



Streamflow Statistics Report

Date: Wed Nov 10 2004 10:53:41
Site Location: Idaho
Latitude: 47.2345
Longitude: -116.6237
Drainage Area: 3.09 mi²

- ① Note that ^{regression} estimate is on low end for watershed size - but still valid
- ② Actual measured flow on .48 cfs on Oct 28th

Flow Cross-Section CONSIDERED "FAIR"

by IDWR EQUIP
WATER RESOURCE
CAL BEARDSLEE

Peak Flow Basin Characteristics			
100% Peak Flow Region 2 (3.09 mi ²)			
Parameter	Value	Min	Max
Drainage Area (mi ²)	3.09	2	1913.1
Mean Basin Elevation (ft)	3450	2966.3	7064
Mean Annual Precipitation (in)	32.6	20	60.87

Low Flow Basin Characteristics			
100% Low Flow Region 2 (3.09 mi ²)			
Parameter	Value	Min	Max
Drainage Area (mi ²)	3.09	3	1913.1
Relief (ft)	2550	1643.9	7789.6
Mean Annual Precipitation (in)	32.6	29.6	60.9
Percent Forest (percent)	90	50.3	95.1
Mean Basin Elevation (ft)	3450 (below min value 3465.5)	3465.5	6649.7

Warning: Some parameters are outside the suggested range. Estimates will be extrapolations with unknown errors.

Streamflow Statistics					
Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
Peak-Flow Statistics					
Q1.5	41.6	54		17.5	98.9
Q2	53.1	53		22.6	124
Q2.33	58.4	53		25	136
Q5	86.1	53		36.6	202
Q10	113	54		47.2	271
Q25	152	56		61.4	377
Q50	183	58		71.8	466

Q100	218	60	82.9	571
Q200	248	62	91.4	671
Q500	302	65	107	854

Streamflow Statistics

Statistic	Flow (ft ³ /s)	Standard Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum

Mean Annual Flow Statistics

Qa	3.68				
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January Flow-Duration Statistics

Jan_Q20	4.31				
Jan_Q50	1.72				
Jan_Q80	0.83				

February Flow-Duration Statistics

Feb_Q20	7.39				
Feb_Q50	3.27				
Feb_Q80	1.14				

March Flow-Duration Statistics

Mar_Q20	9.99				
Mar_Q50	4.54				
Mar_Q80	2.51				

April Flow-Duration Statistics

Apr_Q20	14.5				
Apr_Q50	7.75				
Apr_Q80	4.71				

May Flow-Duration Statistics

May_Q20	9.38				
May_Q50	4.78				
May_Q80	2.39				

June Flow-Duration Statistics

Jun_Q20	5.34				
Jun_Q50	2.98				
Jun_Q80	1.67				

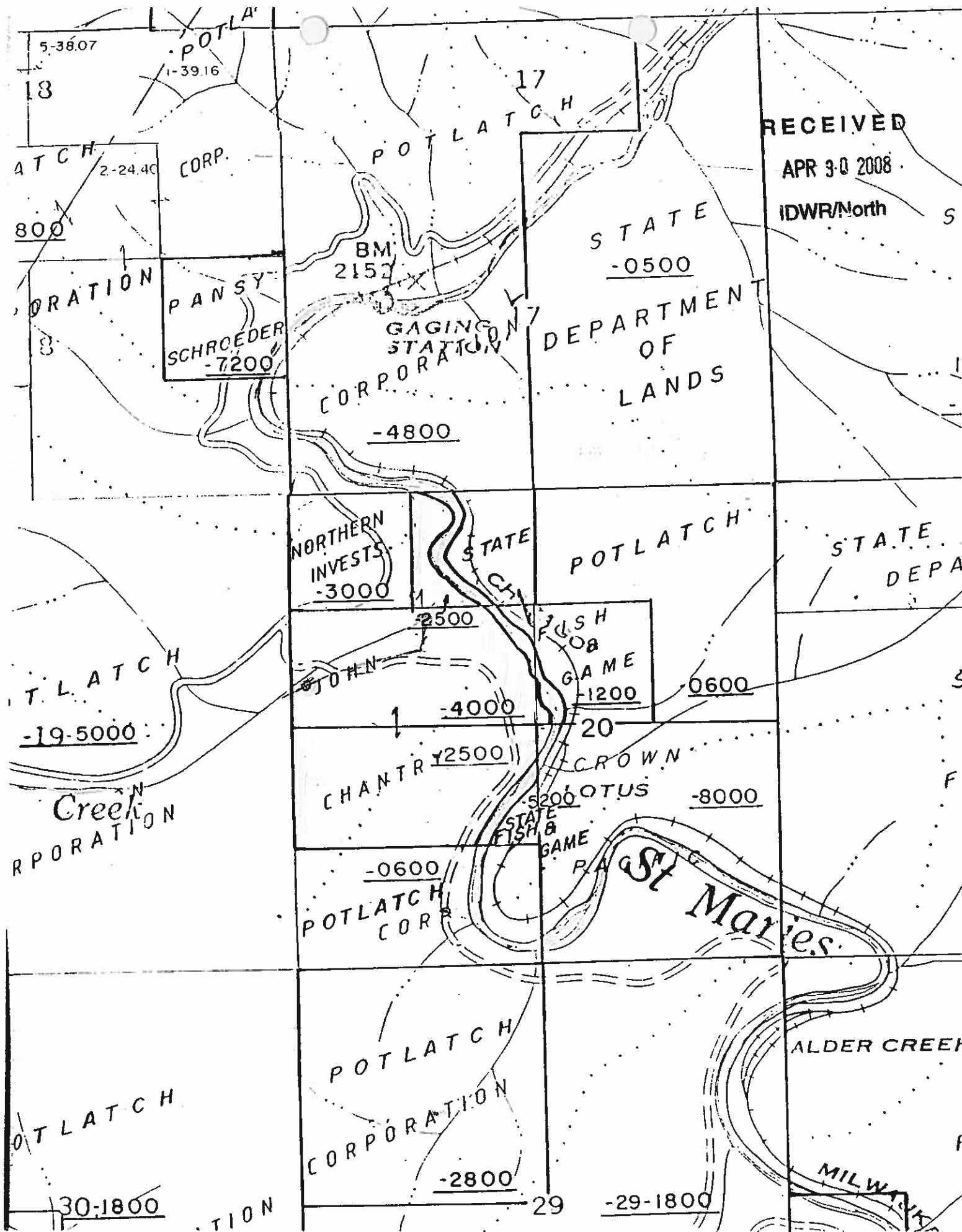
July Flow-Duration Statistics

Jul_Q20	2.15				
Jul_Q50	1.45				
Jul_Q80	1				

August Flow-Duration Statistics

Aug_Q20	1.02				
Aug_Q50	0.78				

Aug_Q80	0.57				
September Flow-Duration Statistics					
Sep_Q20	0.97				
Sep_Q50	0.72				
Sep_Q80	0.55				
October Flow-Duration Statistics					
Oct_Q20	1.25				
Oct_Q50	1				
Oct_Q80	0.74				
November Flow-Duration Statistics					
Nov_Q20	2				
Nov_Q50	1.17				
Nov_Q80	0.82				
December Flow-Duration Statistics					
Dec_Q20	2.74				
Dec_Q50	1.33				
Dec_Q80	0.77				



RECEIVED
APR 30 2008
IDWR/North

STATE
-0500
DEPARTMENT
OF
LANDS

NORTHERN
INVESTS
-3000

POTLATCH

STATE
DEPA

POTLATCH
-19-5000

Creek
RPORATION

JOHN
-2500
-4000

FISH
GAME
-1200

-0600

CHANDLER
-2500

CROWN
LOTUS
-8000

POTLATCH
CORP
-0600

STATE
FISH
GAME

St. Mary's

POTLATCH
CORPORATION
-2800

ALDER CREEK

MILWAUKEE

POTLATCH
-30-1800

-29-1800

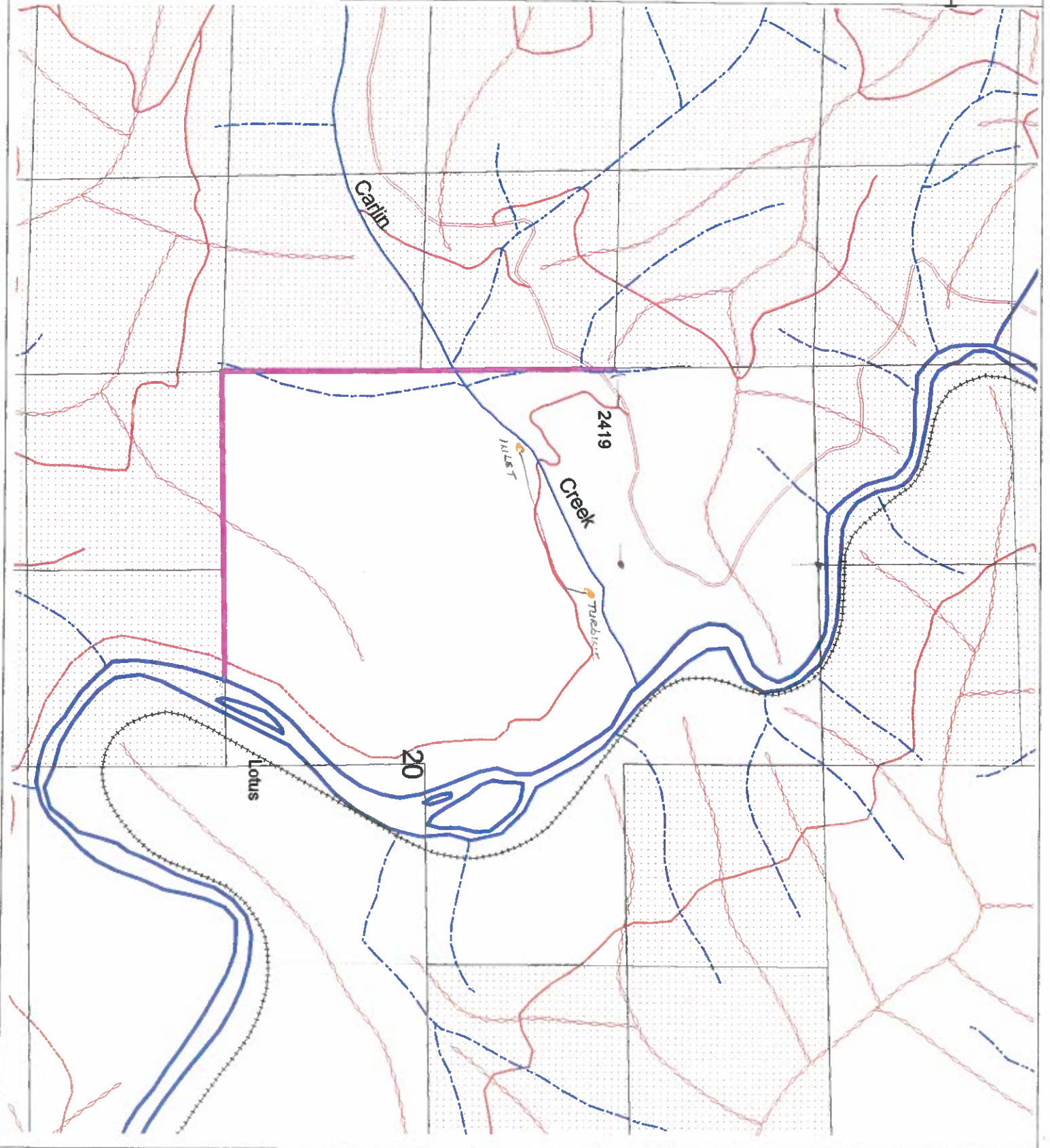
EXHIBIT "A"

TOWNSHIP 45 NORTH
RANGE 2 WEST

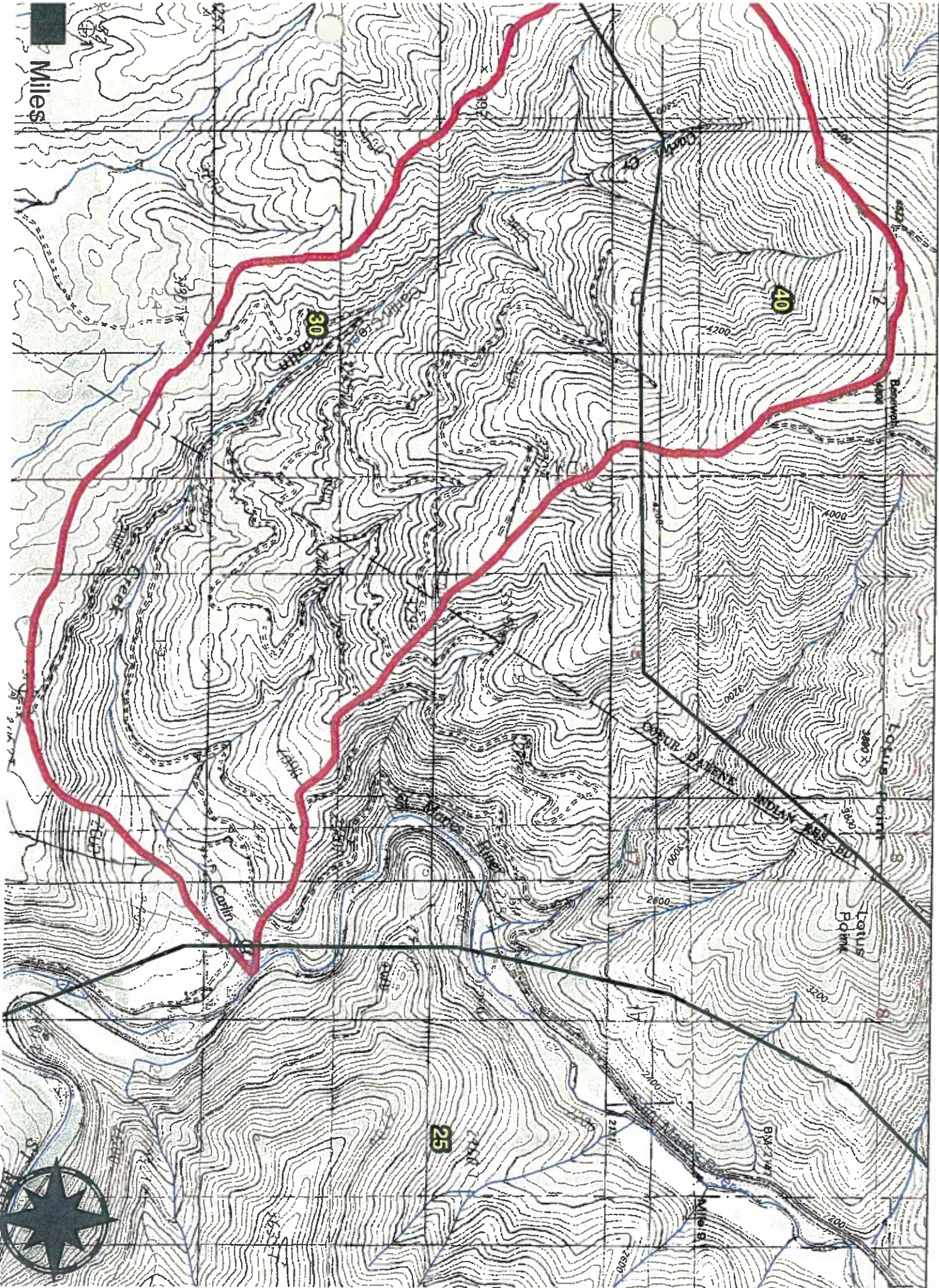
Boundary

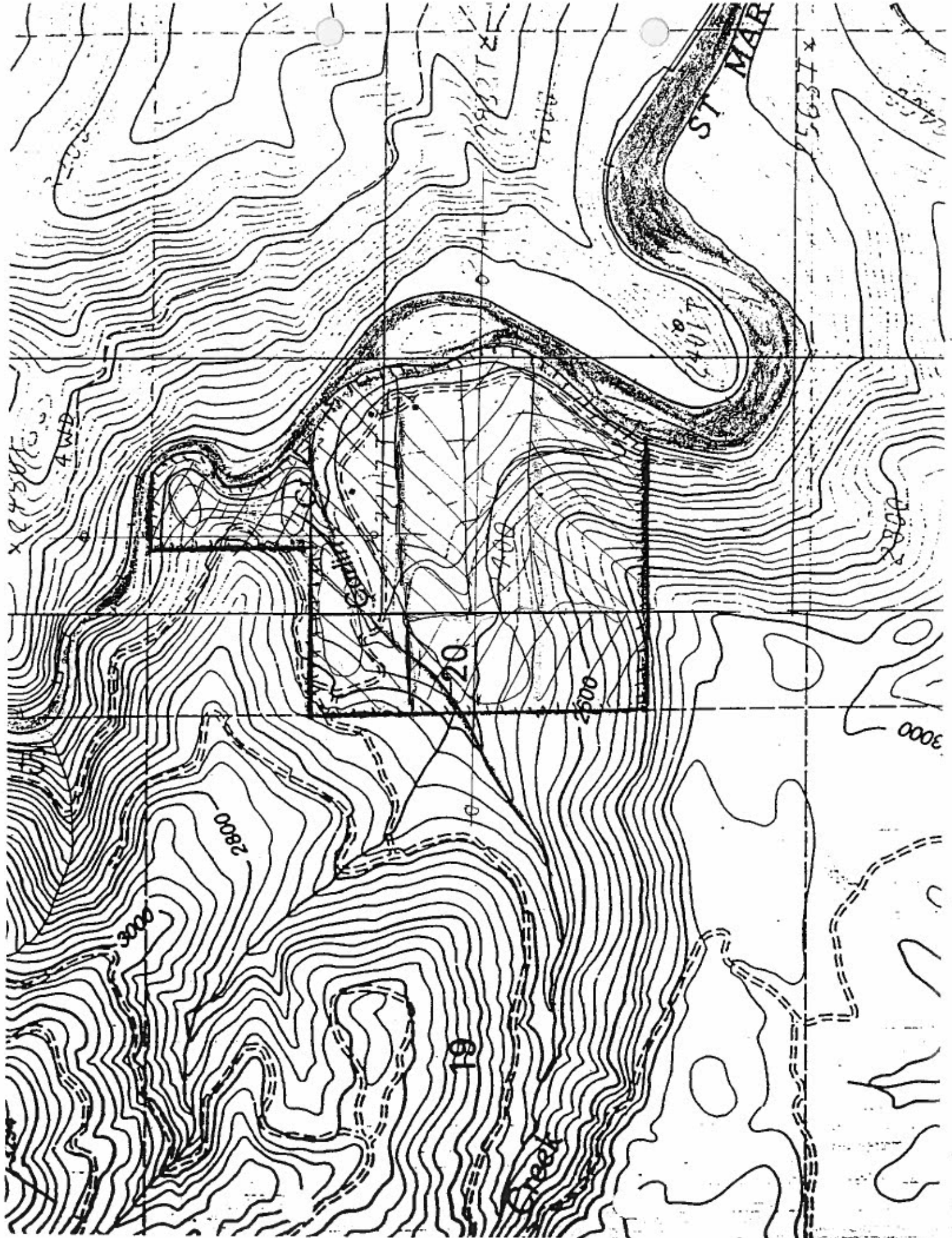
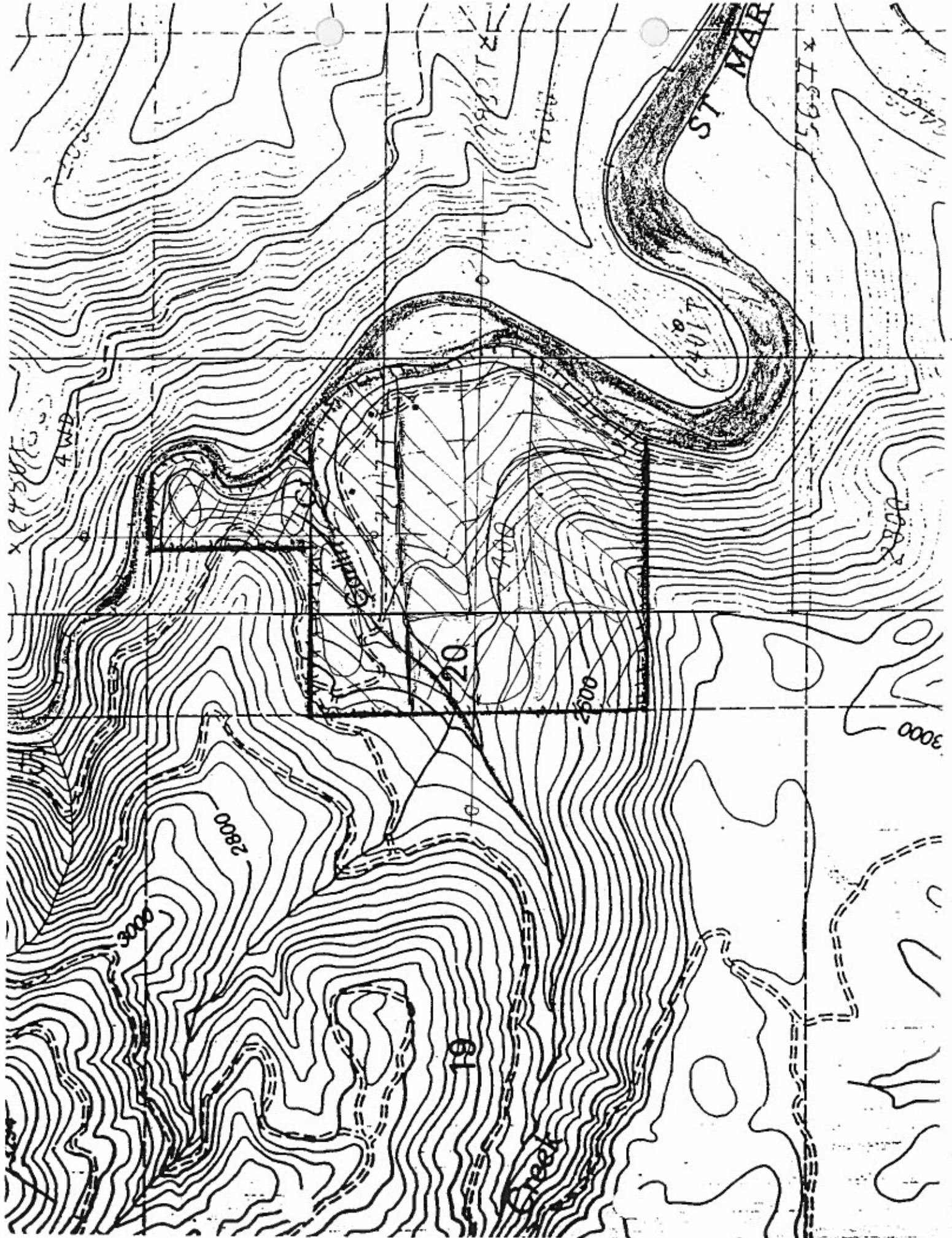
Legend

- Road
 - Paved
 - Primary
 - Secondary
 - Primitive
 - Paper
- Streams&Ridges
 - Ridge
 - River
 - Lake/Pond
 - MajorStream
 - MinorStream
- Ownership
 - 0
 - PotlatchFee
 - PotlatchMtlw
 - USFS
 - IDL
 - BLM
 - BIA
 - COE
 - DAW
 - PlumCreek
 - Bennett
 - Private
 - Water



Carl'n Creek Watershed - 1928 Acres





ENC 1
OVERVIEW

INLET

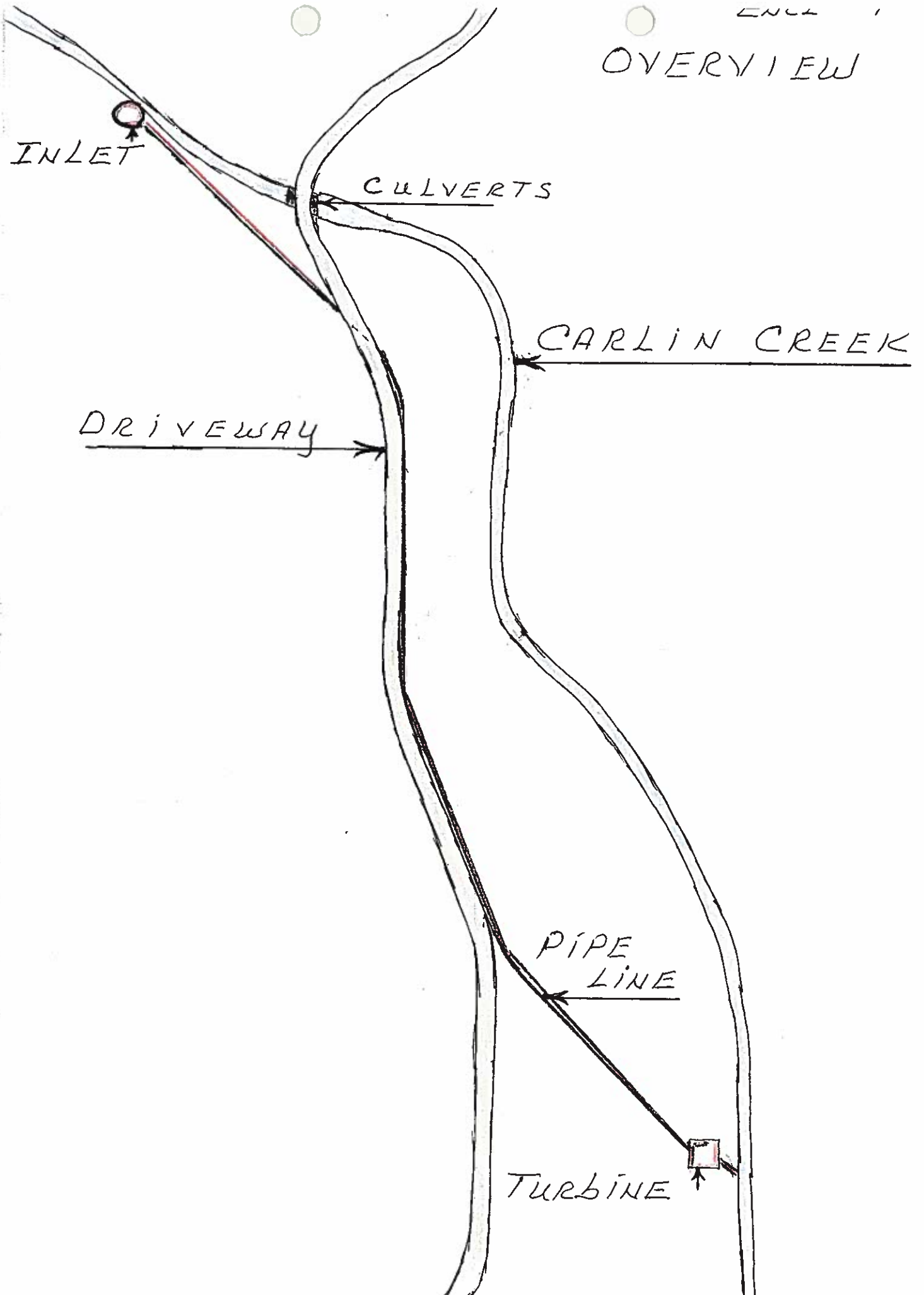
CULVERTS

CARLIN CREEK

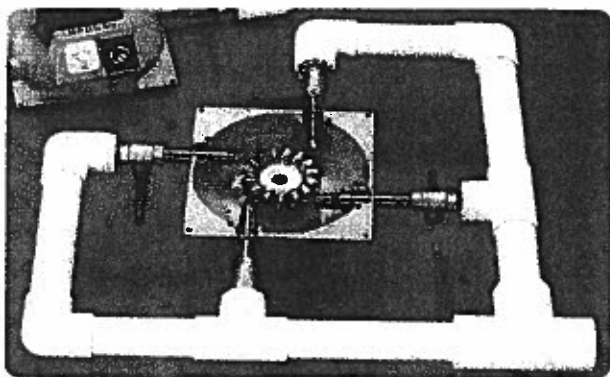
DRIVEWAY

PIPE
LINE

TURBINE



Harris Hydroelectric Systems



The Harris system is an efficient, durable battery charging pelton turbine, utilizing a cast bronze pelton wheel in a cast aluminum housing. It has been produced (and continuously improved) for sixteen years by Don Harris of Santa Cruz, California, in a shop powered by one of his turbines. Sold and installed worldwide, it is especially well suited to produce usable household power from springs and creeks that are too small to sustain the same level of useful power from a conventional AC generating system. Particularly appropriate for high head, low flow applications, it will produce power at heads of 20 to 600 feet and flows from 4 to 250 gallons per minute. Turbines with one to four nozzles are available. Nozzle sizes are from 3/16" to 1/2". Three nozzle sizes are supplied per installed nozzle.

Harris High Output turbines utilize Ford Motorcraft alternators to keep the price reasonable and assure a plentiful supply of spare parts. The new Permanent Magnet (PM) alternator produces more power and is brushless for reduced maintenance. The components in your turbine will be chosen to optimize the head and flow conditions at your site. Call for details and specs.

Harris Turbines - Price List

Single nozzle high output turbine (H-001)	\$1275
Two nozzle high output turbine (H-002)	\$1350
Four nozzle high output turbine (H-003)	\$1425
48 volt, add (H-011) (no extra charge on PM)	\$225
Permanent magnet (PM) alternator, add (H-014)	\$810
Extra nozzles, each (H-007)	\$6
4" bronze pelton wheel, threaded (H-008)	\$330
Cooling fan kit (H-O over 30 amps) (H-012)	\$75

Maximum Efficient Flow (gpm) at Various Heads (ft)

# of Nozzles	Head (ft)						
	25	50	75	100	200	300	600
1	17	25	30	35	50	60	85
2	35	50	60	70	100	120	170
4	70	100	120	140	200	-	-

Harris Hydro: Maximum Wattage at Various Voltages

12 volt	24 volt	48 volt
750	1500	2500

Harris Hydroelectric Generators Output in Watts

Feet of net head						
gpm	25	50	75	100	200	300
3					45 30	80 70
6		20	30 25	45 35	130 100	180 150
10	20	50 35	80 60	105 80	225 180	350 275
15	35 20	85 60	115 95	170 130	350 260	520 400
20	65 30	120 80	170 130	240 200	480 400	700 550
30	100 50	175 125	270 210	360 290	675 580	1000 850
50	150 115	310 230	450 350	620 500	1100 950	1500 1400
100	300 200	560 425	850 625	1100 850	1500 1500	
200		725 520	1050 850	1300 1300		

Note: top line is for PM generator, lower line is for high-output alternator

Energy Systems and Design Turbines

We also offer E. S. & D. Turbines from Canada. These turbines use a "turgo" wheel instead of a "Pelton" wheel. They will operate on heads from 4 to 400 ft., with flows of 5 to 300 gallons per minute. Power can be generated at 12, 24, 48 or higher, up to 120 volts DC, or 100 volt three-phase. Call us for more info on E. S. & D. Hydro Systems.

HiPower Hydroelectric Systems for Long Transmission Distances

The new HiPower Hydro system is for remote sites where water is far from power needs (over a mile if necessary), or where greater power is required. The system includes a heavy-duty brushless, 3-phase alternator, 2 or 4 nozzle cast housing, bronze pelton wheel (up to 200 gpm) or turgo wheel (up to 600 gpm), step-down transformer, and rectifier. The unit can produce up to 440 volts AC which is stepped down to charging voltage at the batteries. Outputs from 500 to 3000 watts and four different size models are available. Power can be sent to a single house or shared with multiple residences. Call us for more information on HiPower Hydroelectric Systems.