MINUTE ITEM
This Calendar Item No. 18
was approved as Minute Item
No. 18 by the State Lands
Commission by a vote of 3
to 0 at its 1-21-88
meeting.

CALENDAR ITEM

A 2, 9 18 01/21/88
W 24026 PRC 7155
S 2, 3 Lane

GENERAL PERMIT - PUBLIC AGENCY USE

APPLICANT: Sonoma County Department
of Public Works
575 Administration Drive, Room 117A
Santa Rosa, California 95401

AREA, TYPE LAND AND LOCATION:
A 0.053-acre parcel of tide and submerged land in Estero Americano near Valley Ford, Marin and Sonoma counties.

LAND USE: Replace and maintain a bridge crossing.

TERMS OF PROPOSED PERMIT:
Initial period: 49 years beginning February 1, 1988.

CONSIDERATION: The public use and benefit; with the State reserving the right at any time to set a monetary rental if the Commission finds such action to be in the State's best interest.

BASIS FOR CONSIDERATION:
Pursuant to 2 Cal. Adm. Code 2003.

APPLICANT STATUS:
Applicant is owner and permittee of upland.

PREREQUISITE CONDITIONS, FEES AND EXPENSES:
Filing fee and processing costs have been received.

STATUTORY AND OTHER REFERENCES:

A. P.R.C.: Div. 6, Parts 1 and 2; Div. 13.

B. Cal. Adm. Code: Title 2, Div. 3; Title 14, Div. 6.

AB 884: 04/14/88.

OTHER PERTINENT INFORMATION:

1. The purpose of the proposed project is to replace an old structurally unsafe crossing over Estero Americano with a new bridge. Slaughterhouse Road, of which the bridge crossing is a segment, serves as local access to Valley Ford from outlying agriculture areas.

2. The annual rental value of the site is estimated to be $50.

3. This activity involves lands identified as possessing significant environmental values pursuant to P.R.C. 6370, et seq. Based upon the staff's consultation with the persons nominating such lands and through the CEQA review process, it is the staff's opinion that the project, as proposed, is consistent with its use classification.

4. A Negative Declaration was prepared and adopted for this project by Sonoma County. The State Lands Commission's staff has reviewed such document and believes that it complies with the requirements of the CEQA.

APPROVALS OBTAINED:

United States Army Corps of Engineers, Department of Fish and Game, and California Coastal Commission.

FURTHER APPROVALS REQUIRED:

None.

EXHIBITS:

A. Land Description.
B. Location Map.
C. Negative Declaration.

(CALENDAR ITEM NO. 13 CONT'D)

IT IS RECOMMENDED THAT THE COMMISSION:

1. FIND THAT A NEGATIVE DECLARATION WAS PREPARED AND ADOPTED FOR THIS PROJECT BY SONOMA COUNTY AND THAT THE COMMISSION HAS REVIEWED AND CONSIDERED THE INFORMATION CONTAINED THEREIN.

2. DETERMINE THAT THE PROJECT, AS APPROVED, WILL NOT HAVE A SIGNIFICANT EFFECT ON THE ENVIRONMENT.

3. AUTHORIZE ISSUANCE TO SONOMA COUNTY DEPARTMENT OF PUBLIC WORKS OF A 49-YEAR GENERAL PERMIT - PUBLIC AGENCY USE BEGINNING FEBRUARY 1, 1988; IN CONSIDERATION OF THE PUBLIC USE AND BENEFIT, WITH THE STATE RESERVING THE RIGHT AT ANY TIME TO SET A MONETARY RENTAL IF THE COMMISSION FINDS SUCH ACTION TO BE IN THE STATE'S BEST INTEREST; FOR REPLACEMENT AND MAINTENANCE OF A BRIDGE CROSSING ON THE LAND DESCRIBED ON EXHIBIT "A" ATTACHED AND BY REFERENCE MADE A PART HEREOF.

EXHIBIT "A"

LAND DESCRIPTION W 24026

A strip of submerged land 30 feet wide in the bed of Estero de Americano, Marin County and Sonoma County, California, the centerline of said strip being described as follows:

BEGINNING at Engineers Station 12+50 P.O.T. as shown on the map entitled "Slaughterhouse Road Right-of-Way and Monument Map" dated June 1987 and on file in the Office of the Sonoma County Surveyor; thence from said point of beginning N 26°07'24" W 150 feet to the end of the herein described line.

EXCEPTING THEREFROM any portion lying landward of the ordinary low water marks of said Estero Americano.

END OF DESCRIPTION

PREPARED NOVEMBER 3, 1987 BY BIU 1.

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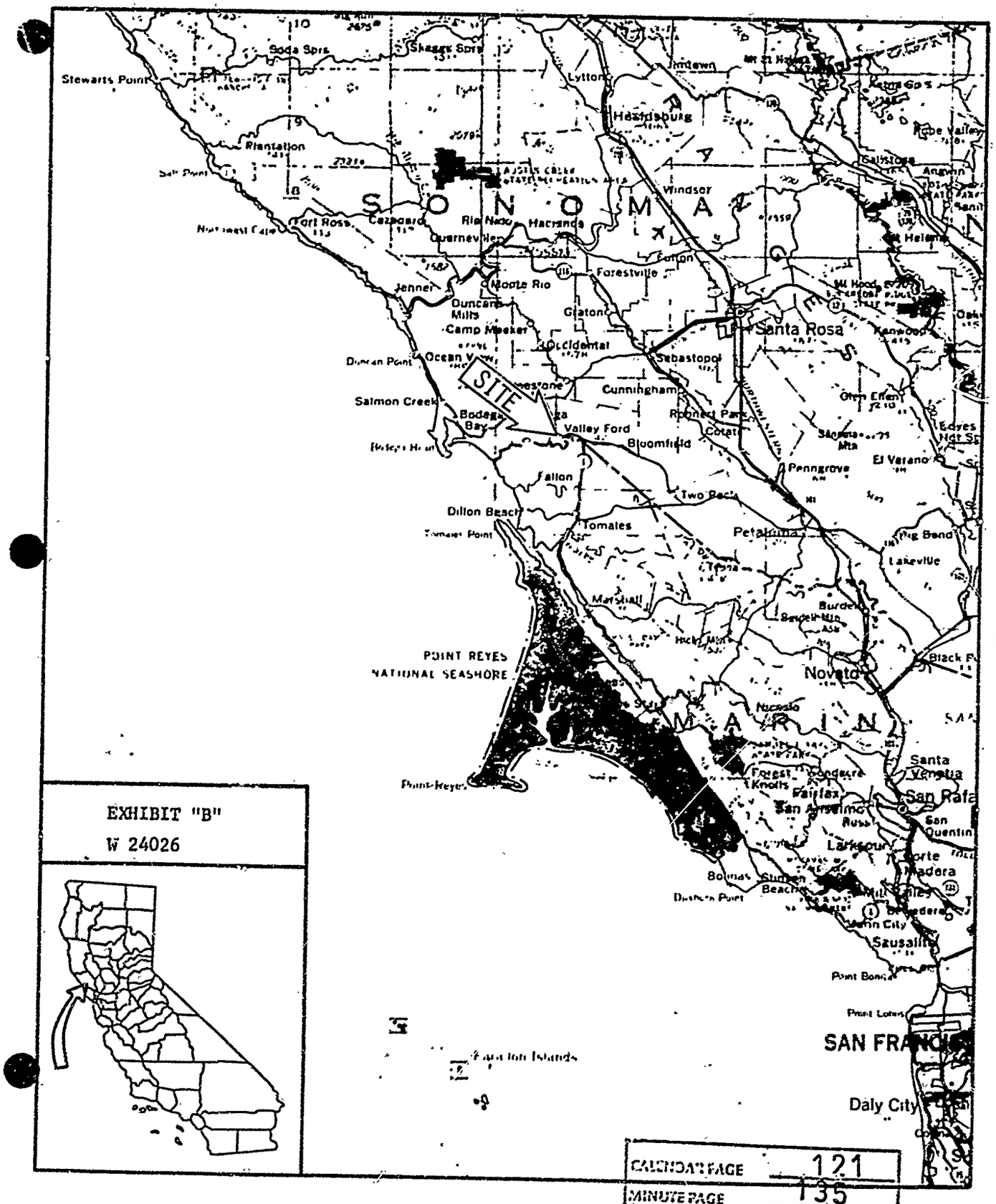

EXHIBIT "B"
W 24026

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W24026
EXHIBIT "C"

NEGATIVE DECLARATION

DESCRIPTION OF PROJECT

Sonoma County proposes to replace the Slaughterhouse Road bridge near the town of Valley Ford. The existing bridge is a temporary structure providing for local access to Highway 1. The purpose of this project is to construct a permanent bridge which will safely support two lanes of traffic. Construction is slated for 1988.

FINDING

The Sonoma County Environmental Review Committee finds and determines on the basis of an Initial Study prepared pursuant to Section 15063 of the California Administrative Code that the project as described above will have no substantial adverse impact on the environment. The following mitigation measures are included in the project:

SUMMARY OF MITIGATION MEASURES

1. Sheet erosion of soil: exposed soils on fill slopes will be hydromulched with a grass/clover seed mix to conserve soil and minimize the amount of sediment entering Americano Creek.

2. Gully erosion of soil: the banks of an actively eroding gully will be stabilized by lining with rock rip-rap. This measure will conserve soil, prevent sedimentation in Americano Creek and stop the headwall erosion which is threatening an adjacent vernal pool. Blackberry vines hindering the flow of runoff through the culvert at the north end of Slaughterhouse Road will be cleared to improve drainage efficiency.

3. Airborne dust: a water truck will be maintained on-site to regularly spray water onto exposed soils.

4. Loss of riparian vegetation: native riparian species will be planted at appropriate locations on both sides of the bridge, in the gully and areas of the fill slope.

5. Increased noise levels: to minimize the effects of increased noise levels during construction, work activities will be limited to take place between the hours of 7 am and 7 pm weekdays; 9 am t 7 pm weekends and holidays.

INITIAL STUDY

The Initial Study was prepared by the Sonoma County Public Works Department. A copy of this Initial Study may be obtained at the Sonoma County Public Works Department, Environmental Section, 575 Administration Drive, Room 117A, Santa Rosa, CA.

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LIST OF FIGURES

INTRODUCTION

The public Works Department proposes to replace Slaughterhouse Road Bridge (#27C-123) near Valley Ford (Figure 1). The existing bridge is a temporary structure which provides local access to Valley Ford. The purpose of this project is to construct a permanent bridge which will safely support two lanes of traffic. Construction is planned to occur in 1988.

NEED FOR THE PROJECT

Existing Facility. The existing bridge is a timber stringer structure 16' wide and 58' long which spans Americano Creek at the Sonoma-Marin County line. The old timbers are structurally deficient. A metal Bailey bridge has been placed over the existing wood structure as a temporary measure to keep the crossing open. The resulting narrowness made it necessary to post the bridge as a one-lane facility.

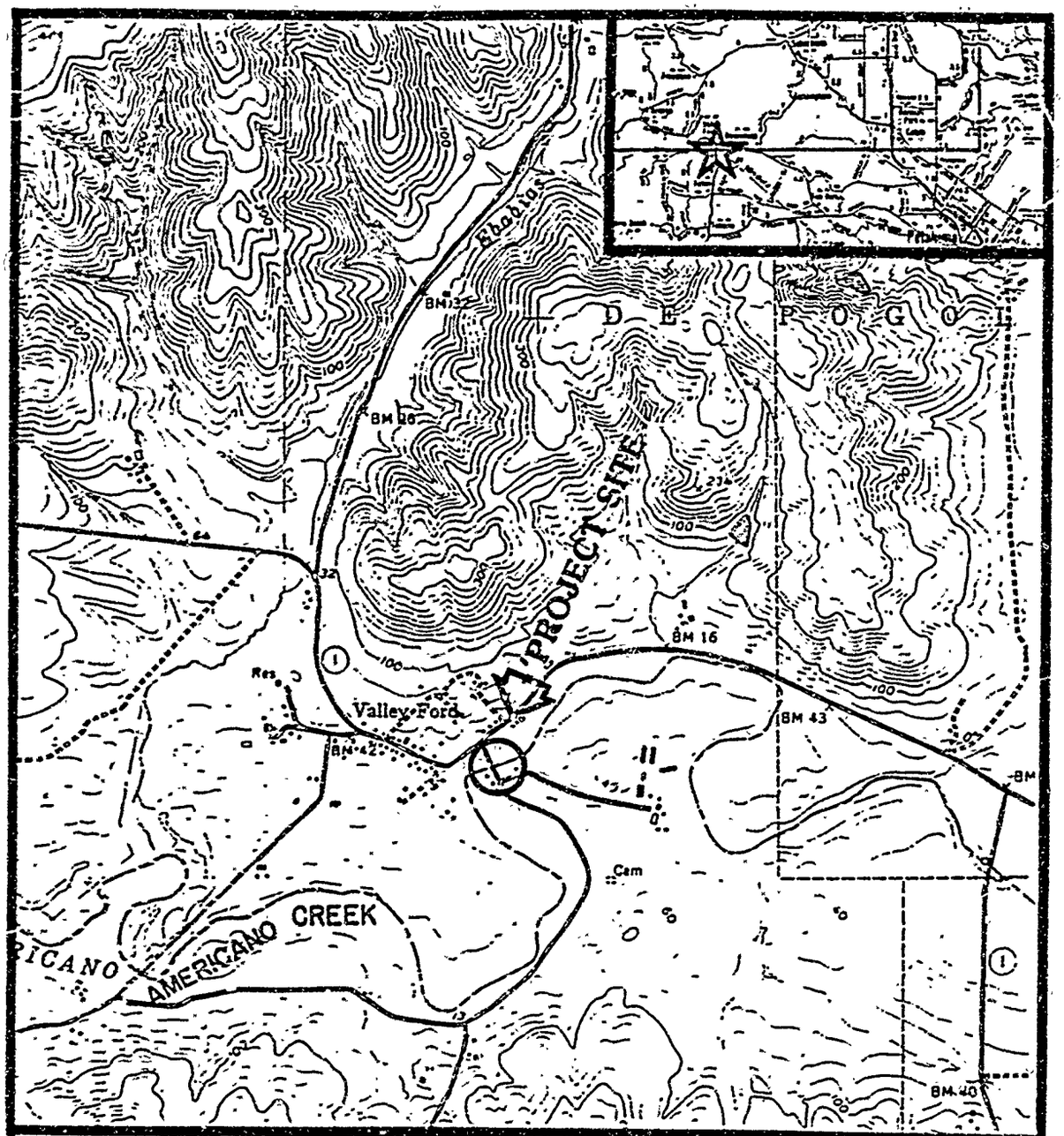
Deficiencies. The Bailey bridge placed over the old bridge has reduced the functional width of the bridge to 10'. At present, the bridge can sustain all legal loads, but no permit loads. The bridge provides a necessary link for local dairy operations and rural residents attempting to reach Valley Ford. In the event of closure, the bypass will be three miles (Figure 1). The bridge requires replacement because the Bailey bridge should be reserved for emergency situations, the old bridge is unsafe and the detour is too circuitous for practical access.

Scope of Study. This study examines the effects of construction activities on the natural and cultural resources of parcels adjacent to Slaughterhouse Road. Findings conform to the mandates of CEQA as well as required Federal and State laws and policies (Endangered Species Act, Section 106 of Historic Properties Act, Section 404 of Clean Water Act, Executive Order 11990 - Wetlands Protection, Fish and Game Codes 1601-1606: Streambed Alteration Agreement, and the Farmland Protection Policy Act).

PROJECT DESCRIPTION

Proposed Facility. The proposed bridge would be a concrete slab type with a clear width of 24 feet and a length of 70 feet. The bridge will accomodate two lanes of traffic. Approaches will be widened to 28 feet for 100 feet on both sides of the bridge. Sixty-two feet of guard rail will line the road on both sides of the bridge. The new bridge will be constructed in the same location and at approximately the same elevation as the old bridge. Approximately 0.25 acres of right-of-way would have to be purchased. Figure 2 illustrates the project limits.

Funding and Phasing. Construction is planned for 1988. The Federal Highway Administration is providing 80% of the funding with the County adding the remaining 20%. Total cost of the project is estimated at



SLAUGHTERHOUSE ROAD BRIDGE PROJECT SITE

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FIGURE 1 LOCATION MAP

SCALE 1:24000

SOURCE: USGS VALLEY FORD QUAD

PUBLIC WORKS DEPT. MEW

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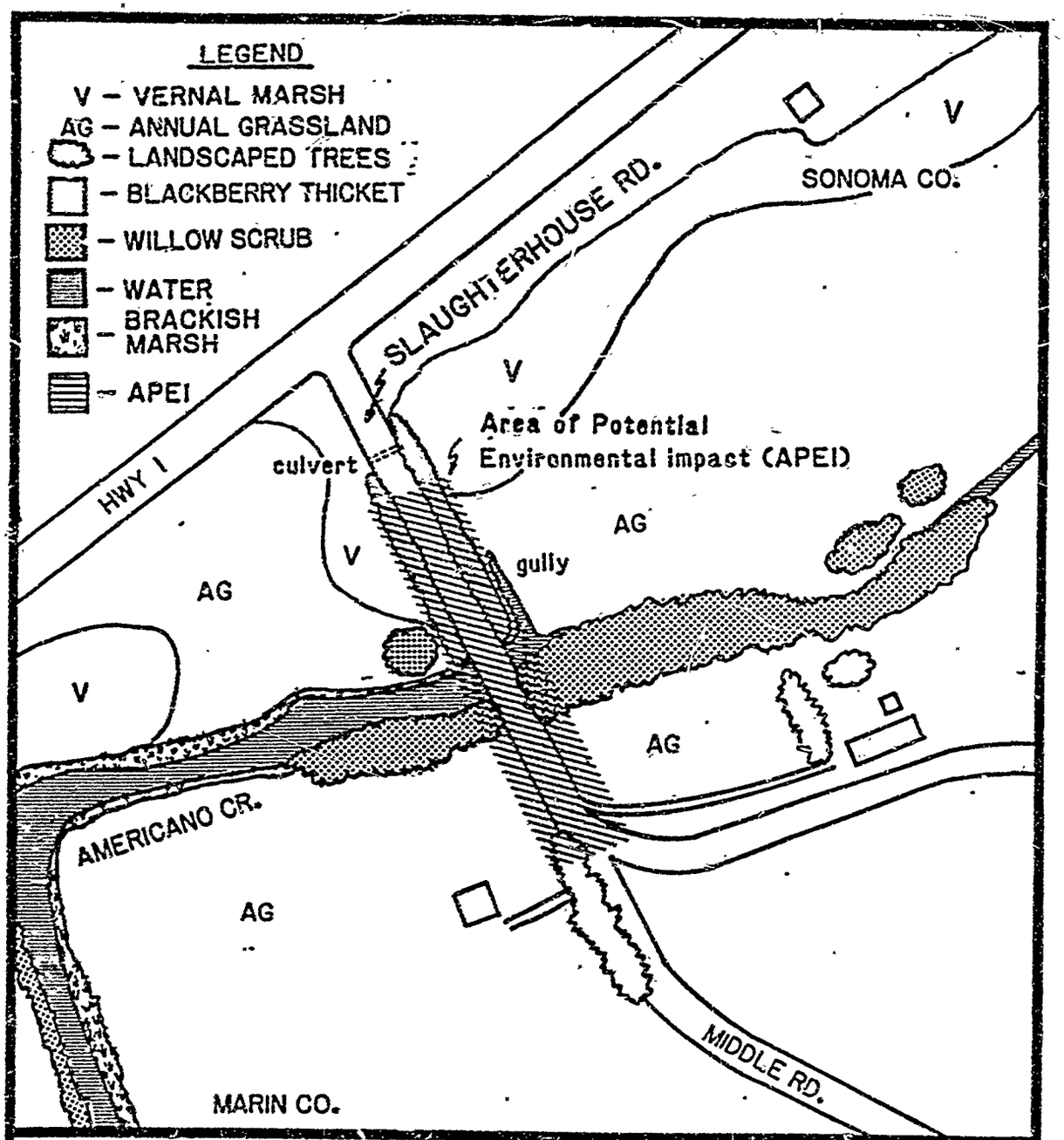

SLAUGHTERHOUSE ROAD BRIDGE

FIGURE 2
PROJECT SITE

SCALE: 1"=125'
SOURCE: AERIAL PHOTO 1"=500'
PUBLIC WORKS DEPT. MEW

$164,000.00. The County does not hold title to any of the land the road is built on. All of the land within the proposed right-of-way would have to be purchased from the existing landowners.

PROJECT ALTERNATIVES

No alternatives besides "no project" have been proposed. The no project alternative would result in the continued use and deterioration of the existing substandard structure. In the event the "no project" alternative is chosen, the crossing may be closed for safety reasons due to ongoing structural deterioation of the bridge. In this case, the route will not be available, causing local drivers to use alternative routes permanently.

A detour will have to be utilized for drivers which routinely used Slaughterhouse/Middle Road for access to Highway 1. Those trying to reach Valley Ford and points west of the closed road will have to take Marsh Road to Franklin School/Estero Road, thereby connecting with Highway 1 near Valley Ford. This could add three additional miles for the homes on the Marin County side of the bridge (Middle Road).

RELATED PROJECTS

There are no corollary projects planned upon which the completion of this project is dependent.

PROJECT REVIEW

Hearings- Sonoma County Environmental Review Committee (ERC)

Permits - Streambed Alteration Agreement (Fish and Game): May need two permits - one for geologic testing and one for construction.

- Army Corps of Engineers (COE) Section 404 Permit. Required for disposal of fill material in surface waters and wetlands.

Review - Sonoma County Planning Director. Determination of General Plan and Coastal Plan consistency (65402).

- CalTrans and the Federal Highway Administration must review and approve the following reports before funding can be approved:

Historic Properties Survey Report
Biological Report
Location Hydraulic Study

Approval- The Sonoam County Board of Supervisors is the lead agency under CEQA, and will consider project approval after completing environmental review.

Marin County must adopt a Negative Declaration and enter into agreement with Sonoma County.

ENVIRONMENTAL SETTING

Hydrology. The project site is within the Americano Creek drainage basin which empties into the Pacific Ocean via the Estero Americano, a coastal estuary. It is a relatively small drainage basin with the main stem being a second order stream flowing from east to west. The first order tributaries make a series of parallel north or south flowing streams draining the hills above the valley. The stream exhibits intermittent flow less than a mile upstream of the project site. Summer flows at the bridge are very sluggish.

Ground elevations adjacent to the bridge are approximately seven to eight feet above mean sea level. The creek is subject to infrequent salt water influence during very high tides when the estuary mouth is open. Water quality appears to be in a deteriorated state largely due to turbidity from accelerated erosion in the headwaters and eutrofication caused by dairy farm wastes. The water table at the project site is within three to five feet of the surface (Miller, 1972).

Geology. The predominant rock unit in the project vicinity is comprised of the Wilson Grove formation (formerly the Merced), a fine grained, massive, marine sandstone (Travis, 1952). The valley bottoms are composed of Holocene alluvium which has aggraded upstream from the valley mouth in response to the recent rise in sea level. A number of northwest-souheast trending faults traverse the general region.

Seismic Hazards: No fault traces pass through the project vicinity making the project site unlikely to experience surface rupture. However, the presence of the San Andreas fault to the west, and others to the east present the potential for the occurrence of liquifaction and intense ground shaking.

Seismicity.

The San Andreas Alquist-Priolo Study Zone paralleling the coast comes within 4.3 miles of the project site (State Geologist, 1974). This fault, which is potentially active because of Holocene movement, has a maximum credible Richter magnitude of 8.5. Other faults within a ten mile radius of the project site are the Joy Woods, Americano Creek, Bloomfield and Tolay faults. These faults show evidence of movement within the Quarternary (ending 2 million years ago), but not during Holocene time. Although they do not

qualify as potentially active using Alquist-Priolo criteria of movement within 10,000 years, they can be considered possibly active (Wagner and Bortugno, 1982).

Although no strong earthquakes have occurred in the project vicinity recently, epicenters for two small earthquakes have occurred within a mile radius of the project site during the period of time from 1910 to 1973 (Huffman and Armstrong, 1980). Richter magnitudes were 3.0-3.9 for the one to the south, and 1.0-1.9 for the one to the east.

Ground Shaking.

Unconsolidated alluvium presents a seismic shaking hazard which is directly related to the thickness of alluvium and the degree of water saturation. This hazard poses the greatest threat from an earthquake event at the project site. Alluvial thickness is estimated to be between zero and 100 feet (results of a geologic study will provide actual depths). The water table in these sediments is near the surface during the wet season and within three feet during typical summers (Miller, 1972). An earthquake similar to the 1906 event (8.25 on the Richter scale) could result in a rating of 10 on the Modified Mercalli Intensity Scale. At this intensity, some well built bridges could be damaged (Huffman and Armstrong, 1980).

Liquifaction.

Liquifaction is a common occurrence in water-saturated, sandy deposits subjected to strong earthquake shaking, and is the proximate cause of low angle flows and lateral spreading landslides. Since the potential for liquifaction varies directly with the distribution of clay-free granular materials and groundwater within 50 feet of the surface (Huffman and Armstrong, 1980), the project site has all the components necessary for liquifaction to possiblly occur. An earthquake event of the appropriate intensity could overcome the shear strength of the saturated alluvial deposits and precipitate earthflows downslope toward Americano Creek.

Soils and Important Farmlands. Soils at the project site belong to the Blucher series which is an alkaline, poorly drained and frequently flooded fine sandy loam occurring on 0-2 % slopes with flood overwash present in the surface horizons (Miller, 1972). The water table is at a depth of 3.5 to 5 feet. The Soil Conservation Service (SCS) determined that 0.077 acres of prime and unique farmland will be converted by the project (SCS, 1987). In their rating, SCS did not indicate the amount of farmland to be converted was a significant loss. Erosion impacts will be minimized by instituting measures in Mitigation #'s 1 and 2.

Flora and Fauna. Plant communities found at the project site consist of riparian willow scrub, non-native annual grassland, vernal marsh and brackish marsh. Figure 2 delineates the extent of these communities in the project area. The California Natural Diversity Data Base (CNDDB)

has assigned wetlands, such as vernal pools, vernal marshes, brackish marshes and riparian communities a high priority status because of their inherent rarity, their high value as critical wildlife habitat and their high potential as rare and endangered species habitat (Holland, 1987). A Biologic Report prepared for CALTRANS review provides details concerning rare and endangerd species and wetlands (Waaland, 1987) and is summarized here.

The site is largely surrounded by the annual grassland community, most of which is subject to grazing. A vernal marsh community forms a mosaic with annual grassland. The effects of grazing by cattle has changed much of the species composition in vernal swale and grassland communities. A well developed riparian willow scrub community and degraded brackish marsh occur within the stream channel. Wetland habitats, such as stream channel, vernal marsh and brackish marsh are of most importance to wildlife at the project site. Wetlands in the project vicinity provide valuable habitat for shorebirds, Tiger salamanders, tree frogs and a host of other species utilizing the wetland resource. The annual grassland is of lower wildlife value because of its widespead occurance, grazing and uniformity of habitat structure. Impacts to riparian vegetation and vernal marsh will be compensated for by the measures in Mitigation #'s 2 and 4.

No federal or state listed rare or endangered species were observed during field surveys conducted in 1986 and 1987 (Waaland, 1987). The site is within the range of two rare plants, Sonoma alopecurus (Alopecurus aequalis sonomensis) and showy Indian clover (Trifolium amoenum), and two rare animals, the California freshwater shrimp (Synacaris pacifica) and the California brackishwater snail (Tryonia imitator).

Showy Indian clover is not likely to occur because of heavy, continuous grazing by cattle and alkaline soils. Sonoma alopecurus habitat is marginal along the creek because of apparent alkaline conditions. Vernal marsh areas, which are more suitable as habitat, have been subject to the detrimental effects of heavy grazing. The potential for this plant occuring is very low. The California freshwater shrimp is not likely to occur because the creek is subject to infrequent tidal influence and substrate conditions are sub-marginal. The California brackishwater snail is not likely to occur because Americano Creek at the project site does not provide a subtidal, brackish marsh or lagoon habitat (Kellog, 1980).

A population of Lobb's aquatic buttercup (Rannunculus Lobbii) was found in a vernal pool north of Slaughterhouse Road in Sonoma County (Figure 2). This species is a California Native Plants Society List 4 plant that is uncommon but not currently considered to be rare or endangered (Smith and York, 1984). The pool in which it occurs will be protected by measures in Mitigation # 2.

Noise. The most significant noise source in the project vicinity, other than an occaisional vehicle crossing Slaughterhouse Road bridge, is the traffic on Highway 1. In general the project site is a quiet area

subject to noises typical of a rural setting. During construction, noise levels for the nearst residences (the nearest being approximately 200 feet south of the bridge in Marin County) will be increased significantly. This impact will be minimzed by restricting construction activity to the hours between 7 am and 7 pm (see Mitigation # 5). After construction the ambient noise level will return to the existing conditions.

Air Quality. The rural character, lack of any localized industrial pollution sources and the prevalent onshore winds from the nearby coast are factors responsible for maintaining good air quality in the project vicinty. Dust may become a problem during construction but will be minimized by directing the contractor to frequently spray water or other dust pallitive on exposed soils. (See Mitigation # 3).

CULTURAL SETTING

Land Use. The extensive grasslands in the area are used by local ranchers for grazing beef and dairy cattle. Valley Ford serves as a commercial center for the ranchers and rural reidences which are clustered around the town and along Highway 1. At the project site, right-of-way will have to be acquired in four parcels. The two in Sonoma County are used as grazing land (although one is currently inaccessible to cattle). The remaining two parcels are in Marin County and are used as rural residences.

Public Plans. The project site is within the boundaries of the Coastal Zone. Parcels at the project site within Sonoma County jurisdiction have been zoned as "Rural Residential" (one unit per acre minimum lot size) in the Sonoma County General Plan Update. Agriculture is a secondary use for this zoning category. This designation is consistent with the Sonoma Coastal Plan. In addition, Highway 1 is planned as a Scenic Highway Corridor and Americano Creek is planned as a Natural Riparian Corridor. General Plan policies state that projects subject to Section 65402 shall minimize vegetation removal for necessary stream crossings and construction activities shall not divert any streamflow, nor result in increased bank instability or erosion.

Parcels under jurisdiction of Marin County are zoned for agricultural protection in the Marin County General Plan. However, they are de facto rural residential because their acreages are too small to meet agricultural zoning criteria. These designations were developed to be consistent with Marin's Local Coastal Plan.

Traffic and Circulation. The bridge links local residents and ranch operators with State Highway 1 to the north, and provides access to Whitacker Bluff Road and the town of Tomales to the south. Highway 1 provides access to the local commercial center in nearby Valley Ford and the Bodega area to the west. To the east Highway 1 leads to County roads providing access to Sebastopol and Petaluma.

Archeological and Historical. Ethnographic information indicates this area was historically used and controlled by the Coast Miwok Indians. The Coast Miwok Village, Ewapaii, was located on the north side of Americano Creek, immediately south of Valley Ford and west of the project area. The Estero Americano provided the Coast Miwok with estuarine food resources and access to both Tomales and Bodega bays. Both bays provided clams for manufacturing clamshell disk beads. No ethnographic sites were found in the project area (Alvarez, 1986).

Historic information indicates historic and prehistoric inhabitants crossed the Estero Americano at or near the bridge site, hence the town name "Valley Ford." A structure located on the west side of the bridge is indicated on the T.H. Thompson (1877) map of Sonoma County as a school. This structure which is now a house is about 200' from the bridge and not within the area of potential environmental impact.

INITIAL STUDY ENVIRONMENTAL CHECKLIST

The following checklist has been adapted from Appendix I of the State CEQA Guidelines. If a question is answered "YES" or "MAYBE" it means the the impact described will or may occur as a result of the proposed project if no mitigation measures are included. Discussion of the impact is included in this checklist.

1. EARTH Will the project result in:

a. Unstable earth conditions or changes in geologic substructures? NO

There will be no significant cuts or fills.

b. Disruption, displacement, compaction or overcovering of the soil? YES

The fill required to widen embankments would cover 0.025 acres (1089 square feet) of surface area. The equipment storage area will also subject soils there to compaction. See Mitigation # 1.

c. Changes in topography or ground relief features? YES

See 1b. Also, a large gully adjacent to the road will be partially filled and rip-rapped to prevent further erosion. See Mitigation # 2.

d. The destruction, covering or modification of any unique geologic or physical feature? NO

e. Any increase in wind or water caused erosion of soils on or off the project area site? YES

Exposed, fresh fill will be subject to temporary increases of water erosion. Areas subject to erosion will be hydroseeded with a clover/grass mix. See Mitigaton # 1.

f. Changes in deposition or erosion of beach sands, or changes in siltation, deposition or erosion which may modify the channel of a river, stream or bed of the ocean or any bay, inlet or lake? YES

Minor modifications of the stream channel will take place in the immediate vicinity of the bridge, but the area of the new channel cross-section will be larger. Sediments resulting from erosion of exposed soils and changes in channel morphology will be deposited

downstream. There is a potential for minor increases of siltation in the Estero Americano, an estuary considered to be critical habitat (CNDDB, 1987). However, these increases will be not add significantly to the sediment load originating in the heavily grazed watershed which is presently undergoing accelerated erosion. Long-term erosional effects will be avoided by installing rip-rap along the channel and gully banks and hydroseeding. See Mitigation #'s 1 and 2.

g. Exposure of people or property to geologic hazards such as earthquakes, landslides, mudslides, ground failures, or similar hazards? NO

A geologic investigation will be undertaken to gather data ensuring adequate bridge design.

2. AIR Will the project result in:

a. Substantial air emissions or deterioration or ambient air quality? NO

Construction activities will cause some dust. Water or other dust pallitive will be sprayed as necessary. See Mitigation # 3.

b. The creation of objectionable odors? NO

c. Alteration of air movement, moisture or temperature, or any change in climate, locally or regionally? NO

3. WATER Will the project result in:

a. Changes in currents, or the course or direction of water movements, in marine or fresh waters? MAYBE

Changes in the dimensions and locations of structural elements may alter currents around the new bridge.

b. Changes in the absorption rates, drainage patterns, of the rate and amount of surface water runoff? YES

There will be minor increases in the area of impermeable surface due to road widening. A culvert connecting a swale near the north end of Slaughterhouse Road may be impacted if an adjacent gully continues to erode or natural drainge patterns are alterred by construction activity See Mitigation # 2.

c. Alterations to the course of flow of flood waters? NO

The new bridge and approaches will have a configuration similar to that existing. The bridge deck will be 0.7' lower than the existing, and

downstream. There is a potential for minor increases of siltation in the Estero Americano, an estuary considered to be critical habitat (CNDDB, 1987). However, these increases will be not add significantly to the sediment load originating in the heavily grazed watershed which is presently undergoing accelerated erosion. Long-term erosional effects will be avoided by installing rip-rap along the channel and gully banks and hydroseeding. See Mitigation #'s 1 and 2.

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A geologic investigation will be undertaken to gather data ensuring adequate bridge design.

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b. The creation of objectionable odors? NO

c. Alteration of air movement, moisture or temperature, or any change in climate, locally or regionally? NO

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Changes in the dimensions and locations of structural elements may alter currents around the new bridge.

b. Changes in the absorption rates, drainage patterns, of the rate and amount of surface water runoff? YES

There will be minor increases in the area of impermeable surface due to road widening. A culvert connecting a swale near the north end of Slaughterhouse Road may be impacted if an adjacent gully continues to erode or natural drainge pattems are alterred by construction activity See Mitigation # 2.

c. Alterations to the course of flow of flood waters? NO

The new bridge and approaches will have a configuration similar to that existing. The bridge deck will be 0.7' lower than the existing, and

the bridge soffit will be 1.2' higher. The water opening will be slightly larger (1704 square feet compared to the existing 1678).

The new bridge will not significantly change the flow of flood waters. The larger water opening should result in slightly less backwater during floods. Consequently, upstream flood elevations should be slightly lower and downstream elevations slightly higher. These changes will be too small to be noticeable.

d. Change in the amount of water in any body of water? **YES**

A small embayment of Americano Creek created by a gully eroding into the stream channel will be partilly filled as a result of road widening. The surface area of this water will be diminished by no more than 766.5 square feet (0.02 acre) by fill. However, the existence of this water is a direct result of recent accelerated erosion of a the gully which was formed by a ditch diverting storm runoff to the creek and cattle using the gully for creek access. Therefore, the water in the gully is an artificial feature which has been highly degraded. The measures in Mitigation # 2 will improve the situation by stabilizing the gully.

A vernal pool north of Slaughterhouse Road in Sonoma County will be protected by not altering the existing drainage patterns and placing rock in an adjacent gully to prevent threatening headwall erosion.

e. Discharge into surface waters, or any alteration in surface water quality, including but not limited to temperature, dissolved oxygen or turbidity? **YES**

There will be an insignificant amount of fill material and suspended solids added as a result of construction. See Mitigation # 1.

f. Alteration of the direction or rate of flow of ground waters? **NO**

g. Change in the quality of ground waters, through direct additions or withdrawals, or through interception of an aquifer by cuts or excavations? **NO**

h. Substantial reduction in the amount of water otherwise available for public water supply? **NO**

i. Exposure of people or property to water related hazards such as flooding or tidal waves? **NO**

j. Significant changes in temperature, flow or chemical content of surface thermal springs? **NO**

4. PLANT LIFE Will the project result in:

a. Change in the diversity of species, or numbers of any species of plants (including trees, shrubs, grass, crops, microflora and aquatic plants? NO

There will be a reduction in the number of individual plants adjacent to the reconstructed bridge and road. Several arroyo willows (Salix lasiolepis) and a thicket of Himilaya berry (Rubus procerus) will be eliminated. However, there is no threat to the existence to any of these species because they are common and widespread. Loss of riparian habitat will be compensated for by planting with willows. See Mitagation # 4.

b. Reduction in numbers of unique, rare or endangered species of plants? MAYBE

Showy Indian clover (Trifolium amoenum) and Sonoma alopecurus (Alopecurus aequalis sonomensis) are reported from the project vicinity and have the potential to occur in habitats at the site (CNDDB, 1987). Field surveys conducted as part of a Biologic Report (Waaland, 1987) indicated no rare or endangered plants occur in the impact area. However, Lobb's aquatic buttercup (Rannunculus Lobbii) occurs in a vernal pool north of Slaughterhouse Road in Sonoma County. This pool will be protected by not altering the drainage patterns in the area and placing rock in a gully to prevent threatening headwall erosion. See Mitigation # 2.

c. Introduction of new species of plants into an area, or in a barrier to the normal replenishment of existing species? NO

d. Reduction of any acreage of an agricultural crop? YES

An insignificant areage of pasture land will be lost.

5. ANIMAL LIFE Will the project result in:

a. Change in the diversity of species, or numbers of any species of animal (including birds, land animals, reptiles, fish and shell fish, benthic organisms, insects or microfauna)? YES

There may be a small decline in the number of nesting and feeding birds at the site due to loss in Himilaya berry thicket and riparian willow scrub habitat (Waaland, 1987). There may be a temporary loss of numbers of fish and benthic organisms in the stream where construction occurs. However, there is no threat to the existence to any of these species because they are common and widespread. See Mitigation # 4.

b. Reduction of the number of unique, rare or endangered

species of animals? MAYBE

The California freshwater shrimp (Syncaris pacifica) historically occurred in the the coastal streams of Sonoma County. A field survey by Bill Cox (1987), a DFG aquatic biologist, resulted in an assessment of Americano Creek as being sub-marginal habitat for the shrimp. He concluded the liklihood of occurance to be very low.

Americano Creek is within the historical range of the California brackishwater snail (Tryonia imitator), a federal candidate species (Kellogg, 1980). Analysis of benthic samples did not reveal any individuals of this species as being present in the creek (Kellogg, 1987).

c. Deterioration to existing fish or wildlife habitat? YES

Construction activities will result in the loss of 3,200 square feet (0.07 acre) of riparian willow scrub habitat and 790 square feet (0.02 acre) of Himilaya berry thicket. A temporary decrease in benthic and stream habitat will occur during, and for a short time after, construction. There may be a small amount of sedimentation in the estuarine habitat at Estero Americano.

6. NOISE Will the project result in:

a. Increases in existing noise levels? YES

There will be a temporary increase of noise levels during construction, especially from pile driving. The nearest receptors are within 300 feet of the project, the nearest being 200 feet distant. These impacts will be ameliorated by limiting the hours of operation. See Mitigation # 5.

b. Exposure of people to severe noise? NO

7. LIGHT & GLARE Will the project produce new light and glare? NO

8. LAND USE Will the project result in:

a. A substantial alteration of the present or planned land use of an area? NO

b. A loss of Prime Agricultural land or lands from a Timber Production Zone? NO

Farmlands in the vicinity are mapped as either being of "local importance" or "grazing land" (Farmland Mapping and Monitoring Program, 1986). The Soil Conservation Service has determined that 0.077 acres of prime and unique farmland will be converted by the project. Their rating did not indicate a significant decrease in prime farmlands.

c. A departure from an adopted public plan? NO

d. Reqire land aquisition ? YES

The county does not hold a deed to the land the road is built on. Right-of-way for the entire extent of the project would have to be purchased (approximately 0.25 acre).

e. Affect use of adjacent parcels ? NO

9. NATURAL RESOURCES Will the project result in:

a. Increase use of any natural resources? NO

b. Substantial depletion of any nonrenewable natural resource? NO

10. RISK OF UPSET Will the project result in:

a. A risk of explosion or release of hazardous substance (including, but not limited to, oil, pesticides, chemicals or radiation) in the event of accident or upset conditions? NO

b. Possible interference with an emergency response plan or an emergency evacuation plan? MAYBE

It is not known whether an emergency response plan has been formulated for the area. In any event, the crossing will be closed during construction thereby adding an additional three miles to reach Highway 1 via Marsh Road. In the event the "no project" alternative is chosen, the crossing may be closed for safety reasons due to structural deterioation of the bridge. In this case, the route will not be available.

11. POPULATION Will the project alter the location, distribution, density or growth rate of the human population of an area? NO

12. HOUSING Will the project affect existing housing, or create a demand for additional housing? NO

13. TRAFFIC/CIRCULATION Will the project result in:

a. Generation of substantial additional vehicular movements? NO

b. Effect on parking facilities, or demand for new parking? NO

c. Substantial impact on existing transportation system? NO

There will be a temporary road closure at the creek during construction causing vehicles to use an alternate route (see 13d, below). The public will be notified of the closure at appropriate intersections. Emergency services will be notified directly. See Mitigation # 6.

d. Alterations to present circulation patterns or movement of people and/or goods? YES

During construction, a detour will have to be utilized for drivers which routinely used Slaughterhouse/Middle Road for Access to Highway 1. Those trying to reach Valley Ford and points west of the closed road will have to take Marsh Road to Franklin School/Estero Road, thereby connecting with Highway 1 near Valley Ford. This could add three additional miles for the homes on the Marin County side of the bridge (Middle Road). For those drivers attempting to go east on Highway 1 from Middle Road, (with Bloomfield as a potential destination), this detour is shorter than their alternative route which would take them to south to Whitaker Bluff Road then north again on Highway 1.

In the event the "no project" alternative is chosen, the crossing may be closed for safety reasons due to structural deterioation of the bridge. In this case the route will not be available, causing local drivers to use alternative routes permanently.

e. Alterations to waterborne, rail or air traffic? NO

f. Increase in traffic hazards to vehicles, bicycles or pedestrians? NO

14. PUBLIC SERVICES Will the project have an effect upon, or result in a need for new or altered governmental services in any of the following areas? NO

a. Fire protection and police protection? MAYBE

During reconstruction, the crossing will be unavailable to emergency vehicles. In the event the "no project" alternative is chosen, the crossing may be closed in the future because structural deterioation of the bridge will endanger public safety. In any event, closing the bridge will add an additional three miles for emergency response from Valley Ford to homes immediately adjacent to Americano Creek in Marin County.

b. Schools? MAYBE

During reconstruction, the crossing may be unavailable to school buses. In the event the "no project" alternative is chosen, the crossing may be closed for safety reasons due to structural deterioation of the bridge. In the case the route will not be available.

c. Parks and other recreational facilities? NO

d. Maintenance of public facilities, including roads? NO

e. Other governmental services? NO

15. ENERGY Will the project result in:

a. Use of substantial amounts of fuel or energy? NO

b. Substantial increase in the demand on existing sources of energy, or require the development of new sources of energy? NO

16. UTILITIES Will the project result in the need for new systems, or substantial alterations to the following utilities:

a. Power or natural gas? YES

Power/telephone poles on the east side of the road will require moving.

b. Communications? YES

Power/telephone poles on the east side of the road will require moving.

c. Water? NO

d. Sewer or septic tanks? NO

e. Storm drainage? MAYBE

The gully conveying stormflow from the swale east of Slaughterhouse Road (Sonoma County) will be rock lined to prevent further erosion. Stormflow impeded by blackberry vines blocking a culvert at the north end of the road will be improved by clearing vegetation from the imediate vicinity. See Mitigation # 2.

f. Solid waste and disposal? NO

17. HUMAN HEALTH Will the project result in:

a. Creation of any health hazard or potential health hazard (excluding mental health)? NO

b. Exposure of people to potential health hazards? NO

18. AESTHETICS Will the project result in the obstruction of any scenic vista or view open to the public, or will the project result in creating an aesthetically offensive site open to public view? NO

19. RECREATION Will the project result in an impact on the quality or quantity of existing recreational opportunities? NO

20. CULTURAL RESOURCES Will the project result in:

a. Alteration or destruction of a prehistoric or historic archaeological site? NO

The results of an archeological survey (Alvarez, 1986) concluded there was no evidence of any historic, prehistoric or cultural resources subject to disturbace in the impact area.

b. Adverse physical or aesthetic effects to a prehistoric or historic building, structure or object? NO

A nearby house may be a structure shown on T. H. Thompson's (1877) map of Sonoma County, but it is beyond the project impact area.

c. Physical change which would affect unique ethnic cultural values? NO

d. Restricting existing religious or sacred uses within the potential impact area? NO

21. MANDATORY FINDINGS OF SIGNIFICANCE

a. Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal species or eliminate important examples of the major periods of California history or prehistory? NO

b. Does the project have the potential to achieve short term, to the disadvantage of long-term, environmental goals? (A short-term impact on the environment is one which occurs in a relatively brief, definite period of time while long-term impacts will endure well into the future). NO

c. Does the project have impacts which are individually limited, but cumulatively considerable? (A project

may impact on two or more separate resources where the impact on eacl. resource is relatively small, but where the effects of the total of those impacts on the environment is significant). NO

d. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly? NO

MITIGATION MEASURES

1. Sheet erosion of soil: exposed soils on fill slopes will be hydromulched with a grass/clover seed mix to conserve soil and minimize the amount of sediment entering Americano Creek.

2. Gully erosion of soil: the banks of an actively eroding gully will be stabilized by lining with rock rip-rap. This measure will conserve soil, prevent sedimentation in Americano Creek and stop the headwall erosion which is threatening an adjacent vernal pool. Blackberry vines hindering the flow of runoff through the culvert at the north end of Slaughterhouse Road will be cleared to improve drainage efficiency.

3. Airborne dust: a water truck will be maintained on-site to regularly spray water onto exposed soils.

4. Loss of riparian vegetation: willow species will be planted at appropriate locations in the rock slope protection on both sides of the bridge and areas of the fill slope.

5. Increased noise levels: to minimize the effects of increased noise levels during construction, work activities will be limited to take place between the hours of 7 am and 7 pm weekdays and 9 am until 7 pm on weekends and holidays.

6. Temporary road closure: The public will be notified of the closure by signs placed at appropriate intersection. Emergency services will be notified directly.

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REPORT PREPARATION

This initial study was prepared by Marco Waaland, Assistant Environmental Specialist and Tim Mayer, Environmental Specialist; employees of the Sonoma County Public Works Department.

BIOLOGIC REPORT FOR RECONSTRUCTION OF SLAUGHTERHOUSE ROAD BRIDGE

MAY, 1987

Sonoma County Department of Public Works
Environmental Section
575 Administration Drive, Room 117A
Santa Rosa, California 95401

Telephone (707) 527-2231

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PROJECT DESCRIPTION

The Sonoma County Public Works Department proposes to replace Slaughterhouse Road Bridge (#27C-123) near Valley Ford (Figure 1). The bridge spans Americano Creek at the Sonoma-Marin County line. It is a timber stringer bridge 13' wide and 70' long. The proposed bridge would be a concrete slab type, 24' wide and 70' in length. Approaches to the bridge would be widened to 28' for 100' on both sides of the bridge. In addition, fifty feet of guard rail will line the road on both sides of the bridge. The area covered by this survey consists of approximately four acres.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

Field suveys of the project site were conducted to assess biological resources. The site is largely surrounded by the annual grassland community, most of which is subject to grazing. Where grazing has been light, a vernal marsh community forms a mosaic with annual grassland. A well developed riparian willow scrub community and degraded brackish marsh occur within the stream channel.

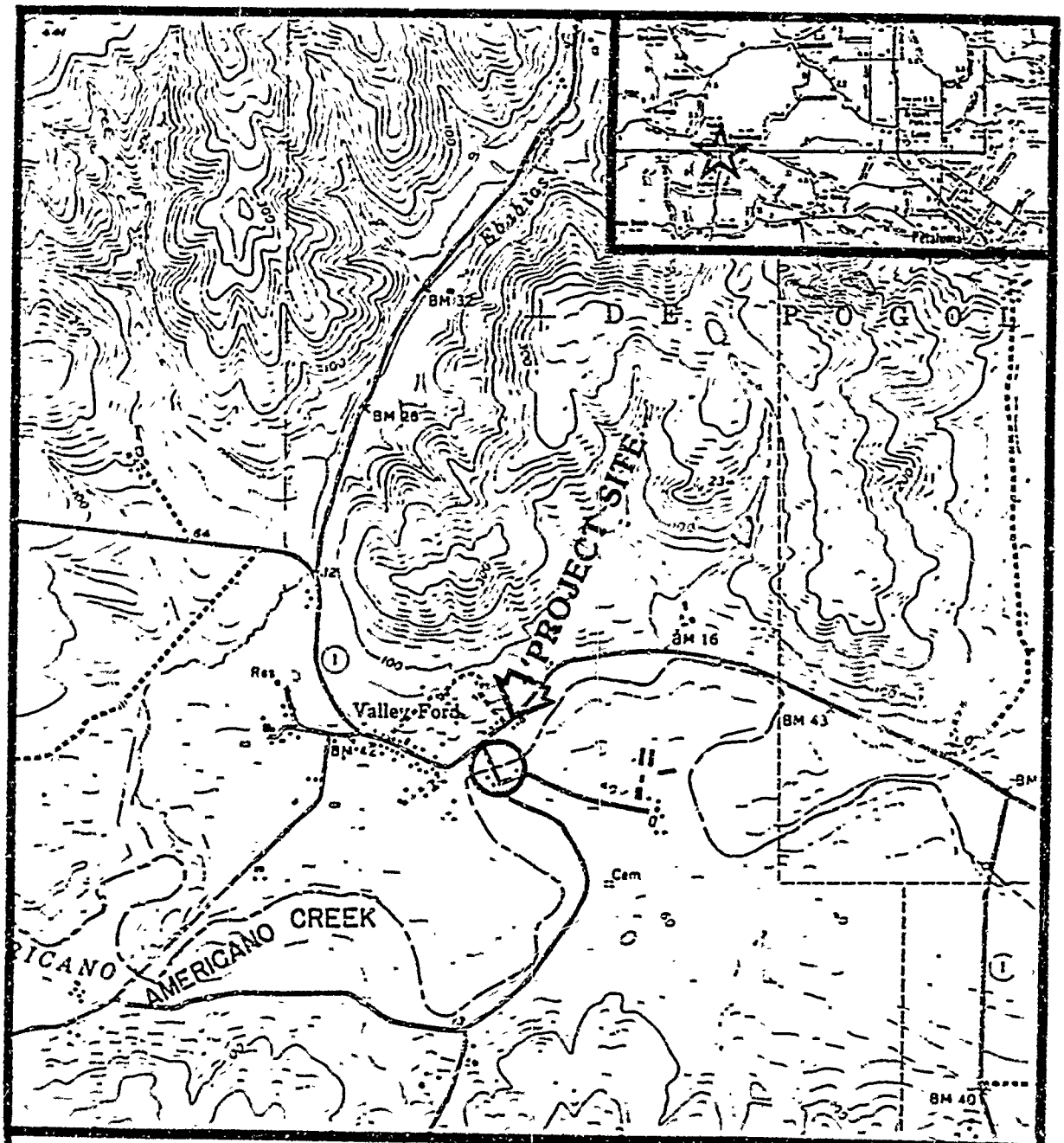
A small amount of riparian willow scrub will be lost to construction activities. This impact will be mitigated by revegetating diturbed banks with willow wattles or cuttings. No rare or endangered species were observed during field surveys. The site is within the range of two rare plants, Sonoma alopecurus (Alopecurus aequalis sonomensis) and showy Indian clover (Trifolium amoenum), and two rare animals, the California freshwater shrimp (Synacaris pacifica) and the California brackish water snail (Tryonia imitator). Field surveys and benthic collections did not result in finding any species of concern.

Showy Indian clover is not likely to occur because of continuous heavy grazing pressure and marginal habitat. Sonoma alopecurus habitat is marginal along the creek due to apparent alkaline conditions. Vernal marsh areas, which are more suitable as habitat, have been subject to the detrimental effects of heavy grazing. However, one of the vernal marshes supported a population of Lobb's aquatic buttercup (Ranunculus Lobbii), a CNPS List 4 species. Although the marsh is beyond the area of direct impact, measures will be taken to prevent any indirect changes to the existing drainage patterns in the area.

The California freshwater shrimp is not likely to occur because the creek is tidally influenced and substrate conditions are sub-marginal. The California brackishwater snail is not likely to occur due to lack of consistent tidal influence.

FIELD SURVEY

Field surveys were conducted on October 27, November 12, 1986 and April 8 and 28, 1987. Surveys were conducted by Marco Waaland, Assistant Environmental Specialist and Tim Mayer, Environmental Specialist, Sonoma County Department of Public Works (707-527-2231). Bill Cox,



SLAUGHTERHOUSE ROAD BRIDGE PROJECT SITE

N

FIGURE 1 LOCATION MAP

SCALE 1:24000

SOURCE: USGS VALLEY FORD QUAD

PUBLIC WORKS DEPT. MEW

150
164

Department of Fish and Game aquatic biologist, conducted the survey for Syncaris pacifica. Mike Kellog, malacologist at the California Academy of Science (CAS), analyzed benthic samples for Tryonia imitator.

RESULTS

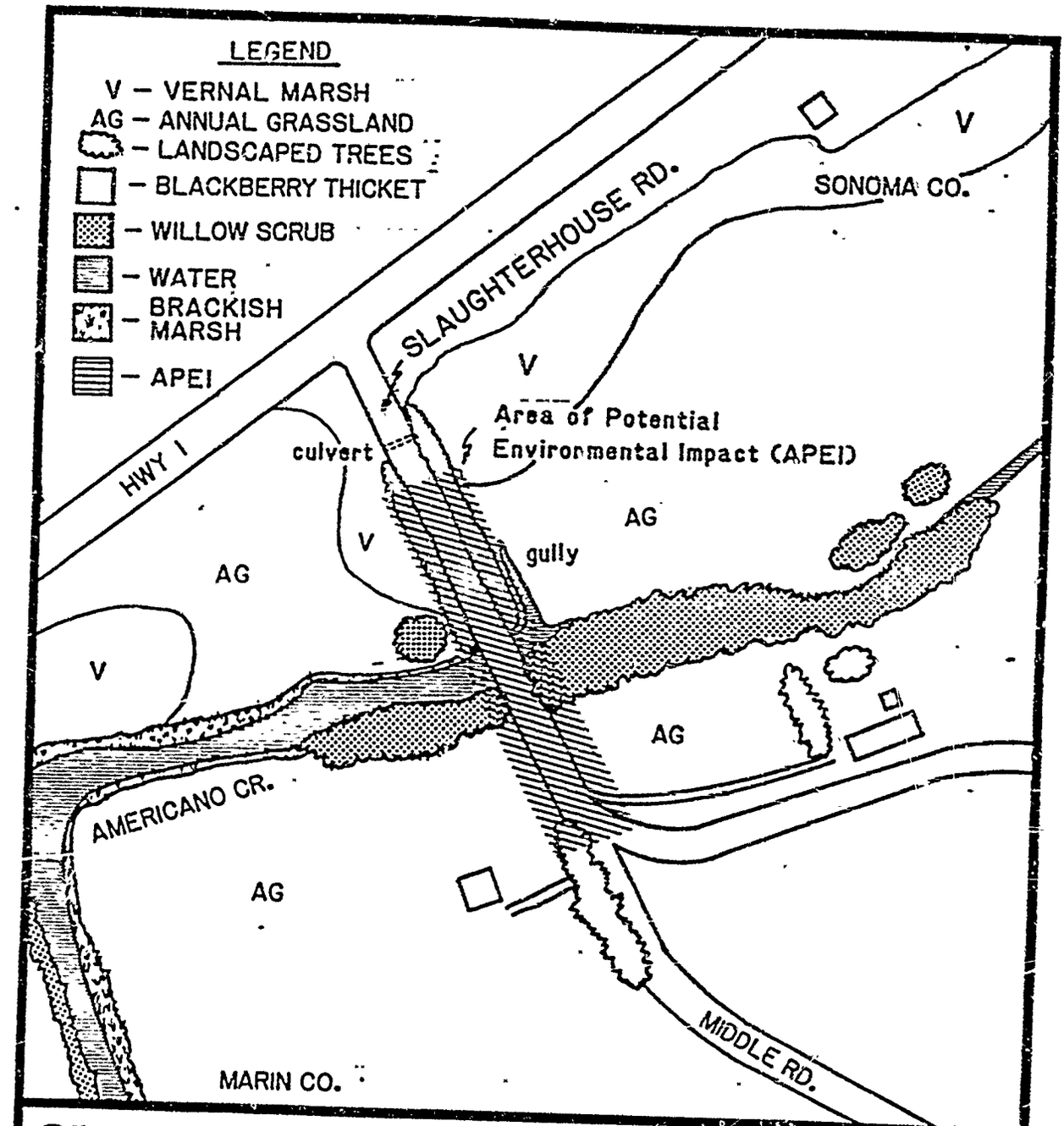
Environmental Setting. The project site is located in the alluvial valley bottom of Americano Creek at elevations between 5 - 10 feet above mean sea level. Americano Creek is an intermittent stream which retains water at the project site, but exhibits sluggish flows and sections of dry bed during the summer and fall. This bottomland is flatto gently rolling. Streambanks make a steep descent to the creek bottom along some stretches of the creek. The soil series present in the study area is Blucher fine sandy loam, which is used primarily to support forage for the local dairy industry. The mostextensive vegetation type in the vicinity is annual grassland. Live oak woodland occurs in moist draws and riparian scrub is present along most valley bottom creeks.

Vegetation of the Project Site. Plant communities found at the project site consist of riparian willow scrub, non-native annual grassland, vernal marsh and brackish marsh (Figure 2). These communities are derived from a classification of Natural Communities developed by Cheatham and Haller (1975) and modified by the California Natural Diversity Data Base (Holland, 1986). The CNDDB has assigned wetlands, such as vernal pools, vernal marshes and brackish marshes a high priority status.

Wetlands

The willow scrub type was dominated by arroyo willow (Salix lasiolepis) with hawthorne (Crateagus douglasii) co-dominant. Himalaya berry (Rubus procerus) formed the shrub layer. Wild onion (Allium spp.) occurred in the herb layer. The arroyo willows formed a canopy up to 25' in height with as much as 100% cover shading Americano Creek upstream of the bridge. In the immediate vicinity of the bridge and downstream from it along the south bank, willows and hawthorne form a dense thicket for 25' landward of the channel. Branches projected over the creek, dipping into the water surface. Along the ditches paralleling Slaughterhouse Road, Himilaya berry and California blackberry form impenetrable thickets leading down to the creek.

Where swales and depressions occur in the grassland, vernal marsh habitat is present. Wetland species such as fat hen (Atriplex patula), rushes (Juncus Boladeri), yellow cress (Rorippa spp.), swamp timothy (Crypsis niliaca) and curly dock were common. Two vernal pools were found at the project site but both appeared to be in a degraded condition due to past grazing. However, the pool in the vernal marsh east of the road in Sonoma County supported a population of Lobb's aquatic buttercup, A California Native Plant Society (CNPS) List 4 species (plants of limited distribution). This species is not



SLAUGHTERHOUSE ROAD BRIDGE

FIGURE 2
PROJECT SITE

SCALE: 1"=125'
SOURCE: AERIAL PHOTO 1"=500'
PUBLIC WORKS DEPT. MEW

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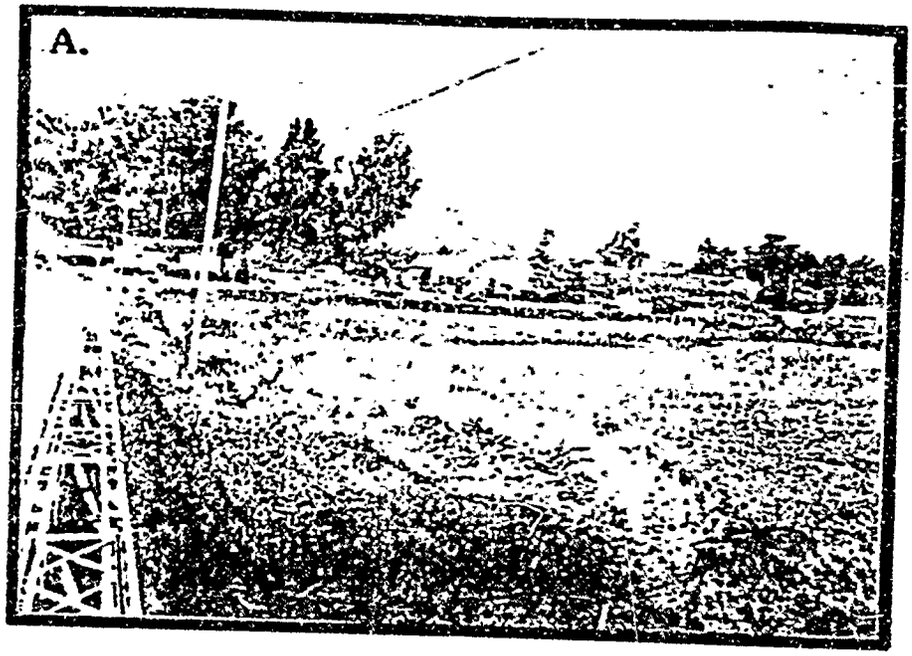
166



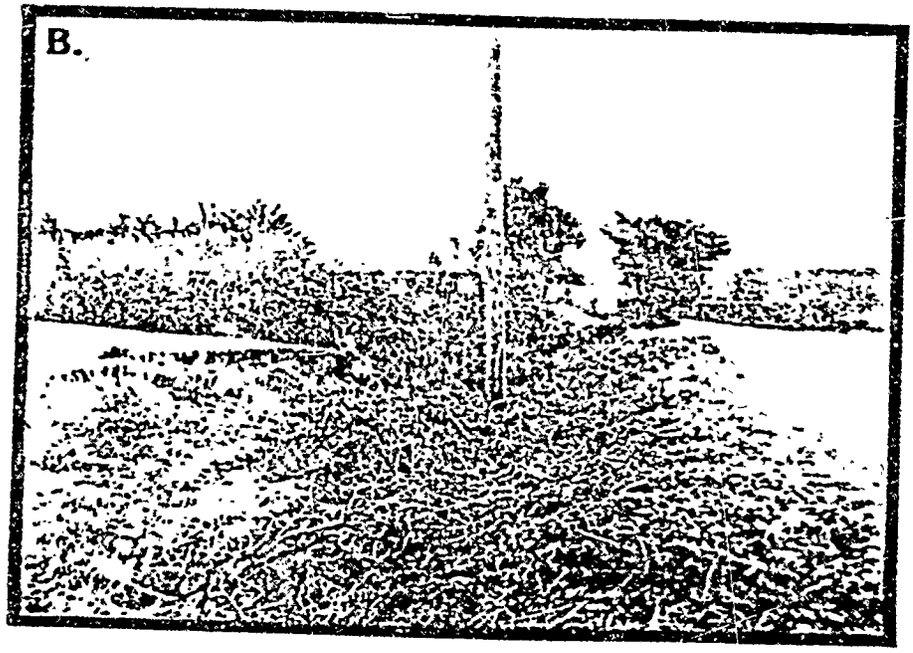


FIGURE 3. A– VIEW OF GULLY LOOKING NORTH ACROSS AMERICANO CREEK FROM THE BRIDGE. B– VIEW OF GULLY LOOKING SOUTH TOWARD CREEK. SLAUGHTERHOUSE ROAD AND BRIDGE ON RIGHT.

consider[illegible] rare, but is uncommon enough to warrant regular monitoring.

Downstream of the bridge where willow thicket was absent, a brackish marsh community occurred along the lower banks of the creek. Common species included saltgrass (Distichlis spicata), alkali bulrush (Scirpus robustus), rabbit-foot's grass (Polipogon monspeliensis) and fat hen.

Uplands

The non-native annual grassland is extensive in the bottomland adjacent to the riparian corridor. This vegetation type is typified by annual bromes (Bromus spp.), fescues (Festuca spp.) and wild oats (Avena fatua). Native forbs can also occur, but their abundance varies with grazing intensity. Frequent tufts of native creeping wildrye (Elymus triticoides) were observed. At the time of the field survey most grasses were in the seedling stage with the only obvious forbs being wild radish (Raphanus sativus), bristly ox-tongue (Picris echinoides) and curly dock (Rumex crispus). Where grazing had recently occurred, vegetative cover had been clipped to approximately 1 inch in height; except for the noxious weed, spiny clotbur (Xanthium spinosum). The parcels west of the road on the Sonoma County side did not undergo grazing this year due to access problems. As a result, species diversity and vegetative cover have increased.

Wildlife of the Project Site. Wetland habitats at the project site are of most importance to wildlife. The annual grassland is much more extensive, but of lower wildlife value because of grazing and uniformity of habitat structure. Wetlands are important to wildlife because they are inherently limited in extent, have become increasingly rare and provide water, a limiting resource.

Seasonal ponding, such as occurs in vernal marshes and vernal pools, is an essential component in the life cycle of the Pacific treefrog and Tiger salamander. Shorebirds utilize these ponds for feeding. Americano Creek, a more consistent source of water, can remain pooled year round at the project site. Flows are sluggish to non-existent, yet the creek likely supports three-spine stickleback (Cox, personal communication). The bridge is at the extreme upper limit of estuarine influence so there is a possibility that tidewater goby and staghorn sculpin also occur in the creek. Local residents report that historically the stream supported a steelhead and silver salmon spawning run. The lack of any recent reports corresponds with the degradation of anandromous habitat in the area.

The willow scrub vegetation of the riparian zone adds structural diversity and cover to the surrounding annual grassland habitat. Many bird species feed in the the grasslands and nest, or roost, in the willows and berries. Scrub jays, mockingbirds, ruby crowned kinglets, house sparrows, white crowned sparrows and house finches were observed in the willow scrub during the survey. Herons, egrets, muskrats, raccons, gray fox, coyote, deer, striped skunks, newts, toads, frogs

and gartersnakes can be expected to use the willow scrub habitat (Madrone Associates, 1976). Raccoon and deer prints were observed in the riparian brackish marsh.

The annual grassland habitat can be expected to support the following species: American goldfinch, American kestrel, barn owl, lesser goldfinch, red-tailed hawk, turkey vulture, black-tailed hare, pocket gopher, moles, mice, vagrant shrew, coyote, striped skunk, common kingsnake, gopher snake, alligator lizard, western fence lizard and western toad.

IMPACTS TO SENSATIVE BIOTIC RESOURCES

Wetlands. As described in the vegetation section, wetlands at the project site consist of vernal marsh, brackish marsh, riparian willow scrub and stream channel. The greatest wetland impact will result from the clearing of willow scrub adjacent to the bridge. An estimated 790 square feet (0.02 acre) of canopy will be lost due to construction activities. This loss will be largely restricted to the south bank of the creek (Figure 2). The shaded area approximates the actual impact zone. The effect of these impacts will be minimal because the small area of willow canopy removed will not significantly reduce the total extent of this plant community in the project vicinity. Arboreal wildlife may undergo a temporary loss of nesting habitat, but there will be no threatening loss of diversity or numbers of individuals.

Impacts to the riparian willow scrub will be mitigated by revegetating disturbed banks with willow wattles or cuttings. Planting within the fenced right-of-way will prevent cattle damage to saplings. Potentially more net canopy area will be created by extending revegetation to a portion of the gullied area.

The finger of water on the east side of Slaughterhouse Road is actually a gully leading down to the creek. Its formation is a result of the combined effects of a ditch capturing runoff previously flowing through a culvert under the road, added runoff volume from ditches along Highway 1 and cattle sloughing material from the edge when using the gully for access to the creek. The creek forms a small embayment in the gully (Figure 3) which will be diminished in extent by 760 square feet (0.02 acre) when fill is added.

The effect of this impact will be minimal because the gully is an artificial channel which is actively eroding, in a highly degraded state and of little or no value to terrestrial and aquatic organisams. If its erosion is left unchecked, there will be a secondary wetland impact. The headward erosion of the gully will capture runoff from the culvert passing under the road, thereby draining surface water from a vernal marsh. The end result could alter the water regime and threaten the existence of the vernal marsh and the population of Lobb's aquatic buttercup.

These direct and secondary impacts will be mitigated by including erosion control provisions in the road design. Recontouring the gully and stabilizing it with a rocked drainageway and willow plantings will prevent further erosion and enhance wildlife habitat.

Species of Concern at the Project Site. A CNDDB report prepared for the Sonoma County Planning Department which encompassed the entire county (CNDDB, 1985) was reviewed for locations of rare or endangered species and critical habitats. The U.S. Geological Survey (7.5 min) quad in which the project is planned (Valley Ford) and the five adjacent Sonoma County USGS quads (Bodega Head, Duncans Mills, Camp Meeker, Sebastopol and Two Rock) were assessed for element occurrences. Species associated with habitats not represented in the project site (such as Arctostaphylous stanfordiana repens, a serpentine chaparral species) or restricted to a specific location (such as Lilium pitkinense, limited to Pitkin Marsh) were omitted from further consideration. The species which could potentially occur at the project site are listed in Table 1.

Because of the robust habit of both Sonoma alopecurus and showy Indian clover some evidence of their presence should have been apparent in the ungrazed parcel. However, no plants with seedheads similar to Sonoma alopecurus were observed. Neither was there any evidence of the ascending stems typical of the showy Indian clover. However, since the survey took place after the flowering period, the presence of these plants cannot conlusively be ruled out. Yet, conditions at the site are such that the potential for occurance is extremely slight.

Showy Indian Clover (Trifolium amoenum). Historically, the project site was within the distributional range of showy Indian clover, a federal candidate species which occurred in low, rich fields and swales (Munz and Keck, 1968). Since that time the range of the plant had been constricted down to four locations in the Valley Ford quad (CNDDB, 1985) and the last observation of the plant at any of these sites was in 1969. A 1980 survey at a nearby site failed to relocate any of the populations (Guggolz, personal communication) and the plant is listed as extinct by the CNPS (Smith and York, 1984). Grazing is considered is considered to be largely responsible for the decline of Showy Indian Clover (Niehaus, 1977).

At the project site, potential habitat is represented by annual grassland and vernal marsh. The most likely area of potential occurrence at the project site is the parcel west of Slaughterhouse Road in Sonoma County. Grazing on this site has been light or non-existent for some time in the recent past due to problems in making the property accessible to dairy cattle (Ballatore, personal communication). If any recruitment has occurred in the area, the best chance of survival would be on this parcel. However, the available habitat has been reduced to a sub-marginal status because of overgrazing. The alkaline soils of the swales also decrease habitat suitability. In light of being listed as extinct, the chances of finding this species in places other than ungrazed refugium are almost nil.

Sonoma Alopecurus (Alopecurus aequalis sonomensis). This state listed endangered species and federal candidate has been reported from freshwater marshes in the project vicinity. One location, the Bloomfield Marsh (USGS Two Rock 7.5 min. quad), supported the species when collections were made in 1880 (CNDDB, 1985). However, recent attempts to locate the marsh site have failed, probably due to conversion of the land (Guggolz, personal communication). The other nearby location, Freestone Marsh (USGS Camp Meeker 7.5 min quad), supported the species in 1962. CNDDB identifies habitat as "coastal and valley freshwater marsh" and Munz and Keck (1968) list a generalized "moist sites" habitat description.

The streamside habitat at the project site consists of brackish marsh where conditions are too alkaline for Sonoma alopecurus to occur. Vernal marsh in the project vicinity is the other potential habitat. Previous heavy grazing and apparent alkaline conditions in the swales have reduced the suitabilit of this habitat to sub-marginal. The abundance of pennyroyal (Mentha pelugium) in the vernal marsh is indicative of overgrazing in this habitat (Guggolz, personal communication). Another frequent species, creeping wildrye, is also indicative of heavy grazing. Its coarse herbage allows it to increase in abundance because grazers favor the more succulent annual grasses (Crampton, 1974).

California Freshwater Shrimp (Syncaris pacifica). This species is state listed as endangered and a federal candidate. Americano Creek is historically within the range of the California freshwater shrimp (Eng, 1981). Habitat conditions such as low stream gradient, moderate to heavy riparian canopy and low summer flows are present at the project site. However, sand and gravel substrates are absent. There is a possibility of occurrence although the probability is considered to be low (Cox, personal communication). The results of subsequent survey by Mr. Cox (see Appendix II) indicated the likelihood of occurance was very low to nil because a) the channel is subject to saline influence during very high tides b) the particle size of the substrate is too fine and c) continuous heavy use of the channel by cattle has seriously degraded the quality of the stream habitat.

California Brackishwater Snail (Tryonia imitator). This gastropod is a federal candidate species. Originally, it ranged from San Luis Obispo county to Sonoma county living subtidally in coastal lagoons and marshes. It is tolerant of wide fluctuations in salinity daily. Recent surveys for the snail indicate it has been extirpated from the northern portion of its original range (including Sonoma County) due to extensive alterations in its habitat (Kellog, 1980). The stretch of Americano Creek in the vicinity of the proposed reconstruction is freshwater with infrequent saline intrusions during the highest tides of winter (when the sandbar at the mouth is breached). The original habitat has been alterred by prolonged cattle use and eutrophication. Apparently, T. imitator is restricted to subtidal habitats (Kellog, 1980) which bear little resemblance to the creek at the project site. Because of the freshwater character and lack of a tidal regime at the

creek, occurance of the snail is considered very unlikely. Analysis of samples collected from the site resulted in typical freshwater invertebrate species being present. Tryonia imitator was absent (see Appendix III).

FIELD METHODS

An area approximately 100' wide on both sides of Slaugterhouse Road (Middle Road in Marin County) was surveyed on foot for rare plant species. Qualitative observations of the soils, vegetation and wildlife were made during the survey. Vernal marsh areas and the stream banks on the west side of the bridge were intensively surveyed for three hundred feet downstream. The stream course will be examined for freshwater shrimp habitat for 200' on either side of the bridge by Department of Fish and Game aquatic biologist, Bill Cox. Four benthic samples collected by Waaland were taken from substrate and aquatic vegetation upstream and downstream of the bridge. Mike Kellog, a California Academy of Sciences malacologist, analyzed the samples for identification of gastropods.

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PERSONS AND AGENCIES CONTACTED

Ballatore. Property owner, grazing lessee. Valley Ford, California.

California Academy of Sciences. Mike Kellog, malacologist. San Francisco.

California Native Plants Society. Betty Guggolz, rare plant expert. Sonoma County Chapter, 1123 Palomino Rd., Cloverdale, CA 95425.

California Department of Fish and Game. Bill Cox, fisheries biologist, Region 1. P. O. Box 47, Yountville, CA 94599.

CERTIFICATION

Preparer: Marco Waaland Title: Assistant Environmental Specialist, Plant Ecologist

Signature: Marco Waaland

APPENDIX I

SPECIES OBSERVED IN THE FIELD

Community: Annual Grassland

Plants

Avena fatua (wild oats)
Brassica spp. (mustard)
Bromus spp. (bromes)
Convolvulus spp. (morning glory)
Elymus triticoides (creeping wildrye)
Picris echinoides (bristly ox-tongue)
Raphanus sativa (wild radish)
Rosa Eglanteria (sweetbriar rose)
Rumex crispus (curly dock)
Xanthium spinosum (spiny clotbur)

Animals

Casmerodius albus (great egret)

Community: Riparian Willow Scrub

Plants

Allium spp. (wild onion)
Crategus douglasii (hawthorne)
Rubus procerus (Himilaya berry)
R.vitifolius (California blackberry)
Salix lasiolepis (arroyo willow)
Urtica holosericea (stinging nettle)

Animals

Aphelocoma coerulescans (scrub jay)
Carpodacus mexicanus (house finch)
Mimus polyglottos (mockingbird)
Passer domesticus (house sparrow)
Regulus calendula (ruby-crowned kinglet)
Zonotricia leucophrys (white-crowned sparrow)

Community: Vernal Marsh

Plants

Atriplex patula (fat hen)
Conium maculatum (poisen hemlock)
Crypsis niliaca (swampgrass)
Mentha pelugium (pennyroyal)
Nasturtium officianale (water cress)
Ranunculus Lobbii (Lobb's aquatic buttercup)
Rorippa curvisiliqua (yellow cress)
Rumex cripus (curly dock)
Xanthium spinosum (spiny clotbur)

Animals

Casmerodius albus (great egret)

Community: Brackish Marsh

Plants

Atriplex patula (fat hen)
Cotula coronopofilia (brass buttons)
Distichlis spicata (salt grass)
Lythrum hyssopifolia (loosestrife)
Plantago spp.
Polipogon monspeliensis (rabbit-foot's grass)

Animals

Odocoileus hemionus (mule deer)
Procyron lotor (racoon)

60001

EQA

STATE OF CALIFORNIA—THE RESOURCES AGENCY APPENDIX II GEORGE DEUKMEJIAN, Governor

DEPARTMENT OF FISH AND GAME
POST OFFICE BOX 47
YOUNTVILLE, CALIFORNIA 94599
(707) 944-2011

Feb. 22, 1987

Tim Mayer
Department of Public Works
County of Sonoma
575 Administration Drive
Santa Rosa, CA 95401

Dear Tim:

At your request I inspected Americano Creek at the Slaughterhouse Road bridge in Valley Ford to determine whether there was any habitat in the stream for the California Freshwater Shrimp, an endangered species. Suitable habitat for this animal consists of slow moving low gradient streams with undercut banks and submerged vegetation such as sedges, exposed willow roots, or blackberry vines.

The habitat in Americano Creek at Slaughterhouse Road has been greatly impacted by cattle trailing along the stream banks and in the stream. I could find no undercut banks and no significant amount of suitable submerged or overhanging vegetation. It is my conclusion that the creek at this location provides no habitat suitable for the California Freshwater Shrimp.

If the shrimp is found in other locations in Americano Creek which were not surveyed; they will not be affected by the construction of a new bridge at Slaughterhouse Road.

Sincerely,

Bill Cox

Bill Cox
Unit Fishery Biologist
Sonoma/Marin

APPENDIX III

Invertebrates from Americano Creek at the Slaughterhouse Road Bridge

Michael G. Kellogg
Departments of Invertebrate Zoology and Geology
California Academy of Sciences
San Francisco, CA 94118

The following invertebrates were identified from samples collected by Marco Waaland on 8 Apr 1987 in Americano Creek approximately 100 feet downstream from the Slaughterhouse Road Bridge. The invertebrates all represent native freshwater species generally distributed over wide ranges.

All of the specimens were collected dead. Identification of freshwater pulmonate snails is not always reliable on the basis of shell characters alone. I carefully compared these specimens with specimens in the collections of the California Academy of Sciences to make the identifications as accurate as possible.

Mollusca: Gastropoda: Pulmonata

Lymnaeidae

Lymnaea proxima Lea 1856. 3 specimens (CAS 064138); this is the earliest named of several possible synonyms forming part of a species complex that is not well understood taxonomically (Taylor 1981:155).

Physidae

Physa gyrina Say 1821. 21 specimens (CAS 064140); widespread over northern North America and general in northern California (Taylor 1981:152).

Planorbidae

Gyraulus parvus (Say 1816). 1 specimen (CAS 064139); widespread over most of North America, mostly replaced by Menetus spp. along northern and central California coast according to Taylor (1981:157).

Arthropoda: Insecta: Coleoptera

Hydrophilidae - one partial head of unidentified larva.

In addition, one sample contained specimens of an immergent grass that appears to be Ruppia maritima Linnaeus or Ruppia spiralis Linnaeus, widespread in brackish waters of California (Munz 1970:1320).

None of the samples contained specimens of Tryonia imitator Pilsbry 1899, a Federal candidate species, category 2, that is potentially present in brackish water habitats of the area. It has not been recently collected north of San Mateo County except at the Petaluma River marsh in southern Sonoma County (Kellogg 1985:27). Except for the Ruppia sp., neither the samples nor the photographs, also made available to me by Marco Waaland, indicate a habitat likely to support T. imitator. It is a coastal strand species inhabiting marshes, lagoons, creeks, and sloughs, with permanent water and often with large stands of Salicornia spp., Ruppia spp., and Enteromorpha spp.

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