#1

EROSION CONTROL PLAN

TERRA SPRINGS LLC
3787 Spring Mountain Road
St. Helena, CA 94574

CONVERSION FROM TIMBER TO VINEYARD

November 2001
Revised November 22, 2002
Revised December 18, 2002
Revised January 28, 2003

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574

NARRATIVE

This project consists of the development of approximately 21.1 acres of new vineyard with APN 022-140-033 a parcel of ± 73 acres located at 3787 Spring Mountain Road. The existing ground slope within the project area range from 7 to 25%. Vineyard rows shall be planted 6' apart and will run generally perpendicular to the contours with the exception of Block L which will be planted cross slope with rows 8' apart. Blocks A, B, C, D, H & L will be hand farmed without the use of motorized vehicles. A drip irrigation system will be installed throughout the vineyard and water will be from an existing well. It is expected that the vineyard will use ±10 AF per annum. Minimal grading will be required to construct the sediment basin and grassy waterways.

No Blueline or County definition streams occur within the project area. There are drainage swales through Blocks F, I and A which will be planted as grassy waterways. The east end of Blocks F and G are adjacent to Class III streams. A 50 foot setback will be provided. In addition to the setback, the first 50 feet of the vineyard will be maintained as a "no strip spray" area. The permanent no-till cover crop shall be mowed and spot sprayed only. Optimally, a ground cover of 80-85% or greater will be obtained each winter. The first year after clearing, the waterways shall be seeded and irrigated by September 1st.

Vegetation Removal is in accordance with the Timber Harvest Plan/Conversion. All organic material to be burned shall be stacked at strategic locations within the cleared areas. Burning of the organic material only shall take place after obtaining approval from all the governing agencies.

Soils within the block boundaries have been classified in the USDA Soil Conservation Service's, Napa County Soil Survey, including the hazard of erosion as follows:

SCS#	Soil Type	% Slope	Hazard of Erosion
107	Boomer loam	2 to 15%	Slight
139	Forward gravelly loam	9 to 30%	Slight to moderate
140	Forward gravelly loam	30 to 75%	High to very high

Although soil mapping includes SCS# 140, no slopes within the project areas exceed 30%. Soils on the project site are stable. There is a large scarp to the west of the project. No active landslides occur within 500' of the project boundaries.

Temporary Erosion Control Measures consist of the installation of silt fencing, straw bale dikes and the application of straw mulch. The installation of all silt fencing and straw bale dikes shall be completed in accordance with the

appropriate Detail and at all locations as shown on the Plan Sheet. A straw mulch cover shall be applied over all open and/or disturbed and seeded areas at the rate specified in the seeding requirements. If the brush is not burned and is to be stockpiled for burning the following spring, it shall be windrowed along contours at strategic points in the fields to be used as a filter.

Permanent Erosion Control Measures consist of the following:

1) Construction of rock checks and placement of Rock Slope Protection in accordance with Detail 4, Sheet 2 and Special Note, Sheet 2 at the locations shown on the Plan.

2) Grading of diversion ditches shall conform with Detail 3, Sheet 2 at the locations shown on the Plan.

3) Construction of a sediment basin at the location shown on the Plan and in accordance with Detail 5, Sheet 2. The outlet pipe of the sediment basin shall be graded to daylight onto a rock apron that shall extend a minimum 8 feet downgradient to a rock check with RSP placed a minimum 15 feet downgradient from the rock check. All rock shall extend the full width of the channel and to the top of bank on both sides.

4) Grassy waterways shall be planted and maintained where shown on the Plan in accordance with Detail 6, Sheet 3.

5) A 12" pipe and 24" bubbler shall be installed at the bottom of Block A as shown on the Plan, and shall be constructed in accordance with Detail 7, Sheet 2.

6) A permanent no-till cover crop shall be planted within the entire vineyard area. The cover crop shall be mowed and may be strip sprayed to a maximum width of 12", centered on the vine row except that Block C shall be spot sprayed only. No disking, ripping or other tillage shall take place within these areas after the vineyard has been planted. Optimally, a ground cover of 70% or greater will be obtained each winter.

Cost: The total of all erosion control measures is estimated to be $30,000.00 including materials, labor, engineering and agency fees.

PROJECT NOTES

APN: 022-140-033

Owner: Terra Springs LLC

Contact: Phil Baxter
PO Box 426
St. Helena, CA 94574
(707) 963-0121

Site Address: 3787 Spring Mountain Road

Implementation Schedule: The work shall be scheduled as follows:

Thru October 15, 2003~~4~~ SRB	**PREPLANT SEASON OPERATIONS** Tree, brush and rock removal; burn brush and other vegetative materials; ripping and disking; staking; installation of irrigation system; other cultural practices. Installation of permanent and temporary erosion control measures.
Rainy Season 2003-200~~4~~5 SRB	Maintain all erosion control measures
April 1 thru October 15, 200~~4~~5 SRB	**PLANTING SEASON OPERATIONS** Complete unfinished preplant operations, plant vineyard, begin cultural practices, maintain erosion control practices.
Rainy Season 2004- Forward	Maintain all erosion control measures

Seeding Requirements: All exposed or disturbed soils, including terraces and avenues shall be seeded. Seed and fertilizer shall be applied hydraulically or broadcast at the rates specified below:

Item		Pounds/Acre
Seed	"Blando" brome	15
	Zorro Fescue	6
	Crimson Clover	3
	Rose Clover	6
Fertilizer	Ammonium phosphate sulfate (16-20-0)	200-240

On all vineyard avenues "Fawn" tall fescue shall be added to the seed mix @ 5 lbs/ac.

An alternate seed mix and/or fertilizer may be used with Engineer's approval.

Straw Mulch shall be spread over all disturbed and seeded areas. The mulch shall be spread mechanically or by hand at the rate of 2 tons/acre.

Diversion Ditches shall be constructed at the locations shown on the Plan and in accordance with Details, Sheet 2. Ditch flowline shall be sloped to drain at 2 to 4%.

Rock Checks shall be constructed of locally gathered fieldstone at the locations shown on the Plan and in accordance with Details, Sheet 2. Rock checks shall remain in place as permanent structures.

Rock Slope Protection (R.S.P.) shall be locally gathered fieldstone, or class light as defined in Caltrans Standard Specifications, Sec 72-2.02. A non-woven filter fabric (Mirafi 140N, or equal) shall be placed between all R.S.P. and earthen material.

Sediment Retention Basins shall be constructed in accordance with Details, Sheet 2 at the locations shown on the Plan.

Silt Fence shall be installed along contours at locations shown on the Plan in accordance with Details, Sheet 2. Silt fencing shall be maintained through the winter after planting, after which it may be removed.

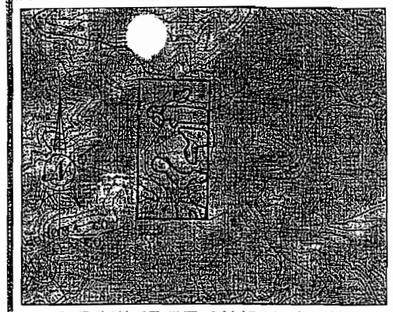
Straw Bale Dikes shall be installed where shown on the Plan in accordance with Details, Sheet 2. Straw bale dikes shall be maintained through the winter after planting, after which they may be removed.

Grassy Waterways shall be planted and maintained where shown on the plan. The grassy waterways shall be planted as a non-till cover crop with minimum 80% ground cover. At grade rock weirs shall be constructed every ± 150 feet. The first year after clearing, the waterways shall be seeded and irrigated by September 1st. Once the vineyard and cover crop is established, late summer irrigation patterns should be adequate for re-germination. Additional seeding, fertilization and irrigation shall be provided as necessary to establish a heavy cover prior to October 15th.

Maintenance: A permanent cover crop shall be planted prior to October 15, 2002.4 This cover crop may be mowed each spring after the seed has fully matured (hard dough stage) to ensure annual grass species regeneration for the following year. Minimum mowing height of 4" shall be maintained for establishing annual and perennial grasses. No ripping or other tillage shall take place within these areas after the vineyard is planted. The vineyard may be strip sprayed or spot sprayed as described in the Narrative under **Permanent Erosion Control Measures.** Optimally, a ground cover of 70% or greater will be obtained with the owner being responsible for reseeding and maintenance in order to reach the desired degree of cover.

All erosion control measures and facilities shall be inspected after each storm event, and repairs shall be promptly performed.

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional



PORTION OF THE CALISTOGA QUAD

Vicinity Map

Scale: 1"=1500'

OWNER: A SPRINGS LLC

CONTACT: PHIL BAXTER (707) 963 0121
PO BOX 426
ST. HELENA, CA. 94574

NAPA CO APN: 022-140-033

SITE ADDRESS: 3787 SPRING MOUNTAIN ROAD
ST. HELENA, CA.

SCALE: 1"=100'
CONTOUR INTERVAL: 5'

0 50 100 200

MAPPING BY: ALBION SURVEYS, INC.
BY AIR PHOTO METHODS APRIL, 1999 AND
GROUND SURVEY NOVEMBER, 2000 AND MAY, 2001

PROVIDE A 50' NO DISTURBANCE BUFFER ALONG CLASS III STREAM WITH AN ADDITIONAL 50' NO TILL, NO SPRAY ZONE. BUFFER SHALL BE FLAGGED IN FIELD AND APPROVED BY CDF PRIOR TO START OF WORK.

ROCK CHECK (typ) 4/2

SEDIMENT BASIN 3/2
20 cy min.

PROVIDE A 50' NO DISTURBANCE BUFFER ALONG CLASS III STREAM WITH AN ADDITIONAL 50' NO TILL, NO SPRAY ZONE. CLASS III STREAM BEGINS AT SEDIMENT BASIN. BUFFER SHALL BE FLAGGED IN FIELD AND APPROVED BY CDF PRIOR TO START OF WORK.

TOP OF BANK (TYP.)

SILT FENCE (typ.) 1/2

STRAW BALE DIKE (typ.) 3/2

SPRING MOUNTAIN ROAD

24" BUBBLER 1/2

Grade out existing cut

BLOCK A
10.8 ACRES

BLOCK B
10.6 ACRES

BLOCK E
12.4 ACRES

BLOCK F
13.5 ACRES

BLOCK G
12.7 ACRES

BLOCK H
9.5 ACRES

DIVERSION DITCH (typ.) 3/2

Hand Farm Block H

30' GRASSY WATERWAY 3/2
(WAT GRADE ROCK CHECK (typ)

Extend existing rock apron 350' down gradient

D.I. & culvert (E)

Clean and maintain existing roadside ditch

culvert (E)

Grade out existing access road through Block J

BLOCK I
9.2 ACRES

BLOCK J
9.2 ACRES

RESERVOIR (E)

GRADE OUT EXISTING ROAD

BLOCK M
12.6 ACRES

BLOCK L
10.5 ACRES

OUTSLOPED AVENUE

Hand Farm Block L

NOTE: All Vineyard Avenues shall be outsloped.

Hand Farm Blocks A & B

Hand Farm Blocks C & D

BLOCK D
9.5 ACRES

BLOCK C
11.0 ACRES

BLOCK K
11.8 ACRES

CULVERT (E)

SPRING

WELL (E)

WINERY

ACCESS RD. (E)

Legend

- DIVERSION DITCH
- EXISTING ROAD
- E EXISTING
- GRASSY WATERWAY
- MSB MINIMUM SETBACK
- PROJECT BOUNDARY
- PROPERTY LINE
- RSP ROCK SLOPE PROTECTION
- 139 SCS SOIL MAPPING UNIT
- SCS SOIL TYPE BOUNDARY
- SILT FENCE
- STRAW BALE DIKE
- 3/2 DETAIL 5; SHEET 2
- A SECTION
- VINEYARD AVENUE, TURNSPACE

REV.	DESCRIPTION	BY	DATE
1	ADD 50' BUFFERS BLK F+G, REV TITLE BLOCK	DLW	11-22-02

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER — DREN L. ASPERGREN — No. 31418 Exp. 12-31-04 — CIVIL — STATE OF CALIFORNIA

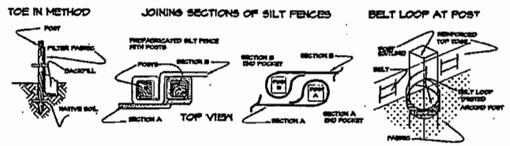
DATE	SCALE
11-15-01	AS SHOWN
FileBaxter	DRAWN JLC / CHECKED DLW

APPROVED
DREN L. ASPERGREN, PE R.C.E. 31418

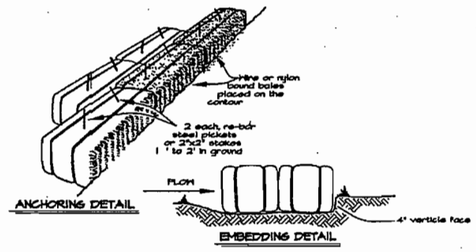
EROSION CONTROL PLAN

TERRA SPRINGS
VINEYARD DEVELOPMENT

SHEET 1 OF 2



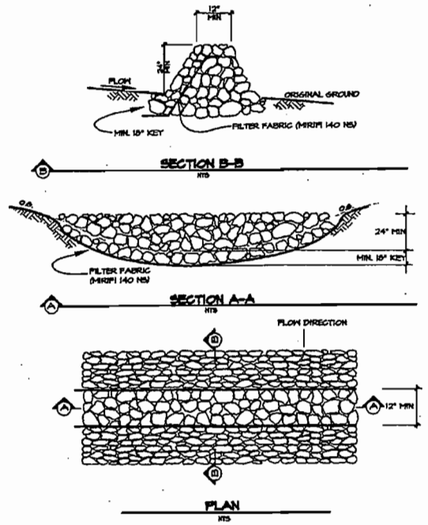
1/2 SILT FENCE DETAIL
N.T.S.



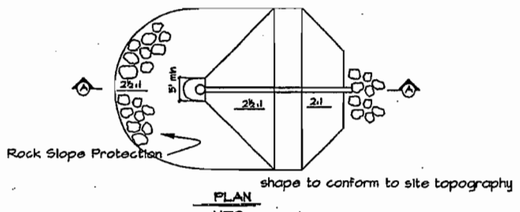
2/2 STRAW BALE DIKE
NTS

NOTES:
1. FLOWLINE SLOPE SHALL BE 2% - 4%
2. DIVERSION DITCHES SHALL BE SEEDED, MULCHED & COVERED W/JUTE NETTING WHICH SHALL BE SECURELY ANCHORED IN PLACE.

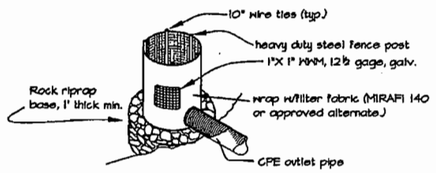
3/2 DIVERSION DITCH
N.T.S.



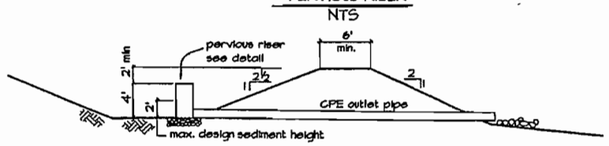
4/2 ROCK CHECK DETAIL
NTS



PLAN
NTS

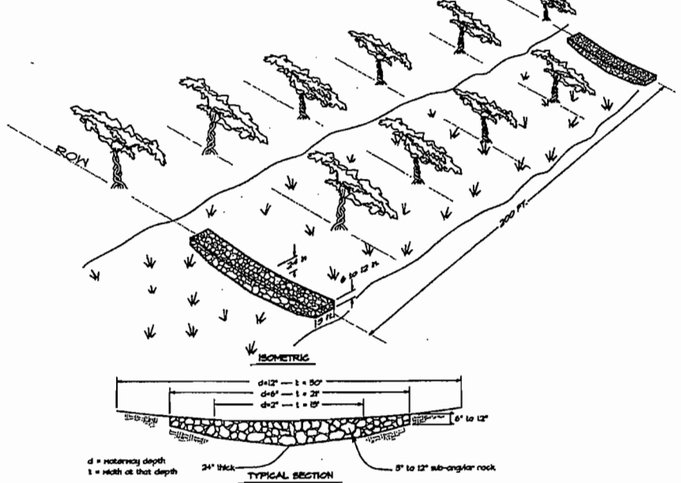


PERVIOUS RISER
NTS



SECTION A-A
NTS

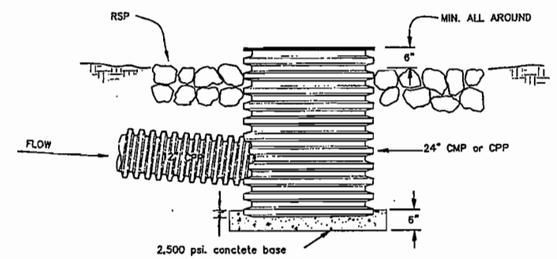
5/2 SEDIMENT BASIN
NTS



6/2 GRASSY WATERWAY WITH AT-GRADE ROCK CHECK
NTS

SPECIAL NOTES

Rock Slope Protection (RSP) shall be locally gathered field stone (25 lb), or class light, as defined in Caltrans Standard Specifications, Sec. 72-2.02. A non woven filter fabric (Mirafi 140 N, or equal) shall be placed between all RSP and earthen material.



7/2 24" BUBBLER
NTS

REV.	DESCRIPTION	BY	DATE

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER — DREW L. ASPERGREN — No. 31418 Exp. 12-31-04 — CIVIL — STATE OF CALIFORNIA

DATE	11-15-01	SCALE	AS SHOWN
FileBaxter		DRAWN JLC	CHECKED DLM
APPROVED			

DREW L. ASPERGREN, PE R.C.E. 31418

EROSION CONTROL PLAN
DETAILS

TERRA SPRINGS
VINEYARD DEVELOPMENT

SHEET 2 OF 2

NAPA VALLEY VINEYARD ENGINEERING, INC.
176 MAIN STREET, SUITE B
ST. HELENA, NAPA VALLEY, CALIFORNIA 94574
(707) 963-4927 FAX (707) 963-1297

DREW L. ASPEGREN, P.E.
CIVIL ENGINEER

May 8, 2002

Mr. Scott Butler
1420 T Knobhill Road
Ukiah, CA 95482

Re: Terra Springs ECP

Dear Mr. Butler:

This letter is in response to the comments made by Dave Steiner of Napa County Resource Conservation District. A copy of his March 11, 2002 letter is attached.

Block A We agree that the swale in this block should be protected, and have added a grassy waterway with a Drop Inlet and piping at the bottom to direct flows to the drainage running along the north side of Block F. The outlet of the 12" CPP will be a 24" bubbler (see detail sheet). The access road between Blocks A and E will be maintained as a vineyard avenue as specified in the project notes.

Block B & C We recommend hand farming these blocks as well as the other small Blocks A, D, H & L.

Block D It is our understanding that the road cut will remain vegetated and no treatment of the bank will be necessary. There is a gentle slope in the south corner of this block which provides access.

Block E & F We believe that the 35' setback from the spring is adequate. If excessive groundwater is encountered during vineyard development it can be dealt with at that time. It is important not to turn around in the grassy waterways, and we have shown the turn spaces outside of the waterways. We have extended the rock in both of these waterways to provide extra protection, and added straw bale dikes as suggested. The first year after clearing the waterways should be seeded and irrigated mid to late summer. Once the vineyard and cover crop is established, late summer irrigation patterns should be adequate for re-germination. Additional seeding, fertilization and irrigation should be provided as necessary to establish a heavy cover prior to the rainy season. We will modify the narrative accordingly.

Block G We have extended the rock slope protection down to the sediment basin.

Block I, J & L We have staggered the rock checks to minimize concentrated flows. All vineyard avenues and turn spaces will be outsloped.

Block K This block was ground surveyed in November, 2000. Contours are accurate and there are no slopes over 30%.

General We recommend farming with ATV's to avoid cutting turn around benches. The avenues with steeper slopes have diversion ditches cut across them which will be constructed as water bars.

Once we have received your comments and Phil Baxter's comments we will finalize this revision and revise the narrative accordingly. Call if there are questions.

Sincerely,
NAPA VALLEY VINEYARD ENGINEERING, INC.
Drew L. Aspegren, P.E.
Diane L. Willson
By: Diane L. Willson

DLW:jw

cc: Bill Pease
Phil Baxter

Napa County Resource Conservation District
1303 Jefferson Street, Suite 500B
Napa, CA 94559

Interoffice Memorandum

Date: March 11, 2002

To: Brian Bordona, Napa County CDPD

From: Dave Steiner, Soil Conservationist

Re: Timberland Conversion to Vineyard, Terra Springs

cc: Phil Baxter, Terra Valentine
Patrick Lowe, CDPD
Napa Valley Vineyard Engineering

At your request I have conducted a review of the referenced project, to determine the adequacy of the proposed, temporary and permanent vineyard erosion control measures. My understanding is that the California Department of Forestry (the proposal's lead agency) has requested your agency's comments, and that you need RCD's technical input in order to best respond to CDF's request. Accordingly, I have analyzed the vineyard erosion control plan as if it were being processed under the Conservation Regulations. The following comments, developed following my office analysis and a site visit with Patrick Lowe and the applicant's representative Phil Baxter, are comparable to comments I would normally direct to the applicant's plan preparer.

- **Block A.** In the center of this proposed block there is an old road cut that is concentrating flows, creating two gullies. After repair of the cut and gullies, the plan should provide for protection (piping or armor) of the swale from concentrated flows. If the existing access road between Blocks A and E is to be used, surfacing and/or maintenance specifications should be provided.
- **Block B.** The "panhandle" of this proposed block is not wide enough to accommodate the specified row direction, unless hand farming is specified.
- **Block C.** The bottom of this proposed block will require a turnaround bench, unless hand farming is specified.

- **Block D.** It appears from the marked block boundaries (blue flags) that the trees will be cleared from the road bank at the bottom of the block. This steep bank should be cut back to a stable gradient and revegetated.
- **Blocks E and F.** Areas affected by the spring drainage at the top of the block should either be drained, or marked in the field and avoided. The upper end (+/-125 feet) of the grassy waterway along the north side of the block is too steep for a grassed waterway , especially since it will be constantly disturbed by tractor turnaround traffic. Flows here should be piped or the swale armored. Similarly, the steeper, upper portions (+/- 200 feet) of the grassy waterway along the south side of Block F should be armored, or its flows piped. In addition, strawbale dikes should be installed across the unarmored (lower) portions of this waterway at approximately 75-100 foot intervals, as a temporary sediment retention measure.

  RCD recommends that top priority be given to early seeding and irrigation of the non-armored portions of all grassy waterways (**Blocks E, F, G,** and **I**). These structures must be covered with heavy sod by the onset of winter rains, or deep incision and heavy sedimentation will almost certainly result. Germination by the October 15 deadline will not be adequate to protect these waterways. Irrigation should begin in mid-summer at the latest, as the relatively high elevation, cooler climate and short photoperiod of these sites will severely limit cover crop growth during the fall and winter months. The plan implementation schedule should be modified to accommodate these constraints.
- **Block G.** The rock apron ("rock check") at the outfall of the diversion near the east end of this block should be extended downhill, into the sediment basin.
- **Block I.** The diversion outfalls along the northeast boundary of this block should be staggered along their respective contours north of the block, so that their flows do not reconcentrate and create a gully. There will need to be a turnaround bench along the south and east boundaries of the block. Typical cross-sections should specify inslope or outslope, as appropriate.
- **Block J.** Is the access road along the east side of the block to be outsloped to retain sheet flows, or insloped to divert flows to the perimeter ditch along the existing vineyard? If insloped, appropriate cross-sections and outfall details need to be specified.
- **Block K.** Heavy understory canopy reduces sight distance and makes slope determinations difficult in this proposed block; however the topo appears to underestimate ground slopes near the block's northern boundary. This block boundary (in particular) should be marked in the field prior to earth-disturbing activity, to assure that cleared areas do not exceed 30% slope. The lower boundaries of this block will need turnaround benches.
- **Block L.** The access road along the lower (eastern) boundary of this block needs to be specified as insloped or outsloped, and any diverted, concentrated flows accounted for in protected outlets.
- **Block M.** This block needs tractor turnaround benches.
- **General.** Waterbars should be specified, with appropriate details, for all vineyard avenues with slopes greater than 10%.

Please let me know if you have any questions or if I may otherwise be of assistance.

5/6/03
Scott Butler
467-9484 fax
1 page

Napa County Resource Conservation District
1303 Jefferson Street, Suite 500B
Napa, CA 94559

Interoffice Memorandum

Date: March 11, 2003

To: Napa County CDPD

From: Dave Steiner, Soil Conservationist

Re: Erosion Control Plan for Terra Springs, new vineyard development, file #02558-ECPA, AP #022-140-033

cc: Terra Springs, LLC
Napa Valley Vineyard Engineering
Scott Butler, RPF

RCD recommends approval of the referenced Plan. Please let me know if you have any questions or if I may otherwise be of assistance.

Note: this recommendation **does not constitute Plan approval**, authority for which rests with the Napa County Conservation, Development and Planning Department.

RESTRICTIVE COVENANT LIMITING TIMBER HARVEST

This Restrictive Covenant is made by Terra Springs LLC (herein referred as "Owner").

RECITALS

A Owner is the sole owner in fee simple of real property ("Real Property"), which is legally described as follows:

76 acres within the York Creek Calwater 2.2 planning watershed, Napa County, Mount Diablo Baseline and Meridian, Township 8 North, Range 6 West, Section 28 Calistoga 7.5' U.S. Geological Survey quadrangle. APN 022-014-33 and 022-014-32

B The Real Property possesses significant ecological values, including species listed under the Endangered Species Act and their habitats, which are of aesthetic, ecological, historical, recreational, educational and scientific value to the Nation and its people. Owner has proposed a timber harvest on the Real Property. To harvest the timber, it is necessary for Owner to obtain an Incidental Take Permit from the U.S. Fish and Wildlife Service to take listed species. As a condition of obtaining the Incidental Take Permit, the real property is to become subject to a Habitat Conservation Plan ("HCP") that minimizes and mitigates the taking of northern spotted owls while conducting otherwise legal timber harvest on the Real Property. The Terra Springs Low Effect HCP, dated (_____), is on file at the U.S. Fish and Wildlife Service Office, Sacramento, California.

C. The HCP and Incidental Take Permit require that the Owner, after completion of 22 acres of timberland conversion, manage in perpetuity 41 acres of Northern Spotted Owl habitat on the Real Property in conformance with the measures described in the HCP.

Now, therefore, Owner, Terra Springs LLC, in consideration of obtaining Incidental Take Permit No. _____, covenants and agrees as follows:

1. The terms of the HCP which are incorporated as terms and conditions of Incidental Take Permit No. _____ are incorporated by this reference into this Restrictive Covenant and shall be binding on all owners of the Real Property, and any portion thereof, and their heirs, successors and assigns. Notwithstanding the immediately preceding sentence, the incidental take authorized by Incidental Take Permit No. _____ is exclusive to Owner and may not be conducted by any future owner or other third party that to the Owner's interest in the Real Property, or any portion thereof, until and unless Incidental Take Permit No. _____ is transferred to such new Owner or third party in accordance with applicable U.S. Fish and Wildlife Service regulation. This covenant will last in perpetuity or terminate when U.S. Fish and Wildlife Service provides written notice to Owner that the terms of the covenant have been fulfilled.
2. Except for timber land conversion by Owner in accordance with Incidental Take Permit No. _____, any removal of trees from the areas controlled by section 7 of the HCP, by Owner or by any successor in interest, may not be done without the express written consent of the U.S. Fish and Wildlife Service Office in Sacramento, California.
3. The above restrictions on land management shall run with the land and shall be binding on the Owner and all future owners of the Real Property, or any portion thereof, their heirs, successors and assigns and Owner shall incorporate this Restrictive Covenant in any deed or other legal instrument by which Owner divests itself of any interest in all or any portion of the Real Property, including, without limitation, a leasehold interest.
4. In the event the Real Property, or any portion thereof, shall be transferred or conveyed, the transferor, and all future transferors, must give the transferee a minimum of 30 days prior written notice of these restrictions; and further give a minimum of 30 days prior written notice to the U.S. Fish and Wildlife Service Office, Sacramento, California, of the transfer.

5. Owner acknowledges that execution of the Restrictive Covenant is a term and condition of Incidental Take Permit No._____ issued to Owner by the U.S. Fish and Wildlife Service and that therefore the U.S. Fish and Wildlife Service is an interested third party with a perpetual right of access with reasonable notification to the Real Property and right to enforce the terms and conditions of the Restrictive Covenant.

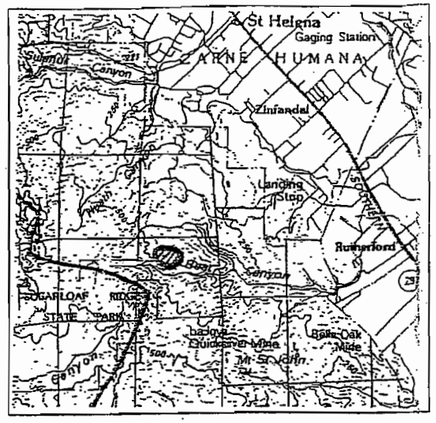
6. The Restrictive Covenant will not become effective and binding until the approval and commencement of the timber conversion and harvest plan.

DATED this 26 day of June, 2002

Terra Springs LLC

By _____
C. Angus Wurtele, Owner

#2



VICINITY MAP

NTS

NARRATIVE

This project comprises the grading and planting of a new vineyard of approximately 10.5 acres within APN 027-004-031. This parcel has approximately 20± total acres and is located at California.

The parcel is owned by H. Brewster Jr. and Martha Atwater of 4900 IDS Towers 80 South Eighth St., Minneapolis, MN.. The vineyard shall be planted at a spacing of 6 feet per row, and 3.3 feet per plant within the row.

Soils within the project boundaries (as shown on the on site soil evaluation by Richard Nagaoka and Dellavalle Laboratory) have been classified as Soil 162, Maymen Los. Gatos (50-75% slope) and Soil 164 Millsholm Loam (15-30%).

Temporary erosion control measures for this project comprise the installation of silt fencing, construction of straw bale dikes, and application of a straw mulch cover. The installation of the silt fencing; construction of the straw bale dikes shall be completed in accordance with the appropriate details shown on Sheet 3, and at the locations shown on the Plan Sheet 2 for each item. A straw mulch cover shall be applied over all seeded areas at the rate specified.

Permanent erosion control measures for this project comprise the rock-lined diversion ditches and a permanent no till cover crop. The diversion ditches shall be sloped to drain to drop inlets, which shall be connected by a subsurface drain which shall outlet at the drainage courses shown on the Plan. The outlet of the drain pipe shall terminate in a rock dissipator before runoff returns to any natural drainage course. Drop inlets, subsurface drain pipes, and dissipator shall be installed in accordance with Detail, Sheet 3.

A permanent no till cover crop shall be established within the entire vineyard area. No ripping, disking or other tillage shall take place within these areas after the vineyard is planted. The vine rows may be sprayed to a total band width of 18 inches. Bare areas will reseeded each fall until a ground cover of 70% or greater will be attained each winter.

PROJECT NOTES

OWNER: H. Brewster Jr. and Martha Atwater
SITE ADDRESS:
AP NUMBER: 027-004-031
IMPLEMENTATION SCHEDULE: The work for all areas within the limit of work line as shown on plan shall proceed as follows:

June 13, 1999 (or immediately upon approval):
commence clearing, grading, soil preparation, and erosion control measures.

Oct. 15, 1999:
completion-all erosion control measures

Oct. 15, 1999 through Rainy season 2000-2001:
maintain temporary erosion control measures. irrigation system installed, staking installed

April 1, 2000:
planting of vineyard

Thereafter:
maintain permanent erosion control measures.

SEEDING REQUIREMENTS:
All exposed or disturbed soils, including avenues, shall be seeded. Seed and fertilizer shall be applied hydraulically or broadcast by hand at the rates specified below:

Material	
Seed "Blando" brome	40%
Zorro Annual Fescue	8%
Land Vetch	12%
Rose Clover	15%
Crimson Clover	15%
Sub Clover	10%
TOTAL	100%

Fertilizer Ammonium phosphate sulfate (16-20-0)
Note: an alternate seed mix may be used if approved if approved by Napa County RCD

STRAW MULCH:
shall be spread over all disturbed and seeded areas. The mulch shall be spread mechanically or broadcast by hand at the rate of 3000 lbs/acre.

SILT FENCE:
shall be installed at locations shown on the Plan in accordance with Detail Sheet 3. Silt fencing shall be maintained through the winter after planting, after which it may be removed.

STRAW BALE DIKES:
shall be installed where shown on the Plan in accordance with Detail Sheet 3. Straw bale dikes shall be installed by October 15, 1998 and shall be maintained and remain in place through two winters after planting, after which they may be removed.

ROCK SLOPE PROTECTION (RSP)
shall be class light as defined in Caltrans Standard Specifications, Sec. 72-2.02, and installed at locations for rock lined ditches shown on the Plan. A non-woven filter fabric (Mirafi 140N, or equal) shall be placed between all RSP and earthen material.

DIVERSION DITCHES:
shall be constructed in accordance with Detail Sheet 3 at the locations shown on the Plan. The ditches shall be sloped to drain as indicated toward the drop inlets at 5-8%.

DROP INLETS/SUBSURFACE PIPING:
shall be installed in accordance with Detail Sheet 3, at the locations shown on the Plan.

MAINTENANCE:

A permanent cover crop shall be seeded prior to October 15, 1998. This cover crop shall be strip sprayed (a maximum total band width of 18") as needed and mowed after the rainy season each year. No ripping or other tillage shall take place within these areas after the vineyard has been planted. A ground cover of 70% or greater shall be attained and maintained by the owner by reseeding annually or as necessary and applying of fertilizer after the first mowing.

All erosion control measures shall be inspected after each storm event, and repairs and sediment cleanout shall be promptly performed.

The total cost of all erosion control measures is estimated to be $25,000.00 including materials, labor, engineering and agency fees.

LEGEND

- LIMIT OF WORK
- VINE ROW ALIGNMENT
- VINEYARD AVENUE
- EXISTING NATURAL DRAINAGE COURSE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- DIVERSION DITCH:
- ROCK LINED
- SEEDED COVER
- DROP INLET
- SUBSURFACE DRAINAGE PIPE
- CPE — CORRUGATED POLYETHYLENE PIPE
- 20"-24"øCPE — LENGTH-DIAMETER-MATERIAL OF PIPE
- a — ENERGY DISSIPATOR
- SILT FENCE
- STRAW BALE DIKE

SHEET INDEX

Richard Berridge
Landscape Architect, Inc.
Planning Landscape Architecture
245 Vallejo Street
San Francisco, CA 94111
(415) 433-2357
1035 Main Street, Suite 204
St. Helena, CA 94574
(707) 963-1105

EROSION CONTROL PLAN
VINEYARD DEVELOPMENT PROGRAM
ATWATER ESTATE
Oakville, California

Owners:
H. B. Jr. & Martha Atwater
4900 IDS Towers,80 S.8th St.
Minneapolis, MN 55402

Site Address:

Assessor's Parcel
027-004-031

Sources:
Michael W. Brooks
TOPOGRAPHIC SURVEY
Job No. 98052

STAMP:

Date: 6-11-99

Scale: NTS

Job:

Drawn By:

No.	Revision	Date
1	PER RCD	3/4/02

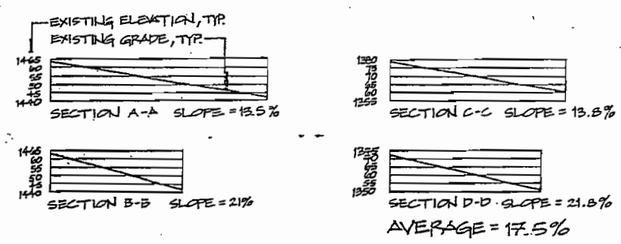
Sheet No.
INDEX SHEET

Sheet One of 4 Sheets

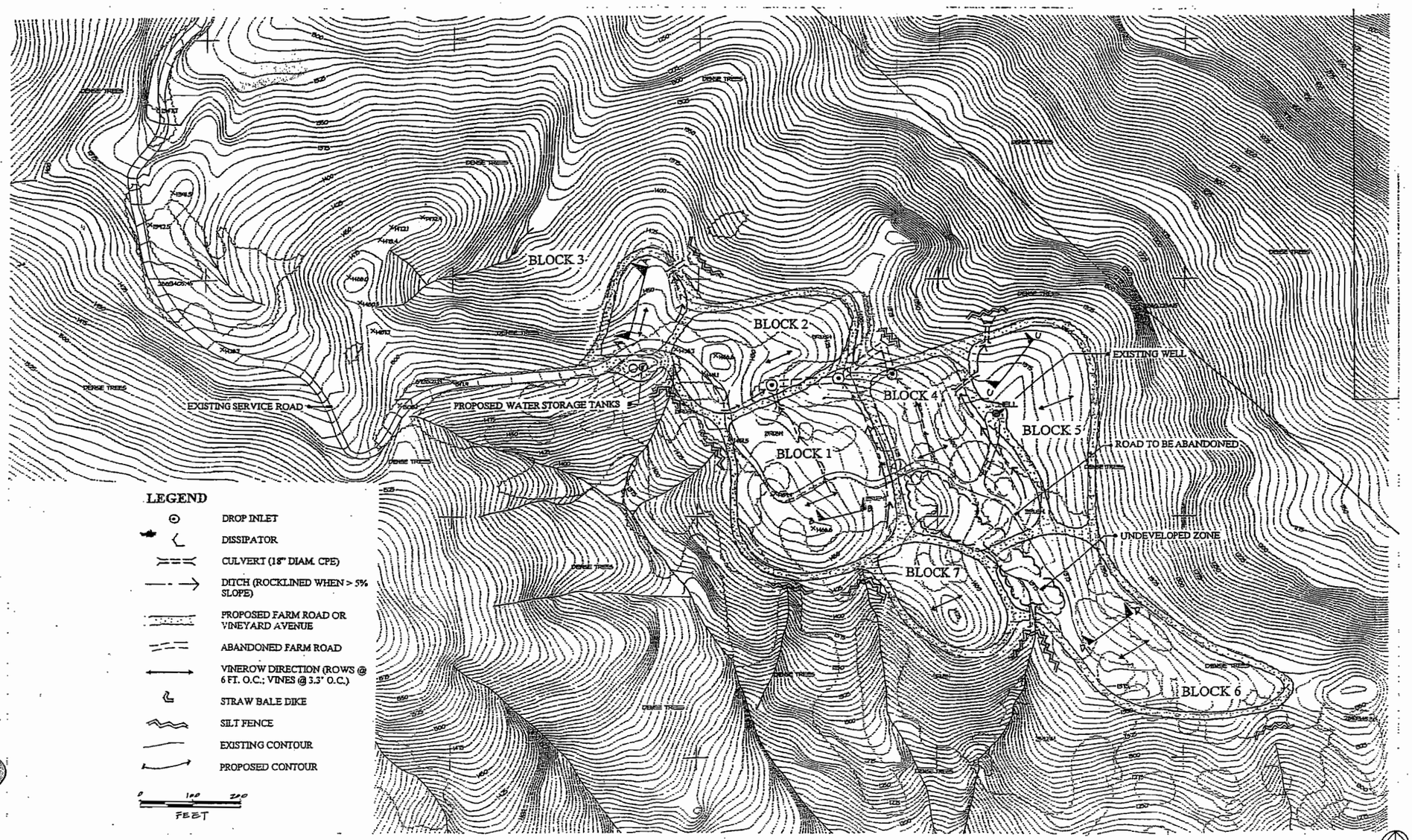
Erosion Control Permit 98-580. Narrative and Project Notes.

Figure 2, Source: Richard Berridge Landscape Architect 3/4/2002

SECTIONS - SCALE: 1"=50'



AVERAGE = 17.5%



Richard Berridge
Landscape Architect, Inc.
Planning Landscape Architecture
245 Vallejo Street
San Francisco, CA 94111
(415) 433-2357
1030 Main Street, Suite 204
St. Helena, CA 94574
(707) 963-1105

EROSION CONTROL PLAN
VINEYARD DEVELOPMENT PLAN
ATWATER ESTATE

Owners:

Site Address:

Sources:

STAMP:

Date: 6-11-99

Scale: 1"=100'

Job:

Drawn By:

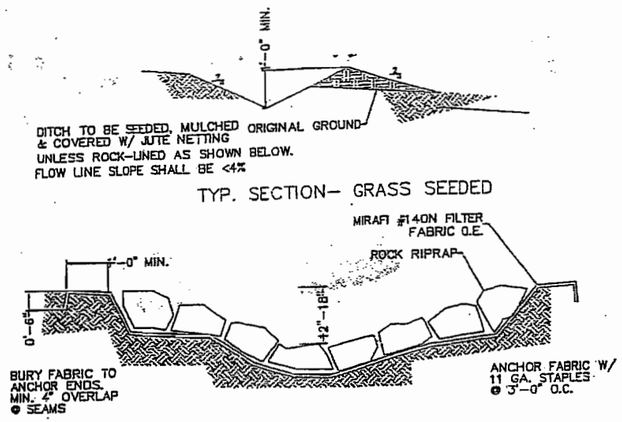
No.	Revision	Date
1	PER RCD	3/4/02

Sheet No.
PLAN SHEET

Sheet Two of 4 Sheets

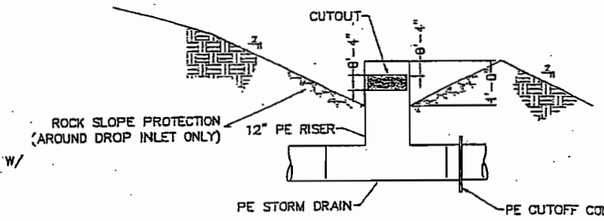
Erosion Control Permit 98-580. Site Plan

Figure 3, Source: Richard Berridge Landscape Architect, 3/4/2002

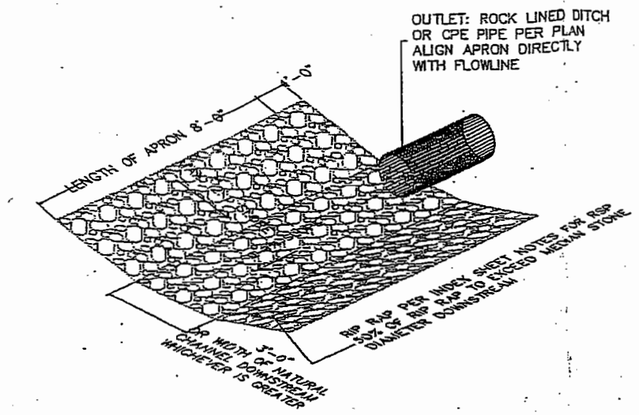


1/3 DIVERSION DITCH NOT TO SCALE

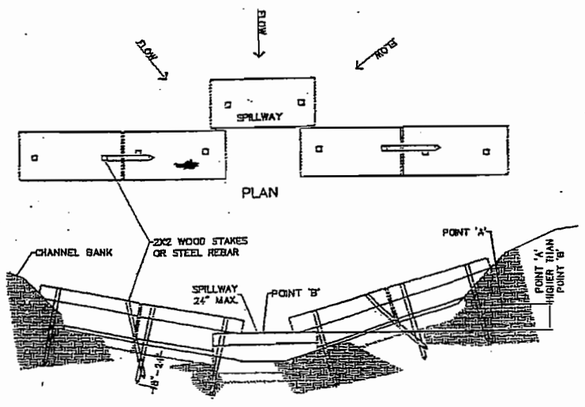
NOTE: FLOWLINE SLOPE SHALL BE 2-8%



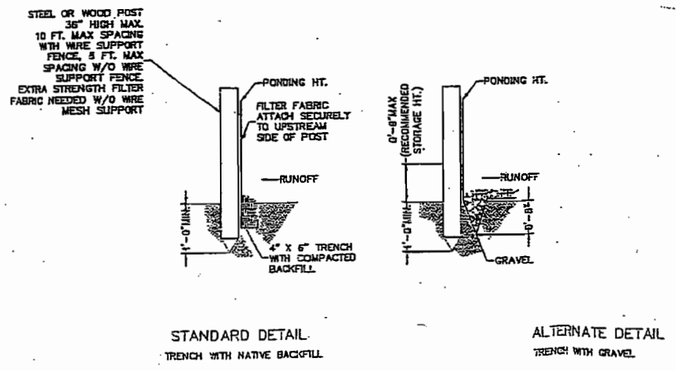
2/3 DITCH AT DROP INLET NOT TO SCALE



3/3 ENERGY DISSIPATOR NOT TO SCALE



4/3 STRAW BALE DIKE NOT TO SCALE



5/3 SILT FENCE NOT TO SCALE

Richard Berridge Landscape Architect, Inc.
Planning Landscape Architecture
345 Valaje Street
San Francisco, CA 94111
(415) 433-2357
1030 Main Street, Suite 204
St. Helena, CA 94574
(707) 963-1105

EROSION CONTROL PLAN
VINEYARD DEVELOPMENT PLAN
ATWATER ESTATE

Owners:

Site Address:

Sources:

STAMP:

Date: 6-4-99

Scale: VAR

Job:

Drawn By:

No.	Revision	Date
1.	PER RCD	3/4/02

Sheet No.
DETAIL SHEET

Sheet Three of 4 Sheets

Erosion Control Permit 98-580.Details

Figure 4, Source: Richard Berridge Landscape Architect 3/4/2002

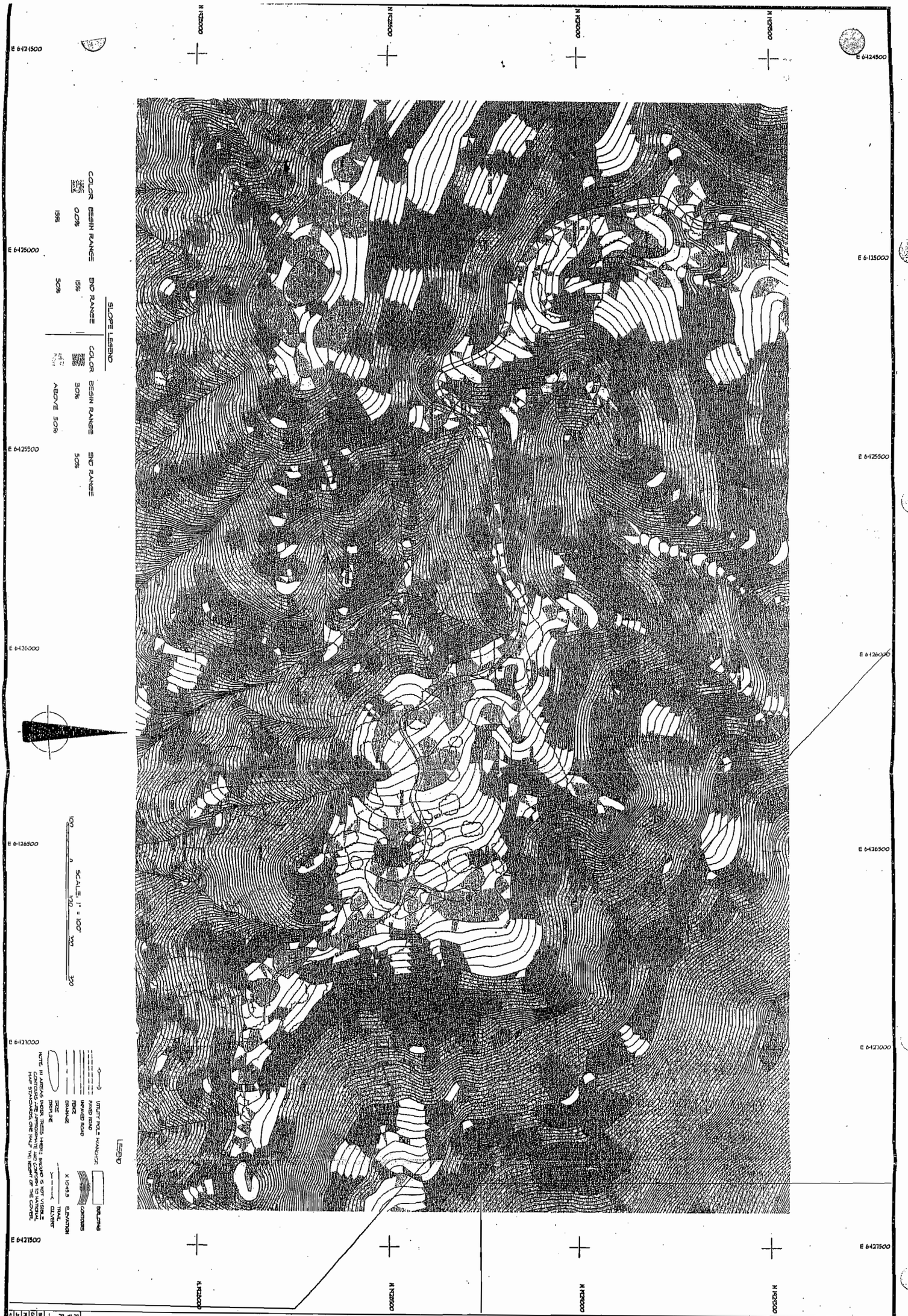


Figure 5, Source: Richard Berridge Landscape Architect 3/4/2002

Erosion Control Permit 98-580.Slope Analysis

#3

EROSION CONTROL PLAN

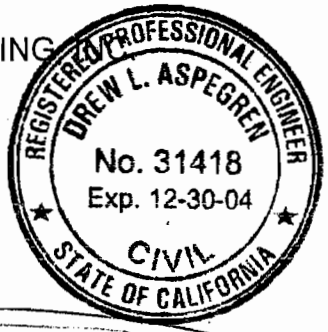
CORT/GOLDMAN VINEYARD

CONVERSION FROM NATIVE VEGETATION TO WINE GRAPE VINEYARD

2435 THIRD AVE
NAPA, CA

JANUARY 4, 2002

NAPA VALLEY VINEYARD ENGINEERING
176 Main St., Suite B
St. Helena, CA 94574



Superseded 7/24/02

CDPD COPY

Cort/Goldman Vineyard
Narrative

This project consists of the development of approximately 2.2 acres of new vineyard within APN 52-130-52, a parcel of ± 14 acres located at 2435 Third Avenue in Napa. The parcel consists of one residence, ± 4.3 acres of existing vineyard, grasses, brush and tree canopy. No future projects are anticipated. There is existing paved access to the project site off of Third Avenue. The existing ground slopes within the project boundary range from 8% to 36% with an average slope of 23%. The area with slopes over 30% is 0.53 acres. Vineyard rows will be planted 7 feet apart and will run generally perpendicular to the contours. A drip irrigation system will be installed throughout the vineyard. Water for irrigation will be from an existing well and annual water use for all purposes will not exceed 0.3 acre feet per acre. It is expected that the developed vineyard (including existing vineyard) will use ± 3 AFA and residential use is ± 0.5 AFA.

No Blueline or County definition streams occur within or adjacent to the project boundary. The project area drains toward an unnamed stream tributary to Sarco Creek which is ± 0.6 miles downstream from the project site. Hydrologic calculations demonstrate that the proposed vineyard with a 70% or greater cover crop does not increase runoff over the existing condition.

According to Napa County Sensitivity Maps, no cultural sites or endangered species occur within the project boundaries.

Vegetation Removal consists of native grasses and plants, and a few scrub oaks. All organic material to be burned shall be stacked at strategic locations within the cleared areas. Burning of the organic material only shall take place after obtaining approval from all the governing agencies.

Soils within the block boundaries have been classified in the USDA Soil Conservation Service's, Napa County Soil Survey, including the hazard of erosion as follows:

SCS#	Soil Type	% Slope	Hazard of Erosion
139	Forward gravelly loam	9 to 30%	slight to moderate
152	Hambright Rock Outcrop	30 to 75%	high
178	Sobrante loam	5 to 30%	slight to moderate

The soils on the project site are stable. County Sensitivity Maps do not show any landslides within 500 feet of the project.

Temporary Erosion Control Measures consist of the installation of silt fencing and the application of straw mulch. The installation of all silt fencing shall be

completed in accordance with the appropriate Detail and at all locations as shown on the Plan Sheet. A straw mulch cover shall be applied over all open and/or disturbed and seeded areas at the rate specified in the seeding requirements. If the brush is not burned and is to be stockpiled for burning the following spring, it shall be windrowed along contours at strategic points in the field to be used as a filter. The locations shall be proposed by the owner, and reviewed and approved by NCRCD.

Permanent Erosion Control Measures consist of the following:

1) Construction of rock checks in accordance with Detail 2 at the locations shown on the Plan.

2) A grassy drainageway shall be planted and maintained where shown on the Plan in accordance with Detail 3.

3) A permanent no-till cover crop shall be planted within the entire vineyard area. The cover crop shall be mowed and may be strip sprayed to a maximum width of 12", centered on the vine row. No discing, ripping or other tillage shall take place within these areas after the vineyard has been planted. Optimally, a ground cover of 70% or greater will be obtained each winter.

Costs: The total cost of all erosion control measures is estimated to be $10,000 including materials, labor, engineering and agency fees.

The project site has been visited by the plan preparer several times since May 1999 to inspect the property for specific erosion problems, determine mitigation, and to check final design and take photographs.

Cort/Goldman Vineyard
Project Notes

APN: 52-130-52

Owner: David Lee Goldman & Lisa Ann Cort
c/o Michael Wolf Vineyard Services

Contact Person:

Michael Wolf
Michael Wolf Vineyard Services
1083 Galleron Road
St. Helena, CA 94574
(707) 963-3891

Drew L. Aspegren
Napa Valley Vineyard Engineering
176 Main St., Suite B
St. Helena, CA 9454
(707) 963-4927

Mapping By: Michael Brooks & Associates
Dated: July 1999, Revised June 2001

Implementation Schedule: The work shall be scheduled as follows:

April 1 thru October 15, 2002	Brush and rock removal; burn vegetative materials; ripping and disking; staking; installation of irrigation system; plant vineyard and begin other cultural practices. Installation of permanent and temporary erosion control measures.
Rainy Season 2002 – Forward	Maintain all erosion control measures.

Seeding Requirements: All exposed or disturbed soils, including terraces and avenues shall be seeded. Seed and fertilizer shall be applied hydraulically or broadcast at the rates specified below:

Item		Pounds/Acre
Seed	"Blando" brome	15
	Zorro Fescue	6
	Crimson Clover	3
	Rose Clover	6
Fertilizer	Ammonium phosphate sulfate (16-20-0)	200-240

On all vineyard avenues "Fawn" tall fescue shall be added to the seed mix @ 5 lbs/ac.

An alternate seed mix and/or fertilizer may be used after review and approval by Napa County RCD.

Straw Mulch shall be spread over all disturbed and seeded areas. The mulch shall be spread mechanically or by hand at the rate of 2 tons/acre.

Rock Checks shall be constructed of locally gathered fieldstone at the locations shown on the Plan and in accordance with the Details. Rock checks shall remain in place as permanent structures.

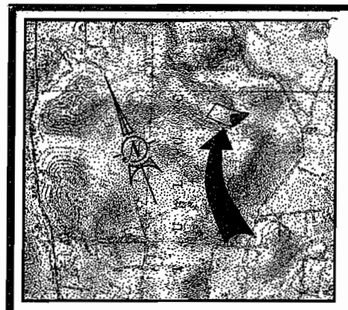
Silt Fence shall be installed along contours at locations shown on the Plan in accordance with the Detail. Silt fencing shall be maintained through the winter after planting, after which it may be removed.

Grassy Drainageway shall be planted and maintained where shown on the plan. The grassy drainageway shall be planted as a non-till cover crop with minimum 80% ground cover.

Maintenance: A permanent cover crop shall be planted prior to October 15, 2002. This cover crop may be mowed each spring after the seed has fully matured (hard dough stage) to ensure annual grass species regeneration for the following year. Minimum mowing height of 4" shall be maintained for establishing annual and perennial grasses. No ripping or other tillage shall take place within these areas after the vineyard is planted. The vineyard may be strip sprayed as described in the Narrative under **Permanent Erosion Control Measures.** Optimally, a ground cover of 70% or greater will be obtained with the owner being responsible for reseeding and maintenance in order to reach the desired degree of cover.

All erosion control measures and facilities shall be inspected after each storm event, and repairs shall be promptly performed.

Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property; that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

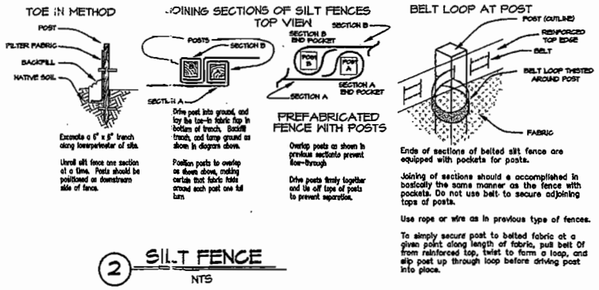


PORTION OF THE MT. GEORGE QUAD.

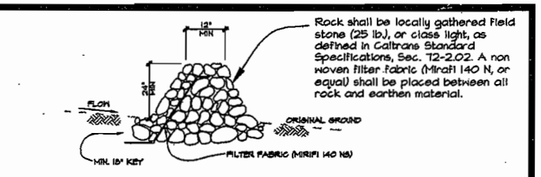
Vicinity Map

Scale: 1"=2000'

APN:	52-130-52
SITE ADDRESS:	2435 THIRD AVE, NAPA
OWNER:	DAVID LEE & LISA ANN GOLDMAN
APPLICANT:	MICHAEL WOLF VINEYARD SERVICES 1093 GALLERON RD. ST. HELENA, CA. 94574
CONTACT:	MICHAEL WOLF (707) 963-3841 DREW ASPEGREN (707) 963-4927
MAPPING :	MICHAEL BROOKS AND ASSOCIATES JULY 1999 REVISED JUNE 2001



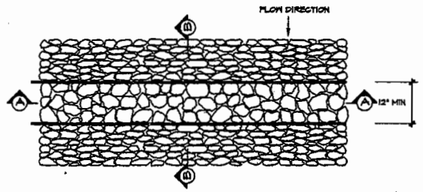
2 SILT FENCE
NTS



Rock shall be locally gathered field stone (25 lb), or class light, as defined in Caltrans Standard Specifications, Sec. 72-2.02. A non woven filter fabric (Mirafi 140 N, or equal) shall be placed between all rock and earthen material.

B SECTION B-B
N.T.S.

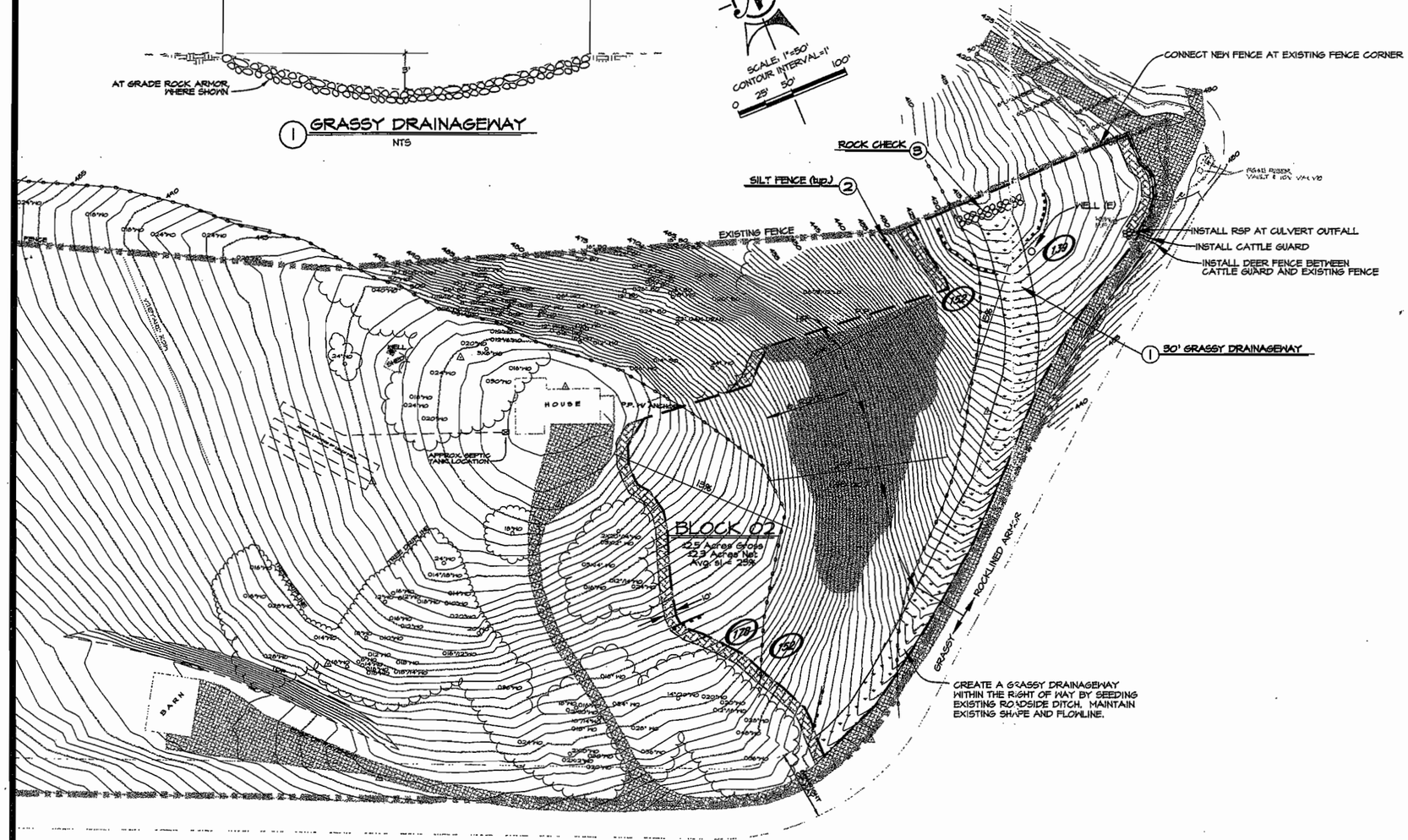
A SECTION A-A
N.T.S.



PLAN
N.T.S.

3 ROCK CHECK
NTS

1 GRASSY DRAINAGEWAY
NTS



PLAN

Legend

25	AREA AND ACREAGE OF SLOPES OVER 30%
2	DETAIL 2
(E)	EXISTING
	FLOWLINE OF DITCHES
	GRASSY DRAINAGEWAY
, HP	HIGH POINT
NTS	NOT TO SCALE
, OG	ORIGINAL GROUND
	PROJECT BOUNDARY
, RSP	ROCK SLOPE PROTECTION
ROWS	ROW SPACING AND DIRECTION
139	SCS SOIL MAPPING UNIT
	SCS SOIL TYPE BOUNDARY
A	SECTION A,
	SILT FENCE
SCS	SOIL CONSERVATION SERVICE
	EXISTING PAVED ROAD
	VINEYARD AVENUE/TURNSPACE
O	TREE
BO	BLUE OAK
LO	LIVE OAK
WO	WHITE OAK

REV.	DESCRIPTION	BY	DATE
2	REV. PROJECT BNDRY, ADD AVE/ TURNSPACE AND DEER FENCING	DLA	7-2-02
1	REV. PER 6-14-02 RCD RECOMMENDATIONS	DLA	6-18-02

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER DREW L. ASPEGREN No. 31418 Exp. 12-31-04 CIVIL STATE OF CALIFORNIA

DATE	Jan. 4. 2002	SCALE	AS SHOWN
CortGoldman.dwg		DRAWN: JLG	CHECKED: DLA
APPROVED			

DREW L. ASPEGREN, PE R.C.E. 31418

PLAN, NOTES, DETAILS

CORT/GOLDMAN VINEYARD

EROSION CONTROL PLAN

SHEET 1 OF 1

#4

ROCKY RIDGE VINEYARDS

VINEYARD DEVELOPMENT AND EROSION CONTROL PLAN
FOR THE TIMBER CONVERSION PERMIT AND TIMBER HARVEST PLAN

GENERAL NOTES:

1. ALL WORKMANSHIP AND MATERIALS FOR THE IMPROVEMENTS SHOWN ON THESE PLANS SHALL CONFORM TO THE APPLICABLE GOVERNMENTAL REQUIREMENTS AND/OR THE LATEST EDITION OF THE STATE OF CALIFORNIA STANDARD SPECIFICATIONS AND STANDARD PLANS, THE FOREST PRACTICE RULES, THE UNIFORM BUILDING CODE (U.B.C.) AND THE UNIFORM PLUMBING CODE (U.P.C.). THE IMPROVEMENTS SHOWN ON THESE PLANS SHALL BE INSPECTED BY A REPRESENTATIVE FROM THE CALIFORNIA DEPARTMENT OF FORESTRY.
2. CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR BEING FAMILIAR WITH THE SPECIFICATIONS, PROVISIONS AND PROCEDURES REQUIRED BY THE APPLICABLE GOVERNMENT AGENCY FOR THE WORK OUTLINED IN THESE PLANS. CONTRACTOR SHALL BE RESPONSIBLE FOR HAVING A COPY OF THE APPROVED PLANS AND ANY ADDENDUMS AT THE JOB SITE AT ALL TIMES.
3. CONTRACTOR SHALL BE APPROPRIATELY LICENSED WITH THE STATE OF CALIFORNIA TO PERFORM THE WORK OUTLINED IN THESE PLANS.
4. CONTRACTOR SHALL CONTACT BARTELT ENGINEERING TO ARRANGE A PRE-CONSTRUCTION MEETING FOR THE PURPOSE OF REVIEWING JOB REQUIREMENTS AND COUNTY OF NAPA PROCEDURES.
5. CONTRACTOR SHALL NOTIFY THE CALIFORNIA DEPARTMENT OF FORESTRY AND THE ENGINEER AT LEAST TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF WORK.
6. CONTRACTOR SHALL REQUEST INSPECTIONS A MINIMUM OF ONE (1) WORKING DAY IN ADVANCE.
7. CONTRACTOR SHALL NOTIFY ALL APPLICABLE PUBLIC OR PRIVATE UTILITY COMPANIES TWO (2) WORKING DAYS PRIOR TO COMMENCEMENT OF WORK ON THIS PROJECT TO VERIFY THE LOCATION OF EXISTING UTILITY LINES. CALL UNDERGROUND SERVICE ALERT (U.S.A.) TOLL FREE AT 1-800-227-2600, 7:00 A.M. TO 5:00 P.M., MONDAY THROUGH FRIDAY.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING UTILITIES IN THE FIELD. COSTS OF REPAIRING ANY DAMAGES OR INJURIES CAUSED BY THE CONTRACTOR SHALL BE BORNE BY THE CONTRACTOR. VARIOUS UNDERGROUND LINES WERE PLOTTED ON THE PLANS FROM THE INFORMATION OBTAINED FROM THE TOPOGRAPHIC SURVEY AND/OR THE OWNER, THEREFORE, NO WARRANTY, EXPRESSED OR IMPLIED, IS MADE AS TO THE COMPLETENESS OR CORRECTNESS OF THEIR LOCATION.
9. EXISTING UTILITIES SHALL BE KEPT IN SERVICE AT ALL TIMES. UTILITIES THAT INTERFERE WITH THE WORK TO BE PERFORMED SHALL BE PROTECTED AS REQUIRED BY PG&E, PACIFIC BELL AND THE OWNER.
10. CONTRACTOR SHALL COORDINATE ALL NECESSARY UTILITY RELOCATIONS, IF REQUIRED, WITH THE APPROPRIATE UTILITY COMPANIES AND/OR THE OWNER.
11. CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXISTING FACILITIES AND IMPROVEMENTS FROM DAMAGE RESULTING FROM CONTRACTOR'S WORK. ANY DAMAGE CAUSED BY CONTRACTOR SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
12. WORK DONE WITHIN THE RIGHT-OF-WAY OF LAS POSADAS ROAD SHALL BE DONE UNDER AN ENCROACHMENT PERMIT ISSUED BY COUNTY OF NAPA PUBLIC WORKS DEPARTMENT.
13. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING A STREAM ALTERATION PERMIT FROM THE CALIFORNIA DEPARTMENT OF FISH AND GAME PRIOR TO THE START OF ANY WORK WITHIN A RIPARIAN AREA.
14. ALL MATERIAL SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
15. CONTRACTOR AGREES THAT THEY SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS. THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THE PROJECT, EXCEPT FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
16. SHOULD ANY CONTRACTOR OR SUBCONTRACTOR FIND ANY DEFICIENCIES, ERRORS, CONFLICTS OR OMISSIONS IN THESE PLANS AND SPECIFICATIONS OR SHOULD THERE BE ANY DOUBT AS TO THEIR MEANING OR INTENT, THE CONTRACTOR SHALL NOTIFY BARTELT ENGINEERING FOR A WRITTEN CLARIFICATION, ADDENDUM, ETC. SHOULD THE CONTRACTOR FAIL TO DO SO BEFORE SUBMITTING A PROPOSAL, THE CONTRACTOR CANNOT CLAIM ADDITIONAL COMPENSATION FOR WORK REQUIRED TO COMPLETE THE PROJECT.
17. WRITTEN DIMENSIONS ALWAYS TAKE PRECEDENCE OVER SCALED DIMENSIONS. IF THERE IS A CONFLICT, NOTIFY BARTELT ENGINEERING AND OBTAIN A CLARIFICATION. NO DEVIATION OR SUBSTITUTION SHALL BE ALLOWED WITHOUT OBTAINING WRITTEN APPROVAL FROM THE ENGINEER.
18. FADED BACKGROUND REPRESENTS EXISTING TOPOGRAPHIC FEATURES. THE TOPOGRAPHIC INFORMATION SHOWN ON THIS PLAN WAS TAKEN FROM THE "TOPOGRAPHIC MAP OF A PORTION OF THE LANDS OF APN 024-300-065", PREPARED BY MICHAEL W. BROOKS & ASSOCIATES, (707) 944-8148, DATED APRIL 2001. BARTELT ENGINEERING ASSUMES NO LIABILITY, REAL OR ALLEGED, REGARDING THE ACCURACY OF THE TOPOGRAPHIC INFORMATION SHOWN.
19. BENCHMARK NOTE: ESTABLISHED TEMPORARY BENCHMARK NEAR SOUTHWEST CORNER OF PARCEL. ELEVATION 100.00' (ASSUMED). CONTOUR INTERVAL: EVERY TWO (2) FEET, HIGHLIGHTED EVERY TEN (10) FEET.
20. THIS DRAWING DOES NOT REPRESENT A BOUNDARY SURVEY. BOUNDARY LINES SHOWN ARE APPROXIMATE AND FOR INFORMATIONAL PURPOSES ONLY.

GRADING NOTES:

1. ALL MOVEMENT OF EARTH SHALL COMPLY WITH THE APPLICABLE GOVERNMENTAL STANDARDS AND SPECIFICATIONS, THE UNIFORM BUILDING CODE, THE FOREST PRACTICE RULES AND THESE PLANS.
2. THE SITE SHALL BE VISUALLY INSPECTED BY THE CONTRACTOR TO DETERMINE THE EXTENT OF CLEARING, GRUBBING AND GRADING WORK TO BE DONE. GRADING ON THE SITE WILL BE LIMITED TO THE EXCAVATIONS AND/OR FILLS SHOWN ON THE PLAN.
3. IN THE ABSENCE OF A GEOTECHNICAL INVESTIGATION REPORT, ALL CUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER.
4. CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN SUCH A MANNER AS TO PRECLUDE WIND BLOWN DIRT AND DUST AND RELATED DAMAGE TO NEIGHBORING PROPERTIES. SUFFICIENT WATERING TO CONTROL DUST IS REQUIRED AT ALL TIMES. CONTRACTOR SHALL ASSUME LIABILITY FOR CLAIMS RELATED TO WIND BLOWN MATERIAL. IF THE DUST CONTROL IS INADEQUATE AS DETERMINED BY THE COUNTY OF NAPA OR THE OWNER, CONSTRUCTION WORK SHALL BE TERMINATED UNTIL CORRECTIVE MEASURES ARE TAKEN.
5. CONTRACTOR SHALL CONFORM TO EXISTING PAVEMENT, SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN GRADING AND AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADES OR CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.

GRADING NOTES (cont.):

6. TREES THAT ARE REMOVED SHALL ALSO HAVE THEIR STUMPS AND MAJOR ROOT SYSTEMS REMOVED. AFTER A TREE OR A STUMP IS REMOVED THE RESULTING EARTH CAVITY SHALL BE CLEANED OF LARGER ROOTS (2 INCH DIAMETER AND LARGER). ALL EARTHWORK, SCARIFICATION, BACKFILL AND COMPACTION SHALL BE PERFORMED PER THE PLANS AND CALIFORNIA DEPARTMENT OF FORESTRY REQUIREMENTS.
7. THE TREE STUMPS AND ALL OTHER ORGANIC MATERIAL TO BE BURNED SHALL BE PILED AT STRATEGIC LOCATIONS WITHIN THE CLEARED AREAS. THESE PILES SHALL BE BURNED ONLY AFTER OBTAINING ALL REQUIRED APPROVALS FROM ALL GOVERNMENT AGENCIES, INCLUDING CALIFORNIA DEPARTMENT OF FORESTRY.
8. THE TREE STUMPS AND ALL OTHER ORGANIC MATERIAL NOT BURNED SHALL BE HAULED OFFSITE AND DISPOSED OF PROPERLY BY THE CONTRACTOR.

UTILITY NOTES

1. ALL WORK SHALL BE IN COMPLIANCE WITH APPLICABLE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (O.S.H.A.) STANDARDS AS SET FORTH BY THE FEDERAL DEPARTMENT OF LABOR AND/OR THE STATE OF CALIFORNIA. THE CONTRACTOR SHALL SECURE A TRENCH PERMIT FROM THE CALIFORNIA DIVISION OF INDUSTRIAL SAFETY PRIOR TO EXCAVATION OF ANY TRENCH OVER FIVE (5) FEET DEEP.
2. TRENCHING AND BACKFILL WITHIN THE PUBLIC RIGHT OF WAY AND UNDER PRIVATE ROADS SHALL COMPLY WITH APPLICABLE GOVERNMENTAL STANDARDS. CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE SAFETY STANDARDS FOR TRENCH SAFETY.
3. ALL STORM DRAIN SYSTEM INSTALLATION SHALL BE DONE IN ACCORDANCE WITH COUNTY OF NAPA STANDARDS. PLASTIC PIPE FOR THE STORM DRAIN SHALL COMPLY WITH SECTION 64 OF THE CALTRANS STANDARD SPECIFICATIONS. CORRUGATED METAL PIPE (C.M.P.) SHALL COMPLY WITH SECTION 66 OF THE CALTRANS STANDARD SPECIFICATIONS.

EROSION CONTROL NOTES

1. CHANGES TO THIS EROSION AND SEDIMENT CONTROL PLAN TO MEET FIELD CONDITIONS WILL BE MADE ONLY WITH THE APPROVAL OF/OR AT THE DIRECTION OF BARTELT ENGINEERING.
2. THE CONTRACTOR WILL INFORM ALL CONSTRUCTION SITE WORKERS ABOUT THE MAJOR PROVISIONS OF THE EROSION AND SEDIMENT CONTROL PLAN AND SEEK THEIR COOPERATION IN AVOIDING THE DISTURBANCE OF THESE EROSION CONTROL MEASURES.
3. SILT FENCE AND/OR STRAW WATTLE SEDIMENT BARRIERS WILL BE INSTALLED PRIOR TO SEPTEMBER 15 AND WILL REMAIN OPERABLE DURING THE RAINY SEASON (SEPTEMBER 15 TO APRIL 1).
4. DURING THE RAINY SEASON (SEPTEMBER 15 TO APRIL 1) ALL SEDIMENT BARRIERS WILL BE INSPECTED AND REPAIRED AT THE END OF EACH WORKING DAY AND, IN ADDITION, AFTER EACH STORM.
5. BETWEEN SEPTEMBER 15 AND APRIL 1, ALL PAVED AREAS WILL BE KEPT CLEAR OF DIRT, SEDIMENT AND DEBRIS. THE PROJECT AREA WILL BE MAINTAINED SO THAT A MINIMUM OF SEDIMENT-LADEN RUNOFF LEAVES THE SITE.
6. THE SEEDED AREAS WILL BE REPAIRED, RESEEDED AND MULCHED AS SOON AS POSSIBLE AFTER BEING DAMAGED.
7. ALL GRADED OR DISTURBED AREAS SHALL BE SEEDED IMMEDIATELY AFTER GRADING IS COMPLETE.
8. THE SEED, FERTILIZER AND MULCH MIXTURE WILL BE APPLIED BY HAND OR HYDRAULICALLY AT THE RATES SPECIFIED BELOW.

   LOWE WILL SPECIAL APPLIED AT 55 LBS/ACRE IN THE FOLLOWING PERCENTAGES:

BLANDO BLUEGRASS	30%
WOOGENELLUP SUBCLOVER*	20%
KARRIDALE SUBCLOVER*	20%
ZORRO FESCUE	10%
SEATON PARK SUBCLOVER	20%

   *SPECIAL-COATED SEED

   AN EQUIVALENT SEED MIX MAY BE SUBSTITUTED BY THE OWNER DEPENDING ON THE SUCCESS OF PRIOR SEED MIXES AND THE NUTRIENT LEVELS IN THE SOIL.

9. FERTILIZER USED SHALL BE ONE OF THE FOLLOWING SPECIFICATIONS:

16-20-0	250 LBS/ACRE
12-12-12	400 LBS/ACRE
15-15-15	300 LBS/ACRE
10-20-0	300 LBS/ACRE

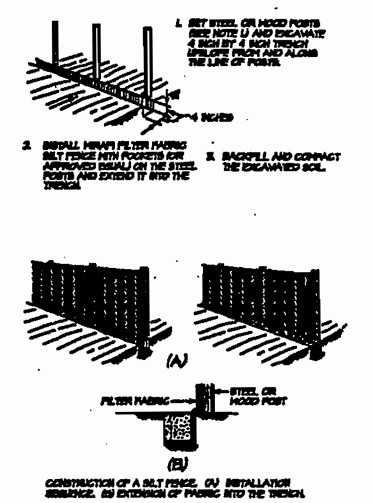
10. THE TYPE OF MULCH USED SHALL BE ONE OF THE FOLLOWING:

STRAW MULCH	3000 LBS/ACRE
WOOD FIBER MULCH	2000 LBS/ACRE (IF HYDROSEEDED)

11. AREA TO BE SEEDED SHALL BE SCARIFIED TO DEPTH OF 4 INCHES TO 6 INCHES AND DRESSED TO PROVIDE A REASONABLY SMOOTH FIRM SURFACE.
12. IF HYDROSEEDING METHOD IS USED A TACKIFIER SUCH AS M-BINDER OR SENTINEL (OR EQUAL) SHALL BE APPLIED AT A RATE OF 75 TO 100 LBS/ACRE.
13. IF HYDROSEEDING METHOD IS USED SEED SHALL NOT REMAIN IN THE SLURRY LONGER THAN 30 MINUTES. FERTILIZERS SHALL NOT REMAIN IN THE SLURRY LONGER THAN 2 HOURS. THE SLURRY SHALL BE APPLIED IN A UNIFORM MANNER AT A RATE THAT IS NON-EROSIVE AND MINIMIZES RUNOFF.
14. NORTH AMERICAN GREEN SC150 EROSION CONTROL BLANKETS SHALL BE INSTALLED OVER SEED ON ALL SLOPES STEEPER THAN 2:1. JUTE NETTING SHALL BE INSTALLED OVER SEED AND STRAW MULCH ON ALL SLOPES 2:1 TO 4:1.

INSTALLATION OF SILT FENCE SEDIMENT BARRIER

1. LAY OUT A SUITABLE FENCE LINE AND SET POSTS ALONG IT. ON SLOPES, ALIGN THE FENCE ALONG THE CONTOUR AS CLOSELY AS POSSIBLE. IN SMALL SWALES, CURVE THE FENCE LINE UPSTREAM AT THE SIDES TO DIRECT THE FLOW TOWARD THE MIDDLE OF THE FENCE.
2. SPACE POSTS ON 6 FOOT CENTERS AND DRIVE THEM A MINIMUM OF 12 INCHES INTO THE GROUND. POSTS FOR SILT FENCES CAN BE EITHER 1 1/2 INCHES MIN. DIA. HARD WOOD OR 1.33 POUNDS PER FOOT STEEL WITH A MINIMUM LENGTH OF 3 FEET. STEEL POSTS MUST HAVE PROJECTIONS FOR FASTENING WIRE TO THEM.
3. FASTEN THE FILTER FABRIC TO THE UPHILL SIDE OF THE FENCE POSTS, AND EXTEND TO 6 TO 8 INCHES INTO THE TRENCH. THE HEIGHT OF THE FENCE SHOULD NOT EXCEED 36 INCHES. DO NOT STAPLE FABRIC ONTO TREES. CUT THE FILTER FABRIC FROM A CONTINUOUS ROLL TO AVOID THE USE OF JOINTS. WHEN JOINTS ARE NECESSARY, SPLICE THE FILTER CLOTH AT A SUPPORT POST, WITH A MINIMUM 6 INCHES OVERLAP, AND SECURELY FASTEN BOTH ENDS TO THE POST.
4. BACKFILL THE TRENCH OVER THE TOE OF THE FABRIC AND COMPACT THE SOIL.
5. PREFABRICATED SILT FENCE WITH POSTS MAY BE USED AS AN ALTERNATE TO SETTING STEEL OR WOOD POSTS.

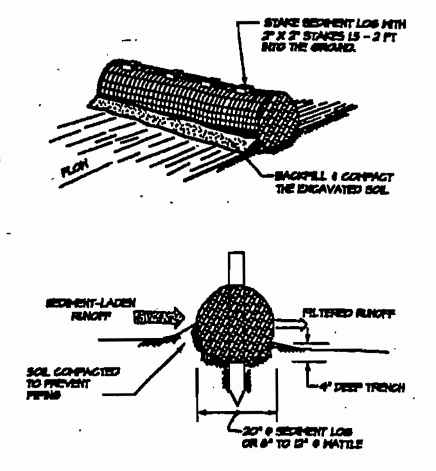


CONSTRUCTION OF A SILT FENCE. (A) INSTALLATION SEQUENCE. (B) EXTENSION OF FABRIC INTO THE TRENCH.

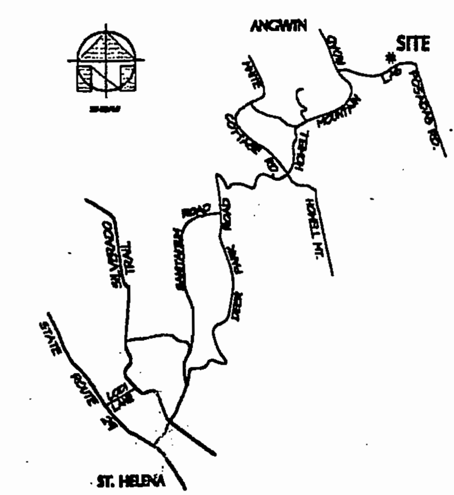
SILT FENCE SEDIMENT BARRIER
NO SCALE

INSTALLATION OF WATTLE SEDIMENT BARRIER

1. PREPARE THE SLOPE BEFORE THE WATTLING PROCEDURE IS STARTED. SHALLOW GULLIES SHOULD BE SMOOTHED AS WORK PROGRESSES.
2. DIG SMALL TRENCHES ACROSS THE SLOPE ON CONTOUR, TO PLACE ROLLS IN. THE TRENCH SHOULD BE DEEP ENOUGH TO ACCOMMODATE HALF THE THICKNESS OF THE ROLL. WHEN THE SOIL IS LOOSE AND UNCOMPACTED, THE TRENCH SHOULD BE DEEP ENOUGH TO BURY THE ROLL 2/3 OF ITS THICKNESS BECAUSE THE GROUND WILL SETTLE.
3. IT IS CRITICAL THAT ROLLS ARE INSTALLED PERPENDICULAR TO WATER MOVEMENT, PARALLEL TO THE SLOPE CONTOUR. START BUILDING TRENCHES AND INSTALL ROLLS FROM THE BOTTOM OF THE SLOPE AND WORK UP.
4. CONSTRUCT TRENCHES AT CONTOUR INTERVALS OF 3-12 FEET APART DEPENDING ON STEEPNESS OF SLOPE. THE STEEPER THE SLOPE, THE CLOSER TOGETHER THE TRENCHES. LAY THE ROLL ALONG THE TRENCHES FITTING IT SNUGLY AGAINST THE SOIL. MAKE SURE NO GAPS EXIST BETWEEN THE SOIL AND THE STRAW WATTLE.
5. USE A STRAIGHT BAR TO DRIVE HOLES THROUGH THE WATTLE AND INTO THE SOIL FOR THE WILLOW OR WOODEN STAKES. DRIVE THE STAKE THROUGH PREPARED HOLE INTO SOIL. LEAVE ONLY 1 OR 2 INCHES OF STAKE EXPOSED ABOVE ROLL.
6. INSTALL STAKES AT LEAST EVERY 4 FEET APART THROUGH THE WATTLE. ADDITIONAL STAKES MAY BE DRIVEN ON THE DOWNSLOPE SIDE OF THE TRENCHES ON HIGHLY EROSIVE OR VERY STEEP SLOPES.



WATTLE SEDIMENT BARRIER DETAIL
NO SCALE



LOCATION MAP
NO SCALE

PROJECT INFORMATION:

PROPERTY OWNER/APPLICANT:
MARC MONDAVI
P. O. BOX 342
ST. HELENA, CA 94574

PROJECT ADDRESS:
383 LAS POSADAS ROAD
ANGWIN, CA 94508

CIVIL ENGINEER:
BARTELT ENGINEERING
1559 PEARL STREET, SUITE 205
NAPA, CA 94559

ASSESSOR'S PARCEL NUMBER:
024-300-065

PARCEL SIZE:
20.00 ACRES

PROJECT SIZE:
11.0± ACRES (9.8± ACRES IN VINES)

SHEET INDEX*:

SHEET 1	COVER SHEET & GENERAL NOTES
SHEET 2	OVERALL SITE PLAN
SHEET 3	EROSION CONTROL PLAN
SHEET 4	DETAIL SHEET

*NOTE: ALSO SEE NARRATIVE SUPPLEMENT TO THE EROSION CONTROL PLAN WHICH SHALL BE CONSIDERED A PART OF THIS PLAN.

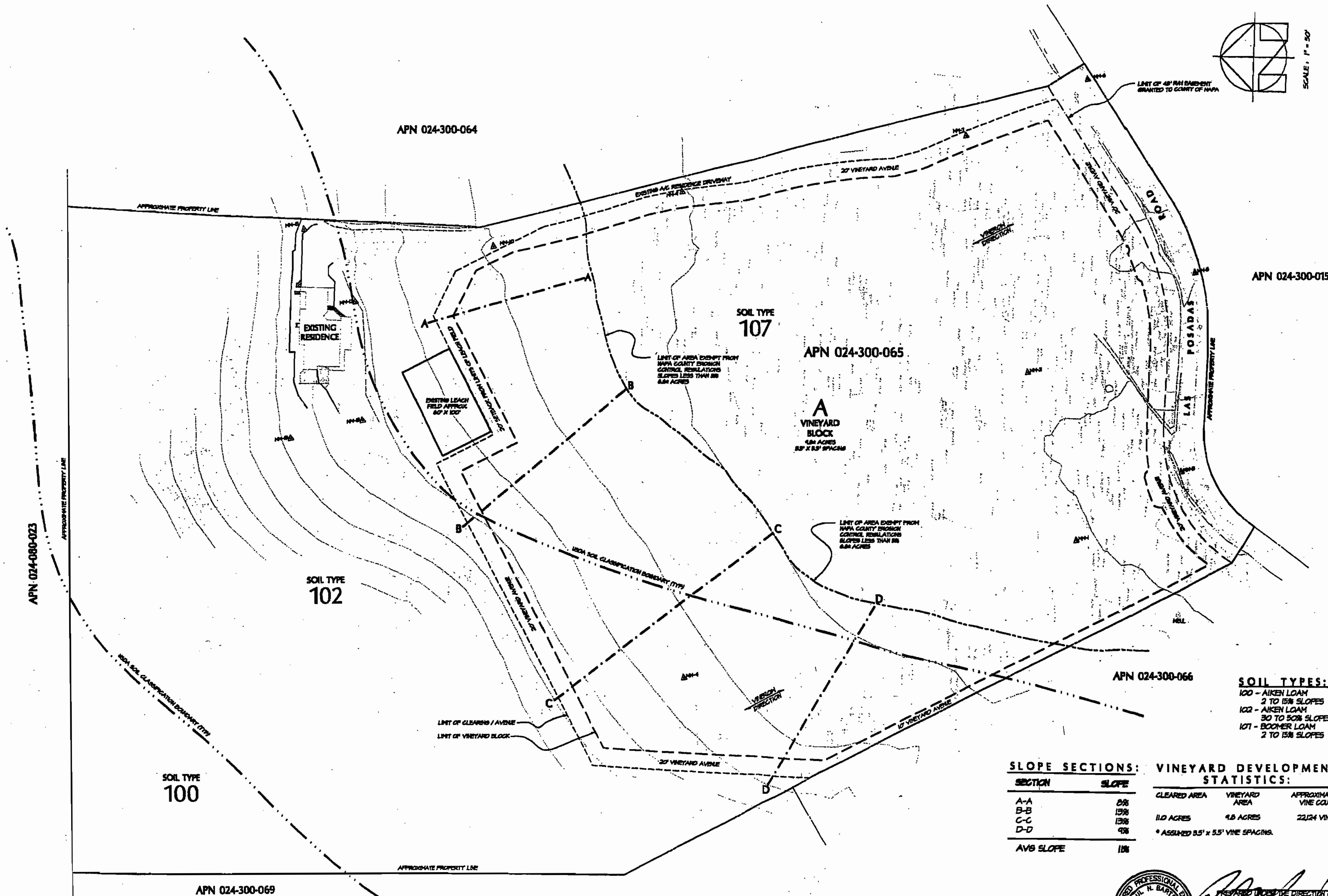
REGISTERED PROFESSIONAL ENGINEER · PAUL N. BARTELT · No. 45102 · Exp. 9-30-02 · CIVIL · STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
7-24-01
PAUL N. BARTELT R.C.E. 45102 EXP. 9/30/02

BARTELT engineering
civil engineering · land planning
1559 pearl street, #205, napa, ca 94559
(707) 258-1301 · fax (707) 258-2926

ROCKY RIDGE VINEYARDS
COVER SHEET
ANGWIN CALIFORNIA

DATE: JULY 2001
FILE NO. 0178CP-01
JOB NO. 01-07
SHEET NO. 1 OF 4



SOIL TYPES:

100 - AIKEN LOAM
2 TO 15% SLOPES
102 - AIKEN LOAM
30 TO 50% SLOPES
107 - BOOMER LOAM
2 TO 15% SLOPES

SLOPE SECTIONS:

SECTION	SLOPE
A-A	8%
B-B	15%
C-C	13%
D-D	9%
AVG SLOPE	11%

VINEYARD DEVELOPMENT STATISTICS:

CLEARED AREA	VINEYARD AREA	APPROXIMATE VINE COUNT*
11.0 ACRES	9.8 ACRES	22,124 VINES

* ASSUMED 9.5' x 5.5' VINE SPACING.

REGISTERED PROFESSIONAL ENGINEER PAUL N. BARTELT No. 45102 Exp. 9-30-02 CIVIL STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
7-24-01
PAUL N. BARTELT R.C.E. 45102 EXP. 9/30/02

OVERALL SITE PLAN

SCALE : 1" = 50'

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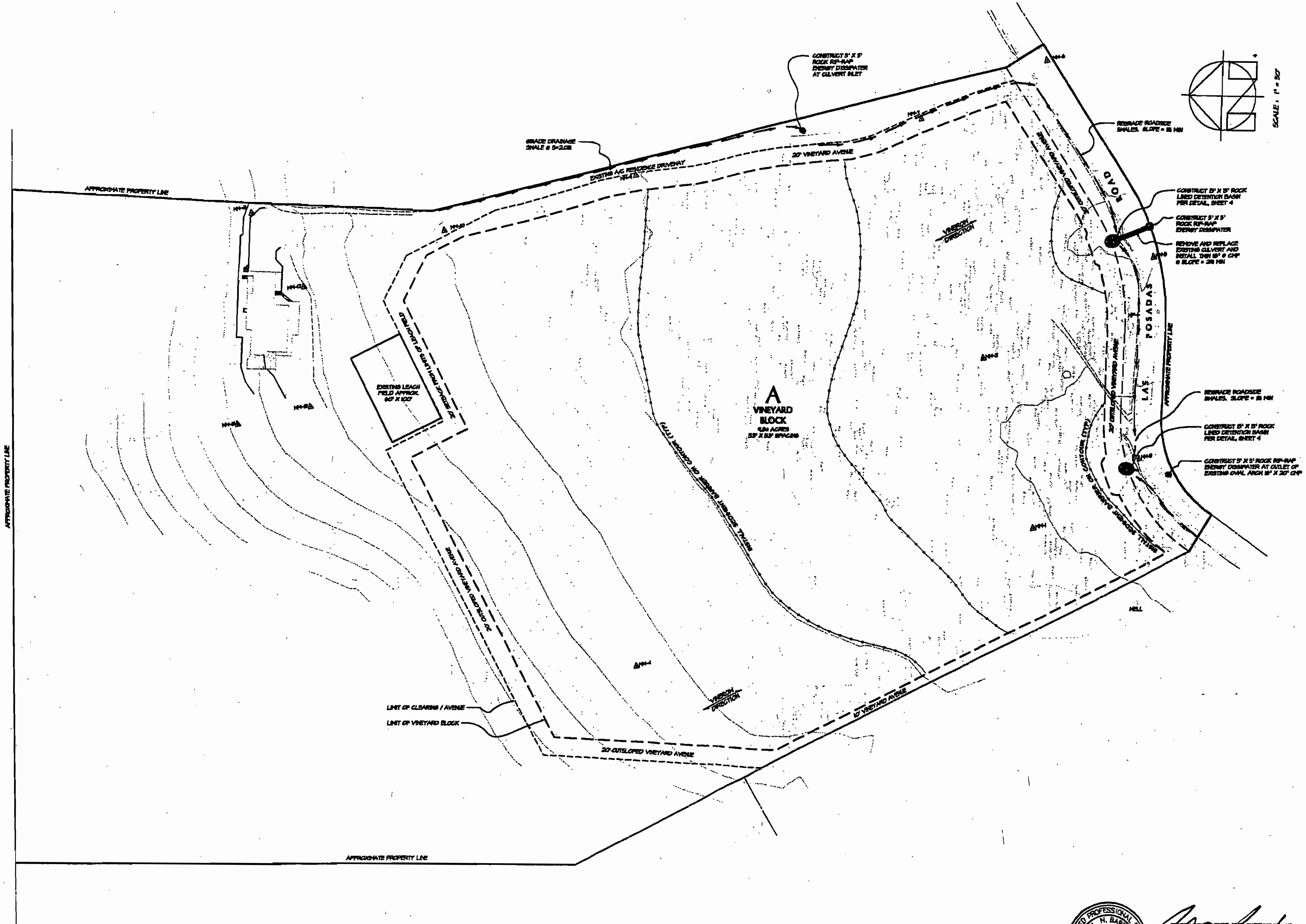
ROCKY RIDGE VINEYARDS
OVERALL SITE PLAN

ANGWIN CALIFORNIA

DATE: JULY 2001
JOB NO. JOB # 01-07
SHEET NO. 2 OF 4



EROSION CONTROL PLAN

SCALE : 1" = 50'

PREPARED UNDER THE DIRECTION OF

PAUL N. BARTELT R.C.E. 45102 EXP. 9/30/02

7-24-01

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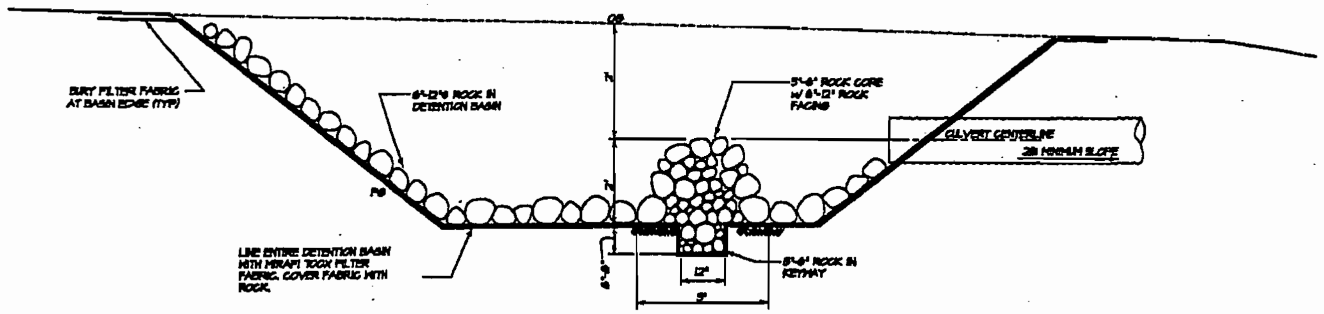
ROCKY RIDGE VINEYARDS

EROSION CONTROL PLAN

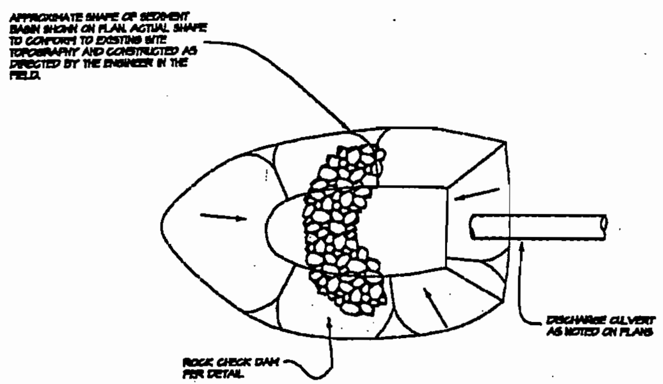
ANGWIN CALIFORNIA

DATE: JULY 2001

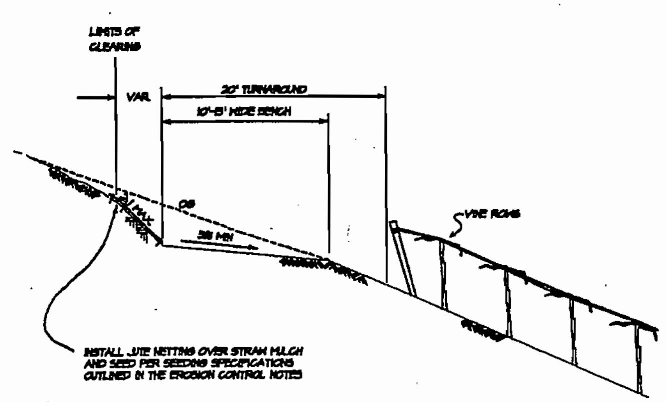
SHEET NO. 3 OF 4



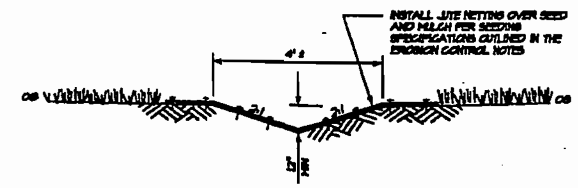
ROCK DETENTION BASIN WITH CHECK DAM
SECTION VIEW DETAIL
NO SCALE



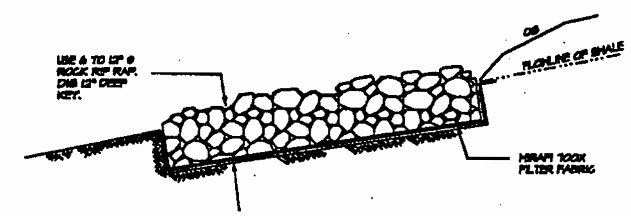
ROCK DETENTION BASIN WITH CHECK DAM
PLAN VIEW DETAIL
NO SCALE



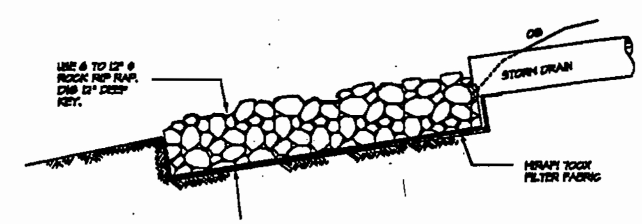
OUTSLOPED TERRACED BENCH
VINEYARD AVENUE
NO SCALE



DRAINAGE SWALE DETAIL
NO SCALE



ROCK ENERGY DISSIPATER
AT OUTFALL OF SWALE
NO SCALE



ROCK ENERGY DISSIPATER
NO SCALE

REGISTERED PROFESSIONAL ENGINEER
PAUL N. BARTELT
No. 45102
Exp. 9-30-02
CIVIL
STATE OF CALIFORNIA

PREPARED UNDER THE DIRECTION OF
7-24-01
PAUL N. BARTELT R.C.E. 45102 EXP. 9/30/02

OWNERSHIP OF DOCUMENTS

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engineering
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(707) 258-1301 · fax (707) 258-2926

ROCKY RIDGE VINEYARDS
DETAIL SHEET
ANGWIN CALIFORNIA

DATE JULY 2001
FILE NO. 010704-D1
JOB NO. JOB # 01-07
SHEET NO.
4
OF 4

10014701

PIÑA VINEYARD MANAGEMENT

LEWIS RANCH

EROSION CONTROL PLAN

SPECIFICATIONS

JULY, 2001

PREPARED BY:

PPI ENGINEERING
860-G NAPA VALLEY CORPORATE WAY
NAPA, CALIFORNIA 94558
(707) 253-1806

TABLE OF CONTENTS

PIÑA VINEYARD MANAGEMENT
LEWIS RANCH

EROSION CONTROL PLAN
NARRATIVE

1. **The nature and purpose of the land disturbing activity and the amount of grading involved.**

   a) The Owners plan to develop approximately 3.3 acres (± 5.7 gross acres) of vineyard at their property located on Chiles Valley Road. The vineyard to be developed is located on APNs 025-240-021, 025-280-050 and 025-280-051, which consists of 137.25 total acres per the Napa County Assessors Office. Ground slopes within the project boundary range between 12 to 35 percent. There are approximately 0.02 acres within the proposed project area that exceed a 30 percent slope based on the topographic map.

   b) Activities to be accomplished include removal of existing vegetation, cultivating the soil to prepare for planting, trenching for irrigation pipelines, installation of trellis system, laying out the vine rows and installing erosion control measures.

2. **General description of existing site conditions, including topography, vegetation and soils.**

   a) The proposed site is located in the Lake Hennessey watershed.

   b) The vineyard area to be developed lies on moderately sloping ground, ranging from 12 to 35 percent. Elevations range from approximately 980 feet to 1345 feet above mean sea level.

   c) Existing vegetation consists of annual grasses with mixed trees and shrubs. There are no Biologic concerns present per the Napa County Sensitivity Maps. See Appendix E for Tree Identification. See Appendix F for Vegetation Retention Calculations.

   d) Soils as described in the USDA - SCS Napa County Soil Survey are listed in Item #5 below.

   e) A site visit of the property was performed by John Vicencio, Davie Piña, and Gary Yates on Tuesday, November 20, 2000. The purpose of the visit was to evaluate potential vineyard development areas and to determine the scope of the proposed project.

A second site visit was done by John Vicencio and Jim Bushey on Wednesday, February 7, 2001. The purpose of the visit was to verify topographic mapping, perform field review of proposed vineyard areas, and photo document existing site conditions.

A photographic location map with accompanying photographs of existing site conditions is in Appendix A of this report.

3. **Natural and man-made features onsite including streams, lakes, reservoirs, roads, drainage, and other areas that may be affected by the proposed activity.**

   a) A portion of the existing driveway will be utilized for vineyard development. A proposed driveway realignment has been designed and will be submitted simultaneously with this erosion control plan. The nearest stream is an unnamed blue lined stream approximately 150 feet southeast of Block 1. No natural or man-made features are expected to be affected by development.

4. **Location and source of water for irrigation or other uses.**

   a) There are two existing wells on the property. The approximate locations are shown on the site plan.

5. **Soil types/soil series identified in the Soil Conservation Service (SCS) Napa County Soil Survey.**

   a) The USDA - SCS Napa County Soil Survey maps the soil within the project boundary as Lodo-Maymen-Felton, 30 to 70 percent slopes; and Sobrante Loam, 30 to 50 percent slopes.

6. **Critical areas, if any, within the development site that have serious erosion potential or problems.**

   a) The site has no areas with serious erosion potential or problems. See Geologic Studies in Appendix B.

7. **Erosion calculations**

   a) Universal Soil Loss Equation (USLE) spreadsheets for this project are in Appendix C of this report.

3.3 ac
x 4 tons/ac/yr
≈ 13 tons/ac
≈ 13 yds³

8. Proposed erosion control methods including:

a) All drainage systems and facilities, walls, cribbing or other erosion protection devices to be constructed with, or as a part of the proposed work.

1. To control surface water runoff in the vineyard blocks, surface drainage pipelines, drop inlets, vineyard diversions, diversion ditches, and rock level spreaders will be installed as shown on the plan map and described in the specifications. Unless otherwise specified, gravity outlets will be installed at the outlet of each pipeline.

2. Waterbars will be installed as shown in the Detail labeled "Waterbars for Vehicular Traffic". They shall be located on roads in the vineyard where necessary to divert concentrated flow off of vineyard avenues into vegetated areas. Waterbars shall be installed each fall by the Owner. Waterbars shall be located 100 feet apart maximum on slopes exceeding 15 percent.

3. Straw bale sediment traps will be installed at the locations shown on the Plan. They shall be constructed as shown on the Detail labeled "Straw Bale Dike Installation" and as described in the specifications.

4. The final pass with tillage equipment shall be performed across slopes to prevent channeling water downhill the first winter after development.

5. Additional temporary erosion control measures shall be installed as needed.

b) Proposed vegetative erosion control measures including location, type and quantity of seed, mulch, fertilizer and irrigation, timing and methods of planting, mulching and maintenance of plant material and slopes until a specified percentage of plant coverage is uniformly established.

1. The entire vineyard and any other disturbed areas shall be seeded as described below. Straw mulch shall be applied to all disturbed areas at a rate of 3000 lbs/acre prior to September 1 of the year of construction. Fertilizer shall be applied as necessary by vineyard management personnel.

2. A no-till cover crop strategy will be utilized within the vineyard. The permanent cover crop will be generated by seeding the first year with Dwarf Barley at 50 pounds per acre, Zorro Fescue at 12 pounds per acre, Blando Brome at 8 pounds per acre, and Rose Clover at 6 pounds per acre. The entire vineyard and any other disturbed areas shall be seeded prior to September 1 of the year of construction.

3. The permanent cover crop will be managed each year such that any areas which have less than 70 percent vegetative cover will be reseeded with the Brome, Fescue, Clover mix only and mulched until adequate coverage is achieved.

4. Vineyard avenues shall be seeded, mulched and maintained as described in b)#1 above. Avenues having less than 70 percent cover prior to the rainy season shall be straw mulched each year.

5. Any additional disturbed areas will be seeded, mulched, and maintained as described in b)#1 above.

9. Stormwater stabilization measures, if the development of the site will result in increased peak rates of runoff that may cause flooding or channel degradation downstream.

a) Where possible, concentration of stormwater will be avoided. When necessary, the proposed outlets will be installed with energy dissipators and/or level spreaders and will drain to naturally vegetated areas reducing potential impacts to areas downstream. Because of the small areas of proposed vineyard development and their locations relative to each other on the property and within the watershed, no significant impacts are expected as a result of increased rates of runoff from the project site.

10. An implementation schedule showing the following:

a) The proposed clearing, grading, and/or construction schedule.

DATE	DESCRIPTION
7/20/01	Submit Erosion Control Plan to Napa County.
4/15/02	Receive Approved Erosion Control Plan from Napa County.
5/15/02	Commence clearing and tillage operations.
8/15/02	All sediment retention structures installed.
9/1/02	All structural measures completed, seed and mulch all disturbed areas.

b) The proposed schedule for winterizing the site (generally by October 15 of each year the permit is in effect.)

1. The complete site shall be winterized and all necessary erosion control measures described in the Erosion Control Plan shall be installed by September 1.

c) **The proposed schedule of installation of all interim erosion and sediment control measures, including the stage of completion of such devices at the end of the grading season (generally October 15) of each year the permit will be in effect.**

See Item 10a).

d) **The schedule for installation of permanent erosion and sediment control devices here required.**

See Item 10a).

11. **The estimated cost of implementation of the erosion and sediment control measures.**

a) Typical costs for installing erosion control measures as described in this plan range from $15,000 to $30,000 per acre.

PIÑA VINEYARD MANAGEMENT

LEWIS RANCH

EROSION CONTROL PLAN

STANDARD PROVISIONS

SECTION 1 - SCOPE OF WORK

These specifications cover the construction of the erosion control system for approximately 3.3 acres of vineyard to be developed by Piña Vineyard Management.

Drawings numbered 10014701E, 10014701D, and these Specifications describe in detail the construction of the complete erosion control system. Requests for further information or clarification of the work to be done can be made to John Vicencio at the Napa office of PPI Engineering, phone (707) 253-1806.

All costs for the complete construction of the erosion control system must be included in the bid items, since no other payment will be made outside of the bid items. This includes all costs for moving onto and off of the job site, all equipment, tools, materials, labor, fuel, taxes, and incidentals for furnishing and installing the drainage system.

Piña Vineyard Management does not guarantee that the project being bid will be awarded, and reserves the right to change the quantities of actual work performed as needed with payment made according to the new quantities at the unit price bid.

SECTION 2 - AUTHORITY OF OWNER AND ENGINEER

The property is owned by Anita L. and James E., Sr. Lewis/Greeg Mountain Ranch, LLC. They shall have the final say in the event of a dispute with the Contractor.

The Owner may appoint PPI Engineering (PPI) as the Engineer to perform periodic review of the work. If so appointed, PPI Engineering shall report any unsatisfactory work to the Owner. The Contractor shall be responsible for any engineering fees or repair costs associated with bringing the unsatisfactory work into compliance with the Plans and Specifications.

SECTION 3 - CHANGES IN WORK

Materials and the manner of performance of the work performed in this contract shall be according to the Plans and Specifications. Modifications to the Plans or Specifications shall be agreed upon in writing by the Contractor, Owner, and Engineer before the work in question is performed. Materials and construction methods shall be as specified on the Plans and Specifications. The burden of proof that a given material or method constitutes an equivalent to the one specified will rest with the Contractor.

SECTION 4 - UTILITIES

At least 2 working days before beginning any excavation on the project, the Contractor shall call the Underground Service Alert at 1-800-642-2444 and request field location of the existing utilities.

SECTION 5 - PROSECUTION OF THE WORK

Unless otherwise provided, the project shall commence upon issuance of a Notice to Proceed. The work shall start within ten days thereafter and be diligently prosecuted to completion within 30 days after the Notice to Proceed. If adverse weather conditions require it, the completion date may be extended by the Owner.

SECTION 6 - RESPONSIBILITIES OF THE CONTRACTOR

The Contractor shall be responsible for following all safety laws which may be applicable. Of particular concern are the trench safety regulations issued by CAL-OSHA. The Contractor alone shall be responsible for the safety of his equipment and methods and for any damage or injury which may result from their failure, improper construction, maintenance, or operation.

The Contractor shall also be responsible for ensuring that all permits which are necessary for construction have been obtained and that copies of these permits are maintained onsite at all times.

The Contractor shall keep the work site clean and free of rubbish or debris throughout the project. No rubbish or debris shall be placed in any trench or other excavation. Materials and equipment shall be removed from the site as soon as they are no longer necessary. Upon completion of the work, before final review, the entire work site shall be cleared of equipment, unused materials and rubbish. All costs for cleanup shall be absorbed in the Contractor's Bid.

The Contractor shall, at his own expense, furnish all necessary light, power, pumps, and water necessary for the work.

SECTION 7 - MEASUREMENT AND PAYMENT

Payment shall be made at the unit prices bid according to the actual quantities installed. Measurement of the final quantities shall be the responsibility of the Owner's Engineer.

A final review will be made of the project by the Engineer when it is complete. Any unfinished or unacceptable work noted will be brought to the Contractor's attention verbally and in writing. Final payment will be made upon satisfactory completion of all items noted as needing attention in the final review.

SECTION 8 - GUARANTEE

Suppliers of materials to the job shall provide a guarantee in writing covering those materials for a minimum period of 1 year following their delivery against defects or failure.

Materials delivered to the job site which are deemed unacceptable by the Engineer shall be removed immediately from the job site at no cost to the Owner.

In addition to the guarantees from suppliers, the Contractor shall guarantee the work he performs for a period of two years. Any repairs needed to the system within two years of completion because of faulty workmanship or materials shall be promptly repaired at no expense to the Owner. Any costs incurred by the Owner and/or Engineer within two years of completion because of rubbish or debris placed in a trench or other excavation shall be paid by the Contractor.

Unless otherwise provided in writing, payment by the Owner to the Contractor for installation of this system shall constitute acceptance of all provisions in this document by the Contractor.

PIÑA VINEYARD MANAGEMENT

LEWIS RANCH

EROSION CONTROL PLAN

SPECIAL PROVISIONS

SECTION 1 - SURFACE DRAINAGE PIPELINES

1.1 GENERAL:

Surface drainage pipelines shall be installed to collect surface runoff at low points throughout the project area and transport it to a protected outlet.

1.2 MATERIALS:

Surface drainage pipelines shall be constructed of solid corrugated polyethylene pipe (CPP) as shown on the Plans. Corrugated plastic pipe for use as surface drainage pipelines shall meet the standards of ASTM F667 for nominal sizes of 8 to 24 inches, and SCS 606 Specifications. Bent or damaged pipe shall not be used in the drainage system and shall be removed from the job site.

Pipe connections shall be made with fittings manufactured by the same manufacturer who made the pipe. All connections shall be securely fastened and the resulting connection shall not have gaps greater than 1/8 inch wide.

1.3 INSTALLATION:

The Contractor may use a trencher, or drainage plow with vertical soil displacement or backhoe/excavator for the excavation and placement of the surface drainage pipe as dictated by soil conditions. The operator shall be skillful in laying the tubing. Grade control may be established by visual control with grade stakes set no more than 100 feet apart or by laser control with grade stakes set no more than 200 feet apart.

Construction staking shall be provided by the Owner's Engineer. The slope, alignment, and depth of placement of the tubing shall be as shown on the Plans and as staked in the field. A minimum cover of 4.0 feet must be provided, unless otherwise staked in the field by Engineer.

A gradual variation of no more than 0.1 foot from grade will be allowed where slopes are 2% or less. Where slopes are greater than 2%, a gradual variation of no more than 0.2 foot from grade will be allowed.

No reverse grade will be allowed. A gradual variation of no more than 1 foot from design alignment is allowed.

Stretching of the tubing should be avoided during installation. No more than 10% stretch will be allowed.

1.4 BEDDING AND BACKFILL:

Surface drainage piping may be backfilled with select native material. Pipelines shall be hand shaded. Backfill material within 6 inches of the pipeline shall be free of rocks and dirt clods larger than 2 inches in size and shall be hand-tamped as necessary to ensure no voids are present. The trench bottom shall be continuous, firm, relatively smooth, and free of rocks or other objects larger than 1 inch.

Rocks or clods shall not be allowed to fall upon or otherwise strike the pipe during any phase of construction.

Cobbles and rocks may be present on the project site. The Contractor shall take necessary actions to work around the cobbles and rocks at his own expense.

Final backfill shall be placed and spread in approximately uniform layers to fill the trench completely. Rolling equipment or heavy tampers shall not be used to consolidate backfill.

Where pipe is installed under all-weather roads, backfill shall be Class II Aggregate Base compacted to 90% per ASTM D-1557. Road surface shall be regraded as necessary to match original conditions.

SECTION 2 - STANDARD DROP INLETS

2.1 GENERAL:

Drop inlets shall be furnished and installed by the Contractor in the locations shown on the plans and as staked in the field by the Engineer, according to the drop inlet detail. The dimensions of the riser and connector pipeline shall be as shown on Detail 1, Sheet 2. A grate shall be installed over the top of each drop inlet.

2.2 MATERIALS:

Drop inlet risers shall be galvanized, 14 gauge corrugated metal pipe (CMP) of the diameter shown on the Plans and/or Details.

Grates shall be fabricated of welded 1/2" diameter steel rebar 4" on center both ways.

Concrete for the bottom of the inlet shall be Portland Cement concrete, 2000 psi minimum compressive strength.

2.3 INSTALLATION:

Standard Drop inlets shall be constructed as shown on the detail sheet and as staked in the field by the Engineer. Connector pipes shall be mortared in place to form a watertight seal. Grates shall be bolted or locked to drop inlet riser. Backfill around the inlet shall be compacted sufficiently by hand or water-jetted such that excessive settlement does not occur. The area surrounding and downhill from the inlet shall be graded such that water is directed to the inlet.

SECTION 3 – CUTOFF COLLARS

3.1 GENERAL:

Cutoff collars shall be installed on all solid pipelines with slopes greater than 5%. Spacing between collars shall be as specified in the table below or as staked in the field by the Engineer.

Ground Slope (%)	Spacing (Feet)
0-5	None Required
6-15	200
16 and greater	100

3.2 MATERIALS:

Cutoff collars shall be constructed of Portland Cement Concrete, 2000-psi minimum compressive strength, in the configuration shown in Detail 5, Sheet 2. A watertight seal shall be formed between the cutoff wall and the pipeline.

Gravel envelope material may be volcanic rock. It shall be free of organic matter, clay, or other material that could decrease its hydraulic conductivity with time. One hundred percent of the material must pass the 1-1/2" clear square openings. Ninety to one hundred percent must pass through the 3/4" clear square openings. At least 50% must pass through the 3/8" clear square openings. No more than 15% may pass the #20 U.S. Standard Sieve. At least 8% must pass the #60 U.S. Standard Sieve. No more than 3% may pass the #200 U.S. Standard Sieve.

Gravel envelope material may also be a blend of clean hard sand and gravel. It shall be free of organic matter, clay, or other material that would decrease its hydraulic conductivity with time. The material shall be well graded. The coefficient of uniformity (D60/D10) must be greater than 4, and the coefficient of curvature ((D30^2/(D10 x D60)) must be between 1 and 3. One hundred percent must pass the 1/2" clear square openings. No more than 5% may pass the #100 U.S. Standard Sieve. An example of this material would be 80% 3/8 crushed rock and 20% washed concrete sand.

3.3 INSTALLATION:

Cutoff collars shall extend a minimum of 1.0 foot into native, undisturbed material on the sides and bottom of the trench and extend 1.5 feet above the top of the pipe. Cutoff collars shall be a minimum of 8 inches thick. The wall of the collar shall be poured against undisturbed soil. Backfill shall be placed around wall and hand compacted to ensure no voids are present.

The Contractor shall perforate the pipe with 1/8-inch diameter holes a minimum of 3 feet upstream of the cutoff collar to allow water to infiltrate back into the drainline. This perforated section shall be backfilled with approved envelope material as specified in Section 3.2 above. Gravel envelope shall be a minimum of 3 inches thick on all sides of the pipe.

Contractor shall take precautions to ensure that concrete does not flow through perforations in amounts that would cause any reduction in flow capacity of pipe.

SECTION 4 – VINEYARD DIVERSIONS

4.1 GENERAL:

Vineyard diversions shall be constructed at the locations shown on the Plans and as staked in the field by the Engineer. Vineyard diversions shall be constructed within the vineyard area to minimize erosion by collecting and diverting surface runoff to a protected outlet. Vineyard diversions shall be constructed as permanent structures and shall be maintained to last the lifetime of the vineyard.

4.2 CONSTRUCTION:

Vineyard diversions shall be constructed as shown in Detail 8, Sheet 2. Flowline slope of vineyard diversions shall be between 3% and 5% wherever possible. Vinerow direction shall be selected to maximize the number of diversions within this range. Where slopes exceed 5%, flowline shall be protected with rock, turf reinforcement, or other suitable method by the Vineyard Manager.

Vineyard diversions shall be cut into native soil. Fill placed on downstream side of ditch to form section shall be moisture conditioned and compacted in order to achieve 90% relative compaction per ASTM D1557.

SECTION 5 – ROCK LEVEL SPREADERS

5.1 GENERAL:

Rock level spreaders shall be installed at the locations shown on the Plans as staked in the Field by the Engineer. Rock level spreaders shall be constructed to uniformly spread water onto the ground surface.

5.2 MATERIALS:

Rock used in the construction of rock level spreaders shall be Cal Trans Class "Facing" as per Cal Trans Standard Specifications Section 72-2. Field Rock generated onsite may be used if it substantially conforms to this specification.

5.3 INSTALLATION:

Rock level spreaders shall be constructed as shown on Detail 4, Sheet 2 of the Plans. The rock shall be placed on undisturbed natural sod. The centerline of the rock level spreader shall be perpendicular to the contour. The downstream edge of the Rock level spreader shall be constructed on contour to ensure the water is evenly distributed.

SECTION 6 - GRAVITY OUTLETS

6.1 GENERAL:

Gravity outlets will be required on pipelines that discharge into excavated channels, swales, or other naturally occurring channels. Gravity outlets shall be furnished according to the sizes indicated on the plan map and as staked in the field by the Engineer.

6.2 MATERIALS:

Gravity outlets shall be constructed of Corrugated Polyethylene Pipe as described in these specifications. The outlet shall be of the same diameter as the pipeline. Rip rap shall conform to Cal Trans Standard Specification 72-5.02, Class Cobble. Rodent guards shall be manufactured by Agri Drain Corporation of Adair, Iowa or approved alternate.

6.3 INSTALLATION:

Installation of gravity outlets shall be performed such that disturbance to the channel is minimized. Rip rap shall be placed around the outlet and downslope sufficient to prevent concentrated water from eroding the natural grade. Rip rap shall be placed such that it does not encroach into the natural channel cross section. Extent of rip rap shall be the minimum necessary to protect natural conditions.

Disturbed areas surrounding the gravity outlet shall be seeded with approved seed mix, straw mulched, and irrigated as needed to establish vegetation.

The Contractor shall ensure that copies of all permits issued by regulatory agencies with jurisdiction over the project are onsite at all times. The Contractor shall comply with all provisions of such permits.

SECTION 7 - DIVERSION DITCHES

7.1 GENERAL:

Grading shall be performed above the vineyard areas at the locations shown on the Plan to form diversion ditches as shown on the Plans and Detail 9, Sheet 2 to direct water into a drop inlet.

7.2 MATERIALS & INSTALLATION:

Diversion ditches shall be cut into native material to the extent possible. Fill material shall be moisture conditioned and compacted to 90% relative compaction per ASTM D1557. Side slopes of the ditches shall be 2:1 (Horizontal:Vertical) as shown on Detail 9, Sheet 2. The ditches shall be 24 inches deep, minimum. Flowline slopes shall be between 3 and 5% and grass lined. Ditches shall be seeded and irrigated prior to September 1st of the year of construction. Irrigation will continue as necessary to establish and maintain adequate vegetative cover. Where flowline slopes exceed 5%, the ditch shall be lined with 6 to 8 inch diameter angular rock. A non-woven filter fabric (Mirafi 140N or equal) shall be placed between the ground surface and the rock. The rock shall be keyed into the sides of the ditch such that they do not obstruct or reduce the cross section of the channel.

SECTION 8 - WATERBARS

8.1 GENERAL:

Waterbars as shown in Detail 2, Sheet 2 shall be installed each fall by the Owner. Waterbars shall be constructed such that water is directed off of vineyard avenues into drop inlets or vegetated vineyard areas. Waterbars shall be installed annually as shown on the site plan and 100 feet apart maximum on slopes exceeding 15%.

SECTION 9 - TEMPORARY MEASURES

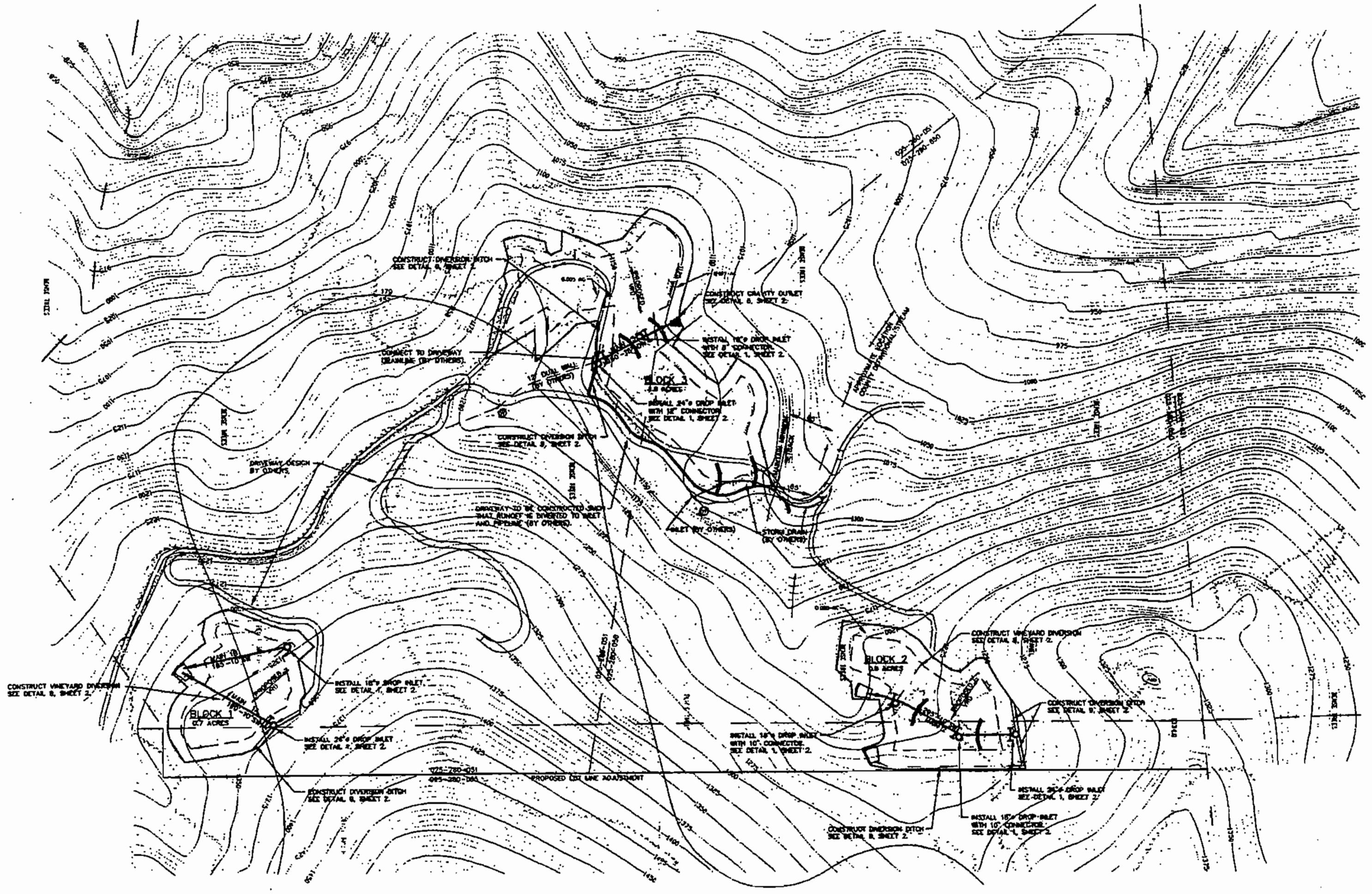
9.1 GENERAL:

Temporary erosion control measures shall be constructed by the Owner. These measures can include water bars, straw bale dikes, and other practices as needed. The measures shall be constructed in conformance with the detail drawings and maintained in a functional condition throughout the rainy season.

SECTION 10 - MAINTENANCE

10.1 GENERAL:

The erosion control measures described in these specification and shown on the plans and details require regular maintenance in order to function as intended. Vineyard management personnel



GRAPHIC SCALE

(IN FEET)
1 inch = 100 ft.

CONTOUR INTERVAL = 5 FEET

TOPOGRAPHIC MAPPING BY MICHAEL BROOKS & ASSOCATES
DATE OF PHOTOGRAPHY: 4-21-00

VICINITY MAP

USGS CHILES VALLEY QUADRANGLE
TOWNSHIP 8 N., RANGE 4 W.
SCALE: 1" = ±2000'

NOTES:

1. OWNERS: ANITA L. AND JAMES E. LEWIS, SR.
813 SIGNORELLI CIRCLE
ST. HELENA, CA 94574

GREGG MOUNTAIN RANCH, LLC

2. SITE ADDRESS: NO SITUS
APN: 025-280-050
025-280-061
025-240-021

3. REQUESTS FOR FURTHER INFORMATION, CLARIFICATION OF WORK TO BE DONE, OR INSPECTION INFORMATION CAN BE MADE TO DAVIE PIÑA AT PIÑA VINEYARD MANAGEMENT, PHONE (707) 944-2229.

4. ACCESS TO PROJECT IS FROM CHILES/POPE VALLEY ROAD. THE DRIVEWAY IS GATED AND LOCKED. ADMITTANCE IS AVAILABLE ON REQUEST.

5. THE UNNAMED BLUE LINE STREAM NEAR THE SOUTHEAST CORNER OF THE PROJECT FLOWS SOUTHWEST TO CHILES CREEK.

6. SEE APPENDIX A FOR PHOTO DOCUMENTATION OF PRE-PROJECT CONDITIONS.

7. THE SITE HAS NO AREAS WITH SERIOUS EROSION POTENTIAL OR PROBLEMS. SEE APPENDIX B FOR GEOLOGIC STUDIES.

8. NAPA COUNTY SCS SOIL SURVEY MAPS THE PROJECT AREA AS LODO-MAYMEN-FELTON ASSOCIATION, 30-70% SLOPES; SOBRANTE LOAM, 30-50% SLOPES.

9. THE VINEYARD AREA TO BE DEVELOPED LIES ON MODERATELY SLOPING GROUND RANGING FROM 12 TO 35 PERCENT. THE AVERAGE SLOPE IS 19%. SEE APPENDIX D FOR AVERAGE SLOPE CALCULATIONS AND CROSS SECTIONS.

10. EXISTING VEGETATION CONSISTS OF ANNUAL GRASSES WITH MIXED TREES AND SHRUBS. SEE APPENDICES E AND F FOR TREE IDENTIFICATION AND VEGETATION RETENTION CALCULATIONS, RESPECTIVELY.

11. VINEROW SPACING AND IRRIGATION METHODS ARE UNKNOWN AT THIS TIME.

12. PERMANENT COVER CROP (NO-TILL):

ALL DISTURBED AREAS AND ALL AVENUES SHALL BE SEEDED WITH A PERMANENT, NO-TILL COVER CROP PRIOR TO SEPTEMBER 1 OF THE YEAR OF CONSTRUCTION. THIS COVER CROP WILL BE GENERATED BY SEEDING WITH DWARF BARLEY AT RATE OF 50 LBS/ACRE AND THE FOLLOWING MIX:

VARIETY	RATE (LBS/ACRE)
BLANDO BROME	8
ZORRO FESCUE	12
ROSE CLOVER	6

THE PERMANENT COVER CROP WILL BE MANAGED EACH YEAR SUCH THAT ANY AREAS WHICH HAVE LESS THAN 70% VEGETATIVE COVER WILL BE RESEEDED WITH THE ABOVE MIX AND MULCHED UNTIL ADEQUATE COVERAGE IS ACHIEVED

THE PERMANENT COVER CROP SHALL BE MOWED ONLY AND SHALL NOT BE DISCED.

13. STRAW MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS. STRAW MULCH SHALL BE APPLIED AT A RATE OF 3000 LBS/ACRE BY SEPTEMBER 1 OF THE YEAR OF CONSTRUCTION.

14. UNLESS OTHERWISE NOTED, ALL AVENUES SHALL CONFORM TO THE NATURAL GRADE AND SHALL BE STRAW MULCHED EACH YEAR PRIOR TO THE RAINY SEASON.

15. AT LEAST 48 HOURS PRIOR TO EXCAVATING, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT (U.S.A.) AT 1-800-642-2444 IN ORDER TO LOCATE EXISTING UTILITIES.

16. PROPERTY LINES AS SHOWN ARE APPROXIMATE. OWNER SHALL BE RESPONSIBLE FOR SURVEYING PROPERTY LINE(S) AS NECESSARY PRIOR TO ANY SITE DISTURBANCE.

17. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS. IT IS THE OWNER'S RESPONSIBILITY TO INSTALL ALL STRUCTURAL MEASURES AS SHOWN ON THE SITE PLAN AND DETAILS AND AS DESCRIBED IN THE SPECIFICATIONS WITHIN THE TIME FRAMES AS SPECIFIED FOR THIS PROJECT. ANY DEVIATION FROM THESE PLANS MUST BE REVIEWED AND APPROVED BY NAPA COUNTY CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT. IT IS THE OWNERS RESPONSIBILITY TO INITIATE THIS MODIFICATION PROCESS.

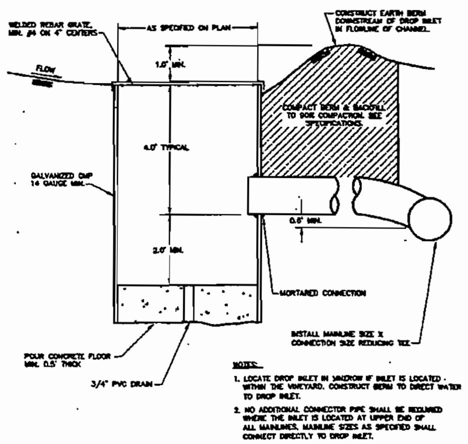
LEGEND

- APPROXIMATE PROPERTY BOUNDARY
- PROPOSED VINEYARD DEVELOPMENT AREA
- PROPOSED BLOCK BOUNDARY AREA
- U.S.G.S. BLUE LINE STREAM
- PROPOSED SURFACE DRAINAGE LINE
- PROPOSED CUTOFF COLLAR (SEE DETAIL 5, SHEET 2)
- PROPOSED STRAW BALE DIKE (SEE DETAIL 3, SHEET 2)
- PROPOSED ROCK LEVEL SPREADER (SEE DETAIL 4, SHEET 2)
- AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER.
- EXISTING WELL (APPROXIMATE LOCATION)
- DW — DUAL WALL CORRUGATED POLYETHYLENE PIPE
- SW — SINGLE WALL CORRUGATED POLYETHYLENE PIPE
- PROPOSED VRD — PROPOSED VINEROW DIRECTION
- EXISTING ROAD
- 179 / 157 — SOIL TYPE BOUNDARY

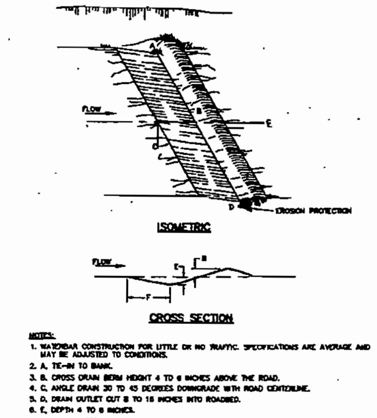
USDA SOIL CLASSIFICATIONS

157	LODO-MAYMEN-FELTON ASSOCIATION, 30-70% SLOPES
179	SOBRANTE LOAM, 30-50% SLOPES

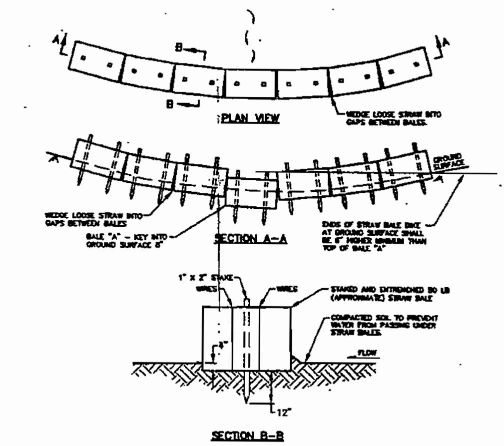
PPI ENGINEERING	PIÑA VINEYARD MANAGEMENT LEWIS RANCH			
	EROSION CONTROL PLAN			
	SITE MAP			
	DESIGN ENGINEER: J. BUSHEY, J. VICENCIO			
JOB NO: 10014701	SCALE:	DRAWN BY:	DATE:	SHEET: 1
DWG. NO: 10014701E	AS SHOWN	JRJ/SD	7-18-01	OF: 2



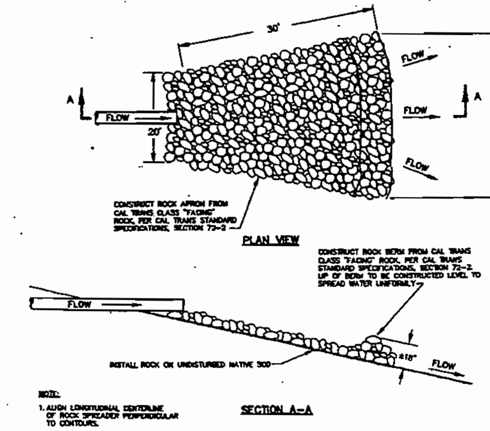
1/2 STANDARD DROP INLET
N.T.S.



2/2 WATERBAR FOR VEHICULAR TRAFFIC
N.T.S.



3/2 STRAW BALE DIKE INSTALLATION
N.T.S.



4/2 ROCK LEVEL SPREADER
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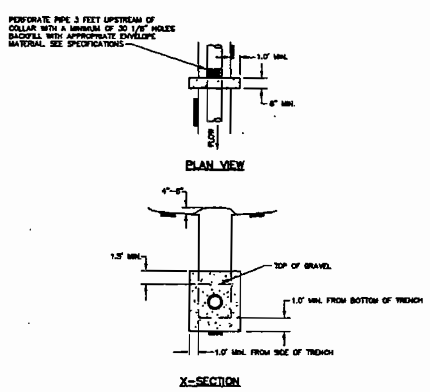
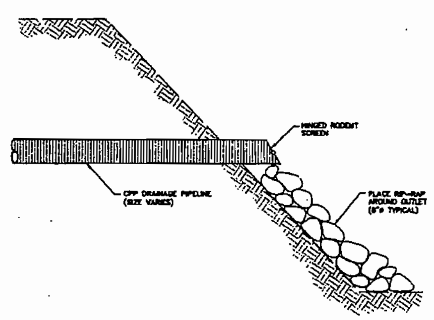
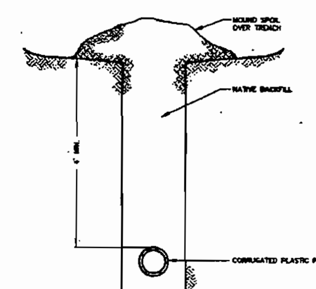


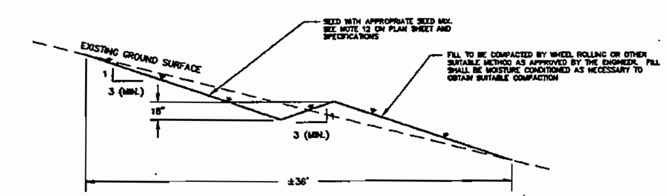
5/2 CUTOFF COLLAR
N.T.S.



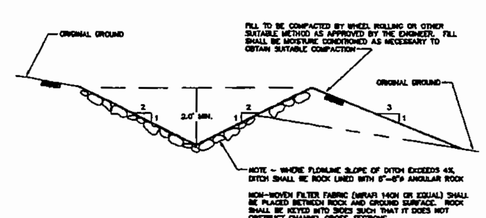
6/2 GRAVITY OUTLET
N.T.S.



7/2 SURFACE DRAINAGE PIPELINE
N.T.S.



8/2 VINEYARD DIVERSION TYPICAL X-SECTION
N.T.S.



9/2 DIVERSION DITCH TYPICAL X-SECTION
N.T.S.

DETAILS
- STANDARD DROP INLET
- WATERBAR FOR VEHICULAR TRAFFIC
- STRAW BALE DIKE INSTALLATION
- ROCK LEVEL SPREADER
- CUTOFF COLLAR
- GRAVITY OUTLET
- SURFACE DRAINAGE PIPELINE
- VINEYARD DIVERSION TYPICAL X-SECTION
- DIVERSION DITCH TYPICAL X-SECTION

REGISTERED PROFESSIONAL ENGINEER — NO. 40931 — CIVIL — STATE OF CALIFORNIA

PIÑA VINEYARD MANAGEMENT
LEWIS RANCH

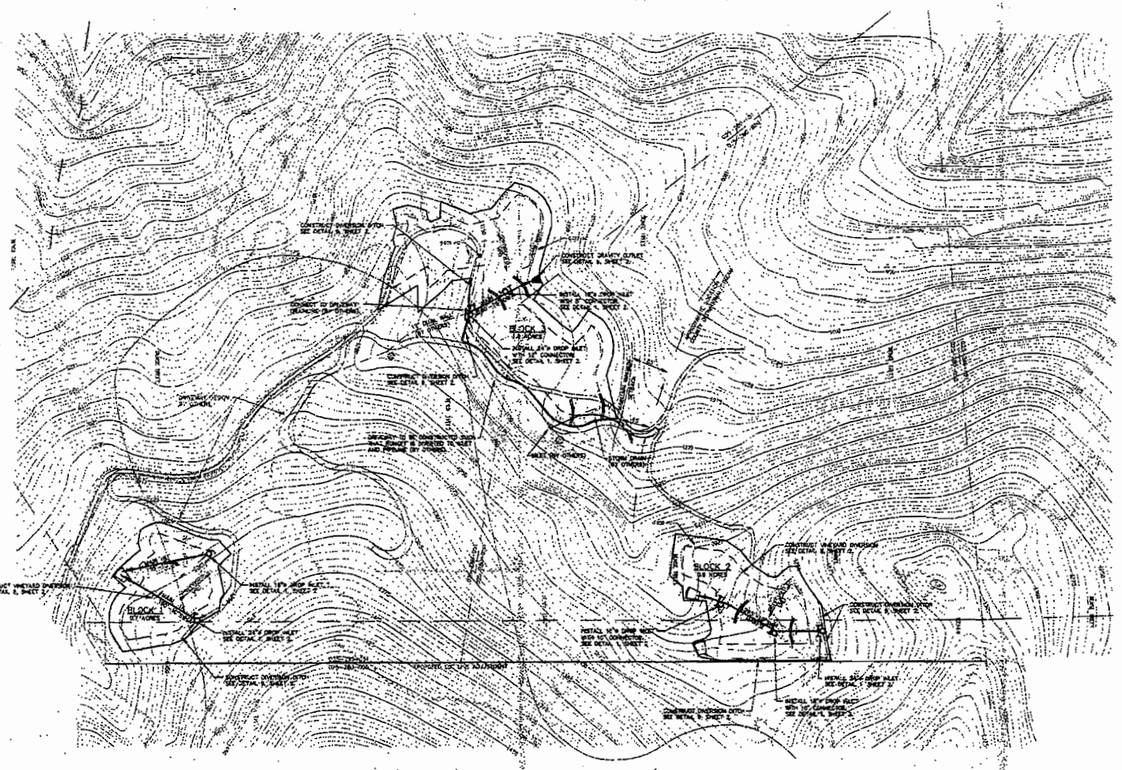
EROSION CONTROL PLAN

DETAILS

PPI ENGINEERING

DESIGN ENGINEER: J. BUSHEY & J. VICENCIO

JOB NO: 10014701	SCALE:	DRAWN BY:	DATE:	SHEET: 2
DWG. NO: 10014701D	AS SHOWN	JRJ	7/18/01	OF: 2



TOPOGRAPHIC MAPPING BY MICHAEL BROOKS & ASSOCIATES
DATE OF PHOTOGRAPHY: 4-21-00

VICINITY MAP

USGS CHILES VALLEY QUADRANGLE
TOWNSHIP 8 N., RANGE 4 W
SCALE: 1" = ±2000'

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6. SEE APPENDIX A FOR PHOTO DOCUMENTATION OF PRE-PROJECT CONDITIONS.

7. THE SITE HAS NO AREAS WITH SERIOUS EROSION POTENTIAL OR PROBLEMS. SEE APPENDIX B FOR GEOLOGIC STUDIES

8. NAPA COUNTY SCS SOIL SURVEY MAPS THE PROJECT AREA AS LODO-MAYMEN-FELTON ASSOCIATION, 30-70% SLOPES; SOBRANTE LOAM, 30-50% SLOPES.

9. THE VINEYARD AREA TO BE DEVELOPED LIES ON MODERATELY SLOPING GROUND RANGING FROM 12 TO 35 PERCENT. THE AVERAGE SLOPE IS 19%. SEE APPENDIX D FOR AVERAGE SLOPE CALCULATIONS AND CROSS SECTIONS.

10. EXISTING VEGETATION CONSISTS OF ANNUAL GRASSES WITH MIXED TREES AND SHRUBS. SEE APPENDICES E AND F FOR TREE IDENTIFICATION AND VEGETATION RETENTION CALCULATIONS, RESPECTIVELY.

11. VINEROW SPACING AND IRRIGATION METHODS ARE UNKNOWN AT THIS TIME.

12. PERMANENT COVER CROP (NO-TILL):

    ALL DISTURBED AREAS AND ALL AVENUES SHALL BE SEEDED WITH A PERMANENT, NO-TILL COVER CROP PRIOR TO SEPTEMBER 1 OF THE YEAR OF CONSTRUCTION. THIS COVER CROP WILL BE GENERATED BY SEEDING WITH DWARF BARLEY AT RATE OF 50 LBS/ACRE AND THE FOLLOWING MIX:

VARIETY	RATE (LBS/ACRE)
BLANDO BROME	6
ZORRO FESCUE	12
ROSE CLOVER	5

    THE PERMANENT COVER CROP WILL BE MANAGED EACH YEAR SUCH THAT ANY AREAS WHICH HAVE LESS THAN 70% VEGETATIVE COVER WILL BE RESEEDED WITH THE ABOVE MIX AND MULCHED UNTIL ADEQUATE COVERAGE IS ACHIEVED.

    THE PERMANENT COVER CROP SHALL BE MOWED ONLY AND SHALL NOT BE DISCED.

13. STRAW MULCH SHALL BE APPLIED TO ALL DISTURBED AREAS. STRAW MULCH SHALL BE APPLIED AT A RATE OF 3000 LBS/ACRE BY SEPTEMBER 1 OF THE YEAR OF CONSTRUCTION.

14. UNLESS OTHERWISE NOTED, ALL AVENUES SHALL CONFORM TO THE NATURAL GRADE AND SHALL BE STRAW MULCHED EACH YEAR PRIOR TO THE RAINY SEASON.

15. AT LEAST 48 HOURS PRIOR TO EXCAVATING, THE CONTRACTOR SHALL CALL UNDERGROUND SERVICES ALERT (U.S.A.) AT 1-800-642-2444 IN ORDER TO LOCATE EXISTING UTILITIES.

16. PROPERTY LINES AS SHOWN ARE APPROXIMATE. OWNER SHALL BE RESPONSIBLE FOR SURVEYING PROPERTY LINE(S) AS NECESSARY PRIOR TO ANY SITE DISTURBANCE.

17. THE OWNER SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS. IT IS THE OWNER'S RESPONSIBILITY TO INSTALL ALL STRUCTURAL MEASURES AS SHOWN ON THE SITE PLAN AND DETAILS AND AS DESCRIBED IN THE SPECIFICATIONS WITHIN THE TIME FRAMES AS SPECIFIED FOR THIS PROJECT. ANY DEVIATION FROM THESE PLANS MUST BE REVIEWED AND APPROVED BY NAPA COUNTY CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT. IT IS THE OWNERS RESPONSIBILITY TO INITIATE THIS MODIFICATION PROCESS.

LEGEND

- — — — APPROXIMATE PROPERTY BOUNDARY
- ——— PROPOSED VINEYARD DEVELOPMENT AREA
- — — — PROPOSED BLOCK BOUNDARY AREA
- — · · — U.S.G.S. BLUE LINE STREAM
- ——→ PROPOSED SURFACE DRAINAGE LINE
- ——I—— PROPOSED CUTOFF COLLAR (SEE DETAIL 5, SHEET 2)
- ⌣ PROPOSED STRAW BALE DIKE (SEE DETAIL 3, SHEET 2)
- ▽ PROPOSED ROCK LEVEL SPREADER (SEE DETAIL 4, SHEET 2)
- ▨ AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER.
- ⊕ EXISTING WELL (APPROXIMATE LOCATION)
- DW DUAL WALL CORRUGATED POLYETHYLENE PIPE
- SW SINGLE WALL CORRUGATED POLYETHYLENE PIPE
- ←→ PROPOSED VINEROW DIRECTION
- ═══ EXISTING ROAD
- ——— SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS

163	LODO-MAYMEN-FELTON ASSOCIATION, 30-70% SLOPES
175	SOBRANTE LOAM, 30-50% SLOPES

REGISTERED PROFESSIONAL ENGINEER
STATE OF CALIFORNIA

PIÑA VINEYARD MANAGEMENT
LEWIS RANCH

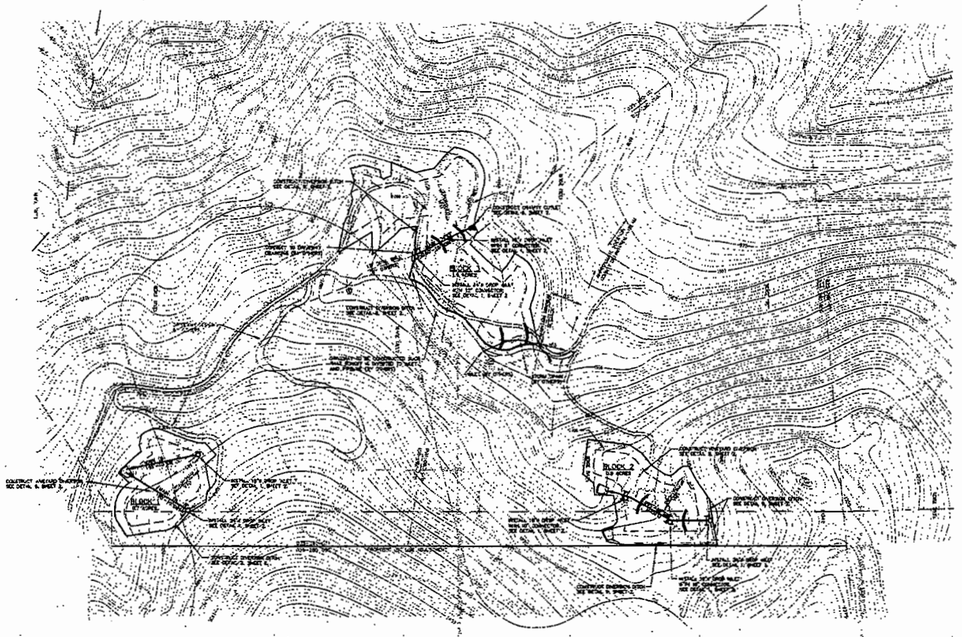
EROSION CONTROL PLAN

SITE MAP

PPI

DESIGN ENGINEER: J. BUSHEY, J. VICENCIO

JOB No.: 10026701
SCALE:
DRAWN BY:
DATE:
SHEET:



CONTOUR INTERVAL = 5 FEET

TOPOGRAPHIC MAPPING BY MICHAEL BROOKS & ASSOCIATES
DATE OF PHOTOGRAPHY: 4-21-00

VICINITY MAP

USGS CHILES VALLEY QUADRANGLE
TOWNSHIP 8 N., RANGE 4 W.
SCALE: 1" = 4000'

NOTES:

1. OWNER: ANITA L. AND JAMES E. LEWIS, SR.
   [illegible] SCHOOL[illegible] CIRCLE
   ST. HELENA, CA 94574

   GREEN MOUNTAIN RANCH, LLC

2. SITE ADDRESS: NO SITUS
   APN: 025-280-050
   025-280-051
   025-240-021

3. REQUESTS FOR FURTHER INFORMATION, CLARIFICATION OF WORK TO BE DONE, OR INSPECTION INFORMATION CAN BE MADE TO DAVE PIÑA AT PIÑA VINEYARD MANAGEMENT, PHONE (707) 944-2229.

4. ACCESS TO PROJECT IS FROM CHILES/POPE VALLEY ROAD. THE DRIVEWAY IS GATED AND LOCKED. ADMITTANCE IS AVAILABLE ON REQUEST.

5. THE UNNAMED BLUE LINE STREAM NEAR THE SOUTHEAST CORNER OF THE PROJECT FLOWS SOUTHWEST TO CHILES CREEK.

6. SEE APPENDIX A FOR PHOTO DOCUMENTATION OF PRE-PROJECT CONDITIONS.

7. THE SITE HAS NO AREAS WITH SERIOUS EROSION POTENTIAL OR PROBLEMS. SEE APPENDIX B FOR GEOLOGIC STUDIES.

8. NAPA COUNTY SCS SOIL SURVEY MAPS THE PROJECT AREA AS LODO-MAYMEN-FELTON ASSOCIATION, 30-75% SLOPES, SOBRANTE LOAM, 30-50% SLOPES.

9. THE VINEYARD AREA TO BE DEVELOPED LIES ON MODERATELY SLOPING GROUND RANGING FROM [illegible] TO 35 PERCENT. THE AVERAGE SLOPE IS [illegible]. SEE APPENDIX D FOR AVERAGE SLOPE CALCULATIONS AND CROSS SECTIONS.

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SPECIES	RATE (LBS/ACRE)
BLANDO BROME	8
ZORRO FESCUE	12
ROSE CLOVER	6

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LEGEND

— · —	APPROXIMATE PROPERTY BOUNDARY
——	PROPOSED VINEYARD DEVELOPMENT AREA
— — —	PROPOSED BLOCK BOUNDARY AREA
— · · —	U.S.G.S. BLUE LINE STREAM
——→	PROPOSED SURFACE DRAINAGE LINE
—I—	PROPOSED CUTOFF COLLAR (SEE DETAIL 5, SHEET 2)
⌣	PROPOSED STRAW BALE DIKE (SEE DETAIL 3, SHEET 2)
▢	PROPOSED ROCK LEVEL SPREADER (SEE DETAIL 4, SHEET 2)
	AREA WHERE GROUND SLOPE IS 30 PERCENT OR GREATER
	EXISTING WELL (APPROXIMATE LOCATION)
DW	DUAL WALL CORRUGATED POLYETHYLENE PIPE
SW	SINGLE WALL CORRUGATED POLYETHYLENE PIPE
	PROPOSED VINEROW DIRECTION
═══	EXISTING ROAD
	SOIL TYPE BOUNDARY

USDA SOIL CLASSIFICATIONS

157	LODO-MAYMEN-FELTON ASSOCIATION, 30-75% SLOPES
175	SOBRANTE LOAM, 30-50% SLOPES

STATE OF CALIFORNIA

PIÑA VINEYARD MANAGEMENT
LEWIS RANCH

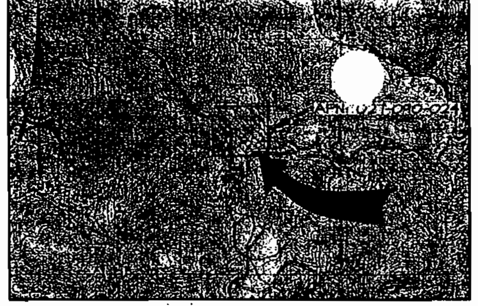
EROSION CONTROL PLAN
SITE MAP

PPI

DESIGN ENGINEER: J. BUSHEY, J. VICENCIO

JOB NO. 800[illegible]	SCALE:	DRAWN BY:	DATE:	SHEET
DWG. NO. [illegible]	AS SHOWN	JRV/SD	7-[illegible]-01	1 OF [illegible]

#6



PORTION OF RUTHERFORD 7.5 MIN. QUAD

Vicinity Map

1" = 2000'

ABBOTT VINEYARDS

EROSION CONTROL PLAN

SHEET INDEX

Narrative

This project consists of the development of approximately 10.8 gross acres of new vineyard, as part of a timber conversion, within APN 027-090-024, a parcel totaling 32.31 acres with access to the proposed vineyard from Wall Road. Existing ground slopes in the project area range from 6 % to 40 %. The slopes over 30 % are within small areas scattered throughout the vineyard blocks and total ± 1.28 acres. The vineyard will be planted on terraces, constructed in accordance with the protocol described under "Special Notes-Terraces" (Sheet 3), and in accordance with the structural plans, Sheets S1 and S2. A comprehensive culverting system shall be installed to collect stormwater at all low points, with discharge at locations shown in the plan. Water discharged from the culvert under Wall Road will be collected in a rock pit and discharged in the natural depression in Block A. Stormwater from Block B will be discharged into the same depression within Block A.

A new drip irrigation system will be installed to irrigate the vineyard and micro-sprayer system will be installed to irrigate the cover crop. An existing spring and a proposed well will serve as the water source. Water use on the new vineyard is expected to be ± 2.3 AF per annum.

Rock Disposal shall be accomplished by construction of rock walls and other erosion control features.

There is one blueline stream running through the parcel, and setbacks have been provided pursuant to Napa County Conservation Regulations.

Vegetation Removal is in accordance with the Timber Harvest Plan/Conversion. All organic material to be burned shall be stacked at strategic locations within the cleared areas. Burning of the organic material only shall take place after obtaining approval from all the governing agencies.

Soils within the block boundaries have been classified in the USDA Soil Conservation Service's, Napa County Soil Survey, as SCS#140, Forward gravelly loam, 30 to 75% slope, with and erosion hazard of high to very high, and SCS#102, Forward-Kidd complex 30 to 50% slope, with an erosion hazard of moderate. Given the existing slopes, the soils within the project site are more properly classified as SCS#139, Forward gravelly loam, 9 to 30% slope, with an erosion hazard of slight to moderate.

Temporary Erosion Control Measures consist of the installation of silt fence and the application of straw mulch. The installation of all silt fence shall be completed in accordance with the appropriate Detail at all locations as shown on the Plan Sheet. Fiber rolls may be used in lieu of silt fence, and installed in accordance with manufacturers recommendations. A straw mulch cover shall be applied over all open and/or disturbed and seeded areas at the rate specified in the seeding requirements.

Permanent Erosion Control Measures consist of the following:

1) Installation of water bars where shown on the plan in accordance with the appropriate detail.
2) Construction of rock roads with rock checks and rolling rock dips in accordance with the appropriate detail and special notes, Sheet 2.
3) Construction of rock retaining walls in accordance with the structural plans, Sheets S1 and S2.
4) Construction of a rock fill with a 12" CPP subdrain in the north end of the drainage running through Block C.
5) Level spreaders at storm flow discharge points shall be constructed where shown on the plan, in accordance with detail 6, Sheet 3.
6) A winter cover crop shall be planted annually within the entire vineyard area, including perimeter and interior avenues, each year after harvest. The vineyard shall be seeded, mulched, fertilized and pre-irrigated prior to each rainy season. Irrigation shall be continuous through germination until onset of winter rains. This annual cover crop may be strip sprayed using springtime applications of "contact" sprays. NO PREEMERGENT SPRAYS SHALL BE USED. The benches may be disked annually. Prior to disking, the condition of the cover crop shall be evaluated, and all weak spots shall be noted for future retreatment as necessary. Treatments may include soil amendments and evaluation of seed mix and/or fertilizer may be necessary. This method is equivalent to a 60% ground cover.

Project Notes

APN: 027-090-024

Owner: John M. Abbott

Contact Person:

John Abbott	Scott Butler
961 Champion Lane	13333 Low Gap Road
Deer Park, CA 94576	Ukiah, CA 94582
(707) 963-6147	(707) 468-8468

Implementation Schedule: The vineyard planting will be completed over several years, beginning with the timber harvest and land stabilization in 2006. As work progresses, some areas of the vineyard may be in different stages of development from other areas. The development schedule is as follows:

Year 1	Logging, clearing, rock and root removal, stack vegetation, etc. Winterization, consisting of seeding and mulching, shall be complete by October 1st. Irrigation shall begin no later than October 1st and shall continue until the onset of winter rains adequate to sustain cover crop growth.
Year 2	Vineyard layout, staking, and construction of rockery walls and benched terraces. After construction, the benches shall be shaped, tilled and winterized. Seeding and mulching shall be completed on all finished terraces by September 1st. Irrigation shall begin no later than September 1st, and shall continue until the onset of winter rains. Construction of terraces may continue until October 1st, but no more than 300' may be constructed without seeding and mulching. Terraces, finished after September 1st shall be put into the irrigation scheduling immediately after completion. Construction of rockery walls and terraces shall terminate on October 1st, and the entire site shall be winterized by October 15th, and irrigation shall continue until the onset of winter rains adequate to sustain cover crop growth.
Year 3	Installation of the drip system and planting of grapevines. The terrace benches and ramps may be tilled to create a planting bed, and to re-shape the terraces to correct land movement which occurred during the winter. After planting, the benches and ramps may be tilled to create a seed bed for the winter crop. The benches and ramps shall be seeded and mulched by September 1st. Irrigation of the cover crop shall begin no later than September 15th, and shall continue until the onset of winter rains adequate to sustain cover crop growth.
Year 4	The cover crop shall be evaluated, and it may be mowed. Weak areas, and any areas damaged by farming practices or other vineyard activities, shall be treated as required, and irrigation of the cover crop shall begin no later than September 15th, and shall continue until the onset of winter rains.
Year 5	Normal cultural practices shall begin, including tilling of all terrace benches and ramps. Vineyard avenues and turnspaces shall not be tilled, but they may be mowed. The annual winter cover crop shall be seeded and mulched by September 15th. Cover crop irrigation shall begin no later than September 15th in non-producing vineyard, and immediately after harvest in producing vineyard. The 18" (min.) along the inside of all ramps shall also be irrigated, beginning no later than September 15th. In either case, irrigation shall continue until the onset of winter rains adequate to sustain cover crop growth.
Year 6+	Continue normal cultural practices. Each year, the winter cover crop shall be evaluated. Weak and damaged areas shall be treated as required. The annual winter cover crop shall be seeded and mulched by September 15th. Cover crop irrigation shall begin no later than September 15th in non-producing vineyard, and immediately after harvest in producing vineyard. The 18" (min.) along the inside of all ramps shall also be irrigated, beginning no later than September 15th. In either case, irrigation shall continue until the onset of winter rains adequate to sustain cover crop growth.

Seeding Requirements: All exposed or disturbed soils shall be seeded. Seed and fertilizer shall be applied hydraulically or broadcast at the rates specified below:

Napa Valley Ag Supply	Annual Rye	45%
"Napa Valley Erosion"	Barley	45%
mix @ 100 lbs/ac	Crimson Clover	10%

Fertilizer Ammonium phosphate sulfate (16-20-0) 200-240 lbs/ac

An alternate seed mix and/or fertilizer may be used after review and approval by the Napa County RCD.

Straw Mulch shall be spread annually over all disturbed and seeded areas. The mulch shall be spread mechanically or by hand at the rate of 2 tons/acre. Straw mulch shall be crimped in place after spreading. Straw spread after reseeding or repair shall also be crimped.

Silt Fence shall be installed along contours at locations shown on the Plan in accordance with the appropriate Detail. Silt fence shall be maintained through the winter after planting after which it may be removed. As an alternate, fiber rolls may be used in place of silt fence.

Rock Roads, Rolling Rock Dips, and Rock Checks shall be constructed of locally gathered fieldstone at the locations shown on the Plan in accordance with the appropriate detail. Rock structures shall remain in place as permanent structures.

A Rock Fill shall be constructed in the north end of the drainage running through Block C. The rock fill shall be constructed of locally gathered fieldstone and shall be covered with a 2' soil cap. A 12" CPP shall be installed through the fill with a drop inlet and a rock check at the outlet.

Water Bars shall be constructed where shown on the Plan in accordance with the appropriate Detail. Water bars shall remain as permanent structures and shall be reshaped as necessary prior to each rainy season.

Maintenance: An annual winter cover crop shall be established as presented in "Annual Winterization", below. This annual cover crop may be strip sprayed using springtime applications of "contact" sprays. NO PREEMERGENT SPRAYS SHALL BE USED. The owner shall be responsible for reseeding and maintenance in order to reach the desired degree of cover each year. The vineyard benches only may be disked annually.

Annual Winterization: After harvest and prior to first rains each year, the following winterization shall be completed:

1) Cover crop evaluation notes made prior to disking shall be reviewed. All weak spots shall be treated as necessary, seeded, fertilized and mulched. Treatments may include soil amendments, and evaluation of seed mix and/or fertilizer may be necessary. After appropriate soil treatments, the entire vineyard, including avenues/turnspaces shall be seeded, mulched and fertilized, and pre-irrigation shall commence. Irrigation shall continue through germination until the onset of winter rains.
2) Water bars shall be reshaped and reinforced as necessary.
3) Avenues around and between blocks shall be seeded, fertilized and mulched, and shall remain undisturbed through the rainy season.
4) Straw Bale dikes, or silt fencing shall be placed downgradient from each rolling rock dip.
5) All erosion control measures and facilities shall be inspected after each storm event, and repairs shall be promptly performed.

Costs: The total cost of all erosion control measures is estimated to be $500,000 including material, labor, engineering and agency fees.

The project site was last visited by the plan preparer March 2005, during October and December 2003, and April and May 2004, to inspect the site for specific erosion problems and to determine appropriate mitigation.

Legend

	AREAS AND ACREAGES OVER 30 PERCENT
	BLOCK BOUNDARY
CPP	CORRUGATED POLYETHYLENE PIPE, SMOOTH WALL
O, D.I.	DROP INLET
	DETAIL 3, SHEET 3
	FLOWLINE OF DIVERSION DITCHES
HP	HIGH POINT
25' - 18" CPP	LENGTH/SIZE/KIND OF PIPE
MSB	MINIMUM SETBACK
	PROPERTY LINE
RSP	ROCK SLOPE PROTECTION
	SILT FENCE
SCS	SOIL CONSERVATION SERVICE
139	SCS SOIL MAPPING UNIT
	SCS SOIL TYPE BOUNDARY
	SUBSURFACE DRAINAGE PIPE OR CULVERT
	WATERBAR

VINEYARD BOUNDARY
AVENUE/TURNSPACE
LIMITS OF WORK

RECEIVED OCT 3 2006

Napa 4 - Abbott

Napa County
Resource Conservation District
Finds
Plan # 04025-ECPA
Technically Adequate for Erosion and Sediment Control
Mitchell K

Date 2/16/06

ABBOTT VINEYARDS
EROSION CONTROL PLAN

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER DREW L. ASPEGREN No. 31418 Exp. 12-31-06 CIVIL STATE OF CALIFORNIA

DREW L. ASPEGREN, PE
R.C.E. 31418

January 12, 2004
DATE

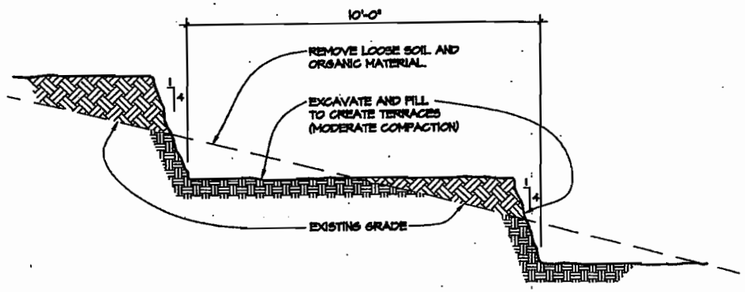
REV. 5 REVISE ACREAGES, LEGEND (SHEET 1); SHEET 2 2-16-06 DLA

REV. 4 SET LIMITS FOR SEDIMENT POND IN BLOCK A, SHEET 2 2-14-06 DLA

REV. 3 REVISE IMPLEMENTATION SCHEDULE 2-7-06 DLA

REV. 2 REVISE DRAINAGE STRUCTURE DISCHARGE POINTS; ADD SPREADERS, SHEET 2 10-31-05 DLA

REV. 1 ADD SPECIAL NOTES-TERRACES, MODIFY NARRATIVE 4-14-05 DLW
ADD STRUCTURAL PLANS, SHEETS S1 AND S2.



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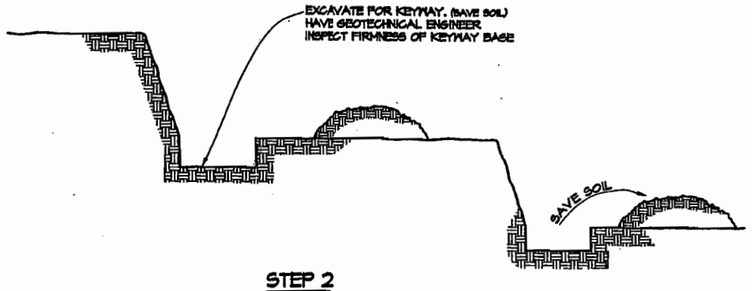

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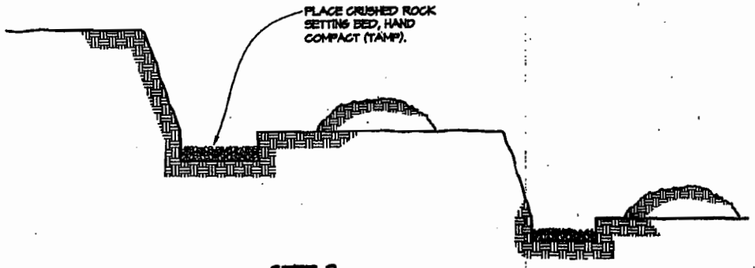

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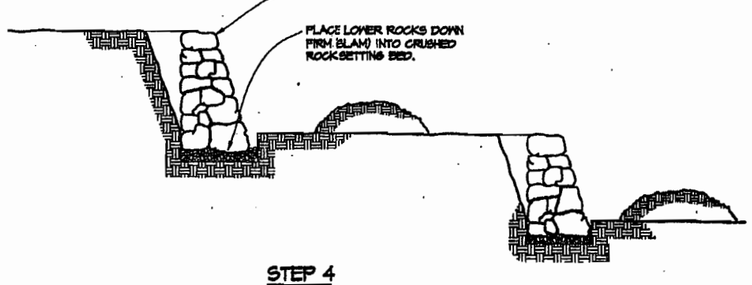

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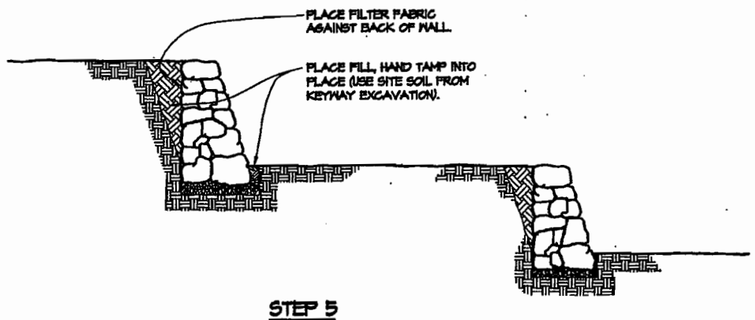
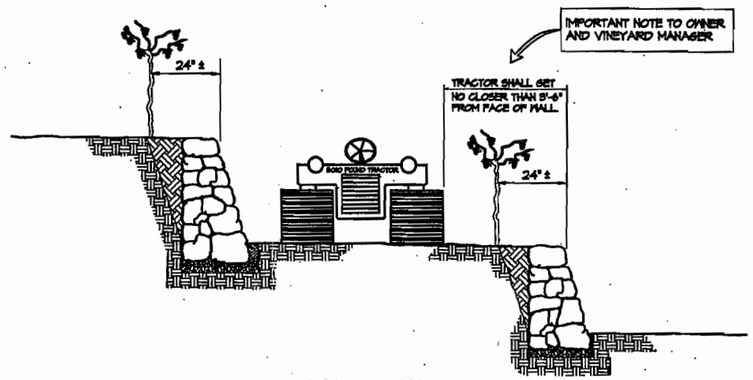


STEP 5



COMPLETED WALL

NOTES FOR CONSTRUCTING ROCKERY RETAINING WALLS

A continuous keyway shall be excavated under each wall as indicated in the drawings. The depth and width will vary depending on the height of the rockery wall at that location. The competency of the keyway shall be evaluated by the Geotechnical Engineer prior to the placement of granular base material and rocks. This evaluation by the Geotechnical Engineer is mandatory.

Once the keyway excavation has been reviewed by the Geotechnical Engineer, a layer of course angular crushed rock, (1 to 2 inches in size and free of fines), shall be placed in the bottom of the keyway as shown in the drawings. This crushed rock shall be firmly tamped into place. The purpose of this is to create a setting bed for the rockery wall. It will increase the frictional resistance and spread the bearing load between the base of the wall and the supporting soil.

All rocks shall be sound and weather-resistant. The contractor shall have sufficient rocks stockpiles so that he can select rocks of appropriate size and shape. Rocks shall be generally rectangular and angular in shape - not rounded, and with the longest dimension no more than 3 times the shortest dimension. The majority of the rocks shall be 50 to 200 pounds each, (12 to 18 inch in size). Smaller ones in the range of 20 to 50 pounds shall be used as required for void infilling and interlock. Rocks down to 10 pounds may be used for "cinking". Do not use rocks smaller than 10 pounds, (4 to 6 inch in size).

The first course of rock shall be placed, or "slammed" firmly into the crushed rock setting bed such that there is uniform bearing under the rock. Wherever possible, the top surface of the rock should slope backwards away from the face of the rockery wall in order to increase the stability of the next layer of rock to be placed. Subsequent layers of rock shall be selected to fit and shall bear on at least two rocks below it. Also, orient rocks such that the longest dimension is perpendicular to the face of the wall. Place rocks so that they interlock - avoid continuous joint planes. Where voids of greater than 6 inches exist, they shall be "chinked" with smaller rocks. Some voids are to be expected and will enhance drainage.

The face of the rockery wall shall be inclined back at 1H:4V and the back face of the wall shall be roughly vertical, all as shown in the drawings.

Place filter fabric on the back face of the wall before placing final backfill behind wall.

The backfill behind the wall shall be natural site soils, placed in 12" maximum lifts, and compacted to about 90% to 95% relative compaction. Compaction shall be done by hand or small equipment so as to not damage the wall.

Kenneth R. Hughes

Structural Engineer

3620 Mt. Diablo Blvd., #203
Lafayette, California 94549
Tel: 925 / 284-2808
Fax: 925 / 284-7492

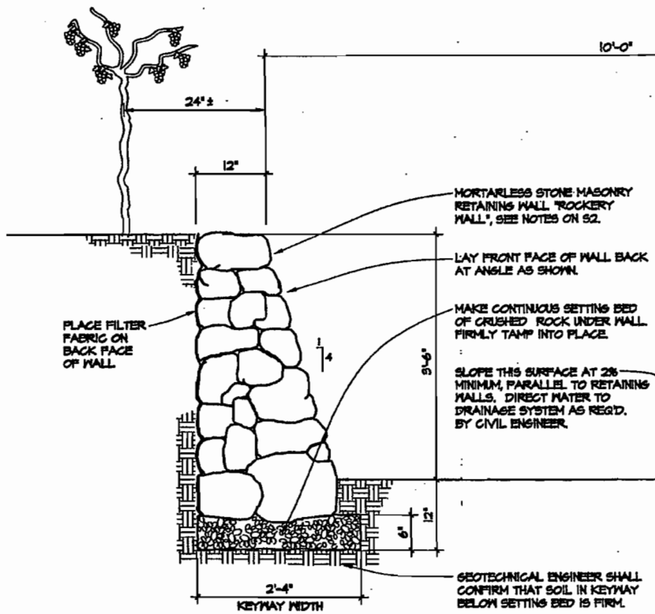
a project for:
NAPA VALLEY VINEYARD ENGINEERING
ST. HELENA, CA.

TERRACED VINEYARD WALL ROAD, NAPA, CA

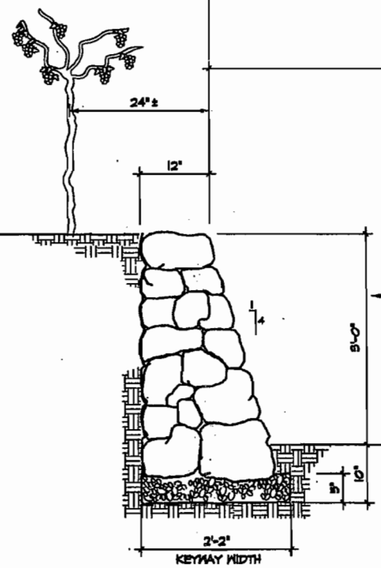
Date 4-6-2005
Project 2005.006
Drawn by LMc
Checked by KRH
Revisions

REGISTERED PROFESSIONAL ENGINEER
KENNETH R. HUGHES
S12645
Exp. 12/31/06
STRUCTURAL
STATE OF CALIFORNIA
4-6-05

Sheet
S2/5



SECTION AT 3'-6" HIGH WALL



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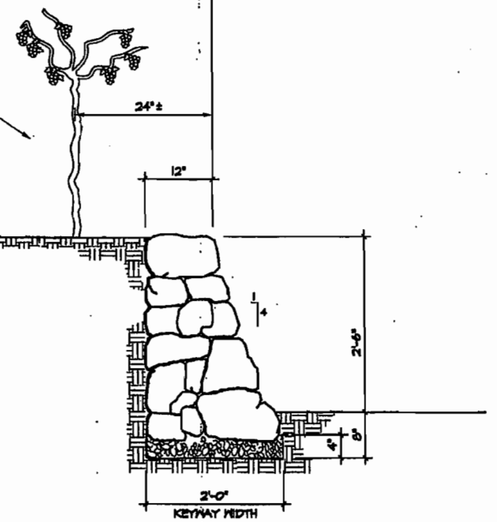

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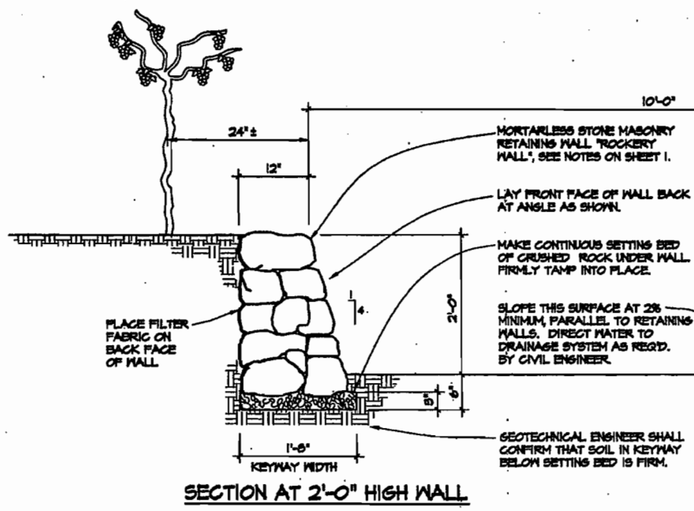

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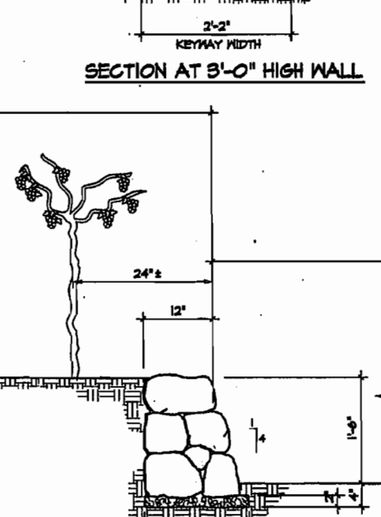
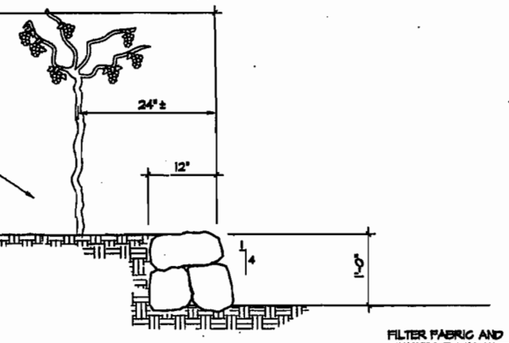


SECTION AT 1'-6" HIGH WALL



SECTION AT 1'-0" HIGH WALL

SECTIONS THROUGH TERRACED RETAINING WALL SYSTEM

1"=1'-0"

SEE SHEET S2 FOR CONSTRUCTION NOTES AND FOR SUGGESTED SEQUENCE OF CONSTRUCTION.

Kenneth R. Hughes

Structural Engineer

3620 Mt. Diablo Blvd., #203
Lafayette, California 94549
Tel: 925 / 284-2808
Fax: 925 / 284-7492

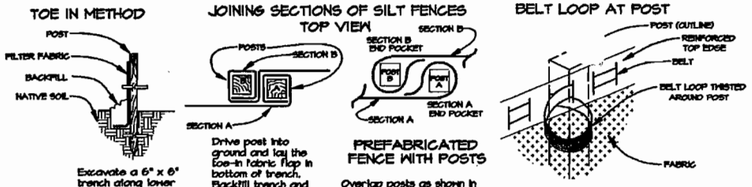
a project for:
NAPA VALLEY VINEYARD ENGINEERING
ST. HELENA, CA

TERRACED VINEYARD WALL ROAD, NAPA, CA

Date 4-6-2005
Project 2005.006
Drawn by LMc
Checked by KRH
Revisions

REGISTERED PROFESSIONAL ENGINEER
KENNETH R. HUGHES
SE2845
Exp. 6/31/06
STRUCTURAL
STATE OF CALIFORNIA
4-6-05

Sheet
S1/5



Excavate a 6" x 6" trench along lower perimeter of site.

Unroll silt fence one section at a time. Posts should be positioned on downstream side of fence.

Drive post into ground and lay the toe-in fabric flap in bottom of trench. Backfill trench and tamp ground as shown in diagram above.

Position posts to overlap as shown above, making certain that fabric folds around each post one full turn.

Overlap posts as shown in previous section to prevent flow-through.

Drive posts firmly together and tie off tops of posts to prevent separation.

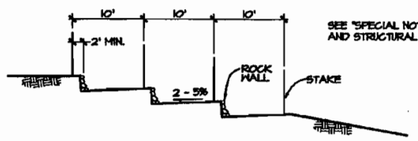
Ends of sections of belted silt fence are equipped with pockets for posts.

Joining of sections should be accomplished in basically the same manner as the fence with pockets. Do not use belt to secure adjoining tops of posts.

Use rope or wire as in previous type of fences.

To simply secure post to belted fabric at a given point along length of fabric, pull belt out from reinforced top, twist to form a loop, and slip post up through loop before driving post into place.

1/3 SILT FENCE
N.T.S.



SEE "SPECIAL NOTES - TERRACES", THIS SHEET AND STRUCTURAL DESIGN, SHEETS S-1 & S-2

5/3 TYPICAL BENCH CROSS SECTION
1" = 10'

Special Notes- Terraces

Each vineyard block will be completely staked (10'x5') before construction begins, and staking shall be done from the top down. The purpose of the staking and subsequent construction is to build benched terraces which are 10' -20' wide and are on completed slopes of 2%-5%. The benches shall be supported by near-vertical retaining walls, which will maximize the use of the land. Beginning at a high point along the nose of a ridge near the center of a block, staking shall be done as follows:

1. A base line vine row (first terrace) shall be established by placing stakes 5' apart on a ~5% grade in both directions down gradient from the nose of the ridge.
2. 10' down gradient from the beginning point will be the start of the second vine row. The second vine row shall be staked 5' on centers, holding a minimum 10' from the stakes established for the first vine row, while maintaining a vine row grade between 2% and 5%. At a point where the grade falls out of the 2%-5% range, or the vine row spacing is less than 10', the row will be terminated.
3. The third and succeeding vine rows shall be staked in the same fashion until the entire block is staked. Additional internal rows may be staked in the same fashion if internal row spacings exceed 20', using the same criteria described above. In the end, there may be gaps in some vine rows, short "internal" rows and short "point" rows on the ends.

Terraces shall be constructed from the bottom up as follows:

a. A 2% - 5% backsloped bench shall be cut, following the lowest vine row. The bench shall be 10' wide measured from one foot (1') outside the lower vine row to a line one foot (1') outside the adjacent upgradient vine row. This will result in a near vertical cut below the second vine row.

b. At all points where the vertical cut exceed 0.5', a retaining wall shall be constructed to support the next bench upgradient. The height of the retaining walls, measured from the base of the cut to the top of the wall, shall be 1.33 times the height of the vertical cut, but in no case shall it be less than one foot (1') tall, measured as described above.

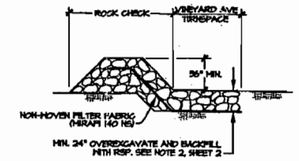
c. The next insloped bench shall be cut, with cut material backfilled against the retaining wall. Material excavated to construct the footings of the retaining wall will also be used as backfill to create the terrace benches.

d. Succeeding inslope benched terraces shall be constructed as described above, working up-gradient to the top. The terraces will be constructed one at a time, with no new terrace being started until the one being constructed is complete. In no case shall terrace cuts be allowed to remain untreated after the onset of the rainy season.

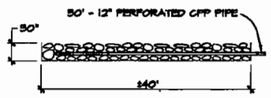
e. The benches shall be warped at the ends to provide approaches and access to vineyard avenues/turnspaces. In those places where access is required between benches, ramps shall be constructed. The ramps connecting the point row terraces will be constructed at 10% maximum slope, and they shall be insloped. This means that a 3' rise between terraces will need a minimum 30' ramp length. To limit concentrated runoff in these steeper areas, drop inlets (DI) will be installed in the flowline at the back of the upper terrace and water bars will direct flow to the DIs at those points. At the bottom of the ramp another water bar will direct sheet flow to the flowline at the back of the lower terrace.

f. Drop inlets (DI) shall be installed at all low points and at ranges (See "e" above) inside the vineyard, and at each low end at the vineyard avenues. Stormwater shall be directed to the DIs and piped to discharge as shown in the plan. Installation of the drainage system and construction of retaining wall will need to be coordinated during construction.

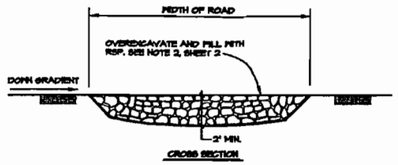
(UNDER NO CIRCUMSTANCES SHALL ANY MATERIAL BE SIDECAST INTO NAPA COUNTY RIGHT-OF-WAY)



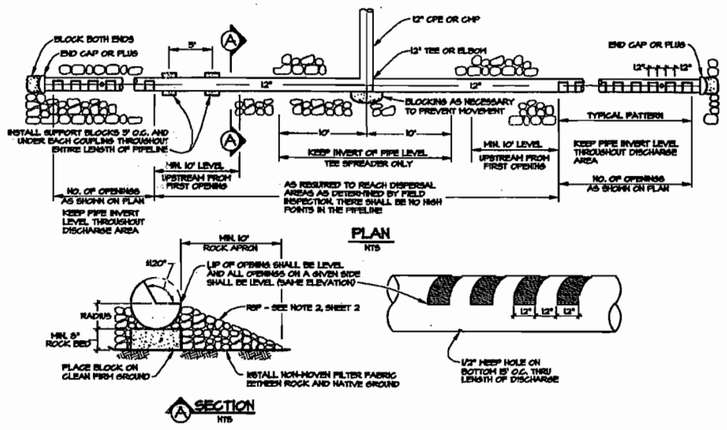
2/3 ROCK ROAD W/ROCK CHECK
NTS



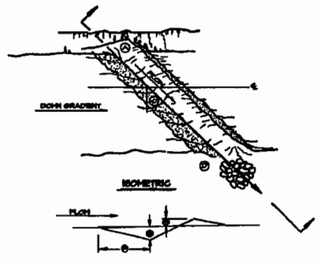
3/3 ROCK PIT
1" = 10'



4/3 ROCK STABILIZATION
N.T.S.

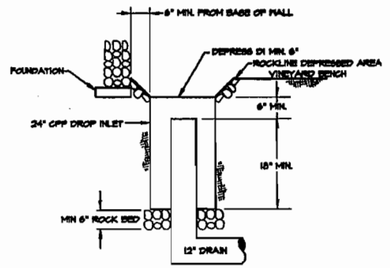


6/3 WATER SPREADER
NTS

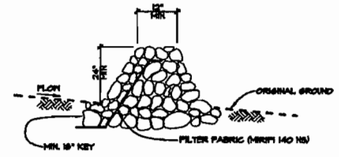


NOTES
Waterbar construction for little or no traffic. Specifications are average and shall be adjusted to conditions.
1. Tie-in to bank if appropriate.
2. Cross drain berm height 4" to 6" above the roadbed.
3. Angle drain 30° to 45° degrees downgrade with road centerline.
4. Outfall structure as shown in plan.
5. Depth minimum 8".
6. 3' to 4'.

7/3 WATERBAR (TYP)
NTS

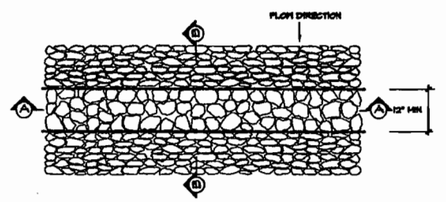


8/3 TYPICAL DROP INLET
NTS



SECTION B-B
NTS

SECTION A-A
NTS



9/3 ROCK CHECK DETAIL
NTS

REV.	DESCRIPTION	BY	DATE
3	REV/SPEC NOTES - TERRACES, DETAILS 5&	DLA	2-7-06
2	REV. DETAILS 3, 4, 5, 6 & 8	DLA	10-31-05
1	REV PER RCD REVIEW	DLH	4-14-05

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER DREW L. ASPEGREN No. 31418 Exp. 12-31-06 CIVIL STATE OF CALIFORNIA

DATE	SCALE
1-12-04	AS SHOWN
DRAWN	CHECKED
TPD	DLA

AbbottESCP1.dwg

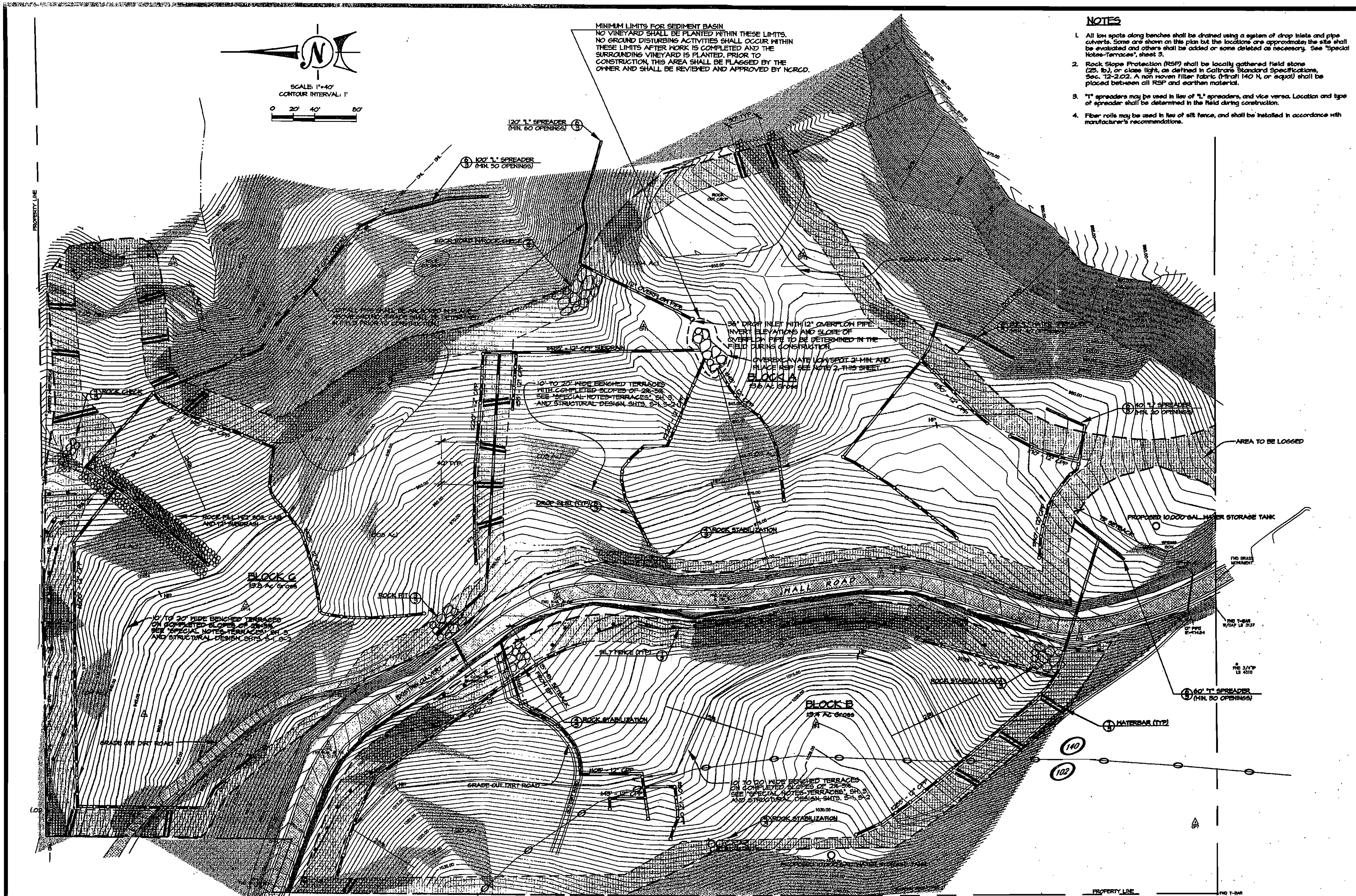
APPROVED

DREW L. ASPEGREN, PE R.C.E. 31418

ABBOTT VINEYARDS
VINEYARD DEVELOPMENT

EROSION CONTROL PLAN
DETAILS

SHEET 3 OF 5



NOTES

1. All low spots along benches shall be drained using a system of drop inlets and pipe culverts. Some are shown on this plan but the locations are approximate; the site shall be evaluated and others shall be added or some deleted as necessary. See "Special Notes-Terraces", sheet 3.
2. Rock Slope Protection (RSP) shall be locally gathered field stone (25. lb.), or class light, as defined in Caltrans Standard Specifications, Sec. 72-2.02. A non woven filter fabric (Mirafi 140 N, or equal) shall be placed between all RSP and earthen material.
3. "T" spreaders may be used in lieu of "L" spreaders, and vice versa. Location and type of spreader shall be determined in the field during construction.
4. Fiber rolls may be used in lieu of silt fence, and shall be installed in accordance with manufacturer's recommendations.

REV.	DESCRIPTION	BY	DATE
5	REMOVE .70 ACRES STEEP SLOPE EAST SIDE BLOCK C	DLA	2-16-06
4	SET LIMITS FOR SEDIMENT POND IN BLOCK A	DLA	2-14-06
2	REV. DRAINAGE STRUCTURE DISCHARGE POINTS, ADD SPREADERS	DLA	10-31-05
1	ADD TERRACES; MINOR MODIFICATIONS	DLW	4-19-05

Napa Valley Vineyard Engineering, Inc.
176 Main St., Suite B
St. Helena, CA 94574
(707) 963 4927

REGISTERED PROFESSIONAL ENGINEER DREW L. ASPEGREN No. 31418 Exp. 12-31-06 CIVIL STATE OF CALIFORNIA

DATE 1-12-04 | SCALE AS SHOWN
AbbottECPB.dwg | DRAWN TPO | CHECKED DLA
APPROVED
DREW L. ASPEGREN, PE R.C.E. 31418

ABBOTT VINEYARDS
VINEYARD DEVELOPMENT

EROSION CONTROL PLAN
BLOCKS A, B, C

SHEET 2

#7

APPENDIX B

EROSION CONTROL PLAN AND
EROSION CONTROL PLAN APPLICATION

STAGECOACH VINEYARDS
VINEYARD INFILL DEVELOPMENT
EROSION CONTROL PLAN
REVISED 6-16-06

PPI
ENGINEERING

10311621

STAGECOACH VINEYARDS

VINEYARD INFILL DEVELOPMENT

EROSION CONTROL PLAN

AND

SPECIFICATIONS

REVISED 6-16-06

JUNE, 2006

PREPARED BY:

PPI ENGINEERING
1802 SOSCOL AVENUE
NAPA, CALIFORNIA 94559
(707) 253-1806

TABLE OF CONTENTS

STAGECOACH VINEYARDS

VINEYARD INFILL DEVELOPMENT
EROSION CONTROL PLAN

NARRATIVE

This Erosion Control Plan (ECP) addresses Stagecoach Vineyards' plans for expansion of the existing vineyard on their property located on Soda Canyon Road in Napa County. Additionally, the as-built configuration of the existing vineyards is presented on the same sheet for the purpose of finalizing existing ECPs. The project will result in the planting of ±90 additional acres of vineyard on 107 gross acres.

ECP History:

#95024-ECPA prepared by PPI Engineering for 51.5 acres of new vineyard approved on August 16, 1995.

#95374-ECPA prepared by PPI Engineering for 374 acres of new vineyard approved on March 21, 1996. (modification by Chaudhary and Associates approved June 10, 1997)

#96586-ECPA prepared by Chaudhary & Associates for 116 acres of new vineyard approved on June 10, 1997

Between the ECPs and the modifications (both formal & field), the Owners were approved to install a total of 541.5 acres of vineyard. This acreage was calculated to be within the clearing limits (vegetation retention requirements for municipal watersheds) mandated by the Conservation Regulations. At the time the designs were completed, regulations required that clearing limits be observed on a parcel-by-parcel basis. Due to the dense brush cover and difficulty in locating the interior parcel lines, configuration of some vineyard blocks after construction deviated from the designed configuration. This was anticipated during the development of the plans and notes were placed on each plan indicating the possibility that field conditions may require minor modifications to the proposed plans.

Although anticipated, the field modifications resulted in some parcels being out of compliance with the vegetation retention requirements in effect at the time of completion. However, the total number of acres developed, as calculated from aerial photographs in December 2005, is 541.2 acres. This is effectively identical to the total approved in the original Plans. In light of the recent amendment to the Conservation Regulations allowing contiguous parcels to be treated as one project under certain conditions, the Owners request that their previously-approved ECPs be deemed in compliance with applicable regulations and that RCD be allowed to "final" these plans.

In addition to bringing the Owner into compliance with Napa County regulations on the existing vineyard development, this ECP addresses additional vineyard development on the property. The owner recently purchased an adjacent parcel (APN 032-030-016) with the intent of developing additional vineyard. However, in planning the new vineyard the strategy was changed from focusing on developing vineyard in the new parcel to primarily designing infill development in the existing vineyard in order to leave a larger and more contiguous habitat area in the undeveloped parcel. This proposed project has been analyzed by a professional biological consulting firm (AES) and a report is included with this application. The analysis concludes that with some minor mitigation, the project will not result in any adverse impact to biological resources. The report also concludes that retaining a larger cohesive habitat area on the property as a whole rather than separate, isolated areas on each parcel is biologically superior.

Avoiding any concentration of stormwater runoff was foremost in the design of the infill vineyard areas proposed in this ECP. Because of this emphasis, no pipes or open channels are required for runoff control on the proposed areas. In addition, no trees will be removed as a result of the new vineyard.

The project area lies within the Rector Reservoir Watershed. The total of the existing and proposed vineyard retains 40% of the brush and 100% of the tree canopy as existed on the property in 1993. All blue-line streams and other waters of the U.S. are avoided, with buffers between the waters and the vineyard development.

1. The nature and purpose of the land disturbing activity and the amount of grading involved.

a) The Owner plans to plant approximately 90 acres of new vineyard (107 gross acres) on his property located on Soda Canyon Road in Napa. The vineyard area to be developed is located on APNs: 032-030-010, 032-030-059, 032-030-060, 032-030-061, 032-030-062, and 032-540-001 which consists of approximately 1,130 acres per the Napa County Assessor's Office.

b) Activities to be accomplished include removal of existing vegetation, cultivating the soil to prepare for planting, trenching for irrigation pipelines, installation of trellis system, laying out the vine rows, and installing temporary erosion control measures.

c) Fencing will also be constructed around some of the proposed vineyard areas. The existing and proposed fence locations are shown on Figure EC-1 at the end of this section.

d) Rock will be excavated and uncovered during development of the proposed vineyard areas. Areas are designated for rock storage for this project and are shown on the Site Plan. Rock will either be stored at the designated locations or crushed onsite.

2. General description of existing site conditions, including topography, vegetation and soils.

a) The property is located in the Rector Reservoir municipal watershed. According to the USGS Yountville quadrangle map there are a series of unnamed Blue Line Streams running through the property.

b) The vineyard areas to be developed lie on moderately sloping ground, which ranges from 10 to 25 percent slope. Elevations range from approximately 1150 to 1775 feet above mean sea level.

c) See Appendix B for Vegetation Retention Calculations.

d) Soils as described in the USDA - SCS Napa County Soil Survey are listed in Item #5 below.

e) A site visit of the property was performed by Jim Bushey, John Vicencio, and Rachel LeRoy of PPI Engineering on Wednesday, August 11, 2004. The purpose of the visit was to evaluate potential vineyard development areas and to determine the scope of the proposed project.

Multiple site visits were performed by Jim Bushey and/or John Vicencio from August to November of 2005. The purpose of the visits was to perform a preliminary field review, photo-document existing site conditions, and verify topographic information. Photographic location points are shown on the Site Plan. Accompanying photographs of the existing site conditions are in Appendix A of this report.

A site visit was performed by Jim Bushey and Dave Steiner of the Resource Conservation District on Tuesday, December 6, 2005. The purpose of the visit was to work with the District on the design of the development areas prior to finalizing the Plan.

3. Natural and man-made features onsite including streams, lakes, reservoirs, roads, drainage, and other areas that may be affected by the proposed activity.

a) There are four USGS blue line streams on the property. These streams are shown on the Site Plan and will not be affected by this project.

b) No natural or man-made features are expected to be adversely affected by this project.

4. Location and source of water for irrigation or other uses.

a) There are 4 existing wells on the property. The approximate locations are shown on the Site Plan. The projected water usage for the proposed vineyard is based on a 6 foot x 5 foot vine spacing and is approximately 0.7 acre-feet per acre per year.

5. Soil types/soil series identified in the Soil Conservation Service (SCS) Napa County Soil Survey.

a) The USDA - SCS Napa County Soil Survey maps the soil within the project boundary as Guenoc-Rock outcrop complex, 5 -30% slopes; Hambright-Rock outcrop complex, 30-75% slopes; Rock outcrop-Hambright complex, 50-75% slopes.

6. Critical areas, if any, within the development site that have serious erosion potential or problems.

a) There are existing facilities that require maintenance. The locations of these areas are shown on the Site Plan and the repairs are described in Section 10: Maintenance of the 'Special Provisions' in these Specifications.

b) The area located along the southeast portion of Block GM6 shows evidence of erosion from surface runoff. The existing slope will be protected with rock to act as an energy dissipator and the existing avenue will be shaped to allow surface runoff to disperse through the existing vineyard.

7. Erosion calculations

a) Universal Soil Loss Equation (USLE) spreadsheets for this project are in Appendix C of this report.

8. Proposed erosion control methods including:

a) All drainage systems and facilities, walls, cribbing or other erosion protection devices to be constructed with, or as a part of the proposed work.

1. An outsloped vineyard avenue between Blocks 15 and 16 and two infield level spreaders in Block 16 will be constructed. These erosion control measures will be constructed on the contour and outsloped to act as level spreaders to evenly spread surface flows on the ground through the vineyard area.

2. A gully repair will be performed in Block 22. The repair will be constructed on the contour and outsloped to act as a level spreader to evenly spread surface flows on the ground through the vineyard area.

3. A rock energy dissipator/slope protection will be constructed along the southern portion of Block GM6.

4. Waterbars will be constructed as shown in the Detail labeled "Waterbars for Vehicular Traffic" each fall by the Owner. Waterbars shall be constructed where needed such that surface runoff is directed off of vineyard avenues into vegetated areas. Waterbars shall be located a maximum of 100 feet apart on slopes exceeding 15 percent.

5. Straw Wattles will be installed as shown in the Detail labeled "Straw Wattle Installation." Wattles shall be installed by September 1 of the year of construction to help prevent sediment from leaving the development areas. In subsequent years wattles shall only be required if upslope areas have been disturbed to re-establish cover crop.

6. The final pass with tillage equipment shall be performed across slopes to prevent channeling water downhill the first winter after development.

7. Additional temporary erosion control measures shall be installed as needed.

8. An additional storm drain will be added to the drainage system in existing vineyard block P3.

b) **Proposed vegetative erosion control measures including location, type and quantity of seed, mulch, fertilizer and irrigation, timing and methods of planting, mulching and maintenance of plant material and slopes until a specified percentage of plant coverage is uniformly established.**

1. All disturbed areas shall be seeded as described below. Straw mulch shall be applied to all disturbed areas at a rate of 3,000 lbs/acre prior to September 1 of the year of construction. Fertilizer shall be applied as necessary by vineyard management personnel.

2. A no-till cover crop strategy shall be utilized within the vineyard. Disturbed areas will be seeded with the following seed mix: Idaho Fescue at 10 pounds per acre, Molate Fescue at 5 pounds per acre, Zorro Fescue at 5 pounds per acre, and Crimson Clover at 5 pounds per acre prior to September 1 of the year of construction

3. The permanent cover crop will be managed each year such that any areas that have less than 70 percent vegetative cover will be re-seeded and mulched until adequate coverage is achieved.

   The cover crop for Blocks 14A, 15, 16, and E3 will be managed each year such that any areas that have less than 75 percent vegetative cover will be re-seeded and mulched until adequate coverage is achieved.

4. Contact herbicides only will be strip sprayed in the vinerows each year for weed management. Contact herbicides shall be applied in late spring to ensure adequate vegetative cover in the spray strips for the remainder of the rainy season. Maximum width of spray strip shall be 18 inches.

5. Per the Napa County Protocol for Re-Planting/Renewal of Approved Non-Tilled Vineyard Cover Crops: When it becomes necessary, either by routine or emergency, to re-establish or renew vineyard cover crop the following measures should be followed:
   - Seek professional consultation, including soil nutrient analysis, to determine the reasons for the original cover crop's failure. Adjust soil fertility, irrigation and seed selection accordingly.
   - When tillage is necessary, alternate rows should be tilled, seeded, and straw-mulched to effectively accomplish the re-establishment/renewal process over a two-year period.
   - Tillage and re-seeding should be conducted in the following manner:
   - In year 1, till to prepare seed bed and sow desired cover crop in every other row ("the evens"), leaving the alternate rows ("the odds") untilled and mowed only.

- Mulch all tilled rows having an up and down hill (perpendicular to contour) row direction with 4,000 lbs./acre of loose straw, or approved equivalent, after seeding.
- Tilled rows with cross-slope (parallel to contour) row direction and slope gradients less than 15% may not require straw mulch.
- In year 2, till to prepare seed bed and sow desired cover crop in "odd" rows.
- In year 2, leave "even" rows untilled and mowed only.
- Mulch rows till in year 2 as specified above.
- Put all re-establishment measures in place by September 1
- In year 3, return all rows to non-tilled culture.

9. Stormwater stabilization measures, if the development of the site will result in increased peak rates of runoff that may cause flooding or channel degradation downstream.

The land use in the infill development areas will change from narrowleaf chaparral to vineyard with a non-tilled cover crop. Hydrologic analysis of this conversion shows that runoff rates off the development areas will remain essentially the same.

The proposed vineyard development areas have been designed to avoid any drainages or swales that would concentrate surface runoff, thereby eliminating the need for any pipelines, sediment basins, or detention ponds.

10. An implementation schedule showing the following:

a) The proposed clearing, grading, and/or construction schedule.

DATE	DESCRIPTION
06/15/06	Commence clearing and tillage operations.
08/15/06	Erosion Control measures installed.
09/01/06	Seed and mulch all disturbed areas.
04/15/07	Commence clearing and tillage operations
08/15/07	Erosion Control measures installed
09/01/07	Seed and mulch all disturbed areas.

b) The proposed schedule for winterizing the site (generally by October 15 of each year the permit is in effect.)

The complete site shall be winterized and all necessary erosion control measures described in the Erosion Control Plan shall be installed by September 1 of the year of construction.

c) The proposed schedule of installation of all interim erosion and sediment control measures, including the stage of completion of such devices at the end of the grading season (generally October 15) of each year the permit will be in effect.

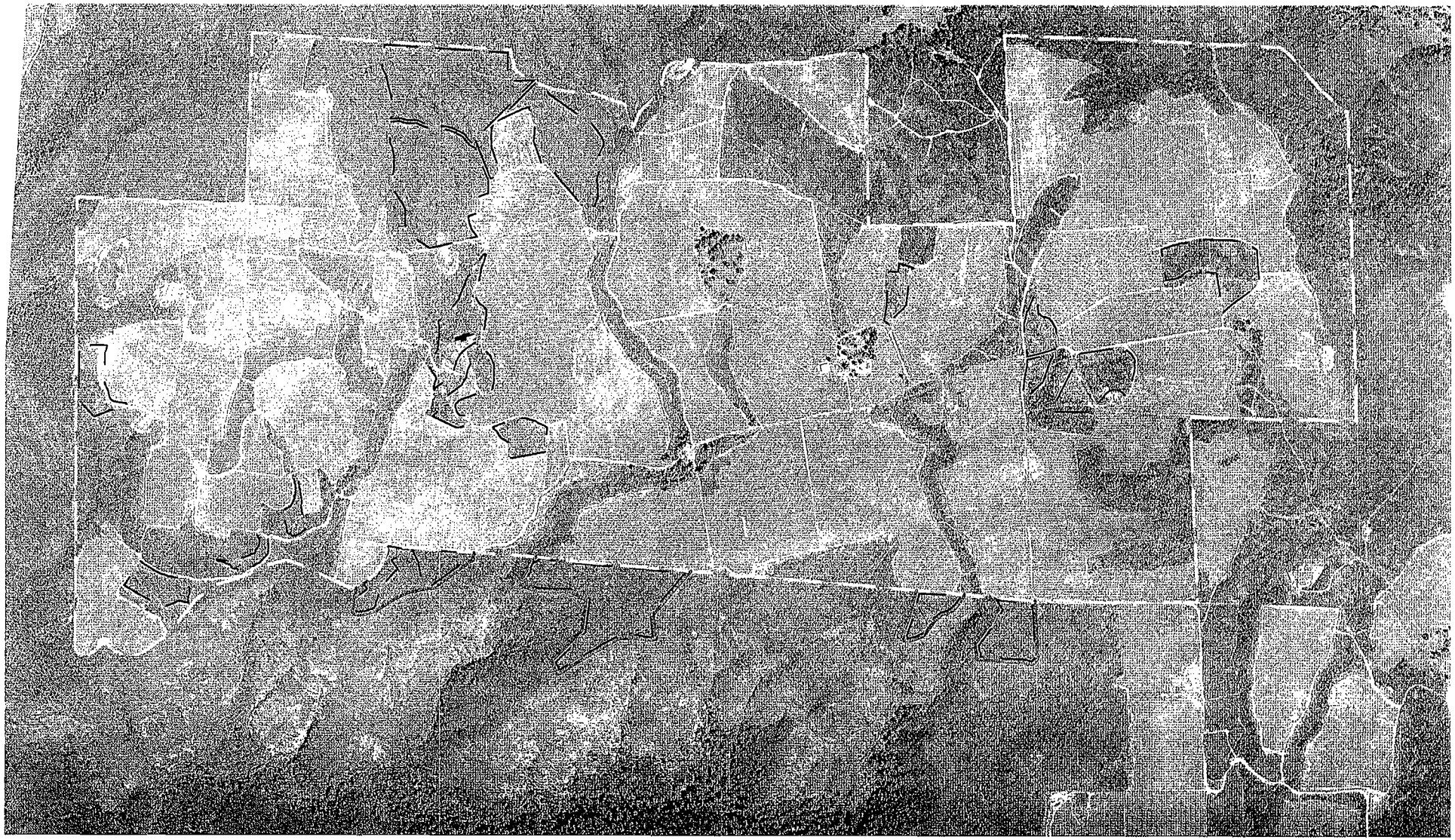
See Item 10a).

d) The schedule for installation of permanent erosion and sediment control devices where required.

See Item 10a).

11. The estimated cost of implementation of the erosion and sediment control measures.

The estimated cost for installing erosion control measures as described in this plan is $1100 per acre.



LEGEND

EXISTING FENCE (APPROXIMATE LOCATION)

PROPOSED FENCE (APPROXIMATE LOCATION)

PROPOSED VINEYARD BLOCK BOUNDARY

NOT TO SCALE

FIGURE EC-1 Existing and proposed fence locations

STAGECOACH VINEYARDS

VINEYARD INFILL DEVELOPMENT
EROSION CONTROL PLAN

STANDARD PROVISIONS

SECTION 1 - SCOPE OF WORK

These specifications cover the construction of the Erosion Control system for approximately 90 acres of vineyard to be developed by Stagecoach Vineyard/Oakville Heights.

The drawings numbered 10311621F, sheets 1 through 3, and these Specifications describe in detail the construction of the complete erosion control system. Requests for further information or clarification of the work to be done can be made to Jim Bushey at PPI Engineering phone (707) 253-1806.

All costs for the complete construction of the erosion control system must be included in the bid items, since no other payment will be made outside of the bid items. This includes all costs for moving onto and off the job site, all equipment, tools, materials, labor, fuel, taxes, and incidentals for furnishing and installing the erosion control system.

Surveying adequate for construction will be provided by the Owner, at the Owner's expense. The Contractor will be responsible for preserving construction survey stakes and markers for the duration of their intended use. Any restaking costs or additional survey work requested by the Contractor shall be deducted from the final payment to the Contractor. The Owner does not guarantee that the project being bid will be awarded. The Owner also reserves the right to change the quantities of actual work performed as needed with payment made according to the new quantities at the unit price bid.

SECTION 2 - AUTHORITY OF OWNER AND ENGINEER

The property is owned by Stagecoach Vineyards LTD PTN, Stagecoach Vineyards Limited, and Oakville Heights, LLC. They shall have the final say in the event of a dispute with the Contractor.

The Owners shall appoint PPI Engineering (PPI) as the Engineer to perform periodic review of the work. PPI Engineering shall report any unsatisfactory work to the Owner. The Contractor shall be responsible for any engineering fees or repair costs associated with bringing the unsatisfactory work into compliance with the Plans and Specifications.

SECTION 3 - CHANGES IN WORK

Materials and the manner of performance of the work performed in this contract shall be according to the Plans and Specifications. Modifications to the Plans or Specifications shall be agreed upon in writing by the Contractor, Owner, and Engineer before the work in question is performed. Materials and construction methods shall be as specified on the Plans and Specifications. The burden of proof that a given material or method constitutes an equivalent to the one specified will rest with the Contractor.

SECTION 4 - UTILITIES

At least two working days prior to beginning any excavation on the project, the Contractor shall contact Underground Service Alert (USA) at 1-800-642-2444 and request field location of all existing utilities.

The Contractor shall be careful to avoid damaging existing facilities and shall notify the Owner immediately if any damage does occur. The cost of repairing any damage shall be the sole responsibility of the Contractor.

SECTION 5 - PROSECUTION OF THE WORK

Unless otherwise provided, the contract time shall commence upon issuance of a Notice to Proceed by the Owner. The work shall start within ten days thereafter and be diligently prosecuted to completion within the time specified in the Contractor's bid. If weather conditions prevent completion of the project within the specified amount of time, the Owner may extend the completion date of the project.

SECTION 6 - RESPONSIBILITIES OF THE CONTRACTOR

The Contractor agrees that in accordance with generally accepted construction practices, Contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including the safety of all persons and property. This requirement shall be made to apply continuously and not be limited to normal working hours. Contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of the work on this project, excepting liability arising from the sole negligence of design professional.

The Contractor shall be responsible for controlling dust and mud generated from construction activities. The Contractor shall not allow dust or mud to obstruct vehicular traffic on County roads or State Highways. The Contractor shall be responsible for cleaning all vehicles prior to leaving the site as required by the California Highway Patrol. The Contractor, at his own expense, shall provide adequate dust control and prevention of mud tracking on roads, and take other preventative measures as directed by the Owner.

The Contractor shall be responsible for following all safety laws that may be applicable. Of particular concern are the trench safety regulations issued by CAL-OSHA. The Contractor alone shall be responsible for the safety of his equipment and methods and for any damage or injury which may result from their failure, improper construction, maintenance, or operation.

The Contractor shall be responsible for installing necessary sediment retention measures to keep sediment from leaving the site if construction activities continue beyond September 1.

The Contractor shall keep the work site clean and free of rubbish and debris throughout the project. Materials and equipment shall be removed from the site as soon as they are no longer necessary or the project is completed.

The Contractor shall also be responsible for ensuring that all permits which are necessary for construction have been obtained and that copies of these permits are maintained onsite at all times.

The Contractor shall, at his own expense, furnish all necessary light, power, pumps, and water necessary for the work.

SECTION 7 - MEASUREMENT AND PAYMENT

Payment shall be made at the unit prices bid according to the actual quantities installed. Measurement of the final quantities shall be the responsibility of the Owner's Engineer.

The Engineer shall periodically observe the project during construction and upon completion of the project any unfinished or unacceptable work observed will be brought to the Contractor's attention verbally and in writing. Final payment will be made upon satisfactory completion of all work items required by these Plans and Specifications.

SECTION 8 - GUARANTEE

In addition to the guarantees from suppliers, the Contractor shall guarantee the work he performs for a period of two years. Any repairs needed to the system within two years of completion due to faulty workmanship or materials shall be promptly repaired at no expense to the Owner. Any costs incurred by the Owner and/or Engineer within two years of completion due to rubbish or debris placed in a trench or other excavation shall be paid by the Contractor.

Unless otherwise provided in writing, payment by the Owner to the Contractor for installation of this system shall constitute acceptance of all provisions in this document by the Contractor.

STAGECOACH VINEYARDS

VINEYARD INFILL DEVELOPMENT
EROSION CONTROL PLAN

SPECIAL PROVISIONS

SECTION 1 – OUTSLOPED VINEYARD AVENUE

1.1 GENERAL:

An outsloped vineyard avenue shall be constructed between Blocks 15 and 16. The avenue will be constructed on the contour to prevent surface flows through the vineyard areas from becoming concentrated.

1.2 CONSTRUCTION:

The outsloped avenue shall be constructed using a bulldozer with a six-way blade and slope board. The avenue will be constructed on the contour. The outsloped avenue shall be constructed as shown in Detail 1, Sheet 2. Vegetation shall be removed or thoroughly incorporated prior to construction of the outsloped avenue. Soil for fill material shall be moisture conditioned as necessary and compacted. Cut and fill slopes shall be seeded in the same manner as the vineyard.

SECTION 2 – GULLY REPAIR

2.1 GENERAL:

A gully repair will be constructed along the lower portion of Block 22. Rock and spoils from the vineyard development will be used to create an outsloped bench to be used as a turnaround area for farm equipment and to function as a level spreader.

2.2 CONSTRUCTION:

The gully repair shall be constructed using a bulldozer and an excavator. The avenue will be constructed on the contour. The outsloped avenue shall be constructed as shown in Detail 2, Sheet 2. Vegetation shall be removed or thoroughly incorporated prior to construction of the gully repair. Soil for fill material shall be moisture conditioned as necessary and compacted. Cut and fill slopes shall be seeded in the same manner as the vineyard.

SECTION 3 – ROCK ENERGY DISSIPATOR/SLOPE PROTECTION

3.1 GENERAL:

There is evidence of concentrated surface runoff around the existing avenue on the southeast portion of Block GM6. Rock will be placed on the existing slope and avenue to protect them against surface flows and allow the runoff to disperse and flow through the existing vineyard.

3.2 MATERIALS:

Rip rap shall be placed on the slope and shall conform to Cal Trans Standard Specification 72-5.02, Class Cobble. Rock on the avenue will consist of ¾-inch minus rock to form an apron.

3.3 CONSTRUCTION:

The Rock Energy Dissipator/ Slope Protection shall be constructed as shown in Detail 3, Sheet 2. The existing rock wall shall be removed from the area. Vegetation shall be removed or thoroughly incorporated prior to construction. The ¾ inch minus shall be spread over the slope and the avenue a minimum of 2 inches deep. Rip rap shall be placed over the ¾ inch minus rock on the slope only. A rolling dip shall be created in the avenue at the lower portion of the rock apron to divert surface flows into the existing vineyard area.

SECTION 4 – ROCK REPOSITORY/OUTSLOPED TURNAROUND

4.1 GENERAL:

During the development of Block E3, the southern portion of Block E3 will be used as a rock storage area. The rock shall be utilized to create a rock bench that will be used as a turnaround area for equipment.

4.2 CONSTRUCTION:

The area shall be cleared of vegetation at the same time as Block E3. Rock uncovered and excavated in the Block E3 will be moved to the southern edge of the development area. The rock will be placed along the lower edge of the vineyard block to create an outsloped bench as shown in Detail 4, Sheet 2. At least one bench shall be cut across the slope to provide a stable platform for placing the rock.

SECTION 5 – OUTSLOPED INFIELD LEVEL SPREADERS

5.1 GENERAL:

Two outsloped infield level spreaders shall be constructed in Block 16. The level spreaders will be constructed on the contour to prevent surface flows through the vineyard areas from becoming concentrated.

5.2 CONSTRUCTION:

The outsloped infield level spreaders shall be constructed using a bulldozer with a six-way blade and slope board. The level spreaders will be constructed on the contour. The level spreaders shall be constructed as shown in Detail 1, Sheet 3. Vegetation shall be removed or thoroughly incorporated prior to construction of the level spreaders. Soil for fill material shall be moisture conditioned as necessary and compacted. Cut and fill slopes shall be seeded in the same manner as the vineyard.

SECTION 6 – SEDIMENT RETENTION ROCK WALL

6.1 GENERAL:

A rock wall shall be constructed along the southern portion of Block 10 as shown on the Site Plan and as staked in the field by the Engineer. The wall shall serve to dissipate the energy of surface flows exiting from the adjacent vineyard and shall serve as a sediment trap. The rock wall shall be installed such that concentrated flows are dissipated to the extent possible.

6.2 MATERIALS & CONSTRUCTION:

Native rock from the project site may be used to construct the wall. The range of rock diameters that can be used to construct the wall shall be 8 to 10 inches. Gaps between these rocks shall then be filled with smaller rocks as necessary to eliminate voids. The wall shall be keyed into native soil a minimum of 12 inches. The wall shall be constructed such that water is allowed to pass through the wall between the rocks

SECTION 7 - PERFORATED SURFACE DRAIN

7.1 GENERAL:

A surface drainage pipeline shall be installed to collect surface runoff at the upper portion of existing vineyard block P3 and tie into the existing 12 inch mainline as shown on the Site Plan.

7.2 MATERIALS:

Corrugated polyethylene pipe for use as drain tubing shall meet the standards of SCS 606 Specifications. In addition, all tubing eight inches and larger shall meet the standards of ASTM F667. All perforations in the tubing shall be free of tag ends.

Bent or damaged tubing shall not be used in the drainage system and shall be removed from the job site.

Pipe connections shall be made with fittings manufactured by the same manufacturer who made the pipe. All connections shall be securely fastened and the resulting connection shall not have gaps greater than 1/4 inch wide.

7.3 GRAVEL ENVELOPE:

Two materials are permissible for use as an envelope material.

Gravel envelope material may be volcanic rock. It shall be free of organic matter, clay, or other material which could decrease it's hydraulic conductivity with time. One hundred percent of the material must pass the 1-1/2" clear square openings. Ninety to one hundred percent must pass through the 3/4" clear square openings. At least 50% must pass through the 3/8" clear square openings. No more than 15% may pass the #20 U.S. Standard Sieve. At least 8% must pass the #60 U.S. Standard Sieve. No more than 3% may pass the #200 U.S. Standard Sieve.

Gravel envelope material may also be a blend of clean hard sand and gravel. It shall be free of organic matter, clay, or other material that would decrease its hydraulic conductivity with time. The material shall be well graded. The coefficient of uniformity (D60/D10) must be greater than 4, and the coefficient of curvature ((D30^2/(D10 x D60)) must be between 1 and 3. One hundred percent must pass the 1/2" clear square openings. No more than 5% may pass the #100 U.S. Standard Sieve. An example of this material would be 80% 3/8 crushed rock and 20% washed concrete sand.

It will be the responsibility of the Contractor to remove and dispose of all envelope material not used on the project.

A sample of the proposed gravel envelope material shall be provided to the Engineer for approval. Any material moved onto the job site which is deemed unacceptable by the Engineer shall be promptly removed from the site at no cost to the owner.

7.4 TRENCHING AND TUBING PLACEMENT:

The Contractor may use a backhoe/excavator for the placement of the tubing as dictated by soil conditions. The operator shall be skillful in laying the tubing. Grade control may be established by visual control with grade stakes set no more than 100 feet apart, or by laser control with grade stakes set no more than 200 feet apart.

Construction staking shall be provided by the Owner's Engineer. The slope, alignment, and depth of placement of the tubing shall be as shown on the Plans and as staked in the field.

A gradual variation of no more than 0.1 foot from grade will be allowed where slopes are 2% or less. Where slopes are greater than 2%, a gradual variation of no more than 0.2 foot from grade will be allowed. No reverse grade will be allowed. A gradual variation of no more than 1 foot from design alignment is allowed.

For perforated drains, the envelope must be at least 3 inches thick on all sides of the pipe. The loader operator shall avoid scooping up soil or other debris with the envelope material while loading the hopper on the trencher or plow and while placing the envelope material in trenches excavated by backhoe.

Rocks or clods shall not be allowed to fall upon or otherwise strike the tubing during any phase of construction.

Stretching of the tubing should be avoided during installation. No more than 10% stretch will be allowed.

SECTION 8 - DROP INLET WITH DIVERSION

8.1 GENERAL:

A drop inlet shall be furnished and installed by the Contractor in the location shown on the plans and as staked in the field by the Engineer, according to Detail 4, Sheet 3. A grate shall be installed over the top of each drop inlet. A diversion shall be constructed along the fence line to divert offsite surface runoff to the inlet.

8.2 MATERIALS:

The drop inlet riser shall be galvanized, 14 gauge corrugated metal pipe (CMP) of the diameter shown on the Site Plan.

An Agri-Drain "Bar Guard" grate or equal shall be installed on the inlet riser

Concrete for the bottom of the inlet shall be Portland Cement concrete, 2000-psi minimum compressive strength.

8.3 INSTALLATION:

The drop inlet shall be constructed as shown in Detail 4, Sheet 3 and as staked in the field by the Engineer. All pipe connections shall be mortared in place to form a watertight seal. Backfill around the inlet shall be compacted sufficiently by hand or water-jetted such that excessive settlement does not occur.

The diversion shall be constructed to the extents as staked in the field by the Engineer. Vegetation shall be removed and the area shall be scarified around the inlet and the diversion. Fill material shall be moisture conditioned as necessary and compacted to 90% relative compaction per ASTM D1557. The side slopes of the diversion shall be 2:1 (Horizontal:Vertical) as shown on Detail 4, Sheet 3. The diversion shall be a minimum of 1 foot in height.

SECTION 9 - TEMPORARY MEASURES

9.1 GENERAL:

Temporary erosion control measures shall be constructed by the Owner. These measures can

include straw wattles and other practices as needed. The measures shall be constructed in conformance with the detail drawings and maintained in a functional condition throughout the rainy season.

SECTION 10 - MAINTENANCE

10.1 GENERAL:

The erosion control measures described in these specifications and shown on the plans and details require regular maintenance in order to function as intended. Vineyard management personnel shall assure that the erosion control measures are monitored throughout the rainy season each year and necessary repairs and/or maintenance are performed immediately. Maintenance operations shall include, but not be limited to the following activities.

10.2 STRAW WATTLES:

Straw wattles shall be installed where indicated on Sheet 1 and as directed in the field by the engineer. Installation shall take place prior to September 1 of the year of construction.

10.3 DIVERSION DITCH:

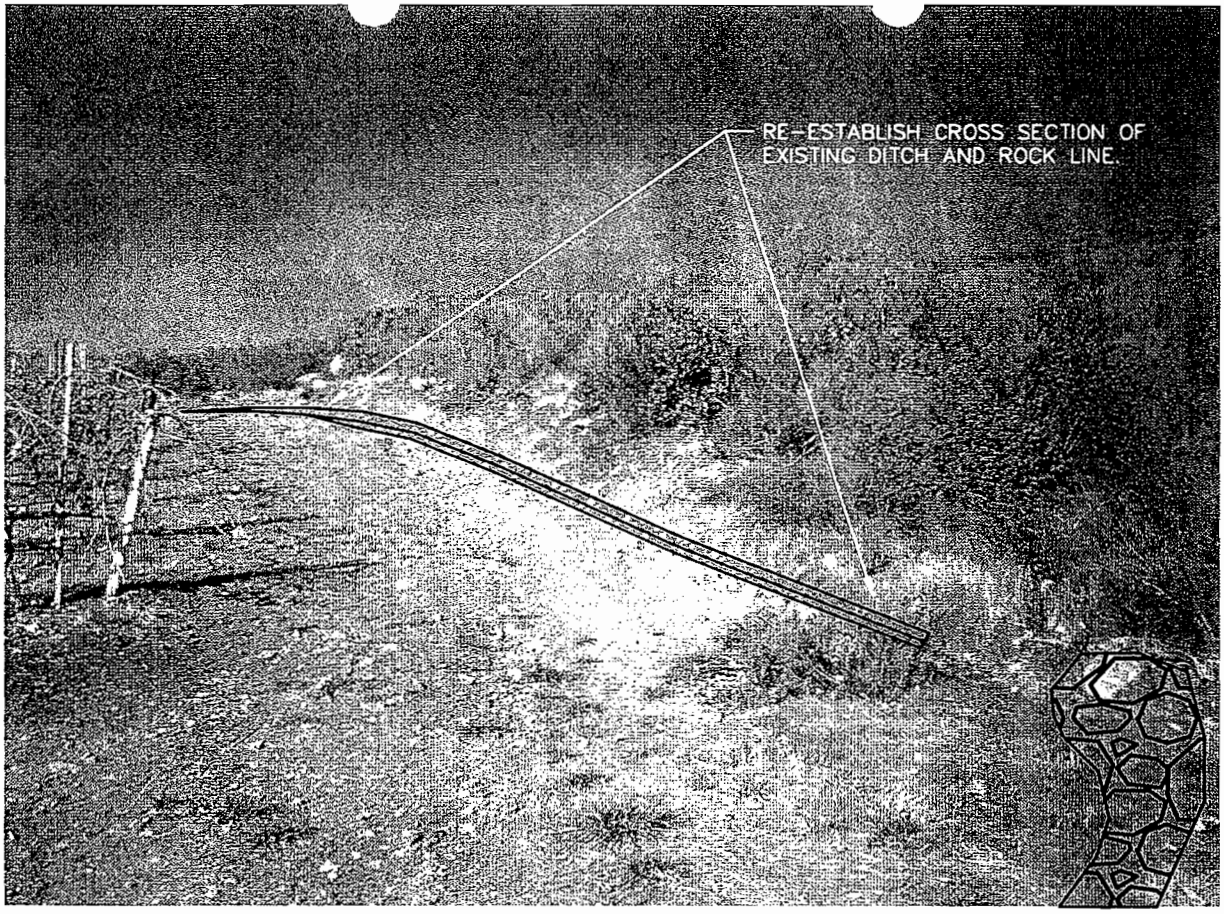
An existing diversion ditch runs along the lower portion of Block E3 as shown on page SP-7. The cross-section of the ditch needs to be re-established to adequately divert surface runoff to a controlled outlet. The ditch shall be monitored periodically to assure the ditch is free of debris.

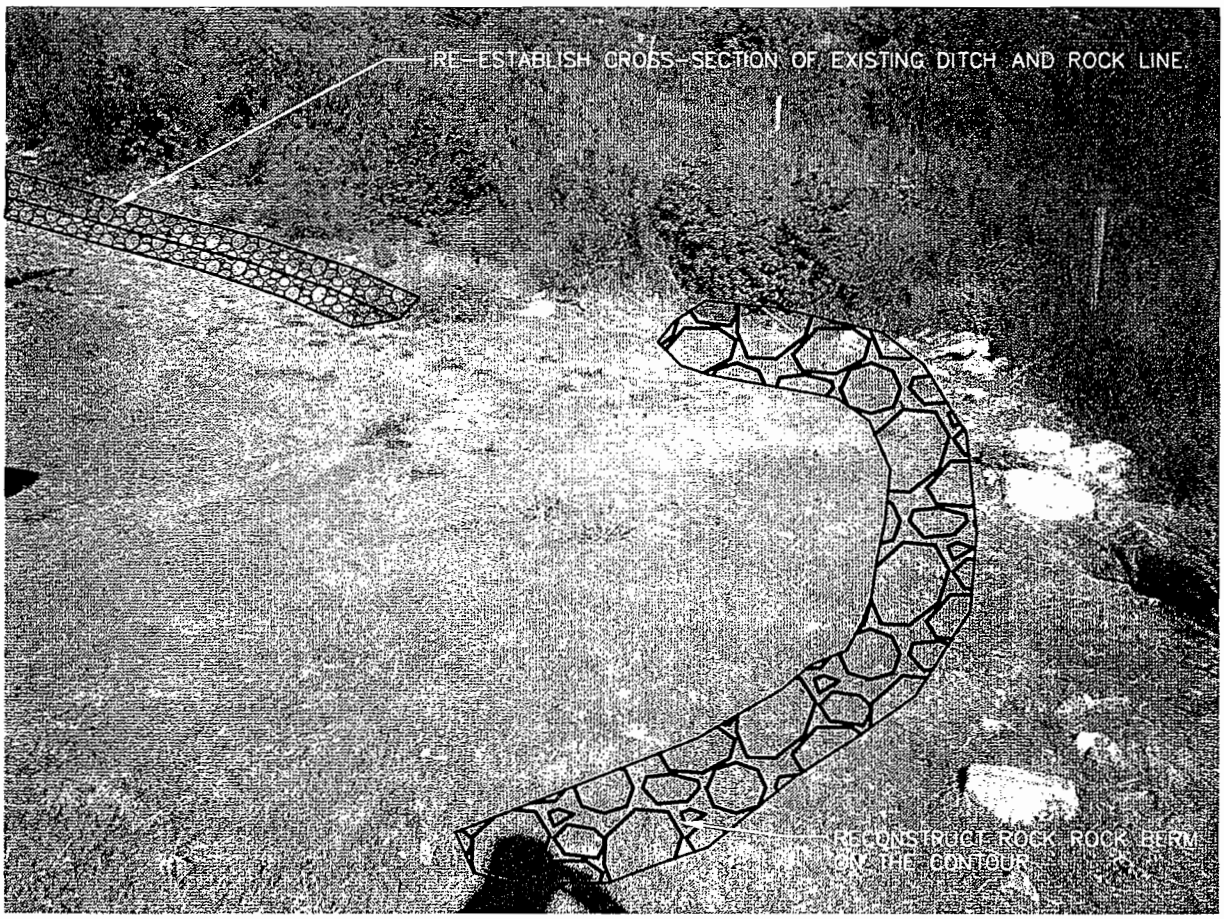
10.4 ROCK BERM:

The existing ditch below Block E3 outlets onto a flat grass covered rock area. The rock berm in this area shall be reconstructed as shown on page SP-7 to dissipate energy and to spread water evenly over the ground surface. The berm shall be inspected periodically to assure that its cross-section is maintained.

10.5 VINEYARD AVENUES:

Upon plan approval, a maintenance program will be implemented for graveling avenues that may be eroding and/or delivering sediment into the stream channel network. Locations, specifications, and timelines for this work will be developed in conjunction with project specialists and Napa County Resource Conservation District personnel prior to start of construction.





APPENDIX A

PHOTOGRAPHIC DOCUMENTATION

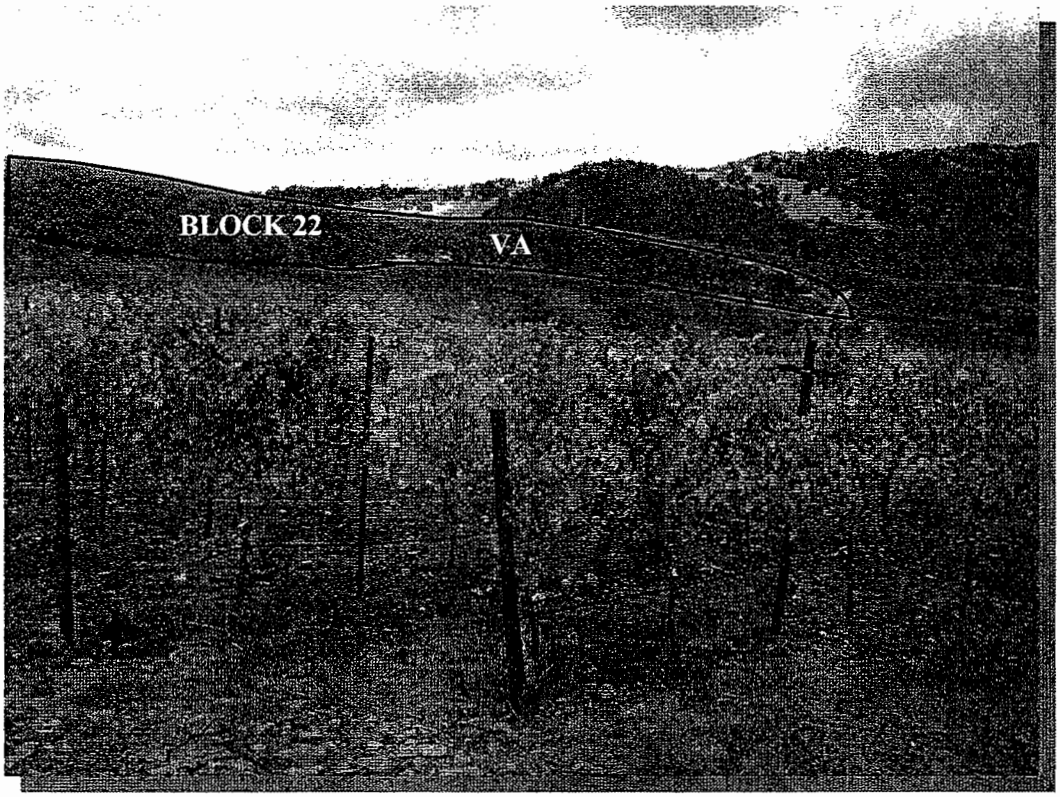


Photo 1

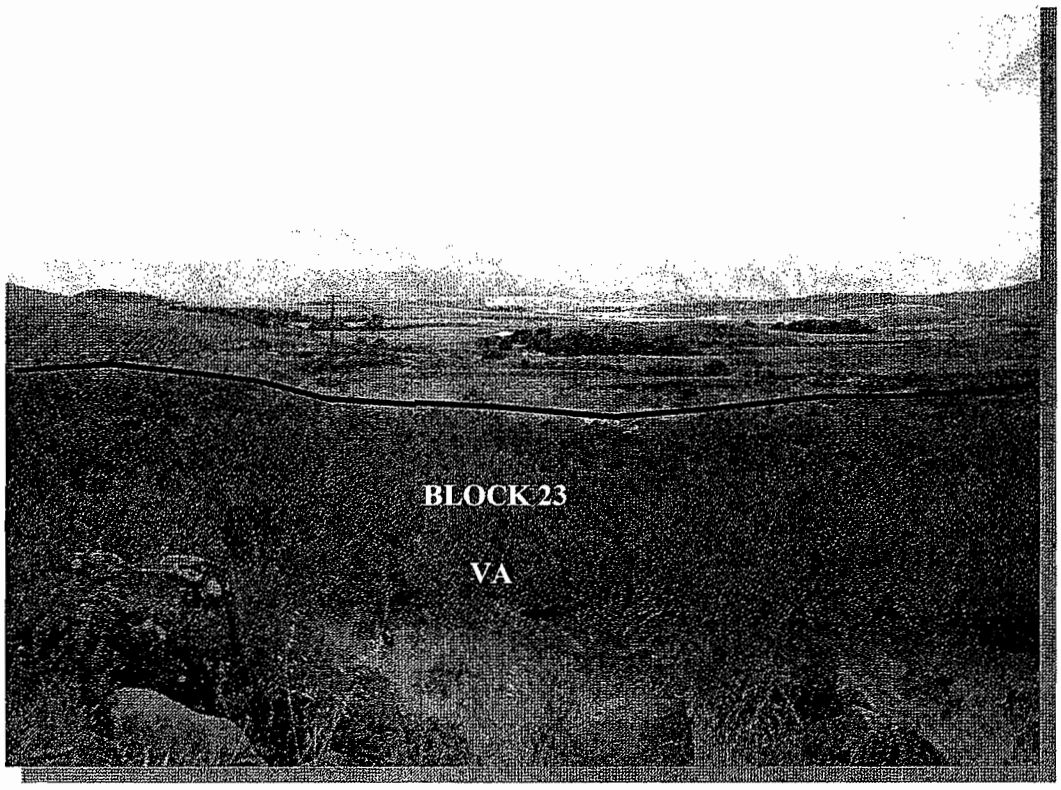


Photo 2

VA – Vineyard Development Area

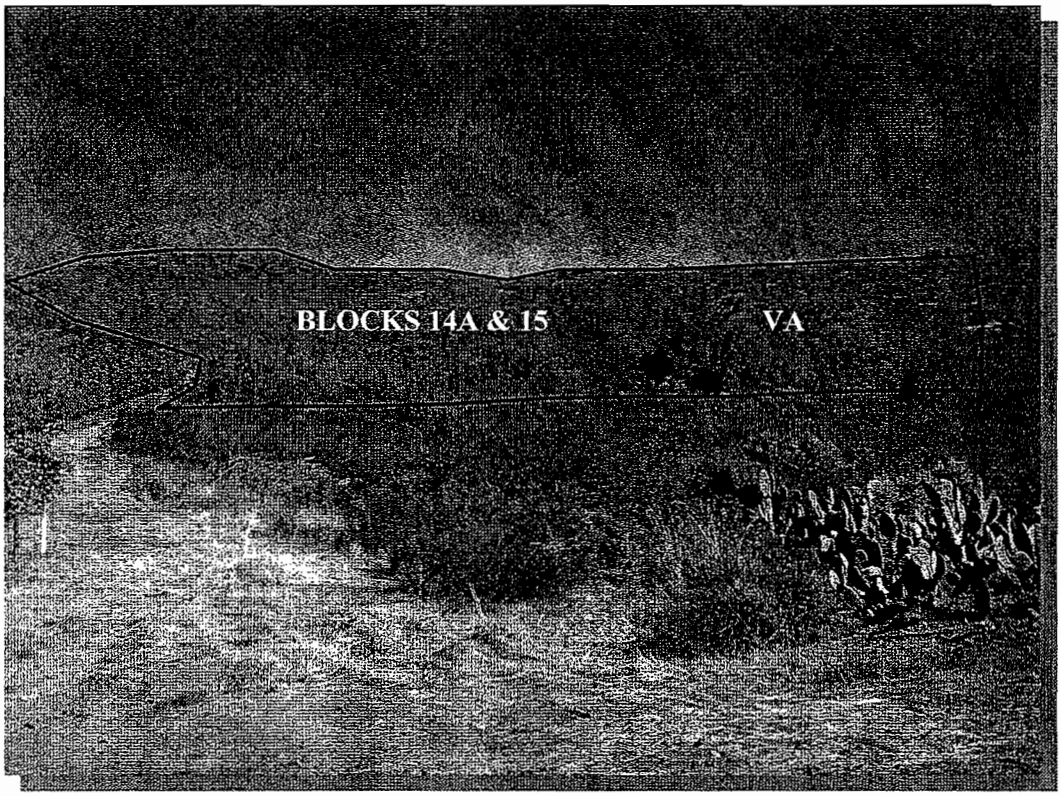


Photo 3

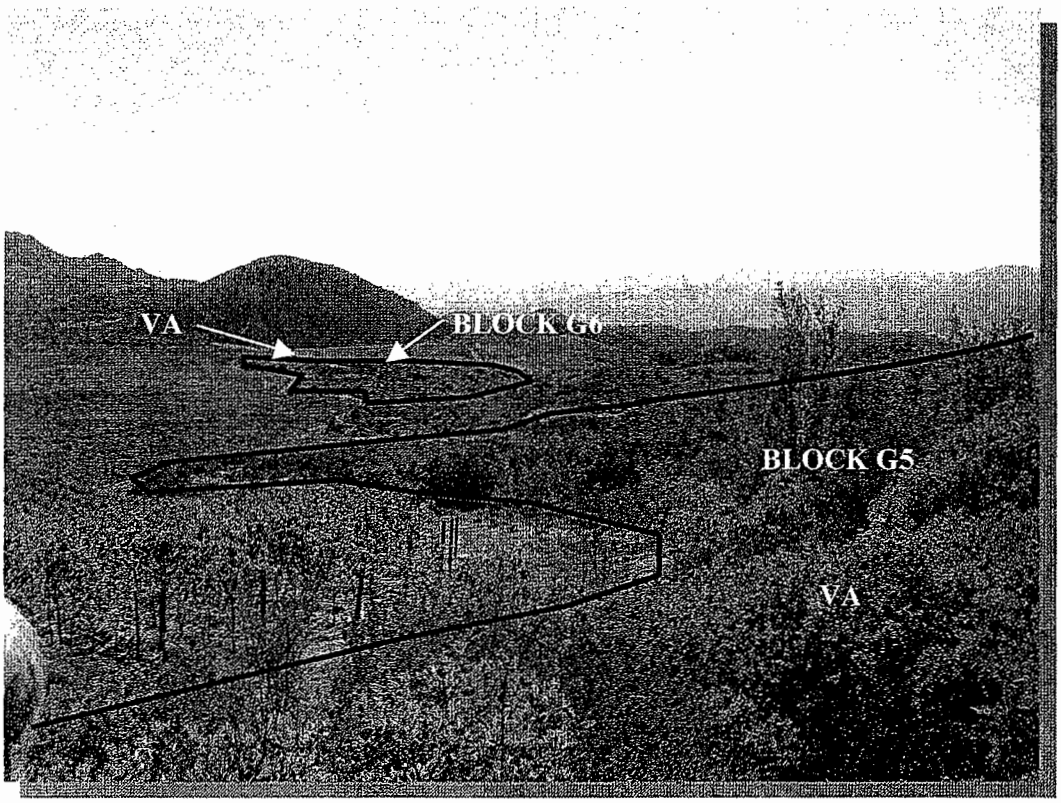


Photo 4

VA – Vineyard Development Area

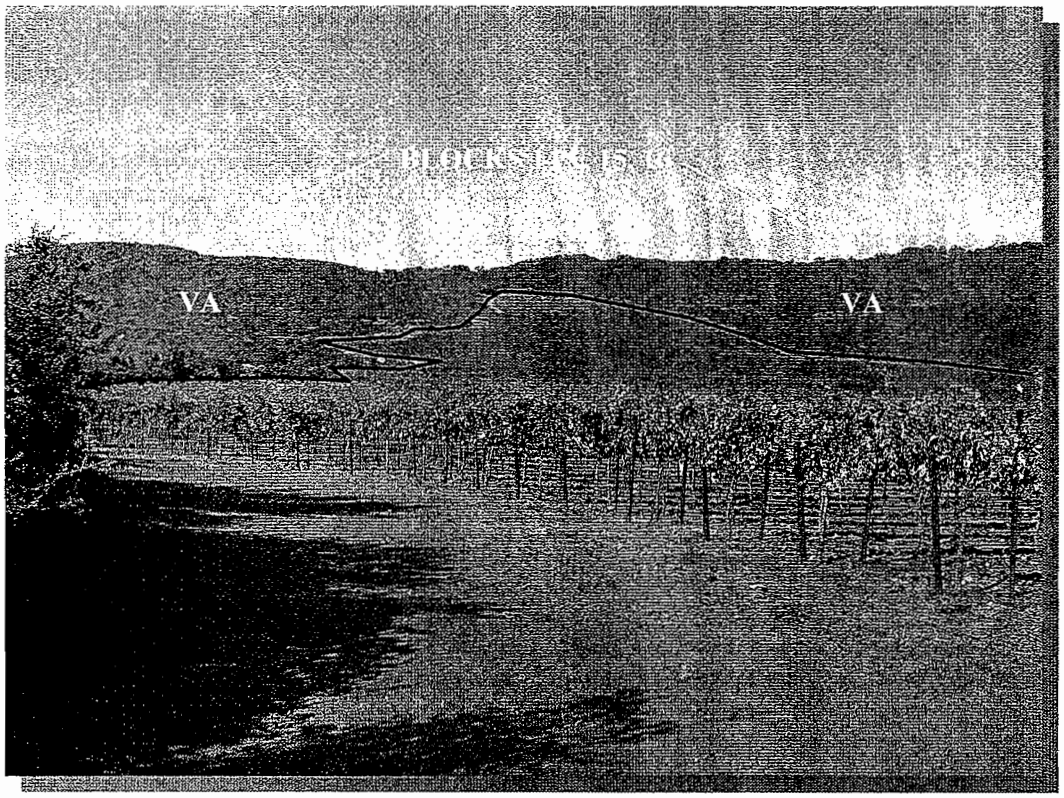
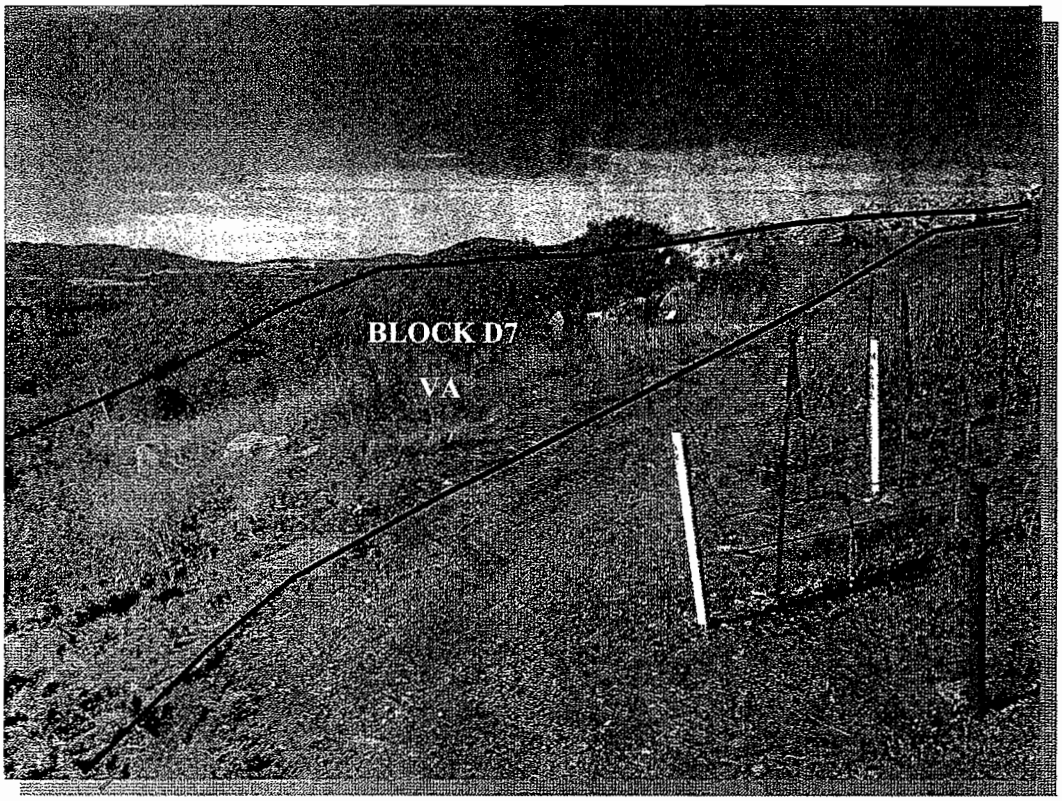


Photo 5



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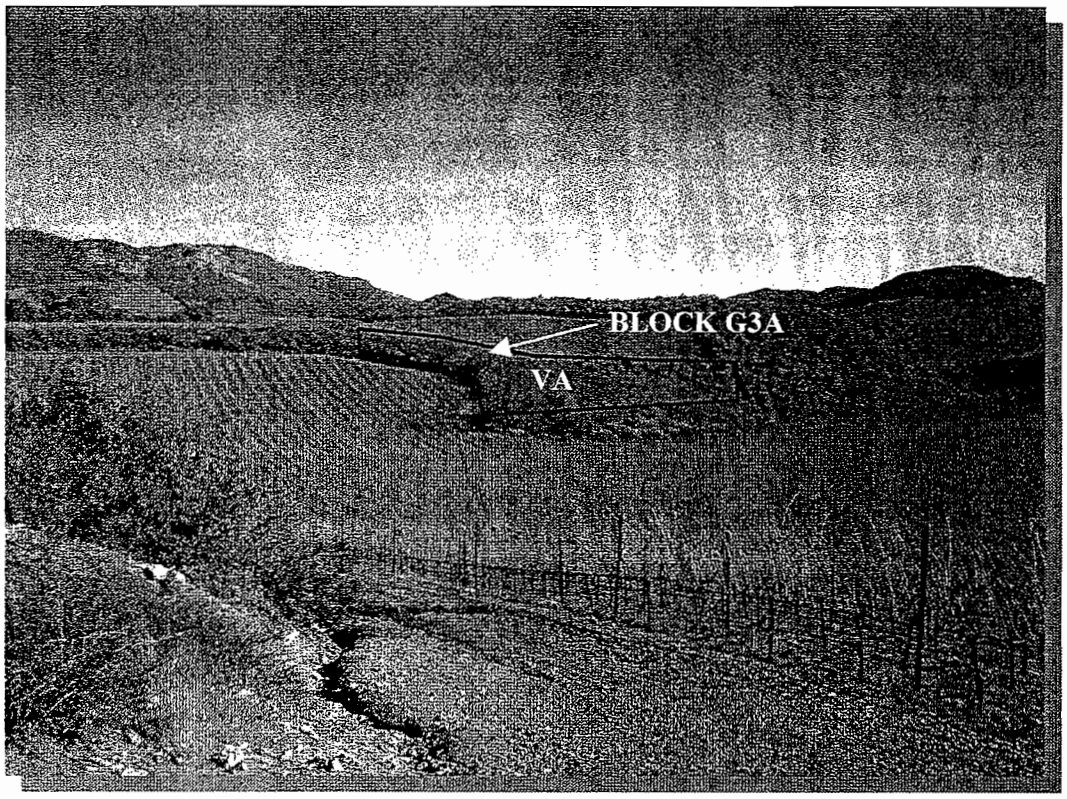
VA – Vineyard Development Area



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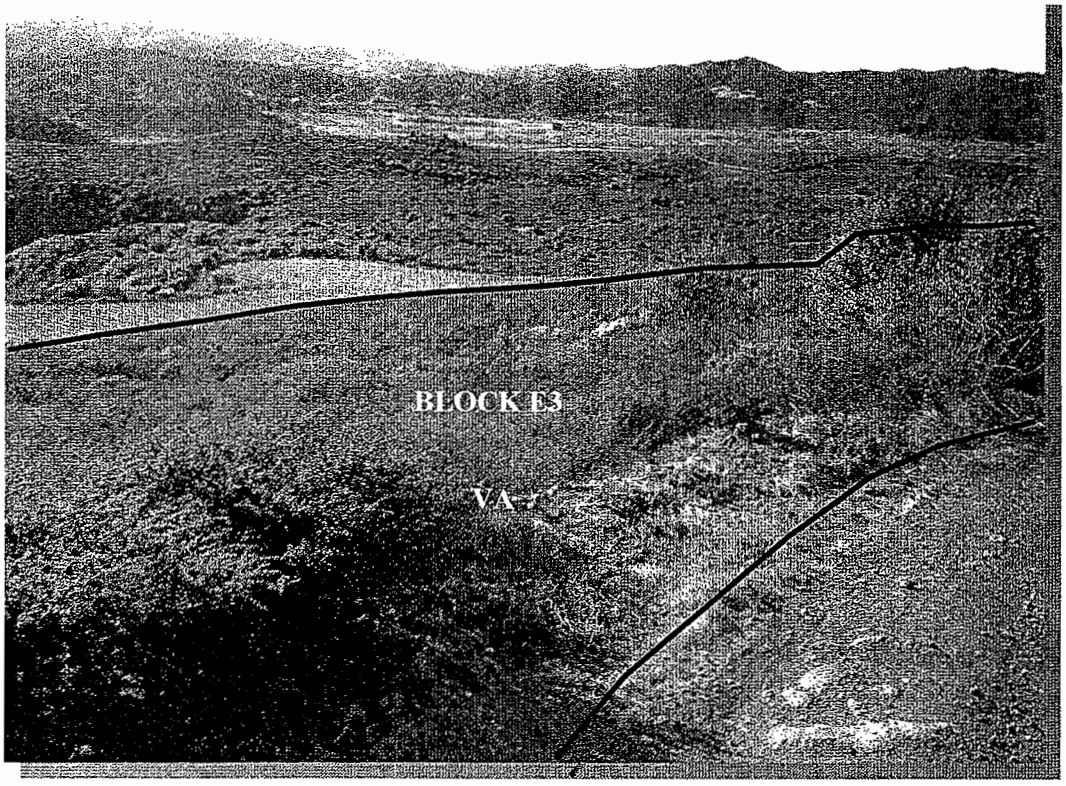

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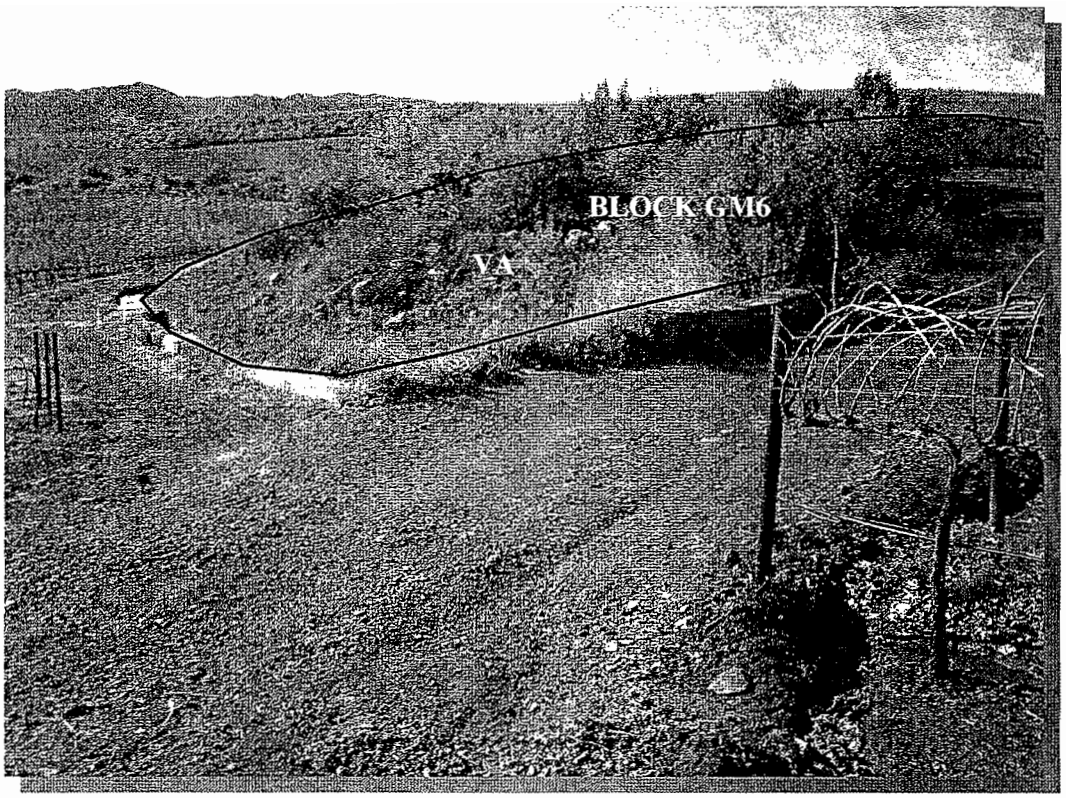
VA – Vineyard Development Area



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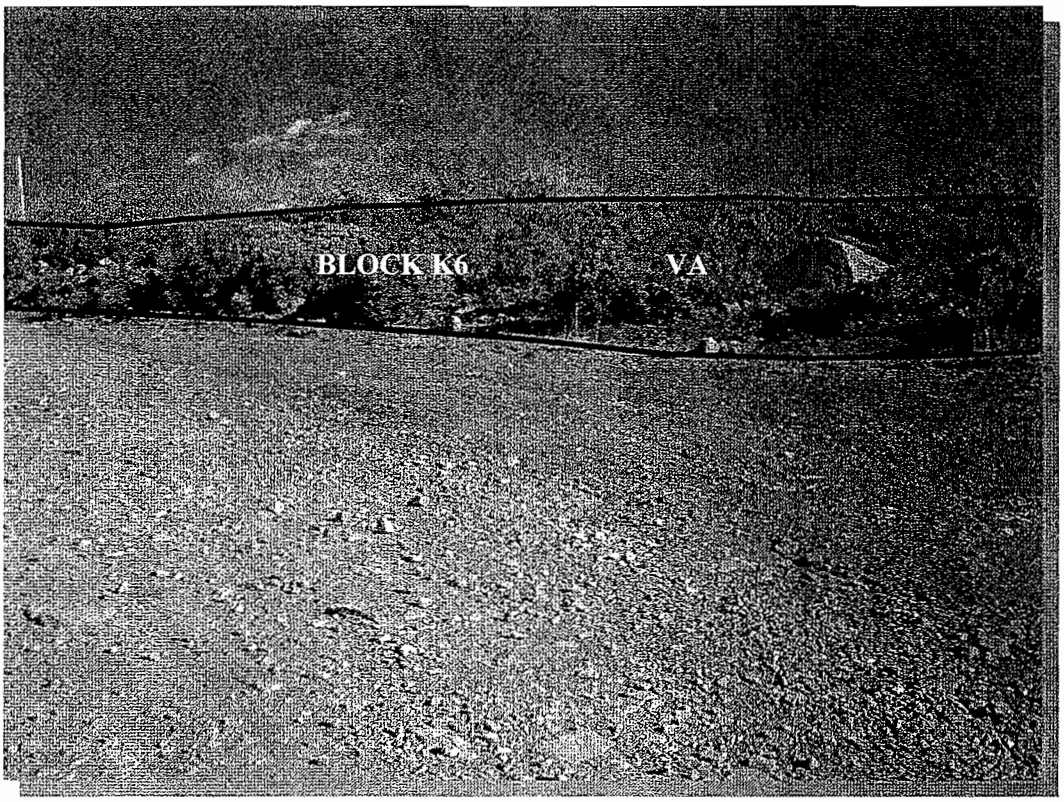


Photo 10

VA – Vineyard Development Area

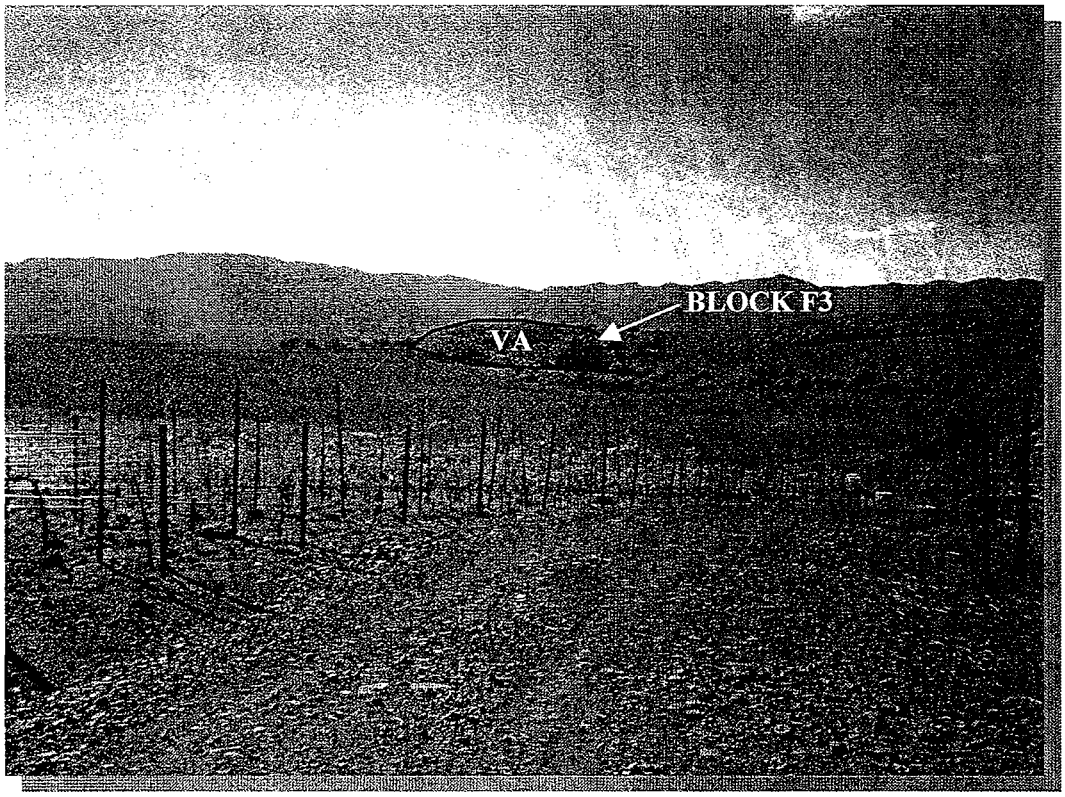


Photo 11

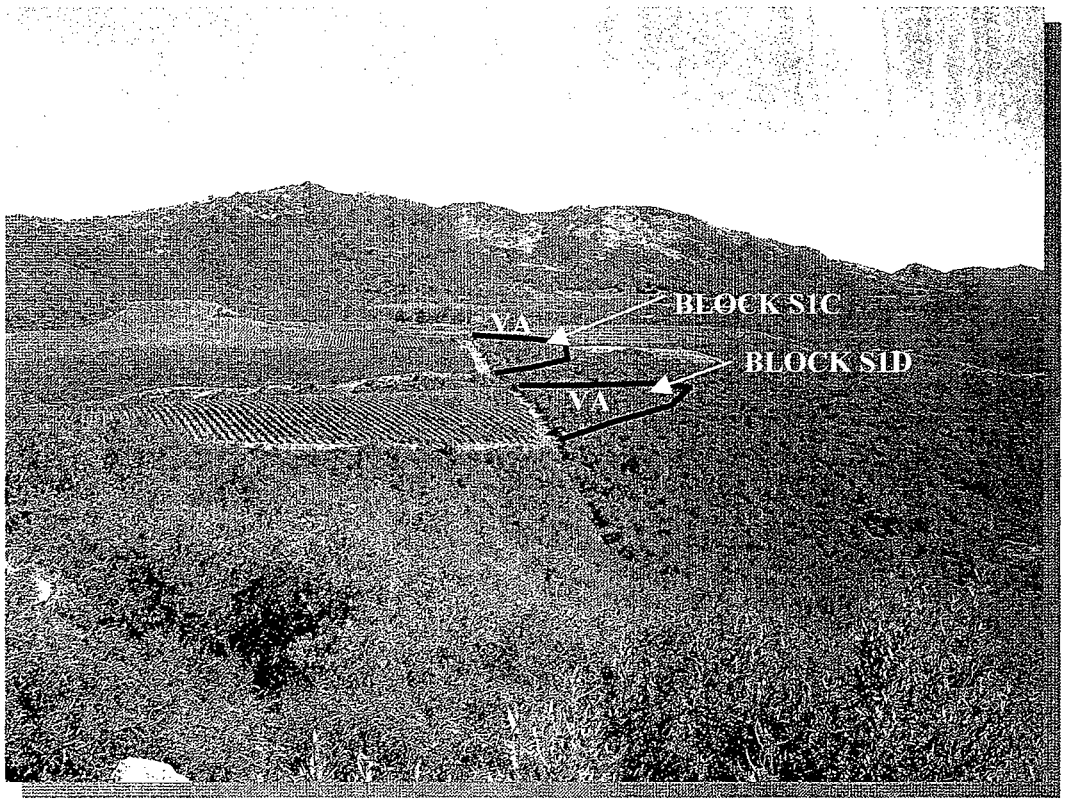


Photo 12

VA – Vineyard Development Area

Supplemental Environmental Information

1. Stagecoach Vineyards and Oakville Heights by Jan Russell Krupp their General Partner. 3265 Soda Canyon Road 707-259-1198
2. 3595 Soda Canyon Road
3. 032-030-010-,059, 060, 061, 062 &032-0-540—001.
4. Erosion Control Plan for new vineyard acres
5. No other related permits required
6. Agricultural Watershed
7. Vineyard , No other projects planned on these parcels.
8. Parcel sizes: 174.87, 118.96, 193.01, 320.04, 128.02, 195.48
9. Project Size 107 acres
10. Beginning in April 2006 and concluding in August 2007
11. Preparing to plant the entire project in 2006. Planting approximately 40% in 06 and 60% in 07.
12. No grading permits, use permits, variances or zoning changes will be required.
13. No other related permits or involvement by other agencies are anticipated

Environmental Setting

22. The project site is defined by chaparral type vegetation, gently sloping to almost flat pieces. The soil is Guenoc and Hambrecht and in its current state is moderately erosive. Coyotes, bobcats, raptors, quail, raccoons, snakes, and lizards cross between the site and nearby vineyards easily. There are no wetlands on the site although several small streams flow between December and April. Areas adjacent to these seasonal streams are not distinctively riparian, but rather are more similar to the surrounding brush. Two forest fires have swept the site in the 60's and 80's. Currently there is a manager's home, a shop, and three generator sheds on these parcels that have been developed along with existing vineyards. The existing adjacent vineyards with their luxurious cover crop are not as erosive as the soil covered by native vegetation.

23. The surrounding properties contain small and medium size vineyards as well as undisturbed brush. There is one house within a quarter mile of one of the parcels covered by this plan. This house is surrounded by vineyard. Birds animals and reptiles are similar but not identical in the surrounding areas. There are a few deer outside of the current deer fence.

Attachment A

SUPPLEMENTAL PROJECT INFORMATION

File #: P06-0048 Owner: STAGECOACH VINEYARD/OAKVILLE HEIGHTS Parcel #: 032-030-010, 059, 060, 061, 062, 032-540-001

Vineyard Development Area Specifics

1. **Size of Area Disturbed:**	107	acres
2. **Size of Vineyard:**	107	acres
3. **Acres of Vines:**	90	acres
4. **Slopes of Area Disturbed:**	10% to 25%	
5. **Amount of Total Acreage Equal to or Above 30% Slope:**	1.5	acres
6. **Total Number of Trees Removed**	0	trees
a) natives		trees
b) non-natives		trees

Vineyard Development Schedule

1. **Pre-Planting Stage:**
(i.e. land clearing, ripping, installation of drainage system., vineyard staking, installation of irrigation system., installation and maintenance of permanent and temporary erosion control measures, planting of cover crop, straw mulching)
Start Date: 4/15/2006 End Date: 8/30/2007 Duration: 17 months
Temporary Cover Crop Planted yes ____ No

2. **Planting Stage:**
(i.e planting of vines, seeding permanent cover crop, apply straw mulch, maintenance of erosion control measures)
Start Date: 5/15/2006 End Date: 8/30/2007 Duration: 16 months

3. **Operational Stage:**
(maintenance and adjustment as needed of permanent erosion control practices, implementation of annual vineyard and erosion control measures, commencement of annual harvests)
Start Date: 8/1/2006

Vineyard Operations Information

1. **Farming Equipment:**

____ Track-laying	Percent of Use	____%
_X_ Rubber-tired	Percent of Use	50%
_X_ ATV	Percent of Use	10%
_X_ Hand/Manual	Percent of Use	40%
____ Other (describe) _____	Percent of Use	

2. **Annual Pruning:**
Time of Year: _____ january-march Number of days: 90 Number of Workers: 14

3. **Annual Sulfuring:**
Time of Year: _____ May- June Estimated applications/year: 5

4. **Weed Control:**

	Under Vines	***Between Rows***
Type of control		Mowing
Method of application	strip spray	
Months:	Jan-march	April- June
Applications/year:	1	3
Number of Workers:	1	1

5. **Harvest (Crush):**
Length 20 days Number of Workers: 13

6. **Frost Protection Method(s)**

	Hours of Operation	***Frequency*** *(times/year)*

____ Return-stack heaters			
____ Sprinklers			
____ Misters			
__X__ Wind Machines	1	2 AM to 7 AM	6
____ Late Pruning	as needed		
____ Other _____			

7. Rodent Protection Method(s):

rodenticides
fencing
raptors

8. Bird Protection Method(s):

	Time of Year (months)	*Time of Day*	*Duration of Use (days per year)*
__X__ Raptor Perches		All Year	

9. Proposed Nighttime Activities:

	Time of Night	*Duration of Use (days per year)*
night sulfur	9 PM to 7 AM	14

10. Irrigation Methods

Drip System ____ Other _____

11. Other Proposed Activities:

Traffic Characteristics Information

1. Estimated size of grape trucks/truck & trailers to be used: ten tons

2 Estimated truck trips per day:

3. Estimated number of farmworkers/vehicle: 6 for crush 6 for pruning

4. Lunch provided on-site for farmworkers: Bring own lunch

5. Soda Canyon road is primary access

6. Proposed secondary access, if any: _____

Itemized Fertilizer and Pesticide Information

	Application Method (broadcast, spray, drip system, etc)	*Application Amount (per acre)*	*Number of Applications per Year.*	*Annual Amount Used (per acre)*	*Total Annual Amount Used Overall.*
1. Fertilizers					
Ca Nitrate	drip	10 gallons	one	10	
Ammonium Phosphate	drip	5 gallons	two	10	
2. Mildewcides					
sulfur	spray	6lbs	5	30	
elite	spray	4oz	one	4oz	
flint	spray	4oz	one	4oz	
3. Herbicides					

Roundup	spray	3qts	one	3	
Goal	spray	3 qts	one	3	
surflan	spray	2qts	one	2	
4. Rodenticides					
Aluminum Phosphide	Hand	5 tablets	one	5	
5. Other Chemicals					

6. Proposed Storage, Mixing/Handling and Safety Measures:

Type of onsite chemical storage facility in use or proposed: Locked Metal container.

Location of current or potential area(s) used for the mixing agricultural chemicals and the description of the facilities present thereat: Concrete pad with safety for eyes and water on current vineyard

Location of current or proposed area designated for the cleaning and washing of chemical application equipment: Adjacent to the mixing Area

Water Source and Usage Information

Use Attachment D to calculate information requested

1. Current and/or Proposed Water Supply Source(s):

Agricultural Water Source(s):	***Percent of Total Agricultural Use:***
____ Well	100%

Residential and Non-Agricultural Water Source(s):	***Percent of Total Resid & Non-Ag***
Well	1%
	_____%

0

2. Current and Future/Proposed Water Usage *(acre-foot per year = AF/yr)*:

	Current Usage:	***Future Usage:***
Vineyard & other Agricultural. Uses:	226.5	287.25
Residential/Domestic Uses:	0.5	0.5
Other Uses:	0.3	0.3
Total Usage:	227.3	288.05

3. Allowable Groundwater Allotment: 565.19

Rock/Spoils/Debris Disposal Information

1. Use/Disposal of Rock Generated (brought to the surface during the vineyard preparation ripping and raking process):

Proposed Use/Disposal Method:	***Percent of Total***	***Location***
____Road Base (crushed to aggregate size)	30%	on site
____"Rock Mulch" (crushed to fist size and returned to fields)	_____%	_____ on-site _____ off-site

____Decorative Rock _____% _____ on-site _____ off-site
____Fill (buried) _____% _____ on-site _____ off-site
____Stacked In Pile 70% on site
____Other _____ _____% _____ on-site _____ off-site

2. **Estimated Amount of Cut & Fill:** _____ cubic yards (total)
_____ cubic yards (cut) _____ cubic yards(fill)

3. **If rock/spoils material is to be disposed of off-site, where, what for and how much:**

Location of Disposal Site	*Use of Material*	*Quantity*
		_____ cubic yards
		_____ cubic yards
		_____ cubic yards

4. **Debris Disposal (Location & Method):**
Burning ____Off-site_____

Related Permits

1. **Please indicate any other related or required permits associated with the proposed conversion plan:**

County:

Grading: Yes _____ No _X_
Building: Yes _____ No _X_
Structural ECP: Yes _____ No _X_
Sewage Disposal: Yes _____ No _X_
Groundwater/Well Permit: Yes _____ No _X_
Use Permit: Yes _____ No _X_
Variance: Yes _____ No _X_
Other Not Listed: _____

State Dept of Forestry:

Timber Harvest Plan: Yes _____ No _X_
Timber Conversion Exemption: Yes _____ No _X_
Timber Conversion Permit: Yes _____ No _____ _____ acres
_____ acres

State Dept of Fish & Game:

Streambed Alteration Permit: Yes _____ No _X_

State Division of Water Rights:

Appropriate Water Rights Permit: Yes _____ No _X_

State Environmental Protection Agency:

Chemical Application Permit(s): Yes _X_ No _____

Other State & Federal Permits *(please list)* **:**

_____

2. **Consultation with, or letter of agreement from:**

Regional Water Quality Control Brd: Yes _____ No _X_
National Marine Fisheries Service/NOAA: Yes _____ No _X_
Army Corps of Engineers: Yes _____ No _X_
U.S. Fish and Wildlife Service: Yes _____ No _X_

Attachment D

PHASE I WATER AVAILABILITY ANALYSIS

File #: P16-0042 Owner: Stagecoach/Oakville Heights Parcel
Parcel #s: 032-030-010, 059, 060, 061, 062, 032-540-001

This form is intended to help those who must prepare a Phase I Water Availability Analysis. **The Department will not accept an analysis that is not on this form.**

BACKGROUND: A Phase I Water Availability Analysis is done in order to determine what changes in water use will occur on a property as a result of the a conversion. Staff uses this information to determine whether the project may have a detrimental effect on groundwater levels. If it may, additional information will be required. You will be advised if additional information is needed.

PERSONS QUALIFIED TO PREPARE: Any person that can provide the needed information

PROCEDURE:

STEP 1: *Prepare and attach to this form an 8-1/2"x11" site plan of your parcel(s) with the locations of all structures, gardens, vineyards, etc in which well water will be used shown*

STEP 2: *Determine the allowable groundwater use allotment for your parcel(s).*

Total size of parcel(s)	1130.38	acre(s)
Multiply by parcel location factor	x 0.5	acre-foot per acre per year (see back)
Allowable groundwater allotment	= 565.19	acre-foot per year

STEP 3: *Determine the estimated water use for all vineyards on your parcel(s) currently and after the planned conversion; actual water usage figures may be substituted for the current usage estimate (please indicate if this is done). Estimate future use for both the vineyard establishment period and thereafter*

Current Usage:

Number of *planted* acres	492	acres
Multiply by number of vines/acre	x 1000	vines per acre
Multiply by gallons/vine/year	x 150	gallons of water per vine per year
Divide by 325,821 gallons/af irrigation	= 226.5	af of water per yr used for vineyard

Future Usage:

Number of *planted* acres	91	acres
Multiply by number of vines/acre	x 1450	vines per acre
Multiply by gallons/vine/year (long-term)	x 150	gallons of water per vine per year (long-term)
	200	gallons of water per vine per year (establish)
Divide by 325,821 gallons/af	= 60.75	af of water per yr used (vineyard long-term)
	81	af of water per yr used (vineyard establish)

STEP 4: *Using the guidelines on the next page, actual water usage figures, and/or detailed water use projections, tabulate the existing and projected future water usage on the parcel(s) in acre-foot per year (af/yr) {1 af = 325,821 gallons}.*

Existing Usage:		**Future Usage:**	
Residential	0.5 af/yr	Residential	0.5 af/yr
Farm Labor Dwelling	af/yr	Farm Labor Dwelling	af/yr
Winery	af/yr	Winery	af/yr
Commercial	0.3 af/yr	Commercial	af/yr
Vineyard (long-term)	60.75 af/yr	Vineyard (long-term)	226.5 af/yr

LEGEND

PROPOSED VINEYARD AREA

BLUE LINE STREAM

(10) PHOTO LOCATION NUMBER

PPI ENGINEERING

JOB NO: 10311621

DWG. NO. FIGURE A-1

SCALE: 1" = 700'

STAGECOACH VINEYARDS

EROSION CONTROL PLAN

PHOTO LOCATION MAP

DESIGN ENGINEER:

DATE: 1-7-06

SHEET: 1 OF: 1

\\Server01\Ranches\KRPKRP\10311621 - Erosion Control Plan\Drawings\10311621F.dwg, Photo Locations, 6/16/2006 3:45:27 PM

GENERAL NOTE

1. CONTRACTOR SHALL BE RESPONSIBLE FOR BEING FAMILIAR WITH THE PROVISIONS AND REQUIREMENTS CONTAINED IN ... PROJECT SPECIFICATION. CONTRACTOR SHALL HAVE A COPY AVAILABLE AT THE JOB SITE AT ALL TIMES.
2. CONTRACTOR SHALL REQUEST INSPECTIONS A MINIMUM OF 24 HOURS IN ADVANCE BY CALLING (707) 257-9520, 8:00 A.M. TO 9:00 A.M., MONDAY - FRIDAY.
3. CONTRACTOR SHALL NOTIFY ALL PUBLIC OR PRIVATE UTILITY COMPANIES 48 HOURS PRIOR TO COMMENCEMENT OF WORK ADJACENT TO EXISTING UTILITY LINES.
4. CONTRACTOR SHALL NOTIFY UNDERGROUND SERVICE ALERT (U.S.A.) AT (800) 642-2444.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE VERIFICATION OF ALL EXISTING UTILITIES IN THE FIELD. LOCATIONS OF UTILITIES AND UNDERGROUND FACILITIES SHOWN ARE APPROXIMATE AND FOR GENERAL INFORMATION ONLY.
6. CONTRACTOR SHALL PROVIDE AND MAINTAIN SUFFICIENT BARRICADES TO PROVIDE FOR SAFETY OF THE GENERAL PUBLIC.
7. ALL MATERIAL SHALL BE FURNISHED AND INSTALLED BY THE CONTRACTOR UNLESS OTHERWISE NOTED.
8. CONTRACTOR SHALL CONFORM TO EXISTING STREETS, SURROUNDING LANDSCAPE AND OTHER IMPROVEMENTS WITH A SMOOTH TRANSITION IN PAVING, CURBS, GUTTERS, SIDEWALKS, GRADING, ETC., AND TO AVOID ANY ABRUPT OR APPARENT CHANGES IN GRADE OR CROSS SLOPES, LOW SPOTS OR HAZARDOUS CONDITIONS.
9. CONTRACTOR SHALL COORDINATE ALL NECESSARY UTILITY RELOCATIONS, IF REQUIRED, WITH THE APPROPRIATE UTILITY COMPANIES.
10. CONTRACTOR SHALL CONDUCT ALL GRADING OPERATIONS IN SUCH A MANNER AS TO PRECLUDE WIND BLOWN DIRT AND DUST AND RELATED DAMAGE TO NEIGHBORING PROPERTIES. SUFFICIENT WATERING TO CONTROL DUST IS REQUIRED AT ALL TIMES. CONTRACTOR SHALL ASSUME LIABILITY FOR CLAIMS RELATED TO WIND BLOWN MATERIAL. IF THE DUST CONTROL IS INADEQUATE AS DETERMINED BY THE PUBLIC WORKS DIRECTOR OR HIS DESIGNATED REPRESENTATIVE, THE CONSTRUCTION WORK SHALL BE TERMINATED UNTIL CORRECTIVE MEASURES ARE TAKEN. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER EROSION CONTROL.
11. ONE WEEK PRIOR TO INSTALLATION OF ANY NEW WATER, STORM DRAIN AND SEWER LINES, THE CONTRACTOR SHALL EXPOSE EXISTING UNDERGROUND UTILITY LINES AT POINTS WHERE CROSSINGS OF THE EXISTING AND NEW UTILITY LINES OCCUR, FOR THE ENGINEER TO REVIEW AND RESOLVE ANY GRADE CONFLICTS.
12. IN ORDER TO COMPLETE THIS PROJECT, ELECTRIC AND GAS LINES AND SERVICES, ETC., MAY BE INSTALLED BY OTHERS. THE CONTRACTOR SHALL COORDINATE THE INSTALLATION OF THESE FACILITIES WITH P.G.&E. AND COOPERATE FULLY IN THE EXECUTION OF THIS WORK CONCURRENTLY WITH THE PROGRESS OF THE REST OF THE WORK.
13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL COSTS OF REPAIRING ANY INJURIES OR DAMAGE TO EXISTING UTILITIES CAUSED BY HIM.
14. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL SECURE CONSTRUCTION PERMITS AS NECESSARY AND PAY ALL FEES INCLUDING INSPECTION FEES THEREFOR.
15. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; AND THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE OWNER AND THE ENGINEER HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING FOR LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE OWNER OR THE ENGINEER.
16. DUE TO THE HEAVY BRUSH COVER ON THE SUBJECT PROPERTY, VERIFICATION OF EVERY TOPOGRAPHIC FEATURE PRIOR TO CLEARING IS NOT POSSIBLE. THEREFORE, CERTAIN MODIFICATIONS TO THIS PLAN MAY BE REQUIRED DURING CONSTRUCTION TO ACCOMODATE CONDITIONS ENCOUNTERED DURING CLEARING OPERATIONS. ALL MODIFICATIONS TO THIS PLAN SHALL BE REVIEWED BY THE NAPA COUNTY RCD, AND IF REQUIRED, THE NAPA COUNTY CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT.
17. CONTRACTOR SHALL HANDLE AND DISPOSE OF ALL TOXIC, CONTAMINATED AND ASBESTOS MATERIALS IN ACCORDANCE WITH PRESCRIBED LOCAL, STATE AND FEDERAL REGULATIONS.
18. ABANDON ANY EXISTING WELL AND/OR SEPTIC TANK PER HEALTH DEPARTMENT STANDARDS.
19. CONTRACTOR SHALL PROVIDE ADEQUATE PROTECTION OF BURIED PIPE FROM CONSTRUCTION LOADS.
20. A DEPARTMENT OF FISH & GAME STREAM ALTERATION PERMIT SHALL BE OBTAINED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF ANY WORK IN THE EXISTING "BLUELINE" STREAM SHOWN.

TREE PRESERVATION NOTES

1. PLACE BARRICADES AROUND TREES THAT PROTECT THE AREA BENEATH THE FOLIAGE CROWN DRIPLINE AGAINST ENCROACHMENT.
2. PLACE A THICK LAYER OF MULCH BENEATH THE TREES AFTER NECESSARY GRADING AROUND THEM TO REDUCE THE EFFECTS OF COMPACTION AND HOLD MOISTURE IN THE SOIL.
3. AVOID TRENCHING BENEATH DRIPLINES.
4. AVOID EXCESSIVE CUTTING OR FILLING. SHOULD IT BE NECESSARY, COMPENSATE WITH PRESCRIBED REMEDIAL MEASURES AND PRUNING.
5. FERTILIZE TREES AFTER CONSTRUCTION IS COMPLETED TO COMPENSATE FOR IMPACT OF CONSTRUCTION AND TO PROMOTE REGROWTH.
6. SOIL VENT WITH AUGER HOLES WHERE FILLING HAS OCCURED.
7. MONITOR FOR HEALTH CHANGES AFTER CONSTRUCTION IS COMPLETED.

HYDROSEEDING

GROUND COVER TREATMENT SHALL CONSIST OF HYDROSEEDING OF ALL DISTURBED AREAS. THE HYDROSEED MIX SHALL BE AS DESCRIBED BELOW:

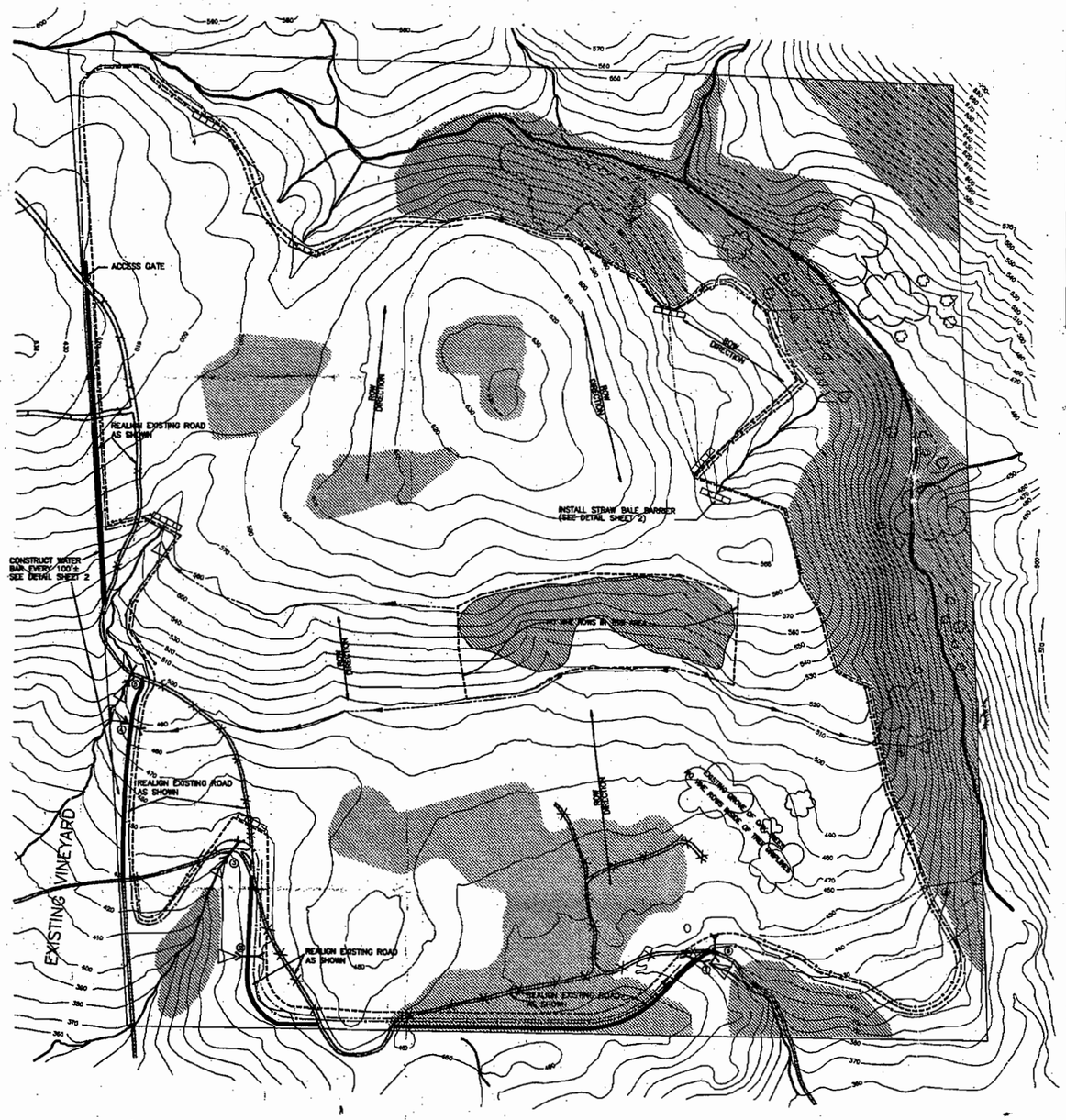
A. SEED:
SEED MIX SHALL BE APPLIED AT THE RATE OF 28 LBS./ACRE AND SHALL CONSIST OF THE FOLLOWING:

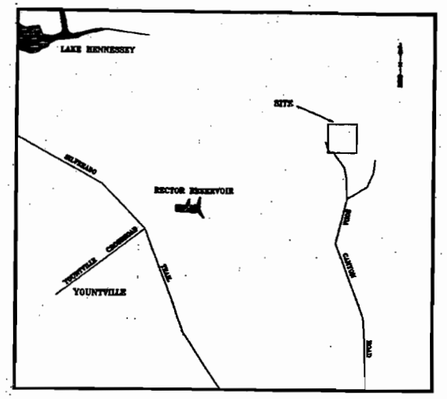
CRIMSON CLOVER	8 LBS./ACRE
ZORRO FESCUE	12 LBS./ACRE
IDAHO FESCUE	8 LBS./ACRE

B. MULCH:
MULCH MATERIAL SHALL BE CLEAN, NATURAL WOOD CELLULOSE FIBER OR STRAW APPLIED AT THE RATE OF 3,000 LBS./ACRE. NATURAL WOOD CELLULOSE FIBER SHALL BE PROCESSED IN SUCH A MANNER THAT IT WILL CONTAIN NO GROWTH OR GERMINATION INHIBITING FACTORS AND SHALL BE DARK GREEN TO FACILITATE METERING OF MATERIALS. IT SHALL BE MANUFACTURED IN SUCH A MANNER THAT AFTER EACH ADDITION AND AGITATION IN SLURRY TANKS WITH FERTILIZER, SEED, WATER, AND OTHER APPROVED ADDITIVES, THE FIBERS IN THE MATERIAL WILL BECOME UNIFORMLY SUSPENDED TO FORM A HOMOGENOUS SLURRY; WHEN HYDRAULICALLY SPRAYED ON THE GROUND, SHALL COVER UNIFORMLY; AND AFTER APPLICATION WILL ALLOW THE ABSORPTION OF MOISTURE AND RAINFALL TO PERCOLATE TO THE UNDERLYING SOIL.

C. FERTILIZER:
FERTILIZER SHALL BE EQUAL TO "BLUE CHIP 16-20-0" APPLIED AT THE RATE OF 200 LBS./ACRE.

D. WETTING AGENT:
WETTING AGENT SHALL BE 95% ALKYL POLYETHYLENE GLYCOL ETHER AS "COMMERCIAL WATER IN" OR EQUAL APPLIED AT THE RATE OF 2 QUARTS PER ACRE.





SITE SKETCH
NO SCALE

N

SCALE: 1"=200'

STREAM SETBACK REQUIREMENTS	
GROUND SLOPE	SETBACK
<1%	35'
1%-5%	45'
5%-15%	55'
15%-30%	65'

LEGEND

- 0-5% SLOPES
- 5-30% SLOPES
- >30% SLOPES
- NEW ROADS (OUTSLOPED, 12'± WIDE)
- EXISTING ROADS
- EXISTING ROAD TO BE RELOCATED
- FENCE LINE
- V-DITCH, SLOPE=5% ± SEE DETAIL SHEET 2
- VINEYARD LIMIT LINE
- CULVERT, SEE TABLE FOR SIZE
- ENERGY DISSIPATOR SEE DETAIL SHEET 2
- SILT FENCE SEE DETAIL SHEET 2
- STRAW BALE BARRIER SEE DETAIL SHEET 2
- INSLOPED VINEYARD AVENUE W/ DROP INLET SEE DETAIL SHEET 2
- STREAM FLOWLINE
- "BLUELINE" STREAM PER USGS QUAD MAP

CULVERTS TABLE
① 18" CORRUGATED PLASTIC PIPE (CPP) ADS N-12 OR EQUAL
② 12" CPP
③ 12" CPP
④ 18" CPP
⑤ 12" CPP
⑥ 12" CPP
⑦ 12" CPP + DI (See Detail, Sheet 2)
⑧ 12" CPP + DI (See Detail, Sheet 2)
⑨ 12" CPP + DI (See Detail, Sheet 2)

EOP # 96-86-ECPA
APPROVED
CONSERVATION, DEVELOPMENT, AND PLANNING DEPARTMENT
DATE: 6.10.97
BY: J Barbarino

Napa County Resource Conservation District
Recommends
Approval ☐ Conditional Approval ☐
Plan # 96-86 ECPA
by

TOPOGRAPHY SHOWN BASED ON MAPPING PREPARED BY AMERICAN AERIAL SURVEYS, DATED SEPTEMBER, 1985

CONSTRUCTION CONTRACTOR NOTE: Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property, that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

NO.	DATE	REVISIONS	BY	APPD.

	BY	SIGNATURES	DATE
	DESIGNED		
	CADD		
	CHECKED		

CHAUDHARY & ASSOCIATES, INC.
Engineers • Surveyors • Planners • Inspectors
3272 VILLA LANE
NAPA, CALIFORNIA 94558
Telephone: (707) 255-2729

REGISTERED PROFESSIONAL ENGINEER — TANVIR K. CHAUDHARY — No. 54008 — Exp. 6/31/99 — CIVIL — STATE OF CALIFORNIA

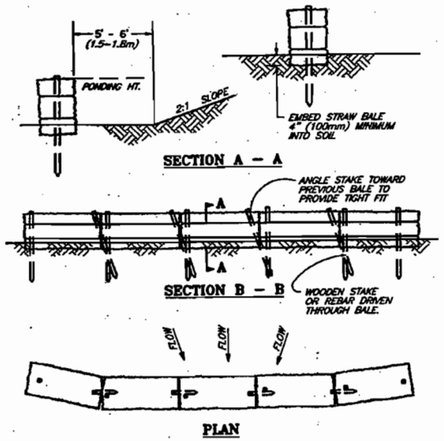
PREPARED FOR:
KRUPP FAMILY PARTNERSHIP
3265 SODA CANYON ROAD
NAPA, CA 94558
TEL #: (707) 259 1198

SCALE: 1"=200'

STAGE COACH VINEYARDS
EROSION CONTROL PLAN
A.P.N. 032-040-001
540
NAPA CALIFORNIA

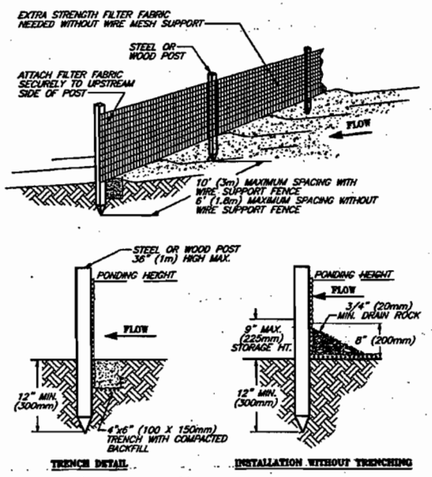
DATE: MAY 30,1997
SHEET 1 OF 2 SHEETS
FILE NO. 96-06-036

0 USE BASELINE MEASUREMENTS FOR REDUCED PLANS 6" 12" 18" 24"



NOTES:
1. THE STRAW BALES SHALL BE PLACED ON SLOPE CONTOUR.
2. BALES TO BE PLACED IN A ROW WITH THE ENDS TIGHTLY ABUTTING.
3. KEY IN BALES TO PREVENT EROSION OR FLOW UNDER BALES.

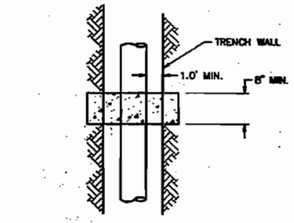
STRAW BALE BARRIER
NO SCALE

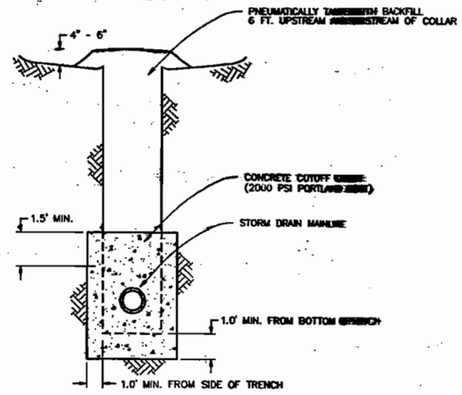


NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

NOT TO SCALE

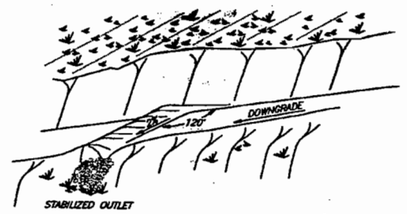
SILT FENCE INSTALLATION
NO SCALE

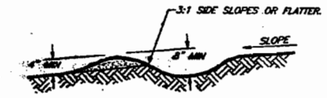




CROSS SECTION
NOTE: INSTALL ON ALL CULVERTS

CUTOFF COLLAR DETAIL
NO SCALE

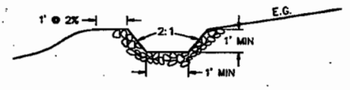




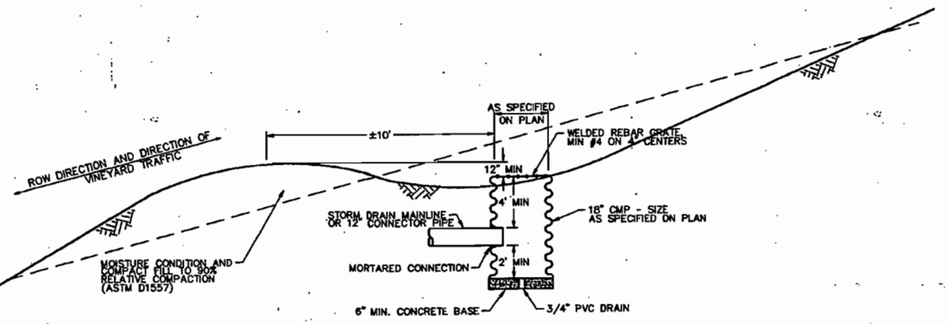
SECTION

NOTE: INSTALL EVERY 100'± ALONG ACESS ROADS

WATERBAR
NO SCALE

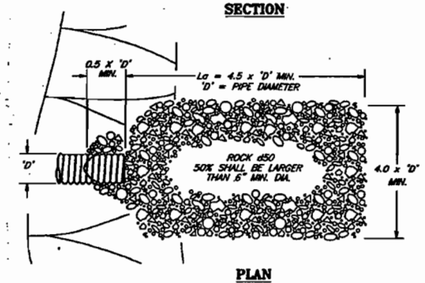


V-DITCH DETAIL
NO SCALE



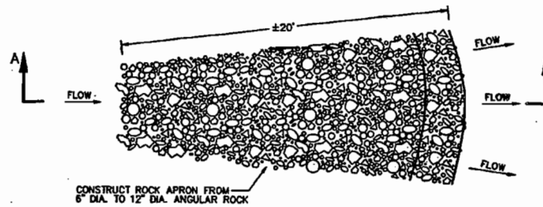
NOTES:
1. FLOWLINE OF INFIELD DIVERSION DITCHES SHALL BE 5% LARGE ROCKS SHALL BE REMOVED FROM DITCHES SUCH THAT FLOW IN DITCH IS NOT IMPEDED.
2. DITCHES SHALL BE CONSTRUCTED SUCH THAT VINEYARD TRAFFIC MAY PASS ACROSS DITCH (UP AND DOWN HILL) SAFELY.
3. DITCHES SHALL BE MAINTAINED AT ALL TIMES TO RETAIN DESIGN FLOW CAPACITY.
4. INSTALL DROP INLET AT LOW POINT ALONG FLOWLINE OF DIVERSION DITCH.
5. DROP INLET SHALL BE ALIGNED WITH A VINEROW OR OTHERWISE PROTECTED FROM VINEYARD TRAFFIC.

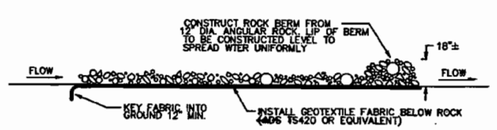
INSLOPED VINEYARD AVENUE W/ DROP INLET
NO SCALE



NOTES:
1. 'Lo' = LENGTH OF APRON. DISTANCE 'Lo' SHALL BE OF SUFFICIENT LENGTH TO DISSIPATE ENERGY.
2. APRON SHALL BE SET AT A ZERO GRADE AND ALIGNED STRAIGHT.
3. FILTER MATERIAL SHALL BE FILTER FABRIC OR 6" (150mm) THICK MINIMUM GRADED GRAVEL LAYER.

CULVERT ENERGY DISSIPATOR
NO SCALE





NOTE: ALIGN LONGITUDINAL CENTERLINE OF ENERGY DISSIPATOR PERPENDICULAR TO CONTOURS, AND PLANT

FLOW ENERGY DISSIPATOR
NO SCALE

BMP # 9158 & 9159A
APPROVED
CONSERVATION DISTRICT
DEPARTMENT
6-10-97
BY: J. H
PAGE 2 OF 2

CONSTRUCTION CONTRACTOR NOTE: Construction contractor agrees that in accordance with generally accepted construction practices, construction contractor will be required to assume sole and complete responsibility for job site conditions during the course of construction of the project, including safety of all persons and property, that this requirement shall be made to apply continuously and not be limited to normal working hours, and construction contractor further agrees to defend, indemnify and hold design professional harmless from any and all liability, real or alleged, in connection with the performance of work on this project, excepting liability arising from the sole negligence of design professional.

UNAUTHORIZED CHANGES & USES: The engineer preparing these plans will not be responsible for, or liable for, unauthorized changes to or uses of these plans. All changes to the plans must be in writing and must be approved by the preparer of these plans.

NO.	DATE	REVISIONS	BY	APPD.

	BY	SIGNATURES	DATE
	DESIGNED		
	CADD		
	CHECKED		

CHAUDHARY & ASSOCIATES, INC.
Engineers • Surveyors • Planners • Inspectors
3272 VILLA LANE
NAPA, CALIFORNIA 94558
Telephone: (707) 255-2729

REGISTERED PROFESSIONAL ENGINEER — ARVIN K. CHAUDHARY — No. 64006 — Exp. 12/31/99 — CIVIL — STATE OF CALIFORNIA

PREPARED FOR:
KRUPP FAMILY PARTNERSHIP
3265 SODA CANYON ROAD
NAPA, CA 94558
TEL. # (707) 253-3198

SCALE: NO SCALE

STAGE COACH VINEYARDS
DETAILS SHEET
APN 032-040-001
NAPA CALIFORNIA

DATE: MAY 30, 199
SHEET 2
OF 2 SHEET
FILE NO. 96-06-07

USE BASELINE MEASUREMENTS FOR REDUCED PLANS

E:/9606036/DETAILS/01DT9636/CH

APPENDIX B

VEGETATION RETENTION CALCULATIONS

STAGECOACH VINEYARDS
VINEYARD INFILL DEVELOPMENT
JOB NUMBER 10311621

Vegetation Retention Summary

Parcel Numbers: 032-030-010, 032-030-059, 060, 061, 062, 032-540-001

Total Area of Parcel(from AP map):	1130.38 Acres
Total Area of Tree Canopy Cover	21.9 Acres
Total Developed Area	557.28 Acres
Total Area of Reservoirs and Ponds	0 Acres
Total Area of Brush/Shrub/Grass without Canopy Cover[1]	551.2 Acres

Developable Area Remaining	107.8 Acres
Proposed Vineyard Development Area	106.8 Acres
Proposed Tree Canopy Cover to be Removed	0 Acres
Proposed Brush/Shrub/Grass without Canopy Cover to be removed[2]	106.8 Acres

Percent Canopy Cover to be retained	**100%**
Percent Brush/Shrub/Grass without Canopy Cover to be Retained	**40%**

[1](Total Area) - (Total Area of Canopy Cover)-(Total Developed Area)-(Total Area of Reservoirs and Ponds)
[2](Proposed Vineyard Development Area)-(Proposed Canopy Cover to be Removed)

Stagecoach Vineyards
Vineyard Infill Development
Job # 10311621

Vegetation Calculations Using 1993 Parcels

APN: 032-030-010

Land Use	Approximate Area (Ac.)
Total area	175
Existing Vineyard Area	103
Existing Tree Canopy	0
Existing Developed Area	2
Proposed Vineyard	12
Remaining brush	58
Brush remaining for development	-12

APN: 032-030-012

Land Use	Approximate Area (Ac.)
Total area	124
Existing Vineyard Area	33
Existing Tree Canopy	0
Existing Developed Area	1
Proposed Vineyard	8
Remaining brush	82
Brush remaining for development	33

Stagecoach Vineyards
Vineyard Infill Development
Job # 10311621

Vegetation Calculations Using 1993 Parcels

APN: 032-030-013

Land Use	Approximate Area (Ac.)
Total area	454
Existing Vineyard Area	297
Existing Tree Canopy	2
Existing Developed Area	8
Proposed Vineyard	45
Remaining brush	102
Brush remaining for development	-79

APN: 032-030-016

Land Use	Approximate Area (Ac.)
Total area	181
Existing Vineyard Area	0
Existing Tree Canopy	5
Existing Developed Area	0
Proposed Vineyard	24
Remaining brush	153
Brush remaining for development	82

Stagecoach Vineyards
Vineyard Infill Development
Job # 10311621

Vegetation Calculations Using 1993 Parcels

APN: 032-540-001

Land Use	Approximate Area (Ac.)
Total area	195
Existing Vineyard Area	109
Existing Tree Canopy	15
Existing Developed Area	4
Proposed Vineyard	17
Remaining brush	50
Brush remaining for development	-22

APPENDIX C

USLE CALCULATIONS

PPI Engineering

Napa County

Maximum Length of Slope

for a soil loss tolerance of 4 tons per acre.

NAME: Stagecoach Vineyards DATE: 1/20/2006

Cover Type: PERMANENT COVER CROP

Soil Unit No. (100-182)--- 143 -K= 0.32

Soil Name GUENOC-ROCK OUTCROP -R= 90

-T= 2

Percent Cover		60%			70%		
		C= 0.070 P= 1.0	C= 0.070 P= 0.60	C= 0.070 P= 0.50	C= 0.046 P= 1.0	C= 0.046 P= 0.60	C= 0.046 P= 0.50
	2	207,340	1,138,092	2,089,848-	840,393	4,612,937	8,470,611
	4	5,491	19,691	31,061	15,685	56,249	88,730
	6	873	2,425	3,491	2,021	5,615	8,085
	8	402	1,116	1,608	931	2,585	3,723
	10	214	596	858	497	1,379	1,986
	12	130	360	519	301	835	1,202
P	14	85	236	340	197	547	788
E	16	59	164	237	137	381	548
R	18	43	120	172	100	277	399
C	20	33	90	130	75	209	302
E	22	25	70	101	59	163	234
N	24	20	56	81	47	130	187
T	26	16	46	66	38	106	152
	28	14	38	54	31	87	126
S	30	11	32	46	26	74	106
L	32	10	27	39	23	63	90
O	34	8	23	34	19	54	78
P	36	7	20	29	17	47	68
E	38	6	18	26	15	42	60
	40	6	16	23	13	37	53
	42	5	14	21	12	33	48
	44	5	13	19	11	30	43
	46	4	12	17	10	27	39
	48	4	11	15	9	25	36
	50	4	10	14	8	23	33

NOTES:

C=Cover and Management Factor

P=Practice Factor

PPI Engineering

Napa County

Maximum Length of Slope

for a soil loss tolerance of 3 tons per acre.

NAME: Stagecoach Vineyards DATE: 1/20/2006

Cover Type: PERMANENT COVER CROP

Soil Unit No. (100-182)--- 152 -K= 0.15

Soil Name HAMBRIGHT-ROCK OUTCROP -R= 90

-T= 1

Percent Cover		60%			70%		
		C= 0.070 P= 1.0	C= 0.070 P= 0.60	C= 0.070 P= 0.50	C= 0.046 P= 1.0	C= 0.046 P= 0.60	C= 0.046 P= 0.50
	2	993,303	5,452,262	10,011,840	4,026,073	22,099,211	40,580,183
	4	17,780	63,763	100,582	50,792	182,144	287,322
	6	2,235	6,207	8,938	5,174	14,373	20,698
	8	1,029	2,858	4,116	2,383	6,619	9,531
	10	549	1,525	2,196	1,271	3,531	5,085
	12	332	923	1,329	769	2,137	3,077
P	14	218	605	871	504	1,401	2,018
E	16	152	421	606	351	975	1,404
R	18	110	307	441	256	710	1,022
C	20	83	231	333	193	536	772
E	22	65	180	259	150	417	600
N	24	52	143	207	120	332	478
T	26	42	117	168	97	270	389
	28	35	97	139	81	224	322
S	30	29	81	117	68	188	271
L	32	25	69	100	58	161	231
O	34	22	60	86	50	139	200
P	36	19	52	75	44	121	174
E	38	17	46	66	38	107	153
	40	15	41	59	34	95	136
	42	13	37	53	31	85	122
	44	12	33	48	28	77	110
	46	11	30	43	25	70	100
	48	10	27	40	23	64	92
	50	9	25	36	21	58	84

NOTES:

C=Cover and Management Factor

P=Practice Factor

PPI Engineering

Napa County

Maximum Length of Slope

for a soil loss tolerance of 3 tons per acre.

NAME: Stagecoach Vineyards DATE: 1/20/2006

Cover Type: PERMANENT COVER CROP

Soil Unit No. (100-182)--- 176 -K= 0.15

Soil Name ROCK OUTCROP-HAMBRIGHT -R= 90

-T= 1

Percent Cover		60%			70%		
		C= 0.070 P= 1.0	C= 0.070 P= 0.60	C= 0.070 P= 0.50	C= 0.046 P= 1.0	C= 0.046 P= 0.60	C= 0.046 P= 0.50
	2	993,303	5,452,262	10,011,840	4,026,073	22,099,211	40,580,183
	4	17,780	63,763	100,582	50,792	182,144	287,322
	6	2,235	6,207	8,938	5,174	14,373	20,698
	8	1,029	2,858	4,116	2,383	6,619	9,531
	10	549	1,525	2,196	1,271	3,531	5,085
	12	332	923	1,329	769	2,137	3,077
P	14	218	605	871	504	1,401	2,018
E	16	152	421	606	351	975	1,404
R	18	110	307	441	256	710	1,022
C	20	83	231	333	193	536	772
E	22	65	180	259	150	417	600
N	24	52	143	207	120	332	478
T	26	42	117	168	97	270	389
	28	35	97	139	81	224	322
S	30	29	81	117	68	188	271
L	32	25	69	100	58	161	231
O	34	22	60	86	50	139	200
P	36	19	52	75	44	121	174
E	38	17	46	66	38	107	153
	40	15	41	59	34	95	136
	42	13	37	53	31	85	122
	44	12	33	48	28	77	110
	46	11	30	43	25	70	100
	48	10	27	40	23	64	92
	50	9	25	36	21	58	84

NOTES:

C=Cover and Management Factor

P=Practice Factor

PPI Engineering

Napa County

Maximum Length of Slope

for a soil loss tolerance of 3 tons per acre.

NAME: Stagecoach Vineyards DATE: 1/20/2006

Cover Type: PERMANENT COVER CROP
Soil Unit No. (100-182)--- 176 -K= 0.15
Soil Name ROCK OUTCROP-HAMBRIGHT -R= 90
-T= 1

Percent Cover		75%			80%		
		C= 0.034 P= 1.0	C= 0.034 P= 0.60	C= 0.034 P= 0.50	C= 0.022 P= 1.0	C= 0.022 P= 0.60	C= 0.022 P= 0.50
PERCENT SLOPE	2	11,027,514	60,530,285	111,150,121	47,061,357	258,320,898	474,347,663
	4	108,141	387,805	611,739	321,094	1,151,473	1,816,381
	6	9,472	26,310	37,886	22,622	62,839	90,488
	8	4,362	12,115	17,446	10,417	28,937	41,669
	10	2,327	6,463	9,307	5,558	15,438	22,230
	12	1,408	3,912	5,633	3,363	9,342	13,453
	14	923	2,565	3,694	2,206	6,127	8,822
	16	643	1,785	2,570	1,535	4,263	6,138
	18	468	1,300	1,871	1,117	3,104	4,470
	20	353	981	1,413	844	2,343	3,375
	22	275	763	1,099	656	1,822	2,624
	24	219	608	875	523	1,452	2,091
	26	178	495	712	425	1,181	1,701
	28	148	410	590	352	979	1,409
	30	124	345	496	296	823	1,186
	32	106	294	423	253	702	1,011
	34	91	254	365	218	606	873
	36	80	221	319	190	529	761
	38	70	195	281	168	466	671
	40	62	173	250	149	414	596
	42	56	155	224	134	371	534
	44	50	140	202	121	335	482
	46	46	127	183	109	304	438
	48	42	116	168	100	278	400
	50	39	107	154	92	255	368

NOTES:
C=Cover and Management Factor
P=Practice Factor

NAPA COUNTY
CONSERVATION, DEVELOPMENT & PLANNING COMMISSION
1195 Third Street, Room 210, Napa, California, 94559
(707) 253-4416

BASIC APPLICATION FOR EROSION CONTROL PLAN REVIEW

FOR OFFICE USE ONLY SUBMITTAL DATE: 02/07/06

FILE #: P06-0042-ECPA APN #: 032-030-010, 059, 060, 061 & 062, 032-540-001 USGS QUAD: Yountville

[ ] STRUCTURAL [✓] AGRICULTURAL TOWNSHIP/RANGE:

REQUEST: 107 acres of new vineyard - mostly within undeveloped areas between existing vineyard blocks.

107 acres total disturbance; 90 net acres of vines

PROJECT TYPE: Agriculture: New ✓ Vineyard Replant: (Process I:____ Process II:____) Other:____

Non-Agriculture: Structure____ Driveway____ Road____ Reservoir____ Other:____

PERCENT SLOPE: Cropland: Avg-16% Structure:____ Pad:____ Driveway:____ Road:____

OTHER PERMITS: Grading Permit____ Use Permit:____ Variance:____ Septic System Permit:____ Groundwater Permit:____

REVIEW AGENCIES: CDPD: X County Consultant:____ OR RCD: X

FINAL APPROVAL: CDPD: X Date:____

TO BE COMPLETED BY APPLICANT

(Please type or print legibly)

Applicant's Name: Stagecoach Vineyards/ Oakville Heights c/o PPI Engineering **Telephone #:** (707) 253-1806

Telephone #: (707) 253-1806 **Fax:** (707) 253-1604 **E-Mail:** jbushey@ppiengineering.com

Mailing Address: 1802 Soscol Avenue (No / Street) Napa (City) CA (State) 94559 (ZIP)

Status of Applicant's Interest in Property: Owner

Property Owner's Name: Stagecoach Vineyards Ltd Ptn, Stagecoach Vineyards Limited, Oakville Heights, LLC

Telephone #: (707) 259-1198 **Fax:** (707) 251-6198 **E-Mail:** --

Address: 3265 Soda Canyon Road (No / Street) Napa (City) CA (State) 94558 (ZIP)

Site Address/Location: 3595 Soda Canyon Road (for parcel 032-540-001 only) (No / Street) Napa (City)

Assessor's Parcel #: 032-030-010, 059, 060, 061 & 032-540-001 **Existing Parcel Size:** 174.87, 118.96, 193.01, 320.04, 128.02, 195.48 acres

Development Area Size: 107 acres

Slope Range: 10 % to 25 % **Total Acreage ≥ 30%:** 1.5 acres **Estimated Total Amount of Cut & Fill:** N/A cubic yards

Land, or Aerial survey Prepared By: Brooks and Associates Date: 1995/2003

(**NOTE:** Contour map/survey is required for all development areas with an estimated slope of 15% or greater and for all road/driveway projects, Contour map must include all areas within 100' of the cut and fill edges. Percent slope shall be calculated and presented as whole numbers.)

Source(s) of Water: Existing well

Related Permits Filed: Water Rights____ Groundwater____ Well____ Sewage Disposal____ Use Permit/Variance?____ Timber Harvest____ Stream Alteration____ Others:____

I hereby certify that all the information contained in this application, including but not limited to, this application form, the supplemental information sheets, site plan, plot plan, cross sections/elevations, is complete and accurate to the best of my knowledge. I hereby authorize such investigations including access to County Assessor's Records as are deemed necessary by the County Planning Division for evaluation of this application and preparation of reports related thereto, including the right of access to the property involved.

Signature of Applicant — Date: 1/5/06 — for Stagecoach Vineyards + Oakville Heights LLC — Signature of Property Owner — Date

TO BE COMPLETED BY CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT

$ 5,000 (Fee) | R06-0005041-505 (Receipt Number:) | Carly Aubrey (Received By) | 02/07/06 (Date)

CDPD 11/00

EROSION NTROL PLAN SUPPLEMENTAL IN RMATION

Project / Construction Phasing Information

APN: 032-030-010, 059, 060, 061
062, 032-540-001

1. Project Description:

There are 2 objectives of this erosion control plan. The first is to bring the Owner into compliance with Napa County regulations for existing vineyard development. The second is to address vineyard infill development on the property. See the Narrative in the specifications.

Parcel Size: 174.87, 118.96, 193.01, 320.04, 128.02, 195.48 acres Total Land area disturbed: 107 acres
Agriculture: NEW plant acres: 90 Replant acres: 0
Structures: Residence____ Building____ Driveway____ Road____ Other____

2. Project Phases: [X] one [X] two or [ ] _____
3. Anticipated date to start construction (month/year): 3-2006
4. Estimated date of completion of each phase:
   Phase 1: 9-2006
   Phase 2: 9-2007
   Phase__: _____
5. Total construction time estimated: 6 weeks
6. Work scheduled between Oct. 1 and Apr. 1? ____Yes ____No OR
   between Sept. 1 and Apr. 1? ____Yes __X__No (municipal watershed)
7. Winterization measures in the Erosion Control Plan: See Erosion Control Plan Narrative
8. Is a grading permit, a well permit, or a sewage disposal permit required? __Yes __X__No
   If yes, has the Napa Co ___Public Works and/or ___Environmental Management Departments been notified? __Yes __No

Slope Information

9. Earth moving, grading or land clearing on slope(s) of: 10 % to 25 %
10. Total acreage with slopes greater than or equal to 30% 1.5 acres
11. Contour mapping source: Digital topography created from surveyed ground control and aerial photography

Water Deficient Area, Watershed Area, & Water rights Diversion Permits

12. Water-deficient area: ___Yes (applicant must contact Co Env Mgmt Dept) __X__No
13. Sub-Watershed Name: Rector Reservoir
    Municipal Reservoir Watershed: __X__Yes ___No
    If yes: ___Bell Canyon ___Kimball ___Milliken ___Lake Hennessey __X__Rector
14. Have any other erosion control plans effecting this parcel been approved since 1991? __X__Yes__No
15. Coverage information (required for projects in any watershed):
    (a) Existing acres of tree canopy cover: 21.9acres
        Proposed acres of canopy cover to be removed: 0 acres
        Percent of canopy cover to be retained: 100%
    (b) Existing acres of shrub, brush, grass without tree canopy: 551.2 acres
        Proposed acres of shrub, brush, grass cover to be removed: 106.8 acres
        Percent of shrubs, brush, grass to be retained: 40%
16. Is there a Water Rights permit associated with the project or parcel? ___Yes __X__No
    acre/feet_____
    a) Copy of permit from the State Dept of Water Resources attached? ___Yes OR
    b) Date application for necessary permit submitted to this board: _____
    c) Copy of associated CEQA document attached? ___Yes ___No

EROSION CONTROL PLAN SUPPLEMENTAL INFORMATION *(Cont.)*

Streams, Watercourses, & Streambed Alteration Agreements

17. All streams and watercourses in vicinity of project area(s) shown and the required setback(s) indicated with the distance and slope? _X_ Yes ___ No

18. Is there a State Dept of Fish & Game Streambed Alteration (1603) Permit associated with the project or parcel? ___ Yes _X_ No
    (a) Copy of State Dept of Fish & Game Permit attached? ___ Yes OR
    (b) Date application for necessary permit submitted to this agency: _____
    (c) Copy of CEQA document prepared attached? ___ Yes ___ No

Environmental Setting

19. Is any portion of the project located on or within 500' of a landslide? ___ Yes _X_ No
    Cite source: Sediment Budget Summary Letter For Stagecoach Vineyards 1-06 by Martin Trso, P.G.

20. Is any portion of the project located in the vicinity of rare/endangered species, species of special concern (plant, animal), wetland (type), riparian habitat, critical habitat, etc.?
    _X_ Yes ___ No
    If yes, list: Holly Leaf Ceanothus
    Cite source/reference(s): Letter for Stagecoach Vineyards Erosion Control Plan Compliance
    Specific study prepared: _____ by: Tim Armstrong, Biologist date: 1-06

21. Is any portion of the project located on or within 500' of an archeological or historic site?
    ___ Yes _X_ No
    Cite source/reference: _____
    Site specific report prepared: Cultural Resources Study for Stagecoach Vyds by: AES date: June 2005

Grading Information

22. Are any new roads/driveways associated with the project? ___ Yes _X_ No
23. Are any new vineyard avenues associated with the project? _X_ Yes ___ No
24. Will the project involve any recontouring of the land? _X_ Yes ___ No
25. Will there be any excavation or fill deeper than 12 inches? ___ Yes _X_ No
26. Total cubic yards of cut & fill: N/A
    Cubic yards of cut: _____ fill: _____
    Spoils location: on-site _____ off-site _____
27. Has a grading permit been filed with the Co Public Works Dept? ___ Yes _X_ No
28. Will the project involve repair of a landslide? ___ Yes _X_ No
    Location _____ Size _____ Report _____

Timber Harvest/Timber Conversion Permits

29. Is there a Timber Harvest or Conversion permit associated with the project/parcel? ___ Yes _X_ No
    Number of Acres: _____
    a) Copy of State Dept of Forestry Permit attached? ___ Yes OR
    b) Date application for necessary permit submitted to this agency: _____
    c) Copy of associated CEQA document attached? ___ Yes _X_ No
    d) Date other County erosion control plan(s) submitted if different than the application date for this plan: _____

30. Is there a Timberland Conversion Exception associated with the project or parcel? ___ Yes _X_ No

P06-0047

SUPPLEM. .TAL ENVIRONMENTAL INFORMATIO. :CP)

To be provided by Property Owner: _Stagecoach Vineyards/ Oakville Heights_____

Attach response sheets to this page.

A. GENERAL INFORMATION

1. Name, address, telephone number of property owner.
2. Address of project.
3. APN.
4. Name, Address and telephone number of person to be contacted concerning this project, if different than owner.
5. Indicate type or number of the permit application for the project to which this form pertains.
6. List and describe any other related permits and/or other public approvals required for this project or parcel, including those required by city, regional, state and federal agencies.
7. Existing zoning district.
8. Proposed use of entire site and/or parcel. List and describe any other projects or improvements with site locations anticipated within the next several years (1-3-5 years).

B. PROJECT DESCRIPTION

9. Parcel(s) size(s), acres per parcel.
10. Project(s) size(s), acres per project.
11. Attach plans.
12. Proposed scheduling.
13. Anticipated incremental or phased development.
14. If the project involves Napa County grading permit, use permit, variance or rezoning application, state this and indicate clearly why the application is required.

Discuss and check yes the following items which are applicable to your project or its effects (attach additional sheets)

	YES	NO	
15.	☐	x☒	Change in existing features of any watercourses, wetlands, tidelands, beaches, hills or alteration of ground contours.
16.	☐	x☒	Change in scenic views or vistas from existing residential areas or public lands or roads.
17.	☐	x☒	Change in the pattern, scale or character of general area of project.
18.	☐	x☒	Change in bay, lake, stream or ground water quality or quantity, or alteration of existing drainage patterns.
19.	x☒	☐	Site on filled land or on slopes of 5% or more.
20.	☐	x☒	Substantial change in demand for Napa County services (police, fire, water, sewage, etc.)
21.	x☒	☐	Relationship to a larger project or series of projects.

C. ENVIRONMENTAL SETTING

22. Describe the project site as it exists before the project, including information on topography, soil stability, plants and animals, wetlands (types), riparian habitat and any cultural, historical or scenic aspects. Describe any/all existing structures on the site, and the use of the structures. Attach photographs of the site, could include current aerial photo.

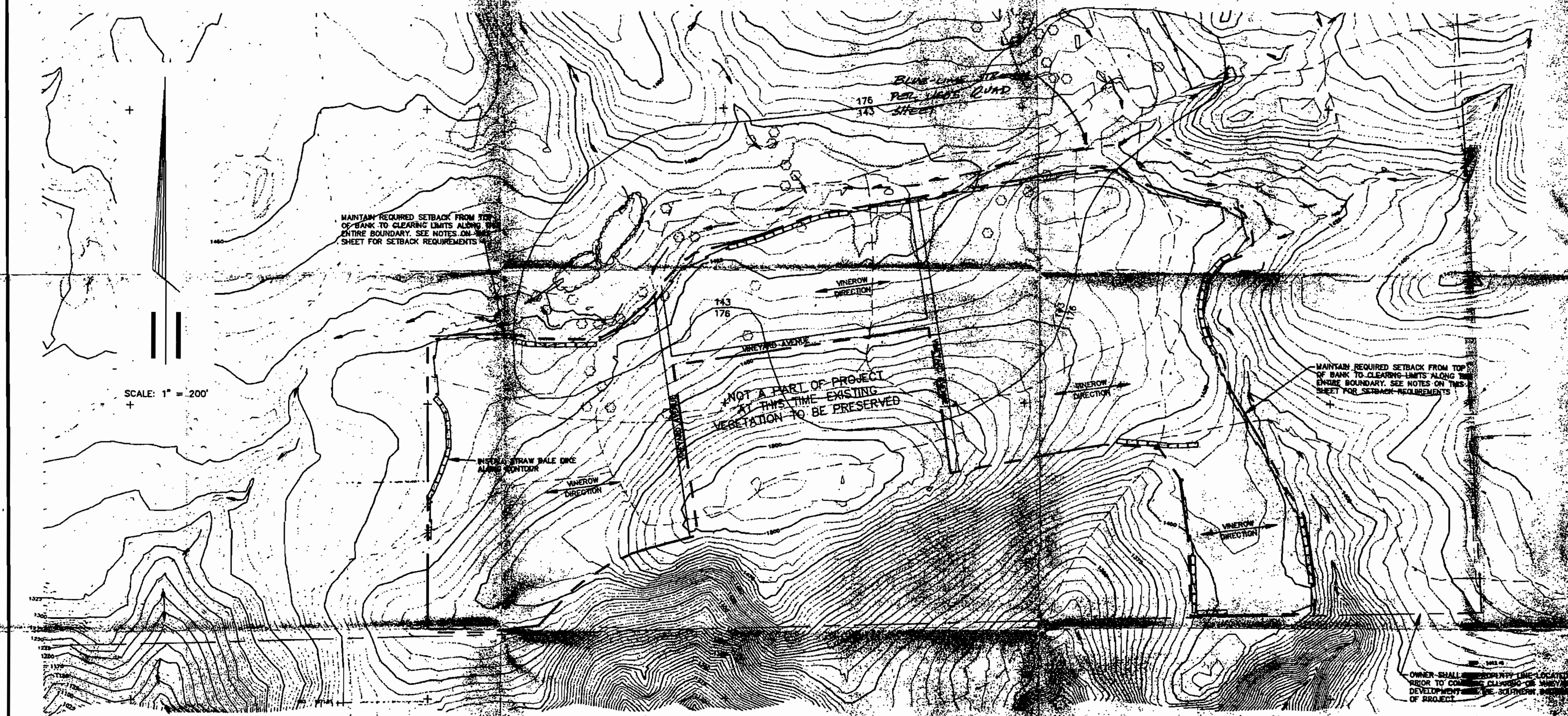
23. Describe the surrounding properties (approximately ¼ mile radius form parcel boundary), including information on plants and animals and any cultural, historical or scenic aspects. Indicate the type of land use (agriculture, residential, commercial, etc.), intensity of land use (vineyards, winery, one-family, multi-family, industry, etc.), and scale of development (acres, height, setback, yard, etc.). Attach photographs of the vicinity, could include current aerial photo.

D. CERTIFICATION

I hereby certify that the statements furnished responding to the above and in the attached sheets present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

1/15/06
Date

Jan Reynolds General Partner of
Signature of Property Owner
Stagecoach Vineyards + Oakville Heights



LOCATION MAP

SCALE: 1" = 4000'

ECP # 95024-ECPA

APPROVED

CONSERVATION, DEVELOPMENT, AND PLANNING DEPARTMENT

DATE: 8/16/95

BY: KE

PAGE 1 OF 1

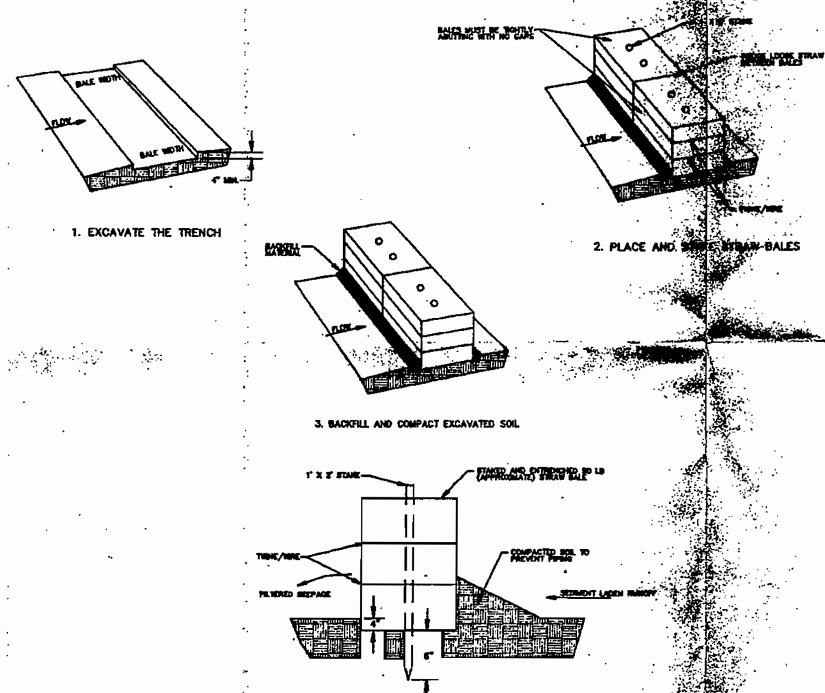
NOTES:

1. OWNER: KRUPP FAMILY PARTNERSHIP
   3265 SODA CANYON ROAD
   NAPA, CA. 94558
2. SITE ADDRESS: NONE
   APN: 032-030-013
3. EXISTING VEGETATION CONSISTS OF BRUSH AND NATIVE GRASSES.
4. A PERMANENT NO-TILL COVER CROP STRATEGY WILL BE UTILIZED WITHIN THE VINEYARD. THE COVER CROP WILL BE GENERATED BY SEEDING WITH ZORRO FESCUE AT 12 lbs\acre, IDAHO FESCUE AT 8 lbs\acre, AND CRIMSON CLOVER AT 4 lbs\acre. THE ENTIRE VINEYARD AND ANY OTHER DISTURBED AREAS SHALL BE STRAW MULCHED AT A RATE OF 3000 lbs\acre.
5. SETBACK FROM STREAMS SHALL BE MAINTAINED WHERE SHOWN. VEGETATION WITHIN SETBACK SHALL NOT BE DISTURBED. STREAM SETBACK REQUIREMENTS VARY ACCORDING TO GROUND SLOPE AS SHOWN IN THE CHART BELOW.

GROUND SLOPE %	SETBACK (FEET)
< 1%	35'
1–5%	45'
5–15%	55'
15–30%	85'

LEGEND

- VINEYARD BOUNDARY LINE / CLEARING LIMITS
- SILT FENCE – SEE DETAIL, THIS SHEET
- STRAW BALE DIKE – SEE DETAIL, THIS SHEET
- VINEROW DIRECTION
- PROPERTY LINE
- EXISTING ROAD
- DRAINAGE FLOWLINE
- 5' CONTOUR
- 25' CONTOUR
- FENCE
- EXISTING BUILDING
- AERIAL CONTROL PANEL
- OPEN AREA IN BRUSH
- TREES
- SOIL TYPE BOUNDARY
- 143 QUENOC ROCK OUTCROP COMPLEX
- 176 ROCK OUTCROP – HAMBRIGHT COMPLEX



STRAW BALE DIKE INSTALLATION

N.T.S.

SILT FENCE INSTALLATION

N.T.S.

REGISTERED PROFESSIONAL ENGINEER — JAMES R. BUSHEY — No. 49931 — (Civil) — STATE OF CALIFORNIA

KRUPP FAMILY PARTNERSHIP	SCALE: AS SHOWN
SODA CANYON VINEYARD	DRAWN BY: JRJ
EROSION CONTROL PLAN	REVISED
DESIGN ENGINEER B. EDWARDS & J. BUSHEY; DATE 7-19-95; P.E. LICENSE NO. 49931	1 OF 1 SHEETS

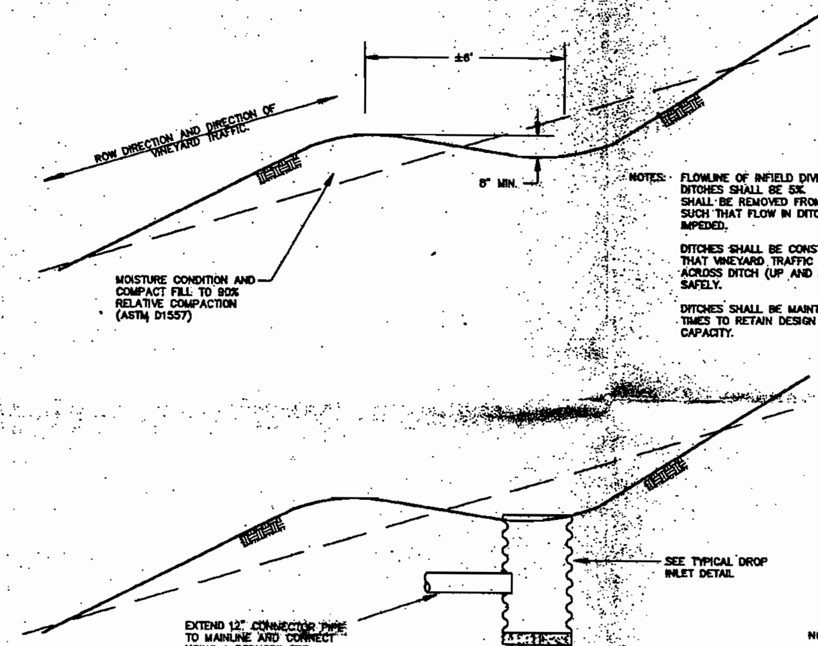
PPI ENGINEERING

JOB NO.: 9506901

DWG. NO.: N95-048

Date Revised

Approval



NOTES: FLOWLINE OF INFIELD DIVERSION DITCHES SHALL BE 5%. LARGE ROCKS SHALL BE REMOVED FROM DITCHES SUCH THAT FLOW IN DITCH IS NOT IMPEDED.

DITCHES SHALL BE CONSTRUCTED SUCH THAT VINEYARD TRAFFIC MAY PASS ACROSS DITCH (UP AND DOWN HILL) SAFELY.

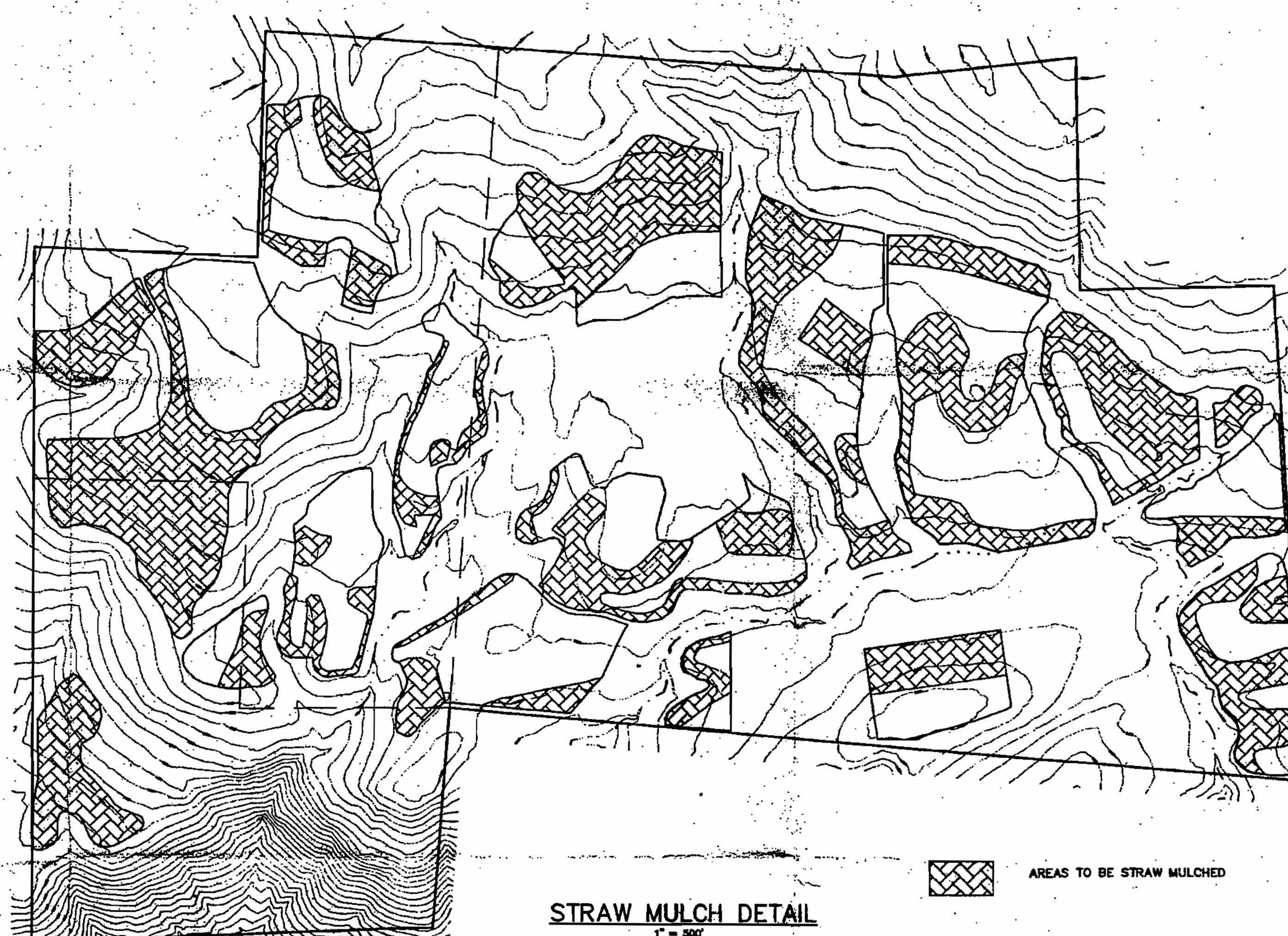
DITCHES SHALL BE MAINTAINED AT ALL TIMES TO RETAIN DESIGN FLOW CAPACITY.

NOTES: INSTALL DROP INLET AT LOW POINT ALONG FLOWLINE OF DIVERSION DITCH.

DROP INLET SHALL BE ALIGNED WITH A VINEROW OR OTHERWISE PROTECTED FROM VINEYARD TRAFFIC.

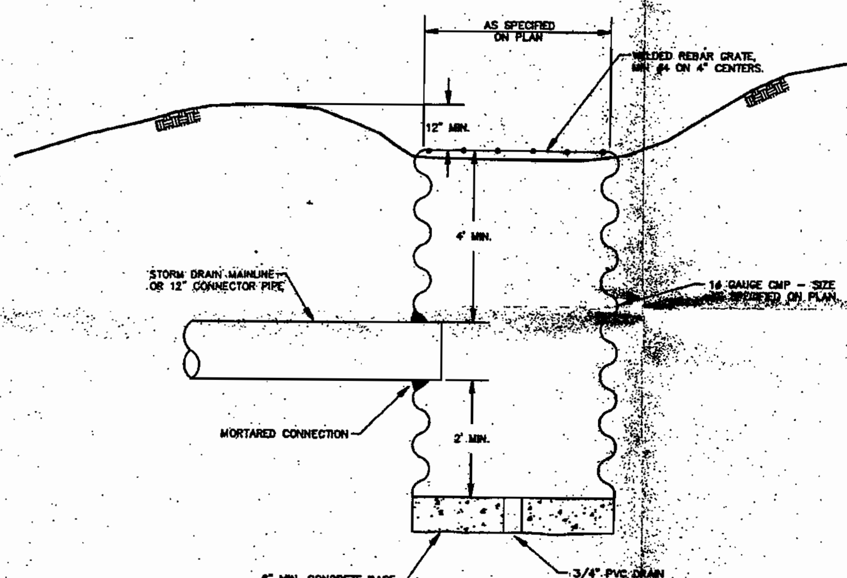
DIVERSION DITCH & DROP INLET DETAIL

N.T.S.



STRAW MULCH DETAIL

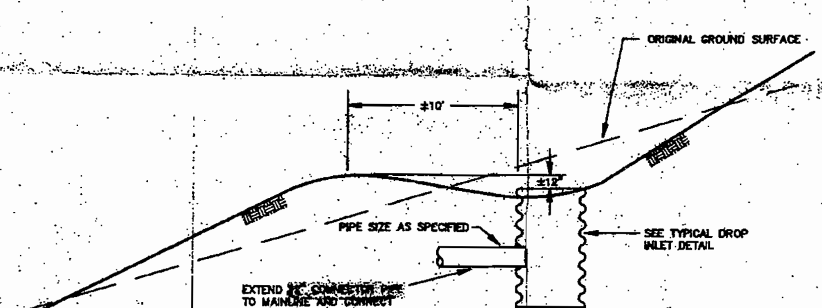
1" = 500'



NOTE: DROP INLET SHALL BE PLACED IN VINEROW OR OTHERWISE PROTECTED FROM VINEYARD TRAFFIC.

TYPICAL DROP INLET

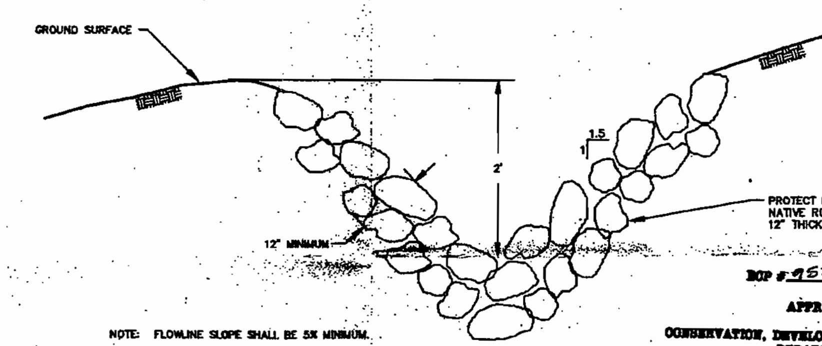
N.T.S.



NOTE: FLOWLINE OF INSLOPED VINEYARD AVENUE SHALL BE 5%

INSLOPED VINEYARD AVENUE W/ DROP INLET

N.T.S.



NOTE: FLOWLINE SLOPE SHALL BE 5% MINIMUM.

V-DITCH

N.T.S.

ECP # 95374-ECPA

APPROVED

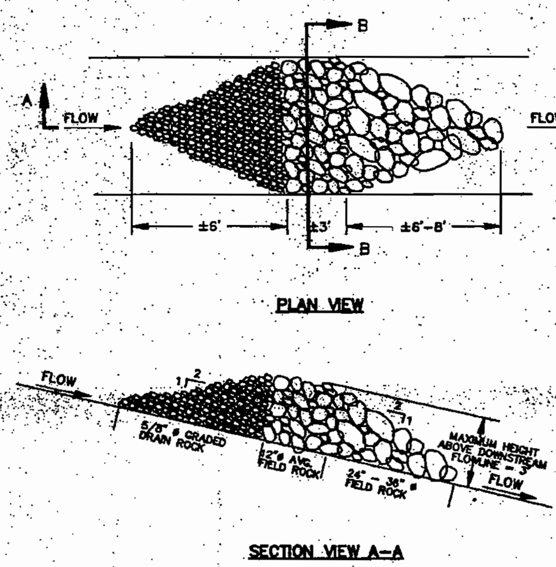
CONSERVATION, DEVELOPMENT, AND PLANNING DEPARTMENT

DATE: 3/21/96

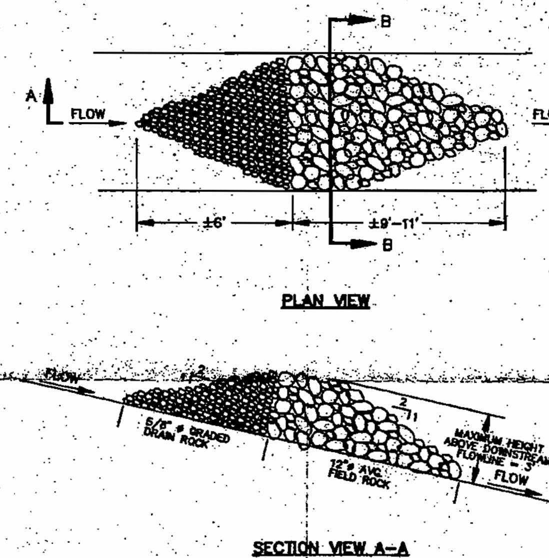
BY: KE

PAGE 3 OF 3

PPI ENGINEERING, 1724 JEFFERSON STREET, NAPA, CA 94559, 707/253-1806 FAX 707/253-1604	KRUPP FAMILY PARTNERSHIP	SCALE: AS SHOWN
	SODA CANYON VINEYARD	DRAWN BY: KDM
	DETAILS	REVISED
	DESIGN ENGINEER B. EDWARDS & J. BUSHEY	
	DATE 1-21-96 P.E. LICENSE NO. 49931	3 OF
JOB NO.: 9506911	Date Revised	3 SHEETS
DWG. NO.: N95-045C	Approval	



SEDIMENT TRAP – TYPE A
N.T.S.



SEDIMENT TRAP – TYPE B
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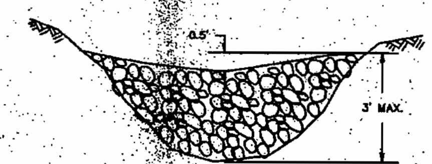
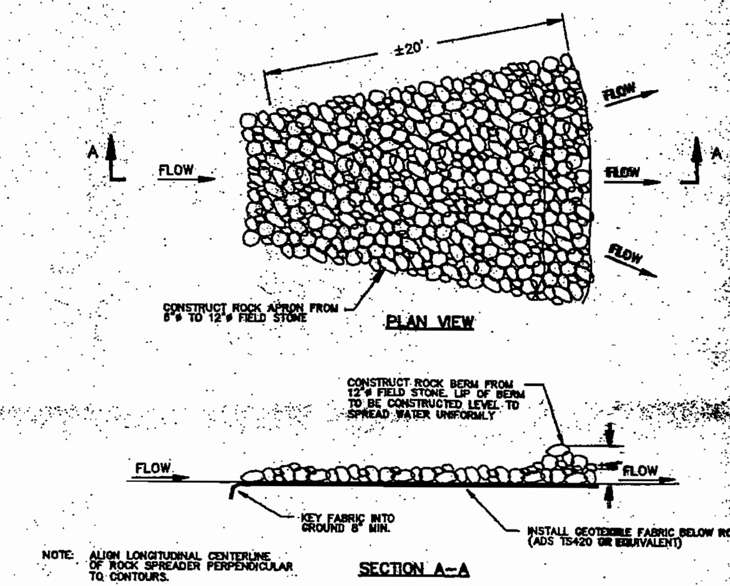
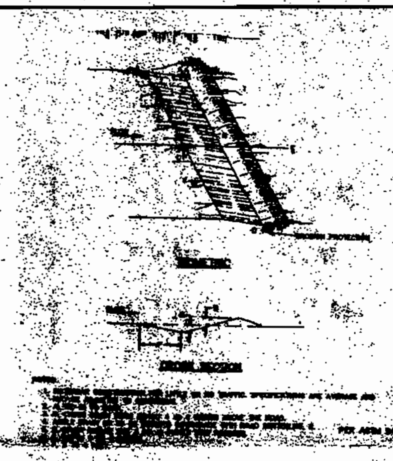


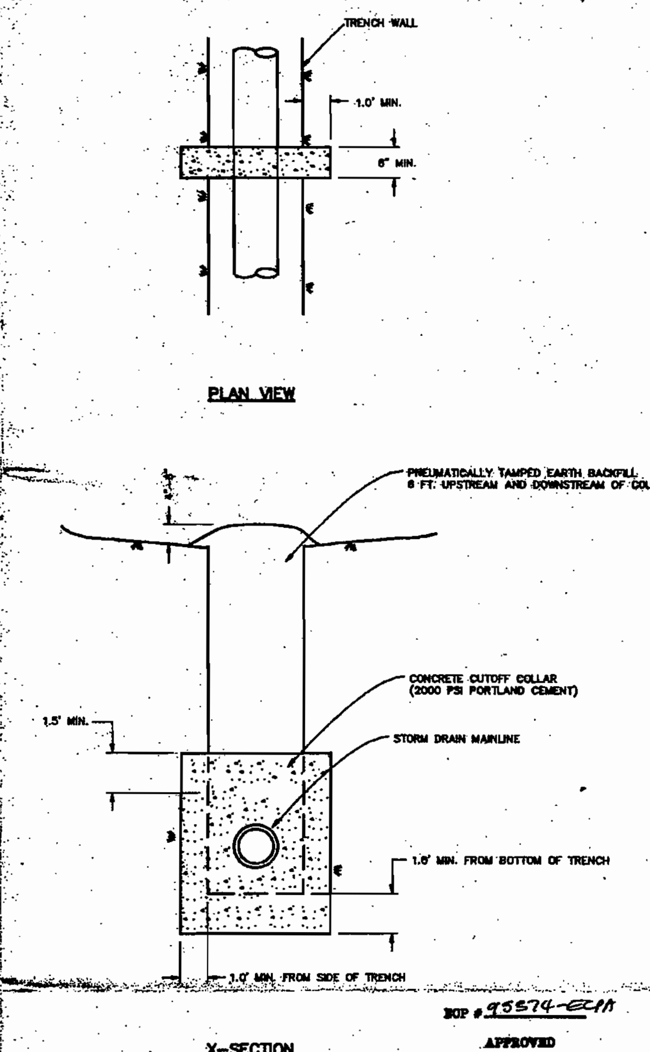
SEDIMENT TRAP – SECTION B–B
N.T.S.



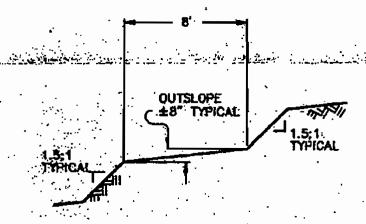
ROCK LEVEL SPREADER
N.T.S.



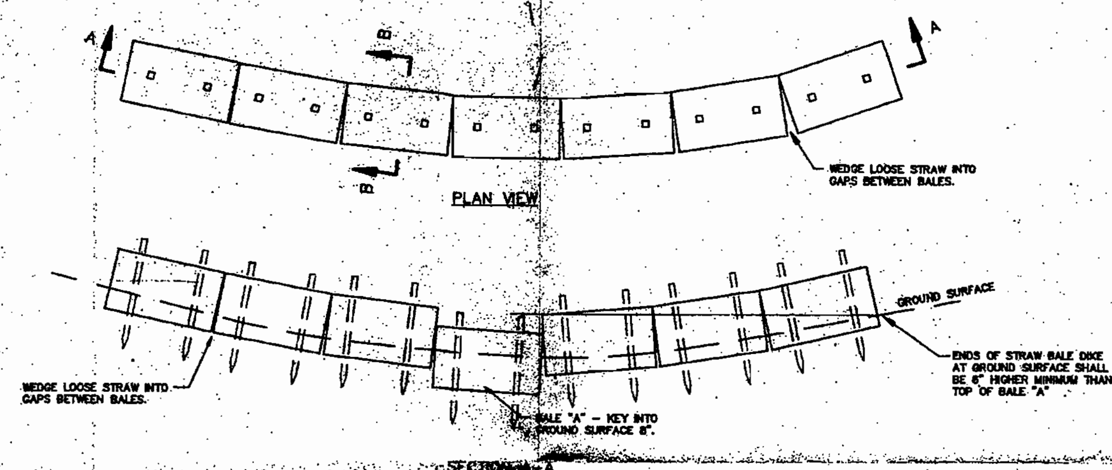
WATERBAR FOR VEHICULAR TRAFFIC

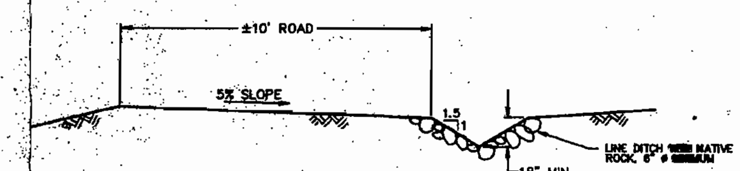


CUTOFF COLLAR DETAIL
N.T.S.

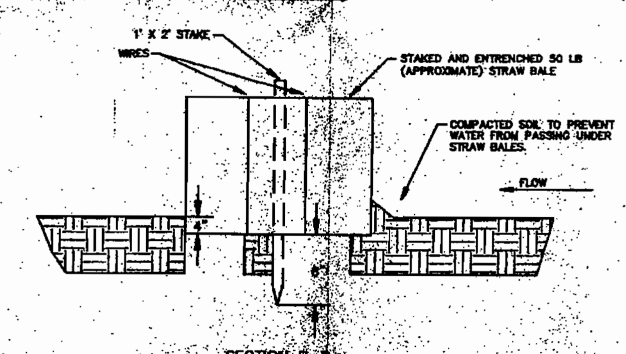


OUTSLOPED TERRACE DETAIL
N.T.S.





ROADSIDE DITCH DETAIL
N.T.S.



STRAW BALE DIKE INSTALLATION
N.T.S.

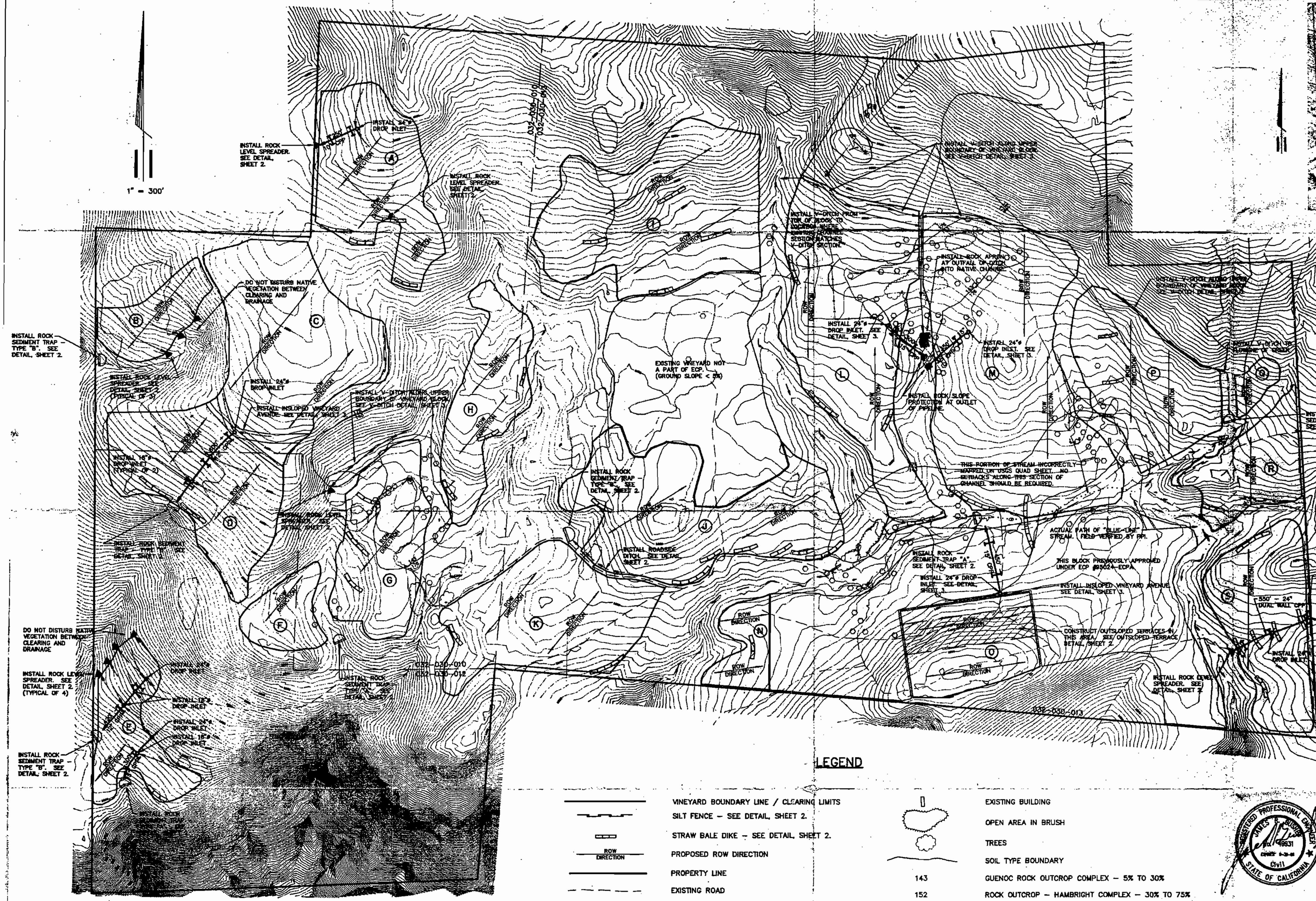
SILT FENCE INSTALLATION
N.T.S.

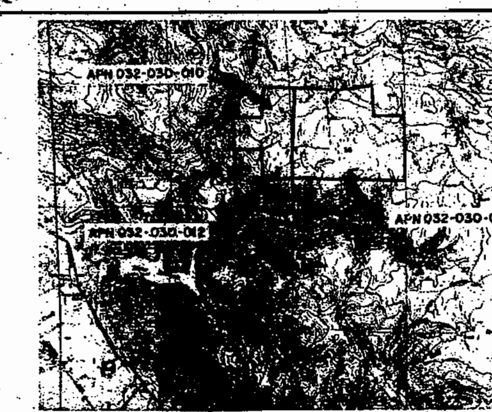
ECP # 95574-ECPA

APPROVED
CONSERVATION, DEVELOPMENT, AND PLANNING DEPARTMENT
DATE: 3/21/96
BY: KE
PAGE 2 OF 3

KRUPP FAMILY PARTNERSHIP	SCALE: AS SHOWN
SODA CANYON VINEYARD	DRAWN BY: JRI
DETAILS	REVISED
DESIGN ENGINEER B. EDWARDS & J. BUSHEY	
DATE 1-21-96 P.E. LICENSE NO. 49931	2 OF 3 SHEETS

PPI
JOB NO.: 9506911
DWG NO.: N95-0456
Date Revised
Approval





LOCATION MAP

SCALE: 1" = 4000'

ECP # 95374 -ECPA

APPROVED

CONSERVATION, DEVELOPMENT, AND PLANNING DEPARTMENT

DATE: 3/21/96

BY: KE

PAGE 1 OF 3

LEGEND

VINEYARD BOUNDARY LINE / CLEARING LIMITS	EXISTING BUILDING
SILT FENCE – SEE DETAIL, SHEET 2.	OPEN AREA IN BRUSH
STRAW BALE DIKE – SEE DETAIL, SHEET 2.	TREES
PROPOSED ROW DIRECTION	SOIL TYPE BOUNDARY
PROPERTY LINE	143 GUENOC ROCK OUTCROP COMPLEX – 5% TO 30%
EXISTING ROAD	152 ROCK OUTCROP – HAMBRIGHT COMPLEX – 30% TO 75%
DRAINAGE FLOWLINE	176 ROCK OUTCROP – HAMBRIGHT COMPLEX – 50% TO 75%
DIVERSION DITCH, SEE DETAIL, SHEET 3.	5' CONTOUR
PROPOSED SURFACE DRAINAGE MAINLINE	25' CONTOUR
PROPOSED DROP INLET, SEE DETAIL, SHEET 3.	FENCE
V-DITCH, SEE DETAIL, SHEET 3.	ø DIAMETER
ROCK LEVEL SPREADER, SEE DETAIL, SHEET 2.	ROCK SEDIMENT TRAP, SEE DETAIL, SHEET 2.
CUTOFF COLLAR, SEE DETAIL, SHEET 2.	
Ⓐ BLOCK NAME	

NOTES:

1. OWNER: KRUPP FAMILY PARTNERSHIP
   3265 SODA CANYON ROAD
   NAPA, CA. 94558
2. SITE ADDRESS: NONE
   APN: 032-030-010
   APN: 032-030-012
   APN: 032-030-013
3. EXISTING VEGETATION CONSISTS OF BRUSH AND NATIVE GRASSES.
4. A PERMANENT NO-TILL COVER CROP STRATEGY WILL BE UTILIZED WITHIN THE VINEYARD. THE COVER CROP WILL BE GENERATED BY SEEDING WITH ZORRO FESCUE AT 5 lbs\acre, MOLATE FESCUE AT 10 lbs\acre, AND CRIMSON CLOVER AT 5 lbs\acre. CERTAIN AREAS AS SHOWN ON THE STRAW MULCH DETAIL SHALL BE STRAW MULCHED AT A RATE OF 3000 lbs\acre.
5. STREAM SETBACKS SHALL BE MAINTAINED FROM ALL STREAMS SHOWN WITH THE SYMBOL ——— · · ———. STREAM SETBACK DISTANCES ARE MEASURED FROM THE TOP OF THE BANK OF THE STREAM. THE SETBACK DISTANCE VARIES ACCORDING TO GROUND SLOPE (SEE TABLE BELOW). NO VEGETATION WITHIN THE STREAM SETBACKS SHALL BE DISTURBED.

GROUND SLOPE %	SETBACK (FEET)
< 1%	35'
1–5%	45'
5–15%	55'
15–30%	65'

6. ANY INTERIOR AVENUES SHALL BE CONTSTRUCTED SUCH THAT THEY DO NOT CONCENTRATE WATER OR ALTER NATURAL DRAINAGE PATTERNS EXCEPT WHERE SHOWN ON THE PLAN.
7. AT LEAST 2 WORKING DAYS BEFORE BEGINNING ANY EXCAVATION ON THE PROJECT, THE CONTRACTOR SHALL CALL THE UNDERGROUND SERVICE ALERT AT 1-800-642-2444 AND REQUEST FIELD LOCATION OF ANY EXISTING UTILITIES.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING ALL SAFETY LAWS WHICH MAY BE APPLICABLE. OF PARTICULAR CONCERN ARE THE TRENCH SAFETY REGULATIONS ISSUED BY CAL-OSHA. THE CONTRACTOR ALONE SHALL BE RESPONSIBLE FOR THE SAFETY OF HIS EQUIPMENT AND METHODS AND FOR ANY DAMAGE OR INJURY WHICH MAY RESULT FROM THEIR FAILURE, IMPROPER CONSTRUCTION, MAINTENANCE, OR OPERATION.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY PERMITS WHICH ARE NECESSARY FOR CONSTRUCTION.
10. DUE TO THE HEAVY BRUSH COVER ON THE SUBJECT PROPERTY, VERIFICATION OF EVERY TOPOGRAPHIC FEATURE PRIOR TO CLEARING IS NOT POSSIBLE. THEREFORE, CERTAIN MODIFICATIONS TO THIS PLAN MAY BE REQUIRED DURING CONSTRUCTION TO ACCOMODATE CONDITIONS ENCOUNTERED DURING CLEARING OPERATIONS. ALL MODIFICATIONS TO THIS PLAN SHALL BE REVIEWED BY THE NAPA COUNTY RCD, AND IF REQUIRED, THE NAPA COUNTY CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT.

REGISTERED PROFESSIONAL ENGINEER — No. 49931 — Civil — STATE OF CALIFORNIA

Plan #: 95374 ECP (Revision)

Received by Napa County Resource Conservation District

Date: 2/22/96

By: [signature]

PPI	KRUPP FAMILY PARTNERSHIP	SCALE: AS SHOWN
1734 JEFFERSON STREET, NAPA, CA	SODA CANYON VINEYARD	DRAWN BY: KDM
	EROSION CONTROL PLAN	REVISED
	DESIGN ENGINEER B. EDWARDS & J. BUSHEY	1 OF
	DATE 1-21-96 P.E. LICENSE NO. 49931	3 SHEETS
JOB NO.: 95D6911	Date Revised 2-21-96	
DWG. NO.: N95-045A	Approval [initials]	

#8

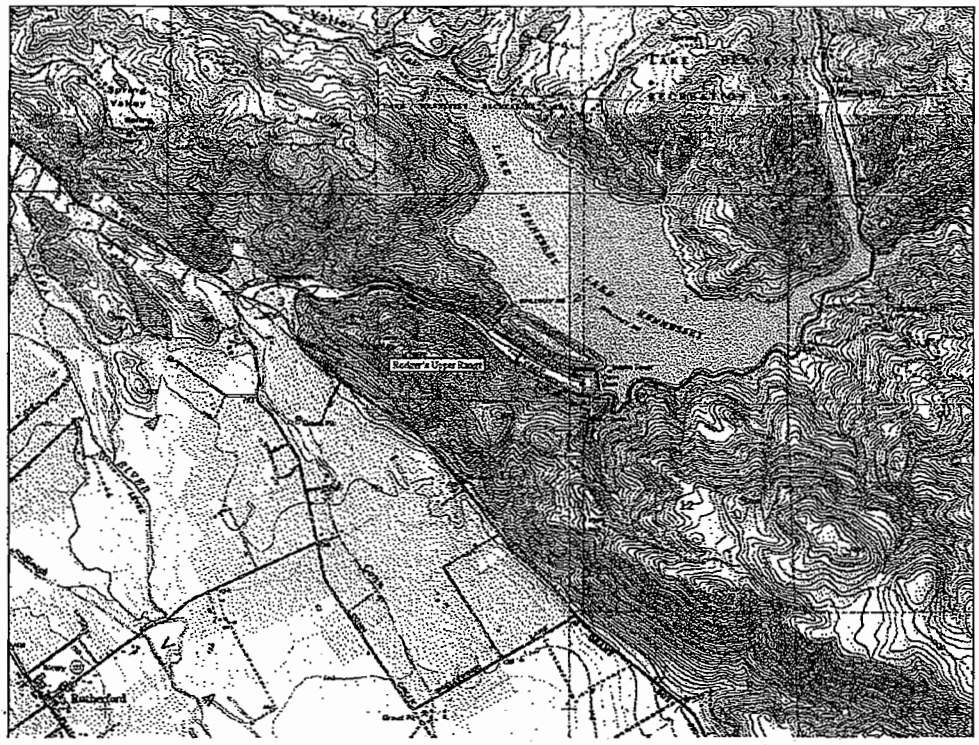
APPENDIX A

EROSION CONTROL PLAN NARRATIVE

AGRICULTURAL ENGINEER

October 14, 2002

Rodgers Upper Range
Erosion Control Plan Narrative
8300 Silverado Tr. Napa, CA.



1930 Oak Circle Yountville, CA. 94599 Telephone 707 944-0752 Fax 707 944-1429
bill@lincolnae.com CPESC 2296

NAPA COUNTY
CONSERVATION, DEVELOPMENT & PLANNING COMMISSION

1195 Third Street, Room 210, Napa, California 94559
(707) 253-4416

BASIC APPLICATION FOR EROSION CONTROL PLAN REVIEW

FOR OFFICE USE ONLY SUBMITTAL DATE: _____

FILE #: _____ APN #: _____ USGS QUAD: _____

[ ] STRUCTURAL [ ] AGRICULTURAL TOWNSHIP/RANGE: _____

REQUEST: _____

PROJECT TYPE: Agriculture: New ___ Vineyard Replant (Process I: ___ II: ___) Other: _____

Non-Agriculture: Structure ___ Driveway ___ Road ___ Reservoir ___ Other _____

PERCENT SLOPE: Cropland: _____ Structure: _____ Pad: _____ Driveway: _____ Road: _____

OTHER PERMITS: Grading Permit ___ Use Permit: ___ Variance: ___ Septic System Permit: ___ Groundwater Permit: ___

REVIEW AGENCIES: CDPD: X County Consultant: ___ OR RCD: ___

FINAL APPROVAL: CDPD: X Date: _____

TO BE COMPLETED BY APPLICANT

(Please type or print legibly)

Applicant's Name: RODGERS LAND & DEVELOPMENT Telephone #: ( ) 258 8618

Address: 5430 ST HELENA HWY NAPA CA 94558
No Street City State ZIP

Status of Applicant's Interest in Property: OWNER

Property Owner's Name: SAME Telephone #: ( )

Address: _____
No Street City State ZIP

Site Address/Location: 8300 SILVERADO TR
No Street City

Assessor's Parcel #: 030 220 001, 030 220 009, 030 200 002, 030 130 008 Existing Parcel Size: 578 acres Development Area Size: 176 acres

Slope Range: 0 % to 35 % Total Acreage ≥ 30%: 44 acres Estimated Total Amount of Cut & Fill: 0 cubic yards

Land, or Aerial Survey Prepared By HJW, OAKLAND, CA Date: 3/96

(NOTE: Contour map/survey is required for all development areas with an estimated slope of 15% or greater and for all road/driveway projects. Contour map must include all areas within 100' of the cut and fill edges. Percent slope shall be calculated and presented as whole numbers.)

Source(s) of Water: EXISTING WELL

Related Permits Filed: Water Rights ___ Groundwater ___ Well ___ Sewage Disposal ___ Use Permit/Variance? ___
Timber Harvest ___ Stream Alteration ___ Others: _____

I hereby certify that all the information contained in this application, including but not limited to, this application form, the supplemental information sheets, site plan, plot plan, cross sections/elevations, is complete and accurate to the best of my knowledge. I hereby authorize such investigations including access to County Assessor's Records as are deemed necessary by the County Planning Division for evaluation of this application and preparation of reports related thereto, including the right of access to the property involved.

Stephen P. Smith 10-14-02 Stephen P. Smith 10-14-02
Signature of Applicant Date Signature of Property Owner Date

TO BE COMPLETED BY CONSERVATION, DEVELOPMENT AND PLANNING DEPARTMENT

$ _____ _____ _____ _____
Fee Receipt Number Received By Date

CDPD 11/00

EROSION CONTROL PLAN SUPPLEMENTAL INFORMATION

Project/Construction Phasing Information

1. Project Description: ROGERS UPPER RANCH VINEYARD
   APN: 030 220 001, 009
   030 200 002
   030 130 008
   Parcel size: 678 acres
   Total land area disturbed: 176 acres
   Agriculture: NEW plant acres: 176 Replant acres: N/A
   Structures: residence ___ building ___ driveway ___ road ___ other ___
2. Project Phases: [ ] one [ ] two or [V] 5
3. Anticipated date to start construction (month/year): 4/10, 2003
4. Estimated date of completion of each phase:
   Phase 1: 2003
   Phase 2: 2004
   Phase 5: 2007
5. Total construction time estimated: 5 YEARS
6. Work scheduled between Oct. 1 and Apr. 1? ___Yes V No OR
   between Sept. 1 and Apr. 1? ___Yes V No (municipal watershed)
7. Winterization measures in the Erosion Control Plan COVER CROP STRAWBALE DIKES
8. Is a grading permit, a well permit, or a sewage disposal permit required? ___ Yes X No
   If yes has the Napa Co ___ Public Works and/or ___ Environmental Management Departments been notified? ___ Yes X No

Slope Information

9. Earth moving, grading or land clearing on slope(s) of: 0 % to 35 %
10. Total acreage with slopes greater than or equal to 30%: 44 acres
11. Contour mapping source: HJW

Water Deficient Area, Watershed Area, & Water Rights Diversion Permits

12. Water-deficient area: ___Yes (applicant must contact Co Env Mgmt Dept) V No
13. Sub-Watershed Name: CONN CREEK
    Municipal Reservoir Watershed: PARTIAL ___ Yes ___ No
    If yes: ___Bell Canyon ___Kimball ___Milliken V Lake Hennessey ___Rector
14. Have any other erosion control plans effecting this parcel been approved since 1991? ___ Yes V No
15. Coverage information (required for projects in any watershed):
    (a) Existing acres of tree canopy cover per parcel: 385 acres
    Proposed acres of canopy cover to be removed: 111 acres
    Percent of canopy cover to be retained per parcel: 71 %
    (b) Existing acres of shrub, brush, grass without tree canopy per parcel: 293 acres
    Proposed acres of shrub, brush, grass cover to be removed: 65 acres
    Percent of shrubs, brush, grass to be retained per parcel: 78 %
16. Is there a Water Rights permit associated with the project or parcel? ___ Yes V No
    acre/feet ___
    a) Copy of permit from the State Dept of Water Resources attached? ___ Yes OR
    b) Date application for necessary permit submitted to this board: ___
    c) Copy of associated CEQA document attached? ___ Yes ___ No

SUPPLEMENTAL ENVIRONMENTAL INFORMATION (ECP)

To be provided by Property Owner: _____

Attach response sheets to this page.

A. GENERAL INFORMATION

1. Name, address telephone number of property owner.
2. Address of project.
3. APN.
4. Name, address, and telephone number of person to be contacted concerning this project, if different than owner.
5. Indicate type or number of the permit application for the project to which this form pertains.
6. List and describe any other related permits and/or other public approvals required for this project or parcel, including those required by city, regional, state and federal agencies.
7. Existing zoning district.
8. Proposed use of entire site &/or parcel. List & describe any other projects or improvements with site locations anticipated within the next several years (1-3-5 years).

B. PROJECT DESCRIPTION

9. Parcel(s) size(s), acres per parcel.
10. Project(s) size(s), acres per project.
11. Attach plans.
12. Proposed scheduling.
13. Anticipated incremental or phased development.
14. If the project involves Napa County grading permit, use permit, variance or rezoning application, state this and indicate clearly why the application is required.

Discuss and check yes the following items which are applicable to your project or its effects (attach additional sheets)

	YES	NO	
15.	____	___	Change in existing features of any watercourses, wetlands, tidelands, beaches, hills, or alteration of ground contours.
16.	____	___	Change in scenic views or vistas from existing residential areas or public lands or roads.
17.	____	___	Change in the pattern, scale or character of general area of project.
18.	____	___	Change in bay, lake, stream or ground water quality or quantity, or alteration of existing drainage patterns.
19.	____	___	Site on filled land or on slopes of 5% or more.
20.	____	___	Substantial change in demand for Napa County services (police, fire, water, sewage, etc.).
21.	____	___	Relationship to a larger project or series of projects.

C. ENVIRONMENTAL SETTING

22. Describe the project site as it exists before the project, including information on topography, soil stability, plants and animals, wetlands (types), riparian habitat and any cultural, historical or scenic aspects. Describe any/all existing structures on the site, and the use of the structures. Attach photographs of the site, could include current aerial photo.

23. Describe the surrounding properties (approximately ¼ mile radius from parcel boundary), including information on plants and animals and any cultural, historical or scenic aspects. Indicate the type of land use (agriculture, residential, commercial, etc.), intensity of land use (vineyards, winery, one-family, multi-family, industry, etc.), and scale of development (acres, height, setback, yard, etc.). Attach photographs of the vicinity, could include current aerial photo.

D. CERTIFICATION

I hereby certify that the statements furnished responding to the above and in the attached sheets present the data and information required for this initial evaluation to the best of my ability, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

SEE ATTACHED

10-14-02
Date

Stephen P. Smith
Signature of Property Owner

October 14, 2002

Rodgers Land & Development
Upper Range
Supplemental Environmental Information

1. Owner: Rodgers Land & Development,
   5430 St. Helena Hwy. Napa, CA 94559 (258-8618)
2. Project address: 8300 Silverado Trail (.6 mile north of Skellenger Ln.)
3. AP# 030-220-001, 030-200-002, 030-130-007, 030-130-008, 030-220-009
4. Contact: Larry Bettinelli, 258-8618 or 974-1702
5. Permit type: Agricultural ECP
6. Other related permits: none
7. Zoning: AW
8. Proposed use of site is vineyard. No other improvements are planned at this time.
9. Parcel size is approximately 678 acres.
10. This project's size is 176 acres.
11. Plans attached
12. Proposed scheduling:

4/1/03-07	prepare planting area
5/1/03-07	install erosion control, drip, and trellis systems.
9/1/03-07	vineyard installation complete
9/1/03-07	cover crop seeded
9/1/03-07	straw mulching completed (Hennessey watershed)
9/1/03-07	cover crop irrigation starts
10/15/03-07	straw mulching completed (Conn Creek watershed)

13. Project to be phased over 5 years.
14. No other permits required.
15. No changes to existing features or ground contours.
16. Approximately 20 acres of vineyard will be visible from the Silverado Trail.
17. Improved character of general area of project due to elimination of grazing.
18. Improved stream or ground water quality due to elimination of grazing. Quantity of runoff should not change. No changes to existing drainage patterns.
19. Site is not on filled land but is on slopes of 5% or more.
20. There will be no change in demand for Napa County services.
21. There is no relationship to a larger project or series of projects.
22. Project site is hills covered by grass, trees and chaparral brush. The area has been heavily grazed. Slopes are generally steep except for the areas of planned vineyard. The ground is rocky and very stable. There are no wetlands. See the Biological Resources Report for a complete description of plants and animals. There are (5) archeological sites that will be avoided. See the Cultural Resources Survey for further information. There are no structures on the site. Site photographs are included with this report.
23. The areas around this parcel are either similar or in vineyard. The topography is steep hills covered by grass, chaparral, trees and vineyards. Land use in the area is vineyards and grazing. An aerial photo of the area is attached.

10/10/2002

Rodgers Land & Development
Upper Range
Erosion Control Plan Narrative
By Wm. D. Lincoln CPESC

- **The nature and purpose of the land disturbing activity and the amount of grading involved.**
  - The owners plan to develop approximately 176 acres of vineyard in the area covered by this plan.
  - No development will occur on slopes over 35%
  - Activities include removal of existing vegetation, fencing, disking, ripping, vineyard layout, installing drip system, trellising, and erosion control systems, planting and seeding of areas with no cover. Minimal grading will be involved.
  - Spoils storage will be within proposed vineyard blocks.

- **Comprehensive description of existing site conditions, including topography, vegetation and soils.**
  - The vineyard area to be developed is on slopes from 0% to 35%.
  - Vegetation is grassland (39 acres), tree cover (111 acres) and chaparral (26 acres). The property has been heavily grazed, creating a higher than normal soil loss situation. For a more comprehensive explanation see the Kjeldsen Biological Resources Report.
  - Soils are described in **#4** below.
  - The property includes 207 acres within the Lake Hennessey watershed of which 36 is proposed be converted to vineyard. 77% of the tree cover and 85% of the brush cover would remain.
  - Site visits:
    12/18/01 took photos, checked setbacks
    12/13/01 took photos, GPS roads
    9/10/01 met w/biologist
    7/30/01 met w/archeologist
    10/17/00 reviewed potential blocks
    8/24/00 met w/surveyor
    2/03/00 met w/geologist
    10/29/99 met w/Dave Steiner
  - Topographic map by HJW & Associates, Oakland, CA.

- **Natural features onsite including streams, lakes, reservoirs, roads, drainage, and other areas that may be affected by the proposed activity.**
  - There is (1) blue line stream and (4) watercourses within the project. Set backs and silt fences will be used to protect them.

10/10/2002

Rodgers Land & Development
Upper Range
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By Wm. D. Lincoln CPESC

- There are no known biological sensitive areas within the project.
- There are (5) archeological sites within the project that have been marked on the plan and will be marked on the ground before starting.
- Fencing will be installed around all vineyard blocks.

- **Soil types and soil series identified in the appropriate SCS County Soil Survey.**
  - The Soil Survey of Napa County maps the soil as 152 Hambright, 154 Henneke and 179 Sobrante.

- **Location and source of water for irrigation and other uses.**
  - An existing well as marked on the plan will provide water. The well produces 200 GPM. The vineyard will use approximately 88 ac-ft/yr.

- **Critical areas if any, within the development site that have serious erosion potential or problems.**
  - There are no serious potential erosion problems within the site.

- **Erosion calculations. A=R(90)xK(.15)xC(.046)xP(1)x(LS)**
  - Block 10 350'-20% LS=6.5 A=1.6
  - Block 24 600'-11% LS=3.8 A=2.0
  - Block 27 700'-18% LS=8.0 A=2.0
  - Block 31 500'-19% LS=7.2 A=1.8
  - Block 33 630'-13% LS=4.9 A=1.2
  - Block 34 975'-19% LS=10.3 A=2.5
  - Block 35 1200'-14% LS=8.0 A=2.0
  - Block 41 790'-17% LS=8.0 A=2.6
  - Block 41 840'-18% LS=9.0 A=3.0
  - Block 42 800'-16% LS=7.3 A=2.4
  - Block 43 400'-13% LS=9.0 A=1.2
  - Block 51 640'-18% LS=7.7 A=2.5
  - Block 50 500'-22% LS=8.8 A=2.9

- **Proposed erosion control protection devices including drainage systems, sediment basins, walls and cribbing. Proposed vegetative erosion control measures including location, type and quantity of seed, mulch, fertilizer and irrigation; timing and methods of planting, mulching**

Rodgers Land & Development
Upper Range
Erosion Control Plan Narrative
By Wm. D. Lincoln CPESC

and maintenance of plant materials and slopes until a specified percentage of plant coverage is uniformly established.

- Silt fence will be used as noted on plan to protect streams. Rock barriers may be substituted for silt fence.
- Straw bale dikes will be used on the two watercourses between the last vineyard block and the blue line streams.
- Water bars will be used on avenues as shown on plan.
- A permanent no-till cover crop will be used on all vineyard blocks and avenues. The areas will be seeded prior to September 1st with Blando Brome @ 9#/ac, Zorro Fescue @ 15#/ac, and Rose Clover @ 8#/ac. Areas over 5% slope will be straw mulched at a rate of 1.5 ton/acre.
  Any areas of cover crop that have less than 80% cover will be seeded and mulched annually until adequate cover is reached. Cover crop will be spot treated around each vine prior to March 1st and strip sprayed with contact herbicides after March 1st. Vine spacing will be 8ft x 4ft.

❖ **Storm water runoff control measures, if needed with a description of the criteria used to determine runoff amounts and the sizing and placement of control devices.**

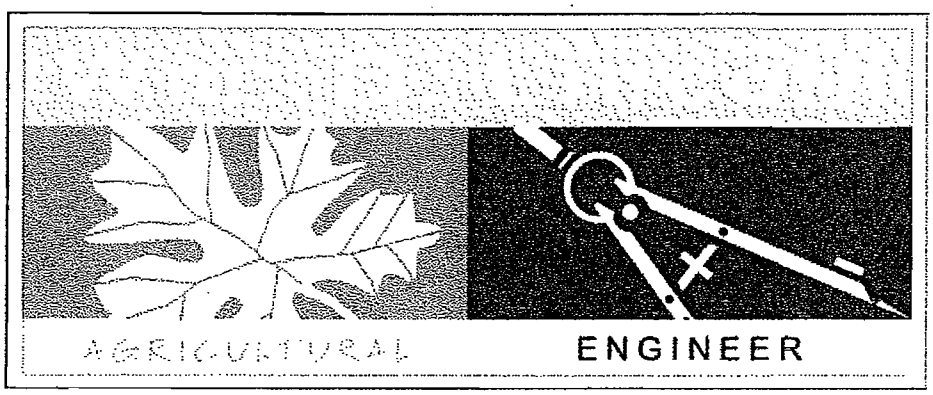
- Straw bale dikes are planned for the two watercourses.
- There will be no significant change in peak flow from the development of this site. The cover crop will be a substantial improvement over the grazed land. See attached TR-55 results.

❖ **An implementation calendar showing the proposed clearing, grading, construction and winterizing schedule.**

- 4/1 Prepare planting area.
- 5/1 Install erosion control, drip, and trellis systems.
- 9/1 Vineyard installation complete
- 9/15 Cover crop seeded (9/1 in Hennessey watershed)
- 9/15 Straw mulch areas over 5% (9/1 in Hennessey)
- 9/15 Start cover crop irrigation.

❖ **Estimated cost of erosion control measures**

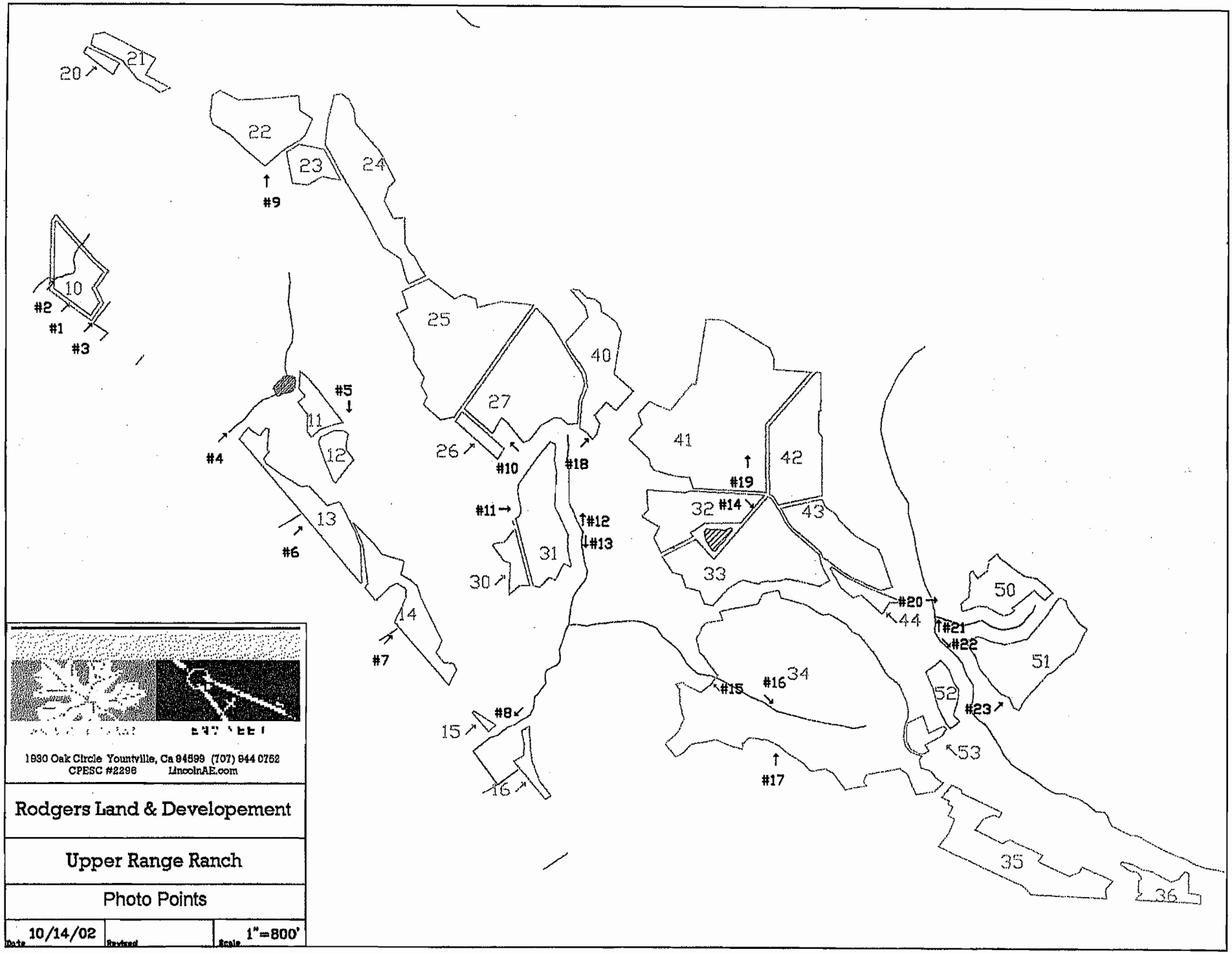
- $4000 per acre.



Rodgers Upper Range Cover Analysis

Area	Total Acres	Vineyard Acres	% Trees Remaining	% Brush Remaining	% Cover Remaining
Entire Project	678	176	71%	78%	74%
Hennessey Watershed	207	36	77%	85%	83%
Parcel 030-220-001	417	131	64%	73%	69%
Parcel 030-130-008	143	19.1	82%	96%	87%
Parcel 030-220-009	100	24.2	63%	88%	76%
Parcel 030-200-002	4	1.4	64%	67%	65%

1930 Oak Circle Yountville, CA. 94599 Telephone 707 944-0752 Fax 707 944-1429
bill@lincolnae.com



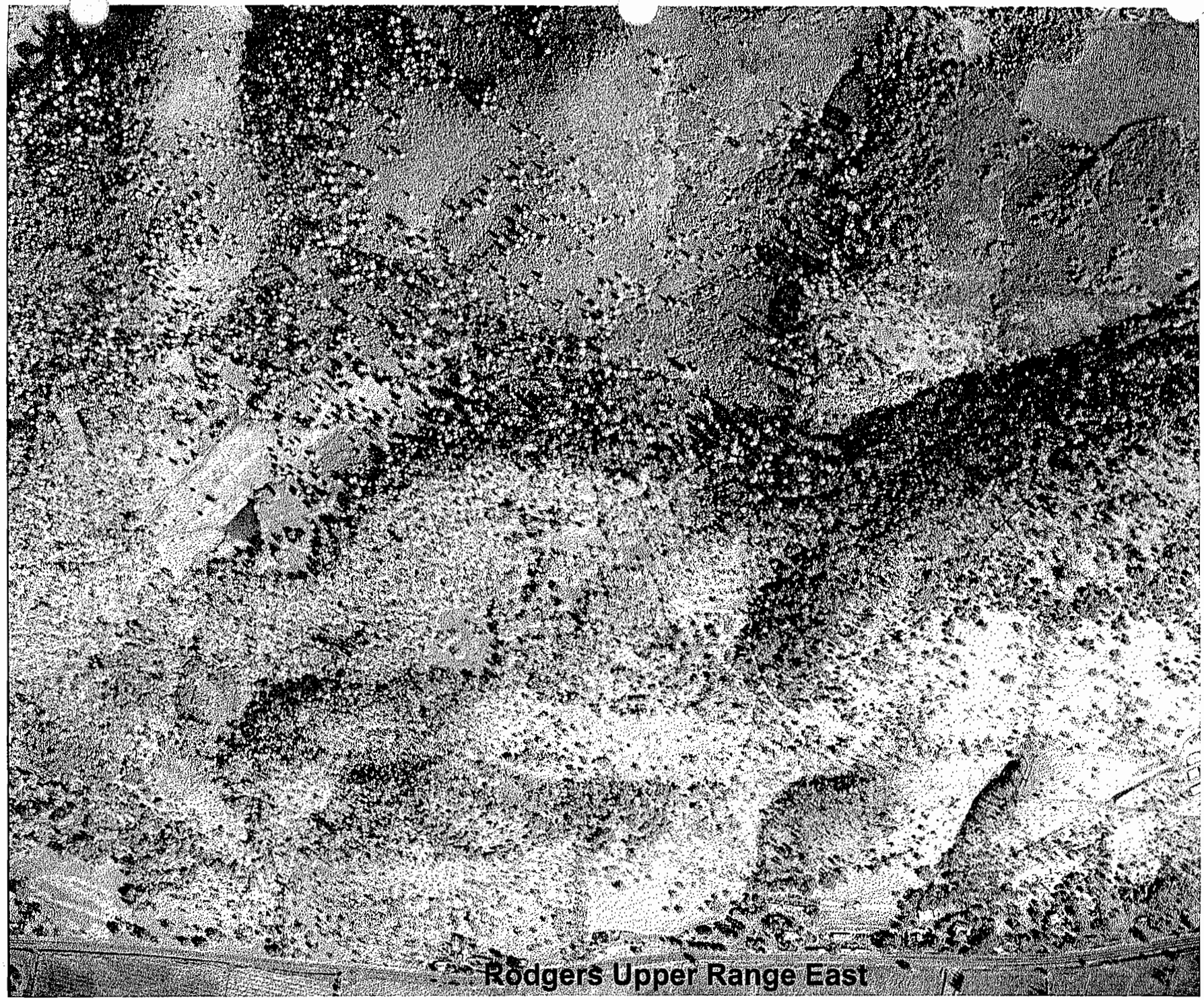
1930 Oak Circle Yountville, Ca 94599 (707) 944 0752
CPESC #2296 LincolnAE.com

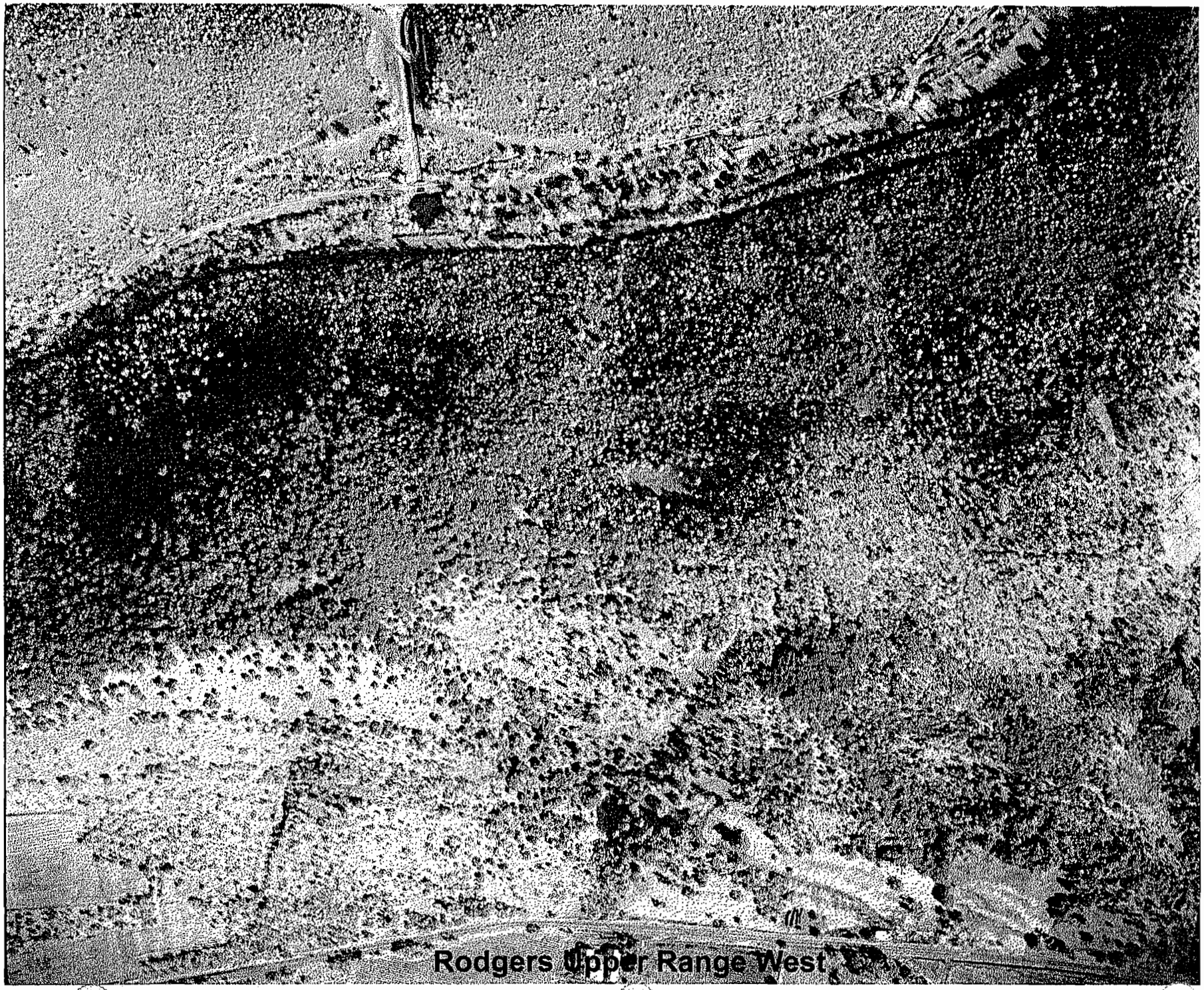
Rodgers Land & Developement

Upper Range Ranch

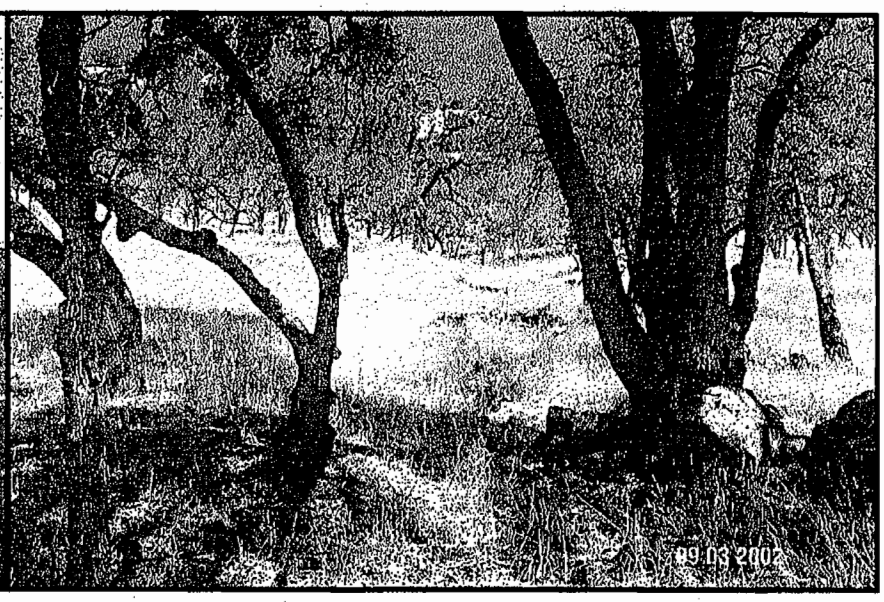
Photo Points

Date	Revised	Scale
10/14/02		1"=800'

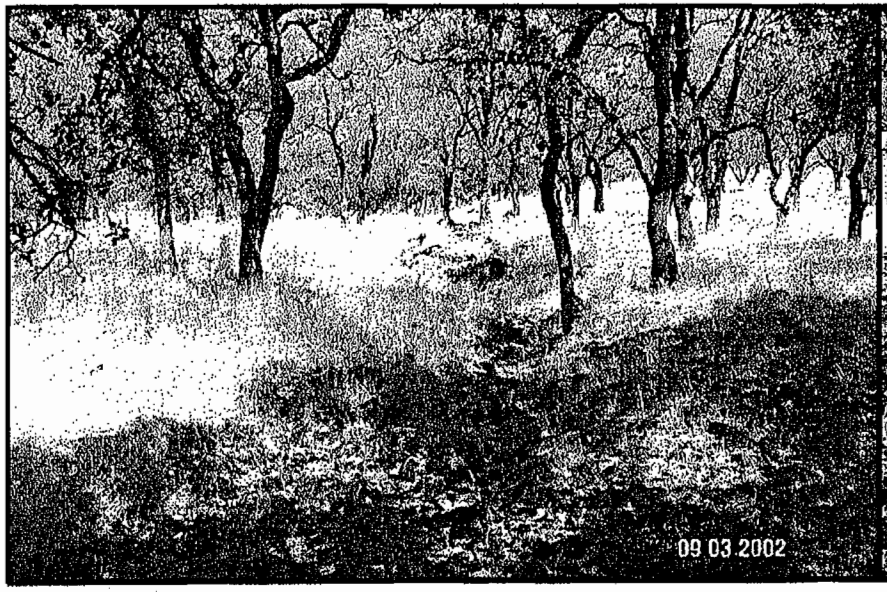

Rodgers Upper Range East


Rodgers Upper Range West

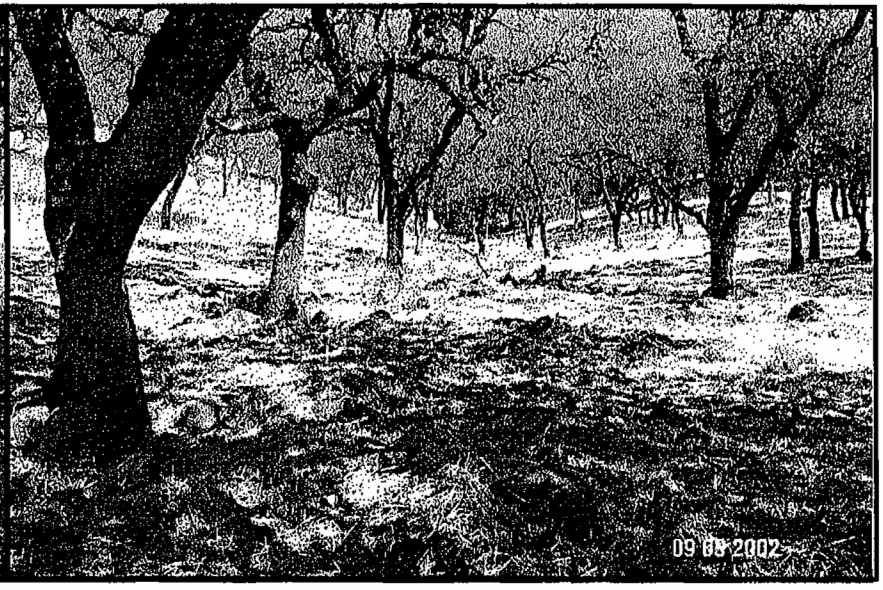
#1 Block 10



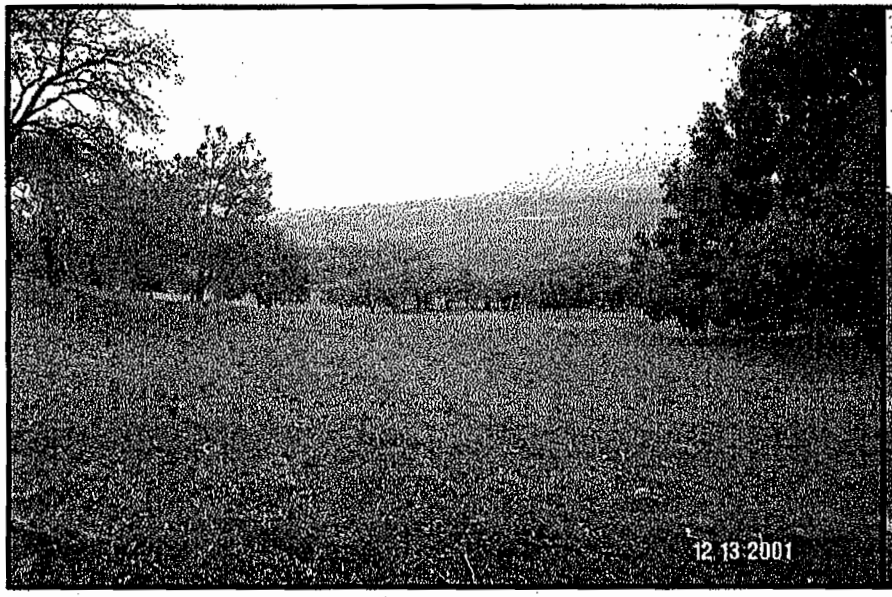
#2 Rock line this ditch in Block 10



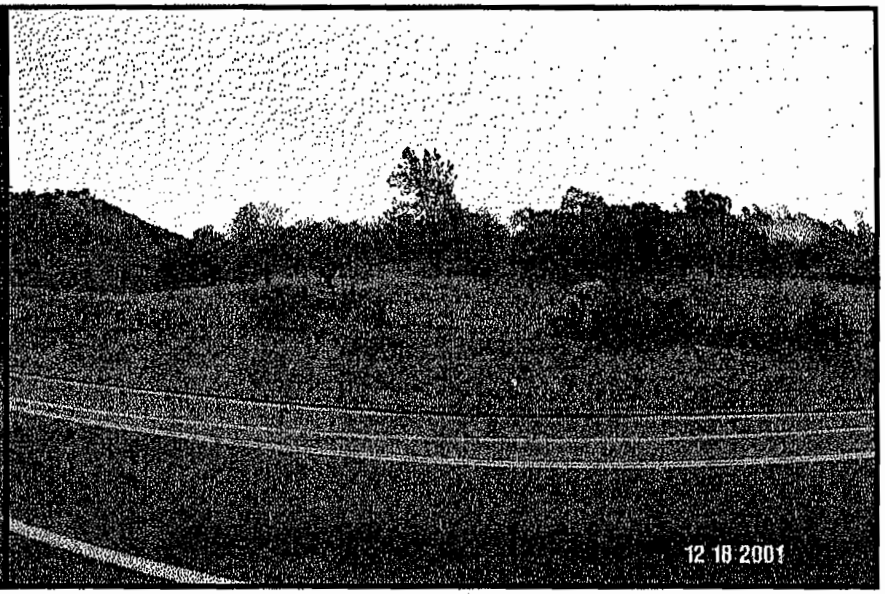
#3 Setback area east of Block 10



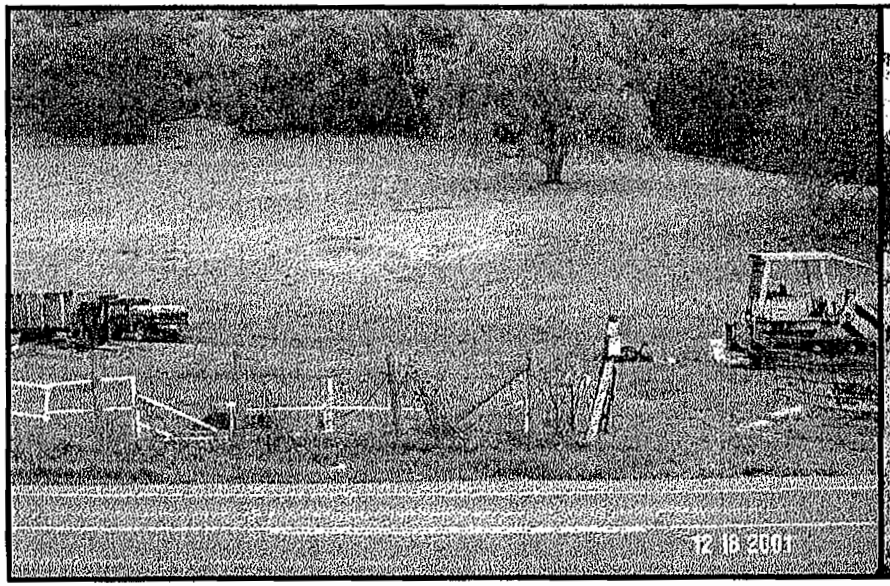
#4 Setback area west of Block13



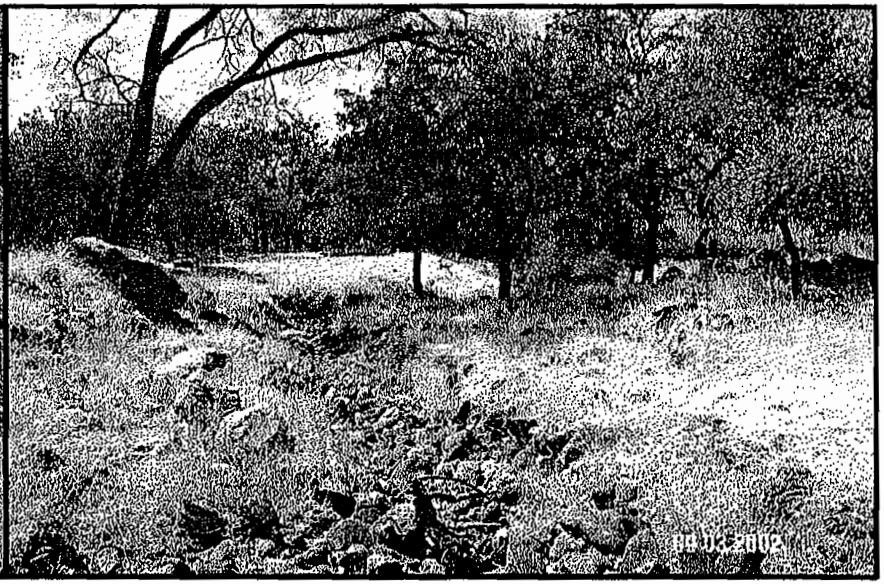
#5 Block 12



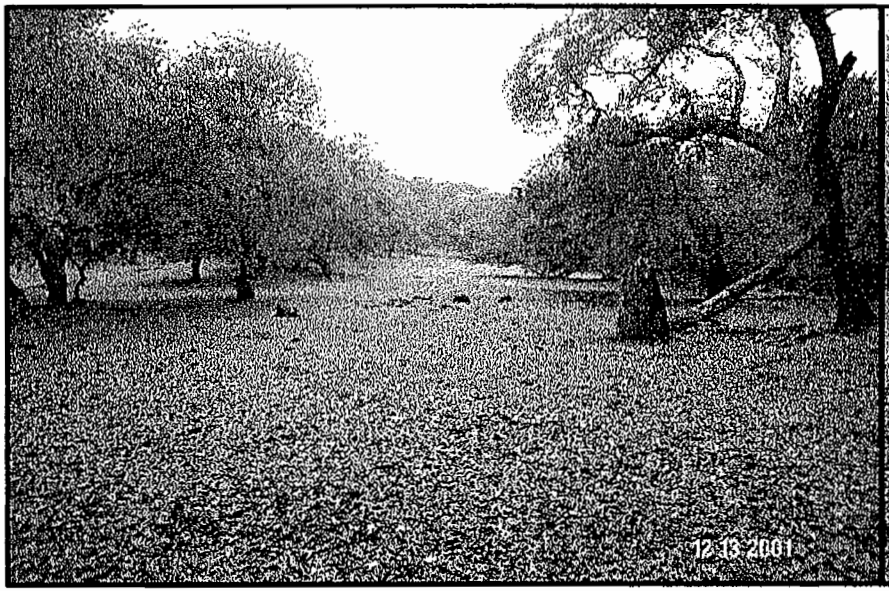
#6 Block13



#7 Block 14



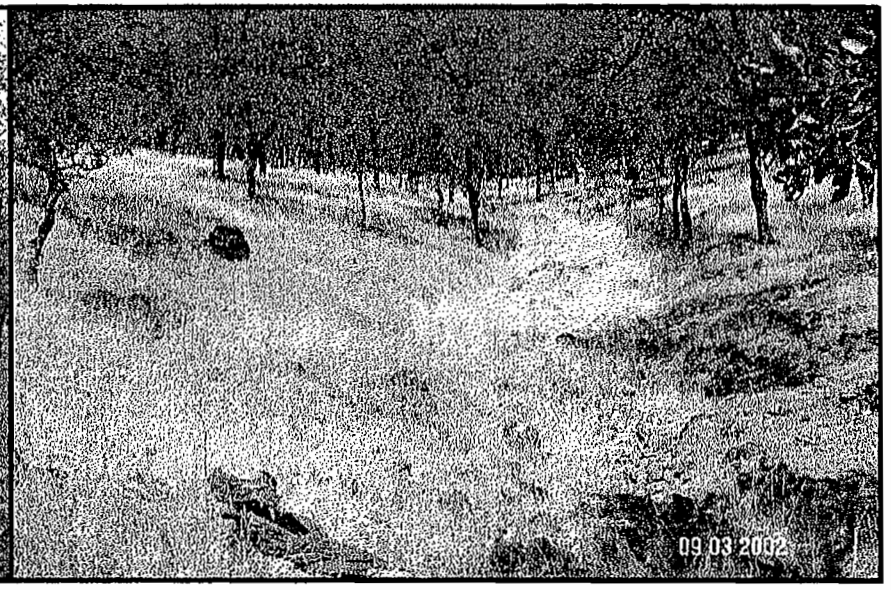
#8 Setback area between Blocks 15&16



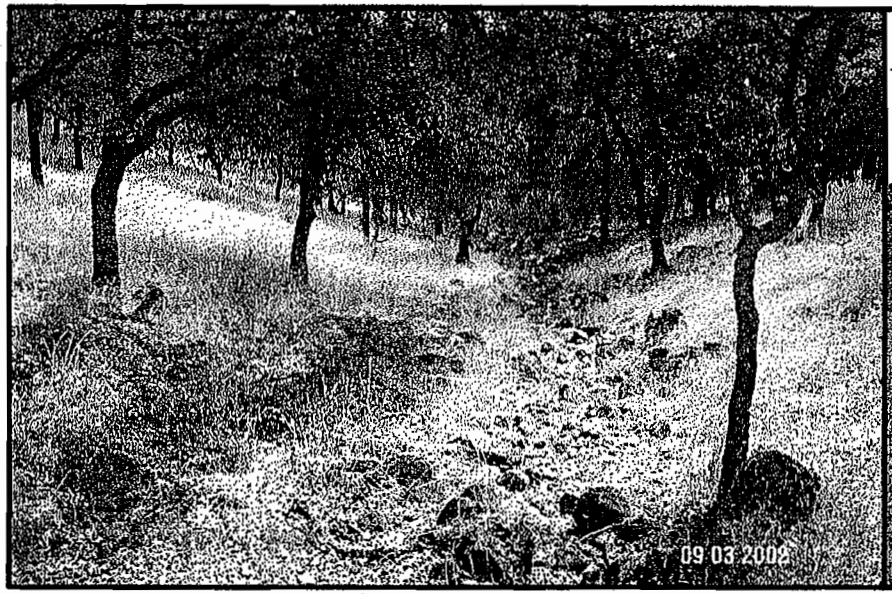
#9 Block 22

#10 Blocks 26 & 27

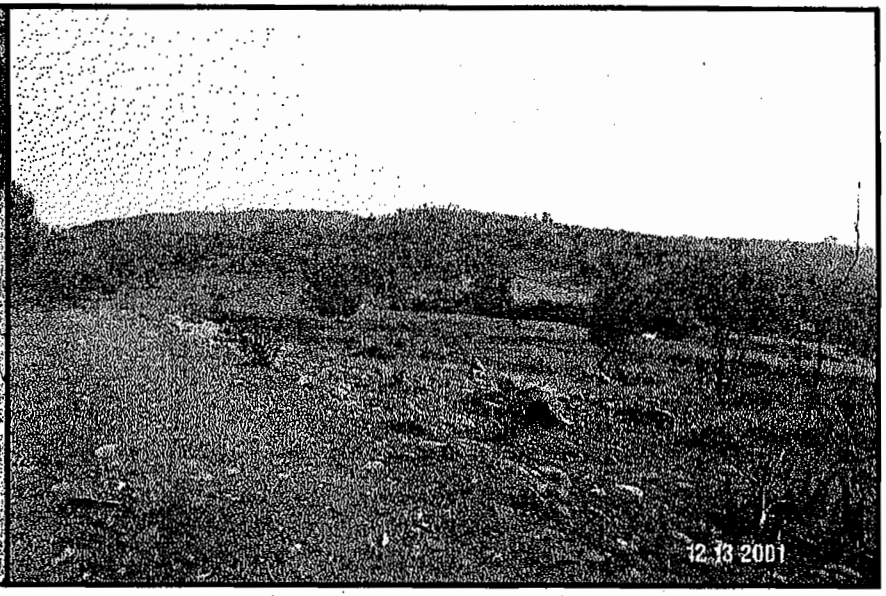
#11 Blocks 30 & 31



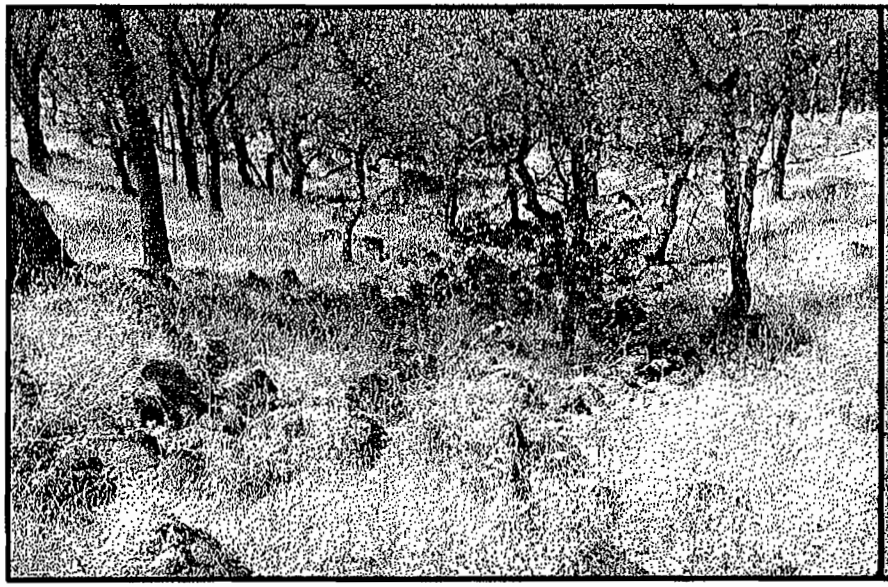
#12 Setback area east of Block 31



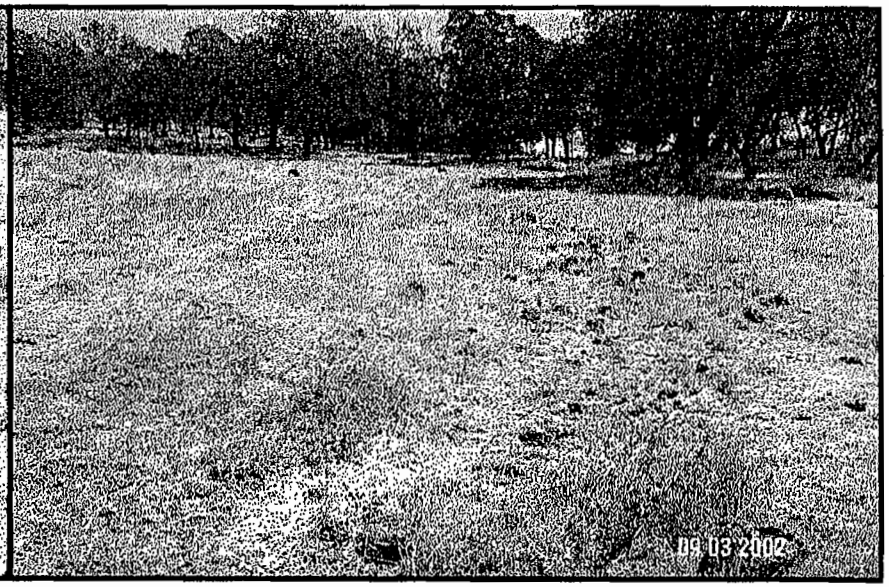
#13 Setback area east of Block 31



#14 Blocks 32&33

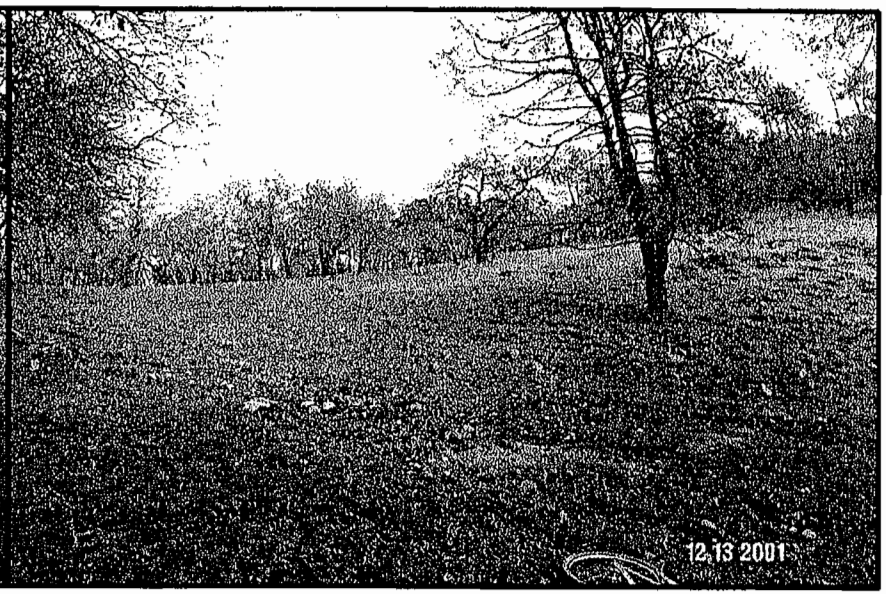


#15 Setback area west of Block 34



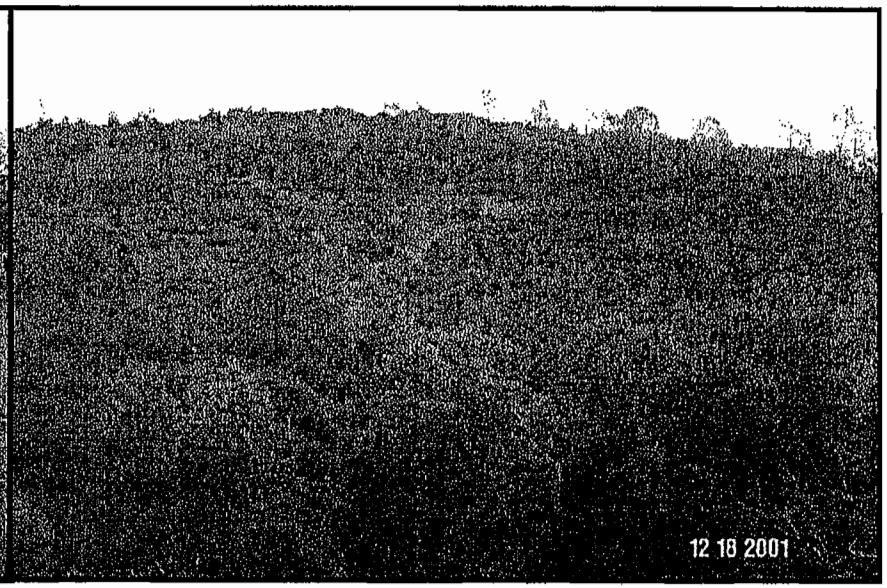
#16 Rock line this ditch in Block 34

#17 Block 34

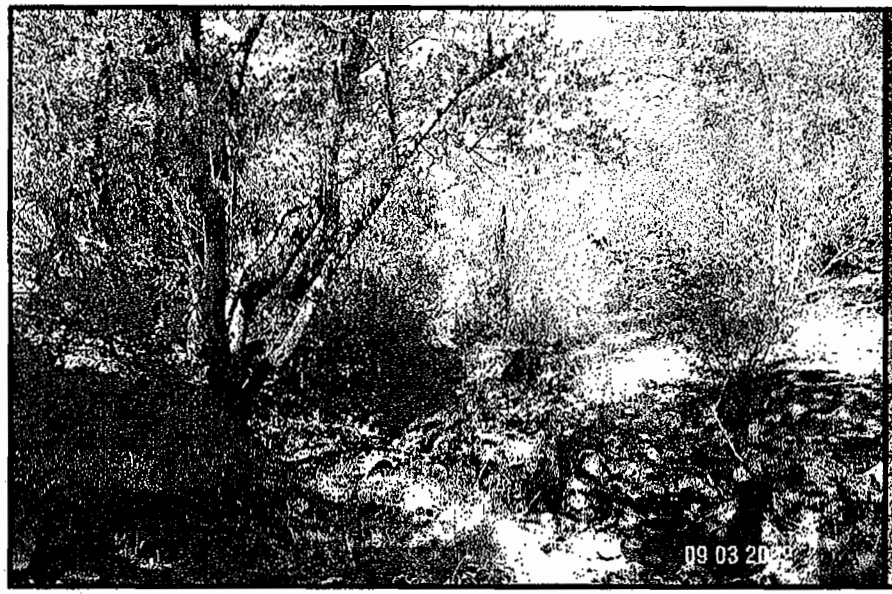


#18 Block 40

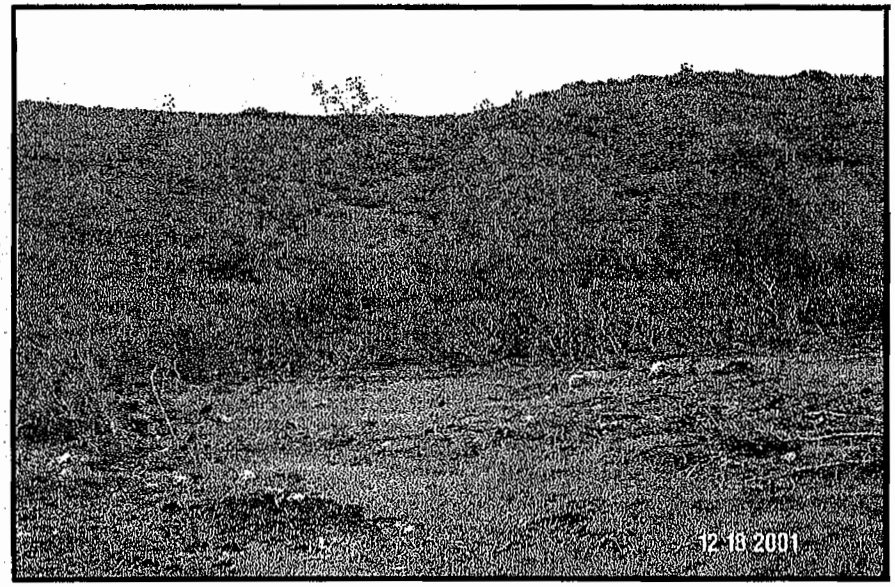
#19 Block 41



#20 Blocks 50&51



#21 Setback area between Blocks 55 & 56 #22



#23 Block 51

GRAPHICAL PEAK DISCHARGE METHOD Version 2.00
Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Conn Creek before vineyard

Data: Drainage Area : 1469 * Acres
Runoff Curve Number : 84 *
Time of Concentration: 7.38 * Hours
Rainfall Type : IA
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	2	10	50
24-Hr Rainfall (in)	4.5	6	9
Ia/P Ratio	0.08	0.06	0.04
Used	0.10	0.10	0.10
Runoff (in)	2.82	4.20	7.06
Unit Peak Discharge (cfs/acre/in)	0.071	0.071	0.071
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	292	435	732

* - Value(s) provided from TR-55 system routines

RUNOFF CURVE NUMBER COMPUTATION Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Conn Creek before vineyard

COVER DESCRIPTION		Hydrologic Soil Group A	B	C	D
		Acres (CN)			
CULTIVATED AGRICULTURAL LANDS					
Close-seeded Straight row legumes or rotation meadow	good	-	-	-	926(85)
OTHER AGRICULTURAL LANDS					
Woods - grass combination	poor	-	-	-	84(86)
	fair	-	-	-	459(82)
Total Area (by Hydrologic Soil Group)					1469

TOTAL DRAINAGE AREA: 1469 Acres WEIGHTED CURVE NUMBER: 84*

* - Generated for use by GRAPHIC method

TIME OF CONCENTRATION AND TRAVEL TIME Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Conn Creek before vineyard

Flow Type	2 year rain	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet	4.5	300	.16	h					0.316
Shallow Concent'd		1000	.22	u					0.037
Open Channel		21685	.003		.06	6	12		7.030
								Time of Concentration =	7.38*

--- Sheet Flow Surface Codes ---

A Smooth Surface
B Fallow (No Res.)
C Cultivated < 20 % Res.
D Cultivated > 20 % Res.
E Grass-Range, Short
F Grass, Dense
G Grass, Burmuda
H Woods, Light
I Woods, Dense
J Range, Natural

--- Shallow Concentrated --- Surface Codes ---

P Paved
U Unpaved

* - Generated for use by GRAPHIC method

GRAPHICAL PEAK DISCHARGE METHOD Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Conn Creek with vineyard

Data: Drainage Area : 1469 * Acres
Runoff Curve Number : 84 *
Time of Concentration: 7.38 * Hours
Rainfall Type : IA
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	2	10	50
24-Hr Rainfall (in)	4.5	6	9
Ia/P Ratio	0.08	0.06	0.04
Used	0.10	0.10	0.10
Runoff (in)	2.82	4.20	7.06
Unit Peak Discharge (cfs/acre/in)	0.071	0.071	0.071
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	292	435	732

* - Value(s) provided from TR-55 system routines

RUNOFF CURVE NUMBER COMPUTATION Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Conn Creek with vineyard

COVER DESCRIPTION		Hydrologic Soil Group A	B	C	D	Acres (CN)
CULTIVATED AGRICULTURAL LANDS						
Close-seeded Straight row legumes or rotation meadow	good	-	-	-		1066(85)
OTHER AGRICULTURAL LANDS						
Woods - grass combination	fair	-	-	-		403(82)
Total Area (by Hydrologic Soil Group)						1469

TOTAL DRAINAGE AREA: 1469 Acres WEIGHTED CURVE NUMBER: 84*

* - Generated for use by GRAPHIC method

TIME OF CONCENTRATION AND TRAVEL TIME Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Conn Creek with vineyard

Flow Type	2 year rain	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet	4.5	300	.16	h					0.316
Shallow Concent'd		1000	.22	u					0.037
Open Channel		21685	.003		.06	6	12		7.030
								Time of Concentration =	7.38*

--- Sheet Flow Surface Codes ---

A Smooth Surface
B Fallow (No Res.)
C Cultivated < 20 % Res.
D Cultivated > 20 % Res.
E Grass-Range, Short
F Grass, Dense
G Grass, Burmuda
H Woods, Light
I Woods, Dense
J Range, Natural

--- Shallow Concentrated --- Surface Codes ---

P Paved
U Unpaved

* - Generated for use by GRAPHIC method

GRAPHICAL PEAK DISCHARGE METHOD Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Hennessey before vineyard

Data: Drainage Area : 354 * Acres
Runoff Curve Number : 84 *
Time of Concentration: 0.53 * Hours
Rainfall Type : IA
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	2	10	50
24-Hr Rainfall (in)	4.5	6	9
Ia/P Ratio	0.08	0.06	0.04
Used	0.10	0.10	0.10
Runoff (in)	2.82	4.20	7.06
Unit Peak Discharge (cfs/acre/in)	0.201	0.201	0.201
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	200	298	502

* - Value(s) provided from TR-55 system routines

RUNOFF CURVE NUMBER COMPUTATION Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Hennessey before vineyard

COVER DESCRIPTION		Hydrologic Soil Group A	B	C	D
		Acres (CN)			
OTHER AGRICULTURAL LANDS					
Woods - grass combination	poor	-	-	-	207(86)
	fair	-	-	-	147(82)
Total Area (by Hydrologic Soil Group)					354

TOTAL DRAINAGE AREA: 354 Acres WEIGHTED CURVE NUMBER: 84*

* - Generated for use by GRAPHIC method

TIME OF CONCENTRATION AND TRAVEL TIME Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Hennessey before vineyard

Flow Type	2 year rain	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet	4.5	300	.13	h					0.344
Shallow Concent'd		1000	.12	u					0.050
Open Channel		5100	.13		.06	6	5		0.140
Time of Concentration = 0.53*									

--- Sheet Flow Surface Codes ---

A Smooth Surface
B Fallow (No Res.)
C Cultivated < 20 % Res.
D Cultivated > 20 % Res.
E Grass-Range, Short
F Grass, Dense
G Grass, Burmuda
H Woods, Light
I Woods, Dense
J Range, Natural

--- Shallow Concentrated --- Surface Codes ---

P Paved
U Unpaved

* - Generated for use by GRAPHIC method

GRAPHICAL PEAK DISCHARGE METHOD Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Hennessey with vineyard

Data: Drainage Area : 354 * Acres
Runoff Curve Number : 83 *
Time of Concentration: 0.53 * Hours
Rainfall Type : IA
Pond and Swamp Area : NONE

Storm Number	1	2	3
Frequency (yrs)	2	10	50
24-Hr Rainfall (in)	4.5	6	9
Ia/P Ratio	0.09	0.07	0.05
Used	0.10	0.10	0.10
Runoff (in)	2.73	4.09	6.94
Unit Peak Discharge (cfs/acre/in)	0.201	0.201	0.201
Pond and Swamp Factor 0.0% Ponds Used	1.00	1.00	1.00
Peak Discharge (cfs)	194	291	493

* - Value(s) provided from TR-55 system routines

RUNOFF CURVE NUMBER COMPUTATION Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Hennessey with vineyard

COVER DESCRIPTION		Hydrologic Soil Group A	B	C	D
		Acres (CN)			
CULTIVATED AGRICULTURAL LANDS					
Close-seeded Straight row legumes or rotation meadow	good	-	-	-	61(85)
OTHER AGRICULTURAL LANDS					
Woods - grass combination	fair	-	-	-	293(82)
Total Area (by Hydrologic Soil Group)					354

TOTAL DRAINAGE AREA: 354 Acres WEIGHTED CURVE NUMBER: 83*

* - Generated for use by GRAPHIC method

TIME OF CONCENTRATION AND TRAVEL TIME Version 2.00

Project : Rodgers Upper Development User: Date:
County : Napa State: Checked: ____ Date: _____
Subtitle: Hennessey with vineyard

Flow Type	2 year rain	Length (ft)	Slope (ft/ft)	Surface code	n	Area (sq/ft)	Wp (ft)	Velocity (ft/sec)	Time (hr)
Sheet	4.5	300	.13	h					0.344
Shallow Concent'd		1000	.12	u					0.050
Open Channel		5100	.13		.06	6	5		0.140
								Time of Concentration =	0.53*

--- Sheet Flow Surface Codes ---

A Smooth Surface
B Fallow (No Res.)
C Cultivated < 20 % Res.
D Cultivated > 20 % Res.
E Grass-Range, Short
F Grass, Dense
G Grass, Burmuda
H Woods, Light
I Woods, Dense
J Range, Natural

--- Shallow Concentrated --- Surface Codes ---

P Paved
U Unpaved

* - Generated for use by GRAPHIC method

APPENDIX B

EROSION AND SEDIMENTATION ASSESSMENT

" (establish)	81 af/yr	" (establish)	_____ af/yr
Other Agriculture	_____ af/yr	Other Agriculture	_____ af/yr
Landscaping	_____ af/yr	Landscaping	_____ af/yr
Other Usage	_____ af/yr	Other Usage	_____ af/yr
TOTAL future	288.08 af/yr	TOTAL while establishing	308.33 af/yr

STEP 5: *Attach all supporting information that may be significant to this analysis including but not limited to all water use calculations for the various uses listed*

Parcel Location Factors

The allowable allotment of water is based on the location of your parcel. Valley floor areas include all locations on the floor of the Napa Valley and Carneros Basin except for groundwater deficient areas. Groundwater deficient areas are areas that have been determined by the Department of Public Works as having a history of problems with groundwater. All other areas are classified as Mountain Areas. Public Works can assist you in determining your classification.

Parcel Location Factors	
Valley Floor	1.0 acre foot per acre per year
Mountain Areas	0.5 acre foot per acre per year
Groundwater Deficient Area (MST)	0.3 acre foot per acre per year

Guidelines For Estimating Water Usage:

Residential:	
Single Family Residence	0.5 acre-foot per year
Farm Labor Dwelling	1.0 acre-foot per year (6 people)
Second Unit	0.4 acre-foot per year
Guest Cottage	0.1 acre-foot per year
Winery:	
Process Water	2.15 acre-foot per 100,000 gal. of wine
Domestic and Landscaping	0.50 acre-foot per 100,000 gal. of wine
Commercial:	
Office Space	0.01 acre-foot per employee per year
Warehouse	0.05 acre-foot per employee per year
Agricultural:	
Vineyards	
Irrigation only	0.2 to 0.5 acre-foot per acre per year
Heat Protection	0.25 acre foot per acre per year
Frost Protection	0.25 acre foot per acre per year
Irrigated Pasture	4.0 acre-foot per acre per year
Orchards	4.0 acre-foot per acre per year
Livestock (sheep or cows)	0.01 acre-foot per acre per year
Landscaping:	
Landscaping	1.5 acre-foot per acre per year

Scale 1"=600'

ENGINEERING

18500 North Shore Drive Hidden Valley Lake, Ca 95467
(707) 987 3390 CPESC #2296 LincolnAE.com

Rodgers Land & Developement

Upper Range East & West

Erosion Control Plan

Date 10/14/02 Rev 08/5/05 Scale Noted

Legend:
Open Space
Irrigation line
Silt fence
Soil Boundary
Water bars
Slopes over 30%
Vineyard row direction
Vineyard avenues
Vineyard fencing

Figure 3-2: Erosion Control Plan
Upper Range Vineyard Project -- Rodgers Property

#11

Napa River Watershed Task Force

Phase II
Final Report

Prepared for:
The Napa County Board of Supervisors

Prepared by:

MOORE IACOFANO GOLTSMAN, INC.
800 Hearst Avenue
Berkeley, CA 94710
510.845.7549
www.migcom.com

September 2000

Rationale:
The proposed standards will provide for existing hydrologic and biologic values of riparian areas and opportunities for future enhancement and/or restoration.

The Technical Review Team acknowledged that a 50-foot setback may not provide optimal width for riparian protection. Minimum setbacks of 100-150 feet are often recommended in scientific literature to protect streams over the long-term[20]. However, the Task Force and Technical Team understand and appreciate the substantial investment in existing vineyards and the significant financial benefits of these lands.

The 50-foot standard provides certainty that a narrow riparian buffer will be available long into the future. This buffer can serve flood control needs, habitat needs and water quality filtering needs. At the same time, as a matter of practice, vineyard managers have tended to setback from streams voluntarily because of terrain, bank stability, vector potential, turn-around needs, etc.

All Task Force members agreed that financial and other incentives to retain or restore natural landscapes are highly desirable and preferable to pure regulation. Section 2-L of this chapter describes the types of incentives that the Task Force believes should be pursued not only to facilitate establishment of setbacks for replanted vineyards but also to achieve many of the other goals contained in the Task Forces' recommendations.

2-C. *Off-site Hydrologic Impacts*

Issue
The current Regulations focus on controlling erosion from on-site earth moving activities and minimizing impacts to adjacent watercourses. However, the Regulations do not fully address the downstream hydrologic impacts from such activities. While current management practices under the erosion control permit process are effective in reducing on-site stream impacts, streams and land downstream from the project site may be affected by fluctuations in peak flow and associated impacts such as bank erosion, channel degradation, and flooding.

The primary concern for off-site hydrologic impacts is increase in peak rate of runoff. The rate of stormwater runoff, as opposed to the volume, is a leading contributor to scouring and bank erosion downstream of project sites. During a storm event, the rate of runoff is typically low during the early stage of the storm. As the ground saturates and more water runs off the surface, the rate of runoff also rises. The highest rate of runoff during a storm event is called the "peak rate of runoff." Although controlling the peak rate of runoff will not necessarily reduce the total volume of runoff, it is an effective way of reducing bank erosion and scouring. For example, stream depth during a storm event could stay at 6 feet for 8 hours, as opposed to reaching a height of 10 feet for 1 hour, and thus moving a high volume of water in a very short time period. The first scenario will result in less erosion and scouring than the second.

[20] U.S. Forest Service. "Specification/Riparian Forest Buffer."

Task Force Recommendation

Table 1 and the accompanying map (Figure 6) are to be used to establish the process and performance standards for on-site and off-site runoff management.

The vulnerability of site soils to increases in runoff will determine what control measures would be required by the applicant. As shown in Table 1, vulnerability is related to the site's soil type and existing cover vegetation. On sites with high vulnerability, ratings 3 and 4, a standard of no net increase in post-project peak runoff rate from pre-application conditions will be adopted. Meeting this standard will require a variety of techniques. High vulnerability sites may include mixed conifer/hardwood forests with soil types A and B (which have high runoff potential), typical of the west-side of the watershed.

On sites with lower vulnerability, ratings 1 and 2 runoff standards will be set through an individual site analysis. Areas of low vulnerability include shrub and grasslands with soil types C and D (which have low runoff potential), typical of the east-side of the watershed.

In both situations, applicants can choose from among many runoff/erosion control options. However, post-project peak runoff rates are not to exceed pre-application conditions. Peak runoff rates vary across storm events and season. Since winter conditions generate the most severe impacts, the Task Force recommends that projects be designed to control peak runoff rates during a typical winter storm event. Modeling of peak runoff rates should be based on established standards, such as those used by the Natural Resources Conservation Service. Generally, a 2-year storm under saturated conditions is used as the baseline condition for these models.

Depending on risk level and specific site conditions, runoff/erosion control measures could include preparing a standard erosion control plan; applying no-till ground cover on a maximum percentage of ground; installing energy dissipaters, water spreaders, sheet flow spreaders and/or constructing discharge detention basins. Measures may also include vegetation retention or replanting or restoration standards and landscape designs to minimize runoff and erosion. The Task Force strongly encourages these "green" methods over more traditional, engineering solutions.

Figures 7-9 on the following pages illustrate the processing steps for applicants on increasingly sensitive sites (hydrologically). The more sensitive the site to runoff and erosion, the more detailed the analysis and the stricter the performance standard. Compliance with these standards will be determined by the RCD, which is under contract to the County.

Rationale

Runoff modeling studies conducted by the Natural Resource Conservation Service and the Resource Conservation Service have shown that intensity of runoff varies with soil type, pre-development vegetation patterns, slope, and slope length and post-development runoff management practices. Based on comparisons of various sites around the Napa River Watershed, soil hydrologic group, in association with pre-development native vegetation type and condition, represents the primary determinant of runoff response to land conversion. Therefore, the extent of land disturbance and the design of erosion control measures should be based on a combination of soil hydrologic group and vegetation. No net increase in peak

rate of runoff on the highly erodable areas is an appropriate standard to protect downstream properties and the hydrologic characteristics of the Napa River system. In less vulnerable areas, traditional erosion control plans that emphasize on-site best management practices should be sufficient.

Table 1: *Soil Hydrologic/Vegetation Association Sensitivity Ratings*

	Predominant Native Vegetation			
Soil Hydrology Group*	**Shrubland**	**Grassland Savannah****	**Hardwood Forest**	**Conifer/Mixed Hardwood Forest**
A, B	2	3	4	4
C	1	2	3	4
D	1	1	3	4

Rating	Management Response
1	Proceed with erosion control plan. No additional hydrologic considerations necessary.
2	Proceed with no additional hydrologic considerations if a no-till cover crop will provide a minimum of 70% ground cover. Proceed to first-level Hydraulic Analysis (Figure 7) if minimum cover cannot be achieved.
3	Proceed to second-level Hydraulic Analysis (Figure 8).
4	Proceed to third-level Hydraulic Analysis (Figure 9).

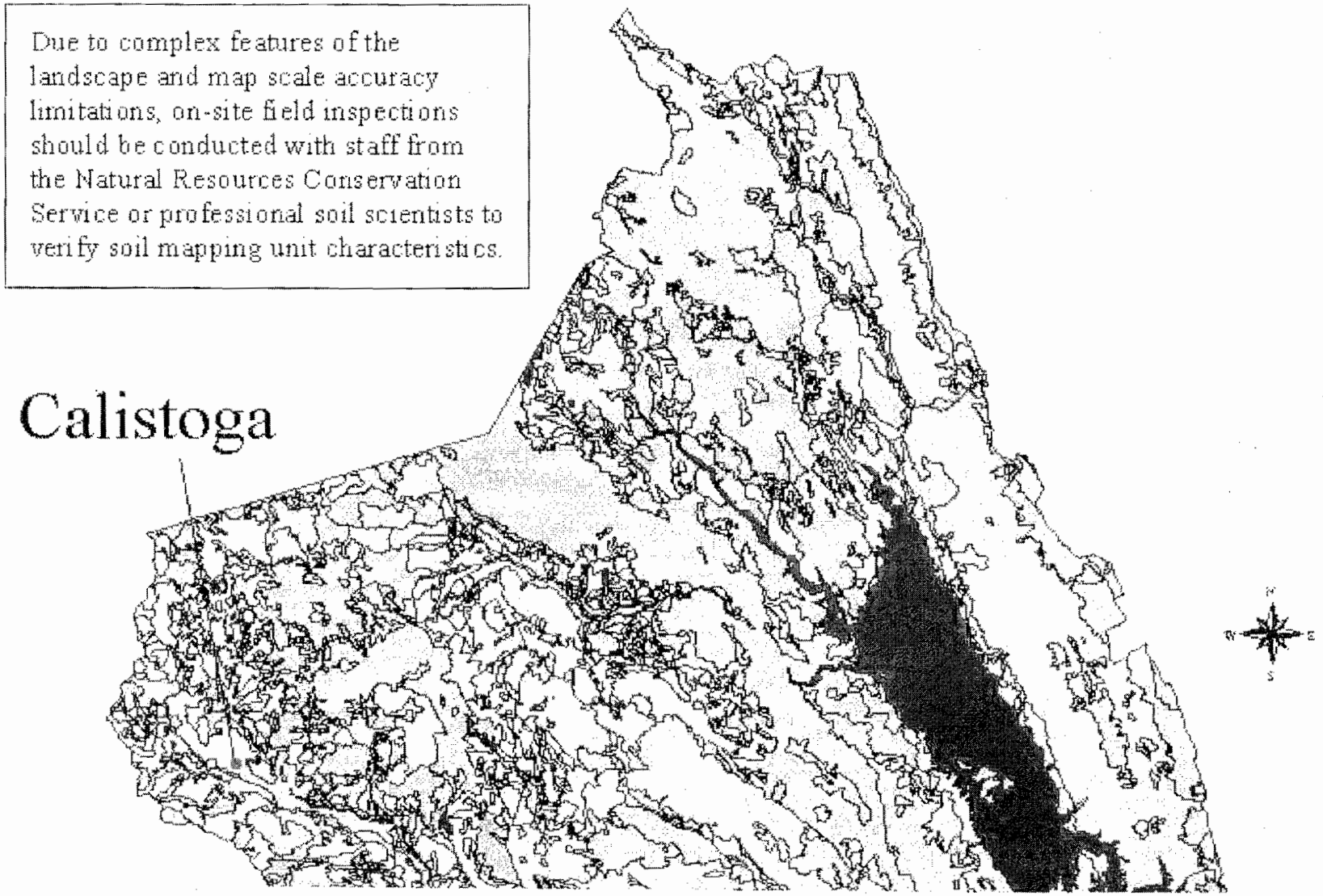
*** As shown in Figure 6. Soil types A-D are characterized as follows:**

- Group A soils have low runoff potential and high infiltration rates even when thoroughly wetted. They consist chiefly of deep, well to excessively drained sands or gravels and have a high rate of water transmission (greater than 0.30 in/hr).
- Group B soils have moderate infiltration rates when thoroughly wetted and consist chiefly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission (0.15-0.30 in/hr).
- Group C soils have low infiltration rates when thoroughly wetted and consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine to fine texture. These soils have a low rate of water transmission (0.05-0.15 in/hr).
- Group D soils have high runoff potential. They have very low infiltration rates when thoroughly wetted and consist chiefly of clay soils with a high swelling potential, soils with a permanent high water table, soils with a permanent high water table, soils with a claypan or clay layer at or near the surface, and shallow soils over nearly impervious material. These soils have a very low rate of water transmission (0-0.05 in/hr).

**** <30% canopy**

Figure 6:
Napa River Watershed
Soil Hydrologic Groups

Due to complex features of the landscape and map scale accuracy limitations, on-site field inspections should be conducted with staff from the Natural Resources Conservation Service or professional soil scientists to verify soil mapping unit characteristics.



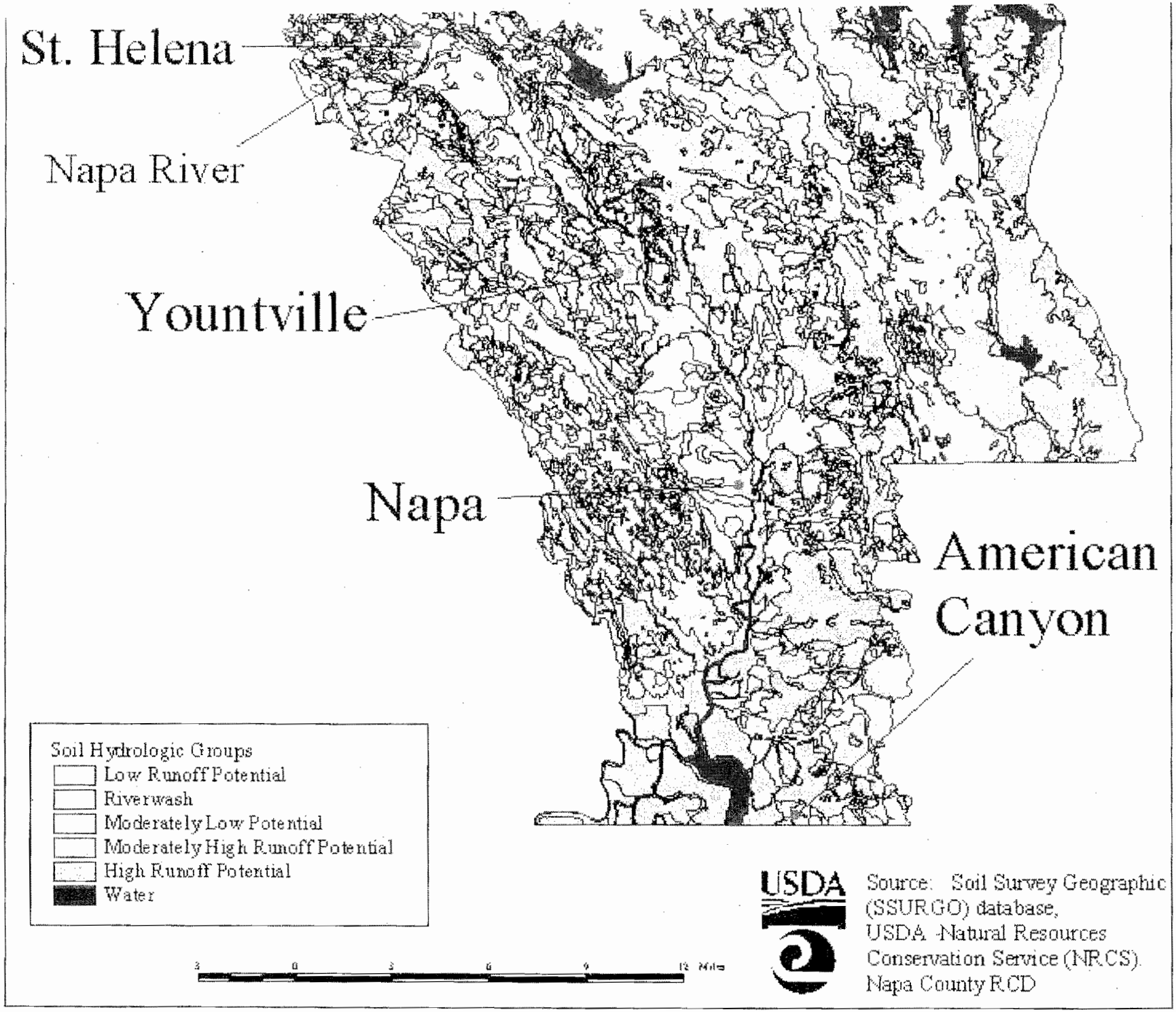

St. Helena
Napa River
Yountville
Napa
American Canyon
Soil Hydrologic Groups
Low Runoff Potential
Riverwash
Moderately Low Potential
Moderately High Runoff Potential
High Runoff Potential
Water
USDA
Source: Soil Survey Geographic (SSURGO) database, USDA Natural Resources Conservation Service (NRCS) Napa County RCD

Figure 7: Hydrology Processing Steps for Rating 2

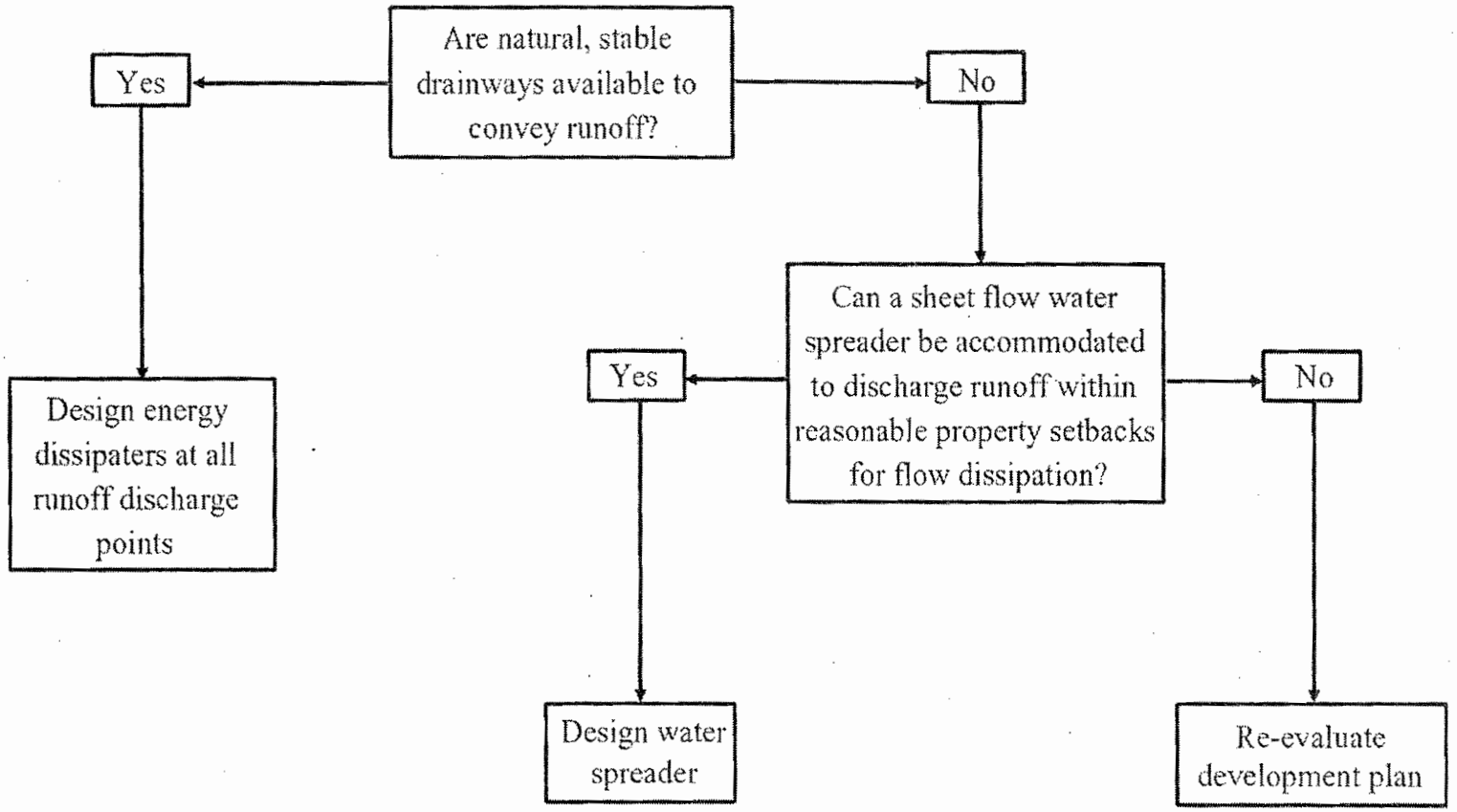


Figure 8: Hydrology Processing Steps for Rating 3

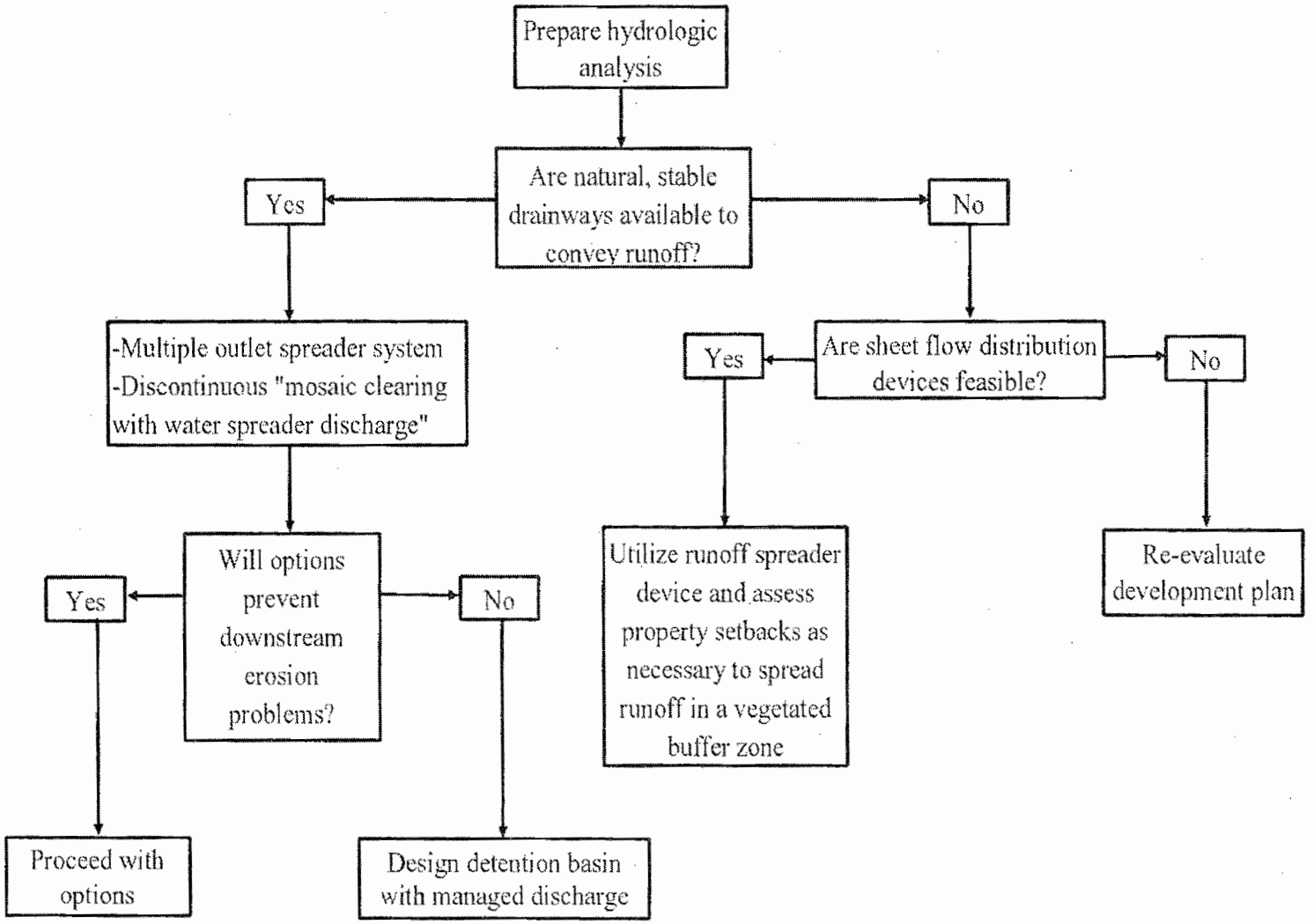


Figure 9: Hydrology Processing Steps for Rating 4