

14640 / MORELL LN

B-138555

COUNTY OF SONOMA

PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA

(707) 527-1900

FAX (707) 527-1103

PLANCHECK RECEIPT ONLY - NOT A PERMIT

B-138555

Address: 14540 MORELLI LN OCC

Printed: 15:40 Aug 30, 1996

Cross Street: HARRISON GRADE RD

APN: 074-041-003

Res/Com:

In Planchek: 00/00/0000

Std/Quick:

Fire District: OCCIDENTAL CSD ZN2 FIRE

Activity Type: AB-GRD 9601

Insp Area: 04

Tax Rate Area: 096039

Owner

Applicant

BRIDGET MORELLI RANCH
14540 MORELLI LN
SEBASTOPOL CA

954729721

ERICKSON ENGINEERING
P O BOX 446
VALLEY FORD CA

94972

707 795-2498

823-0448

Planchek Expires: 00/00/0000

Description: GRADING FOR AGRICULTURAL RESERVOIR - 6300 CU YDS

Initialized By: CNIEDERM

Approved By:

Planchek Multiplier: 1.00

Item #	Item Account Code	Description	Fee	Previously Paid
0060	025619-1341	BLDG PERM PLAN CHECK FEE	\$30.00	\$0.00
0100	025619-1341	SITE REVIEW/ELEV. CERT.	\$54.00	\$0.00
0121	025619-1341	FIRE SAFE STDS REF FEES	\$0.00	\$0.00
0706	025627-3140	REF.-MINOR GRADING/SETBK	\$0.00	\$0.00
0707	025627-3140	REF.-GRADING/DRAIN. PLAN	\$0.00	\$0.00
0708	025627-3140	REF.-GRD/DRAIN DFM/DRVWY	\$229.00	\$0.00
5060	025619-1341-WAIVED	BLDG PERM PLAN CHECK FEE	\$0.00	\$0.00
5100	025619-1341-WAIVED	SITE REVIEW/ELEV. CERT.	\$0.00	\$0.00
5121	025619-1341-WAIVED	FIRE S.S. REFERRAL FEE	\$0.00	\$0.00
5706	025627-3140-WAIVED	REF.-MINOR GRADING/SETBK	\$0.00	\$0.00
5707	025627-3140-WAIVED	REF.-GRADING/DRAIN. PLAN	\$0.00	\$0.00
5708	025627-3140-WAIVED	REF.-GRD/DRAIN DAM/DRVWY	\$0.00	\$0.00

Qualifies for Fee Waivers (Y/N): N

\$383.00

\$0.00

Total Calculated Fees

\$383.00

Total Additional Fees

\$0.00

Previously Paid

\$0.00

Balance Due

\$383.00

CASH REGISTER
VALIDATION
REQUIRED
BELOW

016823 09/04/96AD

0138555

SIERRA \$383.00

**TTL \$383.00

CHECK \$383.00

CHNG \$0.00

SONOMA COUNTY Id: ACTP150 Keyword: VACT User: LCORETTI
Activity Maintenance - Inspection Processing
Permit: B-138555 Applicant : ERICKSON ENGINEERING
Status: PC APRVD Address: 14640 MORELLI LN OCC
Notice: NEED ZONING CLEARANCE

✓
10/30/96
Grading Permit

2

Item	Description
100	E site inspection
500	A plancheck
520r	A Drainage Review
101	grading, rough
102	grading, final
107	underground utilities
109	retaining walls
121	fire safe standards
140	progress
144	water tanks
199r	final

Select Inspection Item: 520

(E=Entries A=Approved r=Required Inspection n=Additional Notations recorded)

F1=Add item F2=Next F3=First F5=Requests F6=Notations ENTER=Select ESC=Exit

PERMIT AND RESOURCE MANAGEMENT

DEVELOPMENT SUBMITTAL INFORMATION

FOR DRAINAGE REVIEW

3

Please type or print the following information:			
Name of Development :			
Property Address :	14640 Morelli Lane		
City, Zip :	Sebastopol CA 95472		
Nearest Cross Street :			
Assessor Parcel No. :	074-040-03		
Design Engineer :	L. ERICKSON		
Address :	Box 446		
City, Zip :	Valley Ford CA 94972		
Phone No. :			
Developer :			
Applicant Name :	Steve Dutton, Dutton Vineyards		
Address :	10717 Graton Road		
City, Zip :	Sebastopol CA 95472		
Phone No. :			
Land use (Planning) File No. :		Permit Application No. :	
Number of Units : _____		Area : _____ acres	
* * To be completed by drainage review * *			
File/Unique No:		Quad Maps:	
Major Dev. (MJS /UP/ DR) : _____		Permit Referral : _____	
Minor Dev. (MNS /UP/ DR) : _____		Flood Zone : _____	
Fee based on: _____ minimum, _____ Units @ _____ per unit = _____			
Permit Referral Fee : _____		Flood Zone Fee _____	
		Date: _____ Receipt No. : _____	
MJS/UP/DR Fee:	Amount	Date	Receipt No.
Base/minimum	_____	_____	_____
Balance or Total	_____	_____	_____
Review Engineer/Technician:		Final Letter Date:	
Comments:			

c:\prmd\dvlp\inf.doc

Rev. 6/95

2550 Ventura Avenue, Santa Rosa, CA 95403

Phone: 707/527-1900 (Main), 707/527-3605 (Drainage Review),

FAX: 707/527-1103

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Erickson Engineering Inc.
Valley Ford CA 94972-0446 707/795-2498 Voice/Fax

County of Sonoma
Permit and Resource Management Department
2550 Ventura Avenue
Santa Rosa CA 95403

August 23, 1996

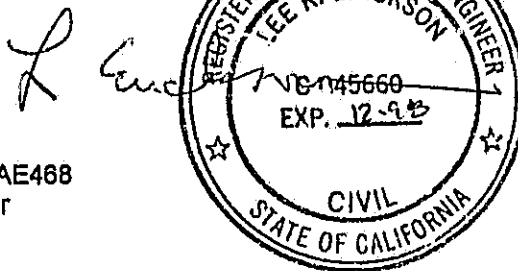
To: Planning Division
Stephen Johnson, Building Inspector III
Lola Coretti, Drainage Review Division

Re: Grading Permit for 8 acre-foot irrigation reservoir
Dutton Ranch Vineyards
14640 Morelli Lane
Sebastopol CA 95472 APN 074 - 040 - 03

Enclosed please find design and documentation materials for the above referenced project that conform to County standards. The 8 acre-foot reservoir is intended for irrigation of vineyards. The structure will require an embankment of about 6300 cubic yards. Maximum embankment height is about 17 feet, and maximum water depth will be about 15 feet. Excavation area is within the impoundment to maximize storage volume, and is limited to about eight feet deep.

Sonoma County Rational Method procedures were used to estimate a peak runoff flow of about 22 cfs for the 100-year storm for the 15-acre watershed. The principal spillway is a drop inlet and pipe structure. The emergency spillway is a trapezoidal vegetated earthen. Spillway discharge is to the existing natural well-vegetated grassy swale with no evidence of erosion. According to State statutes, Water Rights are not required for this project because it is not located in a known or defined waterway or runoff area having "bed and banks".

Very truly yours,



Lee Erickson, PhD CE45660 AE468
Civil and Agricultural Engineer

enclosures

Plans
Engineering calculations

cc: Dutton Vineyards

SITE REVIEW CHECKLIST

138555

JOB ADDRESS: 14640 Morrell Lane

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The proposed construction appears to be located in:

Flood Hazard:	<input type="checkbox"/> FIRM Flood Zone (A.S.F.H.) BFE = _____ ft. NGVD. Lowest finish floor is 12" above BFE at _____ ft. <input type="checkbox"/> Design for moving water is recommended Section _____ is _____ Ft/sec Section _____ is _____ Ft/sec <input type="checkbox"/> Area subject to flooding (not on adopted FIRM). <input type="checkbox"/> Project is on flood zone major damage list. <input type="checkbox"/> Flood prone urban area defined by Ordinance #4467.	<input type="checkbox"/> FIRM Floodway <input type="checkbox"/> Portions of property in flood zone but project site not in flood zone. <input type="checkbox"/> Appears to be a "substantial improvement" (40%), therefore flood regulations apply. <input type="checkbox"/> Located inside the Laguna de Santa Rosa below elevation of 75 ft (Ord.#4467). <input type="checkbox"/> Sensitive drainage area, review by drainage section recommended.
Geo-technical:	<input type="checkbox"/> Area of suspected slides, slumps, earth flow, or soil creep. <input type="checkbox"/> Area of previous fill placement. <input type="checkbox"/> Area of highly expansive soil. <input type="checkbox"/> Area without sufficient slope setback as set forth in UBC Section 2907. <input type="checkbox"/> Area subject to possible liquefaction. <input type="checkbox"/> Area of suspected soft, compressible, or organic soil with low bearing capacity.	<input type="checkbox"/> Area without recommended setback from stream (SCWA recommendations). <input type="checkbox"/> Area of high moisture content in soil. <input type="checkbox"/> Area subject to high erosion (water or wind). <input type="checkbox"/> Area of soft soil due to past deep ripping or cultivation below minimum foundation depth. <input type="checkbox"/> Area within 1000 feet of a solid waste disposal site.
Geologic:	Soils Report: Required <input type="checkbox"/> Available <input type="checkbox"/> <input type="checkbox"/> Located in the Alquist-Priolo Special Studies Zone.	<input type="checkbox"/> Geologic report required (see DMG Publication 42).
General:	<input type="checkbox"/> Building addition will affect the required light and ventilation in an existing room. <input type="checkbox"/> Existing electric meter must be replaced. <input type="checkbox"/> Existing gas meter must be replaced. Slope is _____	<input type="checkbox"/> Indications of existing substandard conditions that are not addressed by the proposed construction. <input type="checkbox"/> Indications of past work done without a permit. <input type="checkbox"/> Grading permit required for road, driveway, or site preparation. <input type="checkbox"/> Site is likely to be acceptable for conventional construction methods.
Wind:	Exposure "B" Exposure "C" Exposure "D" Northern Sonoma County Air Pollution Control District <input type="checkbox"/> Yes <input type="checkbox"/> No	

- 1- Code allows 2:1 below water line but four (one) have ever designed below water slopes that steep in this county.
- 2- 1' atch setbacks from property line! Formula in chapter 33.
- 3- North arrow is 80° off; rotate clockwise for correct direction
- 4- SLOPE ^{BEYOND} SOUTH END OF SECTION A-A RANGE FROM 20° (27%) TO 25° (50%)

Site Sketch:

5- Tributary area map. looks correct.

2 1/2 ft.

10 1/2'

O.K.

Date: 9.13.96

Inspector: Stephen Johnson

(revised 2/96)

FIRE SAFE STANDARDS
SITE REVIEW

Inspector _____ Date _____

P.C.# _____ Address _____

Fire District _____ Parcel size _____ acres
Check Box[] or fill in _____ the following.

ADDRESS

Visible both directions of travel yes[] no[]
Address in sequence yes[] no[]

GATES N/A[]

30' setback from road N/A[] yes[] no[]
Opens in or increased setback yes[] no[]
locked gate N/A[] yes[] no[]

ROAD N/A[]

Existing prior to 1/1/92 yes[] no[]
Meets county road standards yes[] no[]

DRIVEWAY N/A[]

Existing prior to 1/1/92 yes[] no[]
Driveway allows access to
within 150' of structure. yes[] no[]
Driveway over 150' in Length yes[] no[]
Length _____ FT.
Grade not over 0-5%[] 5-10%[] 10-15%[]
Length of grade over 15% _____ FT.
Width of driveway _____ FT.
Bridges required yes[] no[]

EMERGENCY WATER SUPPLY

Public water system hydrant within 800' yes[] no[]
Hydrant type 4 1/2"[] 2 1/2" []
Onsite water minimum _____ gal.
Meets Fire Safe Standards yes[] no[]

CLEARANCE OF FLAMMABLE VEGETATION N/A[]

Over one acre parcel yes[] no[]
Terrain % slope _____ within 100' of building site
upslope[] or downslope[]
Direction of slope face north[] south[] east[] west[]
Vegetation type grass[] woodland[] brush[] timber[]
other _____ (vinyard orchard etc)
Vegetation volume living fuel light[] medium[] heavy[]
Vegetation volume dead fuel light[] medium[] heavy[]
Fire history in area Unknown[] yes[] no[]

Notes

Erickson Engineering Inc.

Valley Ford CA 94972-0446 707/795-2498 Voice/Fax

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County of Sonoma
Permit and Resource Management Department
2550 Ventura Avenue
Santa Rosa CA 95403

September 13, 1996

To: Lola Coretti, Drainage Review Division

Re: Grading Permit for 8 acre-foot irrigation reservoir
Dutton Ranch Vineyards
Bridget Morelli Ranch
14640 Morelli Lane
Sebastopol CA 95472

Plan Check B-138555

APN 074 - 041 - 03

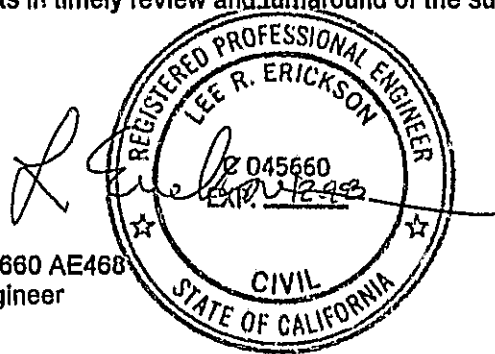
Per your telephone conversation and request of September 12, enclosed please find requested file copies of:

- Plan Check receipt and submittal data for August 30 plans submittal.
- Fish and Game Stream Alteration Agreement.
- State Water Rights letter indicating exemption from appropriative water right for the project.

Please note that these documents relate to Planning Division review and approval and are not required for Drainage and Grading review. It is the Engineer's understanding that Drainage and Grading review is limited to technical adequacy of the submitted plans, and does not include permitting requirements of other resource agencies.

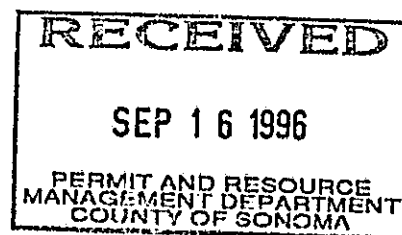
We appreciate your efforts in timely review and turnaround of the submitted plans.

Very truly yours,



Lee Erickson, PhD CE45660 AE468
Civil and Agricultural Engineer

enclosures



AGREEMENT REGARDING PROPOSED STREAM OR LAKE ALTERATION

THIS AGREEMENT, entered into between the State of California, Department of Fish and Game, hereinafter called the Department, and LEE R. ERICKSON REP DUTTON RANCH VINEYARDS of VALLEY FORD, State of CALIF, hereinafter called the operator, is as follows:

WHEREAS, pursuant to Division 2, Chapter 6 of California Fish and Game Code, the operator, on the 30TH day of AUGUST, 1996, notified the Department that he intends to substantially divert or obstruct the natural flow of, or substantially change the bed, channel, or bank of, or use material from the streambed of, the following water: UN-NAMED TRIB TO NO. FORK DUTCHMAN County of SONOMA, State of California, S. 23 T. 7N R. 10W.

WHEREAS, the Department (represented by JERRY BOESEL, WARDEN) has made an inspection of subject area on the _____ day of _____, 19____, and) has determined that such operations may substantially adversely affect existing fish and wildlife resources including: RIPARIAN HABITAT, NON-GAME SPECIES.

THEREFORE, the Department hereby proposes measures to protect fish and wildlife during the operator's work. The operator hereby agrees to accept the following recommendations as part of his work: Numbers 1, 2, 20 & 21 (SEE BACK) from the list of recommendations on the back of this page and the following special recommendations:

1. All work in or near the stream or lake shall be confined to the period SEPT 15, 1996 THRU OCTOBER 31, 1996.

PROJECT LOCATION: 14640 MORELLI LANE, SEBASTOPOL
PROJECT IS TO CONSTRUCT AN IMPOUNDMENT WHICH MAY BE DONE PROVIDING: (1) THE NUMBERED RECOMMENDATIONS LISTED ABOVE ARE ADHERED TO AND; (2) THE PLANS AND SPECIFICATIONS DESIGNED BY ERICKSON ENGINEERING DATED 08-20-96 SUBMITTED WITH THE ORIGINAL NOTIFICATION AND LABELED BY CALIF FISH & GAME AS "EXHIBIT A" ARE FOLLOWED AND; (3) ALL EROSION CONTROL DEVICES AND VEGETATION IS PLANTED PRIOR TO ONSET OF FALL/WINTER RAINS AND; (4) VEGETATION PLANTED SHALL BE CARED FOR IN SUCH MANNER AS TO INSURE GROWTH AND; (5) ALL VEGETATION UTILIZED SHALL BE ADEQUATE TO PREVENT EROSION DURING FALL/WINTER RAINS AND; (6) A COPY OF THIS AGREEMENT SHALL BE PROVIDED TO ALL CONTRACTORS, SUB-CONTRACTORS AND OTHERS DOING WORK PRIOR TO COMMENCEMENT OF SUCH WORK AND; (7) A COPY OF THIS AGREEMENT SHALL BE KEPT AVAILABLE ON THE JOBSITE FOR INSPECTION BY ANY FISH AND GAME PERSONNEL.

NOTE: THIS AGREEMENT DOES NOT SATISFY THE REQUIREMENTS OF ANY OTHER GOVERNMENTAL AGENCY AND IS NOT BINDING ON THEIR REQUIREMENTS.

The operator, as designated by the signature on this agreement, shall be responsible for the execution of all elements of this agreement. A copy of this agreement must be provided to contractors and subcontractors and must be in their possession at the work site.

If the operator's work changes from that stated in the notification specified above, this agreement is no longer valid and a new notification shall be submitted to the Department of Fish and Game. Failure to comply with the provisions of this agreement and with other pertinent Code Sections, including but not limited to Fish and Game Code Sections 5650, 5652 and 5948, may result in prosecution.

Nothing in this agreement authorizes the operator to trespass on any land or property, nor does it relieve the operator of responsibility for compliance with applicable federal, state, or local laws or ordinances.

THIS AGREEMENT IS NOT INTENDED AS AN APPROVAL OF A PROJECT OR OF SPECIFIC PROJECT FEATURES BY THE DEPARTMENT OF FISH AND GAME. INDEPENDENT REVIEW AND RECOMMENDATIONS WILL BE PROVIDED BY THE DEPARTMENT AS APPROPRIATE ON THOSE PROJECTS WHERE LOCAL, STATE, OR FEDERAL PERMITS OR OTHER ENVIRONMENTAL REPORTS ARE REQUIRED.

This agreement becomes effective on SEPTEMBER 15, 1996 PROVIDING AN UNCHANGED, SIGNED COPY HAS BEEN RETURNED TO FISH AND GAME BY MAIL OR OTHER DELIVERY MEANS.

Operator Lee Erickson

Title CE45260

Organization ERICKSON ENGR INC

Date 9/11/96

Jerry Boesel
 Department Representative
 Title FISH & GAME WDN, ENVIRONMENTAL PROJECTS

Department of Fish and Game, State of California

Date SEPTEMBER 10, 1996



Cal/EPA

State Water
Resources
Control Board

Division of
Water Rights

Mailing Address:
P.O. Box 2000
Sacramento, CA
95812-2000

901 P Street
Sacramento, CA
95814
(916) 657-1965
FAX (916) 657-1485



Pete Wilson
Governor

In Reply Refer
to:331:YM:266.0

8

SEPTEMBER 05 1996

Lee Erickson, Ph.D.
Box 446
Valley Ford, CA 94972

Dear Mr. Erickson:

WATER RIGHTS INQUIRY, DUTTON RANCH VINEYARDS IN SONOMA COUNTY

The jurisdiction of the State Water Resources Control Board (SWRCB) over the appropriation of water extends only to surface flow in natural channels and subterranean streams flowing through known and definite channels (Water Code Sections 1200 and 1201).

Runoff from a land surface usually begins as diffused surface water commonly called sheet flow. In such form, the water can be collected and used without a permit or other authorization from the SWRCB. Contour ditches, dikes, pits, etc. can be used to control sheet flow, the facility not being a factor in determining SWRCB jurisdiction. The courts have held that the nature and characteristic of the stream channel is the sole determining factor. A stream channel must be defined as having beds and banks.

We have reviewed the information provided for the 8 acre-foot irrigation reservoir of Dutton Ranch Vineyards in Sonoma County. Based on the contour map and photographs, it appears that the proposed reservoir will be collecting sheet flow before it reaches a natural watercourse, rather than streamflow. If this will be the case, an appropriative water right is not required.

If you have any questions, please call me at (917) 657-0408.

Sincerely,

Mark L. Stretars, Chief
Application and Petition Unit #1

8.20.96
HYDROLOGY CHCS
PAGE 1/5

Son Co Flood Control Design Criteria



$Q = CIAK$

PLATE B.1: Vegetated Areas

Avg Ground slope @ 20%	$C_v = .45$	← MIDDLE	} 15 AC WATERSHED AREAS
@ 10%	$C_v = .40$	← LOWER	
@ 5%	$C_v = .34$	← UPPER	

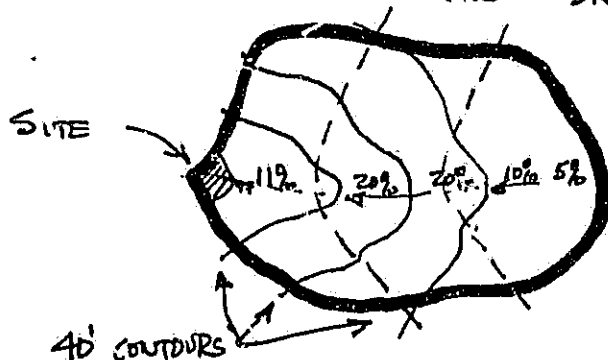
PLATE B.2: $i_{100, 15 \text{ min}}$: 2.4 inches/hour

PLATE B.3: AVG ANNUAL PRECIP @ SITE = 52 inches/year

PLATE B.41 For 52 inches/year; $K = 1.75$

WATERSHED DATA FROM 1:500 SONOMA CO LOT LINE TOPO
(See blue line construction drawing for original copy)

SAC SAC SAC 15 ALPES



NO DEFINED CHANNELS,
IN UPPER WAC
VINEYARD & PASTURE
AREAS.

PUTTON VINEYARD

E. 20.914
HYDROLOGY

PAGE 2/5

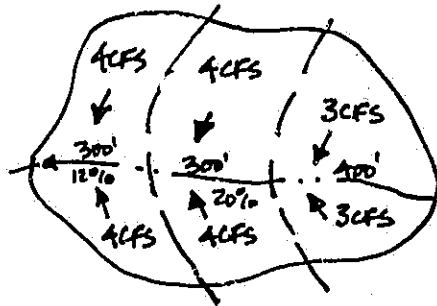
FOR $2\frac{1}{2}$ ac initial Area @ 5% Slope

10

$$Q = CIAK = .34(2.4)(2.5)(1.75) = 3.06 \text{ CFS}$$

FOR $2\frac{1}{2}$ ac blocks each side of runoff swale @ 20% Slope

$$Q = CIAK = .45(2.4)(2.5)(1.75) = 4.05 \text{ CFS}$$

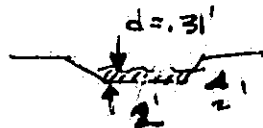


6 AREAS @ $2\frac{1}{2}$ ac = 15 ac

FOR THIS SMALL WATERSHED ASSUME I_{100} , 15 min in each subarea and negligible travel time in vegetated swale for worst-case Q value of $4(4) + 2(3) = 22 \text{ CFS}$

Approximate travel time for 6 CFS over 300' @ 20% slope in small channel

Manning's Eqn:



$$n = .035 \quad 15 \quad 4.8 \text{ FPS}$$

$$\text{@ } 5\% \text{ slope, } d = .455' \\ V = 3.3 \text{ FPS}$$

$$\text{Travel: } 300/4.8 = 62.5 \text{ sec @ } 20\% \text{ slope} \rightarrow 1 \text{ min}$$

$$300/3.3 = 90.9 \text{ sec @ } 5\% \text{ slope} \rightarrow 1.5 \text{ min}$$

no significant change in I ; assumption OK

DUTTON VINEYARD

8.20.96
SPILLWAY

Page 3/5

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Design Flow @ 22 CFS for $i_{100-15min}$ & worst case assumptions.

Manning's Egn, circular section:

Smooth bore PVC Pipe or ABS smooth $n = .012$

Slope @ 5%

Try 18" dia.

$d/D = 3/4$ Full

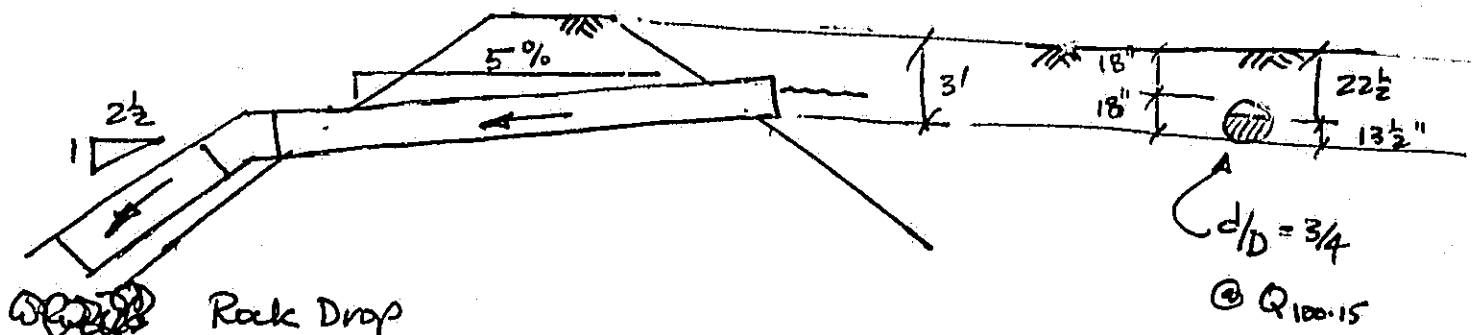
$$V = \frac{1.486 r^{2/3} s^{1/2}}{n}$$

$$r = .453'$$

$$S = .05$$

$$A = 1.422 \text{ ft}^2$$

Results: $V = 16.3 \text{ fps}$ $Q = 23.2 \text{ CFS}$ OK



DUTTON VINEYARD

8.20.96

Spillway

Page 4/5

check orifice flow into culvert - Type Spillway

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$$Q = C A \sqrt{2gh}$$

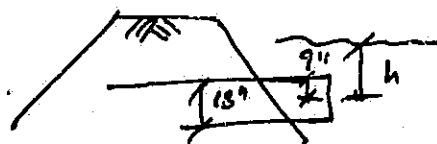
Egn (4-10)
Brater & King, 6th Ed

where $C = .60$ Sharp edge

$$A_{18} = \frac{\pi}{4} (1.5)^2 = 1.766 \text{ ft}^2$$

(Full)

for	h	Q
$(18" + 9"/2) = 2.25$	2.25	12.75 CFS
	2.75	14.1
	3.75	16.1
	4.75	18.5



No Good - Takes > 4' pipe cover to generate $Q = 18.5 \text{ CFS} < Q_{100.15}$

Need Weir Type inlet - use concrete pipe set vertical

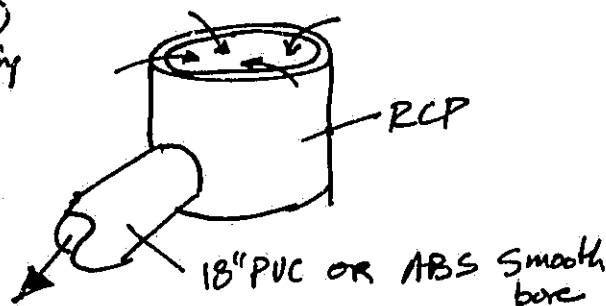
$$Q = C L H^{3/2}$$

Egn (5-10)
Brater & King

L = pipe circumference = πD

H = head

$C = 2.6$ Table 5.3
Brater/King 6th Ed.



$H^{3/2}$
0.353
1.000
1.837
2.828

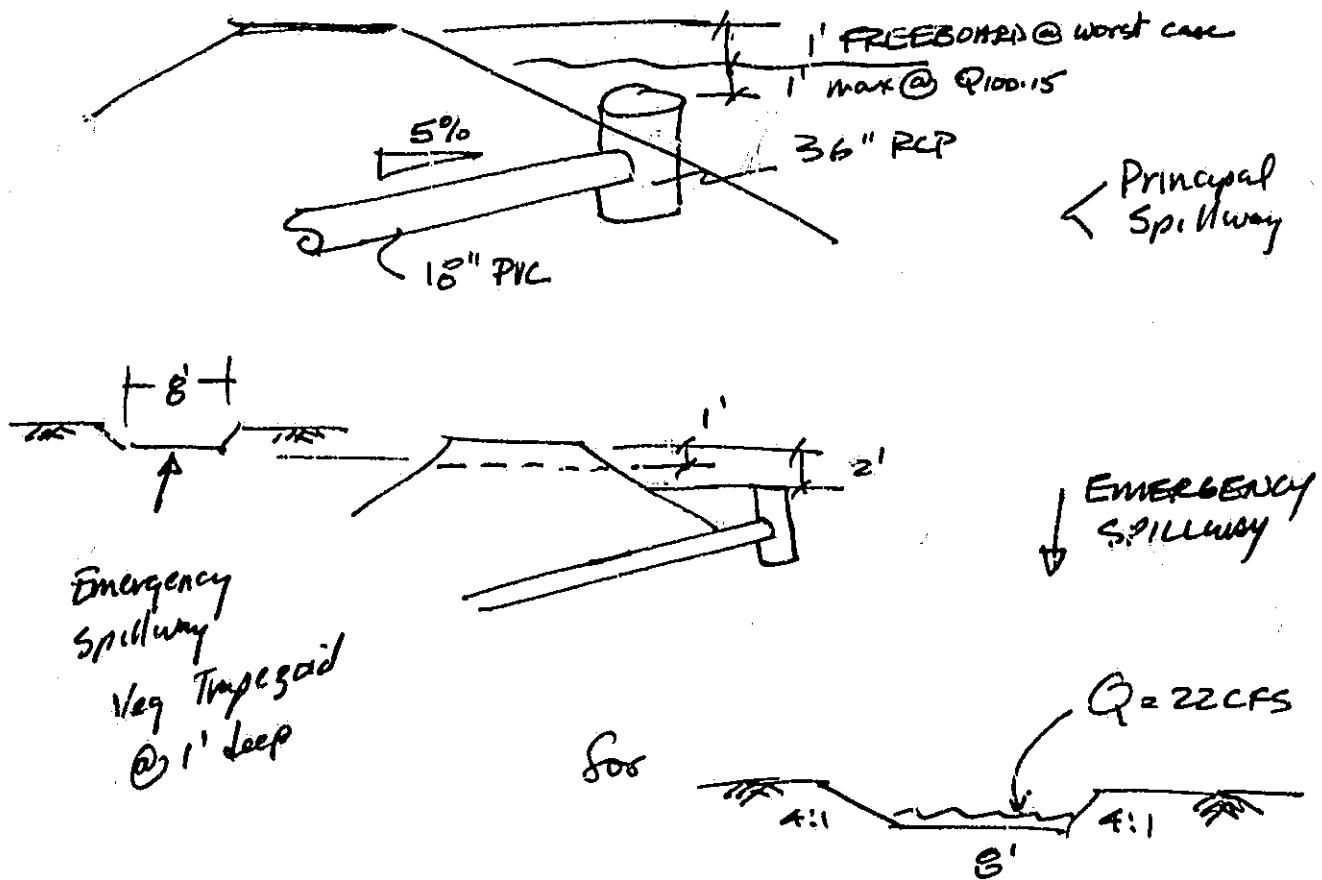
HEAD FT	Pipe Dia. ft	Q, CFS			
		1 1/2	2	2 1/2	3
1/2		4.3	5.8	7.2	8.7
2/2		12.2	16.3	20.4	24.5
3/2		22.5	30.0	37.5	44.8
4/2		34.6	46.2		
L		4.7'	6.3'	7.9'	9.4'

use 3' dia weir inlet
to provide $Q = 24.5 \text{ CFS} >$
 $Q_{100.15}$ at
Head < 1.0'

Dutton Vineyard

8.20.96
Spillway
page 5/5

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Mannings

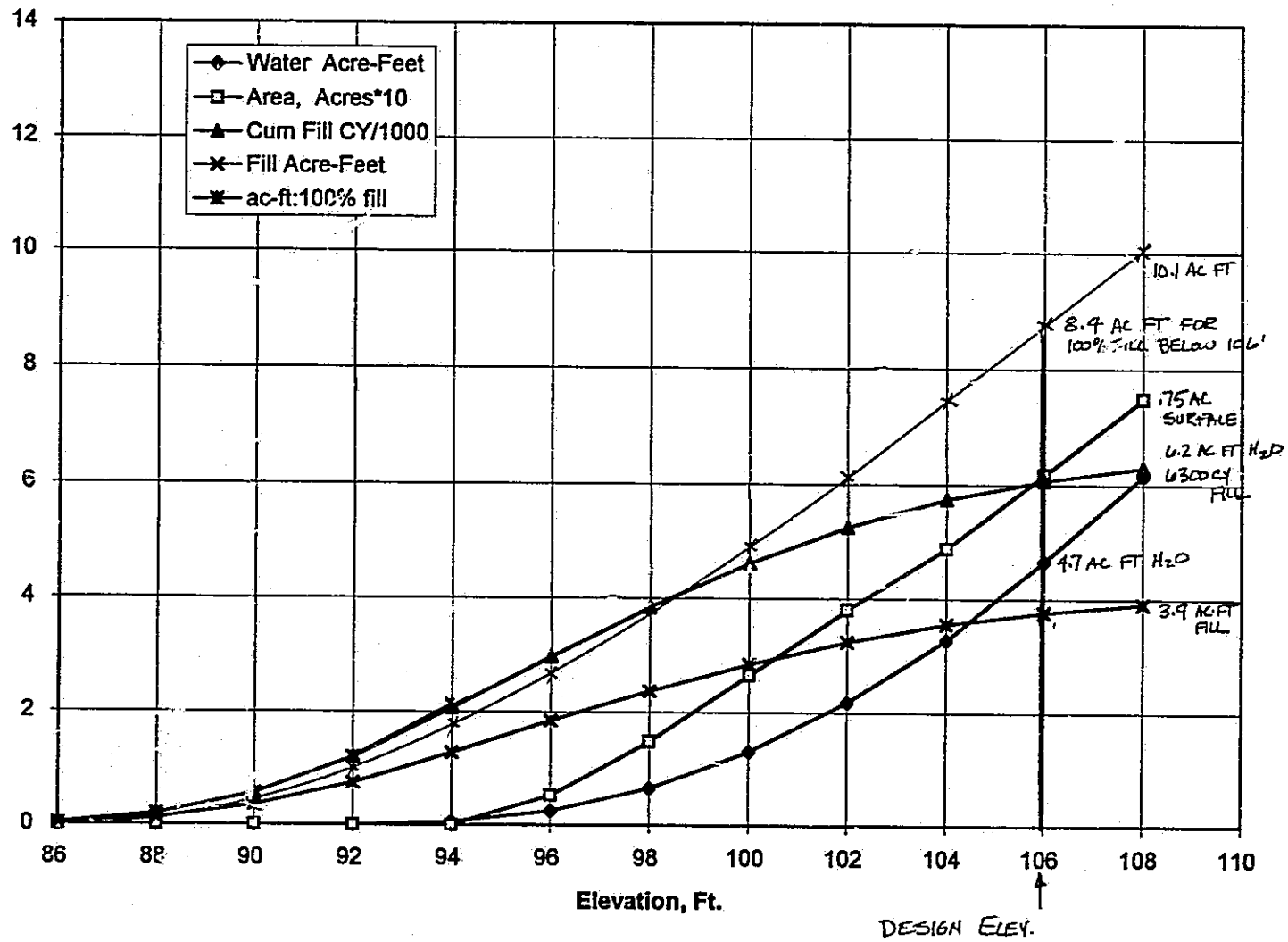
Egn $n = .035$
 $S = 5\%$

$d = .455'$

$V = 4.08 \text{ FPS}$ — non-erosive
good grass cover

Still has freeboard if zero flow
from principal spillway

Dutton Vineyard Reservoir



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Elevation	Fill Planim	Avg Planim	Volume Cu Ft	Cumulative Cu Ft	Fill Acre-Feet	Cumulative Cu Yd
110	0.000					
108	0.350	0.350	6300	170280	3.9	6307
106	0.635	0.493	8865	163980	3.8	6073
104	0.860	0.748	13455	155115	3.6	5745
102	1.060	0.960	17280	141660	3.3	5247
100	1.230	1.145	20610	124380	2.9	4607
98	1.340	1.285	23130	103770	2.4	3843
96	1.390	1.365	24570	80640	1.9	2987
94	1.200	1.295	23310	56070	1.3	2077
92	0.720	0.960	17280	32760	0.8	1213
90	0.410	0.565	10170	15480	0.4	573
88	0.090	0.250	4500	5310	0.1	197
86	0.000	0.045	810	810	0.0	30
84	0.000	0.000	0	0	0.0	0
72	0.000	0.000	0	0	0.0	0
70	0.000	0.000	0	0	0.0	0

170280

cut/fill ratio:

0.00

Stage-Capacity Data
Erickson Engineering Inc.

Scale: 30
Inanim constant: 0.1

File: Dutton
Property: Morelli
Project: Irrigation Reservoir
Location: 14,000 Morelli Lane, Sebastopol CA
Date: 12-Aug-96 08:57 PM

Elevation	Water Planim	Avg Planim	Volume Cu Ft	Cumulative Cu Ft	Water Acre-Feet	Area, Acres*10
110	0.000					
108	3.620	3.620	65160	268020	6.2	7.5
106	2.990	3.305	59490	202860	4.7	6.2
104	2.360	2.675	48150	143270	3.3	4.9
102	1.840	2.100	37800	95220	2.2	3.8
100	1.290	1.565	28170	57420	1.3	2.7
98	0.720	1.005	18090	29250	0.7	1.5
96	0.260	0.490	8820	11160	0.3	0.5
94	0.000	0.130	2340	2340	0.1	0.0
92	0.000	0.000	0	0	0.0	0.0
90	0.000	0.000	0	0	0.0	0.0
88	0.000	0.000	0	0	0.0	0.0
86		0.000	0	0	0.0	0.0
84		0.000	0	0	0.0	0.0
82		0.000	0	0	0.0	0.0
70	0.000	0.000	0	0	0.0	0.0

Elevation	Cut Planim	Avg Planim	Volume Cu Ft	Cumulative Cu Ft	Cut Acre-Feet	Cumulative Cu Yd
110	0.00					
108	0.000	0.000	0	0	0.0	0
106	0.000	0.000	0	0	0.0	0
104		0.000	0	0	0.0	0
102		0.000	0	0	0.0	0
100		0.000	0	0	0.0	0
98		0.000	0	0	0.0	0
96		0.000	0	0	0.0	0
94		0.000	0	0	0.0	0
92		0.000	0	0	0.0	0
90		0.000	0	0	0.0	0
88		0.000	0	0	0.0	0
86	0.000	0.000	0	0	0.0	0
84	0.000	0.000	0	0	0.0	0
82	0.000	0.000	0	0	0.0	0
70	0.000	0.000	0	0	0.0	0