

25

50

5745 PINE FLAT ROAD

B-47608

# COUNTY OF SONOMA

## PERMIT AND RESOURCE MANAGEMENT DEPARTMENT

2550 Ventura Avenue, Santa Rosa, CA

(707) 565-1900 FAX (707) 565-1103

<b>PLANCHECK RECEIPT ONLY - NOT A PERMIT</b>	<b>P-147608</b>
--	-----------------

Address: 5745 PINE FLAT RD GEY  
 Cross Street: RED WILFAY RD  
 Res/Com:  
 Std/Quick: Fire District: TRA?

Printed By: CATHOMAS 13:13 Oct 04, 1999  
 APN: 131-150-028  
 In Planchek: May 06, 1998  
 Activity Type: AB-GRD 9701  
 Insp Area: 01  
 Tax Rate Area: 097020  
 Applicant

Owner CARLSON TIMOTHY P & JEANA HURST 3998 DRY CREEK RD HEALDSBURG CA 95448 707 433 7121	Applicant MURPHY JIM 464 KENWOOD COURT STE B SANTA ROSA CA 95407 707 576 7337
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Planchek Expires 1 Year from Date Planchek Fees Are Paid (See Register Validation Date)

Site Review Fees Paid This Application: \$70.00 Site Review File #:  
 Description: DRIVEWAY CONSTRUCTION - 4,000 CUBIC YARDS

Initialized By: CNIEDERM Approved By: JAGUIRLE Status: EXPIRED  
 Planchek Multiplier: 1.00

Item #	Item Account Code	Description	Fee	Previously Paid
0018	3141 1004	APPLICATION PROCES'G FEE	\$36.00	\$36.00
0060	1341	BLDG PERM PLAN CHECK FEE	\$31.00	\$31.00
0062	1341	ADDITIONAL PLANCHECK FEE	\$.00	\$.00
0100	1341 3502	SITE REVIEW/ELEV. CERT.	\$70.00	\$70.00
0101	1341 3503	GRADING PERMIT FEE	\$115.15	\$115.15
0121	1341	FIRE SAFE STDS & REF PRMD	\$62.00	\$62.00
0220	1600	VIO. PENALTY FEE (BLDG)	\$.00	\$.00
0221	4114 2001	VIO. INVEST. FEE (BLDG)	\$.00	\$.00
0706	3140 6053	REF.-MINOR GRADING/SETBK	\$.00	\$.00
0707	3140 6054	REF.-GRADING/DRAIN. PLAN	\$.00	\$.00
0708	3140 6055	REF.-GRD/DRAIN DAM/DRVWY	\$310.00	\$310.00
1165	3829 6146	ZONING PERMITS W/O D.R.	\$19.00	\$19.00
5018	3141-WAIVED 1004	PROCESSING FEE	\$.00	\$.00
5060	1341-WAIVED	BLDG PERM PLAN CHECK FEE	\$.00	\$.00
5062	1341-WAIVED	ADDITIONAL PLANCHECK FEE	\$.00	\$.00
5100	1341-WAIVED 3502	SITE REVIEW/ELEV. CERT.	\$.00	\$.00
5101	1341-WAIVED 3503	GRADING FEE	\$.00	\$.00
5121	1341-WAIVED	FIRE SAFE STDS & REF PRMD	\$.00	\$.00
5220	1600-WAIVED	VIOLATION PENALTY FEE	\$.00	\$.00
5221	4114-WAIVED 2001	VIOLATION INVESTIG FEE	\$.00	\$.00
5706	3140-WAIVED 6053	REF.-MINOR GRADING/SETBK	\$.00	\$.00
5707	3140-WAIVED 6054	REF.-GRADING/DRAIN. PLAN	\$.00	\$.00
5708	3140-WAIVED 6055	REF.-GRD/DRAIN DAM/DRVWY	\$.00	\$.00
6165	3829-WAIVED 6146	ZONING PERMITS W/O D.R.	\$.00	\$.00

Qualifies for Fee Waivers (Y/N): N	\$643.15	\$643.15
Total Calculated Fees	\$643.15	
Previously Paid	\$643.15	
Balance Due	\$0.00	

CASH REGISTER  
 VALIDATION  
 REQUIRED

# 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-147608**

Address: 5745 PINE FLAT RD GEY

Printed By: CNIEDERM 09:23 May 06, 1998

AEN: 131-150-028

In Planchek: 00/00/0000

Activity Type: AB-GRD 9701

Insp Area: 01

Tax Rate Area: 097020

Cross Street: RED WINERY RD

Res/Com:

Std/Quick: Fire District: ....

Owner

Applicant

CARLSON TIMOTHY P & JEANA HURST

522 SAND HILL CIR

MENLO PARK CA

94025

MURPHY JIM

464 KENWOOD COURT STE B

SANTA ROSA CA

415 854 7786

707 576 7337

95407

Planchek Expires 1 Year from Date Planchek Fees Are Paid (See Register Validation Date)

Description: DRIVEWAY CONSTRUCTION - 9,000 CUBIC YARDS

Initialized By: CNIEDERM

Approved By:

Status: STARTED

Planchek Multiplier: 1.00

Item #	Item Account Code	Description	Fee	Previously Paid
0060	025619-1341	BLDG PERM PLAN CHECK FEE	\$31.00	\$.00
0100	025619-1341	SITE REVIEW/ELEV. CERT.	\$70.00	\$.00
0121	025619-1341	FIRE SAFE STDS/REF FEES	\$62.00	\$.00
0706	025627-3140	REF.-MINOR GRADING/SETBK	\$.00	\$.00
0707	025627-3140	REF.-GRADING/DRAIN. PLAN	\$.00	\$.00
0708	025627-3140	REF.-GRD/DRAIN DAM/DRVWY	\$310.00	\$.00
5060	025619-1341-WAIVED	BLDG PERM PLAN CHECK FEE	\$.00	\$.00
5100	025619-1341-WAIVED	SITE REVIEW/ELEV. CERT.	\$.00	\$.00
5121	025619-1341-WAIVED	FIRE S.S. REFERRAL FEE	\$.00	\$.00
5706	025627-3140-WAIVED	REF.-MINOR GRADING/SETBK	\$.00	\$.00
5707	025627-3140-WAIVED	REF.-GRADING/DRAIN. PLAN	\$.00	\$.00
5708	025627-3140-WAIVED	REF.-GRD/DRAIN DAM/DRVWY	\$.00	\$.00

Qualifies for Fee Waivers (Y/N): N \$473.00 \$.00

Total Calculated Fees \$473.00

Previously Paid \$.00

Balance Due \$473.00

CASH REGISTER  
VALIDATION  
REQUIRED

015400 05/06/98801

# 0147608

SIERRA \$473.00

\*\*\*YTL \$473.00

CHECK \$473.00

CHNG \$0.00



Permit: B-147608 Applicant : MURPHY JIM  
Status: PLANCHEK Address: 5745 PINE FLAT RD GEY  
Notice: ON HOLD BY APPL./ PLANS WILL BE RE-DESIGNED.

Inspections for Activity  
Item Flags Description

100	■	site inspection
500	■	plancheck
510	r ■	fire plancheck
520	r ✓	Drainage Review
101		grading, rough
102		grading, final
103		foundations
107		underground utilities
109		retaining walls
121		fire safe standards
140		progress

F1=Help, INS=Insert, A=Add at End, F5=Requests, F6=ALL Notations, ESC=Exit

# SITE EVALUATION CHECKLIST

JOB ADDRESS: 5745 Pine Flat Rd

File # B- 147608

Inspector: SI

Date: 5/18/98

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 at 12" above BFE at _____ ft.	<input type="checkbox"/> FIRM Floodway
	<input type="checkbox"/> Design for moving water is recommended Section _____ is _____ Ft/sec Section _____ is _____ Ft/sec	<input type="checkbox"/> Portions of property in flood zone but project site not in flood zone.
	<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"/> Appears to be a "substantial improvement" therefore flood regulations apply.
	<input type="checkbox"/> Flood prone urban area defined by Ordinance #4467.	<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 checked="" 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 1806. <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.
	<b>Soils Report:</b> Required <input checked="" type="checkbox"/> Available <input checked="" type="checkbox"/>	
Geologic:	<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 <u>per plan</u>	<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 checked="" type="checkbox"/> Yes <input type="checkbox"/> No	

- 1- Soils report has drainage recommendations.
- 2- An old barn will be removed from station 2+50
- 3- The only wet area is between 0+5 & 1+50

Site Sketch:

**GREEN VALLEY**  
**CONSULTING ENGINEERS**

Civil Engineering & Land Surveying

September 24, 1998

Mr. Ed Scott  
County of Sonoma  
Permit and Resource Management Division  
2550 Ventura Avenue  
Santa Rosa, CA 95403

*Lola* 9/30/98  
*This was approved and computer entries made E.P.*

**RE: Sonoma County PMRD Plan Check #EI-147608**  
**5745 Pine Flat Road, Timothy Carlson Driveway**

Dear Ed:

We have received the second submittal for the above referenced plan check, and backchecked it against our comments on the first submittal. There are no further comments on the plans. The first plan check comments have been incorporated by the applicant as requested.

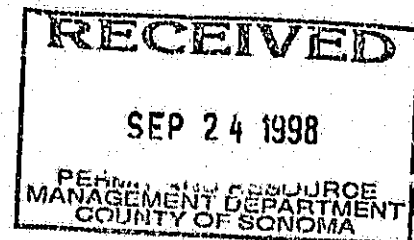
Please note in the correspondence from the applicant that the permit being applied for is only for the construction of driveway facilities, and the improvement plans for construction of building improvements and auto courts at the top of the hill is to be submitted under separate application.

Enclosed you will find the folder assigned to the project by PRMD, along with material retained from the original submittal.

If you have any comments or questions regarding our review, please contact me at 579-0388 at your convenience.

Sincerely,

  
Tom Havens, P.E.





**COUNTY OF SONOMA**  
**PERMIT AND RESOURCE MANAGEMENT DEPARTMENT**

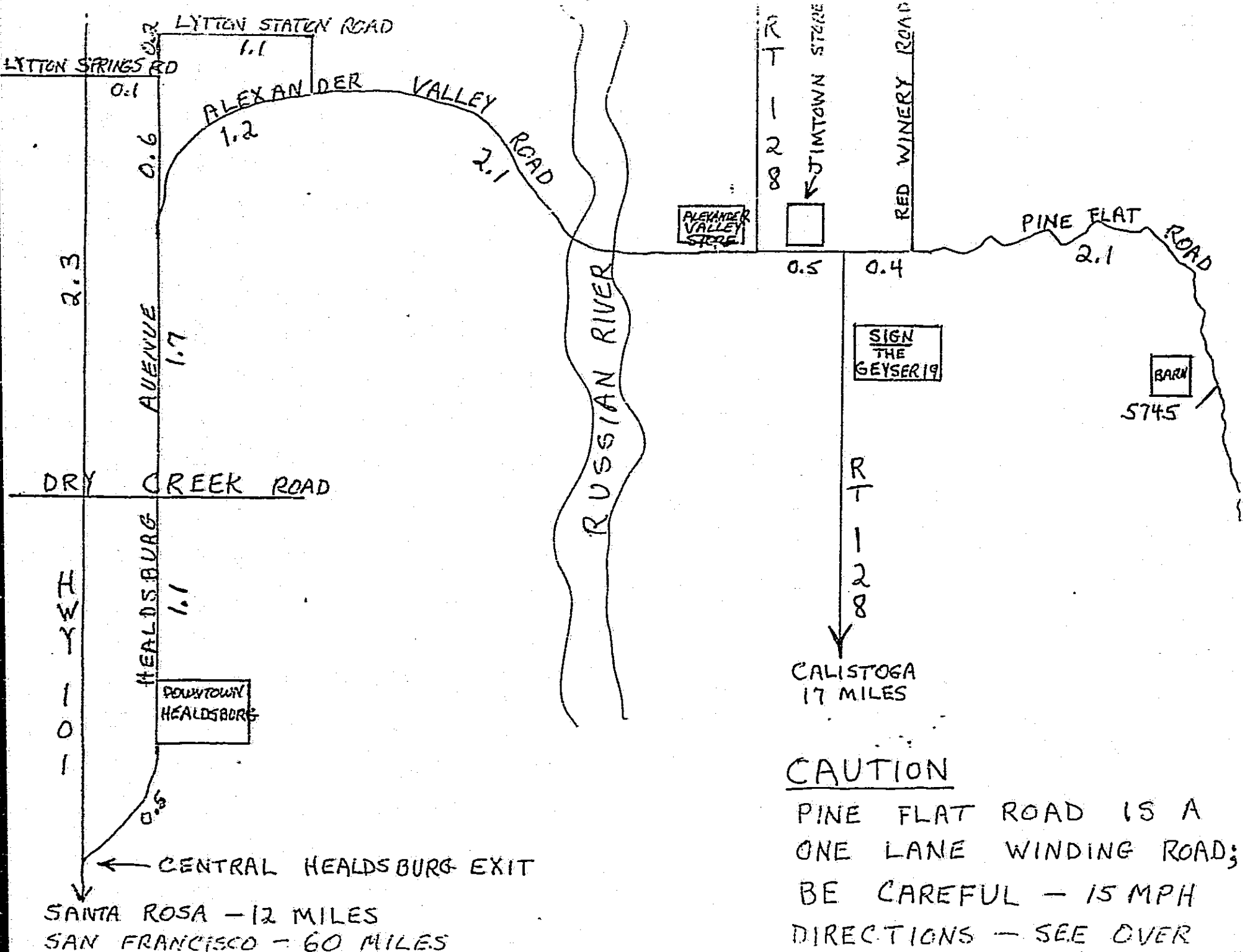
2550 Ventura Avenue, Santa Rosa, CA 95403  
(707) 527-1900 FAX (707) 527-1103

Field Operations • Code Enforcement • Permits • Environmental & Comprehensive Planning

**Development Submittal Information for Drainage Review**

Please type or print the following information:			
Name of Development: <b>CARLSON RESIDENCE</b>			
Property Address: <b>5745 PINE FLOT ROAD</b>	City, Zip: <b>HEADSBURG, CA 95498</b>		
Nearest Cross Street: <b>RED WINERY ROAD</b>			
Assessor's Parcel Number: <b>131-150-028</b>	Developer:		
Design Engineer: <b>CURTIS &amp; ASSOCIATES</b>	Applicant Name: <b>Jim Murphy &amp; ASSOCIATES</b>		
Address: <b>805 HEADSBURG AVE</b>	Address: <b>964 KERWOOD CT SUITE B</b>		
City, State, Zip: <b>HEADSBURG, CA 95498</b>	City, State, Zip: <b>SANTA ROSA CA, 95407</b>		
Phone No.: <b>433 4808</b>	Phone No.: <b>707 576-7337</b>		
Land Use (Planning) File #:	Permit Application # <b>B147608</b>		
Number of Units: <b>SINGLE PAR</b>	Area:		
Drainage Review (527-3805) <input checked="" type="checkbox"/>			
File/Unique #:	Quad Maps:		
Major Dev. (MJS/UP/DR):	Permit Referral:	Flood Zone:	
Minor Dev. (MNS/UP/DR):	Public Project:		
Fee based on: _____ minimum, _____ Units @ _____ per unit = _____			
Permit Referral Fee: _____	Flood Zone Fee _____	Date: _____ Receipt #: _____	
MJS/UP/DR Fee:	Amount	Date	Receipt #:
Base/minimum	_____	_____	_____
Balance or Total	_____	_____	_____
Review Engineer/Technician:	Final Letter Date:		
Comments:			





  
**GREEN VALLEY**  
**CONSULTING ENGINEERS**

Civil Engineering & Land Surveying

September 17, 1998

Mr. Joe Story  
Curtis & Associates  
805 Healdsburg Ave  
Healdsburg, CA 95448

**RE: Sonoma County PMRD Plan Check #B-147608  
5745 Pine Flat Road Private Driveway Plans**

Dear Mr. Story:

The first plan check for the above referenced resubmittal of improvement plans and hydrology calculations is completed, and materials that were submitted for our review have been enclosed for your use in response to comments.

The following comments are noted in the calculations and on the plans:

1. Check inlet control conditions for all culverts crossing the proposed driveway.
2. Indicate the location of the proposed driveway on the hydrology map.
3. Indicate inverts and slopes for all proposed drainage piping. It appears that the grades given for the 42" culvert at station 2+00 do not match the contour elevation change in that location.
4. Please label some of the existing contour elevations.
5. Specify the quantity of rip rap proposed for all inlet and outlet locations.
6. In a number of locations, it appears that a defined channel is being intercepted by a cut slope with no provisions to intercept the drainage. Please indicate proposed facilities.
7. Indicate proposed finished grade elevations in locations indicated. It appears that retaining walls over three feet in height may be required.
8. The typical section on sheet 5 for station 6+00 to 10+80 shows a swale uphill of the driveway, but this swale is not shown in the plan view on sheet 2.
9. There are a number of locations that have unusual looking jogs in the daylight line. Please clarify.
10. It appears that there is approximately 20 feet of vertical fall across the proposed auto courts. Are retaining walls proposed for both courts? Please indicate walls and heights if required.

Please return original comments and three additional sets of stamped and signed improvement plans with the next plan submittal.

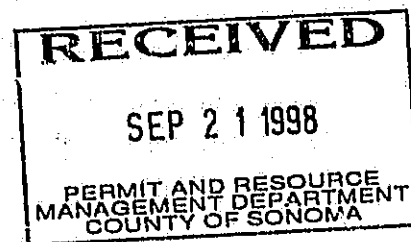
If you have any questions or comments regarding our review, please contact me at 579-0388 at your convenience.

Sincerely,

  
Tom Havens, P.E.

C: Ed Scott, PMRD

C:\data\98\202\01\story 091798



1400 N. Dutton Avenue, Suite 17, Santa Rosa, California 95401  
Tel. 707-579-0388 Fax. 707-579-3877

# CURTIS & ASSOCIATES

SURVEYING – ENGINEERING  
805 HEALDSBURG AVENUE  
HEALDSBURG, CALIFORNIA 95448  
707-433-4808 FAX 707-433-9918

September 23, 1998  
Job No. 97-106

Mr. Tom Havens, PE  
Green Valley Consulting Engineers  
1400 N. Dutton Ave., Suite 17  
Santa Rosa, CA 95401

**Re: Sonoma County PRMD Plan Check #B-147608  
5745 Pine Flat Road Private Driveway Plans**

Dear Mr. Havens:

Enclosed you will find three revised plan sets and one revised set of hydrology calculations. Your comments are addressed below.

1. The topographic map has been revised to show an existing 18" cnp culvert immediately up the road from the proposed 12" culvert at Sta 0+10. Field observations indicate that a 12" culvert will be oversized. The hydrology sketch map has been revised to show a new Tributary 3, the tributary area has been field checked due to the lack of resolution of the county lot line topo maps. Tributary 3 is assumed to have the same characteristics as Tributary 2 and approximately half the estimated flowrate. No revisions were made to the SCWA Rational Method Hydrology output. Inlet control conditions are included in the hydrology calculations for all culverts.

2. Hydrology map has been revised to indicate the driveway location.

3. Culvert inverts are indicated on plan. Slope is indicated on culvert detail as a minimum of 2 percent.

4. Sorry about the contour elevations – labels have been added at 5' increments.

5. See culvert detail on sheet 2 of 5 for quantity of rip-rap recommended.

6. At Sta. 2+00: added note to re-align existing drainage's to large CMP inlet. Fill will be required in this area. At Sta. 3+50 (uphill) the small drainage shown does not continue as concentrated flow all the way to the existing barn (per observations last wet-weather season). The roadside ditch is sized to pick up the estimated flow from this

drainage since we know this is where it will eventually end up. At 7+00 to 8+00 there is some erosion in the existing roadway which will be graded out. This is due to surface runoff and a lack of maintenance. Note that this ditch shows up as the uphill swale you refer to in note 8.

7. FG's as indicated. Retaining wall at auto court area should be over three feet – the site grading and retaining walls in the proposed building area is being handled by others.

8. Typical section chosen to represent Sta. 6+00 to 10+80 shows the existing erosion in the existing driveway surface which is to be graded out. There is no uphill swale in this portion of the driveway.

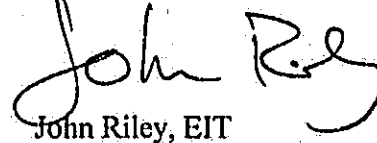
9. Most of the jogs in the daylight line are due to using a Softdesk TIN sampling distance of 25 and 50 feet. The unusual jog at Sta. 12+70 is where we transition from a 1 ft deep swale and 2:1 cut to a 0.5 ft deep swale and a 50:1 cut.

10. There is a 10 ft horizontal difference in the auto court finished grades. Retaining walls will be required in this area. The Geotechnical Engineer and Architect for the project are handling the site work and design in the proposed house area.

Do not hesitate to call if you have any other questions or comments.

Very truly yours,

CURTIS & ASSOCIATES



John Riley, EIT

JR:nc

encl:3 revised plan sets, 1 revised hydrology plan set, redlines

cc:file

# CURTIS & ASSOCIATES

SURVEYING - ENGINEERING

805 HEALDSBURG AVENUE

HEALDSBURG, CALIFORNIA 95448

707-433-4808

FAX 707-433-9918

October 5, 1998

Job No. 97-106

Mr. Tom Havens  
Green Valley Engineers  
Santa Rosa, California 95401

Re: Private Driveway Plans  
5745 Pine Flat Rd., Healdsburg

Dear Mr. Havens:

This letter is written in response to your fax of October 1, 1998 following a meeting with yourself and Lola Coretti of the PRMD. The 42 inch CMP culvert we are proposing to install at station 2+60 created concerns because the drainage was then flowing to an existing 24 inch CMP under Pine Flat Road.

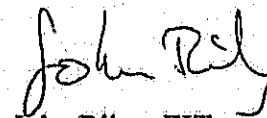
According to Jesse Foster (drainage engineer for Department of Public Works), the existing 24 inch culvert is due to be replaced with a 48 inch diameter CMP culvert as a result of storm damage. Jesse is confident that the culvert is adequately sized for the existing drainage and the proposed driveway. The culvert is scheduled to be replaced in late October or early November of this year. The culvert is identified as M07805 (Storm Damage Site) both on the DPW plans and painted on the pavement near the culvert to be replaced. Please contact Jesse Foster if this information needs to be verified.

Drainage calculations for Tributary 3 are included (unintentionally left off the last drainage calc's), and acreage is shown for each tributary area in the enclosed map.

Do not hesitate to call if you have any other questions.

Very truly yours,

CURTIS & ASSOCIATES



John Riley, EIT

JR:nc

encl: Revised drainage map, tributary 3 calculations

cc: file

# CURTIS & ASSOCIATES

SURVEYING - ENGINEERING

805 HEALDSBURG AVENUE  
HEALDSBURG, CALIFORNIA 95448  
707-433-4808 FAX 707-433-9918

## Hydrology and Drainage Calculations for Driveway Design

for  
Timothy Carlson  
5745 Pine Flat Road  
Healdsburg, Calif.  
APN: 131-150-028



1/10

RECORD 1: TIMOTHY CARLSON - DRIVEWAY DRAINAGE

RECORD 2: 5745 PINE FLAT ROAD, HEALDSBURG

RECORD 3: FILE NAME- 97106HYD

QUAD MAP- JIMTOWN

ZONE-

WORK ORDER- 97-106

-----  
 TRIBUTARY 1  
 -----

REC NUM CP AR	ELEV OR		DIST	C	TIME	DELTA		ADD	TRIBS	CH	VARIABLES				COMMENTS				
	SLOPE					AREA	K				N	OR	Z	B		DP			
4 1 A	0.000		240.0	0.300	15.0	2.8	1.50	0	0	0	0	0	0	0	0.000	0.0	0.0	0.0	INITIAL AREA
5 2 B	0.500		880.0	0.300	0.0	32.3	1.50	0	0	0	0	0	0	0	0.000	0.0	0.0	0.0	
6 3 C	0.180		890.0	0.300	0.0	23.8	1.50	0	0	0	0	0	0	0	0.000	0.0	0.0	0.0	
						SUM	SUM					DIA	DIA	DIA					
CP AR	T10	T25	T100	I10	I25	I100	AREA	KCDA	V10	V25	V100	10	25	100	Q10	Q25	Q100		
1 A	15.0	15.0	15.0	1.72	1.97	2.41	2.8	1.3	0.0	0.0	0.0	0	0	0	2.2	2.5	3.0	INITIAL AREA	
2 B	15.0	15.0	15.0	1.72	1.97	2.41	35.1	15.8	0.0	0.0	0.0	0	0	0	27.1	31.1	38.1		
3 C	15.0	15.0	15.0	1.72	1.97	2.41	58.9	26.5	0.0	0.0	0.0	0	0	0	45.6	52.1	63.9		

-----  
 TRIBUTARY 2  
 -----

REC NUM CP AR	ELEV OR		DIST	C	TIME	DELTA		ADD	TRIBS	CH	VARIABLES				COMMENTS				
	SLOPE					AREA	K				N	OR	Z	B		DP			
7 1 A	0.000		200.0	0.300	15.0	1.1	1.50	0	0	0	0	0	0	0	0.000	0.0	0.0	0.0	INITIAL AREA
8 2 B	0.380		640.0	0.300	0.0	5.2	1.50	0	0	0	0	0	0	0	0.000	0.0	0.0	0.0	
						SUM	SUM					DIA	DIA	DIA					
CP AR	T10	T25	T100	I10	I25	I100	AREA	KCDA	V10	V25	V100	10	25	100	Q10	Q25	Q100		
1 A	15.0	15.0	15.0	1.72	1.97	2.41	1.1	0.5	0.0	0.0	0.0	0	0	0	0.9	1.0	1.2	INITIAL AREA	
2 B	15.0	15.0	15.0	1.72	1.97	2.41	6.3	2.8	0.0	0.0	0.0	0	0	0	4.9	5.6	6.8		

2/11

RUN DATE 10-05-1998  
 TIME 11:37:03

SONOMA COUNTY WATER AGENCY

RATIONAL METHOD HYDROLOGY -- Version 2.0:02005

RECORD 1: TIMOTHY CARLSON - DRIVEWAY DRAINAGE

RECORD 2: 5745 FINE FLAT ROAD, HEALDSBURG

RECORD 3: FILE NAME- 97106TRB3

QUAD MAP- JIMTOWN

ZONE-

WORK ORDER- 97-106

-----  
 TRIBUTARY 3  
 -----

REC	ELEV OR		DELTA				VARIABLES										COMMENTS		
NUM	CP	AR	SLOPE	DIST	C	TIME	AREA	K	ADD	TRIBS	CH	N	OR	Q	Z	B	DP		
4	1	A	0.000	150.0	0.300	15.0	0.5	1.67	0	0	0	0	0	0	0.000	0.0	0.0	0.0	INITIAL AREA
5	2	B	0.300	450.0	0.300	0.0	2.7	1.67	0	0	0	0	0	0	0.000	0.0	0.0	0.0	
CP	AR	T10	T25	T100	I10	I25	I100	SUM	SUM			DIA	DIA	DIA					
1	A	15.0	15.0	15.0	1.72	1.97	2.41	0.5	0.3	0.0	0.0	0.0	0	0	0	0.4	0.5	0.6	
2	B	15.0	15.0	15.0	1.72	1.97	2.41	3.2	1.6	0.0	0.0	0.0	0	0	0	2.7	3.1	3.9	

3/11

August 25, 1998  
Job #97-106

**Timothy Carlson Driveway Drainage Calculations**  
5745 Pine Flat Road, Healdsburg, CA

6" deep v-ditch, stations 12+75 to 14+10

Channel Calculator

Given Input Data:

Shape .....	Trapezoidal
Solving for .....	Depth of Flow
Flowrate .....	4.9000 cfs
Slope .....	0.3800 ft/ft
Manning's n .....	0.0280
Height .....	6.0000 in
Bottom width .....	0.0000 in
Left slope .....	0.5000 ft/ft
Right slope .....	0.5000 ft/ft

Computed Results:

Depth .....	5.5521 in
Velocity .....	11.4449 fps
Flow area .....	0.4281 ft <sup>2</sup>
Flow perimeter .....	24.8298 in
Hydraulic radius .....	2.4830 in
Top width .....	22.2084 in
Area .....	0.5000 ft <sup>2</sup>
Perimeter .....	26.8328 in
Percent full .....	92.5351 %

August 25, 1998  
Job #97-106

Timothy Carlson Driveway Drainage Calculations  
5745 Pine Flat Road, Healdsburg, CA

12" deep vditches

Channel Calculator

Given Input Data:

Shape .....	Trapezoidal
Solving for .....	Depth of Flow
Flowrate .....	4.9000 cfs
Slope .....	0.3800 ft/ft
Manning's n .....	0.0280
Height .....	12.0000 in
Bottom width .....	0.0000 in
Left slope .....	0.5000 ft/ft
Right slope .....	0.5000 ft/ft

Computed Results:

Depth .....	5.5521 in
Velocity .....	11.4449 fps
Flow area .....	0.4281 ft2
Flow perimeter .....	24.8298 in
Hydraulic radius .....	2.4830 in
Top width .....	22.2084 in
Area .....	2.0000 ft2
Perimeter .....	53.6656 in
Percent full .....	46.2675 %

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September 23, 1998  
 Job #97-106

**Timothy Carlson Driveway Drainage Calculations**  
 5745 Pine Flat Road, Healdsburg, CA

12" cmp culvert at station 0+10 for Tributary 3

**Culvert Calculator**

Entered Data:

Shape ..... Circular  
 Number of Barrels ..... 1  
 Solving for ..... Headwater  
 Chart Number ..... 2  
 Scale Number ..... 3  
 Chart Description ..... CORRUGATED METAL PIPE CULVERT  
 Scale Description ..... PIPE PROJECTING FROM FILL  
 Flowrate ..... 3.4000 cfs  
 Manning's n ..... 0.0240  
 Roadway Elevation ..... 494.0000 ft  
 Inlet Elevation ..... 491.5000 ft  
 Outlet Elevation ..... 491.0000 ft  
 Diameter ..... 12.0000 in  
 Length ..... 70.0000 ft  
 Entrance Loss ..... 0.0000  
 Tailwater ..... 1.0000 ft

Computed Results:

Headwater ..... 493.0728 ft From Inlet  
 Slope ..... 0.0071 ft/ft  
 Velocity ..... 4.3290 fps

DIS-CHARGE Flow cfs	HEAD- WATER ELEV. ft	INLET CONTROL DEPTH ft	OUTLET CONTROL DEPTH ft	FLOW TYPE	NORMAL DEPTH in	CRITICAL DEPTH in	OUTLET VEL. DEPTH fps ft		TAILWATER VEL. DEPTH fps ft	
0.00	491.78	0.28	0.00	NA	0.00	0.00	0.00	0.00	0.00	1.00
0.25	491.91	0.41	0.00	NA	3.18	2.47	1.50	0.26	0.00	1.00
0.50	492.02	0.52	0.00	NA	4.57	3.52	1.82	0.38	0.00	1.00
0.75	492.12	0.62	0.00	NA	5.72	4.34	2.03	0.48	0.00	1.00
1.00	492.22	0.72	0.00	NA	6.80	5.04	2.18	0.57	0.00	1.00
1.25	492.31	0.81	0.00	NA	7.89	5.66	2.28	0.66	0.00	1.00
1.50	492.69	1.19	0.00	NA	9.09	6.23	2.35	0.76	0.00	1.00
1.75	492.74	1.24	0.00	NA	12.00	12.00	2.23	1.00	0.00	1.00
2.00	492.79	1.29	0.00	NA	12.00	12.00	2.55	1.00	0.00	1.00
2.25	492.85	1.35	0.00	NA	12.00	12.00	2.86	1.00	0.00	1.00
2.50	492.91	1.41	0.00	NA	12.00	12.00	3.18	1.00	0.00	1.00
2.75	492.93	1.43	0.00	NA	12.00	12.00	3.50	1.00	0.00	1.00
3.00	492.98	1.48	0.00	NA	12.00	12.00	3.82	1.00	0.00	1.00
3.25	493.13	1.63	0.00	NA	12.00	12.00	4.14	1.00	0.00	1.00
3.50	493.30	1.80	0.00	NA	12.00	12.00	4.46	1.00	0.00	1.00
3.75	493.47	1.97	0.00	NA	12.00	12.00	4.77	1.00	0.00	1.00
4.00	493.66	2.16	0.00	NA	12.00	12.00	5.09	1.00	0.00	1.00
4.25	493.85	2.35	0.00	NA	12.00	12.00	5.41	1.00	0.00	1.00

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September 23, 1998  
 Job #97-106

Timothy Carlson Driveway Drainage Calculations  
 5745 Pine Flat Road, Healdsburg, CA

42" CMP Culvert at Sta 2+00 for Tributary 1

Culvert Calculator

Entered Data:

Shape ..... Circular  
 Number of Barrels ..... 1  
 Solving for ..... Headwater  
 Chart Number ..... 4  
 Scale Number ..... 3  
 Chart Description ..... CORRUGATED METAL PIPE CULVERT  
 Scale Description ..... PIPE PROJECTING FROM FILL  
 Flowrate ..... 63.9000 cfs  
 Manning's n ..... 0.0240  
 Roadway Elevation ..... 500.0000 ft  
 Inlet Elevation ..... 494.4000 ft  
 Outlet Elevation ..... 493.5000 ft  
 Diameter ..... 42.0000 in  
 Length ..... 45.0000 ft  
 Entrance Loss ..... 0.0000  
 Tailwater ..... 3.5000 ft

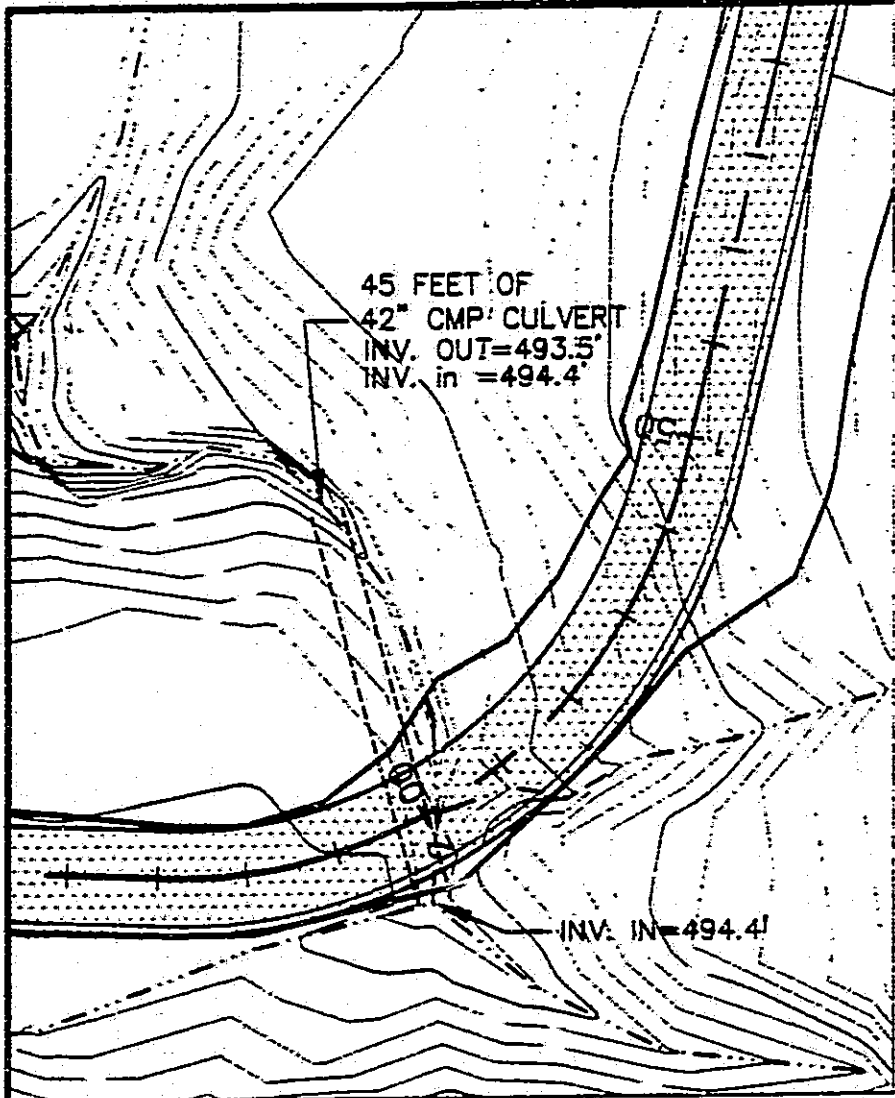
Computed Results:

Headwater ..... 498.8714 ft From Inlet  
 Slope ..... 0.0200 ft/ft  
 Velocity ..... 8.9605 fps

DIS- CHARGE Flow cfs	HEAD- WATER ELEV. ft	INLET CONTROL DEPTH ft	OUTLET CONTROL DEPTH ft	FLOW TYPE	NORMAL DEPTH in	CRITICAL DEPTH in	OUTLET VEL. fps	DEPTH ft	TAILWATER VEL. fps	DEPTH ft
0.00	495.71	1.31	0.00	NA	0.00	0.00	0.00	0.00	0.00	3.50
10.00	496.38	1.98	0.00	NA	10.21	11.48	5.53	0.85	0.00	3.50
20.00	496.97	2.57	0.00	NA	14.59	16.43	6.73	1.22	0.00	3.50
30.00	497.53	3.13	0.00	NA	18.19	20.31	7.51	1.52	0.00	3.50
40.00	498.07	3.67	0.00	NA	21.46	23.61	8.09	1.79	0.00	3.50
50.00	498.62	4.22	0.00	NA	24.62	26.52	8.53	2.05	0.00	3.50
60.00	499.28	4.88	0.00	NA	27.85	29.13	8.86	2.32	0.00	3.50
70.00	500.08	5.68	0.00	NA	31.37	31.47	9.08	2.61	0.00	3.50

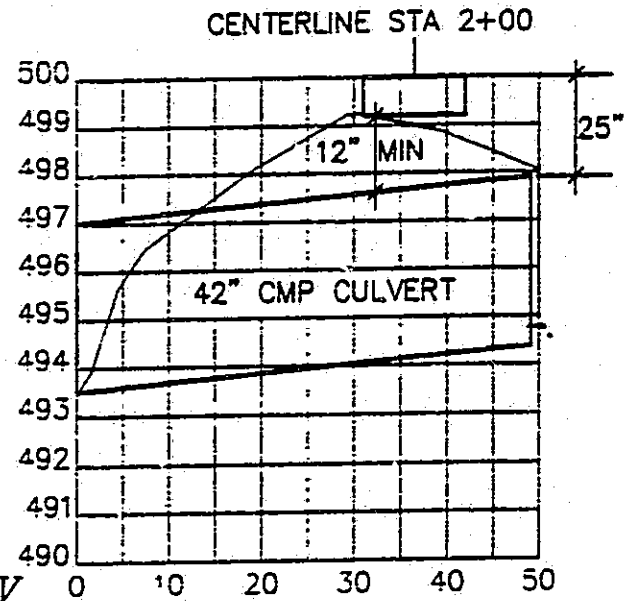
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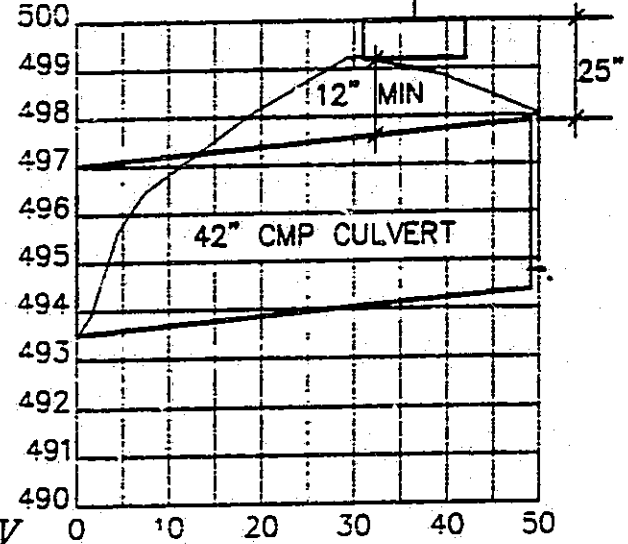


45 FEET OF  
42" CMP CULVERT  
INV. OUT=493.5'  
INV. in =494.4'

INV. IN=494.4'



CENTERLINE STA 2+00



DATUM ELEV

490

GROUP LOWCULVE  
SECTION 42" CMP

HORIZONTAL SCALE"=30'  
VERTICAL SCALE"=4'

**CULVERT DESIGN - STA 2+00**

SHOWING A PORTION OF THE LANDS OF  
TIMOTHY CARLSON  
5745 PINE FLAT ROAD  
HEALDSBURG

COUNTY OF SONOMA - STATE OF CALIFORNIA  
SCALE"=20' MARCH, 1998

**CURTIS & ASSOCIATES**  
200 HEALDSBURG AVENUE - HEALDSBURG, CA 94920 - (707) 231-1000  
SHEET 1 OF 1 87-103

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11/8

September 23, 1998  
 Job #97-106

Timothy Carlson Driveway Drainage Calculations  
 5745 Pine Flat Road, Healdsburg, CA

18" CMP Culvert at Sta 6+10 for Tributary 2

Culvert Calculator

Entered Data:

Shape ..... Circular  
 Number of Barrels ..... 1  
 Solving for ..... Headwater  
 Chart Number ..... 2  
 Scale Number ..... 3  
 Chart Description ..... CORRUGATED METAL PIPE CULVERT  
 Scale Description ..... PIPE PROJECTING FROM FILL  
 Flowrate ..... 4.9000 cfs  
 Manning's n ..... 0.0240  
 Roadway Elevation ..... 549.0000 ft  
 Inlet Elevation ..... 547.0000 ft  
 Outlet Elevation ..... 546.0000 ft  
 Diameter ..... 18.0000 in  
 Length ..... 40.0000 ft  
 Entrance Loss ..... 0.0000  
 Tailwater ..... 1.5000 ft

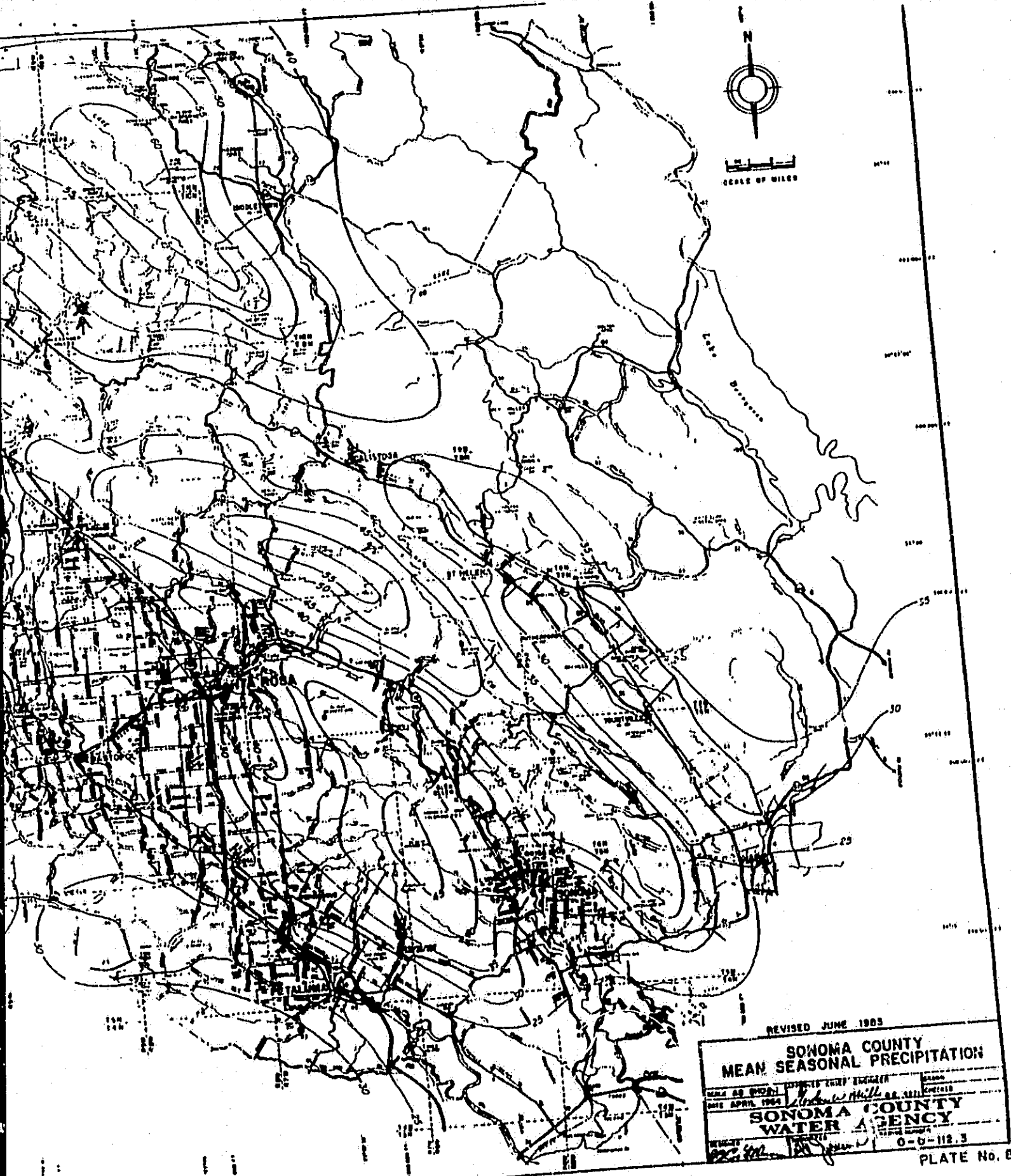
Computed Results:

Headwater ..... 548.3546 ft From Inlet  
 Slope ..... 0.0250 ft/ft  
 Velocity ..... 5.2022 fps

DIS-CHARGE Flow cfs	HEAD- WATER ELEV. ft	INLET CONTROL DEPTH ft	OUTLET CONTROL DEPTH ft	FLOW TYPE	NORMAL DEPTH in	CRITICAL DEPTH in	OUTLET VEL. fps	OUTLET DEPTH ft	TAILWATER VEL. fps	TAILWATER DEPTH ft
0.00	547.34	0.34	0.00	NA	0.00	0.00	0.00	0.00	0.00	1.50
0.50	547.50	0.50	0.00	NA	2.88	3.14	2.74	0.24	0.00	1.50
1.00	547.64	0.64	0.00	NA	4.05	4.48	3.36	0.34	0.00	1.50
1.50	547.76	0.76	0.00	NA	4.97	5.51	3.78	0.41	0.00	1.50
2.00	547.87	0.87	0.00	NA	5.77	6.40	4.10	0.48	0.00	1.50
2.50	547.97	0.97	0.00	NA	6.49	7.19	4.36	0.54	0.00	1.50
3.00	548.08	1.08	0.00	NA	7.16	7.90	4.58	0.60	0.00	1.50
3.50	548.18	1.18	0.00	NA	7.79	8.57	4.77	0.65	0.00	1.50
4.00	548.28	1.28	0.00	NA	8.40	9.19	4.94	0.70	0.00	1.50
4.50	548.37	1.37	0.00	NA	9.00	9.77	5.09	0.75	0.00	1.50
5.00	548.47	1.47	0.00	NA	9.58	10.32	5.23	0.80	0.00	1.50
5.50	548.57	1.57	0.00	NA	10.16	10.85	5.35	0.85	0.00	1.50

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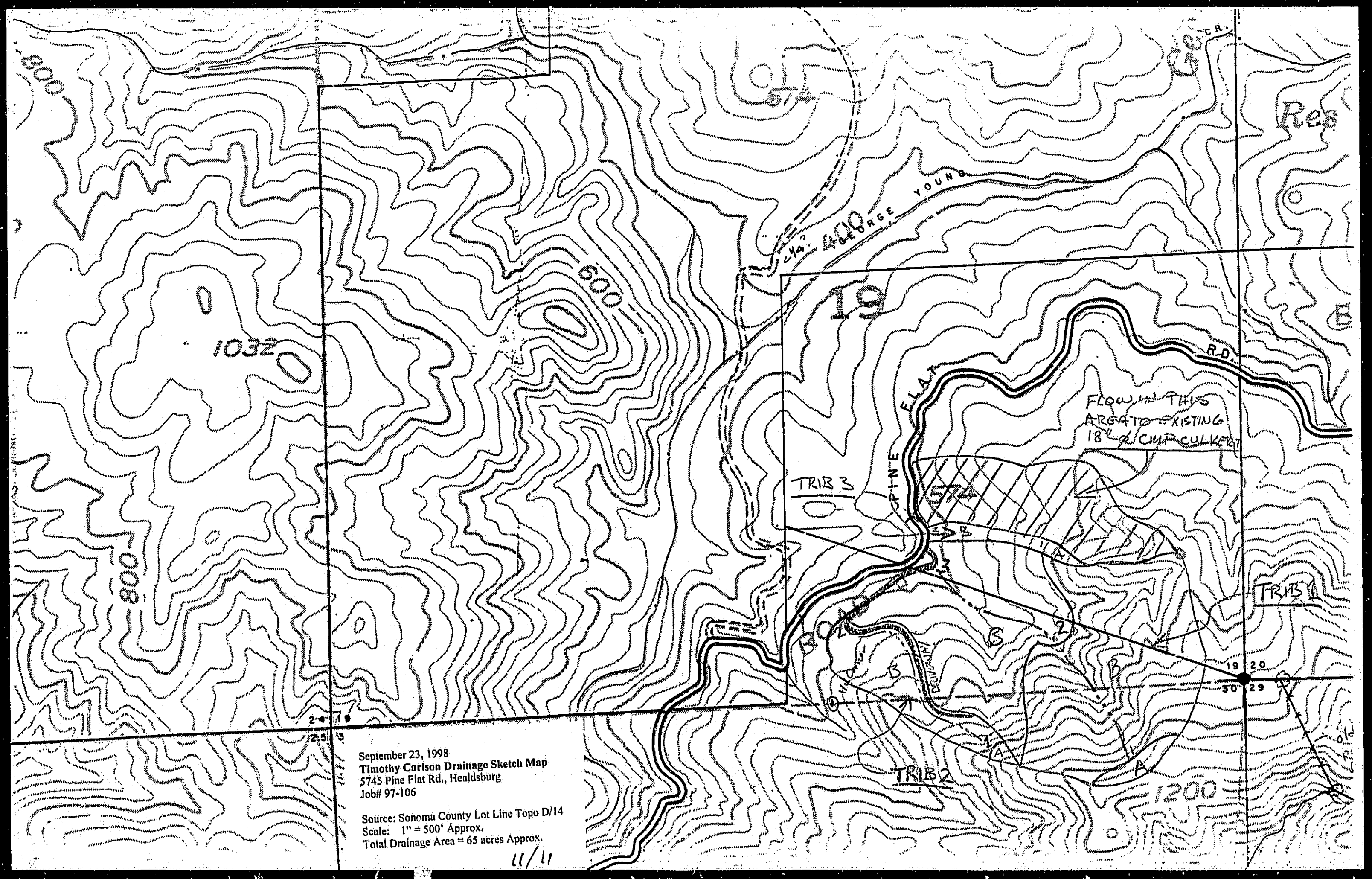


REVISED JUNE 1965

**SONOMA COUNTY  
MEAN SEASONAL PRECIPITATION**

DESIGNED BY	ENGINEER	DATE	PROJECT
DATE APRIL 1964	<i>Robert Hill</i>		
<b>SONOMA COUNTY WATER AGENCY</b>			
PROJECT NO. 0-0-112.3			PLATE No. B

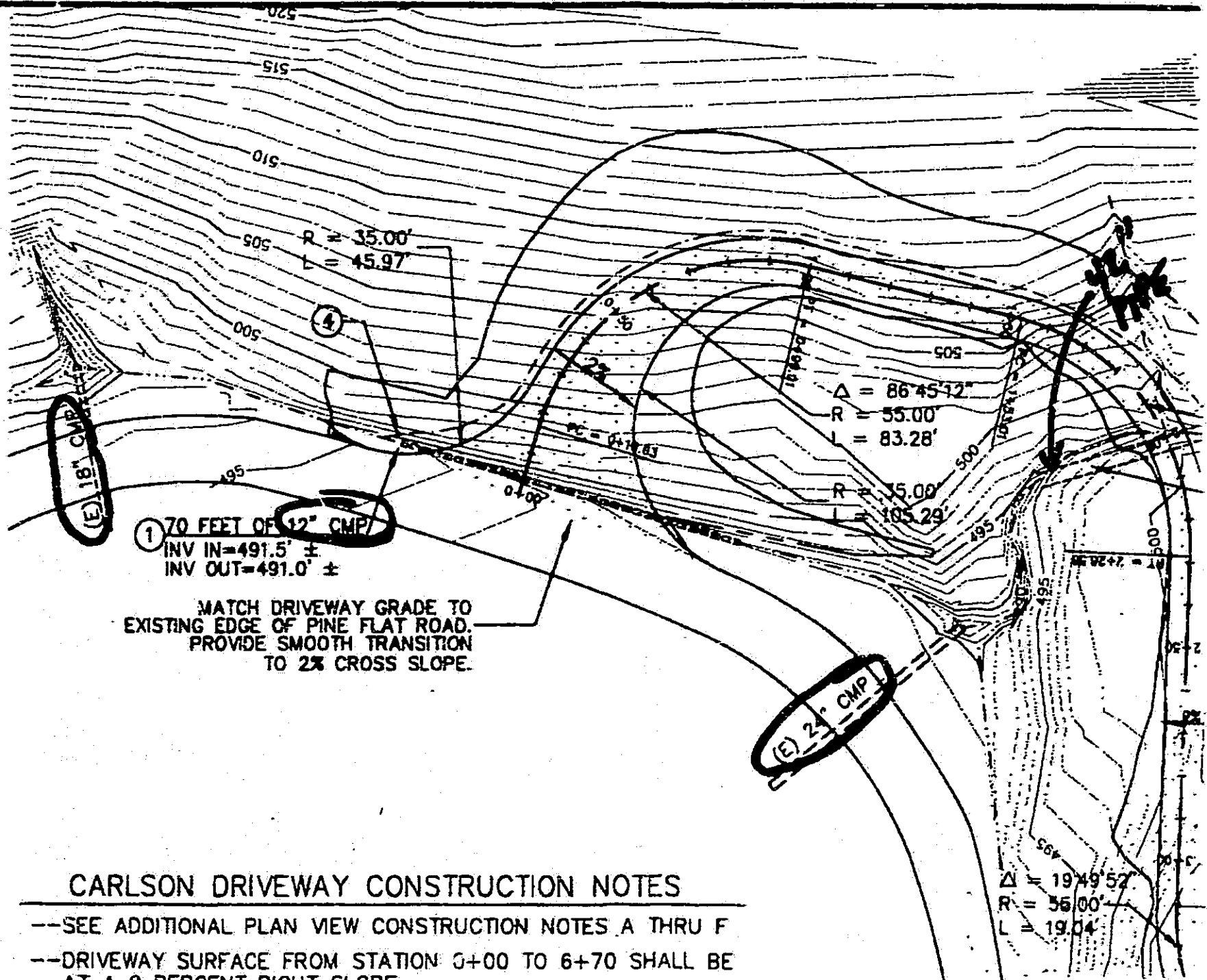
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September 23, 1998  
Timothy Carlson Drainage Sketch Map  
5745 Pine Flat Rd., Healdsburg  
Job# 97-106

Source: Sonoma County Lot Line Topo D/14  
Scale: 1" = 500' Approx.  
Total Drainage Area = 65 acres Approx.

11/11



**CARLSON DRIVEWAY CONSTRUCTION NOTES**

- SEE ADDITIONAL PLAN VIEW CONSTRUCTION NOTES A THRU F
- DRIVEWAY SURFACE FROM STATION 0+00 TO 6+70 SHALL BE AT A 2 PERCENT RIGHT SLOPE