MINUTES OF THE MEETING OF THE APPROPRIATIONS COMMITTEE
March 23, 1983

The Appropriations Committee met at 8:00 a.m. on March 23, 1983 in the Old Highway Building Auditorium, with Chairman Francis Bardanouve presiding and all members were present except Winslow, Menehan, Shontz, and Stobie. Richard Gilbert, Legislative Fiscal Analyst, was also present. HOUSE BILLS 885, 897, 108, 726 and 902 were heard, EXECUTIVE ACTION was taken on HOUSE BILL 902.

Tape 8: Track 3:000)

HOUSE BILL 885: "A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROVE THE ISSUANCE OF STATE OF MONTANA COAL SEVERANCE TAX BONDS TO FINANCE THE DEVELOPMENT OF CERTAIN STATE HYDROELECTRIC PROJECTS, THE REHABILITATION AND REPAIR OF CERTAIN STATE PROJECTS, AND LOANS TO POLITICAL SUBDIVISIONS AND LOCAL GOVERNMENTS FOR CERTAIN APPROVED WATER DEVELOPMENT PROJECTS; TO APPROPRIATE COAL SEVERANCE TAX TRUST PROCEEDS FOR DEBT SERVICE; TO AUTHORIZE THE CREATION OF A STATE DEBT; TO ALLOW THE PRIVATE SALE OF MUNICIPAL REVENUE BONDS TO THE STATE OF MONTANA; AMENDING SECTION 7-7-4433, MCA; AND PROVIDING AN IMMEDIATE EFFECTIVE DATE."

Rep. Glenn JACOBSEN introduced his bill.

(Exhibit 1) Leo BERRY, Director of the Department of Natural Resources and Conservation explained the projects listed in this bill have different capabilities in terms of payments. Some felt they could handle a 6% or 7% interest rate, others felt they could not handle any interest rate and asked for 0% loans. This meant the state would be subsidizing the difference between the rate given to the project and whatever the bonds were sold for. The sponsors of this bill agreed that all of the projects listed could afford the 2% interest rate. The state would be subsidizing the difference between what the bonds are sold for, and the 2%.

Representative BARDANOUVE stated the intent of these loans, when funds were approved two years ago, was not to subsidize these projects. He questioned the millions of dollars in cost to subsidize projects that should be paying for themselves. Mr. BERRY referred to EXHIBIT #1, Page 5-6 which shows the cost of subsidizing the interest rate on the projects listed in the bill now, and not including any amendments that may be introduced today. At the 2% interest rate, the annual cost to the Trust Fund on these projects would be $125,541.

Mr. BERRY explained originally the bonds were guaranteed by the flow of money going into the Trust Fund. Last session, many Legislators were concerned the Trust Fund would lose money if these projects were subsidized. The Senate amended SB-409 to place 15% of the interest from permanent trust back into the permanent trust, to replace any lost revenues. To subsidize these projects at 2% will not mean any loss, because the permanent trust is being made whole, under the Water Development Program.

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Mr. BERRY stated information on the projects and their ranking is available in the "Water Development Program Evaluations and Recommendations Book" (orange book available at DNRC).

Rep. BARDANOUVE stated this bill needs 75% vote to pass, and this is very difficult to get. This will be a policy decision by the Legislature, whether they will subsidize these projects, and for what amount.

Amendments
The following amendments were introduced during the public hearing, with testimony/support as listed on the Visitor's Register at the end of these minutes: (Exhibit 2)

Belgrade Water System Improvement (Page 1)
Whitefish County Water and Sewer District (Page 2)
Columbia Falls Water and Sewer Line Improvement (Page 3)
Libby Sewer System Improvement (Page 4)
Shelby Sewer System Improvement (Page 5)
Conrad Water System Improvement (Page 6)
Bigfork Sewer System Improvement (Page 7)
Noxon Rural Water System Improvement (Page 8)
Power-Teton County Sewer System Improvements (Page 9)
Sage Creek Water District (Page 10)
50% of Excess Revenue from any Hydropower Facility to be Paid to Water Users' Association (Page 11)
Bond Revenue shall Include all Relocation and Reconstruction Costs (Page 12)

Proponents
All proponents are listed at the end of these minutes on the Visitor's Register, in the order they appeared. The following exhibits are also attached:

Exhibit 3 - Geraldine County Water Board
Exhibit 4 - Roosevelt County Rural Water District
Exhibit 5 - Women Involved in Farm Economics
Exhibit 6 - Ravalli County Farm Bureau
Exhibit 7 - Lower Birch Creek Watershed Project
Exhibit 8 - Threemile Farm Irrigation Measure
Exhibit 9 - Sage Creek Water Association

Opponents
None

In closing, Representative JACOBSEN emphasized the need for the low 2% interest rate and asked favorable approval of HB-885.

The hearing closed at 9:45.

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(Tape 8: Track 3:382)
HOUSE BILL 897: "A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROPRIATE MONEY TO THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION FOR LOANS AND GRANTS UNDER THE WATER DEVELOPMENT PROGRAM."

Senator Don OCHSNER introduced the bill for sponsor Rep. NEUMAN.

Leo BERRY, Director of DNRC, explained last session under the Water Development Program, the Renewable Resource Development account was split in half. 30% of the interest was taken from the Renewable Indemnity Trust Account and was placed in the Water Development Earmarked Account, along with the revenues from the existing state-owned projects. HB-897 includes both the projects recommended under the Water Development Account and the Renewable Resource Development Account. The criteria for the two programs were different. Although some projects qualified under both programs, they may have been ranked differently because of this criteria. However, if a project was funded under one program, they were not eligible for funds under the other program - no double funding.

Mr. BERRY pointed out this is the money being looked at for funding of the Water Courts. If the $1.1 million is taken for the Courts, projects would be affected. Instead of funding 42 projects, only 15 could be funded. Current funds available under the Water Development Account are a little over $1.3 million. Based on this projection, 15 projects activities on a prioritized Water Development list of projects (recommended by DNRC and approved by the Water Development Advisory Committee) would receive grants.

Mr. BERRY stated the Legislature also allocated .625% of the Coal Severance Tax Revenues for the Renewable Resource Development Program. In that account, it is estimated to be $1 million. The law currently provides this money be split; 15% for Timber Stand Improvement; 40% for Water Development; 15% for Agricultural land; 10% to Conservation Districts; and 20% for other projects.

Mr. BERRY introduced the "Renewable Resource Development Program 1982 Project Evaluation and Recommendations" (yellow book - available at DNRC). This book lists the projects by the above categories. Under this program, 22 projects would receive funding. 10 projects would be Water Development; 12 would fall into the other projects.

Mr. BERRY stated projects sponsored by private individuals are not eligible for funding under the RRD (Renewable Resource Development) account. Private individuals are eligible under the Water Development Account. Private projects are not listed in the bill because of violation of the Constitution, as it would

be special interest legislation. The Legislature may authorize funds to DNRC for private projects, but may not make a direct appropriation to an individual. There is $296,000 listed for private projects.

Mr. BERRY stated DNRC received $27 million of requests. He estimates $2.3 million available. The large projects were shifted to HB-885, which was just heard (bonding program). The rest of the projects in HB-897 will be funded through grants and loans. These loans will be funded through a small bonding program. SB-409 last session set up two bonding mechanisms: one guaranteed by the permanent coal trust which authorized up to $250 million of bonds; and the other bonding program authorized general obligation bonds guaranteed by .625% of the Coal Tax. (The Board of Natural Resources may issue up to $5 million worth of bonds.)

Mr. BERRY stated the projects listed in HB-894 are proposed to be funded out of the $5 million bonding program through the Board of Natural Resources. The projects listed in HB-885 are through the bonds from the permanent coal trust.

(Tape 8: Track 3:461)

Proponents

All proponents are listed at the end of these minutes on the Visitor's Register, in the order they appeared. The following exhibits are also attached:

Exhibit 10 - Resource Indemnity Trust Fund (breakdown)
Exhibit 11 - Amendment by Senator ECK - Montana Water Resources Data Management System - $115,000
Exhibit 12 - Amendment by Senator ECK - Data Management System
Exhibit 13 - Great Falls Cross Country Ski Club
Exhibit 14 - Geraldine Saline Seep Project
Exhibit 15 - Triangle Conservation District
Exhibit 16 - Antelope Water Analysis Report
Exhibit 17 - Judith Gap Request
Exhibit 18 - Dr. Benjamin B. Stout, University of Montana
Exhibit 19 - Dr. Donald Jenni, University of Montana
Exhibit 20 - Lower Birch Creek Watershed Project

Opponents

None

Representative NEUMAN closed his bill.

The hearing closed at 11:00 a.m.

(Tape 8: Track 3:977)

HOUSE BILL 108: "A BILL FOR AN ACT ENTITLED: " AN ACT TO ALLOCATE TO THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION 5 PERCENT OF THE INTEREST FROM THE RESOURCE INDEMNITY TRUST ACCOUNT

Minutes of the Meeting of the Appropriations Committee
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FOR USE BY THE CASCADE COUNTY CONSERVATION DISTRICT TO SHARE THE COST OF A 7-YEAR FLOOD CONTROL AND IRRIGATION IMPROVEMENT PROGRAM FOR THE MUDDY CREEK SPECIAL WATER PROJECT AREA; AND PROVIDING AN EFFECTIVE DATE."

Representative MANUEL introduced his bill.

Proponents
JOHN ANDREWS, representing the Muddy Creek Irrigation District. Mr. Andrews stated this is the worst erosion problem in the state at this time. RIT is the only funds available for a project like this. He stated long range planning funding is necessary to assure money is available for the next seven years in order to complete the project. He presented Exhibit 21, which explains the bill.

K.M. KELLY, representing the Montana Water Development Association, appeared as a proponent.

ROY KONEN, farmer from Fairfield, supports the bill. (Exhibit 22.)

LEO BERRY, Director of DNRC, referred to Exhibit 23. Muddy Creek is an additional request for use of RIT funds, and Exhibit 22 shows the breakdown.

The Visitor's Register shows the other proponents, who did not speak.

Opponents
None.

Discussion
Representative BARDANOUVE asked Mr. ANDREWS if he was asking for funding for the next seven years. Mr. ANDREWS replied yes, they needed the seven year committment because of the size of the project. Representative BARDANOUVE asked about the Constitutional provision allowing the Legislature to appropriate money for only two years. Mr. ANDREWS replied that DNRC, which this money would be funneled through, has 30% RIT earmarked. He is asking 5% more with a seven-year allocation, and to include a $300,000 cap. Mr. ANDREWS said this is the same thing DNRC is doing now and does not feel this is an unreasonable request.

Representative MANUEL pointed out that HB-108 would allote 5% more RIT money to DNRC, in addition to the 30% they already receive. The 5% would be earmarked and go to the Muddy Creek Project.

Mr. BERRY stated basically what is proposed is to set up an earmarked account. Each session, the Cascade County Conservation District would still have to come back for authorization to spend. Representative BARDANOUVE stated this places a moral obligation

on future sessions to fund that account.

The hearing closed at 11:30 a.m.

(Tape 8: Track 3:1138)
HOUSE BILL 726: "A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROPRIATE $240,000 FROM THE RENEWABLE RESOURCE DEVELOPMENT CLEARANCE FUND ACCOUNT TO THE DEPARTMENT OF STATE LANDS FOR TIMBER STAND IMPROVEMENT GRANTS."

Representative CURTISS introduced her bill.

Leo BERRY, DNRC, explained 15% of the RIT monies are allocated to Timber Stand Improvement. This amount is estimated to be $157,000. The difference between the $240,000 requested in HB-726 and $157,000 will be made up in "other projects" in the Renewable Resource Development program. When DNRC received this request from State Lands, along with some other Timber Stand Improvement requests, DNRC set the capitol at $125,000 to fund as many projects as possible. They are recommending that State Lands receive $125,000. The difference between $125,000 and $240,000 will come from the other projects. Representative QUILICI clarified that 20% RRD monies is set aside for "other projects," and that the differences stated here would be coming out of that 20%.

Representative Curtiss closed her bill.

The hearing closed at 11:45 a.m.

(Tape 8: Track 3:1170)
***EXECUTIVE ACTION:
HOUSE BILL 902: "PAY PLAN"

Representative BENGTSON moved that HB-902 be passed to the Senate from Appropriations Committee without recommendation.

Representative QUILICI made a substitute motion to approve HB-902 as amended. Motion FAILED because of tie vote of 5-5 and 7 members absent.

The committee considered the motion by Rep. BENGTSON to pass HB-902 without recommendation. Motion passed. 8 yes; 1 no; 8 absent.

The meeting recessed at 12:00 p.m.

Francis Bardanouve

FRANCIS BARDANOUVE
Chairman

ps

HOUSE BILL 885

March 23, 1983

TESTIMONY OF THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

H.B. 885

AN ACT TO APPROVE THE ISSUANCE OF STATE OF MONTANA COAL SEVERANCE TAX BONDS TO FINANCE THE DEVELOPMENT OF CERTAIN STATE HYDROELECTRIC PROJECTS, THE REHABILITATION AND REPAIRS OF CERTAIN STATE PROJECTS, AND LOANS TO POLITICAL SUBDIVISIONS AND LOCAL GOVERNMENTS FOR CERTAIN APPROVED WATER DEVELOPMENT PROJECTS; TO APPROPRIATE COAL SEVERANCE TAX TRUST PROCEEDS FOR DEBT SERVICE; TO AUTHORIZE THE CREATION OF A STATE DEBT; AND TO PROVIDE AN IMMEDIATE EFFECTIVE DATE.

The Department supports this bill which will promote water development in the state. In 1981, S.B. 409 created a $250 million coal severance tax bonding authority which can be used to finance water projects. These would be revenue bonds backed by the project revenues as well as by the constitutional trust fund. This bill presents requests of $56.5 million for the sale of these bonds for the following:

1) The development of hydropower in three state-owned projects ($45 million).
2) The rehabilitation of three state-owned projects ($.5 million).
3) eleven projects proposed by local government entities which are : four irrigation projects; three municipal water systems; three rural water systems and one municipal sewer system. ($11 million).

This bonding authority is structured so that requests come directly to the legislature and the legislature determines how the bonds will be repaid. The law allows for the repayment to

be made in whole or in part by the coal severance tax trust fund proceeds or in whole or in part by project revenues. Because of this option, this bill requests a 2% interest rate on all projects. The Department has information on repayment capacity available, which shows that some of these projects cannot repay an interest rate greater than 2%.

ESTIMATED PROJECT COST IMPACT—VARYING RATES OF INTEREST

(Big Bond Financing-30 Year Amortization)

PROJECT NAME	ESTIMATED PROJECT COST	BOND FUNDING REQUEST	RESIDUAL PROJECT FINANCING	INTEREST RATES	APPROXIMATE COST PER ACRE OR USER CURRENT	PROJECT	TOTAL
					Cost Per User Per Month		
City of Manhattan-Water & Sewer Project	$690,000	$300,000	$390,000 E.P.A. Grant for Sewer	0%	420 Users @ $12.24	$1.98	$14.22
				2%		$2.66	$14.90
				4%		$3.44	$15.68
				6%		$4.32	$16.56
				8%		$5.29	$17.53
				10%		$6.31	$18.55
				12%		$7.39	$19.63
					Cost Per Acre Per Year		
Pondera County Conservation District Irrigation System Rehabilitation	$1.78 Million	$555,000	$1,100,000 S.C.S. Cost Share & $125,000 DNRC Grant	0%	75,727 Acres @ $6.10	$.24	$6.34
				2%		$.33	$6.43
				4%		$.42	$6.52
				6%		$.53	$6.63
				8%		$.65	$6.75
				10%		$.78	$6.88
				12%		$.91	$7.01
					Cost Per User Per Month		
Roosevelt County Water Distribution System	$1.915 Million	$1.79 Million	$125,000 DNRC Grant	0%	140 Users @ $100.00	$35.52	$35.52
				2%		$47.57	$47.57
				4%		$61.62	$61.62
				6%		$77.41	$77.41
				8%		$94.64	$94.64
				10%		$113.02	$113.02
				12%		$132.27	$132.27
					Cost Per User Per Month		
South Kremlin & Gildford Rural Water System	$336,000	$248,000	$88,000 DNRC Grant	0%	28 Users @ $100.00	$24.60	$24.60
				2%		$32.96	$32.96
				4%		$42.68	$42.68
				6%		$53.62	$53.62
				8%		$65.56	$65.56
				10%		$78.30	$78.30
				12%		$91.63	$91.63
					Cost Per User Per Month		
City of Three Forks-Water Project	$1.036 Million	Up To $1.1 Million	Applying for a $400,000 Community Develop. Grant	0%	580 Users @ $3.60	$5.27	$8.87
				2%		$7.06	$10.66
				4%		$9.14	$12.74
				6%		$11.48	$15.08
				8%		$14.04	$17.64
				10%		$16.77	$20.37
				12%		$19.62	$23.22
					Cost Per Acre Per Year		
Three Mile Bitterroot Irrigation Project	$2.36 Million	$1.18 Million	$1,180,000 S.C.S. Cost Share	0%	3258 Acres @ $11.00	$12.07	$23.07
				2%		$16.17	$27.17
				4%		$20.95	$31.95
				6%		$26.31	$37.31
				8%		$32.17	$43.17
				10%		$38.42	$49.42
				12%		$44.96	$55.96

[1] Does not reflect avoided costs from project construction.
[2] Includes domestic and livestock use. Current costs zero if project constructed.
[3] Does not include additional operating/maintenance costs after construction.

4

ESTIMATED PROJECT COST IMPACT—VARYING RATES OF INTEREST

(Big Bond Financing-30 Year Amortization)

PROJECT NAME	ESTIMATED PROJECT COST	BOND FUNDING REQUEST	RESIDUAL PROJECT FINANCING	INTEREST RATES	APPROXIMATE COST PER ACRE OR USER CURRENT	PROJECT	TOTAL
					Cost Per User Per Month		
City of Culbertson-Water Supply	$1.229 Million	$704,000	$400,000 Community Develop. Grant & $125,000 DNRC Grant	0%	405 Users @ $10.40	$4.83	$15.23
				2%		$6.47	$16.87
				4%		$8.38	$18.78
				6%		$10.52	$20.92
				8%		$12.87	$23.27
				10%		$15.37	$25.77
				12%		$17.98	$28.38
					Cost Per Acre Per Year		
East Bench Gravity Irrigation Project	$4.383 Million	Up To $4.383 Million	Possible Bureau of Rec. Zero % Loan for $3.383 Mil. 490,000 Grant	0%	6300 Acres @ $6.00	$23.19	$29.19
				2%		$31.06	$37.06
				4%		$40.23	$46.23
				6%		$50.54	$56.54
				8%		$61.80	$67.80
				10%		$73.80	$79.80
				12%		$86.37	$92.37
					Cost Per Acre Per Year		
East Bench Gravity Irrigation Project (Alternative 2)	$3.230 Million	$3.230 Million	~~None~~ 490,000 Grant	0%	6300 Acres @ $6.00	$17.09	$23.09
				2%		$22.89	$28.89
				4%		$29.65	$35.65
				6%		$37.25	$43.25
				8%		$45.54	$51.54
				10%		$54.39	$60.39
				12%		$63.65	$69.65
					Cost Per User Per Month		
City of Ennis-Sewage Treatment	$600,000	$180,000	75 % E.P.A. Grant	0%	330 Users @ $3.25	$1.52	$4.77
				2%		$2.03	$5.28
				4%		$2.63	$5.88
				6%		$3.30	$6.55
				8%		$4.04	$7.29
				10%		$4.82	$8.07
				12%		$5.64	$8.89
					Cost Per User Per Month		
Geraldine Rural Water System	$1.858 Million	$1.733 Million	$125,000 DNRC Grant	0%	112 Users @ $100 to $150.00	$42.98	$42.98
				2%		$57.58	$57.58
				4%		$74.58	$74.58
				6%		$93.69	$93.69
				8%		$114.55	$114.55
				10%		$136.80	$136.80
				12%		$160.10	$160.10
					Cost Per Acre Per Year		
Huntley Irrigation Project	$180,000	$162,000	$18,000 DNRC Grant	0%	27,300 Acres @ $12.50	$.20	$12.70
				2%		$.26	$12.76
				4%		$.34	$12.84
				6%		$.43	$12.93
				8%		$.53	$13.03
				10%		$.63	$13.13
				12%		$.74	$13.24

1 Does not reflect avoided costs from project construction.
2 Includes domestic and livestock use. Current costs zero if project constructed.
3 Does not include additional operating/maintenance costs after construction.

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

WATER RESOURCES DIVISION

5

TED SCHWINDEN, GOVERNOR

32 SOUTH EWING

STATE OF MONTANA

(406) 449-2872 ADMINISTRATOR
(406) 449-2864 ENGINEERING BUREAU
(406) 449-3760 WATER DEVELOPMENT BUREAU
(406) 449-2872 WATER MANAGEMENT BUREAU
(406) 449-3962 WATER RIGHTS BUREAU

HELENA, MONTANA 59620

MEMORANDUM

March 22, 1983

TO: Gary Fritz, Adminstrator
Water Resources Division

FROM: Water Development Bureau Staff

SUBJECT: Cost of subsidizing interest rate on coal severance tax bonds as proposed in H.B. 885

During a discussion with legislators regarding their proposed projects for the use of coal severance tax bonds, the question arose as to whether the 15% of the interest on the trust fund, which has been directed back to the body of the trust for this program, would be adequate to cover the costs of subsidizing the interest (to 2%) on the proposed projects.

The 15% will be $3,421,235 in FY 84 and $4,464,000 in FY 85. This number should be compared to costs of subsidizing a given number of interest points as shown below. For example, bonds sell at 10% and we subsidize to 2%, the average annual cost of subsidizing the 8% spread is $620,530 (Table 1) if only projects proposed by local governments are involved; and an additional $255,717 (Table 2) if all proposed amendments are approved.

Table 1. Cost of subsidizing interest rate a given number of points if only the projects proposed by local government are included.

Number of Interest Points Paid by Trust Fund (i.e. difference between rate on bonds and amount paid by sponsor)	Annual Bond Debt Service	First Year Interest Payment	Total Interest Paid by Trust Fund	Average Annual Cost To Trust Fund
2%	$ 499,271	$ 223,638	$3,796,230	$ 125,541
3%	570,492	335,457	5,932,869	197,762
4%	646,650	447,276	8,217,614	273,920
5%	727,399	559,095	10,640,062	354,669
6%	812,353	670,914	13,188,689	439,623
7%	901,109	782,733	15,851,377	528,379
8%	993,260	894,552	18,615,889	620,530
9%	1,008,406	1,006,371	21,470,266	715,675
10%	1,186,168	1,118,190	24,403,133	813,438

Table 2. Cost of subsidizing the interest rate a given number of points if all proposed amendments for eleven additional projects are funded as proposed by local governments.

Number of Interest Points Paid by Trust Fund (i.e. difference between rate on bonds and amount paid by sponsor)	Annual Bond Debt Service	First Year Interest Payment	Total Interest Paid by Trust Fund	Average Annual Cost To Trust Fund
2%	$ 205,747	$ 92,160	$1,564,405	$ 52,147
3%	235,097	138,240	2,444,902	81,497
4%	266,481	184,320	3,386,433	112,881
5%	299,757	230,400	4,384,710	146,157
6%	334,766	276,480	5,434,986	181,166
7%	371,342	322,560	6,532,264	217,742
8%	409,317	368,640	7,671,504	255,717
9%	448,526	414,720	8,847,777	294,926
10%	488,813	460,800	10,056,395,	335,213

Table 3. Cost of subsidizing the interest rate a given number of points if all projects proposed by local government, and the rehabilitation of those proposed by state government, are included.

Number of Interest Points Paid by Trust Fund (i.e. difference between rate on bonds and amount paid by sponsor)	Annual Bond Debt Service	First Year Interest Payment	Total Interest Paid by Trust Fund	Average Annual Cost To Trust Fund
2%	$ 523,833	$ 234,640	$3,982,987	$ 132,766
3%	598,558	351,960	6,224,738	207,491
4%	678,463	469,280	8,621,881	287,396
5%	763,183	586,600	11,163,503	372,117
6%	852,317	703,920	13,837,511	461,250
7%	945,440	821,240	16,631,191	554,373
8%	1,042,123	938,560	19,531,703	651,057
9%	1,141,950	1,055,880	22,526,502	750,883

March 23, 1983

Sen Lane

BELGRADE

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "(o) Belgrade water system improvement"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted

3. Page 14, line 1.
Insert: "(m) (i) Bonds to a maximum amount of $1,235,000 may be issued for a loan to the city of Belgrade for the purpose of financing improvements in the city's water system.

(ii) The project, which will rehabilitate existing components of the city water system, construct an additional well to supply the water system, and install residence meters, is needed to meet the demands of the city's growing population and to conserve the available water for future use."

BCDIV/HB 885 Belgrade

Mary E. Connelly

HB 885- Amendment
Whitefish County Water and Sewer District

2

1.5 million for engineering design and construction of sewage main collectors and interceptors in the Whitefish Basin, said design to follow feasibility studies which are part of a water quality management plan in progress, said design and construction may start as soon as July 1, 1984.

Mary E. Connelly

COLUMBIA FALLS

3

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "; (o) Columbia Falls water and sewer line improvement"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted

3. Page 14, line 1.
Insert: "(m) (i) Bonds to a maximum amount of $200,000 may be issued for a loan to the City of Columbia Falls for the purpose of partially financing improvements to city water and sewer lines.

(ii) The project is needed to replace existing water and sewer lines with new larger lines and because of the reconstruction of highway 2 in the area where the lines are located.

(iii) The loan must be repaid at a 2% interest rate."

Dave Mahar

LIBBY

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "; (o) Libby sewer system improvement"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted.

3. Page 14, line 1.
Insert: "(m)(i) Bonds to a maximum amount of $590,500 may be issued for a loan to the city of Libby for the purpose of partially financing construction of a secondary sewage treatment plant for the city.

(ii) The project is needed because the city's present sewage treatment system is not in compliance with public health standards.

(iii) The loan must be repaid at a 2% interest rate."

BCDIV/ HB 885 Libby

Roesh

SHELBY

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "; (o) Shelby sewer system improvement"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted

3. Page 14, line 1.
Insert: "(m)(i) Bonds to a maximum amount of $592,000 may be issued for a loan to the city of Shelby for the purpose of partially financing rehabilitation of the city's sewer system.

(ii) The project is needed to replace pipes whose quality has deteriorated due to age and that are inadequate in size to serve the population of Shelby.

(iii) The loan must be repaid at a 2% interest rate."

Elvedahl

CONRAD

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "; (o) Conrad water system improvement"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted

3. Page 14, line 1.
Insert: "(m)(i) Bonds to a maximum amount of $500,000 may be issued for a loan to the city of Conrad for the purpose of financing improvements in the city's water system.

(ii) The project, which will replace a transmission line from the existing treatment plant to the distribution system, is needed because the existing steel pipe transmission has numerous breaks and has deteriorated to the extent that it cannot provide a reliable supply of water to the city.

(iii) The loan must be repaid at a 2% interest rate."

BIGFORK

7

Proposed Amendments to HB 885

1. Page 4, line 3.
Followng: "measure"
Insert: "; (o) Bigfork sewer system improvement"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted

3. Page 14, line 1.
Insert: "(m)(i) Bonds to a maximum amount of $250,000 may be issued for a loan to the city of Bigfork for the purpose of partially financing rehabilitation of the city's sewage treatment plant.

(ii) The project is needed because the existing treatment plan is inadequate to meet the needs of the city, and as a result, poor quality effluent is being discharged by the system.

(iii) The loan must be repaid at a 2% interest rate."

Stobie

NOXON

8

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "; (o) Noxon rural water system improvement"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted.

3. Page 14, line 1.
Insert: "(m) (i) Bonds to a maximum amount of $122,000 may be issued for a loan to the Noxon rural improvement district for the purpose of financing rehabilitation of the community's water system.

(ii) The project is needed because the present wooden lines have leakage problems and contamination is being drawn into the distribution system causing a health hazard.

(iii) The loan must be repaid at a 2% interest rate."

Manuel

POWER

9

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "; (o) Power-Teton County sewer system improvements"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted

3. Page 14, line 1.
Insert: "(m) (i) Bonds to a maximum amount of $200,000 may be issued for a loan to the Power-Teton water and sewer district for the purpose of partially financing improvements to the town of Power's sewer system.

(ii) The project is needed to install a collection and treatment facility to address the present health hazard and pollution problem.

(iii) The loan must be repaid at a 2% interest rate."

SAGE CREEK

Proposed Amendments to HB 885

1. Page 4, line 3.
Following: "measure"
Insert: "; (o) Sage Creek water district"

2. Page 8, line 23.
Strike: "$12,982,281"
Adjust total according to any amendments adopted

3. Page 14, line 1.
Insert: "(m)(i) Bonds to a maximum amount of $750,000 may be issued for a loan to the Sage Creek water district, if that district is formed prior to the sale of bonds pursuant to this act for the purpose of financing construction of a rural water supply system for northern Liberty and Hill Counties.

(ii) The project is needed because residents of the area now must haul domestic water due to the scarcity and poor quality of ground water and it is probable that they will have to haul stock water in the future.

(iii) The loan must be repaid at a 2% interest rate."

PROPOSED AMENDMENT TO H.B. 885

To be added on page 6, after the end of line 15:

Further, if revenue is generated by any hydropower facility which exceeds the requirements set forth in this subsection, then fifty percent (50%) of such excess shall be paid over to the water users' association of that project to be utilized to pay operations and maintenance costs of said district. However, in no event shall the amount to be paid exceed the total cost of the operation, improvement and maintenance of the district.

AMENDMENT HB 885

Page 6. line 4.

Insert: "(3) The maximum amount of bond revenue for each project approved in this section shall include all relocation and reconstruction costs of existing irrigation systems, fences, utility lines, roads, highways and railroads that are subsequently affected by the development of a respective hydroelectric project."

Renumber subsequent subsections.

Exhibit 3
March 23, 1983

March 22, 1983

Mr. Francis Bardanouve
Chairman
State House Appropriations Committee
Capitol Station
Helena, Montana 59620

Dear Mr. Bardanouve:

The Geraldine area has serious domestic and livestock water supply problems. The quality of most surface and groundwater at area farms and ranches is very poor and getting worse. In addition, the quantity of most surface and groundwater is limited. As a result, the majority of rural residents must haul water from nearby towns for domestic purposes and many must haul water for stock. Hauling of water is time consuming and expensive. The quality of this hauled water is poor and is deteriorating as the months and years go by.

Some rural residents have private wells (both deep and shallow). Many of these wells in the Geraldine area are experiencing a deterioration in quality and a considerable number of heretofore good wells have been abandoned. This trend undoubtedly will continue. Last summer, the State Board of Health gave notice that the town of Geraldine's water had higher than acceptable levels of fluoride. Most rural residents haul their water from this source.

We have been attempting to find a suitable water source, financing, etc. since January of 1981. We have had four public meetings, helped the town run a community water survey needs assessment, met with various hydrologists, engineers, etc. and have worked quite diligently in attempting to delineate the best water source, most efficient methods of financing, etc. A preliminary engineering study was completed by the engineering firm of Thomas, Dean & Hoskins (TD&H) in 1981 and was paid for by local residents. More recently, we employed a project coordinator, Mr. Lloyd Bjerum of Havre, to further assist in our efforts. Mr. Bjerum, together with the engineering firm of Hydrometrics, assisted us in preparation of our application to the Department of Natural Resources and Conservation. This application was submitted in September 1982 and we were subsequently ranked 5th out of 83 applicants.

As you know, H.B. 885 proposes the sale of bonds to provide financial assistance for eleven water development projects. The proposed Geraldine Rural Water System is one of these projects. With an interest rate on the bonds of 2 percent for 30 years and a $125,000 DNRC grant, the Department of Natural Resources and Conservation estimates the capital cost per Geraldine rural user at $57.58 per month. Operation and maintenance costs are estimated to be an additional $45/month/user.

There is a great deal of local support and interest in the project and we are attempting to include the town of Geraldine in a cooperative effort to solve all the water problems in this area for the least amount of money. We hope to further reduce costs by doing as much of the work ourselves as the law allows. Your consideration in helping us solve our water supply problem is truly appreciated.

Sincerely,

Kenneth H. Engellant, Chairman
Geraldine County Water Board

KHE:jy

Exhibit 4
March 23, 1983

#4
3-23-83

HOUSTON ENGINEERING, INC.

425 N. 5TH ST. • P.O. BOX 2441 • BISMARCK, NORTH DAKOTA 58501 • PHONE: (701) 224-1151

M E M O R A N D U M

TO: Montana State Legislators

SUBJECT: Background Information Regarding Roosevelt Rural Water District

DATE: March 21, 1983

In May of 1978, residents of eastern Roosevelt County informally developed a committee to explore the possibility of developing a domestic rural water distribution system to area farms and communities. Since that time, the committee has formally organized as a water district, held numerous meetings, hired technical expertise in terms of engineering and legal advice, and has explored numerous federal, state, and local funding sources in an attempt to bring good, portable water to the area. Throughout this period, the need for good, quality water has not diminished, in fact has increased due to a substantial increase in the seismic and oil activity in the area. The need for good water can be attributed to the lack of sufficient quantity of water and more importantly, the poor quality of the water. Most areas have poor quality that is very hard combined with sulfate iron and high in disolved solids. Some wells are very shallow, (twenty to thirty feet) and nitrate contamination is a possibility, especially if the well is near livestock areas or household septic tanks.

The water district has completed a revised preliminary engineering report dated November 22, 1982. The system envisioned proposes to serve a total of 180 users in the towns of Froid and Fort Kip. The anticipated water supply for the project will come from the city of Culbertson. The city is presently upgrading the quality of their water supply and upon completion of a new water treatment facility, would be capable or providing the rural water district with a dependable water supply.

The project has been determined to be engineeringly feasible. The problem the district has faced, for a number of years, has been to secure a workable financial

plan that would make the ultimate water cost to the consumer affordable. The total construction cost of the project has been estimated to be $1,990,000.

As cited earlier, the rural water district has explored all potential sources of funds to construct this project, and at this time it appears as if the only substantial source of assistance would be through the Montana Coal Severance Tax Bond Program, established to finance water development projects. We are very pleased with the foresightedness of the 1981 legislature which created the authority of bonding coal severance revenue.

Our project is currently included in House Bill 885 as a recommended project by the Department of Natural Resources and Conservation. The interest rate at which those funds are loaned to the district's project, is very critical in terms of the monthly cost of the water to the individual users. Any increase in the interest rate above 2% would substantially increase the cost of water to the towns and users on the system.

A table included below illustrates the average cost for rural and town users on a monthly basis. These average users costs include payback of principle and interest as well as the cost of operation, maintainance, and other fixed costs associated with the delivery of service.

Monthly Payback Requirements

Terms	Water Costs Per Month	
	Rural Users for 8,000 gallons	City Users for 1,000 gallons bulk purchase
Example 1		
At 0% interest rate on 1,800,000 for 30 years	65.00	3.50
Example 2		
At 2% interest on 1,800,000 for 30 years	73.00	3.70
Example 3		
At 5% interest on 1,800,000 for 30 years	90.00	4.20

These average monthly costs are based on a total loan request of 1.80 million dollars from the big bond fund. As can be seen, the cost of additional interest on the total loan substantially increases above 2%. With the current economic conditions facing farmers today, it is unreasonable and probably unacceptable to pay something in excess of $75.00 a month for an average amount of water.

We are very pleased to have the opportunity to be considered for funding under this program and we ask that you support funding levels that will allow projects to be feasible, levels of 2% or less on loan funds would be steps in this direction.

Thank you.

Merton Purvis, President
Roosevelt County Rural Water District

Exhibit 5
March 23, 1983

WIFE Women Involved in Farm Economics

NAME JO BRUNNER BILL NO. HB 885

ORGANIZATION WOMEN INVOLVED IN FARM ECONOMICS

ADDRESS 563 3rd St Helena DATE March 23/83

SUPPORT X OPPOSE AMEND

COMMENTS:

Mr. Chairman, members of the committee, for the record, my name is Jo Brunner and I represent the members of the Women Involved in Famr Ecnomics. We concur with HB 885.

While we do not have specific policy on many of the projects listed in HB 885, we support the development of any projects that will store our water needs; that will allow us to conserve water, whether through beneficial irriagation methods or improvement of our ditches and canals; and for the feasible restoration and repairs of existing dams and storage facilities.

Our first concern is of course, agriculture and our immediately related needs and uses, sowe are in support of those requests listed on page 3 and 4, sub-paragraphs a-b-j-k-m-n, and described further in the bill.

We beleive that the further development ofstorage facilities for the beneficial use of Montana water is a direct move to protect that very valuable resource.

We support fully the use of coal tax moneys to develop water storage and hydro facilities in Montana. We further support the use of coal severance tax principle if necessary for water development.

We ask that you concur with HB 885.

"Hell has no fury like a woman scorned"

Exhibit 6
March 23, 1983

March 22, 1983

Francis Bardanouve
House of Representatives
State Capitol
Helena, Montana 59601

Dear Mr. Bardanouve:

This is in regards to House Bill-885.

We support the concept of conservation development and use of Montana's water resources to benefit our citizens and to assure furture growth in our agriculture, industry and other beneficial uses.

We believe the Coal Severance Tax Trust proceeds should be used for the betterment of the citizens of the State of Montana.

At the regular monthly meeting held March 17, 1983, the members of Ravalli County Farm Bureau voted unanimously to ask your support for the passage of House Bill-885.

Sincerely,

H. A. Griffin, President
Ravalli County Farm Bureau

cc: Representative Bob Thoft
Representative Bernie Swift

Exhibit 7
March 23, 1983

WATER DEVELOPMENT
FACT SHEET
LOWER BIRCH CREEK WATERSHED PROJECT

HOUSE BILL 885 Contains $550,000 loan at 2% interest

HOUSE BILL 897 Contains $125,000 Grant

Water development financed by loan and grant backed by Montana Coal Severance Tax Bond Issuance and Trust Fund Interest Income.

Legislation is based on existing authority under Senate Bill 409 passed by 1981 Legislature. Codified as 85-1-601 et seq

SOURCE OF FUNDING: WATER DEVELOPMENT - Ear Marked Account (the funds are available) No new revenue source is used.

NAME OF PROJECT: Lower Birch Creek Water Shed Project

SPONSORS: Pondera County Conservation District
Pondera County Canal and Reservoir Company (non profit)

TYPE OF PROJECT: Irrigation System Rehabilitation - Total project $1,763,200

IRRIGATION PROJECT SIZE: 75,727 acres

OWNERSHIP IN PROJECT: Approximately 350 family farms, City of Conrad, serves some State land

PROJECT GOAL: Replace structures which are 50-70 years old and are ready to collapse

DEPARTMENT OF NATURAL RESOURCES evaluated: ranked #11 with 49 points

COST TO BENEFIT RATIO: Favorable, based on annual cost and annual benefit 2.4:1.0

REPAYMENT ABILITY: Good - Loan will be repaid by per acre water charge.

WATER DEVELOPMENT: Net increase in water delivered to crops 5,100 acre feet

NEGATIVE EFFECTS: None known

POSITIVE EFFECTS:

1. Develop water resource, saving water for Montana
2. Insures necessary water supply for City of Conrad and family farms
3. Insures income stability of community
4. Creates jobs
5. Investment in the future of Montana

LOCAL INTEREST: Vote at meeting of water stock owners (family farms) 100% in favor of project.

HOUSE BILLS 885 & 897 are geographically balanced across State of Montana.

ENTIRE LOAN AND GRANT PROGRAM will continue in the future to serve other water development projects.

Exhibit 8
March 23, 1983

THREEMILE FARM IRRIGATION MEASURE

RC&D MEASURE PLAN

RAVALLI COUNTY, MONTANA

Sponsored By

Bitter Root Irrigation District
Bitterroot Conservation District
Bitter Root Resource Conservation and Development Area
30-6001-081-713

Assisted By

U.S. Department of Agriculture
Soil Conservation Service
Bozeman, Montana

February 1981

Prepared under the authority of Section 102 of the Food and Agriculture Act of 1962 (Public Law 87-703) and of the Soil Conservation Act of April 27, 1935 (16 U.S.C. 590a-f).

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TABLES

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ADDENDUM

THREEMILE FARM IRRIGATION

RC&D Measure Plan

Ravalli County, Montana

This addendum shows the project costs, benefits, and benefit-cost ratio based on 7-3/8 percent interest rate, 1980 installation costs, and current normalized prices for agricultural commodities. Annual project costs, benefits, and benefit-cost ratio are as follows:

1. Project costs are $278,300.

2. Project benefits are $460,900.

3. The project benefit-cost ratio is 1.7 to 1.0.

I. Planning Area and Resources

A. Planning Area

The Threemile area, a portion of the Bitter Root Irrigation District (BRID), is located approximately 5 miles northeast of Stevensville, Ravalli County, Montana. Ravalli County is part of the three-county Bitter Root RC&D area. The project area is generally bounded by the BRID canal on the east, the Illinois Bench on the south, the supply ditch on the west, and Dry Gulch on the north. Ambrose and Threemile Creeks flow through the approximately 7,400-acre area. A general location map is included in Figure 1.

Approximately 6,200 acres of the planning area are irrigated, of which 72 percent is under sprinkler irrigation. There are 4,746 acres to be served by the project. The project area slopes upward from the west boundary eastward toward the foothills of the Sapphire Range with a gradual elevation change of about 400 feet in 4 miles. The cross slope of the major portion is fairly uniform with some steeper hillside areas near the north and east boundaries. Annual rainfall in the area varies from 12 to 14 inches, with a 110-day growing season.

Present land use of the project area is:

Irrigated hayland	41 percent	3,051 acres
Irrigated pasture	30 percent	2,290 acres
Irrigated cropland	12 percent	847 acres
Dry cropland	1 percent	35 acres
Dry pasture	9 percent	636 acres
Farmsteads, roads, and other	7 percent	496 acres
		7,355 acres

Irrigation in the planning area began about 1870 by diversion of water from streams tributary to the Bitterroot River. Large-scale development of the BRID system in approximately its present form was undertaken in 1905 by a syndicate incorporated under the name of Dinsmore Irrigation and Development Company. This development, which promoted the project as a fruit-producing area, encouraged division into relatively small ownership units. In 1920, the Bitter Root Irrigation District was organized by landowners in accordance with Montana law. In later years the orchards were gradually eliminated and converted to other crops.

The BRID gets its water from Lake Como and tributaries of the Bitterroot River. There are 65 miles of BRID canal between Lake Como and the project area.

There are 4,746 acres of the planning area that will be served by the project. The part of the planning area not served by the project is dryland acres with no allocated water, acres already under existing gravity sprinkler irrigation, acres too high in elevation to be gravity sprinkled, roads, or farmsteads. Breakdown of the served area by unit sizes:

	Units	Acres	% of Area
0 - 2 acres	9	14	0.3
2.1 - 10 acres	74	581	12.2
10.1 - 40 acres	76	1876	39.6
40.1 - 100 acres	13	933	19.6
Larger than 100 acres	9	1342	28.3
	181	4746	100.0

Crops presently produced in the area consist mainly of hay and pasture with some acreages of small grain.

The soils in the area fall generally into three groupings--the benchland soils and two bottomland soils. The benchland soils are generally deep loam, gravelly loam, or cobbly loam soils with some locations having intermixed areas of clay or clay loam. The broad bottomland soils are primarily deep, coarse, sandy loams, some with cobbles. The other bottomland soils, those that generally follow the drainageways, are moderately deep to deep loam soils underlain by gravel, some having a seasonal high water table of about 20 inches.

All the soils in the area are suitable for sprinkler irrigation except the minimal areas with slopes steeper than 15 percent.

Threemile project is located along the west flank of the Sapphire Mountains and includes a portion of the foothills area and a portion of the Lower Bitterroot Valley. The project area was formed during the later Tertiary period starting about 40 million years ago.

The older rocks now exposed in the mountain flank and foothills area include gneiss, schists, argillites, and quartzites of Precambrian age and gneissic quartz monzonite of the lower Cretaceous age Idaho batholith.

The basin and valley area is underlain by unconsolidated clays, silts, sands, gravels, compacted sandstone, and conglomerates of Tertiary age. In the valley bottoms, sedimentary alluvial materials overlie the Tertiary sediments. The Tertiary-aged and recent alluvial sediments are the primary irrigated agricultural soils in the Threemile project area.

B. Problems and Potentials

1. Problems

The critical water and land resource problem is an inadequate water supply to meet crop requirements on 4,746 acres of irrigated land. This inadequate supply results from an inadequate delivery system and on-farm ditch systems. Approximately 31 percent of water diverted from the canal is lost through seepage in the delivery system to the farms and in poor water control.

The delivery system consists of 28 miles of delivery ditches, associated inadequate structures, and approximately 10 miles of watercourses used for canals. The fluctuating and inadequate water supply delivered by the system makes good irrigation water management difficult. Water use efficiencies on the flood irrigation systems are approximately 30 percent. Poor water control, water loss in delivery system, and poor irrigation field efficiency in the flood-irrigated acres require excessive water delivery from the BRID. Units in the lower portion of the service area do not receive any water during the peak use periods due to the losses and poor efficiencies. Also, the excessive water requirement puts stress on the main BRID canal for its entire length.

It is estimated that the inadequate water supply reduces net income from agriculture about $291,000 annually. In addition, there are high operation, maintenance, and replacement costs. These result from the inadequate water supply, from sediments in the irrigation distribution system, and pumping costs. These sediments are a result of severe erosion in the present steeply graded delivery ditches and from erosion in the upstream watersheds of Ambrose and Threemile Creeks.

Continuous monitoring of the irrigation system is necessary to assure that the systems remain functional and to assure proper scheduling and application of water. Operation, maintenance, and replacement costs are estimated to be $63,000 annually.

2. Potentials

Installation and operation of a gravity sprinkler system or a lined canal system would solve the problems identified. The efficient use of irrigation water would be improved by reduction of water loss in the delivery system. On-farm field efficiencies for the flood-irrigated acres would be improved by conversion to sprinklers. Crop yields would increase because of an adequate delivery system and increased on-farm irrigation efficiencies. Improving on-farm irrigation water management over the entire irrigated area would have a minor effect on some of the problems identified.

The erosion that exists in the ditches would be eliminated. Maintenance costs would be reduced.

The gravity sprinkler system would conserve energy by the elimination of the electric motors for pumping and would provide a pressurized system for fire control during the irrigation season.

II. Planning Objectives and Alternatives

Planning efforts considered both NED and EQ objectives.[1] The NED objective emphasized increased economic efficiency. The NED plan would include items

[1]"NED" refers to National Economic Development and "EQ" refers to Environmental Quality.

to improve irrigation efficiencies, reduce farm labor needs, and improve and stabilize farm incomes. The EQ objective emphasized improvement in environmental quality. The EQ plan includes items to improve the quality of water, land, and air. The sponsors' objective is to have a plan that considers both of these broad planning objectives.

A. Sponsor Objectives

The sponsors' objectives are to solve the problems and achieve potentials stated earlier. The group also wishes to insure delivery of water to all the units. The installation of the proposed group gravity sprinkler along with revision of farm cropping and management operations will obtain these objectives.

With the installation of the gravity sprinkler system the sponsors feel they can maintain or improve the agricultural and water resources for future generations and concurrently improve their income and operation to meet present-day demands. The sponsors recognize the importance of keeping the land in irrigated agriculture for both their own economic benefit and that of the community.

The group's objectives are consistent with those of the Bitter Root RC&D area and the Bitterroot Conservation District on the use and development of land and water resources. Both organizations have approved the application and are sponsors for this project.

Other alternatives are considered in the following alternative actions.

B. Alternatives

1. No-Action Alternative

The ditch users will continue to use the existing distribution system which will require costly operation and maintenance and provide an inefficient and unreliable means of conveying water. Irrigation water management will remain very difficult with high energy consumption. Erosion and sedimentation will continue to degrade the environment. The estimated average annual cost for operation and maintenance of the existing system is $63,000. The existing ditch system is shown on Figure 2.

2. Gravity Sprinkler

This alternative is the NED alternative. Construction of pressurized delivery pipelines with metered turnouts and on-farm sprinkler systems will provide an efficient means of conveying and applying irrigation water. Energy consumption for pumps will be eliminated. Operation and maintenance on existing sprinkler systems will be greatly reduced. In conjunction with the land treatment included in the plan, this project will improve the irrigation water management and operations management of the units. Estimated installation cost of the pressurized delivery pipelines, with inlet structures and metered turnouts, is $3,477,400. This includes engineering, construction, administration, land treatment, and land rights. The plan for the proposed pipeline system is shown on Figure 3. Approximately 10 acres of existing delivery

ditch will be smoothed, seeded, and incorporated into existing cropland by individual landowners. Areas disturbed by construction activities will be reseeded. Effects of this alternative are displayed in Table 2.

3. Concrete-lined Ditch

Construction of concrete-lined conveyance ditches with metered turnouts will provide an efficient means of conveying irrigation water and will eliminate delivery ditch erosion. Maintenance on existing sprinkler systems will be reduced, but energy consumption will increase with the addition of pump sprinklers to the remaining areas. Maintenance on pumps will be reduced, but operating costs will continue to increase as electric rates increase. This alternative, along with the planned land treatment, will improve the irrigation water management and operation management within the project. Estimated cost for lining, structures, meters, pumps, turnouts in conveyance ditches, and land treatment is $3,376,000. This includes engineering, construction, administration, and land rights. Land treatment for this alternative is the same as that for the gravity sprinkler alternative. Effects of this alternative are displayed in Table 2.

4. Nonstructural

Application of irrigation water management over the entire irrigated area would solve some of the water supply problems by improving irrigation efficiencies and making more irrigation water available. Irrigation efficiencies could be improved by 30 to 60 percent on lands converted from flood to sprinkler. Sufficient water would still not be made available for all the irrigated area.

With this alternative, erosion would still occur in delivery ditches and pumping costs and energy consumption would remain high. Also seepage losses from the delivery system will still occur. Effects of this alternative are displayed in Table 2.

d. Irrigation wells were considered as an alternative. However, it is impossible to develop a sufficient water yield in this area.

5. Environmental Quality Alternative

Components necessary for wildlife have the potential to improve the quality of the environment in the planning area. The environmental quality alternative would include 80 one-quarter-acre food plots of small grain, 36 one-half-acre shrub wintering area plantings and fencing of 14 irrigation pits to enhance wildlife habitat.

The environmental quality alternative can be accomplished by a combination of conservation plans developed with landowners and supported by cost sharing through the Agricultural Stabilization and Conservation Service. The Ravalli County Fish and Wildlife Association's Pheasant Habitat Restoration Committee has been working actively in persuading landowners to do this type of habitat work.

Although this alternative emphasizes environmental attributes, it does very little to achieve the project sponsor's main objectives.

C. Land Treatment Needs

The land treatment problems are poor irrigation water management, inadequate conservation cropping systems, and inadequate hay and pasture systems. Grazing management is complicated by the fact that many of the smaller units maintain their livestock on irrigated land yearlong.

The average yields for flood irrigated lands are: pasture, 3.5 Animal Unit Months (AUMs) per acre; hay, 2.8 tons per acre; and barley, 42 bushels per acre. The average yields for sprinkler irrigated acres are: pasture, 4.9 AUMs per acre; hay, 3.7 tons per acre; and barley, 76 bushels per acre.

Twenty-eight percent of the irrigated land in the served area needs installation of sprinkler irrigation systems and 49 percent needs improved irrigation water management. Twenty-eight percent of the irrigated land needs establishment of improved cropping systems.

Seventy-five percent of the irrigated pasture in the served area needs improved management. Forty-five percent of the irrigated pasture needs reestablishment in order to respond to management. About 1,500 rods of fencing and 20 stockwater developments are needed to aid grazing management.

These land treatment needs remain essentially the same without the project or with the project for each alternative. These needs can normally be met under other ongoing programs.

Other land treatment needs that may vary dependent on each alternative include: ditch closure, critical area treatment, wildlife plantings, and fencing, shaping, and seeding of areas disturbed by construction activities and any other treatment needs associated with installation activities. These treatment needs will be covered as needed under the selected alternative.

Twenty percent of the served area is under an adequate conservation plan. While another 10 percent of the area is not in need of a conservation plan, the remaining 70 percent of the served area needs conservation planning. Forty percent of the units served by the project are receiving assistance from the Soil Conservation Service through the conservation district.

D. Selected Plan

The sponsors, after weighing their needs against the alternatives presented, have selected the installation of a gravity sprinkler irrigation system and on-farm land treatment as best meeting their broad objectives.

The effects of the selected plan have been displayed using the four-account system on the following pages. Accounts for the other alternatives are summarized in Table 2.

The NED account measures the increase in the value of the input of goods and services resulting from the installation of an alternative.

The EQ account measures the relevant physical, ecological, and cultural aspects of a plan. Effects on the quantity and quality of the water, land, and air resources are measured.

The regional economic development account measures the effect the proposed plan will have outside the planning area. The number and types of jobs resulting from the plan, population distribution effects, changes in the economic base, and economic stability are considered.

The other social effects account measures the effects of the plan on society. Real income distribution, effects on life, health, safety, energy requirements, and conservation are evaluated.

GRAVITY SPRINKLER ALTERNATIVE
THREEMILE FARM IRRIGATION RC&D MEASURE
NATIONAL ECONOMIC DEVELOPMENT ACCOUNT

Components	Measures of Effects[1] - - - Dollars - - -	Components	Measures of Effects[1] - - - Dollars - - -
Beneficial effects:		Adverse effects:	
A. The value to users of increased outputs of goods and services		A. The value of resources required for the plan	
		Construction cost	206,200
1. Agricultural water management	433,100	Engineering services	10,300
B. Employment of unemployed or underemployed labor during construction	27,500	Administrative services	17,700
		Land rights	3,000
		Mitigation	3,800
		Associated costs	19,400
		OM&R	10,000
TOTAL BENEFICIAL EFFECTS	460,600	TOTAL ADVERSE EFFECTS	270,400
		NET BENEFICIAL EFFECTS	190,200

[1]Average Annual

October 1980

GRAVITY SPRINKLER ALTERNATIVE
THREEMILE FARM IRRIGATION RC&D MEASURE
ENVIRONMENTAL QUALITY ACCOUNT
BENEFICIAL AND ADVERSE EFFECTS

Project will enhance the physical appearance of the area.

There will be a temporary increase in deposition of sediment in Threemile Creek.

There will be a reduction in the capacity of Threemile Creek to maintain a stream fishery.

There will be a reduction in irrigation ditch erosion and resulting sedimentation.

There will be a reduction in streambed disturbances from irrigation maintenance activities.

There will be a temporary reduction in sediment transport to the Bitterroot River.

There will be a temporary disturbance caused by noise, dust, and exhaust fumes during construction.

There are no known archeological or historical resources that will be disturbed during construction.

October 1980

GRAVITY SPRINKLER ALTERNATIVE
THREEMILE FARM IRRIGATION RC&D MEASURE
REGIONAL ECONOMIC DEVELOPMENT ACCOUNT

Components	Measures of Effects[1]	
	State of Montana	Rest of Nation
	- - - Dollars - - -	
Beneficial effects:		
A. The value of increased outputs of goods and services to users residing in the region		
1. Agricultural water management	433,100	
2. Employment of unemployed or underemployed labor during construction	27,500	
B. The value of output to users residing in the region from external economics	773,800	
TOTAL BENEFICIAL EFFECTS	1,234,400	
Adverse effects:		
A. The value of resources contributed from within the region to achieve the outputs		
1. Gravity pipeline system construction	103,100	103,100
Engineering services	-0-	10,300
Administrative services	700	17,000
Land rights	3,000	-0-
Mitigation	3,800	-0-
Associated costs	19,400	-0-
OM&R	10,000	
TOTAL ADVERSE EFFECTS	140,000	130,400
NET BENEFICIAL EFFECTS	1,094,400	-130,400

[1]Average Annual

October 1980

GRAVITY SPRINKLER ALTERNATIVE
THREEMILE FARM IRRIGATION RC&D MEASURE
REGIONAL ECONOMIC DEVELOPMENT ACCOUNT

Components	Measures of Effects	
	State of Montana	Rest of Nation
Beneficial effects:		
A. Increase in number and types of jobs		
1. Agriculture employment	10.4 permanent ag jobs	
2. Employment for project construction	15 skilled jobs & 6 semiskilled for 1 year	
3. Employment in service & trade activities as a result of project	6.1 permanent semiskilled jobs	

Components	Measures of Effects	
	State of Montana	Rest of Nation
Adverse effects:		
A. Decrease in number and types of jobs		

October 1980

GRAVITY SPRINKLER ALTERNATIVE
THREEMILE FARM IRRIGATION RC&D MEASURE
OTHER SOCIAL EFFECTS ACCOUNT

Component	Measure of Effect
Beneficial and adverse effects:	
A. Real income distribution	1. Create regional income distribution of $433,100 of primary benefits by income class as follows:

Income Class	Percentage of Adjusted Gross Income in Class	Percentage of Benefits in Class
---Dollars--		
Less than 3,000	16.3	16.3
3,000 - 9,999	53.4	53.4
10,000 - 14,999	21.7	21.7
More than 15,000	8.6	8.6

2. Local cost to be borne by region totals with distribution by income class as follows:

Income Class	Percentage of Adjusted Gross Income in Class	Percentage of Benefits in Class
---Dollars--		
Less than 3,000	16.3	16.3
3,000 - 9,999	53.4	53.4
10,000 - 14,999	21.7	21.7
More than 15,000	8.6	8.6

GRAVITY SPRINKLER ALTERNATIVE
THREEMILE FARM IRRIGATION RC&D MEASURE
OTHER SOCIAL EFFECTS ACCOUNT (continued)

Component	Measure of Effect
Beneficial and adverse effects:	
B. Life, health, and safety	1. Reduce the risk of loss of life for small children since open irrigation conveyance ditches will no longer be used.
	2. Reduce the risk of loss of property from fire with the gravity pipeline system during the irrigation season.
C. Energy requirements and conservation	1. Energy resources will be required for construction of this project.
	2. 1,274,000 kilowatt hours of electricity will be saved each year because irrigation pumps will not be needed.
	3. Energy required for operation and maintenance of irrigation pumps will be saved.

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III. INSTALLATION OF SELECTED PLAN

A. Measures To Be Installed

Five buried pipeline distribution systems will be installed to furnish irrigation water under gravity pressure to the area. (See Figures 4, 5, and 6 for typical profiles.) Each pipeline system will have a screened reinforced concrete inlet structure with measuring device to control water entrance from the main BRID canal. (See Figure 7.) The five structures will require about 60 cubic yards of concrete. A total of 128,720 feet of welded steel pipe and plastic pressure pipe ranging in size from 4 inches to 30 inches in diameter will be installed for the distribution and delivery systems. (See Figure 9 for typical pipe trench detail.) All required appurtenances, such as pressure reducing valves, pressure relief valves, air intake and release valves, drains, etc., will be installed. (See Figure 8.) Metered turnouts will be installed for individuals or groups of individuals. All areas disturbed by construction activities will be seeded. (See Figure 8.)

Approximately 10 acres of existing open delivery ditch will be filled, leveled, and seeded by individual landowners.

It is projected that approximately 75 percent of the land treatment needs identified in the land treatment section will be applied within 5 years after the project is completed. Average yields with the installation of this project are: pasture, 8 AUMs per acre; hay, 5 tons per acre; and barley, 80 bushels per acre. Approximately 40 percent of the operators in the served area are receiving conservation district assistance. Conservation planning will be accelerated in the project area under the ongoing program.

Three biologists conducted a systematic wildlife habitat evaluation of the planning area using the Habitat Evaluation Procedure (HEP) developed by the U.S. Fish an Wildlife Service. Sites were evaluated on a habitat unit basis. Habitat unit values could range from a low of one on a site, providing little of the habitat needs of a specie, to a high of ten, where a site met all the habitat criteria for that specie.

Destruction of ditch habitat will account for the loss of 244 habitat units. Less water in Threemile and Ambrose Creeks will result in the loss of 203 habitat units of riverine riparian.

Mitigation of ditch habitat will be accomplished by providing 20.3 acres of strips 10 to 20 feet wide along fencerows and field borders and protection of some ditch habitat from destruction. Mitigation of riverine riparian habitat will be accomplished by protecting 14.5 acres of this habitat from grazing. The approximate mitigation cost is $51,000, which will be for fencing and seeding. The cost of mitigation will be a local cost. For greater detail on mitigation, consult the Environmental Assessment for Three Mile Farm Irrigation Measure.

Professor of Anthropology, Dee C. Taylor, University of Montana, conducted a cultural resources inventory. A literature and field survey did not indicate any archeological or historical resources that might be threatened by installation of the proposed gravity sprinkler irrigation system.

B. Installation Costs

The total cost of installation of the structural measures is estimated at $3,477,400. Of this total $1,771,000 will be borne by RC&D funds and $1,706,400 will be borne by other funds. Details of these costs, which include construction, engineering, administration, land rights, and mitigation, are presented in Table 1.

The estimated construction cost includes all materials and labor necessary for installing the structural measures. Unit prices used in the estimate are based on 1980 prevailing prices. The estimated construction cost is $2,802,000, of which 50 percent will be cost shared by RC&D and 50 percent by other funds (see Table 1).

The estimated costs of the engineering services is $140,000 and will be borne by RC&D funds. These costs include costs of surveys, investigations, design, plans, and specifications for construction of the structural measures.

Total project administration costs are estimated at $240,000 ($230,000 RC&D funds and $10,000 other funds) and include contract administration and construction inspection. Land rights for road crossings, utility crossings, fences, etc., are a local cost and are estimated at $40,800. Mitigation costs to fence and seed wildlife habitat areas are estimated at $51,000.

The above costs are preliminary estimates. Actual costs incurred in the installation of the measure will be used to determine final costs borne by each party.

Construction and resulting costs will be obligated in one fiscal year if possible. However, due to the size of the project and time required for installation, a multiyear construction period may be necessary. Present plans are to obligate some engineering costs in fiscal year 1981 and the remainder of the installation costs in fiscal year 1982 (see Table 1).

C. Method of Financing

The Threemile group, in cooperation with BRID, intends to secure a loan through the Water & Power Resources Service of the U.S. Department of the Interior under the "Small Reclamation Projects Act of 1956." They will form a special improvement district which will make annual property tax assessments on the individual acreages to repay the loan. The local sponsors have submitted a letter of intent and a formal application for the necessary financing for the project.

Approximately 51 percent of the project installation costs will be obtained from RC&D funds. Agricultural Stabilization and Conservation Service (ASCS) cost-sharing assistance is not available for the project installation.

D. Environmental Evaluation

The environmental evaluation process was made in accordance with the National Environment Policy Act. This evaluation is presented as a separate document entitled "Environment Assessment for Threemile Farm Irrigation Measure."

E. Land and Water Rights

Sponsors will acquire without RC&D cost-share all necessary land easements and rights-of-way and all required permits that will be needed in connection with the works of improvement.

Water for the area will be supplied by the Bitter Root Irrigation District. All water rights for this district have been previously established and are recorded and filed in the Ravalli County Courthouse.

Planning and installation of this measure will require permits for access for surveys and construction. Work areas permits for construction access and a permanent easement for operation and maintenance will be required before construction commences.

Pipelines and structures will require a 100-foot-wide construction permit and a 30-foot-wide easement for O&M. Permits and easements will need to be acquired from individual landowners.

The following permits have been identified by the planning team as necessary for construction of the measure. This list may not be all-inclusive for the permits that will be required for construction.

1. 404 Federal Water Pollution Act Permit or written statement from the Corps of Engineers that a permit is not required.

2. Montana Streambank and Land Preservation Permit (310 permit) from the Bitterroot Conservation District

3. Water Pollution Permit for short-term construction activity from Montana Department of Health and Environmental Sciences

4. Permits for road crossings from Ravalli County.

5. Consideration will be given during the design survey period to the possibility of encountering any utilities such as buried cables, pipelines, overhead wires, etc. Utility companies will be notified at the time of construction, and they will provide exact utility locations to assure that buried cables, pipelines, overhead wires, etc., will not be damaged during construction.

F. Contracting and Procurement

The Bitter Root Irrigation District, as sponsors, will serve as the contracting local organization. All work will be done by formal contract. The Soil Conservation Service will prepare the contract documents. Contract administration costs are a part of the estimated $240,000 project administration costs. Proportionate sharing is listed in Table 1.

IV. OPERATION AND MAINTENANCE

An operation and maintenance agreement will be executed between Bitter Root Irrigation District and the Soil Conservation Service setting forth operation and maintenance requirements prior to execution of a project agreement. An operation and maintenance plan will be prepared for this project. The Soil Conservation Service will assist in the preparation of the plan. The BRID will be responsible for the operation and maintenance of the improvements installed. The annual cost of operation and maintenance of structural measures has been estimated at $10,000. Operation and maintenance work will normally include such action as headgate operation and turnout operation to insure proper water distribution, winterizing the buried pipeline and appurtenances, annual performance check on all valves to insure proper performance, annual service check on all flow meters, and servicing of inlet screening devices.

Inspection of the improvement will be made annually by BRID or their designated representative and the Soil Conservation Service.

V. UNIFORM RELOCATION ASSISTANCE AND REAL PROPERTY ACQUISITION ACT

The measure sponsor assures that comparable replacement dwellings will be available for individuals and persons displaced from dwellings and will provide relocation assistance advisory services and relocation assistance, make the relocation payments to displaced persons, and otherwise comply with the real property acquisition policies contained in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-464, 84 Stat. 1894), effective as of January 2, 1971, and the Regulations issued by the Secretary of Agriculture pursuant thereto. The cost of relocation payment will be shared by the measure sponsor and the Soil Conservation Service as shown in the following table.

	Measure Sponsor (percent)	Service (percent)	Estimated Relocation Payment Costs
Relocation Payments	49.1	50.9	$0*

The cultural resource inventory did not identify any known sites of historical or archeological value existing within the construction area. If sites are found during subsequent surveys or construction operations, the appropriate state or federal agency will be notified and necessary course of action decided upon in accordance with the applicable state and federal laws.

*Investigation has disclosed that under present conditions the RC&D measure will not result in the displacement of any person, business, or farm operation. However, if relocation becomes necessary, relocation payments will be shared in accordance with the percentages shown.

VI. MUTUALLY AGREEABLE PLAN

Through a request of the Bitter Root Irrigation District, the Bitterroot Conservation District, and the cooperative efforts of the sponsors and the Soil Conservation Service, this mutually agreeable RC&D measure plan has been completed. This measure has been adopted by the Bitter Root RC&D Council and is included in the project plan as a means of accomplishing goals of the Bitter Root RC&D Area.

VII. AGREEMENT REQUIRED TO OBLIGATE FUNDS

This is not a fund-obligation document. Financial and other assistance to be furnished by SCS in carrying out the work in this plan is contingent on the appropriation of funds for this purpose.

Separate agreements will be entered into between the SCS and the sponsors before either party initiates work involving funds of the other party. Such agreements will set forth in detail the financial and working arrangements and other conditions that are applicable to the specific improvements to be installed.

VIII. COMPLIANCE WITH CIVIL RIGHTS ACTS

The program conducted will be in compliance with all requirements respecting nondiscrimination as contained in the Civil Rights Acts of 1964 and the Regulations of the Secretary of Agriculture (7 C.F.R. Sec. 15 1-15, 12) which provide that no person in the United States shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any activity receiving federal financial assistance.

IX. NO MEMBER OF CONGRESS TO BENEFIT

No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this agreement or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

This plan may be amended, revised, or terminated only by mutual agreement of the parties hereto, except for cause.

BITTER ROOT IRRIGATION DISTRICT

By: Leonard Leese Date: May 8, 1981

Title: Chairman

Authorized by a resolution of the Bitter Root Irrigation District at a meeting held on November 7, 1979.
(date)

BITTERROOT CONSERVATION DISTRICT

By: Stephen J. Vogt Date: 12 May 81

Title: Chairman

Authorized by a resolution of the Bitterroot Conservation District at a meeting held on 12 May 81.
(date)

SOIL CONSERVATION SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

By: Dan K Sodeen Date: 6-1-81

Title: State Conservationist

TABLE 1 - ESTIMATED COST

THREEMILE FARM IRRIGATION RC&D MEASURE PLAN

COST ITEM	UNIT	NUMBER	ESTIMATED COST (DOLLARS)[1]						
			RC&D FUNDS			OTHER FUNDS			TOTAL
			FEDERAL LAND	NONFEDERAL LAND	TOTAL	FEDERAL LAND	NONFEDERAL LAND	TOTAL	
CONSTRUCTION				1,401,000	1,401,000		1,401,000	1,401,000	2,802,000
ENGINEERING AND OTHER TECHNICAL ASSISTANCE				140,000	140,000				140,000
RELOCATION PAYMENTS				-0-	-0-		-0-	-0-	-0-
ASSOCIATED LAND TREATMENT							203,600	203,600	203,600
ADMINISTRATION				230,000	230,000		10,000	10,000	240,000
LAND RIGHTS							40,800	40,800	40,800
MITIGATION							51,000	51,000	51,000
TOTAL COSTS				1,771,000	1,771,000		1,706,400	1,706,400	3,477,400

[1]Price base: 1980

October 1980

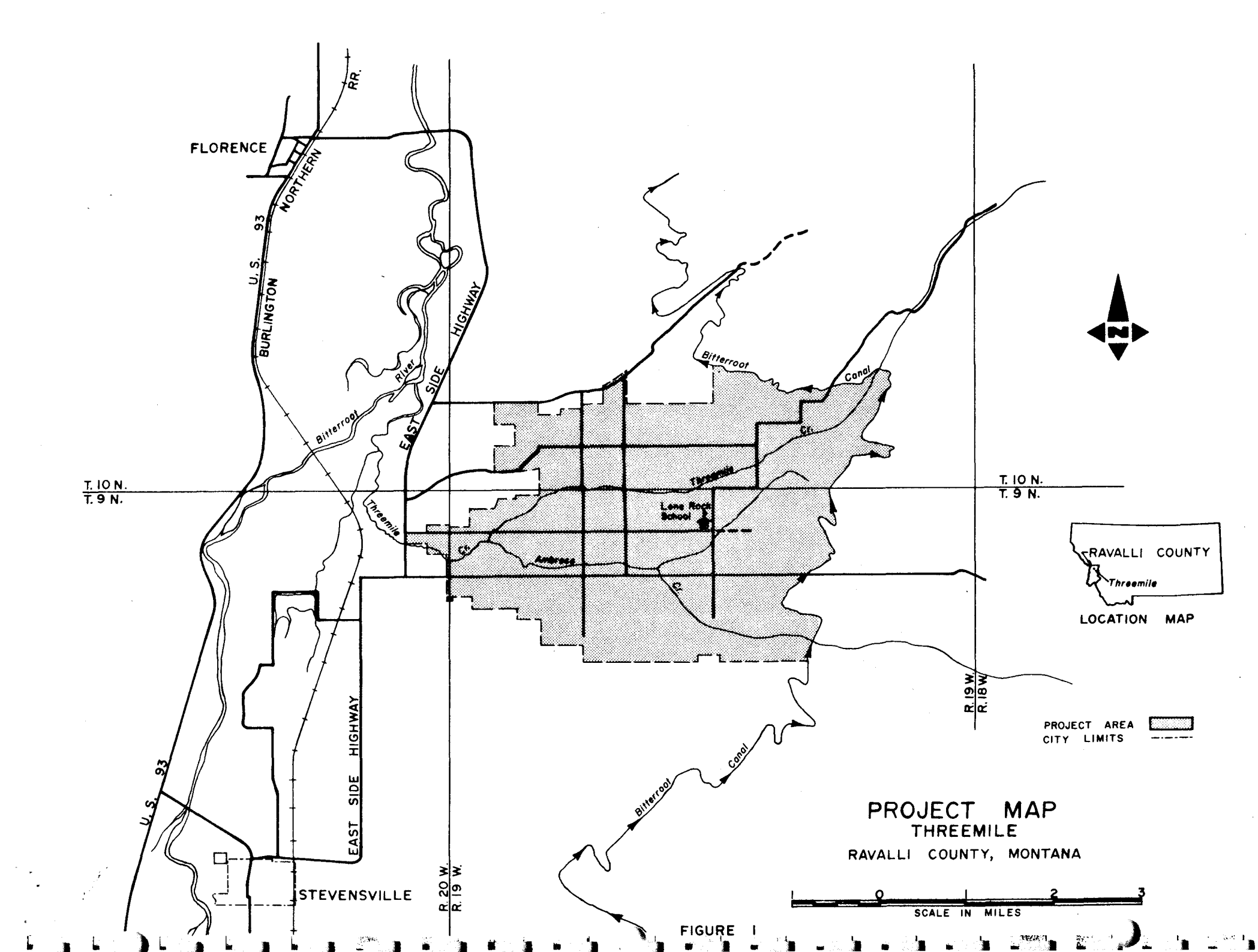
TABLE 2--SUMMARY COMPARISON OF ALTERNATIVES
THREEMILE FARM IRRIGATION RC&D MEASURE
RAVALLI COUNTY, MONTANA

Item	Alternative 1 Nonstructural	Alternative 2 Concrete-lined Ditch	Alternative 3 Gravity Sprinkler	Alternative 4 Envir. Quality
1. National Economic Development				
Installation Costs	369,500	3,375,610	3,477,400	6,700
Annual Costs[1]	31,200	269,000	270,400	1,000
Annual Benefits	36,700	294,500	460,600	---
Net Remaining Benefits	5,500	25,500	190,200	---
2. Environmental Quality				
a. Temporary increase in sediment deposition in Threemile Creek	No	No	Yes	No
b. Temporary reduction in sediment transport to Bitterroot River	No	No	Yes	No
c. Reduction in capacity of Threemile Creek to maintain a stream fishery	No	No	Yes	No
d. Reduction in streambed disturbance from irrigation maintenance activities	No	No	Yes	No
e. Reduction in irrigation ditch erosion and resulting sedimentation	No	Yes	Yes	No
f. Archeological and historical resources	No effect	No effect	No effect	No effect
g. Increase of riparian marsh cover type in habitat units	-0-	-0-	-0-	110
3. Regional Economic Development Account				
a. Net beneficial effects to region	74,400	634,600	1,094,400	---
b. Net beneficial effects to rest of nation	- 7,200	- 114,300	- 130,400	---

[1]Annual costs based on 7-1/8 percent interest rate.

TABLE 2--SUMMARY COMPARISON OF ALTERNATIVES (continued)

Item	Alternative 1 Nonstructural	Alternative 2 Concrete-lined Ditch	Alternative 3 Gravity Sprinkler	Alternative 4 Envir. Quality
3. RED Account (continued)				
c. Increase in jobs				
1. agricultural employment	.84 man-yr.	7.1 man-yrs.	10.4 man-yrs.	---
2. construction employment	.92 skilled man-yr; .41 semiskilled man-yr.	14 skilled man-yrs. 6 semiskilled man-yrs.	15 skilled man-yrs. 6 semiskilled man-yrs.	---
3. employment in service and trade sections	.50 semiskilled man-yr.	4.1 semiskilled man-yrs.	6.1 semiskilled man-yrs.	---
4. Other Social Effects Account				
a. Additional electricity required	484,000 KWH	484,000 KWH	---	---
b. Electricity saved	---	---	1,274,000 KWH	---



PROJECT MAP
THREEMILE
RAVALLI COUNTY, MONTANA

FIGURE 1

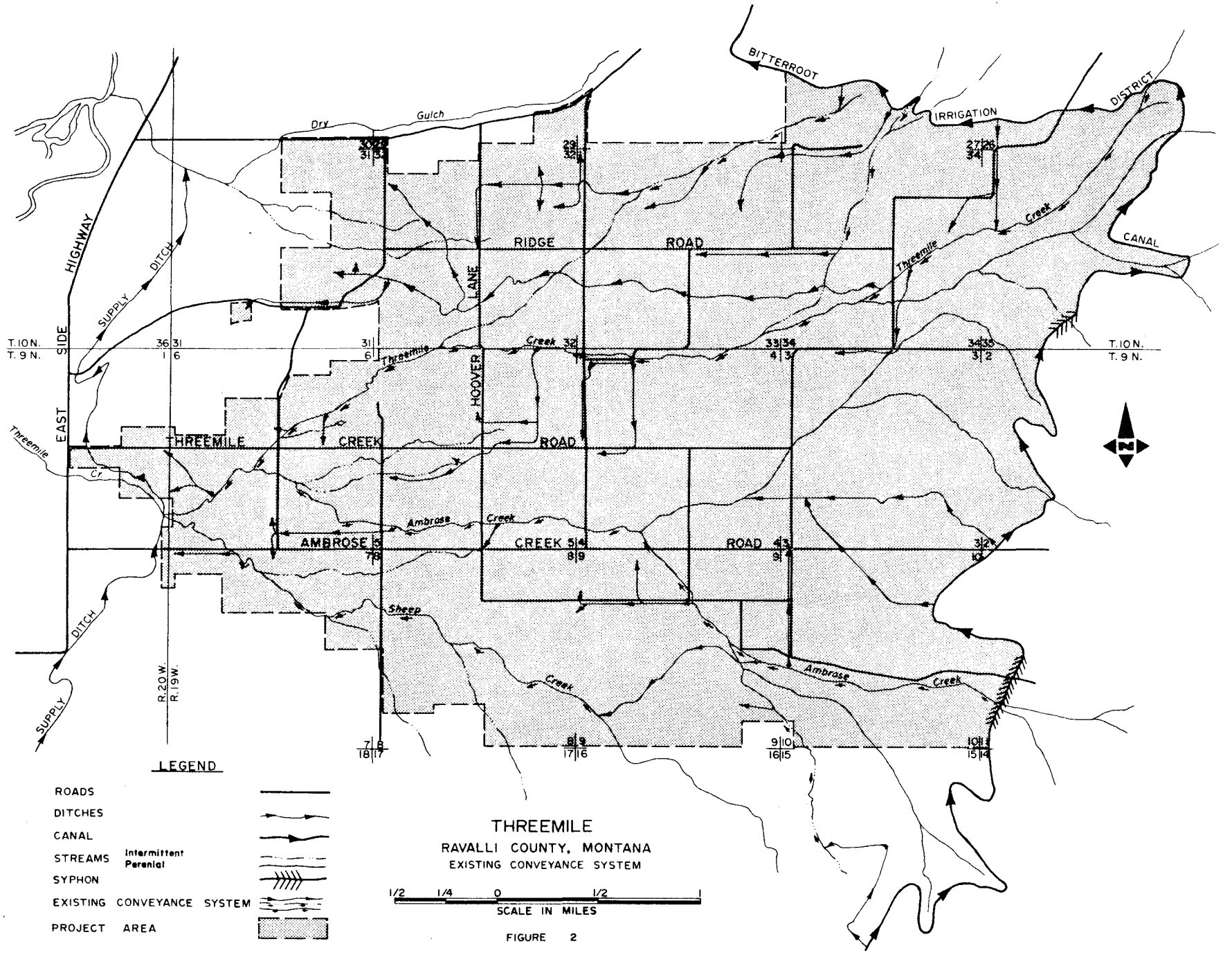

BITTERROOT
IRRIGATION
DISTRICT
Dry
Gulch
HIGHWAY
SUPPLY
DITCH
RIDGE
ROAD
LANE
Threemile
Creek
CANAL
T.10N.
T.9N.
SIDE
EAST
HOOVER
THREEMILE
CREEK
ROAD
Threemile
Cr.
Ambrose
Creek
AMBROSE
CREEK
ROAD
Sheep
Creek
DITCH
SUPPLY
R.20W.
R.19W.
Ambrose
Creek
N
LEGEND
ROADS
DITCHES
CANAL
STREAMS
Intermittent
Perenial
SYPHON
EXISTING CONVEYANCE SYSTEM
PROJECT AREA
THREEMILE
RAVALLI COUNTY, MONTANA
EXISTING CONVEYANCE SYSTEM
1/2 1/4 0 1/2 1
SCALE IN MILES

FIGURE 2

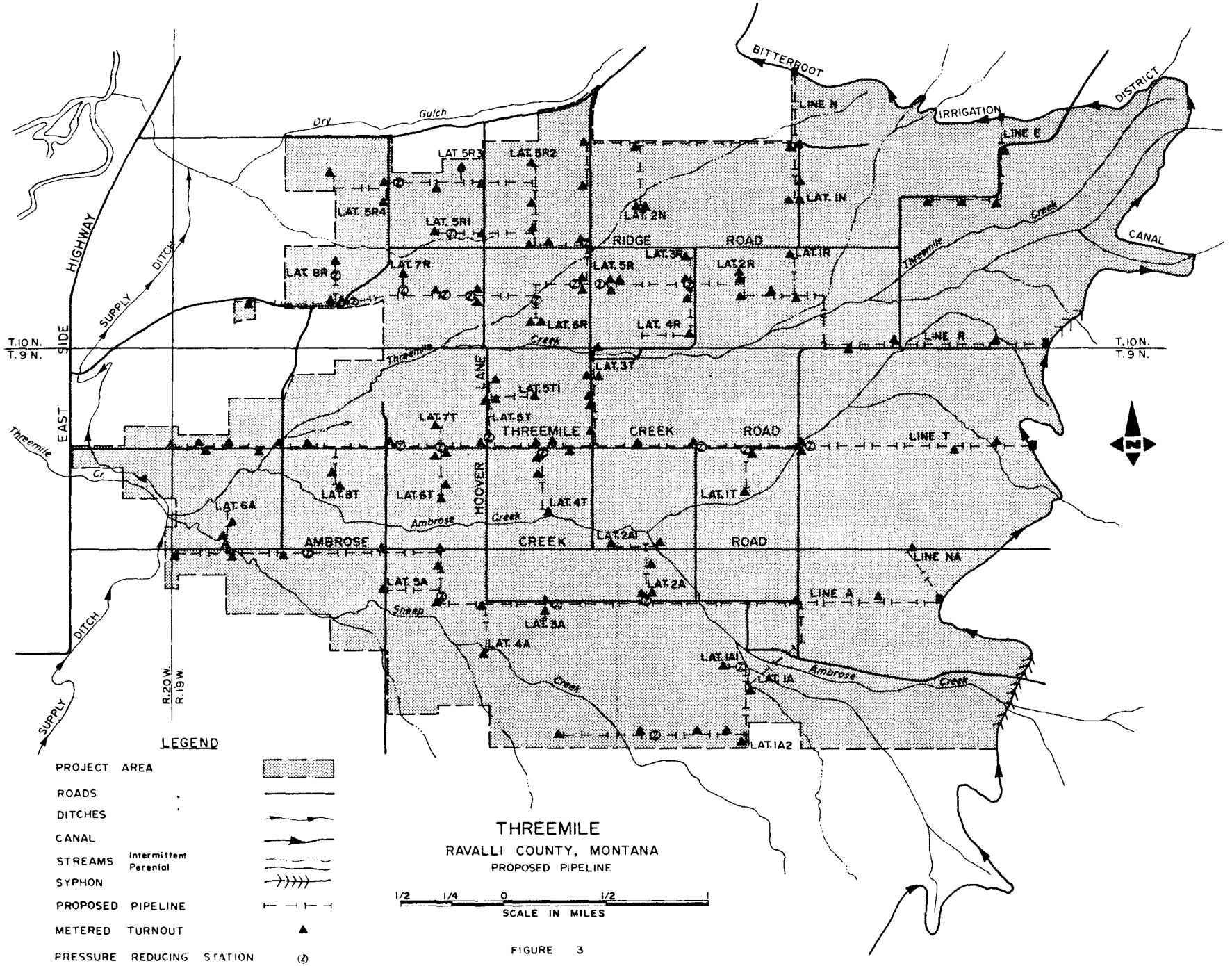
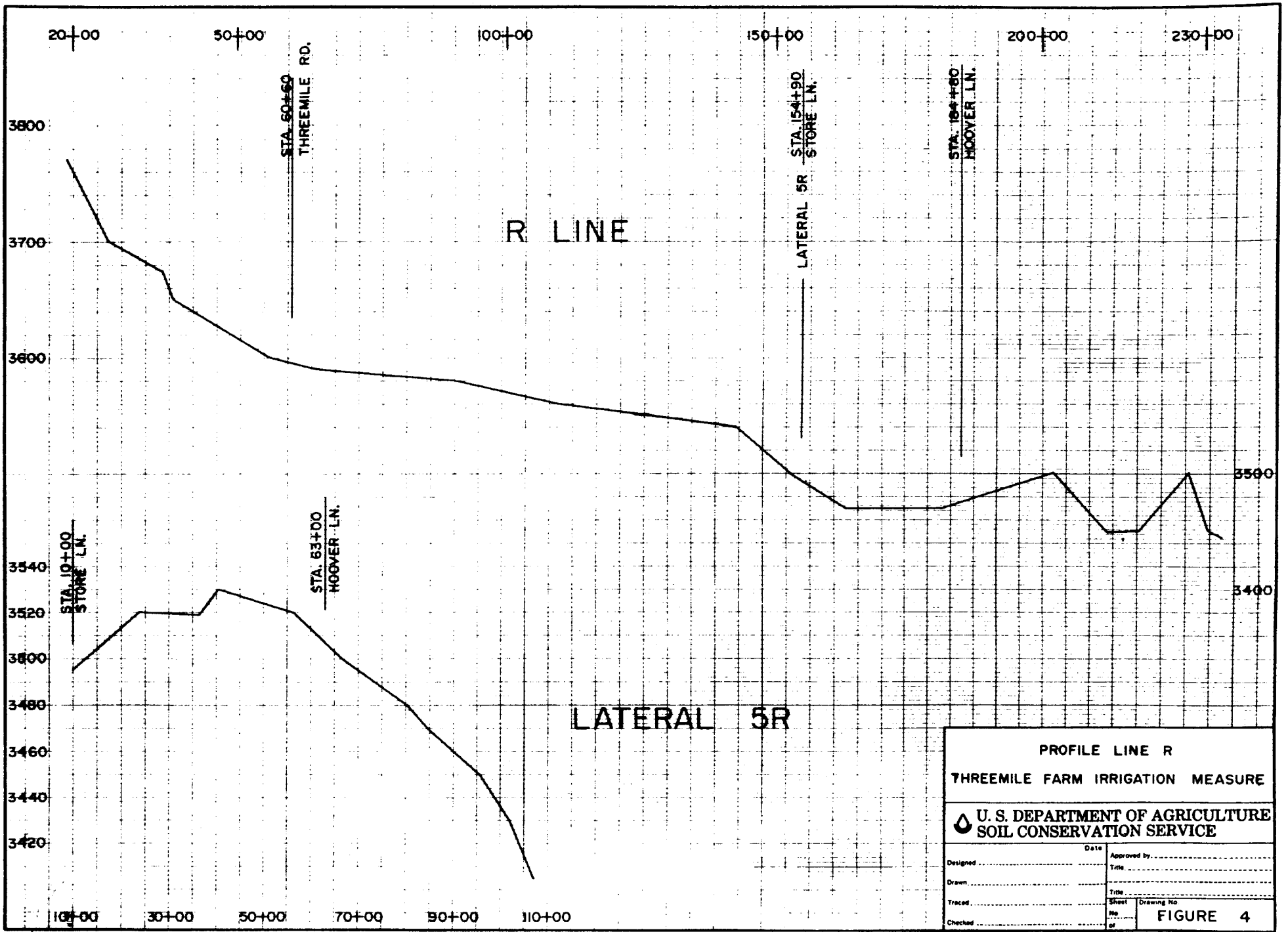

BITTERROOT
IRRIGATION
DISTRICT
LINE N
LINE E
CANAL
Dry
Gulch
HIGHWAY
SUPPLY
DITCH
LAT. 5R3
LAT. 5R2
LAT. 5R4
LAT. 5R1
LAT. 2N
LAT. 1N
RIDGE
ROAD
LAT. 3R
LAT. 8R
LAT. 7R
LAT. 5R
LAT. 2R
LAT. 1R
Threemile
Creek
LAT. 6R
LAT. 4R
T.10N.
T.9N.
SIDE
LINE R
LANE
LAT. 3T
LAT. 5T1
LAT. 7T
LAT. 5T
THREEMILE
CREEK
ROAD
LINE T
EAST
Threemile
Cr.
LAT. 8T
LAT. 6T
HOOVER
LAT. 4T
LAT. 1T
LAT. 6A
Ambrose
Creek
AMBROSE
CREEK
ROAD
LAT. 2A1
LINE NA
LAT. 5A
LAT. 2A
LINE A
Sheep
Creek
DITCH
LAT. 3A
LAT. 4A
LAT. 1A1
LAT. 1A
Ambrose
Creek
SUPPLY
R.20W.
R.19W.
LAT. 1A2
N
LEGEND
PROJECT AREA
ROADS
DITCHES
CANAL
STREAMS
Intermittent
Perenial
SYPHON
PROPOSED PIPELINE
METERED TURNOUT
PRESSURE REDUCING STATION
TURNOUT ON B.R.I.D. CANAL
THREEMILE
RAVALLI COUNTY, MONTANA
PROPOSED PIPELINE
1/2 1/4 0 1/2 1
SCALE IN MILES

FIGURE 3


20+00
50+00
100+00
150+00
200+00
230+00
STA. 60+60
THREEMILE RD.
STA. 154+90
STONE LN.
LATERAL 5R
STA. 184+80
HOOVER LN.
R LINE
3800
3700
3600
3500
3400
STA. 10+00
STONE LN.
STA. 63+00
HOOVER LN.
3540
3520
3500
3480
3460
3440
3420
LATERAL 5R
10+00
30+00
50+00
70+00
90+00
110+00
PROFILE LINE R
THREEMILE FARM IRRIGATION MEASURE
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
Designed
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Title
Title
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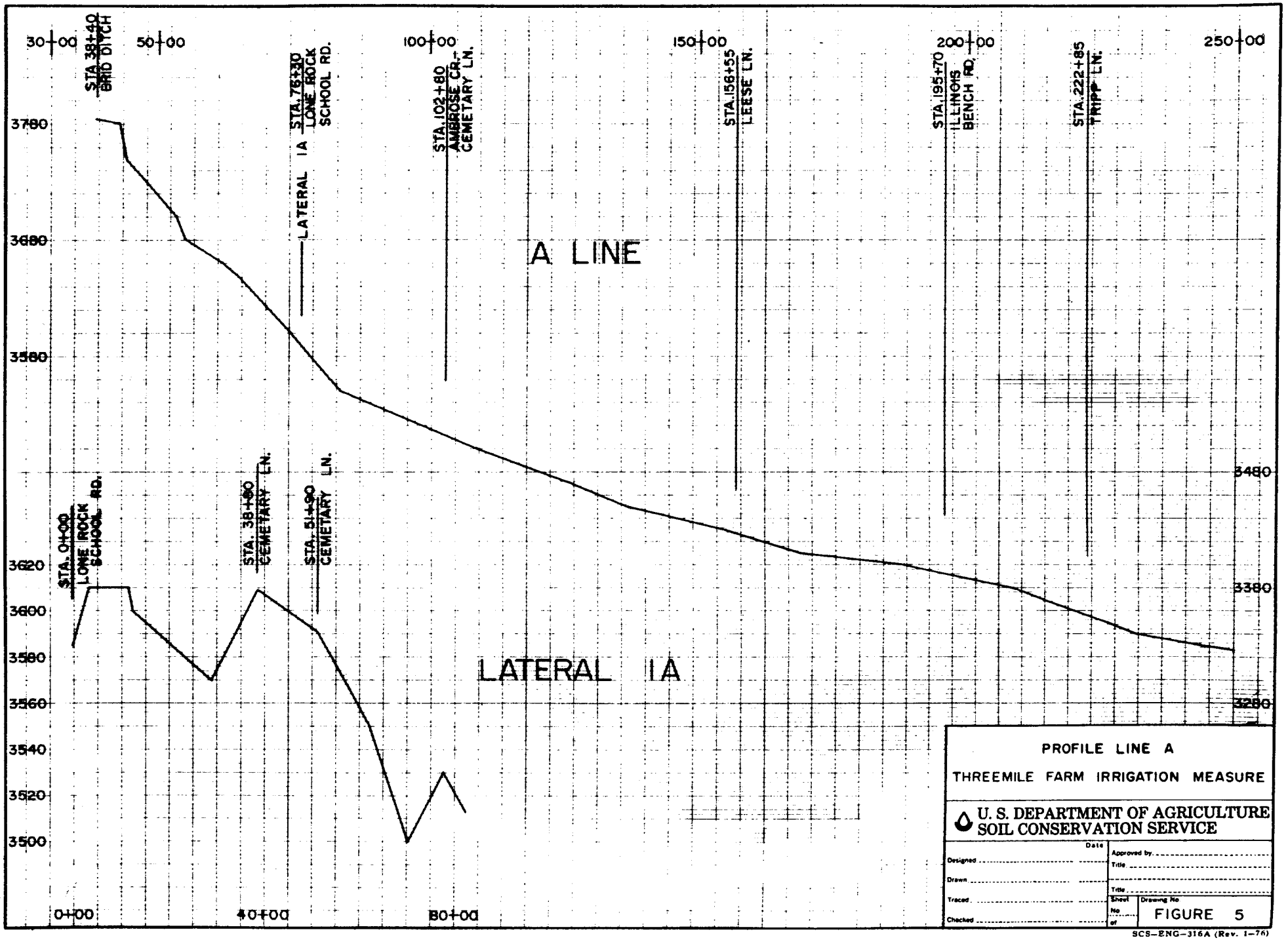
of
Drawing No
FIGURE 4
SCS-ENG-316A (Rev. 1-76)



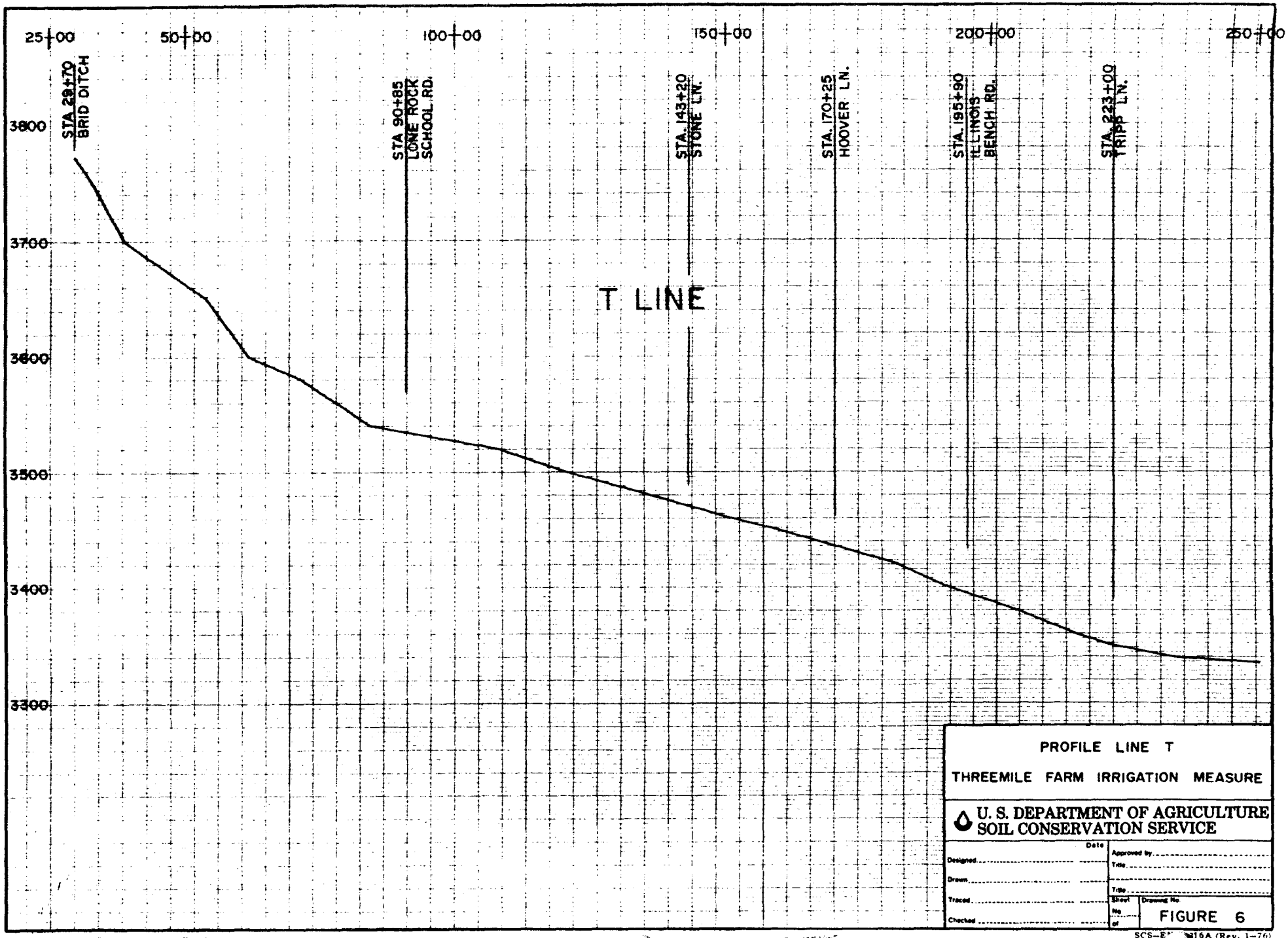
PROFILE LINE A

THREEMILE FARM IRRIGATION MEASURE

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed / Date	Approved by / Title
Drawn	Title
Traced	Sheet No. of
Checked	Drawing No. FIGURE 5

SCS-ENG-316A (Rev. 1-76)



PROFILE LINE T

THREEMILE FARM IRRIGATION MEASURE

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed ____ Date ____ Approved by ____

Drawn ____ Title ____

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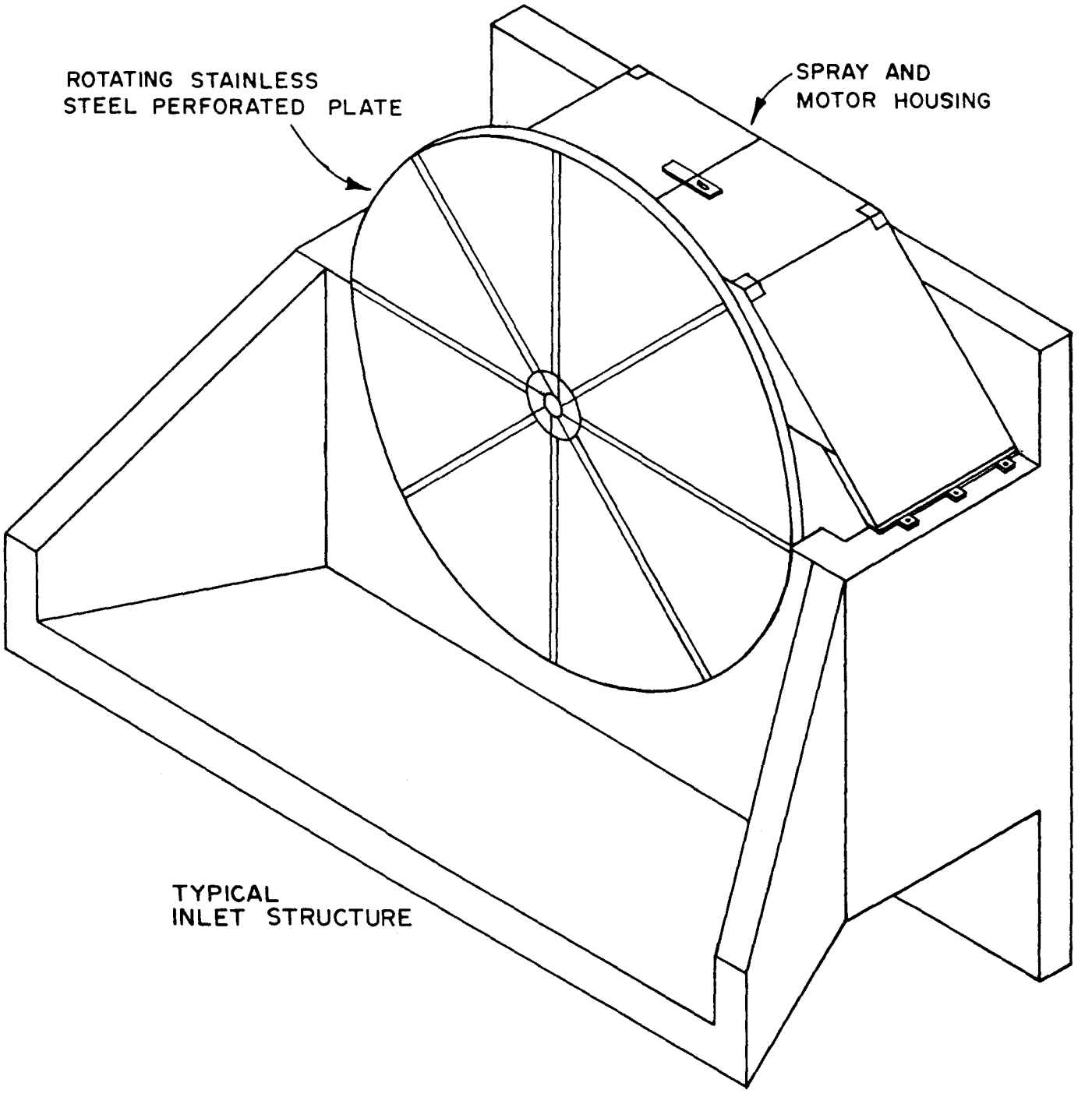
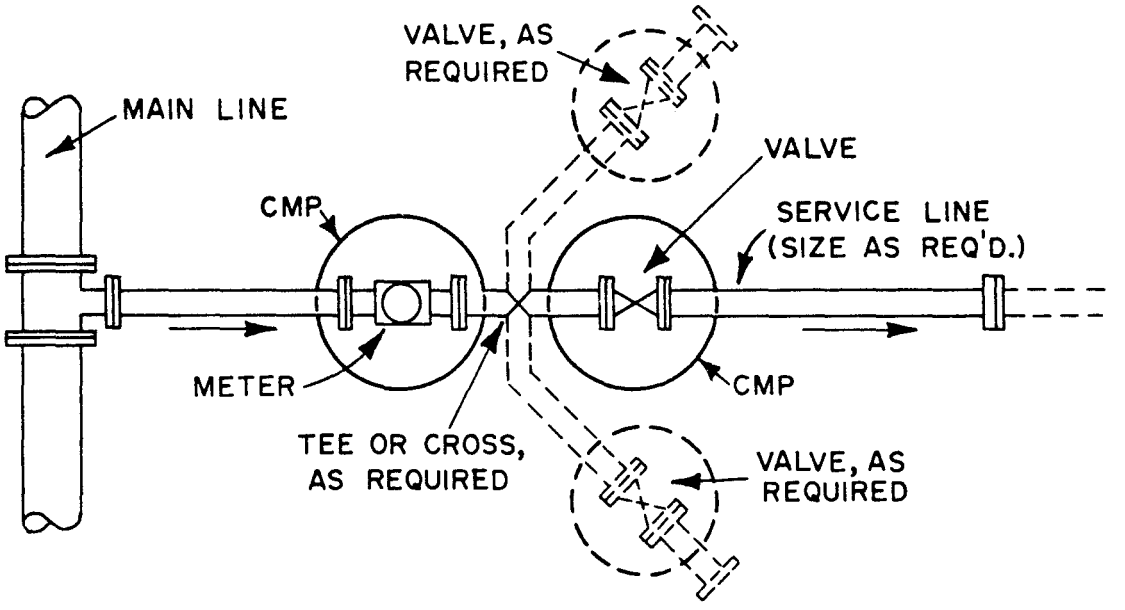
Checked ____ Sheet No. ____ of ____ Drawing No. FIGURE 6

SCS-E[illegible]16A (Rev. 1-76)

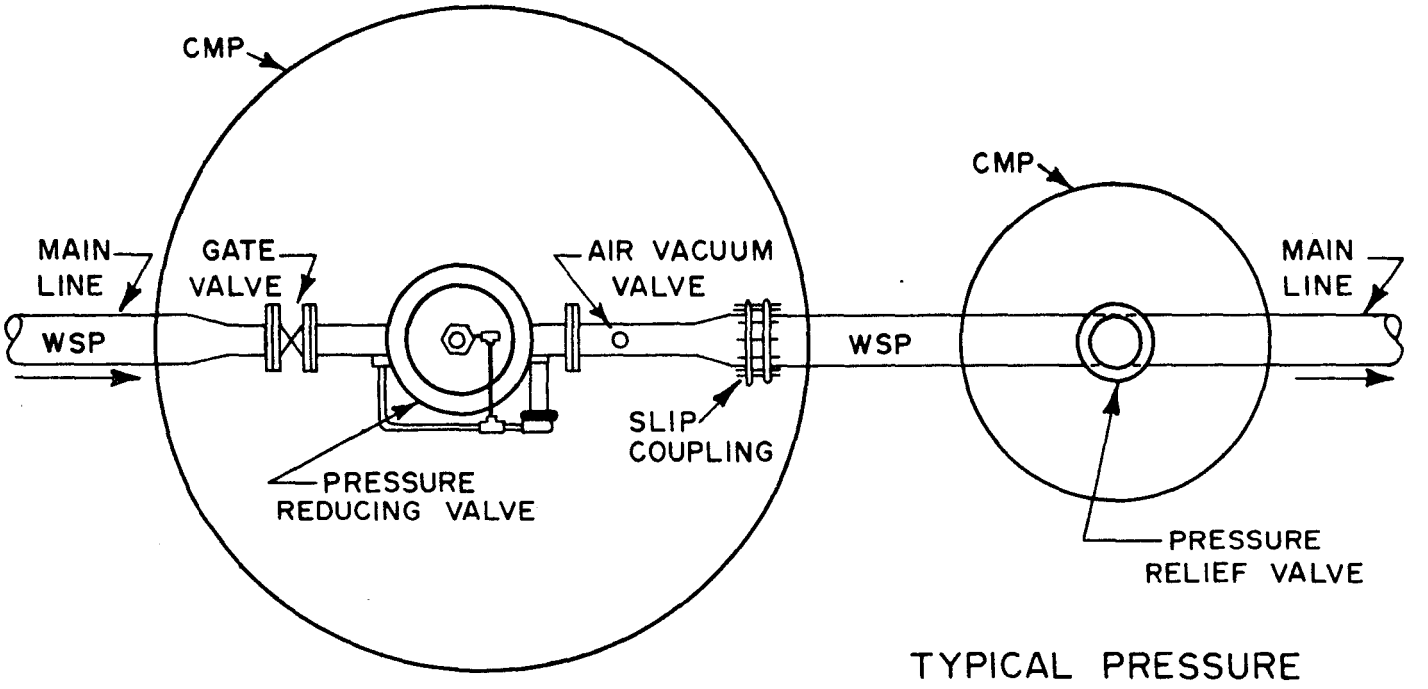


THREEMILE FARM
IRRIGATION MEASURE

FIGURE 7



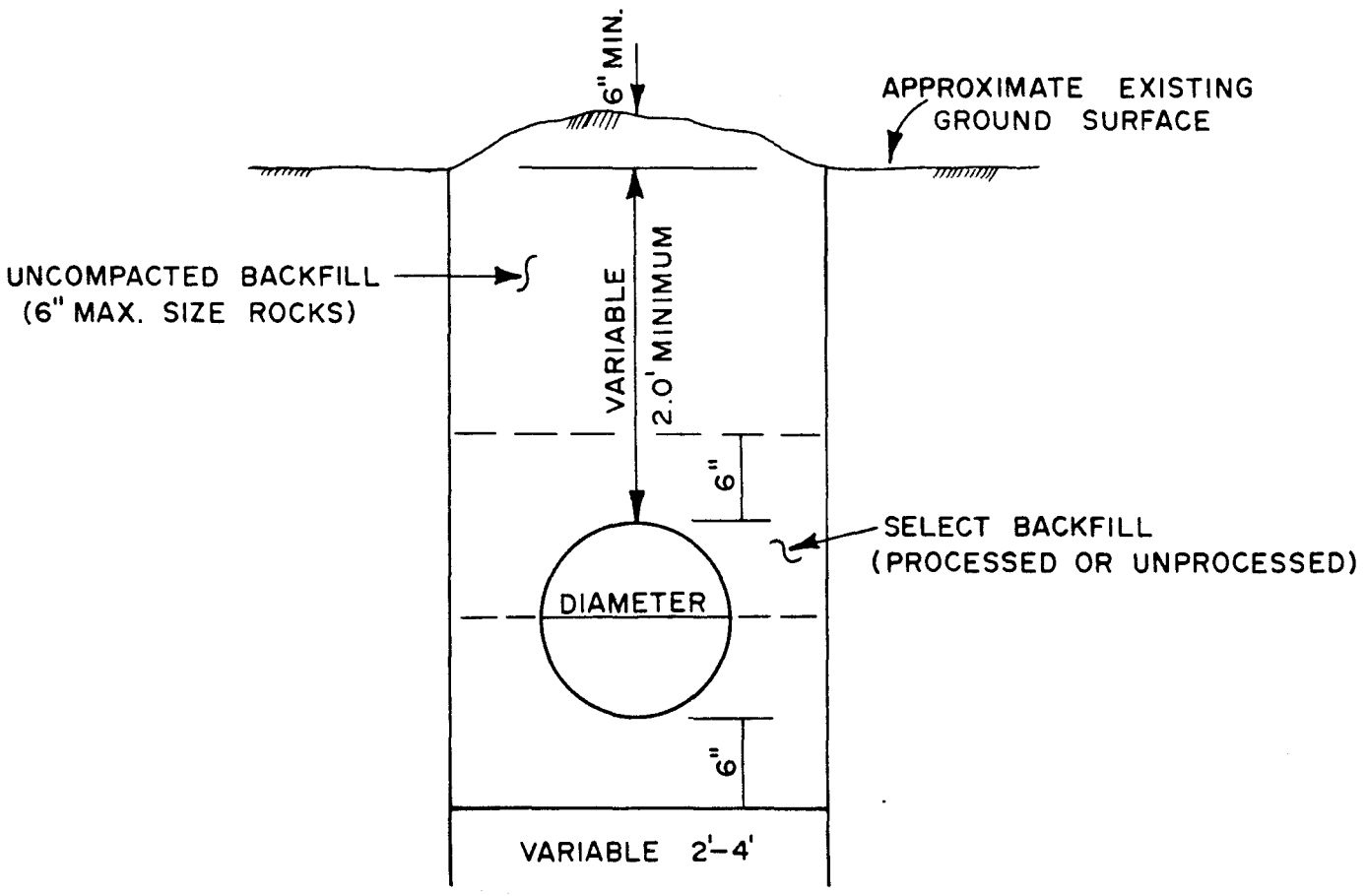
TYPICAL TURNOUTS



TYPICAL PRESSURE REDUCING STATION

THREEMILE FARM IRRIGATION MEASURE

FIGURE 8



TYPICAL PIPE TRENCH DETAIL

NOT TO SCALE

THREEMILE FARM
IRRIGATION MEASURE

FIGURE 9

Exhibit 9
March 23, 1983

DELTA ENGINEERING

"Water Resource Specialists"

MINING GEOLOG

510 - 1st AVENUE NORTH • SUITE 203 • P. O. BOX 1481 • GREAT FALLS, MONTANA 59403 • PHONE (406) 453-2209

SAGE CREEK WATER ASSOCIATION

PRELIMINARY ENGINEERING REPORT

FEBRUARY 1983

Copy of by Laura

SAGE CREEK COUNTY WATER ASSOCIATION
PRELIMINARY ENGINEERING REPORT

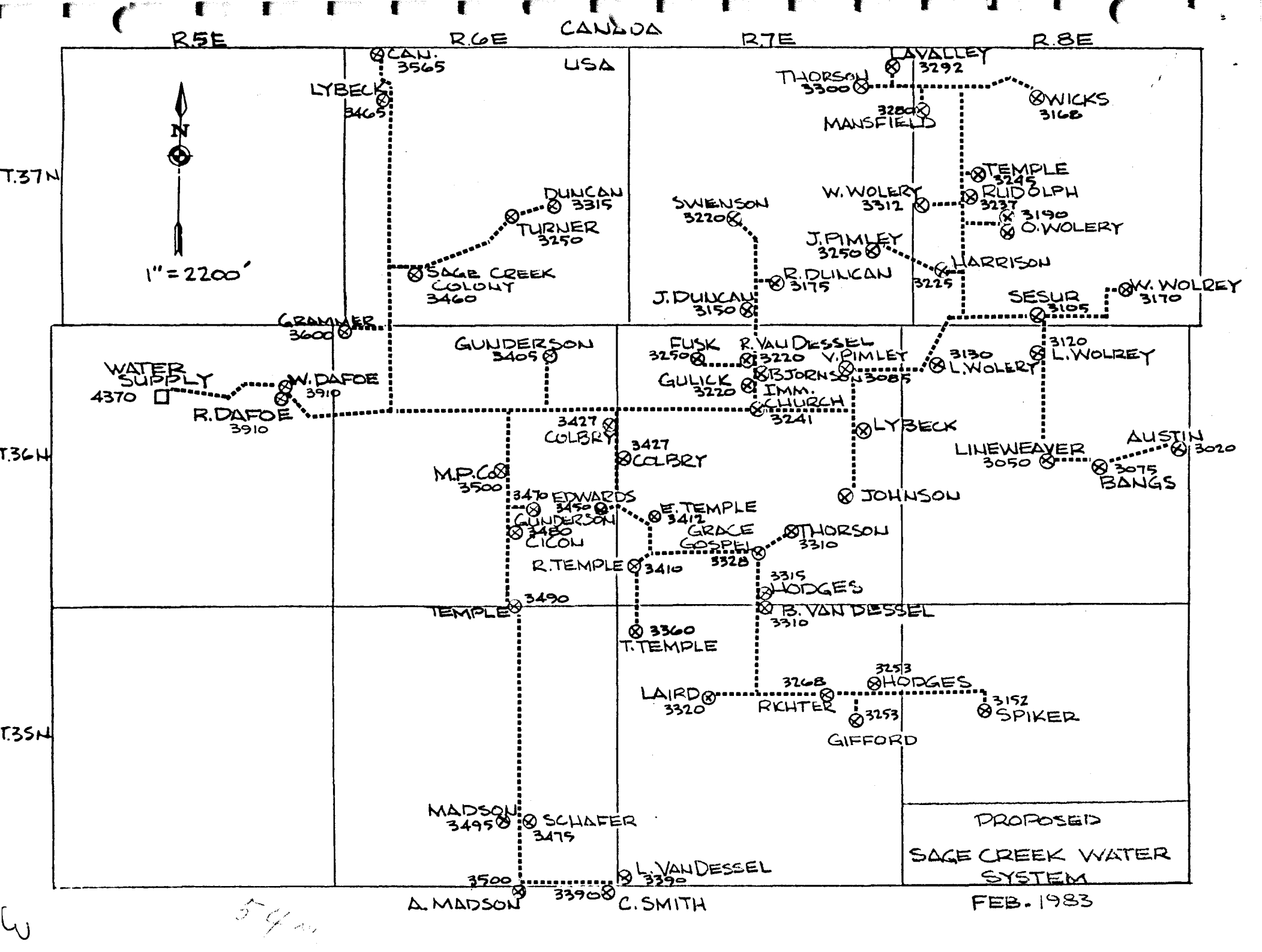
A. AREA - See Enclosed Map

The planned Sage Creek Water District lies in Northern Liberty County and northwestern Hill County approximately 20-30 miles north of the towns of Chester and Joplin, Montana. The approximate boundaries of the District are located along the eastern flank of the Sweet Grass Hills 22 miles eastward along the U.S. Canada border to approximately 5 miles east of the Liberty-Hill County line. The project then proceeds south about 19 miles and west about 20 miles. The project is located in Township 35, 36, 37, North and Ranges 5, 6, 7, 8 east. Total area is approximately 300 square miles.

There are no major obstacles or barriers within the area of the planned water system. There are several naturally occurring obstacles such as the outcropping bedrock along the western and northern edges of the planned water line route and also several creeks or streams which have to be crossed. Neither the bedrock nor the streams will be unsurmountable although construction costs will be escalated where the water line is constructed through these areas.

The elevations within the project boundaries range from a high of 4370 at the location of the planned water source to a low of 3020 at the extreme eastern edge of the project. As the western edge of the project is located along the flank of the Sweet Grass Hills the elevations are highest along the western boundary ranging from 4300 down to 3700. Once away from the hills the area becomes generally flat with gently rolling hills. Elevations gradually decline toward the north and east from highs of about 3700 to lows between 3100 and 3300.

The proposed facility is a rural water system intended to provide potable water to the rural residents located in the project area. At this time most residents haul their drinking water from either Chester or Joplin located some 30 to 40 miles away. Wells which have provided water for livestock and other uses in the past are gradually deteriorating to the point of being unsuitable. Saline seep is also prevalent throughout the area and most surface water east of the Sweet Grass Hills is completely unsuitable for any use. This general area is desperate for a decent water supply for domestic and livestock use without the undue burden and expense of hauling. The areas to the west, south, and east of the proposed Sage Creek Water System boundaries are all served by other rural water systems. However, these systems are utilized to capacity and therefore cannot be expanded to include Sage Creek.


R5E
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USA
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T.36N
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1" = 2200'
CAN.
3565
LYBECK
3465
DUNCAN
3315
TURNER
3250
SAGE CREEK
COLONY
3460
GRAMMER
3600
WATER
SUPPLY
4370
W. DAFOE
3910
R. DAFOE
3910
GUNDERSON
3405
3427
COLBRY
3427
COLBRY
M.P.Co
3500
3470 EDWARDS
3450
GUNDERSON
3480
CICON
E. TEMPLE
3412
GRACE
GOSPEL
3328
THORSON
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R. TEMPLE
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TEMPLE
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T. TEMPLE
3315
HODGES
B. VAN DESSEL
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LAVALLEY
3292
THORSON
3300
WICKS
3168
3280
MANSFIELD
TEMPLE
3245
W. WOLERY
3312
RUDOLPH
3237
3190
O. WOLERY
SWENSON
3220
J. PIMLEY
3250
HARRISON
3225
R. DUNCAN
3175
J. DUNCAN
3150
SESUR
3105
W. WOLREY
3170
FUSK
3250
R. VAN DESSEL
3220
V. PIMLEY
3130
L. WOLERY
3120
L. WOLREY
GULICK
3220
BJORNSON
3085
IMM.
CHURCH
3241
LYBECK
LINEWEAVER
3050
AUSTIN
3020
3075
BANGS
JOHNSON
LAIRD
3320
3268
RICHTER
3253
HODGES
3253
3152
SPIKER
GIFFORD
MADSON
3495
SCHAFER
3475
3500
A. MADSON
L. VAN DESSEL
3390
C. SMITH
PROPOSED
SAGE CREEK WATER
SYSTEM
FEB. 1983

B. Existing Facilities

There are no existing facilities providing water anywhere with the proposed project boundaries.

C. Proposed Facilities and Services

1. Description

The proposed facility will include a water supply, a chlorinating system and the distribution pipeline needed to provide water to each, subscribed user. The water supply will be developed from an existing ground water source using an interception gallery/collector. The groundwater will be piped to a chlorinating unit for disinfection and then distributed throughout the system network. There will be no pumping or storage facilities required as the entire water system will be designed and distributed as a gravity system.

2. Land

The construction and development of the interception gallery will require an area approximately 50 feet wide by 100 feet long. Once constructed however, the gallery will be completely below the ground surface with the exception of a man hole cover located at ground surface. The only land requirements after construction would be a right-of-way and easement for the gallery and for the water line. There is the need for a small parcel of land 50' X 50' for the location and construction of a small building and surge tank to contain a chlorinating unit. The parcel would have to be located near a power source several miles downstream from the gallery.

The waterline will require a 20 foot perpetual easement from various land owners located along the water system route. During construction a 50 foot right-of-way will be needed for excavation and pipe installation.

3. Rights

The various rights or state agency requirements involved in the development and construction of the Sage Creek System as proposed include:

1. Interim Permit - For Beneficial Water Use - State of Montana Department of Natural Resources - Permit to develop and test for groundwater supply - Already Submitted.

2. Notice of Completion of Ground Water Development (Mont. - D.N.R.) submitted after the project is completed and water is put to beneficial use.

3. Temporary Easement from land owners - 50 foot Right-of-way for construction.

4. Permanent Easement from land owners - 20 foot Right-of-way for waterline access and repair.

5. Montana State Department, Health and Environmental Sciences- approval of engineering plans and specific times.

D. Proposed System

1. Water Supply

The water supply has already been investigated and tested. The water supply will be developed in an alluvial aquifer located in NW ¼, SW ¼, NE ¼, Section 9T36NR5E. An interception gallery (perforated screen and gravel pack) will be constructed about 20 feet below the ground surface. Between 60 to 100 feet of an 8 inch diameter PVC pipe using alternating screen sections will be placed along the bottom of the gallery trench. This pipe will be completely surrounded by clean gravel and a marafi fabric to filter out silt. One end of the gallery piping will be located inside a five foot diameter man hole used as a surge tank/reservoir. The gallery trench will be backfilled and the disturbed ground surface graded and contoured to divert runoff and the collection of water.

Quality

The chemical analysis and radiological test of water taken from a test well at the location of the planned gallery are being completed and the results forthcoming. A chemical analysis of water from the adjacent Sage Creek; however, shows the water to be of excellent quality and meets all the parameters of the Safe Drinking Water Act (PC 92-523). It is assumed that the groundwater at the planned gallery location is also of excellent quality.

Since the water source is groundwater no treatment is required. However, since the planned gallery will be completed at a depth of less than 25 feet, the groundwater is considered shallow and will be chlorinated prior to distribution.

Quantity

There are approximately 55 to 60 rural residents who have expressed a positive interest in obtaining water. Each user will be allocated 1

gallon per minute (1440 gallons per day). Since several users want more than 1 use, the quantity of water needed to supply the system requirements is estimated to be between 75 and 80 gpm.

A. Sources

The Montana Bureau of Mines and Geology and the U.S.D.A. Soils Conservation Service conducted an investigation for a water supply for the Sage Creek Water Association in the summer of 1982. The results of their study suggested that the only potential source of water meeting the quality and quantity requirements would have to be developed from groundwater or springs located towards the headwaters of Sage Creek.

In January 1983, nine exploration wells were drilled in the alluvium along Sage Creek or in areas showing some groundwater potential. Of the nine wells drilled only one well contained a significant saturated gravel thickness which could be developed for the water supply (logs are enclosed). Several test pits were excavated in the area of the positive well site to determine the extent and thickness of the gravel and the aquifer potential. A pumping test was also conducted. The test pits showed the gravels to be extensive and the saturated thickness to be in excess of 15 feet. The gravels are very coarse, clean, and show a tremendous potential for groundwater. The test pump indicated that a properly constructed and completed well could yield several hundreds of gallons per minute.

B. Treatment

As indicated the planned water source is shallow groundwater and no treatment is required. The Montana State Department of Health and Environmental Sciences has administrative rules which require chlorination of shallow groundwater used for public water supplies. Chlorination of the water supply is planned.

C. Storage

No storage requirements or facilities are needed. The extensive aquifer provides more than adequate storage for the 80 gpm requirements of the system. A large man hole with a capacity of 2000 to 3000 gallons will be installed in the gallery to serve as a surge tank.

D. Pressure

The entire distribution of water for the Sage Creek system will be by gravity. No pumps or boosters are required. The elevation of the planned water supply provides more than adequate hydraulic pressures to

distribute the required water quantities through approximately 96 miles of pipe. Because of the large drop in elevation along the planned water line, several pressure reducing stations will be required to maintain safe working pressures in the distribution lines.

The system will be designed to provide all water users with a minimum of 20 psi at each user location.

E. Distribution System

The tentative route for the waterline and the location of the planned users will require approximately 96 miles of pipe. Based upon the preliminary engineering the following pipe sizes and quantities are required:

3" CL 200	22,000 feet
3" CL 160	73,400 feet
2" CL 160	52,400 feet
1½" CL 200	12,200 feet
1½" CL 160	348,000 feet
Total	508,000 feet (96.2 miles)

A minimum of six pressure reducing stations are planned to reduce the high hydrostatic pressures caused by the significant changes in elevation. Two automatic air release stations are also planned to expel air from the lines automatically.

F. Estimated Project Costs

The following is an estimated project cost summary based upon the 96.2 mile water line and 78 potential water users as shown on the map.

CONSTRUCTION

-Water Supply & Infiltration gallery	$10,000
-Chlorination Bldg. & Equipment	$15,000
-Pipeline - Excavation & Lay	$362,000
-Fittings & Valves	$35,000
Auto. Air Release Sta. 2@$2000ea	$4,000
-Press. Reducing Sta. 6@$2000ea	$12,000
-Road Crossings 30@$100ea	$3,000
-Manual Air Hydrants 60@$50ea	$3,000
-3/4 Curb Stops 65@$100ea	$6,500
-Valve Installation 50@$100ea	$5,000
-Rock Excavation 5 miles est.	$44,500
	$500,000
10% Contingency	$50,000
TOTAL	$550,000

Project Cost Summary

CONSTRUCTION	$550,000
ENGINEERING/INSPECTION	$64,000
LEGAL	$27,500
INTERIM INTEREST	$45,000
RESERVE	$52,500
ESTIMATED TOTAL PROJECT	$739,000

DEBT REPAYMENT

The Montana Department of Natural Resources & Conservation Water Resources Bureau has indicated that if the Sage Creek Water District were included in the list of water development projects for loan assistance, the State would provide a loan at an interest rate estimated to be 2%, 4%, or 5% with a 25 year payback.

Using a total project cost of $739,000 and assuming a $300 water use fee, the 78 users would generate about $23,000 which would be deducted from the total cost. Therefore the debt repayment would be about $716,000.

The following is the debt repayment schedule for $716,000 at the proposed interest rates:

-2% - $36,670/year ----$39.18 per month per use
-4% - $45,800/year ----$48.96 per month per use
-5% - $50,800/year ----$54.27 per month per use

OPERATION AND MAINTENANCE

The planned Sage Creek Water System is essentially maintenance free as the system is entirely gravity fed without pumps, electrical, and other mechanical equipment. There will be some cost involved in chlorinating as well as bookkeeping/accounting, and a part time water system supervisor. The total of these costs are estimated to be between $600 and $800 per month. Therefore O & M would require an additional $8.00 to $10.00 per month per water use.

TOTAL MONTHLY FEE IS ESTIMATED TO BE BETWEEN

$55.00 AND $65.00 PER WATER USE.

E. Estimated Project Costs

CONSTRUCTION

-Water Supply & Gallery	$12,000
-Chlorinating Bldg & Equip.	$18,000
-Excavation & Lay - Pipe	$594,860
-Press. Reducing Sta. 6@$2500ea	$15,000
-Auto. Air Release Sta. 2@$2500ea	$5,000
-Manual Air Hydrants 90@$150ea	$13,500
-Road Crossings - 40@$200ea	$8,000
-Misc. Valves 50@$200ea	$10,000
-3/4 Curb Stops 65@$100ea	$6,500
-Rock Excavation	$40,000
	$722,860
Contingency	$77,140
EST. TOTAL CONSTRUCTION GOST	$800,000

Cost Summary

CONSTRUCTION	$800,000
ENGINEERING/INSPECTION	$80,000
LEGAL	$40,000
INTERIM INTEREST	$60,000
RESERVE	$50,000
★ Est. Project Cost	$1,030,000

★ FOR FARMERS HOME ADMINISTRATION FED. ASSISTANCE APPLICATION

OMB Approval No. 80-R0190

PREAPPLICATION FOR FEDERAL ASSISTANCE

FEDERAL ASSISTANCE

2. APPLICANT'S APPLICATION	a. NUMBER	3. STATE APPLICATION IDENTIFIER	a. NUMBER
	b. DATE Year month day 19 83		b. DATE ASSIGNED Year month day 19

1. TYPE OF ACTION (Mark appropriate box)
- [X] PREAPPLICATION
- [ ] APPLICATION
- [ ] NOTIFICATION OF INTENT (Opt.)
- [ ] REPORT OF FEDERAL ACTION

Leave Blank

4. LEGAL APPLICANT/RECIPIENT

a. Applicant Name	Sage Creek County Water District
b. Organization Unit	County Water District
c. Street/P.O. Box	P. O. Box 22
d. City	Joplin
e. County	Liberty
f. State	Montana
g. ZIP Code	59531
h. Contact Person (Name & telephone No.)	Wayne Wolrey Phone 292-3509

5. FEDERAL EMPLOYER IDENTIFICATION NO.
N/A

6. PROGRAM (From Federal Catalog)
a. NUMBER 10.418
b. TITLE Rural Water System

7. TITLE AND DESCRIPTION OF APPLICANT'S PROJECT
The Sage Creek County Water District is a rural water system intended to provide water to rural homes for domestic, [redacted] and livestock use. The Water System will require the development of a ground water supply and the construction and installation of about 85 miles of water line.

8. TYPE OF APPLICANT/RECIPIENT
A-State; B-Interstate; C-Substate District; D-County; E-City; F-School District; G-Special Purpose District; H-Community Action Agency; I-Higher Educational Institution; J-Indian Tribe; K-Other (Specify):
Enter appropriate letter: G

9. TYPE OF ASSISTANCE
A-Basic Grant; B-Supplemental Grant; C-Loan; D-Insurance; E-Other
Enter appropriate letter(s): A C

10. AREA OF PROJECT IMPACT (Names of cities, counties, States, etc.)
Liberty & Hill Counties, Montana

11. ESTIMATED NUMBER OF PERSONS BENEFITING
200

12. TYPE OF APPLICATION
A-New; B-Renewal; C-Revision; D-Continuation; E-Augmentation
Enter appropriate letter: A

13. PROPOSED FUNDING

a. FEDERAL	$ 1,000,000 .00
b. APPLICANT	20,000 .00
c. STATE	.00
d. LOCAL	.00
e. OTHER	.00
f. TOTAL	$ 1,020,000 .00

14. CONGRESSIONAL DISTRICTS OF:
a. APPLICANT
b. PROJECT

15. TYPE OF CHANGE (For 12c or 12e)
A-Increase Dollars; B-Decrease Dollars; C-Increase Duration; D-Decrease Duration; E-Cancellation; F-Other (Specify): N/A
Enter appropriate letter(s):

16. PROJECT START DATE Year month day 19 83-1-15

17. PROJECT DURATION 15 Months

18. ESTIMATED DATE TO BE SUBMITTED TO FEDERAL AGENCY Year month day 19

19. EXISTING FEDERAL IDENTIFICATION NUMBER
N/A

20. FEDERAL AGENCY TO RECEIVE REQUEST (Name, City, State, ZIP code)
Farmers Home Administration, Great Falls, MT 59404

21. REMARKS ADDED
[ ] Yes [X] No

SECTION II—CERTIFICATION

22. THE APPLICANT CERTIFIES THAT ▶

a. To the best of my knowledge and belief, data in this preapplication/application are true and correct, the document has been duly authorized by the governing body of the applicant and the applicant will comply with the attached assurances if the assistance is approved.

b. If required by OMB Circular A-95 this application was submitted, pursuant to instructions therein, to appropriate clearinghouses and all responses are attached:

	No response	Response attached
(1)	[ ]	[ ]
(2)	[ ]	[ ]
(3)	[ ]	[ ]

23. CERTIFYING REPRESENTATIVE
a. TYPED NAME AND TITLE: Wayne W. Wolery, Chairman
b. SIGNATURE: Wayne W. Wolery
c. DATE SIGNED Year month day 19

SECTION III—FEDERAL AGENCY ACTION

24. AGENCY NAME

25. APPLICATION RECEIVED Year month day 19

26. ORGANIZATIONAL UNIT

27. ADMINISTRATIVE OFFICE

28. FEDERAL APPLICATION IDENTIFICATION

29. ADDRESS

30. FEDERAL GRANT IDENTIFICATION

31. ACTION TAKEN
- [ ] a. AWARDED
- [ ] b. REJECTED
- [ ] c. RETURNED FOR AMENDMENT
- [ ] d. DEFERRED
- [ ] e. WITHDRAWN

32. FUNDING

a. FEDERAL	$ .00
b. APPLICANT	.00
c. STATE	.00
d. LOCAL	.00
e. OTHER	.00
f. TOTAL	$ .00

33. ACTION DATE ▶ Year month day 19

34. STARTING DATE Year month day 19

35. CONTACT FOR ADDITIONAL INFORMATION (Name and telephone number)

36. ENDING DATE Year month day 19

37. REMARKS ADDED
[ ] Yes [ ] No

38. FEDERAL AGENCY A-95 ACTION

a. In taking above action, any comments received from clearinghouses were considered. If agency response is due under provisions of Part I, OMB Circular A-95, it has been or is being made.

b. FEDERAL AGENCY A-95 OFFICIAL (Name and telephone no.)

U.S. DEPARTMENT OF AGRICULTURE

OMB NO. 80-R0187

PREAPPLICATION FOR FEDERAL ASSISTANCE

PART II

	(Check one) Yes	No
1. Does this assistance request require State, local, regional or other priority rating?		X
2. Does this assistance require State or local advisory, educational or health clearance?		X
3. Does this assistance request require Clearinghouse review? A-95	X	
4. Does this assistance request require State, local, regional or other planning approval? Comprehensive Plan	X	
5. Is the proposed project covered by an approved comprehensive plan?		X
6. Will the assistance requested serve a Federal installation?		X
7. Will the assistance requested be on Federal land or installation?		X
8. Will the assistance requested have an effect on the environment?		X
9. Will the assistance requested cause the displacement of individuals, families, businesses, or farms?		X
10. Is there other related assistance for this project previous, pending, or anticipated?		X
11. Is the project in a designated flood hazard area?		X

PART III – PROJECT BUDGET

FEDERAL CATALOG NUMBER (a)	TYPE OF ASSISTANCE LOAN, GRANT, ETC. (b)	FIRST BUDGET PERIOD (c)	BALANCE OF PROJECT (d)	TOTAL (e)
1.				
2.				
3.				
4.				
5.				
6. Total Federal Contribution		$	$	$1,000,000.00
7. State Contribution				
8. Applicant Contribution				20,000.00
9. Other Contributions				
10. Totals		$	$	$1,020,000.00

PART IV – PROGRAM NARRATIVE STATEMENT

(Attach per instruction)

Sage Creek Water System

PROGRAM NARRATIVE

The rural residents of northern Liberty and Hill Counties desperately need a water supply for domestic and livestock use. Farmers and ranchers in this area presently haul their drinking water from Joplin or Chester, 30 to 40 miles away. Domestic wells or localized springs or ponds provide water for livestock or other use; however, much of this water is of poor quality and is deteriorating to the point of being unsuitable for any use.

The proposed project requires the exploration and development of a ground water supply for household and livestock use. The quantity of water needed for the project is estimated to be between 65 and 75 gpm. Plans are to develop a shallow ground water source near the Sweet Grass Hills. Water will move by gravity through a distribution pipeline to the various users on the system. An estimated 85 miles of water line are required to service the approximately 50 to 60 area residents who have expressed an interest in the water.

The location of this project is in northern Liberty and northwestern Hill Counties about 25 to 30 miles north of the towns of Chester and Joplin, Montana. The planned water line will extend from the east flank of the Sweet Grass Hills south of the Canadian-U.S. border and east to about 5 miles beyond the Liberty-Hill County line.

The proposed plan is to obtain grant and loan funds for the exploration and development of a water supply and for construction of the distribution system including the cost of engineering and legal services.

Sage Creek Water System

The planned water system will provide a continuous supply of good quality water which will benefit the area residents and most importantly preserve the rural community and minimize the abandonment of farms due to a lack of suitable water.

Position 3

USDA-FHA
Form FHA 449-10
(5-23-73)

FORM APPROVED
OMB NO. 40-R 3872

APPLICANT'S ENVIRONMENTAL IMPACT EVALUATION

No monies or other benefits may be paid out under this program unless this report is completed and filed as required by existing law and regulations (7 C.F.R. 1980, Supart E).

Name and Address of Applicant (Firm Name) (Steet, City, State and Zip Code)	EMPLOYER ID NO.
Sage Creek Water District P. O. Box 22 Joplin, Montana 59531	FHA CASE NO.

In order to evaluate the specific impact your proposed project will have on the environment, please complete the following items.

Is a Federal waste discharge permit required under the Federal Water Pollution Control Act Amendments of 1972? ☐ Yes ☒ No

If no, complete parts I through VIII. If yes, has an application been made for the permit? ☐ Yes ☐ No

If so, what is the status of that application? ☐ Approved ☐ Pending ☐ Disapproved?

If above application for permit did not cover all facilities in your project please identify those not covered and complete balance of form, as it pertains to those you list. If the application for permit covered all facilities complete Parts I, VI, VII and VIII.

I. GENERAL *(Briefly describe)*:

A. Location of facility - Provide map if possible to show project location and areas which might be affected by the facility.

Project area includes northern Liberty and northwestern Hill Counties from the Canadian-U.S. border to approximately 20 miles north of the towns of Chester and Joplin, Montana. A proposed water line will be buried about 6 feet deep throughout the project area.

B. Character of the surrounding area (include terrain, population density, etc.)

Primarily farmland with considerable pasture and other types of range land with gently rolling hills and numerous coulees.

Population density less than 1 person per mile.

C. Type of project (nature of activity)

Project is a rural water system which includes development of a water supply and construction of water line to rural farms and ranches.

If your project must conform to approved standards established by the Federal or your state or local environmental protection agencies, please identify for each of Parts II (Air), III (Water), IV (Solid) and V (Other) the appropriate regulating agencies and go on to the next section. If you are not required to conform to such standards, please complete all questions to the best of your knowledge in each part for which standards are not set. You may wish to consult with appropriate State or local agencies in preparing your answers.

II. AIR POLLUTION (include name and address of agencies with cognizance over your project. If you must conform to standards set by these agencies, go on to part III.)

Cite this project's:

A. Activities which are likely to produce air pollution such as incinerators, exhaust systems, fossil-fuel burning units, and ventilation systems.

V. OTHER FORMS OF POLLUTION: (these may include, but not be limited to radiation, noise, radio frequency interference, visual):

A. What are they? N/A

B. How severe?

C. Do codes and/or appropriate regulations govern such pollution to be expected from your project? ☐ Yes ☐ No
If "Yes", identify.

VI. GENERAL PROJECT EFFECTS

A. Describe existing land use, such as Industrial, Recreational, Residential, Sound barriers, Commercial, Semi-private, Public, Farm, etc., including any existing zoning classifications.

Essentially all farm and ranch lands.

B. Describe changes in land use.

No changes anticipated

C. Will the project affect transportation by Highway, Rail, Water or Air? ☐ Yes ☒ No
If yes, how?

D. Will the project affect fish, wild life, water-fowl refuges, beaches, historical sites, forested and scenic areas, etc. ☐ Yes ☒ Nc

---

VII. PLEASE DESCRIBE THE INDIRECT EFFECTS THE PROPOSED PROJECT IS EXPECTED TO HAVE ON THE ENVIRONMENT. (In this section include changes which, although brought about by the proposed project, are not caused by the project itself. An access road to serve a proposed industrial park might be included here).

There are no negative indirect effects anticipated; although there are numerous positive effects such as increased gardening, lawns, shrubbery and ranching activities as a result of the availability of good quality water.

VIII. UPON EVALUATION OF THE INFORMATION SUPPLIED ABOVE, OR ON THE BASIS OF INFORMATION SUPPLIED TO THE FEDERAL OR STATE ENVIRONMENTAL PROTECTION AGENCY, PLEASE PROVIDE A BRIEF SUMMARY OF THE ENVIRONMENTAL IMPACT OF THE PROPOSED PROJECT. The summary shall include a description of the extent to which the project significantly affects the environment, as provided by the National Environmental Quality Act of 1969, including consideration of:

A. The environmental impact of the proposed project, is an improved quality of life for the rural residents of the area and an improved environment as a result of a reduction in the use of poor quality water which contributes minerals and salts to land and water causing saline problems.

B. Any adverse environmental effects which cannot be avoided should the proposed project be implemented,

No adverse environmental effects are anticipated.

C. Alternatives to the proposed project,

N/A

16

D. The relationship between local short term uses of man's environment and the maintenance and enhancement of long-term productivity, and

N/A

E. Any irreversible and irretrievable commitments of resources which would be involved in the proposed project should it be undertaken,

No.

F. Have any questions or objections been raised by any governmental agency, private organization or individual which might indicate that this proposal is, or will become, controversial? ☐ Yes ☒ No
If yes, please describe:

IX. TO BE SIGNED BY APPLICANT.

Date

Applicant
Sage Creek County Water District
P. O. Box 22
Joplin, Montana 59531

Form No. 600
Revised 11/73

APPLICATION NO. _____
(For Dept. Use Only)

STATE OF MONTANA

DEPARTMENT OF NATURAL RESOURCES & CONSERVATION

Interim

APPLICATION FOR BENEFICIAL WATER USE PERMIT

Note: Use one application for each source of supply or separate development. Check all appropriate boxes and fill in each blank line. If the question is not applicable in your case, enter NA (not applicable). If more space is necessary, attach additional sheets.

(Please type or print in ink)

1. Name of Applicant Sage Creek County Water District
   Mailing Address P. O. Box 22
   City or Town Joplin State Montana Zip 59531
   Home Phone 292=3509 Other Phone _____

2. Source of water supply Ground Water,
   a tributary of _____.
   (stream name; if well, so indicate)

3. (a) Point of diversion:

   SW ¼ SW ¼ NE ¼ Section 9, Township 36 (N) S, Range 5 (E) W, Liberty County

   Additional points of diversion, if any:

   SE ¼ SW ¼ NE ¼ Section 11, Township 36 (N) S, Range 5 (E) W, Liberty County

   SE ¼ NE ¼ NE ¼ Section 14, Township 36 (N) S, Range 5 (E) W, Liberty County

   (b) If water is not consumed, it will be discharged back into the same source:

   Yes [XX] ; No [ ] . If no, explain and give the complete land description at the point of discharge. _____

   ____ ¼ ____ ¼ ____ ¼ Section ____, Township ____ N S, Range ____ E W, _____ County

4. Description of water development:

   (a) Diverting works. Enclose all pertinent engineering data available. If not available, describe the horsepower rating of the pump and capacity in gallons per minute, size of ditches, flumes, dikes or other.

   Horizontal well-infiltration gallery.

   (b) Reservoir (if applicable).

   1. Project will be an enlargement of an existing reservoir.
      Yes [ ] ; No [X] . (If yes, complete both 3 and 4 below.)
   2. Project will be a new reservoir.
      Yes [ ] ; No [X] . (If yes, enter NA in 3 below, and complete 4.)
   3. Capacity of existing (old) reservoir when constructed: _____ acre-feet.
   4. Capacity of new (proposed) reservoir: _____ acre-feet.

   (c) Well Depth: 20-30 feet (if applicable).

   (d) Project will be a developed spring: Yes [ ] ; No [X].

18

5. Proposed Construction:

(a) Desired starting date January 11, 1983 anticipated completion date June, 1983

(b) Estimated construction cost $25,000-35,000 .

6. Amount of water, use to which it will be applied, and period of use:

Example:

7.5 (cfs) gpm up to 5.25 (acre-feet) for IRRIGATION (use) from April 15 (month-day) to October 15 (month-day), inclusive.

75 (Amount) cfs/(gpm) up to 120 (acre-feet) for testing (use) from January 1 (month-day) to June 30 (month-day), inclusive.

75 (Amount) cfs/(gpm) up to 120 (acre-feet) for testing (use) from June 30, (month-day) to December 31 (month-day), inclusive.

____ (Amount) cfs/gpm up to ____ (acre-feet) for ____ (use) from ____ (month-day) to ____ (month-day), inclusive.

Total amount requested: 75 cfs/(gpm) up to 120 acre-feet per year.

7. Description of proposed beneficial water uses:

(a) Irrigation (if applicable).

1. Method of irrigation: Flood [ ] ; Sprinkler [ ] . If Flood, explain: ____

2. Project will involve new irrigated land: Yes [ ] ; No [ ] .

3. Project will involve supplemental water to existing irrigation: Yes [ ] , No [ ] .

4. Project will involve both new irrigated land and supplemental water to existing irrigation: Yes [ ] ; No [ ]. If yes, the acreage must be entered on separate lines in the Table below, and identified on the map in Item 9, page 3.

5. Acreage by land description: (Enter the number of acres to be irrigated in the appropriate quarter-section.)

Example:

Sec.	Twp.	Rge.	NE¼	NW¼	SW¼	SE¼	Totals	New	Supplemental
								Check Appropriate Block	
7	13N.	20 E	35		140	118	293	✓	

Sec.	Twp.	Rge.	NE¼	NW¼	SW¼	SE¼	Totals	New	Supplemental
								Check Appropriate Block	

Total number of acres to be irrigated → [ ]

(b) Non-irrigation use: (if applicable)

1. Place of use of the water will be the same as location given in Item 3(a), page 1.

Yes [X] , No [ ] . If no, give the location: ____ ¼ ____ ¼ ____ ¼ Section ____ .

Township ____ N/S , Range ____ E/W , ____ County.

2. Estimate the maximum number and type of livestock to be watered: ____

Are there other locations where the same livestock are watered? Yes [ ] ; No [ ] .

3. Name of municipality to be served: ____

4. Number of families to be supplied: ____

5. If water will be used for other purposes, describe: well testing to determine aquifer parameters.

19

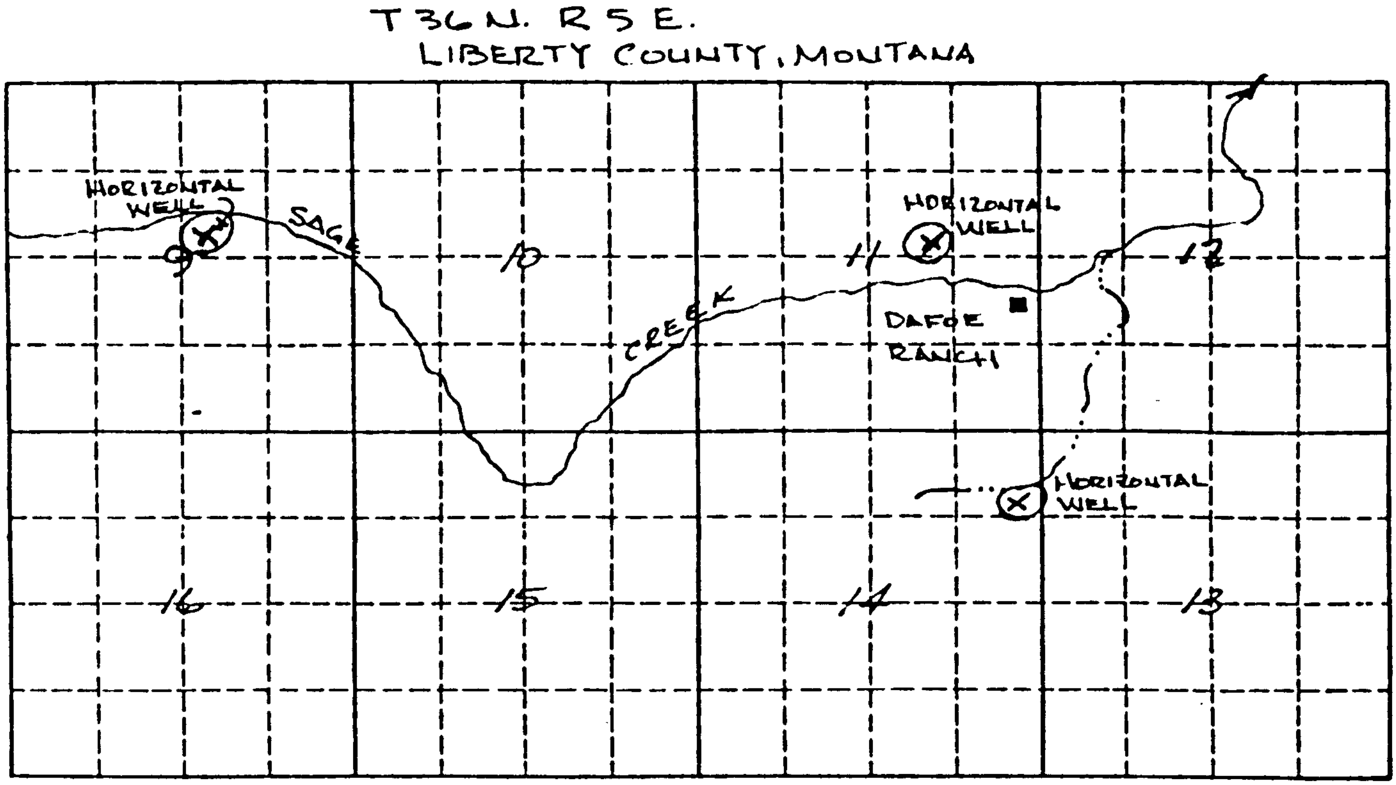
8. Ownership:

(a) Property owner at the point of diversion: Wayne and Robert Dafoe

(b) Property owner at the place of use: N/A

(c) If either (a) or (b) above are other than the applicant, describe the arrangement enabling the applicant to make this filing: owners will provide easement and water to Sage Creek Water District

9. Map of proposed water development: Indicate clearly the point of diversion, place of use, and section, township, and range numbers. Show pertinent information concerning the development, such as dams, canals, ditches, pipelines, wells, etc. Use the largest, most convenient scale possible. If the map shown below is not adequate to describe your development, attach additional sheets.



10. Remarks:

11 THE APPLICANT CERTIFIES THAT THE STATEMENTS APPEARING HEREIN ARE TO THE BEST OF HIS KNOWLEDGE TRUE AND CORRECT.

(Signature)		(Date)
Wayne [illegible]	Chairman	1-11-83
Robert [illegible]	Vice Chairman	1-11-83

Signature of applicant(s) must be exactly as in Item 1, page 1. If more than one applicant is shown, all must sign.

Exhibit 10
March 23, 1983

HB897

RESOURCE INDEMNITY TRUST FUND

	FY 82 & 83	FY 84	FY 85
Beginning Balance	1,098,518	(474,327)	102,984
Revenue	5,704,982	4,312,176	5,198,812
Appropriations			
DNRC-operations	2,958,874	1,228,897*	2,286,351*
DSL-operations	2,464,893	1,212,316*	1,213,269*
DFWP-operations	87,500		
Water Development (statutory allocation of 30%; 85-1-604)	1,711,494	1,293,652	1,559,643
Expected reversions	? (65,000 maximum)		
End Balance	(474,327)	102,984	242,533
Subtotal end balance at end of 1985			242,533

*As of February 23, 1983, approved by House Appropriations Subcommittee.

The following are additional requests for RIT funds in the upcoming biennium:

HB 108 (Manuel)	Muddy Creek	$475,579
HB 334 (Roush)	Triangle Saline Seep	59,000
	(to be amended)	15,600
HB 597 (Schye)	City of Glasgow (or from RRD)	48,800
HB 610 (Compton)	St. Mary-Milk River Project	48,000
HB 724 (Daily)	30% to hard-rock mining mitigation	2,853,296
HB 745 (Schye)	FERC license for Milk River Irrigation District	100,000
	Study Water Shortage	50,000
	in Milk River (may be amended)	25,000
HB 819 (Asay)	Ground water monitoring	232,000
HB 876 (Jacobson)	NE MT ground water inventory	250,000
HB 903 (Fagg)	Reclamation at the Stillwater-complex	1,000,000
TOTAL		5,157,275
Balance at end of biennium if all bills are passed:		(4,914,742)

Amendment: $57,500 FY84 $57,500 FY85 - $115,000

MONTANA WATER RESOURCES DATA MANAGEMENT SYSTEM (presented by Sen. Eck)

Montana's commitment to water development is evidenced by SB409 and other newly enacted and proposed legislation. The decisions that must be made during the 1980s regarding water development in Montana will no doubt have impacts reaching into the 1990s and beyond. The availability of a good data base is essential to this decision-making process.

State and federal water agencies, university personnel, and the private sector have spent considerable resources and effort collecting water data in Montana. These data are often fragmented, are not recorded in a standardized manner, are not indexed, and, perhaps most frustrating of all, are not readily accessible through a centralized clearinghouse system. This lack of coordinate management results in loss of time in locating pertinent data and/or in duplication of effort in generating the needed data.

The need for a centralized data management system has been recognized for some time. During the 1980-81 fiscal year, the Department of Natural Resources and Conservation (DNRC) began work on a Montana Water Use Data System (MWUDS) in conjuncture with the National Water Use Data System (NWUDS) run by the U.S.G.S. However, the NWUDS was abandoned by the U.S.G.S. in 1981, and the MWUDS has never fully developed.

The need for a data management system was recognized by the 47th legislative session. House Bill 70 [Section 1(17)] envisioned such a system to be set up and operated by the Department of Natural Resoures. The Bill was passed, but Section 1(17) was deleted at the last minute at the request of the Department.

It can be argued that a water resources data management system can best be managed by an independent entity that operates in cooperation with and for the benefit of all of the state water agencies, the private sector, and the public at large. The Montana Water Resources Research Center would be an ideal vehicle for such an effort. The computer facilities at the university units are more than adequate for this purpose and are readily available.

The proposed Montana Water Resources Data Management System consists of two units: a surface water management system at Montana State University and a groundwater data management system at Montana College of Mineral Science and Technology. The purpose of this separation is to take advantage of the unique expertise and resources available at these two units. The program will be coordinated through the Water Resources Research Center and will be complementary, not duplicative.

The proposed Montana Water Resources Data Management System would do the following:

1. Inventory and index all sources of data available through the state water agencies.

2. Make the data available through one centralized clearinghouse.

3. Access the validity and completeness of existing data and standardize procedures for collecting future data.

4. Encourage a continuous and integrated water resources data collection and management program for Montana.

The following budget is proposed to support the Water Resources Data Management System's activities by the Water Resources Research Center. The funds identified for the groundwater unit will be channeled through the Center to Montana Tech.

PROPOSED BUDGET

SURFACE WATER UNIT (MONTANA STATE UNIVERSITY)

Personnel Services	FY 84	FY 85	Total Biennium
Director (0.2 FTE)	$ 8,640	$ 9,158	$ 22,250
Secretary (0.4 FTE)	5,195	6,870	12,065
Computer Tech. (0.3 FTE)	5,664	6,004	11,668
TOTAL	$19,499	$22,032	$ 41,531
Operations	5,751	5,968	11,719
Capital	3,500	750	4,250
TOTAL (MSU)	$28,750	$28,750	$ 57,500

GROUNDWATER UNIT (MONTANA COLLEGE OF MINERAL SCIENCE AND TECHNOLOGY)

Personnel Services			
Data Manager (0.2 FTE)	$ 7,200	$ 7,632	$ 14,832
Computer Tech. (0.2 FTE)	4,560	4,834	9,394
Data Technician (0.5 FTE)	8,400	8,904	17,304
TOTAL PERSONNEL	$20,160	$21,370	$ 41,530
Operations	7,090	7,380	14,470
Capital	1,500	---	1,500
TOTAL (Montana Tech)	$28,750	$28,750	$ 57,500
TOTAL BUDGET	$57,500	$57,500	$115,000

PROPOSED AMENDMENT TO HB 897

1. Page 17.
Following: line 7
Insert: "(4) execution of an agreement with the department that all pertinent water resources data derived from the project or activity will be collected and submitted in a format appropriate for entry in the Montana water resources data management system."

Exhibit 12
March 23, 1983

PROPOSED AMENDMENT TO HB 897 (Presented by Sen. Eck)

1. Page 17.
Following: line 7
Insert: "(4) execution of an agreement with the department that all pertinent water resources data derived from the project or activity will be collected and submitted in a format appropriate for entry in the Montana water resources data management system."

Exhibit 13
March 23, 1983

(by Richard Martin)

March 21, 1983

Honorable Francis Bardanouve, Chairman
House Appropriations Committee
Capital Station
Helena, Montana 59620

Dear Mr. Bardanouve and House Appropriations Committee Members,

With respect to HB 897, and more specifically to the grants and loans of the Renewable Resource Development Program, we request your approval of our $10,000 grant proposal to develop cross-country skiing in the Showdown Ski Area. This proposal is to develop 25 Kilometers (15½ miles) of cross country ski trails, construct three three-sided adirondack shelters, install trail signs, and conduct trail and parking lot maintenance. Our sponsor for this proposal is the Cascade County Park Board.

We justify our proposal as such:

1. Direct financial benefit for the State, Cascade County, and Great Falls will occur.

   Reasoning: Greater than 500 skier days use of an existing 5 km ski trail, which was developed by the Club, now occurs during four months of skiing. When based upon a conservative $6.00 per skier day expenditure, the dollars spent by cross-country skiers is more than $3,000 per skiing season. Therefore the State's investment, after only three years, will net direct financial benefits for the cross-country skiing industry.

2. The 1988 Winter Olympics are coming, planning and development is occurring now in Canada.

   Reasoning: If the proposed area is developed now Great Falls and the entire State will capture the flood of traffic and dollars heading for Canada. Cross-country skiing areas need time and extensive development to become nationally recognized.

Also, the Great Falls Community Goals Forum has established a task force to make Great Falls known as the gateway to the Olympics. Our proposal fits in well with this task force goal.

3. Allows for an expansion of cross-country ski races.

   Reasoning: The proposed area is one of the first mountainous areas East of the Continental Divide to accumulate snow. This feature allows more races to be established. With this capability, many Montanans wanting to partake in these races will be traveling within Montana thus keeping the flow of Montana dollars in Montana. Also, as the area becomes nationally known out-of-State tourism will bring outside dollars into the State.

4. Would serve a large population of Montanans.

   Reasoning: The area is within a three hour drive (150 miles) of these major cities: Great Falls, Lewistown, White Sulphur Springs, Roundup, Billings, Big Timber, Malta, Havre, and countless smaller rural towns. The number of Montanans now cross-country skiing is rapidly expanding. This is true even East of the Divide.

5. Would be a stimulous for more economic development.

   Reasoning: As the area's popularity grows the human demands created will need to be satisfied. This will be true within the immediate area, as well as in Great Falls, Billings, White Sulphur Springs, etc.

On behalf of the members of our club, and community members in Central Montana, I urge the approval of our grant application.

Sincerely,

CROSS-COUNTRY CLUB

Richard J. Martin

By: Richard J. Martin,
President

Exhibit 14
March 23, 1983

Geraldine November 1982

Spring Name	SC Lab	SC Field	Lab pH	Field pH	Field temp	Alk Field
Rattelsnake Spring (Clark)	5932	6250	7.9	8.26	8°C	257.
South Spring	3359	3740	7.48	8.05	7.5°C	165.
Sulpher Spring	1214	1120	7.8	8.33	6.7°C	291.
Winchell Spring	5148	5550	7.7	7.98	8.5°C	344.

Old saline-seep observation wells.

Well No.	SWL @ GS	Field SC @ 25°	Temp
G-2	4.37'	3080	8.2°
G-3	1.15'		
G-4	0.00' Flowing		
G-1	Flowing		

September 29, 1982

GERALDINE AND NEARBY RURAL AREA
SALINE SEEP AND HIGH WATER TABLE DAMAGES

Geraldine

Residential Damages

85 houses out of 120 total houses are affected.
55 houses have basements--the basements have a 25-year life rather than a normal 50-year life. The cost of a new basement is $18,000.
$18,000 amortized at 7 5/8% for 25 years (.0907) = $1630 average annual costs.
$18,000 amortized at 7 5/8% for 50 years (.07823) = $1400 average annual costs.
$1630 - $1400 = $230 average annual costs x 55 houses = $12,650 average annual damages.

30 houses only have a foundation--the foundations have a similar shortened life the same as basements. The cost of replacing a foundation is $9,000.
$9,000 amortized at 7 5/8% for 25 yrs. (.0907) = $815 average annual costs.
$9,000 amortized at 7 5/8% for 50 yrs. (.07823) = $700 average annual costs
$815 - 700 = $115 average annual costs x 30 houses = $3450 average annual damages

45 houses have sump pumps. Due to the high salinity of the water the pumps must be replaced every year. The cost of the pump and electricity to run the pump for 6 months is $170 per year x 45 houses = $7650 average annual damages.

40 homeowners drive 14 miles round trip per week to haul water:
40 x 14 miles x $.20/mile x 52 weeks = $5,800 annual costs.

Total residential damages per year: $12,650 + $3450 + $7650 + $5800 = $29,550.

Business Damages

Many businesses on Main Street have to run several sump pumps to keep the basements pumped out. The water table is very high in this part of town. Businesses also have problems with deteriorated foundations and basements. The expense is so great to replace the basement and foundation that it has not been done. This reduces the value of the building. The elevator and fertilizer plant located along the highway have had to haul in extra gravel. Elevator pits have had to be replaced. Machinery has rusted through prematurely and has caused higher maintenance costs. The total damages to businesses minus the cost of replacing foundations are estimated to be $5,000 per year.

Geraldine Airport

The water table around the airport is within one foot of the surface. The area on the west, south, and east side of the airport is soft.

Total Geraldine cost: $29,550 + $5,000 = $34,550

Nearby Rural Area

Cropland

500 acres of crop-fallow land are affected by saline seep out of 6800 acres. The loss in net farm income minus variable costs is $60.00 per crop acre.

250 acres of crop x $60.00 = $15,000 average annual damages

Rangeland

250 acres of rangeland are affected by saline seep. The carrying capacity of this land is 2.5 acres per animal unit month or .40 animal unit months per acre. The yearly loss of production is 250 acres x .40 animal unit months per acre x $12 per animal unit month = $1200 average annual damages.

Haul Water

5 farmers haul water for domestic use. The farmers use a truck with a 1000 gallon tank to haul water. The farmers drive 14 miles round trip once a month. The cost to haul water per year is:

5 farmers x 14 miles/trip x 12 months x 1.25/mile cost to operate the truck with tank= $1,050 average annual damages.

Total Rural $15,000 = $1200 + $1050 = $17,250

Total Damages $34,550 + $17,250 = $51,800 average annual damages.

SUMMARY OF TRIANGLE CONSERVATION DISTRICT'S ASSISTANCE FOR THE GERALDINE SALINE SEEP PROJECT

The Triangle Conservation District (TCD) assisted the Town of Geraldine in setting up the October 22, 1982, Saline Seep Tour. The tour encompassed an on-site review of the detrimental effects of the salinity problem on the buildings and property of the town as well as the adjacent cropland. It was designed to give an insight to the legislators, the press and the public to the severity of the community's problems.

TCD's Board of Supervisors agreed to work in conjunction with the Montana Bureau of Mines and Geology (MBMG) in providing technical assistance on the project. Due to the extent of the TCD project area and time available to work with other landowners in the Triangle Area, TCD is handling the initial reviews of the sites and a portion of the drilling of the groundwater monitoring wells. TCD will also develop the reclamation plans in conjunction with the Soil Conservation Service. The majority of the groundwater monitoring, water quality collection, a portion of the drilling of monitoring wells and the final interpretation of the data collected will be done by the MBMG.

The technical assistance TCD provides, along with a portion of the water quality analysis is being picked up under their current budget. The State funding applied for by Geraldine is budgeted for the technical assistance of MBMG. TCD has not requested additional funds for this project in their application for future funding.

On November 15, 1982, TCD and MBMG began the initial fieldwork and water quality analysis of the project area.

SUMMARY OF PROPOSED WORK FOR THE
GERALDINE, MONTANA SALINE-SEEP PROJECT BY
THE MONTANA BUREAU OF MINES AND GEOLOGY
December 8, 1982

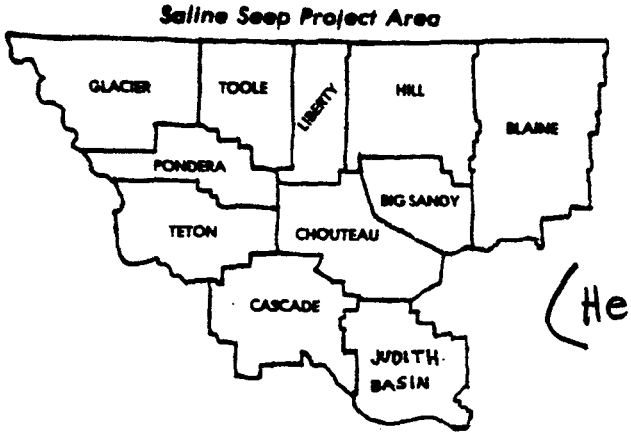
The Montana Bureau of Mines and Geology (MBMG) has proposed to conduct a hydrogeological investigation of the Geraldine area to aid in the abatement of saline seep which is destroying water supplies, basements, property in town and adjacent cropland. The MBMG would identify the glacial and bedrock geology of the area, sources and locations of saline-seep recharge, ground-water flow characteristics and water-quality trends.

Geraldine is situated in a glacial meltwater channel which receives ground-water discharge from the upper channel reach as well as the surrounding uplands. In 1974, the MBMG drilled five wells in the Geraldine townsite and found that water levels were at or within a few feet of ground surface. No further work was done at this time however, due to lack of a specific funded project.

The MBMG has worked with the Triangle Conservation District (TCD) in November 1982, on drilling saline-seep monitoring wells just west and north of Geraldine. The TCD will use the soils and water level data to assist the land-owner/operator in planning a cropping system to control the seep. The MBMG will collect geologic and field water quality information from these same wells to begin its hydrogeologic assessment of the area.

The MBMG has written a preliminary proposal for a hydrogeologic investigation of the Geraldine area that would identify the ground-water systems supplying saline seeps and domestic water sources. The causes of water quality conditions and trends of the various aquifers and requirements for reclamation of seep areas would be evaluated. The findings would be input to the efforts of area residents and the TCD to reverse the growth of saline seep around the community. Experience throughout north-central Montana has demonstrated that saline seep can be controlled utilizing adequate hydrogeological and soils data, and flexible cropping systems.

Exhibit 15
March 23, 1983



(Herb Pesha)

FACT SHEET

TRIANGLE Conservation District

WHAT IS THE PROJECT: Ten triangle area conservation districts united in 1979 to form the Triangle Conservation District (TCD) to stop the spread of Saline Seep. In 1982, Judith Basin County joined. Each district is a legal entity of state government with 5 elected supervisors on each board. One supervisor from each conservation district is on the board of the TCD. The TCD has a staff consisting of a team leader, assistant team leader-agronomist, soil specialist-planner, soil specialist-drill rig operator and a part-time secretary.

NEED FOR PROJECT: Saline seep is caused by a change in land use, which allows excess water to percolate past the root zone. The excess moisture may then resurface downslope to form a saline seep. The largest change in land use in the Northern Great Plains in the last 40 years is to the crop-fallow farming system. An estimated 280,000 acres of once productive dry cropland is now affected by saline seep. It has been estimated that saline seep is growing at the rate of ten per cent per year. The Montana Bureau of Mines and Geology has documented the rate of growth on a 4-square mile area in Chouteau County, and found that the saline affected area grew from 0.4% of the area in 1951 to 19.4% of the area in 1971. Land classified by county assessors in the Triangle area as saline seep land brings in about only one-tenth of the tax revenue that the same land would bring in if it were productive dry-cropland. In the 1982 Montana Water Quality Report, saline seep was identified as Montana's greatest threat to groundwater. A 16 fold increase in salinity has been documented from 1918 to the present in a spring in Chouteau County. Surface waters in saline seep areas are also being degraded. Monitoring carried out by the Montana Water Quality Bureau has documented a salinity level of 78,310 TDS in a salinized drainage in Teton County. Sea water is 35,000 TDS. We have no control over the soils and geology. The only area we have control of is the land use, and we must begin to intensify our cropping systems if we hope to gain control of saline seep. If we don't, the loss of land and degradation of our ground and surface water will continue.

TEAM PROCEDURE: The purpose of the team is to locate the recharge or contributing areas for saline seep and provide information and assistance to the landowner, conservation district, the Soil Conservation Service, and to develop a cooperative control and management plan to minimize or eradicate saline seeps. The field method which has been refined by the team uses a drill rig to determine soil profile. depth to and the identification of the low hydraulic conductivity zone, depth to water table and establishment of a monitoring system maintained and utilized by the farm operators. This information is combined with visual appraisal, aerial photographs, climatic factors, available crops and the farm operators management level to develop the plans.

PROGRESS TO DATE: The TCD currently has 207 applications for assistance from landowners. Reclamation plans have been completed on 164 of the applications. Field work has been started on 35 of the remaining applications. The TCD's work is not limited to just writing saline seep plans. Assistance is provided to the landowner for plan implementation. Help in finding seed sources for different varieties of alfalfa and grasses is provided. The TCD also works with the operator in setting up a flexible cropping system tailored to the individual's operation. Eighty one percent of the plans delivered to landowners prior to the 1982 field season are in various stages of implementation. Many of the earliest plans are showing positive results, with water levels in saline seeps dropping as much as 7 feet. In many cases, saline seeps that were barren or only supporting weeds now have a cover of grasses or alfalfa. There are alfalfa stands in every county served by the TCD as well as recropping and grass seedings.

FUNDING: The TCD is seeking funding for continuation and expansion of the project from the following sources:

1. House Bill No. 334 - $59,000.00 from the Resource Indemnity Trust Account of the Trust and Legacy Fund.
2. A Grant of $125,000.00 from the Water Development Program to the TCD is being recommended by the Department of Natural Resources and Conservation.
3. A Grant of $16,800.00 has been approved from House Bill 223 funds administered by the Conservation Districts Division of the Department of Natural Resources and Conservation.
4. Hill County Conservation District and Cascade County Conservation District have each approved a grant of $2,100.00 to the TCD.

The above sources would together provide $205,000.00 for the operation of the TCD. The total funding required is $305,000.00. The additional monies will come from the landowners assisted by the TCD. Beginning July 1, 1983, all persons receiving assistance from the TCD will be charged for approximately one third of the cost of the services provided.

SUPPORT: The Montana Association of Conservation Districts, and the Montana Environmental Quality Council both have passed resolutions of support for the TCD. WIFE has passed a resolution of support for legislation that eliminates saline problems.

Exhibit 16
March 23, 1983

ENERGY LABORATORIES, INC.
P.O. BOX 593 • 1107 SOUTH BROADWAY • BILLINGS, MT 59103 • PHONE (406) 252-6325

Lab. No. 81-6365

To Antelope Water - Sewer Project Date 1-8-82 jgs

Address Antelope, Montana 59211

WATER ANALYSIS REPORT

Sampled 12-21-81 @ 5:30 PM
Sample Received 12-23-81
Corrected Copy

CONSTITUENTS	MILLIGRAMS PER LITER
Potassium	6
Sodium	147
Calcium	112
Magnesium	68
Sulfate	458
Chloride	14
Carbonate	0
Bicarbonate	571
Total Iron	12.3
Nitrate as N	3.03
Total Solids (Calculated)	1,090
Total Hardness As $CaCO_3$	553
Total Manganese	0.46
Specific Conductance @ 25° C	1,400 Micromhos/cm
pH	7.9

*Remarks: Very hard water. Minerally can be used for domestic use and drinking. Sulfate and total solids exceed maximums recommended by U.S.P.H.S. for public water supplies.

*The suitability of this water for drinking and/or other use is an interpretation based entirely upon the concentration of the constituents reported above. This analysis does not establish the presence or absence of other minor constituents, not reported above, which may effect the suitability of this water for drinking and/or other use.

Copies to
Senator Galt & Dover
Representatives
Gene Ernst - Gay Holliday
Jim Schultz

Exhibit 17
March 23, 1983

Exhibit from Mary Schleining
City Clerk

JANUARY 18,1983

REPRESENTATIVE GAY HOLLIDAY

CAPITOL BUILDING

HELENA, MONTANA

Re: Grant application for water tank at Judith Gap, Montana

The Town Coumcil of Judith Gap has applied to the Natural Resource Board for a grant to help repair the present water tank or install a new one. The tank presently in use was installed in 1916 and has been kept in repair. However, the past couple years it has deteriorated to the point where it will need major repairs or possibly replacement.

The Resource Board is recommending to the Legislature that we receive a $6,000 grant and up to $94,000 in loans.

Since you represent us in the Legislature, we would like to have you informed about our application.

We will appreciate your support of our application.

Sincerely,

----------Mayor

Judith Gap, Montana 59453

Exhibit 18
March 23, 1983
3/23/83

Testimony of Benjamin B. Stout, Dean, School of Forestry and Director, Montana Forest and Conservation Experiment Station, University of Montana. HB 897

The 1981 legislature initiated a Mission Oriented Research Program and the Education sub-Committee has recommended and the Appropriations Committee has recommended that program be continued. The first biennium has seen several accomplishments, among them is a statement of our present state of knowledge. Your experience is mostly with people saying yes or no. It is a pleasure to say, I give. (Here present copies of 2nd Growth Management to Committee members.)

We have located, in addition, 144 studies that have been started. (Hold up notebook)

Seven new experimental treatments have been installed. We were able to do this because we have piggy-backed our experiments at Lubrecht Experimental Forest on the DNRC grant funds. We hope to continue to do that in the coming biennium and, therefore, support strongly HB897. We have competed for those funds. We support the idea of competition and hope that the legislature will allow us to continue to compete.

In a related matter, we understand that HB726 would not allow us to compete for DNRC funds, so we hope you support strongly HB897.

FULL-TREE THINNING DEMONSTRATION PLOTS ON THE LUBRECHT EXPERIMENTAL FOREST

With the 1981-83 Renewable Resource Development Grant, a series of full-tree thinning plots was established on the Lubrecht Experimental Forest. These plots demonstrated a technique that enables landowners to produce a salable product to help defray thinning costs. To make the project more meaningful to a range of landowners, the plots covered a variety of timber types, size classes, tree densities and harvesting techniques. Over 250 people, including ranchers, rural landowners, professional foresters, public agency personnel and logging contractors, viewed the project. These thinning methods have been adopted by some Districts on the Lolo National Forest, the Bureau of Indian Affairs in Ronan, Champion Timberlands and many small operators. After being employed for three months on this project, a group of young men began their own operation. This five person crew now produces hogfuel for Champion International Corporation in Missoula. The methods and equipment used in this system have also been widely demonstrated at fairs and conventions in western Montana.

The past work has concentrated on full-tree thinning techniques suitable for gentle terrain. The proposed continuation of the work will emphasize and demonstrate low cost methods of removing forest thinnings from steep terrain. Using these flexible, portable systems, more landowners can realize the maximum benefit from their timber stands. In their technical assessment of the proposal, the Department of Natural Resources and Conservation stated that: "Several professional foresters have noted that the demonstration of these steep-slope thinning techniques would be invaluable to woodlot operators in Montana." The DNRC recommended funding this project and commented: "The applicant has a proven record of distributing new information from demonstration projects, and seeing that this information is put into practice."

Hank Goetz
March 1983

Exhibit 19
March 23, 1933

University of Montana

Department of Zoology • Missoula, Montana 59812 • (406) 243-5122

16 March 1983

House Appropriations Committee
State Capitol, Helena, MT 59620

Dear Members of the House Appropriations Committee:

Over 500,000 acres of public land in Montana has been converted to crested wheatgrass. No one has even asked the question whether this conversion is good, bad, or neutral. I recently completed a study on the ecology of birds in a shortgrass prairie west of Boise for the B.L.M. We quickly became aware that ranchers were able to graze large crested wheatgrass plantations for a very short time each year and that wildlife generally avoided those areas. There is a lot of general knowledge about crested and how to grow it, however I am concerned with the practical problem of how livestock operators utilize these plantations and how wildlife and non-game wildlife utilize them as well.

I have proposed such a study to the Department of Natural Resources and Conservation, at a cost of $142,576.00 over two years. The study would be funded under the Renewable Resource Development Program (Title 90, Chapter 2, M.C.A.)(the coal tax severance fund). The Department has passed its Status Report and Funding Recommendations for 1983-84 on to the 48th Montana Legislature.

In the evaluation by the Department, the crested wheatgrass project received 47 points; only 7 of the 78 proposals received more points. The Department is recommending $349,811.00 in funding for projects scoring more than 47 points, and $3,222,189.00 for projects scoring fewer than 47 points. The bad news is that they recommend no funding for the crested wheatgrass project. (The information in this paragraph taken from the Department's Renewable Resource Development Program Status Report to the current legislature.)

In evaluating proposals dealing with grasslands, the Department has always relied on recommendations by the U.S. Soil Conservation Service. The Department has and wants to continue to have a good relationship with the S.C.S. The problem seems to be that the S.C.S. is one of those public agencies that has recommended the planting of crested wheatgrass in the past. They seem to fear that the results of this study might make them look bad, so they have recommended to the Department that they not fund the project. We are not asking who planted the crested wheatgrass; all we are trying to learn is: "How useful are the existing crested wheatgrass plantations to livestock operators and wildlife in Montana." Clearly there is no simple answer to this question. Crested has its uses but it is also useless when planted as the sole cover over a several section area. We sincerely believe that we can do a study and make recommendations that will be of great value to those people responsible for managing Montana's public rangeland over the next 50 years.

I would like to have the legislature restore the funding for this project. The reasons given for recommending no funding are spurious, patently false, and inconsistent as well as gratuitous. The recommendation also violates the Department's own rules. I would like to attend the Appropriations Committee hearing on HB 897.

Sincerely,

Donald A. Jenni

Donald A. Jenni
Professor of Zoology

DAJ:mb

Exhibit 20
March 23, 1983
HB

WATER DEVELOPMENT
FACT SHEET
LOWER BIRCH CREEK WATERSHED PROJECT

HOUSE BILL 885 Contains $550,000 loan at 2% interest

HOUSE BILL 897 Contains $125,000 Grant

Water development financed by loan and grant backed by Montana Coal Severance Tax Bond Issuance and Trust Fund Interest Income.

Legislation is based on existing authority under Senate Bill 409 passed by 1981 Legislature. Codified as 85-1-601 et seq

SOURCE OF FUNDING: WATER DEVELOPMENT - Ear Marked Account (the funds are available) No new revenue source is used.

NAME OF PROJECT: Lower Birch Creek Water Shed Project

SPONSORS: Pondera County Conservation District
Pondera County Canal and Reservoir Company (non profit)

TYPE OF PROJECT: Irrigation System Rehabilitation - Total project $1,763,200

IRRIGATION PROJECT SIZE: 75,727 acres

OWNERSHIP IN PROJECT: Approximately 350 family farms, City of Conrad, serves some State land

PROJECT GOAL: Replace structures which are 50-70 years old and are ready to collapse

DEPARTMENT OF NATURAL RESOURCES evaluated: ranked #11 with 49 points

COST TO BENEFIT RATIO: Favorable, based on annual cost and annual benefit 2.4:1.0

REPAYMENT ABILITY: Good - Loan will be repaid by per acre water charge.

WATER DEVELOPMENT: Net increase in water delivered to crops 5,100 acre feet

NEGATIVE EFFECTS: None known

POSITIVE EFFECTS:

1. Develop water resource, saving water for Montana
2. Insures necessary water supply for City of Conrad and family farms
3. Insures income stability of community
4. Creates jobs
5. Investment in the future of Montana

LOCAL INTEREST: Vote at meeting of water stock owners (family farms) 100% in favor of project.

HOUSE BILLS 885 & 897 are geographically balanced across State of Montana.

ENTIRE LOAN AND GRANT PROGRAM will continue in the future to serve other water development projects.

FACT SHEET

SCS CHIEF APPROVES LOWER BIRCH CREEK IRRIGATION REHABILITATION PLAN

United States Department of Agriculture
Soil Conservation Service
23 5th Ave. SE
Conrad, MT 59425

FOR MORE INFORMATION: Jerry Johnson, 278-3922

WHAT: The final plan for the rehabilitation of an irrigation system on Lower Birch Creek in Pondera County, Montana, was approved and authorized for funding November 26, 1982, by Peter C. Myers, Chief, U.S. Soil Conservation Service, in Washington, DC. The plan was requested by the Pondera County Canal and Reservoir Company. The Company plans to replace or repair 23 irrigation water management structures, to add other devices to improve water management in the delivery of irrigation water to farms, and to work with irrigators on onfarm irrigation water management techniques. All the work will be done on an irrigation project operated by the Company.

WHEN: Construction is scheduled to begin in spring of 1983, and the project will be completed in four years.

WHY: The irrigators are facing water shortages primarily because the 70-year-old system no longer functions as originally designed. These shortages and inefficiencies are expected to increase because several water management structures have failed; many others are badly deteriorated and show the potential to fail.

WHERE: The work will be done on the upper portion of the 244,000-acre watershed in Pondera County. The upper project area includes about 42,000 acres and many of the key structures for delivering water to all the 42,600 acres irrigated annually in the watershed area. A map of the area is printed on the reverse of this sheet.

BENEFITS: The rehabilitation work will increase crop yield and reduce operation and maintenance by an estimated average of $415,000 annually. The work will increase the water going to the crops by 5,100 acre-feet. This increase comes through increased water delivery efficiency in a reliable and improved delivery system.

WHO BENEFITS: The 350 shareholders in the irrigation company are the primary beneficiaries, but the increased yields will also improve the local economy.

WHO PLANNED THE WORK: The rehabilitation was requested by the Pondera County Canal and Reservoir Company and the Pondera County Conservation District. The Soil Conservation Service planned the project with the Company and District through its Watershed Protection and Flood Prevention Act (Public Law 83-566).

COSTS: The work will cost an estimated $1.8 million. The canal company will finance $680,000 of the work. The SCS will pay for the rest through the watershed program.

MORE INFORMATION: The detailed watershed plan outlining the proposed work is available from the SCS office in Conrad, the canal company in Valier, and the SCS state office in Bozeman.

December 1982
19(82)43

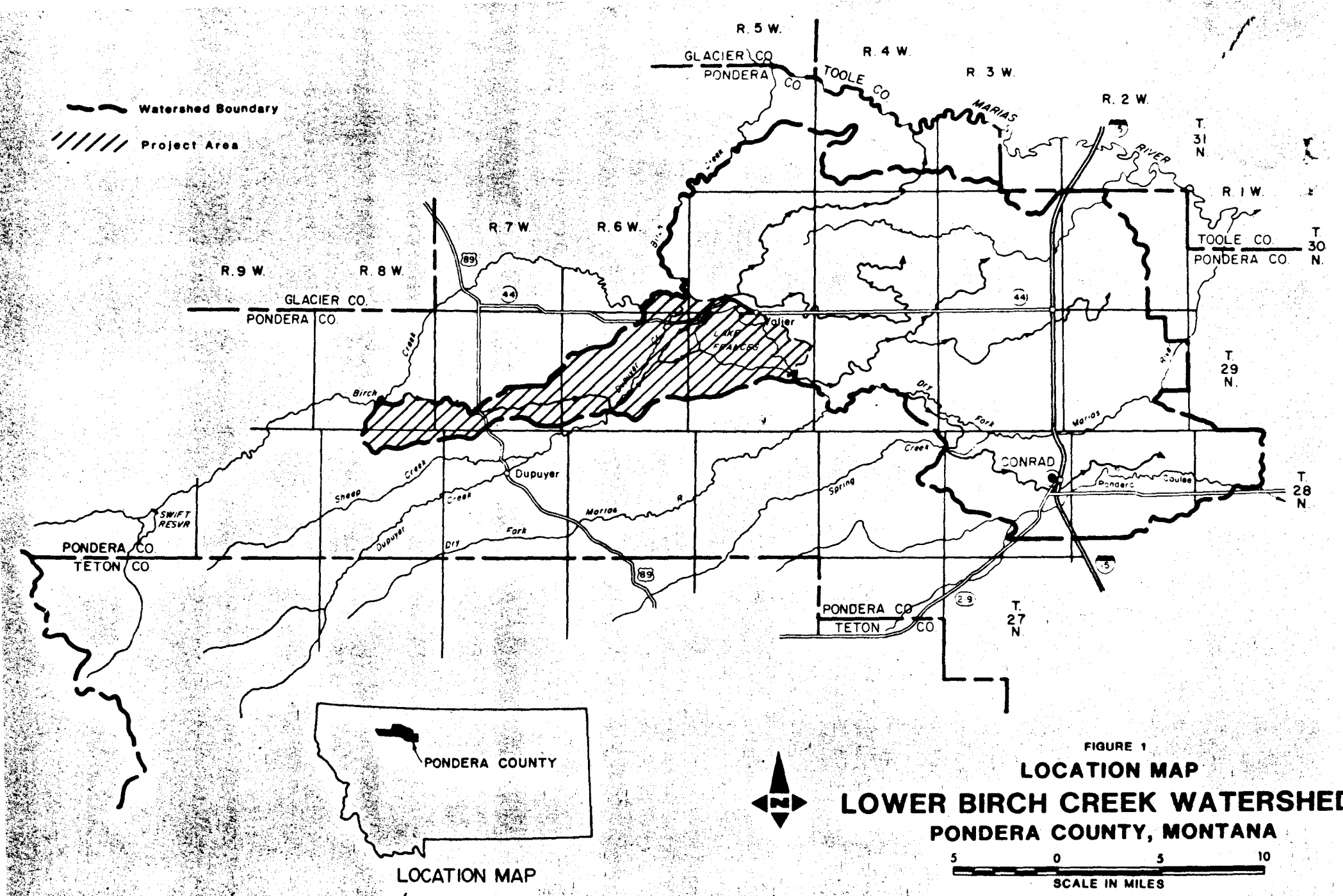


FIGURE 1

LOCATION MAP

LOWER BIRCH CREEK WATERSHED

PONDERA COUNTY, MONTANA

ADDENDUM

Lower Birch Creek Watershed Plan, Montana

This addendum shows the project costs, benefits, and benefit-cost ratio based on 7-7/8 percent interest rate, 1981 installation costs, and current normalized prices for agricultural commodities. Annual project costs, benefits, and benefit-cost ratio are as follows:

1. Project costs are $174,530.
2. Project benefits are $415,300.
3. The project benefit-cost ratio is 2.4:1.0.

FINAL

WATERSHED PLAN

LOWER BIRCH CREEK WATERSHED

Pondera County, Montana

ABSTRACT

This document describes a plan of land treatment and repair or replacement of irrigation structures to solve an irrigation water shortage problem. Planning considered no-action and three different levels of contribution to solving the problem. Economic benefits exceed costs of the recommended plan. Sponsors will pay 38.6 percent of the $1,763,200 installation costs. Environmental impacts include increased use of farmlands and water conservation. This document is intended to fulfill requirements of the National Environmental Policy Act and to be considered for authorization of Public Law 566 funding.

Prepared under the Authority of the Watershed Protection and Flood Prevention Act, Public Law 83-566, as amended (16 USC 1001-1008), and in accordance with Section 102(2)(C) of the National Environmental Policy Act of 1969, Public Law 91-190, as amended (42 USC 4321 et seq).

Prepared by: Pondera County Conservation District
Pondera County Canal and Reservoir Company
U.S. Department of Agriculture, Soil Conservation Service

For additional information contact: Van K Haderlie, State Conservationist, Soil Conservation Service, P. O. Box 970, Bozeman, MT 59715
Phone: 406-587-5271, Extension 4322

WATERSHED AGREEMENT

between the

Pondera County Conservation District
Pondera County Canal and Reservoir Company
(Referred to herein as sponsors)

State of Montana

and the

Soil Conservation Service
United States Department of Agriculture
(Referred to herein as SCS)

Whereas, application has heretofore been made to the Secretary of Agriculture by sponsors for assistance in preparing a plan for works of improvement for the Lower Birch Creek Watershed, State of Montana, under the authority of the Watershed Protection and Flood Prevention Act (16 USC 1001-1008); and

Whereas, the responsibility for administration of the Watershed Protection and Flood Prevention Act, as amended, has been assigned by the Secretary of Agriculture to SCS; and

Whereas, there has been developed through the cooperative efforts of the sponsors and SCS a plan for works of improvement for the Lower Birch Creek Watershed, State of Montana, hereinafter referred to as the watershed plan, which plan is annexed to and made a part of this agreement;

Now, therefore, in view of the foregoing considerations, the Secretary of Agriculture, through SCS, and the sponsors hereby agree on this plan and that the works of improvement for this project will be installed, operated, and maintained in accordance with the terms, conditions, and stipulations provided for in this watershed plan and including the following:

1. The sponsors will acquire, with other than PL-566 funds, such landrights as will be needed in connection with the works of improvement. (Estimated cost $2,000)

2. The sponsors assure that uniform and equitable treatment will be given to persons displaced from their homes, businesses, or farms as required by the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 as implemented by 7 CFR Part 21. The costs of relocation payments will be shared by the sponsors and SCS as follows:

	Sponsors (percent)	SCS (percent)	Estimated Relocation Payment Costs[1] (dollars)
Relocation Payments	38.6	61.4	0

[1]Investigation has disclosed that under present conditions the project measures will not result in the displacement of any person, business, or farm operation. However, if relocations become necessary, relocation payments will be cost-shared in accordance with the percentages shown.

3. The sponsors will acquire or provide assurance that landowners or water users have acquired such water rights pursuant to State law as may be needed in the installation and operation of the works of improvement.

4. The sponsors will obtain all necessary federal, state, and local permits as may be required for installation of the works of improvement.

5. The percentages of construction costs to be paid by the sponsors and by SCS are as follows:

Works of Improvement	Sponsors (percent)	SCS (percent)	Estimated Construction Costs (dollars)
All structural measures	50.0	50.0	1,330,200

6. The percentages of the engineering costs to be borne by the sponsors and SCS are as follows:

Works of Improvement	Sponsors (percent)	SCS (percent)	Estimated Engineering Costs (dollars)
All structural measures	0	100.0	111,900

7. The sponsors and SCS will each bear the costs of project administration that each incurs, estimated to be $13,300 and $212,800, respectively.

8. The sponsors will provide assistance to landowners and operators to assure the installation of the land treatment measures shown in the watershed plan.

9. The sponsors will encourage landowners and operators to operate and maintain the land treatment measures for the protection and improvement of the watershed.

10. The sponsors will be responsible for the operation, maintenance, and replacement of the works of improvement by actually performing the work or arranging for such work in accordance with agreements to be entered into before issuing invitations to bid for construction work.

11. The costs shown in this plan are preliminary estimates. Final costs to be borne by the parties hereto will be the actual costs incurred in the installation of works of improvement.

12. This agreement is not a fund-obligating document. Financial and other assistance to be furnished by SCS in carrying out the plan is contingent upon the fulfillment of applicable laws and regulations and the availability of appropriations for this purpose.

13. A separate agreement will be entered into between SCS and sponsors before either party initiates work involving funds of the other party. Such agreements will set forth in detail the financial and working arrangements and other conditions that are applicable to the specific works of improvement.

14. This plan may be amended or revised only by mutual agreement of the parties hereto except that SCS may deauthorize funding at any time it determines that the sponsor has failed to comply with the conditions of this agreement. In this case, SCS shall promptly notify the sponsor in writing of the determination and the reasons for the deauthorization of project funding, together with the effective date. Payments made to the sponsor or recoveries by SCS shall be in accord with the legal rights and liabilities of the parties when project funding has been deauthorized. An amendment to incorporate changes affecting a specific measure may be made by mutual agreement between SCS and the sponsor having specific responsibilities for the measure involved.

15. No member of or delegate to Congress, or resident commissioner, shall be admitted to any share or part of this plan or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this agreement if made with a corporation for its general benefit.

16. The program conducted will be in compliance with all requirements respecting nondiscrimination as contained in the Civil Rights Act of 1964, as amended, and the regulations of the Secretary of Agriculture (7 CFR 15.1-1t.12), which provide that no person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any activity receiving federal financial assistance.

Pondera County Conservation District By _____

Title _____

P. O. Box 552, Conrad, MT 59425 Date _____
Address Zip Code

The signing of this plan was authorized by a resolution of the governing body of the Pondera County Conservation District adopted at a meeting held on _____.

_____ _____
Address Zip Code

Date _____

==========

Pondera County Canal and Reservoir Company By _____

Title _____

Valier, MT 59425 Date _____
Address Zip Code

The signing of this plan was authorized by a resolution of the governing body of the Pondera County Canal and Reservoir Company adopted at a meeting held on _____.

_____ _____
Address Zip Code

Date _____

Soil Conservation Service
United States Department of Agriculture

Approved by:

_____

Van K Haderlie
State Conservationist

_____

Date

C O N T E N T S

C O N T E N T S (continued)

TABLES

Figures

SUMMARY[1/]

Project Name: Lower Birch Creek Watershed
Pondera County, Montana

Sponsors: Pondera County Conservation District
Pondera County Canal and Reservoir Company

Description of Recommended Plan: The watershed contains 244,000 acres. This plan will address works of improvement in the upper 42,000-acre area. Benefits will accrue to the irrigated land throughout the watershed. The plan proposes the replacement or repair of structures in the upper canals, onfarm water management, and a system management plan. Approximately 5,100 acre-feet of additional net water to crops will be made available annually to the total irrigated area in the watershed.

Alternatives Considered:

1. The no-action (future without project) was defined and used as a basis of comparison for all other alternatives.

2. The primarily nonstructural plan consists of onfarm water management and a system management plan that includes canal measuring structures.

3. The National Economic Development plan consists of all of Alternative 2 plus replacement and repair of main canal structures.

Resource Information:[2/]

Size of Watershed - 244,000 acres, of which 42,000 acres are addressed by this plan

Land Use - 7,100 acres irrigated cropland
14,040 acres dry cropland
14,620 acres rangeland
5,400 acres water
840 acres other

Land Ownership - 95 percent Private
5 percent State

Number of Farm Owners - 68; Average Size 530 acres

Prime Farmland - 4,900 acres

Wetlands - Small scattered areas

1/All data are for the project area of 42,000 acres except where noted.
2/Projected without project assistance.

Endangered Species - None resident to the project area

Cultural Resources - None identified in the project area

Floodplains - No adverse effect

Problem Identification: The primary problem is a shortage of irrigation water. This is primarily due to lowered efficiencies in the 70-year-old system because structures no longer function as originally designed. This results in a loss of income due to reduced crop yields.

Candidate Plans Considered: The candidate plans are the same as shown in alternatives considered.

Project Purpose: Agricultural water management - irrigation

Principal Project Measures:
Repair and replace irrigation canal structures.
Onfarm water management, including accelerated technical assistance and turnout measuring structures.
System management, including canal measuring structures, operational plan for two storage reservoirs and two diversions, and water supply forecasting.

Project Costs:	PL-566 Funds		Other Funds		Total Dollars
	$	%	$	%	$
Technical Assistance	93,000	100		0	93,000
Structural Measures for Irrigation 1/	777,000	54	667,100	46	1,444,100
Project Administration	212,800	94	13,300	6	226,100

Project Benefits:

Agricultural Production - $415,300 average annual benefits

Irrigated Acres Benefited - 45,000 irrigated acres in the 244,000-acre watershed area

Impacts:

Land Use Changes - None

Natural Resources Changed or Lost - None

Other Impacts - None

1/Includes construction, engineering, and landrights.

INTRODUCTION[1/]

The watershed contains 244,000 acres and includes a projected average annual 45,000 acres of irrigated land. The irrigated land has a limited irrigation water supply that results in reduced crop yields and loss of net income.

This plan addresses works of improvement to stabilize and improve the major supply features of the system. These major supply features are located in the upper 42,000-acre area of the watershed and is the project area. The text of this plan is confined to only this project area except where there are discussions of the problems and benefits of the watershed irrigated land. All irrigated land is affected by occurrences in the project plan.

The watershed plan will reduce effects of water shortages in the watershed irrigated area served by the Pondera County Canal and Reservoir Company. The first priority established was to stabilize and improve the major supply features of the system. This plan covers two diversion structures, canal structures, management of two storage reservoirs, and accelerated technical assistance on 5,000 acres of irrigated land. The watershed plan describes plan formulation, discloses the expected environmental and economic consequences, and provides the basis for authorizing federal assistance for implementation.

This plan may be supplemented by adding the remaining watershed area. The reason for emphasis in the upper watershed was the length of planning time involved and the need for an early solution to critical supply problems. Studies showed that the total project, if supplement implemented, will be within the present guidelines for administrative approval.

The sponsoring local organizations (sponsors) who developed the plan are:

Pondera County Conservation District (District)
Pondera County Canal and Reservoir Company (Company)

The U.S. Department of Agriculture, Soil Conservation Service (SCS), provided technical assistance for the development of this plan. Other federal, state, and local agencies provided input into the planning process.

The plan was prepared under the authority of the Watershed Protection and Flood Prevention Act, Public Law 83-566, as amended (16 USC 1001-1008), and in accordance with Section 102(2)(C) of the National Environmental Policy Act of 1969, Public Law 91-190, as amended (42 USC 4321 et seq). Responsibility for compliance with the National Environmental Policy Act rests with SCS.

1/All data in this report are for the project area of 42,000 acres unless noted as being for the overall watershed or benefited area. All information and data, except as otherwise noted, were collected during watershed planning investigations by the SCS and are on file in the SCS office, Bozeman, Montana.

PROJECT SETTING

Lower Birch Creek Watershed is in Pondera County in north-central Montana. Project waters originate in the Rocky Mountains to the west. The watershed encompasses the area served by the Company. There are 244,000 acres in the watershed. This plan addresses the upper 42,000-acre area and effects on water supply in the total watershed irrigated area (Figure 1).

Water from Birch Creek, a perennial, man-altered, regulated stream, is diverted into the area at the upstream boundary. Dupuyer Creek, a perennial man-altered stream, flows through the area and also is diverted into project canals. Cartwright and Laughlin Coulees cross the area in a northeasterly direction.

The climate is characterized by wide variations in daily and annual temperatures and well-defined seasons. Winters are generally cold, and summers are warm with occasional hot periods. Mean annual temperature at Valier is 42.5 degrees F, and the average frost-free season is 114 days.(1, 2) Average annual precipitation at Valier is 13.0 inches, about 80 percent of which occurs during the period April through September.(1) Summer thunderstorms sometimes carry hail that causes crop and property damage.

The surface is undulating, having been modified by glaciation. Glacial till, averaging 20 feet thick and consisting principally of boulders and clay, is the predominant surface material. The till is underlain by various bedrock formations. The plains area consists of high, gently rolling plateaus deeply dissected by Birch Creek and its principal tributaries. Bedrock in the plains area consists of moderately soft, interlayered sandstone and shale and has a westward dip varying from near 0 to 10 degrees.(3) Elevation in the area ranges from 3,800 to 4,300 feet above sea level.

The soils are on three major landscapes--bench-forming terraces, residual uplands, and glaciated uplands. Bench-forming terraces formed in highly calcareous alluvium. Surface textures are mainly loam, clay loam, or gravelly loam. The substratum is mainly very gravelly loam or extremely gravelly loam. These soils are deep and well drained. The residual uplands formed dominantly in sedimentary beds. Surface textures are mainly loam, clay loam, or silty clay loam. The substratum is loam, clay loam, or silty clay loam. The shallow, moderately deep soils are mainly on ridgetops and shoulder slopes, and the deep, well drained soils are mainly on fans and foot slopes. There are a few included areas that have shale or sandstone outcrops. Glacial uplands formed in glacial till, glaciofluvial, or glaciolacustrine deposits. Surface textures are clay loam, silty clay loam, silty clay, or clay. The substratum is mainly clay loam, silty clay, or clay. These soils are deep and well drained.

Landscape resources are dominated by Lake Frances and the rolling plains with stripcropping and rangeland. Roads are few in the area, and the areas away from Lake Frances and Valier are sparsely populated with a scattering of farmsteads.

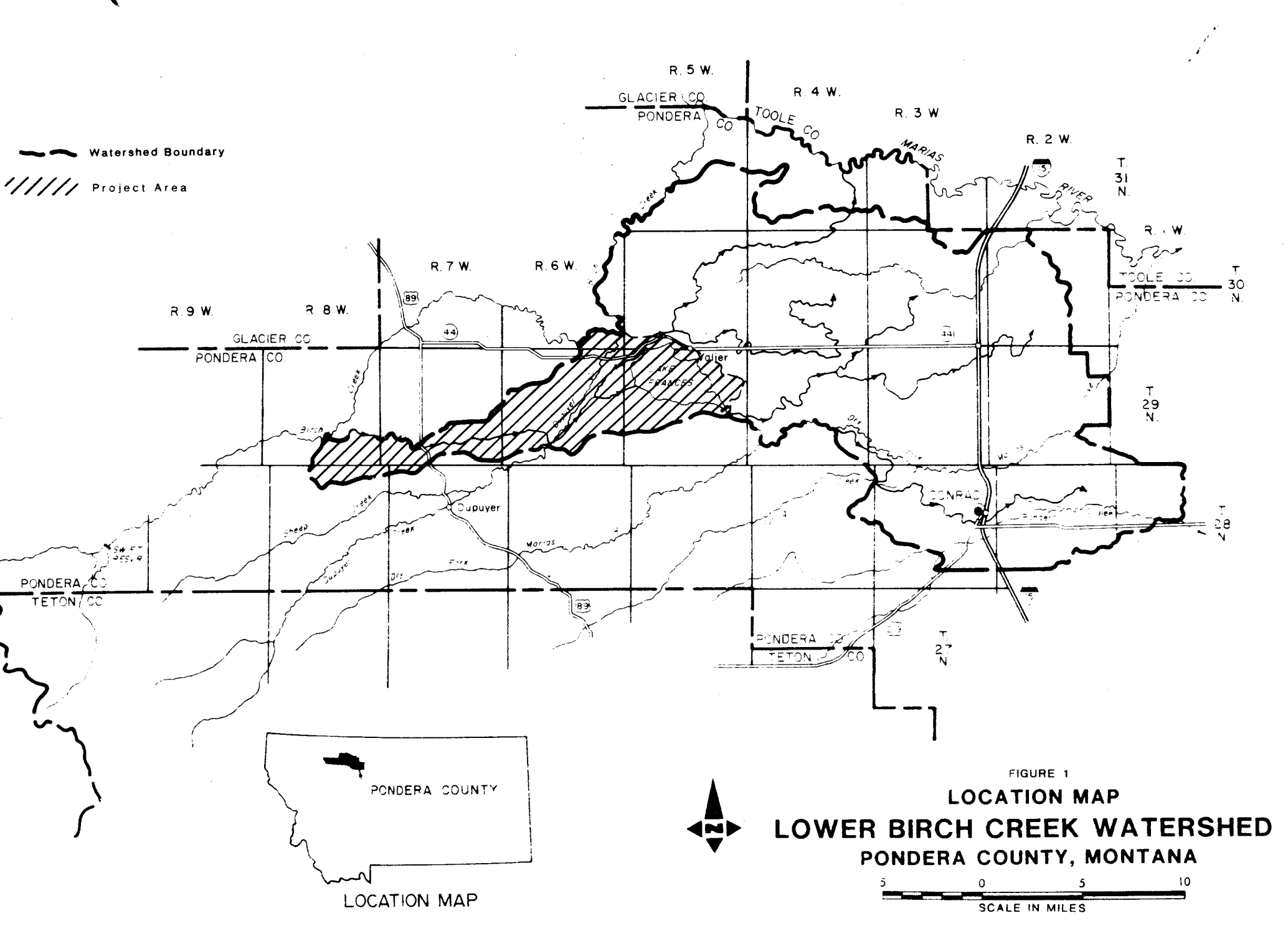


FIGURE 1

LOCATION MAP

LOWER BIRCH CREEK WATERSHED

PONDERA COUNTY, MONTANA

Land use is projected to be 7,100 acres of irrigated cropland; 14,040 acres of dry cropland; 14,620 acres of rangeland; 5,400 acres of water (Lake Frances); and 840 acres of other. The irrigated cropland projection is approximately six percent more than present average acres and will occur with or without a project. There are 39,770 acres of privately owned land and 2,230 acres of state-owned land. The projected total irrigated land in the watershed is 45,000 acres.

The town of Valier, population 640 in 1980, is on the north side of Lake Frances. Conrad, population 3,074 in 1980, is 23 miles east of Lake Frances and is within the downstream benefited area. Conrad is the county seat of Pondera County and the principal service center for the watershed area. The watershed area is approximately 60 miles north of Great Falls, population 56,725 in 1980.(4)

Lake Frances, although built as a single-purpose offstream irrigation reservoir, serves as a major recreation center for the region. The lake is used for summer and winter fishing and boating. The Town of Valier has a small park area on the north shore. Conrad also gets its municipal water from the lake.

Agriculture is the principal industry. A limited number of service businesses operate in Valier. The Company has its office and shop in Valier, normally employing about 15 persons. The recreational use of Lake Frances attracts recreationists from outside the area who purchase food, gasoline, and other supplies in Valier.

Farming enterprises in the watershed focus on wheat and barley operations. Most operations have dryland crops and summer fallow in addition to irrigated crops. Irrigation has developed as a means of reducing crop yield fluctuations that are normally great in dryland agriculture. A high percentage is irrigated by center pivot and wheel-line sprinkler systems. Sixty-eight farm owners and 30 farming operations are currently in the project area, with the average operation being 1,200 acres.

Development of this project began in the early 1900s. The project was organized under the Carey Act of 1894. The physical part of the project was completed in 1948 and was officially accepted in 1953 when the Pondera County Canal and Reservoir Company assumed ownership.(5) The Company is composed of the irrigators who own shares--one share representing one acre of land. There are approximately 75,700 shares in the Company; about 9,300 shares are located in the project area.(6) The Company operates Swift Reservoir, Lake Frances, and about 430 miles of canals and associated structures. Major features in the project area are Lake Frances, Birch Creek and Dupuyer diversion structures, and the main supply canals to Lake Frances.

PROBLEM AND OPPORTUNITY IDENTIFICATION

The major water and related land resource problems in the watershed are limitations and interruptions of the irrigation water supply, resulting in reduced crop yields and loss of net income. No attempt was made to identify other problems outside the project area. This will be done if the plan is supplemented later to include the total watershed area. Other problems or opportunities identified in the project area include: (1) approximately 4,000 acres of dry cropland on soils not suited for cropland; (2) scattered small saline or alkali areas; (3) productive capacity of rangeland that could be increased; and (4) need for additional water-based recreational development on Lake Frances. Other problems identified by the public were property damage caused by major flood events and shoreline erosion in the southeastern part of Lake Frances.

Water Availability

Farm production is limited by irrigation water availability, and the irrigation system is inefficient and deteriorated. The present overall watershed irrigation efficiency is 19 percent. Irrigation water is 56 percent of needed amount for a full irrigation water supply. Net farm income is about 49 percent of potential and is expected to decrease in the future. Crop yields are about 85 percent of potential and are expected to decrease in the future.

Most of the structures are 50 to 70 years old and are ready to collapse or cannot handle the original canal design flows. This causes a significant reduction in the potential system diversion and system conveyance efficiencies. The failure of any one of twenty-one key structures in the watershed could result in long delays of water delivery. The seriousness of a structural failure depends on such factors as location, time of year when failure would occur, and storage level in Lake Frances. Several structures have recently failed, and structure failures will continue at an increasingly rapid rate. This increase in structure failures will not only increase the cost of operation and maintenance for repair and replacement, but will also contribute to increased operation and maintenance costs due to interruption of normal operations. It is doubtful that the Company will be able to meet the accelerated need for repair and replacement without being burdened financially. This would also burden the irrigators financially and not allow them to manage their farm operations effectively.

There is an opportunity to increase the quality of life in the watershed area if farm incomes are increased. There also is an opportunity to relieve anxieties caused by fear of interrupted supplies from structural failures.

Water Management

Approximately 26,800 acres of the watershed area are irrigated by sprinkler systems, and most of the remaining 15,800 acres are irrigated by contour ditch systems. The watershed onfarm efficiency is estimated at about 47 percent. There is an opportunity to improve onfarm irrigation water management through

evaluation of irrigation systems and assistance on timing and scheduling of irrigations. Most of the 7,100 acres in the project area could benefit from this assistance.

Although the Company has good records and data based on available facilities, there is a need for additional measuring devices, accurate streamflow data, and a study of reservoir operation. The Company has a very complex system involving two storage reservoirs and two major diversions. Installation of needed measuring structures and a management plan could be used to increase the useable volume of water diverted each year.

Other Problems

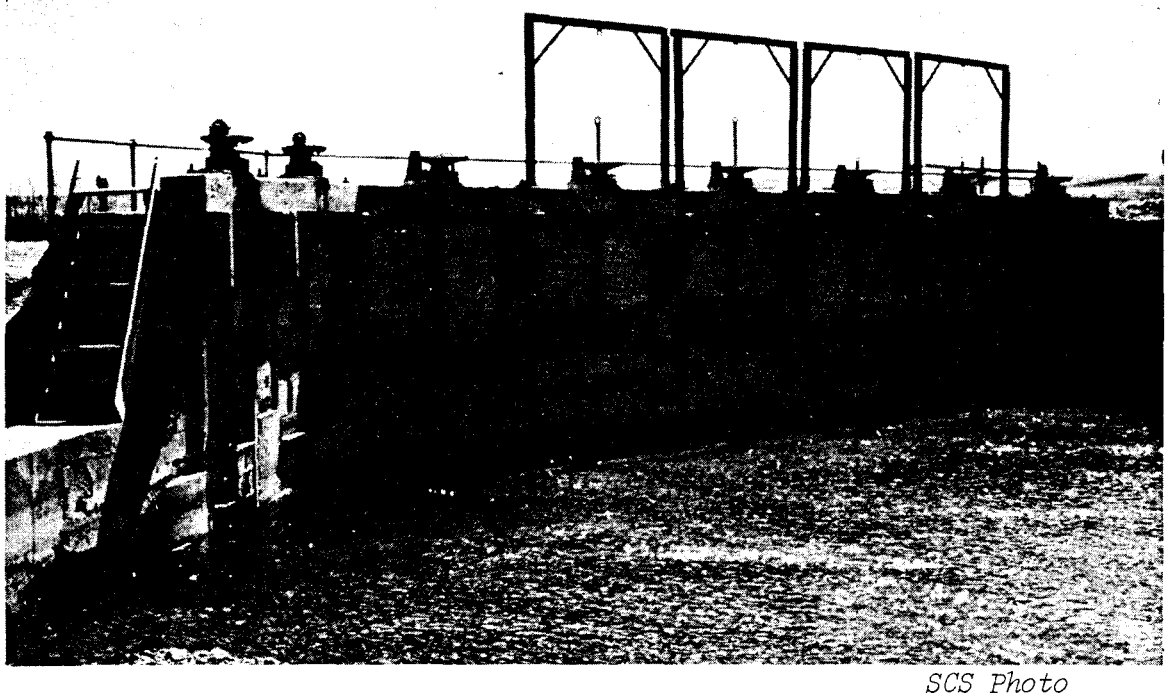
There is a need for more recreational development on Lake Frances. Presently there is a small park near Valier with picnicking, swimming, and a boat ramp. There is also a small fishing access area near the main dam. Early planning identified an interest in recreation, but further investigation with state and local agencies did not find anyone interested in being a financial sponsor.

Early studies showed that flood damages occur during major flood events. The flood plains are primarily rangeland, with a few farmsteads, roads, and bridges. Costs of solutions were found to be much greater than benefits.

It was determined that land treatment needs on dry cropland and rangeland will probably not be met any quicker or more effectively as a result of increased financial or technical assistance. A continuing education and information program, with existing technical and financial assistance programs, will be most effective in solving these land treatment needs.

Shoreline erosion is occurring on the southeastern shore of Lake Frances, causing some loss of land as it moves laterally, contributing to the murkiness of waters near the dam. The Company can control the shoreline erosion in the southeastern part of Lake Frances with their ongoing maintenance program.

PHOTO PLATE 1

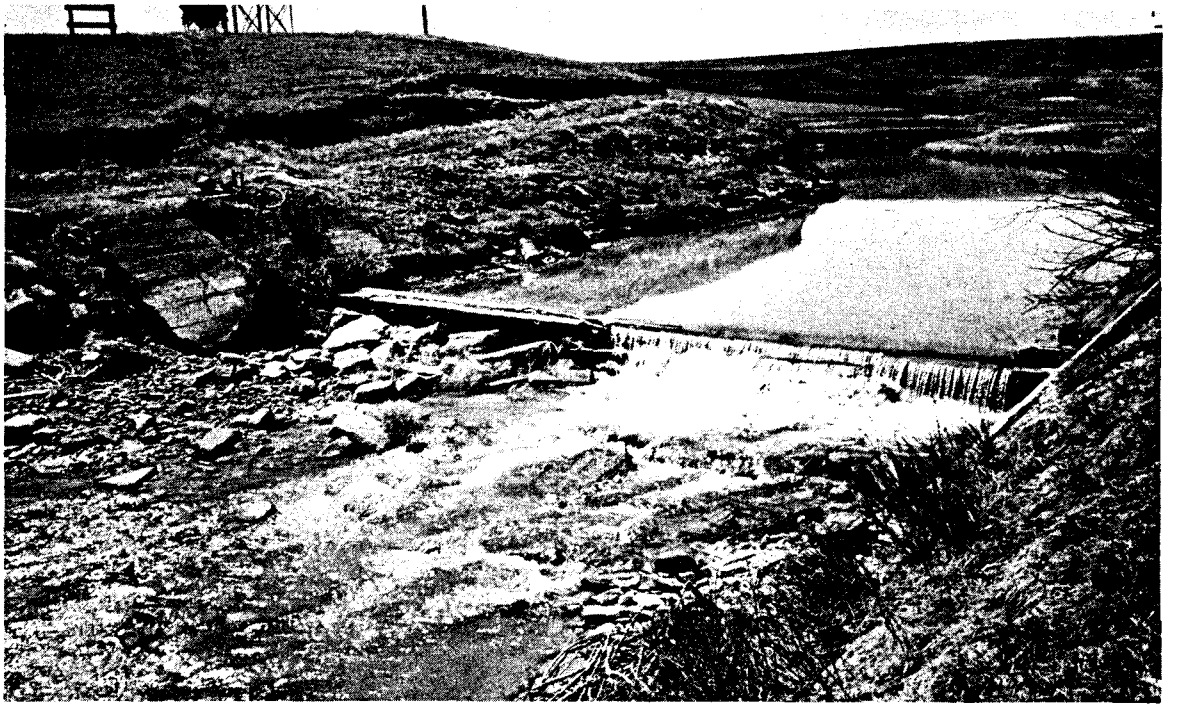


SCS Photo

The Birch Creek Diversion structure at the head of the canal system has severe concrete deterioration, especially below normal water levels. Water leaks through the diversion dam shown below.

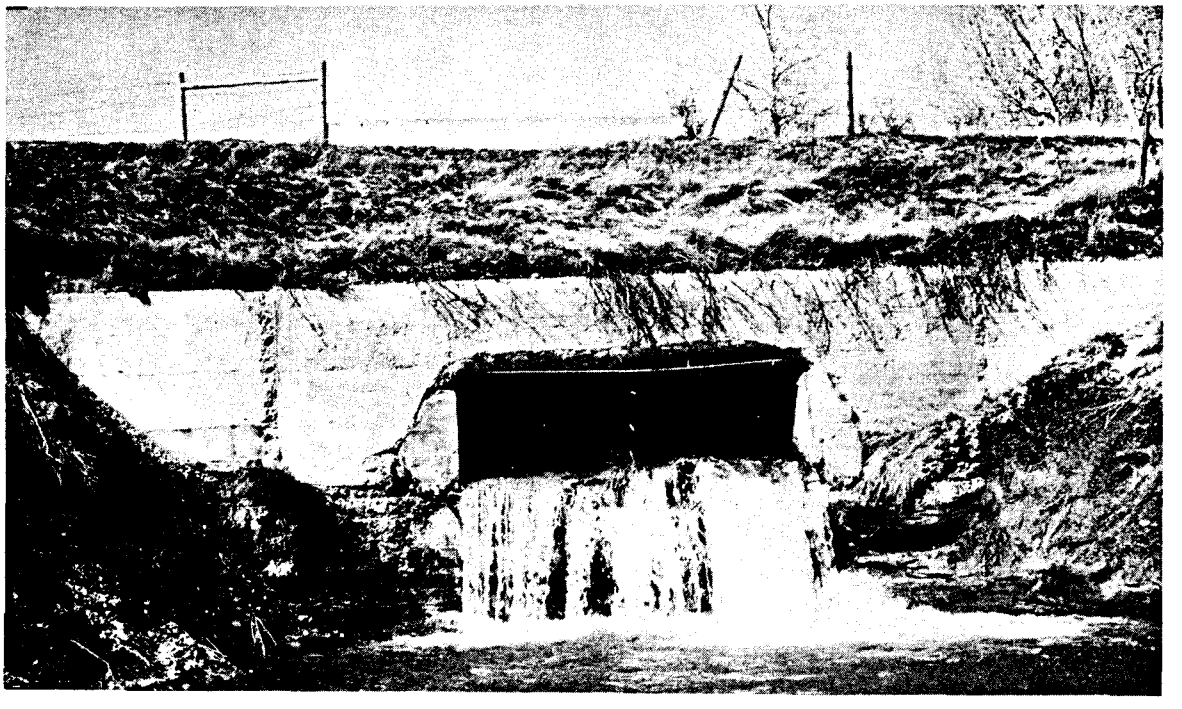
SCS Photo

PHOTO PLATE 2



SCS Photo

The B Canal shown above has numerous drop structures that need replacing.



SCS Photo

The Barrel drop structure on the B Canal is a major grade control structure. The concrete in this structure is badly deteriorated. Flows in the B Canal must be reduced below normal due to the poor condition of this structure and others.

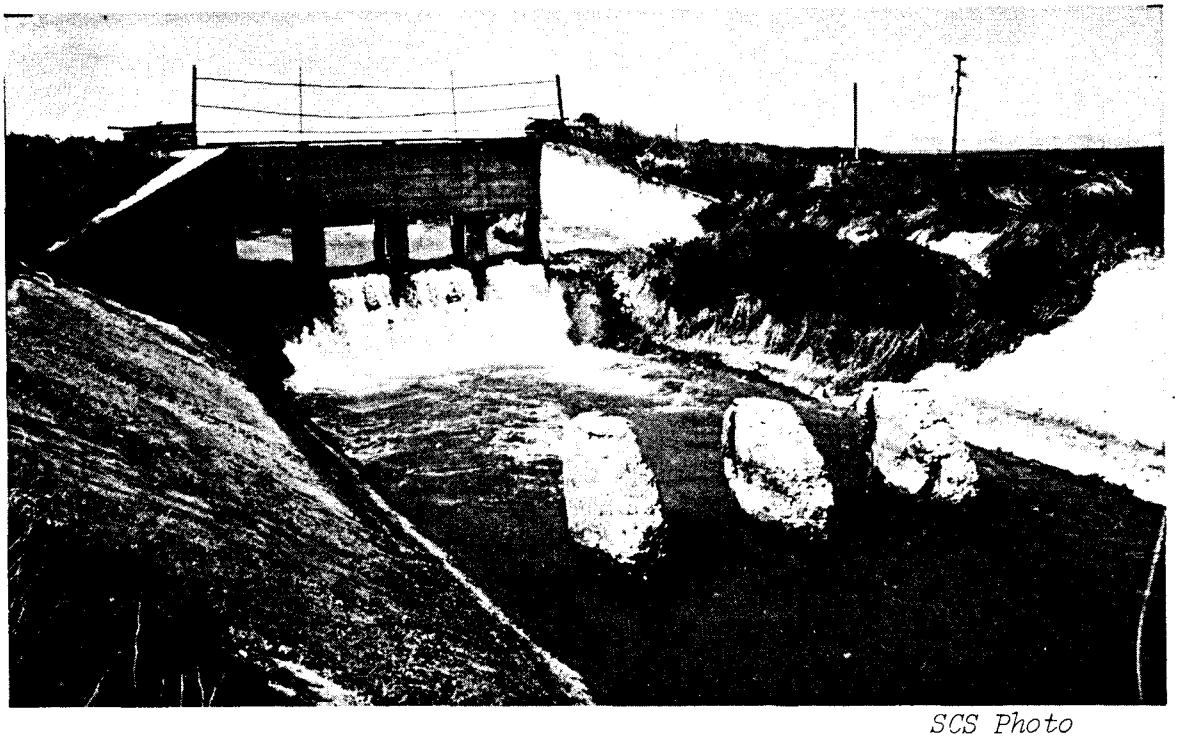
PHOTO PLATE 3

SCS Photo

Dupuyer Creek Diversion (left) shows extensive deterioration. Much of the concrete diversion dam has eroded away. Structural concrete (below) has cracked and shifted. One gate has jammed.

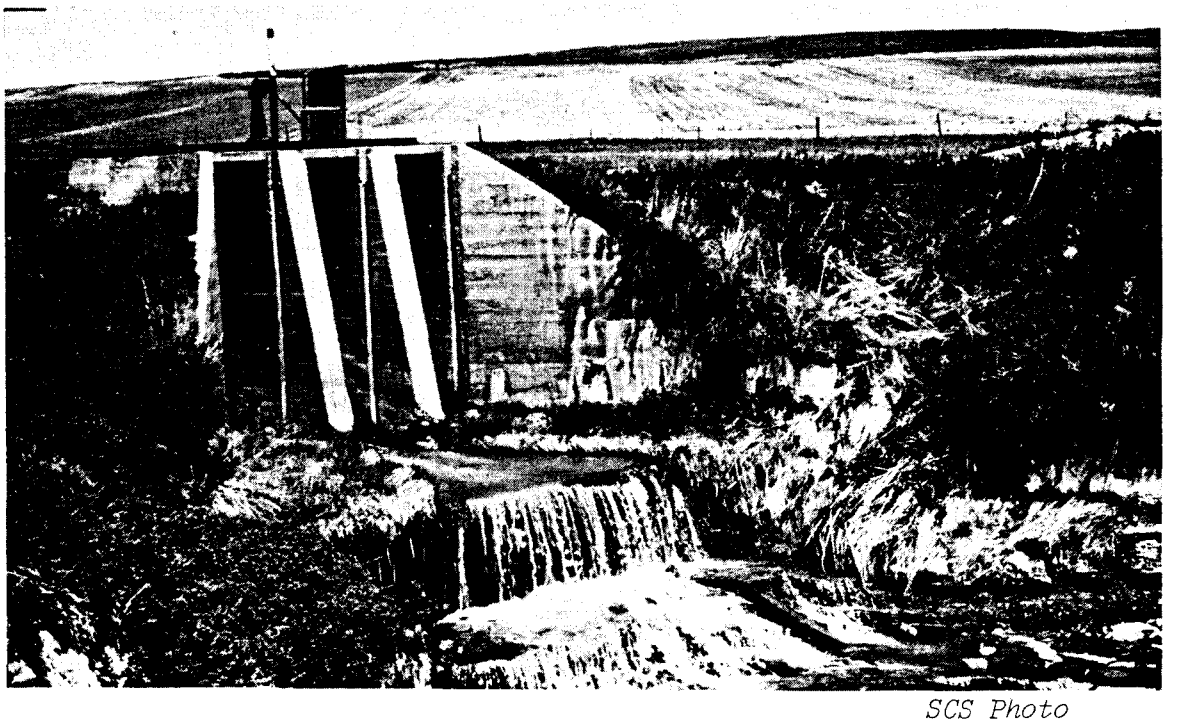
SCS Photo

PHOTO PLATE 4



SCS Photo

The Fort structure in the C Canal is badly cracked and is near collapsing.



SCS Photo

The Hein Coulee structure below Lake Frances Dam regulates flows between the L and P Canals. Cracked walls have shifted. Temporary steel bracing has been added. About 40 percent of the irrigated area depends on this structure.

Scoping of Concerns

The inventory and analysis of resources included an interactive process termed "scoping" in which affected federal, state, and local agencies and other interested groups or persons participated. Scoping was used in developing the plan to ensure that all significant decisionmaking factors were addressed and that unneeded and extraneous studies were not undertaken. The importance of identified economic, social, environmental, and cultural concerns were evaluated (Table A). Those concerns of no significance or low significance to decisionmaking are not discussed or are only briefly discussed in the plan. Basic data concerning resources have been collected in order to determine the magnitude of project impacts. Significant concerns were used to compare alternatives.

TABLE A - Evaluation of Identified Concerns

Economic, Social, Environmental, and Cultural Concerns	Degree of Significance to Decisionmaking[1]	Remarks
Floodwater and drainage	Low	
Erosion and sedimentation	Low	
Land use	Low	
Irrigation	High	
Important agricultural land	Low	
Lake fishery	Medium	Lake Frances
Canal fishery	None	
Ground water	None	
Water quality	Low	
Visual resource	Low	
Endangered and threatened plants and animals	Low	
Mineral resource	None	
Air quality	None	
Human health and safety	Low	Lake Frances Dam
Wetlands	Low	
Wildlife habitat	Low	
Cultural resources	None	None identified
Recreation	Low	Lake Frances
Farm income	High	
Saline seep and alkaline areas	Low	

[1]High - Must be considered in the analysis of alternatives
Medium - May be affected by some alternative solutions
Low - Consider, but not too significant
None - Need not be considered in analysis

Existing Resources

As part of the planning process, an inventory and analysis was made of the resources. A description with baseline information of those resources that will be affected by project action follows. The planning process also includes forecasting changes in the resource conditions that are expected to occur without project action.

This plan covers the area beginning at the diversion structure of the B Canal on Birch Creek and encompasses the main canal supply system that serves the watershed irrigated area. It includes Lake Frances and a short segment of the L Canal down to the Hein Coulee structure. See Figure 1 and Appendix D, Figure D-1.

Water supply for the Lower Birch Creek Watershed comes from the Birch Creek and Dupuyer Creek drainages. The average total water yield over the past 71 years has been 140,500 acre-feet annually.(6) Allowing for water rights of others and diversion spills during high flows, there are about 122,200 acre-feet available annually for the Lower Birch Creek Watershed. Swift Reservoir is on Birch Creek, about 15 miles upstream of the project, and has a usable capacity of 30,000 acre-feet. Water flows downstream in Birch Creek from Swift Dam until it is diverted by the Birch Creek Diversion. The B Canal below the Birch Creek Diversion has a capacity of 700 cubic feet per second (cfs). The B Canal is the main feeder canal for the Lower Birch Creek Watershed. It joins Dupuyer Creek a short distance above the Dupuyer Creek diversion. The D Canal below the Dupuyer Creek diversion has a capacity of about 900 cfs. The D Canal leads to Lake Frances although there is a bypass around the lake to carry water to the northern part of the Lower Birch Creek Watershed. Lake Frances has a usable capacity of 111,900 acre-feet, but is normally held to about 105,000 acre-feet. Water is released from Lake Frances at two points. A high-water release is provided on the northern side of the lake. The main release is through a small dam on the southeastern side of the lake. Water at this release is divided a short distance below the dam at the Hein Coulee structure for the L and P Canals. This structure is on the lower boundary of the project area. There are about 430 miles of canals and laterals in the Lower Birch Creek Watershed with about 41 miles in the project area.

The topography varies from nearly level or gently sloping uplands to undulating hills and broad valleys. Most of the irrigated land has slopes ranging from 0 to 4 percent and is classified as II or III (SCS). The general undulating nature of the irrigated land has contributed to the high degree of sprinkler irrigation development.

There are 75,700 water shares (one share per acre) in the watershed. The one share of water has historically not been enough for a full water supply for an acre of land. Each farmer typically uses his shares on fewer acres than allowed and thereby increases his water supply per irrigated acre. The actual land irrigated within each farm may vary from year to year. Grain farming with summer fallow has been common and fits into this type of irrigation where water is short. Recent trends show that about 42,600 acres are now irrigated in an average year. The installation of sprinkler systems has increased the onfarm irrigation efficiency and enabled farmers to more fully utilize their

shares of water and thus increase their acreage of irrigated land. This type of irrigation requires more capital and incurs higher annual costs.

Principal irrigated crops in the watershed area and present yields per acre are shown in Table B. Under present conditions, crop yields are reduced by limited supplies of water. Current crop yields are about 85 percent of potential, and net farm income from irrigation of 42,600 acres is about 49 percent of potential income.(6, 7, 8, 9, 10)

TABLE B - Present Watershed Irrigated Crop Acreages and Yields

Crop/Units	Acres	Yields
Barley (bu.)	12,570	60
Spring wheat (bu.)	12,570	46
Alfalfa (ton)	12,350	3.5
Pasture (AUM)	5,110	5.2
TOTAL	42,600	

Lake Frances experiences year-round recreational use with an especially heavy demand during the summer season. Boating, swimming, and fishing attract local residents and many persons from a wide neighboring area. Fisherman use of the lake was estimated at 10,000 fisherman days during the 1980-81 season.(7) In recent years, the levels of Lake Frances have fluctuated from an upper level of about 105,000 acre-feet down to 22,000 acre-feet or a change of 19 feet in water elevation. Typical fish species in Lake Frances include northern pike, burbot, walleye, and yellow perch. The lake is also used by ducks and geese during migration periods.(11)

A modest sport fishery consisting of wild populations of rainbow and brook trout occurs on Birch Creek below the diversion. The existing diversion structure functions as a fish barrier. Game fish above the diversion structure are few due to stream instability.

A poor to fair sport fishery, consisting of rainbow and brook trout, occurs on Dupuyer Creek below the diversion. This diversion structure prohibits trash fish (carp) from entering the canal system and Lake Frances.

Small areas of wetland exist in the area. Some areas are located along natural streams or in the bottom of coulees. Other areas with wetland habitat are associated with seepage from irrigation canals. There are also small, interspersed areas of wetland habitat associated with lands subject to saline seep.

Natural coulees below the main canals reflect slightly increased flows because of canal seepage. This seepage from some localized overirrigation, results in a slight increase of dissolved solids in the flows of these creeks. Water from these creeks is still suitable for irrigation and livestock uses.

There are no identified archeological or historical sites in the area. There are no sites listed in the National Register of Historic Places. The State Historic Preservation Officer has been consulted.(12)

Game and nongame wildlife inhabiting the area are prairie species common to the northern Great Plains. Gray partridge, ring-necked pheasant, and sharp-tailed grouse occur throughout the area. The abundance of these species is dependent on areas with adequate habitat. Fencerows, ditchbanks, undeveloped areas, and shelterbelts with woody cover are uncommon throughout cropland areas. White-tailed deer are common along the stream bottoms of Dupuyer Creek, while mule deer occupy the uplands and coulees. A variety of raptors or birds of prey are common during spring, summer, and early fall.(11)

No rare or endangered species of plants or animals are known to reside in the area. Grizzly bears roam through areas around Swift Dam above the area. Peregrine falcons and bald eagles fly over or through the area, but no known use of the area is made for nesting or rearing of young.(13)

Forecasted Conditions[1/]

It is expected that farmers in the watershed will continue to install more sprinkler systems and raise the average annual number of irrigated acres from 42,600 to 45,000 within a three- to five-year period. Onfarm irrigation efficiency in the watershed is expected to increase from 47 to 52 percent, mainly because of conversion to sprinkler irrigation. Even with greater onfarm efficiencies, irrigation water shortages are expected to increase. Water deliveries and reliability will be reduced more than in past years because of the culmination of canal structure failures. Overall irrigation efficiency is expected to remain essentially the same.

Reduced water supplies and reliability will limit crop yields and net farm incomes. Crop yields per acre are expected to be 53 bushels of barley, 41 bushels of spring wheat, 3.4 tons of alfalfa hay, and 5.2 AUMs of pasture. Net farm income from irrigation is expected to decrease from 49 percent to 23 percent of potential income. Crop yields are expected to decrease from 85 percent to 78 percent of potential.

The Company has an active operation and maintenance program. Without accelerating the rate of structural repair and replacement, the irrigation system is expected to deteriorate rapidly. The Company would be pressed beyond its ability to perform this increased operation, maintenance, and replacement. A piecemeal replacement of structures would be expected to increase the cost of design and installation of structures. With the expected increased rate of large canal structure failure, more frequent interruptions of water delivery will occur. These interruptions could extend from short periods of several weeks to several months; possibly, one or two irrigation seasons could be adversely affected. Crop yields and net farm income will suffer as a result of these interruptions.

The ongoing land treatment program will provide very minimal irrigation water management assistance. Some special funding has been given to Pondera County to facilitate irrigation water management. The ongoing program and special funding will never meet the projected need.

1/Future without project condition.

FORMULATION OF ALTERNATIVES

General

The formulation process started with two broadly based objectives. The national economic development (NED) objective advocates increasing the value of the nation's output of goods and services or improving economic efficiency. The environmental quality (EQ) objective promotes the conservation and/or preservation of the nonmonetary aspects of man's surroundings.

A broad range of resource problems and potential opportunities were considered. Opportunities for public involvement, as well as input from federal, state, and local agencies were provided throughout the identification process.

The opportunity to address the NED objective was identified as increasing farm income. A plan was developed to optimize the NED objective by improving the delivery system and increasing irrigation efficiencies, thereby producing greater crop yields. Water conservation was fully integrated into formulation of this plan. A primarily nonstructural alternative plan was developed as part of the formulation process.

Environmental evaluations and scoping have not identified any needs for or interest in enhancing or stabilizing deteriorating conditions of environmental resources that are reasonable for inclusion in an environmental quality plan. Therefore, no EQ plan was formulated.

A preliminary analysis was made of the problems and opportunities in the total watershed area. Similar problems exist in the main canals of the lower portion of the watershed. This plan may be supplemented to provide irrigation improvement measures in the remainder of the watershed. The analysis shows there are sufficient remaining irrigation benefits to support a program of structural and land treatment measures.

Formulation Process

The opportunities remaining after scoping, identified in the "Problem and Opportunity Identification" section, all relate to solving water shortage problems. Formulation began by listing measures that would help achieve one or more of the project opportunities.

Measures considered were: (1) onfarm irrigation water management, (2) system and turnout measuring devices, (3) streamflow forecasting and stream gaging, (4) reservoir management, (5) repairing or replacing canal structures, (6) additional storage, and (7) canal lining.

Initial studies eliminated additional storage and canal lining from consideration for inclusion in alternatives. The original project area design did an excellent job of utilizing storage and canal capacities. Additional storage could be used in high runoff years but would not be cost effective because of insufficient benefits and high installation costs. Water losses from seepage are not high enough to justify the costs of lining.

Measures were placed into three groups for analyzing effectiveness. These groups were onfarm irrigation water management, system management, and repairing and replacing main canal structures. The incremental effect of each group was compared, and it was possible to identify the combination of groups that maximized net NED benefits. This combination is the NED alternative. Each group was also analyzed for inclusion in a primarily nonstructural alternative plan. Water conservation was a primary consideration in plan formulation.

Evaluation of Alternatives

As a result of the plan formulation process, two plans in addition to a no-action alternative (Alternative 1) were developed for which costs, benefits, and effects of each were analyzed. Tentative plans were discussed with the sponsors and other agencies and at public meetings. The advantages, disadvantages, risk, and uncertainty of each plan were considered. Generally, viability of each alternative plan was determined by considering four aspects:

Completeness - The extent to which an alternative plan accounts for all investments and actions necessary to realize planned results.

Effectiveness - The extent to which an alternative plan alleviates the problems and achieves the opportunities identified.

Efficiency - The extent to which an alternative plan is most cost effective.

Acceptability - The extent to which an alternative plan is accepted by the public and compatible with existing laws, regulations, and policies.

The application of this formulation process, including the four aspects described above, effectively identified optimum levels. The following three alternatives have been identified:

Alternative 1 - This alternative defines the no-action alternative (future without a project). It is used as a basis of comparison for the other alternatives.

Alternative 2 - This alternative is primarily nonstructural and is required when structural solutions are proposed for a project. It consists of onfarm irrigation water management and system management.

Alternative 3 - This alternative is formulated to maximize net benefits. It includes Alternative 2, plus replacing or repairing main canal structures.

Alternative 1 - Future Without Project

Components: This alternative is basically a continuation of present conditions. It consists of foregoing implementation of the project. Acres irrigated annually will average 45,000 acres. Sprinkler system installations will continue to increase, thereby improving overall onfarm efficiencies. Other efficiencies will continue to decrease. It will be very difficult to keep up with operation and maintenance costs because of increasing need to repair or replace major structures in the canals.

Estimated Cost: Future operation and maintenance costs will increase significantly just to maintain the present condition of the system.

Benefits: The future volume of water delivered to crops will continue essentially the same, but water available to each acre will decrease slightly. There is a real danger of key supply structures failing, which would interrupt supplies for part or all of an irrigation season.

Effects: The present total project efficiency of 19 percent would decrease to 18.9 percent. There would be an increase in onfarm efficiencies and a decrease in other system efficiencies. Irrigation water delivered to crops as a percentage of full irrigation need will remain at approximately 56 percent. Net farm income from irrigation is expected to decrease from 49 percent to 23 percent of potential income. Crop yields are expected to decrease from 85 percent to 78 percent of potential. The threat of major and minor structure failures will increase as structures continue to deteriorate. It will be difficult for an accelerated operation and maintenance program to stay ahead of future failures.

Alternative 2 - Primarily Nonstructural

Components: This alternative consists of system management and onfarm irrigation water management in the project area. System management includes a snow survey site, three stream gages, one recording station, a reservoir management plan, and 10 canal measuring structures. Onfarm irrigation water management includes accelerated technical assistance and turnout measuring structures. Turnout measuring structures include farm measuring devices at approximately 59 turnout or withdrawal points. Accelerated assistance includes irrigation system evaluations and irrigation education and scheduling.

Estimated Cost: Total cost = $322,200; P.L. 566 = $230,900; other = $91,300; average annual cost = $36,770, including $9,900 operation and maintenance.

Benefits: Average annual net water delivered to crops would be increased by 1,330 acre-feet. Average annual benefits would be $93,000.

Effects: The installation of this alternative would improve the overall project efficiency from 18.9 percent to 20.3 percent. Irrigation water delivered to crops as a percentage of full irrigation need will increase from 56 percent to 60 percent. The installation of measuring devices will provide rapid and accurate rates of flow, aid in gate adjustments and equitable distribution of water, improve onfarm efficiencies, and control waste. The

technical assistance provided to individual irrigators will result in more efficient use of water delivered to the farm. Irrigation water management will increase the average onfarm efficiencies from 52 percent to 58 percent on 5,000 acres in the project area. System management will provide information that will enable the Company to operate the system more efficiently and increase volume of water diverted each year.

The losses of water associated with deteriorated structures and the concern of interrupted supplies caused by structure failure are not addressed in this alternative.

Alternative 3 - National Economic Development

Components: This alternative maximizes the net benefits. It consists of onfarm irrigation water management, repairing or replacing canal structures in the project area, and system management. Onfarm irrigation water management includes accelerated technical assistance and turnout measuring structures. Turnout measuring structures include individual farm measuring devices at approximately 59 turnout or withdrawal points. Accelerated assistance includes irrigation system evaluation and irrigation education and scheduling. System management includes a snow survey site, three streamgaging stations, one recording station, a reservoir management plan, and 10 canal measuring devices. Repairing and replacing structures includes a total of 23 structures.

Estimated Cost: Total cost = $1,763,200; P.L. 566 = $1,082,800; other = $680,400; average annual cost = $169,390, including $15,660 operation and maintenance.

Benefits: Net water delivered to crops would be increased by 5,100 acre-feet. Average annual benefits would be $415,300.

Effects: The installation of this alternative would improve the overall project efficiency from 18.9 percent to 23.2 percent. Irrigation water delivered to crops as a percentage of full irrigation need will increase from 56 percent to 69 percent. The installation of measuring devices will provide rapid and accurate rates of flow, aid in gate adjustments and equitable distribution of water, improve onfarm efficiencies, and control waste. The technical assistance provided to individual irrigators will result in more efficient use of water delivered to the farm and energy savings from reduced pumping requirements. Irrigation water management will increase the average onfarm efficiencies from 52 percent to 58 percent on 5,000 acres in the project area. System management will provide information that will enable the Company to operate the system more efficiently and increase volume of water diverted each year. Replacing and repairing structures will allow for higher diversion efficiencies and eliminate the concern of utilizing maximum canal capacities because of fear of structure failure. Also, the system management elements can be implemented with confidence that supplies will not be cut back or interrupted because of structural failure.

Comparison of Candidate Plans

Alternative plans that could be selected as the recommended plan are identified as candidate plans. The two alternatives formulated are both candidate plans. Table C summarizes information in each alternative and shows significant differences between the plans. The without-project conditions are included to allow a complete comparison.

TABLE C--SUMMARY AND COMPARISON OF CANDIDATE PLAN

Effects	Alternative 1 (Future Without Project)	Alternative 2 (Primarily Nonstructural)	Alternative 3 (NED--Recommended)
Measures	---	Onfarm irrigation water management and system management	Onfarm irrigation water management, system management, and repair or replacement of structures
Project Investment	$0	$ 322,200	$ 1,763,200
NATIONAL ECONOMIC DEVELOPMENT ACCOUNT			
Adverse, Annualized	---	$ 36,770	$ 169,390
Beneficial, Annualized	---	93,000	415,300
Net Beneficial	---	56,230	245,910
ENVIRONMENTAL QUALITY ACCOUNT			
Beneficial	Canal bank erosion can occur when major structures fail during operation	No effect	Reduce bank erosion associated with canals by replacing structures before failure
	Exposed shoreline of Lake Frances occurs during summer recreation season	Amount of exposed Lake Frances shoreline will be reduced slightly	Same as Alternative 2
	Deteriorated canal structures detract from visual quality of the area	No effect	Replacing deteriorated structures will improve visual quality of canal system
	Maximum and minimum Lake Frances water levels will decrease	System management will slightly increase lake levels	System management and increased diversions will slightly increase lake levels

Effects	Alternative 1 (Future Without Project)	Alternative 2 (Primarily Nonstructural)	Alternative 3 (NED--Recommended)
ENVIRONMENTAL QUALITY ACCOUNT (continued)			
Adverse	Large volume of water now flows through Lake Frances each year	Volume of water that flows through Lake Frances will be increased 16-30%.	Same as Alternative 2
	Dust, smoke, and fumes are associated with project operation and maintenance	No effect	Dust, smoke, and fumes increased slightly during construction period and slightly decreased thereafter
	Diverted water may be lost due to water control structures or farm operations	More efficient use of water will reduce average annual flows in stream regime by about 1,500 acre-feet	More efficient use of water and increased evaporation will reduce average annual flows in Birch Creek and Dupuyer Creek stream regimes by about 5,600 acre-feet annually
	Vegetation is well established around canal structures	No effect	Vegetation will need to be reestablished on disturbed areas
	Water quality in Birch Creek below Cartwright Coulee and on Dupuyer Creek below diversion will decrease slightly from its present moderate condition	No effect	Increased flows in canals will increase seepage and dissolved solids slightly in return flow waters to Birch and Dupuyer Creeks
OTHER SOCIAL EFFECTS ACCOUNT			
Urban and Community Impacts			
Income Distribution Increased regional income--primary benefits, dollars annually	---	$ 93,000	$ 415,300

Effects	Alternative 1 (Future Without Project)	Alternative 2 (Primarily Nonstructural)	Alternative 3 (NED--Recommended)
OTHER SOCIAL EFFECTS ACCOUNT (continued)			
Employment Distribution			
Person-years of permanent seasonal agricultural employment created	---	1.0	2.9
Person-years of medium income employment in project construction created	---	2.3	17.4
Life, Health, and Safety			
Drought			
Project irrigation efficiency (percent)	18.9	20.3	23.2
Displacement of people	---	None	None
Long-term Productivity			
Crop yields as a percent of potential with full water supply	78	80	86
REGIONAL ECONOMIC DEVELOPMENT ACCOUNT			
Positive Effect, Annualized			
Region		$ 172,050	$ 747,060
Rest of Nation		-0-	-0-
Negative Effect, Annualized			
Region		17,870	76,780
Rest of Nation		18,900	92,610

Project Interaction

Neither of the candidate plans will have any significant impact on any existing or expected federal or nonfederal project in this area. Both of the candidate plans support local soil and water conservation activities.

Risk and Uncertainty

The degree of risk and uncertainty involved in each alternative plan was considered throughout the planning process. Risk in alternative plans includes severity and frequency of drought and the hazards associated with sudden structural failure. Uncertainty includes the unknown future and such factors as the choice of crops to plant, the economics of producing and selling those crops, and the timing of natural disasters.

The risk of drought is lowest for Alternative 3 because the system can be more fully utilized during good water periods. With replaced structures, diversions can be brought up to planned capacities during periods of water availability. Improved water forecasting will help the Company to anticipate water shortages before they occur and to better plan for the most efficient water use. Net incomes accruing to either plan have been reduced by seven percent below the average to account for extended periods of drought. This reduction was made using percent-chance analysis which showed that net incomes would be reduced to below average even when average supplies of water were considered.

Alternative 3 addresses the problem of sudden structural failure by planning to replace or repair main water supply system structures.

Some uncertainty will always exist in a free society wherein individuals choose the crops to be planted, cropping patterns, and farming practices. This uncertainty is minimized in that farmers operate for maximum profit and constantly strive to adopt improved methods and practices. Improved technology that is expected in the future has not been recognized in computing project benefits.

Rationale for Plan Selection

The sponsors selected the NED Plan (Alternative 3) as the recommended plan. The selection was based primarily on the extent of alleviating the major identified problem. The four tests of completeness, effectiveness, efficiency, and acceptability, together with the evaluation factors and inputs from individuals, groups, and agencies, were used in reaching the decision on the recommended plan.

The recommended plan provides the highest level for achievement of objectives. The percentage of irrigation water needs met is raised from 56 to 69. The major concern of interrupted water delivery from structure failures is eliminated. Also eliminated is the concern of the Company and irrigators as to their financial ability to keep pace with the accelerated need for repair and replacement of structures. System management would provide streamflow

forecast and other data and give the Company information necessary to operate the system of diversions and storage reservoirs more efficiently.

The nonstructural plan (Alternative 2) does not achieve a high level of solving the major problem. The percentage of irrigation water needs met is raised from 56 to only 60. The recommended plan gains 5,100 acre-feet for crop use, and the nonstructural plan gains 1,330 acre-feet. The major concern of interrupted water delivery will not be addressed by Alternative 2, and high future repair and replacement costs will remain as a liability for the Company. System management is cost effective, but the uncertainty of supplies interrupted by structure failures can have major impacts on effectiveness. The Company cannot implement an effective reservoir operation plan as long as structure failures are imminent. The nonstructural plan does not pass the tests of effectiveness and acceptability.

The three increments analyzed were onfarm irrigation water management, system management, and canal structures. Each incremental group has an overall physical inter-relationship. Each increment had net benefits whether analyzed in first, second, or third position. The three combined maximized net benefits and became the NED Plan. Storage as an increment was also analyzed and found infeasible--both in the first and last position.

The B-4 lateral was evaluated as a separate unit. It was found that benefits exceeded costs.

There are no important unresolved conflicts between the recommended plan and preferences expressed by any agencies, groups, or individuals. There are no economically infeasible increments included in the recommended plan.

RECOMMENDED PLAN

Purpose and Summary

The recommended plan is Alternative 3, NED Plan. The purpose to be served by the plan is agricultural water management-irrigation. Works of improvement include onfarm irrigation water management, turnout measuring structures, system management, and canal structures. The installation period for the works of improvement is four years.

Plan Elements

Onfarm irrigation water management through accelerated technical assistance will be applied to approximately 5,000 acres of irrigated land in the project area. This will involve developing water management plans on individual farm operations. The irrigated area is shown on the Project Map in Appendix D. Landusers' participation in the program is voluntary, and they make the final decision on landuse and practices to be applied. Approximately 3.0 staff-years of accelerated technical assistance is needed for conservation planning and application on the irrigated portions of farm units. The accelerated program will supplement the ongoing program on the irrigated lands. The ongoing program will continue to assist on dry cropland, rangeland, and pastureland.

Accelerated technical assistance will include collecting, analyzing, and developing basic irrigation data, including soils irrigation properties, crop consumptive use, and irrigation system design. Evaluating planned and existing irrigation systems will include onsite testing of soils irrigation properties; irrigation system tests, including pumping plants; and recommendations for improvement. Assistance on timing and scheduling of irrigations will also be included.

Turnout measuring devices will be installed at distribution points to individual farms. They will provide the Company with more accurate records and control of water distribution. Forty-six turnouts and 13 pumping withdrawal points were identified. Small flumes or weirs will be installed at turnout points and in-line flow meters will be installed at pumping withdrawal points. Two or more turnouts may possibly be served by one measuring device; this will be determined during detailed final design analysis.

Four stations to continuously record flows will be installed and will improve the accuracy of forecasts and the reservoir operation plan. The first will be below Swift Dam and will include a rated channel section and a pipe well for installation of recording station. The second will be below the Birch Creek Diversion on Birch Creek and will include a rated channel section and a pipe well for installation of recording station. The third recorder will be installed on the existing rated drop structure in the B Canal downstream of the Birch Creek Diversion. The fourth will be on Dupuyer Creek upstream of the Dupuyer Creek Diversion and will include a rated channel section and a pipe well for installation of recording station.

An automated SNOTEL data site will be installed to measure lower-elevation mountain snowpack on the upper drainage basin of Dupuyer Creek. Data will provide more accurate forecasts in Dupuyer Creek for use in overall system management. A special use permit from the U.S. Forest Service will be obtained by SCS to install the data site.

Reservoir operation can be improved through the development and use of a reservoir operation plan. This plan will incorporate the experience of the Company directors and manager with studies of streamflow on Birch and Dupuyer Creeks. It will provide operating guidelines that can be used to increase the volume of water diverted each year by controlling the releases from Swift Reservoir in order to minimize spills. The operating guidelines will be based on time of year, expected runoff on each of the streams, volume of storage in both reservoirs, expected irrigation demand, and any operating constraints or requirements.

There are 23 structures on the B, D, C, C-3, and L Canals and the B-4 lateral that need to be repaired or replaced so that canal capacities can be returned to their optimum capacity. Included are two diversion structures, two division structures, 15 drop structures, one wasteway structure, two check structures, and one side channel inlet. Table 3B summarizes pertinent data regarding the structures.

The 15 drop structures are needed to control grades in the canals. Five will require repair, and 10 require replacement. All but two are of a typical drop design, as shown in Appendix B, Figure B-2. They will have from four to seven feet of overfall and will be designed for 700 cfs on the B Canal and 900 cfs on the C-3 Canal. The other two are the Barrel Drop and Fort Drop structures, which are discussed later. Most of the typical drops to be replaced will be installed downstream of the existing structures. Installation costs do not include removal of the old structures. The Company may wish to remove some of the abandoned structures that are visually unattractive.

The Birch Creek Diversion structure diverts water from Birch Creek into the B Canal. The diversion dam itself is a concrete overfall structure about 8 feet high and 370 feet long. Its capacity is more than adequate to pass the 100-year flood of about 8,300 cfs and will safely pass the 50-year design flood of 5,560 cfs.(14, 15) Repairs will be made to this structure to reduce seepage and to protect the structure from weathering. These repairs will serve to extend the life of the dam to the 50-year project life. The headworks and sluiceway portion of the structure will be replaced. A gated concrete structure with a capacity of 700 cfs into the B Canal and a sluiceway capacity of about 300 cfs is planned. The sluiceway will be used to pass downstream water rights as well as winter flow and will serve to pass some of the stream's gravel bedload from the front of the canal gates. The headgate structure is similar to the one planned at Dupuyer Creek and is shown in Appendix B, Figure B-1.

The Dupuyer Creek Diversion structure diverts water from Dupuyer Creek into the D Canal. This includes water from the B Canal that enters Dupuyer Creek about 2,000 feet upstream of the diversion. The existing structure will be completely replaced by a new concrete overfall structure in Dupuyer Creek and a new headgate structure on the D Canal. A maintenance road bridge will be

built across the canal and is included in the construction cost. This will replace the maintenance crossing that uses the present headgate structure. The diversion dam will be about 190 feet long and about 7 feet high. The structure in Dupuyer Creek will be designed to safely pass the 50-year peak flow of about 7,830 cfs.(16) The headgate structure will have a capacity of 900 cfs. A sluiceway will be provided with a capacity of about 300 cfs. See Appendix B, Figure B-1.

The L-P Division structure at Hein Coulee has two functions. It divides the water released from Lake Frances to the L and P Canal systems, and it serves as a wasteway for emergency discharges from Lake Frances. The existing structure will be completely replaced by a new structure which will operate similarly to the old structure. A gated pipe drop structure is proposed. Figure B-5, Appendix B, illustrates the type of structure that may be used. Gates on the front of the box inlet will control the discharge into Hein Coulee and the P system. The pipes will drop the water into the bedrock grade in Hein Coulee. The P system capacity is proposed at 270 cfs. The structure will safely pass the 900 cfs maximum release from Lake Frances without flow in the L canal.(17) Flow in the L Canal will be controlled by releases from Lake Frances. The L Canal design flow is 460 cfs.

The C-A Division structure is located in the C Canal downstream of the North Dam outlet of Lake Frances. The existing check structure in the C Canal has deteriorated, and it is proposed to replace it with a structure about 2,100 feet downstream from the present structure. This will be a concrete check structure with checkboards to control the water surface elevation in the C Canal and a gated pipe turnout structure into the A Canal. The design capacity will be 300 cfs in the C Canal and 40 cfs in the A Canal. Figure B-6, Appendix B, shows this proposed structure.

The last drop structure on the B Canal is known as the Barrel Drop. The existing structure is a monolithic twin box drop and is in badly deteriorated condition. It is proposed to replace this structure with a pipe drop structure as illustrated in Figure B-3, Appendix B. A measuring device is needed in the B Canal at this location, and it is proposed to provide a suppressed weir on the concrete inlet. The design capacity of this structure is 700 cfs.

The Fort Drop is located on the C Canal. The present structure is a concrete chute drop with a massive inlet that serves as a check structure. It is proposed to replace this badly deteriorated structure with a pipe drop as illustrated in Figure B-4, Appendix B. The pipe drop will provide grade control at the site and will have a capacity of 300 cfs. A weir will be constructed about 2,200 feet upstream of the drop which will permit measurement of water in the C Canal. The weir will provide adequate water surface elevations upstream so that a check structure will not be needed.

Ten measuring devices will be installed in the system canals to accurately manage water. Nine will be flume or weir structures, and one will be a measuring weir incorporated into the Barrel Drop structure. Locations are shown on the Project Map, Appendix D.

Most of the landrights required for installation of structural measures will be within the existing Company-owned lands or canal rights-of-way. Approximately 18 acres of additional easements will be needed. Less than one acre will be for permanent easement, and the rest will be temporary construction easements. Landuse of the needed easement areas is approximately 12 acres of pastureland and six acres of cropland. All existing rights-of-way and the additional easements needed for installation are privately owned and are not available for public use.

All practices will be installed in accordance with applicable local, state, and federal regulations. Water, air, and noise pollution will be controlled according to federal regulations.

Mitigation Features

No significant loss of fish and wildlife habitat will occur as a result of implementing this plan, and no mitigation has been included. The U.S. Fish and Wildlife Service and Montana Department of Fish, Wildlife and Parks participated in this determination.

Permits and Compliance

All activities related to the construction and operation of the facilities described will be accomplished in full compliance with all county, state, and federal requirements. The Company will consult with the U.S. Corps of Engineers and, if needed, submit an application for a permit under Section 404 of the Clean Water Act. Montana's "Natural Streambed and Land Preservation Act," 1975, Senate Bill 310, applies to this plan. Federal requirements and other entitlements are shown in Table D.

Costs

Installation costs for the plan include: (1) cost of accelerated land treatment technical assistance; (2) cost of construction; (3) cost of engineering services; (4) cost of land and water rights; and (5) cost of project administration (Tables 1 and 2).

Annualized costs include amortization of installation costs at 7-5/8 percent for the 50-year life of project period, annual operation, maintenance, and replacement (OM&R) costs, and interest during installtion for structural measures (Table 4).

Land treatment costs include technical assistance for onfarm irrigation water management. Table 1 shows costs during the installation period in excess of the ongoing rate of irrigation water management assistance presently being used. The $93,000 of accelerated technical assistance costs will be furnished by PL-566.

Construction costs include the direct costs of labor and material based on engineers' estimate for the following structural measures: canal structures, $1,163,000; turnout measuring structures, $59,000; and system management, $108,200. System management includes (1) streamgaging, $11,500; (2) SNOTEL data site, $25,000; and (3) canal measuring structures, $71,700. All costs will be shared 50 percent PL-566 funds and 50 percent other funds.

TABLE D - Compliance of the Recommended Plan with WRC - Designated Environmental Statutes

Federal policies	Compliance[1]
Archeological and Historic Preservation Act, 16 USC 469 et seq.	Full compliance
Clean Air Act, as amended, 42 USC 1857h-7, et seq.	Full compliance
Clean Water Act (Federal Water Pollution Control Act), 33 USC 1251 et seq.	Full compliance
Coastal Zone Management Act, 16 USC 1451, et seq.	Not applicable
Endangered Species Act, 16 USC 1531 et seq.	Full compliance
Estuary Protection Act, 16 USC 1221, et seq.	Not applicable
Federal Water Project Recreation Act, 16 USC 460-1(12), et seq.	Not applicable
Fish and Wildlife Coordination Act, 16 USC 661, et seq.	Full compliance
Land and Water Conservation Fund Act, 16 USC 460/-460/-11, et seq.	Not applicable
Marine Protection, Research and Sanctuary Act, 33 USC 1401, et seq.	Not applicable
National Environmental Policy Act, 42 USC 4321, et seq.	Full compliance
National Historic Preservation Act, 16 USC 470a, et seq.	Full compliance
Rivers and Harbors Act, 33 USC 403, et seq.	Not applicable
Watershed Protection and Flood Prevention Act, 16 USC 1001, et seq.	Full compliance
Wild and Scenic Rivers Act, 16 USC 1271, et seq.	Not applicable

[1] a. Full compliance--having met all requirements of the statute for the current stage of planning.

b. Not applicable--no requirements for the statute required compliance for the current stage of planning.

Engineering costs include the direct cost of engineers, geologists, and other technicians for surveys, investigations, designs, and preparation of plans and specifications for structural measures. Also included is the cost of operation and maintenance plans, including the reservoir operation plan. Total engineering costs are estimated to be $111,900, including $5,500 for the reservoir operation plan. PL-566 pays 100 percent of the engineering costs.

Landrights costs include all expenditures made in acquiring interest in land for project installation. Most land involved in installation is presently controlled by the Company. If any private or public road crossing changes become necessary, they would be a landrights cost. Total landrights costs are estimated at $2,000. All landrights are 100 percent other funds (no PL-566 funds).

Water rights costs include the actual cost or the value of rights acquired for carrying out, operating, and maintaining the project. Existing water rights are estimated to be adequate for project operation.

Project administration includes the costs of contract administration, needed permits, government representatives, and necessary inspection during construction. These costs are estimated at $212,800 PL-566 funds and $13,300 other funds.

Annual operation and maintenance costs of project measures are estimated to be $15,660, including $9,000 for the streamgaging stations. All operation and maintenance costs are the responsibility of the sponsors. There are ongoing operation and maintenance costs for other features of the irrigation system that are not included.

Total installation costs are estimated at $1,082,800 PL-566 funds and $680,400 other funds, totaling $1,763,200. A summary of costs is shown in Table 1.

Installation and Financing

Table E shows the planned sequence for installing the project measures and estimated schedule of obligations for PL-566 and other funds.

The Company is the sponsor responsible for the installation of all structural measures. They are also responsible for obtaining needed landrights, permits, and water rights, protection of public utilities, and coordination with other state and county agencies. The District will assume leadership for land treatment. Technical assistance will be provided by SCS under the ongoing program on irrigation lands with accelerated PL-566 funds.

The Company will be the Contracting Local Organization (CLO) and will award and administer all formal contracts for the installation of structural works of improvement. SCS contracting procedures contained in the Contracts, Grants and Cooperative Agreements Manual will be utilized by the CLO. SCS will assist the CLO by preparing invitations for bids and notices to prospective bidders. The CLO is to maintain a written code or standards of conduct and establish a financial management system in accordance with the Office of Management and Budget Circular A-102.

Formal contracting will be used to install, as a minimum, the diversion structures, drop structures, L-P Division structure, and measuring structures adjacent to the Dupuyer Diversion structure, L-P Division structure, and Fort Drop structure. Formal contracting involves awarding contracts based on competitive bids. The Company will provide their share of the contract cost in cash.

"Performance of work" will be used to install all or part of the remaining structural measures. Included are the C-A division; B-4 wasteway and siphon; two B-4 checks; B1, B2, B4, C2, C5, and A flumes; side channel inlet; onfarm measuring structures; and streamgaging stations. The value of work is determined by negotiations between the Company and SCS and is included in a project agreement for the work. SCS-approved cost estimates establish the maximum price that may be negotiated for the work. This work will contribute to the Company's share of cost-shared structural measures as shown in the watershed agreement. The Company has the necessary equipment and workforce and is skilled in performing the type of work contemplated. The Company will assume full financial and other responsibility that would be the responsibility of a contractor if the work were performed by formal contract.

SCS will purchase the equipment and install the SNOTEL data site. The Company will reimburse the SCS for 50 percent of the material and installation costs.

TABLE E--SCHEDULE OF OBLIGATIONS

Year	Measures	PL-566 Funds	Other Funds	Total Funds
1st	Accelerated Technical Assistance	33,000	--	33,000
	Construction	176,500	176,500	353,000
	Landrights	--	2,000	2,000
	Engineering & Proj. Administration	68,200	1,900	70,100
	Subtotal	277,700	180,400	458,100
2nd	Accelerated Technical Assistance	30,000	--	30,000
	Construction	244,000	244,000	488,000
	Landrights	--	--	--
	Engineering & Proj. Administration	116,600	4,500	121,100
	Subtotal	390,600	248,500	639,100
3rd	Accelerated Technical Assistance	30,000	--	30,000
	Construction	244,600	244,600	489,200
	Landrights	--	--	--
	Engineering & Proj. Administration	104,300	4,600	108,900
	Subtotal	378,900	249,200	628,100
4th	Accelerated Technical Assistance	--	--	--
	Construction	--	--	--
	Landrights	--	--	--
	Engineering & Proj. Administration	35,600	2,300	37,900
	Subtotal	35,600	2,300	37,900
TOTAL		1,082,800	680,400	1,763,200

Acquisition of needed easements or rights-of-way shall be made in compliance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, and appropriate USDA and federal regulations. In cases where landrights are not obtained by donation or land exchange, every reasonable effort will be made to acquire the rights by negotiation. Prior to initiation of negotiations, an appraisal of fair market value will be made by a qualified land appraiser. There are no relocations anticipated in the project installation.

If cultural resources are determined to exist during construction, appropriate notice will be given to the Secretary of the Interior in accordance with Section 3 of Public Law 93-291. SCS will take action to protect or recover, or both, any significant cultural resources discovered during construction.

Federal assistance for installing the works of improvement will be provided under the authority of the Watershed Protection and Flood Prevention Act, Public Law 566, 83rd Congress, 68 Stat. 666, as amended (PL-566).

Structural installation costs other than those allocated to PL-566 funds will be the responsibility of the Company. The Company is a legally formed corporation that is not operated for profit. There are approximately 75,700 shares in the Company with one share representing one acre of land. The Company has the power to assess the shareholders or borrow monies as needed. Application has been made with the Montana Department of Natural Resources and Conservation for grant and loan monies to cover the balance of local costs.

The Company has analyzed its financial needs in relation to the scheduled installation, estimated operation and maintenance requirements of the works of improvement, and arranged that funds will be available when needed.

Financial and other assistance to be furnished by SCS for carrying out the project are contingent on the appropriation of funds for this purpose. Other conditions for providing assistance are as follows:

1. Necessary landrights must be acquired and water rights certified by the Company prior to the signing of a project agreement for any structural measures to be installed. Included is a check of the Company's existing landrights.

2. The Company will acquire all necessary permits.

3. Agreements for operation and maintenance of all structural measures installed shall be agreed to in writing by SCS and the Company.

4. Agreement will be reached between SCS and the Company on the schedule of construction and on final plans and specifications.

Operation and Maintenance

The operation, maintenance, and replacement of structural measures will be the responsibility of the Company. This responsibility includes the financing of these actions. An operation and maintenance agreement will be executed prior to signing a project agreement. An operation and maintenance plan will be prepared for all structural measures. The agreements and plans will be in accordance with the Montana SCS Operation and Maintenance Manual.

Operation is the administration, management, and performance of non-maintenance items needed to keep completed works of improvement functioning as planned. Operations include the management of storage and releases from Swift and Lake Frances Reservoirs together with diversion rates at Birch Creek and Dupuyer Creek Diverisions to maximize delivery of water for irrigation in the benefited area. To reduce flow through Lake Frances, the C Canal will be used, when possible, to deliver water to the northern irrigated area. Operation also includes the gathering and analysis of data from streamgaging stations and measuring structures. The reservoir operation plan will be used as an aid in managing the system.

Maintenance is the work required to keep works of improvement in their original physical and functional condition or to restore them to such condition. Maintenance items include vegetation, concrete, control gates,

riprap, debris, eroded areas, sediment, and maintenance travelways. Major repair, as a result of severe storms or other causes, is also a responsibility of the Company. All structural measures are expected to have a 50-year life and no replacement costs are anticipated. Replacement of component parts, as necessary, will be done as a maintenance item.

The District will provide for followup assistance to landowners and operators who receive technical assistance and will encourage them to operate their systems in an efficient manner.

The operation and maintenance of the SNOTEL data site will be performed under the SCS Snow Survey and Water Supply Forecast Program. Any data collected will be made available to the Company.

Inspection of structural measures will be made annually by the Company and an inspection report prepared. SCS personnel and, if possible, representatives of the Pondera County Conservation District will be members of the inspection team. A qualified SCS engineer will assist in conducting inspections at least every other year. SCS will sign or co-sign the inspection reports. The Company is responsible for conducting the annual inspection and preparing the report. If maintenance is required, an agreed-to date of accomplishment by the Company will be reached with SCS. A followup report will be made to document the cost of maintenance and that the maintenance or repair has been completed. Forms will be provided to the Company for making these reports.

SCS will thoroughly review the sponsors' inspection, operation, and maintenance reports. Evidence that inspections or needed maintenance are not being performed properly and promptly will be reported to the state conservationist, who will take appropriate action on reported deficiencies.

TABLE 1--ESTIMATED INSTALLATION COST

Lower Birch Creek Watershed, Montana

Installation Cost Item	Unit	Number	Estimated Cost (Dollars) 1/		
		Nonfederal Land	PL-566 Funds (SCS) 2/	Other Funds	TOTAL
LAND TREATMENT-ACCELERATED					
Irrigation Water Management	Acres	5,000	---	---	---
Technical Assistance (SCS)	Person-years	3.0	93,000	---	93,000
SUBTOTAL LAND TREATMENT			93,000	---	93,000
STRUCTURAL MEASURES					
Canal Structures	Number	23	860,600	595,100	1,455,700
System Management	System	1	85,600	55,200	140,800
Turnout Measuring Structures	Number	59	43,600	30,100	73,700
SUBTOTAL STRUCTURAL MEASURES			989,800	680,400	1,670,200
TOTAL PROJECT			1,082,800	680,400	1,763,200

1/ Price Base 1981 October 1982

2/ Federal agency responsible for assisting in installation of works of improvement.

TABLE 2--ESTIMATED COST DISTRIBUTION

STRUCTURAL MEASURES

Lower Birch Creek Watershed, Montana

(Dollars) 1/

	Installation Cost--P.L. 566 Funds				Installation Cost--Other Funds				Total
	Construction	Engineering	Project Admin.	Total PL-566	Construction	Land Rights	Project Admin.	Total Other	Installation Cost
STRUCTURAL MEASURES									
Canal Structures	581,500	93,000	186,100	860,600	581,500	2,000	11,600	595,100	1,455,700
System Management	54,100	2/ 14,200	17,300	85,600	54,100	--	1,100	55,200	140,800
Turnout Measuring	29,500	4,700	9,400	43,600	29,500	--	600	30,100	73,700
T O T A L	665,100	111,900	212,800	989,800	665,100	2,000	13,300	680,400	1,670,200

1/ Price Base 1981 October 1982

2/ Includes 5,500 for reservoir operation plan.

TABLE 3B--STRUCTURAL DATA--CANAL STRUCTURES
Lower Birch Creek Watershed, Montana

Stream or Canal Name	Structure Name	Design Capacity cfs		Size	Concrete Volume cu. yd.	Grade Control
Birch Creek	B Diversion	Weir	5560	370'	100 (repair)	
		Headgates	700	28' X 4'	159	
B Canal	Drops 2,5,6,7,8,9,13		700	30' - 35'	381	2.2' to 5.3'
B Canal	Drops 4,10,11,12		700	30' - 40'	42 (repair)	
B Canal	Drop 14 (Barrel Drop)		700	2-60" RCP	103	19'
Dupuyer Creek	D Diversion	Weir	7830	187'	518	
		Headgates	900	28' X 6'		
D Canal	D Measuring Flume		900	43'	50	
C-3 Canal	C-3 Drop #1		900	35	66	6.4'
C-3 Canal	C-3 Drop #2		900		(Repair)	
C Canal	C Measuring Weir		300	24'	35	
C Canal	Fort Drop		300	60" RCP	65	14.7'
C Canal	C-A Division	C	300	20'	28	
		A	40	36" RCP		
L Canal	L-P Division					
	(Hein Coulee)	L	450			
		P	900	2-72" RCP	101	17'
L Canal	L Measuring Flume		450	44'	59	
B-4 Canal	B-4 Wasteway & Siphon	Wasteway	30	27" RCP	12	
		Siphon	13	24" RCP		
B-4 Canal	B-4 Checks (2)		13	3'	5.2	
B-1, B-2, B-4, C-1, C-5, A	Measuring Flumes		14.8-40	24"-36"		

October 1982

TABLE 4--ANNUALIZED ADVERSE NED EFFECTS

Lower Birch Creek Watershed, Montana

(Dollars) 1/

Evaluation Unit	PROJECT OUTLAYS		OTHER PROJECT COSTS	Total
	Amortization of Installation Cost	Operation, Maintenance, and Replacement	Interest During Installation	
All Structural Measures and Accelerated Land Treatment	137,950	15,660	15,780	169,390
GRAND TOTAL	137,950	15,660	15,780	169,390

October 1982

1/ Price Base 1981, discounted and annualized at 7-5/8 interest rate for 50 years.

TABLE 6--COMPARISON OF NED BENEFITS AND COSTS

Lower Birch Creek Watershed, Montana

(Dollars) 1/

Evaluation Unit	Irrigation	Total	Average Annual Cost 2/	Benefit Cost Ratio
All Structural Measures and Accelerated Land Treatment	415,300	415,300	169,390	2.5 to 1.0
GRAND TOTAL	415,300	415,300	169,390	2.5 to 1.0

1/ Price Base 1981 October 1982
2/ From Table 4

EFFECTS OF RECOMMENDED PLAN

General Impacts

During the environmental evaluation process, consideration was given to the various environmental, economic, and social concerns that were expressed by various individuals, groups, and agencies at the outset of planning. Areas of potential impact were evaluated and an analysis made of the importance of the impact to decisionmaking (Scoping of Concerns section).

Data were collected from farmers and other agricultural sources concerning landuse, crop yields, soils, farming practices, farm equipment, irrigation methods, water requirements, water shortages, etc. These data were used to determine the existing conditions, which were then modified to reflect expected accomplishments of ongoing projects and programs and become the conditions expected in the future without the project. This future-without-project condition was used as the base from which the effects of the selected plan and all other alternatives were evaluated.

A discussion of the pertinent project impacts is presented below. Appropriate baseline data have been included to establish needed perspective. Areas of impact believed to be of key importance to decisionmaking are summarized for the various alternatives in the comparison of alternatives table, Table C--Summary and Comparison of Candidate Plans.

Future landuse for the watershed area is expected to include 45,000 acres of irrigated land. This will include 11,700 acres of alfalfa, 15,300 acres of barley, 15,300 acres of spring wheat, and 2,700 acres of pasture. The shift from 42,600 acres, the present level of irrigated land, is expected to occur with or without project action. It is also expected that the percentage of sprinkler irrigation will increase independently of any project action.

An incremental analysis was made for the three increments of Alternative 3 (Recommended Plan). The acre-feet gained for each increment were: canal structures, 3,730; system management, 940; and onfarm irrigation water management, 430--for a total of 5,100 acre-feet. Each increment had net benefits and showed a favorable benefit-to-cost ratio.

Total annual benefits will be $415,300. Average annual project costs are computed to be $169,390. Remaining net benefits will be $245,910.

Reservoir operation will be improved through the development and use of a reservoir operation management plan. It will provide operating guidelines that can be used to increase the volume of irrigation water diverted each year.

The installation of one automated SNOTEL data site on upper Dupuyer Creek and increased streamgaging will provide data to more accurately predict seasonal streamflow of Birch and Dupuyer Creeks. The streamgaging stations with water level recorders will aid in improving the accuracy of forecasts and the reservoir operation plan. The station on Birch Creek just below Swift Dam, along with reservoir storage data, will allow for calculations of inflow into the reservoir.

The installation of additional measuring devices on streams and canals will provide refinements for streamflow records and make a more reliable data base for future management decisions. Through improved water supply forecasting and improved streamflow measurements, it is expected that Swift Reservoir can be drawn lower in the fall. More water will be stored in the winter in Lake Frances. With more available spring storage in Swift Reservoir, less water will be spilled at Swift Dam or at the Birch Creek diversion.

Figure 2 illustrates typical reservoir management and improved reservoir management for Swift Reservoir. With improved reservoir management, the reservoir would be operated to have a greater drawdown at the end of the irrigation season. The controlled releases in September and October will be diverted into Lake Frances. More storage is then available to harvest the next year's spring runoff. April, May, and June releases will be managed with consideration of the forecasted runoff to minimize spill. Releases not needed for immediate irrigation will be stored in Lake Frances when possible. There will still be some risk of the reservoir not filling, but the overall effect will be more available water for irrigation on a continuous yearly basis.

The trend has been to put more demand on Lake Frances as irrigation has become more fully developed. During the past 30 years, records indicate there has been a trend toward lower lake levels. The lake does not fill as full, and it is drawn down lower at the end of the irrigation season. These levels are expected to go lower in the future. With the adoption of improved reservoir management, it is expected that the decline will be less. This will have an effect on the lake fishery.

The volume of water in Lake Frances replaced each year may have a minor effect on its fishery. Without a project, it is expected that about 53,000 acre-feet will flow through the reservoir each year. With a project, the expected flow-through volume will be about 61,000 acre-feet each year.

A computer analysis was made of the water supply system from Swift Reservoir down through Lake Frances. A schematic flow diagram for both the "future with" and "future without" project conditions is shown in Figure 3. The diagram shows a reduction in spill at Swift Reservoir from 44,100 to 16,300 acre-feet annually. Spill at the Birch Creek diversion will be reduced from 23,300 acre-feet to 8,900 acre-feet. The delivery run, which is Lake Frances outflow plus lake bypass and upstream deliveries, will be increased from 79,000 to 91,500 acre-feet. These effects will be brought about through improvement of diversion efficiencies, improved reservoir management, and improved system integrity of the replaced or repaired structures. The C Canal will be used, when possible, to deliver water to the northern irrigated area. The impact of possible fertility changes on the lake's fish populations is judged not to be significant.

More efficient use of water and increased evaporation will reduce average annual flows in Birch Creek and Dupuyer Creek stream regimes by about 5,600 acre-feet annually. These effects will be distributed widely throughout the project area and downstream area. No measurable impacts are expected.

Figure 2
SWIFT RESERVOIR
STORAGE & SPILLAGE

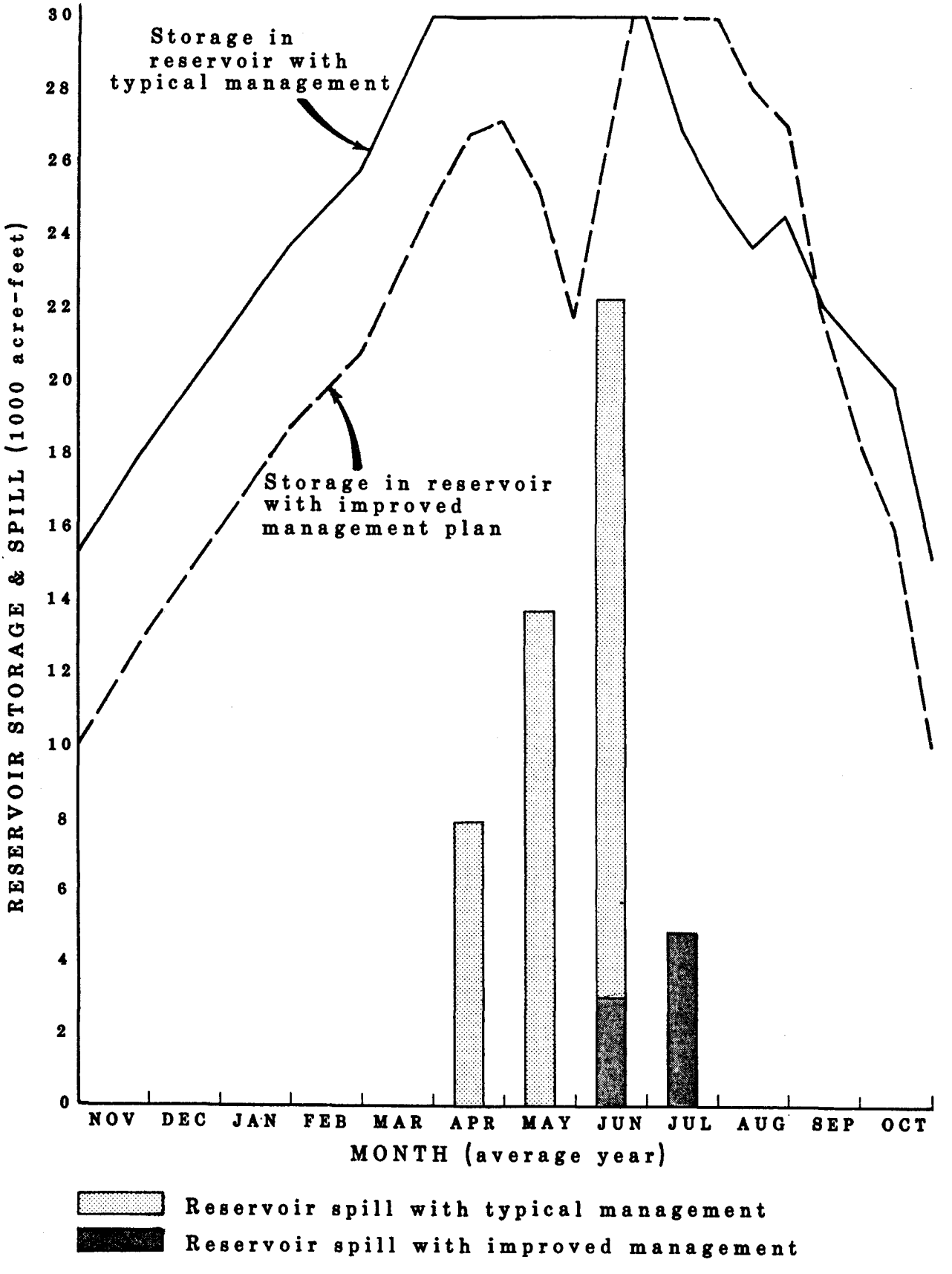
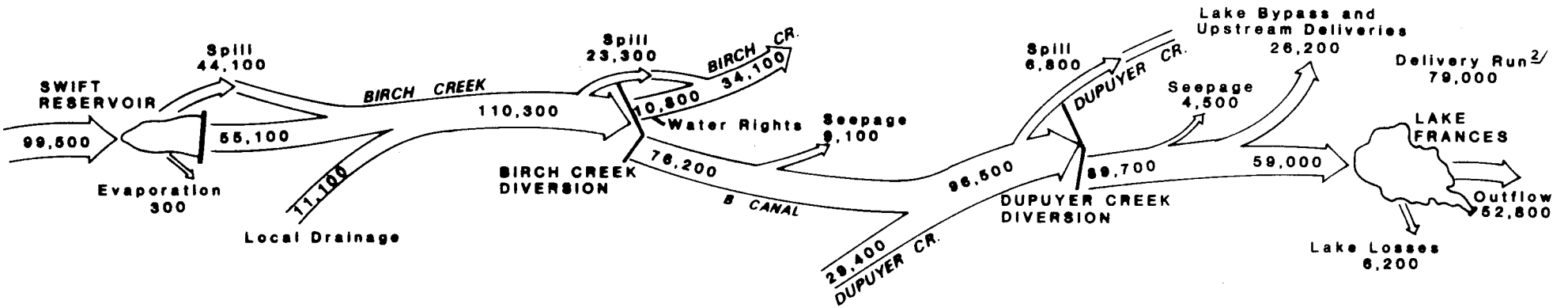


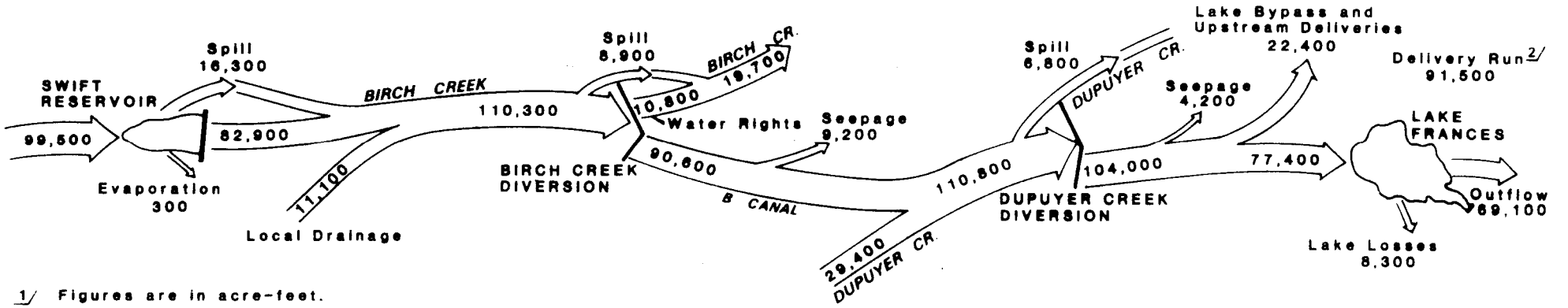
Figure 3

SCHEMATIC OF AVERAGE ANNUAL FLOW VOLUMES [1/]

WITHOUT PROJECT



WITH PROJECT



1/ Figures are in acre-feet.

2/ Delivery run = Lake Frances outflow + Lake bypass and upstream deliveries

Water-measuring devices in canals and at turnouts will include flumes, weirs, and in-line flow meters. Ditchriders will have a rapid and more accurate means to adjust gates and measure flows. Farmers will have more dependable measurements of water received, and more equitable water distribution will be made. The Company will have more accurate records and control of water distribution.

Accelerated technical assistance provided by SCS will be used to collect, analyze, and develop basic irrigation data. These data will be used to help farmers evaluate existing irrigation systems or to develop new systems. The overall effect will be improved irrigation water management. The 5,000 acres assisted will raise the onfarm efficiency in the project area from 52 percent to 58 percent.

Overall watershed irrigation efficiency is defined as the percentage of water available for diversion that is finally used by plants. This efficiency is computed as a product of five efficiency factors: diversion, supply, conveyance, management, and onfarm. Supply efficiency relates to losses in the B and D Canals and Lake Frances. Conveyance and management efficiency relate to the canal system below the project area. Replacing and repairing structures in the canal system will increase the efficiency of diversion and supply. Increased supplies of water will improve efficiencies of all canals because more water can be conveyed without significant additional seepage losses. An increase in onfarm efficiency is also expected, primarily as a result of improved water management. There will be fewer interruptions of water delivery in the main supply canals and less downtime. Flows in the main diversion canals can again be raised to their optimum capacity levels without fear of overtaxing the control structures. Overall watershed irrigation efficiency is expected to increase from 18.9 to 23.2 percent. There will be an additional 5,100 acre-feet of water available to crops. Table F shows expected changes in irrigation efficiencies.

TABLE F - Efficiency Factors 1/

Condition	Diversion	x Supply	x Conveyance	x Management	x Onfarm	= Overall Project Efficiency
Present	81.7	81.7	71.0	85.2	47.0	19.0
Future w/o project	80.9	79.2	70.7	80.4	52.0	18.9
Future with project	92.6	80.5	73.0	80.4	53.0	23.2

1/All factors relate to the total watershed area resulting from works of improvement installed under this plan.

Crop yields and net income are expected to increase in the future as irrigation water supplies are increased. Technological advances (improved seed, etc.) that will improve crop yields are expected to continue; however, these technological advancements were not evaluated, and their effects are not included in any of the projected conditions. Onfarm benefits were determined by comparing the differences in net income between future with project conditions and future without project conditions. Included in the net income for these conditions is the probability of short water supply years. The primary impact of an additional 5,100 acre-feet of water available to crops will be an increase in net farm income. Overall crop yields will increase from an average of 78 percent to 86 percent of potential. Crop yields expected for the projected 45,000-acre irrigated area are shown in Table G.

TABLE G - Future Crop Yields Per Acre

Crop	Without Project	With Project
Barley (bu.)	53	60
Spring wheat (bu.)	41	46
Alfalfa (ton)	3.4	3.7
Pasture (AUM)	5.2	5.6

The plan will increase irrigation water in the benefited area from 56 percent to 69 percent of the needed amount for a full irrigation water supply.

The project is expected to create 2.9 person-years of onfarm employment annually, mainly through increased labor inputs for irrigation and harvesting activities. Increased crop production would have indirect or secondary effects on external economics--an expected 16.0 person-years of employment annually. Project construction would create 17.4 person-years of skilled and semiskilled labor employment.

Long-term projections of natural resource use indicate a continuing agricultural economy composed principally of irrigated grain, dryland grain, and some livestock operations. The plan provides long-term protection and conservation of both land and water resources.

The project will help to alleviate the immediate problem of short irrigation water supplies. Increased water supplies will help to provide the stimulus for long-range planning. Farmers will be encouraged to maintain a high level of operating efficiency, including sprinkler irrigation development. The plan will also encourage long-range plans for improving water and land resource use throughout the watershed.

Replacing or repairing large canal structures before failure can occur will protect the canals from extensive washouts and will protect adjacent cropland from resulting damage. These improvements will enable the Company to utilize its resources more efficiently in accomplishing normal OM&R that has been deferred in the past because of crises involving large structures.

The project will commit 17.4 person-years of skilled and semiskilled labor and $1,763,200 for construction and cost of implementing the project.

Installation of the project will not preclude use or limit presently available alternative uses of any land or resource in the watershed.

Relationship to Other Plans, Policies, and Controls

This watershed project is located in Water Resources Region 10, Subregion 03. There are applications for assistance on two potential PL-566 projects in this subregion, including Lower Birch Creek.

This plan is not being considered jointly with any other project. It is anticipated that there will be a supplement covering the downstream benefited area. See Project Map, Appendix D. Lower Birch Creek Watershed has been identified as one of the principal features in the recommended plan of the 1981 Level B Study for the Upper Missouri River Basin.

Effects of the project on particular resources that are recognized by certain federal policies have been summarized in Table H.

TABLE H - Effects of the Recommended Plan on Resources of Principal National Recognition

Types of resources	Principal sources of national recognition	Measurement of effects
Air quality	Clean Air Act, as amended, 42 USC 1857h-7, et seq.	No effect
Areas of particular concern within the coastal zone	Coastal Zone Management Act of 1972, as amended, 16 USC 1451, et seq.	Not present in planning area
Endangered and threatened species critical habitat	Endangered Species Act of 1973, as amended, 16 USC 1531 et seq.	No effect
Fish and wildlife habitat	Fish and Wildlife Coordination Act, 16 USC 661, et seq.	No effect
Flood plains	Executive Order 11988, Flood Plain Management	No effect
Historic & cultural properties	National Historic Preservation Act, 16 USC 470a, et seq.	Not present in planning area
Prime and unique farmland	CEQ Memorandum of August 1, 1980: Analysis of Impacts on Prime or Unique Agricultural Lands in Implementing the National Environmental Policy Act	Increased irrigation water supply
Water quality	Clean Water Act (Federal Water Pollution Control Act), 33 USC 1251 et seq.	No effect
Wetlands	Executive Order 11990, Protection of Wetlands, Clean Water Act of 1977, 42 USC 1857h-7 et seq.	No effect
Wild and scenic rivers	Wild and Scenic Rivers Act, as amended, 16 USC 1271, et seq.	Not present in planning area

CONSULTATION AND PUBLIC PARTICIPATION

Agency consultation and public participation were an integral part in all phases of planning and environmental evaluation conducted by the sponsors and SCS. Contacts, persons attending meetings, and contents of meetings are documented in the project documentation files.

A public meeting to discuss the watershed and assess local interest was held in May 1975 prior to the completion of the Project Notification and Review System required by the Office of Management and Budget (Circular No. A-95). SCS requested planning authorization based on initial studies, and authorization was granted in July 1976. Federal, state, and local agencies, together with the public, were notified that planning authorization was granted.

Intensive planning and environmental evaluation began in 1981. Federal, state, and local agencies participated in the scoping process. SCS specialists consulted with various federal, state, and local agencies and the sponsors on specific items and to provide appropriate opportunities for participation.

Two public meetings were held in 1981. Each was advertised in local news media. A notice was sent to individuals, agencies, groups, and all irrigation shareholders within the Company project boundaries. The local newspaper published reports on meetings and helped inform local citizens of events and planning progress. The district newsletter also informed county residents of meetings and their results.

The first public meeting in 1981 was held in Conrad on September 29, 1981. The purpose was to inform the public of progress, present problems and opportunities that have been identified, and receive input from the public on their concerns, additional problems, and opportunities. Representatives of U.S. Fish and Wildlife Service and Montana Department of Fish, Wildlife and Parks attended the meeting.

The second public meeting was held in Conrad on December 14, 1981. The purpose was to present alternatives for solutions to problems in the project area and solicit comments from persons attending. No agencies other than SCS attended this meeting.

Five meetings were held with the sponsors in 1981. These meetings were held to keep the sponsors fully informed of planning progress, presenting to them results of studies and analyses and obtaining their input and decisions.

Informal consultation with U.S. Fish and Wildlife Service (FWS), in accordance with Section 7 of the Endangered Species Act, was completed in December 1981.(13) FWS and Montana Department of Fish, Wildlife and Parks participated in the evaluation of fish and wildlife habitat and formal scoping.

A cultural resource inventory of the project area was completed. The State Historic Preservation Officer was consulted and concurred in the finding that no cultural resources will be affected.(12)

The following agencies and groups were requested to comment on the draft plan:

U.S. Department of the Army (Corps of Engineers' District Engineer's Office)
U.S. Department of the Interior (Fish & Wildlife Service Regional Office)
U.S. Department of the Interior (Bureau of Reclamation Regional Office)
Bureau of Indian Affairs (Regional Office)
U.S. Environmental Protection Agency (Regional Office)
Office of the General Council, USDA
Governor of Montana
Montana Office of Budget and Program Planning (state clearinghouse)
Montana Department of Highways
Montana Department of Health and Environmental Sciences
Montana Bureau of Mines and Geology
Montana Department of Natural Resources and Conservation
Montana Department of Commerce
Montana Department of State Lands
Montana Association of Conservation Districts
Montana Environmental Quality Council
Montana Department of Fish, Wildlife and Parks
Montana Bureau of Land Management
Golden Triangle Area Development Corporation
Montana Power Company
Burlington Northern Inc.
Montana Water Development Association
Blackfeet Tribal Business Council
Trout Unlimited
Sierra Club
League of Women Voters
Audubon Society
Montana Wildlife Federation
Natural Resources Defense Council, Inc.
National Wildlife Federation

LIST OF PREPARERS

Name/Title	Education	Experience (Years)	Other (License, etc.)
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H. Allan Dawson Planning Engineer	B.S., M.S.-Agr. Eng.	Planning Engr. (5) Hydraulic Engr. (3) Civil Engr. (8)	
Joseph A. Van Mullem Hydraulic Engineer	B.S.-Civil Eng.	Hydraulic Engr. (11) Civil Engr. (6)	Prof. Engr.
SCS, State Staff			
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Gordon L. Watson Soil Conservationist	B.S.-Agr. Eng.	Soil Cons. (3) Dist. Cons. (6) Civil Engr. (7)	
Robert G. Lohmiller State Res. Cons.	B.S.-Animal Husbandry M.S.-Range Mgmt.	State Res. Cons. (2) Plant Mat. Spec. (5) Soil Cons. (8)	
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David J. Jones Envir. Engr.	B.S.-Civil Eng. B.S.-Mech. Eng. M.S.-Envir. Eng.	Envir. Engr. (9) Civil Engr. (2)	Prof. Engr.
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LIST OF PREPARERS (continued)

Name/Title	Education	Experience (Years)	Other (License, etc.)
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Robert G. Lund Carto. Tech.	Drafting-2yrs. in junior college	Carto. Tech. (10) Surv. Tech. (5)	
Gerald T. Johnson District Consv.	B.S.-Agr. Business	Dist. Cons. (4) Soil Cons. (3)	

Outside SCS

Donald Tennant, Biologist, U.S. Fish and Wildlife Service
Nels Thoreson, Regional Supervisor, and Al Wipperman, Biologist, Montana Department of Fish, Wildlife and Parks
Ardyce Jensen, Social Science Technician, U.S. Forest Service

The draft watershed plan was reviewed and concurred in by state staff specialists having responsibility for engineering, soils, agronomy, range conservation, biology, forestry, and geology. This review was followed by review of the document and supporting data by the West National Technical Center.

INDEX

INDEX (continued)

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11. Communications and correspondence between the Soil Conservation Service and Montana Department of Fish, Wildlife and Parks.

12. Exchange of correspondence between the Soil Conservation Service and State Historic Preservation Officer. February 1982.

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14. U.S. Department of the Interior, Geological Survey. Magnitude and Frequency of Floods in the United States, Part 6-A. Water-Supply Paper 1679. 1966.

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17. CH2M Hill. Lake Frances Dams, Valier, Montana. October 1980.

APPENDIX B

ENGINEERING DRAWINGS

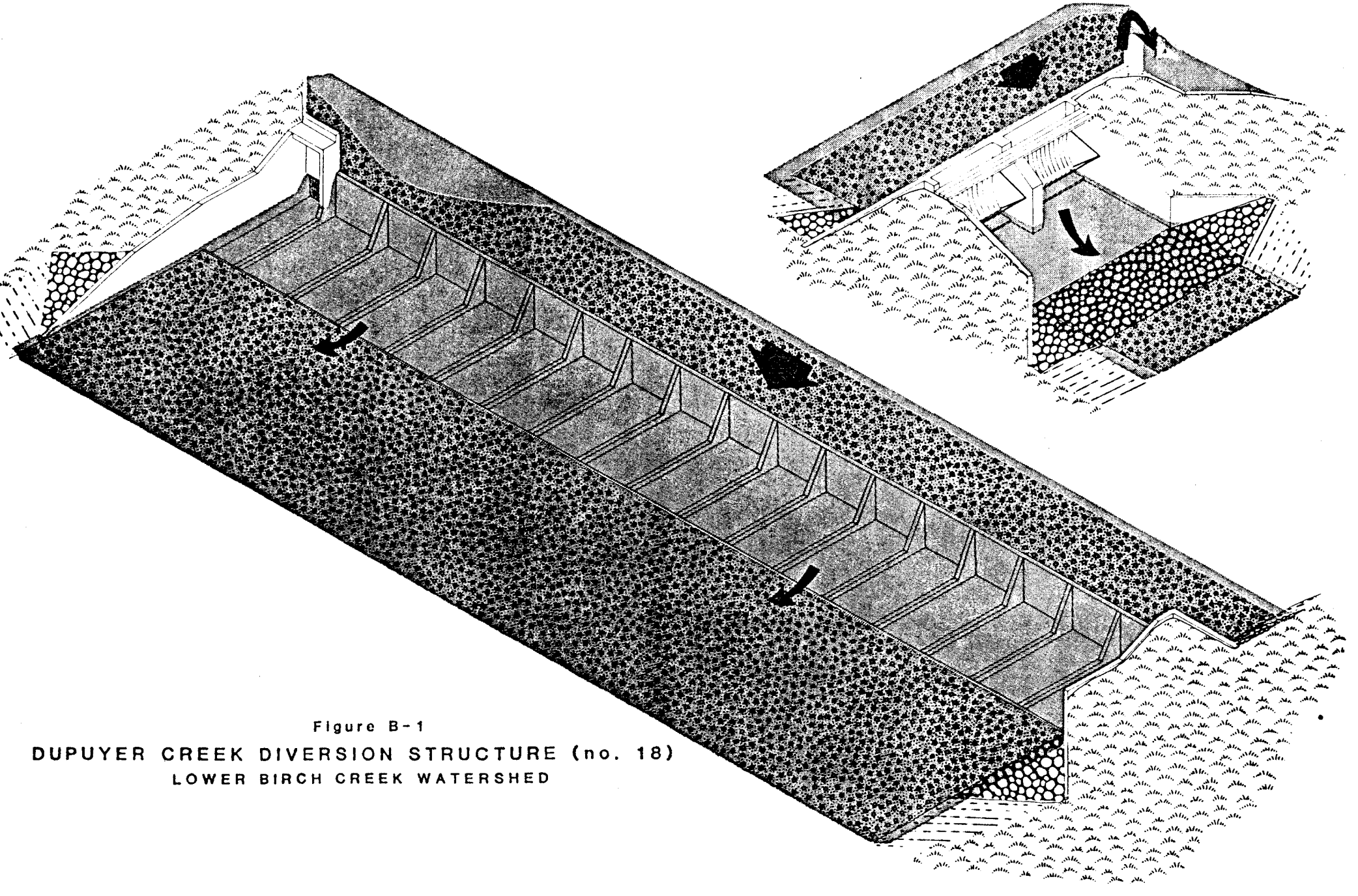

Figure B-1

DUPUYER CREEK DIVERSION STRUCTURE (no. 18)

LOWER BIRCH CREEK WATERSHED

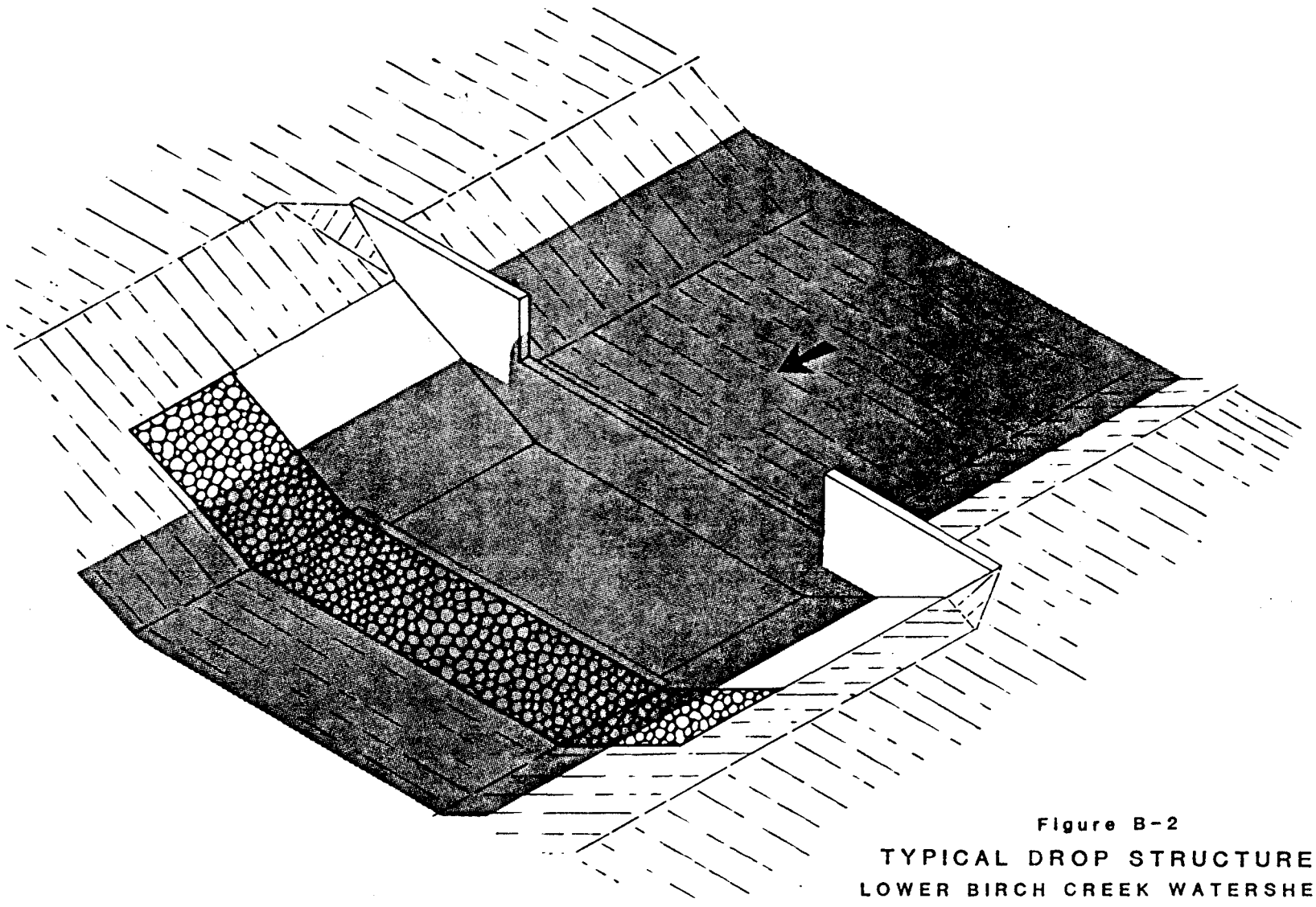

Figure B-2

TYPICAL DROP STRUCTURE

LOWER BIRCH CREEK WATERSHED

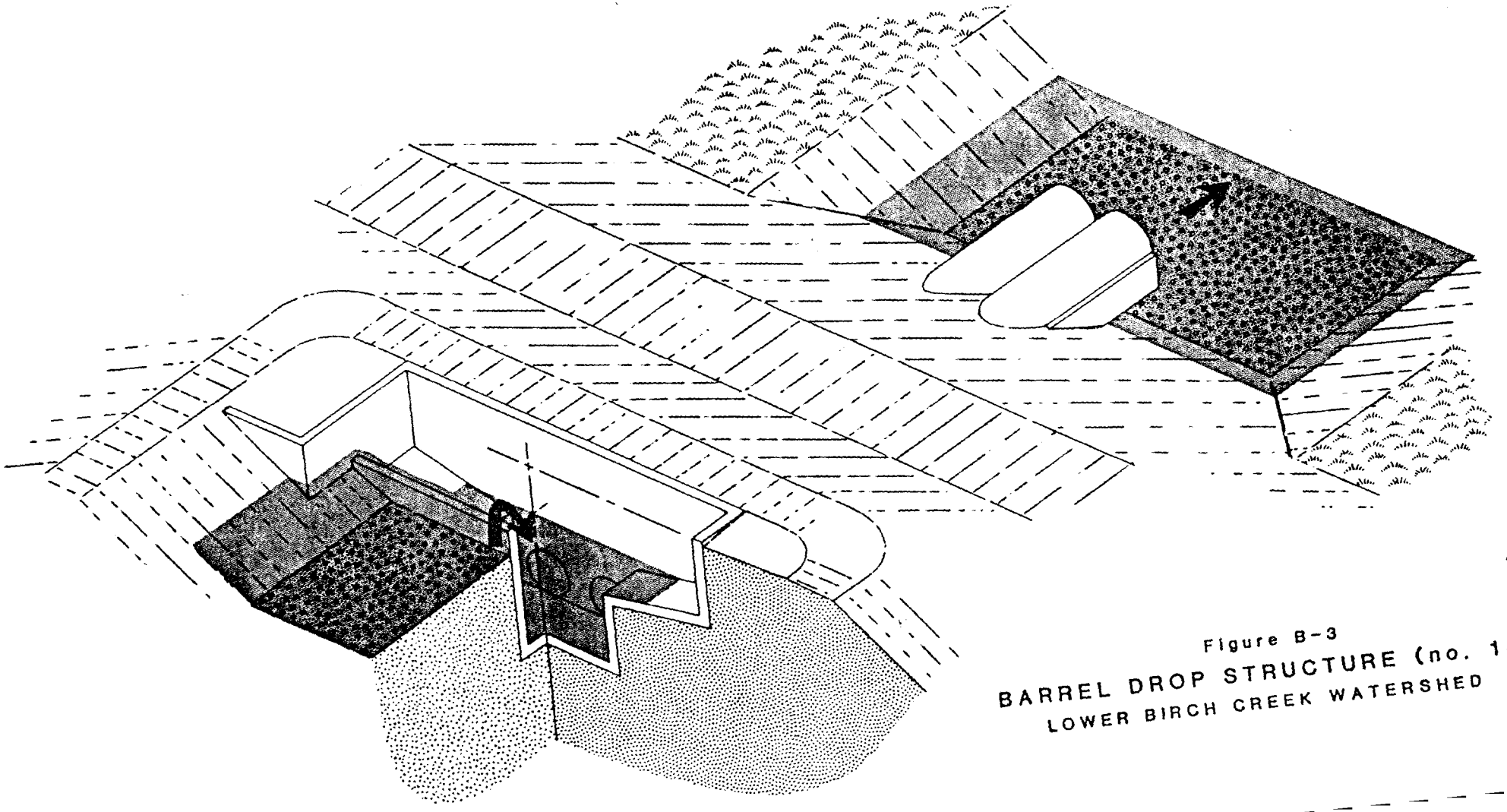

Figure B-3
BARREL DROP STRUCTURE (no. 14)
LOWER BIRCH CREEK WATERSHED

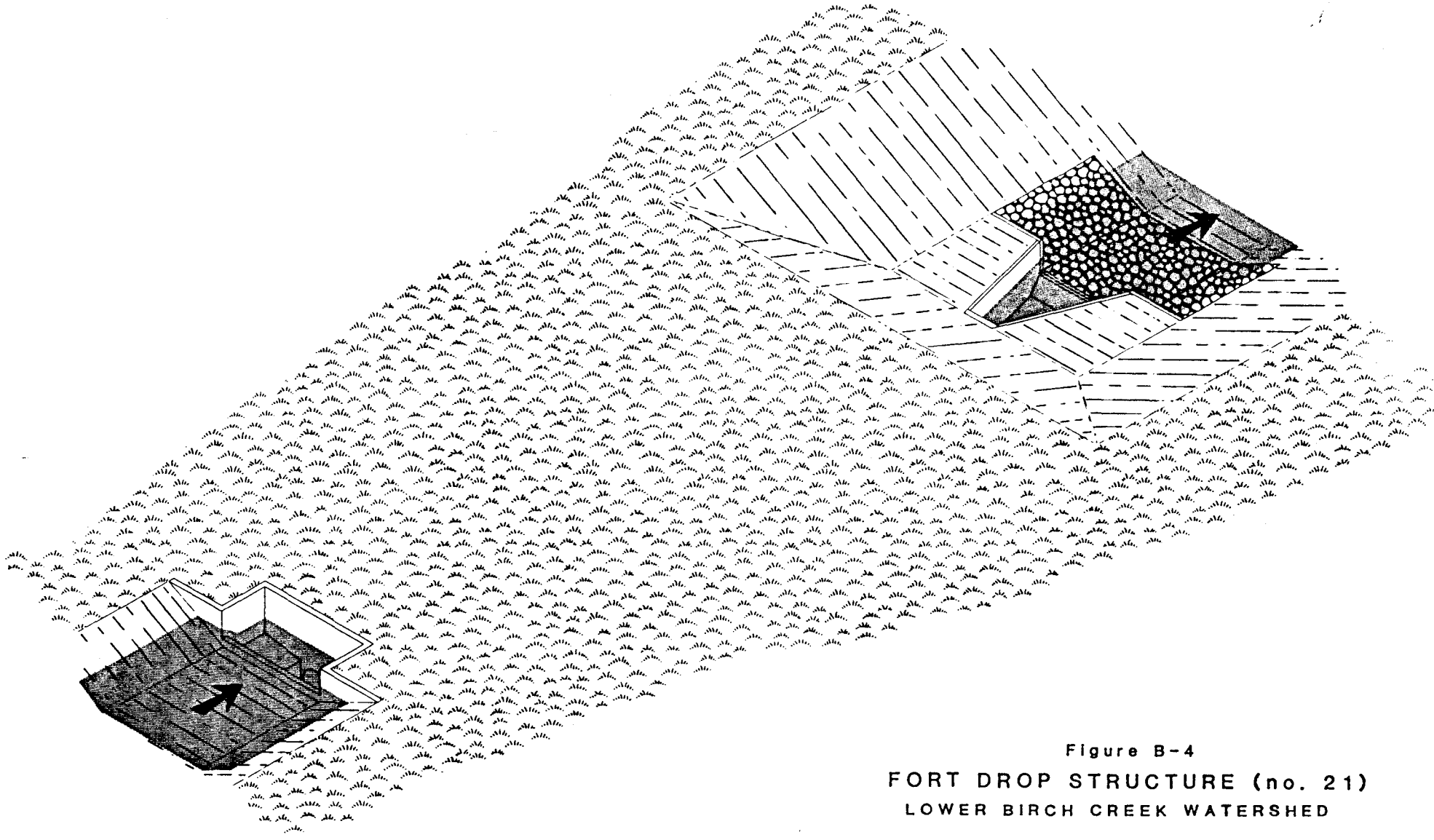

Figure B-4

FORT DROP STRUCTURE (no. 21)

LOWER BIRCH CREEK WATERSHED

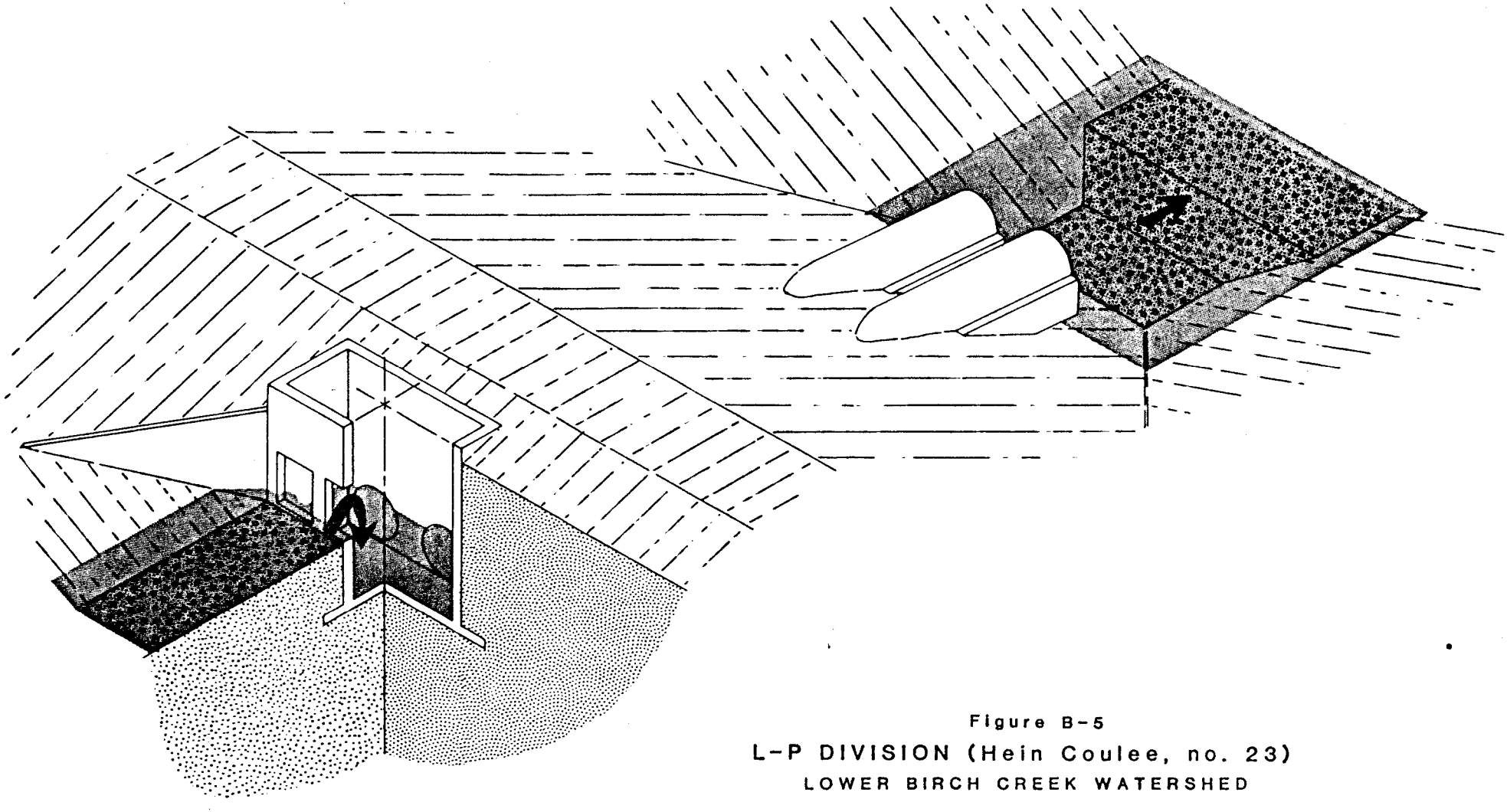

Figure B-5

L-P DIVISION (Hein Coulee, no. 23)

LOWER BIRCH CREEK WATERSHED

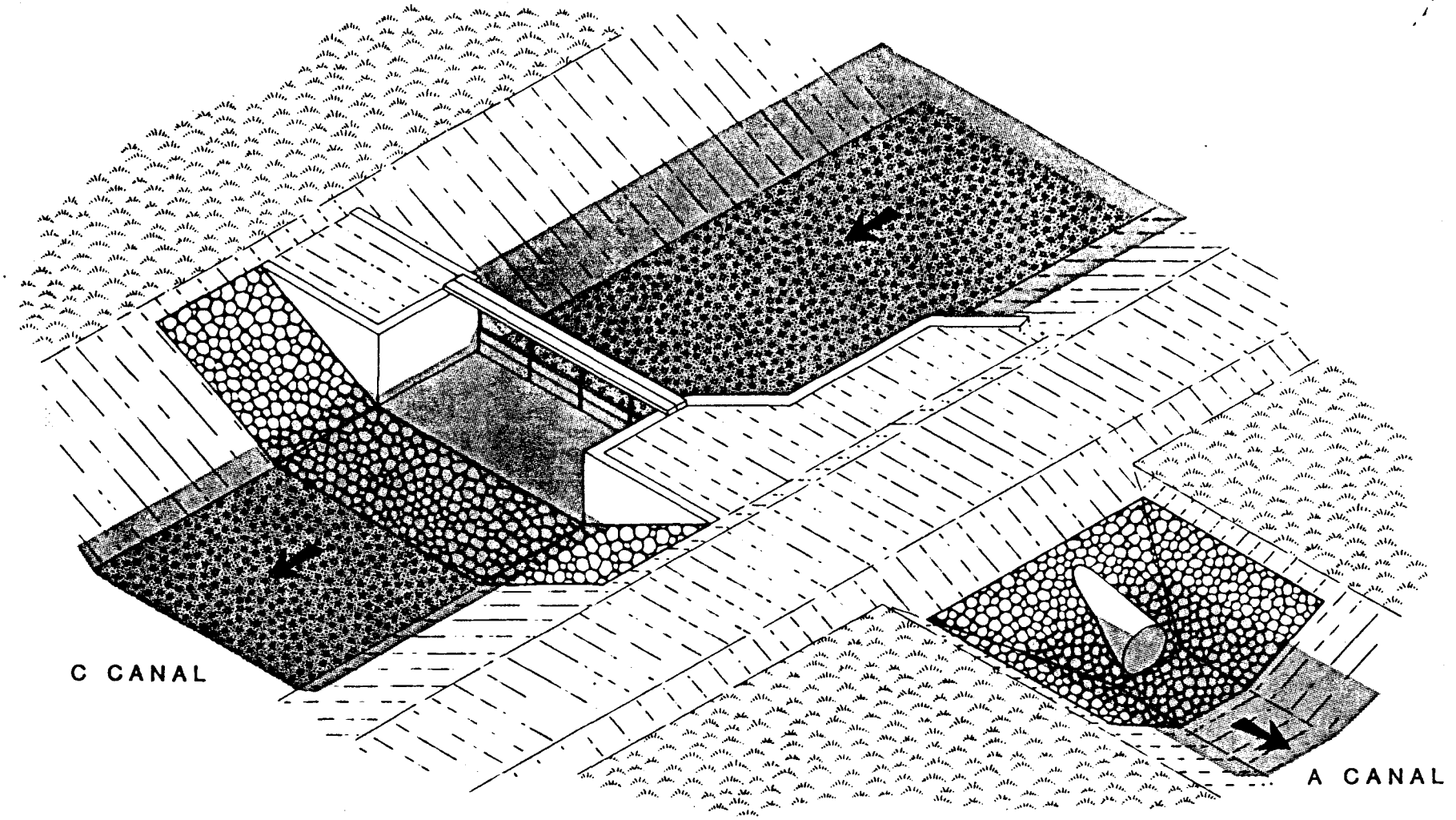

Figure B-6

C-A DIVISION (no. 22)

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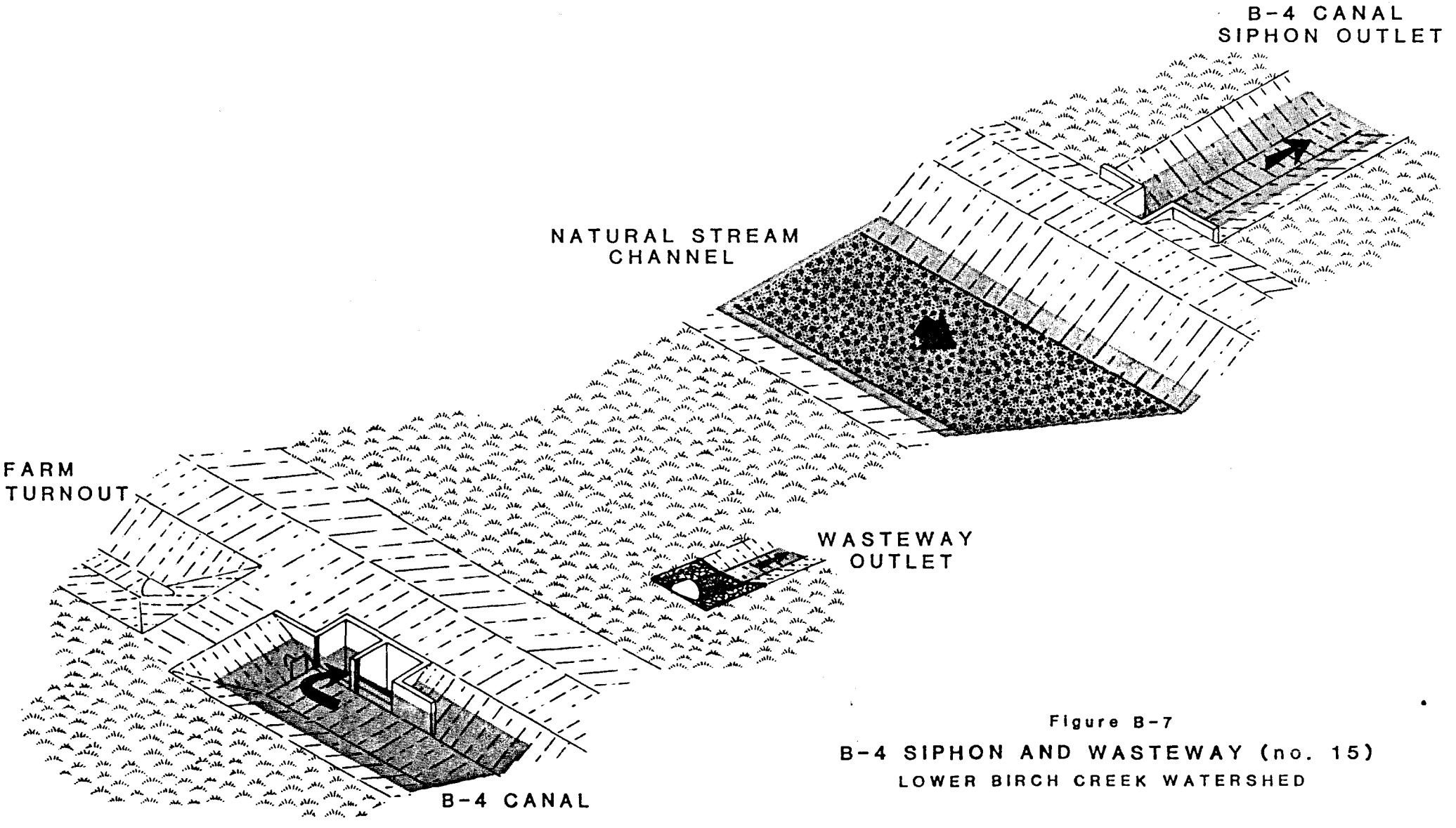


Figure B-7

B-4 SIPHON AND WASTEWAY (no. 15)

LOWER BIRCH CREEK WATERSHED

APPENDIX C

DISPLAY OF P&S ACCOUNTS FOR RECOMMENDED PLAN

APPENDIX C
LOWER BIRCH CREEK WATERSHED, MONTANA
NATIONAL ECONOMIC DEVELOPMENT ACCOUNT

Components	Measures of Effects (Average Annual)
Beneficial Effects: 1/	
A. The value to users of increased output of goods and services:	
1. Agricultural Water Management	$415,300
Total Beneficial Effects	$415,300
Adverse Effects: 2/	
A. The value of resources required for the project:	
1. Project outlays	
a. Irrigation system rehabilitation	
Project installation	$130,670
OM&R	15,660
Accelerated land treatment	7,280
2. Other project costs	
Interest during construction 3/	$ 15,780
Total Adverse Effects	$169,390
NET BENEFICIAL EFFECTS	$245,910

1/ Price Base 1981
2/ Amortized over 50 years at 7-5/8 percent interest.
3/ Construction period of four years. Interest rate: 7-5/8 percent.

October 1982

LOWER BIRCH CREEK WATERSHED, MONTANA
ENVIRONMENTAL QUALITY ACCOUNT

Components		Measures of Effects
Beneficial and Adverse Effects:		
A.	Ecological Attributes	1. Enhance water conservation on 30 farm operations, totaling 7,100 acres.
		2. Reduce erosion associated with canals by replacing structures before failure.
		3. Volume of water that flows through Lake Frances will be increased 16-30 percent.
		4. More efficient use of water and increased evaporation will reduce average annual flows in Birch Creek and Dupuyer Creek stream regimes by about 5,600 acre-feet annually.
		5. Increased flows in canals will increase seepage and dissolved solids slightly in return flow waters to Birch and Dupuyer Creeks.
		6. Maximum and minimum Lake Frances water levels will increase slightly.
B.	Aesthetic Attributes	1. Replacing deteriorated structures will improve visual quality of canal system.
		2. Amount of exposed shoreline on Lake Frances will be reduced slightly.
		3. Dust, smoke, and fumes increased slightly during construction period and slightly decreased. thereafter.
		4. Vegetation will need to be reestablished on disturbed areas.

October 1982

LOWER BIRCH CREEK WATERSHED, MONTANA
REGIONAL ECONOMIC DEVELOPMENT ACCOUNT

Components	Measures of Effects - State of Montana (Average Annual) 1/	Rest of Nation 2/
I. Income:		
BENEFICIAL EFFECTS:		
A. The value of increased output of goods and services to users residing in the region.		
1. Agricultural water management	$415,300	-0-
B. The value of output to users in the region from external economics.	$331,760 3/	-0-
TOTAL BENEFICIAL EFFECTS	$747,060	-0-
Income:		
ADVERSE EFFECTS:		
A. The value of resources contributed from within the region to achieve the outputs.		
1. Project outlays		
a. Irrigation operation and management structures	$ 53,230	$77,440
Project installation OM&R	$ 15,660	-0-
b. Accelerated land treatment	-0-	$ 7,280
2. Other project costs		
a. Interest during construction	$ 7,890	$ 7,890
b. External diseconomies	-0-	-0-
TOTAL ADVERSE EFFECTS	$ 76,780	$ 92,610

1/ Price Base 1981
2/ Amortized over 50 years at 7-5/8 percent interest.
3/ Estimated by WRC Guideline 5 Regional Multipliers, January 1977.

October 1982

LOWER BIRCH CREEK WATERSHED, MONTANA
REGIONAL ECONOMIC DEVELOPMENT ACCOUNT (continued)

Components	Measures of Effects (Average Annual) 1/ 2/ State of Montana	Rest of Nation
II. Employment		
BENEFICIAL EFFECTS:		
A. Increase in number and types of jobs		
1. Agriculture employment	2.9 permanent agriculture jobs	---
2. Employment for project construction	11.3 skilled jobs & 6.1 semiskilled jobs for one year	---
3. Employment in service and trade activities as a result of project	16.0 permanent semiskilled jobs	---
TOTAL BENEFICIAL EFFECTS	18.9 permanent jobs 17.4 person-years of construction	---
ADVERSE EFFECTS:		
A. Decrease in number and types of jobs	---	---
TOTAL ADVERSE EFFECTS	NONE	NONE
NET BENEFICIAL EFFECTS	18.9 permanent jobs 17.4 person-years of construction	---

October 1982

LOWER BIRCH CREEK WATERSHED, MONTANA
OTHER SOCIAL EFFECTS ACCOUNTS

Components	Measures of Effects
BENEFICIAL AND ADVERSE EFFECTS:	
A. Urban and Community Impacts	
1. Real Income Distribution	1. Creates annual regional income distribution of $415,300 of primary benefits by income class as follows:

Income Class (Dollars)	Percentage of Adjusted Gross Income in Class	Percentage of Benefits in Class
Less than 3,000	15.2	15.2
3,000-9,999	52.6	52.6
10,000-14,999	19.0	19.0
More than 15,000	13.2	13.2

Local annual costs to be borne by region totals $76,780 with distribution by income class as follows:

Income Class (Dollars)	Percentage of Adjusted Gross Income in Class	Percentage of Benefits in Class
Less than 3,000	15.2	15.2
3,000-9,999	52.6	52.6
10,000-14,999	19.0	19.0
More than 15,000	13.2	13.2

B. Life, Health, and Safety	1. Reduce the risk of loss of life for canal company ditchriders since water control structures will now function properly.
C. Energy Requirements and Conservation	1. Energy resources will be required for the construction of this project.
	2. Energy for operation and maintenance of the canal system will be saved due to reduced structural failures during the summer season.

October 1982

APPENDIX D

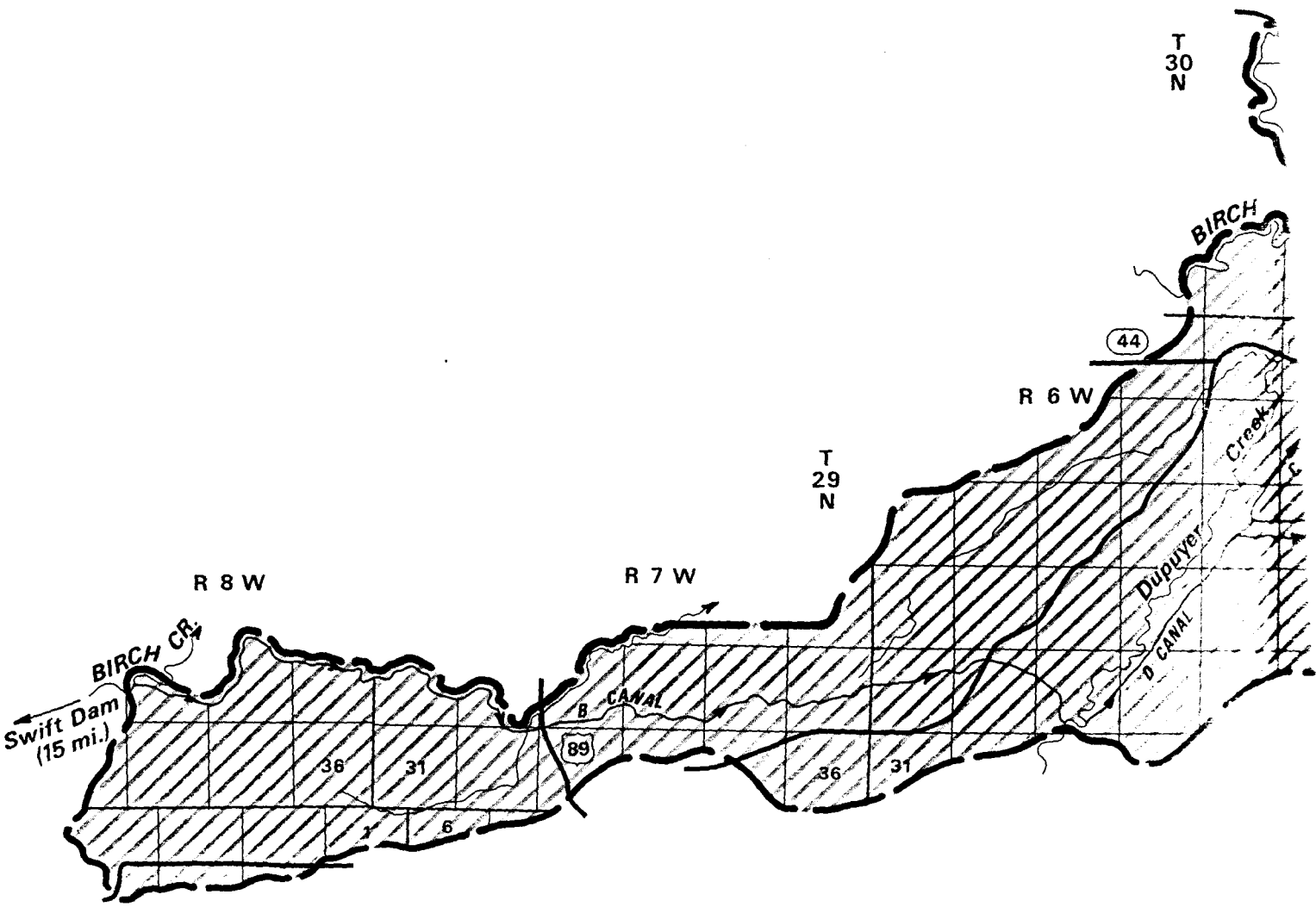
PROJECT MAPS

LEGEND

Watershed Boundary

Project Area

Benefited Area



LOWER

P

—FORT WORTH, TEXAS 1962

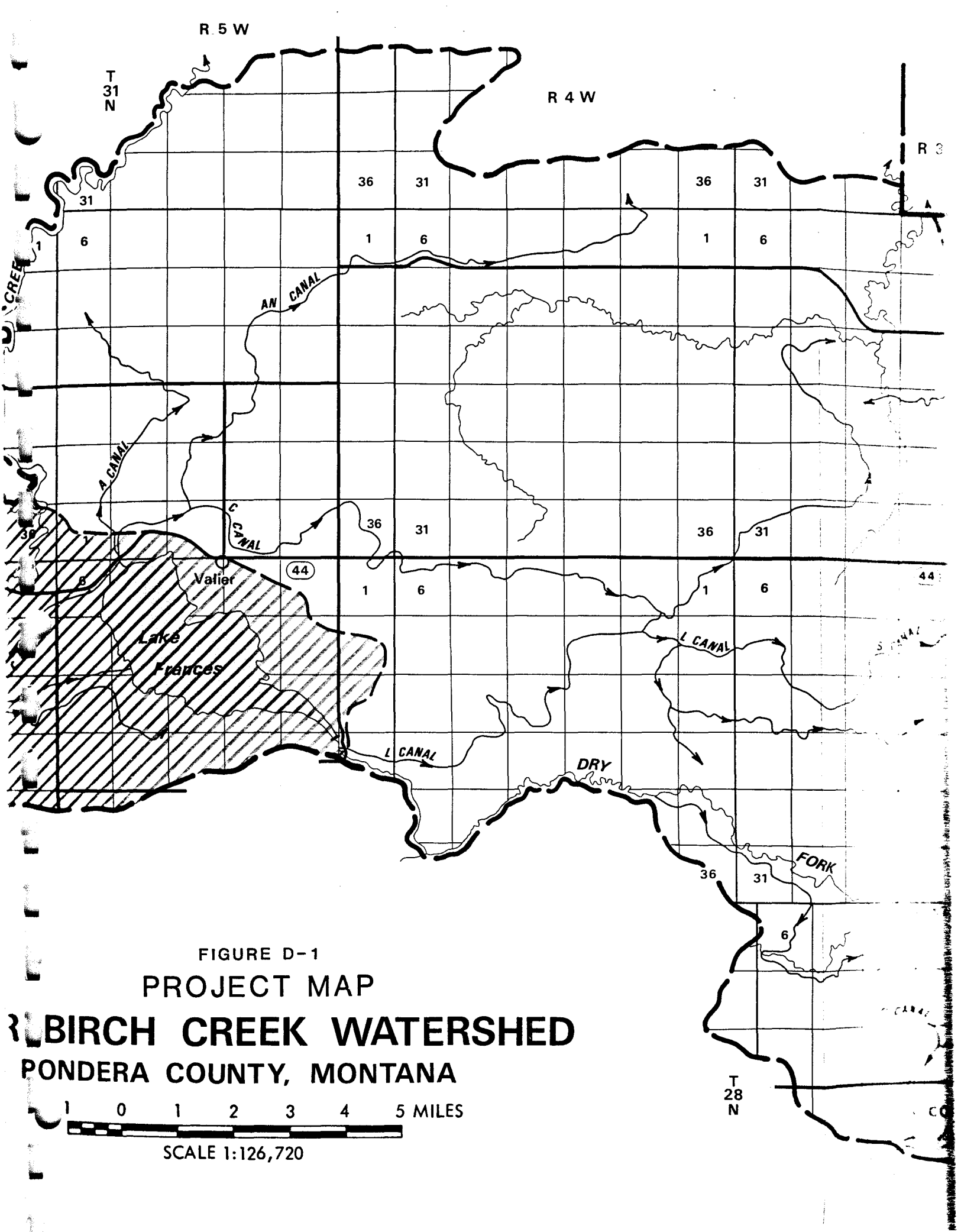


FIGURE D-1

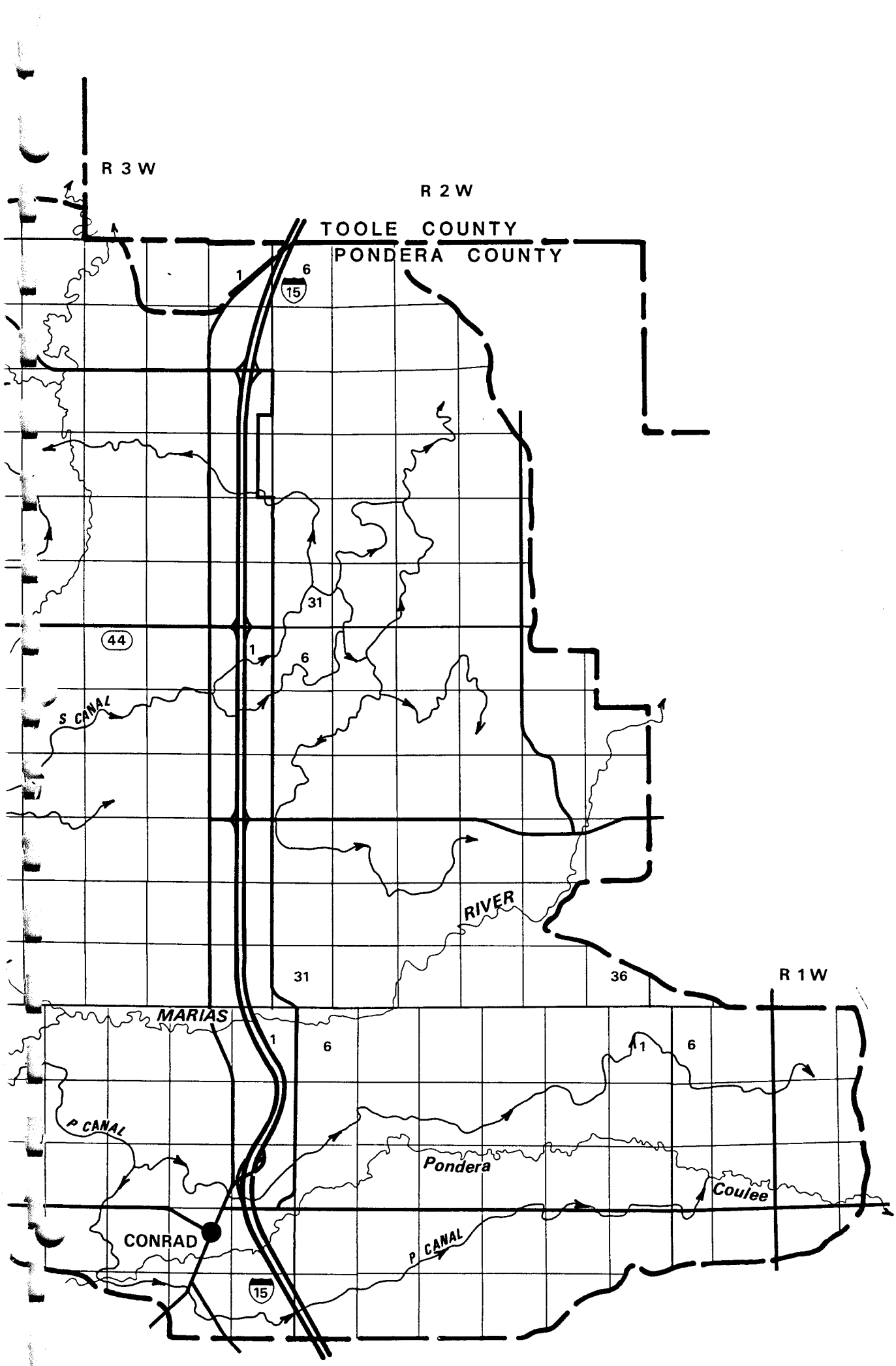
PROJECT MAP

BIRCH CREEK WATERSHED

PONDERA COUNTY, MONTANA

1 0 1 2 3 4 5 MILES

SCALE 1:126,720


R 3 W
R 2 W
TOOLE COUNTY
PONDERA COUNTY
1
6
15
31
44
1
6
S CANAL
RIVER
31
36
R 1 W
MARIAS
1
6
1
6
P CANAL
Pondera
Coulee
CONRAD
P CANAL
15

LEGEND

Watershed Boundary

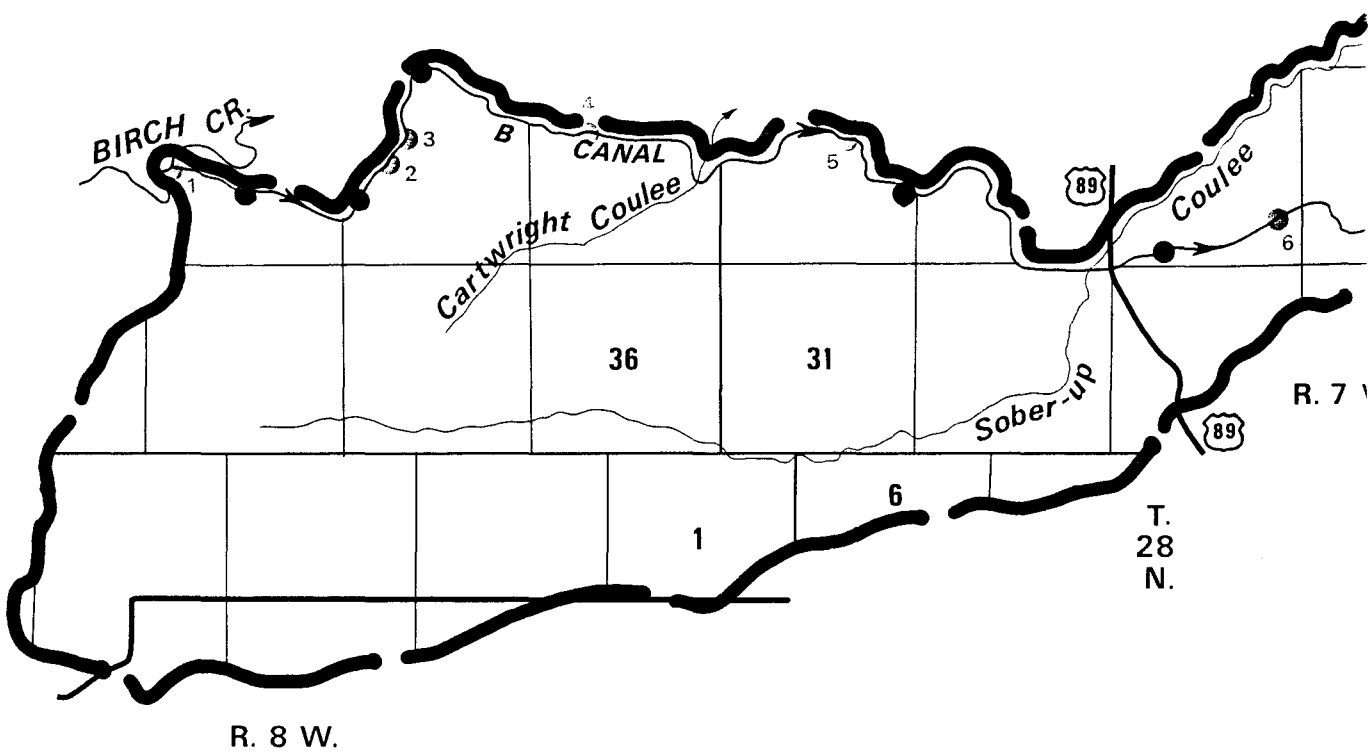
Project Area Boundary

Adequate Existing Structures

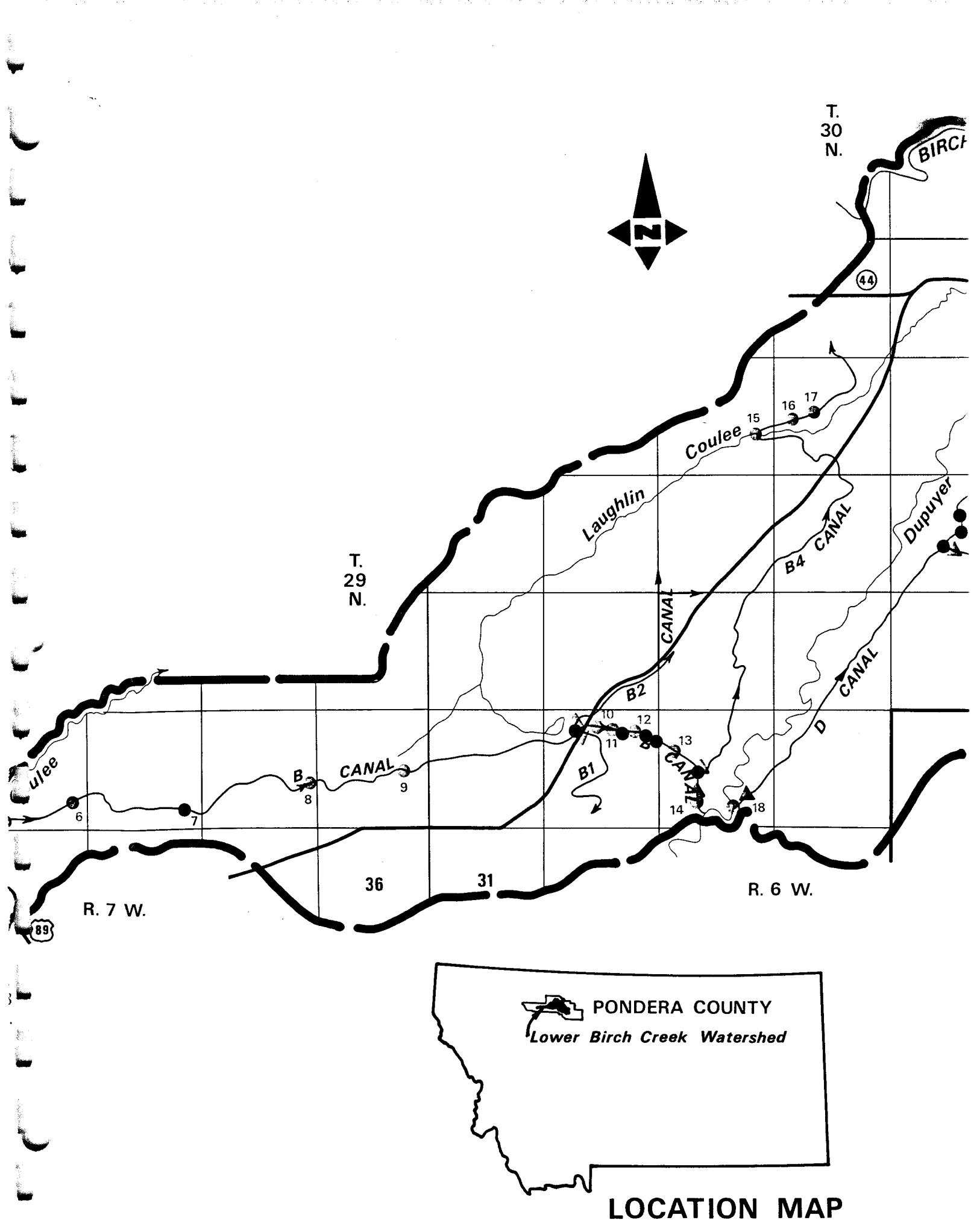
Structures to be Repaired or Replaced

Canal Measuring Structures

1. Birch Creek Diversion
2. Drop Structure
3. Side Channel Inlet
4-13. Drop Structures
14. Barrel Drop Structure
15. B-4 Wasteway
16, 17. B-4 Checks
18. Dupuyer Creek Diversion
19, 20. Drop Structures
21. Fort Drop Structure
22. C-A Division
23. L-P Division (Hein Coulee)



USDA—SCS—FORT WORTH, TEXAS 1982


T.
30
N.
BIRCH
44
Coulee
Laughlin
B4 CANAL
Dupuyer
T.
29
N.
CANAL
B2
D
CANAL
B
CANAL
B1
CANAL
ulee
6
7
8
9
10
11
12
13
14
15
16
17
18
36
31
R. 7 W.
R. 6 W.
89
PONDERA COUNTY
Lower Birch Creek Watershed
LOCATION MAP

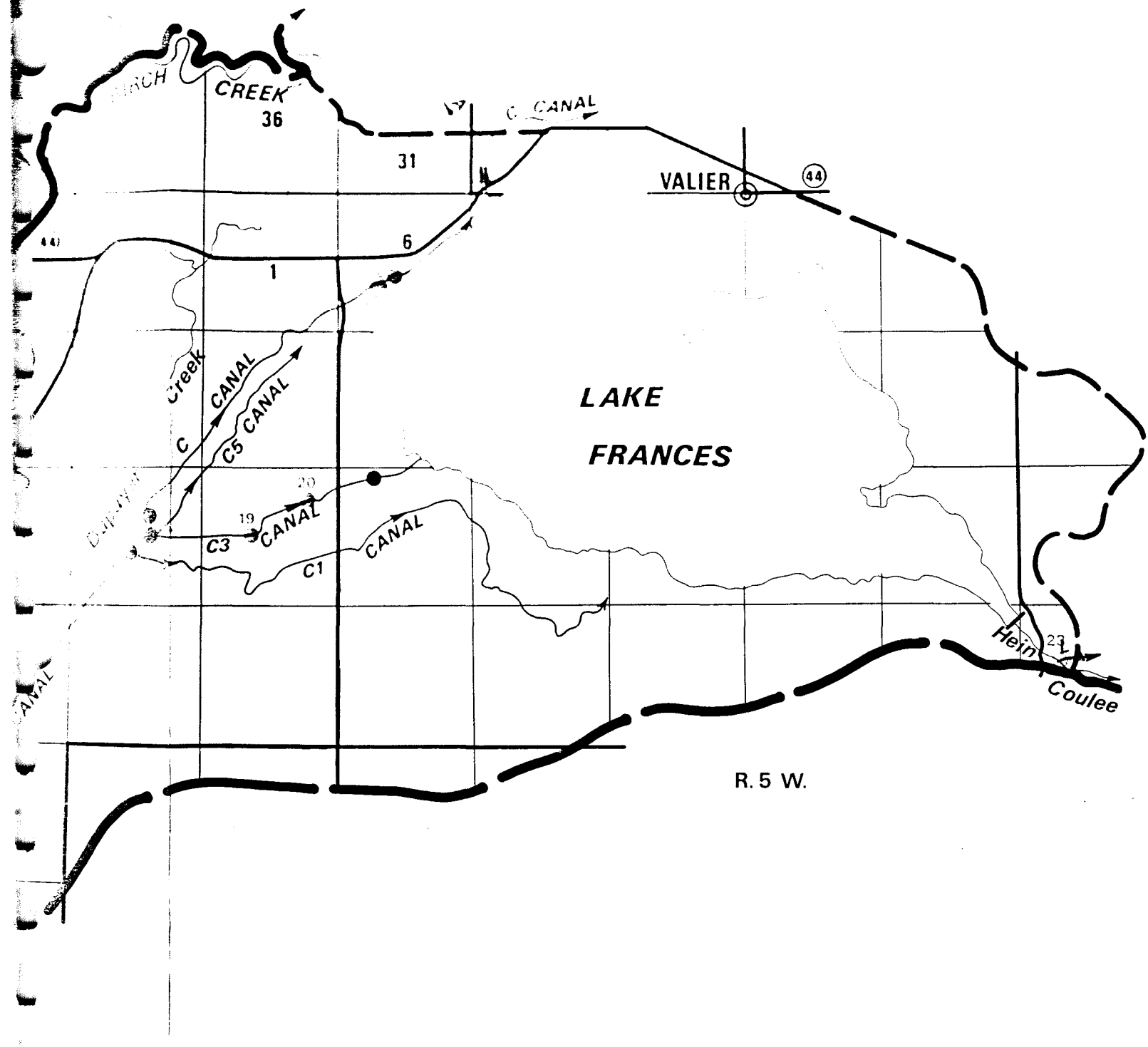


FIGURE D-2

PROJECT AREA MAP

LOWER BIRCH CREEK WATERSHED

PONDERA COUNTY, MONTANA

1 0 1 2 3 MILES

SCALE 1:63,360

THE MUDDY CREEK PROJECT AND HB 108 HB108

Project Location/ Problem:

This project, now three years old, starts 10 miles west of Great Falls, extends north to Dutton, and west to Augusta. This includes 80,000 irrigated acres, Montana's largest single irrigation land tract. Surplus irrigation runoff from this tract has artificially increased Muddy Creek's flow, drastically altering its channel and dumping 250,000 tons of sediment yearly into the Sun and Missouri Rivers.

Previous Commitments/Improvements:

A total of $2.7 million has been committed by the project, the majority of it ($2.3 million) being utilized for direct irrigation improvements to more efficiently use irrigation water. Only 6 percent has been used for administration. Approximately 12 local, state and federal agencies have been involved in financial and/or technical support.

We have completed more than 35 miles of concrete canal lining and sprinkler water supply lines and leveled 1,700 acres for improved water distribution. Irrigation scheduling (Cooperative Extension Service) is reaching more than 50 cooperators, saving fertilizers and increasing crop yields. In only two and-a-half-years, 150 farmers have benefitted, or 30 percent of the project irrigators.

Why State Aid is Needed:

Water conservation is becoming one of Montana's major issues. Irrigation alone withdraws 97 percent of the state's water. Proven irrigation improvements can save 50 percent of that, resulting in the only major method of conserving water. The Muddy Creek Project is the only centrally administered agricultural water conservation effort in the state. Thus, state assistance is needed to continue an already successful project.

Mechancis of HB 108:

The 50 percent cost-share means that an irrigator could receive half the cost of an improvement, but no more than $10,000. He must first apply for the $3,500 from the federal ACP program; we'll supply the rest, not exceeding 50 percent. A $20,000 improvement could receive the maxium of $3,500 ACP/$6,500 state assistance = $10,000.

Five percent in Resource Indemnity Trust Funds (RITF) = $215,000, $260,(and $300,000 in 1984, 1985 and 1986 respectively. An average of 12 percent will be used for the Coordinator's expenses. Approximately $2 million will be used in seven years, benefitting 40-50 farmers yearly, or 250-350 farmers.

House BILL NO. 108

INTRODUCED BY Manuel, Neuman, McCormick, Nisbet, Kessel, Bergene, Miller, LaGrange, O'Connell, Pistoria, Christiaens, Berg, Phillips, Ellis, Farris, Wilson, Thomas

A BILL FOR AN ACT ENTITLED: "AN ACT TO ALLOCATE TO THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION 5 PERCENT OF THE INTEREST FROM THE RESOURCE INDEMNITY TRUST ACCOUNT FOR USE BY THE CASCADE COUNTY CONSERVATION DISTRICT TO SHARE THE COST OF A 7-YEAR FLOOD CONTROL AND IRRIGATION IMPROVEMENT PROGRAM FOR THE MUDDY CREEK SPECIAL WATER PROJECT AREA; AND PROVIDING AN EFFECTIVE DATE."

BE IT ENACTED BY THE LEGISLATURE OF THE STATE OF MONTANA:

Section 1. Allocation. Beginning July 1, 1983, and continuing until June 30, 1990, 5% of the interest income from the resource indemnity trust account not to exceed $300,000 yearly is allocated to the department of natural resources and conservation for the purpose of a cost-share grant to the Cascade County conservation district for flood control and irrigation improvements for the Muddy Creek special water project. Upon application of the Cascade County conservation district and upon fulfillment of the conditions specified in section 2, the department shall within 90 days make the grant of funds applied for.

Section 2. Conditions of grant. Disbursement of funds under section 1 may be made only after:

(1) a contract governing the administration and disposal of funds has been executed between the department of natural resources and conservation and the applicant;

(2) a schedule of proposed accomplishments is submitted to the department stating:

(a) the number of specific irrigation improvements to be completed annually and the number of affected acres;

(b) the annual cost of these improvements to the landowner and to the state;

(c) the quantified savings in water, labor, and fertilizer expected; and

(d) the expected reduction in Muddy Creek sediment loads as a result of irrigation improvements; and

(3) the department determines that the proposed improvements will:

(a) promote, enhance, or advance flood control and irrigation in the project area;

(b) be an efficient use of natural resources, including water, energy, land, and air;

(c) comply with statutory and regulatory standards protecting the quality of such resources as air, water, land, fish, wildlife, and recreational opportunities;

(d) provide associated public benefits in addition to any private benefits the project or activity may provide; and

(e) be econ. feasible

INTRODUCED BILL

Sec. 3. Effective date - 7/1/83

HB 108

March 22, 1983
Westside Flood Control Association
Daniel Falcon, Attorney, Montana Bldg
Great Falls MT 59401

John P. Andrews
Muddy Creek Project Coordinator
1211 Northwest Bypass
Great Falls MT 59404

Dear Mr. Andrews:

In reference to HB-108, Resource Indemnity Trust Fund bill to support the Muddy Creek Project, we are supportive of anything that can be done to clean-up the Sun River's silting problem, and to return it to a living and useable stream is a must.

At present it makes the Sun River from Vaughn to the Missouri River at Great Falls a mud bottom, silt bog, and will not support any type of fish or desireable marine life.

We in lower Sun River are in the process of building a flood control levee. The silting from Muddy Creek over the years will be a real detriment to this project--as siltation has damaged residences and properties in this area during past floods.

We are spending approximately $8 million the City needs clean water for the park and lake project in conjunction with the flood control project.

There has been studies of Muddy Creek for forty or more years. NOW it is time to fund a real beginning.

Sincerely

Jess Milburn
Gordon Schmidt
Dan Neal
Commissioners
West Great Falls Flood
District

Exhibit 22
March 23, 1983

Thank you Mr. Chairman
I am Roy Konen from Fairfield, Montana.
I farm on the Sun River Irrigation Project.

Being limited to 160 acres of irrigated land per person until this year, I have been very conscientious about making every move profitable. If I can save $10 an acre on fertilizer, by not irrigating to much or to long, I will do it. I feel I can accomplish this by leveling my land and installing cement ditches with devices to control my water better. I can increase my yield by getting an even crop over the whole field instead of having high knolls that dry out and pot holes that drowned out. I also have had a water savings of about 38% on my leveled land, and expect more when I get the cement ditches completed. I save the same per cent on laber and time, that I can put to use farming a few more acres, needed to keep up with the economy. Besides costs of leveling our own fields, the farmers on the Greenfields Irrigation District voted on and passed to spend 8.3 million on improvements such as cementing main canals and installing buried pipe for laterals. We pay this back thru water charges each year. These improvements are also saving water.

Next spring I am to have a cement ditch with 2 or 3 different kinds of automated headgates installed on one of my already leveled fields. This will leave me with more time and the use of less water. The less water we need for our irrigation the more water there will be available for other uses, whether it is sold to other states or to corporations to carry coal. In conclusion, I feel I need another program, to kind of piggy back our present ACP program. The costs of doing anything toward the improvement and betterment of our farm land, which is some of the most productive in the state, is expensive, and the $3500.00 limit on cost share with ACP programs, doesn't go far. As soon as we can control our water better the cleaner we will be able to return the excess to the Sun River, ~~by way of Muddy Creek~~.

Roy Konen

Exhibit 23
March 23, 1983

HB897

RESOURCE INDEMNITY TRUST FUND

	FY 82 & 83	FY 84	FY 85
Beginning Balance	1,098,518	(474,327)	102,984
Revenue	5,704,982	4,312,176	5,198,812
Appropriations			
DNRC-operations	2,958,874	1,228,897*	2,286,351*
DSL-operations	2,464,893	1,212,316*	1,213,269*
DFWP-operations	87,500		
Water Development (statutory allocation of 30%; 85-1-604)	1,711,494	1,293,652	1,559,643
Expected reversions	? (65,000 maximum)		
End Balance	(474,327)	102,984	242,533
Subtotal end balance at end of 1985			242,533

*As of February 23, 1983, approved by House Appropriations Subcommittee.

The following are additional requests for RIT funds in the upcoming biennium:

HB 108 (Manuel)	Muddy Creek	$475,579
HB 334 (Roush)	Triangle Saline Seep	59,000
	(to be amended)	15,600
HB 597 (Schye)	City of Glasgow (or from RRD)	48,800
HB 610 (Compton)	St. Mary-Milk River Project	48,000
HB 724 (Daily)	30% to hard-rock mining mitigation	2,853,296
HB 745 (Schye)	FERC license for Milk River Irrigation District	100,000
	Study Water Shortage	50,000
	in Milk River (may be amended)	25,000
HB 819 (Asay)	Ground water monitoring	232,000
HB 876 (Jacobson)	NE MT ground water inventory	250,000
HB 903 (Fagg)	Reclamation at the Stillwater-complex	1,000,000
TOTAL		5,157,275
Balance at end of biennium if all bills are passed:		(4,914,742)

VISITOR'S REGISTER

HOUSE APPROPRIATIONS COMMITTEE

BILL HOUSE BILL 108

SPONSOR MANUEL

Note: Allocate to DNRC 5% of interest from Res Ind. Tr. Acct. for Cascade County Cons. Dist. to share cost of 7-yr. flood control & improvement prog. for Muddy Creek special water project area.

DATE

* Includes "oral" testimony

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPOSE
[illegible]	Sun River	Dist 33	X	
Marvin R. Miller	Butte		X	
Ed Bingler	Butte	MBMG	X	
[illegible]	Bozeman	Water Res. Res. Center MSU	X	
[illegible]	Billings	MBMG	X	
Dale Bauman	Power	T.C.D.	X	
[illegible]	Power	TCD	X	
Bob [illegible]	Power	TCD	X	
Steve Meyer	Helena	MACD	X	
K. M. Kelly	Helena	Mont Water Devel. Assn	X	
Ron Ostberg	Fairfield	Muddy Creek	X	
Roger Beck	Fairfield	Muddy Creek	X	
Allyn [illegible]	Fairfield	Muddy Creek	X	
Randy Brady	Fairfield	Muddy Creek	X	
Don Knight	Fairfield	muddy Creek	X	
Don [illegible]	Missoula	Self	X	
Louis Von Setten	Fairfield Mont	muddy Creek	X	
[illegible] Berry		DNRC		
[illegible] Konen	Fairfield, Mont	Muddy Creek	X	
John Andrews	Gt. Falls.	" "	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE APPROPRIATIONS COMMITTEE

BILL HOUSE BILL 726 Note: DATE

SPONSOR CURTISS

Appropriate $240,000 from Renewable Resource Development Clearance Fund Acct. to Dept. of State Lands for timber stand improvement grants.

NAME	RESIDENCE	REPRESENTING	SUP-PORT	OP-POSE
Bessie Swift	Hamilton mt	Dist #91	✓	
~~John P Andrews~~	~~Gt Falls~~	~~Mostly Lurk~~	✓	
[illegible]				

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

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FORM CS-33

585

VISITOR'S REGISTER

HOUSE Appropriations COMMITTEE

BILL HB 885 DATE March 23, 1983 a.m.

SPONSOR Jacobsen

Witness who spoke.

Page 1

NAME	RESIDENCE	REPRESENTING	SUP-PORT	OP-POSE
Rep. Jacobsen	Plentywood		✓	
Leo Berry	Helena	DNRC	✓	
Leo Lane / Doug Daniels	Three Forks / Belgrade	Three Forks / Manhattan	✓	
[illegible]	[illegible]	[illegible]	✓	
Paul [illegible]	Culbertson, MT	Town of Culbertson water filter	✓	
Ken Engellant	Geraldine MT	Geraldine County Water Project	✓	
Gordon McGowan	Highwood		✓	
Leroy [illegible]	Huntley	Huntley Project Project	✓	
Melvin Underdal	Shelby	Pondera Canal + others	✓	
[illegible]	Conrad	City of Conrad	✓	
Larry J Bonderud	Shelby	City of Shelby	✓	
Gerald Vandenacre	Pondera Co	Conrad	✓	
Jerry Beyer	Ennis	Town of Ennis - East Bench	✓	
John Mohar	City of Libby	Senate District #11	✓	
Ron Paige	Alder	East Bench Gravity Co	✓	
Bob [illegible]	Stevi	Three Mile	✓	
Leonard [illegible]	Stevi	3 mile	✓	
Bonnie Swift	Hamilton	Dist 91	✓	
Roger A. Elliott	Gt Falls MT	Senate Dist 8 Amendment		
John L. Helmer	Whitefish	Whitefish Basin Project	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE Appropriations COMMITTEE

BILL HB 885 DATE March 23, 1983 a.m.

SPONSOR Jacobson

Witnesses who spoke Page 2

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPOSE
Mary Ellen Connelly	Whitefish, MT.	House Dist #15	✓	
Allen Kolstad	Chester, Mt.	Sen. Dist #5	✓	
MIKE KOEHNKE	TOWNSEND, MT	Sen Dist #40	✓	
Bob Davis	Townsend, Mt - Broadwater - Missouri Water Users'			
John W Duncan	Joplin	Sage Creek Water District		
Douglas E. Abelin	Belgrade	Belgrade Mt.	✓	
B. M. Kelly	Helena	Mont. Water Resources Assn	✓	
J. W. Brown	Helena	MT. LIFE	✓	
Barry Damschen	Helena	Robert Peccia & Assoc	—	
Tony Burzynski	Power	" " "	✓	
Rep. Dan Grant	Lolo	HD 71	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

855

VISITOR'S REGISTER

HOUSE APPROPRIATIONS COMMITTEE

BILL HOUSE BILL 885 DATE

SPONSOR JACOBSEN

Note: Approve issuance of Coal Severance tax bonds to finance development of hydro-electric projects, repair certain state projects, loans to political subdivision & local govts. for approved water development projects; approp. coal severance tax trust proceeds for debt service; etc

Witnesses not speaking

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPOSE
Ben Smith	Dagmar	Culbertson Antelope Froid	X	
Henry D. McDunn	Dutton	Town of Dutton	X	
Robert C. Goodell	Dutton	Dutton	X	
Alvin T. Jenn	Great Falls	Dutton	X	
Robert Bachini	Havre, Mont	K.B. water	X	
Stan Ranso	Rudyard, mont.	K.B. water	X	
Jack Baker	Dutton	Town of Dutton	X	
Ken Ochsner	Miles City			
Ron Pawlick	Great Falls	Great Falls Cross-Country Club		
Gordon McGowan	Highwood Mont	Advisory Com DNRC	X	
Dick Matthys	Conrad Mont	Pondera County Cons. Dist	X	
Paul T. Fehr	Conrad MT	Pond Cty Cons Dist	X	
Paul Kunselman	Conrad MO	Farmer. Pondera Cty Canal Co.	X	
Larry Bondurud, OD	Shelby MT	City of Shelby	X	
Donald McClain	Conrad	City of Conrad	X	
Tom Thomas	Great Falls	Thomas Dean & Hoskins	X	
ELEANOR WOLF	HAMILTON	Bitter Root Irrigation District	X	
Bernard Leese	Stevensville	Bitter Root Irrigation District	X	
Al Jenni	Missoula	Self	X	
J H Hamilton	Choteau	Choteau		

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE ______________________ COMMITTEE

BILL 585 ______________________ DATE ______________________

SPONSOR ______________________

NAME	RESIDENCE	REPRESENTING	SUP-PORT	OP-POSE
Gay Cole	Choteau MT	Teton Co.	X	
John Andrews	Great Fall	Teton/Cascade Co.	X	
Roy Konen	Fairfield, Mont.	Muddy Creek Funding	X	
Louie Von Setten	Fairfield Mont	Muddy Creek Funding	X	
Don Knight	Fairfield Mont.	" "	X	
Earl Duvall Jr	Geraldine Mont.	Geraldine Rural Water	X	
Emery L Armstrong	Geraldine, Mont.	Geraldine Rural Water	X	
Jack Arnt	Geraldine, Mont	Geraldine Rural Sys	X	
[illegible]	Geraldine Mont.	Geraldine Rural Sys	X	
Charles J Goldhahn	Geraldine, MT.	Geraldine Rural Sys	X	
Mike Koehnke	Townsend, MT	Self	X - with Amendments	
Francis Koehnke	" "	"	X	
Bob Davis	Townsend, Mt	Broadwater - Missouri Water Users'	X	
[illegible]	Geraldine, MT.	Geraldine & Rural Saline Seep Assn.	X	
[illegible]	Geraldine, Mt.	Geraldine & Rural Area SS Assn	X	
Lynn Gotthahn	Geraldine, Mt	Geraldine & Rural Area SS Assn	X	
Charles N. Davis	Geraldine, MT.	Geraldine & Rural Saline Seep	X	
[illegible]	Geraldine, MT	Geraldine [illegible]	X	
Kathy Bradley	Cut Bank		X	
[illegible]	" "	MASEC	"	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE ______________________ COMMITTEE

BILL 885 DATE ______________

SPONSOR ______________________

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPOSE
Ernest E. [illegible]	Valier	Pondera County Canal & Res.	X	
Bill Stokes	Valier	Pondera County Canal	X	
Fay Stokes	Valier	Pondera Cty Canal & Res	X	
John H. Lee	Winnett	City of Winnett	X	
Bob [illegible]	Power	[illegible]	X	
Dale Bauman	Power	Power [illegible] Water & Sewer	X	
Ray Doig	Townsend			

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE _____ COMMITTEE

BILL 885 DATE _____

SPONSOR _____

NAME	RESIDENCE	REPRESENTING	SUP-PORT	OP-POSE
James J Wieferich	Twin Bridges Mont	East Bench Gravity Pipe	X	
Jack J. Fosick	Twin Bridges, Mont	East Bench Gravity Pipe	X	
Lowell Schellack	Dillon, Mont.	East Bench Gravity Pipe	X	
Ron Paige	Hdlv, Mont	East Bench Gravity Pipe	X	
J. Bauman	Helena	W.I.F.E.	X	
Larry Tveit	Fairview, Mont	Senator Roosevelt County Project	X	
Richard H. Kennedy	Dillon, MT	East Bench Unit	X	
Jack K Lynch	Belgrade, Mt	Mayor	X	
Norma Conklin	Belgrade, Mt.	Belgrade Water Proj.	X	
IVAN Flock	Belgrade	" " "	X	
Doug Daniels	Belgrade	Belg. Wtr Proj. -885	X	
MARK O'Keefe	Helena	DNRC	X	
T. M. Kelly	Helena	Mont. Water Resources Assn	X	
Ken Engellant	Geraldine, Mt.	Geraldine Rural County Water Dist.	X	
Glen Fuller	Geraldine Mt.	Geraldine Rural county water dist	X	
Lloyd D. Ashley	Culbertson	Roosevelt County Rural Water	X	
Ron H. Fitzgerald	Power	① Teinmile Cons. Dist / ② Muddy Creek	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE Appropriations COMMITTEE

BILL H.B. 897 DATE March 23, 1983 a.m.

SPONSOR Neuman

* Witnesses who spoke

Page 1

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPOSE
Leo Berry		DNRC		
Jon L. Heberling	Whitefish	Whitefish Basin Project	✓	
Larry Treit	Fairview	Senator Saline Seep HB 334	✓	
Herb Pesha	Highwood Mt.	Triangle Cons. Dist.	✓	
Dorothy Eck	Bozeman Mt	Senate Dist 39 & EQC	✓	
Bernie Swift	Hamilton, Mt.	Dist. #91	✓	
Carolyn Curtis	Lustre	Dist 20	✓	
Sen. Ed. Smith	[illegible]		✓	
Arthur Dant Ha	~~Bozeman~~	City & Boz Irrig Dist	✓	
Bill Verwolf	Helena	City of Helena	✓	
Hank Goetz	Greenough	Lubrecht Forest Thinning	✓	
Ron Holliday	Helena	Mt. Dept of Fish Wildlife & Parks	✓	
Ellis Wagen	Westby	Sheridan Conservation District	✓	
Lois Tonne	Geraldine	Geraldine & Rural Area	✓	
Roger O. Ashley	Culbertson	Saline Seep Assn Roosevelt [illegible] Dist	✓	
Ken Engellant	Geraldine	Geraldine Rural County Water Dist	✓	
Jim Story	Corvallis	MAES, MT. St. Univ.	✓	
Jay Cole	Choteau	Teton Co. (weed District)	✓	
Bob Nowierski	Bozeman	Montana State Univ.	✓	
Steve Meyer	Helena	MACO	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

Jim Richards Helena Stillwater County ✓

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE Appropriations COMMITTEE

BILL HB 897 DATE March 23, 1983 a.m.

SPONSOR Neuman

* Witnesses who spoke Page 2

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPOSE
Bud Schatz	Hamilton	City of Hamilton	✓	
Mary McCleming	Judith Gap, MT	Town of Judith Gap	X	
Mark Pinkerton	Ingomar, Mt.	Ingomar Water District	X	
John A. Lee	Winnett	City of Winnett	X	
Dale M. Kellogg	Virginia City	Town of Va City	X	
Alvin Jensen	Great Falls	Town of Dutton	X	
Sandra Harris	DGo Helena	D of Institutions	X	
Len Don Ochsner	Miles City			
K.M. Kelly	Helena	Mont. Water Devel. Assn	X	
Ray Beck	Helena	CDD/DNRC	X	
Gon Jenni	Missoula	U.M	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE APPROPRIATIONS COMMITTEE

BILL ~~HOUSE BILL 897~~ Note: Approp. money to DNR for loans & grants under Water Development Program, grants under Renewable Res. Develop. Prog., & loans under Rangeland Improvement Loan Prog., etc., during biennium ending 6/30/85. DATE

SPONSOR NEUMAN

Witnesses who did not speak

NAME	~~RESIDENCE~~	REPRESENTING	SUPPORT	OPPOSE
Mary Ellen Connelly	Whitefish, MT.	House District 15	✓	
Jan L. Helmberg	Whitefish	Whitefish Basin Project	✓	
Henry W. McKenna	Dutton	Town of Dutton	✓	
Robert C. Goodall	Dutton	Town of Dutton	✓	
Al Denson	Great Falls	Town of Dutton	✓	
Jack Beken	Dutton	Town of Dutton	✓	
Robert Bachini Rep	Havre	H.G. Water Dist.	✓	
Archyn Curlin	Dist 20	Dept of State Lands State Forest project	✓	
Bud Schoster	City of Hamilton	Hamilton	✓	
Kurt Weland	Antelope, Mont	Antelope Water & Sewer	✓	
[illegible]	Bozeman, MT.	City of Boz Creek Res	✓	
[illegible]	Bozeman Mont	Bozeman Creek Res	✓	
Bill Hoffman	Bozeman Mont	Bozeman Creek Res	✓	
Kathryn Moore	Bozeman, Mont	Boz Creek Reservoir	✓	
[illegible]	Missoula MT	U.M.	✓	
[illegible]	Hamilton MT	Dist. #91	✓	
Ron Faulick	Great Falls, MT	Great Falls Cross Country Club	✓	
Jim Yeagley	Great Falls	Great Falls Cross-Country Club	✓	
Roger Beck	Fairfield	Muddy Creek	✓	
Ron Ostberg	Fairfield	Muddy Creek	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE ______________________ COMMITTEE

BILL ______________________ DATE ______________________

SPONSOR ______________________

NAME	RESIDENCE	REPRESENTING	SUPPORT	OPPOSE
Bob Lehner	Power	T D C.	X	
Dan Deegan	Hobson	Triangle Cons Dist	X	
Ken Engellant	Geraldine	Geraldine Rural County Water Dist	X	
Harold Goldhahn	Geraldine	Geraldine Rural County Water Dist	X	
Glen Fuller	Geraldine	Geraldine Rural County Water Dist	X	
Lloyd B. Bjorum	Geraldine	[illegible]	X	
Earl Quarello	Geraldine	Geraldine Rural Cnty	X	
Pete Ferris	Ford	[illegible]	X	
John Holzer	Stanford	Reg. T. D. C.	X	
Ray Deegan	"	"	X	
[illegible] Hacker	Alder Mont.	Mont Rangeland Res. Comm	X	
John D Duncan	Joplin Mont	Sage Creek Alkali	X	
Wallace Halvorson	Valier, Mont	~~[illegible]~~ Triangle Alkali	X	
Paul T. [illegible]	Conrad MT	Pond Cty Cons District	X	
Richard [illegible]	Conrad MT	Pond. Cons. District	X	
C Robert Taylor	Bozeman, MT	MT State Univ.	X	
Ted Dodge	Conrad MT	Triangle Cons. Dist	X	
MARK O'Keefe	Helena, MT	Chief, H_2O Development	X	
Barry Wherrem	Highwood, Mt.	Highwood Alkali Cont. Assn.	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE ______________________ COMMITTEE

BILL 897 DATE ______________

SPONSOR ______________________

NAME	RESIDENCE	REPRESENTING	SUP-PORT	OP-POSE
J.J. Brunner	Helena	W.I.FE	X	
E.M. Kelly	Helena	Mont. Water Devel. Assn	X	
Murray Dabel	Huntley	Huntley Project Irr. Dis	X	
Walt Dion	Havre	TCD	X	
Everett Armstrong	Geraldine	Geraldine Rural Water	X	
Charles J. Goldhahn	Geraldine, Mt.	Geraldine Rural Water	X	
Thomas L. Sures	Denmark Mt.	△ Cons Dist.	X	
Robert L. Erdall	Virginia City, Mt.	Town of V.C.	X	
Marvin R. Miller	Butte Montana	Coralline Saline Seep, Sheridan Co Cities Indep, Triangle Conserv District + Etc.	X	
Mark Pinkerton	Ingomar, Mt.	Ingomar Water District	X	
Davi R Hamlin	Ingomar Mont	Ingomar Water District	X	
Stephanie Wood	Virginia City Mt	Town of VC	X	
Dale M. Kelley	Virginia City, MT	Town of VC	X	
Fred Moore	Greenough Mt	U of M Lubrecht Sci	X	
Jim Anderson	HELENA	LEWIS & CLARK CO.	X	
Ray Beck	Helena	Conservation Districts DNRC	X	
LeVon Mills	Whitehall Mont	Pipestone Water Dist	X	
SENATOR LEO LANE	THREE FORKS MONT			
Bill Verwolf	Helena	City of Helena	X	
Ron Pfeifle	Power, Mt.	Triangle Cons. Dist.	X	
Dale Bauman	Power Mont	" " "	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE ______________________ COMMITTEE

BILL HB 897 DATE ______________

SPONSOR ______________

NAME	RESIDENCE	REPRESENTING	SUP-PORT	OP-POSE
Allyn Paddock	Fairfield Mont	Muddy Creek	✓	
Randy Brady	Fairfield MT	Muddy Creek	✓	
Roy Konen	Fairfield, Mont.	Muddy Creek	✓	
Louie Van Setten	Fairfield Mont.	Muddy Creek	✓	
Don Knight	Fairfield Mont	muddy Creek	✓	
John Andrews	Grt Falls	" "	✓	
Jack Arnst	GERALDINE	Chouteau Co. C.D	X	
[illegible]	Conrad	Lower Birch Creek [illegible]	X	
[illegible]	Valier	Lower Birch Creek	X	
Gerald Vandeman	Conrad	Lower Birch Creek	X	
Jay Stokes	Valier, Mt.	Lower Birch Creek	X	
Ron Holliday	Helena	Mt. Dept. of Fish Wildlife & Parks		
Mary Schlemming	Judith Gap, Mont	Town of Judith Gap Clerk	X	
Robert J. Noonan	Judith Gap, Mt.	Town of Judith Gap (Councilman)	X	
David M. Foster	Judith Gap Mt.	Town of Judith Gap	X	
Paul Van Ommen	Judith Gap MT	Town of Judith Gap	X	
Mark Haynes	Judith Gap Mt.	Town of Judith Gap	✓	
Rep Kerry Keyser	Ennis	Virginia City	✓	
Bill Fettinger	Conrad	Triangle Conservation District	✓	
Marian Hanson	Ashland	District #57 Rep	✓	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

VISITOR'S REGISTER

HOUSE _____ COMMITTEE

BILL HB 897 - Did not speak DATE _____

SPONSOR _____

NAME	RESIDENCE Chouteau County CD Assment	REPRESENTING	SUP-PORT	OP-POSE
Mike & Bl	Geraldine MT.	Geraldine & Rural Area Saline Seep Ass. Town of Geraldine	X	
[illegible]	Geraldine, MT	Geraldine Rural Area Sal. Geraldine Airport	X	
Charles N. Davis	Geraldine, MT.	Geraldine + Rural Saline Seep Asse. Geraldine Farmers	X	
Lynn Coldhalm	Geraldine, MT.	Geraldine, Rural S. S. Assn, Area Farmer	X	
Lois S. Towne	Geraldine, Mt.	Geraldine + Rural Area Saline Seep Assn. Assn. Representative	X	

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR LONGER FORM.

WHEN TESTIFYING PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.

FORM CS-33

STANDING COMMITTEE REPORT

MARCH 28, 19 83

MR. SPEAKER

We, your committee on APPROPRIATIONS

having had under consideration HOUSE Bill No. 108

SECOND reading copy (YELLOW Color)

A BILL FOR AN ACT ENTITLED: "AN ACT TO ALLOCATE TO THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION 5 PERCENT OF THE INTEREST FROM THE RESOURCE INDEMNITY TRUST ACCOUNT FOR USE BY THE CASCADE COUNTY CONSERVATION DISTRICT TO SHARE THE COST OF A 7-YEAR FLOOD CONTROL AND IRRIGATION IMPROVEMENT PROGRAM FOR THE MUDDY CREEK SPECIAL WATER PROJECT AREA; AND PROVIDING AN EFFECTIVE DATE."

Respectfully report as follows: That HOUSE Bill No. 108

BE AMENDED AS FOLLOWS:

1. Page 1, line 13.
Following: "Section 1."
Strike: remainder of line in its entirety

2. Page 1, line 14.
Strike: line in its entirety

3. Page 1, line 15.
Following: "account"
Strike: "is allocated"

4. Page 1, line ~~XXX~~ 13. Following: "Section 1."
Insert: " Appropriation. There is appropriated $1,000 for the biennium ending June 30,19

AND AS AMENDED DO PASS

~~XXXXXX~~
~~DO PASS~~

FRANCIS BARDANOUVE Chairman.

STATE PUB. CO.
Helena, Mont.

STANDING COMMITTEE REPORT

March 28 19 83

MR. SPEAKER

We, your committee on APPROPRIATIONS

having had under consideration HOUSE Bill No. 885

second reading copy (yellow)
Color

A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROVE THE ISSUANCE OF STATE OF MONTANA COAL SEVERANCE TAX BONDS TO FINANCE THE DEVELOPMENT OF CERTAIN STATE HYDROELECTRIC PROJECTS, THE REHABILITATION AND REPAIR OF CERTAIN STATE PROJECTS, AND LOANS TO POLITICAL SUBDIVISIONS AND LOCAL GOVERNMENTS FOR CERTAIN APPROVED WATER DEVELOPMENT PROJECTS; TO APPROPRIATE COAL SEVERANCE TAX TRUST PROCEEDS FOR DEBT SERVICE; TO AUTHORIZE THE CREATION OF A STATE DEBT; TO ALLOW THE PRIVATE SALE OF MUNICIPAL REVENUE BONDS TO THE STATE OF MONTANA; AMENDING SECTION 7-7-4433, MCA; AND PROVIDING AN IMMEDIATE EFFECTIVE DATE."

Respectfully report as follows: That HOUSE Bill No. 885

be amended as follows:

1. Page 3, lines 3 through 15.
Strike: lines 3 through 15 in their entirety
Renumber subsequent subsections.

2. Page 3, line 25.
Strike: line 25 in its entirety
Renumber subsequent subsections.

3. Page 4, following line 3.
Insert: "(K) Noxon rural water system improvement"

4. Page 8, line 1.
Strike: "2% interest rate"
Insert: "rate of interest equal to that which must be paid on bonds issued pursuant to [this section]"

DO PASS

FRANCIS BARDANOUVE Chairman.

STATE PUB. CO.
Helena, Mont.

HB 885 March 23 19 83

5. Page 8, line 23.
Strike: "$12,982,281"
Insert: "$11,524,281"

6. Page 9, lines 7 through 25
and page 10, lines 1 through 6.
Strike: subsections (a), (b) and (c) in their entirety
Renumber subsequent subsections

7. Page 10, line 16.
Strike: "2%"
Insert: "6 1/2%"

8. Page 11, line 19.
Strike: "2%"
Insert: "5%"

9. Page 11, line 10.
Strike: "2%"
Insert: "6 1/2"

10. Page 11, line 20.
Strike: "2%"
Insert: "6 1/2"

11. Page 12, line 2.
Strike: "2%"
Insert: "6%"

12. Page 12, line 12.
Strike: "2%"
Insert: "6%"

13. Page 12, lines 13 through 21.
Strike: lines 13 through 21 in their entirety
Renumber subsequent subsections

14. Page 13, line 5.
Strike: "2%"
Insert: "3%"

15. Page 13, line 11.
Strike: "2%"
Insert: "3%"

16. Page 13, line 25.
Strike: "2%"
Insert: "3%"
Following: "rate."
Insert: " (i)(i) Bonds to a maximum of $122,000 may be issued for a loan to the Moxon rural improvement district for the purpose of financing rehabilitation of the community's water system. (ii) The

Chairman.

STATE PUB. CO.
Helena, Mont.

HB 685 March 28 19 83

project is needed because the present wooden lines have leakage problems and contamination is being drawn into the distribution system causing a health hazard
(iii) The loan must be repaid at a 5% interest rate

17. Page 14, line 4.
Following: "section."
Insert: "The interest rates applicable to any of the projects listed in [this section] shall be the lower of the specified rate cited for each project or the rate that must be paid on bonds issued pursuant to [section 5]."

AND AS AMENDED
DO PASS

FRANCIS BARDANOUVE
Chairman.

STATE PUB. CO.
Helena, Mont.

STANDING COMMITTEE REPORT

March 28 19 83

MR. SPEAKER

We, your committee on APPROPRIATIONS

having had under consideration HOUSE Bill No. 897

first white
reading copy (color)

A BILL FOR AN ACT ENTITLED: "AN ACT TO APPROPRIATE MONEY TO THE DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION FOR LOANS AND GRANTS UNDER THE WATER DEVELOPMENT PROGRAM, FOR GRANTS UNDER THE RENEWABLE RESOURCE DEVELOPMENT PROGRAM, AND FOR LOANS UNDER THE RANGELAND IMPROVEMENT LOAN PROGRAM; TO APPROVE LOANS FROM WATER DEVELOPMENT BOND PROCEEDS AND TO COMPLETE AN APPROPRIATION FOR DEBT SERVICE; TO REALLOCATE CERTAIN RESOURCE INDEMNITY TRUST ACCOUNT INTEREST INCOME AND RENEWABLE RESOURCE DEVELOPMENT ACCOUNT FUNDS FOR WATER DEVELOPMENT PROGRAM LOANS AND GRANTS DURING THE BIENNIUM ENDING JUNE 30, 1985; TO PLACE CERTAIN CONDITIONS UPON GRANTS AND LOANS; AND PROVIDING AN EFFECTIVE DATE."

Respectfully report as follows: That HOUSE Bill No. 897

be amended as follows:

1. Page 8, line 24.
Following: "report"
Insert: "Sponsors of recommended projects and activities on the prioritized list that are not recipients of available grant funds must be offered the opportunity to receive loan funds for up to the total recommended project or activity amount pursuant to sections four and eight of this act. The interest rate applicable to these loans shall be the rate paid on bonds issued pursuant to this act."

2. Page 12, line 3.
Strike: "100,000"
Insert: "157,000"

AND AS AMENDED

~~DO PASS~~

FRANCIS BARDANOUVE Chairman.

COMMITTEE SECRETARY

STATE PUB. CO.
Helena, Mont.

STANDING COMMITTEE REPORT

MARCH 23, 19 83

MR. SPEAKER

We, your committee on APPROPRIATIONS

having had under consideration HOUSE Bill No. 902

FIRST reading copy (WHITE color)

A BILL FOR AN ACT ENTITLED: "AN ACT ESTABLISHING STATE EMPLOYEE COMPENSATION PLANS AND BENEFIT LEVELS; PROVIDING PAY SCHEDULES FOR FISCAL YEARS 1984 AND 1985; APPROPRIATING FUNDS THEREFOR; AMENDING SECTIONS 2-18-106, 2-18-301, 2-18-303 THROUGH 2-18-305, 2-18-311, AND 2-18-703, MCA; AND PROVIDING AN IMMEDIATE EFFECTIVE DATE."

Respectfully report as follows: That HOUSE BILL Bill No. 902

WITHOUT RECOMMENDATION
~~DO PASS~~

FRANCIS BARDANOUVE Chairman.

COMMITTEE SECRETARY

STATE PUB. CO.
Helena, Mont.