

(WD)
RECEIVED
JAN 20 2005
DEPARTMENT OF
WATER RESOURCES

January 3, 2005
water user

Robert Bergdahl

Re: Order Requiring Measuring Devices and Headgates in Water District
37, Croy Creek
and Tributaries.

Attention: Steve Burrell PE, Water Distribution Section

Dear Steve,

In sincere desire to comply with the order issued by the Idaho
Department of Water Resources, L. Glen Saxton, P.E., Administrator,
Water Management Division, November.

I, Robert Bergdahl,

208 788-3181

P.O. Box 2355

555 Croy Creek Rd.,

Lots 2A and 2B, Croy Creek Meadows Subdivision, Blaine County, Idaho,

NE 1/4, NE 1/4, Sec. 36, T 2, 2 N/S, R. 17 E/W

Water Right No. 37-0208c,

Priority Date 06/ 01/1880,

submit the following plan for the implementation of measuring devices.

Pursuant to Idaho Code Section 42-101, 42-1204, 42-1206, calling upon
Water District 37 Watermaster to order restoration of the Main Croy
Creek Meadows Ditch, aka "the high line ditch", or "the middle ditch",
and to make the necessary changes to headgates, fences, ponds,
conduits, debris, etc., in order to restore the primary and historic
delivery of deeded water to Lots, 1,2&3, of the original Croy Creek
Meadows Subdivision to it's condition prior to the Falkner disturbance,
thereby establishing a common ditch for all parties of Croy Creek
Meadows Subdivision, at Diversion Point A, Croy Creek (see 1992 aerial
photograph), at GPS point ^{N 43° 27' 00"}_{W 114° 24' 45"}, as claimed during the General Adjudication
process, 10/24/1988, No. A37-0208c, an open ditch with 1/ 8" steel
Rectangular Weir constructed and installed according to accompanied
drawing, and suggested dimensions, University of Idaho Water
Measurement Pamphlet.

Also, Diversion Point B, outlet from Clarke / McCulley irrigation pond
on adjacent Lot 3 Croy Creek Meadows Subdivision (see 2004 aerial
photograph), at GPS point ^{N 43° 28' 01"}_{W 114° 24' 05"}, pursuant to the failure to
restore above common ditch and Diversion Point A by Watermaster, an
open ditch with 1/ 8 " steel Rectangular Weir constructed and
installed according to accompanied drawing, and suggested dimensions,
University of Idaho Water Measurement Pamphlet.

Also, Diversion Point C, Croy Creek (see 1992 aerial photograph), at
GPS point ^{N 43° 28' 00"}_{W 114° 23' 36"}, claimed during the General Adjudication
process on 10/24/1988, No. A37-0028c, an open ditch with 1/ 8 " steel
Rectangular Weir constructed and installed according to accompanied
drawing, and suggested dimensions, University of Idaho Water
Measurement Pamphlet.

SEC 36

T 2 N

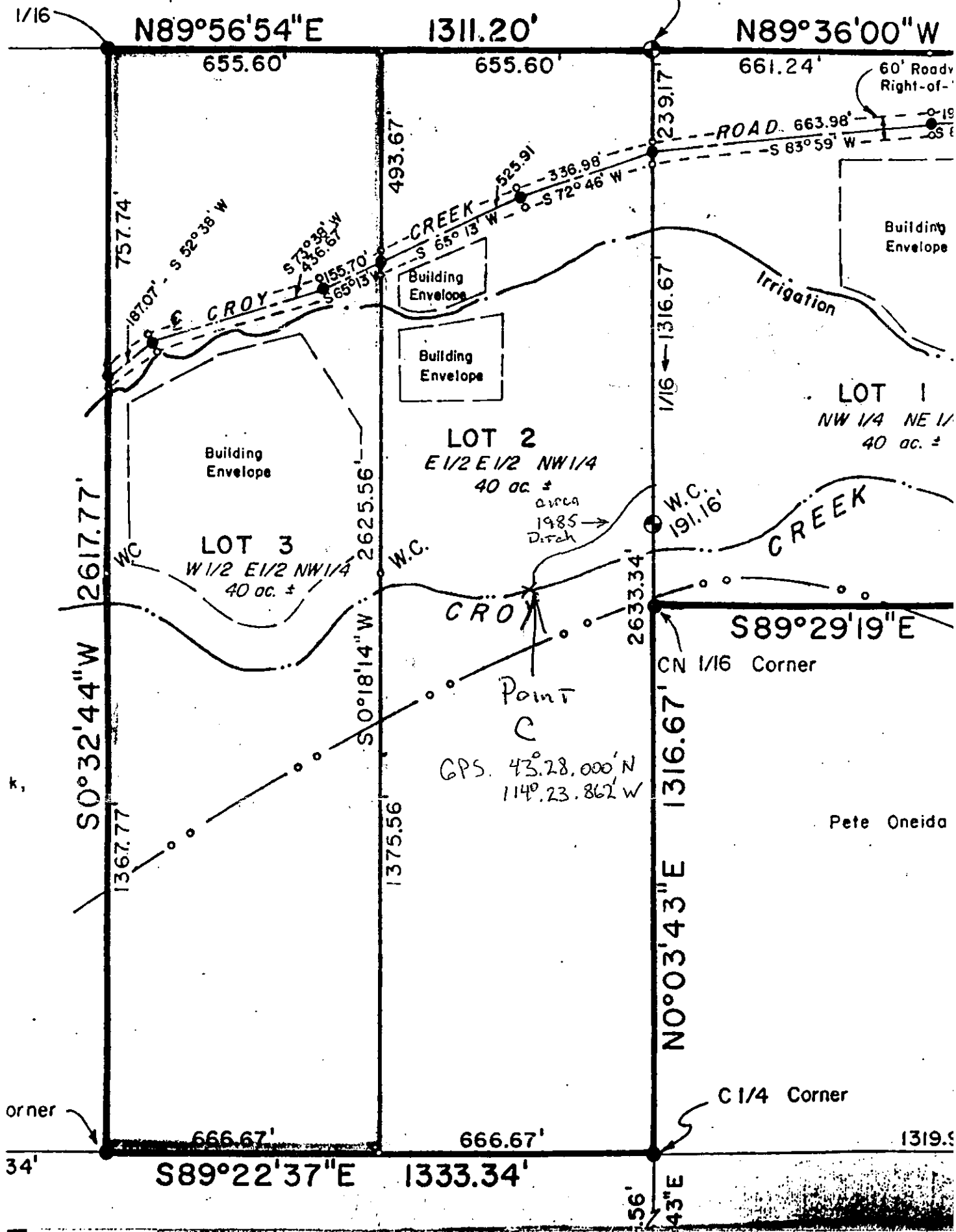
R 17 E

NE NE

CARLA FROM

or these actions shall be paid by the property owner.

N 1/4 Corner
Fd. Rock Mound
Set Alum. Cap





2004

1992

2



1992

Point A

How to Measure

The water surface as it flows over the crest is drawn down as velocity increases. For this reason any measurement at or on the crest is not as accurate as the methods described below.

Drive a 2 x 2-inch flat-topped stake in the ground in the weir upstream from the crest a distance of 4 times the maximum height of the stake to one side in still water out of the way but reachable for taking readings. Use a carpenter's level or an engine level to set the top of the stake at the same height as the crest of the weir. The depth of flow is measured from the top of the stake to surface of the water above it. In Idaho, frost will probably heave stake out of place so that it would have to be re-set and maintain annually to keep the top at the same level as the weir crest.

An observation well (equipped with a staff gauge) next to the head wall and fed by a pipe from the weir pond will refine the reading.

Water depth may be measured on a bulkhead wide enough so gauge can be attached to it in smooth water and be unaffected by drawdown over the crest. The gauge should be at least 1 to 1½ away from the side of the notch. Place the zero on the staff gauge the same height as the crest.

A rectangular weir is the simplest to construct. Its crest is horizontal and its sides perpendicular. Table 3 gives the discharges various widths of rectangular weirs with complete contractions.

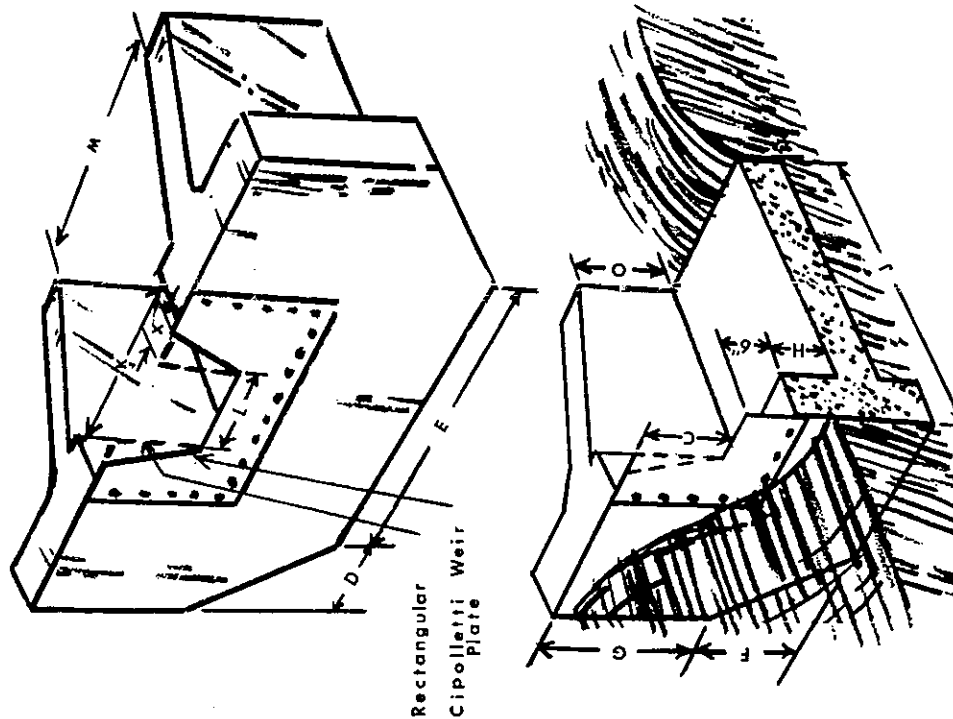
The Cipolletti weir (named after its inventor, Cesare Cipolletti, an Italian engineer) is used most in Idaho because it will measure slightly more water than a rectangular weir with the same length. It is more difficult to construct. The sides diverge outward at a 1 to 4 slope (1 inch horizontally to 4 inches vertically). The charges for various widths of Cipolletti weirs with contractions shown in Table 4.

The V-notch weir is designed to handle small flows accurately. The V-notch angle or V-notch can be laid out very easily using a pentagon's square. Discharge tables for the V-notch with complete contractions are shown in Table 5. Construction details and dimensions for the weirs mentioned above are illustrated in Fig. 2.

Rectangular Submerged Orifice

A rectangular submerged orifice is a sharp-edged rectangular opening in a vertical bulkhead placed in a stream perpendicular to direction of flow, having the upstream and downstream water surface above the orifice as shown in Fig. 3. The cross-sectional area of orifice is small in relation to the stream cross-section. These conditions provide complete contraction of stream flow and the approach velocity of the water becomes negligible.

This device is used on relatively flat ditches where fall is not adequate for a weir. It is simple, easy to construct and accurate. Weirs should be free from floating trash as it will clog very easily.



Crest length L ft.	Recommended range of measurement in C.F.S. Rectangular Cipolletti	Symbol dimensions											
		C=H ft-in	D ft-in	E ft-in	F ft-in	G ft-in	J ft-in	K ft-in	M ft-in	N ft-in	O ft-in	X ft-in	
For Rectangular and Cipolletti Weirs													
1.0	.2 to .6	8	0	5-8	0	2-7	3	2	2-6	10	1-4	2	2
1.5	.3 to 1.7	1	1-4	4-6	1-4	2	3-6	2-6	3	10	1-4	3	3
2.0	.4 to 3.5	1-2	2	5	2	2	4	3	3-6	1	1-6	3½	3
3.0*	.6 to 9.5	1-6	2-6	7	2-6	2-6	4-6	4-4	5	1-6	2	4½	4
4.0*	.8 to 19.5	2	3-10	8-4	3-10	2-10	5	5-6	6	2	2-6	6	6
For 90° V-Notch Weirs													
2.0	.02 to 1.5	1	1-6	5	1-6	2-8	3-6	2-6	3	10	1-4		
3.0*	.02 to 4.0	1-6	2-2	6-2	2-2	3-4	4	3-6	4	1	1-6		

*Use 6" x 6" No. 12 wire mesh reinforcing or equivalent.

Fig. 2. Dimensions and capacities for Rectangular, Cipolletti and 90-degree V-notch weirs.

IDAHO DEPARTMENT OF WATER RESOURCES

Adjudication Claim Report 37-208C

WATER RIGHT NUMBER: 37-208C

Owner Type Name and Address
 Current Owner ROBERT BERGDAHL
 BOX 2355
 HAILEY, ID 83333
 (208)788-3181

Priority Date: 06/01/1880

Basis: Decreed

Status: Active

Source Tributary
 CROY CREEK BIG WOOD RIVER

<u>Beneficial Use</u>	<u>From</u> <u>To</u>	<u>Diversion Rate</u>	<u>Annual Volume</u>
IRRIGATION	4/01 to 11/01	0.400 CFS	
	<u>Total Diversion:</u>	0.400 CFS	

Location of Point(s) of Diversion

CROY CREEK NE1/4NE1/4 Sec. 36, Twp 02N, Rge 17E, B.M.
 BLAINE County

Place of Use

IRRIGATION

Twp	Rge	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
02N	17E	36	20.0																20.0

Total Acres: 20

Conditions of Approval:Remarks:

- General SPLIT FROM 37-00208A 20 MINERS INCHES FOR 20 AC. IRR.

Comments:Dates and Other Information:

IDAHO DEPARTMENT OF WATER RESOURCES

Adjudication Claim Report 37-208C

Claim Received Date: 10/24/1988

Enlargement Use Priority Date:

Enlargement Statute Priority Date:

State or Federal: S

Owner Name Connector:

Water District Number:

Generic Max Rate Per Acre:

Generic Max Volume Per Acre:

Swan Falls Trust or Nontrust:

Swan Falls Dismissed:

DLE Act Number:

Carey Act Number:

Mitigation Plan: False

Combined Use Limits:Element Reviewed/Verified Dates:

<u>Element</u>	<u>Last Reviewed Date</u>	<u>Reviewer</u>	<u>Last Verified Date</u>	<u>Verifier</u>	<u>Status</u>
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Verification Log:

<u>Element</u>	<u>Date Time Stamp</u>	<u>Reviewer</u>	<u>Log text</u>
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