BIOLOGICAL ASSESSMENT
ALTON SOUTH CONSERVATION BANK
SANTA ROSA, CA

Prepared for:

Mr. Harvey Rich, Managing Member
Alton Preserve, LLC
336 Bon Air Center, Box 232
Greenbrae, CA 94904

Prepared by:

Ted P. Winfield, Ph.D.
Ted Winfield & Associates
1455 Wagoner Drive
Livermore, CA 94550

September 2006
Revised October 8, 2007
Revised January 15, 2008
Revised July 23, 2008
Revised August 10, 2008

Table of Contents

List of Figures

1.0 INTRODUCTION

1.1 DESCRIPTION OF PROPOSED ACTION

This Biological Assessment (BA) addresses the impacts resulting from the construction of 0.78 acre of vernal pools at the Alton South Conservation Bank ("ASCB"), which will be inoculated with *Lasthenia burkei* (Burke's goldfields) seeds, and management of the site for the benefit of California tiger salamander ("CTS") upland habitat and potential habitat for *Lasthenia burkei*. Management of the site includes installation of perimeter fencing, gate and corral, removal of grape vines, removal of exotic trees and shrubs, implementation of vegetation control measures (grazing) and control of undesirable vegetation, such as Harding grass.

ASCB is approximately 8.11 acres of abandoned grape vines, seasonal wetlands and small areas planted with native and non-native trees and shrubs in an annual grassland mosaic. The site provides potential habitat for the California tiger salamander, which is known to occur in the vernal pools created in the northwest corner of the existing Alton Lane Preserve and well within the migratory distance for juvenile and adult CTS. Special-status plant species surveys will be completed in 2007. No special-status plants were observed during the 2006 surveys.

Fee title to the ASCB will be transferred to the California Department of Fish and Game ("CDFG") along with the management endowment, and the CDFG will be responsible for implementation of the elements of the Long-term Monitoring and Management Plan.

1.2 GEOGRAPHIC SETTING AND LOCATION

ASCB is approximately 8.11 acres, part of a larger parcel (A. P. No.034-042-075) located at 2779 Piner Road in the northwest part of the City of Santa Rosa, along the north side of Piner Road between Marlow Road and Fulton Avenue (Figure 1). The ASCB is also within the limits of the Alton Conservation Area. The General Plan land use designation and zoning for the ASCB are the same, LIA or "Land Intensive Agricultural."

1.3 HISTORY AND LAND USE

The ASCB is unoccupied but was once converted to a vineyard when the Franks family lived in a residence on the property outside the proposed conservation bank boundaries (Figure 2). The date at which the vineyard was installed is unknown but it appears to have been abandoned for almost a decade and many of the vines have died or been reduced to a fraction of their size when actually managed for grape production. No structures or outbuildings are present within the ASCB but dirt access roads run along the north and east boundaries and through the center of the north end of the ASCB. These roads were graded when the vineyard was actively managed. Mr. Franks also planted ornamental and native trees and installed drip irrigation (Franks, personal communication).

No leases currently exist on the proposed ASCB, but a single easement exists on the proposed ASCB (Figure 3). This easement (2743 OR 330, 2743 OR 333) was granted to Pacific Gas & Electric, its respective successors, assigns, lessees, and agents to construct, reconstruct, install, maintain, and operate an overhead electric transmission line within a 25-foot strip along the

western ASCB property line. PG&E has the rights for vehicular access to the property, and to transport all necessary persons, equipment, materials, etc. within the easement to conduct whatever activities are necessary to transmit, distribute, and supply electrical power to the public in general, to install gates in existing or future fences as necessary to maintain access for these purposes, and trim branches from or remove any trees or brush that might interfere with the line.

1.4 SOILS AND HYDROLOGY

The soils on the proposed ASCB are mapped by the Soil Conservation Service (U. S. Soil Conservation Service 1972) as belonging to the Huichica loam series (shallow, 0 - 9 percent slopes). The Huichica soils possess a clay horizon at a depth of about two feet and occasionally a cemented hardpan below the clay. Together, they form an effective barrier to deep percolation and perch water near the surface. Although the surface relief appears to have been modified, the properties that affect ponding at the surface appear to remain intact on the property. The Huichica loam series is considered a vernal pool soil by the Vernal Pool Task Force (CH2M Hill 1996).

A physical site investigation of the ASCB site found that the surface soils are generally loamy, with clay loam soils uncommon along the main north-south swale; the presence of an almost universal clay horizon with variable amounts of sand and small gravel; the presence of a hardpan over approximately 45 percent of the site and variable cementation from weak to moderately strong, universally decreasing with depth; the presence of a water-restricting horizon (clay horizon and/or hardpan) over most of the site (approximately 90 percent); and that no fill appears to have been imported to the site and no filling appears to have occurred as a result of past active vineyard management.

The proposed ASCB site is drained primarily by three swales (Figure 4). One, with a very small contributing watershed, drains only the extreme northwest corner; a small culvert could potentially carry water from the vineyards to the west but it is small and appears to be crushed. The main swale that runs through the northern part of the ASCB enters from an adjacent vineyard to the north. It also carries a small volume of water from the Porter Mitigation Site north of the vineyard. The swale crossing the southern part of the proposed ASCB carries water from the steeper southern portion of the ASCB as well as the area southwest of the existing residence, which is outside the boundary of the proposed SCB and the vineyards to the east. This southern swale flows into a 60 in x 48 in. concrete culvert at Piner Road.

1.5 PROJECT SCHEDULE

The 0.78 acre of vernal pools is scheduled to be constructed in the spring or summer of 2008. The provisions of the Interim Management Plan, including installation of the perimeter fencing, gate and corral, removal of grape vines, removal of exotic trees and shrubs will occur in either in the spring of 2008.

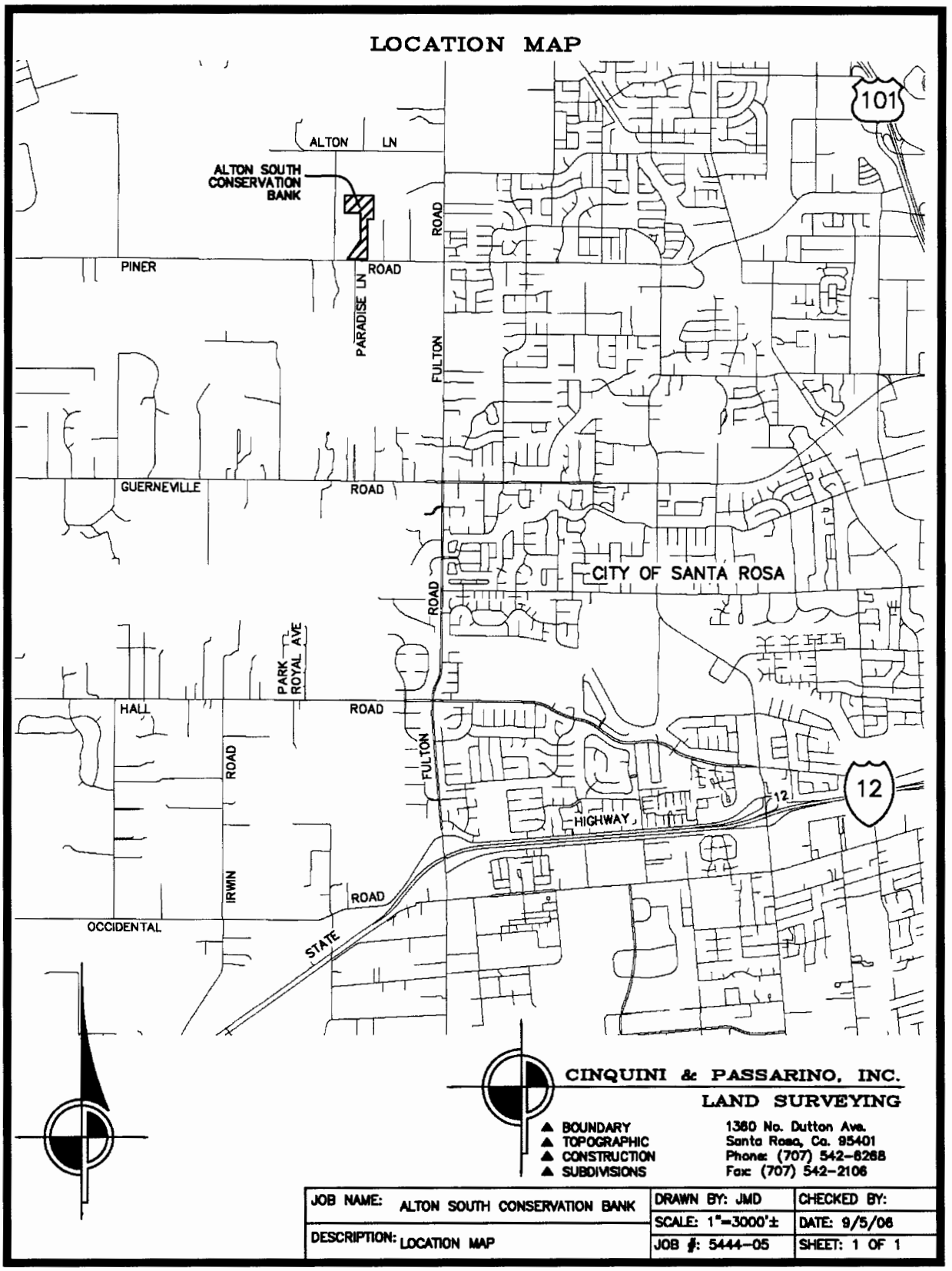

Figure 1. Location of Alton South Conservation Bank.

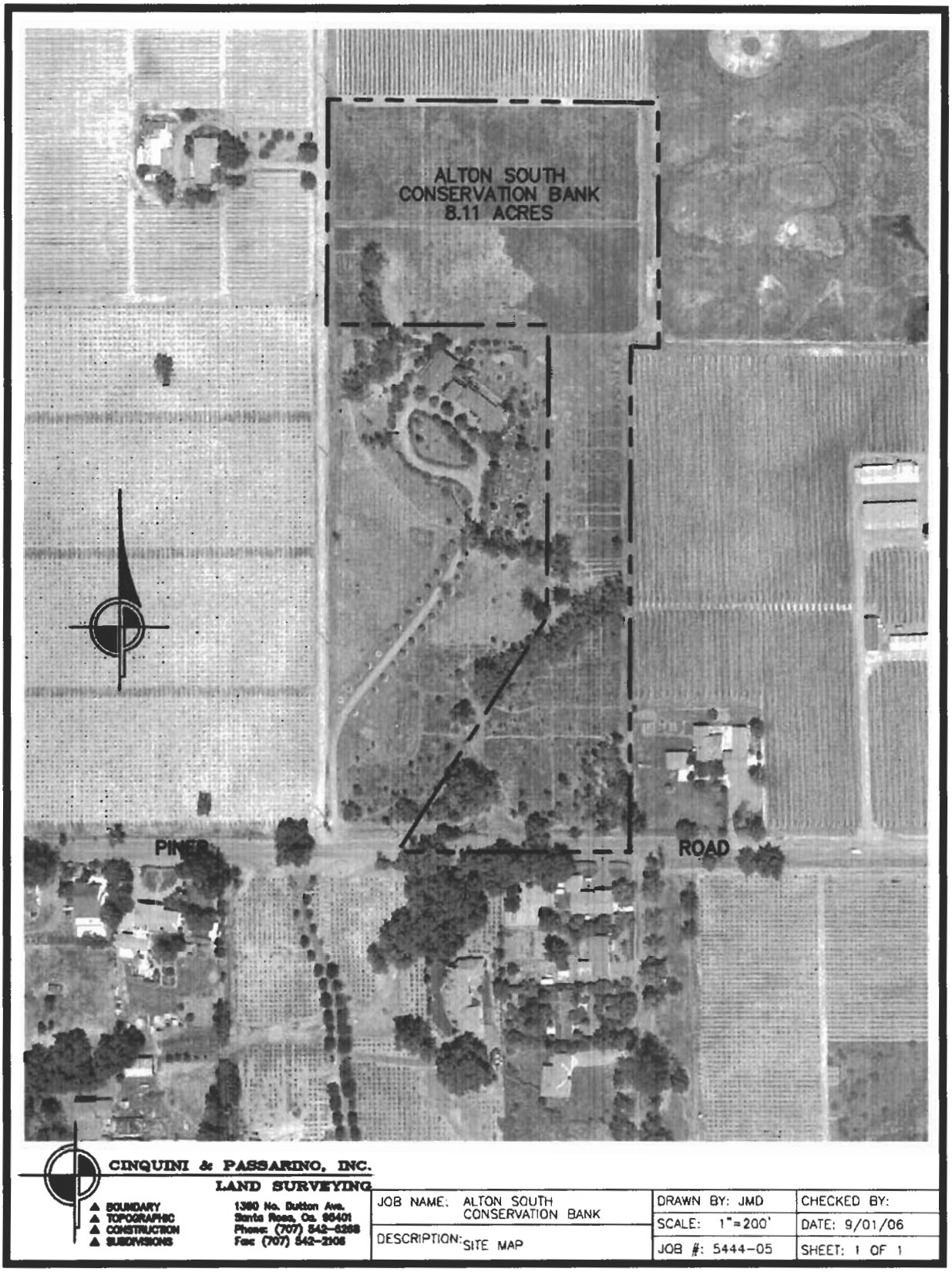

Figure 2. Aerial photograph of Alton South Conservation Bank.

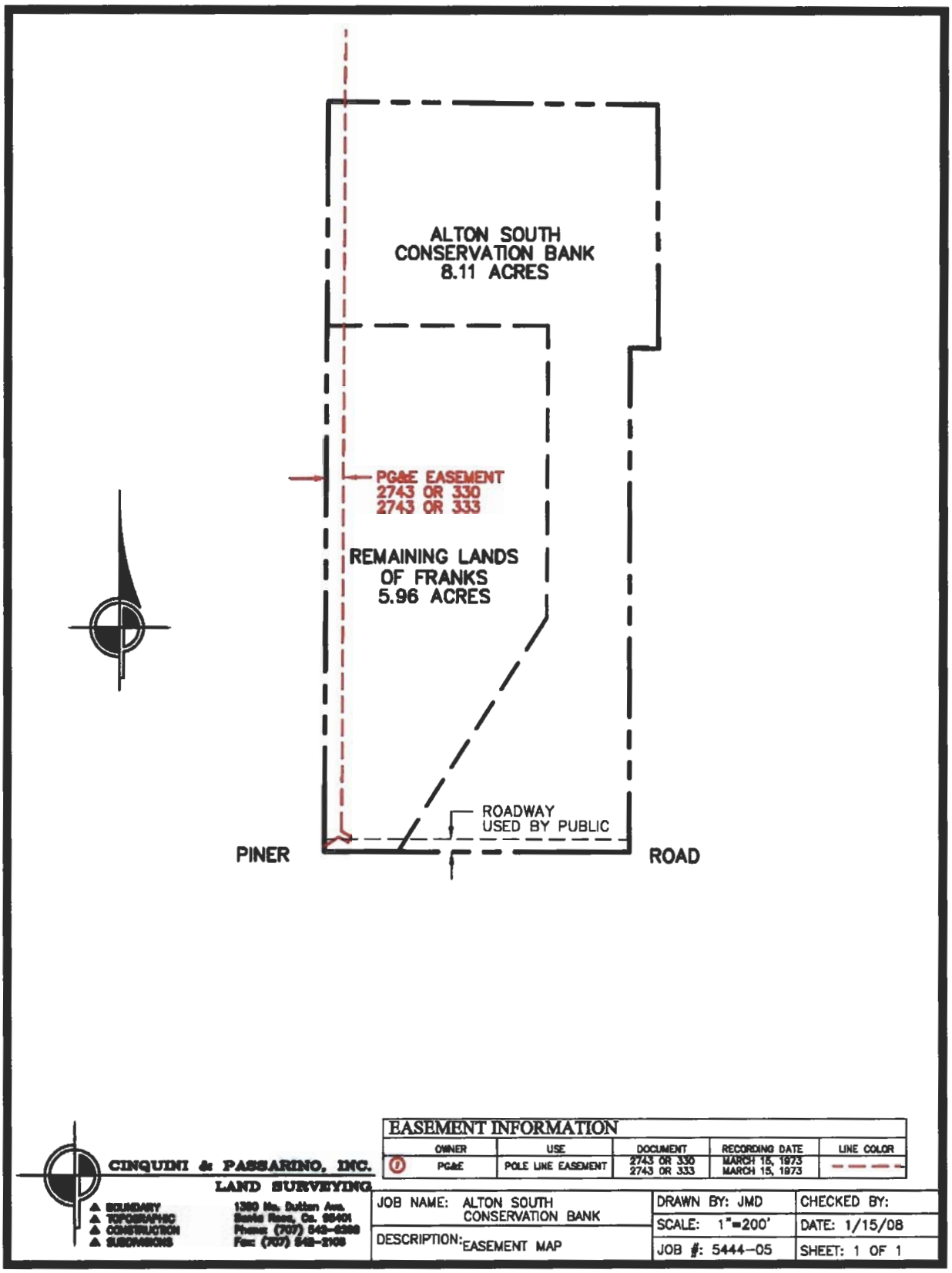

Figure 3. Easement occurring at Alton South Conservation Bank.

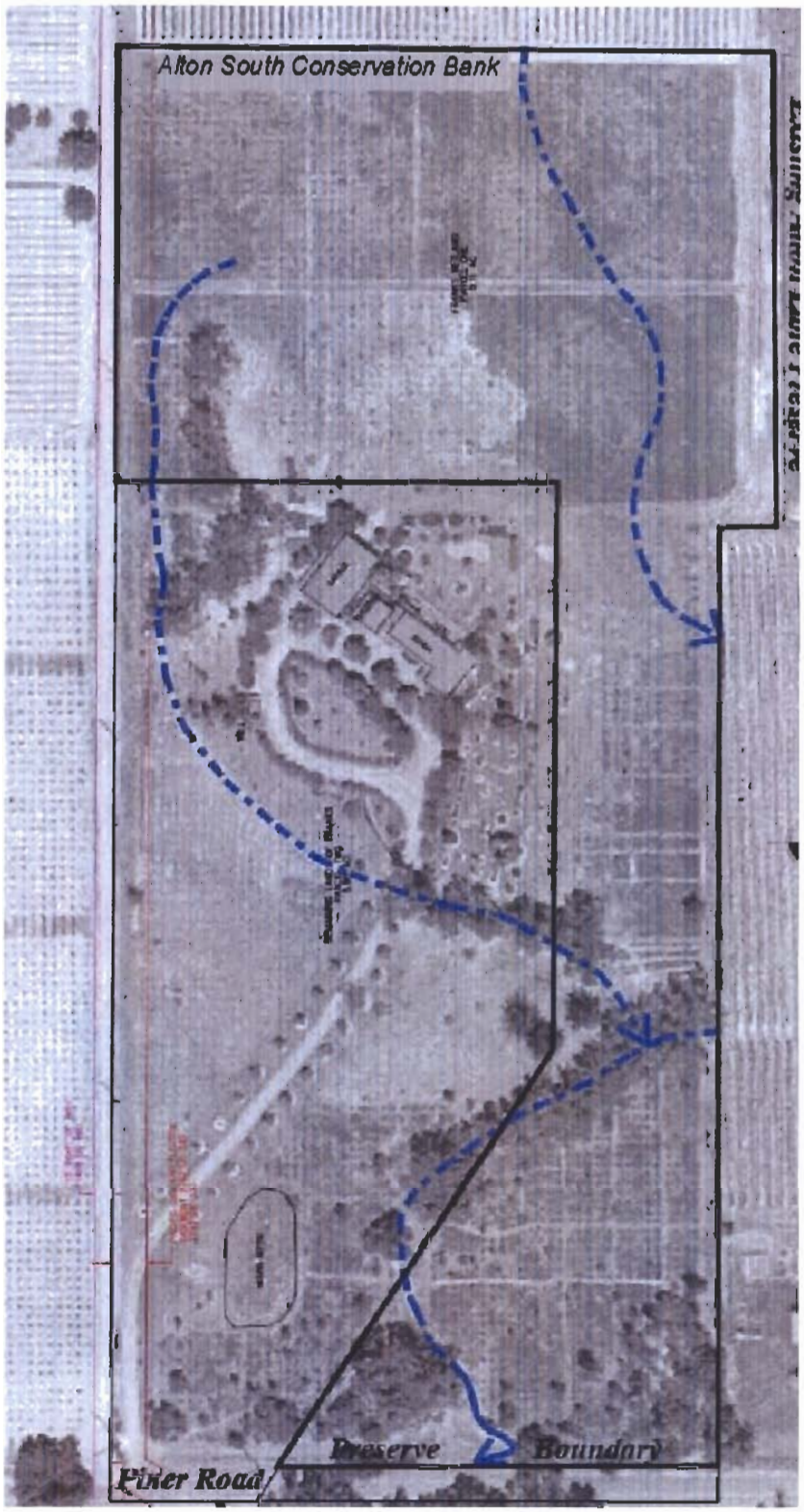

Figure 4. Drainage patterns at Alton South Conservation Bank.

1.6 STORM WATER POLLUTION PREVENTION

A Storm Water Pollution Prevention Plan (SWPPP) will be developed for construction of the vernal pools at the ASCB to prevent project construction impacts on habitat and waters draining outside the work areas. Erosion control will be accomplished using conventional techniques suitable for local conditions (soil type, slope, etc.). Applicable protection measures, such as barrier and/or silt fencing and regular on-site monitoring, will be used to protect against inadvertent impacts to areas outside the project impact area during construction.

1.7 AVOIDANCE, PROTECTION AND MINIMIZATION MEASURES

1.7.1 Avoidance and Protection Measures

The applicant installed and operated a USFWS ("Service")-approved a passive relocation fence-and-ramp system during the fall, winter and spring of 2005-2006 to passively relocate (temporarily exclude) CTS from the work area in which wetland construction is planned. The fence-and-ramp system prevented migrating adults and juveniles from remaining within the work areas and allowed those that had aestivated within these areas to disperse toward the breeding ponds.

In addition, the following protective measures will be implemented during construction:

1. A duly trained monitor will be present at all times when work is in progress at the project site and mitigation site to supervise the on-site compliance of these protection measures. A FWS-approved biologist will be responsible for appropriate training of the monitor.
2. A training session will be given by the biologist to all construction workers before work is started on the project. After initial training, all new personnel will be given the training as well. The training session will provide pictures of the CTS, information on their biology, measures required to protect these species, relevant Federal and state regulations, penalties to harming or harassing the CTS and what to do if CTS are found.
3. If a CTS is observed within the project site by a worker, the worker will immediately inform the monitor. The monitor will notify the biologist immediately. All work will halt and machinery turned off within 100 feet of the animal until a biologist can capture and remove the CTS from the work area. Service-approved biologists are the only personnel allowed to handle CTS. CTS found in the work area will be relocated to pre-approved areas no more than one hour after capture.
4. The monitor and the biologist have the authority to halt work activities at any time to prevent harming special status species or when any of these protective measures have been violated. Work will only commence when authorized by the monitor or biologist.
5. Before the start of work each morning, the monitor will check for wildlife under any equipment such as vehicles and stored pipes.
6. Before the start of work each morning, the monitor will check all excavated steep-walled holes or trenches greater than one foot deep for any wildlife. Wildlife will be

removed; the biologist will be notified if CTS are found.

7. A record of all CTS observed and the outcome of that observation will be kept by the biologist and submitted to the FWS and CDFG.
8. Access routes and number and size of staging and work areas will be limited to the minimum necessary to achieve the project goals. Routes and boundaries of the road work will be clearly marked. Off-road driving will be limited to only what is necessary for the project.
9. All foods and food-related trash items, such as lunch bags, plastic sandwich bags, fast food containers, foods of any type, candy wrappers, chip packages, drink bottles and cans, etc., will be enclosed in sealed trash containers and removed completely from the site once every three days. Food items could attract predators into the work area.
10. No pets are allowed anywhere on the project site during construction.
11. A speed limit of 15 mph on dirt roads will be maintained.
12. All equipment will be maintained such that there will be no leaks of automotive fluids such as gasoline, oils or solvents.
13. Hazardous materials such as fuels, oils, solvents, etc., will be stored in sealable containers in a designated location that is at least 200 feet from aquatic habitats. All fueling and maintenance of vehicles and other equipment and staging areas will occur at least 200 feet from any aquatic habitat.
14. A pollution prevention plan and the identification of best management practices to control storm water discharge, erosion and sedimentation will be developed and implemented.
15. All grading and clearing will be conducted between April 15 and October 15 of any given year.
16. Project areas outside of the footprint of the development that have been disturbed by construction activities will be re-vegetated with native plants.

1.7.2 Minimization Measures

1. Passive Relocation. The applicant installed and operated a fence-and-ramp system to passively relocate (temporarily exclude) CTS from the three work areas in which wetland restoration and construction are planned during the winter and spring 2005/06. The fence-and-ramp system was designed to prevent migrating adults and juveniles from remaining within the work areas and allow those that have aestivated within these areas to disperse toward the breeding ponds. The layout and materials for the fence-and-ramp system were approved by the FWS. Installation was completed before the first rains during the 2005-06 rainy season,. The fence-and-ramp will remain in place until no water remains in the known breeding ponds on the adjacent Alton Lane Preserve.

2. Biological Monitor. A biological monitor will be on-site for part of each day for the entire period during which wetland restoration and construction occur. The

applicant's wetland specialist, who will be on-site to monitor the earthwork process, may serve as the biological monitor. The biological monitor will inform the FWS and CDFG if any CTS are encountered and request a location for release. The biological monitor will prepare a report summarizing the entire operation for submittal to the FWS and CDFG.

3. Storm Water Pollution Prevention Plan (SWPPP). The applicant will develop and implement a SWPPP designed to prevent impacts of wetland restoration and construction on habitat outside the work areas. The applicant will minimize disturbance of upland habitat during wetland restoration and construction. The length of access, haul roads and the area of stock piles will be minimized and will be clearly identified prior to groundbreaking. Any areas disturbed during earthwork will be disced, and stockpiled upland topsoil containing seed and mulch will be reapplied to encourage reestablishment of the species common in the annual grassland habitat on the ACB.

4. Dust Control. The applicant will carry out a dust control program during all active on-site grading operations. The program is intended to minimize the amount of dust leaving construction areas that could be deposited on nearby residents or sensitive habitat. It will consist of continuous use of water trucks during active grading operations. Equipment will be allocated based on weather and wind conditions, and the soil conditions encountered during construction operations.

5. Exotic Plant Control. Control of exotic vegetation may, on occasion and if approved by the Service and CDFG, include the use of specific herbicides. Prior to any use of herbicides to control exotic vegetation during the interim management period, which is anticipated to be the first five years of the bank following completion of construction of the seasonal wetland habitat, an invasive plant control plan would be submitted to the Service and CDFG for approval. The plan would identify the target species, non-chemical control methods to be used, herbicide (s) proposed to be used, application methods, and any anticipated collateral effect the herbicide may have on non-target vegetation or other biotic resources. If the target species occurs in the seasonal wetland habitat, such as pennyroyal or prostrate mamma grass, no herbicide application would occur until the wetlands are dry and the native vernal pool species have set seed. Only herbicides approved for use in aquatic areas, would be applied in this situation. Whenever possible, a wick applicator to apply the herbicide will be utilized. Herbicides will only be applied during the late spring, summer, or early fall months, when CTS are known to be below ground to avoid the likelihood of CTS coming into direct contact with the herbicide during the period of time the herbicide is active. Only herbicides with a short active period, on the order of days or weeks, will be used to eliminate the possibility that CTS would come into contact with the herbicide during their migrations to and from the breeding ponds.

1.8 MONITORING

Monitoring of the hydrologic performance and vegetation establishment and cover of the vernal pools and the Burke's goldfields colonies will extend for 5 years and will be funded by Alton Preserve, LLC. At the ASCB, water levels will be monitored in each created pool.

Quantitative data on Burke's goldfields numbers and plant species cover will be collected, and semi-quantitative data will be collected on the general vegetation to permit within-pool comparisons of the vegetation between areas that are and are not colonized by Burke's goldfields and between-pool comparisons with other vernal pools occupied by Burke's goldfields both within and outside the proposed ASCB. A systematic distribution of quadrats will be used to sample the vegetation throughout the area below the outlet of each monitored pool. Data collected in each quadrat will include:

1. number of Burke's goldfields;
2. total cover (percent of the ground covered by the vegetation as a whole); and
3. semi-quantitative measure of the cover of each species, including Burke's goldfields, using cover classes of the type employed with the releve method (i.e., 0 - 1 percent, 1 - 5 percent, 2 - 25 percent, 25 - 50 percent, 50 - 75 percent, 75 - 95 percent, and 95 - 100 percent).

All monitoring results will be provided in an annual monitoring report to the CDFG and Service by November 30th of each year for the first 5 years. The report will, if necessary, recommend maintenance practices, repairs, etc. (subject to the review and approval of CDFG and Service) necessary to ensure the ASCB continue to function as habitat for the *Lasthenia burkei*.

2.0 SPECIAL-STATUS SPECIES AND SURVEY RESULTS

2.3 ALTON CONSERVATION BANK

2.3.1 Seasonal Wetlands

Approximately 0.63 acre of seasonal wetland habitat subject to the jurisdiction of the U.S. Army Corps of Engineers occurs on the proposed ASCB (Figure 5). The seasonal wetlands occur almost entirely in the swales or in very shallow headwater depressions. They are very shallowly inundated and, as a result, show little range in plant species composition. They were disturbed in the installation and maintenance of the vineyard, but when compared with the swale through the vineyard to the north show considerable recovery in terms of both total cover and species composition. The species present in these seasonal wetlands are typical of the habitat on the Santa Rosa Plain where the gradient is relatively steep. The dominant species are ryegrass (*Lolium perenne*), Mediterranean barley (*Hordeum marinum gussoneanum*), California oatgrass (*Danthonia californica*), curly dock (*Rumex crispus*), and soft chess (*Bromus hordeaceus*). Subdominant species include California buttercup (*Ranunculus californicus*), sheep sorrel (*Rumex acetosella*), tall flatsedge (*Cyperus eragrostis*), tall fescue (*Festuca arundinacea*), slender oats (*Avena barbata*), and other upland species found in the annual grassland on the Santa Rosa Plain.

The narrow swale sections at the southern end of the proposed ACB vary in width from three to six feet. Reaches that are partially covered by the overhanging eucalyptus are undervegetated and littered with bark and fallen leaves. The dominant species include tall flatsedge, tall fescue (*Festuca arundinacea*), curly dock and penny royal (*Mentha pulegium*). In some locations, the swales pass beneath thickets of Himalaya berry (*Rubus discolor*). At the far southern limit, fluellin (*Kicksia spuria*), epilobium, yellow water cress (*Rorippa curvilisqua*) and rabbitsfoot grass (*Polypogon monspeliensis*) also occur in the swale.

2.3.2 Upland

The upland vegetation in the northern half and the narrow north-south limb of the proposed ASCB is a ruderal "annual grassland" habitat that reflects the long-term disturbance associated with vineyard operations. In the southern half of the ACB, the vegetation is a mosaic of tree- and shrub-dominated types within which are interspersed small patches of annual grassland.

The annual grassland is, in its current condition, typical of the type that occurs throughout the Santa Rosa Plain. This description of the vegetation is, however, based on data collected during the late fall (2005) when subdominant and small species are less readily observable. The dominant species include perennial ryegrass, soft chess, two species of vetch (*Vicia sativa* and *V. cracca*), filarees(*Erodium cicutarium* and *E. botrys*) , rattlesnake grass (*Briza minor, Briza maxima*), tarweeds (*Madia elegans, Hemizonia congestum*), ripgut brome (*Bromus diandrus*) and, in a few small areas, medusa head (*Taeniatherum asperum*). Subdominant species include California oatgrass, slender and wild oats, fireweed (*Epilobium paniculatum*), hedge bindweed, Mediterranean barley, rough and smooth cat's ear (*Hypocheris radicat*a and *H. glabra*), cutleaf geranium (*Geranium* dissectum) and bur clover (*Medicago polymorpha*).

Scattered throughout the grassland in the northern part of the proposed ASCB are abandoned vines (*Vitus vinifera),* a few coyote brush *(Baccharis pilularis consanguinea),* a privet hedgerow, and a stand of eucalyptus *(Eucalyptus globulus).*

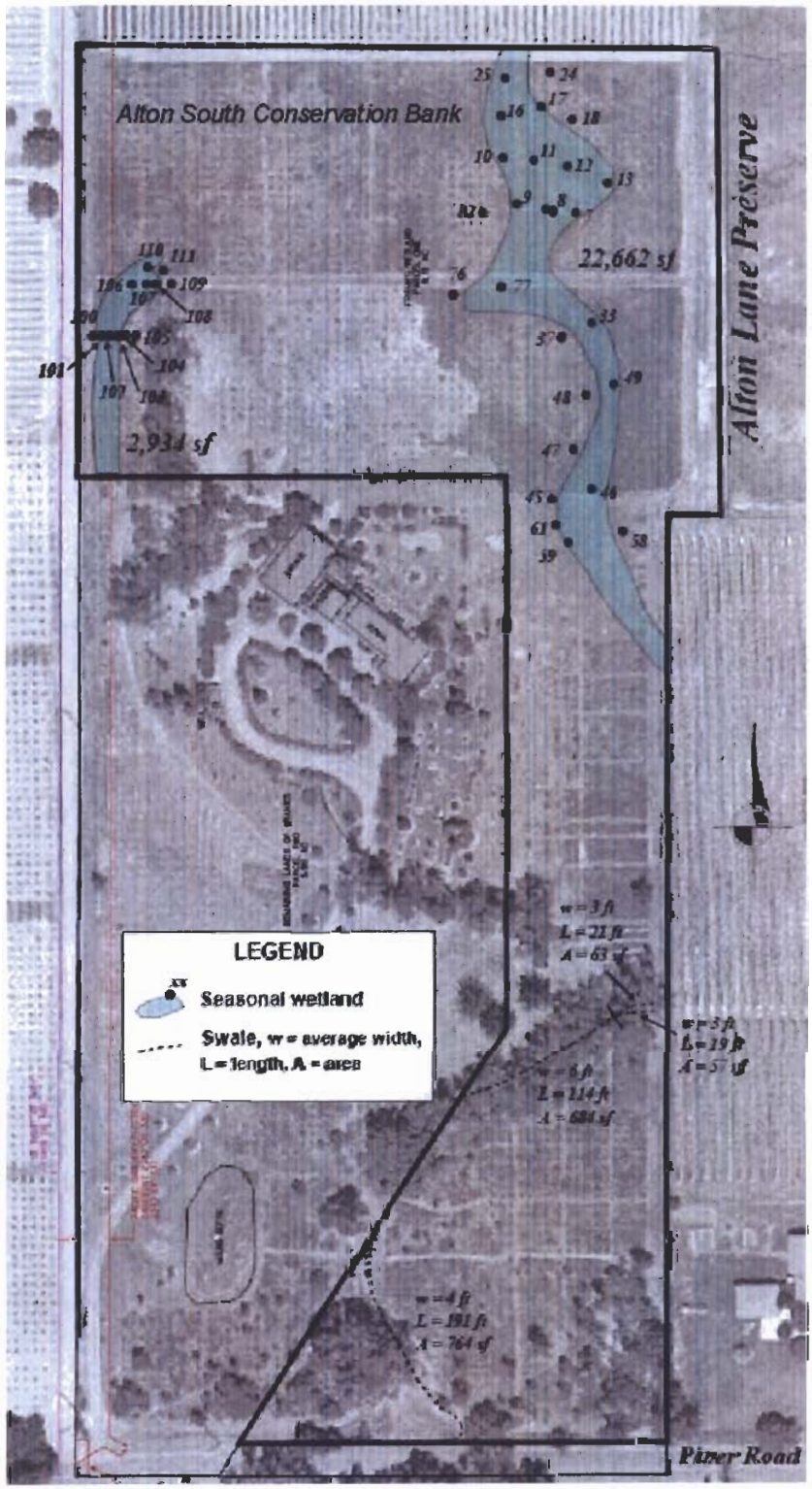

Figure 5. Jurisdictional wetlands at Alton South Conservation Bank.

In the narrow limb that connects the northern with the southern parts of the proposed ASCB, the previous landowner planted a half-dozen cypress *(Cupressus* sp,) and coast live oak (*Quercus agrifolia*), a valley oak (*Quercus lobata*), and a pair of cotoneaster *(Cotoneaster pannosa).* In this limb a few of the abandoned vines also remain in the grassland matrix.

In the southern part of the proposed ASCB, many more of the vines remain and the habitat appears to be dominated by these vines, shrubs, and planted and native trees. The trees include eucalyptus, valley oak, coast live oak, and blue oak (*Quercus douglasii*), the eucalyptus and valley oak typically 20 - 40 feet tall and the coast and blue oaks typically 12- 20 feet tall, and occasionally growing in the eucalytpus understory with eucalyptus saplings. Some blackwood acacia *(Acacia melanoxylon)* and fruit trees *(Prunus* spp.) line Piner Road. Poison oak *(Toxicodendron diversiloba),* coyote brush and Himalaya berry *(Rubus discolor)* are also scattered through the southern part of the proposed ASCB.

2.3.3 Special-status Plant Species

A special-status plant species survey was conducted in the spring of 2006 and the second survey will occur in the spring of 2007. Target special-status species will be those listed in the Santa Rosa Plain Vernal Pool Ecosystem Preservation Plan (CH2M Hill 1996) and which, by virtue of their known occurrence in the vicinity, their habitat requirements, and the types of habitat on the ASCB site, were considered to have the potential to occur on the ASCB site, and are listed below along with notes on the suitability of habitat at the ASCB for each species:

- Sonoma alopecurus (*Alopecurus aequalis* var. *sonomensis*) – no suitable habitat occurs on the ASCB.
- Bent-flowered fiddleneck (*Amsinkia lunaris*) – the upland habitat may provide suitable habitat but it has been disturbed annually.
- Sonoma sunshine (*Blennosperma bakeri*) – good-quality habitat is absent on the proposed ASCB site, but the species is present in the existing adjacent Alton Lane Preserve. Marginal habitat occurs in the main swale in the north part of the ASCB.
- Bogg's Lake dodder (*Cuscuta howelliana*) – parasitic species on many vernal pool species, particularly *Eryngium*, which is no present on the ASCB.
- Dwarf downingia (*Downingia humilis*) – no suitable habitat is present on the ASCB site.
- Burke's goldfields (*Lasthenia burkei*) - good-quality habitat is absent on the ASCB site but the species is present in the existing adjacent Alton Lane Preserve. Marginal habitat occurs in the main swale in the north part of the ASCB.
- Sebastopol meadowfoam (*Limnanthes vinculans*) – no suitable habitat is present on the ASCB site. No vernal pools are present, and the period of inundation in the existing wetlands is insufficient.
- Many-flowered navarretia (*Navarretia pleiantha*) – no suitable habitat is present in the ASCB site.
- Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*) – suitable soils are not present

in the ASCB site.

- Small-flowered mesamint (*Pogogyne douglasii* ssp. *parviflora*) - no suitable habitat is present on the ASCB site. No vernal pools are present, and the period of inundation in the existing wetlands is insufficient.
- Lobb's aquatic buttercup (*Ranunculus lobbii*) - no suitable habitat is present on the proposed ASCB site. No vernal pools are present and the period of inundation in the existing wetlands is insufficient.
- Showy Indian clover (*Trifolium amoenum*) – the upland habitat on the ASCB site provides marginally suitable habitat, but the species was not observed during wetland surveys.

No special-status species of plants were observed during the spring 2006 surveys.

2.3.4 Special-status Wildlife Species

CTS are known to occur in vernal pools created in the northwest corner of the existing Alton Lane Preserve, and the proposed ASCB is well within the migratory distance for juvenile and adult CTS. There are no physical or other barriers to migration between the proposed ASCB and these known CTS breeding ponds, and the proposed ASCB provides a suitable upland and migration habitat. CTS are assumed to be present on the proposed ASCB.

3.0 ASSESSMENT OF IMPACTS TO LISTED SPECIES

3.1 DIRECT AND INDIRECT EFFECTS

3.1.1 Special-status Plant Species

The affected area of the site will be limited to approximately 2.95 acres of existing upland habitat. Special-status species are not expected to occur in either the upland or seasonal wetland habitat at the ASCB but several special-status plant species are present in native swales and created vernal pools on the adjacent Alton Lane Preserve. Special-status surveys for plants conducted in the spring 2006 did not find any of the species to be present. The seasonal wetlands at the ASCB provide marginally suitable habitat based on site conditions and the 2006 special-status species surveys.

If herbicide application is approved by the Service and CDFG, the procedures identified above in Section 1.7.2 (Minimization Measures) should reduce possible direct and indirect impacts of herbicide application to any of the listed plant species. While there may be some drift of the herbicide if applied using a backpack sprayer, by applying after the endangered plants have set seed then the possible impact would be substantially reduced. If application of the herbicide has to occur earlier in the season before the plants have set seed, such as to control prostrate manna grass, there could be some impact to native vernal pool species, including any endangered species present in the wetland. This potential impact, however, can be reduced by limiting the spraying to days with wind at five miles per hour or less and using a concentrated stream flow from the applicator, or by using a wick applicator, if practical.

3.1.2 California Tiger Salamander

CTS are known to occur in vernal pools created in the northwest corner of the existing Alton Lane Preserve and the proposed ASCB is well within the migratory distance for juvenile and adult CTS. There are no physical or other barriers to migration between the proposed ASCB and these known CTS breeding ponds and the proposed ASCB provides a suitable upland and migration habitat. CTS are assumed to be present on the proposed ASCB.

Effects to CTS include direct effects to upland habitat during construction resulting from excavation of the ground surface. These effects will be minimal as construction will occur during the early fall when the CTS are still well below the ground surface. Prior observations during construction of the Gobbi Mitigation Preserve, Hazel Mitigation Bank and Anderson 48 Mitigation project indicates that gophers quickly occupy excavated areas following cessation of work. In one small constructed vernal pool at the Gobbi Mitigation Preserve, 40 new gopher mounds were created in a single evening following cessation of work on that particular pool for the day. As long as the construction remains above the moisture front in the soil profile, CTS are not expected to occur within the area of the soil profile subject to excavation.

If herbicide application is approved by the Service and CDFG, the procedures identified above in Section 1.7.2 (Minimization Measures) should eliminate direct and indirect impacts of herbicide application to CTS.

3.2 CUMULATIVE EFFECTS

Cumulative effects include the effects of future state, tribal, local or private actions that are reasonably certain to occur in the action area. Future federal actions that are unrelated to the proposed action are not considered in this analysis because they require separate consultation pursuant to section 7 of the Endangered Species Act (Act) or Section 10a of the Act.

The threats to Burke's goldfields, such as unauthorized fill of wetlands, urbanization, increases in non-native species, and continued and expanded irrigation of pastures with recycled wastewater discharge are likely to continue with concomitant adverse effects on these species resulting in additional habitat loss and degradation, increasingly isolated populations (exacerbating the disruption of gene flow patterns) and further reductions in the reproduction, numbers, and distribution of these species, which will decrease their ability to respond to stochastic events.

Cumulative effects on Burke's goldfields (and CTS) could increase in the future if the current application of the Corp's regulatory authority under the Clean Water Act changes. On January 9, 2001, the United States Supreme Court issued an opinion regarding the Solid Waste Agency of Northern Cook County, Petitioner v. United States Army Corps of Engineers, et al. (SWANCC) which addressed the Corps' regulatory authority over isolated wetlands. The Corps' San Francisco District generally has regulated wetlands on the Santa Rosa Plain that are hydrologically connected to the Laguna de Santa Rosa, a tributary of the Russian River. Reduced application of the Corps' regulatory authority, and subsequent lack of Section 7 consultation with the Service on such isolated wetlands could result in increased impacts to federally listed species in the Santa Rosa Plain from future state, tribal, local or private actions.

Cumulative effects to the CTS would include continuing and future conversion of suitable breeding, foraging, sheltering and dispersal habitat resulting from urban development. Additional urbanization can result in road widening and increased traffic on roads that bisect breeding and upland habitats, thereby increasing road-kill while reducing in size and further fragmenting of the remaining habitats.

4.0 PROPOSED MITIGATION FOR LISTED SPECIES

The proposed action at the ASCB will be self-mitigating. Construction of 0.78 acre of vernal pools will increase the acreage of wetlands (vernal pools and other seasonal wetlands) at the site and provide potential habitat for *Lasthenia burkei*. Removal of the grape vines and exotic non-native trees and shrubs will provide an increase in the value of the uplands areas for CTS.

5.0 REFERENCES

CH2M Hill. 1998. Final training manual to evaluate habitat quality of vernal pool ecosystem sites in Santa Rosa Plain. Prepared for the U S. Army Corps of Engineers. December 1998.

Environmental Laboratory. 1987. Corps of Engineers wetland delineation manual. Technical Report 87-Y-1. U. S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi. 100 pp and Appendices.

Golden Bear Biostudies. 2005. Biological assessment, 10220 Herb Road, Windsor (APN 066-021001). Report prepared for Mr. Bob Rosetti. October 24, 2005. 18p. + appendices.

Monk & Associates. (2006a) Special-status plant first year report, Kerry Ranch Phase I project site, Santa Rosa, Sonoma County, California. Letter report prepared for Mr. Harvey Rich, Kerry Ranch LLC, dated February 14, 2006. 4 pp + attachments.

Monk & Associates. (2006b) Special-status plant first year report, Kerry Ranch Phase II project site, Santa Rosa, Sonoma County, California. Letter report prepared for Mr. Harvey Rich, Kerry Ranch LLC, dated February 14, 2006.

Patterson, C. A. 1992. Letter report Re: Botanical/wetland survey of the site on Francisco Avenue in northwest Santa Rosa. 5p. September 13, 1992. [prepared for Mr. Craig Stewart, for the site identified as Kerry Ranch 2.].

Patterson, C. A. 1995a. Letter report Re: Botanical/wetland survey of the site on Francisco Avenue in northwest Santa Rosa. 5p. Original report July 23, 1992; revised and resubmitted August 2, 1995, reporting results of additional field visits in 1992, 1993, and 1994). [prepared for Dr. Laurence P. Stromberg for the site identified as Kerry Ranch 2.].

Patterson, C. A. 1995b. Letter report Re: Botanical/wetland survey of the 'Craigie/Johnson' site, 2193 Francisco Avenue, northwest Santa Rosa. 5p. Original report July 23, 1992; revised and resubmitted July 29, 1995. [prepared for Dr. Laurence P. Stromberg for the site identified as Kerry Ranch 3.]

Stromberg, L. P., Wetlands Consultant. 1997. Wetland mitigation plan, northwest Santa Rosa Annexation Area 8-87 (part), City of Santa Rosa, California. Prepared for Mr. George Tedeschi, Project Coordinator, Northwest Property Owners Committee. March 6, 1997. 70 p + appendices.

Stromberg, L.P., Wetland Consultant. 2004. Results of survey for special-status plant species, Wagner-Hall property, Sonoma County, California. Report prepared for Mr. Harvey Rich, TRI Development, dated July 8, 2004.

Stromberg, L.P., Wetland Consultant. 2006. Wetland and Endangered Species Mitigation Plan, Kerry Ranch 2 and 3 Projects, Santa Rosa, California. Prepared for Mr. Harvey Rich, Kerry Ranch LLC.

USDA. Forest Service and Soil Conservation Service and the University of California Agricultural Experiment Station. 1972. Soil survey of Sonoma County. 188 pp. + maps, illus.

Personal Communications

Cay Goude, U.S. Fish and Wildlife Service

Jan Knight, U.S. Fish and Wildlife Service

Carl Wilcox, California Department of Fish and Game