ENVIRONMENTAL REVIEW INITIAL STUDY

FOR

The Private Equestrian Facility, Water Tanks and Water Line Extensions at the Stephenson Ranch

(Application 97-0648)

Prepared by the
County of Santa Cruz Planning Department

December 20, 1999

COUNTY OF SANTA CRUZ
PLANNING DEPARTMENT

Date: December 20, 1999
. Staff Planner: Kim Tschantz

ENVIRONMENTAL REVIEW
INITIAL STUDY

APPLICANT: John and Brenda Stephenson APN: 59-021-08/62-l 51-03
OWNER: John and Brenda Stephenson (A single parcel)
Application No: 97-0648 Supervisorial District: 3
Site Address: 345 Back Ranch Road, Santa Cruz, 95060
Location: Both sides of Back Ranch Road at its intersection with Highway 1, four miles northwest of the Santa Cruz city limits, Bonny Doon area.

EXISTING SITE CONDITIONS

Parcel Size:	208 acres
Existing Land Use:.	Agriculture and Residential
Vegetation:	Grassland, scrub and riparian corridors dominated by either willows or coast live oak.
Slope:	Less than 15%
Nearby Watercourse:	Scaroni Creek
Distance To:	On the project parcel
Rock/Soil Type:	Dense fractured Santa Cruz mudstone overlain by various soil types. The dominant soil type'at the project site is Watsonville Loam

ENVIRONMENTAL CONCERNS

Groundwater Supply:	Good quality/Mod. quant.	Liquefaction:	Low potential
Water Supply Watershed:	No	Fault Zone:	No
Groundwater Recharge:	Not at site	Floodplain:	No
Timber and Mineral:	No	Riparian Corridor:	Yes
Biotic Resources:	Riparian Corridor	Solar Access:	Adequate
Fire Hazard:	Yes, near SFD site	Solar Orientation:	Adequate
Archaeology:	No	Scenic Corridor:	Yes *
Noise Constraint:	No	Electric Power Lines:	No
Erosion:	No	Agricultural Resource:	Yes
Landslide:	No, not at project sites		

* Project site not w/in viewshed of scenic corridor

SERVICES

Fire Protection:	County Fire.	Drainage District:	None
School District:	Santa Cruz City	Project Access:	Back Ranch Rd., a private R/W.
Water Supply:	Well, reservoir (supplied by Laguna Creek, off-site well and natural precipitation) and S.C. City Water Dept.		
Sewage Disposal:	Septic tank system		

PLANNING POLICIES

Zone District:	"CA"	Within USL:	No
General Plan:	"Agriculture" with "Agricultural Resource"		
Special Designation:	No		
Coastal Zone:	Yes		

PROJECT DESCRIPTION:

Proposal to implement the following agricultural improvements for private equestrian uses:

a) Construct an 8,000 sq. ft. agricultural barn with a rest room;
b) Install five 4,975 gallon water storage tanks;
c) Install a new water line of approximately 2,000 lineal feet from the "Upper Reservoir" to the proposed water storage tanks for emergency fire suppression purposes;
d) Install another water line of approximately 2,200 lineal feet from a new well to one of the proposed water tanks;
e) Use a recently drilled domestic well to serve interior needs of the horse barn; and
f) Grading of 840 cubic yards to facilitate the construction of the facilities listed above:

Requires a Coastal Zone Permit and a Grading Permit. (Application 97-0648)

ENVIRONMENTAL REVIEW PROCESS:

An Initial Study was prepared for this project on December 21, 1998. The Initial Study was substantially revised to address comments that were received during the public review and comment process. The revised Initial Study was dated March 8, 1999. The March 8 Study was considered by the County Planning Commission in several public hearings and was approved at their meeting of September 8, 1999; however, that approval was rescinded. The Initial Study was reconsidered by the Board of Supervisors under Special Consideration pursuant to County Code 18.10.350. On October 26 the Board referred the project back to the Environmental Coordinator for additional review of the Initial Study to reassess cumulative impacts and other issues in light of the commencement of Environmental Review on the Master Plan for biomedical livestock raising on the same property.

This is a newly prepared Initial Study which provides the results of additional review which has occurred since October 26, 1999. **Text in the *checklist* which discusses issues related to cumulative impacts are provided in bold type to facilitate readers' review of such issues.** This document will be circulated for public review beginning December 27, 1999.

PROJECT SETTING:

This 208 acre parcel is located on the marine terrace directly north (inland) of Highway 1. The portion of the site bordering the highway is located 2,000 feet from the coast. (Refer to Attachment 1). The site is located in a rural area of the County primarily supporting agricultural and open space uses. The subject property has traditionally been used for row crop and livestock grazing agriculture. The current owners are using the property to raise goats for biomedical purposes. A new single-family dwelling for the property owners is currently being constructed 2,300 feet southwest of the project site.

The elevation of the property ranges from 120 feet MSL at Highway 1 to 600 feet MSL at the northern end of the parcel. Attachment 2 illustrates the major natural

and human-made characteristics of the property. The property includes nearly level land that has been used for row crop production and livestock grazing in the past and is currently used for the pasturing of goats. About 40% of the acreage consists of land with slopes of 1550% which supports grassland and scrub habitats. Four intermittent streams with associated riparian vegetation flow across the property. The largest of these riparian systems, Scaroni Creek, bisects the property; much of it flows in close proximity to a private right-of-way, Back Ranch Road. Due to an historical impoundment at a midway location of this riparian system, the middle reach of Scaroni Creek has been classified as an ephemeral stream. The impoundment has created a water body and wetland known as the "Lower Reservoir". A former rock quarry, which has been historically filled with water procured from a nearby stream, Laguna Creek, as well as by surface runoff is another water body with emergent vegetation known as the "Upper Reservoir". Both reservoirs have traditionally been used for agricultural irrigation purposes. The applicant is continuing this use to irrigate the livestock grazing areas. The property is located midway between Laguna Creek and Majors Creek at about 1,300 feet from each stream. The biotic habitats are shown on Attachment 3.

Two private right-of-ways are located on the parcel, which are best shown in Attachment 3. Back Ranch Road bisects the southerly half of the property into northwest and southeast halves before traversing the northwest edge of the property as it extends northward. The road provides access to other properties located north of the site and continues northward to Smith Grade. Farm Road is the other right-of-way on the parcel. It is perpendicular to Back Ranch Road and provides access to a cluster of buildings that have been located on the parcel for many years. This building cluster includes many of the facilities used to support goat raising on the site. The Initial Study prepared for Application 96-0837 provides more information on the project setting.

BACKGROUND AND DETAILED PROJECT DESCRIPTION

A new single-family dwelling was completed earlier this year 1.1 mile northeast of the Farm Road building cluster. This dwelling and certain other uses were the subject of Environmental Review under Application 96-0837. The Initial Study prepared by the County Planning Department dated April 21, 1997 is incorporated into this Initial Study by reference. Besides evaluating the new dwelling site, the Initial Study also evaluated a plan to rectify violations of the County's Riparian Corridor and Wetlands Ordinance that occurred on the property. A Coastal Zone/Grading/Land Clearing/Riparian Exception Permit was approved for Application 96-0837 on June 20, 1997. A Mitigated Negative Declaration was approved on that same date. The staff report prepared by County Planning dated June 20, 1997 is incorporated by reference into this document. The permit included conditions for livestock fencing to protect riparian habitats. The fencing requirement for the ephemeral reach of Scaroni Creek was not resolved with that permit so a subsequent permit application was made to address this issue (Application 97-0779).

The proposed equestrian facilities [Application 97-0648) are located at the northern end of the parcel in an area dominated by non-native grassland. (Attachment 4). An Initial Study, dated February 10, 1998, was prepared for the original proposal of this project, which included two 4,000 square foot barns and irrigating nearby

pasture with water procured from the "Upper Reservoir". The project was revised in November 1998 to include a single 8,000 square foot barn. Revisions to the proposed water system followed in the subsequent months. A proposed silo to be located 0.75 mile southwest of the project site was removed from the project in October 1999.

A separate application for a master plan for biomedical livestock raising on this property was deemed complete by County Planning in July 1999 and Environmental Review commenced on that project on September 27, 1999. The environmental determination for the master plan project is that an EIR will need to be prepared. Preparation of the EIR will commence early in the year 2000 after the Notice of Preparation has been circulated. Most of the new facilities proposed by the master plan will be in the vicinity of the subject project. This Initial Study evaluates the project described at the top of page 3. It is described in more detail in the following paragraph with the project conditions that were adopted by the Planning Commission. The analysis in this report evaluates the project under the backdrop of several other facilities proposed to be constructed on this same parcel by the master plan. Both the project and future facilities proposed by the master plan would be located within an area of the property that currently open space land that has been historically been used for livestock grazing purposes. As such, the subject project has the potential to set the stage for the proposed master plan development. This issue is discussed under checklist items F.2 and L.3.

The existing project would result in the construction of a single horse barn consisting of 8,000 square feet with a height of 32 feet. The barn would include separated areas for a tack room and a rest room. A septic tank system would be constructed down slope of the barn. A 450 foot long road would be constructed to access the horse barn from Back Ranch Road. The access road would terminate at a 7,600 square foot parking and turn-around area adjoining the barn structure. The road and parking area would be surfaced with base rock overlain with oil and screenings. Five water storage tanks with capacities of 4,975 gallons/each are proposed to be installed adjacent to the proposed access road for a total storage capacity of 24,875 gallons. The tanks would be filled from water procured from the "Upper Reservoir" for emergency fire suppression purposes only. Water to a sixth tank (an existing 86 gallon tank) will be provided by an on-site well located in the northeast corner of the parcel. This well was permitted for domestic purposes in 1997 and is now proposed for rest room and stock watering needs inside the barn.

A new water line would be installed from the well and the 6th tank to the barn. The other tanks would be connected to the "Upper Reservoir" to provide emergency backup fire protection. A new water line would have to be installed from this reservoir to connect with the tanks for this purpose. It would be regulated by a locked valve that could only be unlocked by County Fire Department staff for fire fighting and testing purposes. A water pump would be located adjacent to the tanks so their water could have adequate pressure for fire fighting purposes. The California Department of Forestry and Fire Protection has required the installation of a fire hydrant adjacent to the parking and turn-around area as well as equipping the barn with a fire extinguishing sprinkler system.

Site preparation work for the horse barn, parking area and adjoining paddock areas would include the grading the 840 cubic yards of earth. The volume of cut and fill would be balanced so no excess material would need to be imported or exported to or from the site. The grading would occur over an area of approximately 1.4 acres

to reduce the slope from the existing 4% gradient to a slope of 2% or less.

SUMMARY OF IMPACTS

The following listing presents the project generated environmental impacts that have been identified in the Initial Study Checklist. A more detailed discussion of each impact identified below can be found under the checklist item shown in parentheses directly after the statement of each impact, The Initial Study checklist begins on the following page.

1. IMPACT: Grading of the 1.4 acre site, which is located adjacent to a steep slope, will generate potential erosion impacts to that slope due to the loss of vegetative cover and uncontrolled surface drainage flowing towards that slope. Additional grading proposed by the master plan will add to this potential impact. The project will make a substantial contribution to potential impacts generated by the proposed grading in the project vicinity. (Refer to Checklist item A.3)

2. IMPACT: Installation of the two new water line routes, which span a combined total of 4,200 lineal feet, have the potential to generate erosion, cause a loss of native grasses and stimulate the colonization by exotic invasive plant species due to the loss of vegetative ground cover along the new routes. (A.8 and C.2)

3. IMPACT: Water quality of the new well, which has been constructed to in part serve the barn's rest room, does not meet State standards for bacterial levels. This will place ranch workers and other people using the barn in contact with water which does not meet potable requirements. (8.2)

4. IMPACT: Construction of the water line from the "Upper Reservoir" could harm red-legged frogs that use the "Upper Reservoir" area as habitat.

5. IMPACT: Uncontrolled release of horse manure will flow from the project site downslope into a tributary of Majors Creek. This will potentially degrade the downstream water quality of the creek. This potential impact is exacerbated by the additional generated by goats proposed to be housed in an near master plan facilities. (B.5)

5. IMPACT: Outdoor lighting will restrict wildlife use of the adjoining open space areas during nighttime. Additional lighting on the exterior of proposed master plan facilities will add to this impact. The project will make a substantial contribution to the cumulative nighttime lighting impact on area wildlife. (C.4)

6. IMPACT: Development of the project site will remove a 0.5 acre area from open agricultural land which could be used for livestock grazing and/or the cultivation of crops. In addition, the project will create a 5th development cluster on the property which will further restrict land dedicated to crop and livestock production. The additional facilities proposed by the master plan will in-crease the amount of land available for crop production and livestock raising. This project will make a substantial contribution to the cumulative impact of loss of open land available for versatile agricultural uses. (F.2)

7. IMPACT: The project will affect open space and wilderness views from the adjoining public land which is a wilderness portion of Wilder Ranch State

8. Park. The project site is in clear view of an existing trail planned for public recreation by the California Department of Parks and Recreation. Additional development proposed by the master plan will increase this impact. The project will make a substantial contribution to the cumulative visual impact on users of Wilder Ranch State Park. (G.3)

9. IMPACT: The construction of the 8 inch water line from the "Upper Reservoir", the 450 foot long road and utilities to the water tanks and barn will potentially facilitate the development of future facilities in the same area of the property such as those proposed by the master plan. This is an growth inducement impact. (L.3)

IMPACTS OF THE EARLIER VERSION OF THE PROJECT WHICH HAVE NOW BEEN AVOIDED THROUGH PROJECT REDESIGN

The following list provides a summary of impacts that were identified in earlier versions of the projects that have now been resolved through redesigns of the project to mitigate the earlier identified impacts. This listing is provided here only for informational purposes and to readers' understanding of how the current project differs from earlier designs of the project.

1. Increased surface runoff from the new 0.5 acre of impervious surfaces could exacerbate the erosion problems in the eroded gully located downslope from the project site, This impact is now avoided by a new engineered drainage plan that conveys all site runoff 200 feet southwest of the eroded gully to a non-hazardous point of discharge (Checklist items A.2 and B.9)

2. Unrestricted use of the "Upper Reservoir" water to fill 4-5 water storage tanks has the potential to limit water availability to Swanton Berry Farms, which shares the Laguna Creek diversion with the applicants, as well as potentially degrade the habitat for the federally listed red-legged frog (*Rana aurora draytonii*) and steelhead trout (*Oncorhynchus mykiss*). The project has been revised to restrict use of "Upper Reservoir" water for emergency fire fighting and testing purposes only. The tanks will also be used only for that purpose and will not be used for pasture irrigation as earlier proposed. (B.12 and C.1)

3. Use of the new well for agricultural purposes could generate excessive drawdowns of the Lanting community well which is located 170 feet from the new Stephenson well. The project has been revised so this well will not be connected to any of the 4,975 gallon water tanks but rather only be connected to an adjacent 86 gallon tank. Replacement of this tank in the future is limited to a tank with a storage capacity no greater than 100 gallons. The water line from the tank will connect directly to the barn and not to any other facility. (B.2)

ENVIRONMENTAL REVIEW CHECKLIST

A. GEOLOGIC FACTORS

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
Could the project, or its related activities affect, or be affected by, the following:				
1. Geologic Hazards: earthquakes (particularly surface ground rupture, liquefaction, seismic shaking), landslides, mud slides or other slope instability, or similar hazards?	___	___	X	___

The property is not within a fault zone. The project does not contain improvements that significantly affect *steep slopes or unstable areas.*

2. Soil Hazards: soil creep, shrink swell (expansiveness), high erosion potential?	X			___

The project site is relatively flat *area with* a *4% slope. The NRCS Soil Survey maps this site as being composed of Watsonville loam. While this soil is characterized with high shrink/swell properlies, the type of construction proposed can occur on this type of soil without difficulty. A seasonal drainage tributary to Majors Creek is located 100 feet southeast of the project site. This drainage becomes a severely eroded incised ravine 280 feet from the project site and it appears to have experienced erosion problems for several years. Project site drainage naturally flows into this eroded* swale. *Increased drainage from project improvements, if not controlled, will exacerbate the erosion problem at the swale.* ***Drainage from most master plan improvemenfs is proposed to be conveyed into this* swale; *however, the barn will have a completely separate drainage system.*** *The applicant has submitted site grading/drainage/erosion control plans that show how drainage will be conveyed* away *from the proximity of the eroded swale and a steep slope located between the swale and the project site area. Implementation of this plan will avoid erosion problems on the steep slope east of the site as well as avoid exacerbating the current eroded condition of the drainage* swale. ***Since the project's drainage system is not connected to, nor contributes effluent to the master plan's proposed drainage* system, *the project does not contribute to cumulative drainage impacts of the master plan.*** *Project drainage is further discussed under item B. 9 below.*

3. Change in topography or ground surface relief features?	___	- X -		___

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact

Grading plans submitted on February 19, 1999 show the project includes the excavation of 840 cubic yards of earth to facilitate the construction and use of the barn and its adjoining parking area and to control surface drainage. This grading will reduce the native slope of a 1.4 acre area to gradients ranging from 2.5-1.3%. Grading will be limited to an area *of 4% slope and will not extend into the more steeply sloping* area *located 60 feet east of the proposed barn. Therefore, this grading will not result in a significant topographical change. However, excavating such an area adjoining a steep slope will generate potential erosion impacts as discussed in item A.2 above. Implementing the project* drainage *and erosion control plan will mitigate this impact.* ***This grading will contribute to cumulative grading impacts in conjunction with earthwork associated with the proposed master plan facilities. A comprehensive erosion control plan addressing all proposed facilities should be prepared to address cumulative erosion impacts from total development.***

4.	The destruction, covering or modification of any unique geologic or physical feature?	___			X
5.	Steep slopes (over 30%)?				X
6.	Coastal cliff erosion?		___		X
7.	Beach sand distribution?	___	___		X
8.	Any increase in wind or water erosion of soils, either on or off site?	X			___

Erosion control measures can be implemented in areas *of new construction and ground disturbance* at *the project site, including the entire length of the two new water line routes. Exposed soil should be seeded and mulched prior to the commencement of the next* season *(October 15, 1998) to prevent erosion from occurring. An erosion control plan prepared by Ifland Engineers dated 2/17/99 has been submitted to address potential erosion impacts of the project, The p/an* has *been reviewed and accepted by Planning staff. The applicant should include this erosion control p/an with the construction drawings submitted for a Building Permit application for the project structures and implement the measures specified by the approved plan.* ***The interaction of this plan with the other erosion control plan prepared for the master plan has not been evaluated.***

B. HYDROLOGIC FACTORS

Could the project affect, or be affected by, the following:

1.	Water related hazards such as flooding or tidal waves?		___		X

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	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitisated	Less Than Significant Impact	No Impact
2. Private or public water supply?		X		

The existing water *system is a complex system of various wafer sources for differing purposes on the properly. The project* has *been revised so the 5 storage tanks are no longer connected to the properly's water system except to provide water for emergency fire fighting* and *testing purposes. The following text provides* a *general description of the ranch's water system. The City of* Santa *Cruz provides water service to the parcel through two connections. One connection provides untreated water for irrigation purposes to supplement* water *procured from the two reservoirs located on the site. The second connection provides treated* water to serve *the two dwellings for domestic purposes. The two reservoirs* are *filled from water that is procured from Laguna Creek and a well (named Majors We//)* located *near the water diversion on Laguna Creek. The applicant shares the water from this diversion and the Majors Well with the grower on the adjoining parcel, Swanton Berry Farms. A spring, located northeast of the project site, provides limited* water *to an old caretakers dwelling* that *is present/y used as a stabling area. A new we// has been constructed in the northeast corner of the parcel to serve the project. It is not yet operational. This will provide all domestic water to the barn to serve the restroom and horse watering needs.*

The domestic line conveys City treated water *and serves the former dwelling located on Farm Road and also serve the larger dwelling which was constructed earlier this* year. *According to the applicant, the irrigation line, which conveys untreated City water, provides spray irrigation for the field north of Farm Road and is* also *used for animal needs at the goat keeping facilities along Farm Road. The irrigation line continues to a location adjacent to the "Upper Reservoir" where it is present/y capped off. The City Water Department limits the amount of the water that can be used in the irrigation line parcel-wide to 224,400 gallons/month (300 billing units). A third water line, referred to as the agricultural line, is used to convey water from the Laguna Creek diversion and the off-site well to the "Lower Reservoir" and to convey water between the two resetvoirs. This line is not connected to either the domestic line or the irrigation line.*

Originally, the project would have extended the City's irrigation line from where it is presently capped off to the project site to fill four of the five tanks. That aspect of the project was *removed by the Planning Commission. Instead,* a *new water line with* a *locked* valve will *connect the 'Upper Reservoir" with the five storage tanks to provide water to the tanks for emergency fire fighting or testing purposes. The fire Department would* have sole *possession of the key to unlock the* valve *enabling water to flow from the "Upper Reservoir" to the 5 tanks. A 6" tank would be served by an on-site we//* located at *the northeast corner of the parcel. Serving this 6th tank requires activating this recent/y constructed* we// and *installing a water line to the project site to serve this single tank. The use of this well is discussed in more detail below. Water in the 6th tank will be used to water the animals kept* at *the facility. The private on-site well will also provide water for the restroom. The quality of this well* water does *not meets State standards for potable water (Attachment 6). The applicants will need to take steps to lower the bacteria/ /eve/s in the we// water and submit new testing results to the Environmental Health Service before this water* can *be used to serve the barn's rest room.*

The original project proposed to use "Upper Reservoir" water to fill four of the water tanks. Since much of the "Upper Reservoir" water *is provided by the Laguna Creek diversion and the*

Significant: No or Unknown Mitisation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact

off-site well (located on the Mills parcel), the original project could have resulted in an additional amount of the off site water being used for the project. The previous Initial Study identified this as a significant impact because there was *a potential for this additional water use to reduce the amount of water available to Swanton Berry Farms as well as to reduce the amount of water available for stream habitat. These impacts are discussed in more detail under items C. 1, C.2 and F.2. The adjoining Mills property has been legally allocated riparian rights to Laguna Creek by the State Division of Water Rights and water from the diversion is shared equally with the subject Stephenson parcel, but the diversion is limited to 26 acre/feet of maximum allowable storage and use/year. (Attachment 7).*

The County Fire Department has required a water storage capacity of 24,875 gallons for this project (Attachment 12). This relatively large *amount of* storage *will be used for fire fighting needs at the project site as well as wildfire suppression in the surrounding area.*

County Fire has also required that the tanks be served by a water source which can quickly refill of all *tanks at any time. Due to variable pressure in the City's irrigation* water *line, this type of refill cannot be guaranteed by the City water line which is now proposed as the primary water source for the tanks. Use of the new well or spring are not feasible to fill the five tanks due to their low production rates. A line from the "Upper Reservoir" is therefore required to meet County Fire Department's fire flow standards in meeting fire suppression needs. These standards are discussed under item t-f. 3. a below. According to County Fire, any fire trucks fighting area fires, must be refilled by a source that does not exceed 15 feet vertical lift (i.e. the* vertical *distance between the water source and the truck cannot exceed 15 feet). This standard cannot be met by a truck procuring water direct/y from the reservoir during much of the* year. *As a result, water storage tanks have been required. However,* as *stated above, the connection to the "Upper Reservoir" would limit reservoir water to be used for fire related emergency purposes.*

Description and Use of the New Well
The new well, constructed in 1997, is located near the northeast property line of the Stephenson parcel and approximately 120 feet south of a *community well located on the adjoining Lanting/Eckstrom parcel. The Lanting/Ekstrom well provides domestic water to 4 rural residential properties on* Back *Ranch Road. The new Stephenson well* was *issued* a *permit from the County Environmental Health Service for domestic use (Attachment 6B). , Use of the well to serve the project has the potential to affect the water level of the Lanting community well, which is located 50 feet from the common property line of the two parcels. According to the North Santa Cruz County Water Master Plan, the upper coastal terraces of this portion of the county experiences limited water production. This fact, coupled with 170 foot distance between the two wells will results in* a *potential impact to the to the Lanting community well if use of the new Stephenson well is not limited. The owner/applicant has agreed to connect the well to an existing 86 gallon water tank located near the well which is not connected to any of the other 5 storage tanks to avoid any possibility of significantly affecting the production of the Lanting well. To mitigate the potential impacts on the Lanting community well and water system, the Planning Commission adopted a condition that* any *replacement of this 6" tank in the future be limited to a tank with a maximum volume of 100 gallons. The applicants have agreed to this condition.*

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	Significant: No or Unknown Mitiaation	Potentially Significant Unless Mitioated	Less Than Significant Impact	No Impact
3. Septic system functioning (inadequate percolation, high water-table, proximity to water courses)?	____	____		X

The project has been reviewed by the County Environmental Health Service. Soil testing indicated that the sewage disposal capacity of the site is adequate for the proposed project. (Attachment 15)

4. Increased siltation rates?	___	___	X	

See item A.8

5. Surface or ground water quality (contaminants including silt-urban runoff, nutrient enrichment, pesticides, etc.)?	X			

The "Upper Reservoir", which is the most proximate water body, is located 1,650 feet to the southwest. The nearest riparian environment is the upper reach of Scaroni Creek, located 750 feet to the north. Majors Creek, while being located 1,330 feet to the east, *is fhe only one of the three water bodies that could be effected by the project. The creek has a high potential to be impacted by the project due to one of ifs tributaries being located directly downslope the project site. (Refer to Attachment 4). This tributary is the severely eroded drainage swale described in item A.2 above. Storm water runoff nafurally flows across the project sife into this drainage swale. If the runoff contains horse manure, contamination of Majors Creek could occur. A manure management plan (Atfachmenfs 8A and 8B) to accommodate 8 horses has been submitted to County Environmental Health for review. The plan prevents manure laden runoff from reaching the swale, which is located east and down slope of the proposed equestrian facility. The main facility proposed is a 98 square foot concrete manure bunker where manure can be stockpiled and composted while being protected from winter rains. According to the plan, fhe 1,372 cubic foot volume of the bunker would accommodate manure and bedding* straw *generated by 8 horses over a 6 month period. (Refer to calculations in Attachment 8A). A 3 month period is typically considered adequate for the temporary stockpiling of manure; and therefore even if the barn was used to shelter 16 horses, fhe bunker would be adequate. The p/an has been accepted* as *adequate by Environmental Health. A more detailed plan has now been incorporated into the engineered drainage plan for this project. Together, implementation of the manure management plan and fhe Ifland engineered drainage/erosion control plan will adequate/y mitigate potential impacts of manure accumulation generated by this project alone.* ***However, manure from horses will constitute a portion of the total manure generated by all livestock in the project vicinity if the master plan improvements are approved. The erosion control plan and manure management plan proposed by the master plan have not been evaluated regarding how they would interact with such plans proposed by this project.*** *Erosion from wafer line*

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant impact	No Impact

trenching to the reservoir can

be prevented by incorporating erosion control measures at completion of trenching as discussed in item A. 8 above.

In addition to the issues discussed above, a fair argument has been presented by Gerald Weber, CEG that the drilling of 369 shallow wells on the property in the 1950s for oil exploration creates a series of potential pathways for surface contaminants to reach the underground aquifer (Attachment 16). This potential impact is exacerbated with the manure generated by the livestock associated with the master plan. This issue will need further analysis to determine the level of impact, It will be one of the issues that will be evaluated in the EIR to be prepared for the master plan project.

6. Quantity of ground water supply, or alteration in the direction or rate of flow of ground waters? ___ X

Use of the on-site well will increase the use of the aquifer and may effect the production of the nearby Lanting community well. This impact is discussed under item 8.2 above.

7. Groundwater recharge? ___ X

The project site is not located in a mapped Groundwater Recharge area. However, the project drainage plan will enhance recharge by allowing project site runoff to be discharged southwest of the sife in a manner fhat percolates captured runoff info fhe soil.

8. Watercourse configuration capacity or hydraulics? ___ X

9. Changes in drainage patterns or the rate and amount of runoff? ___ X

The topography of fhe northeast end of the parcel results in surface drainage flowing info

two separate sub-watersheds. Runoff west of the topographic rise flows info Scaroni Creek and runoff east of the rise flows into tributaries of Majors Creek. Except for fhe project access *driveway, all equestrian project improvements will add runoff to the Majors Creek sub-watershed. Most runoff flows into a seasonal drainage fributary of Majors Creek southeast of the project site. (See Attachment 4). This seasonal drainage is severely eroded. Drainage improvements should be designed fo avoid exacerbation the current erosion problem. The equestrian project has been modified result in the impervious surfacing of 21,720 square feet (0.5 acre). These impervious surfaces are as follows:*

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No impact
a. *Barn:*	*8,000 sq. ft.*			
b. *Parking and circulation area:*	*7,600*			
c. *Turn-around extension to parking* area:	*360*			
d. *Access road:*	*5,760*			
e. *TOTAL:*	*21,720 sq. ft.*			

The recently submitted engineered drainage plans (Attachment 5) show all drainage being conveyed west away from the seasonal drainage. This drainage plan is consistent with earlier recommendations of staff to capture all *site drainage in* an *enclosed pipe and discharge it at least 200 feet west of the project site to* a *gently sloping* area *located southwest of the proposed barns to avoid any runoff being discharged into the eroded tributary. The drainage should be discharged through* a *dispersion device that separates discharge flows to result in sheet flow across this gent/e slope of grassland. Alternatively, discharging into* an *adequately sized rock lined trench, as shown in the drainage plan, would be an acceptable discharge method. Attachment 4 shows the recommended area for drainage discharge. An engineered plan showing details of the drainage system has now been submitted for Planning staff review and approval. The approved p/an* shall *be included along with construction drawings submitted for a Building Permit. Also see discussion under B. 5. above.*

10. Cumulative saltwater intrusion?	___			X
11. Inefficient or unnecessary water consumption?	___	___	___	X
12. Change in the amount of surface water in any water body?			X	

Refer to item B.2

C. BIOTIC FACTORS

Could the project affect, or be affected by, the following:				
1. Known habitat of any unique, rare or endangered plants or animals (designate species if known)?		X	___	___

The California red-/egged frog (Rana aurora draytonii) has *been observed on the project parcel. This species is listed as* a *threatened animal species by the U.S. Fish and Wildlife Service (USFWS). The species is not expected to inhabit the* area *of the parcel proposed for fhe equestrian facilities. However, the frog has been sighted in both the 'Upper and Lower Reservoirs" on the property and both water bodies contain suitable habitat for breeding purposes for the species. In addition, Scaroni Creek, which is hydrologically associated with*

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact

the "Lower Reservoir': is expected to be both a refuge and *migration habitat for the species. As a result of a previously approved project, the applicant has made an application for an*

Endangered Species Act Section 10a take permit with the USFWS to authorize incidental take *of the animal during construction and regular livestock raising activities . The application includes the preparation of a Habitat Conservation Plan for the species. The permit application and the HCP are currently under review by the USFWS.* The USFWS has reviewed the equestrian project and have determined that an HCP would not be required to implement this particular project on the parcel but that certain measures should be taken to avoid the potential for take of the Red-legged frog or its habitat. The review comment letter from USFWS is provided in Attachment 14. The measures specified in that letter should be included as mitigation measures for this project.

According to the California Department of Fish and Game (CDFG), nearby Laguna Creek provides spawning habitat for the Steelhead trout (Oncorhynchus mykiss*) from the river mouth to 3.6 miles upstream. This fish species is listed* as a *threatened animal species-by the National Marine Fisheries Service. It is also named by the CDFG as a "Species of Special Concern". Laguna Creek is one of the primary sources of* water *for the "Lower and Upper Reservoirs" on the project site. Since "Upper Reservoir' water will only be used for emergency fire fighting purposes, steelhead and ifs instream habitat will not be significantly affected by water use of this project.*

2. Unique or fragile biotic community (riparian corridor, wetland, coastal grasslands, special forests, intertidal zone, etc)?				X

Three biotic surveys (Attachments 9, 10 and 11) were conducted at the north end of the property by the Habitat Restoration Group to determine if nafive grassland species would be effected by the proposed equestrian facilities, access road, and water line. A small amount of native grasses were observed mixed with non-native grasses in the northern end of fhe parcel. At the project site native grasses only comprise i-2% of the cover and therefore a *significant loss of native prairie species will not occur wifh the project. Revegetation of disturbed* areas *after construction wifh native erosion control seed mix that includes purple needle grass* (Nassella pulchra) *has been recommended in one report (Attachment 10) to further reduce the impact, The seed mixture provided in the proposed erosion control p/an should be revised to include a native seed mix.*

3. Fire hazard from flammable brush, grass, or trees?				X

A minor portion of the property southwest of fhe "Upper Reservoir" is designated as a critical fire hazard area. Neither project site is proximate to this area. Neither project includes uses or facilities that generate a *moderate or high need for fire protection. On the contrary, the equestrian project includes water storage tanks and/or* a *fire hydrant that will increase fire*

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitisated	Less Than Significant Impact	No Impact

protection capabilities *on the site.*

4. Change in the diversity of species, or number of species of plants or animals? X

Any outdoor lighting at the project site will restrict wildlife use of the proximate area during nighttime. The proximate area is expected to be a significant wildlife use area *due to the existence of Majors Creek, its tributary located 300 feet from the project site and the large adjacent publicly owned parcel which is an undeveloped portion of Wilder Ranch* State *Park. This impact from the barn alone can be mitigated by limiting the number of outdoor lights to the minimum required for security purposes and directing all illumination away from land east of the site.* ***However, the* barn *is one of several buildings now proposed within the vicinity of this project and the master plan. As such, exterior* lighting of *the barn will be part of a larger lighting impact generated by* all *proposed buildings in the vicinity. The full lighting impact on wildlife from the cumulative effects of night lighting associated with all proposed facilities at this location on the property has not been evaluated.***

D. NOISE

Will the project:

1. Increase the ambient noise level for adjoining areas? X

Some noise will be generated during consfrucfion but it will be of a *short-term nature. In addition, the project site is located* a *substantial distance from any dwelling.* ***The combined effects of constructing other facilities proposed by the master plan may lengthen the period* when *construction noise will occur, but this noise will also be a temporary impact. Construction noise impacts can be reduced to insignificant levels if standard construction noise attenuation techniques* are *employed throughout the construction period. These techniques include: a) Limiting hours of grading and other construction to 8:00 a.m. to 5:00 p.m. weekdays b) Equipping vehicular machinery with appropriate muffling devices and c) Posting the name and phone number of the "construction disturbance coordinator" to receive and solve any noise complaints from the public.***

2. Violate Title 25 noise insulation standards, or General Plan noise standards, as applicable? X

3. Be substantially affected by existing noise levels? X

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No impact
E. AIR				
Will the project:				
1. Violate any ambient air quality standard or contribute substantially to an existing or projected air quality violation?		___	___	X
2. Expose sensitive receptors to substantial pollutant concentrations?	X	___	___	

Some amount of dust generation will occur during project construction and grading activities at *the equestrian site. However, construction and land clearing is limited to a 1.4 acre* area *of land surface and the site is located approximately 600 feet from the nearest dwelling and 450 feet from the private right-of-way. Any dust generated during construction should not effect dwellings or properties off-site; nor should it create a substantial driving hazard for users of the private right-of-way. To ensure that dust emissions will not be problematic, normal construction site dust minimization measures should be taken by the property owner.* ***Additional dust will be generated by other grading activities which will occur if master plan facilities are approved. The magnitude of cumulative dust generation has not been fully evaluated at this time. This project will potentially generate a substantial contribution to the cumulative impact of construction dust from all development proposed at or near the project site.***

3. Release bioengineered organisms or chemicals to the air outside of project buildings?				X
4. Create objectionable odors?	X			___

The 8,000 square foot barn has the potential to house a large number of livestock which will generate manure and flies. The applicant has prepared a *manure management plan for review and approval by the County Environmental Health Service. According to Environmental Health staff, with some revisions, the plan would be acceptable. The applicant has now made the revisions required by the County. Since this plan was evaluated, the master plan and its manure management p/an commenced Environmental Review. An EIR will* assess *the adequacy of that plan in mitigating odors generated by livestock manure. Manure generated by this project will contribute to the cumulative impact of the potential for foul odor to be created in the project site vicinity.*

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant impact	No Impact
5. Alter wind, moisture or temperature (including sun shading effects) so as to substantially affect areas, or change the climate either in the community in the community or region?				X

F. ENERGYANDNATURALRESOURCES

Will the project:

1. Affect or be affected by timber resources?				X
2. Affect or be affected by lands currently utilized for agriculture or designated for agricultural use?	X	___	___	___

The project removes 21,720 square feet (0.5 acre) *of pasture from grazing use or other forms of soil dependant agriculture. The applicant has recently revised the project by reducing the amount of hardscape surfacing for vehicle use so that the amount open land converted to hardscape or building has been changed from 0.79 acre to the current 0.5 acre. This revision minimizes the impact of loss of arable/pasture land but does not entire/y totally mitigate the impact. The following discussion addresses this issue.*

Clustering the equestrian facilities, together with existing support facilities on Farm Road, would conserve this near/y ½ half acre area *for soil dependant agriculture, but locating an agricultural use different from that which occurs on Farm Road in* a *more isolated portion on the property is a normal farming practice* as *long as steps* are *taken to conserve farmland in the more isolated portion of the parcel for the production of crops and livestock. The northeast portion of the parcel current/y contains a small building (former caretaker's dwelling) and paddocks which are now used as horse stables. The project has not been located to be clustered near this existing development. The project, therefore results in two separate areas within the northeast portion of the parcel that would remove land from grazing and crop production uses. To maximize conservation of agricultural land the project should either:*

1. be revised to locate *the proposed facility directly adjacent to the existing stable, or*

2. be conditioned to require demolition of the existing stable and conversion of the site into

	Significant: No or Unknown Mitioation	Potentially Significant Unless Mitisated	Less Than Significant Impact	No Impact

productive grazing /and or crop land.

Either method would comply with the agricultural land conservation policy of the General Plan. (See item L1.).

By itself, the project site area *does not represent* a *significant amount of* land *area on this 208 acre parcel; but, in addition to the existing stab/e* area, *the project would result in two areas of development in one area of the parcel which could be consider a cumulatively significant reduction of farmland when driveway access and buffering setbacks from structures are also taken into account. Existing building* area *on farmland typically become nodes for future expansion when agricultural uses changes or intensify on* a *parcel. This would add to the cumulative impact, If the existing stab/e was removed, this cumulative impact would be avoided and the loss of 21,720 square feet of* pasture *would not be* a substantial *reduction of land used for grazing or future crop production.*

The analysis above is limited to impacts solely attributable to the project. The master plan will substantially add to the amount of open space land that will be removed from arable/pasture land use. The cumulative amount of this removed land will be considerably larger than the land which could be reconverted to productive pasture or crop land through removal of the existing stable facility. This issue will be evaluated in the EIR to be prepared for the master plan. The barn, water tank, water line project will "set the stage" for future master plan development by creating a new node of development on the parcel. As a consequence, the installation of these facilities will increase the significance of the effects on agricultural land beyond that discussed above. As such the project will make a substantial contribution to the cumulative impact of loss of pasture/crop land on this property.

3. Encourage activities which result in the use of large amounts of fuel, water, or energy, or use of these in a wasteful manner?	___	___		X
4. Have a substantial effect on the potential use, extraction, or depletion of a natural resource (i.e., minerals or energy resources)?				X

G. CULTURAL/AESTHETIC FACTORS

Will the project result in:

1. Alteration or destruction of of historical buildings or				

	Significant: No or Unknown Mitiaation	Potentially Significant Unless Mitisated	Less Than Significant Impact	No Impact
unique cultural features?		___		X
2. Disturbance of archaeological or paleontological resources?	___			X
3. Obstruction or alteration of views from'areas having important visual/scenic values?	X	___		

The project parcel is within the viewshed of the Highway 1 scenic corridor and one publicly used beach, *Laguna Creek Beach. However, due to the rolling topography of the property, the main project site and the proposed grain silo site are not within view of the beach or Highway 1. Therefore, these projects will not impact significant visual resources in the* area.

The project will be visible from the western edge of Wilder Ranch State Park. An existing unimproved road, planned as a public equestrian/hiking/biking trail, is located *along this edge of the park with views to the west across Majors Canyon to the project parcel. The visual impact generated by the project building will be significant due to the size of the single structure, its location near the common property line with the public land and the lack of evergreen trees* at *this location which screen other portions of the Stephenson Ranch from this same public property. This impact is exacerbated by the fact that the new dwelling under construction is already visible from the public property. The visibility of a second new structure from the future state park land would be a cumulative effect on the visual resource of the park.* ***Some of the additional buildings proposed by the master plan will further increase*** **the** ***cumulative impact on visual resources of Wilder Ranch State Park. The project will make*** **a** ***substantial contribution to this cumulative impact.***

A visual simulation was *prepared the applicant to show the extent of visual change caused by the project as viewed from one proximate* vantage *point on Wilder Ranch State Park. The following discussion is based on that visual simulation and Planning staff's review of plans prepared to mitigate visual impacts. The natural wood exterior of the building will help minimize the* visual impact, *but evergreen trees should be planted along the east edge of the project site at an elevation of at least 634 ft. MSL in a manner that screens the barn from the future state park addition. The finished grade for the barn would be 637 ft. MSL. A landscape plan has been prepared which provides for the planting of Douglas fir* and *coast live oaks or other native evergreens to screen the barn site from users of the expanded Wilder Ranch* State *Park. The plan provides for the planting of native evergreen trees in a manner that replicates the natural occurrence of the existing trees along nearby portions of the eastern edge of the Stephenson property. A mixture of species as well* as *a combination of 5 gallon and 15 gallon (or larger) container sizes will promote structural variation, greater natural appearance at maturity and* may *result in fewer plant fatalities. These items* have *been addressed in the landscape plan.*

Other facilities proposed by this project will not generate the same visual impacts to the public

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact

property as *fhaf of the barn primarily because the barn will block views of the asphalt parking and circulation* area *as viewed from the future State Park* land. *In addition, the black color and relatively* small *size of the water storage tanks (12 ft. In diameter* and *under 8 feet in height) will not generate significant* visual *impacts to users of the* Stafe *Park.*

However, a visual simulation has not been prepared to show the cumulative visual change generated by the project together with facilities proposed by the master plan. This will be provided at a later date in the EIR which will be prepared on the master plan. As stated above, this project will make a substantial contribution to the cumulative visual change that will occur if master plan facilities are approved in addition to the subject project.

The October 25, 1999 letter from SOAL has made a fair argument that trees of substantial height and vitality may not grow at the location recommended by previous analyses of this issue. The letter states that the relatively thin layer of top soil at the project site location will not support trees species with large enough canopies to visually screen the main project structure. To support their argument, SOAL points to the fact that this is' the only area on the upper terrace of the project property where evergreen trees have not grown along proximate to the western rim of Majors Creek Canyon. This issue will be evaluated in the EIR to be prepared for the masterplan regarding visual mitigation for the future facilities,

4. Being visible from any adopted scenic highway or scenic corridor?	___	___		X

See discussion under G. 3. above.

5. Interference with established recreational, educational, religious or scientific uses of the area?			___	X

H. SERVICES AND UTILITIES

Will the project or its related activities result in:

1. A breach of national, state, or local standards relating to solid waste or litter management?	___	___	___	X

	Significant: No or Unknown Mitioation	Potentially Significant Unless Mitiqated	Less Than Significant Impact	No Impact
2. Expansion of or creation of new utility facilities (e.g., sewage plants, water storage, mutual water systems, storm drainage, etc.) including expansion of service area boundaries?		___	___	X
3. A need for expanded governmental services in any of the following areas:				
a. Fire protection?				X

The proposed fire hydrant and wafer storage tanks will assist in fire suppression capabilities of the County Fire Department if a fire ever occurred in the immediate area. *This is a beneficial impact, in order to meet fire protection standards, the* Counfy *Fire Department has required a storage volume of 24,875 gallons (Attachment 12)* as we*ll* as *fire extinguishing sprinklering the proposed buildings and a fire hydrant at the site. According to County Fire* staff, *water for the extinguishing system will be provided by the storage tanks. A fire flow of 1,800 gallons/minute (gpm) at a pressure of 60 psi is required for* a *minimum of 120 minutes to meet fire extinguishing standards. The volume of* wafer in *fhe 5 storage tanks will provide* a *fire flow of 1,500 gpm. County Fire approved a the reduction in fire flow based on project including* a *fire hydrant and sprinklering system. Wafer* for *the hydrant and sprinkler system will be provided by the storage tanks. According to County Fire,* a *single water connection to fill the tanks will create adequate fire flow as long the tanks* are *kept filled. (John Saisi, telephone call on December 22, 1998).* ***The project includes a water line dedicated to fire fighting purposes. The line will have a locked valve that can only be unlocked to convey water to the storage tanks with a key in the possession of County Fire Department staff. This restriction makes 'the water*** **in** ***the tanks available solely for fire protection purposes. This relatively large storage volume has been required by County Fire to respond to fires in addition to those which could occur at project facilities. As such it will be adequate to serve fires that could occur in facilities proposed by the master plan.***

b. Police protection?		___		X
c. Schools?			___	X
d. Parks or other recreational facilities?				X
e. Maintenance of public facilities including roads?				X
f. Other governmental services?		___		X

	Significant: No or Unknown Mitisation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
4. inadequate water supply for fire protection?				X

See discussion under H.3.a above.

5. Inadequate access for fire protection?				X

The project has *been revised to reduce the width of the* access *road from 20 feef to 12 feet. This reduced width* has *been determined to be adequate as long as if terminates in* an

appropriafe fire truck furn-around area at the terminus of the access *road. A County Fire approved turn-around* area *is now proposed* as *pat-f of the project redesign.*

I. TRAFFIC AND TRANSPORTATION

Will the project result in:

1. An increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system?				X
2. Cause substantial increase in transit demand which cannot be accommodated by existing or proposed transit capacity?				X
3. Cause a substantial increase in parking demand which cannot be accommodated by existing parking facilities?				X
4. Alterations to present patterns of circulation or movement of people and/or goods?				X
5. Increase in traffic hazards to motor vehicles, bicyclists, or pedestrians?				X
6. Cause preemption of public mass-transportation modes?				X

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	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
4. LAND USE/HOUSING				
Will the project result in:				
1. Reduction of low/moderate income housing?				X
2. Demand for additional housing?		___	___	X
3. A substantial alteration of the present or planned land use of an area?				X
4. Change in the character of the community in terms of terms of distribution or concentration of income, income, ethnic, housing, or age group?			___	X
5. Land use not in conformance with the character of the surrounding neighborhood?				X
K. HAZARDS				
Will the project:				
1. Involve the use, production or disposal of materials which pose hazard to people, animal or plant populations in the area affected?				X
2. Result in transportation of significant amounts of hazardous materials, other than motor fuel?		___		X
3. Involve release of any bioengineered organisms outside of controlled laboratories?				X
4. Involve the use of any pathogenic organisms on site?	___			X
5. Require major expansion or				

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact
special training of police, fire, hospital and/or ambulance services to deal with possible accidents?	___	___		X
6. Create a potential substantial fire hazard?	___			X
7. Expose people to electro-magnetic fields associated with electrical transmission lines?				X

L. GENERAL PLANS AND PLANNING POLICY

1. Does the project conflict with any policies in the adopted General Plan or Local Coastal Program? ___7___
If so, how?

Section 5.13 of the County Genera/ Plan/Local Coastal Program contains several policies to protect agricultural land for crop and livestock production. The policy that the equestrian project MAY conflict with is provided below.

~ Policy 5.13.6 requires all conditional uses on Commercial Agricultural /and to minimize the removal of land from agricultural production.

As discussed in item f.2 above, the project will remove 0.5 acre of open /and from grazing use (or other future agricultural uses). Locating the facility adjacent to existing support facilities on fhe site would better conserve /and for agricultural production purposes; however the amounf of land that would be removed from production is not significant ***as*** *long as if is fhe only cluster (node) for developed uses within the northeast end of the parcel. Constructing the barns and associated uses in a location separate from the existing stable area on fhis portion of the* parcel *would not meet the policy of conserving farmland for pasturing or crop growing purposes as discussed in item F.2 above.* ***The additional facilities proposed to be constructed*** **in the** ***same general area by the master plan would exacerbate this potential policy conflict. The discussion under item F.2 recommends*** **a** ***mitigation measure to address this impact for the subject project. However, when taken together with the cumulative conversion of land available for pasture or crop production purposes from master*** **plan** ***development, the conversion of land is substantially greater than that at the existing stable area. The mitigative strategy to reconvert the existing stable area to arable/pasture land has less mitigative value to address cumulative impacts than to address the subject project*** **alone.** ***Another mitigative strategy of colocating cumulative development proximate to existing development on or near the Farm Road area of the site may be a better approach to address cumulative development.*** *The decision-maker will need to determine if either mitigative strategy meets fhe intent of policy 5.1.3.6. A policy interpretation will be required regarding the project's consistency with fhis policy.*

	Significant: No or Unknown Mitigation	Potentially Significant Unless Mitigated	Less Than Significant Impact	No Impact

County Code Section 13.10.314(a) implements Genera/ Plan *policy 5.13.6 by requiring the approval of* all *projects on "CA" zoned land that are processed* as *level 5-7 projects* ***to be based*** *on making 5 special findings. These findings are provided* as *Attachment 13. The 5th finding can only be made if one of fhe two mitigative techniques specified under item F.2* above ***are*** *incorporated into the project.* ***The ability for either of these techniques to be used to fulfill the requirements of the 5th finding become more difficult when the construction of all facilities proposed by the master plan is considered in addition to the facilities proposed by the project. This is due to the fact that the land area needed for master plan facilities in addition to that need for the project is not commensurate in scale with the relatively smaller land area at the existing stable site. The appropriate location and*** site ***design of master plan facilities has not fully evaluated at this time. It will be evaluated in the EIR to be prepared for the master plan.***

2. Does the project conflict with any local, state or federal ordinances? If so, how? X

See discussion under item L. 1 above regarding County Code Chapfers 13.10 and 16.30.

3. Does the project have potentially growth inducing effect? X

The construction of the 450 foot long access road and any associated utilities (e.g. electrical lines) to the project site will facilitate other development in the vicinity of the project site. Similarly, the Installation of the emergency water line for this project will facilitate water service for any future development. The water line from the "Upper Reservoir" to the project water tanks is an 8 inch ***diameter line. Water lines downslope (southwest of) the "Upper Reservoir" are 4 inch diameter lines. If the lock mechanism was ever removed from the project water line in the future, its size could easily provide water service for additional development beyond the subject project. The*** access ***road and utilities to serve the barn are now also proposed to serve the facilities proposed by the master plan. The master plan also proposes to convert the emergency fire line to a regular water line for pasture irrigation purposes. These factors show that the project is linked to and provides infrastructure to support, additional development*** plans on ***the upper terrace of the property.***

4. Does the project require approval of regional, state, or federal agencies? Which agencies?

USFWS must review and approve construction measures for water line installation intended fo

	Significant: No or Unknown Mitisation	Potentially Significant Unless Mitiaated	Less Than Significant Impact	No Impact,

minimize or avoid *impacts to the Red-legged frog.*

MANDATORY FINDINGS OF **SIGNIFICANCE**

	YES	NO
1. 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, or eliminate important examples of the major periods of California history or pre-history?		X
2. 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, definitive period of time while long term impacts will endure well into the future.)	___	X
3. 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 each resource is relatively small, but where the effect of the total of those impacts on the environment is significant. Analyze in the light of past projects, other current projects, and probable future projects.)	X	___
4. Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	___	X

TECHNICAL REVIEW CHECKLIST

	REQUIRED	COMPLETED*	N/A
APAC REVIEW			X
ARCHAEOLOGIC REVIEW	X	'X	
BIOTIC ASSESSMENT	X	8/4/97	
GEOLOGIC HAZARD ASSESSMENT			X
GEOLOGIC REPORT			X
RIPARIAN PRE-SITE	X	2/4/97	
SEPTIC LOT CHECK	X		
SOILS REPORT			X
OTHER:			
Engineered grading/drainage/ erosion control plan	X	2/17/99	

*Attach summary and recommendation from completed reviews

List any other technical reports or information sources used in preparation of this initial study:

1. *General Plan /and use and resource and constraints maps on file with the County Planning Department.*
2. *Initial Study prepared for Application 96-0837 by County Planning, dated April 21, 1997*
3. *Zoning Administrator* staff *report prepared for Application 96-0837 by County Planning dated June 20, 1997*
4. *Initial Study prepared for the pre-revised design of Application 97-0648 dated February 10, 1998*

5. *Initial Study prepared for Application 98-0647 (Master P/an for Biomedical Livestock Raising)*

6. *Letters from the following people submitted as comments on the previous Initial Study:*

   a. *Robert and Carol Adams, ET AL. undated*

   b. *Robert Bosso, Attorney for Lanting, Eckstrom, Adams, Kaufman and Zucker, dated January 26, 1999; including attachment letter from Joseph Hayes, geohydrologist*

   c. *Paul Bruno, Attorney for the applicants, dated January 27, 1999; including attachment letter from Ifland Engineers* and *Dana* Bland, *biologist*

   d. *Brian Hunter, California Department of Fish* and *Game, dated January 27, 1999*

   e. *Nicolas Papadakis, AMBAG, dated January 14, 1999*

   f. *David Vicent, California Department of Parks and Recreation, dated January 21, 1999*

   g. *Julianne Ward, Save Our Agricultural Land, January 26, 1999*

7. *Letters from the following people submitted to the County Board of Supervisors* at *their October 26, 1999 hearing on this project:*

   a. *Miriam Beams, Corresponding Secretary for the Rural Bonny Doon Association, dated October 21, 1999*

   b. *Paul Bruno, attorney for the applicants, dated October 25 and November 12, 1 9 9 9*

   c. *Rena Vivian Cochlin, dated October 25, 1999*

   d. *Patricia Damron, dated October 21, 1999*

   e. *Bill and Mary/in Fravel, dated October 21, 1999*

   f. *Robert Hirth, Attorney for David Landino, dated October 24, 1999*

   g. *Clay Peters, dated October 24, 1999*

   h. *Celia Scott, dated September 8, 1999 with two attachments*

   i. *Susan Young, dated October 21, 1999*

   j. *Julianne Ward, Executive Director of Save Our Agricultural Land, dated October 25, 1999*

All letters are on file and available for public review at *the County Planning Department.*

Note: This report continues on the follow page.

ENVIRONMENTAL REVIEW ACTION

On the basis of this initial evaluation:

___ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

___ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because the mitigation measures described below have been added to the project. A NEGATIVE DECLARATION will be prepared.

I find the proposed project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

December 22, 1999
Date

Signature

Ken Hart
Environmental Coordinator

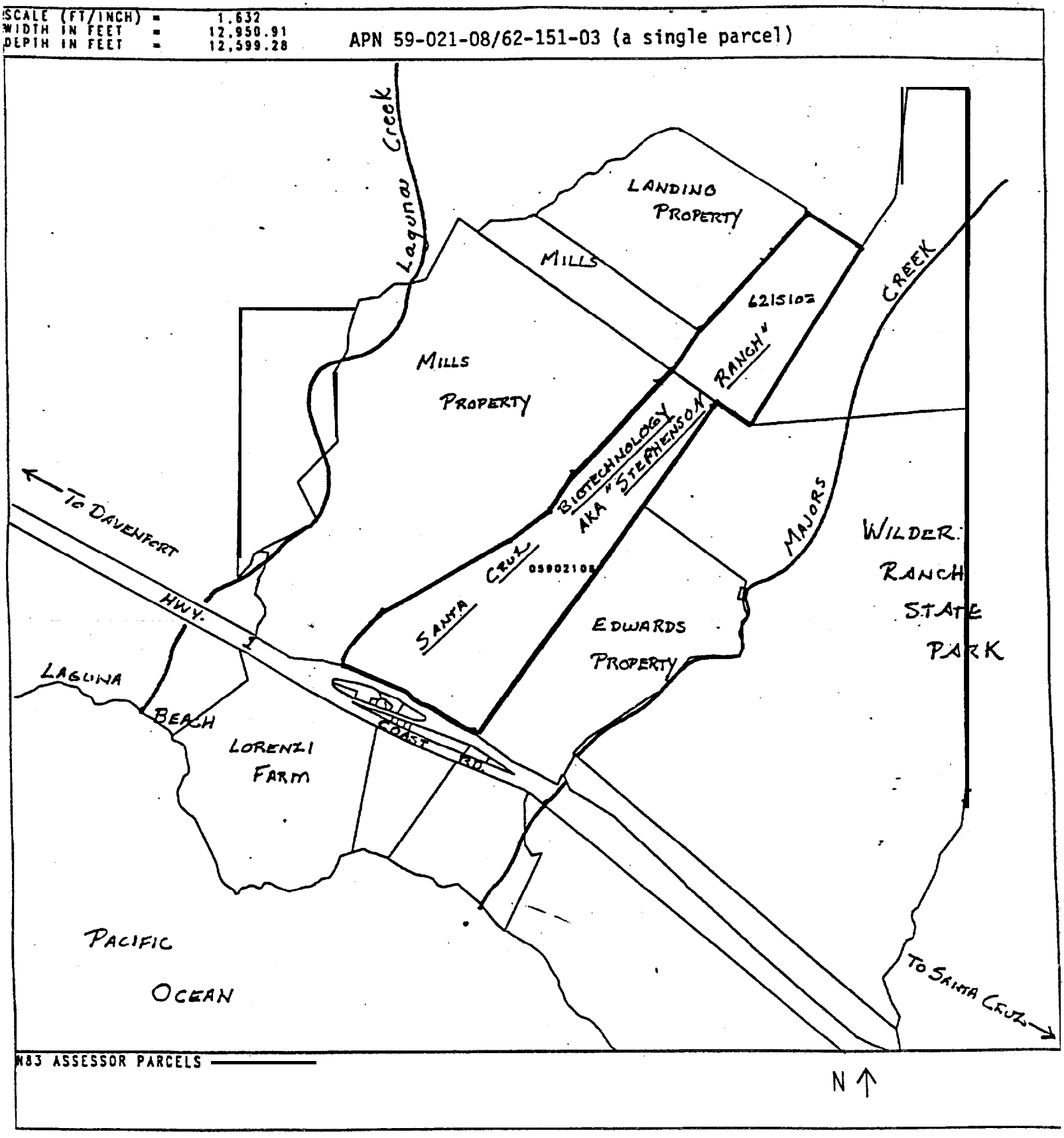
Attachments:

1. Location Map
2. Natural Characteristics and Primary Land Uses on the Parcel
3. Biotic Habitat Map of the Parcel
4. Grading and Drainage Plan prepared by lfland Engineers dated February 17, 1999
5. Site Plan of the Equestrian Facility/Water Storage Project
6A. Well Water Certification for Private Well
6B. Application for Well Permit, including mapped location of well location
7. Documentation of Maximum Water Use Rights to Laguna Creek
8A. Project Manure Management Plan
8B. Addendum to Project Manure Management Plan
9. Biotic Survey for Proposed Equestrian Facilities, dated August 4, 1997
10. Biotic Survey for Proposed Water Line Extension, dated August 4, 1997
11. Biotic Survey for Proposed Leach Field Area, dated January 13, 1998
12. Memo from County Fire, dated December 24, 1997, Regarding Water Storage
13. County Code Section 13.10.314(a)
14. Letter from the USFWS dated April 22, 1998
15. Preliminary Sewage Disposal System Approval by Environmental Health
16. Letter from Gerald Weber, Certified Engineering Geologist, dated October 21, 1999

Note: The full size drawings on 24"X 36" sheets of Attachments 4 and 5 and related project plans are on file in the County Planning Department.

LOCATION MAP OF THE STEPHENSON RANCH

ATTACHMENT 1



Environmental Review **Inital Study**

ATTACHMENT_____

APPLICATION 91-0048

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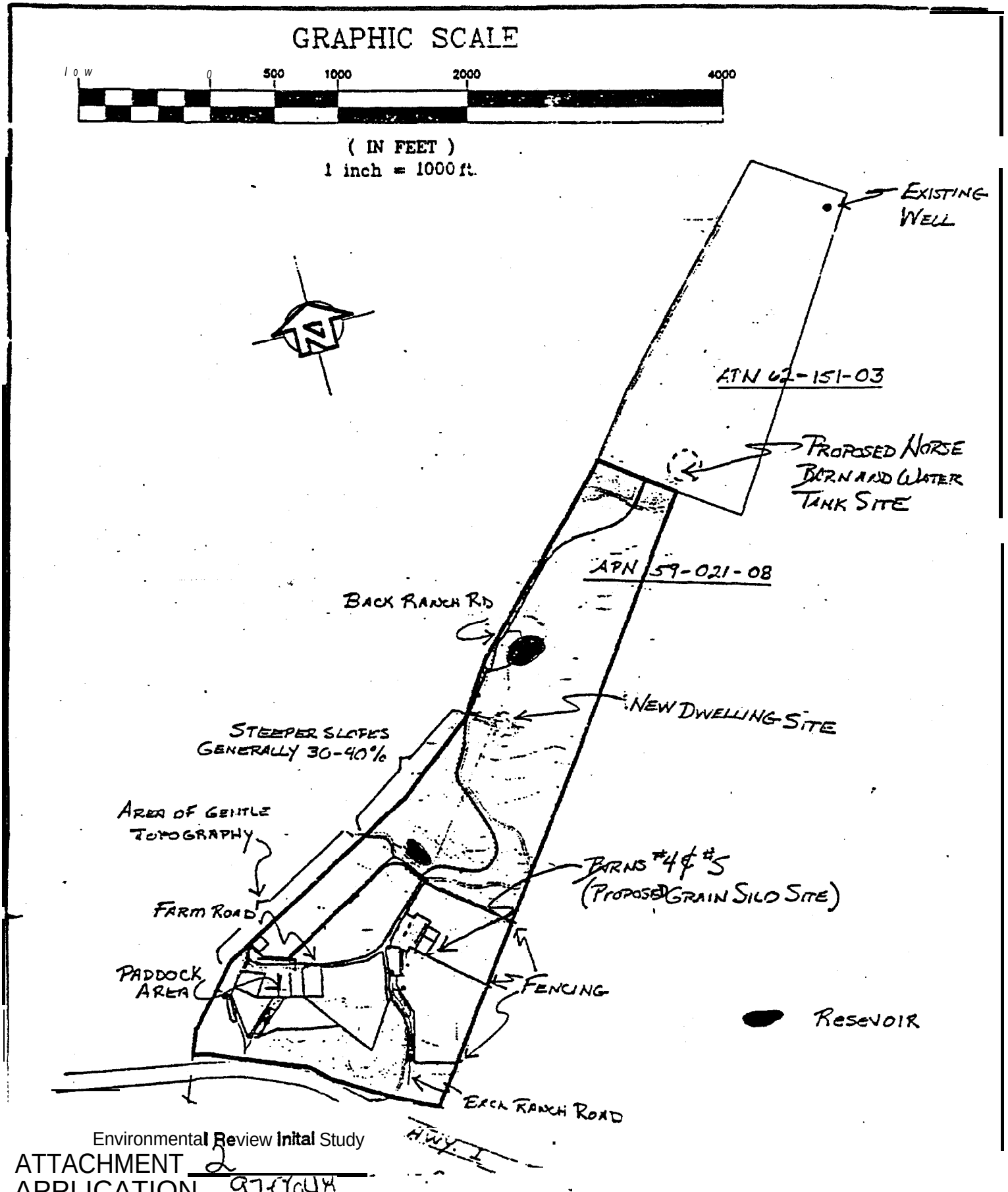
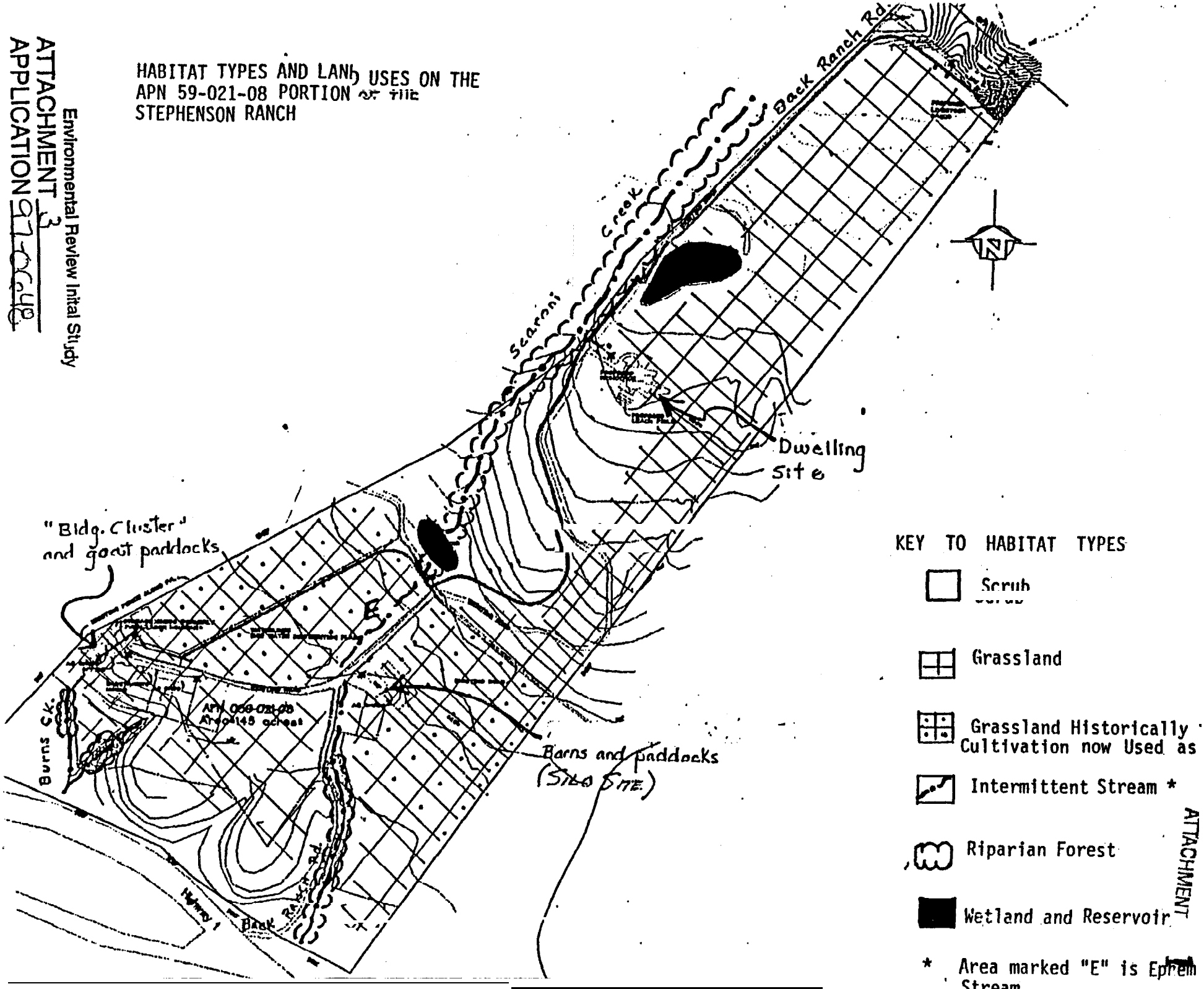
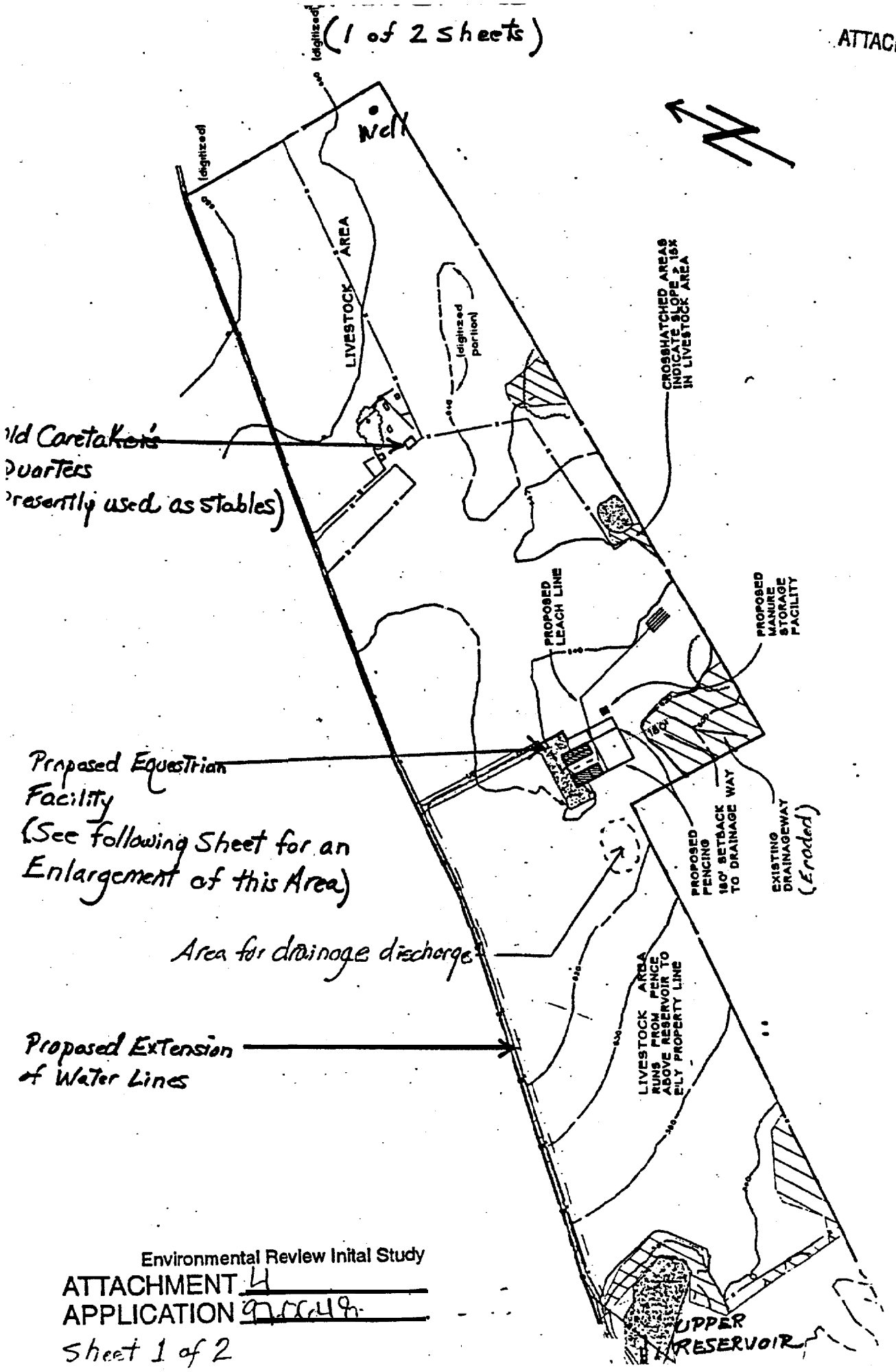

GRAPHIC SCALE
low
0
500
1000
2000
4000
(IN FEET)
1 inch = 1000 ft.
EXISTING WELL
ATN 62-151-03
PROPOSED HORSE BARN AND WATER TANK SITE
APN 59-021-08
BACK RANCH RD
NEW DWELLING SITE
STEEPER SLOPES GENERALLY 30-40%
AREA OF GENTLE TOPOGRAPHY
BARNS #4 & #5 (PROPOSED GRAIN SILO SITE)
FARM ROAD
PADDOCK AREA
FENCING
RESERVOIR
ERCA RANCH ROAD
HWY. 1

HABITAT TYPES AND LAND USES ON THE
APN 59-021-08 PORTION OF THE
STEPHENSON RANCH



(1 of 2 sheets)

ATTACHMENT 1



Old Caretaker's Quarters (Presently used as Stables)

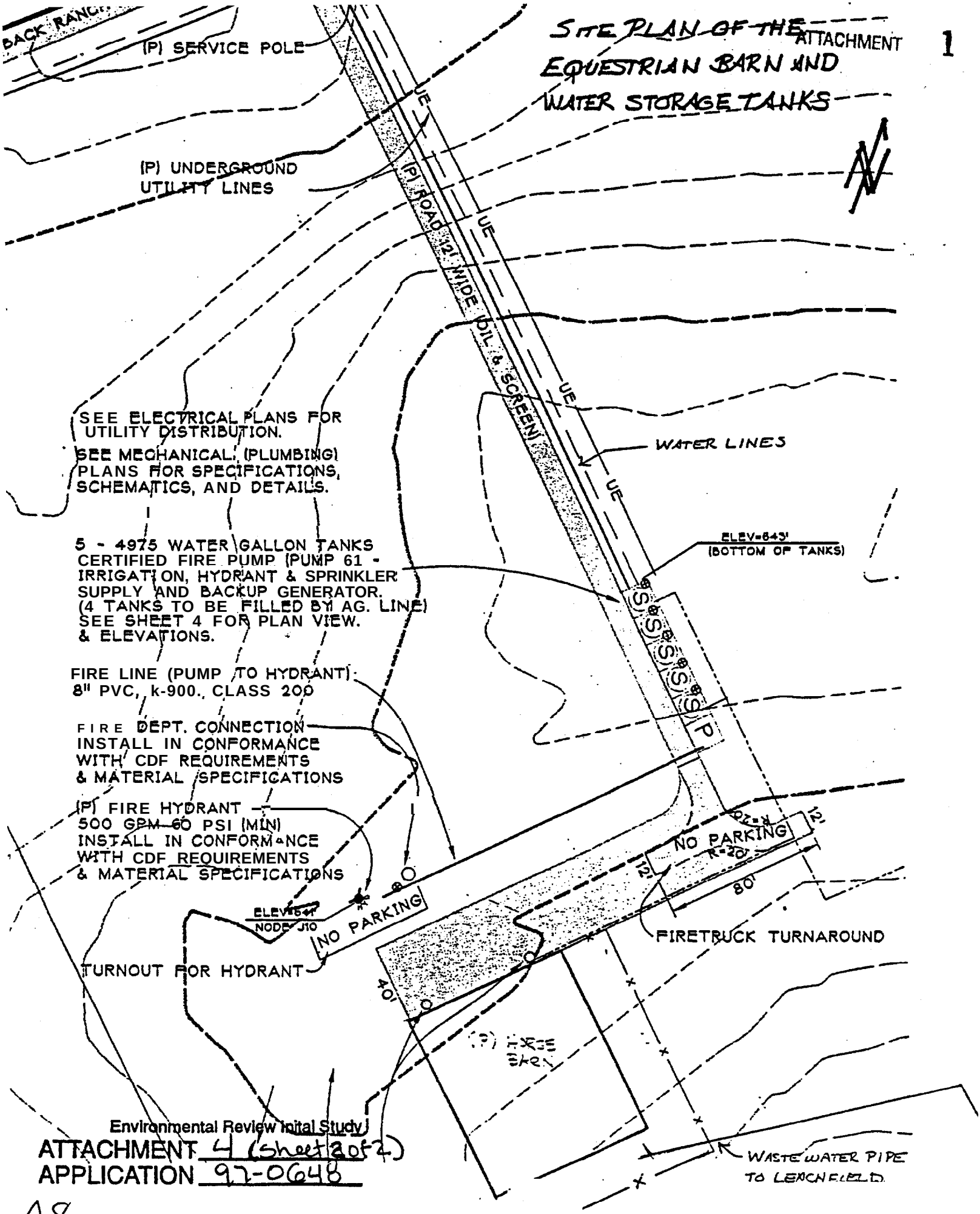
Proposed Equestrian Facility (See following Sheet for an Enlargement of this Area)

Area for drainage discharge

Proposed Extension of Water Lines

Environmental Review Inital Study
ATTACHMENT 4
APPLICATION 97-0249
Sheet 1 of 2

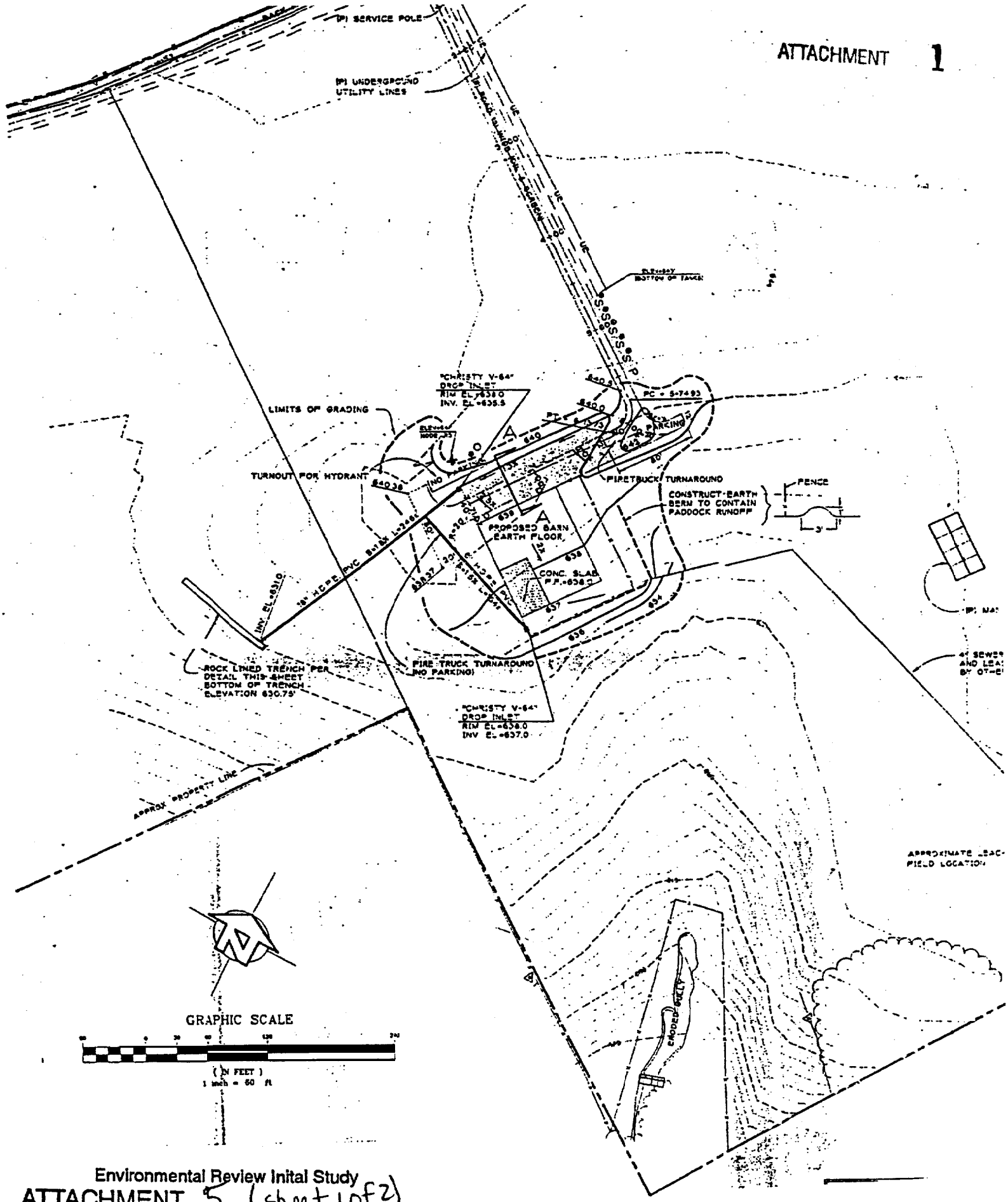
48



Environmental Review Inital Study
ATTACHMENT 4 (sheet 2 of 2)
APPLICATION 97-0648

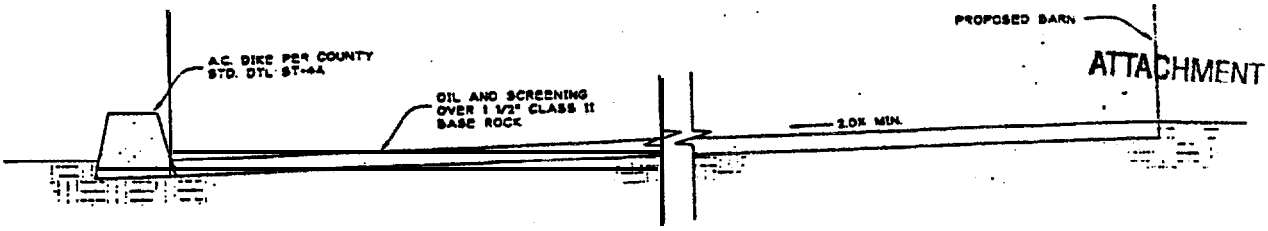
48

ATTACHMENT 1



Environmental Review Inital Study
ATTACHMENT 5 (sheet 1 of 2)
APPLICATION 97-0648

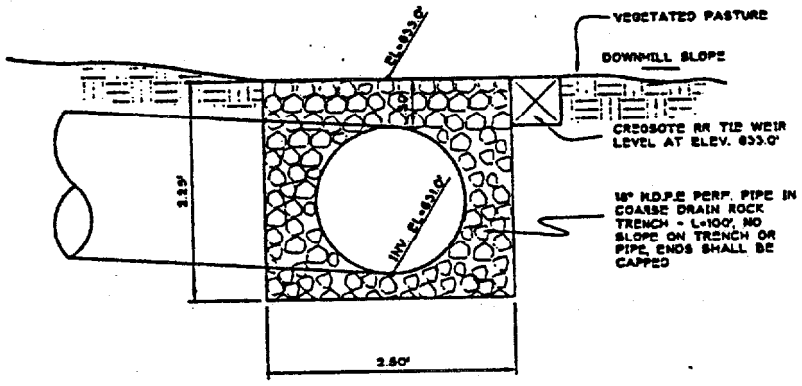
48



ATTACHMENT 1

Section A

SCALE: 1"=



Detail A

General Notes

1. NO LAND CLEARING, GRADING OR EXCAVATING SHALL TAKE PLACE BETWEEN OCTOBER 15 AND APRIL 16 UNLESS A SEPARATE WINTER EROSION CONTROL PLAN IS APPROVED BY THE PLANNING DIRECTOR.

2. BETWEEN OCTOBER 15 AND APRIL 16, EXPOSED SOIL SHALL BE PROTECTED FROM EROSION AT ALL TIMES. DURING CONSTRUCTION SUCH PROTECTION MAY CONSIST OF MULCHING AND/OR PLANTING OF NATIVE VEGETATION OF ADEQUATE DENSITY. BEFORE COMPLETION OF THE PROJECT, ANY EXPOSED SOIL ON DISTURBED SLOPES SHALL BE PERMANENTLY PROTECTED FROM EROSION.

3. NO LAND DISTURBANCE SHALL TAKE PLACE PRIOR TO THE ISSUANCE OF BUILDING PERMITS, EXCEPT THE MINIMUM REQUIRED TO INSTALL STREET IMPROVEMENTS, PROVIDE ACCESS FOR COUNTY REQUIRED TESTS OR TO CARRY OUT OTHER WORK SPECIFICALLY REQUIRED BY ANOTHER OF THESE CONDITIONS. IN ADDITION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A NPDES PERMIT FROM THE REGIONAL WATER QUALITY CONTROL BOARD PRIOR TO GRADING.

4. THE CONTRACTOR SHALL APPLY WATER TO ALL EXPOSED EARTH SURFACES AT INTERVALS SUFFICIENT TO PREVENT AIRBORNE DUST FROM LEAVING THE PROJECT SITE. ALL EXPOSED EARTH SHALL BE WATERED DOWN AT THE END OF THE WORK DAY.

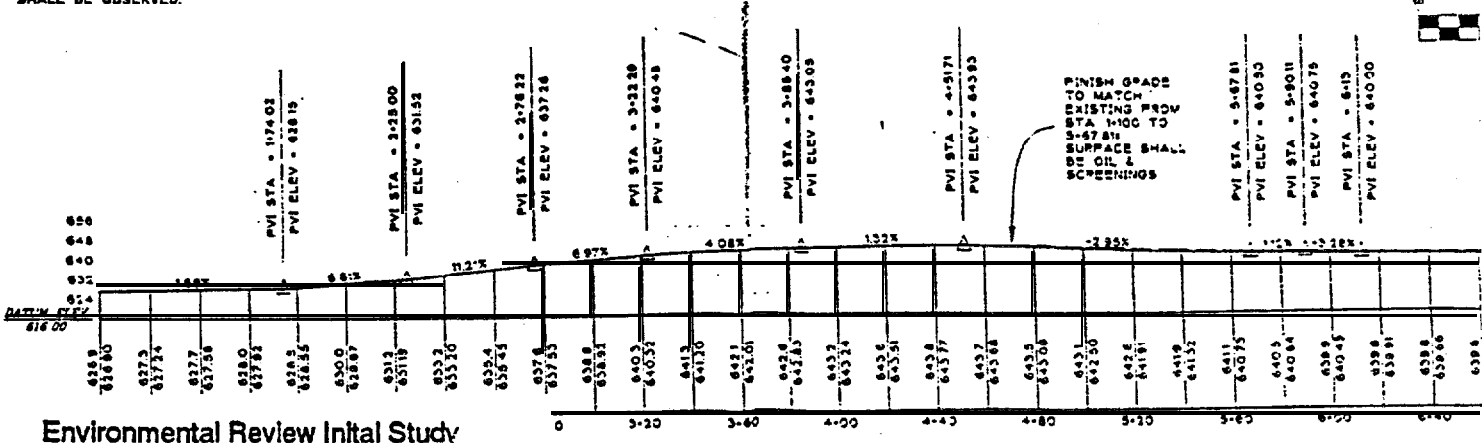
5. WHILE IN TRANSIT TO AND FROM THE PROJECT SITE, ALL TRUCKS TRANSPORTING FILL SHALL BE EQUIPPED WITH TARPS.

6. ALL GRADING WORK AND CONSTRUCTION OF IMPROVEMENTS SHALL BE DONE IN ACCORDANCE WITH RECOMMENDATIONS PROVIDED BY THE GEOTECHNICAL ENGINEER. THE GEOTECHNICAL ENGINEER SHALL INSPECT THE COMPLETED PROJECT AND CERTIFY IN WRITING THAT THE IMPROVEMENTS HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THEIR RECOMMENDATIONS.

7. PURSUANT TO SECTIONS 16.40.040 AND 16.42.100 OF THE COUNTY CODE, IF AT ANY TIME DURING SITE PREPARATION, EXCAVATION, OR OTHER GROUND DISTURBANCE ASSOCIATED WITH THIS DEVELOPMENT, ANY ARTIFACT OR OTHER EVIDENCE OF AN HISTORIC ARCHEOLOGICAL RESOURCE OR A NATIVE AMERICAN CULTURAL SITE IS DISCOVERED, THE RESPONSIBLE PERSONS SHALL IMMEDIATELY CEASE AND DESIST FROM ALL FURTHER SITE EXCAVATION AND NOTIFY THE SHERIFF-CORONER IF THE DISCOVERY CONTAINS HUMAN REMAINS, OR THE PLANNING DIRECTOR IF THE DISCOVERY CONTAINS NO HUMAN REMAINS. THE PROCEDURES ESTABLISHED IN SECTIONS 16.40.010 AND 16.42.100, SHALL BE OBSERVED.

Legend

- WATER STORAGE TANK
- VALVE
- FIRE HYDRANT
- P — PUMP
- (E) — EXISTING
- (P) — PROPOSED
- FUTURE CONNECTION WITH BLOWOFF VALVE ASSEMBLY
- FIRE LINE
- AGRICULTURAL LINE
- E — OVERHEAD ELECTRICAL LINE
- IRRIGATION LINE



Driveway Profile

SCALE:

Environmental Review Inital Study
ATTACHMENT 5 (Sheet 2 of 2)
APPLICATION 97-0648

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ENVIRONMENTAL HEALTH SERVICE 454-2022 ATTACHMENT 1

701 Ocean Street, Room 312, Santa Cruz, CA 95060 (408) 425-2341 #34.00

APPLICATION FOR INDIVIDUAL WATER SYSTEM PERMIT

PERMIT NO. 97-039

11/19/97 10:26AM 0005816269 00L
FL0307 $84.00
CHECK $84. 00

Back Ranch Road
(SITE LOCATION)

ASSESSORS PARCEL NUMBER ~~059-021-08~~ 62-151-03

OWNER ~~Santa Cruz Biotechnologies~~ PHONE 457-3800

MAILING ADDRESS 2161 Delaware Avenue, Santa Cruz, Ca 95060

John Stephens 2161 Delaware

SYSTEM TO BE:

☒ INDIVIDUAL

☐ SHARED (IF SHARED, COPY OF RECORDED DEEDED EASEMENT MUST BE ATTACHED)

TYPE: ☒ WELL ☐ HORIZONTAL WELL ☐ SPRING ☐ STREAM

LOCATION OF WATER SOURCE (APN) 62-151-03

APN'S TO BE SERVED: 1. ______ 3. ______
2. 62-151-03 4. ______

I HEREBY AGREE TO COMPLY WITH ALL LAWS AND REGULATIONS OF THE COUNTY OF SANTA CRUZ PERTAINING TO INDIVIDUAL WATER SYSTEMS.

[signature] (SIGNATURE OF PROPERTY OWNER) 11/17/97 (DATE)

WELL PUMPING TEST

DATE(S) OF PUMPING TEST 11/5-11/6/97

PUMPING RATE 10.33 GPM

DURATION OF CONTINUOUS PUMPING 24 HOURS

TOTAL YIELD 14,950 GALLONS

DRAW DOWN DURING PUMPING TEST N/A FT.

STATIC WATER LEVEL N/A FT.

I CERTIFY THAT I PERFORMED THE PUMP TEST AND THE INFORMATION IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE

Charles V Halbeel III (SIGNATURE)

11-13-97 (DATE) 602890 (LICENSE NUMBER)

☒ WELL DRILLING CONTRACTOR ☐ REGISTERED ENGINEER ☐ REGISTERED GEOLOGIST ☐ REGISTERED ENVIRONMENTAL HEALTH SPECIALIST

ENVIRONMENTAL HEALTH SERVICE EVALUATION

1. PUMP TEST: ☐ MEETS REQUIREMENTS ☐ DOES NOT MEET REQUIREMENTS
2. • BACTERIOLOGICAL QUALITY ☐ MEETS STANDARDS ☑ DOES NOT MEET STANDARDS (RESAMPLE)
3. *CHEMICAL QUALITY ☑ MEETS STANDARDS ☐ DOES NOT MEET STANDARDS (SEE REMARKS)

(Analysis From A State-Certified Laboratory for Bacteriologic & Chemical Quality Must Be Attached)

REMARKS: resample or provide treatment to satisfy bacti standards

PERMIT APPROVED ☑ PERMIT DENIED ☐

____, R.E.H.S. DATE: 11/20/97

Environmental Review Inital Study
ATTACHMENT 8 (Sheet 1 of 4)
APPLICATION 97-0648

TAKEN BY AN EHS APPROVED THIRD PARTY.

ER\PINK=FIS OL\GOLDENROD=

48

42-151-03 (ASSESSOR'S PARCEL NUMBER) (PARCEL SIZE) 97-081 (PERMIT NUMBER)

ATTACHMENT 1

ADDRESS 5322 COAST ROAD

OWNER JOHN & BRENDA STEPHENSON ADDRESS 2161 DELAWARE AVE, SANTA CRUZ, CA 95060

DRILLING CONTRACTOR MAGGIORA BROS. DRILLING, INC. LICENSE # 249957 PHONE (408) 724-1338

DIRECTIONS TO SITE HWY 1 TO 5322 COAST ROAD

CONSTRUCTION X **REPAIR** ___ **DESTRUCTION** ___

DESIGN SPECIFICATIONS:

CASH REGISTER VALIDATION

INTENDED USE
DOMESTIC: X
#Homes Served 1
WATER SYSTEM WELL: ___
Name of Water System
IRRIGATION ___
COMMERCIAL/INDUSTRIAL ___
MONITORING: ___
GRDWTR ___ VADOSE ___
OTHER ___ (SPECIFY)

DISTANCE FROM WELL SITE TO:
SEPTIC SYSTEMS 100' - 150'
SEWER ___
NEAREST PROPERTY LINE 100'
CASING
SINGLE X DOUBLE ___
MATERIAL PVC
TYPE OF JOINT GLUED
GRAVEL PACK X

TYPE OF WELL CONSTRUCTION
ROTARY X
CABLE ___
DUG ___
OTHER ___

06/04/97 10:18AM 0008#3017 GGG!
PL0311 $259.00
CHECK $259.00

ESTIMATED WORK DATES: START ASAP COMPLETION ___

WITHIN WATER DISTRICT SERVICE AREA X NO ___ YES NAME: ___ (FORM HSA-579-REQUIRED)

CONSTRUCTION DEPTH (FT.) 350 DIAMETER (IN.) 5 DEPTH OF SEAL (FT.) 50 WIDTH OF SEAL (IN.) 2

EXISTING WELLS ON PROPERTY:

1. OTHER WELLS ON PROPERTY: NUMBER: ___ TYPES: DOMESTIC ___ IRRIGATION ___ COMMERCIAL USE ___ OTHER ___
2. CONDITION OF OTHER WELLS ON PROPERTY: IN USE TO BE DESTROYED ___
3. IF NEW WELL REPLACES AN EXISTING WELL, INDICATE INTENTIONS FOR USE OF REPLACED WELL:
   ___ TO SUPPLEMENT NEW WELL ___ TO BE DESTROYED ___ OTHER ___

WELL DESTRUCTION: DEPTH OF WELL DEPTH OF SEAL: ___ NUMBER OF WATER FORMATIONS PENETRATED ___
CLEANING OF WELL REQUIRED YES: ___ NO: ___ SEALING MATERIAL ___

PLOT PLAN: ATTACH 2 COPIES OF PLOT PLAN (SEE REVERSE FOR REQUIREMENTS)

I HEREBY AGREE TO COMPLY WITH ALL LAWS AND REGULATIONS OF THE COUNTY OF SANTA CRUZ AND STATE OF CALIFORNIA PERTAINING TO WELL CONSTRUCTION AND DECLARE UNDER PENALTY OF PERJURY THE INFORMATION SUBMITTED ON THIS APPLICATION% TRUE AND CORRECT. I WILL CONTACT THE ENVIRONMENTAL HEALTH SERVICE WHEN I COMMENCE THE WORK. WITHIN 15 DAYS AFTER COMPLETION OF WORK I WILL FURNISH THE ENVIRONMENTAL HEALTH SERVICE A REPORT OF THE WORK PERFORMED AND NOTIFY THEM BEFORE PUTTING THE WELL INTO USE. UNDERSTAND THAT THIS PERMIT EXPIRES ONE YEAR FROM DATE OF ISSUANCE. I UNDERSTAND APPROVAL OF THE WEU PERMIT DOES NOT INDICATE WHETHER THIS PROPERTY IS SUITABLE FOR AN INDIVIDUAL SEWAGE DISPOSAL SYSTEM OR THAT A PERMIT TO INSTALL SUCH SYSTEM WILL SE GRANTED

WORKER'S COMPENSATION CERTIFICATE

X A CURRENTLY EFFECTIVE CERTIFICATION OF WORKERS COMPENSATION INSURANCE IS ON FILE WITH THIS OFFICE.
INSURANCE CARRIER STATE FUND COMP POLICY # 787059

— I CERTIFY THAT IN THE PERFORMANCE OF THE WORK FOR WHICH THIS PERMIT IS ISSUED I SHALL NOT EMPLOY ANY PERSON IN ANY MANNER SO AS TO BECOME SUBJECT TO THE WORKER'S COMPENSATION LAWS OF CALIFORNIA

PROPERTY OWNER Brenda Stephenson DRILLING CONTRACTOR [signature] 6/4/97

FOR OFFICE USE ONLY:

ENVIRONMENTAL ASSESSMENT REQUIRED YES ___ NO /

	DATE	EHS SPECIALIST
SITE INSPECTION	6/12/97	(RS)
APPLICATION APPROVAL	8/28/97	(RS)
PAD INSPECTION	12/1/97	(RS)
RECEIPT OF WELL LOG	12/2/97	(RS)
FINAL	12/2/97	(RS)

ANNULAR WELL SEAL WITNESSED:
— construction sched.
___ YES DATE ___
___
X NO DEPTH 50'
SEAL MATERIAL Cement
SACKS CEMENT/YARD ___

COMMENTS: See conditions on Attached Addendum.

Environmental Review Inital Study
ATTACHMENT B (Sheet 2 of 4)
APPLICATION 97-0648

FISCAL CONTROL

V - X

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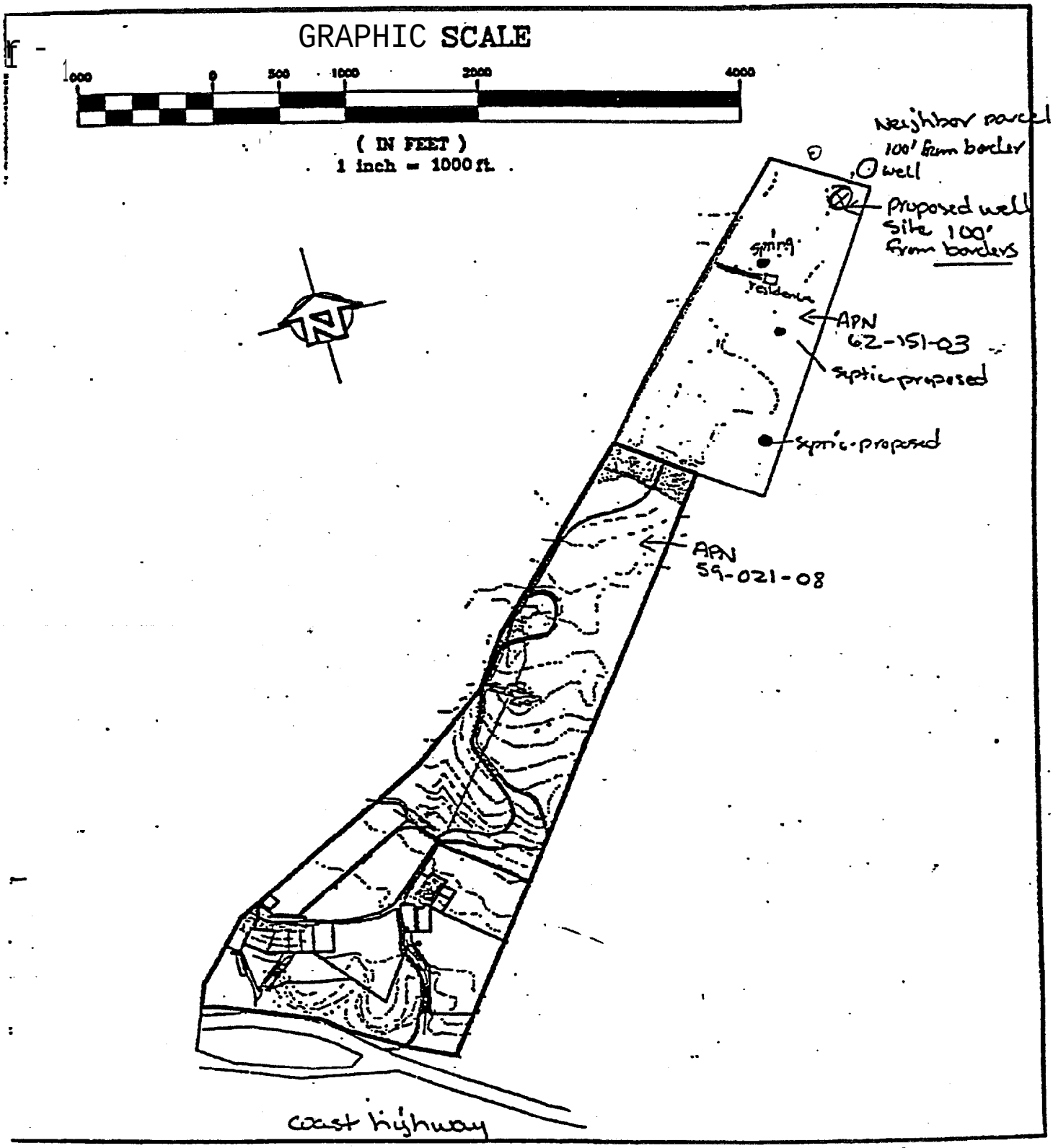
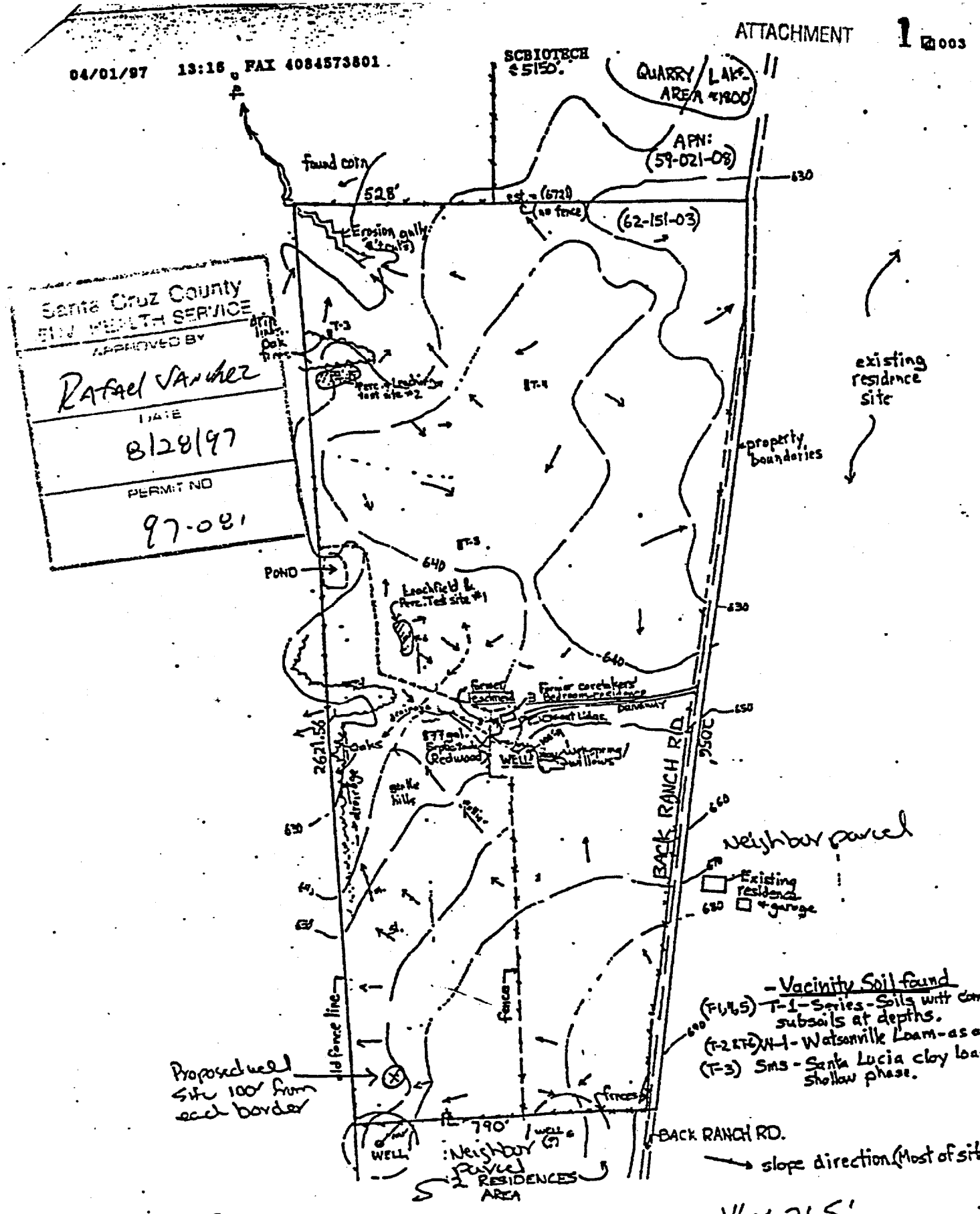
ifland ENGINEERS, INC.
1100 WATER STREET
SANTA CRUZ, CA 95062
TEL (408) 426-5313
FAX (408) 426-1763
CIVIL ENGINEERING • LAND SURVEYING • STRUCTURAL DESIGN

JOB NO. 96187- SC BIOTECH. SITE PLAN- REDUCED
SHEET NO. 1 OF ATTACHMENT 1
CALCULATED BY SSG DATE 2-20-97
SCALE: 1"= 1000'



Environmental Review Inital Study
ATTACHMENT 6B (Sheet 3 of 4)
APPLICATION 97-0648

04/01/97 13:16 FAX 4084573801



- Vacinity Soil found

(F1,T5) T-1 - Series - Soils with co subsoils at depths.

(T-2 T4) W-1 - Watsonville Loam - as

(T-3) Sms - Santa Lucia clay loa shallow phase.

LEGEND

Environmental Review Inital Study

ATTACHMENT 6B (Sheet 4 of 4) 2/MAY

APPLICATION 97-0048

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ATTACHMENT 1
APPLICATION 27626

Environmental Review Initial Study

NAME OF PREVIOUS OWNER

47

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Note: rights initiated prior to Dec. 19, 1914, and therefore included in this list, users of water diversions as of these rights are on by Water Code Section

STATE OF CALIFORNIA
RESOURCES AGENCY
STATE WATER RESOURCES CONTROL BOARD
DIVISION OF WATER RIGHTS

MEMORANDUM CONCERNING APPLICATIONS TO APPROPRIATE WATER

SANTA CRUZ COUNTY

DATE PREPARED OCTOBER 9,

APP NO.	DATE FILED	APPLICANT	SOURCE	POINT OF DIVERSION: SECTION	POINT OF DIVERSION: TWP & RANGE	POINT OF DIVERSION: B&M	AMOUNT: CFS OR GPD	AMOUNT: ACRE-FEET	USE
10226	072258	MARTIN C & MARTHA K BROWN	UNNAMED STREAM	NESE24	10S1E	M	0.1C		DR
10335	092458	STATE WATER RESOURCES CONTROL BOARD	SCOTT CREEK	SE18	10S3W	M		20000	KZ
10336	092458	STATE WATER RESOURCES CONTROL DOARO	APTOS CREEK	NW07	11S1E	M		8300	KMZ
10337	092458	STATE WATER RESOURCES CONTROL BOARD	ZAYANTE CREEK	SE36	9S2W	M		7500	KMZ
10338	092458	STATE WATER RESOURCES CONTROL BOARD	W BR SOQUEL CREEK	NE10	10S1W	M		7250	KMZ
10339	092458	STATE WATER RESOURCES CONTROL BOARD	SOQUEL CREEK	SW12	10S1W	M		6800	KMZ
10390	102158	MAC E PRINGLE	SPRINGVALE CREEK	SESE24	10S2W	M	6100G		IS
10667	050159	ANASTACIO & VIRGINIA SANCHEZ	HARKINS SLOUGH	SWSE22	11S1E	M		48	SR
10816	062259	HARRY W & V. PEARL BARRICK	UNNAMED STREAM	SWNW14	11S1E	M		7	KU
10833	062659	LAUREL COMMUNITY LEAGUE INCORPORATED	UNNAMED SPRING	SESE28	9S1W	M	0.03IC		0
10940	062759	JOHN E HACKAMACK ET AL	UNNAMED STREAM	NWNE1611	S2E	M		35	IS
10996	091559	HOWARD W & PAULINE I I RATHBUN	BEAN CREEK	NENW05	10S1W	M	4300G		ID
19084	111659	MT DIABLO COUNCIL B S A	KINGS CREEK	NWSE06	9S2W	M	6000G		0
19137	121759	DALE MATTHIESEN	UNNAMED SPRING	SESW19	9S2W	M	800G		D
19230	021660	CLIO & MARIO RODONI	LAGUNA CREEK	SWNW12	11S3W	M		26	I
19261	030460	L O, V H & G B, FULTON	HOPKINS GULCH	SENE20	9S2W	M	3800G		D
19376	042160	LOCKHEED AIRCRAFT CORPORATION	MILL CRCCK	SWSE29	9S3W	M	0.04C	15	JE
19421	050660	SUMMIT MUTUAL WATER COMPANY	UNNAMED STREAM	NWSW27	9S1W	M	0.03IC		N

SEE REVERSE SIDE OF FORM FOR EXPLANATION OF ENTRIES

ATTACHMENT 1

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EXPLANATION OF ENTRIES

DATE FILED: First two digits are month; next two digits are day of month; last two digits are year.

POINT OF DIVERSION:

SECTION: Forty acre subdivision of the section in which the point of diversion is located:

NWNW	NENW	NWNE	NENE
SWNW	SENW	SWNE	SENE
NWSW	NESW	NWSE	NESE
SWSW	SESW	SWSE	SESE

TWP & RANGE: Numbers preceding N or S are township number north or south of base line. Numbers preceding E or W are range numbers east or west of meridian.

B & M: H is Humboldt Base and Meridian
M is Mt. Diablo Base and Meridian
S is San Bernardino Base and Meridian

AMOUNT: A symbol (*, #, %, ¢, =, ", etc.) preceding an amount entry indicates that there are alternate points of diversion under this application and the amount listed may be diverted from this or other point or points of diversion identified by the same symbol under this application number. cfs and gpd are abbreviations for cubic feet per second and gallons per day, respectively. Following an amount entry they are further abbreviated c for cubic feet per second and g for gallons per day.

USE:
- A Agricultural
- B Mining
- C Milling
- D Domestic
- E Fire protection
- F Flood control
- G Dust control
- H Fish culture
- I Irrigation
- J Industrial
- K Irrigation, domestic
- L Frost Protection, Heat Control
- M Municipal
- N Frost Protection
- O Stockwatering, fish culture
- P Power
- Q Recreational, fire protection
- R Recreational
- S Stockwatering
- T Recreational, fire protection, fish culture
- U Stockwatering, fire protection
- V Recreational, fish culture
- W Wildlife propagation
- X Recreational, stockwatering
- Y Recreational, stockwatering, fish culture
- Z Uses too numerous to list or not included in code

STATUS:
- No entry—Application
- P —Permit
- L —License

ATTACHMENT 1

ATTACHMENT 1

STEPHENSON RANCH

HORSE BARN MANURE MANAGEMENTPLAN

Introduction

The Stephensons propose'to house 6 to 8 horses on the upper pasture lands of the Stephenson Ranch in the northern portion of Santa Crux County. The parcel is located on the marine terrace directly north (inland) on Highway 1 (Site Map). The portion of the site bordering the highway is located approximately 2,000 feet from the coast. The property is located midway between Laguna Creek and Majors Creek at approximately 1,330 feet from each stream. The property encompasses 208 acres; most of the site is nearly level land that is currently being used for livestock grazing and has been used for crop cultivation and grazing in the past. About 5% of the acreage consists of lands with slopes of 15-50% which supports either grassland or scrub vegetation. Four intermittent streams with associated riparian vegetation flow through the property. One intermittent drainage bisects the property; much of it flows in close proximity to a private right-of-way, Back Ranch Road. An old impoundment at one location along the drainage has created a reservoir, referred to as the Lower Reservoir. A former rock quarry has been historically filled with water and is known as the Upper Reservoir. Both reservoirs have historically been used to irrigate the livestock grazing areas. All of the intermittent riparian areas are fenced to preclude grazing by livestock, including horses. The fencing is 10 outward from the dripline of the riparian vegetation, 30 feet from the bankfull flow line or whichever is greater.

Proposed Horse Barn

The ranch operation is currently comprised of two barn complexes in the lower portion of the parcel, these are depicted as the West Field Barn Site and the East Field Barn Site on the Site Map. These barns are utilized for the company's goat operation. The Stephenson's propose to construct a horse barn in the upper pasture area. (North Field Barn Site). The horse barns include a fenced outside pen around the barn and fenced pasture. The area will also include a concrete-lined bunker for manure storage. Up to eight horses are proposed to be housed at the barn. The horses would be contained in the barn and fenced pen during rainy periods and would periodically graze in the adjacent fenced pasture during the dry season.

During the dry'months, horse manure and rice hulls would be removed from the barn and spread on the pasture. The pasture would be irrigated and the horses would graze in the pastures during this time. During the wet months, generally December - March, the horse manure would be stored in the concrete-lined bunker and kept dry. This manure would be spread on the pastures during appropriate dry periods. The ranch proposes to implement a manure management' program that is intended to promote the health of the grazing land and prevent adverse impacts to water quality in the area. This program is described in more detail, below.

Management of Horse Manure and Urine

The eight horses on the ranch will graze in a fenced pasture as well as being fed and housed in the horse barn. Manure and other soiled barn material (i.e., rice hulls), will be periodically removed from the barn. During the dry months this manure will be spread onto approximately 100 acres of pasture in the vicinity of the North Field barn. Manure is not spread in or near riparian corridors, as these areas are fenced from all agricultural and grazing activities.

Environmental Review Initial Study
ATTACHMENT 8A (1 sheet of 3)
APPLICATION 97-0678

During the wet months, generally October 1 through May 31, the horse manure will be stored in a concrete-lined bunker (25' by 25') until weather conditions are suitable for spreading. The location of the bunker is depicted on the Site Map. The concrete bunker will be covered with a waterproof tarp to keep the manure dry and minimize any contact with rainwater or surface water flows. The tarp will be secured with ropes and cinder blocks and will be periodically checked during the winter by ranch personnel. With proper checking of the tarps and replacement of tarps as needed, the potential for discharge of manure runoff into area watercourses is considered low.

Nitrates and ammonia from horse manure and urine are a potential source of pollutants to the ranch's watercourses if not properly applied to pasture lands or improperly handled and stored during wet months. As the riparian corridors and ephemeral drainages are fenced to preclude access by grazing animals and ranch operations, deposition of manure directly into watercourses is not a potential pollutant source.

The manure is periodically spread onto the pasture using a tractor with a manure spreader. The goal of manure composting and management is to improve pastures. Manure placement quantities are optimized to maximize pasture quality but not cause the transmission of nutrients and organic matter to receiving waters or deep groundwater. This same practice will be utilized for the manure from the eight horses.

Irrigation of the pastures by overhead sprinklers is regulated to provide adequate moisture to the pastures but not in quantities to cause deep percolation or runoff. Since the amount of available pasture is greater than the available manure, very little manure is stored in these facilities during the dry months. If there is excessive composted manure, it will be sold and used off site.

Best Management Practices

Best Management Practices to be implemented by Santa Cruz Biotechnology to prevent or reduce pollutants from activities relating to the horse barn are described below. The goals of the specific best management practices (BMPs) are as follows:

- Prevent the exposure of composting manure situated in bunkers from rainfall and stormwater runoff;
- Prevent direct stormwater runoff from the horse pen to receiving waters;
- Control soil erosion from the horse pastures and prevent transmission of particulate-borne nutrients to receiving waters through sustainable grazing management, retention of 2-4.0" of grass cover at all times, and use of vegetated filter strips, grass-lined swales and storm water detention facilities.

Non-Structural BMP's

- For winter 1997/98, manure will be stored in upland areas. Beginning in winter 1998/99, manure will be stored in a concrete-lined bunker. During the winter months, manure storage areas will be covered with waterproof tarps. The tarps will be inspected prior to and after each major storm event to ensure that the tarps are secure and there are no leaks. Areas around the manure storage areas shall be periodically checked during the winter to ensure that water is draining away from the storage area and the manure is kept dry. If holes or other defects in the waterproof tarps are detected, new tarps will be installed within 24 hours if rain is occurring or within 48 hours if rain has stopped. Temporary drainage catchment swales will be constructed around the storage areas to collect runoff if the manure piles were exposed to direct rainfall.

- The horse pasture lands will be managed to improve overall productivity and to increase the amounts of desirable plants that are optimum for livestock. Additionally, pasture management will control the growth of brush and minimize erosion.
- Pasture will be grazed with the goal of maintaining a minimum of **2-4"** of **herbage** year-round. The level of **herbage** will be controlled through the management of the duration of grazing, irrigation and use of selected pasture grasses. Electric fencing will be used to divide the fenced pastures into smaller units where needed to allow the pasture to rest and/or to irrigate fields.
- Re-planting of pasture; if necessary, will be conducted in the fall or spring months. Timing will be based on rainfall and general condition of the pastures.

Structural **BMP's**

- One concrete-lined bunker will be installed near the Horse Barn for the storage of manure. The location and size of the bunker is depicted on the Site Map. The location has been selected to have the least possibility of receiving runoff from adjacent areas. The storage facilities will be covered during the winter, as described above.
- **Riparian** fencing will be periodically inspected to ensure that horse animals are excluded from the riparian corridors. If holes in the fencing are detected, the applicable field will not be used for grazing until the fence is repaired or temporary electric fencing is used.
- The roof runoff systems will be inspected prior to and periodically throughout the winter season to measure that downspouts are clear and runoff is not flowing through the barns or pens.

ATTACHMENT 1

February 9, 1999

John Ricker
Jim Safianek
Environmental Health Services
701 Ocean Street, Room 3 12
Santa Cruz, CA 95060 ·.

Via hand delivery

RE: Winter Fertilization Plan, Stephenson Ranch
Application 97-0648

Dear Mr. Ricker and Mr. Safranek:

Please fmd enclosed standard operating procedures and the corresponding winter fertilization plan foi storing and utilizing horse manure generated at the Stephenson Ranch. As previously discussed, it is the intent of the applicants to fertilize the pastures at the Stephenson Ranch throughout the year, including the winter months, in a manner that will improve pasture production while protecting water quality.

Upon review of this information, if you have any questions, or if I may provide you with any additional information, please don't hesitate to t call.

Sincerely,

Matt Mullin

cc: Kim Tschantz, Planning Department

encl: Standard Operating Procedures with reduced winter fertilizing plan
(1) 24" x 36" winter fertilizing plan

9161 Delaware Avenue
Environmental Review Inital Study
ATTACHMENT B Sheet 1 of 8
APPLICATION 97-0648

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STEPHENSON RANCH
HORSE MANURE FERTILIZING
STANDARD OPERATING PROCEDURES

OBJECTIVE: To use horse manure generated on-site as fertilizer to improve pasture quality and in a manner that maintains water quality. The purpose of this SOP is to identify Best Management Practices (BMPs) at the Stephenson Ranch to fertilize pasture lands during October 15 to April 15.

BACKGROUND: The Horse Barn project includes a manure bunker storage facility to store manure and soiled bedding materials during the rainy season. The bunker facility Will provide sheltered storage for manure (i.e. fertilizer) and prevent storm water from transporting manure off-site. Like all agricultural properties in the County, fertilizer will be applied to the land at appropriate times throughout the year, and this will be done at the Stephenson Ranch. The bunkers are intended to provide enough storage space to stockpile and compost manure during the winter until it may be spread as fertilizer at appropriate times during October 15 to April 15.

It is anticipated that each horse will produce approximately 8.5 cubic feet of manure and soiled bedding per month. Thus, 8 horses will produce approximately 68 cubic feet of manure each month, or 408 cubic feet over six months. The horse manure bunker is 1,372 cubic feet in size (interior dimensions 14'x14'x7'). The size of the bunker will allow multiple stockpiles to be generated with sufficient area for stockpiles to be aerated by the tractor. Thus, the manure bunker has been adequately sized to store and compost six months of manure.

Nevertheless, it is the desire of the applicant to fertilize the pastures throughout the year to optimize crop production. The applicants further desire to fertilize its pastures in a manner that does not impair water quality in and around the property. The Best Management Practices described herein are intended to accomplish these two goals.

STOCKPILING: As noted, the manure bunker will provide a protected area to store manure during the rainy season to prevent storm water and manure from interacting with one another. "Composting" is an effective means to eliminate pathogens that may contaminate surface water. The key elements to effectively eliminate pathogens through composting are temperature and time. In other words, the compost pile must heat to a certain temperature for a certain duration to sufficiently "cook" disease organisms. "Microbial activity will rapidly heat a pile to 130 ° to 150 ° F within the first few days" (Van Horn, Mark, 1995. ***Compost Production and Utilization,*** University of California and California Department of Food and Agriculture, Publication 21514). According to EPA 503 Sludge Regulations, when the temperature of a sewage sludge compost pile is raised to 40 . C (104 . F) or higher and remains at 40 . C or higher for five days, pathogens are significantly reduced and the compost may be safely applied to the land. For four hours during that five day period the temperaturk in the compost pile must exceed 55 ° C (13 1 ° F) ***(EPA 's 503 Sludge Regulations,*** Appendix B - Pathogen Treatment Processes, A. Processes to Significantly Reduce Pathogens, 4. Composting, pg. 751). It should be . noted these EPA standards apply to sewage sludge, which contains significantly more pathogens that are harmful to humans than what is found in animal manure. Therefore, the EPA 503 Sludge Regulations provide a conservatively high performance standard for significantly reducing pathogens from animal waste so that it may be used as fertilizer in a safe manner.

Environmental Review Inital Study
ATTACHMENT 8 (sheet 2 of 8)
APPLICATION 97-0648

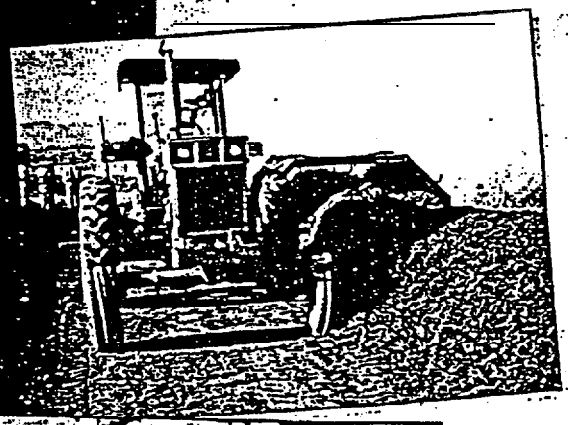
BEST MANAGEMENT PRACTICES:

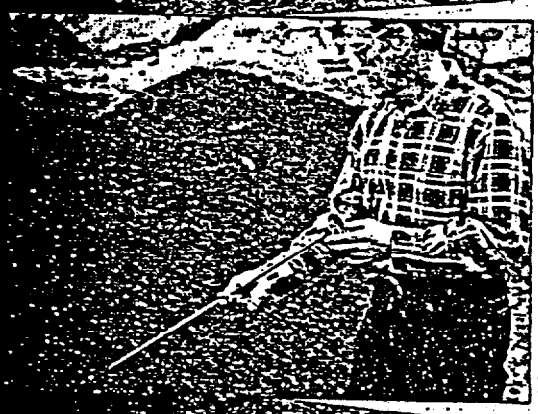
1. The barn and holding pens will be cleaned 1-3 times per week, depending on conditions. The manure and bedding will be immediately placed in the manure bunker.
2. The bunker will be kept closed when not in use to prevent storm water from penetrating the bunker.
3. Manure will be stockpiled in separate piles, on an as needed basis. It is anticipated 2 to 4 stockpiles will be utilized at any given time over the rainy season. When a stockpile is of sufficient size (mature) no further material will be added to it, and new material will be placed within developing stockpile(s).
4. A mature stockpile will be left in the bunker to "compost" for a minimum of 5 days. During this time, the stockpile will heat sufficiently to significantly kill disease pathogens. The material will then be available for use as fertilizer.
5. Following completion of the "composting" cycle, during the months of October to April fertilizer will be applied as follows:
   - Fertilizer will be applied to flat to gently sloping pastures (see attached Winter Fertilizing Plan by Ifland Engineers). Fertilizer will not be applied to within 10 meters of any drainage course or drainage swale, per EPA 503 Regulations.
   - Fertilizer will only be spread when the pastures are sufficiently dry. This will be determined on a case by case basis, due to the variability of soil conditions (i.e. time of year, daily temperatures, relative humidity, winds, etc.). This practice will minimize the potential transport of fertilizer by storm water. Moreover, spreading fertilizer when the ground is unsaturated is advantageous because it minimizes soil compaction by the heavy fertilizing spreading machinery.
   - Fertilizer will be spread if rain is forecasted to occur within 72 hours from the time of application.

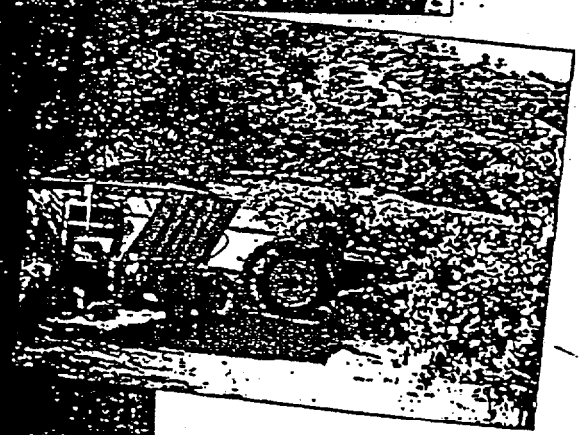
ATTACHMENT 1

COMPOST PRODUCTION AND UTILIZATION

A GROWERS' GUIDE







Publication 21514

A joint publication of the
California Department of Food and Agriculture and the
University of California Division of Agriculture and Natural Resources

Environmental Review Inital Study
ATTACHMENT 8 (Sheet 4 of 8)
APPLICATION 97-0647

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microbes will immediately begin to decompose the materials, and their populations will increase rapidly. Some compost managers inoculate new compost piles with a small amount of material from an existing pile or with commercially available compost inoculants, preparations, or starters. Such products may be beneficial in some situations. However, because virtually all unsterilized organic materials naturally contain large numbers of decomposing microbes, successful composting does not require inoculation of new piles. As microbial activity in a compost pile accelerates, the metabolic energy of the microbes will heat the pile rapidly.

Compost windrows vary in size, depending primarily upon starting materials and turning equipment. A compost windrow can be of any length. Windrows range in height from 3 to 4 feet for dense materials with poor structure (e.g., manures) to 10 to 12 feet for very light and structured materials (e.g., leaves, straw). Most windrows, especially those blended from diverse materials, are of intermediate height. Turned windrows are typically between 6 and 20 feet wide at the base; with sloping sides. The width and height of a windrow may be limited by the size of the turning equipment.

MANAGING THE COMPOSTING PROCESS

Because composting is a biological process, it depends upon water. In managing the moisture content of a compost pile, the microbes' need for water must be balanced with their need for oxygen. The moisture content should be maintained at approximately 50 to 60 percent water on a weight/weight basis. The moisture percentage can be determined by subtracting the oven-dried weight of a sample from its fresh weight, and then dividing this difference by the fresh weight. Most experienced compost managers can estimate the moisture content of compost by feel. As a rule, the interior of the pile should be quite moist, but not so moist that one could squeeze water from a handful of the compost.

Even if the moisture content is not excessive, oxygen concentrations in the pile may be insufficient because of inadequate gas exchange between the interior of the pile and the atmosphere. In a turned windrow system, this situation is remedied though the turning process. While the actual turning process does re-aerate the pile, the oxygen introduced in this way is consumed by the microbes quite rapidly. More importantly, however, the turning process increases the porosity of the pile, thus allowing more efficient gas exchange. Turning not only enhances aeration but also re-mixes the materials. Repeated turning of the windrow ensures that all the material in the windrow is exposed to the high levels of microbial activity and high temperatures in the interior of the pile during the composting process.

In a properly constructed compost pile, microbial activity will rapidly

Environmental Review Inital Study
ATTACHMENT 8B (sheet 5 of 8)
APPLICATION 97-0647

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properly managed; temperatures will remain elevated for several weeks (with the possible exception of brief periods after turning) during the thermophilic phase of composting. Thus, the most commonly used diagnostic feature of a compost pile is its temperature. Compost temperature should be monitored frequently (at least weekly during most of the composting process and as often as daily during the Initial period following pile construction) and at several places within the pile. A specially designed compost thermometer with a long, sturdy probe is necessary to measure the temperature in the mlddle of the pile without damaging the thermometer.

Decreasing compost temperatures, which indicate a slowing of microbial activity, most commonly result from a lack of oxygen, moisture, or adequately decomposable material. When compost temperatures drop, the cause should be determined. If it appears to be insufficient oxygen or moisture, the pile can be turned and/or water can be added. If these actions do not result in increased temperatures in a relatively old pile, the compost may no longer Contain any easily decomposed material and may be ready for curing, which is the final stage of the composting process.

During curing, microbial activity, and thus pile temperatures, are reduced. In addition, different microbial populations dominate the pile and somewhat different chemicals are produced. As the compost pile cures, the humus content, cation-exchange capacity, and disease-suppressiveness of the compost may all increase. Properly curing the pile for several weeks also helps ensure the aerobic decomposition of particularly resistant particles or potentially harmful compounds that may be present if anaerobic conditions have existed in any portions of the pile. Curing can be very important in many situations, such as when using compost in container mixes or applying It to a field immediately prior to planting. Because even an excellent compost can be spoiled if it becomes anaerobic before being used, it is important to continue to manage compost piles, particularly in regard to their oxygen content, during the curing phase and until they are used.

BEHAVIOROFNITROGENDURINGCOMPOSTING

Nitrogen transformations in active and finished composts are complex, but they can be managed. For both economic and environmental reasons, minimizing N losses from composting systems is important. When excess water is added to a compost pile, either through irrigation or precipitation, the surplus water leaches through the system. This water can carry significant amounts of N as soluble organic-N, ammonia (NH_3), and nitrate (NO_3), especially early in the composting process. These nitrogen losses can be avoided by preventing the addition of excess water to the compost pile or by recycling leachate back into the pile. This will require some management, but it is certainly an achievable objective.

ATTACHMENT 1

Environmental Review Inital Study
ATTACHMENT 8 (Sheet 6 of 8)
APPLICATION 97-0647

ATTACHMENT 1

APPENDIX B - PATHOGEN TREATMENT PROCESSES

A. PROCESSES TO SIGNIFICANTLY REDUCE PATHOGENS (PSRP)

1. **Aerobic digestion**

Sewage sludge is agitated with air or oxygen to maintai aerobic conditions for a specific mean cell residence time a a specific temperature. Values for the mean cell residenc time and temperature shall be between 40 days at 20 degree Celsius and 60 days at 15 degrees Celsius.

3. **Air drying**

Sewage sludge is dried on sand beds or on paved or unpave basins. The sewage sludge dries for a minimum of thre months. During two of the three months, the ambient averag daily temperature is above zero degrees Celsius.

3. **Anaerobic digestion**

Sewage sludge is treated in the absence of air for a specifi mean cell residence time at a specific temperature. Value for the mean cell residence time and temperature shall b between 15 days at 35 to 55 degrees Celsius *and* 60 days at 2 degrees Celsius.

4. **Composting**

Using either the within-vessel, static aerated pile, o windrov composting *methods*, the temperature of the sewag sludge is raised to 40 degrees Celsius or higher and remair at 40 degrees Celsius or higher for five days. For four-hour during the five days, the temperature in the compost pi exceeds 55 degrees Celsius.

5. **Lime** stabilization

Sufficient lime is added to the sewage sludge to raise the p of the sewage sludge to 12 after two hours of contact.

B. PROCESSES TO FURTHER REDUCE PATHOGENS (PFRP)

1. **Composting**

Using either the within-vessel composting method or the stat; aerated pile composting method, *the temperature of the sewa* sludge is maintained at 55 degrees Celsius or higher for thr days;

Using the windrov composting method, the temperature of t sewage sludge is maintained at 55 degrees or higher for

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Environmental Review Inital Study
ATTACHMENT 8 (Sheet 7 of 8)
APPLICATION 97-0647

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Biotic Resources Group

Biotic Assessments • Resource Management • Permitting

August 4, 1997

Mr. Kim Tschantz
County of Santa Cruz Planning Department
701 Ocean Street
Santa Cruz, CA 95060

RE: Biotic Review of Proposed Horse Barn (Application #21860G), Stephenson Ranch

Dear Kim,

This letter presents the findings of the biotic review conducted by the Biotic Resources Group for the proposed North Field horse barn on the Stephenson Ranch.

Methods and Results of Biotic Review

The area of the proposed ho& barn on the Stephenson Ranch was field checked on July 51997. The purpose of the field survey was to ascertain the known or potential presence of sensitive biotic resources in the area, in particular the occurrence of native coastal terrace grassland.

Proposed North Field Horse Bam: The proposed horse barn site is located within the North Field area of the Stephenson Ranch. An area approximately 60,000 square feet within the north field area was field checked. This area is depicted on the location map in the Stephenson's application packet as the "barn location and the surrounding area".

The proposed horse barn area consists of flat to gently sloping grassland. The grassland has been grazed, historically by cattle and horses. The vegetation is dominated by non-native grass species. Dominant species include foxtail barley (*Hordeum jubatum*), perennial ryegrass (*Lolium perenne*) and wild oat (*Avena barbata*). Also occurring within the grassland are scattered occurrences of California oatgrass (*Danthonia californica*) and purple needlegrass (*Nasella pulchra*), two native perennial bunchgrasses. The percent cover by native grass is approximately 1-2%. Other plant species observed during the July site visit include filaree (*Erodium* sp.), English plantain (*Plantago lanceolata*), cat's ear (*Hypochaeris* sp.), curly dock (*Rumex crispus*) and scattered young shrubs of coyote brush (*Baccharis pilularis*). Other annual plant species may occur within the grassland but were not observable during the July field visit.

Special Status Plant Species. Special status plant species were not observed within the proposed horse barn area during the July field visit. Two plant species of concern that may occur in coastal grasslands, the Santa Cruz tarplant (*Holocarpha macradenia*), a species State-listed as endangered and Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), a locally unique species, were not observed in the area. As these two species flower in June and July, identification of these species is possible during the summer months. These species were not observed in the area.

Post Office Box 14 ♦ Santa Cruz, Caliiornla 95063 ♦ Phone/Fax (408) 476-4803

Environmental Review Inital Study
ATTACHMENT 9 (sheet 1 of 2)
APPLICATION 97-0678

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ATTACHMENT 8 (Sheet 8 of 8)
APPLICATION 97-0248

Environmental Review Intial Study

existing perimeter fencing above
ervoir. Fencing is to be replaced
long the southerly site perimeter
therly fence of the Assault pasture
rly fence of the Cigar pasture.

survey was performed for much
bove the upper reservoir. All
s were digitized or scanned from
rs. The survey is on an assumed

eatures in unsurveyed areas are
on information supplied by the
s by others.

acks are 20' from property lines.

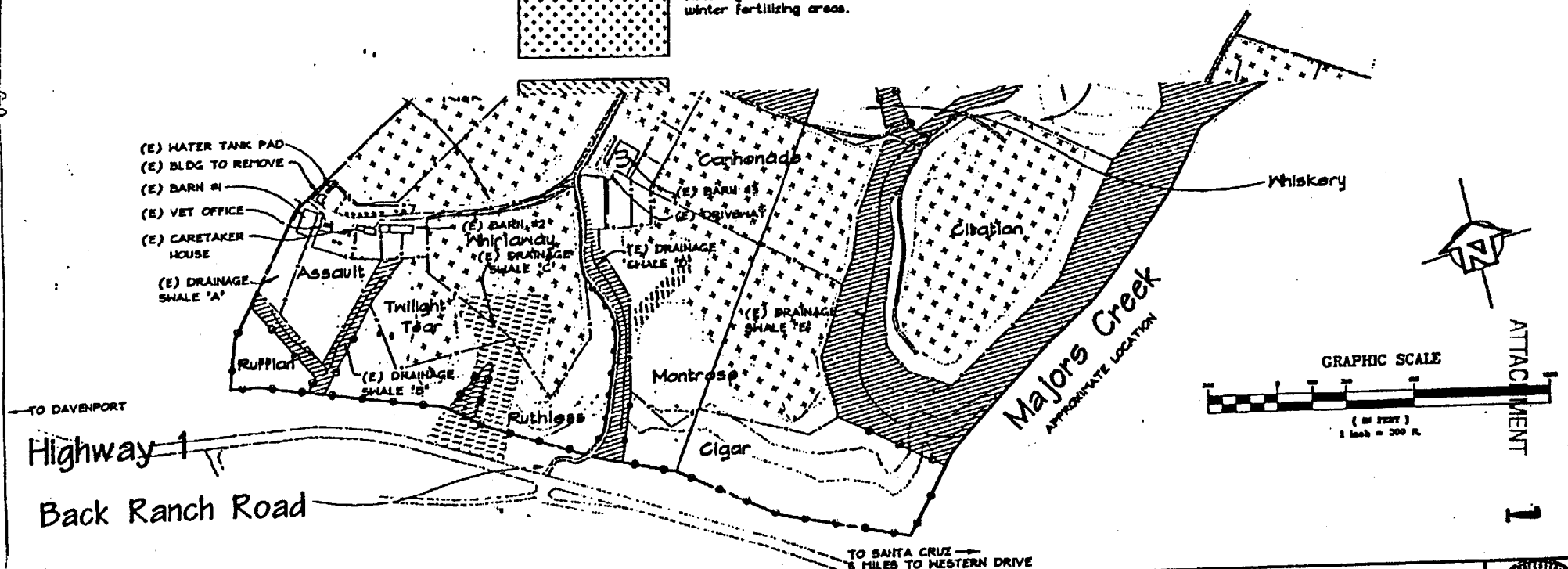
boundary survey. Property lines
r reference only.

Legend

(P) Proposed
(E) Existing
Existing Fence
Proposed Fence
Approximate Property Line
Digitized Contours
Contours from Topo Survey

Hatching indicates non-pasture areas.

Hatching indicates winter fertilizing areas.



ATTACHMENT

SHEET 1	A.P.N. 058-021-08 A.P.N. 062-151-03	Winter Fertilizing Plan for Stephenson Ranch 5322 Coast Highway 1, Santa Cruz, CA	REVISIONS APPROVED
DATE 2-08-88	DESIGN		
SCALE 1" = 300'	DRAWN BSG		

ifland ENGINEERS, INC.
CIVIL ENGINEERING • LAND SURVEYING • STRUCTURAL DESIGN
1100 WATER STREET
SANTA CRUZ, CA 95062
TEL (408) 426-5313
FAX (408) 426-1763

REGISTERED CIVIL ENGINEER NO. 18318

Recommendations

The placement of the proposed horse barn has the potential to impact very scattered occurrences of native grasses, including purple needlegrass and California oatgrass. As the diiition of these species is somewhat limited within Santa Cruz County, impacts to these stands should be avoided to the greatest extent feasible. During the site visit with the landowner, the horse barn was sited in an area having the least amount of native grass cover in order to reduce impacts to these scattered native plants to the greatest extent feasible. Despite these measures, however, it is expected that the construction of the barn facilities will remove scattered occurrences of native grasses. Due to the low coverage by such species and the dominance by non-native grasses, however, tbis removal is not deemed a significant impact to botanical resources.

Please give me a call if you have any questions on this review.

Sincerely,

Kathleen Lyons
Principal / Plant Ecologist

cc: John and Brenda Stephenson, Santa Cruz Biotechnology

101-01

8/4/97

Environmental Review Inital Study
ATTACHMENT 9--(Sheet 2 of 2)
APPLICATION 97-0678

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August 8, 1997

Mr. Kin Tschantz
County of Santa Cruz Planning Department
701 ocean street
Santa Cruz, CA 95060

RE: Biotic Review of Proposed. Water Line (Application # 97-0430); Stephenson Ranch

Dear Kim,

This letter presents the findings of the biotic review conducted by the Biotic Resources Group for the proposed water line to the North Field horse barn on the Stephenson Ranch

Methods and Results of Biotic Review

The area of the proposed water line on &Stephenson Ranch was field checked on July 2, 1997. The purpose of the field survey was to ascertain the known or potential presence of sensitive biotic resources in the area, in particular the occurrence of native coastal terrace grassland.

Proposed Water Line, A water line is proposed to be constructed adjacent to Back Ranch Road from the Upper Reservoir to the North Field Horse Barn. The water line would beconstructed with a backhoe, digging a trench approximately 2 feet wide. Equipment will work in an area approximately 10 feet wide. Upon completion of the trenching and placement of the water line, the soil will be replaced.. The landowner proposes to revegetate the disturbed area with a native erosion control seed mix, that includes native grass species, such as purple needlegrass.

The proposed water line is located immediately adjacent to Back Ranch Road. The vegetation is consists of grassland vegetation. Dominant species include non-native grass species, such as foxtail barley (*Hordeum jubatum*), perennial ryegrass (*Lolium perenne*) and wild oat (*Avena barbata*). Also occurring within the grassland along the roadway are scattered occurrences of California patgrass (*Danthonia californica*) and purple needlegrass (*Nasella pulchra*), two native perennial bunchgrasses. The percent cover by native grasses is estimated at 5 percent. Other plant species observed during the July site visit include filaree (*Erodium* sp.), English plantain (*Plantago lanceolata*), cat's ear (*Hypochaeris* sp.), curly dock (*Rumex crispus*) and scattered young shrubs of coyote brush (*Baccharis pilularis*). Other annual plant species may occur along the roadway area but were not observable during the July field visit.

Special **Status Plant Species.** Special status plant species were not observed within the proposed water line area during the July field visit. Two plant species of concern that may occur in coastal grasslands; the Santa Cruz tarplant (*Holocarpha macradenia*), a species State-listed as endangered and Gairdner's yampah (*Perideridia gairdneri* ssp. *gairdneri*), a locally unique species, were not observed

in the area As these two species flower in June and July, identification of these species is possible during the summer months. These species were not observed in the area.

Recommendations

The water line placement has the potential to impact scattered occurrences of native grasses, however the majority of the water line area is comprised of non-native species. Due to the low coverage of native plant species along the water line route and the dominance by non-native species, the removal of grassland for the water line is not deemed a significant impact to botanical resources.

As proposed by the landowner, revegetation of the water line area following construction activities is recommended. The use of a native erosion control seed mix, that includes purple needlegrass (as proposed by the landowner) is an acceptable measure to restore the disturbed area.

Please give me a call if you have any questions on this review.

Sincerely,

Kathleen Lyons

Kathleen Lyons
Principal / Plant Ecologist

cc: John and Brenda Stephenson, Santa Cruz Biotechnology

Biotic Resources Group
Biotic Assessments • Resource Management • Permitting

January 13, 1998

Mr. Kim Tschantz
County of Santa Cruz Planning Department
701 Ocean Street
Santa Cruz, CA95060

RE: **Biotic Review of** Septic **Leach Field Area at Horse Barn** Site. **(Application #21860G), Stephenson Ranch** ,

Dear Kim,

The Biotic Resources Group submitted a letter to you on the findings of a biotic review for the proposed North Field horse barn on the Stephenson Ranch (letter dated August 4, 1997). It that letter the review of the septic leach field area was not specifically mentioned, however, the leach was in the area surveyed. As stated in the August 4, 1997 biotic review, the grassland area is dominated by annual, non-native grasses, yet there are very scattered occurrences of native grasses, including purple needlegrass and California oatgrass. The septic leach line is sited in an area having the least amount of native grass cover. This siting will reduce impacts to these scattered native plants to the greatest extent feasible. Despite these measures, however, it is expected that the construction of the leach field line will remove scattered occurrences of native grasses. Due to the low coverage by such species and the dominance by non-native grasses, however, this removal is not deemed a significant impact to botanical resources.

Please give me a call if you have any questions on this review.

Sincerely,

Kathleen Lyons
Principal / Plant Ecologist

cc: John and Brenda Stephenson, Santa Cruz Biotechnology

Post Office Box 14 • Santa Cruz, California 95063 • Phone/Fax (408) 476-4803

ATTACHMENT 1

12/24/97

To: Ken Hart
Planning Department
County of Santa Cruz

Re : Stephenson Ranch
Environmental Review of Applications No. 97-0648 and 97-0779
Assessor's Parcel No.: 59-021-08/62-151-03
Water Use

The five 4975 gallon water tanks shown on the Stephenson Ranch plans are required by CDF / County Fire for fire protection water storage.

John Salsi, CDF / County Fire

TOTAL P.02

Environmental Review Inital Study
ATTACHMENT 12
APPLICATION 97-0678

TOTAL P.01

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SANTA CRUZ COUNTY CODE SECTION 13.10.314(a)

ATTACHMENT 1

13.10.314 REQUIRED SPECIAL FINDINGS FOR "CA" AND "AP" USES.

(a) All Uses. For parcels within the "CA" Commercial Agriculture and "AP" Agricultural Preserve Zone Districts, the following special findings must be made in addition to the findings required by Chapter 18.10 in order to approve any discretionary use listed under Section 13.10.312 which requires a Level V or higher Approval except Agricultural Buffer Determinations:

1. That the establishment or maintenance of this use will enhance or support the continued operation of commercial agriculture on the parcel and will not reduce, restrict or adversely affect agricultural resources, or the economic viability of commercial agricultural operations, of the area.

2. That the use or structure is ancillary, incidental or accessory to the principal agricultural use of the parcel or that no other agricultural use is feasible for the parcel or

3. That the use consists of an interim public use which does not impair long-term agricultural viability; and

4. That single-family residential uses will be sited to minimize conflicts, and that all other uses will not conflict with commercial agricultural activities on site, where applicable, or in the area.

5. That the use will be sited to remove no land from production (or potential production) if any nonfarmable potential building site is available, or if this is not possible, to remove as little land as possible from production. (Ord. 4094, 12/11/90)

(b) Residential Uses in the Coastal Zone. For parcels within the "CA" Commercial Agricultural and "AP" Agricultural Preserve Zone, Districts in the Coastal Zone, the following special findings shall be made in addition to those required by Chapter 18.10 and paragraph (a)

Environmental Review Inital Study
ATTACHMENT 13
APPLICATION 97-0648

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Ventura Fish and Wildlife Office
2493 Portola Road, Suite B
Ventura, California 93003

ATTACHMENT 1

April 22, 1998

Kim Tschantz
Planning Department
County of Santa Cruz
701 Ocean Street, Room 400
Santa Cruz, California 95060

Subject: Proposed Negative Declaration for Application Numbers 97-0648 and 97-0779 at the Stephenson Ranch, Santa Cruz County, California

Dear Mr. Tschantz:

This letter responds to a request from the County of Santa Cruz (County), dated February 17, 1998 and received by the U.S. Fish and Wildlife Service (Service) on March 10, 1998, for comments on the negative declaration for the proposed equestrian facility and fencing project at the 207-acre Stephenson Ranch, Santa Cruz County, California (application numbers 97-0648 and 97-0779). Santa Cruz Biotechnology (applicant) proposes to implement agricultural improvements for equestrian uses including the construction of two 4,000 square foot agricultural barns, the installation of five 4,975 gallon water storage tanks, the installation of a water line from the upper reservoir to the proposed water storage tanks, and the installation of one grain silo (application number 97-0648). The applicant also proposes to install seasonal fencing to keep livestock from entering a riparian corridor between December 1 to April 1 of each year. Based on our review of the negative declaration and of the proposed project site, we have the following comments and recommendations.

The federally threatened California red-legged frog (*Rana aurora draytonii*) is known to occur on the Stephenson Ranch in the vicinity of the lower reservoir. California red-legged frogs likely also occur at the upper reservoir, along the riparian corridor between the upper and lower reservoirs, and along Scaroni Creek.

Section 9 of the Endangered Species Act of 1973, as amended (Act), prohibits the taking of any federally listed endangered or threatened species. The Act defines "take" to mean "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Service regulations (50 CFR 17.3) define "harm" to include "significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering." The Act provides for

Environmental Review Inital Study
ATTACHMENT 14 (Sheet 1 of 3)
APPLICATION 97-0648

civil and criminal penalties for the unlawful taking of listed species. Such taking may be authorized by the Service in two ways: through interagency consultation for projects with Federal involvement pursuant to section 7 or through the issuance of an incidental take permit under section 1 O(a)(l)(B) of the Act.

The applicant would need to apply for a 10(a)(1)(B) permit from the Service if the proposed activities would result in incidental take of the California red-legged frog. As mitigation, the County is requiring the applicant to protect the California red-legged frog and to comply with the Act. In addition, the County is requiring the applicant to submit a copy of a valid section 10(a)(l)(B) permit prior to installing the water line or bringing the water storage tanks onsite.

Based on inspection of the proposed project site during a site visit on March 10, 1998 by David Pereksta of my staff, we have determined that the construction of the equestrian barns and the installation of the water storage tanks onsite are not likely to result in take of the California red-legged frog. The site for the proposed equestrian barns and water storage tanks is within a pasture on top of a ridge that provides little or no habitat for California red-legged frogs. Dispersing California red-legged frog could traverse across this area, but regular use of this area by California red-legged frogs is doubtful due to the lack of any riparian corridor or vegetation. TO minimize the potential of take, the construction of the barns and installation of the water tanks should occur during the summer months when California red-legged frogs are not likely to be far from water. 1

The installation and operation of the new water line does have the potential to result in take of California red-legged frogs if it was installed through an area occupied by California red-legged frogs. Take could also occur if the draw of water from the upper reservoir, lower reservoir, and Laguna Creek affected water levels within these water bodies to an extent that it interfered with breeding activities of the California red-legged frog, or rendered the habitat unsuitable for California red-legged frogs, including adults and tadpoles. During the March 10, 1998 site visit, the applicant indicated that the 'water level within the upper and lower reservoirs would not be affected by the proposed projects due to the water circulation system onsite and that water levels suitable to support breeding would be maintained. The applicant also stated that the pumps would be screened to avoid entrapment of individual California red-legged frogs. The proposed location of the new water line is expected to have minimal effects on California red-legged frogs and their habitat. To further avoid impacts, we suggest installing the line during the summer months when frogs are not likely to be encountered@ from water, reducing impacts to riparian vegetation to the greatest extent practicable, and conducting pre-construction surveys for California red-legged frogs to ensure that none are affected by the installation of the water line.

The Service concurs with the County that the fencing of Scaroni Creek during the rainy season should reduce the potential for take occurring as a result of livestock grazing. The applicant should still ensure that proposed activities such as fence placement and removal and any other ground-disturbing activities within or adjacent to riparian corridors do not result in take of California red-legged frogs because the riparian corridors may provide habitat. We suggest

Environmental Review Inital Study
ATTACHMENT 14 (sheet 2 of 3)
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locating the fence outside of the dripline of the corridor to avoid impacts to California red-legged frogs. The suggestions provided above for the water line installation also apply to the proposed fencing activities. 1

The Service has provided input to the County and the applicant in previous letters for proposed projects on the Stephenson Ranch, including a reservoir management plan, and has been working with the applicant to ensure that management and maintenance of the reservoirs on the property will not result in the incidental take of California red-legged frogs. The applicant is currently preparing a habitat conservation plan (HCP) as part of an application package for a lO(a)(1)(B) permit for the incidental take of California red-legged frogs resulting from the management and maintenance of the lower reservoir and may expand the HCP to cover other activities on the Stephenson Ranch property. Currently, the Service does not believe that the applicant intends to cover the proposed activities covered by this negative declaration under this HCP. We agree with this approach and will continue to coordinate with the applicant regarding what activities would be appropriate for inclusion in their HCP. (cont.)

If the Service is able to concur that the proposed projects will not result in the incidental take of California red-legged frogs, a section lO(a)(l)(B) permit would not be required. If the take of California red-legged frogs is unavoidable as a result of any project impacts, including but not limited to the grading of land, clearing of riparian vegetation, changes in water levels in the reservoirs, or entrapment of individuals in the reservoirs' pumps, the applicant should consider applying for a section 10(a)(1)(B) permit to ensure that any take that may occur as a result of the proposedproject does not violate section 9 of the Act. For the applicant to demonstrate compliance with the Act, the applicant should provide the County with written concurrence from the Service that the development and implementation of the proposed projects will not result in incidental take of the California red-legged frog. The applicant should address the concerns presented in this letter and describe in writing to the Service what measures or management practices will be incorporated into its proposed projects to avoid take of the California red-legged frog. 2

The Service appreciates the opportunity to comment on the proposed negative declaration and looks forward to additional coordination with the County and the applicant. If you should have any questions, please contact David Pereksta of my staff at (805) 644-1766.

Sincerely,

Judy Holman

Diane K. Noda
Field Supervisor

Environmental Review Inital Study
ATTACHMENT 14 (Sheet 3 of 3)
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ATTACHMENT 1

ENTAL HEALTH SERVICE HEALTH SERVICES AGENCY - COUNTY OF SANTA CRUZ
701 OCEAN ST., ROOM 312 SANTA CRUZ, CA 95060 (406) 454-2022

APPLICATION FOR SEWAGE DISPOSAL PERMIT

By Applicant: John + Brenda Stephenson — Assessor's Parcel Number 62-151-03

2161 Delaware Ave. — City Santa Cruz State CA Zip 95060

If Different Than Above — Consult? Phone: (H) 684-1446 (W) 457-3800

Directions to Site 5 miles past western Dr. on Hwy 1, Right on Back Ranch Rd - 1 mi. up. ort. side, rign

Correspondence to: owner

The Proposed Sewage Disposal System Will Serve:

[ ] Single Residence ——— Total Number of Bedrooms (including guest): ____

[ ] Multiple Residences -Total Number of Units: ____ Total Number of Bedrooms: ____

[X] Commercial/Institutional Facility – Describe: Horse barn restroom

Peak daily wastewater flow: 100 GPD (Attach meter records and calculations)

Validation

05/16/97 10:33AM 00083333 0006
P 3150 $1070.00
CHECK $1070.00

This Application Is For:

[X] New sewage disposal system to serve new development – Parcel S&e: 60 Acres — Date Recorded: ____

[ ] Repair/Replacement of system that serves existing development

[ ] Upgrade of system that serves existing development for addition/remodel purposes

[ ] Septic Tank Only [ ] Greywater Sump Only [ ] Curtain Drain Only [ ] Grease Trap *

CONTRACTOR: by bid. — SEWAGE DISPOSAL CONSULTANT: Chris Rummel

Contractor's Ucense Law Certificate (Complete A or B)

[ ] A The applicant is licensed under the provisions of the Calif. Contractors License Law under license number _____ which is in full force and effect.

[X] B. The applicant k exempt from the provisions of the Calif. Contracton Lkense Law for the following reason: [ ] Owner/Builder, [ ] Other ____

5/12/97 x Brenda Stephenson
Date Applicant Signature

Worker's Compensation Certificate (Complete A or B)

[ ] A A currently effective certificate of Worker's Compensation Insurance coverage k on file with Santa Cruz County Environmental Health Service

[X] B. I certify that in the performance of the work for which this permit k issued I shall not employ any person in any manner so as to become subject to the worker's comp. laws of Calif.

5/12/97 x Brenda Stephenson
Date Applicant Signature

I understand that issuance o! a permit by Santa Cruz Environmentat Health Service implies no guarantee that the proposed septic system will function indefinitely. Any subsequent septic system failure will require the owner to have the tep tic tank pumped and make repairs as necessary to confine sewage below ground surface.

I hereby acknowledge that I have read this application and the instructions on the reverse side, and state that the information on this page and the following page k correct, and agree to comply with all County Ordinances and State laws regulating Construction of private sewage disposal systems.

Incomplete application for sewage disposal permits will become null snd void if all required information is not submitted within one year of date of pplicatton.

I understand that this permit shall expire: for new systems, In 24 months after approval if a building permit is not applied for In that hime period; or, for repairs and upgrades, in 6 months after approval.

I agree to comply with addiiicnal conditions which may be imposed by Staff as listed on the following page to ensure that the system meets standards.

I agree to provide 24-hour notice directly to the Inspector during office hours the morning before an inspection is requested.

Date: 5/12/97 Applicant Signature: Brenda Stephenson

PERMIT NUMBER: 97-241 — EHS USE ONLY

The design for the sewage disposal system presented herein meets the standards for: [ ] Not Applicable [✓] Standard System

[ ] Nonstandard System: Fee Level: [ ]1 [ ]2 [ ]3 [ ]4 [ ]5 Type: ____

Application Approved by: Patricia Jancaitz Date: 2/17/98 Supervisor: [illegible] Date: 2/18/98

THIS PERMIT EXPIRES ON 2/17/00 OR WILL BE VALID AS LONG AS THE BUILDING APPLICATION IS VALID.

PHD-19A [page 1 of 2 pages] [REV. 9/94]

Environmental Review Inital Study
ATTACHMENT 15 (Sheet 10f2)
APPLICATION 97-0648

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ATTACHMENT 1

Revised 6-2-97

APPLICATION FOR SEWAGE DISPOSAL PERMIT
PROPOSED DESIGN FOR SEWAGE DISPOSAL SYSTEM

Following Is To Be Completed By The Applicant: Assessor Parcel Number 62-151-03
System+ 1 (If multiple systems on property) Permit # 97-246

Water Supply
Public - . Future Well; Private X Shared
Name of Water Company _____ source (APN) 62-151-03

My Proposal Is For (check one):

[X] 1. A new septic system for new development (standard septic system requirements and water supply requirements).
[ ] 2 A repair or upgrade of a system that serves existing development (must meet standard system requirements including expansion area). Future expansion trenches must be shown on plot plan.
[ ] 3. A nonconforming system to serve existing development (cannot meet standard system requirements).
[ ] 4. A haulaway system (parcel can only accommodate less than 30% of leachfield requirements).
[ ] 5. A specific alternative system design: (attach diagram and specifications) _____

• For system types 3, 4, 5, owner or agent must sign an Acknowledgement of Nonstandard System, and must comply with the Requirements specified in the Acknowledgement, which Is made a part of this permit).

(EHS Staff: If necessary, change category above to match completed permit).

My Proposed System Design Is:

Septic Tank [X] New [ ] Existing
Septic Tank Size (gallons): 2,000 Material: concrete Brand: Tom's (watertight)
If Pump Chamber Size (gallons): not proposed now Material: _____ Brand: _____
If Grease Trap: Size (gallons): _____ Materials: _____ Brand: _____

Conventional Leaching Device Specifications: [X] Leachfield [ ] Greywater Sump
Design soil percolation rate range (minutes per inch) (circle choice): <1 1-5 6-30 (31 - 60) 61 - 120
Number lines 8 Total linear feet 696 width (ft) 3 Depth (ft) 2½ Proposed Area (sq.ft) 5568 (includes 100% exp.)
Existing functional leachfield that meets standards (sq.ft.) _____
(2) Distribution box type 4 - outlets - Tom's or = ; Edsberg Lea&field grand total 5568'

Seepage Pit(s): (allowed only for certain Repair/Upgrade)
Number: _____ Diameter: _____ Flow depth: _____ Total square feet: _____

Permit conditions to be satisfied prior to final inspection approval: _____

(Note: Failure to comply with conditions may result in recordation of Notice of Violation.)

Draw & Attach Two Copies of a Plot Plan That Clearly Describes the Design (turn page over for plot plan requirements).

(FOR EHS USE ONLY) INSTALLER _____

INSPECTIONS:	INSPECTOR	DATE		INSPECTOR	DATE
TANK:			SEWAGE PUMP TEST:		
LEACHING:			WATER CONSERVATION:		
DIST. BOX:			IWS CONDITIONS: b 4ct		
INSP. RISERS:			OTHER:		
GW SUMP:			FINAL:		

NOTES: Hold septic final until IWS conditions are satisfied

SHOULD THIS SYSTEM BE RECHECKED? _____ IF YES, WHEN? _____ DESCRIBE WHAT TO CHECK FOR: _____

PHD-19 [page 2 of 2 pages] [REV. 9/94]

Environmental Review Inital Study
ATTACHMENT 15 (sheet 2 of 2)
APPLICATION 97-0648

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August 16. 1999

Kim Tschantz
County Planning
701 Ocean Street
Santa Cruz, CA 95060

Via hand delivery

RE: Revised Hose Barn Plans, Photosimulation, and Withdrawal of Grain Silo
Application No. 97-0648

Dear Mr. Tschantz:

Pursuant to the directive given by the Planning Commission at its June 23. 1999 hearing, please find enclosed a revised floor plan, lighting plan, and photosimulation for the Stephensons' horse barn application. Three (3) copies of each item are provided herein.

With respect to a new permit condition regarding a maximum number of horses, the Stephensons have consistently stated their intent to have 'up to eight (8) horses in association with the barn. However, before we agree to add such a condition. we would like to discuss the impetus of this condition in more detail when you return from vacation.

Finally, the Stephensons respectfully withdraw the proposed grain silo from Application No. 97-0643 (all other elements of said application remain intact). While differences of opinion may exist as to the interpretation of the Board of Supervisors' Resolution No. 390-97. we have decided to withdraw the grain silo from this application to avoid any suggestion of connection between the Stephensons' horse barn application and Santa Cruz Biotechnology, Inc. s Master Plan application.

If you require any additional information, please let me know at your earliest convenience.

Sincerely,

Matt Mullin

cc: Martin Jacobson. Principal Planner (w/o encls)

encls: Three sets of revised plans (floor plan and lighting plan)
Three copies of photosimulation (view from Wilder Ranch State Park)

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G. E. WEBER GEOLOGIC CONSULTANT
129 Jewell Street, Santa Cruz, CA 95060
831. 469. 7211 831.469. 3467 Fax

October 2 1, 1999

Jonathan Wittwer, Esq.
Wittwer & Parkin, LLP
147 South River Street, Suite 221
Santa Cruz, California 95060

Subject: Geologic Conditions at Santa Cruz Biotechnology, Inc., 5322 Back Ranch Road

Dear Mr. Wittwer:

This review of published and unpublished literature was prepared to evaluate the geologic conditions at the above mentioned property. My focus was to determine if porous and permeable rocks are present at the above mentioned site that could hydrologically connect the surface to the main aquifer in the area, the Lompico Sandstone. During this study I have reviewed:

1. CRWQCB Staff Report for Regular Meeting of October 22, 1999
2. Two Memoranda from Todd Engineers to the CRWQCB, dated 10-29-98 and 6-23-98.
3. *Stratigraphy, Paleontology, and Geology of the Central Santa Cruz Mountain,* 198 1, J.C. Clark, USGS Professional Paper 1168.
4. *Geology of the Davenport Coastal Area and the Proposed Davenport Power Plant Site Area,* 197 1, prepared for PG&E by, R. H. Jahns and D. H. Hamilton, Earth Sciences Associates.
5. *Geology and Tectonics of the Central California Coast Region, San Francisco to Monterey,* Volume and Guidebook, 1990, eds. R. E. Garrison, and others, AAPG Pacific Section Guidebook.
6. *Geometry and fluid flow Mechanisms of the Bituminous Sandstone Intrusion at Yellow Bank Creek, Western Santa Cruz County, California,* 1995, Brian Thompson, unpublished MS thesis, UCSC.
7. *Late Cenozoic Fluid Seeps and Tectonics Along the San Gregorio Fault Zone in the Monterey Bay Region, California,* Volume and Guidebook, 1999, eds. R.E. Garrison and others, AAPG, Pacific Section Guidebook.
8. *Coastal Geologic Hazards and Coastal Tectonics, Northern Monterey Bay and Santa Cruz/San Mateo County Coastlines,* Field Trip Guide, 1990, G. B. Griggs and G. E. Weber, Association of Engineering Geologists, San Francisco Section.
9. *The Influence of Changing Tectonic Styles on Petroleum Migration and Accumulation in a Small, Pacific Rim Basin: The Majors Tar Sand Deposits, Santa Cruz County, California.* 1993, C. L. Erickson and others, Final Report on a Preliminary Study funded by UC Berkeley.

In addition, I have reviewed a variety of published and unpublished materials, including publications of the California Division of Oil and Gas, field notes, and letters to the CRWQCB.

To facilitate this discussion of the site geology I have attached two figures, both geologic maps of the area. Figure 1 consists of Cheryl Erickson's (#9 above) modification of Joseph Clark's geologic map (#3 above). The scale is approximately 1 inch = 2000 feet.

Figure 2 is a colored copy of the Jahns and Hamilton map prepared for PG&E (#4 above). The scale is also 1 inch = 2000 feet.

On both of these maps I have plotted the boundary of the subject property (as best as I can determine from the map in #1 above). The boundary is approximate, and may vary by as much as several hundred feet in some areas.

Geologic Conditions at Subject Property: A close examination of these maps indicates two important geologic relationships, that bear directly on the connectivity between the surface of the terrace and the regional aquifer.

1. A major unconformity, or erosional break, occurs at the base of the Santa Margarita Sandstone. This break in deposition was obviously accompanied by both folding of the older rocks and subsequent erosion of topographic highs. As a result, the Monterey Formation has been eroded away at the subject property, and the Santa Margarita Sandstone lies directly upon the Lompico Sandstone. The consequences of this relationship are:

a. On the northeastern portion of the property, the marine terrace deposits are in direct contact with the aquifer - the Lompico Sandstone. Any contaminants entering the terrace deposits have a direct path to the aquifer.

b. Any contaminant that enters the Santa Margarita Sandstone, enters the regional aquifer, the Lompico Sandstone.

2. The Jahns and Hamilton map (PG&E map) shows a large mass of intrusive sandstone and intrusive asphaltic sandstone on the southern portion of the subject property. This intrusion into the Santa Cruz Mudstone is a sill, which means the sandstone mass is parallel to the layering or bedding in the Santa Cruz Mudstone. The intrusive sandstone is "sandwiched" between thin layers of Santa Cruz Mudstone, but throughout most of the subject property lies in direct contact with both the base of the terrace deposits and the top of the Santa Margarita Sandstone. The sandstone body is probably not homogenous and may contain large intact blocks of Santa Cruz Mudstone. This intrusive mass is partially to totally saturated with thick viscous tar, the bituminous sandstone mined by the CalRock Quarry for about 60 - 70 years. This sand is also the deposit drilled and subjected to secondary stimulation by Husky Oil and Union Oil Company of California in the 1950's. The geologic consequences are:

a. The entire upper terrace on the subject property is directly underlain by either the Lompico Sandstone or the intrusive Santa Margarita Sandstone. The terrace is, therefore, in direct contact hydrologically with the deeper Lompico Sandstone aquifer.

b. During the ill fated attempt to develop a thermal secondary recovery oil field on what is now the SCBI property, Husky Oil and Union Oil drilled 369 wells through the terrace deposits into the oil bearing Santa Margarita Sandstone. The top of the Santa Margarita Sandstone lies about 8-10 feet below the surface of the terrace; and the intrusive sandstone body is about 30 - 40 feet thick. Average well depth was about 53 feet. Records of this operation are scant, but it is probable that many of the wells were drilled completely thorough the Santa Margarita Sandstone into the Lompico Sandstone. Since no groundwater was encountered during the drilling it is open to question whether these wells were abandoned by plugging with concrete.

Discussion: All geologic maps contain mistakes, some minor, some large. Therefore, a geologic map must be considered a "work in progress", as it is never really finished. The variations between Clark's map and the Jahns and Hamilton map are small. However, the more recent Jahns and Hamilton map shows both more structural detail and many of the smaller rock bodies ignored by Clark. The J-H map shows most of the outcrops of asphaltic intrusive sandstone that are clearly visible on the property, and correlates closely with my observations on the property. However, regardless of which published geologic map you examine, you will find that the Monterey Formation is missing in this area, resulting in the Santa Margarita Sandstone lying directly on the primary aquifer, the Lompico Sandstone.

The presence of the intrusive sandstone body in this area has contributed to the resulting confusion over which sandstone is the Santa Margarita, which is the Lompico and what is the fine grained rock - mudstone - bracketing the intrusive sandstone. This is particularly true for water wells, where most lithology descriptions are made on the basis of relatively crude descriptions of cuttings. This means that one cannot use a single well drilled on the upper terrace to determine the relationships between the underlying rock bodies.

Conclusions: Based on published and unpublished geologic studies, and my own observations, I believe it is obvious that: 1) The Santa Margarita Sandstone is in contact with the underlying Lompico Sandstone on the northern portion of the property. The Monterey Formation, which lies between these two formations elsewhere, is not present on the subject property; having been removed by erosion at an earlier time. 2) A large tabular sill of intrusive sandstone has been injected into the Santa Cruz Mudstone on the subject property. This sand body underlies the upper terrace and provides another potential hydrologic pathway for contaminants to reach the Lompico aquifer. 3) The drilling of 369 shallow wells by Husky Oil and Union Oil, on what is now the SCBI property, creates another series of potential pathways for surface contaminants to reach the Lompico aquifer.

Consequently, there appears to be a significant potential for surface contaminants on the subject property to migrate into the Lompico aquifer. Obviously, it is possible that the geologic maps are incorrect. However, until a regional geologic study can clearly demonstrate the presence of an impermeable zone **between** the surface and the Lompico Sandstone aquifer in this area, the existing data indicate there is a high potential for connectivity between the surface and the aquifer.

If you have any questions, please contact me.

Very truly yours,

Gerald E. Weber
Certified Engineering Geologist #1395
Registered Geologist #7 14

ATTACHMENT 1

Fig, 1

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DESCRIPTION OF MAP UNITS

ATTACHMENT 1

SURFICIAL SEDIMENTS

Qal — ALLUVIUM—Unconsolidated gravel, sand, and silt

Qls — LANDSLIDE MATERIAL—Half arrows show direction of downslope movement

Qt — RIVER TERRACE DEPOSITS—Unconsolidated sandy pebble and cobble gravel and dark-yellowish-orange fine to medium sand

Qm — MARINE TERRACE DEPOSIT—Unconsolidated moderate-yellowish-brown fine sand and granular gravel

UPPER MIOCENE TO PLIOCENE SEDIMENTARY SEQUENCE

Tp — PURISIMA FORMATION (upper Miocene and Pliocene)—Very thick bedded yellowish-gray tuffaceous and diatomaceous siltstone with thick interbeds of bluish-gray semifriable fine-grained andesitic sandstone. Includes Santa Cruz Mudstone east of Scotts Valley and north of Santa Cruz

Tsc — SANTA CRUZ MUDSTONE (upper Miocene)—Medium- to thick-bedded and faintly laminated blocky-weathering pale-yellowish-brown siliceous organic mudstone. Includes Santa Margarita Sandstone along Glenwood syncline

SANTA MARGARITA SANDSTONE (upper Miocene)—Very thick bedded to massive thickly crossbedded yellowish-gray to white friable granular medium- to fine-grained arkosic sandstone; locally calcareous

MIDDLE MIOCENE SEDIMENTARY SEQUENCE

Tm — MONTEREY FORMATION—Medium- to thick-bedded and laminated olive gray to light-gray subsiliceous organic mudstone and sandy siltstone Includes few thick dolomite interbeds

Tlo — LOMPICO SANDSTONE—Thick-bedded to massive yellowish-gray medium to fine-grained calcareous arkosic sandstone; locally friable

EOCENE TO LOWER MIOCENE SEDIMENTARY SEQUENCE

LAMBERT SHALE (lower Miocene)—Thin- to medium-bedded and faintly laminated olive-gray to dusky-yellowish-brown organic mudstone with phosphatic laminae and lenses in lower part

Tv — VAQUEROS SANDSTONE (Oligocene and lower Miocene)—Thick-bedded to massive yellowish-gray arkosic sandstone

Basalt—Spheroidal-weathering pillow basalt flows in upper part

Tz — ZAYANTE SANDSTONE (Oligocene)—Thick- to very thick bedded yellowish-orange arkosic sandstone with thin interbeds of greenish and reddish siltstone and lenses and thick interbeds of pebble and cobble conglomerate

SAN LORENZO FORMATION

Tsr — Rices Mudstone Member (Eocene and Oligocene) Massive medium-light gray fine to very fine grained arkosic sandstone; thick bed of glauconitic sandstone at base

Tst — Twobar Shale Member (Eocene)—Very thin bedded and laminated olive gray shale

BUTANO SANDSTONE (Eocene)

Tbc — Upper sandstone member—Thin to very thick bedded medium-gray fine to medium-grained arkosic sandstone with thin interbeds of medium-gray siltstone

Tbb — Middle siltstone member—Thin to medium bedded nodular olive gray pyritic siltstone

Lower sandstone member—Very thick bedded to massive yellowish-gray granular medium to coarse-grained arkosic sandstone.

Conglomerate— Thick to very thick interbeds of sandy pebble conglomerate in lower part of lower sandstone member

PALEOCENE SEDIMENTARY SEQUENCE

Tl — LOCATELLI FORMATION—Nodular olive-gray to pale-yellowish brown micaceous siltstone

Tlss — Sandstone—Massive medium-gray fine to medium grained arkosic sandstone locally at base

CRYSTALLINE PLUTONIC AND METAMORPHIC ROCKS

QUARTZ DIORITE—Grades to granodiorite south and east of Ben Lomond Mountain

GRANITE AND ADAMELLITE

gd — GNEISSIC GRANODIORITE

HORNBLENDE-CUMMINGTONITE GABBRO

sch — METASEDIMENTARY ROCKS—Mainly pelitic schist and quartzite

m — MARBLE—Locally contains interbedded schist and calc-silicate rocks

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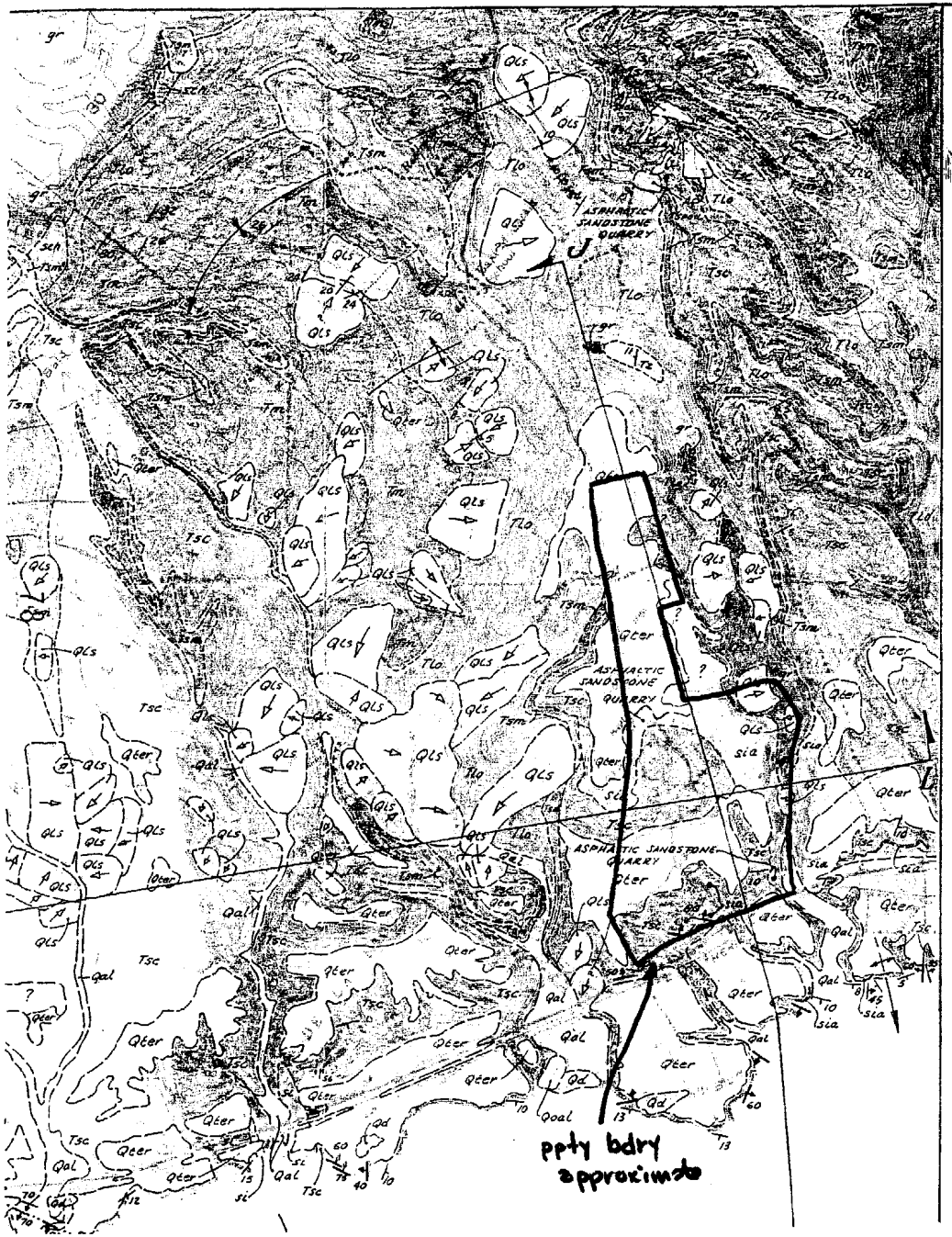

ATTACHMENT 1

EXPLANATION

GEOLOGIC UNITS

PLEISTOCENE AND HOLOCENE	Af	ARTIFICIAL FILL.
	Qd	WIND-BLOWN SAND.
	Qal	ALLUVIAL AND VALLEY-BOTTOM COLLUVIAL DEPOSITS; UNDIVIDED. UNIT LOCALLY INCLUDES MARSH AND LAGOONAL DEPOSITS.
	Qls	LANDSLIDE DEPOSITS.
	Qoal	OLDER ALLUVIAL DEPOSITS.
	Qsd	DEPOSITS ON THE SEA FLOOR.
	Qter	DEPOSITS ON COASTAL WAVE-CUT TERRACES.
		UNCONFORMITY
	vol.	INTRUSIVE VOLCANIC ROCKS.
	si.	INTRUSIVE SANDSTONE.
	sia.	INTRUSIVE ASPHALTIC SANDSTONE.
MIOCENE — PLIOCENE	Tp	PURISIMA FORMATION.
	Tsc	SANTA CRUZ MUDSTONE.
	Tsm	SANTA MARGARITA SANDSTONE.
	Tm	MONTEREY FORMATION.
	Tlo	LOMPICO SANDSTONE.
		UNCONFORMITY
OLIGOCENE	Te	ZAYANTE SANDSTONE.
EOCENE	Teb	BUTANO SANDSTONE.
		UNCONFORMITY
PALEOCENE	Tlc	LOCATELLI FORMATION.
		UNCONFORMITY
UPPER CRETACEOUS	gr	IGNEOUS ROCKS, CHIEFLY GRANITE, ADAMELLITE, AND QUARTZ DIORITE
PALEOZOIC	sch	METAMORPHIC ROCKS, CHIEFLY SCHIST AND QUARTZITE.
	m	METAMORPHIC ROCKS, CHIEFLY MARBLE.

Figure 2