Fish & Game

14. That the display period of the project shall be limited to a period of fourteen (14) days commencing with the erection of the first fabric panel; and that at the end of said display period, the applicant shall immediately commence removal of the project and restoration of affected properties substantially to their original condition, including removal of roadside litter; and in any case, said removal and restoration shall be completed prior to the expiration of this permit.

15. That the fabric fence panels shall be removed immediately upon request of the California Highway Patrol, if necessary to maintain safe traffic movement.

16. That at least 80 persons trained in crowd and traffic control, fire prevention, and citizen and property rights shall be stationed along the project route during the fabric display period.

17. That the portion of the project route within 1000 feet of U. S. 101 Freeway, and the portion within Estero Americano shall be constructed last and removed first following the display period.

18. That this permit shall be subject to revocation or modification by the Board of Zoning Adjustments if: (a) the Board finds that there has been noncompliance with any of the foregoing conditions or (b) the Board finds that the use for which this permit is hereby granted is so exercised as to be substantially detrimental to persons or property in the neighborhood of the use.

Any such revocation shall be preceded by a public hearing noticed and heard pursuant to Section 26.225 of the Sonoma County Code.

MARIN COUNTY

CONDITIONS

Prior to issuance of a building permit:

1. All activities associated with the running fence shall be completed as per the application for Design Review, unless stipulated otherwise in the following conditions.

2. Applicant shall submit to the County of Marin a report prepared by a registered engineer or other person (acceptable to the Planning Director) with demonstrated expertise in the area of marine engineering detailing the design and tolerance of the running fence structure (to be placed in the tidelands) to withstand extreme bottom fluctuations, tidal velocities, debris pileup, etc.

3. The County of Marin staff shall have the right to pass over the properties on which the running fence is located for inspection, supervision, and other related and reasonable activities.

4. Motion picture operations, if performed from a County maintained road, and if performed by the applicant or his delegates, shall require a commercial filming permit as per County Code §5.36, and an encroachment permit per Marin County Code §13.12.

5. County maintained roads shall, in all cases, be kept open to through traffic. The C.H.P., or other appropriate enforcement agencies, shall be requested by the applicant to monitor the operations and adjust any offending traffic situations.

   During construction, materials may be placed along the roadside of County maintained roads, only as permitted by an encroachment permit issued by the County Department of Public Works.

6. The fence, upon approaching a County maintained road, shall terminate at the right-of-way line. No guy lines, overhead or otherwise, within the right-of-way shall be permitted.

7. A wildlife expert (acceptable to applicant and the Planning Director) shall supervise the siting, installation, and removal of the running fence (posts and fabric) on parcels 100-040-21, 100-010-22, 100-040-24 and 100-020-26 (adjacent to Estero San Antonio and Estero Americano) to ensure:

   a. Provision for adequate and appropriate openings for wildlife seeking access to the waterways.

   b. That the installation and removal of posts and fabric and vehicular operation do not disturb any endangered plant species or obvious wildlife "resting" sites (nest, pad, etc.)

8. The precise location of the running fence in the following locations shall be subject to the approval of County staff, as determined by on-site field investigation and technical consultation:

   a. From the 200 foot elevation west to the termination of the running fence on the Rancho Compedres de San Antonio and adjacent tidelands.

   b. All stream (intermittent or perennial) crossings.

   c. Within the conservation zone adjacent to Estero Americano

9. County staff, upon field inspection prior to installation of posts has the right to require no operations (posts or fence) within environmentally sensitive areas, such as the stream conservation zone of Estero Americano or other stream crossings.

10. The mutually acceptable wildlife exaert shall have the authority to require openings in the fence to enable wildlife access to Estero San Antonio.

11. The vehicles utilized cross-country (off established fire or ranch roads) shall be as specified in the application (equipped with wide, flotation type tires); in addition, said vehicles shall be equipped with fire suppression equipment as required by the Marin County Fire Chief and all personnel shall be instructed in the operation of the equipment.

12. Applicant's representative(s) shall consult with the Marin County Fire Chief regarding the method of emergency passage "through" the fence in the event of wild fire; if necessary, the applicant shall provide the Marin County Fire Department with appropriate tools to cut the lower cable or otherwise provide rapid passage "through" the fence. (Tools may be required for the fire trucks at Pt. Reyes, Hicks Valley, Tomales as well as deputys' vehicles at these locations.

13. Certification shall be provided to insure that the fabric utilized will not sustain fire.

14. No vegetation shall be removed other than grasses or forbs which grow in the immediate location of anchors, posts, etc.

15. 18 inches of clearance above grade shall be maintained for the length of the fence with the only exceptions at tie-downs, where the lower edge may be drawn toward the ground.

16. All poles, cables, weights and other remnants of the project (excepting anchors, see #17) shall be removed from the running fence route; stockpiling may occur on individual ranch compounds as determined by individual landowners. All holes shall be backfilled as specified in the application, and the natural terrain shall be left in such a condition as to provide no hazard to livestock, wildlife, persons or vehicles.

17. Soil anchors may remain in place, provided that such will not result in metal projections in the uppermost 12 inches of the soil.

18. In order to maximize the potential for visibility for wildlife, the fence shall be displayed during the brightest phases of the moon; such occurs between September 12 and 28, 1975.

19. The timetable for display clean-up, removal and restoration shall be as follows:

Days	1 - 14:	Display
Days	15 - 17:	Fabric Removal
Days	15 - 17:	complete removal within the tidelands off Campodres de San Antonio
Days	15 - 50:	pole, guyline, etc. removal backfill

The County of Marin shall retain the right to supervise removal and clean-up operations. If the tidelands segment is not completed by the 18th day following the commencement of display, the County of Marin shall have the right to secure services to remove all materials from the tidelands, with the cost of such services to be deducted directly from the cash bond held by the County of Marin.

In the event that all clean-up operations are not completed by November 1, 1975, staff of the County of Marin may authorize day-to-day continuation of work, as necessary; ground conditions (as affected by rainfall) will be considered in the time extensions. If warranted by early rainfall or other unforseen event, the County of Marin may authorize continuation of cleanup at a later date, not to commence later than May 1, 1976. Applicant shall file with the County of Marin a notice of completion of clean-up and restoration. The County of Marin shall retain the right to inspect affected lands within 21 days of this notice and determine whether or not all conditions have been met. Discrepancy between applicant's statement of completion and Marin County staff findings shall be reviewed by the Environmental Protection Committee for determination. Standard appeal procedures will be applicable.

20. Bonding shall be required in the amount of $100,000, $25,000 of which shall be in the form of a cash bond, on deposit with the County of Marin or depository acceptable to the County of Marin and applicant. Said cash deposit shall be available for the following:

a. In the event of unsatisfactory completion of the conditions in "19" above, where lack of action constitutes a hazard to persons or the environment in the opinion of the Planning Director, the County of Marin shall have the right to secure services to achieve completion of said conditions, the cost of such services to be deducted from the cash deposit available on an immediate basis.

b. Direct cost of county supervision shall be charged to applicant, to be deducted from the cash deposit. Said supervision shall be charged at the hourly rate of the staff person assigned the responsibility, and shall not exceed ten days (80 hours) and appropriate mileage, motor pool charges without authorization by the Planning Director and applicant.

21. Applicant shall make available to the County of Marin evidence of liability insurance. Such shall indemnify and hold harmless the County of Marin against any claim for damages, costs, attorneys' fees and expenses and any judgement or decree which might be rendered against the County of Marin on account of any event or claim which might be related to the installation, display, or removal of the running fence intentional or accidental.

All agreements required shall be approved prior to commencement of work by the County Counsel of the County of Marin.

At the hearing before the Planning Commission, the Staff of the Planning Department and Applicant agreed to modifications to conditions 15 and 20, which are attached hereto. The conditions as modified were the subject of the Planning Commission vote.

15) Adequate clearance above grade shall be provided at suitable intervals along the length of the Fence to provide for passage of field mammals, such provision of clearance to be subject to approval of the County staff.

20) Bonding shall be required in the amount of $50,000, $10,000 of which shall be a letter of credit posted with a depository acceptable to the County of Marin and applicant. Said deposit shall be available for the following:

a. In the event of unsatisfactory completion of the conditions in "19" above, where lack of action constitutes a hazard to persons or the environment in the opinion of the Planning Director, the County of Marin shall have the right to secure services to achieve completion of said conditions, the cost of such services to be deducted from the letter of credit.

b. Direct cost of County supervision shall be charged to applicant, to be deducted from the letter of credit. Said supervision shall be charged at the hourly rate of the staff person assigned the responsibility, and shall not exceed ten days (80 hours) an appropriate mileage/motor pool charges without authorization by the Planning Director and applicant.

OFFICE OF THE COUNTY CLERK

MARIN COUNTY BOARD OF SUPERVISORS

SAN RAFAEL, CALIFORNIA

TO:

DATE: May 1, 1975

EXCERPT FROM MINUTES, MEETING HELD APRIL 22, 1975

E: CONDITION ON RUNNING FENCE PROJECT

Pursuant to the recommendation of Supervisor Giacomini, M/s Roumiguiere-Price, to arify the condition regarding bio-kinetic reclamation, which is part of the Board's approval February 4, 1975, of the Running Fence Project, as follows:

"In the event the Running Fence Project obtains all necessary approvals and is erected, and if the farmers of West Marin enter into a contract for bio-kinetic reclamation, which will call for the test of bio-kinetic manure recycling equipment, and under which the contractor for such equipment would receive a fee upon certification by appropriate independent engineers that the equipment successfully meets appropriate performance specifications, then the applicant (Mr. Christo and his organization) will subsidize any fee to be paid by such farmers in an amount not to exceed Ten Thousand Dollars ($10,000)."

YES: ALL

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ATTEST: GEO. H. GNOSS
Clerk

F. APPROACH TO THE EIR

Its size, transitory nature and essentially non-utilitarian purpose make Christo's *Running Fence* one of the most unusual and challenging projects ever to be considered in terms of potential impacts on the environment. Clearly, the subjective interpretation and analysis of the *Running Fence* is beyond the purview of the preparers of an environmental impact report. ESA has carefully avoided judging *Running Fence* as an art object.

This investigation has, therefore, addressed only the primary and secondary environmental effects associated with the construction, viewing, and removal of the *Fence* as a part of the total process. In isolating the physical *Fence* from the whole process, this distinction, while not consonant with the artist's objectives as we understand them, is nevertheless necessary for our present purposes.

In this work program, we have:

- *Organized* data provided by the Running Fence Corporation and County of Sonoma, existing literature, public and public-agency attitudes, and other consultants.

- *Supplemented* existing information and acquired additional data where appropriate.

- *Identified* possible areas of concern not previously noted.

- *Completed* the impact analysis and remaining report sections as specified in the Guidelines for Implementation of the California Environmental Quality Act of 1970, as amended through March 1975.

The analysis has covered setting, impact, and mitigation for each of the three on-site stages of *Running Fence*: (1) construction, (2) viewing, and (3) removal.

II. ENVIRONMENTAL SETTING, IMPACT, MITIGATION

A. SOCIAL/ECONOMIC

1. ARCHAEOLOGY*

Setting

In the vicinity of the *Running Fence* route, no known archaeological sites or resources appeared in the records studied: California Department of Parks and Recreation at Sacramento, Sonoma State University at Rohnert Park, and California State University at San Francisco. No indications of archaeological resources were observed or discovered during visual surface reconnaissance efforts at locations where prehistoric sites would be most likely to occur.

Impact

The *Running Fence* on its proposed route will have no significant impacts upon archaeological resources, so far as can be determined by existing data. Since they include no excavation, construction activities are not likely to uncover information about (exposed) archaeological sites. By the same token, such activities are not likely to damage such sites if present along the route. However, in the unlikely event that archaeological artifacts are observed in any area during the construction phase, the area should be immediately vacated until clearance or mitigation measures are approved by an archaeologist representing the governing agency.

Mitigation

No mitigation is required, unless artifacts, or other evidence, are discovered. The permits authorizing the project should contain conditions or safeguards, such as a performance bond, to assure that potential archaeological sites are protected from damage or destruction.

*See Appendix L for report of Archaeological Consulting and Research Service, Inc.

2. LAND USE

Setting

The proposed *Running Fence* route passes through predominantly large open agricultural, dairy, and grazing properties. In addition, the route passes through clusters of rural residential use near Railroad Avenue, Meacham Road, and the town of Valley Ford; and the route also passes near the community of Bloomfield--all in Sonoma County. Bloomfield consists of an elementary school, a tavern, and residences. Valley Ford (population 126) consists of a market, a bank, a post office, a sandwich shop, a repair garage, a service station, a small hotel, a restaurant, a realtor's office, and an office of the U. S. Soil Conservation Service. The Marin County portion of the route passes through dairy and grazing properties.

Zoning along the route within Sonoma County is predominantly Agricultural, Exclusive Agricultural or Unclassified, but also includes an area of Light Industrial zoning on Stony Point Road, and the Rural-Residential-zoned Happy Acres, a subdivision off Meacham Road. Zoning in the Marin County portion is A-60, Agricultural Zone (60 acres minimum).*

Sonoma County has traditionally been an agricultural county. The amenities of agriculture and the proximity to Bay Area centers have attracted people to the County. Population growth and increasing urbanization in the County over the last 20 years have reduced overall agricultural potential.** The City of Petaluma tripled in population between 1950 and 1972, and now has a "slow-growth" housing plan limiting new housing units to a maximum of 500 a year; this policy is currently being tested in the courts. Sonoma County has a policy of compact growth. Agriculture in the County is considered vital to the preservation of urban/rural diversity.**

Impact

The *Running Fence*, a temporary structure, will have no substantial practical impacts on current land uses along its route.+ However, it will be potentially a partial barrier to movement of stock and wildlife; and when in proximity to the viewer, a barrier to view of the landscape, during the two weeks (maximum) it is to

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*Telephone Communication, Kathleen Ohlson, Marin County Planning Department, August 19, 1975.

**Sonoma County General Plan Bulletin--Summary Composite Alternatives, March 14, 1975.

+Potential congestion along public rights of way is considered in Traffic/Circulation/Parking Section. It is not conventionally considered to be a Land Use impact in EIR's.

be in place in its completed state with nylon panels in place--the viewing phase (two weeks of September 1976).

During the construction phase (starting in April 1976) and during the removal phase (October 1976) the *Running Fence* will not be a visual barrier, due to the absence of the nylon panels. The lower cable, lying on the ground, is not likely to be a barrier to movement. Movement on public rights of way will not be obstructed by the *Fence per se* during any phase.

Other than the visual barrier and partial movement barrier, the *Fence* will not interfere with the existing land uses of the area of the *Fence* route--mainly grazing. In the community of Valley Ford, the *Fence* route, with construction restricted to private property only, will cross Petaluma/Vallev Ford Road, possibly bringing increased temporary economic activity to Valley Ford, but not otherwise creating impacts on land uses in Valley Ford.

The *Running Fence* will be viewed from Bloomfield, but will not be close enough to obstruct land uses within the community.

The *Fence* will pass within view of homes in the Happy Acres subdivision,* travelers on Freeway 101 (north of Petaluma), and rural residents near Railroad Avenue and Meacham Hill.

The *Fence* itself will not obstruct use and movement along its route, although viewer traffic at peak times on a weekend day during the viewing phase may obstruct use and movement (see Traffic/Circulation/ Parking Section).

Many of the parcels within the *Running Fence* route that are under easement agreements with the applicant are also under Agricultural-Preserve Contract with Sonoma County. An Agricultural-Preserve Contract limits a landowner's use of his land to agricultural use or open space in exchange for reduced assessed valuation of the property (and thus reduced taxes) while the land is under contract (usually a set time period such as ten years).

As the *Running Fence* is not a commercial venture for which direct profit** would be earned (i.e., from admission charges), the *Running Fence*, the landowner easement agreements with the

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*See Appendix for one resident's views on land-use impacts (Appendix N, letter from Mr. and Mrs. R. L. Raymond to Sonoma County Planning Department.)

**According to the applicant, indirect income will be earned by the Running Fence Corporation in the form of sales of art works created in conjunction with the project (but sold elsewhere). The applicant attests that to date, such income has been applied to the costs of other large-scale art projects of the corporation. (Jeanne-Claude Javacheff, personal communication, July 28, 1975.)

Running Fence Corporation, and the Agricultural-Preserve Contracts with Sonoma County do not appear to be in conflict. Therefore, the *Running Fence* can be considered not incompatible with agricultural or open-space use.

Mitigation

See Section on Traffic/Circulation/Parking.

An ultimate mitigation measure for obstruction uf use and movement due to viewers, after other suggested solutions have been applied, is to take down the *Fence*--even before scheduled removal. This would be done, by prior agreement, upon proper signal* under necessary conditions.

Upon removal of the *Fence*, existing land uses and movement will continue as before.

*To be given by Captain Eric Denton, Commander, California Highway Patrol, Santa Rosa Area Office.

3. POPULATION AND COMMUNITY CHARACTERISTICS*

Setting

Most of the length of the proposed *Running Fence* project lies within Sonoma County, passing near the towns and communities of Penngrove, Cotati, Two Rock, and Bloomfield, and through Valley Ford. The most westerly section of the *Fence* cuts across a small corner of northwestern Marin County, terminating in Bodega Bay between the Estero Americano and the Estero de San Antonio. The portions of both counties which it traverses are sparsely populated and rural, consisting for the most part of dairy ranches and small villages.

In this section of the report, the growth characteristics of the county populations and the relative changes in character will be discussed. The January 1974 population of Sonoma County was 235,100. The annual growth rate of the County population since 1940 has been constantly on the decline: between 1940 and 1950, it was 5.0 percent; between 1950 and 1960, 4.3 percent; between 1960 and 1970, 3.9 percent; and between 1970 and 1973, 3.7 percent. The source of the population has been recorded since 1960 and categorized either as in-migration or as a natural increase due to the birth rate's exceeding the death rate. The statistics show that in-migration is responsible for between 68 and 94 percent of the increase. Although there is not a steadily increasing trend in the proportion of in-migrants to total population increase, the figures show that most recently in 1973 and 1974, in-migration was responsible for 93 and 90 percent, repectively, of the County population increase.

Sonoma County is considering two alternatives in county planning which would affect population growth, density, and distribution. Under Alternative One, the countywide population projection for the year 2000 would be 478,000, the growth rate averaging slightly over four percent annually. Alternative Two would involve some growth restriction: the county population in the year 2000 would be substantially lower--378,000, corresponding to a growth rate averaging 2.48 percent annually. The County also anticipates a decrease in the rural population and an increase in urban center development, a continuation of a trend that started about ten years ago. It is anticipated, in addition, that the housing market would shift towards multi-family construction and mobile homes, although single-family homes still would occupy a portion of the housing demand.

A small part (less than 20 percent) of the proposed *Running Fence* route traverses a corner of Marin County as it approaches

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*This section is based on information from the *Sonoma County Data File*, a recent publication of the Sonoma County Economic Development Board.

the coast. It does not pass close to any established community in Marin County.

Marin County population statistics* show that Marin County experienced a fairly high rate of growth between 1960 and 1970, averaging 4.03 percent annually. Over that period of time, the growth in the urban areas averaged 4.77 percent annually while the rural area populations decreased at a rate of 1.25 percent annually. Since 1970, the rate of population growth has been rapidly reduced. The County has experienced a total increase of approximately 4.7 percent since 1970, or an annual rate of approximately one percent. The current Countywide population is 216,500.**

It was estimated that the 1972-73 Marin County population gain was 3,300 persons, of which 24.5 percent was a natural increase due to the birth rate's exceeding the death rate and 75.5 percent of the increase was due to the in-migration of population.

Impact

a) Construction Phase.

The construction phase of the *Running Fence* project would not have any significant impacts on the population or community characteristics of the area, since the construction team (poles and cables) is small, and the panel-hanging team would be working for only one or two days during this phase.

b) Viewing Phase.

It is assumed that people would visit this area to view the *Fence*, arriving from all parts of the San Francisco Bay Area, the State of California, and beyond. This would result in a temporary increase in population in the northern part of Marin County and the southern part of Sonoma County.

Many of those who would come to visit the *Fence* would be new to this area. The exposure of a significant number of persons to this region could instigate a slight increase in the number of people interested in living in or developing more housing in this area. This could lead to an ultimate increase in the population which, however, could not be considered significant in comparison to substantial development pressures which already exist (see Economic Setting Section).

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*Marin County Planning Department, September 1974, *Marin County Statistical Abstract*.

**Ray Ahearn, Marin County Planning Department, July 23, 1975.

c) Removal Phase.

Upon removal of the *Running Fence*, the population of the area would return to its normal number. No significant impacts on the population or community characteristics would be incurred by this action.

Mitigation

Widespread publicizing of the event would encourage significant crowding in the area. The temporary increase in population in the area of the *Fence* could thus be mitigated by control and limitation of publicity. Effective dissemination of information concerning the time available for viewing and the many different viewpoints and routes available might reduce potential crowding.

4. COMMUNITY ATTITUDES

This section has been based on community attitudes already expressed at the time of writing. Additional attitudes may be expressed during the public hearing process, and may be incorporated into the Final EIR, an addendum to the Draft EIR.

Summary

This project is unique with respect to the variety and quantity of community attitudes and public agency viewpoints that have been articulated, assembled, and made available prior to actual initiation of work on the EIR. Community attitudes may vary according to the meaning of "community", which may refer to (1) local dairy land owners, (2) conservationists, (3) agencies, (4) Bay Area residents, or (5) art experts and critics.

The attitudes of some of the local dairy landowners seem to be that a landowner should be able to do what he wants with his land with a minimum of interference.* Conservationists, on the other hand, want to protect the natural environment, regardless of ownership. Agencies are required to carry out the law, as they interpret it, in the public interest. Bay Area residents travel throughout the Bay Area region for recreation and participation. Most of the artists, art experts, or critics who have volunteered their comments want a known artist to be able to complete his or her art work.**

Specific Information

Over 60 dairy land owners (in Sonoma and Marin Counties) favor the proposed *Running Fence* idea; their support is documented by their easement agreements with the applicant for use of their land.

Some conservationists opposed the original proposal for the construction of *Running Fence* for fear of environmental damage from construction and from trespassing by viewing visitors, and suspicion of the project's being an "invention to make money" (Findley, 1975).+

Although the North Central Coast Regional Commission of the California Coastal Zone Conservation Commission approved Christo's *Running Fence* "with (environmental) safeguards deemed adequate," the California Coastal Zone Conservation Commission itself denied approval within the Commission's area of jurisdiction, partly on the basis of a conservationist's written appeal.++

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*Personal communication with various dairy landowners on August 3, 1975 and August 10, 1975.

**See sample letters in Appendix. (Note: Appendix letters have been chosen to demonstrate various viewpoints; no attempt has been made to indicate the frequency of occurrence of any viewpoint.

+See section on Economics Impact.

++Margaret Azevedo, Chairman, North Central Coast Regional Commission, letter to Dr. Joel Hedgpeth, June 26, 1975. See also Section on Project Permit Process above.

The legal history of the project, reflecting in part other community attitudes, has been summarized in Section I.E. above.

One Bay Area community, Belvedere, in southern Marin County, stated its support of *Running Fence*, but did not specify its reasons.*

Art experts and critics, in written statements, have declared Christo as "serious", "sincere", and "a significant and respected creative artist".** Some local artists disagree with this assessment.**

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*Letter from Mayor David Bordon to Melvin Lane, Chairman, Coastal Commission, June 11, 1975.

**See Appendix N for copies of communications.

5. COMMUNITY SERVICES

Setting

The proposed *Fence* route crosses unincorporated land in both Sonoma and Marin Counties which is served by a number of public agencies.

a) Education Services.

The students of Sonoma County who live in these rural areas are bused to various schools including those under the jurisdiction of the county Superintendent of Schools (in Cotati and Petaluma); Marin students are bused to schools of the Shoreline Unified School District. The large fleet of buses which serves these schools delivers the students to school between 7:30 and 9:00 AM and then returns most students to their homes between 2:00 and 4:00 PM. Kindergarten students are returned home between 11:00 AM and 1:00 PM. School usually opens early in September--after Labor Day.

b) Water Supply.

Water is supplied to the homes in Petaluma and Cotati from the Russian River Aqueduct, and to the outlying areas by wells on individual properties.

c) Liquid Waste Treatment.

Most of the homes in the unincorporated rural areas do not connect to sewage lines; they use septic tank systems to treat liquid waste. The areas around Petaluma and Cotati have sewers; the latter city is served by the Rohnert Park Sewage Treatment Plant.

d) Solid Waste Removal.

Several sanitation companies provide solid waste pickup for the area.

e) Fire Protection.

There is a fire department in Petaluma and one in Cotati; both have small service areas in comparison to the total area along the *Fence* route. Penngrove also has a fire department. Bloomfield, Valley Ford, and Two Rock have volunteer fire departments. The rural unincorporated area is served by the fire protection service of the California State Division of Forestry, which has three stations in the region--one in Petaluma, one on Graton Road near Occidental, and its headquarters in Santa Rosa.

From June through the middle-to-end of October is the "fire season" in Sonoma County. Up-to-date 1975 records for all State-responsibility fires (those responded to by the State Division of Forestry) in Sonoma County (5-year annual average) for the two dryest months (those of highest fire frequency), August and September, show:*

Date (5-year annual average)	Number of Fires
August 1-10	195
August 11-20	216
August 21-31	239
September 1-10	260
September 11-20	279
September 21-30	294

In contrast to these figures are the figures for April,* as an example, with its spring rain:

Date (5-year annual average)	Number of Fires
April 1-10	3
April 11-21	3
April 21-30	5

*Mr. Ron Matiali, State Division of Forestry, Sonoma Office, October 16, 1975.

f) Police Protection.

During the period that the *Fence* would be in place, the Sonoma and the Marin County Sheriff's Departments would be responsible for events taking place on the properties along the *Fence* route; the California Highway Patrol would be concerned with maintenance of traffic flow on all roads in the vicinity. The California Highway Patrol would be assisted by county Sheriff's Departments when necessary.*

g) Emergency Medical Service.

Emergency ambulance service is available from Community Hospital in Santa Rosa and from Hillcrest Hospital Annex in Petaluma. They charge MediCal rates for the service but have a very limited number of ambulances. Outlying areas and other hospitals rely on private ambulance companies to provide service. There are numerous companies providing this service; they operate out of Santa Rosa, Sebastopol, Guerneville, Sonoma, and Cotati.

h) Recreation Areas.

For a map of major recreation areas in the area, see Figure J-2 (Appendix J).

Impacts

The construction, viewing, and removal of the *Running Fence* would require the cooperation of the various safety-related public agencies. In anticipation of a number of potential safely problems, the applicant, the Running Fence Corporation, has proposed (or accepted in prior agreements) a number of precautions as conditions to erection of the *Fence*; these are described in Project Description and in the Mitigation Measures accompanying this section (Community Services) of the report. Impacts described in the following represent the "unmitigated" potential situations.

a) Education Services.

i. Construction Phase: No impacts.

ii. Viewing Phase: As this event holds the potential for causing traffic congestion on the rural roads in this area, it is possible that the school buses, bearing children to and from schools, would be delayed or prevented from keeping their schedules. If such a disruption so affected the students in the area, it would constitute a significant temporary impact on the area educational system.

iii. Removal Phase: No impacts.

*Lt. Robert Greer, CHP Santa Rosa Area Office, October 17, 1975.

b) Water Supply.

i. Construction Phase: As a safety precaution for fighting small fires, two five-gallon back-pack, water-filled fire extinguishers would be mounted on the construction and monitoring vehicles. As there would be six monitoring trucks, only about 100 to 300 gallons would be available/used for this purpose. Construction workers would require a minimal amount of drinking water.

ii. Viewing Phase: On a peak day, visitors would use less than 100,000 gallons of the area's water; this cannot be considered a significant impact, in view of the temporary nature of the project.

iii. Removal Phase: No significant impact; the removal phase would last less than two days.

c) Liquid Waste Treatment.

i. Construction Phase: Those who would be working on erection of the *Fence* would use facilities on the various properties involved. The small number of workers involved would result in no adverse effect on the community service agencies.

ii. Viewing Phase: The people who would be traveling through the area to view the *Fence* would be using public toilet facilties in service stations and restaurants in Petaluma and other sizeable communities along Highway 101, and to a lesser extent, along Highway 1. An estimated crowd of 15,000 to 30,000 on a peak day would generate between 45,000 and 90,000 gallons of liquid waste. It is not anticipated that any adverse impact would affect the involved community service agencies.

iii. Removal Phase: See Construction Phase impact discussion above.

d) Solid Waste Removal.

i. Construction Phase: It is unlikely that a significant amount of solid waste would be generated during the process of erecting the *Fence*. It is likely that a total of 2.5 cubic feet of solid wastes would be produced each day by the workers themselves. Fabric panels will arrive in wrappings of the same fabric, which will be given to farmers and landowners.

ii. Viewing Phase: It is expected that the people attracted during the viewing phase will generate a substantial amount of solid waste. On a peak day, 1,050 to 2,100 cubic feet (about 40 to 80 cubic yards) of solid wastes could be disposed of in the area. It is possible that a significant fraction of this will be litter along the route, confined to public roadways as public viewing from private properties will not be allowed.

iii. Removal Phase: See Construction Phase above. The *Fence* materials themselves will be delivered to the landowners or disposed of as surplus materials (to the trade).

e) Fire Protection.

i. Construction Phase: The construction phase will continue through August and into September, the period of the highest frequency of fires. The use of a motor-driven vehicle on the dry grassland area creates a potential for fire. The *Fence* itself is made of nylon, which is not very flammable (see Technical Description Section). Mitigation measures are planned for fire-protection purposes. The responsibility for handling a fire would rest on the fire department serving the area in which the fire occurred (see Setting). The cost of the work done by the fire department for any emergency related to construction would be reimbursed by the Running Fence Corporation.

ii. Viewing Phase: *Running Fence* is to be viewed during two weeks in the month of September, the month with the highest frequency of State-responsibility fires. The increase in number of persons and vehicles in this area, during the season when the grass is dry and the fire danger generally is high, compounds the fire danger and increases the chance that fire departments would be called upon.

iii. Removal Phase: Removal will begin in September, the month of the highest frequency of fires. See Construction Phase discussion above.

f) Police Protection.

i. Construction Phase: The applicant states that such control would be exercised over the construction phase under present plans that it is unlikely that the police would be required to perform any special duties. There is a minimal probability of any needed policing, given the nature of the activity.

ii. Viewing Phase: The Running Fence Corporation has planned for its own monitoring of the event (see Mitigation Measures); however, in the event of a major problem, the Sheriff's Departments of both Marin and Sonoma Counties would have the responsibility to lend aid. The California Highway Patrol would be responsible for

maintenance of the traffic flow. Any cost of effort spent related to this event would be paid for by the Running Fence Corporation.

iii. Removal Phase: See Construction Phase above.

g) Emergency Medical Service.

The number of persons who would visit the area to view the *Fence* would increase the probability of an incident which would require emergency medical services. The number of autos on the road could inhibit swift service by emergency vehicles (see Traffic/Circulation/Parking Section). Running Fence Corporation plans to provide for the stationing of an ambulance in the Valley Ford area at such times and location as will be determined by further consultation with public safety authorities.

h) Recreation Areas.

It is expected that many people visiting the area to view the *Fence* would make their visit a vacation. It is probable that the parks in the region--particularly those in the coastal areas--could be visited by large numbers of people during the period that the *Fence* is in place.

Mitigation

a) Education Services.

Potential for severe traffic congestion and possible delay of school buses would be mitigated to some degree by the attempt to maintain a steady traffic flow by the planned placement of uniformed off-duty Sheriffs' deputies (paid for by the applicant) along the roadway; their job would be to control traffic. This measure is a part of the project plan (see Traffic/Circulation Section also).

b) Water Supply.

The monitors would be provided with drinking water from six trucks carrying containers of water, according to plans of the Running Fence Corporation.

c) Liquid Waste.

The Running Fence Corporation could set up chemical toilets for use by the monitors which would mean that they would not use ranchers' or public toilet facilities. To avoid crowding of the public restrooms, chemical toilets could be set up in rest stop or viewing areas on private property to accommodate the visitors. This is not part of the present plan.

d) Solid Waste.

In order to keep litter to a minimum, it is suggested that plans be changed to include placement of waste containers at stopping points along the roadway; also, the removal phase of the *Fence* could include roadside clean-up by the monitors. The Sonoma County conditions call for removal of litter by the applicant. The conditions include posting of a $150,000 bond by the applicant "...to insure compliance with the conditions of this permit...".

e) Fire Protection.

Several measures have been included in the Running Fence Corporation's plans as safety precautions against fire:*

- Stationing of monitors along the roadway where the *Fence* nears the road to discourage people from stopping and leaving their cars to examine the *Fence*; this would keep people off dry grassland;

- Equipping each of six monitoring trucks with one ABC fire extinguisher, two water fire extinguishers and fire-fighting tools;

- Having the 100 *Fence* monitors trained in crowd control and method of control of small grass fires;

- Equipping the trucks used for erection of the *Fence* with spark arresters and skid plates to reduce the potential of grass-fire caused by these vehicles;

- Assuming total financial responsibility for fire prevention actions related to this event.

In addition, farmers along the route have offered to make available their spray rigs filled with liquid. Also, visitors should be requested to refrain from smoking while in the vicinity of *Running Fence*, by means of signing and other communication.

f) Police Protection.

The plans of the Running Fence Corporation include the following mitigation measures:

- Stationing monitors along the *Fence* where it intersects or approaches the roadway to keep viewers from trespassing on private property to inspect the *Fence*.

*Mr. Burr Heneman, A & H Builders, August 21, 1975.

• Crowd-control training of the monitors by the Sonoma County Sheriff's office and the Sonoma County District Attorney's office;

• Contracting to hire uniformed off-duty Sheriff's deputies to help control traffic;*

• Assuming total financial responsibility for additional police activities related to the *Fence* project.

g) Emergency Medical Service.

During the periods when large numbers of visitors are expected to be viewing the *Fence*, an ambulance is to be provided by Running Fence Corporation and kept in readiness on one of the crowded roads in case of emergency. Traffic could be controlled to enable use of the road by an ambulance in case of emergency.

h) Recreation Areas.

Normal controls on numbers of visitors to public recreation areas (as on holiday weekends) would mitigate potential impacts.

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*Captain Eric Denton, Commander, California State Highway Patrol, approves of uniformed (off-duty) Sheriff's deputies aiding in traffic flow and general policing. He disapproves of amateur monitors guiding, slowing, or stopping traffic; but approves of their monitoring private property--telephone communication August 21, 1975.

6. ECONOMICS

Setting

The proposed *Running Fence* route crosses land which is generally open and used for dairy ranching. Some other smaller agricultural activities such as potato farming and turkey raising take place in the vicinity. The agricultural industry is the largest industry in Sonoma County, having had an income of $123.6 million in 1974-75. Of all of the activities which are a part of the agricultural industry, milk production is the largest. The Sonoma County milk industry had an income of $42 million in 1974-75. The largest dairy companies in the County are Clover and Challenge. The unit price for milk in the County is good but hay and land prices are high.* Some ranchers have moved to the San Joaquin or Sacramento Valleys because of the rising land assessments in Sonoma County.*

Although agriculture represents the largest industry in the County, it comprises only a small portion (about 2 percent) of the total earnings of the County, including all wages, salaries, and other labor and proprietors' income. Of the total earnings, 29.22 percent are made in the governmental sector and 68.61 percent in the private sector, in which wholesale and retail trade (13.84 percent), services (11.53 percent) and manufacturing (9.19 percent) are the greatest contributors.** Farm income comprises 2.18 percent of the earnings.

In a description of total personal income in Sonoma County in 1969, farm property income was recently listed as a negative figure.** This signifies that although farming is a sizeable industry, profit is not being made. This situation is attributed to the high costs of feed and other farm-related expenses, combined with the limitation on the price at which milk can be sold.*

Ranch land in this portion of the county was reassessed two or three years ago. The large parcels of agricultural land did not experience much change in value even though there is an influencing development pressure in the general area. Parcels which were affected are those located in proximity to developing areas, like Penngrove, and those small parcels which are considered most developable--due to availability of water, sewer lines, and other services. Their assessed valuations have increased dramatically.

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*Mr. Harry McCracken, Sonoma County Agricultural Commission, July 29, 1975.

**Sonoma County Economic Development Board, 1974.

Recent sales in the area show that large 200-300 acre parcels sell for $600-700 per acre. Also, as noted earlier, the lands which have appreciated in value are the small parcels located close to the existing developed communities.

Sonoma County has experienced a decline in building permits after reaching a high of 5,309 in 1972. This reflects the depression which has influenced the housing industry all over the Bay Area. In 1973 the single-family housing unit was more popular than the multiunit structure, but the most recent and projected trend is that multifamily housing and mobile homes will increase proportionately due to the high cost of land (Sonoma County General Plan Summary/1975).

The new housing has concentrated in the vicinity of Santa Rosa, where much of it has been scattered in the unincorporated area, and, also, on the east side of Petaluma, which tripled in population between 1950 and 1972 (Zane, 1975).

Impact

In the process of erecting the *Running Fence*, persons would by employed from the local area to punch holes in the soil and place the poles, guy wires, and cables. Up to 225 persons would be hired to attach the sections of *Fence*. About 100 would be trained in certain skills for fire-fighting and crowd control to be used during the viewing phase. This constitutes temporary employment for some area residents.

During the viewing phase, up to 100 persons would remain employed to monitor the *Fence* in shifts, providing a 24-hour-a-day guard. In addition, off-duty deputies from the Sheriff's Departments of Sonoma and Marin Counties would be hired by the Running Fence Corporation as needed to control traffic. Most of the precautionary measures and emergency services would be paid for by the Running Fence Corporation.* These include emergency use of helicopters, and services performed by the California State Highway Patrol or County Sheriff's Departments. They do not include all services performed by the California State Division of Forestry, for which there is no mechanism for reimbursement of training costs. This agency would train monitors in some fire-fighting techniques, as well as respond to emergency calls.** In summary, it is anticipated that the proposed project would not have an adverse impact on the finances of the local governments or the local public service agencies. However, one State agency would have some unreimbursed expenses.

*The Running Fence Corporation is financed by sales of Christo's art; o.e., the sketches and drawings of each of his projects which he creates during the process of the project and after its completion.

**See Community Services Section. Note that there *is* a mechanism for reimbursement of the Division of Forestry by the individual or organization directly causing a fire.

The project would attract approximately 15,000-30,000 viewers on a peak day,* the majority of whom would be from outside the immediate vicinity of the *Fence* route. These visitors would make purchases in the commercial portions of the local communities, bringing some business to merchants and sales tax to the cities; quantities cannot be estimated.

Viewing of the *Fence* would introduce the area to great numbers of people who had not visited there previously, which could result in a slight increase in demand for housing over a long period of time in this area, and therefore, pressure for development in this area. Land speculation in the area is down. As noted earlier, reappraisal of land value in the area within the past two or three years has not resulted in much change in assessed value for the large parcels such as those which the *Fence* would cross. Much of this land is not considered developable; some of it is in agricultural-preserve contracts with Sonoma County.** Much of it does not have water available nor are the soils conducive to use as a percolation area for septic treatment of sewage. It is unlikely that assessments would be affected by the *Running Fence* project.+

In addition, a minor development pressure resulting from the event would not constitute a significant impact on the land or on the market for land. The significant development pressure which exists at the present time affects the land considered developable; the *Fence* project could of itself create only a slight increase in the present demand for such developable land.

The *Fence* would be removed by those persons who had been hired to erect it and monitor the viewing phase. The last stage of the project, removal,would complete and terminate the temporary jobs created by the *Running Fence*.

Upon removal of the *Fence*, the materials used would be given to the community. One of the trucks with balloon tires used to erect the *Fence* would be given to Sonoma County, as well as one of the machines used to punch holes in the soil for placement of the fence poles. Each owner of land which the *Fence* crosses would be given the poles used to hold the *Fence*. There are over 2,000 poles; at a cost of $42 each, they represent a gift of $84,000.++The *Fence* panels and the steel cable and anchors would also be given to the landowners. The Running Fence Corporation will bestow

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*See Traffic/Circulation/Parking section.

**See Land Use section.

+Mr. Don Martin, Appraiser, Petaluma Assessor's Office, July 23, 1975.

++At 1973 prices.

a gift of a biokinetics machine--a machine which converts animal wastes into animal feed--upon the County of Marin. All these gifts represent a substantial monetary benefit to the Counties* and the ranchers in the area. Sonoma County also received from Running Fence Corporation in 1975 a use permit fee of $1,850,* and almost $800 in building permit fees** ($526.50 building inspection fee, $263.25 plan check fee, and $10.00 referral to County Water Agency). The use permit fees for new permits for 1976 are an additional $900.

In order to better judge *Running Fence's* potential traffic impact, a special traffic count was made during the months of August and September, 1975, in Sonoma County at the request of the Planning Department, at some cost (amount unavailable) to the County for labor, computer time and equipment use.

The value of Christo's art increases with time, new showings, and new projects. The *Valley Curtain,* Christo's most recent large-scale work, raised the price of Christo's drawings, which had been $129 in 1964 and $980 in 1969, to $7,200 in 1975.*** Nevertheless, the Christos (Javecheffs) do not profit directly from projects such as *Running Fence* and its predecessor, *Valley Curtain;*** nor from the films**** and books+ that result from such projects. The Christos (Javacheffs), who finance their projects (via closely held corporations) through the sale of Christo's drawings, had joint personal (adjusted gross) incomes for the last two years of: 1974, $7,207; and 1973, $1,743.++

Running Fence Corporation, formerly Valley Curtain Corporation, which finances Christo's large works and which is supported by the sale of Christo's drawings, had net losses for the last four years of: 1974, $74,659; 1973, $121,836; 1972, $65,083; 1971, $67,852.+++

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*Lloyd Johnson, Zoning Administrator, Sonoma County, Telephone Communication, August 21, 1975.

**Anna Lee Wilcox, Office of Building Inspector, Sonoma County, Telephone Communication, October 17, 1975.

***Jeanne-Claude Javacheff, Personal Communication, July 28, 1975.

****Letter from Maysles Films, Inc., Filmmaker, August 15, 1975, regarding proposed *Running Fence* film. See Appendix N.

+Letter from Harry N. Abrams, Inc. Publisher, June 6, 1975, regarding *Running Fence* book. See Appendix N.

++IRS joint personal income tax return for Christo and Jeanne-Claude Javacheff and correspondence from Harry Auerbach, CPA, N.Y.

+++IRS corporation income tax return for Running Fence Corporation and correspondence from J.K. Lasser & Co., CPA, Chicago. These figures include carried-forward losses from prior years.

It can be assumed that the successful completion of *Running Fence* will tend to raise the price of Christo's future drawings. Past practice, as noted, has been to use funds from sales of such drawings to support large-scale projects, a practice that the Christos are continuing in the present project. Nevertheless, there is no legal guarantee that all future income will go to the Running Fence Corporation (or its successors) for future large-scale projects, nor is it certain that the net worth of the Corporation at any time will not revert to its principal stockholders, including the Christos.

Mitigation

As an overall net economic gain is expected to the community and the County, no mitigation is required.

7. VISUAL AND AESTHETIC

Setting

The *Running Fence* route, from Meacham Hill at Highway 101 to the coast, meanders among local roads and through the watersheds of two creeks: Stemple Creek and Americano Creek.

The grazed rolling hills, contrasted with large late-19th-century tree plantings on ridges or along roads (for windbreaks) and on gullies (for erosion control), give form to the landscape. Eucalyptus, in rows or groupings, predominates among the introduced trees.* Monterey cypress, Monterey pine, and poplar trees give a decided vertical contrast to the rolling terrain. Old fences--split rail, rustic picket, white board--add modified horizontal delineation, as do the local roads--emphasizing the on-going variation in elevation. Old (late-19th-century) houses, barns, relics of an old railroad, sheep and cattle, dairy trucks and signs, mailboxes supported by milk cans, and a surviving road sign stating "Slaughter House Road" identify the predominant use and interests of the area for close to a century.

Impact

The direct** visual and aesthetic impacts include the claimed *beneficial* aspects, which will not be discussed here because, as noted earlier, they have to do with the subjective nature of the *Running Fence* as an art object. Of more concern in an environmental impact report are the potential direct *adverse* impacts; these have to do chiefly with the intrusive, if transitory, nature of the *Fence* as perceived by some local residents and by travelers along the local roads. The chief potential adverse impact is the blockage, or the partial blockage, of close in and panoramic views from residences along the route. Another is the dominance (as opposed to view blockage) of the *Fence* as an element of the close-in view from some residences. Local property-owners who have signed easement agreements with the applicant are

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*Which provide perch or habitat to numerous species of birds (i.e., turkey vultures, etc.), adding to the interest of the environment.

**The *indirect* impacts result from visitors attracted to the area of the *Fence* route, primarily during the viewing period. Probably the most important of these indirect impacts would be the potential traffic congestion, the nature and the location of which would depend on the "attractiveness" of the *Fence* at specific points along its route. A detailed analysis of the variation of "attractiveness" along the route, with its implications for congestion, is presented in Appendix J.

assumed to be unconcerned about the adverse visual and aesthetic impacts (or to consider the visual and aesthetic impacts to be beneficial). This brief examination will therefore emphasize those portions of the *Fence* which may block or interfere with views from residential property *not* under easement agreements.*

One group of residences so affected consists of the Penngrove area homes on the eastern flank of Meacham Hill. Most of the closest homes cluster in a band about 750-1000 feet downslope of the ridge-line *Fence*. For those residents, the *Fence* will change the appearance of the ridge line where it can be seen through the trees but it will not block views. One home near the northern end of Segment 23 is a little closer, perhaps 500 feet from the *Fence*. However, there are two intervening knolls, so that the *Fence* may not be visible from this home. Near the start of the *Fence*, at the southern end of Segment 23, is a group of homes, some of which are somewhat closer than 500 feet. These, however, see the *Fence* end-on at its closest approach.

A second group of residences is that in the Happy Acres subdivision, on the southeast side of Meacham Road. The *Fence* would run about 1200-1500 feet to the southeast of these homes, and would be on the far side of the nearest ridge line. These residents now have some distant views of Meacham Hill, over the top of that ridgeline. It is possible that the top of the *Fence* would be visible above the ridge line; it could therefore partially block the residents' distant views of Meacham Hill. One home under construction in July 1975 is on the nearest ridgeline. The site has panoramic views to the southeast. While the *Fence* (below the ridgeline) would block close-in views, most of the panorama would be visible over the top of the *Fence*.

*Direct visual/aesthetic impacts on all travelers are discussed in Appendix J.

8. TRAFFIC/CIRCULATION/PARKING*

Setting**

Beginning at the project's east end, the principal traffic-way for reaching the *Running Fence* route and for viewing the *Running Fence* will be via U.S. 101 (Freeway), West Railroad Avenue, Stony Point Road, Meacham Road, Pepper Road, Walker Road, Petaluma/Valley Ford Road, Franklin School Road, and Estero Road near the project's west end [See Figures J-1 and J-2 (Appendix J) and 6 (Section II.A.8 and Appendix K)]. To reach these roads, most traffic will approach from the south on the Freeway (Route 101), exiting at one of three interchanges: the Old Redwood Highway interchange at Denman Flat and then along Stony Point Road; Railroad Avenue; or Roblar/West Sierra Avenue and Stony Point Road. The return to the freeway may be by these same routes except that, instead of using Railroad Avenue, traffic must use an on-ramp at Pepper Road to the south of Railroad Avenue (see Figures J-2 and 6). From the north, those who leave the freeway will use the Gravenstein Highway (Route 116) ramps and then Old Redwood Highway (Railroad Avenue) or Stony Point Road. Those southbound motorists who first decide to leave the freeway after noticing the *Fence* would use the Denman Flat Interchange. Those who do not leave the freeway may view parts of the *Fence* from the freeway itself.

A limited number of twenty-four-hour weekday traffic counts by Caltrans and Sonoma County were available at the start of this EIR project (see Appendix K).+ Also, twenty-four-hour and hourly weekday and weekend traffic counts on the principal traffic-way and on nearby roadways were taken in August and September 1975 by the Sonoma County Department of Public Works, in order to anticipate normal traffic volumes in September 1976, when the *Fence* will be in place (see Appendix K, Table K-1).+

From all these counts and from personal observations, it appears that most project-area roads currently operate well below capacity. Exceptions may be certain segments of the freeway and of Route 1 on Sundays, particularly in the summer months.

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*This section is based on the calculations and judgment of Donald K. Goodrich, Transportation and Traffic Engineer (Consultant to ESA), except where other contributors are specifically identified.

**The environmental setting can be presented only if the potentially involved traffic network is first delineated.

+Details of data and calculations are presented in Appendix K; the emphasis in this section of the text is on assumptions, general methods of evaluation, conclusions, and mitigation suggestions.

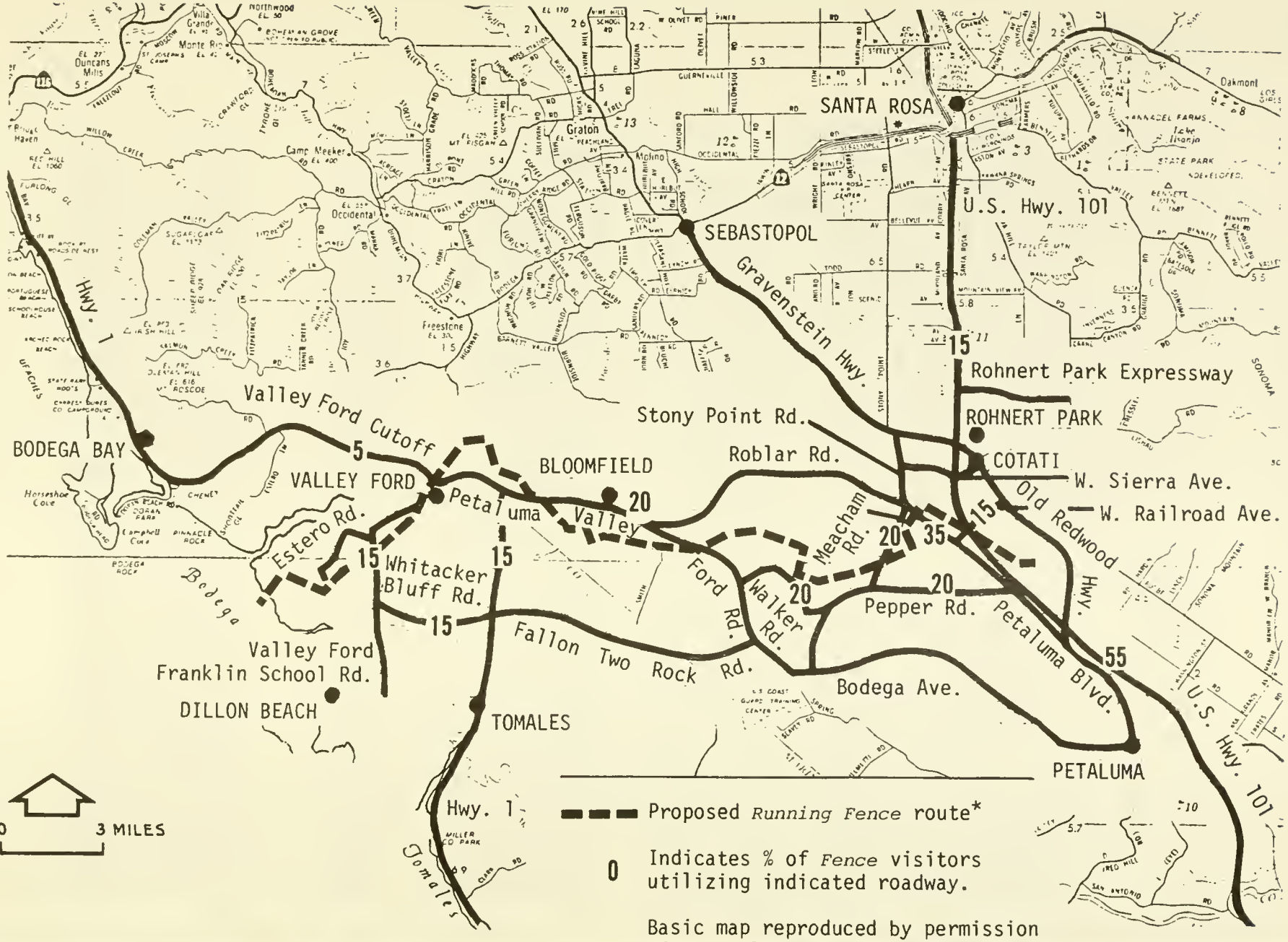

FIGURE 6 LOCAL ROAD NETWORK

*See Figure 5 for alternate route location.

The principal traffic-way for viewing the *Fence* is composed of five basic road types (see Figure J-2, Appendix J):

1. Four-lane freeway

2. Two-lane roads with centerline stripe and shoulder delineated by edge stripe

3. Two-lane roads with centerline stripe but without shoulder

4. Two-lane roads with neither centerline stripe nor shoulder

5. One-lane road

A review of accident records furnished by Sonoma County indicates an unusually high percentage of nighttime accidents on Stony Point Road in 1973, showing a possible need for after-dark road delineation. However, the pattern did not recur in 1974.*

Impact

Traffic problems are not expected during construction and removal of the *Fence*. The limited number of construction vehicles will make little use of the roadways, except for arrival and departure each day. The construction and removal stages will not cause sizable adverse impact from visitors, since the placing of poles and cables by men and equipment ought not to be much more attractive to viewers (especially from a distance) than the digging of wells, the building of water supply ponds, or the loading of hay--usual activities on Sonoma County farm and dairy land.

The visitor impact will be during the viewing stage--a maximum of two weeks in September 1976.

As the *Running Fence* "runs" in an east-west direction, visitors can view it while driving west, and again while returning east, or vice versa (a round trip of about 45 miles). Also, they may travel the *Fence* route in one direction only, continuing to another

*Sonoma County Traffic Department Accident Reports for 1973 and 1974.

destination, or returning to their point of origin by another route. The viewing route from the east would be via the following roads [see Figures J-1 and J-2 (Appendix J) and 6*).

- Highway 101
- Old Redwood Highway
- Railroad Avenue
- Stony Point Road
- Meacham Road
- Pepper Road
- Walker Road
- Petaluma/Valley Ford Road
- Highway 1
- Franklin School Road
- Marsh Road

The relationships among view of the *Fence*, existence (or lack) of place to stop cars (along public right-of-way), and potential traffic hazard have been studied in some detail in Appendix J.** They provide a qualitative basis for some of the conclusions of this section (and Appendix K).

A preliminary estimate of the visitor demand generated by the *Running Fence* (total arrivals and access routes) was made on the basis of crowd data from previous events+, the distance of the *Fence* route from Bay Area population centers, and the probable sources of *Fence* visitors.+ It must be emphasized that this estimate is a matter of judgment rather than calculation; the *Running Fence* will be a unique event, with no real precedent to serve as a basis for extrapolation from the past. Factors taken into account in the estimation of numbers of visitors and the ways in which they will disperse to view the *Fence* include the following+:

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*Figure 6 appears here, and in Appendix K.

**This portion of the analysis was performed by ESA staff.

+Data presented in Appendix K.

- The *Fence* will be visible during all daylight hours for its proposed two-week display period. This distinguishes it from single-occurrence events, such as sports events or rock concerts, and makes it more like county fairs and similar occurrences.

- Unlike extended-duration events that occur at a fixed site, the *Fence* will be visible at numerous points from over 40 miles of public roads.

- Although Christo's past projects drew relatively low public attendance (leading, to the best of our knowledge, to no unacceptable traffic congestion) the total number of visitors attracted by the *Fence* cannot be ascertained with certainty because of demographic differences between the Bay Area and the sites of the prior projects.

- Many viewers, even among those making a special trip to view the *Fence*, may be satisfied with the view they receive from the main approach routes, Highways 101 and 1, and therefore, will not disperse onto the cross-county traffic-way.

- Total attendance will depend on publicity to date, particularly that associated with the environmental review process, but also that associated with museum and lecture events involving the applicant. It may depend even more on the same kinds of publicity in the future. TV coverage may either encourage or discourage viewing attendance.

- Variation in daily attendance during the two-week display period will depend on media publicity immediately prior to and during that period. It is likely that attendance will be higher on weekends than during the week, and that it will build up over the two-week period, so that the peak day will be the second Sunday, all other factors being equal.

- Heat and lack of shade (easterly part of route) or fog and wind (westerly part of route), and rise in gasoline prices, may discourage some motorists from visiting and viewing the *Fence*.

The resulting estimate of the total number of visitors on the peak day (presumably the second Sunday) is expressed in the following in terms of the probability of occurrence of several levels of attendance:

VISITOR DEMAND ON PEAK DAY

Number	Probability of Occurrence (Judgment)	Explanation
15,000 (5,000 cars)*	60%	(probable)
30,000 (10,000 cars)*	30%	(possible)
50,000 (16,700 cars)*	5%	(top demand, though only 10,000 cars may be able to arrive, due to limitations of road network)**

The analysis indicated that about 80 percent of the *Fence* visitor vehicles will approach the viewing area from the south and about 20 percent will approach from the north. It is anticipated that the viewers, upon reaching the viewing area, will distribute themselves over the local road network (see Figures J-2 and 6) according to the following estimate:

Roadway	Percent of Visitor Vehicles
West Railroad Avenue	15
Stony Point Road (between Meacham Road and Route 101)	35
Meacham Road--Pepper Road--Walker Road--Petaluma/Valley Ford Road	20
Franklin School Road--Whitacker Bluff Road	15
Route 1 north of Valley Ford	5
Route 1 south of Valley Ford	15
Route 101 north of Gravenstein Highway	15+
Route 101 south of Old Redwood Highway interchange at Denman Flat	55+
Dispersed among other roads	20

*Three visitors per car (estimate for recreational travel).

**Result of analysis herein and in Appendix K.

+Visitor traffic on the section of Highway 101 between Gravenstein Highway and Denman Flat may be as much as 65 percent of the total, depending on visitor decisions on where to exit, which may be influenced in part by back-ups on off-ramps.

Hourly traffic variations in general can be expected to resemble those of summer Sunday recreational travel, e.g., arrivals starting in mid-morning and continuing until about 3 PM. Similar patterns can be expected on weekdays and weekend days, with the latter reaching a higher level. The weekend to weekday variation should tend to follow the two-to-one ratio observed for visitors to the Sonoma County Fair and Sonoma County wineries.

While the vast majority of *Fence* viewers will view the *Fence* from land vehicles, chiefly autos, some viewers may approach the *Fence* route by air and water. Visitor arrival by boat to see the coastal area is not expected to be heavy. The North Coast Harbor Study for the Army Corps of Engineers (by JHK & Associates) showed that few recreational boaters are willing to leave the shelter of San Francisco Bay and brave the long unsheltered route to Bodega Bay.

Roadways near the *Fence* route have a limited amount of capacity available to absorb new traffic generated by *Fence* viewers. The traffic impact of the viewing period will depend upon the volume of vehicle usage relative to the capacities of specific roadways. Vehicle usage is expected to vary from hour to hour and day to day.

Table 1 illustrates the relationship between level of service (or driving ease) and hourly traffic volumes (capacities) for two-lane rural roads. The Table is appropriate for the two-lane roads in the project area during normal, non-*Fence* periods. However, the actual capacity under the conditions anticipated during the viewing period may be one-half of these.* The narrower Type 3 and 4 roadways are assigned the same traffic capacity as the wider Type 2 (Setting Section) because parking would generally be prohibited from the former and allowed along the Type 2 roadway. Route 101 has been estimated by CALTRANS to have a one-way peak hour capacity of 3,000 vehicles on a viewing day.*

Too much traffic compared to road capacity (i.e., Level of Service E to F) could lead to stop-and-go flow, traffic backups onto the freeway, cars running out of gasoline, boiling radiators, traffic accidents, and entrapment of emergency vehicles. Therefore, it is necessary to assess the possibility of network capacity overload under the peak visitor conditions estimated above.

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*Letter to Mr. George Kovatch, Sonoma County, from Mr. L. Newman, CALTRANS, February 5, 1975.

TABLE 1

LEVEL OF SERVICE, TWO-LANE RURAL ROAD

Hourly 2-way Volume	Level of Service	Operating Characteristics
400	A	Ideal flow
900	B	Free flow
1,400	C	Stable flow; some car-following; average speed 30 mph; a common service level for design
1,700	D	Approaching unstable flow; average speed, 20 mph, greatly restricted dur to car-following
2,000	E	Maximum volume attainable, average speed 10 mph. Level E is not likely to be attained. Operation may go directly from D to F
less than 2,000*	F	Forced, congested flow with unpredictable characteristics. Stop and go, long queues

Source: Adapted from page 308, "A Policy on Design of Urban Highway and Arterial Streets", American Association of State Highway Officials

The descriptive operating characteristics apply to other road types, including freeways. However, the associated traffic volumes change with road type.

*As traffic demand exceeds 2,000, the resulting turbulence reduces flow to less than 2,000.

Accurate assessment of the potential traffic impacts of the *Running Fence* is precluded by a combination of uncertainties, including those pertaining to the following:

- Maximum likely levels of visitor traffic
- Ratio between peak week-end visitor traffic and week-day visitor traffic
- Hours when *Fence* visitor traffic would occur; percent of daily visitor traffic in the peak (visitor) hour
- Non-visitor ("normal") traffic during the display period
- Visitor-traffic splits on the affected road network
- Actual capacity of individual segments of the affected road network, under potential traffic conditions during *Fence* display
- Variation in capacity among the different road types in the affected road network

Therefore, the approach taken was to examine several critical elements of the road network, under a series of assumptions.* The road elements evaluated were: (a) Highway 101; (b) Walker Road; (c) Petaluma/Valley Ford Road, east of Gericke (Jones) Road; and (d) Highway 1, east of Franklin School (in Valley Ford itself). Stony Point Road and Bodega Avenue were also investigated, but with less confidence in the input data.

The assumptions were as follows:

- Total visitor "demand" on the peak day (second Sunday) is 10,000 vehicles (the 30 percent probability figure)
- While the normal weekend/weekday ratio of daily traffic throughout the road network is about two to one, the ratio of the peak-visitor-day (second-Sunday) *Fence* visitor traffic to the *Fence* visitor traffic on the first day (weekday) of display is about four to one. That is, interest will develop as the display goes on.

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*This examination was performed by ESA staff, after the receipt, on October 17, 1975, of the traffic count data presented in Appendix K. The results confirmed the main conclusions of Donald K. Goodrich, Consultant to ESA, which had been based on the limited data available in July, 1975.

- Visitor-traffic splits throughout the road network are as estimated earlier in this Section.

- Visitor-traffic in the peak visitor hour is 15 percent of daily visitor traffic. For "normal" traffic, the figure is 10 percent.

- In the absence of data on existing *weekend* traffic on Highway 101, *weekday* maximum traffic levels can be assumed to apply (as the setting) on *weekends*. This is not unreasonable for a freeway segment that combines business, commute, and recreational traffic.

- Highway 101 peak hour capacity in the vicinity on a viewing day is, as noted above, 3,000 vehicles (one-way), or 6,000 vehicles (two-way).

- Capacity of the two-lane local roads during the viewing period is, as noted above, one-half of the normal capacity, because visitors will slow down and/or park to view the *Fence*.

The approach used in estimating traffic levels of service resulting from the addition of *Fence* visitor traffic to "normal" traffic was as follows:

- The calculation was for the peak (PM) hour on the second Sunday.

- The resulting peak hour total flow was compared to the above criteria for capacity. For the two-lane rural roads, the first comparison was against the flow criteria for Level of Service C, as reduced by 50 percent to account for conditions during viewing.

- Once the situation for the peak day (second Sunday) had been established, the situation on the average weekday could be assessed. This would be needed for the development of a contingency plan, to be based on traffic levels experienced (after the fact) during the first weekdays of viewing.

- The initial assumption was that the visitor demand on the second Sunday would be 10,000 vehicles (the 30 percent probability figure).

The results of the evaluation were as follows (the calculated flows represent normal traffic plus visitor traffic):

a) Highway 101--The peak-hour second-Sunday *one-way* flow in the segment of the freeway between Denman Flat and Gravenstein Highway would be about 3,100 vehicles. This is greater than the capacity of 3,000 stated above. That is, if the visitor demand reached 10,000

cars per day, Highway 101 would reach Level of Service F. On Highway 101 south of Denman Flat, the flow would be slightly lower, but still above the stated capacity. Since Highway 101 is the principal access route to the *Fence* area, its northbound approach carrying 55 percent of the total visitors and its southbound approach carrying 15 percent of the total visitors, it appears to be the controlling element in capacity analysis and in California Highway Patrol decisions about requesting removal of the *Fence*. On weekdays, the freeway capacity would not be reached, whether the assumption used is a weekend/weekday visitor flow ratio of four to one or of two to one. On the other hand, if the 30 percent probability assumption of 10,000 visitor vehicles on the second Sunday is conservative, weekday flows could be high enough to indicate this possibility, while still remaining below capacity.

b) Walker Road--This segment of the (viewing) road network experiences very little traffic normally; however, the road is twisting and narrow (Type 4). The peak-hour second-Sunday *two-way* flow is about 320 vehicles. This is well below the modified (50% reduction) capacity of 700 (for Level of Service C). Therefore, congestion should not be a problem, unless large numbers of visitors try to stop along the shoulders for views (or photos) of the *Fence*. Since the flows on the weekdays will be further below capacity, visitor behavior on those days can foreshadow the potential problems on the weekends, while not causing serious problems itself.

c) Petaluma/Valley Ford Road, east of Gericke (Jones) Road--This segment of the (viewing) road network consists of both Type 2 and Type 3 road, but experiences much more traffic normally than does Walker Road. The peak-hour second-Sunday *two-way* flow is about 660 vehicles. This is still below the capacity of 700 (for Level of Service C), but close enough so that congestion from parkers or even those who merely slow down to view the *Fence* may be a problem. Again, experience on the first weekdays of the viewing period should provide clues to the levels and the behavior of the expected weekend traffic, and of their consequences.

d) Highway 1, east of Franklin School Road (within the Town of Valley Ford--This segment normally experiences higher traffic flows than does the Petaluma/Valley Ford Road segment above. The peak-hour second-Sunday *two-way* flow is about 680 vehicles. The same consideration as those for Petaluma/Valley Ford Road to the east apply. Further complications may result from the presence of the commercial buildings along the road, coupled with the fact that the *Running Fence* route crosses this road within the town, providing a further attraction that may lead visitors to pull over.

e) Stony Point Road, north of Railroad Avenue--The only available count for this road is a weekday figure, for the whole day, of 1500 vehicles. If the normal Sunday traffic is assumed to be

the same, with 10 percent in the peak hour, then the peak-hour second-Sunday *two-way* flow (normal traffic plus *Fence* visitors) would be about 675 vehicles, still below the Level C capacity of 700 vehicles. However, if the normal Sunday flow is assumed to be 3,000 vehicles, the total peak-hour flow would then be about 825 vehicles, close to the Level of Service D capacity of 850. This situation could create problems, particularly since perhaps one-half of the visitors northbound on Stony Point might attempt to turn left onto Meacham Road. Experience on the first weekdays would again provide guidance as to what could be expected later, while unacceptable congestion would probably not exist at the time.

f) Bodega Avenue, west of Pepper Road--This road segment is not part of the viewing-road network. However, it may be attractive as an access or departure road. Its existing Sunday peak-hour flow is about 750 (two-way), which would be above (worse than) Level of Service C, if the road were on the view network. Since it is not, the capacities of Table 1 apply directly, so that existing Sunday peak-hour flow is between Levels of Service A and B. Even if as much as 35 percent of the total visitor flow were to use this approach (an extremely unlikely prospect), the peak-hour second-Sunday flow would still be below (better than) Level of Service C.

The main conclusion above is that 10,000 visitor vehicles are the maximum that can be reasonably accommodated on the road network, and that the controlling feature is that this level of demand would cause Highway 101 to go to Level of Service F. Thus, a decision by the California Highway Patrol to request removal of the *Running Fence* could be made on the expectation that such levels would be reached on the first or second weekends, even if congestion had not built up to unacceptable levels during the first weekdays. The dominance of the potential Highway 101 buildup in the analysis and decision is confirmed by the earlier conclusions of Mr.Goodrich that a demand of 30,000 visitors (10,000 visitor vehicles) "produces Service Level "F" on 101 (Remove *Fence* if over 30,000 anticipated.)"

Mr. Goodrich had concluded also that if as many as 35-40% of the visitor vehicles attempted to use the principal viewing trafficway between Highways 101 and 1, the controlling road network would shift away from the freeway, even at somewhat lower total flows. This is a more conservative judgment than the above analysis of individual segments would indicate. However, it takes into account the interior road network as a whole; of particular importance is the effect of left turns at different intersections, depending on whether the visitor vehicle is going from west to east or from east to west.

Both analyses indicate, however, that with the expected

gradual buildup of visitor interest there would be time to implement a series of contingency plans, including the ultimate mitigation of requiring removal of the *Fence*.

Mitigation

Mitigation measures will be presented first in terms of a composite of general suggestions by the preparers of this EIR and measures already planned by the applicant. Then the rationale for a traffic management plan, suggested by Mr. Goodrich, will be presented in some detail.

Viewers should be kept off private property and discouraged from public roads that present hazards: (1) roads that are not through-roads; (2) too-narrow roads; (3) roads without turn or easy connection to other roads. Monitors and off-duty Sheriff's deputies will be hired by the applicant to protect private property and to guide traffic flow.* The applicant does not propose to provide parking areas. Therefore, in general, traffic should be kept moving smoothly. For those points where views of the *Running Fence* are especially clear or panoramic, the tendency of the curious (especially photographers) would be to stop. If there is no safe place to stop, a potential hazard exists and traffic should be kept moving. Sheriff's deputies will guide traffic while monitors (college students and others) will guard private property using two-way communication for assistance. The number of persons controlling traffic and protecting private property will be determined on the basis of need (100 anticipated on 8-hour shifts). Need will vary with time: (1) weekday vs. weekend day; (2) day vs. night.

Road construction and maintenance activities should not be scheduled during the viewing period. All planned Sonoma County roadwork in the *Fence* route area will be completed by September 1976 (Sonoma County Public Works Department, letter of August 26, 1975 to ESA), most of it in calendar 1975.

If private parking is provided by private landowners** (separate from any part of the applicant's proposal or plan), guidance should be received in advance by the landowner from public authorities [+] in order not to create more traffic problems because of egress and ingress conflict on roads.

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*Only uniformed police officers can control traffic on public roads *per se*.

**Some landowners have stated interest in providing parking on their land.

[+]Captain Eric Denton, Commander, California State Highway Patrol, Santa Rosa Area; Sonoma County Traffic Engineer; Sonoma County Sheriff's Office.

If traffic becomes too congested for stopping for viewing and photographing, it could be prohibited, except for emergencies; even whole roads could be closed to visitors.* If the viewing/stopping hazard becomes dangerous to public safety, even after employment of the suggested mitigation measures, the ultimate mitigation measure can be employed: remove the *Fence* panels (especially prior to the first weekend) before the end of the viewing period. The applicant has agreed to this condition in advance; the decision will be made by Captain Denton.

A Traffic Management Plan for the *Running Fence* should be prepared by a (consultant) traffic engineer for the following roadways:

- Route 101 between Petaluma Boulevard South and the Rohnert Park Expressway. Consideration should be given also to the Section of Route 101 south of Highway 37, because of the possible traffic conflicts with the Renaissance Pleasure Faire
- Route 1 from Valley Ford to Tomales Road
- Principal viewing trafficway: Railroad Avenue--Stony Point Road--Meacham Road--Pepper Road--Walker Road--Petaluma/Valley Ford Road--Franklin School Road
- Whitacker Bluff and Fallon/Two Rock Roads
- Bodega Avenue (From Petaluma/Valley Ford Road to Pepper Road, and perhaps points east)
- Pepper Road
- Stony Point Road from Gravenstein Highway to Petaluma Boulevard North
- Old Redwood Highway from Gravenstein Highway to Petaluma Boulevard North
- West Sierra Avenue
- Roblar Road

*Road closing, with the exception of the Estero Road situation, may be unworkable. Estero Road is a county-maintained, one-way road off Franklin School Road. It leads to a few parcels (Pozzi, Gaver, Pellascio, and de San Antonio Compadres) at the coastal end of the *Fence* route. The applicant has stated that he will not accept road closures (exception of Estero Road) as part of the project, because of their additional impacts. Instead, he accepts removal of the panels as the ultimate mitigation measure.

The Traffic Management Plan will be able to use the available count data in a more detailed way to analyze the principal viewing trafficway for sensitive capacity areas. This knowledge, in turn, should allow a further refinement of the maximum traffic volume that can be absorbed (currently estimated at about 30,000 visitors/ 10,000 cars per day) before the *Fence* is ordered to be removed. It is also suggested that the plan address the use of publicity as a traffic-control factor. For example, minimal publicity will attract few visitors,while a publicity program will attract a great many more. A carefully planned public information program could give potential viewers driving directions that could assist them in avoiding the most-traffic-sensitive areas.* Other elements that should be addressed by the Traffic Management Plan include road closures**, one-way viewing routes, use of uniformed police officers to guide traffic flow, temporary road signs+, flagmen, and mass-transit utilization. The implementation of the plan would depend on accurate traffic measurements starting on the first day of viewing.

A Traffic Management Plan, whose framework is outlined below, will prepare public authorities for any level of visitation that is likely to occur. Contingency plans for three visitation levels are suggested:

Level	Number of Visitors
A	Fewer than 4,500 visitors (1,500 cars) per day
B	4,500 to 10,000 visitors (1,500 to 3,300 cars) per day
C	more than 10,000 visitors (3,300 cars) per day

The contingency plan for Level A should be implemented before the first day of viewing. To prepare for Level B, elements such as signs should be prepared and their installation locations selected

*See Golden Gate Recreational Travel Study Area 3 report.

**As noted above, the applicant prefers removal of the *Fence* to road closures (exception Estero Road).

+Approval for the road signing would have to be obtained from the County Public Works Department.

before the first day of viewing. If the first few weekdays indicate subsequent weekday or weekend visitation will exceed 1,500 visitor vehicles per day, the signs should be installed immediately. The plan for Level C has four alternatives. One of the four alternatives should be selected and expanded after all the traffic count hourly data are available and prior to any viewing.

The following is an explanation of the various contingency levels and the appropriate actions to be taken.

Contingency Level A

For Contingency Level A, fewer than 4,500 visitors (1,500 cars) per day, regulatory signs for parking and access control should be installed. These could be portable signs or temporary signs made of low-cost material. The signs and their location should be approved by the responsible jurisdiction. The parking-control signs would contain the message "No Parking" and should be posted along all road Types 1, 3, and 4 (see Figure J-2, Appendix J). Parking can be allowed along road Type 2, which has adequate shoulder area. Other parking may be available at private, off-road lots, at which some entrepreneurs may charge for parking. A planned off-road parking program does not seem warranted, considering the few spaces it could develop compared to those available along road Type 2. A "Do Not Enter" sign should be posted at the entry to road Type 5, Estero Road, because the single lane of this dead-end road cannot accommodate two-way traffic.

Contingency Level B

At Contingency Level B, 4,500 to 10,000 visitors (1,500 to 3,300 cars per day), temporary guidance signs should be installed. These signs should be placed at, and in advance of, intersections along project-area trafficways. The signs should indicate turn directions for those who wish to view more of the *Fence* or who wish to return to major roads such as Routes 1 and 101.

For those motorists who travel most of the length of the *Fence*, starting from Route 101, return is provided by use of Franklin School Road to Marsh Road to Middle Road to Petaluma/Valley Ford Road. Another possible return is via Franklin School Road/Whitacker Bluff Road.

Contingency Level C

For Contingency Level C, over 10,000 visitors (3,300 cars) per day, four alternative mitigation measures are suggested. With Alternative 1, uniformed personnel and flagmen would have specific instructions for assigning rights of way to traffic to expedite flow and for turning excess traffic away from congested areas.

For example, there is an existing truck pull-out where southbound trucks can stop on Route 101 at the top of the hill north of Railroad Avenue. From this stop, the *Fence* will be visible. The stop should be closed by barrier or monitored by State Highway Patrolmen on-site to avoid back-ups onto the freeway.

Alternatives 2 and 3 would allow more visitors to see the *Running Fence* than would Alternative 1. However, these measures would involve considerable advance planning that may not be warranted, considering the fact that maximizing public viewing is not a major goal of the project. Alternative 2 would implement a one-way flow pattern along the principal trafficway.* With one-way flow, return routes via other roads would be needed. To satisfy art objectives, the flow should be reversible on different days, so that the *Fence* could be viewed from both directions. This alternative would require careful study to prepare a signing and policing plan to deal with the complex changes in traffic movements.

Alternative 3 would institute bus tours for viewing.* Shuttle lot parking areas would be required. To induce people to use the buses, the main view route would have to be closed to general traffic.* As the C level of visitation would probably occur only on weekends, parking lots, such as at the Marin County Civic Center, and buses, such as from Golden Gate Transit, may be available. Alternative 3 would require extensive advance arrangements for buses, drivers, parking areas and road controls, routing, signing and publicity. The plan would also have to be capable of implementation with only about two days advance notice. For example, if visitation is high during the first few weekdays, a decision to activate the plan for the weekend would have to be made quickly.

Alternative 4 would take down the *Fence* in order to remove it as an attraction. Someone should be authorized to order the *Fence* removal** and should have at his or her disposal a pre-planned publicity program that will announce the *Fence* has been removed. The decision could be made prior to a weekend based on weekday observations of crowd size.

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*The applicant has indicated that he would not accept these measures as part of the project, preferring the ultimate measure, removal of the *Fence* (Alternative 4).

**See letter from Captain Eric Denton, attached to this section. The applicant has agreed to this condition.

DEPARTMENT OF CALIFORNIA HIGHWAY PATROL
3854 Santa Rosa Avenue
Santa Rosa, CA 95401

August 27, 1975

Ms. Gerry Wolff
Environmental Science Associates
1291 East Hillsdale Boulevard
Foster City, CA 94404

Dear Ms. Wolff:

Regarding the "Christo" running fence proposal, I wish to clarify my current position and advise you of agreements reached with the Christo staff since my letter of February 10, to the Sonoma County Planning Board.

Current agreements provide that I may order any portion of the fence, which I deem is creating a traffic hazard, removed. My particular concern is that portion in sight of Highway 101 but the staff has agreed that this authority is extended to any portion or all of the project. With this proviso I have no objection to the fence being constructed as originally planned.

My criteria would be delays and/or accidents caused by people slowing on the freeway to observe the display or congestion on the secondary road net to the point of creating a serious threat to local residents by denying the roads to emergency services or delays of through traffic for unreasonable times.

In addition, the Christo group has agreed to reimburse the State for the cost of our additional traffic control personnel which may be necessary because of the display.

Very truly yours,

ERIC DENTON, Captain
Commander
Santa Rosa Area

9. ENERGY

Setting

CEQA* was amended, effective January 7, 1975, to require that the discussion of mitigation measures in an EIR include a discussion of measures to reduce the inefficient and unnecessary consumption of energy. There is no need to describe the existing setting, since no current uses of energy on-site will change with the project.

Impacts

Planning, engineering, and construction of the *Running Fence* will result in the consumption of energy and material resources. The impact of the latter is relatively small since most of the structural elements of the *Fence*, including the fabric, poles and some cables, are existing materials which are surplus to, or deemed unsuited for, their originally intended use.

Energy is the major resource that will be consumed by the project. The energy budget for construction and removal of the project is dominated by the fuel consumption of the vehicles and auxiliary machinery used. A rough estimate of the motor fuel needs during construction and removal of the *Fence* is as follows:

construction - 3,800 gallons

removal - 800 gallons

For comparison purposes, 800 to 900 gallons of gasoline is an approximate average consumption for one year of family driving of a standard size automobile.

The principal consumption of energy, however, will result from the visitors to the *Fence*. Estimates of visitor origin distributions, travel distances, and the resulting total access mileage (on a per-thousand-visitor basis) are contained in Table K-2 (Appendix K). These data were used to estimate fuel consumption, under two travel-mode alternatives, by visitors in traveling to and from the *Fence* and in viewing the *Fence*.** It was assumed that twice the length

*California Environmental Quality Act of 1970, which deals with environmental quality, the environmental evaluation of public and private projects, and the preparation and evaluation of environmental impact reports.

**This is in every way a worst-case analysis. It assumes that all visitor vehicles will travel the full length of the *Fence* route, and that all visitors would not have been consuming fuel in other ways on the day(s) they visited the *Fence*.

of the road system along the *Fence* route, or about 45 miles, would be traveled by each visiting vehicle during viewing of the *Fence*. The estimated fuel consumption per thousand visitors is presented in Table 2.

TABLE 2

FUEL CONSUMPTION IN ACCESS+ AND VIEWING.
GALLONS OF BUS/AUTO/AIRCRAFT FUEL CONSUMED PER 1000 VISITORS

VISITOR ORIGIN	Access Alternative		Viewing Alternative		
	A* (auto/air)	B* (bus/auto/air)	A (auto)	B (bus/auto)	C** (bus)
Sonoma and Marin Counties	260/0	13.7/208/0			
Other Bay Area Counties	1149/0	38.7/1002/0			
Other, California	2541/760	9.5/2505/760			
Other, Out of State	261/500	0/261/500			
Total Fuel Consumed	4211/1260	61.9/3976/1260	1071	23.3/983	281

+"Worst-case" analyses, (based on assumption of Table K-2), which assign the full fuel consumption of the trip to *Fence*-viewing, regardless of possible other reasons for the trip, yield upper-limit estimates. If each trip (except an access trip by bus) is assumed to be dual-purpose (i.e., to visit Point Reyes *and* the *Fence*) fuel consumption assignable to access to the *Fence* would be halved. The halved values would represent reasonable lower-limit estimates for fuel consumption for access; fuel consumption for viewing would not be altered. Similarly, jet fuel consumption for visitor access by commercial aircraft is not generally attributable to the *Fence*, since most flights have empty seats (i.e., the aircraft would be flying in any event).

*See Table K-2 for fractional splits for Alternatives A and B.

**Alternative C is viewing restricted to bus riders only.

For a "worst-case" weekday, with a maximum of 25,000 visitors, the estimated total day's fuel consumption would be:

Access and viewing Alternative A--gasoline	132,000	gallons
jet fuel	31,500	gallons
Access and viewing Alternative B--diesel fuel (bus)	2,130	gallons
gasoline	124,000	gallons
jet fuel (aircraft)	31,500	gallons

For a weekday rate of about 15,000 visitors and a weekend daily rate of about 30,000 visitors, a total of about 270,000 visitors would view the *Fence* during the full two week period. The total fuel consumption would be:

Access and viewing Alternative A--gasoline	1.43	million gallons
jet fuel	0.34	million gallons
Access and viewing Alternative B--diesel fuel	.02	million gallons
gasoline	1.34	million gallons
jet fuel	0.34	million gallons

More modest visitor daily attendance rates or a shorter attendance period, either of which would reduce total attendance, would result in decreased energy use.

Mitigation

Resource use by the *Fence* will, with the major exception of fuel consumption, be temporary. Materials from the *Fence* will be given to the landowners for their own use on-site or for sale as surplus.

Consumption of fuel in the construction and removal of the *Fence*, although not inconsequential, is small when compared to quantities of fuel estimated for visitor use. No measures are proposed to mitigate this small consumption.

The total consumption of fuel by the public during the viewing period can be reduced by: maintaining traffic flows to eliminate fuel waste in traffic jams; encouraging visitors to ride 4 or more in each car; and, most effective of all, encouraging visitors to ride in buses (and/or limiting auto use on area roads). Measures taken to improve the transportation energy-efficiency of the visitors will be the most effective in reducing the total energy consumption related to the *Fence*. The potential fuel *saving* (Table 2) from just using buses for viewing is about 790 gallons of fuel [281 gallons diesel (C) vs. 1,071 gallons gasoline (A)] per thousand visitors. This represents about a 74% saving in fuel use for viewing, in addition to the resource-utilization advantage of using diesel vs. gasoline as motor fuel.

B. BIOLOGICAL/PHYSICAL

1. ECOLOGY

a. Marine Biology*

1) Setting--Physical Description of the Area

The termination point of the *Running Fence* is a moderately exposed intertidal area of the Sonoma County coastline at about 38°, 16', 55.8"N., 122°, 59', 29.4"W. This portion of the coastline is a rocky intertidal region almost midway between Estero Americano to the north and Estero de San Antonio to the south and lies within the semi-embayment produced between Tomales Point to the south and Bodega Head to the north. The region of immediate concern is a strip of very steep rocky coastline of approximately 1500 feet in length delimited on either side by very steep slopes. Access can be gained to the cliffs above the designated area only by crossing private land, and necessitates walking several miles or the use of a four-wheel drive vehicle over open country. Final access must be made by foot down a very steep cliff to the center of the study area.

The slope immediately above the intertidal area shows signs of considerable erosion with both rock and dirt from slide activity accumulating along the bottom of the slope and there are signs of severe erosion on the two cliffs limiting the study area to the north and south.

To facilitate a discussion of this intertidal region, it has been arbitrarily subdivided into four areas (Area 1, 2, 3, and 4) as illustrated in Figure 7 . These areas are based predominantly on topographical features. For reference purposes, the figure also includes the ranges of the various intertidal biotic zones according to tidal datum (=mean lower low water, 0.0 feet).

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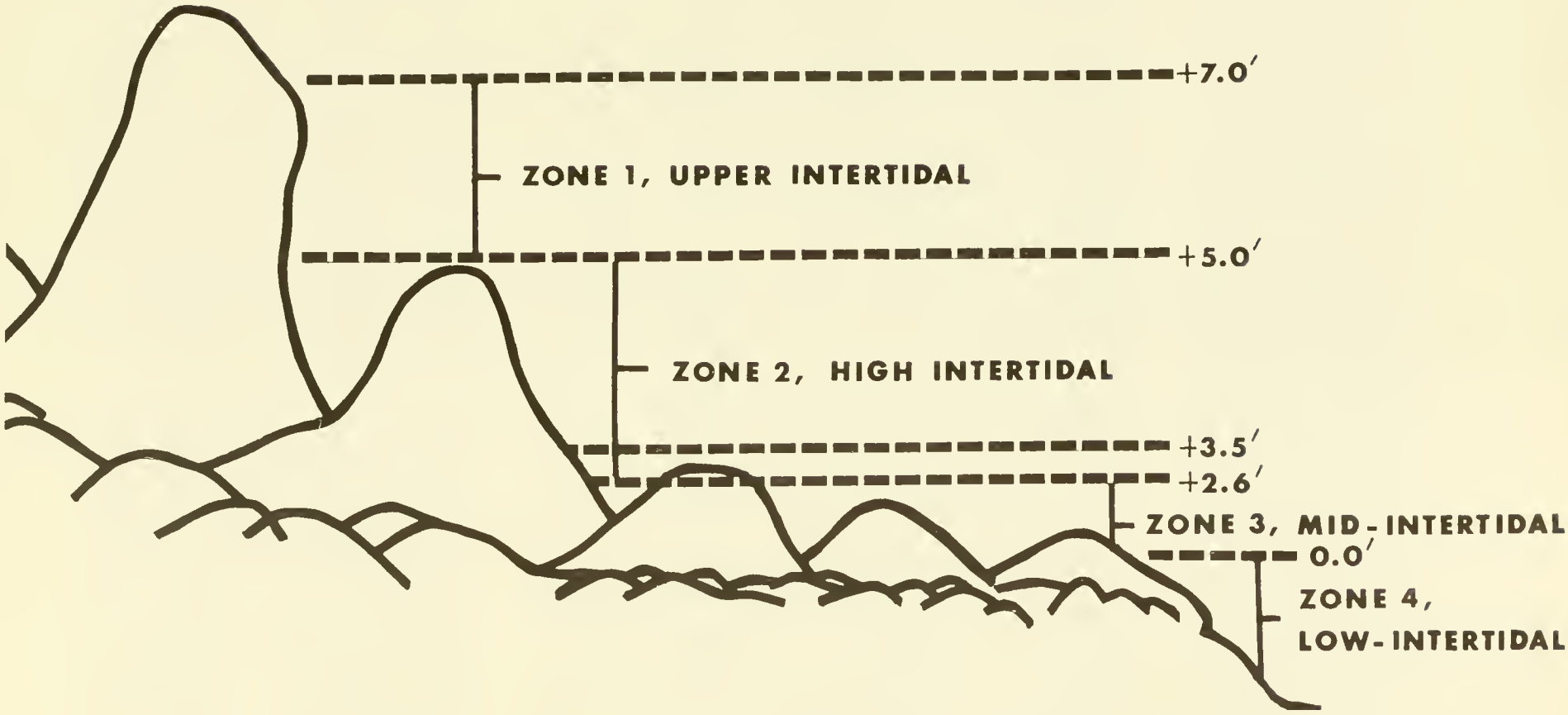
*This subsection was prepared by Dr. Welton L. Lee, California Academy of Sciences, under direct contract with the Sonoma County Planning Department. It covers the environmental impact of the *Running Fence* on intertidal and subtidal communities. The study area was visited on September 5, and September 8, 1975. The first visit allowed for preliminary observations to be made during a high tide (+5.0 ft.) (tidal datum is taken as mean lower low water); detailed observations of the biological communities were made during the low tide period (0.0 ft.) on September 8. Observations by other investigators are cited specifically in the text.



Diagrammatic cross-section of the study area showing designated Areas (Area 1, 2, 3, and 4) and biotic zones. The tidal height is given in feet relative to tidal Datum (= mean lower low water).

FIGURE 7 ELEVATION OF MARINE BIOLOGY STUDY AREA

Area 1: Area 1 is composed chiefly of rock rubble and very large boulders. The area encompasses a tidal range from about +4.0 feet to +10.0 feet. This area, closest to shore, encompasses the supralittoral or splash zone, the upper intertidal (+5.0 feet to +7.0 feet) and part of the high intertidal (+2.6 feet to +5.0 feet). The rock and boulders here have apparently accumulated both from slide activity and from rock movement due to very severe wave action. Coarse gravel, cobble, and small rocks are interspersed in between the boulders and rock rubble.

Area 2: Area 2 includes the high intertidal (+2.6 feet to +5.0 feet and a portion of the mid-intertidal (0.0 feet to +2.6 feet) and is similar in nature with fairly large boulders sitting on a rock and gravel substrate. The northern and southern thirds of the study area are rocky with the central portion consisting of a gravel to cobble beach interspersed with a few large boulders.

Area 3: The mid-intertidal (0.0 feet to +2.6 feet) and low intertidal (-2.0 feet to 0.0 feet) are included in Area 3. This area consists of large boulders set on a gravel and cobble substrate extending seaward from about 25 to 100 yeards. The tops of the rocks closest to shore reach to about the +3.5 foot level. Offshore, the rocks are barely submerged at about a 0.0 foot tidal level. The slope here is moderately steep with an even steeper drop at the outer edge.

Area 4: The steep drop at the outer edge of Area 3 drops to a subtidal (-20 feet to -40 feet) sand substrate, Area 4.

The entire intertidal is semi-protected by a series of offshore rocks and/or reefs which are more extensive to the north. These occur out to a distance of approximately 1000 feet or more from shore.

There is much evidence of extreme scouring and heavy wave action. Virtually all of the rocks in the intertidal and splash zones are highly polished as a result of this scouring. The gravel beach area has a berm of cobble several feet high and the entire intertidal and supralittoral area is strewn with debris including much algal and benthic invertebrate material torn loose from lower intertidal zones offshore, as well as several logs of considerable size.

The area can be generally designated as a moderately steep rocky intertidal, often swept by heavy seas, and showing evidence of considerable scouring by rocks and/or sand.

Off the Central California Coast, we find that wave action, current, and temperature are largely influenced by a series of

marine seasons. Three distinct hydrographic periods have been elucidated by Solin and Abbott, 1963. These are:

1. The Upwelling Period: This occurs from March to July or August and is the longest of the three periods. It is dominated by winds from the north or northwest and by considerable upwelling of deeper, colder water. Coastal conditions are usually moderately calm and strongly influenced by heavy fog which is a result of the interaction of the cold upwelled water on warmer, moist air above.

2. The Oceanic Period: This occurs in September and October when the winds from the northwest are reduced, when upwelling essentially ceases and when, as a result, temperatures are highest along the coast. This season is characterized by generally very warm and calm sea conditions.

3. The Davidson Current Period: This lasts roughly from November to sometime in February and is characterized by winds from the south, declining sea temperature and domination by a northerly flowing current, the Davidson Current, which because of the Coriolis effect banks up against shore. This is the period of our winter storms and the roughest seas.

Knowledge of the effects of these hydrographic "seasons" suggests that the greatest scouring in the area would occur during the Davidson Current Period when winter storms would cause heavy wave action to penetrate the protection afforded by the offshore rocks and reefs. The period with least wave action and scouring would be the Oceanic Period when seas are calmest and the weather most often clear and warm. It is this latter period which has been selected for the construction and viewing of the Running FEnce.

2) Setting--Biological Description of the Area

Comparison of the study area to other Central California intertidal regions.

At all tidal levels, the populations observed were typical for the kind of habitat in which they were found. There was no evidence of endangered species or unusual or peculiar organisms that might be considered as being of special biological significance.* The area is typical for exposed intertidal regions subject to severe

*Local biologists, familiar with the area, were consulted and concurred that the area was not biologically unique (see Appendix B, Supplementary Contact List, prepared by Dr. Lee).

scouring. For this reason, the communities represented are more impoverished than the usual, moderately protected, intertidal areas along the California Coastline.

The assemblages seen at the study area are common to multitudes of intertidal sites along the Central California Coast and do not represent unusual or unique biological systems. Detailed biological description follows.

a) Area 1: Although it was easy to see that wave splash reached the higher rocks in this area, as evidenced both by direct observation during high tide and by the occurrence of a fine growth of a bacterial and diatom scum over the seaward surface of these rocks, there was little evidence of any other organisms. The sole resident was the maritime isopod *Ligia (Megaligia) occidentalis* Dana, 1853. Large populations of this isopod resided in the cracks and crevices of these rocks but the barnacles and limpets often expected in such a location were not to be found. These upper rocks showed signs of severe scouring and weathering and this one factor probably excluded the permanent appearance of any other organisms. In short, this zone was dominated by a single isopod species and little else but a very sparse bacterial-diatom film. Below the splash zone, the rocks were severely scoured and no organisms were evident even under the rock and cobble substrate.

b) Area 2: From about the +5.0 foot level to about +2.5 feet, the biological community consisted chiefly of littorines, limpets and barnacles. The highest areas of this zone had very extensive populations of the two common intertidal littorine molluscs, *Littorina planaxis* Philippi, 1847 and *Littorina scutulata* Gould, 1849. *L. planaxis* was relatively sparse but the populations of *L. scutulata* were very large. *L. planaxis* usually occurs at a slightly higher tidal height than *L. scutulata* and in this region, this relegated these molluscs to the very tops of the larger boulders. It is probable that inadequate space was available for *L. planaxis* to become as abundant as the other species. Throughout this zone were to be found very large populations of limpets. Chief among those found in the area were *Collisella digitalis* (Rathke, 1833) and *Collisella scabra* (Gould, 1846) with some *Notacmea persona* (Rathke, 1833) occurring in cracks and crevices. These populations were sparse on the seaward faces of the boulders except in cracks and fissures in the rock, but much more extensive on the sides and backs of these same rocks. Immediately below were extensive populations of two barnacles, *Balanus glandula* Darwin, 1854 and *Chthamulus dalli* Pilsbry, 1916. An occasional specimen of *Chthamulus fissus* Darwin, 1854 was to be found at the higher intertidal areas. These populations were extensive in more protected places such as rock surfaces protected by other surrounding rocks, or the sides of rocks most protected from the prevailing wave action. At the lower portion of their range, they formed extensive mats over many of the boulders.

The last species in this zone of any note were two gastropod molluscs. One, *Tegula funebralis* (A.Adams, 1855) was only found occasionally in dense clusters at the bases of the rocks in Zone 1, and always in the most protected areas. The second mollusc, *Nucella emarginata* (Deshayes, 1839) was scattered throughout the barnacle covered rocks.

DISCUSSION (Area 2)

Several interesting points were noted regarding the occurrence of organisms in this portion of the intertidal. First, it was obvious that while all of the species noted were to be expected at this tidal level in such a habitat, their distribution was strongly influenced by one factor, exposure to wave action. Much of the rock surface on which these organisms could reside was highly polished due to abrasion by both rock and sand. In these areas, no organisms could be found. This principally occurred on the seaward face of rocks and at their bases where they were scoured by the gravel and cobble substrate. Distribution of almost all of those species noted was highly irregular and a perusal of this distribution pattern could be utilized to elucidate small scale current patterns and local wave exposure. Perhaps most interesting was the size-class distribution evident in most of these populations. In the center of the intertidal study area where wave action and scour was greatest, the populations showed the domination of one size class, usually smaller, younger animals. For example, populations of *Littorina scutulata* Gould, 1849 showed a single size class (about 2 mm) in the central, more exposed region. To the north and south where offshore rocks afforded substantial protection from wave action, the populations were represented by specimens of all size classes with no single size class predominating. The same phenomenon was most notable also in populations of barnacles. Presumably, the one size class seen in the more exposed areas represents a single settlement which probably is substantially destroyed at the outset of the winter storms. It should also be noted that, for many of these organisms, larval settlement itself could well be prevented as a result of wave shock and scour. To the north and south in more protected areas, mortality is probably due to a variety of causes, none quite so severe as the scouring noted above, and the organisms can survive over a considerably longer time allowing for a more mixed population structure.

The littorines and limpets, representing the vast majority of organisms in this area, are already adapted to heavy wave action by their morphology and/or through behavioral means. They feed predominately upon the abundant bacterial and diatom scum covering the rocks. This source of food also is virtually unaffected by wave action. Barnacles, on the other hand, are particulate feeders dependent upon suspended material brought to them by currents and waves. Barnacles, however, are highly susceptible to scouring and while food is certainly not a critical factor in this location,

their distribution is severely limited as a result of scouring activity. This is true also for *Tegula funebralis* (A. Adams, 1855) which, in this area, feeds predominantly on algal debris thrown up by the wave action. Its distribution is largely influenced by the combination of availability of food and protection from heavy wave action.

The chief predator, principally on the barnacle *Balanus*, is the Gastropod Mollusc *Nucella emarginata* (Deshayes, 1839) which is even more restricted in its distribution for the same reasons. One species, *Tegula funebralis* (A.Adams 1855) has a very limited distribution but is present here as a direct result of heavy wave action, which distributes algal wrack up into the intertidal, where it serves as a rich source of food. It is to be noted that this animal likewise can utilize attached algae and diatom scum for food but prefers wrack, especially brown algae. *Nucella* were seen only in areas where there was sufficient relief on the rocks to allow them to retreat from the more exposed areas.

c) Area 3: The most apparent feature of this area is the presence of sparse aggregations of the red alga *Endocladia muricata* (Postels and Ruprecht) J.G. Agardh, on the tops of the rocks closest to shore. This occurs on most of the rocks whose tops do not fall below about the +3.0 foot level. In the central part of this portion of the intertidal area, the tops of the rocks may serve as a substrate for organisms other than the *Endocladia,* depending on the degree of protection afforded from wave action. In the more-protected areas, one finds either large masses of the barnacle *Balanus glandula* Darwin, 1854 (with *Chthamalus dalli* Pilsbry, 1916 and *Chthamalus fissus* Darwin, 1854) or sparse mats of the alga *Pelvetiopsis limitata* (Setchell) Gardner with some *Fucus distichus* Linnaeus, below. On rocks with a more-flattened surface, some *Mytilus californianus* Conrad, 1837 may be found interspersed with the gooseneck barnacle *Pollicipes polymerus* Sowerby, 1833. Populations of both of these organisms, however, are very sparse.

In the most protected areas, namely those to the north and south extremes of the study area, the rocks show a sparse cover of *Pelvetiopsis limitata* (Setchell) Gardner with massive growths of red alga *Porphyra perforata* J.G. Agardh.

Immediately below this uppermost band of organisms, the rocks in Area 3 all show a more or less thick skirt of red algae. This band includes *Gigartina papillata* (C.A. Agardh) J.G. Agardh, *Gigartina agardhi* Setchell and Gardner, and other red algae typical of this zone. It should be noted that the tidal ranges of the bands of organisms in Area 3 show considerable variation depending on the degree of exposure. Likewise, it is important to note that the various algal bands mentioned all support their usual complement of microfauna. For example, the

Endocladia supports substantial populations of gammarid amphipods such as *Oligochimus lighti* Barnard, 1969, and the *Porphyra* shelters large populations of the gastropod mollusc *Barleeia*, possibly *B. baliotiphila* Carpenter, 1864.

Below this band of red algae, the effects of scouring were most notable and the plants and animals normally found at this tidal level were not present. This area was essentially bare, at times polished, and supported only one macrofaunal species in any abundance at all. This was the starfish *Pisaster ochraceus* (Brandt, 1835). This starfish was exceedingly abundant just below the skirt of red algae and especially on those rocks supporting large barnacle populations. Other than this single species, little else was visible in the central portion of the study area with the exception of occasional strands of the brown alga *Egregia menziesii* (Turner) Areschoug and, at the very outer edge of the rock shelf, the brown alga *Cystoseira osmundacea* (Menzies) C.A. Agardh. In the more-protected areas to the north and south of the study area, the region below the skirt of red algae supported little else than encrusting and erect coralline algae with their associated microfauna. The only obvious macro-invertebrates were the sea anemones *Anthopleura elegantissima* (Brandt, 1835) in the shallower portions and *A. xanthogrammica* (Brandt, 1835) in deeper water. Both of these anemones were almost always found in bare rock and cobble. The usual splendid array of tunicates, sponges, hydroids, etc. which characterize this lower intertidal zone were nowhere to be seen and once again, the apparent reason was scouring.

DISCUSSION (Area 3)

The rock shelf of Area 3 is not dissimilar from other central coastal intertidal areas of the same tidal range. The populations seen are all typical of their respective tidal heights and the mid-intertidal area in particular supports the kinds of populations normally expected. The major predators of these populations are starfish, which feed on sessile forms such as barnacles and bivalve molluscs, and intertidal fishes and birds, which prey upon those animals living on the various algae found in the area. The greatest number of organisms noted in this intertidal area are either filter feeders such as *Balanus* or herbivores feeding on the attached algae.

Once again, the influnce of wave action and scouring were notable. The rocks in this area showed essentially a "cap" of growth below which was little more than bare rock. The usual rich and diverse lower intertidal zone was essentially bare and the delicate organisms which should be common here were nowhere to be found.

d) Area 4: Direct observations were not made on this area. In a region such as this, dominated by scouring and heavy wave action, one would suspect considerable movement of sand which would preclude

any large, permanent populations of organisms. While no observations could be made, it is probable that the sand area in the deeper water would be essentially bare or would support small populations of organisms which would disappear at the outset of heavy seas.*

OTHER NOTES

Two California sea lions were observed during the study period (September 5 and 8) and possibly a single harbor seal near the offshore islets which appeared to be rich and less subject to the scouring seen intertidally.

Birds also are present in some numbers and diversity along the immediate coast area. On July 22, 1975, the black-bellied plover, the marsh hawk, the turkey vulture, the cormorant, the California brown pelican, the black oyster catcher, and various gulls were observed by T.H. Lindenmeyer (ESA) and B. Heneman (representing Running Fence Corporation).

3) Impact--Description of Changes within the Intertidal and Subtidal of the Study Area as a Result of the Project

Details of the changes to be made can be obtained elsewhere. Suffice to say that there is no construction within the intertidal itself. In addition, the pole closest to the ocean will be located near the bottom of a grassy slope which ends at a lip approximately 20 feet above the high tide line of the study area. That pole will be situated far enough on the landward side of the lip so that guy anchors running seaward from the pole will be set in solid ground. These anchors will be set back from the lip so as not to contribute to sloughing. The anchors will be tested to working load. No anchors or anchor cables will be any closer to the intertidal zone than the top of the lip.

From the top of the last pole (approximately 40 feet above the intertidal), the top cable (7/8ths inch wire rope) will run seaward approximately 550 feet, where it is attached to the apex of a V-shaped bridle. The legs of the bridle extend seaward another 450 feet to anchors, the type of anchor to be determined by the type of bottom (Danforth 200-H, if the bottom is sand). The bridle is also of 7/8ths inch wire rope. A flotation buoy at the junction of the top cable and bridle will be used to give the top cable the propse sag for display of the fabric panel. The top cable and bridle will be marked with any buoys required by the Corps of Engineers or the Coast Guard.

*These judgments were confirmed by subsequent observations by Environmental Research Consultants, Inc. See Appendix M.

During the maximum two-week display period in September, a 300 foot long nylon panel, tapered from a width of 18 feet where it is attached to the first pole at the top of the cliff to a width of about two feet at the seaward end, will be pulled out on the top cable on blocks. The bottom of this loose-footed panel will be weighted to keep it vertical in normal winds. The bottom of the fabric panel will be under water a maximum of two feet toward the seaward end. Crossing the intertidal zone, the bottom of the fabric panel will be several feet above the water at high tide.

In short, the only changes to be made are 1) the deposition of two sea anchors 1000 feet offshore; 2) the presence of a wire rope through a small portion of the offshore water column; 3) the suspension of nylon panels into the surface waters of the offshore area. No changes are planned for the intertidal area itself. The timing of these changes is as follows: one month construction period in August, two weeks display in September and two weeks removal time.

The two oceanographers consulted (see Appendix B, Supplementary Contact List) feel that if the seas are relatively calm, the combination of 7/8ths inch wire rope and two Danforth Anchors should be sufficient to hold the *Fence* in place. Since the display of the seaward portion of the *Fence* is planned for the oceanic period, our calmest marine season, there is small likelihood of there being sufficiently violent weather to dislodge this portion of the *Fence*. However, should we experience unseasonable bad weather during the display period, the worst that is likely to happen is the collapse of the final shore poles and the disengagement of the anchors. In such an event, the wire rope and nylon panels would drop into the intertidal and swirl around. The wire rope would probably eventually bury itself.

4) Impact--Discussion of Potential Impacts

Several significant environmental values can be identified with the general region surrounding the study area. These are: scenic-aesthetic, recreational, wilderness-pristine, geological, and biological, including possible endangered species habitat, critical ecosystem, and fish spawning and nursing.

a) Scenic-aesthetic

The study area is unquestionably a scenic region with great aesthetic value. From the cliffs above the intertidal zone one can obtain a vista of virtually the entire area between Bodega

Head to the north and Tomales Point to the south. It is a region of sheer cliffs and rugged, rocky coastline.

The scenic and aesthetic values of the area must be placed into context with present accessibility to the general public. Like much of the land between Estero Americano and Estero de San Antonio, access to the sea is through private farm land. This access can only be made over fenced, private land with no maintained roads. Presently, the only people who have the benefit of the scenic and aesthetic attributes of the area are those working on their farmlands. One possible exception is the access afforded from the sea and/or air. Noteworthy is the fact that normally, the region is severely restricted to use by a very minor portion of the general public.

b) Recreational

In the study area, there are no facilities other than the potential for fishing which lend themselves to recreational use. Hiking, etc. is prohibited due to the private ownership of the land and the difficult access. Fishing of any kind from shore is likewise prohibited for the same reasons. Offshore fishing is possible but highly improbable due to the abundance of offshore islets and submerged rocks, not to mention the restrictions due to potential heavy wave action.

In brief, the area, because of its location and isolation, now has little recreational potential. The brief incurrence of the *Running Fence* should not impose even short term changes on this potential.

c) Wilderness-pristine

The area in question can hardly be stated as being wilderness or pristine. Intertidally, the area is similar to many hundreds of like sites located along the California coastline. The changes to take place are all of very short duration and should only impact the deeper waters where the anchors are to be set, and perhaps a small portion of the offshore surface waters. This impact will be minor as well as temporary.

d) Geological (Biological Implications)

Two possible surface alterations can be foreseen. First, the placement of the final on-shore support pole might possibly cause some erosion and sloughing of rock or dirt onto the upper intertidal area. Second, the placement of sea anchors offshore might conceivably disturb the bottom sediments.

Both of these possibilities are almost meaningless in light of the nature of the area. First, there already is and has been considerable erosion and sloughing of cliff material onto the intertidal. This

area, biologically, is one in which the present communities have either adjusted to this natural phenomenon or are displaced as a result of it. The possible addition of a minuscule amount of additional erosion is considered to be irrelevant.

Similarly, there is every evidence of considerable sand and rock movement offshore and intertidally. The presence of two sea anchors for a two week period is likely to have no biological effect. Any possible biological changes that might occur would be insignificant relative to the natural phenomena which occur all of the time. Here, no long term changes are anticipated and, if there are any short term changes, they would be of no significance whatsoever.

e) Biological

To begin, the area is not of unique biological significance. It is a habitat duplicated in hundreds of areas along the California coastline and does not represent some critical ecological system. There is no evidence or knowledge of endangered species present.

Both commercial and recreational fishing are prohibited already as a result of almost impossible access both from sea or land and the vagaries and extremes of wave action in the area.

In addition, staff member of the California Department of Fish and Game* have indicated that the region is not a significant breed ing or spawning area, and holds no special significance relative to sports or commercial fisheries.

To assess the maximum potential impact on the biological communities in the area, one can assume the worst possible sequence of happenings likely to occur during the two to four week period when part or all of the *Fence* will be in place.

Two events could bring about some problems with the *Fence* which might impact on the intertidal. First, the sea anchors could give way during a severe storm. In this contingency, the cable could tear loose from the anchors and the cable with the screen would be thrown about the intertidal. In such an event, many organisms could possibly be crushed or torn loose from the rocks. In addition, such a mass of nylon and cable tangled on the rocks would pose a considerable clean-up problem. Loose nylon panel and cable might be of some danger to anyone in the immediate region during periods of heavy wave action. Simultaneously, it is possible that part of the last shore pole would be torn out, causing some sloughing of rock and/or dirt.

*Appendix B, Supplementary Contact List.

A second possibility is that the partially submerged nylon panels would tend to accumulate surface debris and eventually give way under the pressure. Likewise any large floating object such as a log could conceivably break the cable or pull the anchors loose.

In either of these events, the impact would be of little or no significance other than making removal more difficult. The area is normally strongly influenced by scouring. The amount of additional scouring incurred as a result of the proposed events would be far less than occurs naturally. Those organisms destroyed would be quickly replaced but subject to the same potential destruction by natural scouring forces.

Similarly, any erosion or sloughing of material resulting from the collapse of the terminal pole on-shore would be minuscule relative to natural sloughing and erosion.

It is appropriate to note again that the California brown pelican does utilize the shallow coastal waters where the *Fence* route enters the ocean. It is impossible to predict how individual birds of this species might react to the cables and fabric of the *Fence*. It does seem likely that these would be very visible, and that the irregular activity, as the *Fence* moves with wind and wave action, would be sufficiently alarming to cause the birds to stay away from the *Fence*. If this is the case, it is not anticipated that the *Fence* will have any adverse effect upon the pelican.*

5) Mitigation

The plans for constructing and displaying the *RUNNING FENCE* show considerable forethought relative to the possible impact on the intertidal and subtidal regions. First, construction and display are programmed for the oceanic period when wind and wave action are normally of little significance and seas are almost always calm. Second, the display period is for only two weeks and the materials are to be fully removed within two weeks of the display period. Finally, the only physical disruption to the oceanic area is the placement of two sea anchors and a small portion of the nylon panel into the nearshore waters.

*Conclusion of T.H. Lindenmeyer (ESA), based on discussion with Mr. Daniel W. Anderson, Federal Bureau of Sport Fisheries and Wildlife.

6) Discussion and Recommendations

The short period allowed for an investigation of the intertidal area obviates any in-depth analysis of the marine communities present. However, the area in question is so typical of other exposed coastal areas along this coastline that a description of the major faunal elements and the prevailing environmental conditions is sufficient to make a reasonable assessment of the impact.

The placement of the terminal portion of the *Running Fence* poses no irreversible or long term problems to the marine communities in the area nor does it interfere in any way with recreational, scientific, or other potential uses.

Short-term impacts are likely to occur only if the region is beset with unseasonable stormy weather. The likelihood that this will occur is minimal; even if it did occur it would bring about minimum alteration of the local marine communities. Such alterations would be almost assuredly less drastic than would occur due to natural causes and would hardly be noticed against the background of natural scouring frequenting this intertidal region.

The only major impact likely is the effect on the scenic and aesthetic attributes of the region. Here, we are faced not with a scientific assessment but with value judgments. It is likely that there will be substantial numbers of people subscribing to totally opposite assessments of the artistic and aesthetic values of the *Fence*. Pertinent to this point is the fact that the *Fence* will be displayed only for a two week period during a period representing the mildest hydrographic conditions. Within two weeks of the display period, the entire *Fence* is scheduled to be removed.

The only recommendation that can be made to reduce the possible impact of the *Fence* on the intertidal is to require that the materials utilized for the marine portion of the *Fence* meet the specifications needed to withstand the stresses of reasonable storm activity even though this is not likely to occur at this time. Consulting oceanographers and engineers should be able to supply the necessary specifications. Assurances should also be made that the materials will indeed be removed two weeks after the display period.

b. Terrestrial Biology*

1) SETTING--GENERAL DESCRIPTION OF THE REGION AND THE ROUTE

The proposed route of the *Running Fence* lies virtually entirely within a region known locally as "The Petaluma Wind Gap". This is a major climatological feature of the north bay region which has recognizable effects on the local ecology. The generally low-lying topography, consisting of the drainage systems of Estero Americano and Estero de San Antonio, allows cool moist winds to flow directly to the interior Petaluma Valley, a distance of approximately twenty miles. The biological effects of these year-round winds are many and obvious, both in the type of vegetation supported and in the increased length of the growing season. The latter frequently entends into early summer, in distinct contrast with immediately surrounding dry, brown areas.

It is difficult to know in any detail what the original undisturbed vegetation of the Gap was since there has been considerable disturbance for agricultural purposes for a period extending back into the nineteenth century. The severity of the disturbance appears to be greatest in the eastern portions and least on the immediate coast, but perhaps only on the final slope into the ocean can we see relatively undisturbed vegetation.

Because of the long history of disturbance and the somewhat unique conditions produced by the Wind Gap described above, it is difficult to classify much of the proposed route into the usual vegetational and plant community categories. Most of the course of the *Running Fence* would traverse heavily grazed rolling, to sometimes, steeper, hills which form the topographic outlines of Americano Creek and San Antonio (Stemple) Creek. Along the top of Meacham Hill on the eastern end and for nearly twenty-four miles in a westward trending zig-zagging pattern, the proposed route, for the most part, stays on ridges and mid-slope levels. It rarely passes through or even near any woody vegetation. Where this does occur, such as at the crossings of several of the large tributaries of the Esteros (creeks), the contact is minimal and insignificant in its potential impact on plant life. Virtually all of the trees growing in the vicinity of the route are woodlots or windbreaks of planted Blue Gum (*Eucalyptus globulus* Labill.) or in one instance, the Osage Orange (*Maclura pomifera* Schneid.).

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*This subsection was prepared (under direct contract with the Sonoma County Planning Department) by Drs. John R. Arnold and Charles Quibell, both of California State College, Sonoma.

Much of the inland portion of the route might be best described as modified Northern Oak Woodland*--without oaks. Whether the oaks were removed at an earlier time or whether prevailing windy conditions of the Wind Gap are responsible is difficult to determine.

Some apparently undisturbed sites in the vicinity of the eastern end of the Wind Gap have good populations of Garry Oak (*Quercus garryana* Dougl). However, a case could be made that these sites are more protected from the winds. Some north-facing slopes within the Gap may have borne a Mixed Evergreen Forest, a possible remnant of which can be seen near the intersection of Meacham and Pepper Roads opposite Section 19 of the *Fence* Plan.

The vegetation which remains along the major portion of the route can best be described as essentially a mixture of Valley Grassland and Coastal Prairie species together with a high proportion of introduced weedy annuals and perennials. Many Coastal Prairie and even some Coastal Strand species are found considerably further inland than is usual because of the climatic features of the Gap. Since faunal distribution is most frequently predicated on vegetational features, it is to be expected that a shallow "inland sag" may also occur in Coastal animal populations in this area. Figure 8 shows the route of the *Running Fence*, with potentially sensitive areas identified.

2) SETTING--PLANT LIFE

a) Introduction

Botanical field observations were made only during the third week in September 1975. Both lists and some prepared specimens of the plants seen along the route were made. These will be filed at the North Herbarium, California State College, Sonoma.

During the field work, a greater emphasis was made on the western end of the route between Valley Ford and the coast both because of the condition of the flora being more conducive to reasonable identification and also because it was judged that this constituted the less disturbed and therefore more disturbable portion. On-the-ground observations of selected sites inland of Valley Ford were made as well, including all areas expected to be sensitive as described below; but the whole course of the route was not walked out.

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*Vegetational terms follow Munz and Keck (1959).

FIGURE 8


SEG. 1
SEG. 2
SEG. 3
SEG. 4
SEG. 5
SEG. 6
SEG. 7
SEG. 8
SEG. 9
SEG. 10
SEG. 11
SEG. 12
SEG. 13
SEG. 14
1
2
3
4
5
6
7
8
TENTATIVE LOCATIONS
SUBJECT TO LAND OWNER
AND/OR COUNTY APPROVAL
POGOLIMI
BLUCHER
SONOMA CO
MARIN CO

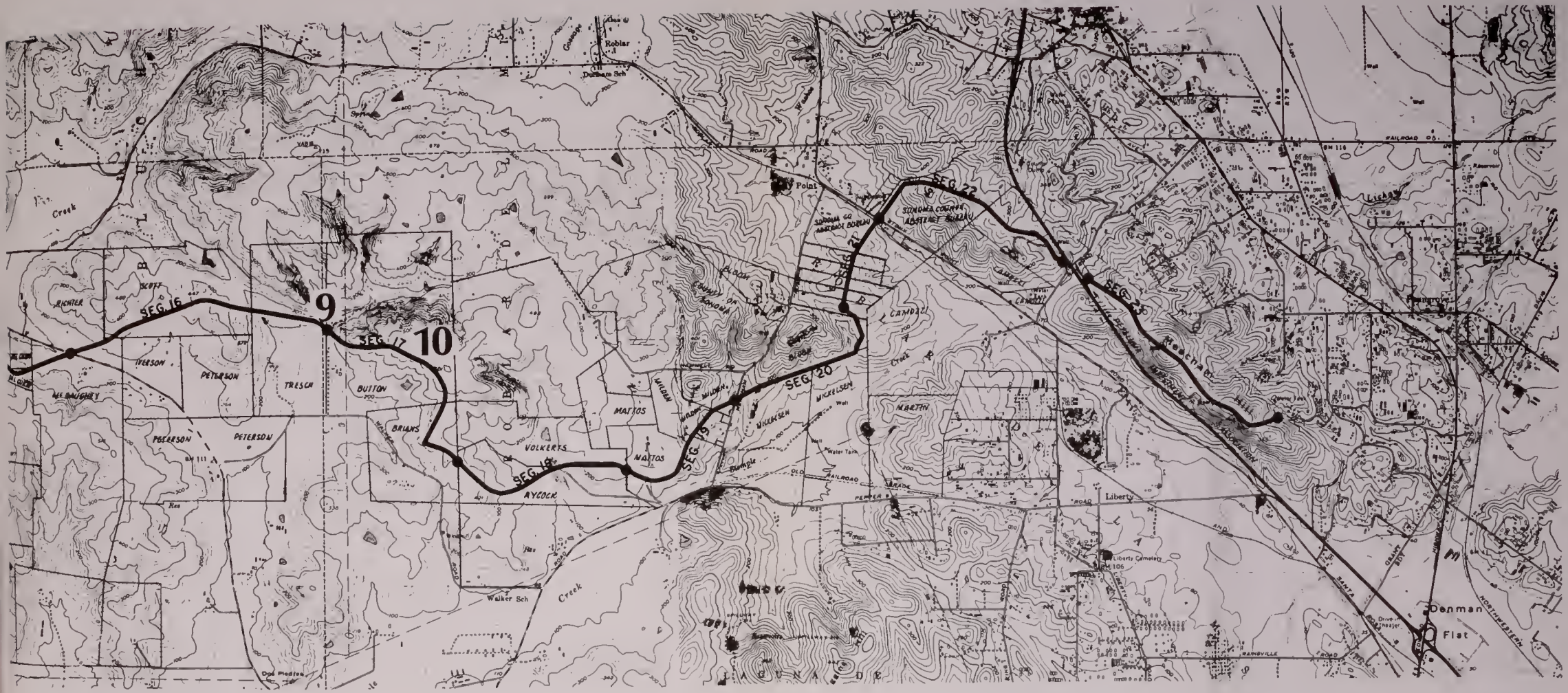
Running Fence

1-10 Sensitive areas

0 2000′

REFER TO FIGURE 3
FOR BASIC LEGEND

FIGURE 8 SENSITIVE PLANT AREAS



The following remarks must be predicated on a reiteration of the fact that field observations have been made only during the September dormant period and that a fully adequate picture which would allow certainty of conclusions was not obtained. However, a careful study of herbarium and literature records compiled from all of the major collections in California institutions makes it possible to formulate very strongly probable conclusions regarding the likelihood of occurrence of plants considered "Rare and Endangered Species" by the California Native Plant Society (CNPS) (Powell, *et al*, 1974). One of the preparers of this (terrestrial biology) sub-section (Charles Quibell) was an active contributor to the Society's Rare Plant Project which produced the document referred to above. He is, in addition, curator of the North Coast Herbarium of California, which houses the very extensive collections of Milo S. Baker, who became, during the first half of this century, the leading authority and most prolific collector of the flora of Sonoma County. As a result, there have been available either actual specimens or herbarium label records of each of the CNPS "Rare and Endangered Species" collected in this region back into the nineteenth century. In may instances, these records include habitat information, while in the others, knowledge of the restrictive ecological niches of the individual species is available from the literature. These, then, are the bases on which the following comments and suggestions for mitigation are made.

b) Setting--Classification and Description of Sensitive Areas

Sensitive areas in or potentially within the forty-feet-wide route easement of *Running Fence* can be classified into three categories: 1) Coastal Bluff and immediate vicinity; 2) Freshwater marshy or vernally wet areas; and 3) Rocky outcrops which have been protected from grazing. All but one of the rare or endangered species which could be encountered by the construction of *Running Fence* would, with little doubt, be necessarily found in one or another of these habitats. This one, *Chorizanthe valida* Wats. (Sonoma chorizanthe) is described as occurring on "sandy soil of coastal mesas in Sonoma and Marin Counties". No individual of this species were seen in the field observations in preparation of this report, but due to the conditions of the area in mid-September, it is possible that they were overlooked.

- Coastal Bluff and Vicinity

Two plants could very well occur within the easement of the *Running Fence* in the last hundred yards before it enters the Pacific. They were not seen on September 13, but could have been missed because of the unfavorable season. These are: *Arabis blepharophylla* H. & A. (Coast rock-cress) which has been collected on Bodega Head and at Larkspur Rock (about one mile inland from Bodega Harbor on the south side of Highway 1), as well as further south in Marin County; and *Agrostis blasdalei* Hitchc. var. *marinensis* Crampton (Marin bent-grass)

the nearest collection locality for which is "among rocks just east of Dillon Beach".*

- Freshwater Marshy or Wet Areas

There is a maximum of five rare or endangered plant species which might occur in these habitats within the easement. Most have only been collected in marshes of some size, examples of which do not occur within the easement of the *Running Fence*:

Alopecurus aequalis Sobol. far. *sonomensis* (Sonoma alopecurus) "Marshy places on Pt. Reyes and in Sonoma County"

Carex albida Bailey (White sedge) "Open marshy places below 300', Sonoma County"

Campanula californica (Kell.) Hell. "Freshwater swamps near coast, Marin to Mendocino County"

Potentilla hickmanni Eastw. (Hickman's cinquefoil) "Rare in scattered marshy places, Sonoma to Monterey County"

Rhynchospora californica Gale (California beaked rush) "Bogs, Ledum Swamp, Pt. Reyes, and Pitkin Marsh, Sonoma County"

- Rocky Outcrops from Near the Coast to Well Inland: (Big enough to be ungrazed)

The Marin bent-grass, mentioned above under Coastal Bluff, more likely the Yellow Larkspur (*Delphinium luteum* Heller), and the Coast rock-cress (*Arabis blepharophylla* H. & A.) could occur on or around such rock outcrops. The larkspur in particular could be present without above-ground parts' being visible in September. This is a particularly sensitive plant since the only presently confirmed existing population consists of perhaps a few hundred individuals at Larkspur Rock described above, where it occurs with the Coast rock-cress. Earlier reports of the former species or of potential hybrids with it hint that it could occur south of this area. Both it and the Coast rock-cress could also be established well inland in this region because of the Wind Gap.

An annotated list of all of the other species listed by the CNPS as rare or endangered and from Highway 101 to the coast in Sonoma and northern Marin counties will be found in Appendix D.

*Also possible here is *Agrostis clivicola* Crampton var. *punta-regesensis* Crampton.

c) Impact--Instances of Sensitive Habitats*

- Rocky Outcrops

Several of these occur within or very near the easement as for example in the de San Antonio Compadres parcel and further inland on the Raven property. Other sites very likely exist along the route but it was judged that examination of them at this time would prove entirely inconclusive.

- Freshwater Marshy or Vernally Wet Areas

These vary from true vernal pools, two of which were observed near the edge of the bluff at the de San Antonio Compadres, to low overflow or flooding areas of San Antonio Creek, Stemple Creek or their tributaries.

These latter places are all heavily grazed now and appear to have been for a considerable period such that the proposed construction would seem to pose little, if any, additional impact threat. The vernal pools and their attendant relatively lush marshy areas could, however, sustain a significant impact if care were not taken to minimize the disruption during construction and removal of the *Running Fence*. In addition to these, a spring-seep area was examined part way down the final slope into the ocean at the de San Antonio Compadres. This and similar hillside seeps elsewhere along the route should be considered as sensitive and direct contact avoided when at all possible.

d) Mitigation--Recommendations for Mitigation of Impact on Plant Life

- Introduction

Mitigation suggestions pertaining to the floristic elements must be prefaced by the strong recommendation for a subsequent field survey to be carried out in the spring of 1976. The importance of this to any sensitive and responsible approach to the potential negative environmental impact on rare plants cannot be overstated. A major proportion of the flora, including virtually all of the species classified as "Rare or Endangered" by the California Native Plant Society in their *Special Publication No. 1* (1974), is for all intents and purposes, unrecognizeable during the dormant season.

*In the interest of conciseness, specific potential impacts are treated in the following subsection on mitigation

- Specific recommendations relating to the above-identified "Sensitive Areas"

Coastal Bluff - Since the placing of anchors and posts on the last slope and vicinity entering the sea will necessarily require hand tools or unicycles only, it is not expected that a serious impact will occur so long as attention is paid to minimizing the physical disruption of the soil surface. The seep area should be avoided, even by extensive foot traffic. At the top of this bluff there is a pair of vernal (springtime wet only) pools and surrounding lush somewhat marshy areas. If at all possible, these areas should be detoured around and vehicular traffic over them prevented. If passage across a lush area is necessary in order that a functional line be maintained for a low-impact entry into the ocean, this should be approached from the two sides rather than driven across by the various vehicles distributing materials, driving anchors, coring post-holes, etc.

Freshwater Marshy or Wet Areas Away from the Coast - These areas should not provide special problems for the construction or removal process *except* as one or more should prove to contain any of the rare or endangered species which could conceivably turn up in the spring survey recommended above. As a general rule, however, hillside seepage areas should be avoided or treated as suggested above under Coastal Bluff. In most instances, these seeps will be so small that this will prove no problem in compliance.

Rocky Outcrops - Here again, avoidance would be preferable, but where a close approach needs to be made, this should preferentially be made on or along the *south* sides of the outcrops in each case. It is the north-facing slopes of these microhabitats which support *Arabis blepharophylla* H. & A. and *Delphinium luteum* Heller.

3) ANIMAL LIFE

a) Introduction--Setting and Potential Impact

On the basis of recent visits to the easement of the *Running Fence* and to areas adjacent to the *Fence*; upon studies of the literature; and upon personal knowledge of Sonoma and Marin Counties, certain general statements may be made.

Most of the area to be traversed by the proposed *Running Fence* has been heavily grazed and much disturbed by man and his agriculture for nearly a century. Comments by local ranchers, hunters, and others lead us to believe that this area will continue to be much disturbed.

As to the animal populations now present that might be affected by the *Running Fence*:

- The invertebrates will be little influenced except as they are crushed by the impact of the trucks and feet of the workmen. The flying insects, such as the abundant grasshoppers, will only be briefly diverted.

- Of the amphibians, the tree frog (*Hyla regilla*) is probably the only one likely to be disturbed during the construction and viewing periods. Other present in the general vicinity will probably not be disturbed at all. See Appendix E for a list of amphibians.

- Very few reptiles were seen during our visits and no rare or endangered forms occur in that area. See Appendix F.

- Many birds are present in the area; in fact, some 68 species were seen in our short visits, yet only one endangered species, the Brown Pelican, occurs regularly in this area. The Peregrine Falcon (*Falco peregrinus anatuns*) occurs occasionally at Bodega Harbor to the north and at Bolinas Lagoon to the south and probably occasionally crosses this area. The California Brown Pelican (*Pelecanus occidentalis californicus*) occurs along the coast but our recommendations for modification of the *Fence* will probably protect these as well as other species and reduce the number of casualties to one as low as, or lower than, those created by telephone wires, power lines, and the highways. Appendix G lists those species observed by us in September 1975 and those likely to occur during the period of the *Fence* construction and viewing.

- Most mammals are nocturnal and so our determinations are based largely on previous experience, tracks, scat, and literature. Mice, especially the California Vole (*Microtus californicus*) are abundant. (Marsh Hawks and White-tailed kites were observed hunting over the grasslands regularly). Indications are that the Gray Fox (*Urocyon cineroargenteus*), Badger (*Taxidea taxus*), Black-tailed Deer (*Dama hemionus*), and Jackrabbits (*Lepus californicus*) are abundant. In some areas, Brush Rabbits (*Sylvilagus bachmani*), Bobcats (*Lynx rufus*), Deer Mice (*Peromyscus maniculatus*) and Woodrats (*Neotoma fuscipes*) are common. Ranchers state that the Norway Rat (*Rattus norvegicus*) is a pest in some areas. A list of mammals is presented in Appendix H.

With the possible exception of the Brown Pelican, no rare or endangered animal species are present in this region. It is estimated that the construction of the *Fence*, if modified as suggested, will not particularly influence the animal population.

b) Impact--Specific Sensitive Areas

The following areas are considered "sensitive" because of the possibility that the *Fence* and/or the supporting cables and poles will hinder the passage of wild animal life. It is assumed that the landowners will ask for sufficient passageway for sheep, horses, or cattle where such is needed.

- The ridge and ravines above the reservoir on the Button Property in the middle of Section 17 of the *Fence* route. This area constitutes a natural passageway of deer and the *Fence* could restrict their natural movements to water and cover.

- The crossing by the *Fence* of the branch of Stemple Creek between the Tresch and Button properties at the junction of Sections 16 and 17 of the *Fence* route. Same problem as above.

- The crossing of the Petaluma-Valley Ford Road between the Kirkland and Lepori properties--the junction between Sections 10 and 11 of the *Fence* route.

- The crossing of Americano Creek between the Titus and Albini properties, in Section 7 of the *Fence* route. A possible cripple-creating hazard.

- The Ridge-crossing *Fence* between the Estero Americano and the Estero de San Antonio. A possible barrier to migrating birds crossing between the two estuaries. One such area is at the end of county-maintained Estero Road--at a junction of two farm roads and a rather deep ravine. Fast migrating birds might well strike the cables and/or panels here (de San Antonio Compadre--Pellascio line).

- A similar situation could develop at a ravine just east of the Coastal Zone on the de San Antonio Compadre property.

c) Mitigation--Recommendations to Minimize the Effects of the *Running Fence* on Animal Life

- It is recommended that at least one opening of at least ten feet in width ad three feet high be left in the *Fence* on the ridge above the reservoir on the Button property. This will be unnecessary if the final line of the *Fence* crosses the ravines at the top in such a way as to leave gaps three feet high there. The opening to be left for the farm road will also aid the movements of deer and other vertebrates to the west of the reservoir.

- It is recommended that the *Fence* follow what appears to be its present plan to have the bottom of the *Fence* well over six feet above the branch of Stemple Creek on the west side of the Button property.

In any case, the bottom cable here should be at least three feet above the creek bed.

- At the crossing of the Petaluma-Valley Ford Road between Kirkland and Lepori properties, the *Fence* will probably not cause much of an obstruction to animal life since there will be a gap for Carroll Road as well as one over the main highway. However, space (3-5 feet) should be allowed on the south side (Lepori Property) between the restarting of the *Fence* and the dense vegetation against the farm fence to the west. If September, 1976 should be a rainy month, there will be a great deal of avian activity about the base of the *Fence*.

- Where the *Fence* is planned to cross Americano Creek (between the Titus and Albini properties), it is recommended that no panel or lower cable be placed across the creek. While this should leave a space at least as broad as the bank-to-bank free up to about 15 feet, an even better solution would be to have no cables crossing the creek. This area is used frequently for birds flying up and down the creek. In fact, in September of this year Great Blue Herons, Great Egrets, Mallards, Snipe, and Northern Phalarope were seen flying along the creek at the *Fence* crossing site.

- On the ridge between Estero Americano and Estero de San Antonio, it is recommended that gaps be left as follows:

  a. At the end of Estero Road where the *Fence* will cross the ravine in de San Antonio Compadre (just beyond the Pellascio line), it is recommended that a gap approximately 10 feet wide and 18 feet high be left at the middle of this deep ravine. This is desirable, even though there are openings at nearby roads on the banks above. Fast-flying, migrating birds might go over if the *Fence* is noted in time, but foggy nights or days might obscure the white panel.

  b. It is recommended that a full panel be omitted at the ravine at the west end of the de San Antonio property at approximately the beginning of the Coastal Commission Zone. Here, as in other places where the upper cable remains in place without a lower panel, white cloth or other visible strips 18-36 inches long should be hung at intervals of 5-10 feet to divert fast flying birds, single or in flocks.

- Where the *Running Fence* goes down the bluff and into Bodega Bay, the cables should have highly visible strips hung from them immediately and these should be in place at all times except when the panels are displayed. The rather constant breeze moving the strips should keep birds from striking.

- The lower cable should be at least three feet off the ground at some place on this slope to allow deer and sheep to pass.

4) PLANT and ANIMAL LIFE--CONCLUSIONS AND GENERAL RECOMMENDATIONS

Erosional Problems

Aside from the special sensitive areas mentioned previously in this subsection (Terrestrial Biology), we feel strongly that the greatest potential impact of the construction, display, and removal of *Running Fence* is that of rut formation by wheeled or tracked vehicles. It has been estimated that a minimum of seven separate vehicular passes will be required to distribute materials, set anchors, core postholes, erect poles and cables, set the panels, drop the panels, dismantle the rigging, remove the materials, and set the anchor cable stubs the required 18 inches below grade. This seems to us to be a very conservative (low) estimate of the number of transits which will be required. It may, in fact, be several times this number in some areas. Even this should not cause permanent scars so long as great care is taken not to traverse any sloped area which has not dried sufficiently to allow virtually no evidence of tire tracks other than that of crushed vegetation. This is especially important in the case of the steeper slopes where even slight depressions can produce channelization and inevitable erosion, with potentially ruinous results.

Mitigations would involve the reduction, to a minimum, of the number of vehicular transits over any and all segments of the route and the use of all already established lateral access roads except where these might pose an even greater threat of erosion.

Seasonal Problems

Extreme care should be taken to check each area to verify that the ground is sufficiently dry to support vehicles before starting construction in that area. It is recommended that an independent observer witness the early construction phases to assure compliance with this very important recommendation.

The panels should not be spread for the display period until the end of the Coastal Deer Season since even though there will be gaps in sensitive areas, unsportsmanlike hunters would be likely to use the *Fence* barrier to channel deer past posted shooters. Aside from other considerations, this could well produce a very dangerous situation in which hunters or other people are vulnerable to rifle bullets passing through the opaque but not bullet-proof screen.

Fire

The problem of an increased fire hazard in the region* due to the erection, display, and dismantling operations is of significant importance, both in terms of floral and faunal damage and of potential damage to real property. This is particularly true because of the fact that timing of the project places these activities in the driest time of the year. (In addition, it should be pointed out that, during the display period, *Running Fence* will function as a barrier to free movement by animals who, should a fire threaten them, could be caught against this "wall".)

Descriptions of the fabric have included indications that it is fire-resistant. However, it is likely that, should sufficient heat be applied, the material could melt and burn on the ground where dry vegetation would be ignited. Vandalism should not be ruled out in these considerations.

Fires on grazing land produce impacts that are essentially no worse than those caused by grazing itself. Also, there is no reason to believe that local fires will threaten rare or endangered botanical species.

As precautions, it is recommended that no smoking be allowed except at coffee or lunch breaks, i.e., not while the crews are moving through the fields along the route. It is expected that vehicles will conform to Division of Forestry specifications regarding spark and fire suppression and that each will carry extinguishers, shovels, and other fire-fighting equipment appropriate. In addition, it is understood that radio contact will be maintained with local fire fighting agencies.

Because of the vandalism and public smoking problems, it is recommended that monitors on duty during the display period be provided with access both to radio contact with fire fighting agencies as well as some fire fighting equipment.

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*Frequency of fire in the unincorporated areas of Sonoma County is documented in the Community Services Section. Most of these fires are man-caused grass fires. In general, the area is not subject to naturally produced fires, because of the local climate (moisture content).

5) PLANT AND ANIMAL LIFE--SUMMARY COMMENTS

- We have not considered the value of *Running Fence* as an art form nor as a construction project, but simply as an influence on native plants and native animals inhabiting the easement and the adjacent areas, including those animals likely to try to move through the easement during the period from April 1976 through September 1976.

- Because of the ephemeral nature of the *Fence*, and considering the safeguards suggested in the body of this report, it appears to us that, aside from possible erosion damage, the biological effects of *Running Fence* will be only temporary.

- Since construction, viewing, and removal will take place over a period of several months from Spring to Fall, it is recommended that periodic visits to the area be made by biologists. Such persons should be responsible for checking the effectiveness of the recommended mitigations and for recognition of potential presence of rare and endangered plants not visible in September. In addition, since minor re-routing may be demanded by soil conditions or construction problems, consultation with the biologists could be essential.

- Because of the nature of the plant and animal life, it is recommended that construction be begun last and the *Fence* be removed earliest in the area between Valley Ford and the coast.

- Potential impact of the viewing public should not be underestimated and some means of controlling or preventing access, especially to sensitive areas, should be provided. It is recommended that strong consideration be given to the closing of Estero Road at the intersection with Franklin School Road since there is no adequate parking or turnaround space beyond this point.

6) PLANT AND ANIMAL LIFE--COMMENTS ON SOME OF THE OBJECTIONS RAISE TO EARLIER REPORTS

- Fire Danger--It is our understanding that the synthetic fabric has low flammability and in fact "melts away from heat". It is also understood that each vehicle is to be brought into conformity with California Division of Forestry specifications for fire prevention and that in addition, each will carry firefighting equipment and maintain radio contact, either direct or indirect, with local fire control agencies (see Subsection 4 above).

- Used fabric and equipment--According to the applicant, agreements have been reached whereby all materials will be given to the owners of the properties traversed, the *Fence* will be removed as soon as possible after its two-week display period, and the materials will be dismantled and removed to mutually-agreed-upon locations by the erection crews.

- Wind action--Our understanding of the *Fence* design is that adequate tests have been performed to assure safe operation even in the event of strong winds. Features of the design which specifically bear on this problem are: anchors to be tension-tested to 14,000 pounds at time of setting; wire clips designed such that the top and sides of each panel will separate from upper cable and poles, respectively, before any separation with the bottom cable, thus allowing the panel to lay out and spill the wind but not be blown away.

- Cliff erosion--Since spectators cannot, according to the present plan, approach the coastal end of the *Fence*, cliff or bluff erosion will be affected only by construction and dismantling operations. Specific recommendations have been made to minimize this, including use of hand transportable tools on these and other steep and fragile slopes.

- General erosional effects along the route--It is recognized that much of the easement and adjacent farmlands have been overgrazed and greatly modified over a considerable period in the past and it is unlikely that these conditions will change in the near future. Specific recommendations in mitigation of the effects of the proposed *Running Fence* construction and removal have been made elsewhere in this subsection (Terrestrial Biology).

- Openings for wildlife--This subsection contains many recommendations which, if followed, it is expected will allow sufficient movement of larger wild animals to prevent serious impact on them. See Figure 8 and Section 3 c of this subsection (Terrestrial Biology).

2. SOILS/GEOLOGY/SEISMOLOGY

Setting

a) Topography.

The *Running Fence* project site traverses a topographic low along the westernmost ridge of the Coast Range. Along most of its length, this first line of hills along the coast is on the order of 1,000 to 2,000 feet above sea level. The gap between Bodega Bay and Cotati Valley, however, is generally less than 500 feet in elevation over its 12 mile length and 8 mile width. The well developed drainage in this area has dissected the landscape into rolling hills and broad valleys with 200 to 400 feet of relief. Slopes are generally gentle, but often exceed 25 percent; at the coastal bluff, generally slopes can reach 100 percent (see Figure 9).

b) Bedrock.

The oldest rocks in the area are of the Jurassic-to-Cretaceous-age Franciscan Formation. In this area these rocks consist of *melange*, an incoherent mass of crushed and sheared rock material containing small-to-huge blocks of coherent rock. Overlying these rocks on an old and irregular erosion surface are Pliocene-aged marine sediments known as the Merced Formation. These materials were deposited over the Franciscan rocks perhaps 4 million years ago, when this area subsided below sea level. Sand, silt and clay deposited in the old Merced embayment are today a nearly horizontal layer, up to 500 feet thick, of poorly cemented clayey sandstone and sandy mudstone (Travis, 1949; Rice and Strand, 1971; and Blake, *et al.*, 1971).*

Near the east end of the proposed *Fence* alignment, Segment 22 passes over the Petaluma Formation. This sedimentary claystone, siltstone, and sandstone also contains debris from the Franciscan Formation and the Sonoma Volcanics. Its age is approximately contemporaneous with the Pliocene Merced Formation, but the relationship is somewhat uncertain as their contact is at the Tolay Fault. Overlying the Petaluma Formation and forming the cap rock of Meacham Hill (Segment 23) are andesitic basalt lava flows of the Sonoma Volcanics (Fox, *et al.*, 1973).

c) Geomorphology.

As the area was again uplifted, the meandering channels of Stemple and Americano Creeks were initiated on the "mudflats" of the Merced bay bottom as it emerged above sea level. Continuing uplift was accompanied by down-cutting of the drainages, deeply incising them through the entire thickness of Merced sediment and into the underlying Franciscan melange. The last great ice age, 10 to 25 thousand years ago, lowered sea level by about 300 feet, allowing further down-cutting

*See Figure 10.


SEE FIGURE 3 FOR ALTERNATE ROUTE LOCATION
SEG. 1
SEG. 3
SEG. 6
SEG. 8
SEG. 9
SEG. 10
SEG. 11
SEG. 13
P O G O L I M I
B U G H E R
AMERICANO
BENEDETTI
BIANCHI
TITUS
ALBINI
SPALETTA
FARLEY
CASELLI
KIRKLAND
STEITZ
JONES
PORTER
MC CLELAN
ZIMMERLI
SONOMA CO.
MARIN CO.
Bloomfield
PELLASCIO
SAVER
POZZI
ESTERO
SAN ANTONIO

Running Fence

Slopes

50% or greater

25-50%

Prepared by C. R. Davis, ESA

0 2000'

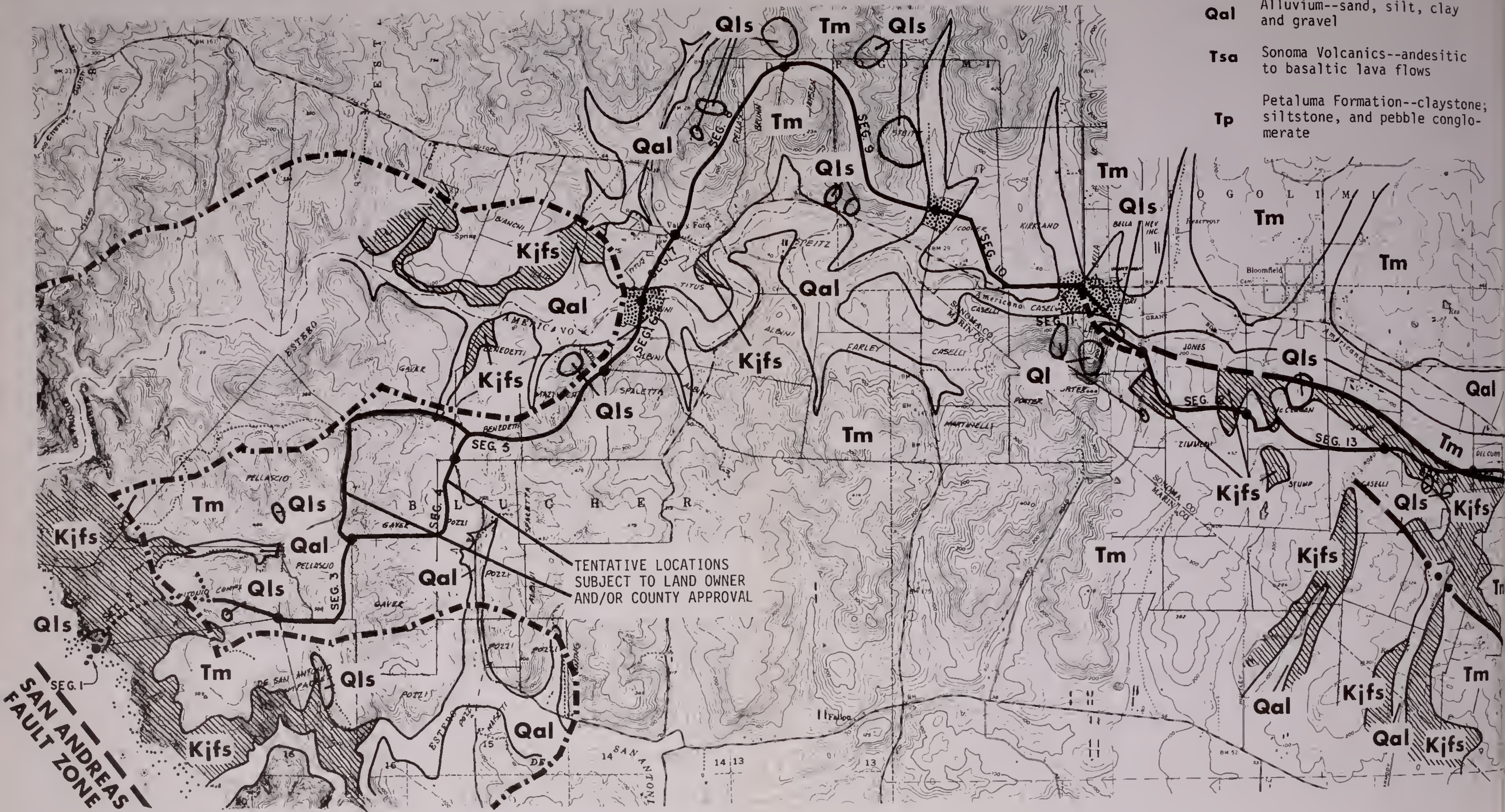
REFER TO FIGURE 3
FOR BASIC LEGEND

FIGURE 9 SLOPES

FIGURE 10

Geology

Qls	Landslide area
Qal	Alluvium--sand, silt, clay and gravel
Tsa	Sonoma Volcanics--andesitic to basaltic lava flows
Tp	Petaluma Formation--claystone; siltstone, and pebble conglomerate



Geology con't.

Tm — Merced(?) Formation--massive fine-grained sandstone and siltstone

Kjfs — Franciscan Assemblage--sheared shale and sandstone with chert and greenstone

Formation Contact

Geology con't.

Fault--dashed where approximate, dotted where concealed

Soil Constraints

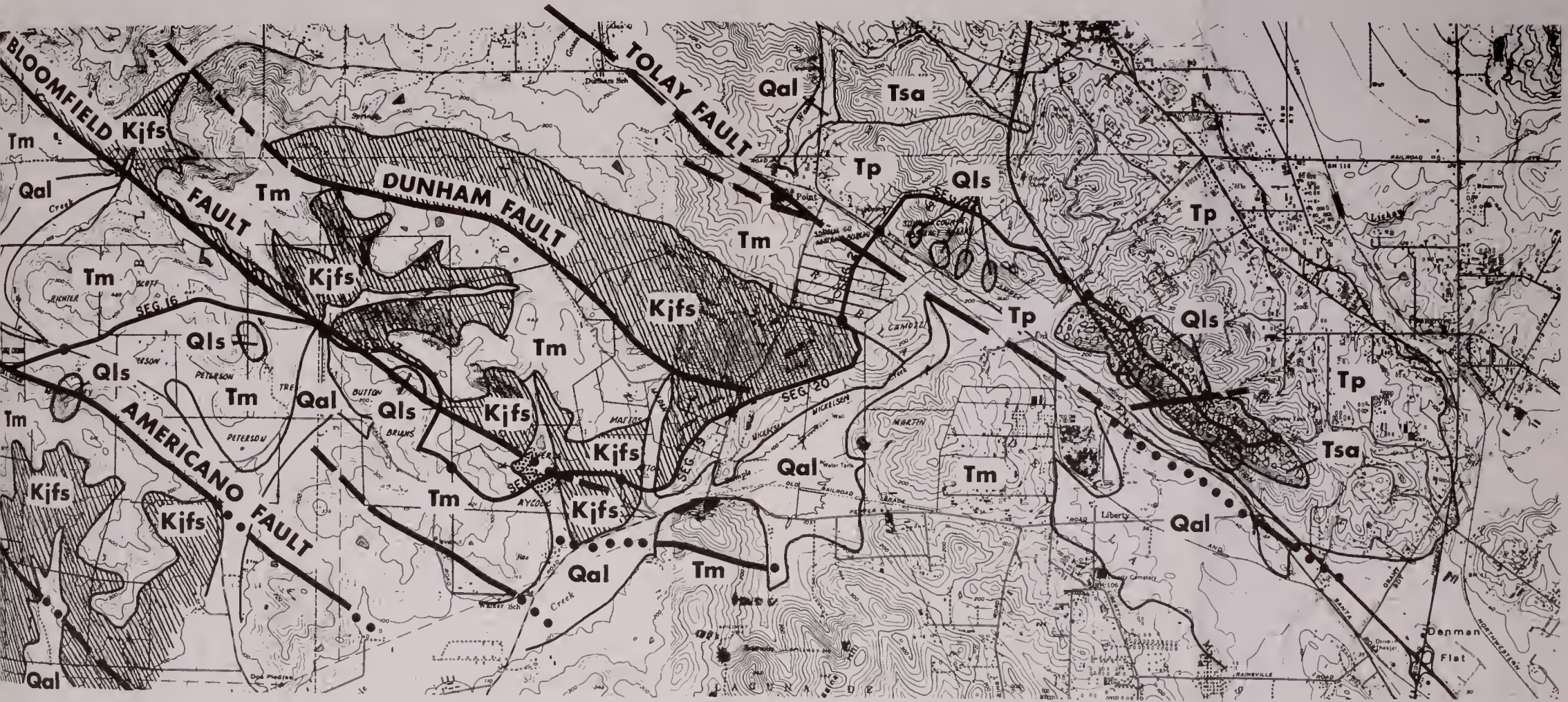
Potentially weak soil

Shallow soil underlain by hard rock

0 2000'

REFER TO FIGURE 3 FOR BASIC LEGEND

FIGURE 10 GEOLOGY AND SOILS



Compiled by C. R. Davis, ESA, from Travis, 1949; Blake, et al., 1971; Fox, et al., 1973; Miller, et al., 1972; Armstrong, 1974; with aerial photo interpretation and field reconnaissance.

of these streams. Return of sea level to its present state flooded the channels, creating the esteros we see today.

Geomorphic processes active in the area today include sheet erosion, gullying, and landsliding.* These processes are most prevalent on the weak, poorly consolidated and poorly drained Merced sediments. Overgrazing and cultivation during the last century has seriously accelerated these processes, as is evidenced by old fence lines on the Merced Formation which are now on mounds six inches to a foot above the surrounding ground. Most drainage-ways are severely gullied due to accelerated runoff, and most hillsides on the Merced Formation exhibit sheet erosion and slumping. The hillsides appear to be at or near the greatest angle of repose for these poorly consolidated sediments, which are commonly seen to be failing.

Landsliding is prevalent at the coastal bluff where the sea is wearing it away at the base. Undercutting in the weak Franciscan melange leads to slumping on the upper slopes. The *Fence* route traverses a reasonably stable old slide on this bluff. Recent failure is not apparent, and the toe of the slide mass has not been seriously undercut, suggesting that it may be inactive at this time.

d) Surficial Deposits.

Erosion on the upper slopes has provided sediment to fill the valley bottoms. The alluvium reflects the nature of the parent material and is composed of sand, silt, and clay.

e) Soils.**

The soils along the proposed *Fence* route vary according to underlying substrata, topography, and hydrologic conditions. In general, upland soils developed on the Merced and Franciscan Formations west of Segment 18 are of the Steinbeck series.

The Steinbeck soils are medium-textured, moderately-well-drained loams with clay loam subsoils. They occur on slopes from 2 to 50 percent and vary in depth from 20 to 60 inches, depending on position, slope, and erosion history. Steeper slopes and hill tops have experienced more erosion, so that soil depth is shallow. Permeabilities are moderate, and runoff is medium to rapid, creating a moderate to high erosion hazard. As an indication of engineering properties, these soils are described as having slightly hard, friable and slightly plastic surface soils with slightly hard to hard friable and nonplastic

*See Figure 10.

**This section has been developed from the Sonoma County Soil Survey and the Marin County Soil Report, U.S. Department of Agriculture, 1972 and 1967 respectively (Miller *et al.*, 1972; U.S. Soil Conservation Service, 1967). See also Armstrong, 1974, and Figure 10.

subsoils. These soils have agricultural capability classifications of from III to VI*, depending on depth of top soil and the extent of erosion. Steinbeck soils occupy approximately 75 percent of the proposed *Fence* route.

Proceeding to the east from Segment 16 into the headwater areas of Americano and Stemple Creeks, the soils on the hills become somewhat more sandy. Sebastopol series soils formed on the Merced and Franciscan Formations in this area are sandy loams. Occurring on slopes from 2 to 30 percent, the sandy loam surface soil is thin, with a deep sandy clay loam subsoil to a depth of 43 inches. This subsoil is hard, firm, and plastic when wet. The soils being well-drained, runoff is slow to rapid (depending on slope), and erosion hazard is slight to high. These soils are again classified as III to VI.

The soils in Segment 22 are developed on the Petaluma Formation and are quite sandy. These Cotati series soils on 2 to 5 percent slopes have moderately deep fine sandy loam surface soil underlain at a depth of about 22 inches by clay subsoil which is very hard, very firm, and very plastic when wet. These soils being only moderately well-drained, with slow permeability in the subsoil, runoff is medium to rapid with moderate to high erosion hazard. Agricultural capability classification is III and IV.

The easternmost end of the proposed route is on Toomes rocky loam. This soil is developed on and underlain at a depth of 5 to 20 inches by shattered and weathered andesitic basalt lava flows which form Meacham Hill. Permeability is moderate with slow to medium runoff and slight to moderate erosion hazard. This is very poor soil, having an agricultural capability classification of VII (marginal rangeland).

One other soil type is found in the valley bottoms along Americano and Stemple Creeks. The proposed route approaches or crosses each of these drainages twice. Blucher series soils have formed in these areas from stream-deposited fine sand, silt, and clay. Slopes are from 0 to 5 percent. Surface soils are fine sandy loam and clay loam to a depth of about 34 inches, underlain by silty clay loam subsoil which is very hard and firm but moist and plastic for much of the year. Permeability is slow, but gentle slopes produce slow runoff and a slight erosion hazard. This is prime agricultural soil, with a classification of II.

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*III = moderately good cropland
IV = good pasture land
V and VI = good rangeland

Current agricultural use of the soils along the proposed *Fence* route is grazing and dry grain production, although Sebastopol series soils are suitable also for orchards and vineyards, and Blucher series soils are suitable for orchard and row crops.

f) Faults and Seismicity.

The proposed project would span most of the block between two major active fault zones in the San Francisco Bay Region.* The San Andreas Fault Zone, the contact of the drifting North American Continental plate with the Pacific oceanic plate, passes about ¼ mile offshore of the proposed coastal site. This section of the San Andreas moved some 20 feet in the great earthquake of 1906. At the eastern end of the proposed route in Segment 21, the route would cross the Tolay Fault, a potentially active branch of the Hayward Fault system. The route would cross three additional inactive faults. The Americano Fault crosses Segment 14, the Bloomfield Fault crosses Segment 17 twice where fault and route are roughly parallel for ½ mile, and again in Segment 18, and the Dunham Fault crosses the route at Segment 20. These faults are all aligned with the San Andreas and trend northwest (Jennings, 1973; Fox, *et al.*, 1973; Travis, 1949).

Major faults in the region (Jennings, 1973) which could cause potentially damaging levels of ground-shaking in the project area include, but are not necessarily limited to, the Healdsburg-Rogers Creek and San Andreas Faults. The Healdsburg-Rogers Creek Fault lies approximately 4½ miles to the east of the eastern end of the *Fence* route, while the San Andreas Fault, as noted, lies about ¼ mile to the west of the western end of the land portion of the *Fence* route.

The project area lies within a portion of the San Francisco Bay Region that has experienced moderate seismic activity. In the past 160 years, the area has been shaken 11 to 15 times with sufficient force to potentially produce damage ranging from cracked plaster and broken windows to partial collapse of unreinforced masonry structures (California Division of Mines and Geology, 1972).

In addition, the 1906 earthquake on the San Andreas Fault shook this area hard enough to destroy or severely damage most masonry structures and even some well-constructed wooden ones.

g) Natural Resource Base.

There are two basic types of physical natural resources present in any given area. The first is the land itself, while the second is the material present beneath the land's surface.

The land within the project area can be considered moderately to highly valuable from an agricultural standpoint. U.S. Soil Conservation Service Land Capability Classifications range from Class II

*See Figure 10.

(prime) to Class VII (suitable for range) with most of the land being Class III to VI [suitable for dry grain and pasture (range)].

No known economically significant subsurface materials are known to exist in the project area, although gold, mercury, quartz, and rock have been recovered from this area in the past (Travis, 1949; California Division of Mines and Geology, 1949).

Impacts

The geologic "impacts" of a project can be divided into two categories: impacts and hazards. Impacts are those changes which the proposed project may induce in the geologic conditions of the site. Hazards are those problems which the geology of the site may pose for the proposed project.

a) Topography.

The proposed project would involve no topographic modification, but the topography could affect implementation of the project. Slopes greater than 50 percent would preclude the direct use of vehicles for installation and would require hand work or a modified technique. Slopes greater than 50 percent are shown on Figure 9 .

The slope interval between 25 percent and 50 percent brackets the "angle of repose" for loose soils; that is, the angle above which loose soils tend to slide.* Thus, this interval defines the portion of the *Fence* route in which care must be taken during construction to prevent further erosion (induced by the project).

b) Bedrock.

This project would have no impact on bedrock, but Meacham Hill is capped by shallow hard rock which could hinder the project. See the subsection on "Soils", following, for a discussion of this hazard and its mitigation.

c) Geomorphology.

The only place along the proposed route where the project could potentially significantly affect land-shaping processes is at the coastal bluff. The route would pass down a major landslide to reach the ocean. It is conceivable that the installation could leave depressions in the soil surface which would serve to trap water and allow it to percolate. An increase in the water content of the slide mass could hasten its movement downslope into the sea. The remainder of the route has been so located that no other landslides would be

*Strictly speaking, this concept applies only to loose, "cohesionless" soils. The local soils are somewhat cohesive, because of their clay content.

crossed. Field reconnaissance of the route in Segment 11 confirmed that the staked route is indeed upslope of the landslides on this north face. The corrected alignment on the base map reflects this field verification. Erosion processes are discussed separately under "Water Resources", following.

d) Soils.

The potential impacts on the soils of the area which could result from implementation of the proposed project would be associated first with vehicle traffic over the grass lands and second with the direct disturbance of the soil by the actual installation. The first effect from vehicular traffic could compact the soil or actually cause ruts from heavy vehicle tires. This impact would be most severe when the ground is moist or wet. The second effect could mix the soil column, reducing surface soil fertility while exposing the soil to other impacts. This could result from posthole digging (punching), placement or removal of anchors, or failure of the ground, allowing pulling out of anchors, and tipping over of posts.

Soil properties or characteristics could impose hazards to the proposed project. Digging of post holes and placement of anchors to a depth of 36 inches could be hindered by hardpan or shallow bedrock, and weak soil conditions at that depth could provide insufficient strength to support the structure. As noted above, the low-lying soils adjacent to the principal creeks are clayey and wet much of the year. These soils may have poor strength and may not provide good support for the proposed structure. On the other hand, Meacham Hill is covered by only 5 to 20 inches of soil underlain by hard igneous rock; this could pose special problems for the placement of posts and anchors. (See Figure 10).

e) Faults and Seismic Hazards.

The project would cross the potentially active Tolay Fault, but could in no way affect the activity of this fault. While this is a seismically active region and a major or great earthquake is anticipated, the probability of such an event's occurring during the life of this project is extremely low. If such an event were to occur, the structure would probably not be seriously damaged. Perhaps some cables would part or some anchors might be pulled out of the ground, but the life risk associated with failure would be negligible.

f) The Natural Resource Base.

As there are no known economic mineral deposits along the route, and since an insignificant amount of soil would be disturbed, there is only one potential resource impact. The project would use steel for cables, poles and anchors, and plastic fabric for the curtain.* Petroleum would be consumed in construction and viewing. See Energy Section, above.

*Mostly surplus material, already available.

Mitigation

a) Topography.

Construction plan methodology specifies that vehicles shall not be driven on slopes in excess of 50 percent. Installation and removal will be accomplished in these areas either by hand or by using a second vehicle to winch the construction vehicle into position without putting power to the wheels. This will prevent any wheel spinning which could have erosional consequences. Even in handwork involving the powered moto-mule, the equipment would be winched up and down steep slopes to prevent these impacts. In the 25 to 50 percent slope interval, decisions about construction methods should be made by an engineer on-site at the time of construction.

b) Geomorphology.

There should be no impact on the coastal landslide's stability from the project since under actual project plans, no depressions will be left to act as water traps. Backfilling and revegetation measures included in the project will leave the surface essentially undisturbed. Vehicles will not be driven in this area and therefore no disturbance will result from this cause.

Since rates of infiltration or runoff will not be affected, slide-prone areas downslope of the route will experience no change in stability.

c) Soils.

Mitigation which has been developed and included as part of the project plan will minimize any of the soil impacts and hazards discussed above. The vehicles to be used would be equipped with 4-wheel drive and wide, flotation-type tires to minimize soil pressures and erosion from wheel spinning. To avoid damage to moist soils, early work can begin on higher ground, which dries sooner.

The engineering design and methodology is so conceived as to make soil disturbance insignificant. Special equipment developed for this project will punch a minimum sized posthole for the main poles, thus limiting the amount of disturbance. Anchors would be driven directly into the ground, so that excavation and soil disruption would not be necessary. Areas inaccessible to the truck-mounted

equipment would require manual installation, but the methodology would be similar and would result in no more soil disturbance. Further, plans for removal of the structure include filling and seeding of the post holes; anchors would not be removed (which would require considerable disturbance of the soil), but covered by backfilling.

Soil hazards to the project (with resulting impacts) have also been considered in the design and methodology. Three types of anchors, which will be suitable for rock, average, or soft soil conditions, have been designed. In addition, the method of placement calls for driving the anchor 10 inches below design depth and then "setting" it by partial withdrawal. If the anchor moves up more than 10 inches under a measured load, additional anchors (up to a total of four) would be placed at each point to achieve the designed strength. Also, the system has been designed for "controlled" failure (panel separation) at points other than anchors and post holes; since anchor holding power will be measured on installation, it is highly unlikely that the structure will fail at these points and cause soil - disturbance impacts/hazards.

d) Natural Resources.

The materials to be used to construct the *Fence* will be given to the landowners,who will use it on their ranches or sell it as surplus at the end of the project,and thus they will not be lost. Petroleum will be consumed in implementation of the project.* Fuel will be expended by persons travelling to view the project.*

*For estimates of consumption, see Energy Section above.

3. WATER RESOURCES

Setting

a) Drainage.

The proposed project route would cross several drainages. The area immediately adjacent to the coast drains directly to the sea. The 1500 feet of the route that is closest to the coast is in the 15-acre area which drains over the landslide to be traversed to reach the ocean. The next 10,000 feet would follow the drainage divide between two unnamed minor drainages leading to the sea. From this point to Segment 16, the route would be in the Americano drainage basin, crossing that creek twice and running along the Stemple/ Americano drainage divide for 3000 feet in Segment 13. In Segment 16, the route crosses into the Stemple Creek basin and follows the north side of that drainage to its headwaters near Stony Point. Three thousand feet of Segment 22 pass through the Laguna de Santa Rosa basin (tributary to the Russian River). The route then enters the Petaluma River drainage basin on Meacham Hill.

b) Runoff.

The bedrock and subsoils in this area are generally quite impermeable, resulting in relatively rapid runoff in spite of the gentle slopes. Overgrazing of the rangeland is nearly universal in the area, contributing significantly to the rate of runoff. Numerous small stock-watering impoundments have been created on the intermittent streams throughout the area in order to capture some winter runoff for summer use.

c) Erosion and Sedimentation.

Rapid runoff over the poorly vegetated hillsides of the area has caused serious erosion in the form of gullying and rilling. The sediment produced is carried downstream into impoundments or to the Esteros. The natural process of filling these intertidal areas to become marsh has been accelerated by the poor land management in the watersheds.

d) Groundwater.

Although wells exist in this area, groundwater is not plentiful. Webster (1972a) shows this area to be about half in zone A and half in zone B,* indicating that water well yields would probably be no worse than marginal to adequate for stock or single family domestic use.

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*Category A: "Marginal to adequate for stock or single family use, 0.5 to 5 gallons per minute."

Category B: "Adequate for stock or single family use, but inadequate to marginal for light industrial use, 5 to 50 gallons per minute."

e) Water Quality.

The quality of the groundwater in the area has not received extensive study; however, one data point at Salmon Creek, a similar area nearby, indicates nitrate levels have been high enough to be harmful to infants (Webster, 1972b). Surface water quality also is not well characterized, but the large numbers of livestock kept in the area certainly contribute considerable quantities of nutrients to the runoff. Some stream channels which were still wet in late summer were noted to be eutrophic (containing visible quantities of algae), an indication of excessive nutrients.

Impacts

Since this project would traverse a number of watersheds, any impacts on local water resources would not be concentrated in a single area. Any effects of the project as proposed, however, would be negligible. Woodward-Clyde Consultants (1975), after studying the most sensitive portion of the route, the Coastal Zone,* concluded:

- Proposed *Fence* placement and removal procedures are extremely safe and conservative, and far surpass the average standard of care existing today in any fence project.

- Placement of the Christo *Fence* will not cause surface soil erosion in any manner.

- There will be no erosion impact on the Estero de San Antonio or on the adjacent sea cliffs and bluffs. *

- If public viewing is limited to existing roads, in accordance with the Christo public access plan,** there is no risk of soil erosion due to public activity. A few hundred accidental excursions would not alter this conclusion.

These conclusions may be extended with high confidence to the rest of the route, particularly when viewed in the context of the normal farm-vehicle activities on the ranches along the route. Water quality could possibly be adversely affected by the wastes from the potentially large numbers of people visiting the area to view the project.

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*Refers to the original route, entering the ocean at the mouth of Estero de San Antonio, generally a more sensitive location than the currently proposed point of entry.

**The "Christo public access plan" no longer applies, as it refers to a concept and a location that are no longer part of the project plan.

Mitigation

Elements of the project design and methodology will mitigate potential impacts to the region's water resources:

a) Runoff.

Rates of runoff will not be affected by this activity because the use of wide flotation-type tires and the planned construction during the dry season will prevent compaction of the ground. For the same reasons, impacts on vegetative cover which could otherwise increase runoff also will not be significant.

b) Erosion and Sedimentation.

Since rates of runoff will not be increased by this activity, erosion rates will also not be affected thereby. Disturbance of the soil could expose it to erosion, but structure removal plans call for backfilling the post holes and seeding of disturbed areas, with placement of jute matting to stabilize the surface where necessary (i.e., on slopes) until revegetation takes place. Thus, there will be no increase in erosion rates as a result of this project.

c) Water Quality.

The potential impact on water quality from additional people in the area would be mitigated by the provision of portable chemical toilets. This measure should be effective it they are provided in sufficient numbers, placed at strategic locations, and receive the required maintenance.

4. AIR QUALITY/METEOROLOGY

Climate

a) Setting.

The proposed route of the *Running Fence* pierces the strong gradients of wind, temperature, rainfall, and cloud cover that produce the unique coastal climate of northern California. The break in the coastal hills made by Americano and Stemple Creeks provides a conduit through which cool marine air moves eastward to meet and mingle with another air stream moving northward from San Pablo Bay. During the trip eastward and northward, these air streams are subjected to intense solar radiation which quickly modifies their marine characteristics and produces the remarkably strong climatic gradients of Sonoma County.

Wind motion carries air over and past the route of the *Fence*. Along the coast, the prevailing summer wind blows from the northwest. At the least-sheltered coastal locations, the average hourly wind speed in May and June reaches 30 miles per hour between 6 PM and midnight. By September, the maximum average hourly wind has decreased to about 20 miles per hour but the late afternoon and evening is still the most blustery period (California Department of Water Resources, 1971). The eastern portion of the *Fence* route lies in a region that experiences lighter southerly and southwesterly summer winds. In contrast to the coastal zone, average daytime wind velocities here (hourly averages are not available) are only between five and six miles per hour and even these modest levels decrease slightly during September and October (BAAPCD unpublished data).

Peak wind gust data are not available for any portion of the *Fence* route. However, gust data are available for the San Francisco International Airport site, which occupies a lowland exposure comparable to those of the *Fence* route with respect to the marine flow. The airport data will supply a gross indication of the possible gust environment of the central portion of the *Fence* route near Bloomfield, which is about as far inland as the San Francisco Airport is from the coast. During the 18-year period 1948-1965, the maximum gust for each month occurred as follows:

Month	Peak Gust* (mph)	Month	Peak Gust* (mph)
January	78	July	47
February	64	August	49
March	58	September	56
April	60	October	64
May	62	November	67
June	58	December	66

*Source: National Climatic Center, Asheville, North Carolina, (Air Weather Service, undated).

In the same 18-year period, one-minute average wind speeds (in contrast to instantaneous peak gusts) greater than 31 miles per hour were recorded during 0.1 percent of the September observations.

The route of the *Fence* traverses an area that is normally subjected to a strong temperature gradient during the warmer months. Average September afternoon temperatures along the immediate coast are in the upper 60's while inland areas between Petaluma and Santa Rosa experience September afternoon temperatures in the low 80's (Miller, *et al.*, 1972).

The *Fence* route also crosses a significant rainfall gradient that gives a mean annual rainfall of 39 inches to the coastal end of the route and 22 inches to the eastern end (U.S. Geological Survey, 1971). Detailed, long term rainfall data for Santa Rosa are available which are representative of rainfall conditions along the central portion of the *Fence* route. Annual rainfall contour maps indicate that Santa Rosa and the center of the *Fence* route experience the same amount of precipitation, with Cotati drier and Petaluma more so. These data (see Table 3) indicate that 87 percent of the annual precipitation falls during the six months from November through April, thereby producing a well-defined dry season during the remainder of the year. On the average, the three driest months are July, August, and September. However, anomalously heavy rainfall amounts have been recorded in all seasons; the data indicate that the early and late portions of the dry season are susceptible to invasions of weather that more properly belong to the wet season. The record 9.47 inches that fell in October 1962 illustrate how quickly the dry season can be displaced.

At the western end of the *Fence* route, where mean rainfall amounts are considerably higher, the maximum daily and maximum monthly values are also expected to be higher. Similarly, the maximum daily and monthly values at the drier eastern end of the route are expected to be lower. However, the mean number of days with precipitation .10 inch or greater will not differ significantly from one end of the route to the other (U.S. Geological Survey, 1971).

Fog and low cloudiness frequents the coastal portion of the *Fence* route and occasionally penetrates areas to the east by following the lowlands of the Estero Americano. July and August are the foggiest months but no month is completely fog free.

b) Impact.

By pulling and tugging at the fabric, the wind environment of the *Running Fence* will have an important influence on the structure's appearance. The prevailing westerly and northwesterly winds will push the fabric southeastward along that portion of the *Fence* that lies west of the Highway 1/Petaluma-Valley Ford Road intersection.

TABLE 3

RAINFALL MEANS AND EXTREMES, SANTA ROSA, 1931-1973 (INCHES).

	Average Monthly	Maximum Daily	Maximum Monthly	Mean Number of Days Rainfall 0.10" or More
January	6.02	3.77	15.38	9
February	5.15	4.20	12.31	8
March	3.98	3.04	8.03	7
April	2.33	2.97	7.61	4
May	.98	1.39	3.95	2
June	.32	1.08	1.94	1
July	.02	.20*	.20*	< 1/2
August	.06	1.15	1.68	< 1/2
September	.27	2.82	3.16	< 1/2
October	1.54	2.35	9.47	3
November	2.94	2.77	13.23	5
December	5.64	4.33	17.89	8

Source: U.S. Weather Bureau, 1974.

*Note: In July 1974, 1.61 inches was recorded, nearly all of which fell in a 24-hour period.

Between this point and the Pepper Road-Meacham Road intersection, the alignment of the *Fence* will cause a fluttering or ruffling of the fabric similar to that of a luffing sail. The remaining eastern extremity of the *Fence* lies, for the most part, approximately perpendicular to the prevailing southerly wind flow. Along this section, the fabric will most commonly be bowed to the north of the *Fence* line.

The maximum gust record for San Francisco International Airport* presented in the Climate Setting Section gives an indication of the extreme winds to which the *Fence* may be subjected. The difficulties inherent in applying these data to all portions of the *Fence* route are obvious. In particular, areas immediately adjacent to the coast and on exposed ridge tops can be expected to have significantly higher maximum gusts than those observed at San Francisco International Airport, which is about 10 miles inland from the coast. However, the general annual trend of weaker gusts in summer and stronger gusts in winter illustrated by these data is expected to be valid along the entire route. This trend information indicates that the most wind-sensitive period of the project will occur during September, when the probability of gusts of more than 50 mph is increasing (see Appendix N for summary of wind tests conducted by applicant's engineers).

Work on the *Fence* will face the greatest probability of weather (rain) interference during the initial construction (April) and the removal (October) periods. Even though April is the transition month between the wet and dry seasons, the historic record shows that very heavy rains have fallen in this month (see Table 3). Copious rainfall amounts at this time of the year can seriously aggravate runoff and soils problems because they occur at the end of a 6-month period during which more than 2 feet of rain is likely to have fallen.** The 43-year record for 1931 through 1973 shows that a total monthly rainfall greater than 3 inches occurs in about 1 out of 4 Aprils. October is also a transition month; however, when unusually heavy October rains occur, they fall upon soils desiccated by the summer drought. A total monthly rainfall greater than 3 inches occurs in about 1 out of 5 Octobers and in about 1 out of 2 Novembers.

The reader is reminded that the above discussion and Table 3 are directly applicable only to the central portion of the *Fence* where the average annual rainfall is approximately 30 inches. Construction activities along the western segments will face a higher probability of interference by rainfalls of greater intensity while activities along the eastern segments will face a lower probability of the intensities predicted for the central segments.

*From where the only local records are available.

**This discussion applies to *potential* interferences and impacts. The likely situation is discussed under Water Resources above.

c) Mitigation.

See Section on Project Description-Technical Description, and Appendix N for engineering testing of *Fence* panels. The system is designed so that the panels will separate from the top cables and the poles and, thus, lie on the ground if winds arise at high enough velocity to otherwise tear the materials or pull out the poles. Note that testing of *Running Fence* was done at full scale. One project, Christo's *Valley Curtain*, did *not* conform to engineering expectations. However, the great size of *Valley Curtain* (width: 1250-1368 feet, height: 185-365 feet, precluded anything but scaled-model testing (Christo, 1973).

If rainfall in April 1976 is unusually high, construction work on wet areas and the western end of the *Fence* route could be delayed to avoid damage to soils and vegetation.

Air Quality

a) Setting.

The Bay Area Air Pollution Control District (BAAPCD) maintains two air quality monitoring stations near the eastern portion of the *Fence* route, one in Petaluma and the other in Santa Rosa. Oxidants only are sampled at the Petaluma site, while the full range of air pollutants (oxidants, carbon monoxide, nitrogen dioxide, sulfur dioxide, and suspended particulates) is sampled at Santa Rosa. A combined summary of the 1973 and 1974 monitoring experience is presented in Table 4 for those contaminants that exceeded federal or state air quality standards. Violations of the nitrogen dioxide and sulfur dioxide standards did not occur during this period.

The oxidant violations at both stations occurred, as would be expected, during the summer and early fall oxidant season when intense sunlight and restricted ventilation combine to carry the photochemical smog reaction to its annual peak. Comparison with other BAAPCD locations indicates that, while oxidants are a problem in the Santa Rosa-Petaluma area, they are not present in the concentrations or frequencies observed in much of the rest of the Bay Area. In contrast to oxidants, the carbon monoxide violations occurred in the late fall and winter period. High concentrations of this pollutant are promoted by the weakening wind flows and nighttime radiation inversions common to this time of year. The suspended particulate annual geometric mean indicates that Santa Rosa is among the least dusty locations in the entire Bay region.

The BAAPCD monitoring data discussed above are, of course, relevant only for the eastern portion of the *Fence* route between Petaluma and Santa Rosa. The less-developed and less-traveled western portion, particularly the section within several miles of the Coast, undoubtedly experiences less polluted air than does the Petaluma-Cotati valley. Violations of the ambient air quality standards along this part of the route are probably rare occurrences.

TABLE 4

OXIDANT, CARBON MONOXIDE, AND SUSPENDED PARTICULATE EXPERIENCE--1973 AND 1974

Station	Oxidant Maximum	Number of Days National Oxidant Standard Exceeded	Carbon Monoxide Maximum	Number of Days National Carbon Monoxide Standard Exceeded	Suspended Particulate Annual Mean (Micrograms/ Cu. Meter)
Santa Rosa	12	15	9.6	3	42
Petaluma	14	23	--	--	--

Note: For oxidant, "maximum" is the highest hourly average value expressed in parts per hundred million. For carbon monoxide, "maximum" is the highest eight-hour average value in parts per million. (The one-hour standard for CO--35 parts per million--was never exceeded during the period.)

Source: BAAPCD, 1974 and 1975.

b) Impact.

i. Construction Period.

During the construction period, the principal air quality impact will be caused by fugitive dust emissions from soil disturbances (pole and anchor placement) and off-road vehicle usage. Emission factors for the placement of the poles and anchors are not available; this lack prevents quantification of the impact of this activity, which is expected to be small compared to that from off-road vehicle usage in general. However, preliminary work on fugitive dust emissions from unpaved roads is available and appears in Table 5 . Note that the emission output is dependent upon the vehicle miles traveled and the average vehicle speed. Note also the sharp increase in emissions per vehicle mile at speeds above 25 miles per hour (PEDCo. Environmental Specialists Inc., 1973).

TABLE 5

DUST EMISSIONS FROM UNPAVED ROADS

Average Vehicle Speed (mph)	Emissions (Pounds/ Vehicle Mile)
15	0.81
25	1.18
35	2.47
40	4.20

These emission factors describe the dust emissions from dry, unpaved surfaces. If *Fence* construction begins in April, the hillsides will most likely still be moist from the winter rains which may, indeed, still be falling. Vehicle travel over unpaved surfaces at that time would therefore produce much less dust than indicated in Table 5 .* Vehicle disturbances during June, July, and August would realize the

*As noted under "Soils"; however, construction should not be encouraged under such conditions.

full dust-producing potential. Construction activities performed in September, such as the hanging of the fabric panels, will take place after (during) the summer drought and during the period when the probability of measureable rainfall is increasing. Dust production will then be dependent upon the occurrence of the first rains of the new wet season. In no event are area suspended-particulate standards likely to be exceeded because of the project. Localized dust generation will be similar to that produced by off-road farm vehicles in normal use.

ii. Removal Period.*

Removal of the *Fence* will cause dust to be emitted from the same sources that were described in the paragraphs above. Total dust emission, however, may be lower during the removal period for two reasons. First, the removal of the poles and the abandonment of the anchors will cause less disturbance of the soil than did their installation. Second, while the installation of the *Fence* will encompass the heart of the dry season from April to September, the removal will take place from mid-September through October, which is a period of rapidly increasing rainfall probabilities.

iii. Viewing Period.

The greatest air quality impact during the viewing period will be caused by the exhaust emissions from the thousands of automobiles expected to visit the *Fence* route. The amounts of pollutants emitted from this source are dependent upon the number of vehicles and their average speed. For carbon monoxide, a primary pollutant with an immediate environmental impact (when released in high enough concentrations and quantities), the emission rate per mile traveled rises as the average vehicle speed drops, reaching a maximum under stop-and-go conditions. The environmental *concentration* of a given pollutant (and therefore its impact) is dependent upon additional dilution-controlling climatic factors, such as wind speed and atmospheric stability.

On the basis of the weekend visitor demand projections and the vehicle distributions (Appendix K) and the calculation method recommended by the Federal Highway Administration (1974), carbon monoxide concentrations were estimated for the busiest afternoon hour at selected points along the trafficway (see Table 6). These estimates include carbon monoxide generated by combined *Fence* and non-*Fence* weekend traffic along these roads but do not include carbon monoxide drifting in from distant traffic sources. Conservative climatic parameters were assumed for the calculations. Nevertheless, the values in Table 6 are far below the on-hour national ambient air quality standard of 35 parts per million and well below

*Presented out of normal order for continuity of technical presentation.

the 8-hour standard of 9 parts per million. Therefore, given the good dilution characteristics of September afternoons and the relatively low ambient background levels of carbon monoxide--particularly along the western portion of the *Fence* route--it is highly unlikely that the *Running Fence* traffic will cause violations of the national standards for carbon monoxide. For the locations specified in Table 6, this is true even if there are intermittent traffic jams along area roadways.

TABLE 6

PEAK HOUR CARBON MONOXIDE CONCENTRATION

LOCATION	CONCENTRATION (parts/million)
Highway 101 (100 feet from roadway)	1.4
Stony Point Road (30 feet from roadway)	1.1
West Railroad Avenue (30 feet from roadway)	< 1
Pepper Road (30 feet from roadway)	< 1
Valley Ford Road/Highway 1 (30 feet from roadway)	1.7

Unburned hydrocarbons and oxides of nitrogen are other components of auto exhaust emissions. Upon exposure to sunlight, they form secondary pollutants known as oxidants (photochemical smog.). The photochemical reaction requires several hours to reach equilibrium, during which time the mixture is transported far from the emission areas by the wind flow. The extreme complexity of the photochemical reactions and the lack of a generally accepted simplified computation method prevent an exact quantitative conclusion regarding the impact of the *Running Fence* traffic on smog levels. However, since a large percentage of the smog in the Bay Area is believed to be caused by exhaust emissions, a qualitative feel for the importance of the *Fence*

traffic can be obtained by comparing vehicle miles traveled for *Fence* and non-*Fence* activities. Such a comparison indicates that *Fence* traffic will constitute less than one percent of the total vehicle miles traveled in the Bay Area on a heavy viewing day (30,000 visitors). It therefore appears that the *Fence* traffic will have only a very small, and probably unmeasurable, impact on the smog level in the air basin.

c) Mitigation.

The particulate (dust) impact could be reduced by eliminating unnecessary trips over unpaved surfaces, by water spraying these surfaces whenever the number of vehicle trips makes spraying worthwhile, and by keeping vehicle speeds below 25 miles per hour.

Mitigation of the slight auto exhaust impacts detailed above will depend upon the elements proposed in the Traffic Management Plan. Elements that increase the average vehicle speeds (i.e., one-way roads, flagmen, publicity that contains travel instructions) or that reduce the number of autos (i.e., mass transit options) will also serve to reduce the not-very-significant air quality impact.

5. NOISE

Setting

The present sources of noise in the region that would be traversed by the proposed *Fence* are varied in nature. They range from artificial, introduced sources such as garbage-disposal activities and farm operations, to natural sources like flowing water and waves breaking on the shore. In an overall area-wide sense, the main noise sources involved are cattle, turkeys, birds, gurgling streams, and wind in the grass and trees. However, in the vicinity of the roadways, vehicular traffic is an important source of noise also.

The sound levels experienced throughout the region are, in general, relatively low. Median daytime noise levels in over half this area probably lie under 40 dBA.*,**

In nearly all the remainder, the current levels experienced appear to lie well below 60 dBA.*** The two main exceptions occur in those locations immediately bordering U.S. 101 and the Petaluma/Valley Ford Road section of Highway 1. In both these instances, median daytime noise levels during at least some portions of the week will exceed 65 dBA at the closest residential structures. Sites at which such levels occur are deemed unacceptable for residential use by the Department of Housing and Urban Development unless special noise reduction measures are incorporated into the design of the development (U.S. Department of Housing and Urban Development, 1971).

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*dBA: The decibel reading obtained from a sound measurement instrument with a frequency response similar to that of the human ear. A 1-dBA change in noise level is just discernible to a trained listener in a laboratory situation. However, a 2- to 3-dBA change is needed to be perceivable to most people under normal conditions. A 10-dBA increase in sound level corresponds roughly to a perceived doubling of noise.

**This background noise level was *estimated* from the data on rural sound levels presented in Wyle Laboratories (1971).

***This judgment is based on *calculated* noise levels in the vicinity of the roadways crossing the region.

Impact

The new sources of noise introduced by the proposed project will be *temporary* but numerous. The noise produced can, on the basis of the basic underlying activity involved, be divided into two distinct categories: construction/removal noise, and "viewing" noise.

i. Construction/removal noise: The sources of noise introduced by the proposed project during the approximately 5-month-long construction and 1-month-long removal periods would be varied in nature. They would include 6 three-quarter-ton trucks, 1 flat-bed truck, several moto-mules, and 4 sets of hole-punching and anchor-installing equipment.* Probably the noisiest activity during either of the periods under discussion would be the hole-punching/anchor-installing operation. This work could perceivably raise the *daytime* energy equivalent sound levels** experienced in areas as distant as 2300 feet (line-of-sight exposure) or 800 feet (shielded exposure) from the actual construction site.+ It may, in addition, produce sound levels at distances of 400 feet for unshielded exposures or 100 feet for shielded ones that will strongly interfere with both outdoor and indoor residential site activities.++ Such interference would be similar to that produced by road-paving operations taking place about 700 feet away or heavy grading activities occurring approximately 1400 feet away (unshielded exposure). In the proposed situation, the period throughout which activity interference may take place at any given residence would be rather short. Even for a unit located immediately next to the planned *Fence*, such interference would be experienced for at most 3 days during the entirety of the construction and removal periods. For most of the 20 to 30 residences so affected by construction noise (i.e., those within 400 feet of the *Fence*), the total period involved would be less than one day. On the other hand, the *total* duration of the period during which work on the *Fence* may be perceivable at a single residence could range up to as much as 4 weeks, with intermittent operations of various kinds.

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*Personal and telephone communications with Mr. Burr Heneman, A&H Builders.

**Energy-equivalent sound level: the constant sound level that would be experienced if the energy contained in the actually time-varying noise were released at a constant rate.

+The distances presented here and in the remainder of this paragraph were calculated on the basis of noise level data presented in Bolt, Beranek & Newman (1971) or supplied by Mr. Burr Heneman, A&H Builders. Air absorption of sound was semi-quantitatively considered.

++This conclusion is based in part on the rough set of construction noise acceptability guidelines presented in Bolt, Beranek & Newman (1971).

ii. "Viewing" noise: There would be several distinct sources of noise associated with the proposed project during the viewing period of up to two weeks. The most important one in an area-wide sense would be the generated vehicular traffic. On weekdays, such traffic could conceivably raise the daytime median noise levels experienced along the local viewing routes and Highway 1 south of Petaluma/Valley Ford Road from 5- to 23-dBA. As can be seen from Table 7 , the largest increases would occur along the roadways carrying the smallest amounts of existing traffic. Since present noise levels are lowest in these areas, the sound levels produced by the cited changes would all tend to fall between 60- and 68-dBA. All of the increases under discussion are of at least some significance, for all would be easily perceivable. However, those potentially experienced along Petaluma/Valley Ford Road and along Highway 1 south of Fallon/Two Rock Road are of the most importance. In these two instances, the sound levels produced could be high enough to interfere with residential site activities in areas within 30 to 50 feet of these roadways' centerlines.* Along Petaluma/Valley Ford Road, fewer than 10 residences would potentially be affected. For Highway 1, the exact number involved is unknown. However, again, it is not expected to be large.

The noise-level *changes* induced on Saturdays and Sundays by the generated vehicular traffic would be significantly smaller than those experienced during the week (see Table 7).** This apparently paradoxical behavior results from the facts that: 1) the amount of traffic normally handled at this time of year on either of these days is about double that handled on a regular weekday; and 2) automobile noise levels go down as speed goes down, which occurs at higher traffic levels. None of the traffic noise level increases induced during the weekend period would produce sound levels high enough to interfere with residential site activities. Such interference, however, could be experienced due to congestion-associated noise (i.e., horn honking, vehicles starting and stopping, etc.) during the late afternoon along the more-heavily-travelled routes.

One point about the previous discussion deserves special emphasis here. This is that it is in general based on a worst-case analysis of the situation involved. If fewer than the *maximum* number of visitor vehicles judged possible on a weekday (i.e., 8,300) or manageable on a weekend day (i.e., 10,000) arrive, the noise level changes induced would in most cases be smaller than those specified above. The one readily noticeable exception occurs in the case of Stony Point Road. There the weekend increase produced could actually be larger if fewer people come. Again, this is a result of the speed/noise relationship.

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*This conclusion is based on the noise acceptability criteria and the category definitions presented in U.S. Department of Housing and Urban Development (1971) and Schultz (1971), respectively.

**Table 7 is based on traffic-setting information available in August 1975.

TABLE 7

NOISE IMPACT OF THE VEHICULAR TRAFFIC GENERATED BY THE PROPOSED *Running Fence* PROJECT*

Typical Road Section**	Present Median Daytime Noise Level*** (dBA)	Temporary Project-Induced Change in Median Daytime Noise Level (dBA)	Approximate Resultant Change in Perceived Noise
U.S. 101			
s/o[+] Old Redwood Highway	71/69[++]	+1/+1 [++]	None/None[++]
s/o Railroad Ave.	71/69	+1/-2	None/None
PETALUMA/ VALLEY FORD ROAD			
w/o Highway 1 I/S[+]	62/66	+5/-1	Readily Perceptible Increase/None
e/o Highway 1 I/S	59/65	+8/+4	2-Fold Increase/ Perceptible Increase
STONY POINT ROAD			
n/o Railroad Ave.	50/57	+10/+2	2-Fold Increase/ None
MEACHAM ROAD			
s/o Stony Point Rd.	50/55	+13/+9	3-Fold Increase/ 2-Fold Increase
PEPPER ROAD			
w/o Stony Point Rd.	39/47	+23/+17	5-Fold Increase/ 3-Fold Increase

*Noise level evaluation based on traffic-volume/median-noise-level charts presented in Schultz (1971). Traffic volumes used to determine noise level increases induced assume the *maximum* number daily visitors judged possible (i.e., 25,000 on weekdays, 30,000 on weekends). Average traffic speed developed from estimated maximum traffic flow rates and level-of-service calculations.

**Road sections selected listed in order of the amount of traffic presently carried.

***Approximate median noise level experienced during the period between 6 AM and 10 PM at the front of the closest residential structure to the trafficway cited.

[+]s/o indicates south of; w/o indicates west of; etc. I/S=intersection.

[++]weekday/weekend noise levels.

In addition to vehicular traffic, there are three other potentially important noise sources that could be associated with the proposed project. The first is people stopping to view the *Fence*. Any crowd noise they may produce would be limited to the vicinity of those areas where cars can be parked (i.e., road shoulders). The second source is aircraft bringing in persons who wish to observe the project from the air. This activity could increase the noise levels experienced not only in the region traversed by the *Fence* itself but also in those areas surrounding the several small airports present in this part of the Bay Region. The final source of noise involved is the *Fence* itself. Strong winds blowing parallel or sub-parallel to this structure (see Climate Section) could produce humming of guywires, flapping of fabric and/or ringing of metal fabric hooks against the metal fence poles.

Mitigation

a) Included as part of the proposed project.

The applicant has already taken, or has indicated that he would take, several measures that will reduce the noise impacts of the proposed project.* These include selecting a sparsely inhabited area distant from the main centers of Bay Area population for the site of the *Running Fence*, employing off-duty Sheriff's deputies to keep viewing-traffic flowing smoothly, restricting the time the *Fence* would be up to a maximum of two weeks, limiting *Fence* construction and removal activities to daylight hours, and taking down the *Fence* early if the projected number of persons arriving exceeds the capacity of the road network involved.

b) Suggested as possibilities by this report.

Several additional measures could be taken to further reduce the noise impacts of the proposed project. These include modifying the equipment used in the *Fence* construction and removal operations so that it will produce the least amount of noise practicable, eliminating roadside parking in the vicinity of any residences involved, and further reducing the length of time the *Fence* is up.**

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*In the development of the following paragraph, extensive use was made of personal communications with Christo and Jeanne-Claude Javacheff and Captain Eric Denton, California State Highway Patrol.

**The last, of course, would mitigate a number of impacts.

III. IMPACT OVERVIEW

A. UNAVOIDABLE ADVERSE ENVIRONMENTAL IMPACT

Traffic is the main (and probably the only) *source* of unavoidable adverse environmental impact. The potential significant impacts include congestion and traffic noise, which would be temporary, and energy use. Late-summer weekend traffic to view the *Fence* may be great enough to slow down or stop traffic in the area of the *Fence* route. As many as 30,000 persons (10,000 autos) per day may travel the country road network and the freeway in the vicinity of the *Fence* during the two scheduled viewing weekends.

Since the traffic for the most part will be kept to the public right-of-way, no permanent damage or impact is foreseen. Traffic should return to normal immediately after the removal of the fabric panels.

Traffic congestion can be minimized if roads are closed to visitors' autos, and buses are substituted; or reduced somewhat if other mitigating measures are used as suggested herein. Nevertheless, a residue of (temporary) impact is almost certain to remain.

B. RELATIONSHIP BETWEEN LOCAL SHORT-TERM IMPACT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Increased traffic, a local short-term impact*, will affect the county road network and freeway for a maximum period of two weeks in September, 1976, the viewing phase. Other traffic, during the construction and removal phases, will not noticeably add to normal traffic in the *Fence* route area. All three phases--construction, viewing and removal--constitute a period of seven months maximum which would be the time of any additional traffic impact, except for that added by inspecting and surveying during the permit and planning stages.

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*Which may, however, affect traffic movement as far south as Novato on Freeway 101, and beyond.

Noise may increase with traffic increase during the viewing phase*, and air quality will change (but not significantly) with addition of fuel pollutants. In addition, vegetation, if damaged by the construction and removal activities and by the movement of the *Fence's* materials when in place, is expected to return to normal state within a few years. Therefore, the above impacts can be considered as local short-term impacts. These impacts would not interfere in the long-term with the land and its use, the functioning of the road network, or the lives of the residents.

C. IRREVERSIBLE ENVIRONMENTAL CHANGES

The soil cores (3' x 4") removed for placement of *Fence* poles and replaced with sand create an irreversible environmental change; one that is somewhat comparable to the usual farm operation of digging post holes for fences. Similarly, the metal guy anchors will be left in the ground, but these will be tamped down to a depth of at least 18 inches below the surface of the ground and the holes will be backfilled with sand. Thus, a total of several hundred per mile of *Fence* length will have been punched and backfilled. Grasses and herbs are expected to grow back to normal within a few years.

The large-scale irreversible environmental change may very well be in the ideas and attitudes of people. *Running Fence* is an idea, as well as a physical object. Because of this idea, different people may become more aware of the dairy farm environment of southern Sonoma County and northern Marin County, and more sensitive to its beauty and preservation (see Community Attitudes Section). As an idea or an event, *Running Fence* will remain in the memories of all of those involved with the idea, whether they are sympathetic to the project or not. Also, *Running Fence* (and with it the Sonoma/Marin landscape) will be well recorded in film and book form.

D. GROWTH-INDUCING IMPACT

The event of the viewing of *Running Fence*, as well as all the information released on the project in the form of art reviews, lectures, and exhibitions, will have brought much attention (including

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*Where speeds are reduced as a result of heavier traffic, noise levels can drop. On the other hand, start-and-stop traffic, horn honking, etc. can raise noise levels.

nationwide and worldwide) to the Sonoma/Marin dairy-farm landscape. The viewing phase of the *Fence* will also bring many visitors (up to 30,000 on a peak day), some of whom may be attracted by the numerous FOR SALE signs in the area. The low-quality agricultural soil, lack of water and sewer service, high land price, high taxes for non-agricultural-preserve land, and restrictions on building in the coastal zone, will tend to discourage land sales beyond the normal rate of such transactions. Thus growth (other than at current rates) is not a likely outcome of the project.

IV. ALTERNATIVES TO THE PROPOSED PROJECT

According to the applicant, any alternative that would appreciably change the route locations of *Running Fence* (except to avoid geologically and ecologically sensitive areas) would reduce its artistic value. The route was originally selected by Christo on the basis of its concept as a whole--with a beginning and an end--interacting with road system, terrain, ownerships, and objects on the land. The local road system would provide intermittent viewing by the public of the *Fence* running over rolling grassy hillsides of two watersheds in front of or behind objects on the land such as large rows or groups of trees, fences, farms, towns, etc. Nevertheless, alternatives to the originally proposed route have already been selected or accepted as detailed below:

NO-PROJECT ALTERNATIVE

This alternative implies that the *Fence* not be constructed in Sonoma/Marin Counties. All potential adverse environmental effects in the two counties would be removed. These include, in particular: (1) potential traffic congestion on peak viewing days; (2) potential impacts on ecological resources, particularly in the coastal zone.

The applicant would suffer economic loss: much of the total expense to date. Economic gain to contracting landowners would be lessened (no supplies or materials); the same would be for county agencies (no gifts of construction equipment).

As much of the design, fabrication and testing have already been done, the *Fence* would probably be constructed elsewhere. Christo indicates that he has been invited to construct the *Fence* in Mexico, for example. Although the initial concept was conceived before selection of the site, the artist feels that a location other than Sonoma/Marin Counties (picked as most choice among several choices) would produce a less meaningful product.

ALTERNATIVE ROUTE IN SAME LOCAL AREA

In general, the major potential environmental impact, traffic congestion during viewing, is not likely to be reduced by minor

adjustments in the *Fence* route location. That is, there is no reason to believe that any other *Fence* route, of the same length, in the same general area, will have lesser traffic impacts (unless an alternative *Fence* route would cause the *Fence* to be out of view from the local road network, which is not possible). In part, this route has already been chosen to minimize other types of impacts; for example, it bypasses known landslide areas, and stays away as much as possible from areas with steep slopes.

Traffic congestion in what appears to be one critical section of the *Fence* route which can be seen from Highway 101 could be mitigated by removal of the *Fence* segments on Meacham Hill and in the Stony Point Road area. This would eliminate congestion and possible accidents due to slowing by viewing traffic from Highway 101, and might reduce the casual traffic attracted to the route; that is, visitors unaware of the project until they see it from the freeway.

Removal of internal segments of the *Fence* might reduce potential congestion and accidents at unobstructed viewing points along the main *Fence* route trafficway. However, breaking up of the *Fence* into discontinuous segments would, according to the applicant, greatly reduce its artistic value, the effectuation of the artist's concept.

Deletion of the coastal zone portion would remove the possibility of trespassers in the most geologically and ecologically sensitive areas of the *Fence* route, and resolve any question of ecological damage to the coastal bluff and the surf zone. The artist considers this section of the *Fence* very important to his concept, but he is aware of the possibility that the *Fence* could be built without the coastal section. That is, he was prepared to go ahead without it after the denial of a permit by the statewide Coastal Zone Commission, when he still had hopes of constructing the inland portion of the *Fence* in the summer of 1975. Also, the currently proposed coastal-zone section is different from the original Estero de San Antonio routing. In particular, it reaches the coast at a point at some distance (at least 3/4 of a mile) from both nearby Esteros.

The applicant has accepted conditions which dictate last-minute adjustments of the route based on recommendations by a biologist who would accompany the construction parties.

CHANGE IN LENGTH OF VIEWING PERIOD

The viewing period could be shortened to include only one weekend, or perhaps no weekends, depending on the conclusions

of the suggested Traffic Management Plan. If the full two-week viewing period were scheduled as part of the permit process, the viewing period would be shortened (after construction) if the commander of the local-area State Highway Patrol Office were to request it on the basis of weekday traffic experience.

APPENDIX A

REPORT PREPARERS

This Environmental Impact Report was prepared by Environmental Science Associates (ESA), Paul Zigman, President. The project leader, Dr. Richard Cole, and the deputy project leader, Ms. Gerry Wolff, were assisted by ESA staff members: Mr. Charles B. Bennett, Ms. Irene J. Chan, Mr. Clyde R. Davis, Ms. Kathleen G. Gundry, Ms. Jo Julin, Mr. Thomas H. Lindenmeyer, Mr. Jon C. Merkle, Mr. William L. Selleck and Ms. Judith B. Whipple. Donald Goodrich and Archaeological Consulting and Research Services, Inc. (see Appendix L) served as consultants to ESA on traffic and archaeology, respectively. As consultants to the Sonoma County Planning Department, Dr. Welton L. Lee, California Academy of Sciences, Dr. John R. Arnold, Professor of Biology, State College, Sonoma, and Dr. Charles Quibell, Associate Professor of Biology, California State College, Sonoma, provided the subsections on marine biology, terrestrial fauna, and terrestrial flora, respectively. Assessment of the integrity of the ocean portion of *Running Fence* was performed by Environmental Research Consultants, Inc.,Arcata, California (see Appendix M), under contract to the Sonoma County Planning Department.

APPENDIX B

SOURCES OF INFORMATION (ORGANIZATIONS AND INDIVIDUALS)

Information was received from the following organizations and individuals during the preparation of this report:

Sonoma County

Planning Department

Mr. Thomas Cordill, Environmental Administrator
Mr. Lloyd Johnson, Zoning Administrator
Mr. Robert Pocan, Planner

Public Works Department

Mr. Walter Laab, Traffic Engineer

Office of Building Inspector

Ms. Anna Lee Wilcox, Clerk-Typist IV

Agricultural Commission

Mr. Harry McCracken, Commissioner

Superintendent of Schools

Mr. Dick Bacon, Assistant Superintendent

Sheriff's Department

Captain Charles Kishbaugh

Running Fence Corporation

Jeanne-Claude Javacheff, President
Christo Javacheff, Assistant Secretary (and artist)

Running Fence Corporation--Current Accountants, Affiliates, Attorneys, and Contractors

A & H Builders--Mr. Burr Heneman
URS Research Company--Mr. H.G. (Marty) Abell, Jr.
URS/The Ken R. White Company--Dr. Ernest C. Harris
Paul Kayfetz, Attorney
Howard, Prim, Rice, Nemerovski, Canady and Pollack--
Mr. Stephen Tennis
Harry Auerbach, CPA--Mr. Harry Auerbach
J.K. Lasser and Company, CPA--Mr. R.H. Krako
Maysles Films, Inc.--Mr. Albert Maysles, President and
Mr. David Maysles, Vice President
Henry N. Abrams, Inc.--Mr. Henry N. Abrams, Chairman
Bryan & Murphy Associates, Inc.--Mr. Robert L. Floyd

U.S. Fish & Wildlife Service

Mr. Daniel Anderson

California State Highway Patrol

Captain Eric Denton, Commander, Santa Rosa Area Office
Lt. Robert Greer

California State Department of Fish and Game

Lt. Rich Elliott

California State Division of Forestry

Mr. Gerald Murphy, Sonoma Office
Mr. Ron Matiali, Sonoma Office

Marin County

Planning Department

Mr. Harvey E. Bragdon, Chief of Current Planning
Mr. Ray Ahearn, Planner
Ms. Kathleen Ohlson, Environmental Planner

Sheriff's Department

Captain Harvey Teague

City of Petaluma

Mr. Don Martin, Appraiser, Assessor's Office

OTHER ORGANIZATIONS

Pt. Reyes Bird Observatory--Mr. John Smail

Newport (R.I.) "Monumenta"--Mr. William A. Crimmins, President

Kassel, West Germany "Documenta"--Dr. Arnold Bode

"Wrapped Coast", Syndey, Australia--Mr. John Kaldor, Project Coordinator

Rifle (Colorado) Chamber of Commerce

Mr. George Musselman, President
Mr. Allen R. Koeneke, Former President

University of Colorado Museum--Professor William A. Weber, Curator

SUPPLEMENTARY CONTACT LIST (Dr. Welton L. Lee)

Several local biologists were consulted as to their personal knowledge of the area and the possibility of special biological significance relative to commercial use, their ongoing research, or to educational use of the area. In addition, two oceanographers were consulted to establish the stability of the ocean portion of the *Fence*.

1. Dr. Robert Andrews--Oceanographer, U.S. Navy Postgraduate School
2. Dr. Edward Thornton--Oceanographer, U.S. Navy Postgraduate School
3. Dr. Edward Smith--Marine Biologist, Pacific Marine Station
4. Dr. Dennis Breedlove--Botanist, California Academy of Sciences
5. Mr. Paul Kayfetz--Attorney to Running Fence Corporation
6. Mr. Burr Heneman--A & H Builders, Project Coordinator for Running Fence Corporation
7. Dr. Joel W. Hedgpeth--Marine Biologist
8. California Fish and Game--Menlo Park

SONOMA COUNTY PLANNING DEPARTMENT
COUNTY ADMINISTRATION BUILDING - 2555 MENDOCINO AVENUE
SANTA ROSA, CALIFORNIA 95401 - PHONE 707 527-2412

GEORGE KOVATCH, PLANNING DIRECTOR

October 23, 1975

Mr. Paul Zigman
Environmental Science Associates
1291 East Hillsdale Blvd.
Foster City, California 94404

Dear Paul:

For purposes of completing the Draft Environmental Impact Report on the "Running Fence" project, the following information is provided.

The undersigned has consulted with the other public agencies having jurisdiction over the project, with regard to the acceptance of Sonoma County as the lead agency in preparing the Environmental Impact Report, and to ascertain whether or not the existing record of communications, meetings, public hearings and other proceedings, involving past deliberations of those various agencies, represents the agencies' concerns in relation to the project.

The following is a list of the individuals, and the various agencies with which they are connected, who have been contacted:

1. County of Marin, San Rafael, California:
   Mr. Tom Severns, Environmental Administrator
   Mr. Joel Rubey, Environmental Hearing Officer
   Ms. Kathy Ohlson, Planning Department

2. State Lands Division, State of California, Sacramento:
   Mr. Robert Hight, Chief Counsel, State Lands Commission
   Mr. William Northrup, State Lands Commission Staff

3. North Central Coast Regional Commission, San Rafael, California:
   Mr. Mike Fischer, Executive Director

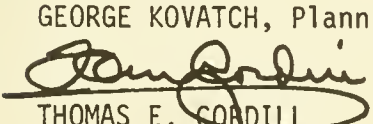
4. U.S. Army Corps of Engineers, San Francisco, California:
   Mr. Tom Stone, Permit Division
   Mr. Tom Crews, Environmental Division.

The response of all individuals is agreement that Sonoma County is acceptable as the lead agency and that the above-mentioned documents pertaining to proceedings of these agencies represent, in general, their concerns with regard to the project.

All of these agencies will receive the Draft Environmental Impact Report for comments.

Very truly yours,

GEORGE KOVATCH, Planning Director



THOMAS E. CORDILL
Environmental Administrator

APPENDIX C

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(DONALD K. GOODRICH)

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2. Letter to Mr. George Musselman, Manager, Independent Lumber Company, Rifle, Colorado, from Ms. Gerry Wolff, ESA, July 24, 1975.

3. Letter from Mr. Allen R. Koeneke, President, The First National Bank in Rifle, Rifle, Colorado, to Ms. Gerry Wolff, ESA, July 30, 1975.

4. Partial map - Revised Route of Christo's Running Fence in Marin County, by URS/The Ken R. White Co., July 5, 1975.

5. Partial map - Property Sketch for Running Fence Corporation, Christo's Running Fence Project, Sonoma County and Marin Counties, California, by Bryan & Murphy Associates, Inc., July 30, 1975.

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13. Traffic Counts by Sonoma County Traffic Department, 1973-1975.

14. Accident Reports by Sonoma County Traffic Department, 1973 and 1974.

15. Letter to Mr. George Kovatch, Planning Director, Sonoma County Planning Department from Mr. L. Newman, Chief, Highway Operations, Caltrans, February 5, 1975.

16. Letter to Mr. Robert Pocan, Sonoma County Planning Board, from Captain Eric Denton, Santa Rosa Area, California Highway Patrol, February 10, 1975.

17. Staff report from Sonoma County Planning Department, January 23, 1975.

18. Letter to all commissioners, California Coastal Zone Conservation Commission, from Mr. Joseph E. Bodovitz, Executive Director, State Commission, re: Minutes of State Commission Meeting of June 17-18, 1975.

19. Letter to Captain Charley Kishbaugh, Sheriff's Department, Sonoma County, from Mr. Burr Heneman, Project Coordinator, A & H Builders, Inc., April 4, 1975.

20. Letter to Fire Chief Pedroli, Marin County, from Mr. T. L. Dougherty President, A & H Builders, Inc., March 26, 1975.

21. Letter to Ranger-in-Charge Frank Crossfield, California Division of Forestry, from Mr. Burr Heneman, Project Coordinator, A & H Builders, Inc., April 3, 1975.

22. Letter to Mr. Donald Neuwirth, California Coastal Zone Conservation Commission, from Mr. H. E. Abell, Jr., AIP, Senior Planner, URS Research Company, May 21, 1975.

23. Excerpts from report by URS Research Company on the Christo Running Fence, April 8, 1975.

24. Staff report to the California Coastal Zone Conservation Commission meeting of April 17, 1975

25. Telephone calls to the following: Sonoma County Fair Association; Christian Brothers Winery; Napa County Chamber of Commerce; Berringer Winery; Monterey Peninsula Chamber of Commerce; Angel's Camp, Calaveras District Fair; Renaissance Pleasure Faire; Mill Valley Fall Arts Festival Committee; Santa Rosa Chamber of Commerce; Sonoma-Marin Fair; and Sears Point International Raceway.

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(DRS. JOHN R. ARNOLD AND CHARLES QUIBELL)

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SUPPLEMENTARY REFERENCE LIST
(DR. WELTON L. LEE)

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Appendix D. Rare and Endangered Native Plants of southwestern Sonoma and adjacent Marin County: (Sources: CNPS Inventory (1974); Photocopies of labels of herbarium specimens from all major California herbaria; the collections of the North Coast Herbarium of California)

The following taxa, taken from the CNPS lists, were carefully considered as to the likelihood of their occurrence within or near the easement and route of Running Fence. Only those marked with an asterisk (*) were found to be reasonable candidates. These decisions were based on field studies of the actual route, actual known collection sites, and a knowledge, both personal and from the literature, of the specific habitat requirements of each of the species. Evidence upon which the others were rejected is similarly extensive and was judged too much to include in this report. Interested persons wishing to review this may contact Dr. Charles Quibell at the North Coast Herbarium, Department of Biology, California State College, Sonoma. Establishing an appointment by telephone is strongly advised. Field records of the native and introduced species observed during the field studies on which this report are based including lists and actual specimens, are also on file at the North Coast Herbarium. Permission to peruse these materials may be obtained by contacting Dr. Quibell as indicated above.

Agrostis aristiglumis Swall. (Awned bent-grass)
*A. blasdalei Hitchc. var. marinensis Crampton (Marin bent-grass)
*A. clivicola Crampton var. punta-reyesensis Crampton (Pt. Reyes b-g.)
*Alopecurus aequalis Sobol. var. sonomensis Rubtzoff (Sonoma alopecurus)
*Arabis blepharophylla H.&A. (Coast rock-cress)
Arctostaphylos bakeri Eastw. (Baker's Manzanita)
A. densiflora M.S. Baker (Vine Hill Manzanita)
A. virgata Eastw. in Sarg. (Bolinas Manzanita)
Astragalus clarinus Jeps. (Clara Hunt's Rattleweed)
Blennosperma bakeri Heiser (Baker's blennosperma)
B. nanum (Hook) Blake var. robustum J.T. Howell (Pt. Reyes blennosperma)
Calamagrostis crassiglumis Thurb. (Thurber's reed-grass)
*Campanula californica (Kell.) Heller (Swamp hare-bell)
*Carex albida Bailey (White sedge)
Castilleja leschkeana J.T. Howell (Pt. Reyes Indian Paintbrush)
Ceanothus gloriosus J.T. Howell var. porrectus J.T. Howell (Mt. Vision ceanothus)

D. Concluded

*Chorizanthe valida Wats. (Sonoma chorizanthe)
Cordylanthus brunneus (Jeps.) Penn. ssp. capillaris (Penn.) Chuang & Heck.
Cordylanthus maritimus Nutt. ssp. palustris (Behr.) Chuang & Heck.
Delphinium bakeri Ewan (Baker's delphinium)
*D. luteum Heller (Yellow larkspur)
Drosera rotundifolia L. (Round-leaved sundew)
Erysimum franciscanum Rossb. var. franciscanum (San Francisco sunflower)
Lasthenia burkei (Greene) Greene (Burke's baeria)
Limnanthes vinculans Ornduff (Ornduff's meadow-foam)
Lupinus tidestromii Greene var. layneae (Eastw.) Munz. (Pt. Reyes lupine)
Polygonum marinense Mertens & Raven (Marin knotweed)
*Potentilla hickmanii Eastw. (Hickman cinquefoil)
*Rhynchospora californica Gale (California beaked-rush)
Tanacetum camphoratum Less. (Dune tansy)

Appendix E

AMPHIBIANS FOUND IN SONOMA COUNTY*

Name	Observed in Vicinity of Easement Sept. 1975	Likely to be Found in or near Easement
Tiger Salamander (*Ambystoma tigrinum*)		
Pacific Giant Salamander (*Dicamptodon ensatus*)		
Rough-skinned Newt (*Taricha granulosa*)		
California Newt (*Taricha torosa*)		X
Red-bellied Newt (*Taricha rivularis*)		
Ensatina (*Ensatina eschscholtzi*)		X
California Slender Salamander (*Batrachoseps attenuatus*)		X
Black Salamander (*Aneides flavipunctatus*)		X
Arboreal Salamander (*Aneides lugubris*)		
Western Toad (*Bufo boreas*)		X
Pacific Treefrog (*Hyla regilla*)	X	X
Red-legged Frog (*Rana aurora*)		X
Foothill Yellow-legged Frog (*Rana boylei*)		X
Bullfrog (*Rana catesbeiana*)		X

*Specimens of each species have been taken in Sonoma County; most are represented in the collection at California State College, Sonoma.

Appendix F

REPTILES FOUND IN SONOMA COUNTY*

Name	Observed in Vicinity of Easement Sept. 1975	Likely to be Found in or near Easement
Western Pond Turtle (Clemmys marmorata)		
Western Fence Lizard (Sceloporus occidentalis)		X
Sagebrush Lizard (Sceloporus graciosus)		
Western Skink (Eumeces skiltonianus)		
Southern Alligator Lizard (Gerrhonotus multicarinatus)		
Northern Alligator Lizard (Gerrhonotus coeruleus)		X
Rubber Boa (Charina bottae)		
Pacific Ring-neck Snake (Diadophis punctatus)		X
Sharp-tailed Snake (Contia tenuis)		
Racer (Coluber constrictor)		
Gopher Snake (Pituophis melanoleucus)		X
Common Kingsnake (Lampropeltis getulus)		X
Common Garter Snake (Thamnophis sirtalis)		X
Western Terrestrial Garter Snake (Thamnophis elegans)	X	X
Western Aquatic Garter Snake (Thamnophis couchi)		X
Western Rattlesnake (Crotalus viridis)		

*Specimens of each species have been taken in Sonoma County, most species are represented in the collection at California State College, Sonoma.

Appendix G

BIRDS RECORDED IN SONOMA COUNTY

Name	Observed in Vicinity of Easement Sept. 1975	Likely to Occur in this Vicinity between April and August
Common Loon	X	X
Yellow-billed Loon		
Arctic Loon		X
Red-throated Loon		X
Red-necked Grebe		
Horned Grebe		
Eared Grebe		X
Western Grebe	X	X
Pied-billed Grebe		X
Wandering Albatross		
Black-footed Albatross		
Fulmar		
Pink-footed Shearwater		
Flesh-footed Shearwater		
New Zealand Shearwater		
Sooty Shearwater		
Ashy Petrel		
Black Petrel		
White Pelican		
Brown Pelican	X	X
Double-crested Cormorant		
Brandt's Cormorant	X	X
Pelagic Cormorant	X	X
Magnificent Frigatebird		
Great Blue Heron	X	X
Green Heron		
Little Blue Heron		
Cattle Egret		
Great Egret	X	X
Snowy Egret		X
Black-crowned Night Heron	X	X
American Bittern		
Whistling Swan		
Trumpeter Swan		
Canada Goose		
Black Brant		
White-fronted Goose		
Snow Goose		
Mallard	X	X
Gadwall		
Pintail		X
Green-winged Teal		
Blue-winged Teal		

G. Continued

Name	Observed in Vicinity of Easement Sept. 1975	Likely to Occur in this Vicinity between April and August
Cinnamon Teal		
American Widgeon		
Northern Shoveler		
Wood Duck		
Redhead		
Ring-necked Duck		
Canvasback		
Greater Scaup		
Lesser Scaup		
Common Goldeneye		X
Bufflehead		
Oldsquaw		
Harlequin Duck		X
White-winged Scoter		X
Surf Scoter		
Black Scoter		X
Ruddy Duck		
Hooded Merganser		
Common Merganser		X
Red-breasted Merganser	X	X
Turkey Vulture	X	X
White-tailed Kite		
Sharp-shinned Hawk	X	X
Cooper's Hawk	X	X
Red-tailed Hawk	X	X
Red-shouldered Hawk		
Rough-legged Hawk	X	X
Ferruginous Hawk		
Golden Eagle		
Bald Eagle	X	X
Marsh Hawk		X
Osprey		
Prairie Falcon		X
Peregrine Falcon		
Merlin	X	X
American Kestrel	X	X
California Quail		
Mountain Quail		
Ring-necked Pheasant		
Clapper Rail		
Virginia Rail		
Sora		X
Common Gallinule		X
American Coot		
Black Oystercatcher		X
Semi-palmated Plover		
Killdeer	X	

G. Continued

Name	Observed in Vicinity of Easement Sept. 1975	Likely to Occur in this Vicinity between April and August
American Golden Plover		
Black-bellied Plover		
Surfbird		
Ruddy Turnstone		X
Black Turnstone		X
Common Snipe	X	
Long-billed Curlew		
Spotted Sandpiper		
Whimbrel	X	X
Solitary Sandpiper		
Wandering Tattler		
Willet	X	X
Greater Yellowlegs	X	X
Lesser Yellowlegs	X	X
Red Knot		
Rock Sandpiper		
Sharp-tailed Sandpiper		
Pectoral Sandpiper		
Baird's Sandpiper		
Least Sandpiper		X
Dunlin		
Short-billed Dowitcher		
Western Sandpiper	X	X
Marbled Godwit	X	X
Ruff		
Sanderling		
American Avocet		
Black-necked Stilt		
Red Phalarope		
Wilson's Phalarope		
Northern Phalarope	X	X
Pomarine Jaeger		
Parasitic Jaeger		
Skua		
Glaucous Gull		
Glaucous-winged Gull		
Western Gull	X	X
Herring Gull		
Thayer's Gull		
California Gull	X	X
Ring-billed Gull	X	X
Mew Gull		
Bonaparte's Gull		
Heermann's Gull		
Black-legged Kittiwake		
Sabine's Gull		
Forster's Tern	X	X
Common Tern		
Elegant Tern		
Caspian Tern		

G. Continued

Name	Observed in Vicinity of Easement Sept. 1975	Likely to Occur in this Vicinity between April and August
Black Tern		
Common Murre		
Pigeon Guillemot		
Marbled Murrelet		
Ancient Murrelet		
Cassin's Auklet		
Rhinoceros Auklet		
Tufted Puffin		
Band-tailed Pigeon		
Rock Dove	X	X
Mourning Dove	X	X
Roadrunner		
Barn Owl		X
Screech Owl		
Great Horned Owl	X	X
Snowy Owl		
Pygmy Owl		
Burrowing Owl		
Spotted Owl		
Long-eared Owl		
Short-eared Owl		
Saw-whet Owl		
Poorwill		
Common Nighthawk		
Vaux's Swift		
White-throated Swift		
Anna's Hummingbird	X	X
Rufous Hummingbird		
Allen's Hummingbird		
Calliope Hummingbird		
Belted Kingfisher		X
Common Flicker		X
Pileated Woodpecker		
Acorn Woodpecker		
Lewis' Woodpecker		
Yellow-bellied Sapsucker		
Hairy Woodpecker		
Downy Woodpecker	X	X
Nuttall's Woodpecker		
Eastern Kingbird		
Tropical Kingbird		
Western Kingbird		X
Ash-throated Flycatcher	X	X
Black Phoebe	X	X
Say's Phoebe		
Willow Flycatcher		
Western Flycatcher		

G. Continued

Name	Observed in Vicinity of Easement Sept. 1975	Likely to Occur in this Vicinity between April and August
Western Wood Pewee		
Olive-sided Flycatcher		
Horned Lark	X	X
Violet-green Swallow		X
Tree Swallow		X
Bank Swallow		
Rough-winged Swallow		
Barn Swallow	X	X
Cliff Swallow		X
Purple Martin		
Steller's Jay	X	X
Scrub Jay		
Yellow-billed Magpie		X
Common Raven	X	X
Common Crow	X	X
Chestnut-backed Chickadee		X
Plain Titmouse		X
Bushtit	X	X
White-breasted Nuthatch		
Red-breasted Nuthatch		
Pygmy Nuthatch		
Brown Creeper		
Wrentit		X
Dipper		
House Wren		
Winter Wren		
Bewick's Wren	X	X
Long-billed Marsh Wren	X	X
Canyon Wren		
Rock Wren		
Mockingbird		
Gray Catbird		
California Thrasher		X
American Robin	X	X
Varied Thrush		
Hermit Thrush		
Swainson Thrush		
Western Bluebird	X	X
Mountain Bluebird		
Townsend's Solitaire		
Blue-gray Gnatcatcher		
Golden-crowned Kinglet		
Ruby-crowned Kinglet		X
Water Pipit		X
Bohemian Waxwing		X
Cedar Waxwing	X	X
Phainopepla		

G. Continued

Name	Observed in Vicinity of Easement Sept. 1975	Likely to Occur in this Vicinity between April and August
Northern Shrike		
Loggerhead Shrike	X	X
Common Starling	X	X
Hutton's Vireo		X
Solitary Vireo		
Warbling Vireo		X
Black-and-white Warbler		
Tennessee Warbler		
Orange-crowned Warbler	X	X
Nashville Warbler		
Parula Warbler		
Yellow Warbler		X
Yellow-rumped Warbler		
Black-throated Gray Warbler		
Townsend's Warbler		
Hermit Warbler		
Chestnut-sided Warbler		
Blackpoll Warbler		
Palm Warbler		
MacGillivray's Warbler		
Yellowthroat		X
Yellow-breasted Chat		
Wilson's Warbler		
American Redstart		X
House Sparrow	X	X
Western Meadowlark	X	X
Yellow-headed Blackbird		
Red-winged Blackbird	X	X
Tri-colored Blackbird		
Hooded Oriole		
Northern Oriole		
Brewer's Blackbird	X	X
Brown-headed Cowbird	X	X
Western Tanager		
Summer Tanager		
Summer Tanager		
Black-headed Grosbeak		
Lazuli Bunting		
Painted Bunting		
Evening Grosbeak		
Purple Finch		
House Finch	X	X
Pine Siskin		X
American Goldfinch	X	X
Lesser Goldfinch	X	X
Lawrence's Goldfinch		
Red Crossbill		

G. Concluded

Name	Observed in Vicinity of Easement Sept. 1975	Likely to Occur in this Vicinity between April and August
Green-tailed Towhee		
Rufous-sided Towhee	X	X
Brown Towhee	X	X
Savannah Sparrow	X	X
Vesper Sparrow		
Lark Sparrow	X	X
Rufous-crowned Sparrow		
Sage Sparrow		
Dark-eyed Junco		X
Chipping Sparrow		
Brewer Sparrow		
Black-chinned Sparrow		
White-crowned Sparrow	X	X
Golden-crowned Sparrow		
White-throated Sparrow		
Fox Sparrow		
Lincoln's Sparrow		X
Swamp Sparrow		
Song Sparrow	X	X

Appendix H
MAMMALS OF SONOMA COUNTY*

Name	Animals, tracks or sign Sept. 1975**	Likely to be in or near Easement
Broad-footed Mole (Scapanus latimanus)	X	X
Shrew-mole (Neurotrichus gibbsii)		X
Vagrant Shrew (Sorex vagrans)		X
Ornate Shrew (Sorex ornatus)		
Trowbridge's Shrew (Sorex trowbridgii)		X
Bats		
Little Brown Myotis (Myotis lucifugus)		
Yuma Myotis (Myotis yumanemsis)		
Long-eared Myotis (Myotis evotis)		
Fringed Myotis (M. thysanodes)		
Long-legged Myotis (M. volans)		
California Myotis (M. californicus)		
Silver-haired Bat (Lasionycteris noctivagans)		X
Big Brown Bat (Eptesicus fuscus)		X
Red Bat (Lasiurus borealis)		
Hoary Bat (Lasiurus cinereus)		X
Townsend's Big-eared Bat (Corynorhinus townsendii)		X
Pallid Bat (Antrozous pallidus)		X
Brazilian (formerly Mexican) Free-tailed Bat (Tadarida brasiliensis mexicana)		
Brush Rabbit (Sylvilagus bachmani)	X	X

*Actual specimens from Sonoma County, as represented in the collection at California State College, Sonoma, plus a study of the literature and other collections have been used to compile this list.

**Since most mammals are nocturnal, a complete list would result only after considerable trapping and/or netting.

MAMMALS OF SONOMA COUNTY (CONT'D)

Name	Animals, tracks or sign Sept. 1975**	Likely to be in or near Easement
Black-tailed Jack Rabbit (Lepus californicus)	X	X
Townsend's Chipmunk (Eutamias townsendii)		
Sonoma Chipmunk (E. Sonomae)		
California Ground Squirrel (Spermophilus beecheyi)		X
Western Gray Squirrel (Sciurus griseus)		
Douglas' Squirrel (Tamiasciurus douglasii)		
Pocket Gopher, variously called Botta (Thomomys bottae) or Southern Pocket Gopher (Thomomys umbrinus minor)	X	X
Heermann's Kangaroo Rat (Dipodomys heermanni)		
Western Harvest Mouse (Reithrodontomys megalotis)		X
Salt-marsh Harvest Mouse (R. raviventris)		
Deer Mouse (Peromyscus maniculatus)		X
Brush Mouse (P. boylii)		
Pinon Mouse (P. truei)		
Dusky-footed Woodrat (Nectoma fuscipes)		
Western Red-backed Mouse (Clethrionomys occidentalis)		
Red Tree Mouse (Phenacomys longicaudus)		
California Vole (Microtus californicus) (Meadow Mouse)	X	X
Muskrat (Ondatra zibethicus)		
Norway Rat (Rattus norvegicus)		X
House Mouse (Mus musculus)		X
Pacific Jumping Mouse (Zapus trinotus) (Z. t. orarious)		

--Whales and Dolphins are not included in this listing

MAMMALS OF SONOMA COUNTY (CONT'D)

Name	Animals, tracks or sign Sept. 1975**	Likely to be in or near Easement
Coyote (Canis latrans)		See note 1.
Gray Fox (Urocyon cineroargenteus)		X
Black Bear (Ursus americanus)		
Ringtail (Bassariscus astutus)		
Raccoon (Procyon lotor)		X
Ermine (Mustela erminea streatori)		X
Long-tailed Weasel (Mustela frenata)		
Mink (Mustela vison)		
Badger (Taxidea taxus)		X
Western Spotted Skunk (Spilogale gracilis)		X
Striped Skunk (Mephitis mephitis)		X
River Otter (Lutra canadensis)		
Mountain Lion (Felis concolor)		See note 2.
Bobcat (Lynx rufus)		X
Northern Sea Lion (Eumetopias jubata) (Steller)		X[3]
California Sea Lion (Zalophus californicus)		X[3]
Harbor Seal (Phoca vitulina)		X[3]
Black-tailed Deer (Mule Deer) (Dama hemionus) (Odoccileus hemionus)	X	X

Notes:

1. One rancher reported that coyotes had been very common many years ago, but that they were not present now. Some very large scat was found by us but not identified as coyote.
2. The same rancher reported a mountain lion several years ago.
3. Possibly at seaward end--Bodega Bay.

APPENDIX J

VISITOR-ATTRACTING FEATURES OF THE RUNNING FENCE and THEIR LOCATIONS. POTENTIAL TRAFFIC CONGESTION POINTS.

As noted in the Text (Visual/Aesthetic Impacts), the indirect visual impacts of the *Running Fence* as an "attractive" object are probably more important then the direct impacts. This Appendix presents a description of the *Fence* route and its "attractive" elements, in some detail, with an assessment of their implications.

Quantitative aspects of traffic impacts are treated in the text (Section II. A. 8--Traffic/Circulation/Parking) and in Appendix K.

The *Running Fence* project will have three stages:

- Construction
- Viewing (during two weeks in September 1976*)
- Removal

The construction and removal stages will not cause sizable adverse impact from visitors, since the placing of poles and cables by men and equipment (especially from a distance) ought not to be much more attractive to viewers than the digging of wells, the building of water supply ponds, or the loading of hay--usual activities on Sonoma County farm and dairy land.

However, the visitor impact will, most decidedly, be during the viewing stage--a maximum of two weeks in September 1976.

During the viewing stage, visitors from the San Francisco Bay Area and beyond are expected. As many as 30,000 people, or 10,000 cars (three persons per car) could be expected on the peak weekend day (fewer on weekdays).* Because there are no specified stopping or parking areas provided for the viewers, the *Fence* will be seen mainly from autos moving along the country roads that are closest to the *Fence*--and from Highway 101. Therefore, congestion (stopping and starting) and traffic backup can be expected, at least during peak viewing periods (see Traffic/Circulation/Parking Section and Appendix K).

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*See Traffic/Circulation/Parking section in text, and Appendix K.

As the *Running Fence* "runs" in an east-west direction, visitors can view it while driving west, and again while returning east, or vice versa (a round trip of about 45 miles). The route from the east would be via the following roads (see Figures J-1, J-2, and 6*).

- Highway 101
- Old Redwood Highway
- Railroad Avenue
- Stony Point Road
- Meacham Road
- Pepper Road
- Walker Road
- Petaluma/Valley Ford Road
- Highway 1
- Franklin School Road
- Marsh Road

The relationships among view of the *Fence*, existence (or lack) of place to stop cars (along public right of way), and potential traffic hazard have been studied in the following detail+ (see Figure J-3 for graphic summary):

1. East to West.

The main visual introduction to the east end of the *Running Fence* route is via the "north-south" auto movement on Highway 101. Travelers in both directions on Highway 101 have their first views of the *Fence* from some distance, so panic stops would be likely only if preceding drivers slow down considerably to view the *Fence*. "Northbound" viewers, at first glimpse of the *Fence* on Meacham Hill or with prior knowledge of the *Fence* route, may exit:

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*Figure 6 appears in Traffic/Circulation/Parking in text, and in Appendix K.

+Notated during normal traffic on summer weekend days, July 26, 1975 and August 3, 1975. Abnormal traffic will change movement of traffic and may make any stopping hazardous.

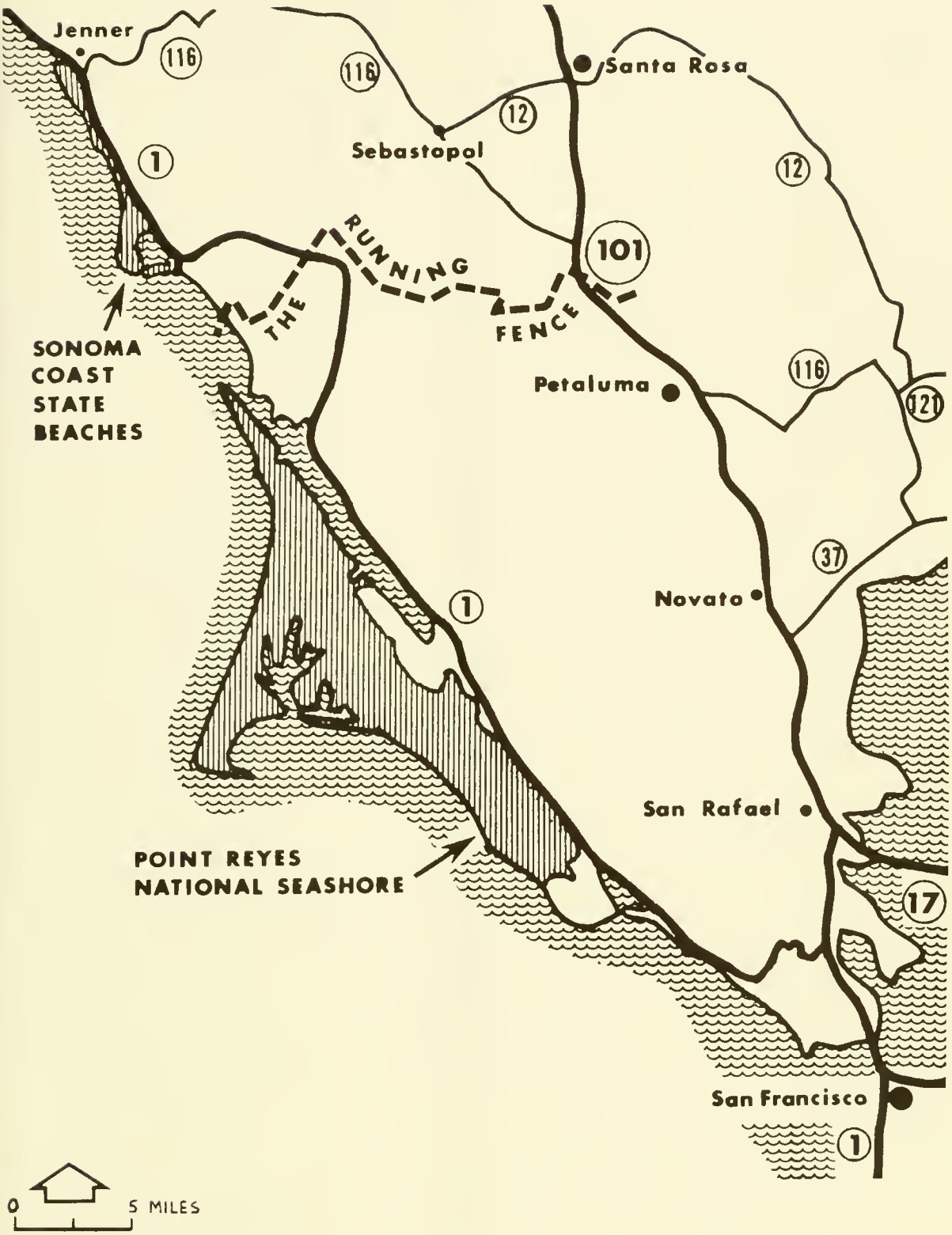
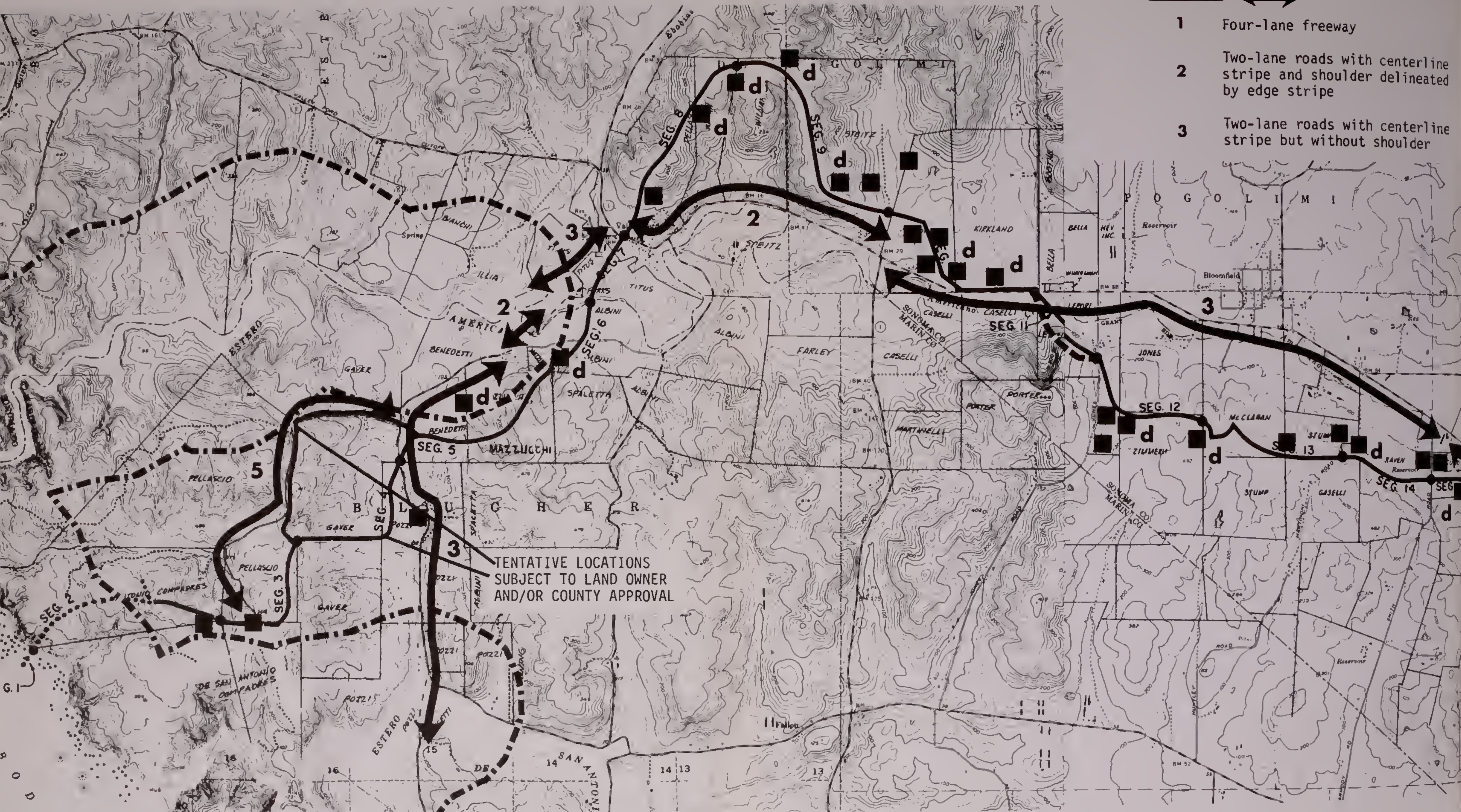


FIGURE J-1 U.S. AND STATE ROUTES, AND COASTAL RECREATION AREAS

FIGURE J-2


Running Fence
Road Type
1 Four-lane freeway
2 Two-lane roads with centerline stripe and shoulder delineated by edge stripe
3 Two-lane roads with centerline stripe but without shoulder
TENTATIVE LOCATIONS SUBJECT TO LAND OWNER AND/OR COUNTY APPROVAL
SEG. 2
SEG. 3
SEG. 5
SEG. 6
SEG. 8
SEG. 9
SEG. 11
SEG. 12
SEG. 13
SEG 14
B L U C H E R
P O G O L I M I
MAZZUCCHI
SONOMA CO
MARIN CO
Bloomfield
KIRKLAND
FARLEY
CASELLI
PELLASCIO
BENEDETTI
ALBINI
TITUS
STEITZ
JONES
ZIMMERH
STUMP
SPALETTA
BIANCHI
PORTER
MARTINELLI
McCLABAN

Type con't.

Two-lane roads with neither centerline stripe nor shoulder

One-lane road

Gate Type

■ Pre-existing interior gate

■d Existing interior gate donated by *Running Fence* Corporation

0 2000′

REFER TO FIGURE 3 FOR BASIC LEGEND

FIGURE J-2 CIRCULATION CHARACTERISTICS

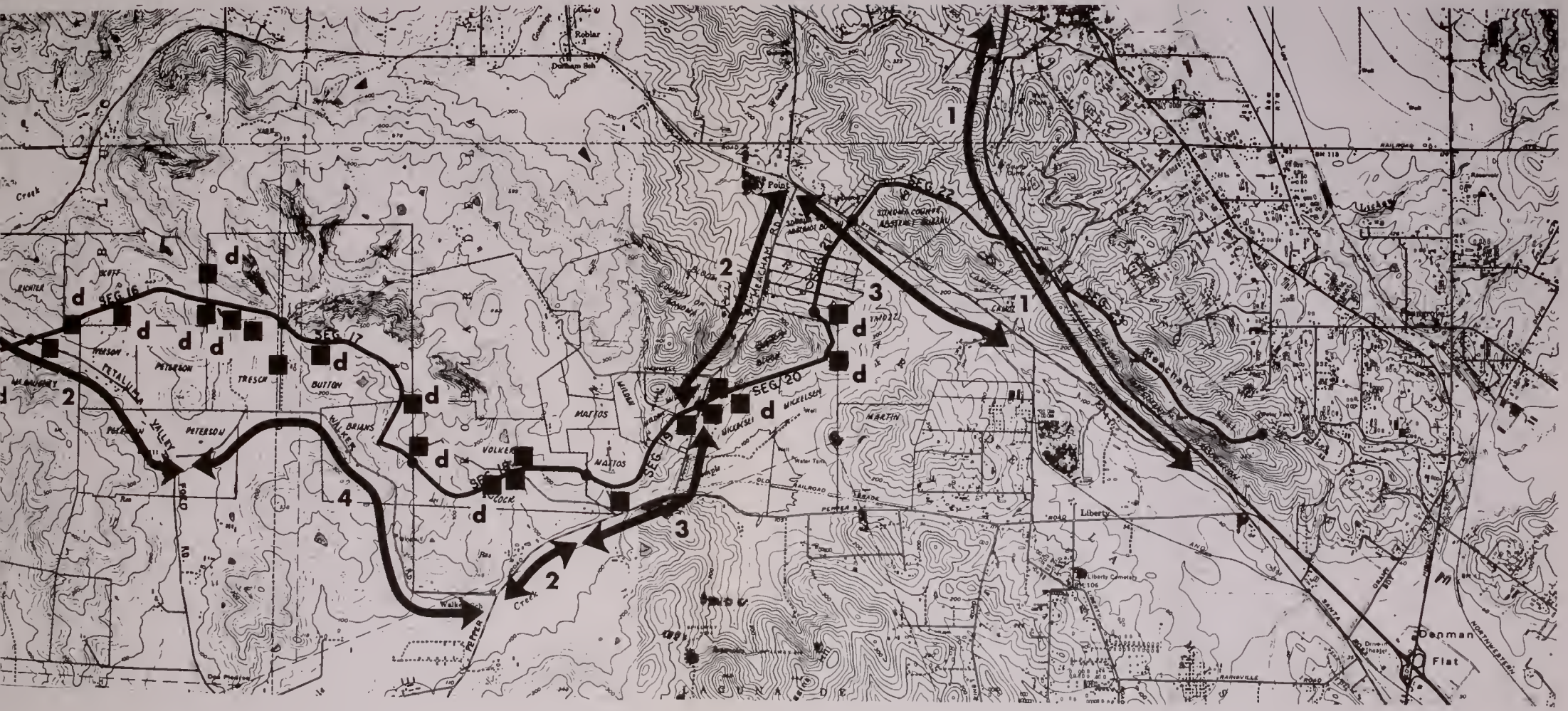
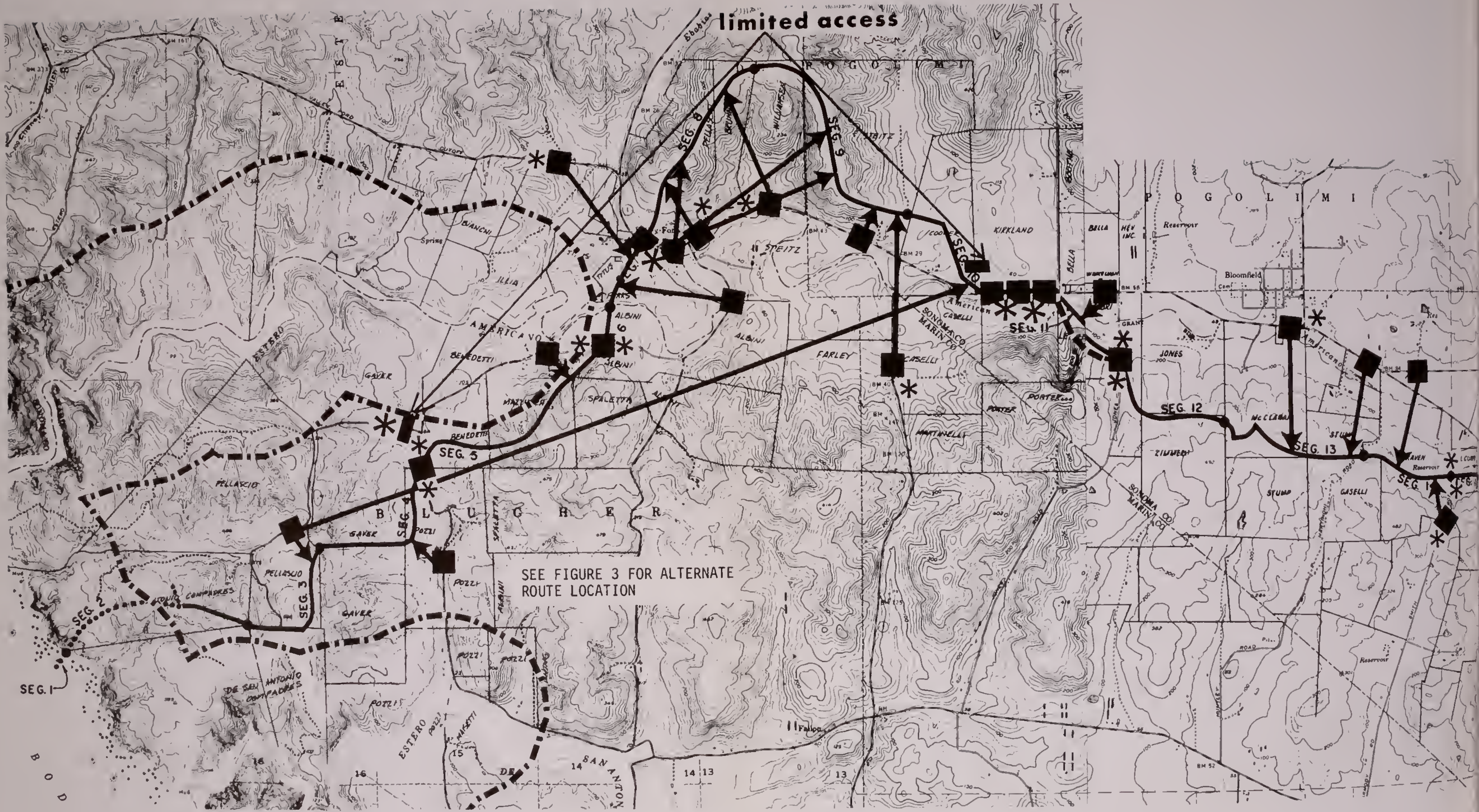


FIGURE J-3


limited access
SEG. 1
SEG. 2
SEG. 3
SEG. 5
SEG. 12
SEG. 13
SEE FIGURE 3 FOR ALTERNATE
ROUTE LOCATION
KIRKLAND
FARLEY
Bloomfield
P O G O L I M I
B L U C H E R

Running Fence

Viewpoint

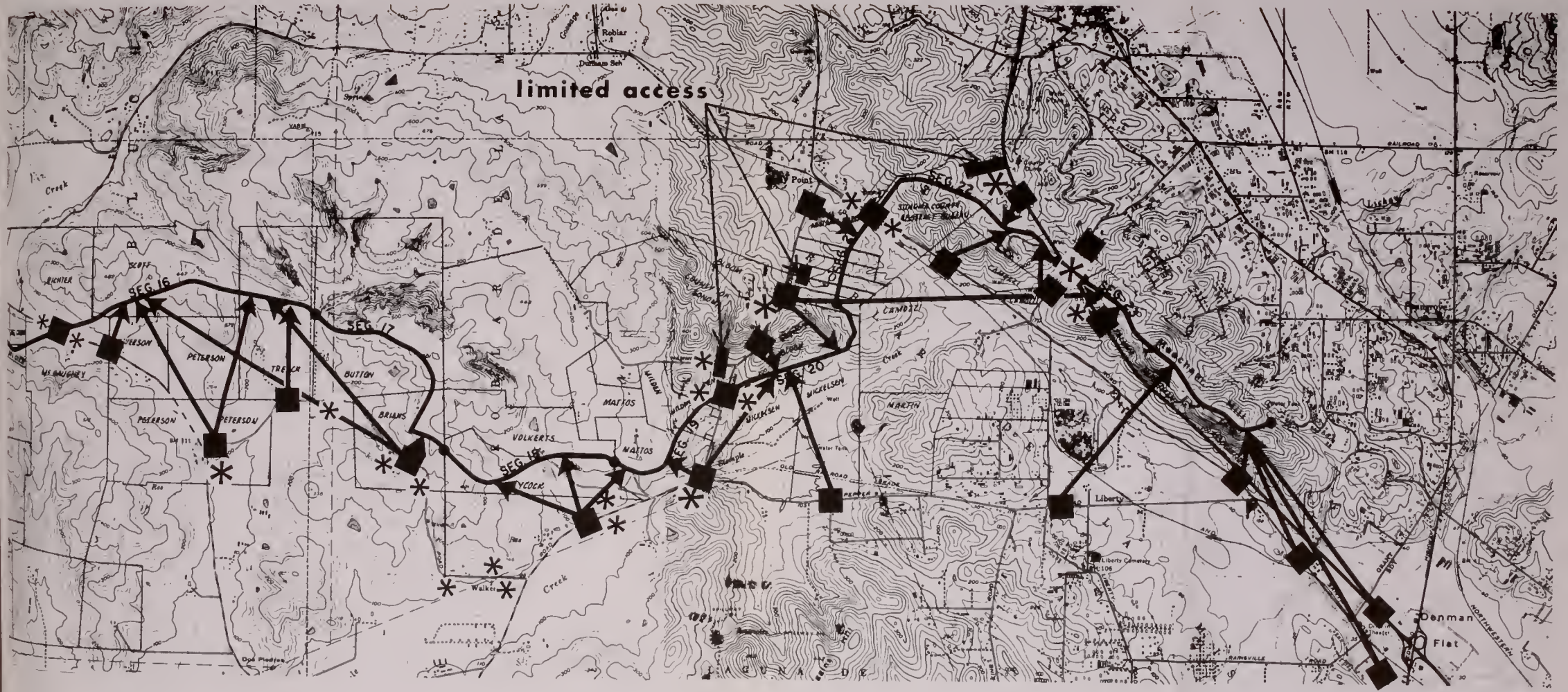
Point of hazard

Limited access areas

0 2000'

REFER TO FIGURE 3
FOR BASIC LEGEND

FIGURE J-3 FENCE VIEWS AND TRAFFIC HAZARDS



- Onto Old Redwood Highway southbound, then to Stony Point Road northwestbound, parallel to the freeway and to the *Fence*;

- Onto Railroad Avenue (where *Fence* breaks at freeway), which runs under freeway bridge and connects with Stony Point Road;

- Onto West Sierra Avenue, which also connects with Stony Point Road (Southbound) for return to *Fence* route.*

For traffic moving "south" on 101, the only turnoff after viewing the *Running Fence* is at Old Redwood Highway (southbound) and then onto Stony Point Road heading northwest. Southbound Highway 101 viewers with prior knowledge of the *Fence* route may also exit at Gravenstein Highway, for connection with Stony Point Road. South-moving traffic on 101 has access to a truck stop providing a good view of the *Fence*, while presenting a real hazard to traffic due to congestion.**

The *Fence* is not visible from Old Redwood Highway, east of the freeway, except by concentrated exploring along short roads leading from Old Redwood Highway. There is a route from Old Redwood Highway to Stony Point Road via Railroad Avenue, crossing under Highway 101.

Along Stony Point Road, there is ample shoulder area for autos to stop for viewing and for photographing the *Fence* (a probable desire of numerous viewers).+

North of Denman Road, Stony Point Road has a wide shoulder that would provide space for up to about 20 cars, for viewing the *Fence* on Meacham Hill.

Pepper Road at Stony Point Road provides a return to Highway 101 for southbound traffic only. North of this point, there is no stopping till Jewett Road (which is out of view of the *Fence*).. Further north, at the PG & E Cotati Substation, there is room for up to about 10 cars, with view of the *Fence* from both sides of Stony Point Road. The *Fence* route crosses the road (the *Fence* breaks) near this point at a low point on the route.

From Stony Point Road, *Fence* viewers will turn south onto Meacham Road and run roughly parallel to the *Fence* until the *Fence* route

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*Also Gravenstein Highway interchange further north, connecting with Stony Point Road.

**Recommended to be closed during *Fence* viewing stage(especially during weekend)--Captain Eric Denton, Commander California Highway Patrol, Santa Rosa area, Telephone Communication, August 20, 1975.

+Statements in this EIR about space along shoulders merely indicate that there is a physical capability for stopping. It is not certain that this will be permitted. In general, such stopping is permitted when there is enough shoulder width for the auto to be entirely clear of the roadway. However, motorists must move on when so directed by traffic controllers (Lt. Robert Greer, Santa Rosa Area Office, California Highway Patrol, Telephone Communication, October 17, 1975.

crosses Meacham Road, just north of Pepper Road, near Stemple Creek (a low point in the route). Near Stony Point Road, Meacham Road has shoulders to accommodate up to about 10 cars where there is a good view.

There are additional shoulders on both sides of Meacham, till the entrance to the dump.* At the top of the rise at the driveway of 388 Meacham, there is a clear view of the *Fence*, but no place to stop cars on the right of way. This presents a conflict with the driveway entrance and with road traffic. Further on, Hammel Road (not a through road) offers a stopping place to see the *Fence*, but turning around on Hammel presents a traffic-jam potential.

At the intersection of Pepper Road and Walker Road, up to about 25 cars can be accommodated along the shoulder, for stopping, viewing, and photographing. Various single-car spaces are available at the edge of the road and at stream culverts, allowing for emergency and viewing stops.

At the intersection of Walker Road and Petaluma/Valley Ford Road, about 5 cars can be accommodated to view the *Fence* at a distance, for a length of 1/4 to 1/2 mile. About 1/4 mile beyond this intersection, there is another pull-out for about 5 cars, with a clear view straight ahead to the *Fence*. The view at the Petaluma/Valley Ford Road break in the *Fence* is unobstructed, and a potential distraction to motorists.

The view south from Roblar Road, which accommodates about 3 cars, is also unobstructed. Once again, turning around presents a traffic hazard. The community of Bloomfield and Bloomfield Road view the *Fence* directly to the south, but there is very little space to stop a car for viewing or photographing. Within Bloomfield but out of sight of the *Fence* there is a vacant lot suitable for parking (50' x 100' ±) at Sutton and Bloomfield; however, its use is determined, of course, by its owner.

The *Fence* runs parallel to, and on the north side of, Petaluma/Valley Ford Road, on private property, just beyond Carroll Road** (not a through road, where traffic would interfere with residents' activities and should be discouraged). About 20 cars can be temporarily accommodated on the northern shoulder of Petaluma/Valley Ford Road for viewing and photographing--the only opportunity to see the *Fence* at close range from a public right of way (unless Estero Road in Marin County is permitted to be part of the *Fence* route and public access is allowed). At this point, assistance may be needed to aid traffic flow and to discourage trespassing.+

The *Fence* can be viewed straight-on by viewers facing north on Highway 1.++Just before one reaches the relatively flat valley of the

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*Dump traffic is from 7 AM to 4 PM, including Saturdays and Sundays.

**Also known as Cooper-Kirkland Road.

+According to the applicant's plans, monitors will be stationed at such points to discourage trespassing and off-duty Sheriff's deputies will assist in traffic movement.

++This would actually be the first view for those approaching from the south on Highway 1 and then taking the West-to-east route.

Petaluma/Valley Ford Road, there is a hill on Highway 1 to the south from which about five miles of *Fence* can be seen; about 50 cars can be temporarily accommodated at this point. The *Fence* follows the ridges to the north behind eucalyptus trees, then descends upon the town of Valley Ford where the *Fence* route crosses (breaks at) Petaluma/Valley Ford Road in the midst of commercial and social activities, yet staying only on private property. It is near here that private parking and portable toilet facilities and litter containers* could be most needed and most easily reached by the public--where commercial services are available. Valley Ford presently can absorb some parking (in private commercial parking spaces), but beyond about 20-30 cars, traffic would be obstructed.

The *Fence* crosses into Marin County at Americano Creek, just southeast of Valley Ford, and can be viewed by southbound viewers along Franklin School Road, at which the *Fence* breaks on its way to the coast and into the shallow waters of the Pacific Ocean. The coastal portion of the *Fence* route is on private property, generally remote from public roads and access, and therefore, not viewable by auto** or by casual hiker except from long distances (Bodega Harbor or Tomales Bluff) or from private property (Dillon Beach). However, the *Fence's* entry into the ocean will be viewable from airplanes (probably from local airports) and from boats (from Bodega Harbor and Tomales Bay).

2. West to East.

For the traveler approaching from the west toward Valley Ford, the *Fence* can first be seen from the Valley Ford Cutoff; there is no stopping until the space at the vegetable stand on the old right-of-way, where there is, however, no view of the *Fence*.

Off Franklin School Road is Estero Road, a two-mile, one-way-traffic, partially paved (Marin) County-maintained road that leads to private property and offers views of much of the *Fence* (as proposed) from a long distance, looking east at and beyond Valley Ford. However, it presents traffic, fire, and trespassing hazards. An alternative *Fence* route, proposed by the applicant. is to use the public right-of-way of Estero Road to connect with the currently proposed route on the private properties of Pellascio and Compadres de San Antonio at the coast. Although Estero Road serves only a few ownerships, so that normal traffic is limited, the proximity of the 18' nylon and metal *Fence* adjacent to interesting, abandoned,

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*Litter should be collected during the viewing phase for health and aesthetic reasons.

**Estero Road is county-maintained for a portion of its length; it affords some views of the *Fence* on its originally proposed (GAVER property) alignment. However, the road supports only one-way traffic. Its use by viewers would probably be discouraged. On the alternate *Fence* alignment along Estero Road, viewer control would probably be even more important.

and dilapidated farm buildings (although potentially attractive to photographers) would increase traffic, fire, and trespassing hazards. Therefore, Estero Road should be closed to general traffic or its use should at least be discouraged in any event, but especially if the *Fence* route is realigned to the Estero Road right of way.

At Marsh Road, the *Fence* route crosses the road, creating an attraction where only a few cars can be accommodated. Therefore, a potential traffic hazard exists unless traffic is kept moving. Traffic should be kept moving on Franklin School Road, Middle Road (Slaughter House Road), and various other roads, as well as Marsh Road. On Middle Road, there is a small shoulder/pull-off with an unobstructed view to the *Fence* on a ridge to the north.

On Petaluma/Valley Ford Road near Carroll Road, where the *Fence* runs parallel and close to the east-west road, there is no parking or stopping space on the right (south) side except for one car space over a culvert. Traffic movement may need aid here.*

The *Running Fence* route crosses Petaluma/Valley Ford Road at the joining of Gericke (Jones) Road, near Americano Creek, a low point.

West of Bloomfield, going east, is an unobstructed view of the *Fence*, at a limited space for car stopping, which makes this area potentially dangerous. Along the St. Anthony Farms property, there is also space forup to 10 cars along the right of way; these can take advantage of the view encountered there. There is also space for up to 4 cars further east. The shoulder is continuous (providing for more cars) past Roblar Road, where it ends as the view also ends (before bridge culvert) near the Raven property.

The *Fence* route crosses Carmody (Smith) Road about 300 yards south of Petaluma/Valley Ford Road and continues behind farm structures.

In front of the Del Curto property is a large, apparently safe pull-out about 300' long, where the *Fence* view is fairly clear. Further east, the *Fence* crosses Petaluma/Valley Ford Road from the McGaughey property onto the Richter property. The *Fence* view is unobstructed. In addition, the shoulder of this road, separated from the main roadway by a white line, can accommodate cars for 1/8-1/4 mile. Motorists will lose sight of the *Fence* as it goes behind the Iverson property hills and trees, and then onto the Scott property where there is a clear view of the *Fence* at a distance from the road; the same shoulder is available for stopping cars.

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*By off-duty Sheriff's deputies (use of off-duty Sheriff's deputies or monitors will vary with time: day or night, weekend or weekday).

The road system turns away from the *Fence* route on Walker Road. Near the intersection of the latter with Petaluma/Valley Ford Road, there is a clear view to the distant *Fence*, but it is an unsafe place to stop. Just before Petaluma/Valley Ford Road narrows a bit further on, there is a place for several cars (up to 5) to stop, just before reaching the line of eucalyptus trees* which parallel Walker Road. At the rise and the turn to left onto Walker Road, there is a view and a place for one car, after which traffic should keep moving.

At the entrance to the Tresch property on Walker Road is a clear view to the *Fence* at a distance of about 3/4 mile for a span of about one mile, and the road shoulder can accommodate about 10 cars. Just beyond is a culvert providing space for one car on each side of the road for a view of the *Fence*, partially blocked by willow trees in the stream.

The driveway of the Button property, opposite the Valena driveway and adjacent to the Tresch property, is a stop for one car with a clear *Fence* view, but in conflict with the driveway, and therefore, with the use of private property. Beyond this point (further east) there is no place to stop for some distance. At the top of the knoll, there is a panoramic view of the *Fence* (looking back about a mile); however, without stopping space, this view presents a real traffic hazard. At the top of the hill, there is some view to the left and back with pull-outs for one car on each side of the road adjacent to the Brian property, and one more car space beyond the near eucalyptus trees. Where eucalyptus trees abut the road, there is shade--a temptation for stopping during the heat of late summer, but this is hazardous due to the lack of a place to stop.

After the area of the eucalyptus trees, there is a partially obstructed view but there is no stopping place till the end of Walker Road (up to 3 cars). Just beyond Walker Road on Pepper (eastbound) there is ample shoulder for stopping, about 1/4 mile, accommodating up to approximately 40 cars and providing a view of the *Fence* at a distance of 3/4 to 1 mile. Along much of Pepper (between Walker and Meacham Roads)there is a clear *Fence* view at a distance of about 1/2 mile for a span of about 1/2 mile. A shoulder that may permit stopping runs alongside the road to the point where the view disappears.

On Pepper Road, one car space at the culvert allows an unobstructed view of the *Fence* for a short distance, and one potentially hazardous space opposite the Aycock property also permits viewing. Opposite the Volkert driveway entrance is space for three cars on the shoulder before culvert. Opposite the Mattos property is a viewpoint for the *Fence* 1/4 mile away for length of about 1/4 mile.

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*On which several turkey vultures were observed on one occasion.

Near the intersection of Pepper and Meacham is an area of shade during part of the day from eucalyptus trees along the road. Stopping here is a temptation during the heat of late summer,* but lack of space may make this a traffic hazard. This point presents a clear view of *Fence* less that 1/4 mile distant for a length of 1/4 mile. Closer to the intersection is pull-out space for up to about 10 cars.

Southbound traffic may continue on Pepper Road to Highway 101 to return to the center of the Bay Area. Although distant from the *Fence*, this part of Pepper Road presents some clear views of it.

After the turn onto Meacham from Pepper, there is space for up to about 6 cars on shoulders with an unobstructed view. Due to lack of space and the traffic hazard beyond (driveways) there should be no stopping till the culvert beyond the first farmhouses. The *Fence* route crosses the road here, adding attraction and thus hazard. The traffic should be kept moving till just before the road to the dump,** at a cattle-loading area with space for about 3 cars. There is no view ahead here, but a clear view behind in the distance.

Opposite the dump on Meacham Road+ is space for up to approximately 20 cars--to the top of the hill where pull-out space is very good. The view is panoramic and includes three different sections, each for about 1/4 mile distance, plus Meacham Hill about 2 miles away.

Everett Road in the Happy Acres subdivision has a clear view of the *Fence* nearby and a panoramic view of the *Fence* on Meacham Hill. However, traffic should be controlled away from the houses and the unimproved roads of the subdivision.

Approaching Stony Point Road, Meacham Road has ample shoulder all the way until just before the corner of Stony Point Road. The view is clear for a long distance, though semi-obstructed.++

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*Heat and lack of shade (easterly part of route) or fog and wind (westerly part of route) and rise in gasoline prices may discourage some motorists from visiting and viewing the *Fence*. Likewise, TV coverage may either encourage or discourage viewing attendance. Many visitors may be satisfied with viewing only a small portion of the *Running Fence* rather than viewing the whole length in detail from two directions; this could relieve some potential congestion.

**Generating traffic from 7 AM to 4 PM daily including Sunday.

+Maximum speed limit is 40 mph.

++Although there is road construction in progress in 1975 on Stony Point Road and on Railroad Avenue (and Bloomfield Bridge on the Petaluma/Valley Ford Road), it is due to be completed by 1976.

On Stony Point Road, about 1/4 mile from Meacham Road, the *Running Fence* crosses the road near the PG&E Cotati Substation and runs uphill perpendicular to the road. There is space for about 10 cars with some view, and about 20 cars with no view, both with some hazard.* A culvert bridge over a gully (low point) again provides space for one car to stop.

At one half the distance from Meacham Road to Railroad Avenue is a clear view to Meacham Hill and the *Fence*. In the section of Stony Point Road facing Railroad Avenue, 6-8 cars can pull out to view the *Fence* in Meacham Hill. Space continues more or less to the corner of Railroad Avenue. The view is partially unobstructed.

There is some space for stopping at Jewett Road, but it is hazardous, and there is some stopping space at driveway entrances, but this too is hazardous and also a conflict with use of private property, and so should be discouraged.

Stony Point Road can lead to Highway 101 southbound via the Pepper Road on-ramp.

A simplified graphic summary of the above detailed information can be found on the foldout map, Figure J-3, which includes view angles and potential hazards along the *Running Fence* route.

Mitigation

Viewers should be kept off private property and discouraged from public roads that present hazards: (1) roads that are not through-roads; (2) too-narrow roads; (3) roads without turn or easy connection to other roads. Monitors and off-duty Sheriff's deputies will be hired by the applicant to protect private property and to guide traffic flow.** The applicant does not propose to provide parking areas. Therefore, in general, traffic should be kept moving smoothly. For those points where views of the *Running Fence* are especially clear or panoramic, the tendency of the curious (especially photographers) would be to stop. If there is no place to stop, a potential hazard exists and traffic should be kept moving. Sheriff's deputies will guide traffic while monitors (college students and others) will

*Stony Point Road has a record of accidents, especially during nighttime (1973).

**Only uniformed police officers can control traffic on public roads *per se*.

guard private property using two-way communication for assistance. The number of persons controlling traffic and protecting private property will be determined on the basis of need (100 anticipated on 8-hour shifts). Need will vary with time: (1) weekday vs. weekend day; (2) day vs. night.

Road construction and maintenance activities should not be scheduled during the viewing period. All planned Sonoma County roadwork in the *Fence* route area will be completed by September 1976 (Sonoma County Public Works Department, letter of August 26, 1975 to ESA), most of it in calendar 1975.

If private parking is provided by private landowners* (separate from any part of the applicant's proposal or plan), guidance should be received in advance by the landowner from public authorities** in order not to create more traffic problems because of egress and ingress conflict on roads.

If traffic becomes too congested for stopping for viewing and photographing (see Traffic/Circulation/Parking Section), stopping, except for emergencies, could be prohibited; even whole roads could be closed to visitors.† If the viewing/stopping hazard becomes dangerous to public safety, even after employment of the suggested mitigation measures (here and in the Traffic/Circulation/Parking Section), the ultimate mitigation measure can be employed: remove the *Fence* panels (especially prior to the first weekend) before the end of the viewing period. The applicant has agreed to this condition in advance; the decision will be made by Captain Denton.

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*Some landowners have stated interest in providing parking on their land.

**Captain Eric Denton, Commander, California State Highway Patrol, Santa Rose Area; Sonoma County Traffic Engineer; Sonoma County Sheriff's Office.

†Road closing, with the exception of the Estero Road situation, may be unworkable. The applicant has stated that he will not accept road closures (exception of Estero Road) as part of the project, because of their additional impacts. Instead, he accepts removal of the panels as the ultimate mitigation measure.

Appendix K*

Traffic/Circulation/Parking Details and Background

Setting**

Beginning at the project's east end, the principal traffic-way for viewing the *Running Fence* will be via U.S. 101 (Freeway), West Railroad Avenue, Stony Point Road, Meacham Road, Pepper Road, Walker Road, Petaluma/Valley Ford Road, Franklin School Road, and Estero Road near the project's west end [See Figures J-1 and J-2 (Appendix J) and 6 (Section II.A.8 and Appendix K)]. To reach these roads, most traffic will approach from the south on the Freeway (Route 101), exiting at one of three interchanges: the Old Redwood Highway interchange at Denman Flat and then along Stony Point Road; Railroad Avenue; or Roblar/West Sierra Avenue and Stony Point Road. The return to the freeway may be by these same routes except that, instead of using Railroad Avenue, traffic must use an on-ramp at Pepper Road to the south of Railroad Avenue (see Figures J-2 and 6). From the north, those who leave the freeway will use the Gravenstein Highway (Route 116) ramps and then Old Redwood Highway (Railroad Avenue) or Stony Point Road. Those southbound motorists who first decide to leave the freeway after noticing the *Fence* would use the Denman Flat Interchange. Those who do not leave the freeway may view parts of the *Fence* from the freeway itself.

Twenty-four hour weekday traffic counts by Caltrans† and Sonoma County††, available at the start of this EIR project, are as follows:

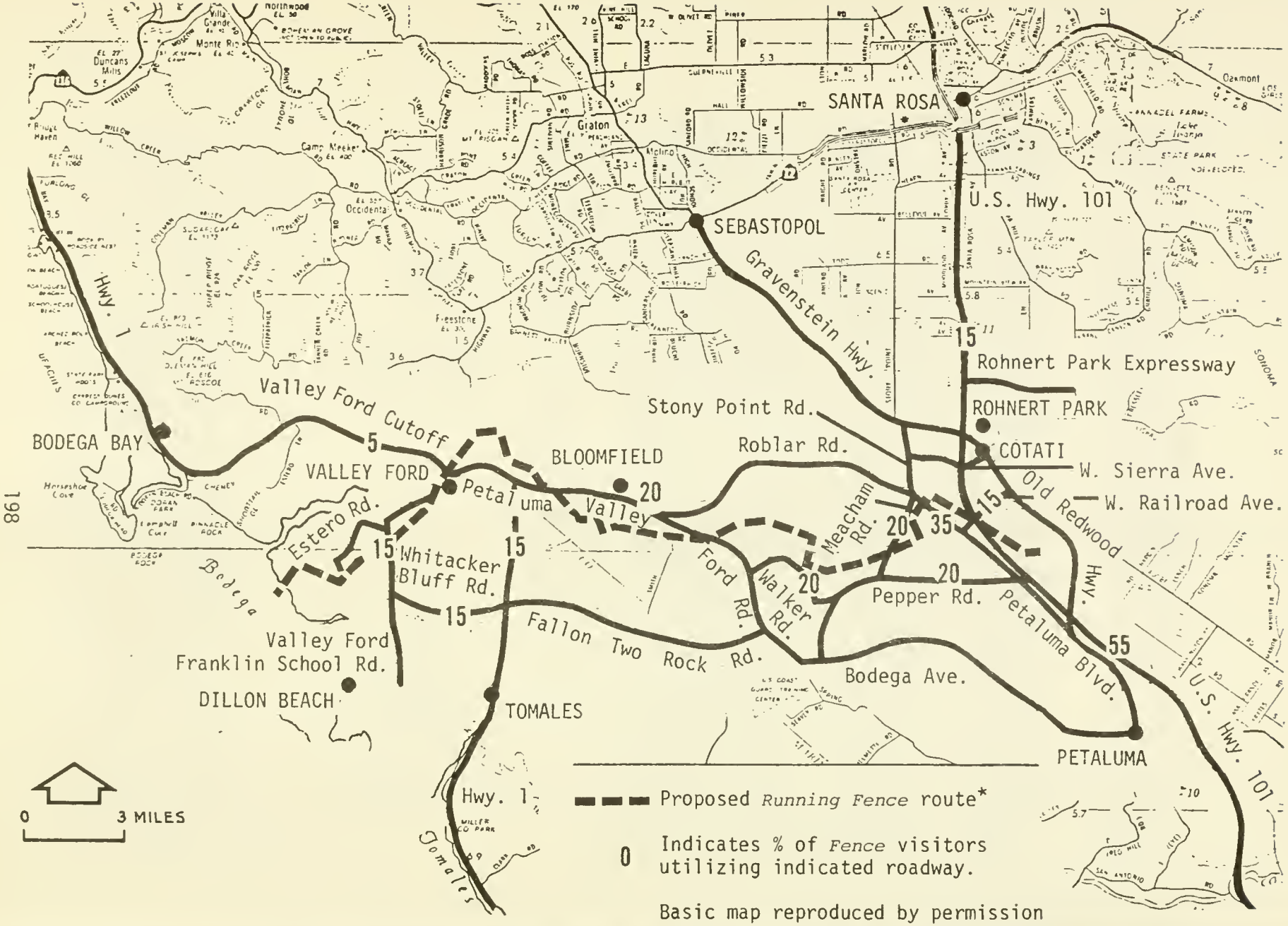
	Count
Freeway (U.S. 101)	36,000 to 52,000†
State Highway Route 1	2,200 to 3,400†
Petaluma/Valley Ford Road	700 to 3,400††
Stony Point Road	1,500††
Pepper Road	240††
West Railroad Avenue	267††

*This Appendix is based on the calculations and judgment of Donald K. Goodrich, Transportation and Traffic Engineer (Consultant to ESA), except where other contributors are specifically identified.

**The environmental setting can be presented only if the potentially involved traffic network is first delineated.

†1973 Traffic Volumes on the California State Highway System, by Caltrans.

††Sonoma County Traffic Department, 1973-July 1975.


SANTA ROSA
U.S. Hwy. 101
SEBASTOPOL
Graton
Camp Meeker
Occidental
Freestone
Duncans Mills
Monte Rio
Villa Grande
Northwood
Ozmont
Hwy. 1
Gravenstein Hwy.
Rohnert Park Expressway
ROHNERT PARK
COTATI
W. Sierra Ave.
W. Railroad Ave.
Old Redwood Hwy.
Stony Point Rd.
Roblar Rd.
Valley Ford Cutoff
BODEGA BAY
VALLEY FORD
BLOOMFIELD
Petaluma Valley
Estero Rd.
Whitacker Bluff Rd.
Meacham Rd.
Ford Rd.
Walker Rd.
Pepper Rd.
Petaluma Blvd.
Bodega Ave.
Fallon Two Rock Rd.
Valley Ford Franklin School Rd.
DILLON BEACH
TOMALES
Hwy. 1
Gomales
PETALUMA
U.S. Hwy. 101
0 3 MILES
Proposed Running Fence route*
0 Indicates % of Fence visitors utilizing indicated roadway.
Basic map reproduced by permission of the California State Automobile Assoc. - Sonoma, Napa Counties, 1975

Traffic counts on the principal traffic-way and on nearby roadways were taken in August and September 1975 by the Sonoma County Department of Public Works, in order to anticipate normal traffic volumes in September 1976, when the *Fence* will be in place. The counts were taken at the following locations*; at the time of preparation of this Draft EIR, data for the segments marked "**" were available. They are summarized in Table K-1.

Stony Point Road, south of Meacham Road
Railroad Avenue, east of Route 101
Meacham Road, east of Pepper Road
Pepper Road, east of Walker Road
Walker Road, east of Petaluma/Valley Ford Road**
Petaluma/Valley Ford Road, east of Gericke (Jones) Road**
Petaluma/Valley Ford Road, east of Franklin School Road (Hwy 1 segment)**
Franklin School Road, north (east) of Estero Road**
Bodega Avenue (Tomales Road), west of Pepper Road**
Petaluma/Valley Ford Road (Bodega Avenue), east of Pepper Road
Highway 1, just south of Petaluma/Valley Ford Road**

From all these counts and from personal observations, it appears that most project-area roads currently operate well below capacity. Exceptions may be certain segments of the freeway and of Route 1 on Sundays, particularly in the summer months.

The principal traffic-way for viewing the *Fence* is composed of five basic road types (See Figure J-2, Appendix J):

1. Four-lane freeway

2. Two-lane roads with centerline stripe and shoulder delineated by edge stripe

3. Two-lane roads with centerline stripe but without shoulder

4. Two-lane roads with neither centerline stripe nor shoulder

5. One-lane road

A review of accident records furnished by Sonoma County indicates an unusually high percentage of nighttime accidents on Stony Point Road in 1973, showing a possible need for after-dark road delineation. However, the pattern did not recur in 1974.+

*U.S. highways may not be counted by local jurisdictions.
**Count data available at time of preparation of this Draft EIR.
+Sonoma County Traffic Department Accident Reports for 1973 and 1974.

TABLE K-1

TRAFFIC COUNTS, AUGUST 30 - SEPTEMBER 22, 1975*
(SONOMA COUNTY PUBLIC WORKS DEPARTMENT)

Road Segment	Weekday		Weekend or Holiday	
	24 Hour	Peak Hour	24 Hour	Peak Hour
Walker Road, East of Petaluma/Valley Ford Road	77-103	11-14	95-139	13-19
Petaluma/Valley Ford Road, East of Jones (Gericke)Road	1417-2027	132-181	2859**-3451**	264**-357**
Highway 1, North of Bridge over Estero Americano (Just South of Petaluma/Valley Ford Road)	696-866	83-96	1224-1263	144-154
Petaluma/Valley Ford Road, East of Franklin School Road (Highway 1 Segment in Valley Ford)	1774-2325	187-216	3013-3933	293-457
Franklin School Road, East of Estero Road	184-205	26-29	344	51
Bodega Avenue, West of Pepper Road (Short Segment of Petaluma/ Valley Ford Road at Two Rock Ranch)	4213-5190	432-470	6737**-7363**	652**-746**

*Ranges indicated, where several days' counts were made.
**Labor Day Weekend.

Impact

1) Expected Visitors.*

To arrive at an estimate of the size of the crowd that will be attracted by the *Fence* the history of special events in Northern California and at Christo's previous showings was investigated. The results appear below:

SPECIAL EVENT	Approximate Daily Visitation** (persons)
(Bay Area/California)	
Sonoma Fair	40,000
Sears Point Raceway	4,000
Napa Wine Festival	10,000
Composite of all West Marin Recreation Areas	50,000
Sonoma-Marin Fair	15,000
Napa Area Winery	1,500
Calaveras District Fair (Frog Jumping)	12,000
Santa Rosa Art Fair	1,000
Christo's Showing	
Sydney, Australia	10,000
Kassel, Germany +	8,000
Rifle, Colorado	10,000

*Traffic problems are not expected during construction and removal of the *Fence*. The limited number of construction vehicles will make little use of the roadways, except for arrival and departure each day. As noted in Appendix J, little visitor traffic is expected during construction and removal.

** Information obtained by ESA from special-event sponsors. Attendance data for the Renaissance Pleasure Faire (Black Point area of Marin County) are not available. Faire staff members state that they are considered confidential information. Since the Faire runs through the month of September, there is a potential traffic conflict between *Fence* and Faire traffic, particularly on Highway 101 south of Highway 37.

+An exhibition with 60 other artists.

A preliminary estimate of the visitor demand generated by the *Running Fence* has been made on the basis of crowd data from previous events, the distance of the *Fence* route from Bay Area population centers, and the probable sources of *Fence* visitors. It must be emphasized that this estimate is a matter of judgment rather than calculation; the *Running Fence* will be a unique event, with no real precedent to serve as a basis for extrapolation from the past. Factors taken into account in the estimation of numbers of visitors and the ways in which they will disperse to view the *Fence* include the following:

- The *Fence* will be visible during all daylight hours for its proposed two-week display period. This distinguishes it from single-occurrence events, such as sports events or rock concerts, and makes it more like county fairs and similar occurrences.

- Unlike extended-duration events that occur at a fixed site, the *Fence* will be visible at numerous points from over 40 miles of public roads.

- Although Christo's past projects drew relatively low public attendance (leading, to the best of our knowledge, to no unacceptable traffic congestion), the total number of visitors attracted by the *Fence* cannot be ascertained with certainty because of demographic differences between the Bay Area and the sites of the prior projects.

- Many viewers, even among those making a special trip to view the *Fence*, may be satisfied with the view they receive from the main approach routes, Highways 101 and 1, and therefore will not disperse onto the cross-county traffic-way.

- Total attendance will depend on publicity to date, particularly that associated with the environmental review process, but also that associated with museum and lecture events involving the applicant. It may depend even more on the same kinds of publicity in the future.

- Variation in daily attendance during the two-week display period will depend on media publicity immediately prior to and during that period. It is likely that attendance will be higher on weekends than during the week, and that it will build up over the two-week period, so that the peak day will be the second Sunday, all other factors being equal.

The resulting estimate of the total number of visitors on the peak day (presumably the second Sunday) is expressed in the following in terms of the probability of occurrence of several levels of attendance:

VISITOR DEMAND ON PEAK DAY

Number	Probability of Occurrence (Judgment)	Explanation
15,000 (5,000 cars)*	60%	(probable)
30,000 (10,000 cars)*	30%	(possible)
50,000 (16,700 cars)*	5%	(top demand, though only 30,000 may be able to arrive, due to limitations of road network)

2) Direction of Approach.

The origin and directional flow of visitors to the *Fence* viewing area can be estimated by comparing data from West Marin and Sonoma County attractions. The origin of visitors to recreational areas in western Marin County is tabulated below:

ORIGIN OF VISITORS TO WEST MARIN RECREATIONAL AREAS

County	Percent of Visitors
Alameda	8.5
Contra Costa	6.2
Marin	21.0
Napa	1.0
San Francisco	18.4
San Mateo	4.6
Santa Clara	6.4
Santa Cruz	0.3
Solano	0.6
Sonoma	5.0
Other	28.0
TOTAL	100.0

Source: Table 4, "The Golden Gate Recreational Travel Study Model" (Area 1 and Area 3 Reports, 1975).

*Three visitors per car (estimate for recreational travel).

Because the *Running Fence* is almost entirely in Sonoma County, it can be expected to attract a greater percentage of Sonoma County residents and a lesser percentage of Marin County residents than do West Marin recreational sites. Therefore, it is anticipated that during the viewing period the percentages for Marin and Sonoma counties will be interchanged (i.e., 21 percent of the *Fence* viewer trips will originate in Sonoma County and 5 percent in Marin County). A license-plate survey conducted for Sonoma county on Route 1 between Doran County Park and Salt Point State Park confirms this estimate of visitor origins:

Origin of Visitors	Percent of Visitor Vehicles
Sonoma County	25
Rest of Bay Area	37
Rest of California	31
Out of State	7

Source: Sonoma County General Plan Bulletin

These data indicate that about 80 percent of the *Fence* visitor vehicles will approach the viewing area from the south and about 20 percent will approach from the north.* It is anticipated that the viewers upon reaching the viewing area will distribute themselves over the local road network (see Figures J-2 and 6) according to the following estimate:

Roadway	Percent of Visitor Vehicles
West Railroad Avenue	15
Stony Point Road (between Meacham Road and Route 101)	35
Meacham Road--Pepper Road--Walker Road--Petaluma/Valley Ford Road	20
Franklin School Road--Whitacker Bluff Road	15
Route 1 north of Valley Ford	5
Route 1 south of Valley Ford	15
Route 101 north of Gravenstein Highway	15**
Route 101 south of Old Redwood Highway interchange at Denman Flat	55**
Dispersed among other roads	20

*Detailed assumptions about visitor access and viewing routes appear in Table K-2, following. These were generated by ESA as input for energy-consumption calculations.

**Visitor traffic on the section of Highway 101 between Gravenstein Highway and Denman Flat may be as much as 65 percent of the total, depending on visitor decisions on where to exit.

TABLE K-2+

ASSUMPTIONS--VISITOR ACCESS AND VIEWING

	Visitors/ 1000 Visitors	Access Round Trip (miles)	Access Total (Passenger miles)	Access Mode (fraction) Alternate A (auto/air)	Alternate B (bus/auto/air)
Sonoma and Marin Counties	260	42	10,920	1.00/0	.20/.80/.0
Other Bay Area Counties					
Alameda	85	104	8,840	1.00/.0	.10/.90/.0
Contra Costa	62	84	5,208	1.00/.0	.10/.90/.0
Napa	10	44	440	1.00/.0	.0/1.00/.0
San Francisco	184	80	14,720	1.00/.0	.20/.80/.0
San Mateo	46	150	6,900	1.00/.0	.10/.90/.0
Santa Clara	64	180	11,520	1.00/.0	.10/.90/.0
Solano	6	104	624	1.00/.0	.0/1.00/.0
TOTAL OTHER BAY AREA COUNTIES	457	--	48,000	1.00/.0	
Other, California					
Santa Cruz County	3	230	690	1.00/.0	.0/1.00/.0
Sacramento-San Joaquin Valley	76	400	30,400	1.00/.0	.0/1.00/.0
Southern California	152	900	136,800	.50/.50	*/.50/.50
TOTAL OTHER, CALIFORNIA	231	--	168,000	.67/.33	*/.67/.33
Other, Out of State					
Direct Visit to View Fence	10	3,000	30,000	.0/1.00	.0/.0/1.00
Detour from US 101	16	0	0	1.00/.0	.0/1.00/.0
Detour from I 80	26	37	962	1.00/.0	.0/1.00/.0
TOTAL, OUT OF STATE	52	--	31,000	.81/.19	.0/.81/.19

+Source: ESA assumptions and calculations.
*Calculations of fuel consumption (Energy section) assume 20% of air passengers use bus access from San Francisco to the *Fence*.

Hourly traffic variations in general can be expected to resemble those of summer Sunday recreational travel, e.g., arrivals starting in mid-morning and continuing until about 3 PM. Similar patterns can be expected on weekdays and weekend days, with the latter reaching a higher level. The weekend to weekday variation will generally follow the two-to-one ratio observed for visitors to the Sonoma County Fair and Sonoma County wineries.

While the vast majority of *Fence* viewers will view the *Fence* from land vehicles, chiefly autos, some viewers may approach the *Fence* route by air and water. Visitor arrival by boat to see the coastal area is not expected to be heavy. The North Coast Harbor Study for the Army Corps of Engineers (by JHK & Associates) showed that few recreational boaters are willing to leave the shelter of San Francisco Bay and brave the long unsheltered route to Bodega Bay.

3) Roadway Capacity.

Roadways near the *Fence* route have a limited amount of capacity available to absorb new traffic generated by *Fence* viewers. The traffic impact of the viewing period will depend upon the amount of vehicle usage relative to the capacities of specific roadways. Vehicle usage is expected to vary from hour to hour and day to day.

Table K-3 illustrates the relationship between level of service (or driving ease) and hourly traffic volumes (capacities) for two-lane rural roads. The Table is appropriate for the two-lane roads in the project area during normal, non-*Fence* periods. However, the actual capacity under the conditions anticipated during the viewing period may be one-half of these.* The narrower Type 3 and 4 roadways are assigned the same traffic capacity as the wider Type 2 (Setting Section) because parking would generally be prohibited from the former and allowed along the Type 2 roadway. Route 101 has been estimated by CALTRANS to have a one-way peak hour capacity of 3,000 vehicles on a viewing day.*

Too much traffic compared to road capacity (i.e., Level of Service E to F) could lead to stop-and-go flow, traffic backups onto the freeway, cars running out of gasoline, boiling radiators, traffic accidents, and entrapment of emergency vehicles. Therefore, it is necessary to assess the possibility of network capacity overload under the peak visitor conditions estimated above.

*Letter to Mr. George Kovatch, Sonoma County, from Mr. L. Newman, CALTRANS, February 5, 1975.

TABLE K-3

LEVEL OF SERVICE, TWO-LANE RURAL ROAD

Hourly 2-way Volume	Level of Service	Operating Characteristics
400	A	Ideal flow
900	B	Free flow
1,400	C	Stable flow; some car-following; average speed 30 mph; a common service level for design
1,700	D	Approaching unstable flow; average speed, 20 mph, greatly restricted due to car-following
2,000	E	Maximum volume attainable, average speed 10 mph. Level E is not likely to be attained. Operation may go directly from D to F
less than 2,000*	F	Forced, congested flow with unpredictable characteristics. Stop and go, long queues

Source: Adapted from page 308, "A Policy on Design of Urban Highway and Arterial Streets", American Association of State Highway Officials

The descriptive operating characteristics apply to other road types, including freeways. However, the associated traffic volumes change with road type.

*As traffic demand exceeds 2,000, the resulting turbulence reduces flow to less than 2,000.

4) Assessment of Possible Capacity Overloads Due to *Fence* Visitor Traffic.

Accurate assessment of the potential traffic impacts of the *Running Fence* is precluded by a combination of uncertainties, including those pertaining to the following:

- Maximum likely levels of visitor traffic
- Ratio between peak week-end visitor traffic and week-day visitor traffic
- Hours when *Fence* visitor traffic would occur; percent of daily visitor traffic in the peak (visitor) hour
- Non-visitor ("normal") traffic during the display period
- Visitor-traffic splits on the affected road network
- Actual capacity of individual segments of the affected road network, under potential traffic conditions during *Fence* display
- Variation in capacity among the different road types in the affected road network

Therefore, the approach taken was to examine several critical elements of the road network, under a series of assumptions.* The road elements evaluated were: (a) Highway 101; (b) Walker Road; (c) Petaluma/Valley Ford Road, east of Gericke (Jones) Road; and (d) Highway 1, east of Franklin School Road (in Valley Ford itself). Stony Point Road and Bodega Avenue were also investigated, but with less confidence in the imput data.

The assumptions were as follows:

- o Total visitor "demand" on the peak day (second Sunday) is 10,000 vehicles (the 30% probability figure)
- o While the normal weekend/weekday ratio of daily traffic throughout the road network is about two to one, the ratio of the peak-visitor-day (second-Sunday) *Fence* visitor traffic to the *Fence* visitor traffic on the first day (weekday) of display is about four to one. That is, interest will develop as the display period goes on.
- o Visitor-traffic splits throughout the road network are as estimated earlier in this Appendix.
- o Visitor traffic in the peak visitor hour is 15% of daily visitor traffic. For "normal" traffic, the figure is 10%.

*This examination was performed by ESA staff, after the receipt, on October 17, 1975, of the traffic count data summarized in Table K-1. The results confirmed the main conclusions of Donald K. Goodrich, Consultant to ESA, which had been based on the limited data available in July, 1975.

- In the absence of data on existing *weekend* traffic on Highway 101, *weekday* maximum traffic levels can be assumed to apply (as the setting) on *weekends*. This is not unreasonable for a freeway segment that combines business , commute and recreational traffic.

- Highway 101 peak hour capacity in the vicinity on a viewing day is , as noted above, 3,000 vehicles (one-way), or 6,000 vehicles (two-way).

- Capacity of the two-lane local roads during the viewing period is, as noted above, one-half of the normal capacity, because visitors will slow down and/or park to view the *Fence*.

The approach used in estimating traffic levels of service resulting from the addition of *Fence* visitor traffic to "normal" traffic was as follows:

- The calculation was for the peak (PM) hour on the second Sunday.

- The resulting peak hour total flow was compared to the above criteria for capacity. For the two-lane rural roads, the first comparison was against the flow criteria for Level of Service C, as reduced by 50% to account for conditions during viewing.

- Once the situation for the peak day (second Sunday) had been established, the situation on the average weekday could be assessed. This would be needed for the development of a contingency plan, to be based on traffic levels experienced (after the fact) during the first weekdays of viewing.

- The initial assumption was that the visitor demand on the second Sunday would be 10,000 vehicles (the 30% probability figure).

The results of the evaluation were as follows (the calculated flows represent normal traffic plus visitor traffic):

a) Highway 101-- The peak-hour second-Sunday *one-way* flow in the segment of the freeway between Denman Flat and Gravenstein Highway would be about 3100 vehicles. This is greater than the capacity of 3000 stated above. That is, if the visitor demand reached 10,000 cars per day, Highway 101 would reach Level of Service F. On Highway 101 south of Denman Flat, the flow would be slightly lower, but still above the stated capacity. Since Highway 101 is the principal access route to the *Fence* area, its northbound approach carrying 55 percent of the total visitors and its southbound approach

carrying 15 percent of the total visitors, it appears to be the controlling element in capacity analysis and in California Highway Patrol decisions about requesting removal of the *Fence*. On weekdays, the freeway capacity would not be reached, whether the assumption used is a weekend/weekday visitor flow ratio of four to one or of two to one. On the other hand, if the 30 percent probability assumption of 10,000 visitor vehicles on the second Sunday is conservative, weekday flows could be high enough to indicate this possibility, while still remaining below capacity.

b) Walker Road -- This segment of the (viewing) road network experiences very little traffic normally; however, the road is twisting and narrow (Type 4). The peak-hour second-Sunday *two-way* flow is about 320 vehicles. This is well below the modified (50% reduction) capacity of 700 (for Level of Service C). Therefore, congestion should not be a problem, unless large numbers of visitors try to stop along the shoulders for views (or photos) of the *Fence*. Since the flows on the weekdays will be further below capacity, visitor behavior on those days can foreshadow the potential problems on the weekends, while not causing serious problems itself.

c) Petaluma/Valley Ford Road, east of Gericke (Jones) Road -- This segment of the (viewing) road network consists of both Type 2 and Type 3 road, but experiences much more traffic normally than does Walker Road. The peak-hour second-Sunday *two-way* flow is about 660 vehicles. This is still below the capacity of 700 (for Level of Serivce C), but close enough so that congestion from parkers or even those who merely show down to view the *Fence* may be a problem. Again, experience on the first weekdays of the viewing period should provide clues to the levels and the behavior of the expected weekend traffic, and of their consequences.

d) Highway 1, east of Franklin School Road (within the Town of Valley Ford -- This segment normally experiences higher traffic flows than does the Petaluma/Valley Ford Road segment above. The peak-hour second-Sunday *two-way* flow is about 680 vehicles. The same considerations as those for Petaluma/Valley Ford Road to the east apply. Further complications may result from the presence of the commercial buildings along the road, coupled with the fact that the *Running Fence* route crosses this road within the town, providing a further attraction that may lead visitors to pull over.

e) Stony Point Road, north of Railroad Avenue -- The only available count for this road is a weekday figure, for the whole day, of 1500 vehicles. If the normal Sunday traffic is assumed to be the same, with 10 percent in the peak hour, then the peak-hour second-Sunday *two-way* flow (normal traffic plus *Fence* visitors) would be about 675 vehicles, still below the Level C capacity of 700 vehicles. However, if the normal Sunday flow is assumed to be 3,000 vehicles, the total peak-hour flow would then be about 825

vehicles, close to the Level of Service D capacity of 850. This situation could create problems, particularly since perhaps one-half of the visitors northbound on Stony Point might attempt to turn left onto Meacham Road. Experience on the first weekdays would again provide guidance as to what could be expected later, while unacceptable congestion would probably not exist at the time.

f) Bodega Avenue, west of Pepper Road -- This road segment is not part of the viewing-road network. However, it may be attractive as an access or departure road. Its existing Sunday peak-hour flow is about 750 (two-way), which would be above (worse than) Level of Service C, if the road were on the view network. Since it is not, the capacities of Table K-3 apply directly, so that existing Sunday peak-hour flow is between Levels of Service A and B. Even if as much as 35 percent of the total visitor flow were to use this approach (an extremely unlikely prospect), the peak-hour second-Sunday flow would still be below (better than) Level of Service C.

The main conclusion above is that 10,000 visitor vehicles is the maximum that can be reasonably accommodated on the road network, and that the controlling feature is that this level of demand would cause Highway 101 to go to Level of Service F. Thus, a decision by the California Highway Patrol to request removal of the *Running Fence* could be made on the expectation that such levels would be reached on the first or second weekends, even if congestion had not built up to unacceptable levels during the first weekdays. The dominance of the potential Highway 101 buildup in the analysis and decision is confirmed by the earlier conclusions of Mr. Goodrich that a demand of 30,000 visitors (10,000 visitor vehicles) "produces Service Level 'F' on Highway 101 (remove *Fence* if over 30,000 anticipated)".

Mr. Goodrich had concluded also that, if as many as 35-40 percent of the visitor vehicles attempted to use the principal viewing traffic-way between Highways 101 and 1, the controlling road network would shift away from the freeway, even at somewhat lower flows. This is a more conservative judgment than the above analysis of individual segments would indicate. However, it takes into account the interior road network as a whole; of particular importance is the effect of left turns at different intersections, depending on whether the visitor vehicle is going from west to east or from east to west.

Potential problems at specific locations, including those associated with "attractive" stopping places for viewing and/or photography, are discussed in detail in Appendix J.

Both analyses indicate, however, that with the expected gradual buildup of visitor interest there would be time to implement a series of contingency plans, including the ultimate mitigation of requiring removal of the *Fence*. Mr. Goodrich's suggested contingency plans are presented in the text (Section II A 8, Traffic/Circulation/Parking).

ACRS
ARCHAEOLOGICAL CONSULTING AND RESEARCH SERVICES, INC.

August 21, 1975

Dr. Richard Cole
Environmental Science Associates
1291 East Hillsdale Boulevard
Foster City, California

Dear Dr. Cole,

Pursuant to your letter of authorization dated August 18, 1975, our firm has completed archaeological investigations for the proposed route of the Christo Running Fence project in Sonoma and Marin Counties, California. As outlined in our proposal letter of August 12, 1975, archival and reconnaissance research tasks were undertaken to determine what impacts the proposed project would have on archaeological resources. We are herein reporting to you the results of those investigations.

Our first task, that of archival research, was accomplished by reviewing records of all archaeological sites which are known to be located within the vicinity of the proposed project. Those facilities which possess complete records of this type and as consulted by ACRS include the California Department of Parks and Recreation at Sacramento, Sonoma State University at Rohnert Park, and San Francisco State University at San Francisco. No known archaeological sites or resources were shown in these records to be within ¼ mile near the proposed route of the Christo Running Fence project.

Our second task, that of completing an in-field reconnaissance of those portions of the Running Fence route which would have a high probability of containing archaeological resources, was accomplished by walking over and visually inspecting the ground surface along those sections of the Running Fence route which will intersect with and cross over intermittent or permanent creek or estero courses. Included were the Estero Americano, Americano Creek, and all intermittent creeks along the Running Fence route. In addition, ACRS surveyed a number of sections along the Running Fence route which will traverse hill tops or ridges. Included were all hill tops and ridges along the

20 EVERGREEN AVENUE MILL VALLEY, CA 415/388-3175

project route from Stony Point Road to the project terminus at the Pacific Ocean. A corridor with a width of 100 feet was inspected along those sections of the Running Fence route which were examined. No indications of archaeological resources were observed or discovered during the visual surface reconnaissance efforts.

It would appear, then, that the proposed project would have no prohibitive impacts upon archaeological resources. All areas along the Running Fence route which appeared to have a high probability of containing archaeological resources were subject to surface examinations as were areas with a more moderate probability of containing archaeological resources, i.e., the ridge and hill tops. No archaeological resources which would be impacted by the proposed project were found to be either within the records of known sites or in the route sections as surveyed by ACRS. Additionally, the nature of the project's construction design, specifically the placement of 3½" supporting posts and adjoining anchors at 62 foot intervals, would, even if an archaeological site were encountered, create such minor impacts as to be virtually negligable.

If you should have any questions about our work, please do not hesitate to call. Thank you.

Sincerely,

Stephen A. Dietz
Principal

SAD:ms

APPENDIX M
OCEAN ENGINEERING

CHRISTO'S RUNNING FENCE

ENVIRONMENTAL ASSESSMENT

Prepared By

ENVIRONMENTAL RESEARCH CONSULTANTS, INC.

17 October, 1975

Project Manager:
Mr. Raymond L. Anderson

Physical Oceanographer:
Dr. Edward Thronton

Senior Diver:
Mr. Don Heacock

DESCRIPTION OF THE PROJECT

Christo, an artist, has proposed the creation of an art work entitled RUNNING FENCE which will consist of a 26 mile, 20 foot high, nylon fence supported by steel pylons. RUNNING FENCE will follow a meandering course through southern Sonoma County terminating in the sea at a point south of the Sonoma-Marin County line and north of Tomales Bay (Map 1).

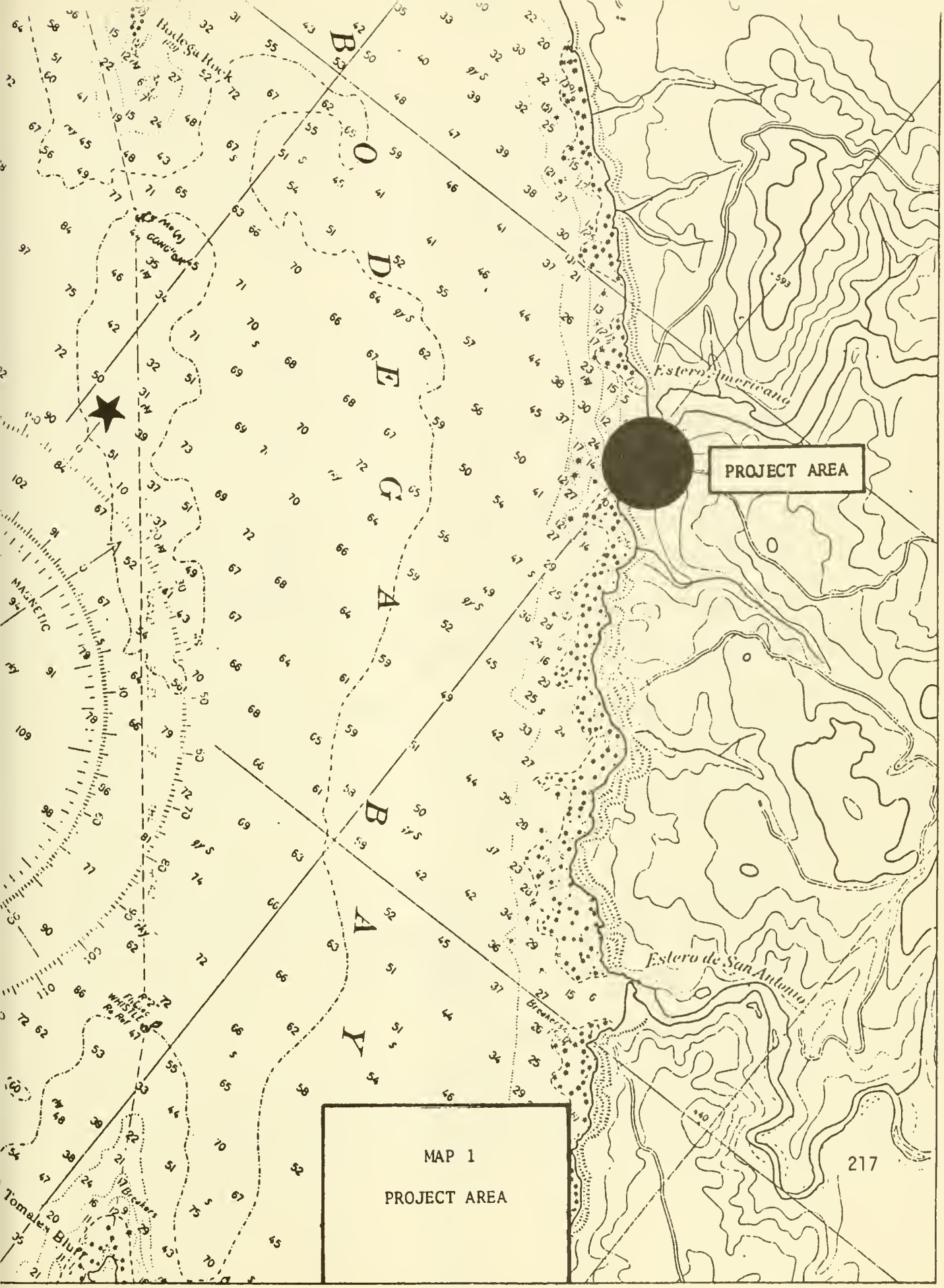
RUNNING FENCE is essentially a series of extremely long nylon sheet hung from a 7/8" steel cable which is suspended between steel stanchions. It is proposed that the seaward terminus of the fence be suspended from a cable which will be anchored in the sea. Dimensions and materials specifications are included in design schema prepared by URS/The Ken R. White Company.

SCOPE OF ANALYSIS

The portion of the RUNNING FENCE project that extends from the beach bluff to the ocean terminus was reviewed with regard to environmental considerations of the structural design. The dimensions and geometry of the final design will necessarily be slightly modified from the plans dated 3/21/75 because of the location change, but it is assumed that the basic design will remain similar. The structural design calculations were checked and verified as a matter of review.

METHODOLOGY

Three Environmental Research Consultants, Inc. employees (the Project
216 Manager and two biologist divers), visited the proposed anchorage site on



MAP 1

PROJECT AREA

September 19, 1975. A subtidal area 2,000 x 700 feet was chosen as a tentative anchoring area. Preliminary maps of the shore and of subtidal rocks which reach intertidal height were made and diving strategies were planned. The location of sampling sites and the transect lines swum by the divers are indicated on Figure 1.

Diving operations commenced on September 20, 1975 and continued through September 21, 1975. Divers swam the transects in tandem using standard SCUBA buddy techniques. As sea floor slope was fairly uniform, three transects were swum to establish a bathymetric profile of the area.

Notes on the condition of the sea floor were taken during the transect swims. Further notes were taken on the bottom conditions in areas between and outside the transects. A steel probe was used to establish the depth of the sand substrate.

Notes were made on the species of organisms present, on their abundance relative to habitat position and relative to other localities along the Sonoma Coast, and on patterns of distribution related to obvious factors of the physical environment.

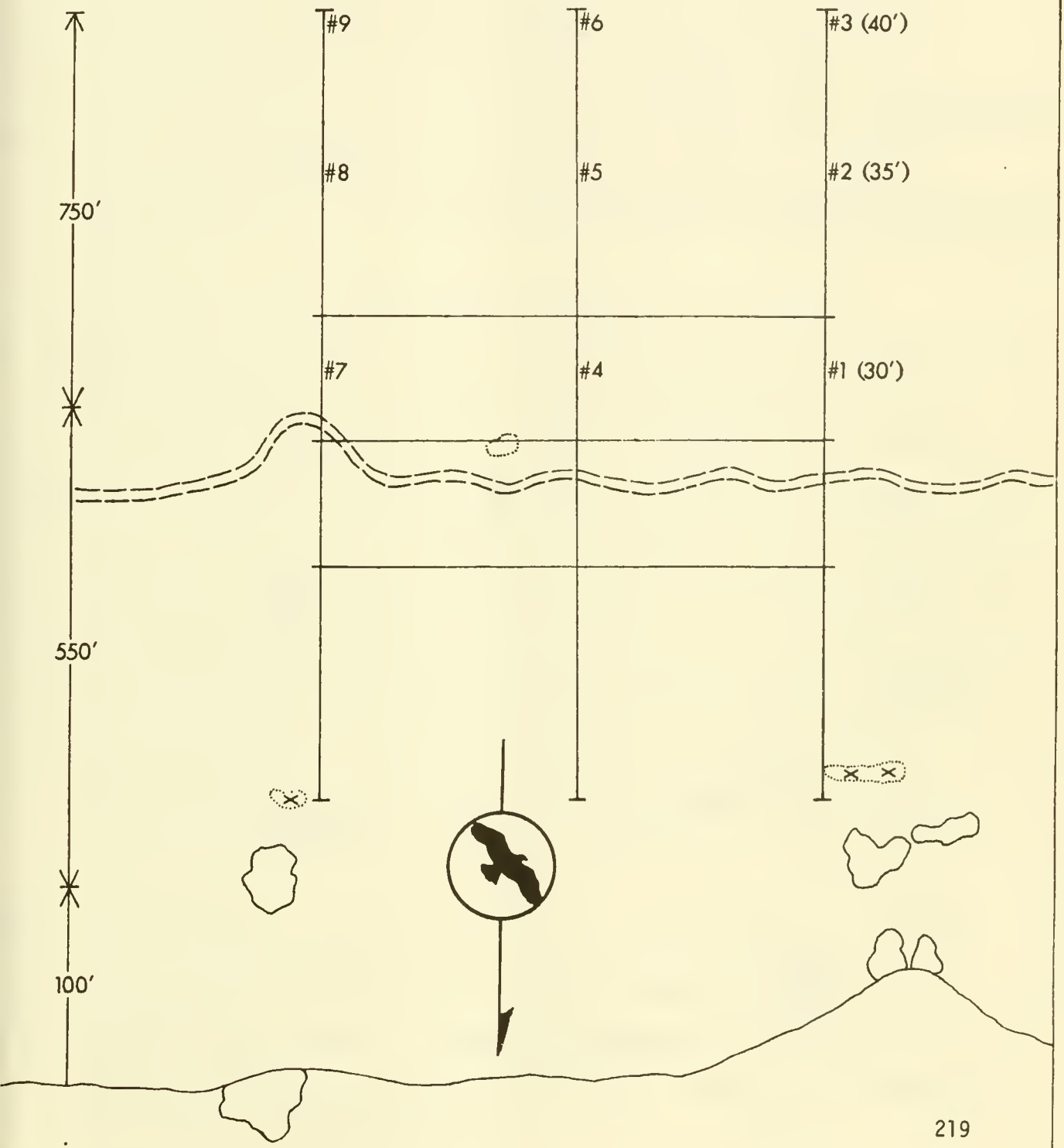
The environmental aspects considered include: waves, biological fouling, bottom sediment with regard to anchor holding capacity, dynamics of the structure and impact if structure fails.

ENVIRONMENTAL FINDINGS AND ANALYSIS

Substrate

The bottom substrate was found to be sharply divided between a

FIGURE 1
SAMPLING SITES AND TRANSECT LINES



shoreward reach with a cobble and boulder bottom and a seaward reach with a coarse sand bottom. The division occurs approximately 650 feet from shore (see Figure 2). It is possible this was an anaomolous year in that the beaches were not replenished from the previous winter's cut back of sand to the offshore; this possibility is suggested by other beaches in the vicinity. If the beaches had not recovered to normal equilibrium, it would be expected next year the sandy bottom would be closer to shore.

The inshore area is composed almost entirely (99%) of small rocks and large boulders ranging in size from one to five feet, with some (1%) intermittent small patches (less than one foot diameter) of coarse sand. The offshore area, is composed entirely of the same coarse sand. There was a distinct dividing line between the rocky area and the sandy area, not a gradual transition from one substrate type to the other.

The sands of the seaward reach were found to be over three foot in depth. There was considerable evidence of regular and violent displacement of the sands due to wave action. The sand bottom was disturbed by the surf which was running between four and seven feet in the study area. Suspended silt and detritus limited visibility, particularly at depths of less than fifteen feet.

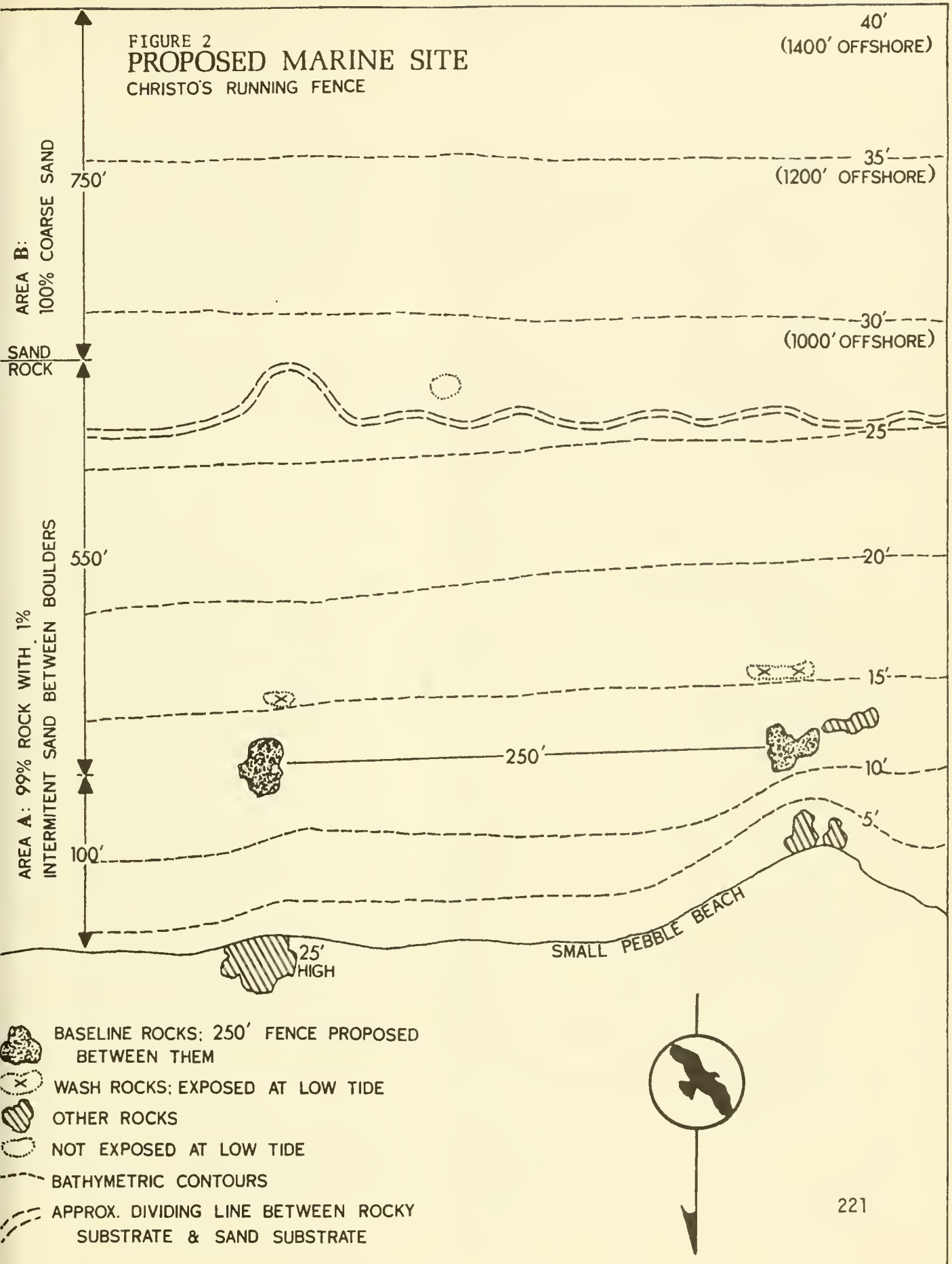
Waters

The wave environment during the months of August and September is generally mild. The wave height statistics for a three year period, 1956
220 through 1958, indicative of waves offshore of the proposed site, are given

FIGURE 2

PROPOSED MARINE SITE

CHRISTO'S RUNNING FENCE



in Table 1. This data is from the National Marine Consultants Wave Statistics report which is the standard reference for the West Coast. The maximum wave height is less than 11 feet and the average wave height less than 3 feet. The waves' heights are the average monthly frequency of occurrence (percent) from all directions SW - NW. It is assumed the decreased wave height due to headland sheltering and refraction is balanced by the increased wave height due to shoaling and the wave height statistics are indicative of the breaking wave heights at the surf zone.

TABLE 1

Wave Height (feet)	Percent of Occurrence		
	July	August	September
calm - 3	85.3	78.1	52.3
3 - 4.9	13.1	19.7	27.1
5 - 6.9	1.6	2.2	17.2
7 - 8.9			3.1
9 - 10.9			0.3

It is important that buoys and other large area appurtenances be outside the surf zone to minimize forces on the structure. The surf zone is defined as the point at which waves start to break. Conservatively assuming a maximum breaking wave height, H_b, of 8 feet for the month of August, the depth of wave breaking, h_b, is calculated: $h_b = 1.28\ H_b = 10$ feet. Hence, the surf zone during August will extend to a maximum depth of 10 feet, or approximately 100 feet offshore.

222

The dynamics of the structure was examined because of the cyclic wave loads. The resonant frequencies of the cable structure in two modes

of vibration were calculated. The calculations are given in Appendix A. No dynamics problems are anticipated since the resonant frequencies of the structure are sufficiently removed from the frequencies of the waves at the peak of the energy spectrum.

The most vulnerable aspect of the ocean portion of the structure is the anchoring system. The offshore anchors are also the most difficult aspect to reliably design. The holding capacity of the anchors is most dependent on the bottom sediment characteristics. The coarse sand affords good anchoring capability. The anchors will be subjected to long term static loads of 14.3 Kips and a conservative maximum cyclic load of 1.6 Kips due to wave action (See Appendix A). Scour about the anchor may occur since the anchors will be placed in shallow water where significant wave action can occur. Hence, because of the possible reduction in holding capacity of the anchor due to creep resulting from cyclic loading and because of scour, a safety factor of at least two is recommended. It is extremely important that the anchors be properly set (dug into the sediments) in order to accomplish the design holding capacities of the anchors.

If the anchors do not hold, the cables will go slack. The cables would tend to bury themselves in the slack condition in the offshore regions. It is not anticipated the anchors and cables would drift substantially parallel to the shore in the slack conditions. In the event of an anchor failure, the cables can be salvaged from shore because of the high breaking strength of the 7/8" cable and high point of lift on the bluffs.

Biology

No organisms or signs of living organisms were seen in the sandy portion of the study area. This is not surprising in light of the agitated condition of the substrate. Only the most mobile of benthic infauna or epifauna would be able to avoid burial in this region.

The organisms of the rocky substrate were typical of that of a high surge and high abrasion habitat in the shallow waters off the Sonoma Coast. Coralline algae of the articulated genera were the most abundant organisms. They were found from five to twenty-five feet in depth and covered most of the exposed rock surfaces. The second most abundant algae, though by no means abundant in terms relevant and relative to other sites along the coast were the coarse phaeophytan forms: *Pterygophora californica*, *Distyoneurum californicum*, *Laminaria* sp., and *Egregia menziesii*. Virtually all of the phaeophyta were concentrated in water less than 10 feet deep on the lee side of offshore rocks, sheltered from wave action.

The invertebrate life of the rocky area was concentrated in deep cracks between rocks. Sponges and tunicates were most abundant. *Patiria miniata* was the dominant seastar (25 were seen). Other seastars seen include: *Pisaster ochraceus (3)*, *P. giganteus (2)*, and *Pycnopodia helianthoides (4)*. The main prey of the seastars appeared to be small shelled gastropods, such as *Ceratostoma foliatum (15)* and bivalves, such as *Protothaca staminea* and *Hinnites* sp (4). Barnacles were extremely uncommon,

except for a few *Balanus nubilus (3)* in deeper water (25 feet). Other organisms observed are as follows:

gum boot chiton	*Cryptochiton stelleri* (2)
nudibranch	*Hermissenda crassicornis* (3)
sea anenome	*Epiactis prolifera* (4)
sea anenome	*Anthopleura* sp (2)
sea urchin	*Strongylocentrotus franciscanus* (8)
abalone	*Haliotis rufescens* (6)

The relatively low biomass and diversity of both plants and animals in this particular marine habitat is probably governed by wave action and concomitant sand abrasion.

An often encountered problem of structures placed nearshore is fouling due to entanglement by algae, particularly the giant kelp macrocystis, which is torn loose during periods of high waves and storms. The entangled algae can greatly increase the drag forces on the structure. Fortunately, few algae and no kelp were found in the survey area. Hence, biological fouling should not be a problem during the life of the structure.

IMPACTS

The sea floor of the seaward portion of the site chosen for anchoring RUNNING FENCE is covered with more than three feet of coarse sand which is subject to regular agitation by wave action and is consequently barren of macroscopic organisms.

The sea floor of the shoreward portion of the site chosen for anchoring RUNNING FENCE is covered with cobbles and boulders which support a relatively depauperate flora and fauna of surge resistant algae and crevice dwelling invertebrates which have survived the sand abrasion occasioned by the wave action.

It is unlikely that any severe habitat damage could be caused by an anchoring device in either segment of the study area. None of the species observed to be present are rare either locally or regionally and recruitment would quickly restore any losses.

It is unlikely that any severe marine habitat damage would be attendant upon a failure of either the anchoring device or the suspension cable.

Abrasion and burial result in a relatively low biomass and species diversity in this area. The impact of a temporary anchoring device on existing populations is judged to be extremely local and minor.

MITIGATION MEASURES

As an art work, RUNNING FENCE, is presumed to be physically ephemeral rather than temporally enduring. Bouys and other large area appurtenances shoul be located outside of the surf zone. A safety factor of two should be utilized in the deisgn of the anchors and anchors should be properly set to accomplish the designed holding capacities. Provisions should be made for removing the physical remains after the aesthetic impact has been accomplished, or following a failure of the anchor system.

APPENDIX A

WORKSHEET FOR CALCULATION OF RESONANT FREQUENCIES ON STRUCTURE

Maximum Wave loading on structure due to loads on buoy. Assume single buoy displacing 3000 lbs. and weight of buoy is 500 lbs.

Diameter of single buoy

Displacement $= \frac{1}{6}\pi d^3 \gamma = 3000\#$

d = dia of buoy

γ = specific wt of sea water = $64\,lb/ft^3$

$$d = \sqrt[3]{\frac{(3000\#)\,6}{\pi(64\,lb/ft^3)}} = 4.5\ ft.$$

Maximum Drag Force on buoy, F.

$$F = \frac{\rho}{g}\frac{C_D A u^2}{2}$$

where $A = \frac{\pi d^2}{4}$

$u_{max} = \frac{H_b}{h_b}\sqrt{gh}$ from solitary wave theory

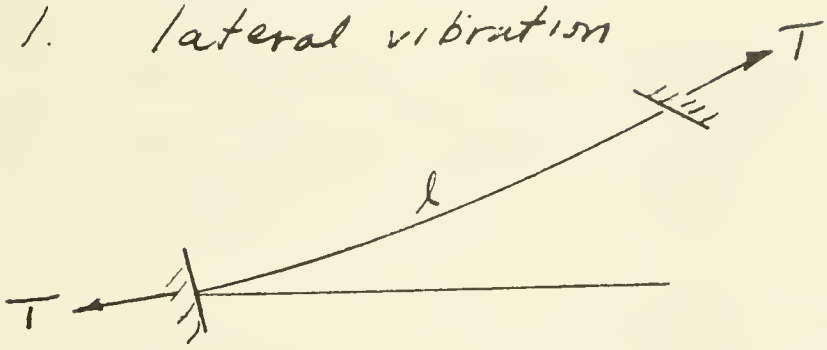
$= \frac{6.4}{15.4}\sqrt{g10'} = 14.4\ fps$

$C_D = 1.05$

$$F = \frac{1}{2}\left(\frac{64}{32.2}\right)(1.05)\frac{\pi(4.5)^2}{4}(144)^2 = 3275\ lb$$

MODES OF VIBRATION

1. lateral vibration



$$f_n = \frac{n}{2l}\sqrt{\frac{T}{\rho_{cable}}}$$

T - cable tension

ρ_{cable} - mass/unit length

l = length = 500 ft

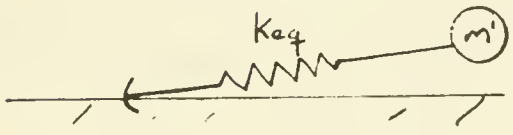
$T = 14.3\ K$

$l = 500\ ft$

$$\rho = \frac{1.05\ lb/ft}{g} = 0.326\ lb/ft^2/sec^2$$

$$f_1 = \frac{1}{2(500)}\sqrt{\frac{14.3\ K}{.0326}} = 0.66\ sec^{-1}$$

2. spring vibration due to added mass of buoy



spring constant

$$K_{eq} = \frac{2EA}{l}$$

E = elastic modulus = 13×10^6 psi of cable

$l = 500\ ft$

$A = C_w d^2$ = effective [illegible] area

$C_w = 0.405$

$d = 7/8$ in

$$K_{eq} = \frac{2(13\times10^6 \text{ psi})\,\pi\left(\frac{7}{8}\right)^2 \text{in}^2 (0.405)}{500'}$$

$K_{eq} = 12.3\times10^3$ lb/ft

$$f_1' = \frac{1}{2\pi}\sqrt{\frac{K_{eq}}{m'}}$$

m' added mass of water

$m' = D\gamma' = 3500$ lb

$$f_1' = \frac{1}{2\pi}\sqrt{\frac{12.3\times10^3}{3.5\times10^3}} = 0.46 \text{ sec}^{-1}$$

Hence, no resonant interaction problems are anticipated with waves.

APPENDIX N

EXHIBITS

SUMMARY OF TEST PROGRAMS

FOR

CHRISTO'S RUNNING FENCE

by

URS/THE KEN R. WHITE COMPANY
3955 EAST EXPOSITION AVENUE
DENVER, COLORADO

Ernest C. Harris, P.E., PhD
Project Engineer

KRW No.: 3031
August 5, 1975

SUMMARY OF TEST PROGRAMS

Several types of test were performed to aid in developing the final design of Christo's Running Fence. These included laboratory tests of small components, tests of cable/anchor assemblies and cable connections at the Contractor's shop, plus full-scale field tests. The latter included a preliminary test (Test No. 1) to measure pole-soil interaction and compare anchor types, and a full-scale prototype test (Test No. 2) used to compare various details and as an aid in developing a final design. Test No. 2 was the more advanced and had considerable influence on the final design.

TEST NO. 2 - GENERAL

The objects of Test No. 2, the full-scale prototype test, were:

(1) To confirm that the actual structure would behave as predicted by the engineer's computations.

(2) To try several variations of detail in the structural system to determine those that would be:

  (a) aesthetically satisfactory to the artist;

  (b) satisfactory to the engineer; and

  (c) considered feasible by the Contractor.

Test No. 2 was conducted at Soda Lake, near the town of Morrison, Colorado, during the first half of 1974. This site was selected for its strong winds and proximity to the offices of both the engineer (URS/The Ken R. White Company) and the contractor (A & H Builders, Inc.).

Test No. 2 consisted of four spans of the Running Fence, including a right-angle turn and a hill. The plan of the test setup is shown by Figure 1, attached.

The setup for Test No. 2 was used five times, in what were called "Runs" A, B, C, D and E. Each Run was tested for a long enough time for artist, engineer, and contractor either to find the tested details unsatisfactory or to confirm that they might be used in the final design.

Recording wind gages were operative during most of the test period.

With five test runs and four test panels it was possible to experiment with many different details and methods of construction. Among the features which were varied and tested were:

URS/THE KEN R. WHITE COMPANY

Home Office 3955 East Exposition Avenue
Denver, Colorado 80209

RS CORPORATION

PAGE _____ OF _____

KRW JOB NO. 3031-80-3 DATE 8-5-75 BY ECH CHECKED BY _____ (Date)

CLIENT CHRISTO PROJECT RUNNING FENCE

SUBJECT LAYOUT - SODA LAKE SITE - TEST No. 2

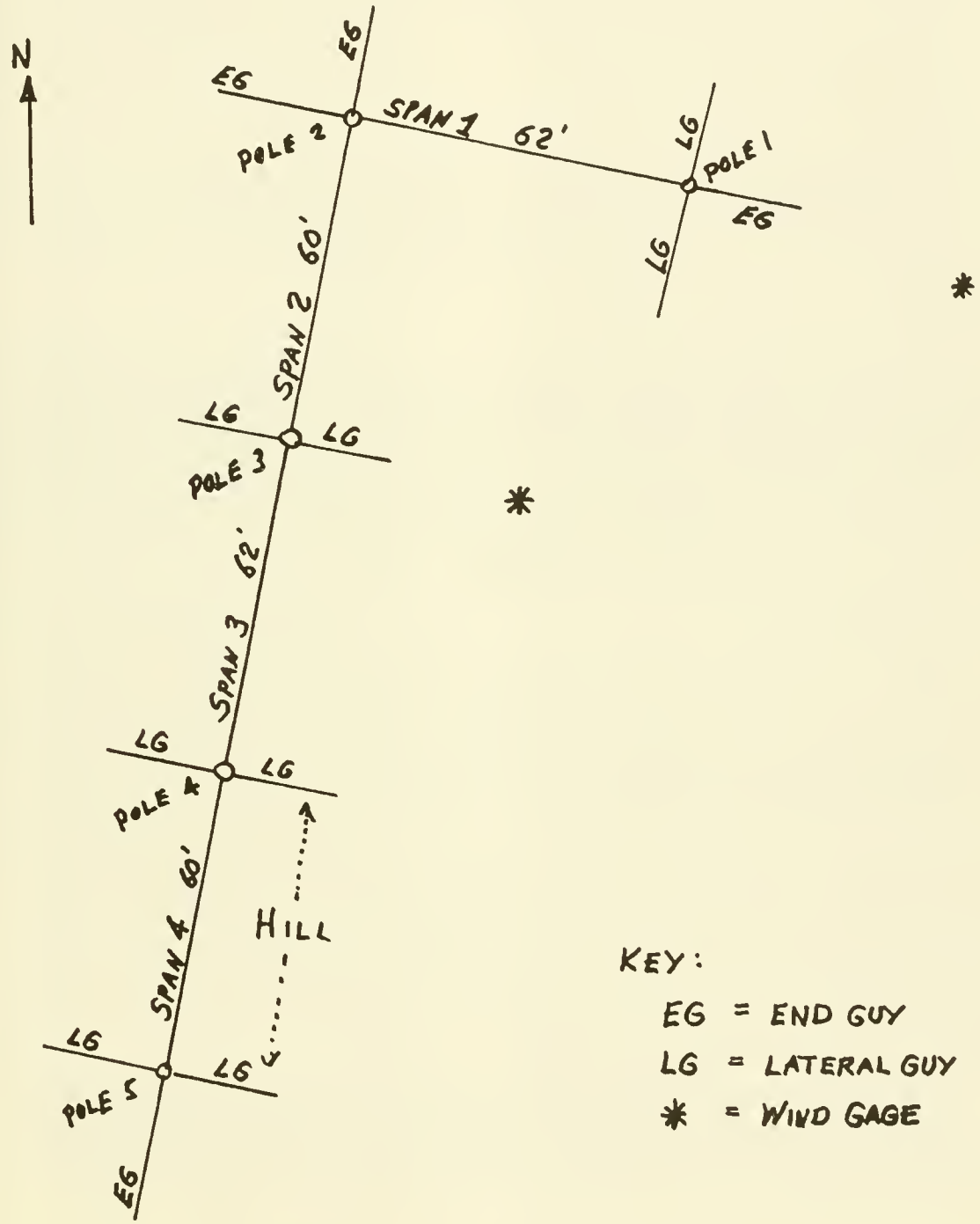


FIGURE 1 - PLAN - LAYOUT OF TEST No. 2

(NOT TO SCALE)

(1) Types of fabric (glass cloth vs heat-set nylon and nylon "grey goods").

(2) Length, height, and shape of cloth panels.

(3) Double vs triple and quadruple seam stitching.

(4) Presence or absence of webbing in hems.

(5) Pole sizes (3-inch vs 3-1/2 inch and 3-inch, reinforced).

(6) Detail at top and bottom of poles.

(7) Type of ground anchor.

(8) Methods of installing ground anchors.

(9) Method of bottom-edge tiedown (11 anchors vs bottom cable and 2 anchors)

(10) Type and spacing of ties between fabric and poles (pole ties).

(11) Type and spacing of top hooks and bottom hooks.

(12) Methods of installing cables and cloth panels.

Each of the Runs remained in place until winds occurred which were strong enough to cause failure of some element. Though it may seem odd at first, structural failure was essential to the success of these tests. The reason -- it is not sufficient to know that a particular design would withstand wind speeds up to x miles per hour. What is needed is to know how the system will fail and at approximately what wind speed. Actually, the first of these -- how the system will fail -- is the more important.

RUN A - TEST NO. 2

Run A showed that either type of nylon panel was satisfactory. The mode of failure, however, showed that a positive tie-down of top cable to pole is essential if earth anchors at other poles are not to be withdrawn. Run A also showed that a better method had to be developed to prevent the poles from moving downward (sinking) under repeated wind loading. The initial methods tried for connecting the cloth panels to top cable, poles and bottom anchors were satisfactory structurally, but very cumbersome to handle.

These preliminary results were then considered when modifying the system in preparation for Run B.

RUN B - TEST NO. 2

Modifications made for Run B included:

(1) "Shoe angles" at ground level on each pole. (This measure was completely successful; it prevented appreciable downward movement of the poles, was used in Runs B, C, D and E, and is specified in the final design.)

(2) Positive means were provided to hold the top cable down to pole No. 4. The ground slope change here caused the top cables to apply an upward force component to the pole under full wind. With the modified detail this upward component was resisted by the lateral guys and their ground anchors. The modification was successful and the principles involved were used in the computer program developed for final design.

(3) All cloth panels were changed, glass cloth being used on one span and nylon on the others.

(4) Hooks and pole ties were changed, the object being to determine a design for each ensuring that the cloth panels would become disconnected before the wind caused structural damage. This principle hereafter will be referred to as "fused connections".

Run B was observed around-the-clock. On the 9th day of the test, the type of failure we were seeking occurred. The system had withstood winds in the 45- to 50-mph range for almost two days with negligible damage. Then, under a gusty wind, recorded at 50 mph, the fused connections in span 1 released the cloth panel, pole ties opening first and then all top hooks opening. This allowed the cloth panel to spread out flat on the ground, still attached by its bottom edge and still in fairly good condition.

With the cloth no longer in place, wind forces on the structure of span 1 were much reduced. Winds of 75 and 80 mph were recorded about five hours later, and neither the released cloth panel nor the structure for span No. 1 suffered any damage.

Run B provided much information which was used directly in final design. The principal conclusions from Run B were:

(1) Top fusing (opening of top hooks following the opening of pole ties) is the best system, protecting the structure and preventing serious damage to the cloth itself.

(2) The structure proper (with the cloth released from poles and top cable) can withstand winds causing well over 20 lb per sq ft (psf) pressure on flat vertical surfaces without structural damage. (Sonoma County's Building Department requires that this capability be shown by computation also. It has been done. Copies of the computations can be provided by the writer if needed.)

(3) The structural system, as a whole, was structurally satisfactory, although individual details in spans 2, 3 and 4 were, in most cases, discarded in favor of those for span 1.

(4) Glass cloth was shown to be completely unsatisfactory, fraying and breaking up under gusty wind so that particles and threads were scattered over a wide area. The nylon panels, selected for final design, even when badly damaged remained together and remained attached to the structure.

(5) The shoe angles proved completely satisfactory in slowing downward movement of the poles to a tolerable rate.

(6) Use of the lateral guys to resist upward components of the top-cable forces is satisfactory.

Even though Run B provided what we were looking for, additional Runs C, D and E were made to experiment with other variations in cloth panel shape, pole details, etc.

RUN C - TEST NO. 2

In Run C, reinforcement used earlier on poles 2 and 5 was removed. Also, a bottom cable was added to all spans. The cloth panels were connected to this cable, and the cable was anchored to the ground at 20- to 22-ft intervals.

Pole ties on three of the poles were deliberately made much stronger than the "fused" pole ties that had worked so well in Run B. The object was to see whether the cloth itself could serve as the "fuse". Other details (hooks, hook spacing, etc.) were varied from span to span and most were different than for Runs A and B.

The fused pole ties for span 1 functioned properly again, but this time the bottom cable (in this span, of lighter weight than in spans 2, 3 or 4) broke, releasing the lower edge of the cloth. This occurred under gusts of 50-to 60-mph, and the cloth then hung "like a sheet on a clothesline". No structural damage occurred, showing that bottom fusing might be used instead of top fusing if desired.

The value of the fused pole-ties was shown dramatically by Run C. While poles 1 and 2, having fused ties, were not damaged at all, poles 3, 4 and 5 all failed in bending. Severe bending moments occurred in these poles when transverse wind forces were applied to them by the extra strong ties.

These three poles were damaged beyond repair, being bent nearly parallel to the ground. However, they remained vertical below ground; they did not tilt and break out at their lower end. The low section modulus of the 3-inch pipe just doesn't provide the flexural strength and stiffness required to disrupt the soil in that way when embedded to a depth of nearly three feet.

The failure in poles 3, 4 and 5 was probably precipitated by a break in the connection of one lateral guy to its earth anchor. As a result, the detail at that connection has been strengthened (and simplified) in the final design. (Subsequent to Test No. 2, that detail was tested several times by the contractor at his Broomfield, Colorado, yard. The writer observed these tests, which confirmed the suitability of the revised detail.)

A new, simple top-of-pole detail was used in Run C. This detail proved completely satisfactory and has been copied for the most part in the final design.

Following their review of the results of Run C, artist, engineer and contractor concurred that the most desirable construction was top-fused, with weak pole ties, as demonstrated by Run B.

RUNS D AND E - TEST NO. 2

Runs D and E involved only spans 1 and 2, the two spans meeting at a right-angle turn in the line of the Running Fence. With both of these Runs further variations of cloth panel details, pole ties and top and bottom hooks were tried.

The important finding from Run D was that an improved configuration of pole tie would be needed to ensure that the ties would open at turns in the Running Fence and also under winds from any direction at straight sections. The ties at pole No. 2 were positioned for Run D so that their hooked ends were subject to little force, while the side opposite the hooks received the higher force. Thus, these ties did not open as required and pole No. 2 was severely bent under winds of about 56 mph.

As a result of this experiment, the pole tie was redesigned as a two-piece wire loop having one point of weakness on <u>each</u> side of the Running Fence. With this revised design, the pole ties function as fused connections under either direction of wind, and at turns or corners as well as along straight runs.

In Run E, the original type of pole ties were used again, but placed with their hooks on the outside of the turn (i.e., opposite to the position for Run D). This time the pole ties opened as planned. The wind speed for this final test is not known, as the wind recorder was behaving erratically. However, the test panels and structure did withstand 58 mph winds without damage.

TEST NO. 2 - SUMMARY

Test No. 2 provided much information used directly in final design, alerted us to necessary design precautions, confirmed that the "fused connection" concept was desirable and feasible and allowed the artist to confirm that the work would meet his aesthetic requirements.

Structural features selected from the results of Test No. 2 and confirmed by either engineering computations, laboratory test or component field tests are:

(1) Cloth panel details -- material, height, length, shape, stitching, grommet spacing.

(2) Pole size and details -- top slotted connection and shoe angles.

(3) Bottom tie-down system, consisting of a bottom cable with earth anchors at about 21-ft centers.

(4) Lateral guy and end guy systems.

(5) Connections of guy cables to earth anchors.

(6) Earth anchor type.

(7) Pole ties -- a specially developed, two-piece wire loop, sized to open under light wind pressures so as to protect the poles.

(8) Top and bottom hooks -- specially designed and developed double hooks, designed for quick installation and shake-proof service, yet of intentional weakness to allow them to release the fabric and prevent damage to cables and withdrawal of earth anchors.

In final design the change of air density with elevation was considered, so that at sea level the top hooks will function as did the Run B hooks at about 5,300 ft above sea level.

The cloth panels for Test No. 2 were 18 ft high. This height allowed the cloth to touch the ground and drag from side-to-side as the wind shifted. Over the several months that the test was underway, this brushing back and forth eroded a narrow path along the line of the Fence. To make sure that this will not occur with the Running Fence in California, the height of the cloth panels was reduced so that the bottom cable and cloth are held clear of the ground for a few inches. This was shown to be successful in two spans of Run B. All panels for the actual Running Fence proposed for construction in California have been made to this reduced height.

It is interesting to note that within four months of the end of Test No. 2, it was impossible to detect where the four-span prototype had been. Even though some construction took place during our season of alternately thawed and frozen ground, recovery had been complete, and this recovery took place during Colorado's harsh, dry summer.

The word "failure" may have an undesirable ring, but for the engineers assisting Christo on the Running Fence, controlled failure is extremely important. It is through pre-planned points of controlled weakness that safety is assured.

Should failure occur, we expect it to be an obscure event, hooks and ties releasing to allow the fabric to lie on the ground, out of site to most observers. No harm should come to the poles, but even if some poles were lost their low flexural strength would prevent them from damaging the ground. Anchors and guys will be the strongest of the structural elements and anchor withdrawal is extremely unlikely.

S A M P L E

EASEMENT AGREEMENT*

AGREEMENT made _____, 19___, between _____ of _____, _____, County of _____, State of California, herein referred to as GRANTOR, and RUNNING FENCE CORPORATION, a corporation organized pursuant to the laws of the State of Illinois and duly qualified as a foreign corporation in the State of California, herein referred to as GRANTEE.

In consideration of _____ to be paid upon commencement of the project described hereinafter on the lands of GRANTOR, GRANTOR hereby conveys and releases to GRANTEE an easement and right of way for a certain fence, hereinafter more particularly designated and described as the "Running Fence," for the period from April 1, 1975 to November 1, 1975, over and across lands owned by GRANTOR and situated in the County of (Marin (Sonoma), State of California, and more particularly described as follows:

(Insert Legal Description)

*Many of the executed agreements were modified in minor respects as a result of negotiations between Grantor and Grantee.

The right of way hereby conveyed and released to GRANTEE is for the sole purpose of locating, establishing, storing, constructing and maintaining over and across the above described land a work of art known as "Running Fence" and includes all necessary and proper foundations, footings, and other fixtures for use in connection with such Running Fence, together with a right of way on, along, and in all of the hereinafter described Strip of the above-described land.

The aforesaid Strip extends across the above-described land and covers a strip of land 40 feet in width, which is approximately located as indicated on Exhibit A attached hereto and which will be more particularly located by mutual agreement of GRANTOR and GRANTEE.

GRANTOR, for the consideration aforesaid, further grants to GRANTEE the right of ingress to and egress from the Strip over and across the land by means of roads and lanes thereon, if there is such, otherwise by such route or routes as shall occasion the least damage and inconvenience to GRANTOR.

GRANTOR shall have the right to use the Strip for purposes not inconsistent with GRANTEE's full enjoyment of the rights hereby granted, provided that GRANTOR shall not erect or construct any building or other structure, or drill or operate any well within the Strip.

GRANTEE shall also have the right from time to time to trim and cut down and clear away any and all brush now or hereafter on the Strip which, in the opinion of the GRANTEE, may be a hazard to the Running Fence or any of its employees or agents who may be

involved in constructing the Running Fence; provided, however, that all wood or brush, if deemed valuable by the GRANTOR who shall so notify GRANTEE, shall continue to be the property of GRANTOR. GRANTEE shall not remove or damage any trees.

GRANTEE shall also have the right to mark the location of the Strip by suitable markers set in the ground, but the markers when set in the ground shall be placed in such a way or in such a location so as not to interfere with any reasonable use GRANTOR shall make of the Strip.

GRANTEE hereby covenants and agrees as follows:

(a) GRANTEE shall backfill any trench or excavation made by it on the Strip, shall remove any and all material (which, at GRANTOR's option, shall become property of GRANTOR) and/or equipment as shall have been installed on the Strip, and shall leave the Strip in as good condition as received (excepting reasonable wear and tear and damage resulting from GRANTOR's negligence) upon the removal of the "Running Fence."

(b) GRANTEE shall indemnify GRANTOR against any loss and damage which shall be caused by the exercise of the rights of ingress and egress or by any wrongful or negligent act or omission of it or of its agents or employees in the course of constructing the "Running Fence." Prior to any entry or use of the premises, except surveying, a copy of GRANTEE's indemnity insurance policy shall be delivered to GRANTOR.

(c) GRANTEE shall not use said Strip for any unlawful purpose and will conform to and obey all laws, regulations, ordinances and orders of all governmental authorities or agencies, respecting the use of the Strip.

(d) GRANTEE shall procure and pay for, at its own cost and expense, fire and liability insurance policies in connection with the "Running Fence" project, such policies to be in favor of and payable to GRANTOR, and to GRANTEE, as its respective interests may appear.

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(e) GRANTEE further agrees not to do any act or thing to create any mechanic's lien or claim for lien against said property owned by GRANTOR and to pay any mechanic's lien claim within thirty (30)days from the date such claim is made, or to provide upon GRANTOR's request a good and sufficient surety company bond to indemnify and save harmless GRANTOR against any such claim for all damages, costs, attorneys' fees and expenses, and any judgment or decree which might be rendered against said GRANTOR or said premises on account of any such claim, matter or thing.

GRANTOR hereby covenants and agrees as follows:

(a) GRANTOR is the lawful owner of the premises on which the Strip is located, and there is no restriction, condition or covenant in GRANTOR's title to the Strip, nor is there in effect any zoning ordinance or other governmental statute, action, law or regulation impeding, limiting or prohibiting the use of the Strip for the use intended by GRANTEE.

All notices, requests, instructions, legal processes and other documents to be given hereunder shall be in writing and shall be delivered personally, against receipt or by registered mail, return receipt requested, as set forth below.

If to GRANTEE, Running Fence Corporation:

c/o Mr. Scott Hodes
One North LaSalle Street
Suite 4400
Chicago, Illinois 60602

HOWARD N. NEMEROVSKI
HOWARD, PRIM, RICE, NEMEROVSKI,
CANADY & POLLAK
650 CALIFORNIA, SUITE 2920
SAN FRANCISCO, CALIFORNIA 94108

If to GRANTOR:

This Agreement shall be binding upon and inure to the benefit of the parties hereto and their successors,

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representatives, executors and assigns.

The parties hereto shall execute such other documents as may be necessary for the implementation of this Agreement and the warranties herein contained.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed as of this_____day of_____, 19___.

_____

_____
GRANTOR

RUNNING FENCE CORPORATION (Grantee)

By _____

Bond Number 475D8602

PERMIT BOND

KNOW ALL MEN BY THESE PRESENTS, That we, RUNNING FENCE CORPORATION and A & H BUILDERS, INC., 3050 Industrial Lane, Broomfield, Colorado 80020, as Principals and THE TRAVELERS INDEMNITY COMPANY, a Connecticut Corporation, as Surety, are held and firmly bound unto the COUNTY OF MARIN, CALIFORNIA, as Obligee, in the penal sum of FORTY THOUSAND AND NO/100 ($40,000.00) DOLLARS, lawful money of the United States of America, for the payment of which sum well and truly to be made we bind ourselves, our heirs, executors, administrators, successors and assigns, jointly and severally, firmly by these presents.

THE CONDITION OF THIS OBLIGATION IS SUCH THAT, Whereas, the above bounden Principals have agreed to erect a "Running Fence Project" across certain property in the County of Marin, California, and to remove said fence by November 1, 1975, and

WHEREAS, the Principals have been granted a permit containing certain pre-requisites, terms and conditions by the County of Marin, California.

NOW, THEREFORE, if said Principals shall comply with the conditions of said permit regarding the erection and removal of said "Running Fence' on or before November 1, 1975, to the satisfaction of said Obligee, then this obligation shall be null and void; otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that no suit shall be brought on this bond after four (4) years from the expiration of permit which is November 1, 1975.

SIGNED, SEALED AND DATED this 1st day of April, 1975.

Attest: RUNNING FENCE CORPORATION

By_____ By_____

Attest: A & H BUILDERS, INC.

By_____ By_____

THE TRAVELERS INDEMNITY COMPANY

By_____
Courtney T. Peterson, Attorney-in-Fact

g.a. Talbert, Inc.
ONE THOUSAND ONE LINCOLN STREET
DENVER, COLORADO 80203
AREA CODE 303/893-1330

Maysles Films, Inc.
1697 Broadway at 53rd
New York, N.Y. 10019
(212) 582-6050

August 15, 1975

Gerry Wolff
Environmental Science Association
1291 East Hillsdale Boulevard
Foster City, California 94404

To Whom It May Concern:

The CHRISTO'S VALLEY CURTAIN film has been produced and is owned by the Maysles Brothers. Christo, the Valley Curtain Corporation, has not received and will not receive any royalties and no fee for this film.

Nor will Christo or Running Fence Corporation receive any royalty or fee for the RUNNING FENCE film now in production by the Maysles Brothers.

Sincerely,

Albert Maysles
President

David Maysles
Vice-President

DM/pld

HARRY N. ABRAMS, INC.
TIMES MIRROR

June 6, 1975

Mr. Joseph Bodovitz
California Coastal Zone Conservation Committee
1540 Market Street
San Francisco, California 94102

Dear Sir:

This letter is to advise you that Christo (Javacheff) has never received and will not receive any royalties from Harry N. Abrams, Inc. from the sale of any of the three books which were published by us and which are listed below:

CHRISTO by Lawrence Alloway
CHRISTO by David Bourdon

To help defray the costs of the above books for publication, Christo donated to our publishing company 100 signed and numbered lithographs, and will not receive any form of remuneration for them.

In addition, Christo has personally helped to pay parts of the costs for the colorplates for the book, CHRISTO VALLEY CURTAIN, for which he will not be reimbursed. He receives no free copies of our books and is required to pay for them at the wholesale price.

It is my understanding that Christo has spent approximately $1,000,000 on the "Running Fence" project.

Very truly yours,

HARRY N. ABRAMS, INC.

Harry N. Abrams

HARRY N. ABRAMS
Chairman

HARRY N. ABRAMS, INC. | PUBLISHERS | 110 EAST 59TH STREET, NEW YORK, N.Y. 10022 | CABLE: ABRAMBOOK | PL 8-8800

newport

Box 163 Newport, Rhode Island 02840

William A. Crimmins, President Sam Hunter, Guest Director

August 16, 1975

Ms. Gerry Wolff
Environmental Science Associates
1291 East Hillsdale Boulevard
Foster City, California 94404

Dear Ms. Wolff:

I cannot understand the frantic objections to the "Running Fence" project. Newport, with its roots in the 17th Century and its minds gradually emerging into the 20th Century accepted the Christo project.

1974 was an America's Cup year, and at the same time 40 sculptors presented 53 works, 14 along Ocean Drive, which is a two-way road roughly 12 miles long and which up until this spring had minimal parking facilities. Forty-five million people live within 3 hours drive of Newport, yet there was no severe traffic jam. The Chamber of Commerce reported no obscene amounts of tourist activity due to Christo.

The Christo Project, which involved many young people in its production, go the normal attention modern art gets. The fact that it was dismantled in 10 days naturally cut down attendance. But the presumed rush to see such a transient project did not materialize, despite the fact that it was very well received by both the critical art world and the public.

The most ardent environmentalists who had loudly objected on endless ground to its production, were quickly hushed by the fact that the gulls and many sea creatures enjoyed it. Also, before they could raise other objections, it was gone and the site returned to its original pristine state.

Ms. Wolff, I know that you have met the Christos and have learned very qui ly to love them for many reasons, one of which is their sweet sincerity. major question here was typically, "Why?", followed closely by, "How much?" When both these questions had been answered, the average result was disbelief. An American is a fairly practical person and he values what he works for. He has a very, very hard time understanding a work of art cost ing $25,000 which serves no practical purpose and which will be quickly di mantled. It is those who know the Christos and Modern Art least who raise the most objections.

Sincerely,

William A. Crimmins
President

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WAC:cc

Enclosure

INSTITUTE OF CONTEMPORARY ART UNIVERSITY OF PENNSYLVANIA PHILADELPHIA 19174

June 12, 1975

Mr. Joseph Bodovitz
Statewide California Costal Zone Conservation Commission
1540 Market Street
San Francisco, California 94102

Dear Mr. Bodovitz:

I have been following the artist Christo's plans for the California Coast with graet admiration and enthusiasm. All of us at the University of Pennsylvania's Institute of Contemporary Art have great respect for Christo's art. In fact, in 1969 the Institute mounted the first major American exhibition of Christo's art. The enclosed publication, documenting Christo's work, was published on the occasion of that exhibition.

The Institute was extremely proud of the exhibition, for it was an early manifestation of a new direction for art, of which Christo is a major figure. Christo, like many American Artists such as Robert Smithson, Michael Heizer and Robert Morris, made a decisive break with the valuable, personally owned art object. Rather, Christo chose to by-pass the making of unique and highly valued art objects in order to make works that intervene in our landscape or the various economic, communication and urban networks that characterize our environment. It is Christo's desire to work in a public rather than an exclusive and private scale, with its monetary benefits that command our respect.

For all of these reasons I am writing to you with the hope that you will reconsider your position on Christo's project for California. In our opinion, the project would be a great cultural contribution to the citizens of California and would draw the public's interest and concern to the valuable resources provided to Californians by the Pacific coast.

With all my heart, I urge you to endorse Christo's art and allow the citizens of California the rich experiences provided by Christo's advanced vision.

Sincerely,

Suzanne Delehanty
Director

SD:at

251

34th and Walnut Streets • Telephone 215-594-7108

COLLEGE OF MARIN
KENTFIELD, CALIFORNIA 94904

RECEIVED
FEB 10 1975
PLANNING DEPARTMENT
COUNTY OF SONOMA

Sonoma County Planning Commission
Administration Building Room 107A
Santa Rosa,California.

January 23,1975

Dear Commissioners:

We,the undersigned faculty members of the art department of the College of Marin,firmly support the artist,Christo's "running fence" project in Sonoma and northern Marin Counties.

His considerable contribution to a new vision in contemporary and avant-garde art is undeniable. In fact,Christo's reputation with this regard is world-wide. The delicate question of ecological damage is answered by Christo's assurance that his structure will be completely removed in two weeks,returning the landscape to its original state. We feel,in fact, its memory will serve as a symbol accentuating Sonoma's beautiful terrain.

We are in hopes of student and faculty participation,and the opportunity to present Christo's concept to Sonoma and Marin communities as a vital artistic enterprise. We trust Christo's appeal to the Planning Commission will be approved.

Yours sincerely,
Art Faculty members,
College of Marin.
(signed below)

Alton Raible

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Mary Fuller (McChesney)
2955 Mountain Road
Petaluma, California 94952
January 28, 1975

Sonoma County Planning Commission
2555 Mendocino Avenue
Santa Rosa, California

Dear Sirs:

As a sculptor and writer about art, I would like to object to the construction of the Christo curtain here in Sonoma County. I have published articles in ARTFORUM, ART IN AMERICA, ART DIGEST, CRAFT HORIZONS and my book, A PERIOD OF EXPLORATION, was published by the Oakland Art Museum in 1973. I have exhibited sculpture here and on the East Coast. I cite all this to indicate that I am acquainted with the subject.

I oppose the construction of the curtain for the following reasons:

First: It is a money making proposition, a deal, not art. Pieces of the Christo curtain from Colorado were sold to the public for outrageous prices. They had no intrinsic artistic value; they only had value because of the publicity built up around them. A public relations snow job is not the same thing as fine art. As Ad Reinhardt, the New York painter, so succinctly pointed out, "There is a kind of moral prestige that an artist has because he's not involved in exploiting anybody or involved in the values of the business world. If he does become involved in them, he becomes like anybody else and then it becomes funny." A bad joke

Second: It is a waste of energy and material at a time when people are hurting economically in this county and all our energies and materials should go into constructive projects that will benefit the community.

Third: It will bring tourists into the county and make it into a crummy Coney Island kind of event. I don't think the people or the cultural life of Sonoma County needs this sort of vaudeville turn.

Fourth: It's old hat already. If the county wants to be avant guard, this Christo is not the one to do anything. As the art critic Peter Plagens pointed out in his new book about West Coast art (Sunshine Muse) when he spoke of Christo's work, among others, it was the swan song of the sixties and their work was "cumbersome, breakdown prone and esthetically unclear".

Sincerely,

Mary Fuller

Robert McChesney
2955 Mountain Road
Petaluma, California 94952
Feburary 7, 1975

Sonoma County Board of Zoning Adjustments
2555 Mendocino Avenue
Snnta Rosa, California

Dear Sirs:

I wish to express my concern over the possibility of the Christo fence being allowed to deface the beautiful countryside of Sonoma County.

I, as an artist of some national reknown in the field of contemporary art who has shown his work in exhibitions abroad as well as in the United States and has read of Christo's work in the art magazines and newspapers, find that his presentation to the public is dishonest and his art forms are discarded experiments of the avant-guarde.

I believe that the Board of Supervisors of Marin County was wrong in overriding their Planning Commission and sincerely hope that a more positive action will be taken against this con-carnival-Evil-Knievel-fence-ride in Sonoma County.

Sincerely,

Robert McChesney

14 Park House,
5-11 South Dowling Street,
KENSINGTON, 2033,
Sydney, N.S.W. Australia.

17th September, 1975

Dear M/S Wolff,

Mr. John Kaldor has asked me to provide information in respect of Christo's "Wrapped Coast". This project was undertaken after considerable negotiation as the coast line involved was the northern arm of Little Bay which is within the grounds of The Prince Henry Hospital, a Teaching Hospital of the Medical School of The University of New South Wales. The Hospital is controlled by a Board of Directors comprising 12 very eminent citizens and the Directors gave permission for Christo to wrap up the coast only after stringent conditions were agreed upon.

The conditions referred to included guarantees that no permanent damage would be caused to the headland and foreshores of Little Bay; all fastenings, structures and material used in the project were removed; necessary reclamation and restoration would be effected; no damage would be caused the environment on the headland and the foreshores and any funds raised from viewers would remain the property of the Hospital. The headland area was rocky with little native vegetation, but what vegetation was there was unique in that it was one of the few remaining stands of botanical specimens typical of the Botany Bay area which would have been catalogued by Sir Joseph Banks, the botanist who was a member of Captain Cook's expedition. Assurances were sought from qualified botanists and other experts and the advice given was that there was little likelihood that any permanent damage would be caused.

The project made an impact on artistic circles in Australia and caused a good deal of controversy both for and against. Opinions were expressed on many grounds - artistic merit, conservation, waste of money, environmental damage. At the time of the "happening" I was the Chief Executive Officer of The Prince Henry Hospital and two other hospitals of The University of New South Wales, and in this position I bore the brunt of the negotiations with Christo's sponsors and my Board of Directors as well as the groundswell of public opinion.

In reply to the questions asked in your letter the following information is provided.

1. Approximately 29,000 people paid to view the project after it was completed. Two or three thousand members and visitors to the Coast Golf Club would have visited the area during the period of construction, and after completion (the Coast Golf Club is located directly opposite the site of the "happening") many thousands of people visited the area. At the time, The Prince Henry Hospital had a work force of some two and a half thousand and I would estimate that 90% of these people took the opportunity of viewing Christo's work during construction and after completion. I would estimate that at least 50,000 people viewed the project at some stage or other.

   The period of time was about two to three months - the period of construction and that of completion.

2. It would not be possible to indicate from what distances the viewers came except to say that they came from an area of 30 miles plus around Sydney. It was a "happening" and it became the thing to go out and see it at the weekends. Visitors to Sydney would have made it a must to view the project and they would have included people from the country areas of New South Wales and the other States of Australia. I have no information as to people making special visits from long distances but no doubt some would have done this.

   The main viewing was from the land but many people did view the project from the sea and a few from the air.

3. No impact was made on the general environment by viewers.

4. The Hospital received about $4,000 from charges made for inspection. Had the weather been kinder and the "wrapping" not destroyed by southerly gales, I would estimate that an income of $10,000 might have been received. No property sales resulted from the project.

As to the impact that the "Running Fence" might have on the coastal area of California I can only hazard a guess. Had the weather conditions for the "wrapping" been more favourable I would have thought that about 100,000 people might have visited the site during the period of construction and after completion. I believe Christo's new artistic expression is to run some 20 miles inland from a point on the Pacific Coast - the same ocean as the "Wrapped Coast". One would expect that viewing would be at many points. I can see many people leaving without appreciation of the message from Christo.

In conclusion might I say that I have no views as to the value of Christo's art. The venture was recommended to my Board of Directors by Australian artists of good reputation, both orthodox and contemporary, and on reflection it was great fun.

Yours sincerely,

Jack Clancy.

M/S Wolff,
Environmental Planner,
Environmental Science Associates,
1291 East Hillsdale Boulevard,
Foster City,
CALIFORNIA, U.S.A. 94404.

Mr. Gerry Wolff
Environmental Planner
Environmental Science Associates
1291 East Hillsdale Boulevard
Foster City, Ca. 94404

Dear Mr. Wolff:

In response to your letter of August 12: the attendance for the Christo exhibition at the Museum of Contemporary Art, from January 18 to March 2, 1969, was 13,964. However, to this number you should add a much larger but uncounted group of people who saw the wrapped museum exterior but did not come to the exhibition inside the building.

Sincerely,

Stephen Prokopoff
Director

21 August 1975

SP:ec

237 e. Ontario st., Chicago 60611, Wh 3-7755

THE FIRST NATIONAL BANK IN RIFLE

RIFLE, COLORADO
81650

ALLEN R. KOENEKE
PRESIDENT

July 30, 1975

Jerry Wolf
Invironmental Planner
Froster City Office
1291 E. Hillsdale Blvd.
Froster City, Calif

Dear Mr. Wolf

I will attempt in the best way possible to explain to you, the experience we had with Mr. Christo, during the time he was in Rifle and had the hanging of the Valley Curtain. The answer to #], the highway situation, the Valley Curtain did not face the highway, as a matter of fact, the highway went under or through the curtain, however you wish to phrase it. This is a small county highway, that was never heavily traveled, located approximately]0 miles from the city of Rifle. To questions #2 and #3, because of the size of our city and the location where the Valley Curtain was hung, it is extremely difficult to estimate the number of people that actually viewed the Valley Curtain. You are correct in understanding that the curtain hung for a period of only 28 hours. During this time, there were many many people in the area and I am sure that had the curtain hung for a longer period of time, the traffic problem would have been quite unique. From observation of people in the area, we had people from as far away as Illinois to east and California to the west. Naturally, again because of the short duration, it was difficult to say what would have happened had we had the full time expanse that we were anticipating. The answer to #4, what impact did the Valley Curtain viewers make on the general invironment, absolutly none. The area now is the same as it

Jerry Wolf

was prior to Christos hanging of the curtain. The answer to #5, the economic impact, certainly, the tourist income was negligable and I can see no correlation between property sales and the hanging of the curtain.

During the twelve months plus that we dealt with Christo, the relationship was excellent. The group was very co-operative with the City of Rifle, County of Garfield and the State of Colorado. I don't feel that you could have had a warmer relationship or people who were more willing to co-operate in any way shape or form possible. There were certainly may skeptics and many people who were dubious of what would happen to the environment and to the area, if the curtain were hung in the Rifle area. A group of us went to the governor of the State, explained our position and thus we feel that we helped Mr. Christo to get the permission to hang his curtain. I, again, want to emphasize that if my answers seem vague and sketchy, it is because of the problems that Christo encountered with the wind, thus we just were not able to come up with questions that you need the answers for. Again, if you need any further information, please feel free to call on me at any time.

Sincerely yours,

Allen R. Koeneke
President

ARK/ce

January 8, 1975

Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, California

Re: Christo Running Fence
"Art" (?) Project

Gentlemen:

Regarding the above referenced "Running Fence", here are our comments as per your request:

1) TRAFFIC: We, the residents of Mecham Road, now have between 1800 to 2000 cars and trucks passing our homes each day on their way to the dump. We feel this is excessive. Will Mr. Christo's fence bring still more?

2) VIEW: While the "Fence" may be art to some, the view we now have of the Sonoma Mountains and surrounding countryside is more desirous to us. The fence will cross the apex of the hill directly behind our homes and 18' of white nylon will obliterate our view.

3) ENVIRONMENT: So the EPC finds that the "project will have no substantial environmental impact." We wonder if the deer and rabbits feel the same way?

4) PRIVATE PROPERTY: From our understanding of where the fence will run, the acreage behind our homes is the only unfenced private property through which it will pass. Where do you suppose people will go for a close-up look at it? Who will guarantee and protect our privacy and property? One of the lanes leading to the land behind us is Wambold Lane; it now is full of chuck holes and barely gravelled from the scant traffic it now receives. What will happen to it after two weeks of sightseers (not to mention the construction crew!) ? WHO will repave it for the Wambolds use?

5) NOTICES: There is ONE notice of the public hearing posted in our area (on the pole at Mecham Road and Wambold Lane) and several home owners on Mecham Road did not receive your postal card with the information regarding Mr. Christo's fence.

If Mr. Christo's fence is approved and built, will you please provide us the name and telephone number of who we should call for help when the traffic, intruders, noise and dust become unbearable? (We now must wait for a sheriff's deputy to come from Santa Rosa and by the time one arrives, our emergency is long past.)

Thank you, in advance, for your careful consideration of our situation.

260

Mr. and Mrs. Ronald L. Raymond
317 Mecham Road
Petaluma, California 94952

POINT REYES STATION, CALIFORNIA 94956

Telephone 663-1231

President
WALDO GIACOMINI
Point Reyes Station, Calif.

Vice President
LOUIS ALBINI
Valley Ford, Calif.

Secretary
WALTER E. WEYMAN
Marshall, Calif.

Director
DONALD McISAAC
Olema, Calif.

Director
WILLIAM BARDONI
Petaluma, Calif.

Recording Secretary
ULLA McLEAN
Point Reyes Station, Calif.

January 13, 1975

Ms. Kathleen E. Ohlson
Environmental Planner
Marin Co. Civic Center
San Rafael, California 94903

Dear Ms. Ohlson:

At a regular meeting of the Board of Directors of the Marin County Resource Conservation District, held on January 9, 1975, the Directors voted to oppose the Christo Running Fence project in Marin County.

The effects would be detrimental on wildlife and a great fire hazard to the whole area, if constructed during late summer. Great soil erosion would also occur by equipment used in constructing and removing the fence.

Respectfully yours,

Waldo Giacomini
President

WG/um

cc: Werner Von Gundell

We are opposed to Christo's Running Fence, because of the detrimental effect it will have on wildlife. When this fence is put up, deer will not be able to move around in their natural habitat. If does with their fawns are caught on the wrong side of the fence, from their water source it could be very rough on them, because they may not find any water. Birds will fly into a white curtain, especially small birds, like quail, which fly lower than eighteen feet. There will be broken necks and wings so there will be wounded and dead birds just like there were in the Santa Barbara oil goo. The other thing is the fire hazard this fence will create it will be built in the most critical time of the year for fire, in this area. So our question is IS this curtain made out of fire proof material? Otherwise with several miles of curtain strung together and somebody decides to have a little extra excitement and lights a match to it on a windy night there will be fences, barns, wildlife and livestock burn up and possibly even homes. There is a real fire potential just from having a lot of extra people in the area. So all Marin county will get out of this fence will be a lot of broken bottles, cans, and a lot of congestion on the roads from this fence. The Commission doesn't want any growth in the area because you have to buy sixty acres to build one-way.

Sincerely
Friends of Wildlife

256 Alma Drive
Rhonert Park, CA 94928
February 4, 1975

Sonoma County Board of
Zoning Adjustments
Administration Building
2555 Mendocino Avenue
Santa Rosa, CA 95404

Gentlemen:

In the matter of "The Running Fence".

Unfortunately, I must attend a conference out of the state on February 13, so I cannot attend the hearing scheduled, according to the article in the San Francisco Sunday Examiner & Chronicle, for that date on this matter.

As one who frequently drives between Rohnert Park and Dillon Beach, I would probably see this fence, if installed, more often than necessary to appreciate its engineering and artistic aspects. At the risk of being called an unthinking Philistine, I must say that from the air I suspect the project would resemble a gargantuan roll of toilet paper unfurled across the pleasant dairy lands.

However, I should like to raise certain questions concerning this project, inasmuch as it is estimated it will cost a million dollars. What kind of fabric is to be used, and what will happen to it as the wind and vandals work it over? If this is fabric based on petrochemicals, we simply cannot afford to waste that much material. Or is it to be removed after a set date and put to other uses? If the builder so stipulates, that may be an acceptable requirement for a permit; even if the fabric is not made of scarce materials, it is still too wasteful to abandon the material after it has served its evanescent purpose (a 20-mile strip of fabric 18 feet wide would be more than 1,900,000 square feet, or over 43.5 acres of material). Certainly we cannot seriously consent to a project which will result in sheets of fabric ripping off and blowing about the landscape to be draped over the cows and fences of the countryside. The project will also involve posts and steel cable. What is to happen to this material? Or has there already been an agreement that these items are to go to the landowners concerned? Should there not be a requirement to remove the posts and cables before permitting such an artistic experiment?

In short, I would recommend that approval of this project be contingent upon salvage and removal of all materials after a stipulated date.

Very truly yours,

Joel W. Hedgpeth

263

JWH:bl

855 Alma Avenue
Rohnert Park, CA 94928
March 24, 1975

North Central Regional Coast Commission
1050 Northgate - Suite 130
San Rafael, California 94903

Gentlemen:

Subject: The Running Fence

After seeing the Corps of Engineers' public notice #75-315-053, concerning the Running Fence project, I must disagree with them that the project does not require an environmental impact report. Not only is there danger of causing serious changes during actual construction of the fence, there is the perhaps even more serious aspect of stimulating unnecessary foot and vehicle traffic (especially motorcycles) on the seaward slopes at the mouth of the Estero San Antonio in coastal Marin County. One must bear in mind that if this project is carried out in September, toward the end of the dry season, its effects may not become apparent until well into the following rainy season. It is possible that the activity could eventually cause a landslide that would occlude the mouth of the Estero.

It is my understanding that the instigator of this project is promising to restore the land to its original condition afterwards. This suggests to me that he is not aware of the dangers of operating on these steep seaward slopes, that, for example, a post hole may start erosion that in two or three ensuing wet seasons could become a serious gully in the hillside. The proposal to secure the last (or first) section of the fence in the sea a few hundred feet offshore with a 1,000-pound anchor and guy lines is impractical. The sea can be very rough here, and the whole business may shift within 24 hours, dragging cables and posts around in the sea, which could endanger fishermen and skin divers as well as small craft that would venture nearshore.

It is obvious to me that in order to protect the interests of the people in an unscarred coastal environment, this project should not be approved without an environmental impact study by competent geologists and soils specialists, and that restrictions should be placed on the kind of public access to the area, bearing in mind that one of the alleged benefits of this project is the stimulation of visitors to see the fence. This could be especially dangerous to the unstable coastal environment because of the significance placed upon the seaward end of the fence by the instigator of the project. Any circumstance which would stimulate a large aggrega-- tion of people on these slopes should be avoided; it is quite possible that plans for a rock music demonstration are already being considered. Such an event could leave scars on the landscape for generations and I recommend that if the fence is approved that access to view it beyond regularly paved roads within the jurisdiction of the Coastal Commission

be restricted to foot traffic and viewing from craft offshore. Certainly, any other activity would be much more than the "minor effort of no significant effect on the quality of the human environment" suggested in the public notice of the Corps of Engineers.

Very truly yours,

Joel W. Hedgpeth

JWH: bl
cc: Edmund H. Smith, Pacific Marine Station, Dillon Beach, California
Marin County Board of Supervisors, San Rafael
Kathy Dillon, Marin County Planning Commission, San Rafael
Joseph E. Bodovitz, California Coastal Commission, San Francisco
Felix E. Smith, River Basin Studies, U.S.F.C.W.S., Sacramento
Kenneth Stanking, Dept. of Biology, Sonoma State College, Rohnert Park
Editor, San Rafael Independent Journal, San Rafael

ESA-EIR-1975
December 12, 1975
Volume 2 of 2

Addendum to the Draft Environmental Impact Report

Comments and Responses

RUNNING FENCE

Part 1 -
Written comments on Draft EIR received by November 26, 1975, and responses thereto.

Part 2 -
Transcript of oral comments at BZA Hearing, December 3, 1975, and oral responses. Late written comments.

Prepared under contract to the
SONOMA COUNTY PLANNING DEPARTMENT
Santa Rosa, California

Environmental Science Associates, Inc.

1291 E. Hillsdale Boulevard Foster City, California 94404 415/573-8500
1390 Market Street San Francisco, California 94102 415/552-4775
8725 Venice Boulevard Los Angeles, California 90034 213/838-2221

PART 1*

WRITTEN RESPONSES TO WRITTEN COMMENTS RECEIVED BY NOVEMBER 26, 1975.

I. INTRODUCTION

This part of the addendum to the Draft EIR on the proposed *Running Fence* contains all written comments on that document received from public agencies, private organizations and individuals during and following the review period (through November 26, 1975). All these written comments are presented in Section II and are fully answered in Section III. This Addendum responds to comments on the Draft EIR, as opposed to comments on the project *per se*. Nevertheless, all correspondence received is reproduced in Section II; some of the attachments to the commentary (or portions of those attachments), which add no relevant information, have been deleted. Section III (responses) was read into the record at the Board of Zoning Adjustments hearing on December 3, 1975.

Part 1 of this Addendum must be read in conjunction with the Draft EIR if the comments and the responses to them are to be fully understood. Each piece of correspondence in Section II has been identified (at the top) with a letter, from "A" through "N". In an effort to prevent confusion, the letter "I" has not been used. Within each piece of correspondence, each individual comment has been identified with a number, placed in the left margin where possible. The responses in Section III appear in sequence; that is, commentary "A" is responded to in its entirety, then commentary "B", etc. In the response section, comments are identified by designators such as "K.13", corresponding to the identification of the comment in the correspondence as received. Where necessary, the comment is paraphrased, and the response follows immediately.

*Part 2 of the Addendum contains written comments received after November 26, 1975. Also, it presents pertinent pages from the transcript of the Board of Zoning Adjustments hearing on December 3, 1975. Specifically, it presents those pages containing (1) responses to the late written comments (post November 26, 1975); and (2) oral comments by Board members and members of the public, and the oral responses thereto.

II. COMMENTS ON DRAFT EIR

A

267 Cavedale Rd Sonoma, Ca 95476

November 3 '75

Sonoma Country Board of Zoning Adjustments
2555 Mendocino Ave
Santa Rosa, Calif.

Dear Sirs:

Once again, as a citizen of Sonoma County, I am asked by the Running Fence Committee to protest any reopening of negotiations on the part of Christo of this abomination against art and environmental corruption. I understand there is a meeting on December 3rd at Santa Rosa, at which Christo will ask for a use permit extension in the form of a new application to avoid further litigation.

Accordingly, a carbon of this letter goes to the Board of Supervisors, which has to pass on the use permit too.

I beg you to do all you can to stop this happening in 1976.

Sincerely yours,

Ruth L Corey

Ruth L Corey

B

COMMITTEE TO STOP THE RUNNING FENCE
% 317 Lecham Road
Petaluma, California 94952

November 5, 1975

Sonoma County Board of Zoning Adjustments
2555 Mendocino Avenue
Santa Rosa, California

Dear Board Members:

This letter is written in an attempt to save some time--both yours and ours--at the public hearing on the Running Fence, to explain who we are and why we are opposing the fence.

Our committee is made up of local people, primarily; some of us are concerned about the invasion of privacy that the fence will cause us as it runs near our homes. Some of us are vitally concerned about the traffic and crowds that will descend upon Sonoma County as a whole, exposing much of our agricultural area to pressures that would not ordinarily exist, to develop into another Santa Clara County or Los Angeles. Some of our members are artists, whose personal commitments to the fine arts make this commercial display very distasteful. Some, active environmentalists whose concern is for the land and all living things.

As you probably know, our committee took the lack of an EIR on the fence to court. We won the Superior Court ruling, with the judge saying that a project of this size and nature had the potential for adverse and significant environmental damage; they won the appellate court decision, with that court saying the Superior Court could not have so ruled without the entire administrative record. We would have appealed to the California Supreme Court, but also the lack of funds and a competent lawyer stopped us.

So, they are back to you, EIR in hand, "to avoid further litigation" as one planner worded it. We are also back to you, with the same questions, concerns and facts.

Unless they have come up with a whole new set of conditions, and a whole new way of granting their monitors authority, their enforcement of the conditions is, at best, subject to dispute. In the matter of crowd control, there have been some horrendous examples that is is impossible to control crowds--Woodstock; the Altamont rock festival; Santa Cruz's July 4, 1974, firework display that caused Santa Cruz to discontinue the displays permanently, the major reason given was that emergency equipment could not respond properly.

Running Fence Corporation assumes that people can be controlled; people are unpredictable, especially in crowds.

Many of the conditions are to repair environmental damage after it occurs, and others are attempts to mitigate damage. Can we expose Sonoma County to these dangers?

Also, no EIR will be able to travel to Sonoma County without viewing the fence to us, this is like religion--someone else's idea should not be forced on us.

Very truly yours,

Lois Raymond, Chairman

LC1

TATE OF CALIFORNIA—RESOURCES AGENCY

EDMUND G. BROWN JR., Governor

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
NORTH COAST REGION
000 CODDINGTOWN CENTER
ANTA ROSA, CALIFORNIA 95401
hone: 707—545-2620

November 10, 1975

Mr. George Kovatch, Planning Director
Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, CA 95401

Dear Mr. Kovatch:

The water resources section in the draft environmental impact report on the Running Fence has been reviewed.

We believe that the mitigation part of this section could be strengthened by referring to or citing the Regional Board's "Water Quality Control Plan, North Coastal Basin 1-B", which sets forth special waste discharge prohibitions for nonpoint sources. The prohibitions are paraphrased below: (1)

> The discharge of soil, silt, or earthen material from any construction or associated activity of whatever nature into any stream or water course in the Basin in quantities deleterious to fish, wildlife or other beneficial uses is prohibited. Further, the placement or disposal of such materials where they could pass into any stream or water course in deleterious quantities is also prohibited.

Returned herewith is the copy of the Running Fence environmental impact report, which you sent for our review.

If you have questions concerning this subject, please write to Ronald Church, Environmental Specialist, at this office.

Sincerely,

David C. Joseph
Executive Officer

Enc.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
4226 Petaluma Blvd. N., Petaluma, Ca. 94952

D

November 13, 1975

Sonoma County Planning Department
County Administration Bldg.
2555 Mendocino Ave.
Santa Rosa, Ca. 95401

Dear Sirs:

After reviewing the Enviromental Impact Report of the Running Fence, I feel the report sufficient and well presented.

From a soil erosion and sedimentation point of view, the greatest hazards seem to be from fire removing the ground cover and causing erosion and resulting sedimentation as a result of winter rains falling on bare ground.

Respectfully,

CHARLES E. SWISHER
District Conservationist
Petaluma Field Office

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
100 McALLISTER STREET
SAN FRANCISCO, CALIFORNIA 94102

E

SPNCO-R

14 November 1975

Mr. Thomas E. Cordill
Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, California 94501

Dear Mr. Cordill:

Inclosed is your copy of the EIR which you requested be returned. As I am leaving the Corps for another job on November 14, 1975, I do not have enough time to suggest official comments for the Corps.

I may make comments as a private citizen at a later date.

Sincerely yours

Thomas A. Stone

Thomas A. Stone
Regulatory Functions Branch

Jerome Tichenor

F

Y gwiwer goch

AFFILIATED WITH:
society for the prevention
of progress

5660 MONTECITO AVENUE
SANTA ROSA, CALIFORNIA 95404

15 November 1975

Sonoma County Planning Department
Board of Zoning Adjustments
Santa Rosa, Calif.

Gentlemen:

Draft Environmental Report for Running Fence

(1) In view of the number of omitted letters and references casually mentioned in the text, and the astoningly inadequate section on "Lwgal History of the Project" without a single precise date, it is not surprising that the opinions of artists not in favor of the project are inadequately represented. In particular the opinion of men of letters (of which I am one) is not represented. Accordingly you will find enclosed a poet's opinion of this project, which I suspect is not entirely unknown to the applicant.

Very truly yours,

Jerome Tichenor

According to bardic tradition, the first environmental impact report was submitted by a delegation of squirrels at the time of Elizabeth I.

Blin ac afrydd yw'r gyfraith,
mae'n boen i'r gwiwerod bach;
mynd ar lawndaith i Lundain
a'u blodd a'u mamaeth o'u blaen.

Odious and hard is the law
and painful to little squirrels.
They go the whole way to London
with their cry and their matron before them.

Y gwiwer yn erbyn y byd

ON TOP OF OLD HOKEY

Across old Sonoma
and into Marin,
A fence of white nylon
will take us all in.

For some twenty-four miles
it will drag o'er the land,
And gleam like fresh laundry:
how utterly grand!

About forty-three acres
of cloth it will take;
Can this be esthetic,
or a silly mistake?

'Twill be like T-paper
spread over the hills,
A sort of reminder
to take the right pills.

Right over the hilltops
and to the seaside,
The fence will be flapping:
the landscape will slide.

'Twill last but a fortnight,
what harm can that be?
But even a moment
is too much for me.

They tell us we're skeptics
who don't wknow what's art,
And that we're all actors
and each has a part.

We're all in their caper
and have no escape;
Relax and enjoy it,
and smile as they rape.

Our gallery pundits
claim that it's great art,
But it's not as much pleasure
as an elegant fart.

Our brave and proud mentors
fear to be made fools of,
So they lean so far backwards
they make themselves tools of.

Our government bodies
are cowed by the mob,
And think all that nylon
will be a great show.

The farmers are promised
all sorts of rewards -
TV's and white nylon
and flattering words.

The skeptics are certain
it's not for art's sake,
That the whole dizzy project
is only a fake.

The multitudes singing
in praise of Christo
Are telling the skeptics
just where they can go.

He's hung his odd curtains
by mountain and sea,
But never did much
to impress you and me.

A million fat dollars
they'd spend on this farce;
What they need most of all
is a kick in the arse.

This fence is offensive,
what more can we say?
Than Christo, you fence,
just go far away.

Jerome Tichenor

G

JOEL W. HEDGPETH
5660 Montecito Avenue, Santa Rosa, California 95404 • Telephone 707-539-1267
ENVIRONMENTAL AND EDITORIAL ANALYSIS

16 Nov 1975

Sonoma County Board of Zoning Adjustments
2555 Mendocino Ave
Santa Rosa, Calif.

Gentlemen:

Environmental Impact Report, Running Fence, terrestrial phases.

(1) With respect to those aspects of this project involving a fence across the hills of Sonoma County, I am disturbed by the high breaking strength (to withstand winds of 60 miles per hour, or approximately 50 knots) proposed for this fence. The sample of nylon cloth included with some (but not all) copies of the EIR indicates a type of cloth that should catch any wind, and no sailor would keep his sails up at 50 knots. All tests of this system, evidently, were done in Colorado, not under conditions of the coastal winds of the "Petaluma Wind Gap", and, more significantly, of the soil conditions of Marin and Sonoma counties in the (soil) area to be traversed by the fence. Since adequate ~~conditions~~ test in this environment will depend on wind conditions, it will be necessary to to wait for the right conditions to be certain that possible environmental circumstances will not uproot the posts and induce unfavorable erosional patterns in the local environment. I think that we should demand that test cores be made of every possible site location for the fence poles to demonstrate that thet there is, or is not, adequate conditions for the posts and for the anchoring cables, or whether some of these areas may not be on unstable surfaces near seepage areas or overlying contacts with underlying rocks, etc. The real issue in this application is not the ephemeral nature of this work of "art" but the events that may be set in motion long after the entrepreneur has exulted in his triumph on the TC programs, sold his books and departed from our midst. Rape is an all or none proposition. and, as the late FDR remarked in another context, there is no such thing as "just a little pregnancy."

(2) As a personal matter, I must protest that my name has been taken in vain in a number of places in this EIR. On page 38, for example, there is a footone reference to a letter by Ms Azevedo Chairman (Chairperson?) of the North Central Regional Coastal Commission to me under the date of June 26. This letter is not included anywhere in this EIR, and since it was also pub,ished in the Point Reyes Light, I think it should be included. Nor is my reply to the lady (who apparently cheerfully accepts her designation as the Red Queen without remembering what happened to the Red Queen when Alice finally got her by the throat). It is a matter of considerable interest to me that on the same day that Ms Azevedo wrote her rather petulant and prejudiced le her commission camemto a diametrically opposed decision that evening by endorsing the application for estuarine sanctuary status for this part of the coast. Is the lady trying to have it both ways? Well, this is not altogether out of chara cter, for as Humpty Dumpty said, a word is what I say it means, and there is no argument about it.

In general, this EIR is surprisingly inadequate in essential documentation, and I must ask whether we have been well served by this process. Where are the dates that should have been given in the "legal history"? Where are the documents in substantion of the various passing references in the footnotes? This EIR is prefaced with an imposing code of ethics, but it would seem that most of the code has been ignored. It is certainly unethical, for example, to use the casual conversatuon with people as "consultations" and to use their names in substantiation of opinions without apprising those concerned that such casual encounters might be cited later as substantive support. I submit, this is in plain violation of the code of ethics subscribed to. Pwrhaps we need another EIR by completely ethical people, without this implication of the well known tendency of the Running Fence people to encourage only the most favorable comments on their enterprise.

Be all that as it may, I would like to suggest certain mitigations for this project:

1. Reduce the entire project to scale of 1 inch to the foot. The fence then be 18 innhes high, and the burden of proof would then be upon Shristo to prepare an inspiring scale model of the entire project. If it is to last only for a moment in time, what is the difference between one day and eighteen days, for example? Or, an inch or a foot?

2. If the present grandiose scale is retained, the breaking strength of the links in the system vis à vis guy wires, posts, etc, should be reduced at least fifty percent, to withstand wind forces of about 25 miles per hour, or equivalent to that strength of force which any prudent master of a square rigged vessel would reef in all his sails.

3. All substantiating studies of soil strength, effect ofmwinds , etc., must involve actual <u>in situ</u> tests in Marin and Sonoma counties, rather than irrelevant tests in Colorado. What is good for Colorado may not be be good for Sonoma County. I do not believe that we have yet had adequate tests of the environmental effect of this project under local conditions.

Very truly yours,

Joel W. Hedgpeth

CC Sonoma Co. Bd of Supervusors

H

H

JOEL W. HEDGPETH
5660 Montecito Avenue, Santa Rosa, California 95404 • Telephone 707-539-1267
ENVIRONMENTAL AND EDITORIAL ANALYSIS

Nov. 16 1975

Sonoma County Board of Zoning Adjustments
2555 Mendocino Ave
Santa Rosa, Calif

Gentlemen:

Environmental Impact Report, Running Fence

It is necessary to correct the point of view expressed by Dr Welton Lee in his discussion of the coastal phase of the Running Fence Application, specifically his contention that "the area is not of unique biological significance. It is a habitat duplicated in hundreds of areas along the California coastline and does not represent some critical ecological system." This area under consideration lies in Marin County (NOT Sonoma County as Dr Lee states), and is the only area on the California coast immediately between two active marine laboratories, one in Sonoma County and the other in Marin. These laboratories make a significant educational and economical contribution to both counties concerned.

(1)

In making his judgement, Dr Lee was evidently not adequately informed by legal counsel for the applicant concerning the present status of this part of the California coast insofar as the North Central Regional Coastal Commission is concerned. On June 26, 1975, ten days after the California Coastal Commission rejected, by a 9-3 vote the application for the running fence to rise from the sea at the mouth of Stemple Creek, the regional commission, formerly in favor of the fence, approved an application prepared by Pacific Marine Station and the Bodega Marine Laboratory to apply for status as a Federal Estuarine Sanctuary under section 312 of the Federal Coastal Zone Management Act of 1972 for Tomales Bay and the coast line to Bodega Head. Thus the proposed estuarine sanctuary would "also extend north along the shore line of Bodega Bay to Bodega Head", as defined in the application approved by the regional commission and forwarded to the California Coastal Commission by letter of June 27. This approval by the regional commission is recognition of the value of this region to scientific study and a support of the application for federal support of research and aquiculture projects inthe area concerned. By this action the regional commission turned its back on such ephemeral and non-essential uses of the environment as the running fence stunt. Therefore, Dr Lee's contention that this area is not unique is beside the point. Indeed, it is difficult to see how the North Central Regional Commission can reverse itself on the matter of the appropriate use of this part of the California coastline without declaring that it has no interest in the wisest and best use of this part of the coast. Certainly the California Coastal Commission cannot see fit to approve an action that would jeopardize a much more beneficial program for the shoreline. It would therefore appear that the Sonoma County Planning Commission and Board of Zoning adjustments must also agree that potential designation of this area for preferred research status and federal support for local laboratories and research activities on a long term basis should override

(2)

the transitory desires of people who wish to tramp around, lay cables and drag things over the landscape for no purpose other than to express some vague esthetic ideas in the name of an art form whose essential feature is its ephemeral nature.

(3) I am sorry to say that Dr Lee's implication that I was consulted and concurred in his judgement, and by implication, of the relative lack of effect of the project, is simply not true and must be corrected. The "consultation" consisted of a few minutes on the telephone at which time I was given the distinct impression that Dr Lee had not yet decided to accept the assignment for this EIR, and I consider this use of my name and reference to me as inappropriate. I think you will find the same circumstances apply to another person mentioned as having been "consulted" in this left handed designation by footnote. I would say that proper "consultation" in this context should include the appropriate documentation with correspondence, etc. This at least is the implication I get from the code of ethics reproduced opposite the title page of this EIR.

(4) In any event, to summarize: the coastline of Bodega Bay has long been a research resource of the Bodega Marine Laboratory and Pacific Marine Station, and is especially useful because its isolated situation makes it possible to study certain aspects of plant and animal distribution and interactions without undue interference by man. We do not have many such areas within easy reach of other areas intensively studied and visited by both students and the general public. Therefore, by virtue of this history of study and research, the coastline of Bodega Bay in Marin and Sonoma counties, assumes a character that makes it of special value, whether its fauna and flora are unique or not.

(5) In view of these circumstances, any approval of such an activity as the Running Fence on the seashore should be disposed of as contradictory to the policy approved by the North Regional Commission, and as against the best interests, both scientific and economic, of the marine laboratories and educational institutions of Marin and Sonoma counties.

Very truly yours

Joel W. Hedgpeth

cc California Coastal Commission
North Central Regional Commission
Sonoma County Board of Supervisors
Welton L. Lee
Bodega Marine Laboratory
Edmund H. Smith, Pacific Marine Station ("Edward Smith of Dr Lee's list of consultants.")

J

November 20, 1975

Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, California 95401

Re: Running Fence, File 7772
Draft Environmental Impact Report

Attention: George Kovatch, Secretary, Board of Zoning Adjustments

The EIR confirms my worst fears of the problems that the fence will bring to me--increased traffic, litter, noise, air pollution, fire danger, and the inability of any emergency equipment to respond in a reasonable amount of time. (1)

The traffic problems are all based on the publicity attending the project. Too much publicity has already been given to it. The Articles of Incorporation for the Running Fence Corporation state (page three, article 4, first paragraph, last sentence) "...and to attract groups and individuals to view such work of art through advertising, publicity, and other means." They had a booth at the Sonoma-Marin County Fair; Christo has addressed art classes in colleges all over the state; and there have been Valley Curtain shows at all the major museums in the Bay Area; and in Freestone, and "Exhibit of the Project in Process." (2)

Aside from the problems the fence will cause those of us who are unwitting victims along its route, the fence WILL cause the county problems that it should not even consider undertaking. The last annual report for the Corporation filed February 11, 1975, states that the total capital of the Corporation was $51,300.00. I am aware of the bonding and insurance policies supplied by the applicant; however, what, specifically, and whom, specifically is covered? What is not covered? Will the Corporation file bankruptcy and the County be left liable? The County will be liable in case of accident and become a party in any liability. (3)

In view of the fact that there has been very little testing and/or studies done in Sonoma County or Marin County, how can the Board judge the impact properly? There are no wind velocity measurements for Sonoma County (as Highway 101 is marked as a gusty wind area for four miles at the beginning of the ascent of Mecham Hill, that should have been measured), no mention of this summer's rains, no investigation of the intertidal [illegible] in-depth analysis of the marine communities present, the whole course was not walked out for floral and faunal studies, the inability to identify rare or endangered plant species in September (the dormant period), "since most mammals are nocturnal, a complete list would result only after considerable trapping and/or netting" (Page 174), and since the engineering tests were done in Colorado, this is not a complete environmental impact report and I question how a competent decision can be made. (4)

The EIR, as most reports filed in regards to the Fence, goes to great length to emphasize the temporary nature of the project; the catastrophies that may occur (fire, accidents, etc.) will NOT be temporary. The report also goes into detail about the benefits to be gained by allowing the project--gifts to the county, materials to the landowners, etc. Is a truck worth the risk of a 40-mile traffic jam, abundant law suits, and risking even one person's life either through accident or the inability of emergency equipment to respond in any emergency, fence-caused or otherwise? (5)

Lois Raymond

Mrs. Lois M. Raymond, 317 Mecham Road, Petaluma, California 94952
cc: Board of Supervisors

he following are specific references within the environmental impact report on which the foregoing conclusions: have been based:

Lease read the entire SUMMARY; though a great point is made of distinguishing etween "local short-term impact and the maintenance of long-term productivity" he risks and inconveniences to residents along the route (except the ranchers nd other who have granted the easements, as they have had a choice) are many nd not ones to be taken lightly--congestion, fire danger, air-quality mpairment, noise, plus additional fuel consumption, not to mention the danger f delay of any emergency service vehicle. (6)

he report makes a point of emphasizing that there will be no costs to the ounty. Has the county been reimbursed for the hearing already held and the nes to be held? Has the county been reimbursed for its cooperation in the IR? (7)

lso, what will happen to the holes that have been backfilled with sand ith the first heavy rains? (8)

age 11, paragraph 3 , last sentence: "It is not the intent of the applicant o encourage maximum visitation to the Running Fence." Please see the attached opy of the Articles of Incorporation of Running Fence Corporation, page 3, rticle 4, first paragraph, last sentence, "and to attract groups and ndividuals to view such work of art through advertising, publicity, and ther means." This year, three shows were planned for the largest Bay Area rt Museums to correspond with the fence showing. (9)

ara. 5 - The Fence is scheduled to be built on a paved, deeded, road asements in the Happy Acres subdivision, so how can it "break at roads"? lso, the last sentence in this paragraph, "little space is expected beneath he fence except in very uneven ground or over ravines"--what happened to he 18" ground clearance promised last time around for the passage of field ammals?? (10)

age 15 There is no mention of how the cable will be brought in and unrolled. (11)

age 16 Isn't Jameson Trucking in Petaluma? Anyway, there is no mention of he wind velocity necessary to release the fabric from the bottom hooks. (12)

age 33 para. 2: "possibly bringing increased temporary economic activity o Valley Ford"--Valley Ford is a very small town; it will accomodate but VERY FEW people, not thousands in any one day. (13)

ara. 6 "As the Running Fence is not a commercial venture"--there must be wo sets of values for determining commercial ventures; art and non-art! (14)

age 35-37 There is no mention of the proposed subdivision for Mecham Hill nd Pepper Road! (15)

age 38 COMMUNITY ATTITUDES Omits rural residents who are not dairy owners, onservationists, agencies, Bay Area residents, or art experts or critics! t also mentions that Belvedere, in southern (!) Marin County stated its upport of Running Fence, but neglects to mention that Cotati expressed oncern. (16)

age 40 a) Neglects to mention that the students who attend Dunham School o not have bus service. (17)

Page 40 & 41 Fire. As there are almost 600 fires in the Division of Forestry's area in the last three weeks in September normally, the thought of them trying to respond to those normally incurred at this time of year on congested roads is really frightening. (18)

Page 42 a) ii "As this event holds the potential for causing traffic congestio on the rural roads in this area, it is possible that the school buses (see not on page two of this summary regarding Dunham School), bearing children to and from schools, would be delayed or prevented from keeping their schedules. If such a disruption so affected the students in the area, IT WOULD CONSTITUTE A SIGNIFICANT TEMPORARY IMPACT ON THE AREA EDUCATIONAL SYSTEM.

(b)
Page 43 Regarding the water supply, Petaluma has had voluntary water rationing in the summer; a two week drain on the water supply by visitors could harm their supply drastically. (20)

d) "2.5 cubic feet of solid wastes would be produced each day by the workers themselves." (21)

Page 44 first para. "40 to 80 CUBIC YARDS of solid wastes could be disposed of in the area." (22)

e) FIRE PROTECTION i "The used of a motor driven vehicle on the dry grassland area creates a potential for fire." "The responsibility for handling a fire would rest on the fire department serving the area in which the fire occured."

ii. "The increase in number of persons and vehicles in this area, during the season when the grass is dry and the fire danger generally is high, compounds the fire danger and increases the chance that the fire department would be called upon." (25)

HOW CAN FIRE (OR ANY EMERGENCY EQUIPMENT) RESPOND ON CONGESTED, CLOGGED ROADS

1) POLICE PROTECTION 100 monitors (on motorcycles?) monitoring traffic, protecting private property, passing out free fabric samples and pamphlets?? (26)

g) "THE NUMBER OF AUTOS ON THE ROAD COULD INHIBIT SWIFT SERVICE BY EMERGENCY VEHICLES." HELP! HELP! (27)

PAGES 45 & 46 Chemical toilets and waste containers at stopping points along the roadway?? (28)

c) Keep visitors from smoking by means of signing and other communication? (29)

g) "TRAFFIC COULD BE CONTROLLED TO ENABLE USE OF THE ROAD BY AN AMBULANCE IN CASE OF EMERGENCY." HOW??? With traffic slowed or stopped in each direction on narrow, two-lane roads, most of which have ditches on each side? (30)

Page 48 has anyone considered what will happen if the milk trucks are unable to get through? (3

Please see the copy of the last Annual Report for Running Fence Corporation filed in the State of Illinois, filed February 11, 1975, which states the total capital of the Corporation is $51, 800.00. What will happen when law suits are filed as a result of this project? Will Sonoma County be liable? (3

Page 54 regarding the Happy Acres Subdivision, two homes (317 and 319 Mecham) are not to be separated from the fence by the nearest ridge line, as the ridge ceases to be where it intersects Wambold Lane. (At the board of Supervisors hearing in March, Mr. Mayfetz presented a map of the Happy Acres subdivision, stating that there were four homes in the tract; at that time, there were ten, there are now eleven.) The two homes on the non-ridge line side of Wambold Lane have a clear view of Mecham Hill, so both close in and panoramic views will be altered. (33)

Page 65 - 71 The traffic management plan SHOULD HAVE BEEN included as a part of the EIR. If approval for the fence is granted without it, it shows a lack of preplanning on everyone's part. (34)

Pages 73-75 4,211 gallons of auto fuel per 1,000 visitors?? What a waste of a dwindling resourse! And an estimated 4,600 gallons to be used in construction and removal? (35)

Page 89 "the short period allowed for an investigation of the intertidal area obviates any in-depth analysis of the marine communities present." (36)

Page 91 last para. - "the whole course of the route was not walked out." (37)

Page 99 - last paragraph - "strong recomendation for a subsequent field survey to be carried out in the spring of 1976." (38)

Page 126 - the mitigation conclusions are based on the project being done during the "dry season". The "dry season" was very unpredictable in 1975, with measurable rain occuring each month. (39)

Page 127 Wind velocity figures for the San Francisco Airport? No wind velocity taken in Sonoma County, or particularly the "Petaluma Wind Gap?" Mecham Hill, on Highway 101, is marked as a gusty wind area! (40)

Pages 128-130 Rainfall figures for Santa Rosa? No mention of the summer rains this year! (Or heavy rains late in the spring, or the wind storm in early October.) (41)

Pages 131-136 Any increase in dust impact and auto exhaust impact on air quality should be discouraged! (42)

Pages 137-141 Any increase in noise is inexcuasble. (43)

Page 143;"* Which (increased traffic) may, however, affect traffic movement as far south as Novato on Freeway 101, and beyond." !! (44)

Page 174 "**Since most marmals are nocturnal, a complete list would result only after considerable trapping and/or netting." (45)

Page 187 - the place where my house should be marked is marked as a viewpoint and a hazard. (46)

Page 139 - Para. 6 , "Along Stony Point Road, there is ample shoulder area for autos to stop for viewing and for photographing the fence..." This must be a different Stony Point than that parallels the freeway from Petaluma Blvd. North to Mecham Road. (47)

Pages 172 - 196 This "guided tour" seems to assume that cars can park on any paved shoulder area, then pull out into traffic without causing any problems. ??? (48)

Pages 197 - 212 Several things have been omitted from this section.
1) Stony Point Road from Gravenstein Highway to Mecham Road was under construction during summer 1975; the traffic was greatly decreased due to the construction.
2) Says no numbers were available for traffic on Stony Point on Sundays. The traffic on Stony Pt. increases on weekends, primarily from vehicles travelling to the dump on Mecham Road. (49)
3) No traffic counts for Mecham Road? A fairly good source is the Central Refuse Disposal Site, with Pepper Road's count added for through traffic!
4) If 10,000 people viewed the Valley Curtain in it's 26-hours of hanging, perhaps the expected "worst case analysis" is way off.

Page 234 XXXX "Test No.2 was conducted at Soda Lake, near the town of Morrison, Colorado..." (50)

Certificate Number 528 4

STATE OF ILLINOIS

OFFICE OF THE SECRETARY OF STATE

To all to whom these presents Shall Come, Greeting:

Whereas, *Articles of Incorporation, duly signed and verified of*
VALLEY CURTAIN CORPORATION

have been filed in the Office of the Secretary of State, on the 8th *day of* January *A. D. 19*71*, as provided by "THE BUSINESS CORPORATION ACT" of Illinois, in force July 13, A. D. 1933.*

Now Therefore, I, JOHN W. LEWIS *Secretary of State of the State of Illinois, by virtue of the powers vested in me by law, do hereby issue this certificate of incorporation, and attach thereto a copy of the Articles of Incorporation of the aforesaid corporation.*

In Testimony Whereof, *I hereto set my hand, and cause to be affixed the Great Seal of the State of Illinois,*
Done at the City of Springfield this 8th
day of January *A.D. 19*71* *and of the Independence of the United States the one hundred and* 95th

(SEAL)

John W. Lewis

SECRETARY OF STATE.

ARTICLE FOUR

The purpose or purposes for which the corporation is organized are:

To secure the appreciation of the fine arts, and the elevation of standards of taste and artistry by creating, developing, constructing, building, and erecting a work of art for public exhibition, and to attract groups and individuals to view such work of art through advertising, publicity, and other means.

To buy, sell, deal in or with works of art of any and all kinds, whether originals, copies, or others, and any and all kinds of personalty, wares, merchandise, or goods, either as principal or agent.

To purchase or otherwise acquire, lease as lessee, invest in, hold, use, lease as lessor, encumber, sell, exchange, transfer, and dispose of property of any kind or description or any interest thereon.

To advance money to and enter into contracts and arrangements of all kinds with builders, property owners and others, but not have the power to discount bills or notes or to buy or sell bills of exchange or to exchange in the business of bonding.

ARTICLE FIVE

PARAGRAPH 1: The aggregate number of shares which the corporation is authorized to issue is 2000, divided into one class. The designation of each class, the number of shares of each class, and the par value, if any, of the shares of each class, or a statement that the shares of any class are without par value, are as follows:

Class	Series (If any)	Number of Shares	Par value per share or statement that shares are without par value
common		2000	$25.00 per share

PARAGRAPH 2: The preferences, qualifications, limitations, restrictions and the special or relative rights in respect of the shares of each class are:

8

FORM BCA-55

(Do not write in this space)	
Date Paid	73
License Fee	$
Franchise Tax	$
Filing Fee	$ 25.00
Clerk	

(File in Duplicate)

ARTICLES OF AMENDMENT
TO THE
ARTICLES OF INCORPORATION
OF

5749 23

Valley Curtain Corporation
(Exact Corporate Name)

MICHAEL J. HOWLETT

To JOHN W. LEWIS
Secretary of State
Springfield, Illinois

The undersigned corporation, for the purpose of amending its Articles of Incorporation and pursuant to the provisions of Section 55 of "The Business Corporation Act" of the State of Illinois, hereby executes the following Articles of Amendment:

ARTICLE FIRST: The name of the corporation is:

Valley Curtain Corporation

ARTICLE SECOND: The following amendment or amendments were adopted in the manner prescribed by "The Business Corporation Act" of the State of Illinois: Resolved, that Article One of the Articles of Incorporation of this corporation be and it hereby is amended to change the name of this corporation from Valley Curtain Corporation to Running Fence Corporation, and should read as follows: "Article One. The name of the corporation hereby incorporated is Running Fence Corporation."

PAID

OCT 11 1973

Michael J. Howlett
Secretary of State

14

FOR IS 75

FILED FEB 11-75

THE BUSINESS CORPORATION ACT

ANNUAL REPORT

MICHAEL J. HOWLETT

SECRETARY OF STATE OF ILLINOIS

D 4976-907-5
FILE NO.

USE TYPEWRITER IN EXECUTING THIS REPORT WHICH MUST BE FILED PRIOR TO MARCH 1st.

FILING FEE $15.00

1.) CORPORATE NAME RUNNING FENCE CORPORATION
REGISTERED AGENT % SCOTT HODES
REGISTERED OFFICE 180 N LASALLE SUITE 3800
CITY, STATE, ZIP CODE CHICAGO, ILLINOIS 60601

696 42

2.) THE NAME AND OFFICIAL POSITION OF THE OFFICER EXECUTING THIS REPORT IS:

SCOTT HODES, SECRETARY

(PRESIDENT, VICE PRESIDENT, SECRETARY, ASSISTANT SECRETARY, TREASURER, RECEIVER, ASSIGNEE, OR TRUSTEE.)

3.) THE ABOVE CORPORATION ORGANIZED UNDER THE LAWS OF THE STATE OF Illinois, PURSUANT TO PROVISIONS OF "THE BUSINESS CORPORATION ACT" OF THE STATE OF ILLINOIS, HEREBY MAKES THE FOLLOWING REPORT:

4.) THE NAMES AND RESPECTIVE ADDRESSES OF ITS OFFICERS AND DIRECTORS ARE: IF OFFICERS ARE DIRECTORS, SO STATE.

NAME	OFFICE	NUMBER AND STREET	CITY	STATE
Jeanne-Claude Javacheff	PRESIDENT	48 Howard St.,	New York,	New York
Scott Hodes	SECRETARY	180 N. LaSalle St.,	Chicago,	Ill.
Jeanne-Claude Javacheff	TREASURER	48 Howard St.,	New York,	New York
Christo Javacheff	Ass't Treasurer	48 Howard St.,	New York,	New York
Jan van der Marck	Vice President	48 Howard St.,	New York,	New York
Jeanne-Claude Javacheff	DIRECTOR	48 Howard St.,	New York,	New York
Christo Javacheff	DIRECTOR	48 Howard St.,	New York,	New York
	DIRECTOR			

5.) THE FOLLOWING IS A BRIEF STATEMENT OF THE CHARACTER OF THE BUSINESS IN WHICH THE CORPORATION IS ACTUALLY ENGAI

To erect a work of art for public exhibition and to generally deal in works of art and art supplies.

6.) THE AGGREGATE NUMBER OF SHARES WHICH THE CORPORATION HAS AUTHORITY TO ISSUE (AS OF PRECEDING DECEMBER 31s

IS 2,000 ITEMIZED AS FOLLC

CLASS	SERIES (IF ANY)	NUMBER OF SHARES	PAR VALUE PER SHARE OR STATEMENT T SHARES ARE WITHOUT PAR VALUE
Common	None	2,000	$25.00

7.) THE AGGREGATE NUMBER OF ISSUED SHARES (AS OF PRECEDING DECEMBER 31st)

IS 1,036 ITEMIZED AS FOLLC

CLASS	SERIES (IF ANY)	NUMBER OF SHARES	PAR VALUE PER SHARE OR STATEMENT T SHARES ARE WITHOUT PAR VALUE
Common	None	1,036	$25.00

8.) THE AMOUNT OF STATED CAPITAL AND PAID-IN SURPLUS AS OF DECEMBER 31st IS:

STATED CAPITAL $ 25,900

PAID-IN SURPLUS $ 25,900

TOTAL $ 51,800

READ INSTRUCTIONS ON BACK OF FLYER BEFORE FILLING IN.

K

Ronald L. Raymond
317 Mecham Rd
Petaluma, Calif
94952

November 23, 1975

Sonoma County
Board of Zoning Adjustments
1555 Mendocino Ave.
Santa Rosa, Calif.

RE: Running Fence Corporation Environmental Impact Report.

Herein are my thoughts and comments on the report prepared for the Running Fence project.

Summary Page 5 — Construction noise "could produce levels that would strongly intefere with both outdoor and indoor residential activities at some homes along the route."

Noise levels caused by visitor traffic on local roads could increase by 23 decibals - a 5 fold increase.

Comment - This has been our contention all along and we feel, would constitute an unacceptable intrusion on our peace and privacy for an unneccesary project. (1)

Summary page 6 — "Air Quality will change."

Comment - Another unacceptable side affect of an unneccesary project. (2)

Page 1 — "The business activity of the Running Fence Corporation is to foster public appreciation of fine art."

Comment - The articles of incorporation go on to say that this goal, among others, is to be attained by advertizement and other means to attain public notice and publicity. (3)

Page 11 — "No stopping or parking area has been proposed as part of the project." "It is not the intent of the applicant to encourage maximum visitation to the Running Fence."

Comment - They cannot reconcile this statement with the paid publicity director or previous statements that Christo wants controversy or the numerous museum appearances and public speaking engagements in 1975 in the Bay Area or the exibit in Freestone, or the showing of the film "Valley Curtain" at public gatherings and employee group meeting in Sonoma County and elsewhere. This statement is in conflict with the corporations articles of incorporation on file in Illinois. (4)

Page 12 — Phases - Construction will take 5 month, exhibit in September and a month to six weeks for take down.

Comment - Not so temporary as the impression Running Fence Corporation wishes left with us. (5)

Page 15 June - lists construction techniqes.

Comment - No where does it mention what the heavy cable reels would weigh or what the gross weight of the vehicle carrying the cable reels will be. They do not detail how the cable is to be anchored and pulled taut. There is no mention of what cable expansion and contraction due to temperature fluctuation will effect panel position and sag.

(6)

Page 19 Speaks of monitors and their duties.

Comment - If monitors cannot prevent trespass (they have little authority to do so) and call for help, how will the sheriffs' Deputies respond on the clogged roads? Will they abandon their traffic control duties?

(7)

Page 19 Motorcycle Monitors.

Comment - Are there to be 100 of these? Since they are to be equipped with spark arresters, the assumption is that they are intending to run them cross country. NOISE. EROSION. Not mentioned in any report.

(8)

Page 33 Impact - "During the construction phase (starting in April 1976) and during the removal phase (October 1976) the Running Fence will not be a visual barrier, due to the absence of the nylon panels."

Comment - We consider seeing a string of 18' poles marching off into infinity for 7 months visual impact and personally intrusive as at this time, there are no utility visible in the panarama to the rear of Happy (sic) Acres, from the rear of our home at 317 Mecham.

(9)

Page 33 - 34 They do not consider the project in conflict with the Williamson Act because it is not a commercial venture.

Comment - There is no way this can be considered other than as a commercial project. It is the act of a Corporation. The project directly affects the market value of the Corporations' principle owners' art work. See **page 33, * page 49 and para 2, page 51.

(10)

The assets of the Corporation may at any time, revert to the principals, the Corporation presumably pays wages to the Javacheffs and certainly pays for transportation, living and entertaining encountered while promoting the project both here and abroad.

Our present understanding of the Williamson Act, section 51201.(N) and section 423.7(K) Para 3, is that it allows certain participating recreational use. In light of the need to prevent wholesale trespass to forstall havoc across the county and the applicants claims that the project is inherently designed to be simply viewed from a distance completly obviates the proscribed participatory nature of such use. Further, the tenents of Open Space requirements, section 51201.(C), are to prevent blocking public view of rural areas. This proposal is an apparent contradiction on these basis.

Page 39 Para 2 - Report claims that one community - Belvedere - stated it's support.

Comment - Report fails to mention that the Cotati City Council voted opposition. Needless to say, Cotati would feel the effects of the project much more than Belvedere.

(11)

Page 40. Education Services

Comment - Note that school buses would be returning children to their homes at the height of the traffic influx. Not mentioned is that students of Dunham School on Roblar Rd. are driven by their parents as there is no bus service. How are these people to function? (12)

Page 40 Fire Protection

Comment - Most of the area is served by Division of Forestry. Stations at Graton, Santa Rosa and Petaluma are all long runs from the subject area.

(13)

Under normal conditions there are almost 600 fires in the Division's jurisdiction the last 3 weeks of September.* The high probability of even more fires caused by the influx of people, coupled with the increased response time caused by traffic congestion consititutes an unnacceptable risk.

Page 42 Police Protection - States that the CHP would be assisted by the Sheriffs Dept. should their assistance be necessary for traffic flow.

Comment - This section must be talking about a sheriffs Dept other than Sonoma County. We have been told by the Sheriffs office that "Traffic on Mecham Rd is not our concern." (14)

Page 42 Admits that traffic congestion may well delay or prevent school buses from completing their scheduled runs.

Comment - This goes as well for those who must take their children to and from school (not mentioned), as well as mail delivery and other such service. (also unmentioned) (15)

Page 44 ii - Anticipates 40 to 80 cubic yards of waste a day with signifigant litter along the route.

Comment - Reiterates that public viewing from private property will not be allowed.** (16)

Page 44 Fire Protection ii - quote "THE INCREASE IN NUMBER OF PERSONS AND VEHICLES IN THIS AREA, DURING THE SEASON WHEN THE GRASS IS DRY AND THE FIRE DANGER GENERALLY IS HIGH, COMPOUND THE FIRE DANGER AND INCREASES THE CHANCE THAT FIRE DEPARTMENT WOULD BE CALLED UPON." emphasis added.

Comment - Note that it corresponds with the month with the highest frequency of fire. This is an unbelievable risk to suffer for no reason. The already admittedly congested road net, long response time for fire apparatus and other emergency equipment coupled with the increased need for such assistance is an undue risk for the county to entertain. (17)

* table on page 41
**see comments on Williamson act.

Page 46 — Solid Waste - Calls for trash cans at stopping points along roadway.

Comment - Earlier, the report stated that there are no plans for parking areas. This is an contradiction. This report seems to conclude that where culverts go under the narrow roads are good places for cars to stop. (18)
For cars to be pulling in and out of heavy traffic at these points is insane. Traffic jams would become monumental and many people would misjudge these narrow pull offs and end up in the ditch, compounding everyones problem. First they say there are no plans for parking areas and now they say they should put garbage cans in the parking areas.

Page 46 — e. Fire Protection

Comment - How in hell are you going to "discourage" visitors from smoking? (19)

Page 47 — Emergency Medical Service - "Traffic could be controlled to enable use of the road by and ambulance in case of emergency."

Comment - This is patently untrue and unworkable. If the roads have cars in both lanes and there is no shoulder, there is simply no where for an ambulance to go. (20)

Page 48, 49 — Economics - Para 1, states the price for milk is good. Para 3, Page 49 refers to income in 1969, the rest of the page refers to expenses in 1974-75. Para 3, page 48 says the price of milk is low.

Comment - Cost factors and income from the same years should be considered. You shouldn't pick poor price years for that and high expenses for a different year. (21)

Page 51 — Para 2 - Would have us believe that the Javacheffs averaged $4,475 income the last 2 years.

Comment - How this is appropriate in an EIR is beyond me but, can this be the same people who fly to and from the east and west coasts and Europe? (22)
The money to entertain large groups of people is coming from somewhere. If they are on Corporation business all the time, the Corporation can pay all their costs. This is convieniant since they own the Corporation.
Paragraph 3 tells us the same Corporation has lost money the last 4 years. In fact, $229,430. If all of Christo's works go to the Corporation and the Corporation has lost money every year and Christo is personally poverty stricken then how can they continue to function?

Page 53 — Impact - Correctly describes it as intrusive, blockage or partial blockage of close in and panaramic views.

Comment - We agree, and INTRUSIVE blockage of partial blockage of close in and panaramic views. (23)

Page 54 — Para 2 talks of homes on Meacham (sic) Rd. States the fence would be over the ridge line from the homes and therefore it is possible the top of the fence would be visible from them.

Comment - Our home is on Mecham Rd. (317) We could see the "Fence" from top to bottom. There is no ridge line between our home and the "Wall." We have an excellent view of Mecham hill. We have an unimpeded view all the way to Sonoma Mountain. Destroying our view damages the value of our home in that it deprives us of the benefit and enjoyment of one of the best features of our home. (24)

TRAFFIC/CIRCULATION/PARKING

Note: All freeway turn offs mentioned lead to Stony Point Rd. This in turn leads to Mecham Rd. Mecham Rd. now carries upward of 1500 cars and trucks to and from the dump each weekend day. This is a 9 hour figure and means 3,000 vehicles per day in addition to any through traffic.

Page 60 — Estimates 55% of traffic taking Denman Flat off ramp.
15% Gravenstein Hwy.
15% West Railroad.
Total of 85% of visitors using these three routes, all leading to Stony Point and then Meaham Rd.

Comment - Combined with the normal traffic load at that time of year, too many people would be attempting left turns onto Mecham Rd. Stony Point road would reach capacity sooner than anticipated. (25)

Page 61 — Para 3 Concur

Page 65,66 — Lists traffic flows of roads <u>except</u> Mecham.

Comment - Does not state where count was made on Stony Point. Assumes weekend traffic count is the same as weekday. In fact, Weekend traffic is 2 or 3 time weekday.* (26)
*conversations with J. Conaway, Refuse Disposal, Mr. Head, Public Works, counts taken at Refuse Disposal sites last 3 years)

Page 69

Comment - Police officers, flagmen, monitors (on motorcycles?), signs all over the place. What a mess. (27)

Page 69 — Traffic levels of service

Comment - Stony Point and Mecham road are at a level B or C right now on weekends. We get 70+ garbage trucks each weekday now. (28)

Page 86 (B) Recreational . This thing is being proposed as a recreational use on Agricultural Preserves.

Comment - quote, "In brief, the area, because of it's location and isolation, now has little recreational potential." They can't have it both ways. (29)

Page 101 Erosion.

Comment.- The potential for erosion has been greatly underplayed. There is no mention (30) of the effect rain at the time of the showing would have. There is no mention of the effect rain would have on the removal of the project.

Page 127 Wind.

Comment - Wind measurments from San Francisco International Airport are used. Wind would certainly be different in the "Petaluma Wind Gap." It is the job of the company (31) conducting the EIR to take such readings, not to go to a source 50 miles away for their information. The distance of the airport from the coast is a non sequitur. The airport is beside the bay and on the far side of the coast range from the ocean. All of the wind measurements are suspect.

Page 128,129 Rainfall

Comment - We had measurable rain in June, July, August and September in 1975. There is no mention of this and no mention of effect or mitigation proposed. (32)

Page 133 States little dust from construction because ground will be moist.

Comment - Not so, they state earlier construction will begin only when ground is dry. (33)

Page 137 Noise

Comment - No mention of truck and other vehicle traffic along Mecham Rd. (34)

Page 197 Traffic counts

Comment - Traffic counts to the dump were available. (35)

Page 210 Assumes same traffic count weekends on Stony Point. States level C now Assumes level "D" if traffic is 3,000 per day.

Comment - Mecham Rd itself has 3,000 vehicles on a good fall day. (36)

Final comment - Test conducted in Colorado on the chance on earth disruption in the event of failure may be missleading. Sonoma County is not the same as Colorado. (37) Reaction may be entirely different here.
The relative value of "Art" is subjective. An "Artist" should not force his concept of "Art" on others and we feel that is the case in this instance. Most people would be drawn not by art but by the unusual, the bizzare. We would not be able to avoid this thing, it's construction or the hazard created by crowds of gawkers.

Thank You

Ronald L. Raymond

Robert L. Holtzer, M.D.
~~WALTER B. SEGWERS, M.D.~~
PUBLIC HEALTH OFFICER

L

SONOMA COUNTY
PUBLIC HEALTH SERVICE

3313 CHANATE ROAD
SANTA ROSA, CALIFORNIA 95404
PHONE: 527-2685

November 26, 1975

George Kovatch, Director
Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, California 95401

Dear Mr. Kovatch:

Subject: Draft Environmental Impact Report
and use permit extension for
Running Fence
(File: 706.4-7772)

We have reviewed the subject EIR and use permit. Our remarks will address each separately, beginning with the EIR:

Environmental Impact Report

In relation to our basic concerns of public health, we find two points in the report to be inadequate.

1. p. 43, Liquid Waste Treatment

(1) The EIR addresses only potential effects to public sewerage systems and does not reflect the fact that the restaurants and service stations in rural areas along the route of the Fence utilize septic systems for sewage disposal. Particularly in Bloomfield and Valley Ford, the use of these systems, which have limited capacities for large numbers of visitors, may cause serious overloading leading to malfunction and sewage discharge to the ground.

2. p. 46, Fire Protection

(2) The report mentions that "farmers along the route have offered to make available their spray rigs filled with liquid" for fire protection. Such a proposal is highly improper due to insecticide residues in the rigs. Water mixed with these residues and then sprayed in areas of fire fighting would potentially expose large numbers of people to possibly harmful if not lethal insecticide levels.

Use Permit Extension

Although we have some concerns about adequate restroom facilities for viewers, particularly if large numbers of people are involved, we are also aware that there may be no practical or enforceable means of providing such facilities, particularly in the rural areas. Therefore, we can only address those items which can actually be required of the applicant in terms of use permit conditions. (3)

If this application is approved, we recommend it be subject to the following conditions:

1. Toilet and handwashing facilities approved by the Public Health Officer shall be available to workers during all phases of the proceedings. Potable drinking water shall also be provided.

2. Provision for removal of litter generated by workers during all phases and roadside litter generated by viewers during the viewing phase shall be made by the applicant and such plans shall be subject to approval from the Public Health Officer and the Department of Public Works.

Enclosed herewith is copy #34 of the draft EIR.

Sincerely yours,

ROBERT L. HOLTZER, M.D.
Public Health Officer

Lester N. Bennett, Jr.

LESTER N. BENNETT, JR., R.S.
Director of Environmental Health

LNB:nl
cc: Public Works
cc: Jack Vrieer, R.S., District Sanitarian
cc: William Pitcher, R.S., District Sanitarian
cc: Diane Evans, R.S., Land Use Specialist

DEPARTMENT OF ENVIRONMENTAL SERVICES

COUNTY OF MARIN

M

Civic Center, San Rafael, California 94903
Telephone: (415) 479-1100

Tom Severns, Director
William L. Desmond, Director Environmental Control
Joel E. Rubey, Environmental Hearing Officer

November 25, 1975

Mr. Tom Cordill, Environmental Administrator
Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, California 95401

RE: Christo Running Fence EIR

Dear Tom:

This response is to certify that Marin County has accepted Sonoma County as the lead agency in the "Running Fence" project as described in the October 23, 1975 letter to ESA, the project EIR consultant.

Secondly, Marin County staff has reviewed the EIR as to adequacy and the report appears to cover the major concerns of the Marin County Planning Department and this division. The consultant, in accordance with your instructions and CEQA Guidelines regarding "jurisdiction by law" contacted concerned Marin staff. Mr. Donald Dickenson as assigned planner replacing Kathy Ohlson, has further reviewed the EIR to coordinate same with the ongoing Marin approval process.

The following review and procedure is furnished by Mr. Dickenson to provide you guidance as to our process:

1) The draft EIR and the conditions imposed at the time the design review application was approved by the Marin County Board of Supervisors on February 4, 1975, appear to adequately cover the major concerns of the Marin County Planning Department relative to this project.

2) On September 22, 1975, the Marin County Planning Director granted the Running Fence Corporation a one year extension to the design review approval by the Marin County Board of Supervisors. This extension will allow the project to take place in the Fall of 1976, the precise dates to be determined later by the Planning Director. The extension grants no variance from the conditions imposed as part of the approval dated February 4, 1975.

3) As a result of the recent request to alter the route of the fence to move it further from Estero Americano and Estero San Antonio, a design review amendment will be required for the project. Processing of this application will begin shortly as a staff item, with no action to be taken until Sonoma County has certified the EIR. Except for those items required as conditions of the design review approval, this design review amendment will be the final action required by the Marin County Planning Department prior to application for a building permit.

With your permission, we will keep one copy of the draft EIR. Would you please forward one copy of the final EIR for decision-making at this end? Please advise if we can be of further assistance.

Very truly yours,

Tom Severns

Tom Severns, Director
Department of Environmental Services

TS:hl
Enclosure

cc: Don Dickenson, Planning Department

DEPARTMENT OF THE ARMY
SAN FRANCISCO DISTRICT, CORPS OF ENGINEERS
100 McALLISTER STREET
SAN FRANCISCO, CALIFORNIA 94102

N

SPNED-E

18 November 1975

Mr. Thomas E. Cordill
Environmental Administrator
Sonoma County Planning Department
County Administration Building
2555 Mendocino Avenue
Santa Rosa, CA 95401

Dear Mr. Cordill:

Reference is made to your letter of 10 November 1975 forwarding the Draft EIR on the Running Fence Project.

As indicated in your letter of 23 October 1975 to Mr. Paul Zigman, copy attached, the documents mentioned that pertain to the proposed activity represent, in general, this agency's concern with regard to the project. We have no objection to the County of Sonoma being the lead agency.

(1) On page 21 of the Draft EIR, it is stated in part "...the U.S. Army Corps of Engineers granted (a permit) for those portions of the originally proposed project under their (jurisdiction)..." This statement is incorrect. An application was received for the original project on 31 October 1974. Public Notice 75-315-053 was issued 7 March 1975 announcing the project. The application was subsequently withdrawn 1 July 1975. A permit for the proposed project was never granted by the Corps.

It appears that this new proposed activity requires Corps of Engineers authorization for structures or work in navigable waters of the United States. Attached please find a copy of our pamphlet, "Applications for Department of the Army Permits for Activities in Waterways." If you require additional information on this question, please contact Mr. Hans Lamm of our Regulatory Functions Branch at 415-556-5966.

SPNED-E
Mr. Thomas E. Cordill 18 November 1975

As requested, we are returning the Draft EIR herewith. Please provide this office with a copy of the Final EIR when available.

This office appreciates the opportunity to review your report and we have no further comment at this time.

Sincerely yours,

H. E. PAPE, JR.
Chief, Engineering Division

3 Inclosures
As stated

III. ERRATA AND RESPONSES TO COMMENTS

A. INTRODUCTION

This section revises and updates the Draft Environmental Impact Report (DEIR) on the proposed *Running Fence* by correcting errors in the original report and by responding to all comments on the DEIR. Each response is keyed to indicate which comment it answers.

All material in this section should be read as supplemental to that in the DEIR. In cases of conflict, material in this Addendum supersedes the information presented in the DEIR.

B. ERRATA (NOT MENTIONED IN COMMENTARY)

DEIR Summary, p. S-4. First line is start of a paragraph (should be indented).

DEIR p. 99 "• Freshwater Marshy or Vernally Wet Areas". Words should be underlined.

DEIR p. 107, last paragraph. Underline "Openings for wildlife".

DEIR Figure 10, p. 115. Legend: Hatching for Franciscan Assemblage (Kjfs) should be slanted in opposite direction, to match that in Figure itself.

DEIR p. 147, paragraph 2 under No-Project Alternative, line 3. Should read: "....; the same would be <u>true</u> for county"*.

*Underlining denotes added or changed word.

DEIR p. 151, line 12. Should read "Biology, California State College, Sonoma,..."*

DEIR p. 153, line 13. Should read "Harry N. Abrams, Inc.--Mr. Harry N. Abrams, Chairman."*

C. RESPONSES

A. Ruth L. Corey

Entire letter is a comment on the project, rather than the DEIR. No response is required.

B. Lois Raymond, Chairman, Committee to Stop the *Running Fence*

Entire letter is a comment on the project, with no specific comments on the DEIR. No response is required. Mrs. Raymond has commented on the DEIR (Correspondence "J") in detail, covering the same points raised in this letter. See response to "J".

C. California Regional Water Quality Control Board -- North Coast Region

Correspondence contains one comment:

C.1 - Cites special waste discharge prohibitions for non-point sources, and suggests incorporation as additional mitigation measure. Accordingly, the prohibitions (paraphrased in "C.1") of the Regional Board's "Water Quality Control Plan, North Coastal Basin 1-B"are hereby added to the mitigation measures on p. 126 (Water Resources) of the DEIR.

D. Soil Conservation Service, U.S. Department of Agriculture

Correspondence contains no specific comments on the DEIR. It indicates "From a soil erosion and sedimentation point of view, the

*Underlining denotes added or changed word.

greatest hazards seem to be from fire removing the ground cover and causing erosion and resulting sedimentation as a result of winter rains falling on bare ground." These potential secondary impacts should be added in the appropriate places on pages 105 and 126 of the DEIR. The standard mitigation measure of early reseeding of slopes should be added also.

The commentator's statement that he feels the report is "sufficient and well presented" is acknowledged with gratitude.

E. U.S. Army Corps of Engineers, San Francisco District

Correspondence contains no comments on the DEIR or on the project. No response is required. See "N" and response thereto.

F. Jerome Tichenor

Correspondence contains essentially one comment concerning citation of dates and references; in particular, it asserts that the opinions of artists not in favor of the project are inadequately represented.

F.1 - The "Legal History of the Project" section of the DEIR was added to provide a brief background for the benefit of the reader. It is not required by the California Environmental Quality Act (CEQA) or by the EIR-preparation guidelines of the California Office of Planning and Research. Similarly, it is not required that the DEIR incorporate every piece of documentation that is cited. The project documentation alone would, if included, add hundreds, perhaps thousands, of pages to the DEIR. As for the assertion that the opinions of artists not in favor of the project are inadequately represented, attention is called to the statement in the Community Attitudes section of the DEIR (p. 38): "Appendix letters have been chosen to demonstrate various viewpoints; no attempt has been made to indicate the frequency of occurrence of any viewpoint." If there was unconscious bias in the sampling of letters, it was in favor of the opposition. Of the ten letters of opinion in the DEIR Exhibits, three were in favor of Christo and/or the project; seven were in opposition. ESA has on file some twenty-five letters supporting Christo and/or the project, most from prestigious institutions, which were not included. Known letters of opposition (prior to preparation of the DEIR) were in far smaller supply. Mr. Tichenor's comment becomes part of the record, along with his "poet's opinion." Just as ESA has "carefully avoided judging *Running Fence* as an art object" (DEIR, p. 30), we will refrain from artistic judgment of Mr. Tichenor's poetic effort.

G. Joel W. Hedgpeth (Subject: Environmental Impact Report, *Running Fence*, terrestrial phases.)

G.1 - The commentator asserts that engineering tests performed in Colorado may not be valid under the wind and soil conditions in Sonoma and Marin Counties. While it is true that both wind and soil conditions may be different, the comment is irrelevant, for the following reasons. For a nylon panel (sail) of a given size, a wind of a given speed and intensity will exert a total force on the panel that can be estimated. The calculated force for the wind speeds for which the breakaway features were designed provided the basis for the crucial specification; namely, the designed anchor strength (including soil strength). The vital point here is that if and when the *fence* is being erected *in Sonoma and Marin Counties, every anchor will be tested in place*, to a force of 7,000 lbs. (DEIR, p. 17, paragraph 2: "These poles will be guyed laterally with cables attached to soil anchors driven 36 inches below the surface and tested to working load.") Thus, if wind speeds in Marin and Sonoma Counties should rise to the point at which (without a breakaway system) the anchors would fail and disrupt the soil, then the top and side clips would have released, allowing the affected nylon panels to fall and lie flat on the ground. In other words, the anchors, tested *in place* to a force of 7,000 lbs.,could never be exposed to such a force. If the system is designed (and has been tested) to withstand 25 MPH winds, there is no reason to make it fail (break away) at such wind speeds.

G.2 - Commentator objects to the failure to include in the DEIR the cited letter by Margaret Azevedo, Chairman of the North Central Regional Coastal Commission. See Response F.1 above for the applicable response.

G.3 - Commentator asserts the EIR "is surprisingly inadequate in essential documentation" (again, see Response F.1 above), and goes on to impugn the ethics of the DEIR preparers. His commentary appears to apply primarily to the contribution of Dr. Welton Lee, produced under contract directly with the Sonoma County Planning Department. For Dr. Lee's response, see Response H.3 following. For ESA's response, it is sufficient to quote the applicable statement of the Code of Ethical Practice of the Association of Environmental Professionals (DEIR, p. iv): "IF PREPARING a document pursuant to the environmental document process, I WILL.....Cite all sources, written and oral."

G.4 - The first mitigation measure suggested by the commentator is a reduction in scale, the principal feature being a new *Fence* height of 18 inches. Coming as it does from a respected and serious scientist, this suggestion should be given the same kind of thoughtful consideration that must have gone into its development.

G.5 - Dr. Hedgpeth's second suggested mitigation measure, a 25 MPH breakaway feature, has been discussed under G.1 above.

G.6 - His third suggested mitigation measure, *in situ* testing in Marin and Sonoma Counties, has also been covered in G.1 above.

H. Joel W. Hedgpeth (Subject: Environmental Impact Report, *Running Fence*).

H.1, H.3 and H.4 - Comments about Dr. Welton L. Lee's contribution and methods have been responded to in Dr. Lee's letter to Mr. Tom Cordill, attached. Nothing further need be said here.

H.2 and H.5 - Commentator asserts that the uniqueness of the ocean portion of the proposed *Fence* route is established by the North Central Regional Coastal Commission's approval of an application for status "as a Federal Estuarine Sanctuary under section 312 of the Federal Coastal Zone Management Act of 1972 for Tomales Bay and the coast line to Bodega Head." The following information about that application and its implications was obtained via a telephone conversation with Mr. Michael L. Fischer, Executive Director, North Central Regional Coastal Commission, on November 26, 1975.

Concerning the question as to whether the coastal end of the *Running Fence* would be in the proposed sanctuary: The proposal for an estuarine sanctuary is in a pre-application, preliminary stage. Detailed geographic mapping has not been done. The proposal is an attempt to get the feeling of the Federal Coastal Zone Management Office as to the value of the area (Dillon Beach to Bodega Head), in the context of a limit of ten estuarine sanctuaries in the entire United States. The emphasis is on protection of the estuaries themselves; this means that activities at some distance from the estuaries proper could still come under consideration if they were to have "spillover" impacts on the estuaries, but probably not otherwise.

Concerning the further question as to whether approval of the estuarine sanctuary would preclude approval of the coastal portion of the *Running Fence*: Establishment of the sanctuary would imply regulation, not ownership. The sensitivity of the estuaries was high before the (sanctuary) application, and remains high. Final approval of the sanctuary would not *ipso facto* preclude approval of projects such as the *Running Fence*. The major concern in the establishment of a sanctuary is with projects having long-term, continuing impacts; these include power plants, refineries, sewage outfalls, etc.

November 19, 1975

Mr. Tom Cordill
Environmental Coordinator
Sonoma County Planning Department
County Administration Building
2555 Mendocino Avenue
Santa Rosa, CA 95401

Dear Mr. Cordill:

This letter is in response to the attached communication from Dr. Joel W. Hedgpeth, dated November 16, 1975. I trust you will see to it that my response is duly received by the Sonoma County Board of Zoning Adjustments and the other agencies to which Dr. Hedgpeth has sent copies. I would like to respond to several comments made by Dr. Hedgpeth in order of their appearance in his letter.

In Paragraph 1, Dr. Hedgpeth states that the area in question is "...the only area on the California Coast immediately between two active Marine laboratories...." While this particular point has little bearing on my charge which was to assess the environmental impact of the running fence on the intertidal, I should comment that the Hopkins Marine Station and the Moss Landing Marine Laboratories also fall into such a category. Depending upon one's judgment of "immediately," one might also include the Marine facilities at Long Beach, Corona Del Mar and Scripps as falling into a similar category. Be that as it may, Dr. Hedgpeth utilizes this information relative to a proposed use of this particular swath of Coastline (Paragraph 2.) His statement that I was not adequately informed of the present legal status of this portion of the California coastline is perfectly correct. At no time was I ever informed of this matter, either by legal council or by Dr. Hedgpeth or Dr. Smith in my short conversations with them. I might add, however, that this information is of extreme importance to those making the ultimate decision concerning the Running Fence proposal, but in no way changes my assessment of the direct impact of the running fence on the intertidal area in question. Since only a very tiny fraction of the coastline that Dr. Hedgpeth mentions will be impacted at all, I see no reason to alter my statements unless it can be adequately shown that this particular region is of some

special biological significance to the two Marine Stations in question. Indeed, it appears that Dr. Hedgpeth may concur as he states in line 20 of Paragraph 2: "Therefore, Dr. Lee's contention that this area is not unique is beside the point." I suggest that Dr. Hedgpeth's statements regarding the legal status of this area are indeed important to the ultimate decision but that they have no direct bearing on my assessment of the impact on the intertidal region.

On the second page of his letter, Dr. Hedgpeth states: "I am sorry to say that Dr. Lee's implication that I was consulted and concurred in his judgment, and by implication, of the relative lack of effect of the project, is simply not true and must be corrected." Dr. Hedgpeth proceeds to outline that the "consultation" was only a short conversation on the telephone. First let me say that Dr. Hedgpeth was completely correct in stating that the "consultation" was only a short telephone conversation. That was also true for Dr. Ed Smith, whom Dr. Hedgpeth mentions in his letter. On both occasions I explored briefly the feelings of these knowledgeable biologists relative to the impact of the fence on the biology of the intertidal area in question. In each case I received no information concerning potential hazard to the intertidal area which I specifically requested, and in both cases statements were made which indicated that there were no overriding BIOLOGICAL reasons for worrying about the impact on this intertidal region. It should be noted that the footnote states only that these biologists concurred that the area was "not biologically unique." I believe the statement made on page 154 of the Impact Report is true and accurate relative to my conversations with these gentlemen.

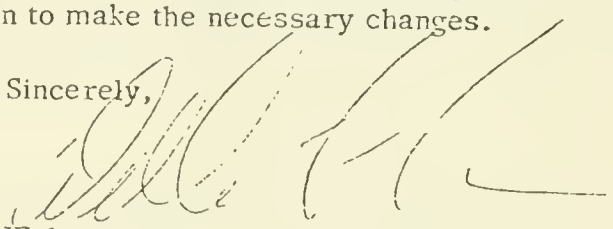
I must emphasize one point which appears to continually get lost in the heat of debate. I was asked to perform one strictly defined task, to assess the impact of the running fence, as proposed, on the stability and biological integrity of the immediate intertidal area where the fence would end. To the degree possible, I have done that and I see no additional information which would change my present assessment. However, I do see that many people may have strong objections to the intrusion of the running fence, objections not concerning the biological impact of the fence, but rather representing value judgments as to the aesthetics or legality of the fence or concerning the "impact" on future decisions of a similar nature. Many of these objections may be valid but they should be handled quite separately from the consideration of the biological impact. I personally may or may not have objections to the running fence based on my personal value judgments, but that should not have any effect on my assessment of the biological impact.

Finally, I very much regret the implications made by the footnote on page 79 of the report. I did indeed "consult" with the biologists listed. These contacts

were brief as Dr. Hedgpeth stated, and I did specifically request information which might bear upon the task I was given. In both cases, statements were made which suggested that there was no reason to expect any significant biological impact on the intertidal region. I most certainly was in error in not obtaining the explicit consent of these two biologists and apologize for that oversight. In point of fact, I was requested to produce a list of "anyone" I talked to regarding the work I was doing and accordingly provided the list given on page 154 of the Impact Report, without even a thought of obtaining their express consent. This was an oversight on my part. I might also add that at the time of the conversations I had no intent to use their names nor had ever thought of such a matter. I also very much regret the implication that my action was "unethical." If oversight is unethical then I am guilty, but I do wish to correct any improper implications which might be taken from the "supplementary contact list" on page 154 and the footnote on page 79.

I would suggest that anyone having information directly bearing upon my assessment should duly submit their information so that it can be utilized. Contrary to Dr. Hedgpeth's implications, I am ethical and would hope that if I have been mistaken in my assessment, that responsible biologists would provide the appropriate information to make the necessary changes.

Sincerely,



Welton L. Lee

cc Edmund H. Smith

JOEL W. HEDGPETH
5560 Montecito Avenue, Santa Rosa, California 95404 • Telephone 707-539 1267
ENVIRONMENTAL AND EDITORIAL ANALYSIS

Nov. 16 1975

Dr Welton Lee
California Academy of Sciences
San Franisco

Dear Welton:

Enclosed you will find copies of communications to the Sonoma County Board of Zoning Adjustments in the matter of the EIR for the Running Fence project.

In view of these, I would appreciate it if you could see your way to writing to them that your use of my name in this context was without my specific consent or indication that you had such intention in our recent telephone conversation.

Sincerely,

Joel W. Hedgpeth

cc EDMUND H. Smith

J. Mrs. Lois M. Raymond

J.1, J.2, J.3, J.4 and J.5 - These general comments, some containing a large number of points, are repeated in the subsequent comments (J.6 *et seq.*); they are responded to at the appropriate points in the following.

J.6 - Commentator asserts that the Summary makes a great point of distinguishing between "local short-term impact and the maintenance of long-term productivity." Consideration of this factor is mandated by CEQA and by the Office of Planning and Research EIR guidelines. The EIR does not take the risks and inconveniences to residents along the route lightly; the extensive analysis of traffic impacts, for example, bears this out.

J.7 - County costs for hearings on EIR's and on projects themselves are presumed to be covered by fees imposed on the applicant; there are standard procedures and fees for all such applications. See DEIR, p. 51, first paragraph.

J.8 - Holes backfilled with sand should fare as well in heavy rainstorms as the original soil; as noted on p. 126, DEIR, structure removal plans call for seeding of disturbed areas and placement of jute matting to stabilize the surface where necessary until revegetation takes place.

J.9 - Commentator notes an apparent conflict between the applicant's stated position that it is not his intent to encourage maximum visitation (Page 11, DEIR), on the one hand, and his advertising and promotion program, on the other. [Note that in the enclosures to Correspondence J (Section II above), only those pages related directly to the comment have been included.] In response, several points can be made.* First, the interested "audience" is that part of the public that is interested in art and art events. Second, the applicant points out that at the time of the Oakland Museum exhibit of the *Valley Curtain* and the *Running Fence* in August, 1975, seven other exhibits of his work were going on throughout the world. Third, the publicity for such museum exhibits is controlled by the museum, rather than the applicant.

*Jeanne Claude and Christo Javacheff, telephone communication, November 30, 1975.

J.10 - Within the Happy Acres subdivision the *Fence* is to run along a right-of-way that runs parallel to Meacham Road, under license granted by the subdivider. Wherever the *Fence* crosses a road, paved or unpaved, that is in current use, the *Fence* will break. The same is true for known animal trails. Each nylon panel will be anchored at two points between its supporting poles; thus on absolutely flat terrain there would be no ground clearance for passage of small animals. However, the usual terrain irregularities will provide space for passage, in addition to that at *Fence* breaks.

J.11 - Cable will be brought in on cable trailers and unrolled from cable reels.

J.12 - Jameson Trucking is in Petaluma, as the commentator states. There is no plan to have the fabric release from the bottom hooks. Therefore, it is irrelevant at which wind velocity such release occurs. Once the top and side clips release, and the panels lie flat, wind forces on the panels become inconsequential.

J.13 - The potential impacts on Valley Ford were noted in the DEIR, on pages 191 and 210.

J.14 - The non-commercial (non-profit) nature of the *Running Fence* is described in the DEIR. See, for example, pages 51 and 52. The State Lands Commission, in its action approving the original ocean portion of the route, referred to the application as one for a "Non-commercial Lease" (State Lands Commission Calendar Summary, March 31, 1975, pages III, 1(16) and 2(17)).

J.15 - The comment, *re* the Population and Community Characteristics section of the DEIR, that there is no mention of "the proposed subdivision for Meacham Hill and Pepper Road" is irrelevant, since the section in question deals primarily with Countywide statistics and projections.

J.16 - Rural residents who are not dairy owners *should* be added to the list of communities, as the commentator requests. The DEIR preparers were not aware at the time of preparation that there was a letter of opposition from the City of Cotati; this would have been included. We find now that the commentator is correct about Cotati's opposition. In our files at the time of preparation of the DEIR were letters from city planners in both Cotati and Petaluma (Cotati: letter of February 13, 1975 from Mark Thysen, Planner, to William L. Bettinelli, Esq.; Petaluma: letter of February 12, 1975 from Frank B. Gray, Director, Department of Community Development to William L. Bettinelli, Attorney). Neither letter raised any opposition to the project. Both noted its temporary nature. Neither letter was cited nor included in the DEIR.

J.17 - The commentator's assertion that students who attend Dunham School do not have bus service is accepted. This changes no statements about project impacts; individual autos carrying students to Dunham School merely add to the normal traffic before and after school hours. To the extent that school bus traffic might be interfered with by *Fence* visitor traffic, as noted on page 42 of the DEIR, this auto traffic might experience similar delays.

J.18 - The potential impact of *Fence* visitor traffic on the ability to provide various kinds of emergency service to the area along the *Fence* route is discussed in the DEIR, for example on page 61 (last paragraph) and the following development in that Traffic/Circulation/ Parking section. The emphasis in that section is on the assessment of the possibilities for congestion, with all its implications, and the suggestion of a mitigation approach. The conclusion (DEIR, pages 66 and 67) that with the expected gradual buildup of visitor interest there would be time to implement a series of contingency plans, including the ultimate mitigation of requiring removal of the *Fence*, is most important. If Captain Denton of the CHP decides that potential congestion is likely to interfere seriously with the provision of emergency service, he will order the *Fence* to be removed; the applicant has agreed to comply immediately with such an order.

J.19 - Comment quotes a statement from the DEIR. No response is required.

J.20 - The impact of a temporary drain on the Petaluma water supply must be viewed in the context of overall water use as well as use by normal tourist traffic in the area. The upper limit of 100,000 gallons per day on the peak day is probably more than double a worst-case estimate of the average daily visitor use. This figure applies to use along the entire route.

J.21 - Comment quotes a statement from the DEIR. No response is required.

J.22, J.23 and J.24 - Same as J.21.

J.25 - See J.18, for response applicable to this comment.

J.26 - The commentator appears to question whether the proposed monitors can handle all the duties that they may be assigned. It should be noted that the monitors will be operating in support of on-duty and off-duty police personnel and will be trained by the Sonoma County Sheriff's office and the Sonoma County District Attorney's office (DEIR, page 19). Details of operations by the monitors would be worked out at the training sessions. The monitors would *not* be controlling road traffic (DEIR, pages 46 and 47).

J.27 - Comment quotes statement in DEIR and expresses concern about impact. No response required.

J.28 - If chemical toilets were set up on private property, as suggested in the DEIR, parking would have to be provided on that property. Waste containers could be set up at stopping points along the roadway.

J.29 - The no-smoking suggestion is one of several mitigation measures.

J.30 - In case of emergency under congested conditions, the authorized traffic controllers could block access to particular road sections until the emergency vehicle(s) had gotten through.* Again, see J.18.

J.31 - For effects of traffic congestion on milk trucks, see J.18.

J.32 - Bonding and insurance arrangements and requirements are described at several locations in the DEIR. See Sonoma County Conditions, Nos. 6 and 7, on page 23, DEIR, for example.

J.33 - Commentator appears to be correct in her contention that a break in the ridge line will expose the full height of the *Fence* to view from some homes, including her own. The DEIR (p. 54, as cited by commentator) indicates that both close-in and panoramic views would be altered.**

J.34 - Given the conclusion referred to under Response J.18 above, regarding the availability of time (after erection of the *Fence)* for accurate projection of peak conditions, and given the authority of Captain Denton, CHP, to demand removal of the *Fence* in advance of the development of peak traffic conditions, it appears that preparation of a detailed traffic management plan as a requirement for use permit approval is not necessary.

J.35 - This is a comment on the project, not on the EIR. No response is required. It should be repeated here that the assessment of energy utilization was very much a worst-case analysis.

J.36, J.37 and J.38 - These comments quote statements in the EIR. No responses are required.

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*A standard procedure, common in summertime traffic on Highway 1, for example, is for the emergency vehicle to move down the center of the roadway, at speeds as high as 20 MPH, with autos on both sides of the road pulled over with at least one pair of wheels on the shoulder.

**It should be noted that commentator does not hold her view in perpetuity. The Assessor's Map (24-10) for the Happy Acres subdivision shows 10 residential parcels, from 0.54 to 1.08 acres each, in a direct line between her property and the *Fence* right of way.

J.39 - Commentator notes that measurable rainfall occurred during the "dry season" in 1975. Measurable rainfall at some point during the dry season would not necessarily mean that construction activities would produce harmful impacts, since dry soil can absorb or percolate some rainfall without becoming saturated. Construction would have to be controlled, depending on soil conditions. See Sonoma County Condition No. 8, DEIR p. 23.

J.40 - Wind velocity figures for San Francisco Airport were used to document seasonal changes in the Bay Area. To develop similar information for the Petaluma Wind Gap would require a continuing measurement program over many years. Taking a limited number of measurements in one season of one year would provide little useful information. For significance of wind data, see response G.1 above.

J.41 - See responses J.39 and J.40.

J.42 - Not a comment on the DEIR. No response required.

J.43 - Same as J.42.

J.44 and J.45 - Each comment is a quote of the DEIR. No response is required.

J.46 - Comment: "the place where my house should be marked is marked as a viewpoint and a hazard." There is no more reason to mark commentator's house than there is to mark any other along the route. By commentator's own statement (J.33) the *Fence* will be visible from the area of her home. Therefore this spot along Meacham Road could very well be a viewpoint and a hazard.

J.47 - As noted in the DEIR (footnote, p. 189), "Statements in this EIR about space along shoulders merely indicate that there is a physical capability for stopping. It is not certain that this will be permitted..."

J.48 - See Response J.47. See also DEIR (footnote, p. 178): "Abnormal traffic will change movement of traffic and may make any stopping hazardous."

J.49 - This four-part comment about traffic conditions near commentator's home is partly responded to by analysis of the second set of recent traffic counts, received by ESA after the delivery of the DEIR to the Sonoma County Planning Department. Table K-1 (Addendum), following, summarizes those data. ESA's analysis of the implications of the Table K-1 (Addendum) data and of the visitor traffic projections is as follows*:

*Additional information was provided by Walter W. Laabs, Jr., Sonoma County Public Works Department, telephone conversation, December 1, 1975.

TABLE K-1 (ADDENDUM)

TRAFFIC COUNTS, AUGUST 29 - SEPTEMBER 22, 1975*
(SONOMA COUNTY PUBLIC WORKS DEPARTMENT)

Road Segment	Weekday		Weekend or Holiday	
	24 Hour	Peak Hour	24 Hour	Peak Hour
Stony Point Road, South of Meacham Road	2132-2526	190-220	1969**-2365**	195**-295**
Meacham Road, East of Pepper Road	1039-1113	95-180	713**-1062**	81**-139**
Pepper Road, East of Walker Road	1027-1348	106-218	894 - 932	104 -128
West Railroad Avenue, East of Highway 101	860- 977	86- 98	977 - 981	87 - 96

*Ranges indicated, where several days' counts were made.
**Labor Day Weekend.

Meacham Road, east of Pepper Road -- These counts were taken at a point about 500 feet east of the intersection with Pepper Road. Therefore, they do not document what may be a critical element of the interior road network; namely, the section of Meacham Road between Stony Point Road and the dump. However, they can be added to the dump traffic provided by Mr. Laabs (*op. cit.*). April 1975 *vehicle* counts on the dump road itself were as follows:

Weekdays:	Full-day	338-486
Saturday:	Full-day	1055
Sunday:	Full-day	1310
	Peak-hour	200 (rate level at about 170 from 10AM to 4PM)

For *vehicle trips* (2-way), these figures must be doubled.

If the weekend peak-hour figure of 400 dump trips (trip ends) is added to the highest weekend peak hour 2-way count of 139 (Table K-1 Addendum) for the westerly end of Meacham Road, near Pepper Road, then the total weekend peak-hour traffic on Meacham Road at the Happy Acres subdivision would be a maximum of 550, allowing for inclusion of trips by Happy Acre residents themselves.* This is the projected traffic count *before* the addition of *Fence* visitor traffic. The latter are estimated under the assumptions and by the calculational methods of the DEIR (pages 208 and 209). Second-Sunday peak-hour *Fence* visitor traffic would be 300 (2-way). Therefore, the total second-Sunday peak-hour volume is 850, well above the two-way capacity (Level C) under congested conditions; in fact, exactly at the volume for Level D. Thus, on the peak Sunday, and probably on other weekend days, congestion on Meacham Road at the Happy Acres subdivision could be a problem, particularly if large numbers of visitors try to stop along the shoulders for views (or photos) of the *Fence*. Since the flows on weekdays, especially the first few, will be well below capacity (about 400 to 500, 2-way, peak hour), visitor behavior on those days can foreshadow the potential problems on the weekends, while not causing serious problems itself. Thus, there would be time for decisions about *Fence* removal, if traffic volumes are as high as those predicted here.

*This is an overestimate, because it ignores the possibility that some of the Table K-1 Addendum trips are to the dump, rather than to Stony Point Road.

Stony Point Road, between Railroad Avenue and Meacham Road --
The new traffic counts (Table K-1 Addendum), taken in this section of Stony Point Road, supersede those used on Page 210 of the DEIR, which we find had been taken (May 1974) about 500 feet north of Pepper Road. The new counts for existing Sunday peak-hour volume,* when combined with the *Fence* visitor projections for the second-Sunday peak hour, lead to a projected total volume (2-way) of 820. This peak-hour volume is above the Level C capacity of 700, approaching the Level D capacity of 850. The new projected volume of 820 is very close to the projected volume of 825 (p. 210, DEIR), which had been estimated on the assumption of a normal Sunday volume of 3000 (all day). Thus, the conclusions of the DEIR (first paragraph, p. 211) stand. It should be noted that the recent roadwork on Stony Point Road included provision of a left-turn channel for traffic turning into Meacham from northbound Stony Point. While this would improve the left-turn situation, it is almost certain that under peak visitor traffic conditions a traffic controller would have to be stationed at this intersection. Experience on the first weekdays would again provide guidance as to what could be expected later, while unacceptable congestion would probably not exist at the time. Commentator's assertion that Stony Point traffic increases on weekends is partially correct (Table K-1 Addendum). The maximum peak-hour existing traffic is higher on the (Labor Day) weekend than on weekdays, but the total-day weekend traffic is lower than the total-day weekday traffic. In any case, the analysis here used weekend volumes, and the analysis in the DEIR assumed that existing Sunday traffic is double the traffic on weekdays.

Pepper Road (east of Walker Road) and West Railroad Avenue --
The data on these two roads in Table K-1 Addendum indicate that on neither road will traffic volumes approach Level C under any circumstances. West Railroad Avenue has extremely low existing volumes; Pepper Road (east of Walker Road) is not part of the viewing network.

The projections of total visitor traffic reflect the judgment of an experienced traffic engineer, on the basis of visitor data for a variety of events, in the Bay Area and elsewhere. Other comments under J.49 have been responded to in the preceding discussion of Meacham Road and Stony Point Road traffic.

J.50 - See Response G.1 above.

*Mr. Laabs (*op. cit.*) estimates that the roadwork on Stony Point north of Meacham, which was going on at the time of the count south of Meacham, would not have affected the count significantly.

K. Ronald L. Raymond

K1, K.2 and K.3 - Comments on the project, not on the DEIR. No response required.

K.4 - See Response J.9 above.

K.5 - See Responses K.1, K.2 and K.3.

K.6 - Commentator asks for details of the proposed operations involving transport of cable reels to the site, unreeling and placement of the cables, and behavior of the cables under temperature fluctuation. The cable trailer will be rented from Underground Construction Co. of Oakland. The rigs and the procedures will be similar to those used by Pacific Gas and Electric Co. in its own cable-stringing or cable-undergrounding operations, which are performed in both wet and dry seasons. A rule that will be followed, without variation, in all operations involving multi-axle vehicles is that gross weights will be limited to values such that the load per tire will be no more than that on a pickup truck like those used by the ranchers in routine operations (Paul Kayfetz, Attorney for the Running Fence Corporation, telephone conversation, December 1, 1975). No information was available, at time of writing, on the subject of temperature effects on cables. Since nylon panels will be anchored to the ground at twenty-foot intervals (via anchoring of the bottom cable), it is difficult to see how any sag produced at the highest temperatures experienced will produce panel movements more extreme than those produced by mild breezes.

K.7 - See Responses J.26 and J.18.

K.8 - Total number of monitors will be sufficient to provide forty (40) in one shift on the peak Sunday and at other times as needed, with a normal-shift complement of twenty five (25). Not all will have motorcycles. Those with motorcycles would be using the roads only; they would not be going cross-country. Erosion is therefore not a problem in this context. To the extent that motorcycles are used, they will create intermittent (intrusive) noise events, but will not affect the time-averaged noise levels generated in the DEIR.

K.9 - Commentator's judgment as to the visual impact of the fence poles (before installation of the nylon panels) is now part of the record. It does not affect the conclusion of the DEIR that the *Fence* is not a visual *barrier* before installation of the panels.

K.10 - The comment pertains to the relationship between the *Fence* easement agreements, on the one hand, and Williamson Act contracts between landowners and the County, on the other. Terms of the Williamson Act agreements between the landowners and Sonoma County do not prohibit the landowner from granting this kind of temporary easement (written opinion of Ms. Caroline Kerl, County Counsel's Office, in County Planning Department files). The potential detrimental effects of the *Fence* on the preservation of agriculture in Sonoma County are another issue related to the intent of the Williamson Act. The DEIR concludes (p. 145) that developmental growth, other than at current rates, is not a likely outcome of the project.

K.11 - See Response J.16.

K.12 - See Response J.17.

K.13 - See Responses J.18 and J.30.

K.14 - The statement in the DEIR is an accurate paraphrase of Lt. Greer's statement.

K.15 - See Responses J.17 and J.18.

K.16 - See Responses J.28 and K.10.

K.17 - Quotes the DEIR. See also Responses J.18 and J.30.

K.18 - See Responses J.28, J.47 and J.48. A distinction between "stopping" and "parking" should be made.

K.19 - See Response J.29.

K.20 - See Response J.30.

K.21 - The cited statements are taken out of context. The statement about the price of milk in the first paragraph on p. 48, DEIR, refers to the comparative market for milk; that in the third paragraph, same page, to price as related to production cost. Data as available were used; there was no selection to prove a point. The important statement in the ECONOMICS Setting section of the DEIR was that there are existing pressures for development in the area of the *Fence* route, in spite of the depression in the housing industry in the Bay Area.

K.22 - With regard to personal and corporate income, the DEIR cited data from federal income tax returns. The purpose was to document the non-commercial nature of the enterprise. See the statement of caution in the DEIR (p. 52, paragraph 1, last sentence). See also Response J.14.

K.23 - Quotes the DEIR. No response required.

K.24 - See Response J.33.

K.25 - See Response J.49. Commentator misinterprets assumptions about traffic splits made by ESA's traffic-engineering consultant.

K.26 - See Response J.49.

K.27 - Comment on project, not on DEIR. No response required.

K.28 - See Response J.49.

K.29 - The DEIR is quoted out of context, with respect to the presumed relationship between the existing recreational potential of the area* and commentator's statement: "This thing is being proposed as a recreational use on Agricultural Preserves."

K.30 - See Response J.39.

K.31 - See Response J.40.

K.32 - See Response J.39.

K.33 - There is a difference between the soil's being dusty dry, on the one hand, and moist, but still not susceptible to rut formation or erosion, on the other. See suggested mitigation, p. 104, paragraph 2, DEIR.

K.34 - The comment concerns the noise from the truck (and other vehicle) traffic on Meacham Road. The DEIR conclusions about existing noise along the *Fence* route are not affected by the new traffic-count data on Meacham Road, even with the truck data supplied by Comment K.28.

K.35 and K.36 - See Response J.49.

K.37 - See Response G.1, with respect to testing in Colorado. The remainder of the comment has to do with the project, not the DEIR.

*The cited statement refers explicitly to the ocean end of the *Fence*.

L. Sonoma County Public Health Service

L.1 - Commentator notes that, with respect to liquid waste, the DEIR refers only to potential effects on public sewerage systems, whereas septic systems are used by restaurants and service stations in the rural area. He notes further that overuse of such systems, particularly in Bloomfield and Valley Ford, can have serious contamination consequences. This provides further support for the suggested mitigation measure (p. 45, DEIR) of provision of chemical toilets, particularly in these areas.

L.2 - This comment concerns the suggested use of water-filled spray rigs, on stand-by on ranches, for fire protection. Commentator asserts that the proposal is highly improper due to insecticide residue in the rigs, which might expose people to harmful, if not lethal, insecticide levels. The proposal was made (by the applicant) on the understanding that the rigs to be made available were used only for the spreading of liquid fertilizer (telephone communication, Paul Kayfetz, Attorney for the Running Fence Corporation, November 28, 1975). Precautions will be taken to see that no rigs that have been used for insecticide or herbicide spraying will be applied to fire-fighting.

L.3 - Commentator's recommendations for toilet and handwashing facilities for workers, and for provision for removal of litter generated by workers and viewers, become part of the record of recommendations for conditioning of the proposed *Fence* use permit.

M. County of Marin Department of Environmental Services

The only comment pertaining to the DEIR *per se* is "...the report appears to cover the major concerns of the Marin County Planning Department and this division." The comment is acknowledged with sincere appreciation.

N. U.S. Army Corps of Engineers, San Francisco District

The commentator notes that the DEIR incorrectly stated that the Corps had granted a permit for those portions of the originally proposed project under its jurisdiction. ESA apologizes for this error, generated in the course of the last-minute revisions to the DEIR before printing. What the DEIR preparer had in mind was the following statement from the Corp's Public Notice 75-315-053 of March 7, 1975:

"In accordance with requirements of the National Environmental Policy Act (PL 91-190), the Corps has evaluated the environmental aspects of the proposed activity and has determined that the activity involves a minor effort of no significant effect on the quality of the human environment. Therefore, at this time it does not appear that the preparation of an Environmental Impact Statement (EIS) by the Corps will be necessary."

PART 2

LATE COMMENTS AND RESPONSES, AND TRANSCRIPT

I. INTRODUCTION

The contents of Part 2 of this Addendum are as follows:

(1) Letter from Division of Forestry. The Comments therein were responded to at the December 3 hearing. See transcript following.

(2) Letter from Dr. Welton L. Lee responding to comments of Jerome Tichenor (Part 1). A full ESA response to Mr. Tichenor's comments appears in Part 1.

(3) Letter from Dr. Welton L. Lee responding to comments of Lois Raymond (Part 1). A full ESA response to Mrs. Raymond's comments appears in Part 1.

(4) Letter from California Coastal Zone Commission (short title). No response is required. The Coastal Commission action had been cited in the Draft EIR.

(5) Pertinent pages from the transcript of the December 3, 1975 hearing on the EIR. Omitted are the pages concerning procedures for the hearing and the EIR processing, as well as the pages covering the reading of the Part 1 responses into the record. Included are the oral comments on the EIR (BZA and public) and the oral responses thereto (R. Cole, ESA; T. Cordill, Sonoma County Planning Department). The transcript pages are preceded immediately by a list of errata in the transcript. This list ignores errors of transcription in grammar and usage; it includes only errors of substance.

II. LETTERS OF COMMENTARY AND RESPONSE

ATE OF CALIFORNIA—RESOURCES AGENCY
EDMUND G. BROWN JR., Governor
EPARTMENT OF CONSERVATION
IVISION OF FORESTRY
onoma Ranger Unit
560 West College Avenue
anta Rosa, CA 95401
46-1544

December 2, 1975

George Kovatch, Planning Director
Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, CA 95401

ATTENTION: Robert Pocan

Dear Mr. Pocan:

In regards to the RUNNING FENCE Environmental Impact Report, the California Division of Forestry would include those comments made in a letter to your office for the RUNNING FENCE Use Permit Application dated January 21, 1975. California Division of Forestry would also like to make the following additional comments.

One area of concern can be directed at the potential traffic in the event of a fire in this area or other emergency in which vehicles are required to respond into, through or out of, during peak traffic flow periods. We feel that traffic control problem criteria should be established so that the movement of these emergency vehicles would not endanger the personnel on them or the sightseer, etc.

Another impact as an unknown could be to the drawing of people living outside the area to establish residence in either existing or newly constructed residences to the point that in the future this new populace would increase either fire occurrence or demands on other emergency services, schools, etc. This new populace would not necessarily reside in the area of the fence. The EIR confines it's comments to the area of the fence.

Although the EIR mentions a study of potential visits by water, it does not mention a potential visitation by air.

GRM/eb

Very truly yours,

FRANK E. CROSSFIELD
State Forest Ranger IV

by GERALD R. MURPHY
Fire Prevention Supervisor

November 25, 1975

Mr. Tom Cordill
Environmental Administrator
Sonoma County Planning Department
County Administration Building
2555 Mendocino Avenue
Santa Rosa, CA 95401

Dear Mr. Cordill:

I have received and reviewed the two letters which you forwarded to me. As you know, I was sent a separate copy of the letter from Dr. Joel W. Hedgpeth, dated November 16, 1975. You should already have my response to the charges in that letter.

I do not feel that the second letter you sent, namely the response of Mr. Jerome Tichenor, the "artist," merits comment since satirical poetry does not constitute a responsible or objective criticism of a scientific evaluation. I note with interest that the address of Mr. Tichenor and Dr. Hedgpeth is one and the same.

Sincerely,

Welton L. Lee
Consultant

WLL:rm

December 2, 1975

Mr. Tom Cordill
Environmental Administrator
Sonoma County Planning Department
County Administration Building
2555 Mendocino Avenue
Santa Rosa, CA 95401

Dear Mr. Cordill:

I just received copies of the responses to the Environmental Impact Report on the Running Fence and would like to comment on two of the letters in which statements were made relative to my assessment of the impact on the intertidal and subtidal areas.

The first letter is from a Mrs. Lois M. Raymond, dated November 23, 1975. On page one of that letter the comment is made that [there is] "...no investigation of the intertidal area for in-depth analysis of the marine communities present." As substantiation of this statement, Mrs. Raymond quotes my report (page 89) "... the short period allowed for an investigation of the intertidal area obviates any in-depth analysis of the marine communities present." What was omitted, however, was the remainder of my statement which says, "However, the area in question is so typical of other exposed coastal areas along this coastline that a description of the major faunal elements and the prevailing environmental conditions is sufficient to make a reasonable assessment of the impact." Let me pursue what might be entailed if one were to take the implications of her comment seriously.

The major question would be: What is the effect of Running Fence on the intertidal communities under the worst possible sequence of events? These would be: 1) the unseasonable occurrence of heavy storm activity, 2) the dislodging and/or breakage of the anchors, 3) the scouring of the area by a loose cable and 4) the dislodgment or sloughing of debris onto the upper intertidal. To answer such a question would require complete knowledge of the distribution of the most susceptible species in an arc through which a loose cable would move, simulation of the effects of a loose cable and estimates of the over-all effect in the entire area, and several years of detailed population studies to assess natural variability in population levels and recruitment, particularly as they change during the stormy months, with a final mathematical assessment of the degree of natural die-off from

scouring as compared to the additional die-off under these simulated conditions. In addition, to study the effect of sloughing and landslide - from one pole - a complete analysis of the species in the upper intertidal would be necessary, followed by detailed studies of effects of natural slide activity on population levels as compared to simulated slides of a magnitude similar to that expected with the dislodgment of the last pole. The intertidal area in question, although depauperate, nevertheless contains many hundreds of species. Population studies and the experimentation of the magnitude needed for a full "in-depth" study would require the efforts of many people over several years. Such a study would almost certainly create more of an environmental impact than the Running Fence even under the worst possible conditions. I therefore feel that the effort implied would far exceed the expected impact by such a degree that it would be unreasonably costly, unnecessarily destructive to the intertidal, and provide no more real assurance of the ultimate outcome. I therefore feel that the present level of study is perfectly adequate for a reasonable prediction of the worst possible effects on the areas and provides that information with little or no impact on the area in question.

The second letter which requires comment is from Mr. Ronald L. Raymond from the same address and dated November 23, 1975. On page six of his letter he refers to a statement I made: "In brief, the area, because of its location and isolation, now has little recreational potential." Mr. Raymond apparently objects to this statement because the Running Fence has been proposed as a "recreational use on agricultural preserves." The statement I made is perfectly correct, for I said the area had "little" recreational potential, not "no" recreational potential. The one-time, relatively short-term use of this land, as proposed, seems to me to fall in the category of little recreational use. Obviously, the term is dependent upon an individual's concept of "little" and therefore is subject to different interpretations.

Sincerely,

Dr. Welton L. Lee
Consultant

WLL:rfm

TATE OF CALIFORNIA
Edmund G. Brown, Jr., Governor
CALIFORNIA COASTAL ZONE CONSERVATION COMMISSION
NORTH CENTRAL COAST REGIONAL COMMISSION
050 NORTHGATE DRIVE, SUITE 130
AN RAFAEL, CALIFORNIA 94903
415) 472-4321

No vember 25, 1975

Thomas Cordill
Environmental Administrator
Sonoma County Planning Department
2555 Mendocino Avenue
Santa Rosa, California 95401

Re: Environmental Impact Report, Running Fence

Dear Mr. Cordill:

This letter hereby recognizes that Sonoma County is the lead agency in evaluating and acting upon the Environmental Impact Report for the Running Fence in Sonoma County. To aid in your evaluation of the Coastal Commission's concerns about this project, I am enclosing the staff report and action of the State Commission meeting of June 18, 1975, at which this item was considered. The Commission's resolution fairly represents the concerns relative to this proposed project.

If you have any questions or comments please contact me at (415) 472-4321.

Sincerely,

Gary L. Holloway
Senior Coastal Planner

bcv
enc.

STATE OF CALIFORNIA
CALIFORNIA COASTAL ZONE CONSERVATION COMMISSION
1540 MARKET STREET, 2nd FLOOR
SAN FRANCISCO, CALIFORNIA 94102
PHONE: (415) 557-1001

EDMUND G. BROWN JR., Gover

July 22, 1975

Running Fence Corporation
c/o Marty Abell
URS Research Corporation
155 Bovet Road
San Mateo, California

Re: Appeal No. 103-75

Dear Sir:

On June 18, 1975, by a vote of 3 in favor, 9 against, the California Coastal Zone Conservation Commission denied your application for a permit to construct the development described in the attached staff recommendation.

Yours very truly,

JOSEPH E. BODOVITZ
Executive Director

Attachment

cc: North Central Coast Regional Commission

CALIFORNIA COASTAL ZONE CONSERVATION COMMISSION

1540 Market Street, San Francisco 94102 (415) 557-1001

NORTH COAST REGIONAL COMMISSION

STAFF RECOMMENDATION

JUL 21 1975

RECEIVED

Appeal No. 103-75
(Running Fence)
60th Day: 7/5/75

DECISION OF REGIONAL COMMISSION: Permit granted with conditions by North Central Regional Commission

PERMIT APPLICANT: Running Fence Corporation

APPELLANTS: Lawrence White, COAAST (Californians to Acquire Access to State Tidelands and the Committee to Stop the Running Fence

DEVELOPMENT LOCATION: In Sonoma and Marin Counties, extending 24 miles from Highway 101 near Petaluma through Valley Ford and 600 ft. into the ocean at the mouth of Estero de San Antonio (Exhibits 1 and 2)

DEVELOPMENT DESCRIPTION: Construction of a temporary 18 ft. high white nylon fence supported by poles, cables, guy wires, and anchors (Exhibits 3 and 4)

PUBLIC HEARING: Held June 4, 1975, in South San Francisco

STAFF RECOMMENDATION RE TWO-THIRDS VOTE: The staff recommends that a 2/3 vote to approve this application is required under Coastal Act Section 27401 (a), which requires a 2/3 vote to approve "dredging, filling, or otherwise altering any bay, estuary, salt marsh, river mouth, slough, or lagoon...." and Section 27401 (e), which requires a 2/3 vote to approve "any development which would adversely affect...existing areas of open waters free of visible structures...."

STAFF RECOMMENDATION: The staff recommends that the Commission adopt the following resolution:

I. Denial.

The Commission hereby denies a permit for the proposed development on grounds that the applicant has not met the burden of proof that the proposed development would be consistent with the findings, declarations and objectives of the California Coastal Zone Conservation Act of 1972.

II. Findings and Declarations

The Commission finds and declares as follows:

1. Project Summary. The 24-mile long nylon fence proposed by the applicant would cross the coastal permit zone twice: once at Estero Americano, the Sonoma-Marin County boundary, and once where the fence would enter the ocean at the mouth of Estero de San Antonio in Marin County (Exhibit 2). Easements have been obtained from property owners along the route. A lease has been granted by the State Lands Commission for the tidelands portion. An Army Corps of Engineers' permit and possibly a Water Quality Control Board discharge permit remain to be obtained. The fence would consist of nylon panels hung between two cables suspended from metal poles. The poles and cables would

be supported by guy wire ith soil anchors driven 4 ft. o the ground. When t
fence is dismantled, r wires would be cut and th ors remain underground.

No poles would be placed below mean low water. A single cable attached to two Danforth anchors would support the 600-ft. segment in the ocean. Construction of the poles, cables, and guy wires would begin as soon as all permits are granted. The panels would be hooked up on September 15 for a 2-week display period.

This $1 million project is proposed on behalf of Christo Javacheff. Previously, he has undertaken other outdoor projects such as inflating a 280-ft. high air bag in Kassel, Germany; placing a plastic cover over a mile of shoreline near Sydney, Australi hanging a 400-ft. curtain across a gorge in Rifle, Colorado; and most recently, covering an ocean cove near Newport, R. I. with 150,000 sq. ft. of plastic.

2. Controversy Over Artistic Merit of Project. The applicant, supported by museum directors and art critics, contends that the proposed fence, and the process of building it, are an artistic endeavor of international importance. Opponents of the fence consider it a coastal carnival, a promotion, a publicity stunt. Much of the hearing time before local governments considering the proposed fence was spent on artistic merit: is the fence art or isn't it?

The Commission makes no finding whatever with regard to the artistic merit, or lack of merit, of the process or project. The Coastal Act does not require that a project be a work of art to be approved, nor does the law allow environmental risk or degradation because a project is determined to be of artistic merit. The Commission must, under the Coastal Act, apply to this proposed development the same standards and judgments that would be applied under the Coastal Act to any other development.

The applicant's attorney has submitted the following description of the project: "The process of developing, planning, implementing--and removing without a trace--his work of art is the most important artistic aspect of Christo's work. In other words, in this case it's not the 'Running Fence' alone which is artistically important to Christo; the entire process of the engineering work, the legal work related to the acquisition of easements, the interaction with the community and with governmental agencies also are crucial to his art" (emphasis in original). Except for the removal aspect, this definition--planning, engineering, obtaining easements and permits, etc.--would qualify every land developer as an artist and every land development as a work of art. Clearly, the Commission must evaluate this proposed development under the Coasta Act as it would every other proposed development, and not accord it special treatment.

3. Requirements of Coastal Act. The California Coastal Act, adopted as an initiative measure by the people of California in 1972, states that "the coastal zone is a distinct and valuable natural resource,...existing as a delicately balanced ecosystem; that the permanent protection of the remaining natural and scenic resources of the coastal zone is a paramount concern to present and future residents of the state and nation; that in order to promote the public safety, health, and welfare, and to protect public and private property, wildlife, marine fisheries, and other ocean resourc and the natural environment, it is necessary to preserve the ecological balance of the coastal zone and prevent its further deterioration and destruction;..." (Sec. 27001).

The Act further provides that any proposed project, to be approved, must be consistent with these findings and objectives, and that the burden of proof as to consisten is on the applicant.

4. The Project and Its Risks. The coastal area through which the fence would pass is fragile, generally unspoiled, and relatively isolated. Into this area the appli cant proposes to bring a corps of consultants to supervise the fence construction, and also to invite large but unpredictable numbers of spectators. The environmental risks are of two types:

a. Construction and Removal of Fence. Although the fence would be on public display for only two weeks, construction and removal would, under the applicant's schedule, require several months. In the coastal area, the fence construction would involve placing poles in rolling agricultural land, and on the sides of steep slopes, draping the nylon across salt marshes and tidelands, and anchoring the fence in the ocean. The applicant and his consultants (biologists, geologists and engineers) concede that this area is of great environmental significance and could be damaged by unwise construction methods, but the applicant and his consultants maintain that the work can be accomplished with a minimum of environmental damage. Their assessment of the impact of proposed construction is strongly disputed by the opponents, whose arguments are bolstered by Dr. Joel Hedgpeth, a renowned authority on this coastal estuarine area. Time has not allowed for independent study to try to resolve the dispute between the claims of the consultants employed by the applicant and the objections of the opponents. Given the fragile and important nature of this coastal area, the burden of proof is heavy upon those who wish to intrude needlessly into it, and the applicant has not yet met that burden.

b. Spectators and Curiosity-Seekers. The second risk comes from the crowds--of unpredictable size and duration--likely to seek to view the fence. To reach those parts of the fence within the coastal permit area, there may be some visitors arriving on foot or on bicycles, but most may be expected to come by car, bus, or motorcycle. To see the proposed fence where it enters the ocean, these visitors would have to travel on narrow, winding, rural roads--or across dry grasslands. The danger of erosion caused by people trampling on coastal bluffs and fields, the danger of people disturbing the estuaries, and the danger of grass fire (the display would be at the height of the fire-danger season, in late September) are recognized by all parties. Large numbers of people drawn to the area could clog the major coastal access roads, both during construction/removal and display periods, thus significantly interfering with other recreational travel to the coast at the height of the summer and fall visitor season.

5. Efforts to Mitigate Possible Adverse Effects. Both Marin County and Sonoma County, whose approval was needed for portions of the fence, have granted their approvals subject to numerous conditions to try to deal with these risks. Their conditons, and a similarly long list of conditions imposed by the North Central Regional Coastal Commission in granting its approval, generally require the applicant to hire consultants to plan and supervise the construction, and to have fire and police protection and monitors to control crowds. The conditions also require bonds to help enforce the conditions. Because of the wording of some of the conditions, however (Exhibits 5, 6, and 7), their enforceability could well be subject to disputes. In any event, many of the conditions seek to mitigate or repair environmental damage after it has occurred. The Commission finds no justification for such an approach in the Coastal Act, and finds no legal basis for excusing long-term environmental damage on grounds the cause of it was on display for only two weeks.

The Commission further finds that no Environmental Impact Report has ever been prepared for this project, despite its obvious potential for major environmental disruption, and finds that in the absence of the full evaluation an EIR could have provided, it is difficult indeed to judge the effectiveness of the proposed conditions.

III. ERRATA IN TRANSCRIPT*

1. Page 10, Line 7: MR. CORDILL, *vice* DR. COLE

2. Page 10, Line 17: Same as 1.

3. Page 18, Lines 14-15: ...and I will read them at the appropriate points, *vice* ...and I will read them at this point.

4. Page 24, Line 15: Thompson, *vice* Thomas

5. Page 62, Line 20: Subjective, *vice* substantive

6. Page 76, Line 1: Quarry, *vice* Korty (twice)

7. Page 77, Line 14: antithetical, *vice* antiethical

8. Page 79, Line 22: ...close to if perhaps not over, *vice* ...close to perhaps not over

9. Page 81, Line 14: affairs, *vice* fears

10. Page 82, Line 21 fast, *vice* far

11. Page 90, Line 4: visual and aesthetic, *vice* just an antiaesthetic

12. Page 90, Line 6: need, *vice* may

13. Page 91, Line 15: environment than, *vice* environment of

14. Page 91, Line 17: CEQA, *vice* SEQA. This correction applies wherever "SEQA" appears.

*Replacements for errata are indicated. Errata in transcript section containing reading of Part 1 into the record are not shown. Part 1 herein supersedes that portion of the transcript.

15. Page 91, Lines 18-19: As I read, the requirement over estuarine, *vice* As I read the requirement, other estuarine

16. Page 91, Line 23: viability, *vice* liability

17. Page 92, Line 7: full, *vice* fourth

18. Page 92, Line 23: Thompson, *vice* Thomas

19. Page 94, Line 5: the, *vice* that

20. Page 94, Line 6: unless special flights were made, *vice* of less special flights made

21. Page 96, Line 8: was reference to such a letter, *vice* was such a letter

22. Page 97, Line 26: prohibition, *vice* provision

IV. TRANSCRIPT (SELECTED PAGES)

ORIGINAL

BEFORE THE BOARD OF ZONING ADJUSTMENT

COUNTY OF SONOMA

- - -

IN THE MATTER OF:

Hearing Re: CHRISTO RUNNING FENCE.

ROOM 107-A
COUNTY ADMINISTRATION CENTER

SANTA ROSA, CALIFORNIA

Wednesday, December 3, 1975

9:00 A.M.

---o0o--

Robert T. Doidge, C.S.R.

50 Santa Rosa Avenue

Santa Rosa, Ca. 95402

THE COMMISSION:

Chris K. Kjeldsen, Chairman
George Kovatch
Edward T. Meese
Fred Realy, Jr.
Leo O. Torr III
Adrian Swensen

COUNTY COUNSEL: Prentis Fish

ENVIRONMENTAL COORDINATOR: Tom Cordill

STAFF: Bob Pocan

- - -

APPEARING ON BEHALF OF CHRISTO JAVACHEFF: Edwin C. Anderson, Jr., Esq.
Paul Daniel Kayfetz, Esq.

- - -

number is marked, and listen to the response. I will identify each response by the caption "K.13," "J.24," et cetera,as it applies in the course of your decision, but it might be more efficient if you withhold comments until I continue to read.

Just to make sure I don't forget something, I will respond first to the comments that were read by Mr. Cordill from the Division of Forestry.

The letter was dated December 2nd. I did not see it until this morning.

The letter makes three points. One concerns the effect of traffic congestion upon emergency vehicles to get through. There are responses to that question throughout this document, and I will read them at this point.

The second concerns growth effects on areas outside the immediate route of the fence and the growth induction section of the DEIR, Pages 144 and -5, respond to that question.

There are other places where it is discussed, I believe, in the economic section.

The third point has to do with visits by air. They are mentioned on Page 61 of the EIR.

CHAIRMAN KJELDSEN: Excuse me, Dr. Cole. Could we proceed this way:

That if any of the Board has comments relative to the document that you are referring to, you will read a response, and if the Board has any questions as to that

disrupt the soil, then the top and side clips would have released, allowing the affected nylon panels to fall and lie flat on the ground. In other words, the anchors, tested in place to a force of 7,000 lbs., could never be exposed to such a force. If the system is designed (and has been tested) to withstand 25 MPH winds, there is no reason to make it fail (break away) at such wind speeds."

I have been informed this morning that two representatives of a firm retained by the Applicant have recently made further calculations and that individual answers will be tested to different loads, as I understand it now, ranging from 7,000 to 9,000 pounds. And if there are any further questions, these two gentlemen, Messrs. Thomas and Fuller, can answer the questions.

Comment G.2:

"Commentator objects to the failure to include in the DEIR the cited letter by Margaret Azevedo, Chairman of the North Central Regional Coastal Commission. See Response F.1 above for the applicable response."

"G.3 - Commentator asserts the EIR 'is surprisingly inadequate in essential documentation' (again, see Response F.1 above), and goes on to impugn the ethics of the DEIR preparers. His commentary appears to apply primarily to the contribution of Dr. Welton Lee, produced under

not appropriate there; but I think they are ranchers that were stating that they consider the environmental impact on their land and the sheep and the grazing, and what have you.

I thought that should be part of the record. The other letter does have a specific issue that is raised and refers to certain pages of the EIR.

MR. POCAN: Paraphrasing --

MR. FISH: Read them.

MR. POCAN: I will read the whole thing.

"Dear Chairperson and Members of the B.Z.A. . . ." It is dated December 3, Santa Rosa.

"I have studied the draft EIR submitted by Environmental Science Associates on the Running Fence and I wish my comments to be a matter of record.

"The excesses of pollution, energy waste, costs of services and damage to the land in general is something which cannot be satisfactorily mitigated as far as I am concerned. There would have to be some overwhelming redeeming features of this project to seriously consider mitigation. In my opinion there are no overwhelming benefits to the people of Sonoma County and therefore I urge that your approval of this project be withheld.

"I did note two very glaring omissions in the EIR. The first one is that there is no plan to mitigate the visual and aesthetic pollution

(pp 53-54). And there is no proposal apparent for determining that Running Fence activities should cease because of the dampness in the ground. Do men and equipment have to be mired up to their axles before the work stops? Or will it stop at the first sign of damage to the environment. Who decides and by what method? Should this be considered?

"I am, in my absence, appearing before the California Coastal Zone Conservation Commission on a similarly important matter and regret not being amont this group today. I remember prior hearings as being lots of fun, like a circus."

"Sincerely, Charles H. Rhinehart."

Two other letters:

Would the preparer of the EIR respond to those two points that were raised?

DR. COLE: Point one concerned "visual and aesthetic pollution.

We made no claim that there is visual or aesthetic pollution. We stated, as exactly as we could, what the visual and aesthetic impacts were.

In our judgment, if one accepts the contention that that is pollution, there are no mitigating factors before him.

And we listed only those mitigation measures proposed by the applicant or suggested by us.

Point two, cessation of operations because of dampness in the ground have been covered in several of the written

responses to other comments. In particular I point out that in one of those responses I mentioned the condition -- I think it was number eight, Sonoma County Condition No. 8 of the original list, which had a biologist making the determination, going along before construction proceeds and making determinations as to whether construction in any given area should start.

The other comments were general and had to do with decisions that are properly made by members of your Board, and we have as much as possible in all of our EIR's stayed away from trying to balance beneficial versus detrimental impact of a project. That is not our purview. That is your job, and we are glad you are the ones who have it.

CHAIRMAN KJELDSEN: Thank you.

MR. CORDILL: Mr. Chairman, may I point out that on the two specific remarks here referred for comment by the Chairman, the conditions attached to the use permit I think adequately treat the work in relation to biological or environmental damage.

CHAIRMAN KJELDSEN: Another letter that is not dated was passed to me by Mr. Fish. It is one that I have trouble decidings as to whether it is really speaking to the environmental impact. It does present some data. Perhaps there is some data presented that should be included.

It does not address itself specifically to any references in the environmental impact. However, it is adding additional information, perhaps.

Perhaps that should be read into the record.

the invitation of the chairman to answer some questions. I hope this does not happen at your meeting. Thank you for your time in reading this.

"Sincerely, Lois Kirkland."

That is all I have.

CHAIRMAN KJELDSEN: That then concludes the written documentation and responses.

We will now take a 10-minute break, and then we will proceed into the public hearing.

(Recess.)

CHAIRMAN KJELDSEN: Now the Board members' questions at this time.

COMMISSIONER MEESE: Mr. Chairman, I would like to direct this to Dr. Cole.

On Page 30 you say you carefully avoided judging the Running Fence as an art object as part of your EIR process.

Would you clarify that?

DR. COLE: What we meant was that we interpret CEQA and the guidelines to say that substantive judgment should be avoided at all costs; that our functions as consultants is to analyze as quantitatively as possible all the impacts, the potential impacts of a project.

COMMISSIONER MEESE: Pardon me. Is it your opinion that the artistic nature of this project has no bearing on the EIR process?

DR. COLE: It has no bearing on what the EIR says. It has a bearing on your decision because --

COMMISSIONER MEESE: Mr. Cordill, do you agree with that?

MR. CORDILL: Will you repeat the question again?

COMMISSIONER MEESE: The artistic nature of the project has no bearing on the adequacy of the EIR.

MR. CORDILL: Well, I don't think the question can be answered, very frankly, Mr. Meese. The question is -- and let me paraphrase it -- should the EIR in compliance with CEQA discuss the artistic aspect of the project, and the answer in this instance is No.

COMMISSIONER MEESE: Thank you.

Mr. Chairman, in that case I happen to agree. I think that the artistic nature is of no relevance to the adequacy of the EIR.

Because we are already an hour late because of that submission, or the reading of that document, I would move that the B.Z.A. exclude all testimony as to the artistic nature or quality of the project in hearing the EIR.

COMMISIONER REALY: As I recall, that is what you did at the last meeting.

CHAIRMAN KJELDSEN: I don't think that is necessary. I intend not to have any input or data submitted at this time relative to the artistic quality of that. What we need to look at --

COMMISSIONER MEESE: I would like the agreement of the Board.

COMMISSIONER TORR: I will second the motion, if you want it.

FROM THE AUDIENCE (Mr. Sutley): My name is Sutley (?) and I am in the Peace and Freedom Party, and I live at 60 Bensen Lane in Cotati.

I can't cite page number, but I know a lack of coverage on the traffic situation, and that's Javacheff's joke that there is not even any consideration given to bicycle traffic and what happens to the people that ride out in that area and the safety factors involved there.

This is a real dangerous situation if we are going to have the traffic stacked up out there.

I have just a couple of other points to address myself to. The monitors to be trained by the Sonoma County Sheriff to monitor things.

I don't know if that deals with the environmental impact report, but that's going to cost us a lot of money and it's going to mean the County is going to use the slave labor of prisoners at the Honor Farm that are ultimately going to be the ones to clean it up.

The only other question I have is, Maybe you can find out if this material is being stored on Sonoma County property because I heard that it's being stored in a warehouse down at the Petaluma Fairgrounds. And maybe we can find out about that.

CHAIRMAN KJELDSEN: Thank you.

Anyone else wish to speak to the EIR?

MR. HEDGEPETH: My name is Joe Hedgepeth, 5660 Montecito Avenue, Santa Rosa.

My name has been taken in vain here a bit. I will

explain very briefly that I am sorry that Dr. Lee got into this bind with me.

He called me up and gave me the distinct impression that he had not yet decided to do this job on the EIR. I think the rest of the letter is self-explanatory.

However, there is one point that has to be made. He states that there are a lot of areas on the seacoast between laboratories in California. There is only one with no developmental military reservation or industry.

Now, it is true that the application for estuarine status is still in the beginning stage. However, at this time the National Science Foundation has put out its call for proposals for support of field laboratories, and Pacific Marine Station is preparing such a proposal.

It feels that it may have favorable status due to the comparative smallness and the long tradition of environmental work on changes through time.

Now, one of the critical questions asked in these proposals is, Can you control your environment?

If you don't own the beach, what guarantee can you give?

We can say, of course, that Tomales Point, Bird Rock, are in reserve status by being part of the national seashore; and all that is dedicated for special study purposes.

However, all this particular region of coast may not be unique. It has become to an extent unique because it is a study area. It may not be as easily

accessible, and that is one of the reasons it is a good study area.

I think actions of Commissions like this which would indicate they are not interested in what is going on in the local marine laboratories and plans for the future, and especially for finances which has some financial impact in Sonoma County, since most of the staff members of Pacific Marine Station live in Sonoma County, most of the business is transacted in Petaluma and Santa Rosa. Anyone who expresses in favor of such crackpottery as we have -- if you will pardon my personal opinion -- will be looked at very critically by the committees in Washington. They don't know anything about this. They don't care. They are scientists and they say, "If the people put up with this kind of stuff, they are not really very helpful to us, are they?"

That's the sum total of my comments. Thank you.

CHAIRMAN KJELDSEN: Thank you.

Is there anyone else in the audience who would like to speak to this matter?

LOIS RAYMOND: My name is Lois Raymond. I live at 317 Meacham Road.

I am not very good at speaking; so I hope you bear with me.

I hope that you read my letter to the Board and comments that I included as a summary for my conclusions in this letter.

The responses to them state that the EIR is

quoted that none is necessary since it's a quote from them, but I really think that some of it should be brought out and noticed.

2.5 cubic feet of solid waste would be produced each day by the workers themselves. That is Page 43, Item (d).

Page 44 in the first paragraph reads:

> ". . . about 40 to 80 cubic yards of solid waste could be disposed of in the area."

Also in regards to fire protection, Page 44, Number (e):

> "The use of a motor-driven vehicle on the dry grassland area creates a potential for fire."

Also Page 45, Item (g):

> ". . . the number of autos on the road could inhibit swift service by emergency vehicles . . ."

Many of the roads involved in this project do not have any shoulders. I do not know how traffic going in both directions could pull over for emergency vehicles to pass through the center, as was stated in the responses about emergency vehicles.

Also, in Response to J.9 to my letter it states:

> "The interested audience is that part of the public that is interested in art and art events."

Anyone coming to Sonoma County during the time of the showing of the fence will not be able to ignore it. I think that the interested audience will be anyone who is interested in art, in art events, and anyone who passes through Sonoma County who lives in Sonoma County who drives through it, whether they had planned to or not, will not be able to ignore it. And my feelings are that many of them who originally would not come to visit it will take a little side tour to see what it's all about.

I don't know if this is apropos at this time or not. There was a letter from Lois Kirkland, one of the farmers on the land that it's going through. She stated that the fence will be in for one week. It is my understanding that it will be two weeks.

I hope you will consider us who live between the route of the fence and the busy road who do not have the easement agreement that it will be taken down without any problems, who will not have monitors to protect our homes.

Also, again I will reiterate that over one million gallons of gas will be used by visitors, not to mention the jet fuel and boat fuel. I'm trying to separate my use permit comments from any EIR comment. You will have to excuse me.

Again, J.14 refers to the non-commercial, non-profit nature of the running fence.

If you will read a copy of the Articles of Incorporation, there is nowhere where they say they are a

non-profit corporation.

Also J.13. It states too the proposed subdivision from Meacham Hill and Pepper Road was irrelevant, and yet the gentleman who prepared the EIR told us that they only considered the area that the fence would pass through in their comments.

Also, J.13 states that the weekday traffic would be less than the weekend traffic and that perhaps they could judge the impact of the weekend traffic from that.

The Valley Curtain which was only up for 28 hours drew 10,000 people in one day, the first day.

Also J.26: Who is going to give these monitors any authority to stop the trespassing? I have been told by the Sheriff's Department that I have no right to stop anything from trespassing on my property myself; that I can ask them to leave, but actually I have no authority. So I am wondering, Who is going to grant monitors authority to protect anything.

Also J-29, the no-smoking thing is, I think, not enforceable in the great outdoors.

J-30, in case of emergency under congestion: the authorized traffic controllers could block access to particular road sections until the emergency vehicles have gotten through.

As I said, some of these roads do not have shoulders. And also if there is going to be parking and stopping allowed on the shoulders, there will not be any room for emergency vehicles.

And while I do not hold the view from the rear of my home in perpetuity the area in which I live is also zoned for rural residence uses, and I do not feel this is an acceptable use in this area.

I would not oppose someone who is building a home there because that's a necessary use and it is what it is zoned for.

I brought a picture, if you want, if anyone would like to look at it to see what the view is.

COMMISSIONER SWENSON: Will a staff member pass that around, please?

LOIS RAYMOND: J.14 is exactly what I was trying to bring out: that the place where my home is located would be a viewpoint and a hazard will cause some very serious problems for me and for my neighbors.

The traffic situation from Meacham Road where figures taken in April of 1975, well, the dump traffic increases as the year goes on, and towards the beginning of fall when people are starting to take out their summer gardnes, or whatever, the dump traffic increases greatly.

Also I question their talking about the maximum peak period existing traffic is higher on the Labor Day weekend than on weekdays.

I think that the figures are available for the use of the dump on Sunday, whether it is a holiday or not, and they are higher than when the dump is closed.

Also one of the things that I --.

Oh! J.11. Excuse me. I asked about how the cable

would be brought in and unreeled, but there is no comment as to what the weight of the cable is or the machine that will be used to unroll it.

I think that's all the comment on the EIR. Thank you.

CHAIRMAN KJELDSEN: Is there anyone else who would like to speak to the EIR?

CAROLINE WILLIAMS PAYNE: Yes. My name is Caroline Williams Payne. I live at 361 School Road in Cotati, and I would like to read into the record a motion that was made by the City of Cotati on March 4, 1975.

This was after the letter which was received by the consultants in reference to whether Cotati had objection to the project or not.

> "The motion was made that the City Council indicate to the Board of Supervisors that Cotati disapproves of the fence proposed by Christo in terms of the impact it would have in bringing more people into Sonoma County as well as because the fence would use beautiful natural resources for a stunt."

The motion was approved by a four to nothing vote with one abstention.

CHAIRMAN KJELDSEN: Thank you. Is there anyone else in the audience who would like to speak to the EIR?

RONALD RAYMOND: Yes. My name is Ronald Raymond. I live at 317 Meacham Road.

The summary on Page 5 talks about a five-fold

increase in noise. Motorcycles, they tell us, will add to the noise.

They still haven't answered how much these cable reels weigh or how much pressure the tires of that truck from Oakland will exert on the ground. My wife expressed our views.

Our present understanding of the Williamson Act, Section 51201.(n) and Section 423.7(K), Paragraph 3, is that it allows certain participating recreational use.

In light of the need to prevent wholesale trespass to forestall havoc across the county and the applicant's claims that the project is inherently designed to be simply viewed from a distance, completely obviates the proscribed participatory nature of such use. Further, the tenants of Open Space Requirements, Section 15201.(O), are to prevent blocking public view from rural areas. This proposal is an apparent contradiction on these bases.

I would like to reiterate that all of the fire departments running from Graton, Santa Rosa and Petaluma are all long runs, and they are going to be very congested. And I would take issue with the proposition that people pull over. People coming at you will pull over to the right, and people in front pull over to the left.

I have driven equipment, Code 3, and I know that half the time they stop dead center and you can't go either way to go around them because you don't know which way they are going to jump.

Page 44 says, "The increase in number of persons

and vehicles in this area, during the season when the grass is dry and the fire danger generally is high, compound the fire danger and increases the chance that fire departments would be called upon."

Page 46 calls for trashcans at stopping points along the roadway, and they tell us, "There are no stopping points along the roadway." And they point out about 50 stopping points along the roadway and 50 additional hazard stops where it is dangerous to stop along the roadway.

For cars to be pulling in and out of heavy traffic at these points is insane. Traffic jams would become monumental and many people would misjudge these narrow pulloffs and end up in the ditch, compounding everyone's problem.

And it speaks of traffic being effected south of Novato.

On Page 53 it correctly describes it as intrusive blockage or partial blockage of close-in and panoramic views.

Thank you.

CHAIRMAN KJELDSEN: Is there anyone else in the audience who would like to speak?

I may remind you that what we need to have is information relating to the adequacy or inadequacy of the EIR and information on that.

When we get to the use permit some of these concerns that have been expressed are really applicable there. Let's continue.

MR. DOUG KORTY: My name is Doug Korty. I live at 505 Lichau Road, Penngrove.

I have three major criticisms of the report.

I would like to say first that I worked for the National Commission on Water Quality, Vice President Rockefeller's study of the water pollution problem in this country.

We had dealings with Environmental Science Associates and consider them one of the better firms in the business.

I think the report in general is very well done and reflects well on both the contractor and the Planning Department staff.

My criticisms are, first of all, the Applicant has agreed to leave no trace of the proposed fence and also to pay for or be responsible for all costs related to fire control and crowd and traffic control, police protection, ambulances, litter removal, forestry services and the possible destruction of archeological sites.

I did not find in the environmental impact report the results of any investigation by the contractor or of what the total cost of all this might be and in any way any suggestions for a way that the County can guarantee that any and all of these expenses would be paid by the Applicant.

I think that the expenses could be rather substantial. I'm not sure that the $150,000 bond would suffice. I am not sure. There is no evidence that the Running Fence Corporation, in fact, has even $150,000 in assets.

On Page 33 of the report the contractor ventures

the opinion that, "The running fence, the landowners easement agreements with the Running Fence Corporation and agricultural preserve contracts with Sonoma County do not appear to be in conflict. Therefore, the Running Fence can be considered not incompatible with agricultural or open space use."

This is opinion and yet is stated as a conclusion. Worse, it confuses a technical issue: the agricultural preserve contracts with broader issues of land use.

I assume people use a phrase such as "not incompatible" to avoid saying "compatible".

I believe that the running fence is compatible with neither agriculture nor open space. It would be hard to conceive of anything more spectacularly antiethical to "open space" than a 24-mile long 29-foot high fence.

The incompatibility with agriculture involves the erosion and fire threats as well as the legal issue of the agricultural preserve contracts under the Williamson Act. The contractor's stated reason for believing the running fence creates no conflict with the agricultural preserve contracts is that no direct profit from admission charges will be earned by the applicant. By this, indirect income will be earned in the form of sales of art works created in conjunction with the project but sold elsewhere.

By this interesting distinction between direct and indirect profits a factory would be not incompatible with agriculture or open space as long as the owners refrained from charging admission.

Not only does the Running Fence Corporation plan to earn income from this project, but the landowners are receiving substantial income in the form of gifts for the use of their land.

Since the IRS would treat these gifts as income, I don't see why Sonoma County should be involved.

The contractor should do a thorough investigation of the financial interest of the applicant and of the landowners.

My third criticism is that the contractor failed to treat the question of whether the fence represents visual pollution. If the fence is constructed, people living in or traveling through the affected area will have no choice about whether to view it. Much like the billboard advertisements, the fence will be there for all of us to see, like it or not, 24 miles of it, 20 feet high, blocking a good deal of the natural scenery which we might prefer.

The fence is purportedly an educational experience and a gift for the public. I, for one, do not appreciate either the generosity or the condescension of the applicant. The contractor should have made an effort to assess the attitudes of others who may be forced to view the fence in various stages of construction for seven months.

Thank you.

CHAIRMAN KJELDSEN: Is there anyone else in the audience who would like to speak to the EIR?

(No response.)

Is there anyone else in the audience who would like

to speak to the EIR?

(No response.)

There are Staff questions that the Board has at this time of Staff.

COMMISSIONER REALY: One thing I would like to know in this report here, it says it is a limited corporation with a capital of $51,000. I can't see whether it is 8 or 6, but if that's what the corporation is, how are they going to get a hundred thousand dollar bond? And it says in the report here a $150,000 bond and a million dollars in insurance with a $50,000 corporation.

CHAIRMAN KJELDSEN: Can we have the preparer of the EIR respond to some of the issues that were raised in answer to some of those so we will have it as part of the record?

DR. COLE: Would you like, Mr. Chairman, to take this last Board comment first?

CHAIRMAN KJELDSEN: Yes, let's answer that.

DR. COLE: I think the comment was with respect to a starting figure when the corporation was formed.

First of all, I think everyone is aware that on the running fence alone something close to perhaps not over a million dollars has already been spent. That is to say, the corporation income from the sale of art generated on previous and the current project is used for expenditures on these.

Secondly, I believe the bond is already available, is it not?

JEANNE-CLAUDE JAVACHEFF: And paid for.

CHRISTO JAVACHEFF: One half million dollars.

COMMISSIONER REALY: Why don't you put that under J.32? It says nothing about it.

DR. COLE: That was an oversight. Actually it is a partial oversight simply because we have cited the fact that a Sonoma County condition -- I think this appears on Page 23 -- was that a bond be obtained, and we considered that the binding principle.

CHAIRMAN KJELDSEN: Any other questions that the Board has?

Mr. Meese?

COMMISSIONER MEESE: Yes. I was going to ask Mr. Fish, Is the bond that is created satisfactory to you or protecting the public interest?

CHAIRMAN KJELDSEN: That really is on the subject of the use permit, and I think that is all we are looking at now, Has the EIR addressed itself to that? And I think I would rule that out of order.

COMMISSIONER MEESE: I will agree with you. I am sorry. I would like to ask, though, if this question of cost is pertinent as far as CEQA is concerned to the EIR process.

The gentleman brought up the question as to whether the costs were examined adequately or not. How does that fit as far as SEQA is concerned?

MR. CORDILL: I am not sure I understand what costs are being described here. But insofar as a description

of the existing environmental conditions and the effect of the project itself, it is immaterial what the costs may be so long as the nature of the structure in the project does not change.

COMMISSIONER MEESE: Okay.

DR. COLE: There is another way to answer that which might be helpful.

The legislature has been wrestling with the problem practically since '72, the question of whether or not an economic impact report should be required at the same time as an environmental impact report.

Now, that very distinction implies that there is not a statutory guideline requirement for discussion of economic fears in an EIR. Our firm as a matter of policy has on most conventional projects, as well as this one, discussed those aspects of economics which concern community service costs because we see those as very much relevant to a lead agency's decision. But economics on the other side, the potential benefits we feel are not necessarily required in the EIR.

CHAIRMAN KJELDSEN: Thank you.

Miss Swenson has a question.

COMMISSIONER SWENSON: Yes. On the question of fire and other emergency services -- perhaps I have missed it -- but I know you read the proposed mitigation measures, and I understand that you recognize there is a fire hazard in this area and that the roads, some of these roads, particularly Walker Road, is extremely narrow. It is

essentially a one-lane road.

If it is in your EIR, I have missed it. How would the mitigating measures or what mitigating measures could be used to insure that emergency vehicles could get through, an ambulance or some kind of a fire rig in case of a fire?

I understand from your statistics that there is a fairly high probability of fires in that area.

Have you dealt with this issue? I have not found it.

DR. COLE: In our responses we were not dealing specifically with roads such as Walker Road. If it indeed will not allow an emergency vehicle to get through between two rows of cars with one set of wheels on --

COMMISSIONER SWENSON: It will accomodate one. I drove it.

DR. COLE: If that is true, then the only other mitigating measure is the one that we have suggested in our written responses, namely, that they would end up in a delayed response by the emergency vehicle. But the only one would be that the traffic controllers to get all the traffic out of there as far as they can when the vehicle did come through.

Now, in further response, let me say something that I think is very important in this analysis. I will throw some numbers out.

We made our congestion analysis on what we considered to be a worst-case situation, in that we picked the second Sunday at which time we assumed that the peak

buildup of traffic would have occurred as interest developed, as the public realized that this was the last chance to see the fence.

Our judgment there was affected very much by the history of the Chinese Art Exhibit in San Francisco at the DeYoung Museum where interest picked up gradually over what was about a two-month period, two and a half, with the largest crowds showing up on the last weekend.

Now, further, we had two important numbers in the total induced visitor traffic, that is, numbers of visitors on that peak Sunday.

We said that there would be a 30 percent probability -- this is the judgment of our traffic engineering consultant -- a 30 percent probability of 30,000 people or 10,000 cars, a 60 percent probability -- that is very close to a 50-50 probability -- of 15,000 or 5,000 cars, and an outside chance of 5 percent of 50,000 people which we did not examine.

We examined both the worst-case, the 30 percent probability, which is to say, something like 2 to 1 against that happening of 30,000 visitors.

It was on that basis that we did the whole traffic analysis, and that is for that second Sunday.

We said as a further assumption that the traffic buildup to that level, that very likely on the earliest days before visitor interest had really developed, traffic levels would be about one-quarter of that; so with the 30 percent or worst-case probability, you would be talking about 10,000 cars, about 2500 to 3,000 cars in that first day.

If our judgment is right, that meant first of all that the kind of congestion that people worried about, anywhere on this interior road network, would not show up in those early days; but traffic measurements on those early days, which would have to be a part of traffic management -- we mentioned that in the EIR -- would indicate the high levels of attendance would be later on in those peak days.

If those traffic measures indicate that conditions like our 30 percent were expected to occur on that second Sunday, then at that point I would imagine that Captain Denton of the CHP would say, "Tear it down," before then.

That is a condition which I believe is built in. It is a condition that the applicant has said he would accept.

If Captain Denton says, "Tear it down now," then the removal starts immediately. And it apparently can be done in a day.

CHAIRMAN KJELDSEN: Thank you.

Are there any other questions?

COMMISSIONER SWENSON: Can I follow up? What, then, if I understand your answer, are you saying? That this then would make it very unlikely that there could be a situation of an emergency where emergency vehicles could not get through? Is that the substance of your answer?

DR. COLE: On those very early days if our judgment about numbers are correct.

COMMISSIONER SWENSON: On those very early days?

DR. COLE: What I'm really saying is, in my judgment right now -- this is partly based on a recent analysis which I was just doing the day before yesterday -- that you would be getting to Level D which is getting pretty bad on that second Sunday with our 30 percent probability estimate.

I would think that those conditions, if they were to occur or were to occur on the basis of the first days would lead to a decision by Captain Denton to shut things down. But I would think that the levels that would occur on the first day, the first few days, would not be enough to create the situation you are concerned about.

COMMISSIONER SWENSON: I have one other question. Does your EIR -- I have not found this -- deal with the possible impact of traffic on Highway 101, possible accidents, lawsuits resulting from them, this sort of thing?

DR. COLE: We didn't go into the question of lawsuits. What we said was that the fence would be attractive to people on 101 but that they would get views of it; the traffic coming in both directions on 101 would see the fence long enough in advance so there wouldn't be panic stops by people seeing it for the first time. But there could be a danger of congestion because people slow down to see it, and you could have a cueing feffect with people backing up.

COMMISSIONER SWENSON: Would the County be liable legally for damage or, you know, loss of life or injury in such accidents?

CHAIRMAN KJELDSEN: That is a question properly addressed to Mr. Fish, and that will come up.

Mr. Realy has a question.

COMMISSIONER REALY: I would like to call your attention to this: there is an annual report,that was just handed to me from the Secretary of the State of Illinois.

On February 11, 1975, the total of this corporation was $51,800.

CHAIRMAN KJELDSEN: Mr. Meese, do you have any other questions?

COMMISSIONER MEESE: Yes, I have, that pertain to adequacy.

On the matter of visiting by air or viewing by air, I don't think you treated that adequately because that is the logical way to see the project. I think it might attract quite a bit of air traffic.

I do understand you now. I think Adrian has made it clear that you feel that you can predict when the traffic situation may be reaching an unacceptable level and the project can be shut down.

As far as the costs go, in several places in here you mention the willingness of the applicant to assume the burden of costs that are actually mitigating circumstances: the cleanup, should it be necessary, the protection of the property and one thing and another. If that has to do with the mitigating circumstances, it appears like the cost of these items are relevant to the EIR process and whether the applicant can sustain these costs.

DR. COLE: Mr. Kayfetz would like to explain that. He is attorney for the corporation.

COMMISSIONER MEESE: I am just dealing with the adequacy of the EIR. I am still concerned with whether or not these cost figures should be approached.

MR. CORDILL: May I suggest, Mr. Chairman, I think, Mr. Meese, you are confusing the ability of the applicant to comply with the condition, with the statement of condition necessary to mitigating adverse effect which is contained in an EIR.

COMMISSIONER MEESE: In my mind they are the same.

CHAIRMAN KJELDSEN: We will recess five minutes to change the tape.

(Recess.)

CHAIRMAN KJELDSEN: We are now back in order.

Mr. Meese, do you want to restate your question?

COMMISSIONER MEESE: If I understand your answer, you are saying that as far as the EIR process to SEQA goes, the cost of these mitigating factors are all of no relevance? They are not of concern to us in deciding adequacy? I want a Yes or No on that.

MR. CORDILL: In other words, so far as the EIR is concerned, the EIR if it specifies the mitigating measures that are needed in order to minimize adverse environmental effect of the project and a mitigation condition is contained in the use permit, then that use permit is not valid, cannot be used by the applicant until and unless he can comply with that condition.

If a bond is required, he can't do a thing until he's got his bond.

Whether he can afford it or not is not something that needs to be argued and discussed in the content of the environmental document.

MR. KAYFETZ: Mr. Chairman, may I add one item --

CHAIRMAN KJELDSEN: Your name?

MR. KAYFETZ: My name is Paul Kayfetz. I am an attorney for the applicant. The applicant obtained and paid for and provided copies of policies to the County Staff for the project last year when construction was contemplated during September of 1975 from Travelers and other reputable bonding companies in the amounts required by the various agencies, a total of $25,000 in bonds which stand as surety for performance on the various mitigation terms agreed to, including cleanup, and also provided certificates of insurance for the million and a half dollars liability policy covering the County for all risks. So at that point the insurers, Travelers and others, stood responsible for these risks.

The terms in this permit again require that such proof be provided and be deemed satisfactory by County Counsel before any work can go forward on the project.

So I believe that datum would be partially responsive to the concern that has been expressed.

COMMISSIONER MEESE: Mr. Chairman, that is not my question. I think my question is very clear, and I would like a yes or no answer.

Are the costs associated with mitigating activities a matter of our concern as far as dealing with adequacy of

the EIR?

DR. COLE: Perhaps I can try to answer that.

CHAIRMAN KJELDSEN: Let me interrupt. Mr. Cordill has stated that once before. Do you want to state it again?

MR. CORDILL: The answer is No.

COMMISSIONER MEESE: Thank you. That's good.

CHAIRMAN KJELDSEN: We have got it on the record twice.

Now, Dr. Cole, will you proceed, if you would like, to answer comments relative to the oral testimony that is appropriate at this time?

DR. COLE: I think there was one outstanding question from Mr. Meese which concerns air travel to view the fence, and we mentioned that as a possibility.

We had no way of estimating how many people would use that approach. We were not sure if we had a number how we could say anything about the potential environmental impact, that kind of thing.

COMMISSIONER MEESE: But you think it would be insignificant?

DR. COLE: I would think so.

COMMISSIONER MEESE: Thank you.

CHAIRMAN KJELDSEN: Will you proceed to give your responses?

DR. COLE: I will try. I tried to write as fast as I could, Mr. Chairman, as people were giving their comments. I may have missed them; and if I missed anything, I would appreciate having the people who made the comments

tell me I did.

I think Mr. Rhinehart made the first comment when he was talking about -- I believe he referred to it as just an antiaesthetic pollution. I don't think anything further than what has been said in the EIR or the response to EIR, response to the comment may be said.

I will not make any comments on those comments which were favorable to the project and which did not speak to the adequacy or completeness of the EIR.

I have no notes on Mr. Christopher. I don't remember whether he had derogatory comments. No responses on Mr. Solinsky or Miss Kirkland.

Mr. Sutley (sp?) claimed that there was a lack of consideration given to traffic. I don't see how one can make that judgment. We have a very long and detailed traffic calculation, and I think we covered the bases.

He mentioned bicycle traffic and the danger to bicycle traffic. All I can say in that respect is that visitor traffic to this project as it developed would presumably be moving fairly slowly; some people would be at a standstill.

Somewhere in the files there is a response from one of the agencies -- that may have been CalTrans -- to the effect that slowdowns of traffic induced by any reason lead to less likelihood of accidents than normal traffic operations on roads.

Mr. Sutley mentioned monitor training and the costs, and the implication of his remarks were that these

would be a burden upon the County.

That is a cost which has been accepted by the applicant, and it would be obviously paid for long before the fence went up.

There is a question about where the material is stored. The answer from the applicant is it is not at the fairgrounds. If that is a major issue, we can go a little further.

Dr. Hedgepeth commented on his view of the uniqueness of the coastal area and talked about the National Science Foundation call for proposals asking, "Can you control your environment?"

The only response I can make to that is that if any State in the United States is more concerned about recreation or control of the coastal zone environment of California, I am not aware of it.

California has a SEQA which is a full operation. It has the Coastal Commission. As I read the requirement, other estuarine zones would be regulation, not ownership.

I think the basic question for Dr. Hedgepeth's concern about the interactions of a project such as the running fence with the area as a study area are, What effects would this project have, if approved, on the liability of that part of the coast as a study area? And I think every biologist who has been called upon in any capacity or by anyone in this study since the U.R.S. first started on the use permit has indicated that there is nothing particularly unique about this.

CHAIRMAN KJELDSEN: Just specifically, to home in on that, would that affect that area as a study area?

DR. COLE: I don't see how.

CHAIRMAN KJELDSEN: Thank you.

DR. COLE: And in summary of our responses to Dr. Hedgepeth, in today's testimony and, to the best of my knowledge, in his fourth correspondence he has still named no specific biological impact, no specific detrimental biological impacts of the fence as proposed in the coastal zone.

And that really is the substance of Dr. Lee's response, also.

Proceeding to Mrs. Raymond's comments, these went pretty fast; and I may have missed some.

She said that the fact that the EIR was quoted by her andwith no further statement on some of these points should not be neglected, and she is right.

These points should not be neglected when you are considering the use permit. They had nothing to do with the adequacy of the EIR. They are there. She accepts them.

She refers to the question of cable weights. I have answered that partially in my response -- I believe it was K.6 - to Mr. Raymond. Two experts -- Mr. Thomas and Mr. Fuller -- stand ready to answer any detailed questions about weights if you feel they are necessary.

Otherwise I think that response covered that.

I think Mr. Raymond asked, "How do we know what the weights will be per tire?"

We have a statement that they will be limited such that weights per tire will be less than those on ordinary pickup trucks and that the multi-axle vehicles will all carry flotation tires.

If you need, we stand ready to answer any questions.

Another point that Mrs. Raymond made, if I understand correctly, her contention is that the monitors will protect only the property of the ranchers across whose property the fence will go.

That is not so. The monitors will be posted at places where the potential is high for trespass, stoppages, and what have you.

If I understand the applicant's contention correctly, the Happy Acres will be one of those locations because it may be so tempting for trespass.

In a comment she made about the advertising promotional aspect of the applicant's operation, she mentioned casual visitors, people out driving who will be looking at the fence. Such people are not affected by advertising or promotion. They are there. Their numbers are assumed in the traffic calculations.

The advertising and promotion affects those people who specifically go to see the fence, travel to see it.

She mentioned the energy use and quoted the top numbers for gasoline and jet fuel consumption that we gave.

I have said this, I believe, in my responses; and I want to repeat that energy calculation was very, very much a worst-case analysis. It is assumed that every one of the

visitors we listed counted would make a special trip to see the fence; that they would not be driving somewhere else on the same day.

In the calculations of air travel, commercial air travel, we assumed that per passenger jet fuel usage, again as a worst-case, because of less special flights made for carrying people who want to view the fence, those flights would be going on anyway.

So in a way I am embarrassed about the numbers that came out because they are so high because of our attempt to be worst-case.

I think if one sat down and tried to figure out what percentage of this fuel is really chargeable, attributable to the running fence, it would turn out to be a very, very much smaller number.

Mrs. Raymond made another point about the subdivision, specific subdivision. I am not sure what she had in mind.

She cited the section on population and community characteristics which discussed only as background trend in the County as a whole, and I don't see the point in mentioning a specific subdivision as opposed to all the other potential subdivisions that may go in in the next one, two, five, or ten years.

She mentioned that 10,000 visitors came to see the Valley Curtain on the first day. I assume that was visitors and not cars, which would mean that figure is one-third of our peak Sunday number at 30 percent probabilities so that that number would be about what we would estimate

as a maximum for the early days of the project.

That number converged on one point, and the people who were involved in that report: we have one letter in the appendix exhibit that said there were no particular problems at this number. The number we are talking about will split over the whole network.

Mrs. Raymond asked what control monitors would have over trespassers who refused to leave. They can ask them to leave. If they don't, the monitors can call on the two-way system, call on the on-duty police people and have them there to take care of the problem.

Mrs. Raymond mentioned the rural residential nature of her area in connection with our statement about the view, and all we can do is reiterate that Happy Acres is an approved subdivision, and at full development there can be 10 homes between her and the view, between her and the fence route.

She mentions again that there are hazards because her home is at a viewpoint that we name. That is exactly what we said.

She mentioned that the dump traffic would increase greatly by September and that we use an April count which was the last count that the Public Works Department gave us on Monday.

Our number for Sunday all-day traffic on Meacham was 1300 vehicles on the dump road one-way. That is versus a 1500 number that Mr. Raymond quoted as having gotten as kind of, I think, a worst-case analysis for him. So the

numbers are very close together, and the difference would not affect our conclusions.

It was at this point that she mentioned the weight of cables, et cetera, and I have already responded to that one.

Mrs. Payne read into the record the circumstance on the Cotati letter against the proposal.

There was such a letter in our responses. I think nothing more need be said.

Coming to Mr. Ronald Raymond, he mentioned the Summary, Page 5, a five-fold increase in noise. That is a statement quoted from the EIR. It is a matter for your decision with respect to the use permit, not the adequacy of the EIR.

He again mentioned the cable weight. He mentioned fire runs of emergency vehicles. We have already tried to answer that with respect to your questions.

He mentioned an apparent conflict in the Draft EIR, statements about trashcans along stopping points and no points for stopping, et cetera.

What the Draft EIR attempted to do -- and probably we haven't made this clear to all readers -- is first state where the potential stopping points are, assuming there is no control, where it would be attractive for a motorist to pull over and stop to take a long look at the fence or take pictures of it. We then said that motorists would be permitted, presumably permitted to stop only at certain locations; and we specified along our road Type 2, and we

documented this with a map. I believe it was J.3 in the EIR.

Clearly if the decisions were made by the CHP and the Sheriff's Department that no stopping would be allowed on the narrow road, then there would be no point in putting trash containers at points along those roads. So we see no internal inconsistencies in our statement about stopping points and litter collection points.

Mr. Korty's comment: we thank him for his statement of praise for the firm.

He asked about the costs, certain costs to the County; and I think those questions have been covered very well by your questions and the responses to them.

He asked questions about the bonding and the assets, and these have been covered.

He raised the issue of the Williamson Act agreement and raised the question of broader issues of land use in open space, et cetera. And all I can do, since the question is really the same as that of Mr. Raymond, is state this: the Williamson Act contract have two aspects. This is my understanding based on conversations with Mr. Fish.

One is whether the current landowners' agreement with the County under the Williamson Act provisions prohibit this proposed use; and the answer, as it was the opinion of a member of County Counsel's staff, there is no such provision.

The second issue was the detrimental effects on the preservation of agriculture in the County; and we have

answered that in the growth-inducing impact summary of the report and the economic section by saying it appears that the project will not induce growth beyond that expected at current rates with the existing pressures for developmental growth.

Finally, according to my notes, he mentioned the fence as a form of visual pollution inflicted on the whole community, and we again say this is a matter of judgment. And we have tried to stay away from it.

CHAIRMAN KJELDSEN: Does that conclude your remarks?

DR. COLE: It concludes the notes I have on comments.

CHAIRMAN KJELDSEN: Are there any final questions that the Board has before we close the public hearing?

COMMISSIONER MEESE: I would like to ask one brief question. I think it should be answered Yes or No.

As far as the adequacy portion of it, it is a pretty comprehensive traffic study; but apparently one of your basic assumptions is there would be no attempt to maximize visitors to the fence. That is one of the assumptions that you used.

For some reason subsequently there was a determination to attempt to maximize visitation to the fence. What impact would that have on your study?

DR. COLE: As I recall the way in which these traffic figures were developed, they are independent of that consideration.

COMMISSIONER MEESE: Thank you.

CHAIRMAN KJELDSEN: Your second question, though, wasn't answered.

What impact would it have if visitor viewing was maximized?

Maybe I missed the point.

DR. COLE: I think our traffic numbers are based on the assumption that there would be attempt to maximize.

CHAIRMAN KJELDSEN: Are there any questions?

If not, I will close the public hearing.

We are open for discussion among the Board.

The chair is ready for a motion.

COMMISSIONER MEESE: Mr. Chairman, I had a few reservations, and they were basically rather minor; so I would move that we certify the EIR adequacy.

COMMISSIONER SWENSON: Second.

COMMISSIONER TORR: Does it include all the additions?

CHAIRMAN KJELDSEN: Yes, it automatically does.

We have a motion to certify the adequacy of the EIR. Discussion on that motion?

(No response.)

It's been moved and seconded. Hearing no discussion, will you call the roll?

STAFF MEMBER JOHNSON: Commissioner Realy?

COMMISSIONER REALY: Aye.

STAFF MEMBER JOHNSON: Commissioner Swenson?

COMMISSIONER SWENSON: Yes.

STAFF MEMBER JOHNSON: Commissioner Meese?