

JMP TEST SUMMARY

Pumping Unit: Double Diamond Date: 5-12-94

Address of Owner: S. King

Total Dynamic Head: G. Dove

a) pumping water level:

Fisher or steel tape (ft) static pumping ft
 b) discharge pres.: IDWR gage psi x 2.31 = ft
 c) press. gauge height (from center line of disch. pipe) ft
 d) friction losses (pump intake to pressure gauge) ft

TDH = (a + b + c + d) = ft

(see below) Q = gpm

OHP = Q x TDH / 3960 = hp

(see attached data) IHP = hp

Eff. = OHP / IHP x 100 = %

Electric Powered Pump Standards for Tested Efficiencies				
(from Pacific Gas and Electric Company 77 Beale Street, San Francisco, California 94106)				
Motor Size (HP)	Ratings			
	Low	Fair	Good	Excellent
3-5	41.9 or less	42-49.9	50-54.9	55 or above
7.5-10	44.9 or less	45-52.9	53-57.9	58 or above
15-30	47.9 or less	48-55.9	56-60.9	61 or above
40-60	52.9 or less	53-59.9	60-64.9	65 or above
75 +	55.9 or less	56-62.9	63-68.9	69 or above

9.87
2.9

Other flow meter data: 1277

Amount units seconds 1) 2) 3) Ave

Type McCrometer Computed Flow Rate 1160 gpm

FLOW MEASUREMENT

OD = 10.14"
Thick = 0.135"

Inside Dia. (D) = 9.87 in

Inside radius IR = 4.935 in

Station Factors (F)	Stations (IR x F)		Velocity (V)	
	dec	in	R	L
A) 0.051		.25	2.6	3.5
B) 0.163		.80	2.7	4.0
C) 0.293*		1.45		4.25
D) 0.453		2.24		4.5
E) 0.684		3.38		4.88
F) 1.316		6.49		5.32
G) 1.547		7.63		5.38
H) 1.707*		8.424	5.05	5.10
I) 1.837		9.07		4.85
J) 1.949		9.62		3.2
Average Velocity (V):			4.50	

DECIMAL TO FRACTION CONVERSIONS (TO 1/16 INCH)

0.0000	- 0.0313	0
0.0313	- 0.0938	1/16
0.0938	- 0.1563	1/8
0.1563	- 0.2188	3/16
0.2188	- 0.2813	1/4
0.2813	- 0.3438	5/16
0.3438	- 0.4063	3/8
0.4063	- 0.4688	7/16
0.4688	- 0.5313	1/2
0.5313	- 0.5938	9/16
0.5938	- 0.6563	5/8
0.6563	- 0.7188	11/16
0.7188	- 0.7813	3/4
0.7813	- 0.8438	13/16
0.8438	- 0.9063	7/8
0.9063	- 0.9688	15/16
0.9688	- 1.0000	1

V (Hall) =

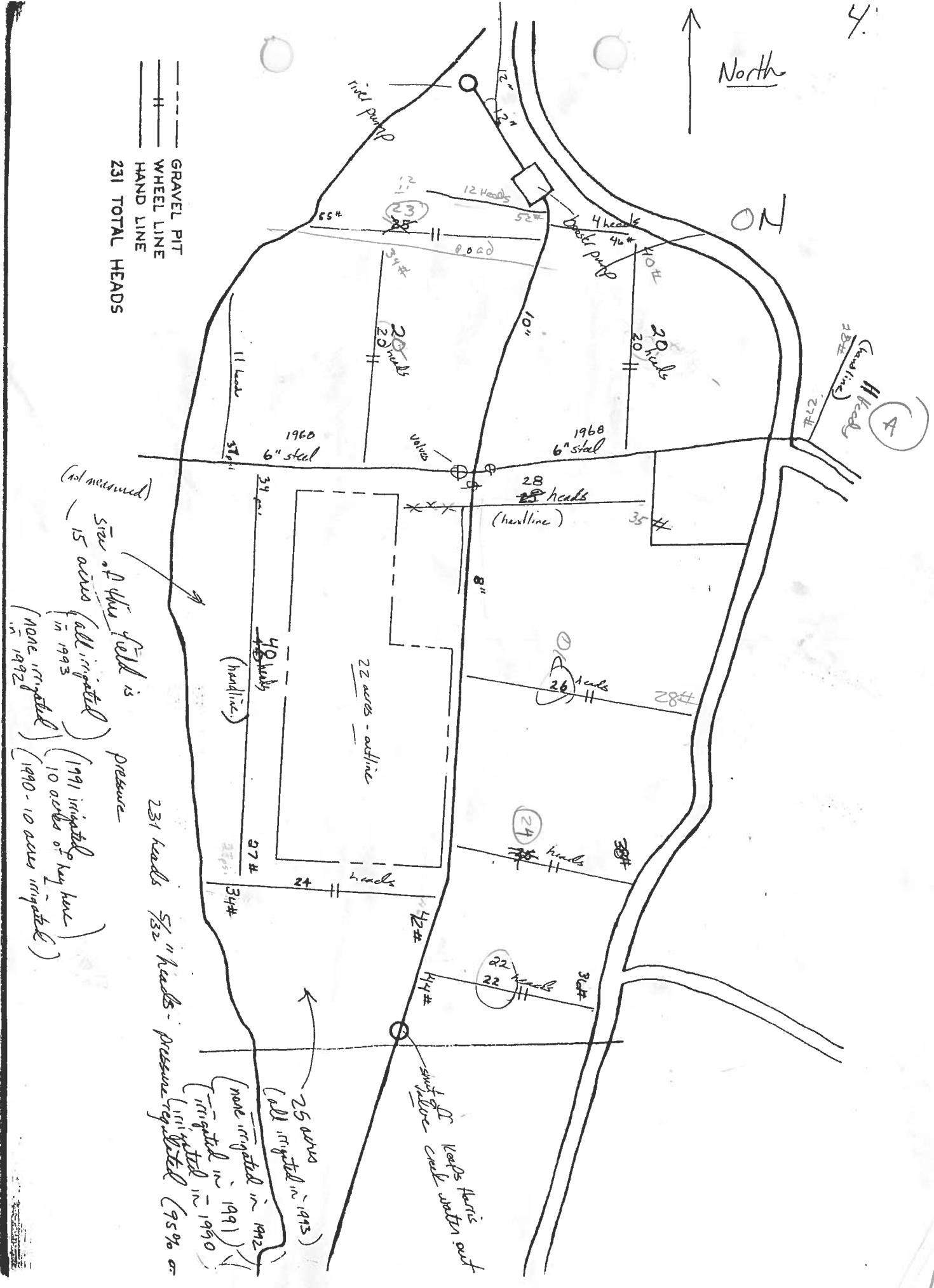
* two-point method

Flow: Q = 2.451 x V x (DIA)² x corr. factor = 1074 gpm

All ok
CJ Palletti
Weir 36" Weir
.49 Ahead
3.46
= 1553.

North

GRAVEL PIT
WHEEL LINE
HAND LINE
231 TOTAL HEADS



size of this field is
15 acres (all irrigated
in 1993)

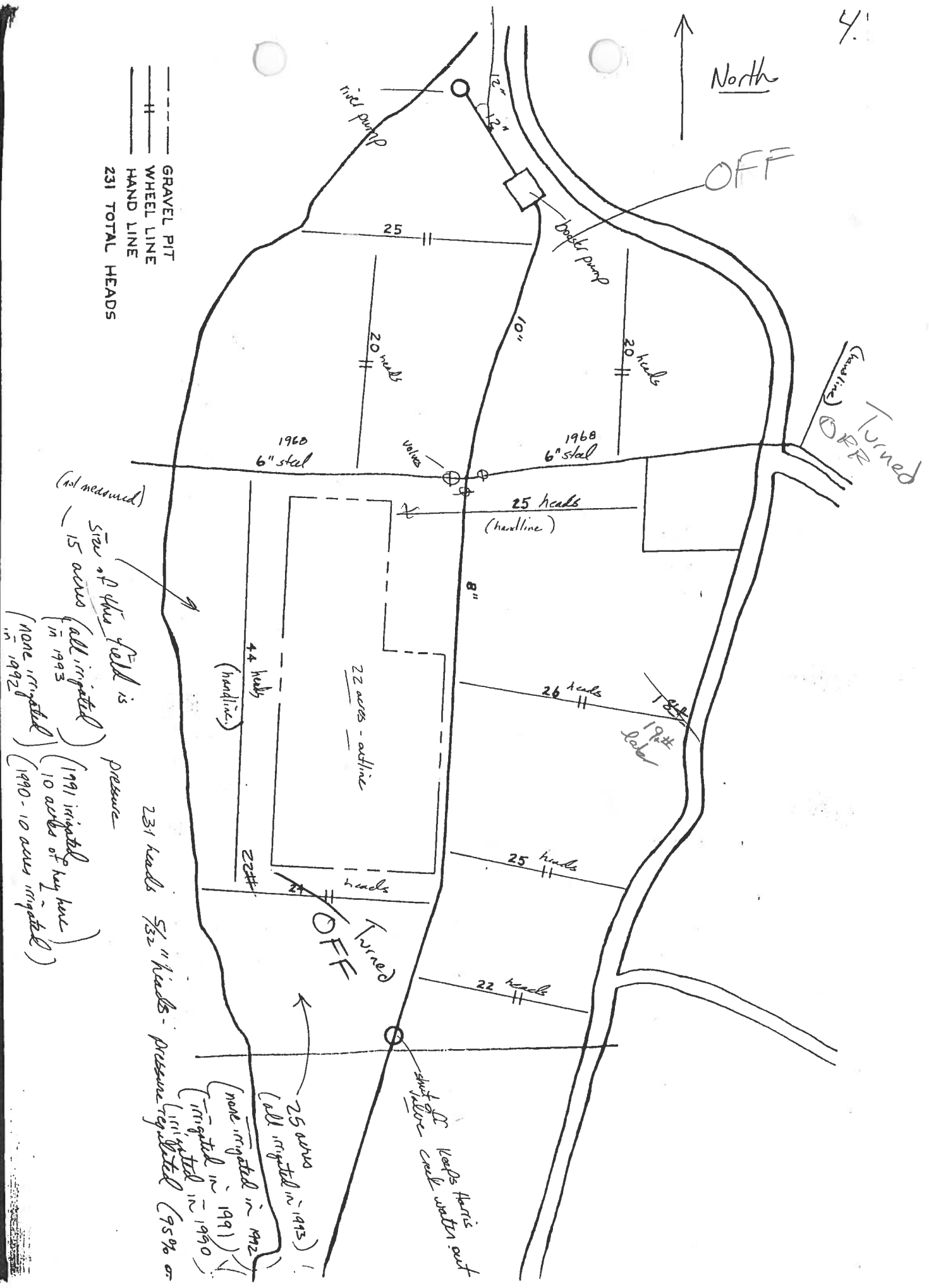
231 heads 5 1/2 inch heads - pressure regulated (95% or more irrigated by line in 1993)
(1991 irrigated by line 10 acres of line)
(1990-10 acres irrigated)
(none irrigated in 1992)

25 acres
(all irrigated in 1993)
none irrigated in 1992
(irrigated in 1991)
none irrigated in 1990
(irrigated in 1992)

A keeps Harris out of the creek with out

North

--- GRAVEL PIT
 --- WHEEL LINE
 --- HAND LINE
 231 TOTAL HEADS



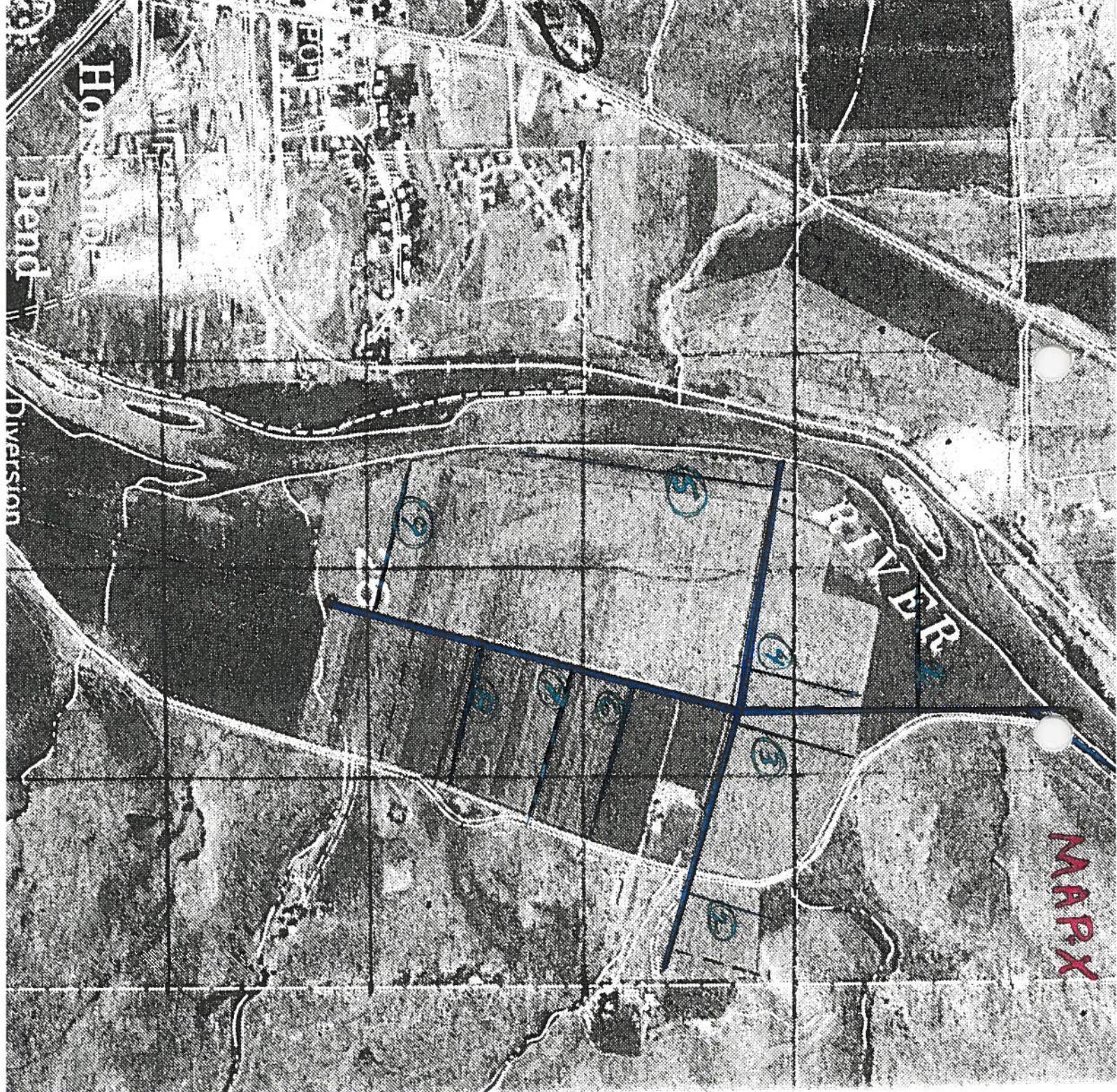
(not measured)
 size of this field is
 15 acres (all irrigated)
 (in 1993)

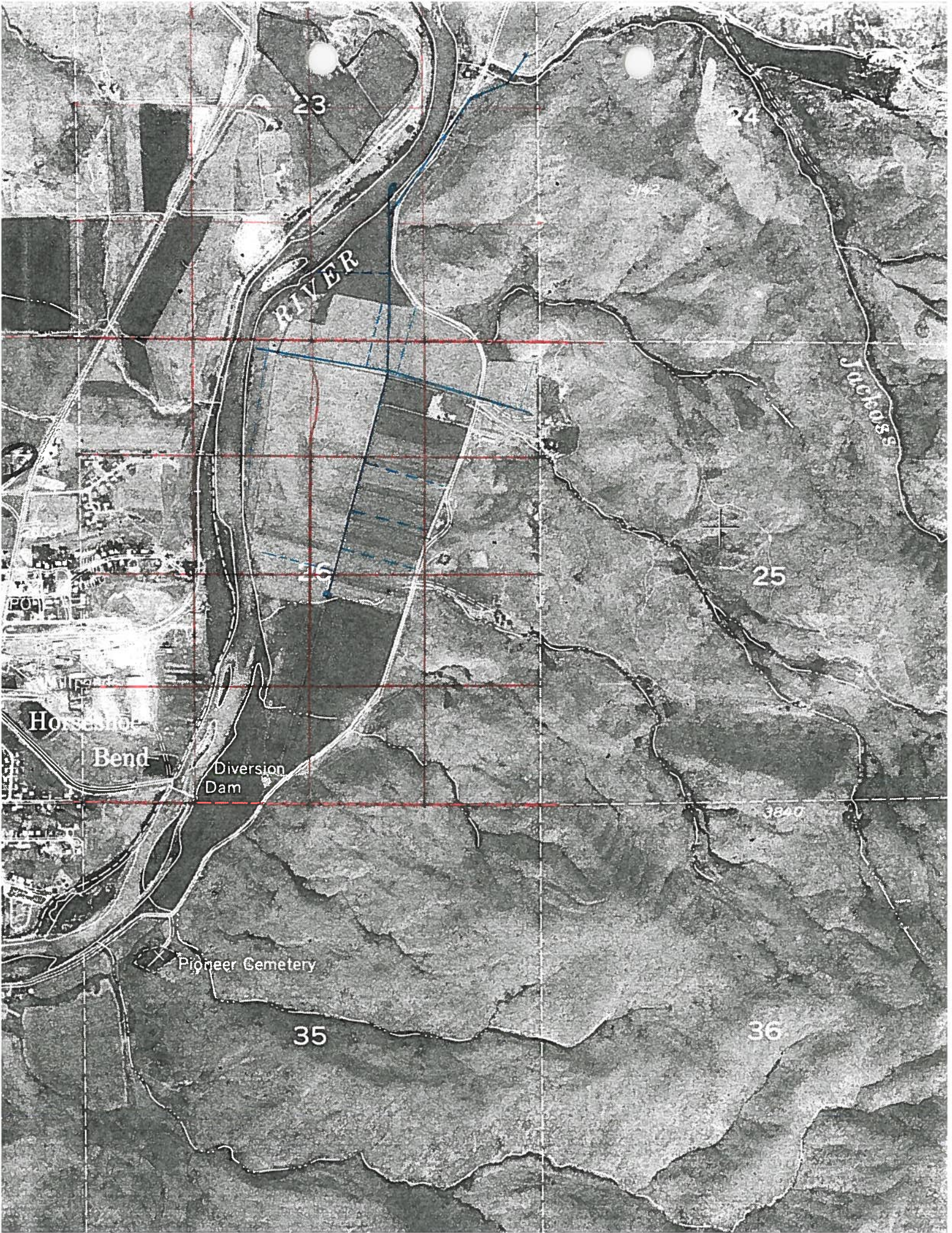
(none irrigated in 1992)
 (1991 irrigated by hand)
 (1990-10 acres irrigated)

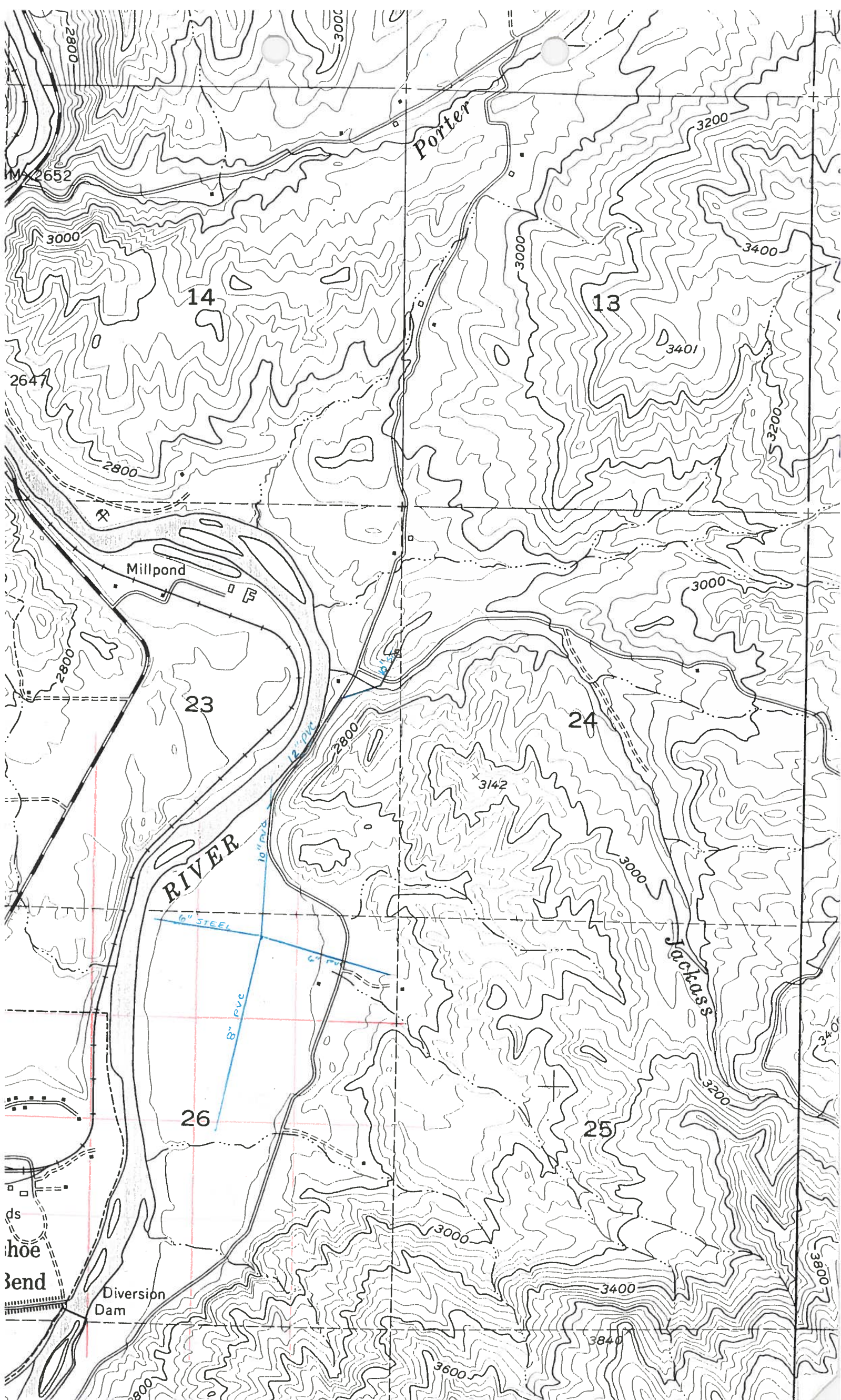
231 heads 5 1/2" heads - pressure regulated (95% or more irrigated in 1992)

(all irrigated in 1993)
 (none irrigated in 1991)
 (irrigated in 1990)

shut off valve call water out







The protestant excepts to the finding because that portion of the finding that is emphasized by underlining states facts or assumptions that are contrary to the testimony and evidence and which also flies in the face of logic.

The uncontested testimony and evidence showed that any quantity of water diverted to Double Diamond exceeding 2.0 cfs was always wasted and was subsequently promptly reduced by the watermaster following a request from Dovel to halt the waste. This occurred even when Double Diamond was permitted to divert 2.79 cfs and when Lester instructed the watermaster to divert that quantity.

When 2.79 cfs was diverted through Double Diamond's number one priority headgate, at least .79 cfs was wasted out the Jackass Creek overflow pipe because it exceeded the system capacity which was 2.0 cfs including ditch losses. If 10.0 cfs had been diverted through that headgate, at least 8.0 cfs would have been similarly wasted.

(FINDING OF FACT)

31. On May 11 and 12, 1994, Donald Rumsey, a principal owner of Double Diamond, George Dovel, Sherl Chapman, a consultant hired by Dovel, and Scott King, a Department employee, met at the Double Diamond ranch. Flows, discharges, and pressures were measured according to criteria agreed upon by the parties.

The protestant excepts to the finding because that portion of the finding that is emphasized by underlining states facts or assumptions that are untrue. Flows and discharges were not measured according to criteria established by the parties.

(FINDING OF FACT)

33. *The discharge of the system was first measured with the booster pump on and then with the booster pump off. The river pumps were off, and the gate valve in the Payette River line was closed, isolating it from the Porter Creek gravity pressure system.*

The protestant excepts to the finding because, contrary to the agreed upon criteria, nozzles from all of the lines in operation with the booster pump on were not measured and nozzles from most of the lines were not measured with the booster pump off. Also, the valve separating Porter Creek and Shafer Creek water was not closed as agreed upon when most of the sprinkler nozzle pressures were measured. When the valve was later closed, a noticeable change occurred in the Porter Creek system indicating that some Porter Creek water had been diverted into the Shafer Creek lines when most of the measurements were taken.

psi increased when
we closed the valve

(FINDING OF FACT)

36. *The flow in the pipeline with the booster pump operating could not be measured with a Collins meter or an inline McCrometer meter because the booster pump entrained air in the water. Mr. King and Mr. Chapman measured a flow of 3.12 cfs in the Porter Creek line by measuring the inflow to the collection box, and by subtracting the overflow at Jackass Creek.*

The protestant excepts to the finding because it is inaccurate. Chapman was not present and did not participate in either the measurement of water flowing in the ditch or the

measurement with the Collins meter cited in Finding of Fact No. 35. Both Chapman and Dovel were always present during the times scheduled for measurements, but these measurements were taken by King when Chapman was attending another previously scheduled appointment in the area on the day after the Double Diamond measurements were scheduled to take place.

(FINDING OF FACT)

37. After the measurements agreed to and observed by Dovel and his consultant, Dovel objected to the results, alleging the Porter Creek line was prepared and lines were added which were never used. These objections were not raised at the time of the test.

The protestant excepts to the finding because it is inaccurate. Once Dovel learned that the system had been changed, he discussed with King the improved system and the newly installed gate valve and the fact that these changes had radically increased the system capacity. Dovel also requested that King make additional measurements of all the sprinkler nozzle pressures following the closing of the valve which permitted Porter Creek water to flow in to the Shafer Creek pipeline. After measuring only a single nozzle on one wheel line, King declined to measure the rest of the nozzles as Dovel had requested and left before Dovel's consultant, Chapman, returned as agreed upon, to conduct further measurements and further discussion.

Chapman had discussed with Dovel and agreed to protest to King on his return to the site shortly after 3:00 p.m.: (1) the newly discovered system improvements which negated the value of the tests for determining the previously existing system

capacity; (2) the existence of a substantially smaller flow with far fewer sprinklers and lower nozzle pressures that he had personally observed on a visit two weeks earlier; (3) the inappropriate use of only 20 psi as a working pressure for FCN and 5/32 inch nozzles; (4) the addition of a substantial number of sprinkler lines that had heretofore never been used in that location and which were strategically placed at lower elevations to maximize pressures and nozzle delivery volume; and (5) the inability of Chapman and King to make accurate estimates of flows from each lateral due to a wide variance in nozzle sizes encountered.

Because King expressed displeasure with Dovel for requesting more than the single admittedly inaccurate measurement King had taken and because King also did not wait for Chapman's return as agreed upon, the additional objections were not permitted to take place at the site. Also, as explained above, the measurements of both ditch and pipeline flow were not witnessed by Chapman as stated.

(FINDING OF FACT)

38. Several individuals have diverted water from the Double Diamond ditch referred to locally as "courtesy water." The quantity of water diverted is only approximately two inches per user. These diversions are represented by adjudication claims. "Courtesy water" was not delivered in 1993 to the individuals who diverted it in previous years.

The protestant excepts to that portion of the finding which states that the quantity of water diverted is "only approximately two inches per user," because that statement is

Comp. by.

DOUBLE DIAMOND

G.H. of zero flow ft. Sheet No. of sheets

Comp. by

DOUBLE DIAMOND

Date 5-12, 19 94 Party S. King

Width 5.5' Area 4.3 ft² Vel. G. H. Disch. 3.19 cfs

Method No. secs. 10 G. H. change. in hrs. Susp.

Method coef. Hor. angle coef. Susp. coef. Meter No.

Type of meter Suffer 2100 Date rated Tag checked

Meter ft. above bottom of wt. Spin before meas. 487 after 438

Meas. plots. % diff. from. rating. Levels obtained.

Check bar, chain found changed to at
Wading, cable, ice, boat, upstr., downstr., side bridge. 40 feet, mile, above, below gage.
Measurement rated excellent (2%), good (5%), fair (8%), poor (over 8%); based on the following cond:
Flow
Cross section
Control
Gage operating Weather
Intake/Orifice cleaned Air °C@ Water °C@
Record removed Extreme Indicator: Max. Min.
Manometer N₂ Pressure Tank Feed Bbl rate per min.
CSG checked Stick reading
Observer Dean Larson - Ranch Operator
HWM outside, in well
Remarks Warm, Sunny, Calm
GPS LAT\LONG
G.H. of zero flow ft. Sheet No. of sheets

Measured 1430 gpm in ditch. McCrometer agrees
Don turned on innermost line, then off.
Booster On
Noon - Checking Lines

End Long = 27

Overflow @ 1:00 Pump on/
6 gal/11 sec = 32.7 gpm

1 1/2

Turned off pump
1:12 Shut off (A)

@ 38 psi

1/4 5 FCN = 331

1/4 7/64 238.5

1/4 3/32 291.5

1/4 1/64 344.5

COLLINS TUBE MEASUREMENT

DATE: 5/11/94

OWNER: Don Rumsey

CIRCUMFERENCE: _____ OUTSIDE R: .42

PIPE THICKNESS: _____ INSIDE R: .40

FACTOR	Mr (IR Factor)	Mp	Velocity
0.949	.38	.96	10.35
0.837	.33	.91	9.00
0.707	.28	.86	6.75
0.547	.22	.80	8.51
0.316	.13	.71	7.35
0.316	.13	.71	6.25
0.547	.22	.80	6.9
0.707	.28	.86	6.78
0.837	.33	.91	7.76
0.949	.38	.96	7.8

$\bar{V}$ = 7.95

Mp = P + Mr - O.R. where P is chosen reference point on collins tube

$Q = \bar{V} \pi (IR)^2 = \overset{9.87}{2} \underline{4.22} \text{ cfs} = 1896 \text{ gal}$

Pumping level _____	Pump Type _____
Time Operating _____	RPM _____
Pressure at discharge _____	Rated Flow _____
Pump motor type _____	GPM _____
Serial No. _____	Head _____
Horsepower _____	Access Port _____
RPM _____	Yes _____
Meter Constants _____	No _____
K = _____	Location _____
Kh = _____	_____
Revolutions _____	_____
Time (seconds) _____	_____
Voltage _____	_____
Amperage _____	_____
L1 _____	L2 _____
L3 _____	_____

5-11-94
Double Diamond

Scott King
Sheri Chapman, Don Ramsey, George Dovel

1:30 Arrive Install Sonde.
Tried several locations & Z method. No reading.

Inserted collins. Lots of Air in water.

Measured $Q = 1896 \text{ gpm}$
 4.22 cfs

Owners Propeller meter
by needle. 1300 - 1550 gpm

3:45 Cipolletti Weir @ Porter Cr Good Cond.

36" L } 3.46 cfs
0.49' Head } = 1553 gpm

4:00 River Pump off. Valves closed.
Static 38 psi owner

Booster Pump ON
Gate Valve Closed ✓
Disch press = 53 psi

1st Line below pump 36-38 psi

Uppermost line. Psi 17-19 psi
turn off. Nozzles $\frac{5}{32}$, $\frac{1}{64}$, 5 FCN

12 nozzles
First two blowing lots
of air.

Tried to turn off several lines & stop air.
Didn't work.

Concl: Measurement by collins or ^{nozzle psi} system will
show more Q than actual due to air
in the system.

- will measure Q via current meter
above pipe inlet. Measure overflow
w/ bucket / stopwatch. on 5/12

DON RUMSEY 466-3680
465-5998

GEORGE DOVEL
793-2768

- 3-21-94 Tried to contact both parties. Only Dovel
- 3-22-94 Rumsey returned call. Set meeting for 10:00 am
Wed 3-23-94. Verified with Dovel.
- 3-23-94 Met & inspected system. See memo
4:00 pm - Called Rumsey - Will tap tomorrow p.m.
- 3-24-94 11:15 pm - Called Dovel - Coming out to tap pipe.
11:30 AM - Touched base w/ Gary S.
3:00 pm - Tapped pipe. Measured elevation at
various points
- 3-25-94 Worked on Protocol. Gary gave me faxes.
- 3-29-94 Protocol → Gary
Gary returned
Edited device ambiguity. Returned to Gary
- 4-7 Gary Returned
Called Don - MRC
Called George - FAX COPY
Called Don - Cannot do Monday - Replacing
~~Call~~ section of pipe?
Called George - Notified of cancel date
and pipe replacement. He will be
protesting pipe repl.
Called Don - MRC
Don - RC Notified of George's Protest. Send
Protocol & V-notch wire specs. ←
Memo to Gary notifying of pipe repl & protests
- 4-15 Met w/ Gary. Directed to contact Don Rumsey.
If pipe change, contact Shul and see what
he thinks, & if he will call Dovel and

334-8400
8577

explain changes inconsequential.

If pipe not replaced — ~~not~~ try to convince
Rumsey not to replace & to test soon. Contact
Gary. Gary gave copy of Eisman's fax/memo
— Tried to call Rumsey — out of office.

4-18-94 - Rumsey met in office. Gave copy of protocol & Cipolletti
leak lit. Pipe not changed. Riddlemeyer in hospital.

Rumsey in court in Las Vegas next week. He
will call when back

Memo — Gary

Left message w/ George

4-25 Rumsey had called 4/21 — I was out (Berburg-Vac).
Returned his call, but out until next Monday.

4-29 Left message for Rumsey to call Mon ASAP.

5-2 Called Don. Maybe Thurs or Fri. ...

5-5 MRC to Don

MEMORANDUM

To: Gary Spackman
From: Scott King

Date: May 20, 1994

Subject: Results of Porter Creek flow measurements

May 11, 1994, 2:00 p.m.

Don Rumsey, George Dovel, Sherl Chapman, and I met at the Double Diamond Ranch. I installed the department's ultrasonic flowmeter on the 10 inch steel pipeline crossing Jackass Creek. Unfortunately, excessive air in the pipe prevented use of the ultrasonic meter, so Sherl and I installed a collins meter.

The amount of air in the system was so excessive that the collins meter provided inaccurate results. We shut down some lines in order to reduce the amount of air entering the pipeline, but this effort was unsuccessful. It was agreed that the best method to measure the flow under these conditions was to current meter the ditch near the pipe entrance, and measure the overflow with a bucket and stopwatch. As it was getting late, we agreed to make these measurements the next day.

May 12, 1994, 10:00 a.m.

Upon arriving at the ranch, I measured the flow over the 3' cipoletti weir at the Porter Creek diversion. At 0.50' of head, 3.57 cfs was entering the ditch.

I then used the Swoffer 2100 current meter to measure the flow in the ditch before it entered the pipeline. This flow was 3.19 cfs, or 1431 gpm. At this time, all the flow entered the main pipeline, and none was overflowing. The owner's recently installed propeller type flowmeter (McCrometer) indicated a flow of 1430 gpm, which agreed with the open channel measurement.

Don, Sherl, George, and I then inspected the system. The in-line booster pump was running. The river pumps were off and the gate valve closed, thereby isolating these pumps from the system and preventing water from flowing from the system into the Payette River.

One short hand line on the uppermost portion of the system was shut off because the average pressure was below 20 psi. All other lines were operating adequately (after some adjustment by the owner).

The gate valve located at the end of the 8" mainline was closed. This valve isolates the Porter Creek system from the other system(s).

Upon verifying that the proper valves were closed and that all lines were operating adequately, we measured the overflow at the Jackass Creek crossing using a 6 gallon bucket and stopwatch. The average time to fill the 6 gallon bucket was 11 seconds, resulting in an overflow of 33 gpm. Thus, the system capacity with the in-line booster pump on is 3.12 cfs, or 1400 gpm.

$$\begin{aligned}\text{System Flow} &= \text{Ditch Flow} - \text{Overflow} \\ &= 3.188 \text{ cfs} - 0.073 \text{ cfs} \\ &= 3.115 \text{ cfs}\end{aligned}$$

At this flow rate, 265 nozzles were operating at an average pressure of about 37 psi. Nozzle sizes were varied, ranging from 9/64" to 11/64" smooth bore commingled with 5 gpm flow control nozzles. Due to the variety of nozzle sizes and types, exact measurement using nozzles would be very time consuming. However, assuming equal distribution of nozzle sizes and types operating at 37 psi results in a flow of about 1200 gpm. Worn nozzles and leaks could easily account for another 15-20% above this flow rate. These measurements therefore confirm the previous measurements.

The booster pump was then turned off, and two more lines were shut down due to low pressure (one short hand line in the uppermost portion of the system, and one wheel line in the southwest end of the system). With a total of 230 nozzles, all lines were now operating adequately. The average pressure had dropped by about 10-11 psi.

Sherl and I tried to measure the overflow with the bucket and stopwatch, but the flow was too excessive, filling the bucket in under two seconds. I then set up to use the collins meter. Sherl left to attend to a another appointment.

Since there was no longer any air in the system, the collins meter measurement went much better. However, moss plugged the impact tube several times during the measurement. I cleaned the instrument as soon as the problem was observed, and continued with the measurement. Results of this measurement indicated a flow rate of 2.39 cfs, or 1074 gpm. The owners' McCrometer flow meter indicated 1160 gpm. It is likely that the collins measurement may be slightly low due to partial plugging at some stations, and I would therefore recommend that the McCrometer reading of 1160 is more accurate. In any case, these measurement are within 10% difference and should be considered acceptable.

Therefore, the system capacity with the booster pump off is:

$$\text{Flow (McCrometer)} = 2.58 \text{ cfs or } 1160 \text{ gpm}$$

$$\text{Flow (Collins)} = 2.39 \text{ cfs or } 1074 \text{ gpm}$$

Flow Measurement Protocol
Double Diamond/Porter Creek System

I. Flow measurement

- A. Location - Flow will be measured in the 10" steel pipe at or near the Jackass Creek crossing. This should be an ideal location for measurement and minimal turbulence is expected.
- B. Devices
 - 1. Ultrasonic - The Department's Polysonic Time-Flyte Model TF-P ultrasonic flowmeter will be used for measurement. In situations of ideal laminar flow, this meter is expected to have less than ± 2 percent error. However, if the ultrasonic meter does not work at this location, or if it provides unreasonable results compared to the field evaluation (difference greater than 20 percent), another measurement using the Collins meter will be performed.
 - 2. Collins - The Collins pitot-tube type flowmeter will be used if necessary. If the ultrasonic meter does not work, or it provides unreasonable results, the Collins measurement will preside.

II. Pumps

- A. River pumps - The pumps delivering water from the Payette River to the system will be **off** during the period of flow measurement and system analysis. The gate valve located on the discharge side of the 60 hp pump shall be closed in order to isolate these pumps from the system. After completion of flow measurements and system analysis, the river pump may be turned on and a measurement made of the Porter Creek water if the system owner so wishes.
- B. 40-Horsepower Booster Pump - Measurements will be made with the 40 horsepower booster pump, located downstream of the Payette/Porter connection, operating and not operating. The gate valve located on the bypass of the booster pump will be closed while the booster is on, and open when the pump is off.

III. Laterals

- A. Wheel lines - Up to seven wheel lines may be operated during the exam. Each wheel line has approximately 25 nozzles.
- B. Hand lines - Up to two hand lines may be operated during the exam. One is located on the East side of the road, in the NENE corner of Section 26. The second hand line, which is longer than the other laterals, will run parallel to the Payette River and will be connected to the 6" steel mainline.
- C. Minimum Lateral Pressure - In an effort to determine system capacity of an adequately operating system, laterals which are operating ineffectively due to low pressure will be turned off. Laterals must maintain an average nozzle discharge

pressure of at least 20 psi. Pressure will be measured at the end nozzles (and intermediate nozzles if necessary) using a pitot tube and pressure gauge. The average of these pressures must be at least 20 psi. If any lateral is found to have average pressure below 20 psi, laterals will be turned off until all laterals meet the minimum pressure requirement.

- D. Turning off Laterals - If laterals need to be turned off, they will be turned off in order of pressure, i.e. the lateral with the lowest average pressure will be turned off first.

IV. System Analysis

- A. Lateral flows - Pressure will be measured at the end nozzle of each lateral (and intermediate points if necessary) and an average pressure determined. Nozzle diameter will be measured and nozzles will be counted. The resulting data will be used to estimate flow rate for each lateral.
- B. Mainline check - Each mainline will be inspected to verify that gate valves at the ends of mainlines are closed (if applicable), and to check that water is not diverted out of system.
- C. Leaks - Leaks will be documented and their flow rate estimated.
- D. Total flow - Lateral and leak flows will be totaled. The system flow will be compared to the ultrasonic meter measurement. If the difference between these two measurements is greater than 20 percent, the Collins meter will be used to verify the ultrasonic meter reading.

Telephone (208) 467-3100
Facsimile (208) 466-4666

EISMANN LAW OFFICES

3016 CALDWELL BLVD.
NAMPA, IDAHO 83451-6416

RICHARD B. EISMANN
DEBRA L. EISMANN

FAX COVER SHEET

DATE: 4/7/94
TIME: 11:56 a.m.

ATTENTION: GARY SPACKMAN
ADDRESSEE'S FAX NO.: 327-7866
ADDRESSEE: HEARING OFFICER
ADDRESSEE'S
TELEPHONE NO.: 327-7900

TOTAL NUMBER OF PAGES INCLUDING FAX COVER SHEET 3

This is transmitted to you from a Canon Fax-L770. If you are not receiving this properly or should for some reason not receive all pages, please telephone this office immediately at (208) 467-3100.

Thank you.

By Viki/8
Operator

EISMANN LAW OFFICES

Telephone (208) 467-3100
Facsimile (208) 466-4498

3016 CALDWELL BLVD.
NAMPA, IDAHO 83651-6416

RICHARD B. EISMANN
DEBRA L. EISMANN

April 7, 1994

DELIVERED BY FACSIMILE

GARY SPACKMAN, HEARING OFFICER
STATE OF IDAHO DEPARTMENT OF WATER RESOURCES
1301 NORTH ORCHARD
STATEHOUSE MAIL
BOISE, IDAHO 83720

Re: Application for Transfer of Water Right Nos. 65-03103,
65-10773, 65-10746 and 65-12751/Double Diamond, Inc.

Dear Mr. Spackman:

It is my understanding that Mr. Rumsey now wants to replace the pipe crossing Jackass Creek because there are some leaks in the pipe. The leaks in the pipe are small pin-hole leaks which have been there for years, and in the past, those have been handled by Double Diamond using duct tape to attempt to stop up the holes.

Mr. Dovel has no objection to Mr. Rumsey's using duct tape as he has in the past, but a replacement of the pipe will obviously replace old, rusted and corroded pipe with new pipe, thereby influencing the water delivery through that section of the pipe.

Therefore, would you please see that the tests are conducted by April 15, 1994, which is the deadline agreed upon by all parties at the last hearing, and that such tests are conducted as originally agreed without replacement of any sections of pipe, but of course, permitting Mr. Rumsey to plug holes with duct tape as he historically has done.

Also, if the measurements of the Double Diamond irrigation system are going to be conducted with the booster pump operating and without the booster pump operating, then to resolve the issue, Mr. Rumsey should produce copies of all the Idaho Power Company billings on the booster pump from the year 1986 through 1993.

Gary Spackman, Hearing Officer
Dovel v. Double Diamond
April 7, 1994
Page 2

Thank you for your attention to this matter.

Very truly yours,

A handwritten signature in black ink, appearing to read 'RBE', with a long horizontal line extending to the right.

Richard B. Eismann
RBE/vn/8
CLT: George Dovel
Jack C. Riddlemoser

MEMORANDUM

To: Gary S.
From: Scott K. *SK*

Date: April 7, 1994

Subject: Double Diamond--Rumsey proposes to replace leaky mainline crossing Jackass Creek, Dovel protests.

I contacted both parties today to notify them of proposed measurement protocol. Faxed copy to Dovel.

Rumsey wants to replace the steel mainline which crosses Jackass Cr. When I tapped this pipe for the Collins meter, I noticed that it was old, rusty, and had some small holes in it. He said he was going to replace it at the first of next week or earlier. He is going to be gone on Monday. He will contact me when his system is ready.

I contacted Dovel again to notify him of this change. He said he is going to protest the pipe replacement as Rumsey is "changing the system." I explained that although new pipe will have lower friction losses which may increase flow, flow will probably be reduced due to less leaks, and that the bottom line will not amount to a hill of beans. He still protested the principal of the change.

I again contacted Rumsey and notified him of Dovel's protest.

A new test date has not been set.

EISMANN LAW OFFICESTelephone (208) 467-3100
Facsimile (208) 466-44983016 CALDWELL BLVD.
NAMPA, IDAHO 83651-6416RICHARD B. EISMANN
DEBRA L. EISMANN**FAX COVER SHEET**DATE: 3/25/94TIME: 10:55 a.m.

ATTENTION:

GARY SPACKMAN, HEARING OFFICER

ADDRESSEE'S FAX NO:

327-7866

ADDRESSEE:

IDAHO DEPARTMENT OF WATER RESOURCESBOISE, IDAHOADDRESSEE'S
TELEPHONE NO:327-5432TOTAL NUMBER OF PAGES INCLUDING THIS COVER SHEET 2

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Operator

EISMANN LAW OFFICES

Telephone (208) 467-3100
Facsimile (208) 466-4498

3016 CALDWELL BLVD.
NAMPA, IDAHO 83651-6416

RICHARD B. EISMANN
DEBRA L. EISMANN

March 25, 1994

DELIVERED BY FACSIMILE

GARY SPACKMAN, HEARING OFFICER
STATE OF IDAHO DEPARTMENT OF WATER RESOURCES
1301 NORTH ORCHARD
STATEHOUSE MAIL
BOISE, IDAHO 83720

Re: Application for Transfer of Water Right Nos. 65-03103,
65-10773, 65-10746 and 65-12751/Double Diamond, Inc.

Dear Mr. Spackman:

Please be advised that my client, George Dovel, has engaged the services of Sherl Chapman who will draw up his suggested guidelines and specifications for taking measurements of the Double Diamond irrigation system and who will be present to witness the taking of such measurements on behalf of Mr. Dovel.

If you should have questions, please contact me.

Thank you.

Very truly yours,

**Dictated by the Attorney
and faxed without signature
in his absence to avoid delay.**

Richard B. Eismann
RBE/vn/8

CLT: George Dovel
Jack C. Riddlemoser
Donald Rumsey
David P. Hirschi

EISMANN LAW OFFICESTelephone (208) 467-3100
Facsimile (208) 466-44983016 CALDWELL BLVD.
NAMPA, IDAHO 83651-6416RICHARD E. EISMANN
DEBRA L. EISMANN**FAX COVER SHEET**DATE: 3/25/94

TIME: _____

ATTENTION: GARY SPACKMAN, HEARING OFFICERADDRESSEE'S FAX NO.: 327-7866ADDRESSEE: IDAHO DEPARTMENT OF WATER RESOURCESADDRESSEE'S
TELEPHONE NO.: 327-5432TOTAL NUMBER OF PAGES INCLUDING FAX COVER SHEET 2

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GARY SPACKMAN, HEARING OFFICER
STATE OF IDAHO DEPARTMENT OF WATER RESOURCES
1301 NORTH ORCHARD
STATEHOUSE MAIL
BOISE, IDAHO 83720

Re: Application for Transfer of Water Right Nos. 65-03103,
65-10773, 65-10746 and 65-12751/Double Diamond, Inc.

Dear Mr. Spackman:

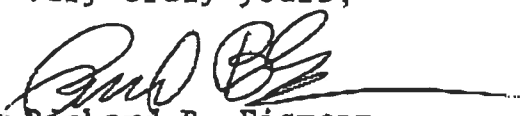
My client, George Dovel, contacted me this date to inform me that the engineer for the Department of Water Resources who is going to take measurements of the Double Diamond irrigation system has been advised by Donald Rumsey that such measurements should be taken with the booster pump running.

Please be advised that at the last hearing held in this matter on March 9, 1994, it was agreed that the Double Diamond irrigation system would be measured without the booster pump running since the testimony at the hearing reflected that the Double Diamond system had been operating without the booster pump during the period involving the forfeiture. Donald Rumsey testified that the Double Diamond system would operate 231 five-gallon-per-minute sprinklers without the booster pump running.

We adamantly object to any measurement of the Double Diamond system being taken while the booster pump is running because that does not duplicate the conditions which existed since 1986.

Thank you for your attention to this matter.

Very truly yours,


Richard B. Eismann

RBE/vn/8

CLT: George Dovel
Jack C. Riddlemoser

MEMO

To: Gary
Glen

From: Scott K. 

Date: March 23, 1994

Subject: Travel notes from Double Diamond visit

Travel Notes
March 23, 1994
Horseshoe Bend, Double Diamond

In response to Gary's request for an unbiased flow measurement of the diversion from Porter Cr. to Double Diamond ranch, Steve Lester and I met with George Dovel and Don Rumsey to inspect the diversion.

We agreed I would try to measure flow in the 10" steel pipe crossing Jackass Cr. using the ultrasonic and/or collins flowmeters. We agreed that the system should be running at capacity for a reasonable amount of time before making the measurement.

The pump delivering water from the Payette should be off and the gate valve closed. It is interesting that both parties seem to agree that the flow from porter creek is increased when the river pump is on. Intuitively, it seems that turning on the river pump would increase the system pressure, which would cause the Porter diversion to be reduced.

The two parties could not agree if the 40 hp in-line booster pump, located downstream from the Payette/Porter connection, should be on or off. Operating this pump will increase pressure and flow in the system. It would seem that a measurement of the system "at capacity" would encourage use of the booster, unless the booster was not necessary for adequate operation of the system at capacity.

An examination of the delivery system will be made to verify beneficial use of the water and to confirm the earlier flow measurement. I will measure pressure at either end of each lateral, count nozzles, measure nozzle sizes, and calculate flow from each lateral. The sum of these flows should be reasonably close to the flow in the pipe. It is reasonable to expect a degree of loss in any distribution system.

If the in-field measurements are reasonably close to the in-pipe measurement(s) at Jackass Cr., we would accept the in-pipe measurement.

I will develop a "protocol" for testing this system. Both parties and their attorneys must agree before measurements are made. Either March 24 or 25, I will tap the pipe crossing porter creek while it is still empty.

OK *[initials]*

MEMORANDUM

TO: GLEN SAXTON

FROM: GARY SPACKMAN *Gary*

RE: MEASUREMENT OF SYSTEM CAPACITY FOR DOUBLE DIAMOND GRAVITY
PRESSURE IRRIGATION SYSTEM LOCATED NEAR HORSESHOE BEND, IDAHO
=====

On March 9, 1994, I held an additional hearing regarding the Double Diamond application to transfer water. One of the questions raised at the hearing is the capacity of the Double Diamond gravity pressure irrigation system, which diverts water from Porter Creek. The parties agreed to accept the results of a test of the capacity of the system, using mutually acceptable test criteria, results, and will not ask for an additional hearing after the evidence is presented.

The parties are looking for someone from the department who is not tainted by past proceedings, but who is knowledgeable about water measurement. I thought perhaps Scott King, as the new water resources engineer, could work with the parties to design and conduct an acceptable test, and submit the results to me as the hearing officer.

The parties are anticipating the development of a plan by about April 1. If you are willing to allow Scott to work on this project, I will be happy to visit with him further. Thanks.

10100

As per Gary:

Contact Steve Lester at Western, Discuss date to inspect diversion and system.

Develop and propose testing criteria for measuring system capacity. Measure by April 1.

*Steve Lester
Western*

*Tests by April
Develop and
propose testing
criteria*

Rumsey, Donald

Dovel, George

*Rumsey - applicant
Double D*

*336-4801
(208) 445-5998*

Dovel - protestant

793-2768

*3-21-94 4:00 MRC
3-22 Don R.C. Meet 10:00 at farm
8:00 am*

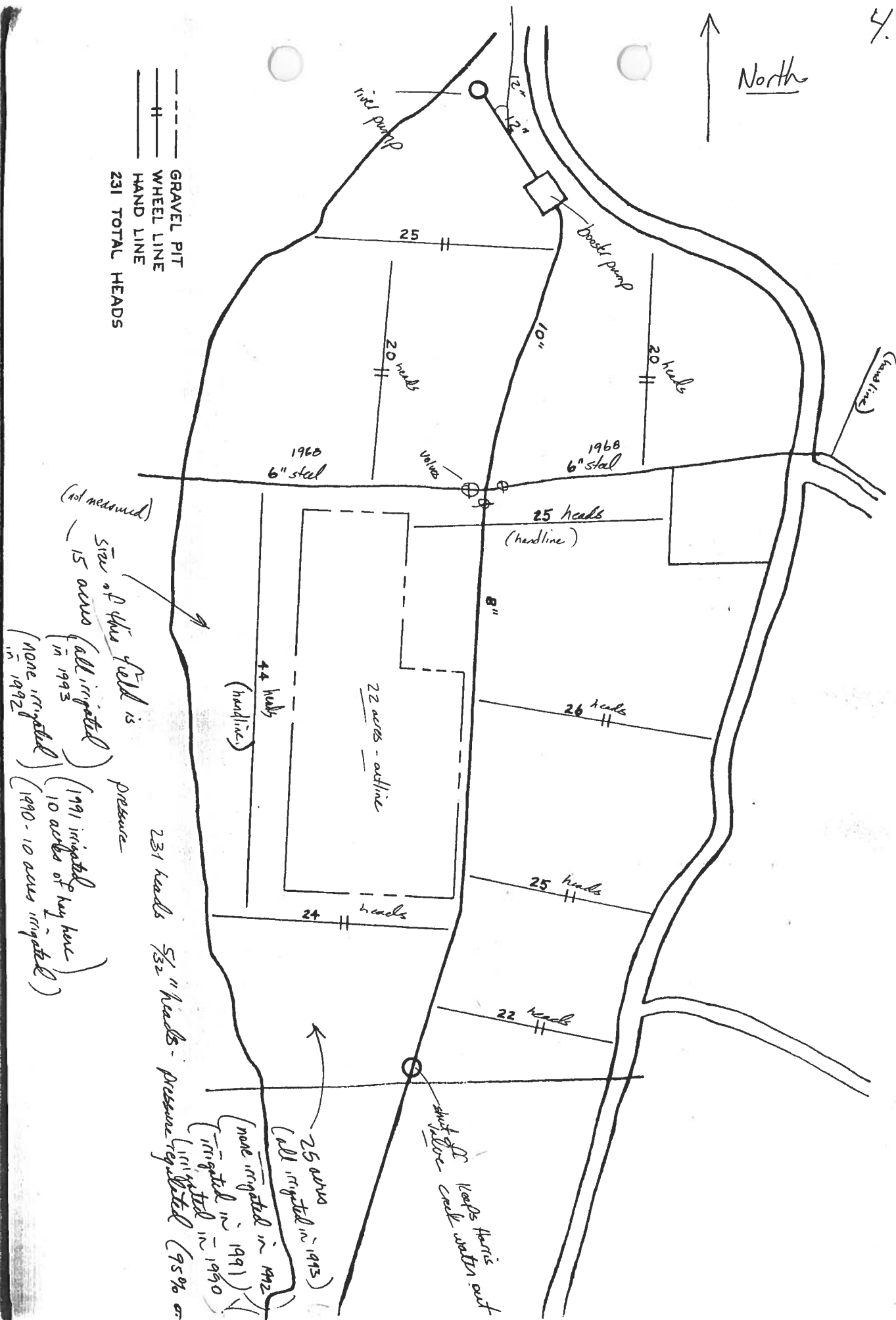
*3-21-94 4:00 Wed or Thurs am oka
3-22 8:00 am 10:00 okay*

Double Diamond

North



-----	GRAVEL PIT
-----H-----	WHEEL LINE
-----	HAND LINE
231	TOTAL HEADS



MEMORANDUM

To: Gary
From: Scott K. 

Date: April 18, 1994

Subject: Meeting with Don Rumsey

Don dropped by my office today. He has not replaced the pipe and does not intend to. He does not want to start any protests.

Don will be out all next week as he must appear for court in Las Vegas. This will postpone the measurement. His attorney may also cause delays due to his ailing condition.

Don said he will call me upon his return from Las Vegas so that we may continue this project.

Scott - OK

Flow Measurement Protocol
Double Diamond/Porter Creek System

I. Flow measurement

- A. Location - Flow will be measured in the 10" steel pipe at or near the Jackass Creek crossing. This should be an ideal location for measurement and minimal turbulence is expected.
- B. Devices
 - 1. Ultrasonic - The Department's Polysonic Time-Flyte Model TF-P ultrasonic flowmeter will be used for measurement. In situations of ideal laminar flow, this meter is expected to have less than ± 2 percent error. However, if the ultrasonic meter does not work at this location, or if it provides unreasonable results compared to the field evaluation (difference greater than 20 percent), another measurement using the Collins meter will be performed.
 - 2. Collins - The Collins pitot-tube type flowmeter will be used if necessary. If the ultrasonic meter does not work, or it provides unreasonable results, the Collins measurement will preside.

II. Pumps

- A. River pumps - The pumps delivering water from the Payette River to the system will be **off** during the period of flow measurement and system analysis. The gate valve located on the discharge side of the 60 hp pump shall be closed in order to isolate these pumps from the system. After completion of flow measurements and system analysis, the river pump may be turned on and a measurement made of the Porter Creek water if the system owner so wishes.
- B. 40-Horsepower Booster Pump - Measurements will be made with the 40 horsepower booster pump, located downstream of the Payette/Porter connection, operating and not operating. The gate valve located on the bypass of the booster pump will be closed while the booster is on, and open when the pump is off.

III. Laterals

- A. Wheel lines - Up to seven wheel lines may be operated during the exam. Each wheel line has approximately 25 nozzles.
- B. Hand lines - Up to two hand lines may be operated during the exam. One is located on the East side of the road, in the NENE corner of Section 26. The second hand line, which is longer than the other laterals, will run parallel to the Payette River and will be connected to the 6" steel mainline.
- C. Minimum Lateral Pressure - In an effort to determine system capacity of an adequately operating system, laterals which are operating ineffectively due to low pressure will be turned off. Laterals must maintain an average nozzle discharge

pressure of at least 20 psi. Pressure will be measured at the end nozzles (and intermediate nozzles if necessary) using a pitot tube and pressure gauge. The average of these pressures must be at least 20 psi. If any lateral is found to have average pressure below 20 psi, laterals will be turned off until all laterals meet the minimum pressure requirement.

- D. Turning off Laterals - If laterals need to be turned off, they will be turned off in order of pressure, i.e. the lateral with the lowest average pressure will be turned off first.

IV. System Analysis

- A. Lateral flows - Pressure will be measured at the end nozzle of each lateral (and intermediate points if necessary) and an average pressure determined. Nozzle diameter will be measured and nozzles will be counted. The resulting data will be used to estimate flow rate for each lateral.
- B. Mainline check - Each mainline will be inspected to verify that gate valves at the ends of mainlines are closed (if applicable), and to check that water is not diverted out of system.
- C. Leaks - Leaks will be documented and their flow rate estimated.
- D. Total flow - Lateral and leak flows will be totaled. The system flow will be compared to the ultrasonic meter measurement. If the difference between these two measurements is greater than 20 percent, the Collins meter will be used to verify the ultrasonic meter reading.

DRAFT

Protocol for Flow Measurement
Double Diamond/Porter Creek system

I. Flow measurement

A. Location - Flow will be measured in the 10" steel pipe at or near the Jackass Creek crossing.

B. Devices - The Department's Polysonic Time-Flyte Model TF-P ultrasonic flowmeter will be used for measurement. If the ultrasonic meter does not work at this location, or if it provides unreasonable results compared to the field evaluation, a Collins pitot-tube type flowmeter will be used. If an unreasonable discrepancy exists between the two meters, the Collins measurement will preside.

II. Pumps

A. River pumps - The pumps delivering water from the Payette River to the system will be off during the period of flow measurement and system analysis. The gate valve located on the discharge side of this pump shall be closed in order to isolate this pump from the system. After completion of flow measurements and system analysis, the river pump may be turned on, and a measurement made of the Porter Creek water at the location discussed above. if the system owner wishes to do so.

B. 40-Horsepower Booster Pump - Measurements will be made with the 40 horsepower booster pump, located downstream of the Payette/Porter connection, operating and not operating. The gate valve located on the bypass of the booster pump will be closed while the booster is on, and open when the pump is off.

III. Laterals

A. Wheel lines - Up to seven wheel lines may be operated during the exam. Each wheel line has approximately 25 nozzles.

B. Hand lines - Up to two hand lines may be operated during the exam. One is located on the East side of the road, in the NENE corner of Section 26. The second hand line, which is longer than the other laterals, will run parallel to the Payette River and will be connected to the 6" steel mainline.

C. Minimum Lateral Pressure - In an effort to determine system capacity of an adequately operating system, laterals which are operating ineffectively due to low pressure will be turned off. Laterals must maintain an average nozzle discharge pressure of at least 20 psi. Pressure will be measured at the end nozzles using a pitot tube and pressure gauge. The average of these two pressures must be at least 20 psi. If any lateral is found to have average pressures below minimum, laterals will be turned off until all laterals meet

word?
properly?
and intermediate points if necessary

20 psi

Check psi of Tarec

Review for lateral
HASS
Order

the minimum pressure requirement.

OR Lowest psi 1st
easier

- D. Turning off Laterals - If laterals need to be turned off, critical laterals should be turned off first in order to maximize flow. Critical laterals are those which operate at the lowest pressure due to higher relative elevations and/or high friction losses in the mainline/lateral. Laterals should be turned off in the following order (refer to Map "X"): #2, 8, 4, 7, 6, 3, 1, 5, & 9.

IV. System Analysis

- A. Lateral flows - Pressure will be measured at the end nozzle of each lateral (and intermediate points if necessary) and an average pressure computed. *calculated word?*
Nozzle diameter will be measured and nozzles will be counted. The resulting data will allow an estimate of lateral flow rate for each lateral.
- B. Mainline check - Each mainline will be inspected to verify at gate valves at the ends of mainlines are closed (if applicable) and to check that water is not being diverted out of system.

C. Leaks - Noted & estimate of Q

D. Sum Lat Q & Leak Q

E. Compare to measured

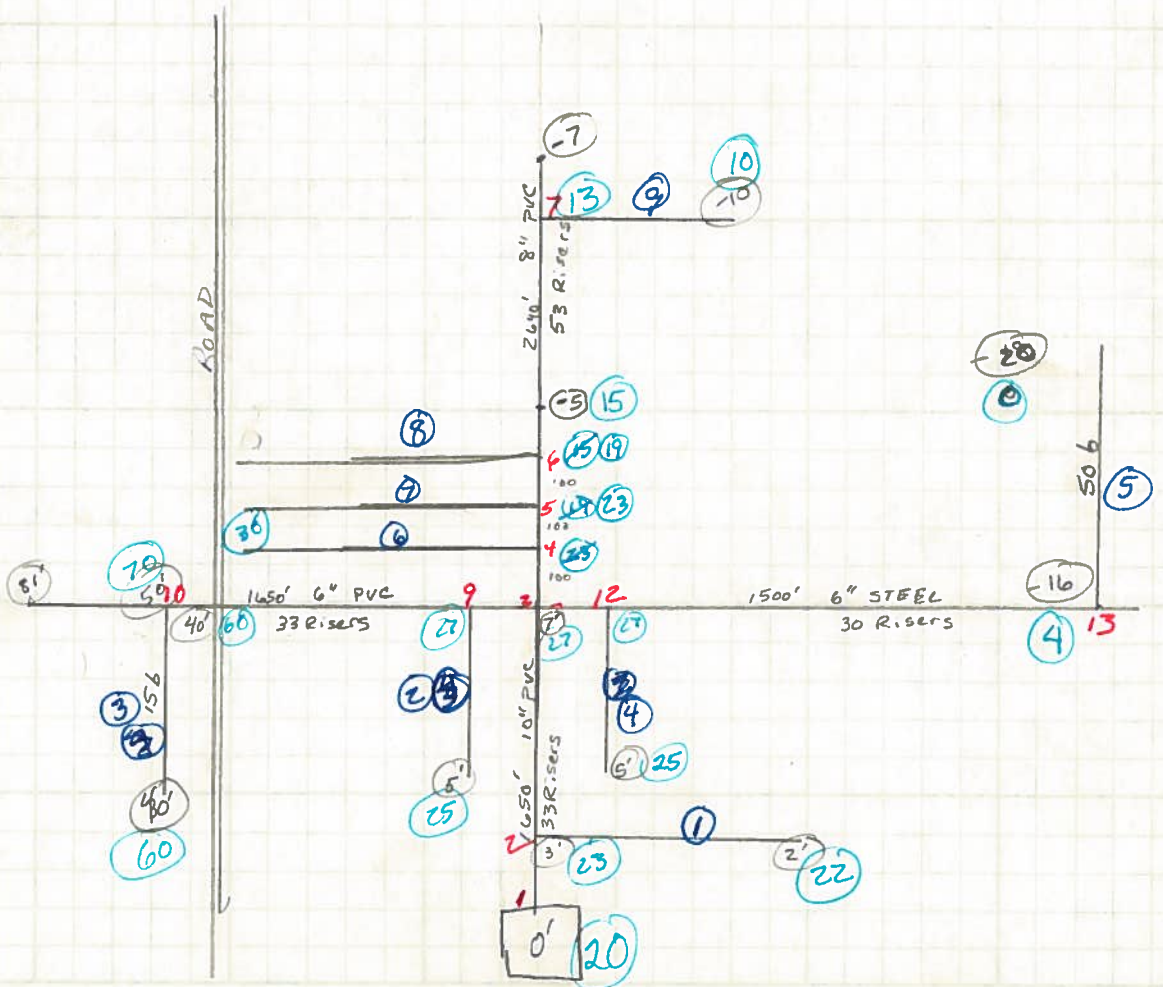
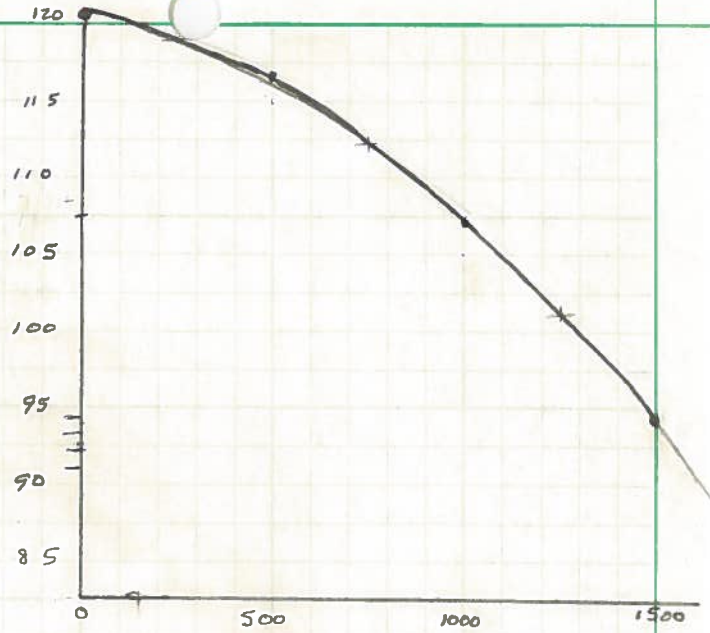
If large discrepancy → use Collins

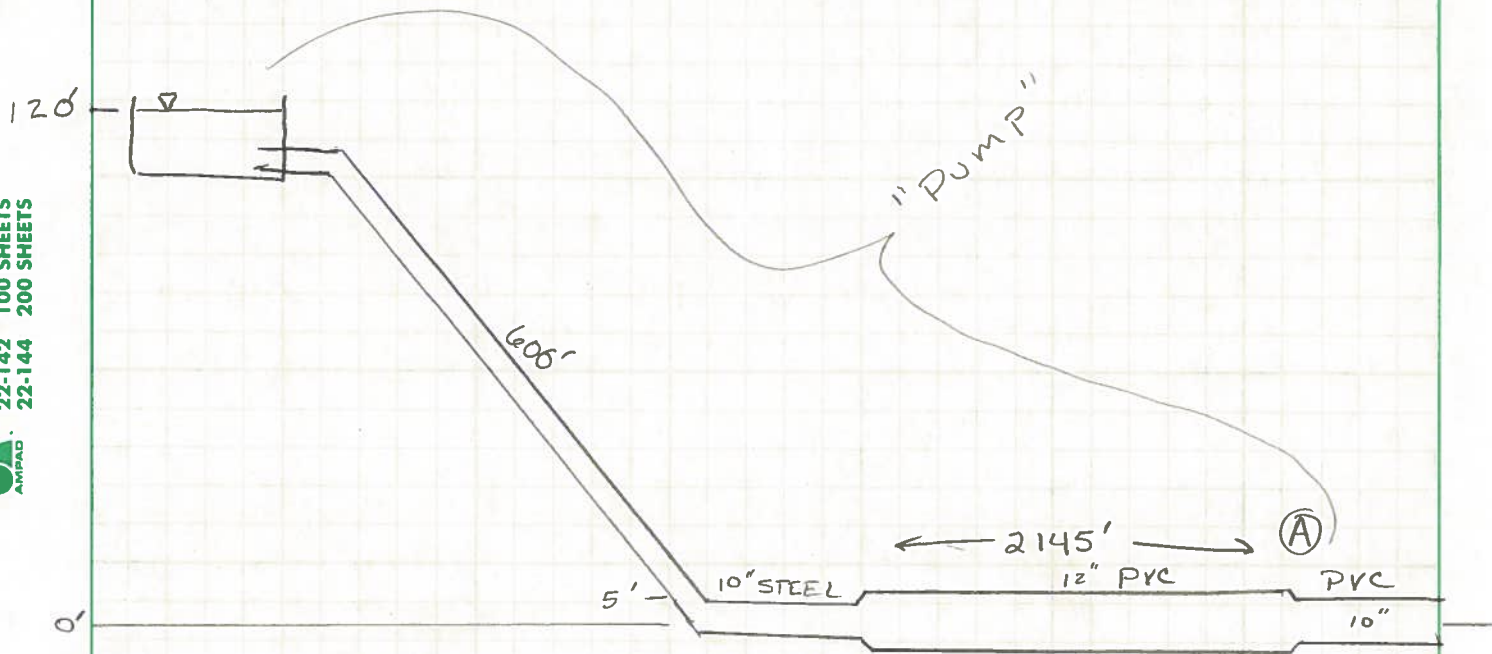
1.8 3
2.1 5
2.6 7
3.3 9
4.2

HASS

" Pump Curve "

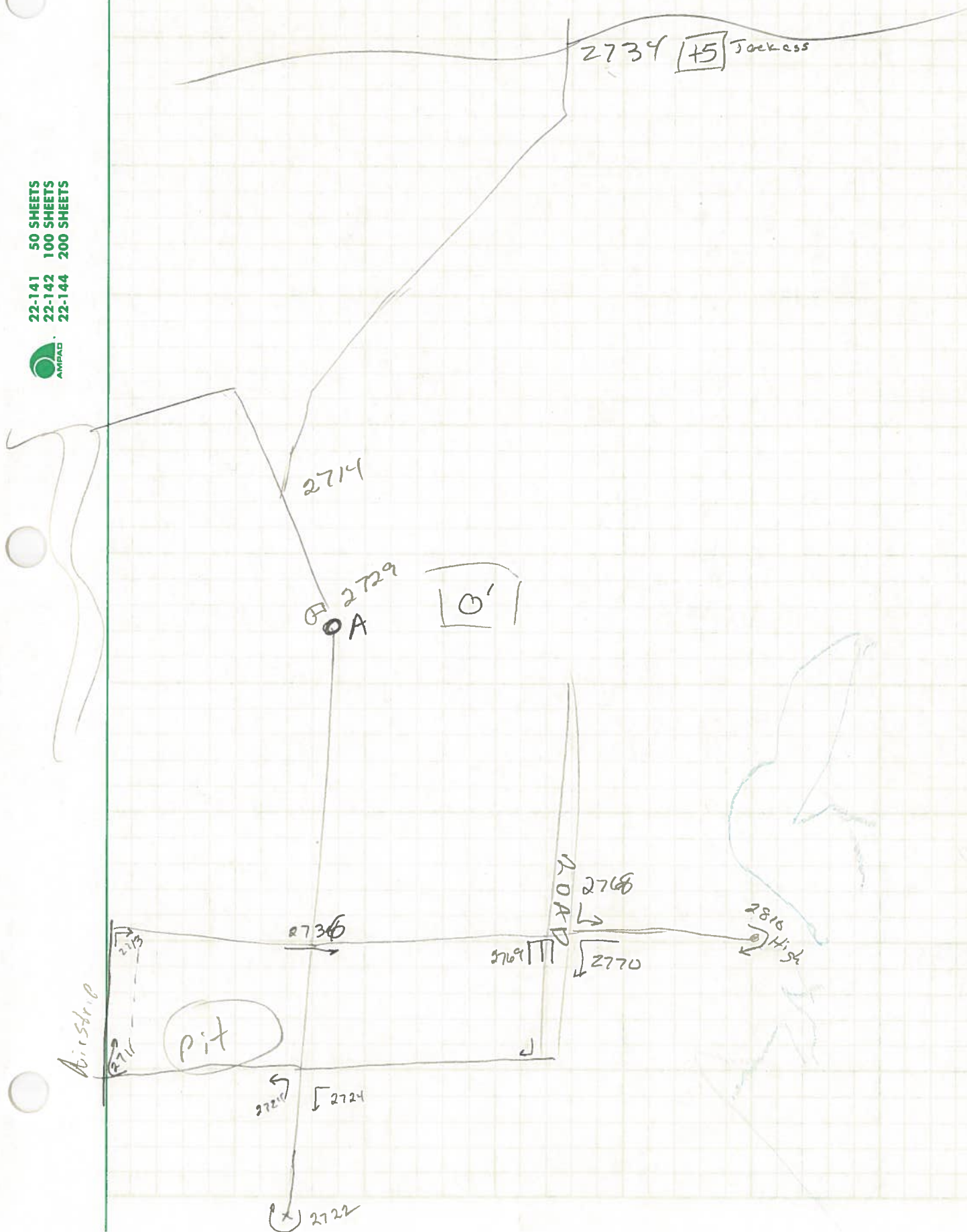
Q	H	Psi
0	120	51.9
250	118.5	51.3
500	116.5	50.4
750	112.3	48.6
1000	107.3	46.5
1250	101.3	43.9
1500	93.9	40.6





LOSSES	AT Q			
	0	500	1000	1500
Entrance <u>25' @ 10"</u>	0	.07	.125	.53
600' 10" ST	0	1.66	5.99	12.66
~~10" → 12" @ 45°~~	0			
2145' 12" PVC	0	<u>1.73</u>	<u>6.44</u>	<u>12.88</u>
	0	3.46	12.7	26.1
TDH @ A =	120	116.5	107.3	93.9

22-141 50 SHEETS
22-142 100 SHEETS
22-144 200 SHEETS

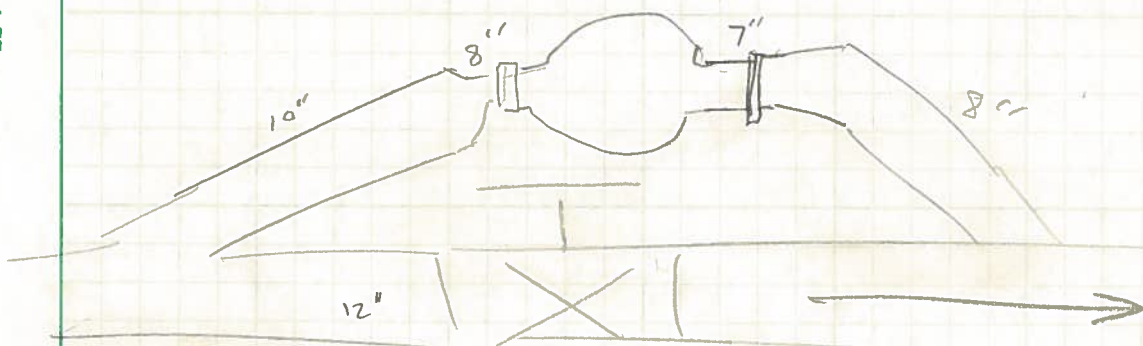




Peerless
6 AD11

SN
77 LI 3734

40HP



Buried

