MINUTES OF THE MEETING
LONG-RANGE PLANNING SUBCOMMITTEE
MONTANA STATE
HOUSE OF REPRESENTATIVES

March 8, 1985

The meeting of the Long-Range Planning Subcommittee was called to order by Chairman Robert Thoft on March 8, 1985 at 7:55 a.m. in Room 420 of the State Capitol.

ROLL CALL: All members were present.

EXECTUTIVE ACTION

MONTANA ARTS COUNCIL, CONTINGENCIES FOR CULTURAL AND AESTHETIC PROJECTS: Madalyn Quinlan (72:A:008), Staff Analyst, Office of the Legislative Fiscal Analyst explained a letter from the Montana Arts Council concerning Cultural and Aesthetic project contingencies (EXHIBIT 1).

Senator Van Valkenburg (72:A:055) noted the contingency on Project 104. He said he feels a suggestion to an applicant is really not a contingency. Representative Ernst said there are several projects which will be given direction from the suggestions made by the council.

Senator Van Valkenburg (72:A:069) moved the Chairman write a letter to the Arts Council, saying the committee has received its recommended contingencies and would like the Arts Council to adopt them in the awarding of grants. The motion passed unanimously.

Several members of the committee discussed a use for the $35,000 which was approved for Project 110. This money will be used for planning, if the Kleffner Ranch is purchased as a state park (72:A:078 to 72:A:113).

AGRICULTURAL MUSEUM, FORT BENTON: Madalyn Quinlan (72:A:114) said she checked on whether or not Coal Tax Park Acquisition funds can be used for purchasing the property in Fort Benton for an agricultural museum. She said the way the bill is written the state will purchase the site and own it. The bill also specifies that the state will lease the site to the city of Fort Benton for $1.00 a year and the city will be responsible for operating and maintenance costs.

Senator Van Valkenburg (72:A:126) asked how many buildings the state leases for $1.00 a year. Ms. Quinlan said she did not know. Representative Bardanouve (72:A:127) asked about liability in this

situation. Chairman Thoft said it will probably fall under the state's blanket insurance policy.

Senator Van Valkenburg (72:A:131) said he does not believe the answer on legality is as simple as saying the bill provides a method by which the site can be purchased with Coal Tax Park Acquisition funds. He asked if the legal staff of the Legislative Council has been consulted on the issue. Ms. Quinlan said she talked with them and the council's legal staff checked into the issue prior to drafting the bill.

Valencia Lane (72:A:139), Staff Attorney, Legislative Council said as long as the state retains the title to the property it should not run into any constitutional problems. She said the Legislature should worry about appropriations for private purposes. Ms. Lane said a precedent for this type of purchase was set when the Moss Mansion in Billings was purchased. She did give the committee some suggestions on how to make House Bill 509, which provides for the purchase of the property for the ag museum, better. She said the funds should be appropriated to the Department of Fish, Wildlife and Parks (FW&P) rather than the Department of Administration (DOA) because it has more expertise in this type of purchase. She recommended there be some safeguards and guidelines on the kind of lease between the state and the city of Fort Benton. Ms. Lane also recommended there be language added which states the property must be purchased at fair market value.

Representative Bardanouve (72:A:178) asked if $1.00 per year is a fair market value for the lease. Ms. Lane said the amount of the lease is a policy decision which the Legislature must make.

Chairman Thoft (72:A:184) asked, if the money is reserved for the project, but not included in the Long-Range Appropriations Bill, will Representative Manuel have to get the bill passed in order to have the money appropriated for the project. Ms. Lane said yes.

Don Hyyppa (72:A:189), Administrator, Parks Division, FW&P said he believes the legality issue depends on what funding source is used for the project. He said he is uneasy about using Coal Tax Park Acquisition funds even if there is a precedent for doing so. He said the Park's Coal Tax Property Law states that properties purchased with the money are for the State Park System and must comply with the statutes that pertain to the State Park System. He said problems may occur when the property is turned over to Fort Benton

and is not part of the park system. Mr. Hyyppa said he is also uneasy about negotiating a price for the property in an open-ended manner. Senator Tveit (72:A:220) said the price of the property is already established and there will be no need for negotiations. Mr. Hyyppa said he was responding to Ms. Lane's recommendation to get a fair market value for the property. Senator Tveit said the Legislature will set the price the property will be purchased for, not FW&P.

DEPARTMENT OF INSTITUTIONS, FORENSIC UNIT: Chairman Thoft (72:A:238) explained the two funding proposals for this project.

Representative Bardanouve (72:A:262) asked what money is presently available for the project. Madalyn Quinlan (72:A:266) gave members information on capital construction projects which have been approved for funding, funds available in the Long-Range Building cash account and the funding options for the forensic unit (EXHIBIT 2).

Representative Bardanouve (72:A:319) asked Ms. Quinlan where additional funding in Option A would come from. Ms. Quinlan said other projects in the Capital Construction Program would have to be cut.

Senator Van Valkenburg (72:A:325) said he feels the committee is within striking distance of funding the project this session and should try to do so, rather than, coming back in the 1987 Session for more money. Representative Bardanouve (72:A:329) said he agreed with the Senator on funding the project this session, but he said he is nervous about using a 5% inflation rate.

Chairman Thoft (72:A:348) said if the committee picks Option B the accumulated interest on the fund will be larger and there is only on year difference in the time frame of the project. Representative Bardanouve said he would like to do the project this year and Senator Van Valkenburg said there is a difference of one year and one Legislature in the options. Chairman Thoft said he does not want to cut another $364,000 out of projects. Senator Van Valkenburg (72:A:373) said the $250,000 for capitol parking improvements could easily be postponed. Representative Bardanouve (72:A:377) said the amount to be raised does not have to be taken entirely from one project. He said $50,000 apiece can be cut from the Energy Retrofit Project, the Asbestos Abatement Project or the Fire Protection Project and they will still be continued in some form. Chairman

Thoft (72:A:386) said there is no absolute crisis about doing the Forensic Unit in one session.

Representative Bardanouve (72:A:407) moved the committee accept Option A for funding of the Forensic Unit. Representative Ernst (72:A:426) said he would like to see where cuts will be made to make up the additional funding before he votes.

Senator Van Valkenburg (72:A:429) suggested the DOA project for parking improvements ($248,680) be cut. He also said Mrs. Feaver and Marvin Eicholtz indicated yesterday there is a good possibility of having $500,000 in additional interest earnings on the Long-Range Building Cash Account. Senator Van Valkenburg said the committee can include language in the bill which will allow any additional interest to be spent on this project. He also suggested using the Capital Land Grant Account for funding a portion of the Fire Protection Project on the capital grounds or for a portion of the Asbestos Abatement Project. He said he believes there is enough money available in other areas to fund some projects, and therefore, free up money for the forensic project.

Representative Bardanouve (72:A:471) said he agrees with Senator Van Valkenburg, but he would like the Architecture and Engineering Division (A&E) to recommend where it feels cuts can be made. He said he believes A&E can do this in a more professional manner than the committee.

Representative Bardanouve (72:A:516) made a substitute motion to have the Architecture and Engineering Division present the committee with suggestions on where reductions, amounting to $419,000, should come from, within the Long-Range Building Cash Program.

Chairman Thoft (72:A:532) asked if there is money available in the Capital Land Grant Account for funding some of the projects. Tom O'Connell (72:A:536), Chief, Facility Planning Burea, DOA said there is a small balance of about $200,000 in the Capital Land Grant Account. He said some of this balance will be used to retire the bonds on the Capitol Renovation Project. He said there is a balance of $4.9 million in the account for the Capitol Renovation Project, but unless this is reappropriated it cannot be used for the project.

Chairman Thoft (72:A:577) suggested language should be drafted to the effect that if there is excess interest earnings on the Capital Land Grant Account it should be used for parking improvements at the Capitol.

Mr. O'Connell (72:A:580) asked if committee is referring to the 5% inflation factor in Option A for funding of the Forensic Unit. Chairman Thoft said yes.

Representative Bardanouve's substitute motion passed unanimously.

DEPARTMENT OF FISH, WILDLIFE AND PARKS, COAL TAX PARK ACQUISITIONS

Kleffner/Child Ranch, Helena: Senator Fuller (72:A:642) said he met with Mr. Hyyppa, James Flynn (Director, FW&P) and Mr. Kleffner, and they have agreed on what would be the optimum park proposal for the Kleffner Ranch. He said FW&P recommends keeping the buildings, the streambed and 48 acres. He presented two options for buying the ranch: 1) buy the entire package for $500,000, without any contribution from Mr. Kleffner for a maintenance trust; or 2) put a downpayment of $50,000 (fund balance in the Coal Tax Park Acquisition Account) on the land. Senator Fuller said Mr. Kleffner said he will consider the second option if the downpayment is $100,000. Mr. Kleffner does not feel he can tie the property up for 2 years for anything less than $100,000. Senator Fuller said the publicity on the site as a park has stirred up several other prospective buyers for the property.

Chairman Thoft (72:A:706) said the $100,000 is earnest money on the property and will obligate the next session for the purchase of the property.

Senator Fuller (72:B:012) said if House Bill 2 passes, the department will not be requesting money for park maintenance next session and funds will be available for park acquisitions.

Senator Tveit (72:B:024) made a motion to not purchase the Kleffner Ranch as a state park, with the understanding that the Department of Fish, Wildlife and Parks can negotiate with Mr. Kleffner during the interim on a purchase price for the property. Chairman Thoft (72:B:063) asked for a roll call vote. The motion failed due to a tie vote.

Senator Fuller (72:B:071) made a motion to authorize FW&P, through a combination of funding sources, including $35,500 from the Cultural and Aesthetic Program to offer Mr. Kleffner $100,000 as a downpayment on his ranch.

Senator Van Valkenburg (72:B:081) said this motion really gives the state an option to buy the ranch. He

asked what the sale price of the ranch will be under this option. Senator Fuller (72:B:084) said his offer today was for $500,000, but this can be negotiated.

Chairman Thoft (72:B:089) asked for a roll call vote. The motion failed due to a tie vote.

DEPARTMENT OF STATE LANDS, FIRE CREW QUARTERS: Senator Van Valkenburg (72:B:109) moved the committee approve $44,000 for the Department of State Lands fire crew quarters.

Senator Van Valkenburg (72:B:113) asked if Mr. O'Connell had comments to make concerning this project.

Mr. O'Connell (72:B:115) said this project was included in State Lands larger request in the building program and it was not recommended for funding by A&E. He said the Department of State Lands likes to do many small projects with its own personnel. This is in direct conflict with the bidding process A&E must follow and becomes a legal nightmare. Mr. O'Connell said problems do exist with the fire crew quarters, but perhaps the money should be in State Lands operating budget so that it can do the work without going through a bidding procedure. He said if the money is appropriated for the project, A&E will bid the job and this will make the Department of State Lands unhappy, but it will get the project done.

Representative Bardanouve (72:B:135) asked if the funds can be appropriated directly to the Department of State Lands. Mr. O'Connell said if the money is put in the operating budget State Lands can do the project without A&E's specific requirements for construction.

Representative Bardanouve (72:B:153) made a substitute motion to appropriate funds, for the fire crew quarters, directly to the Department of State Lands.

Senator Van Valkenburg (72:B:155) made a substitute motion to approve an appropriation of $44,000, from the Capital Construction Program, as other funds to the Department of State Lands in the general appropriations bill. The motion passed unanimously.

CAPITAL CONSTRUCTION CASH PROGRAM, REMAINING REQUESTS: Senator Van Valkenburg (72:B:179) made a motion to approve the remaining requests in the Capital Construction Cash Program, except the Fort Benton Agricultural Museum and the Montana State University (MSU) and Eastern Montana College (EMC) Brick Repair Projects.

The motion passed. Representative Ernst voted no on this motion.

Senator Van Valkenburg (72:B:201) made a motion to reconsider the committee's action on his previous motion. The motion passed. Representative Bardanouve voted no on this motion.

Senator Van Valkenburg (72:B:212) made a motion to approve the remaining requests, except the Fort Benton Agricultural Museum, the MSU and EMC Brick Repair Projects and the Center for the Aged laundry improvements. The motion passed unanimously.

DEPARTMENT OF INSTITUTIONS, CENTER FOR THE AGED LAUNDRY IMPROVEMENTS: Senator Van Valkenburg (72:B:218) moved to approve funding for the Center for the Aged Laundry Improvements Project.

Representative Ernst said there is a commercial laundry in Lewistown which would like to contract with the center for its laundry needs. Carroll South (72:B:236), Director, Department of Institutions said the center will have to do a significant amount of remodeling even if the laundry services are contracted out.

The motion passed. Representative Ernst voted no on the motion.

MONTANA STATE UNIVERSITY, BRICK REPAIR ON JOHNSON AND WILSON HALLS: Representative Bardanouve (72:B:253) moved the Montana State University (MSU) brick repair project be approved.

Senator Van Valkenburg (72:B;256) asked if a portion of the project can be done to see if the proposed repairs will actually be a solution to the existing problem. Phil Hauck (72:B:267), Administrator, A&E, DOA said problems with the proposed repairs may not surface for many years. He said he does not believe the project can be scaled down.

Senator Tveit (72:B:272) asked what will hold the bricks in place when the anchors needed are not in the building. Mr. Hauck said this project will reanchor the bricks on the entire building.

Senator Van Valkenburg (72:B:296) said he will vote no on this motion because he thinks, if the project has to be done, it should be included in a bonding program which deals with other university system requests. He said he is introducing a bill which will create such a

bonding program. Senator Van Valkenburg said his bill provides for a funding source for the bonding program and he feels this project should be included in the program, if his bill passes. This will make money available in the Long-Range Building Cash Account for other projects which also need to be done.

Senator Fuller (72:B:329) said he is in agreement with Senator Van Valkenburg. He said he will also vote against the motion and hope that a bonding program is created.

Representative Bardanouve (72:B:334) asked if the bonding bill will provide a source of revenue to pay off the bonds. Senator Van Valkenburg said yes.

Representative Bardanouve (72:B:340) amended his original motion to include a proviso which will delete the project from the Long-Range Building Cash Program, if there is another funding source available.

The motion passed. Senator Tveit voted no on the motion.

EASTERN MONTANA COLLEGE, BRICK REPAIR PROJECT:
Representatiave Bardanouve (72:B:404) moved that the funding for the brick repair project at Eastern Montana College DO NOT PASS.

Senator Van Valkenburg (72:B:406) said there is the risk of having an even larger expenditure for brick repair if this project is not done now.

Chairman Thoft (72:B:411) asked if the bricks are anchored to the wall of the building. Mr. Hauck said they are as far as A&E knows. Mr. Hauck said A&E did review the project, but did not feel it should be included in the priority list. He also said it will need to be repaired in the future.

Chairman Thoft (72:B:422) said he will oppose the motion based on the testimony given at the committee hearing. Representative Ernst asked what the $25,000 will be used for. Chaimran Thoft and Mr. Hauck said it will be used to cap the parapets to prevent water from running down the face of the bricks.

Chairman Thoft (72:B:442) asked for a roll call vote. The motion failed.

Senator Van Valkenburg (72:B:448) made a motion to reverse the vote on the previous motion and adopt the

Eastern Montana College Brick Repair Project. The motion passed unanimously.

AGRICULTURAL MUSEUM, FORT BENTON: Senator Fuller (72:B:453) asked if the question about the legality of using Coal Tax Park Acquisition funds for this project has been reviewed. Chairman Thoft said yes, the state will own the building and lease it to Fort Benton for $1.00 per year. He (72:B:459) said apparently there are no legal problems with doing this.

Representative Bardanouve (72:B:462) repeated his question about the state's liability on the property. My Hyyppa said he speculates that, if the state chose, it could cover the liability or have the city of Fort Benton provide for liability insurance. Chairman Thoft asked if FW&P can make the decision on who is responsible for liability insurance. Mr. Hyyppa said if the responsibility is assigned to the department it can make the decision. Representative Bardanouve suggested it be written into the bill.

Senator Van Valkenburg (72:B:483) said he does not believe it is correct to say there is no legal problem with appropriating money from the Coal Tax Park Acquisition Trust. He said he thinks the question of buying property and leasing it for $1.00 a year could still be considered an appropriation for private purposes.

Chairman Thoft (72:B:490) said the state will own the building. Senator Van Valkenburg asked how long the building will be leased. Chairman Thoft said the length of the lease will be left up to the discretion of FW&P.

Senator Tveit (72:B:562) made a motion to apply the $35,000 in the Cultural and Aesthetic Program toward the purchase of property for the agricultural museum, with the community of Fort Benton to provide matching funds of $35,000 toward the purchase.

Senator Fuller (72:B:568) said he believes the Fort Benton project will be done whether the state is involved in it or not. He said it really bothers him that this project will be funded and it did not go through the proper process of being reviewed by A&E, FW&P or the Cultural and Aesthetic Program. He said he is not speaking toward the merits of the project, but feels it is inappropriate to not follow the process that other projects were submitted through.

Chairman Thoft (72:B:599) asked if there was a deadline for park acquisition proposals. Mr. Flynn said yes.

He said FW&P advertises for submission of proposals which must be received by a particular deadline.

Chairman Thoft (72:B:623) asked for a roll call vote. The motion passed.

Senator Tveit (72:B:642) moved $55,000 be allocated, from the Long-Range Building Cash Account, for the purchase of a museum site in Fort Benton. Chairman Thoft (72:B:652) asked for a roll call vote. The motion passed.

LONG-RANGE BUILDING APPROPRIATIONS BILL, PROPOSED LANGUAGE: Tom O'Connell (73:A:008) gave members a copy of the language proposed by the Department of Institutions (DOI) for the Long-Range Building Appropriations Bill (EXHIBIT 3). He said one change was made to the original language on page 2, Section 4. One sentence was added concerning the proper accounting entity that land proceeds should be deposited in.

Senator Van Valkenburg (73:A:021) made a motion to adopt the proposed language.

Tom O'Connell (73:A:025) said the New Section 5, on the last page of the proposed language, is no longer needed for the Forensic Unit if funds are appropriated this session for the project.

Senator Van Valkenburg (73:A:048) made a substitute motion to adopt the first three pages of the proposed language. Chairman Thoft asked Senator Van Valkenburg to rephrase his motion to delete Section 5.

Senator Van Valkenburg (73:A:054) made a substitute motion to delete the New Section 5, in the proposed language, and to adopt the remaining proposed language. The motion passed unanimously.

Tom O'Connell (73:A:061) gave the committee copies of the new proposed language for major maintenance plans (EXHIBIT 4). Mr. O'Connell said A&E will decide which buildings it should receive major maintenance plans on.

Senator Van Valkenburg (73:A:092) made a motion to adopt the proposed language on a major maintenance plan.

Chairman Thoft (73:A:099) asked why the major maintenance plan could not cover ten years with costs projected for two of the ten years. Mr. O'Connell said the building program covers a six year period and A&E feels it will get a better agency response if both the

maintenance and building plans are for the same number of years.

The motion passed unanimously.

DEPARTMENT OF MILITARY AFFAIRS, ADDITIONAL FEDERAL SPENDING AUTHORITY ORGANIZATIONAL MAINTENANCE SHOP: Ralph DeCunzo (73:A:119), Director Facilities Maintenance, Department of Military Affairs (DOMA) gave members information on increasing DOMA's federal spending authority (EXHIBIT 5). He said DOMA would like to increase its spending authority through a budget amendment process.

Representative Bardanouve (73:A:139) asked if the ratio of federal dollars was increased. Mr. DeCunzo said the ratio has not been changed, but the federal government will participate in more of the project than originally indicated. Since the federal government is willing to participate in more of the project, the department's federal spending authority must be increased. Mr. DeCunzo said DOMA has state matching funds available for the additional federal dollars.

Representative Bardanouve (73:A:148) asked if DOMA is spending more than was originally appropriated. Mr. DeCunzo said the department is asking for the authority to spend more federal dollars than were appropriated in the last session. Representative Bardanouve said if DOMA is spending more federal money there should be a reversion of $150,000 of state money. Mr. DeCunzo said state money cannot be reverted in the place of federal money.

Chairman Thoft (73:A:174) said the issue before the committee is if the project warrants the additional expenditure of federal dollars. Mr. DeCunzo said yes, because the project was cut back in the last session prior to being approved.

Representative Bardanouve (73:A:201) made a motion to adopt the Department of Military Affairs budget amendment for $150,000 of additional federal spending authority.

Representative Bardanouve asked what change orders have been approved on this project. Mr. Hauck said there were quite a few change orders due to receiving very favorable bids on the project. Some aspects of the project which were cut earlier can now be done. Ellen Feaver (73:A:223), Director, DOA said she is familiar with the change order. They were made for a variety of reasons, all of which are legitimate.

The motion passed unanimously.

DEPARTMENT OF COMMERCE, PLANNING FUNDS FOR THE CENTENNIAL CENTER: Representative Bardanouve (73:A:257) asked what the final cost will be for the Centennial Center. Mr. O'Connell said the preliminary cost estimate is for $4.6 million. He said nothing definite has been decided on how to fund the project. Mrs. Feaver said the Governor and Keith Colbo have said they can raise $2.0 million in private donations for the center. This amount roughly equates to the amount of floor space which will be provided for product displays. She said FW&P will lease some of the space and license fees will pay for lease charges. Mrs. Feaver said $500,000 will be the remaining cost which is to come from the Long-Range Building Cash Program. She said DOA proposes a $2.4 million bond issue for the 1987 Session and the debt service on the bonds would be paid from license revenues and the Capital Land Grant Account. She said the Capital Land Grant Account, starting with the 1989 biennium, will have enough funds for additional debt service. DOA feels $158,000 a year can be taken from the Capital Land Grant Account to service bonds for the center.

Chairman Thoft (73:A:312) asked if this project and the Capitol Renovation will be competing for the funds in the account. Mrs. Feaver said the income in the Capital Land Grant Account is small and she feels $158,000 a year is all that can be used for any one purpose.

Senator Fuller (73:A:330) moved to approve $25,000 for planning of the Centennial Center.

Chairman Thoft (73:A:339) said this motion will obligate money in the future for construction of the project. Senator Van Valkenburg said there is no obligation involved. The committee is just approving planning money. Representative Bardanouve (73:A:343) said usually when money is spent for planning, an obligation to build follows. Senator Van Valkenburg (73:A:352) said the motion will appropriate $25,000 for planning and in essence allow for additional funds to be sought for planning.

Chairman Thoft (73:A:358) asked for a roll call vote. The motion passed.

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, WATER DEVELOPMENT PROGRAM: Senator Van Valkenburg (73:A:373) asked Caralee Cheney to present the committee with additional information on the Bozeman Fan project

(#36). Caralee Cheney (73:A:383), Chief, Water Development Bureau, Department of Natural Resources and Conservation (DNRC) said the project budget is requesting $10,000 for seismic equipment. The project will need two seismic rigs, one of which is being donated by MSU and a second will be purchased. The option of leasing the second truck is more expensive than buying a truck because of the scarcity of the equipment. She said the rest of the equipment budget ($47,000) is for well drilling and pumping, report publication and computer time.

Representative Bardanouve (73:A:396) asked how long it will take to complete the project. Ms. Cheney said two years. She said the applicants have looked into using seismic equipment owned by the Bureau of Mines, but the bureau will need their equipment at the same time as this project will need it. Representative Bardanouve asked what the $10,000 will be buying. Ms. Cheney said the applicants will be refabricating a trailer and building the seismic equipment to put on it.

Madalyn Quinlan (73:A:427) went through the Water Development projects which the committee deleted or reduced in funding.

Senator Van Valkenburg (73:A:447) asked Ms. Cheney to explain the Water Resources Research Center at MSU. He said it seems to him as though the center has alot in common with many of the water development studies. Ms. Cheney said the research center uses federal dollars, which are matched by state money, to fund university research projects. The center has a committee which reviews project applications from the university system. She said the center does fund the same type of projects as the Water Development Program. She said the center tends to fund purely research projects which do not necessarily have a specific application. They also have a limited amount of funding. Ms. Cheney said she thinks the center only funds 5 to 6 projects a year for $20,000 each. Ms. Cheney said the Water Development Program will not fund purely research projects unless they benefit the entire state.

During a break Don Hyyppa gave members information about the Gartside Dam project (#28) (EXHIBIT 6).

DEPARTMENT OF FISH, WILDLIFE AND PARKS, COAL TAX PARK ACQUISITION TRUST

Agricultural Museum, Fort Benton: In discussion about finding $125,000 in funding for the agricultural museum in Fort Benton, Mr. Hyyppa was asked if any of the park

maintenance projects can be reduced. Don Hyyppa (73:A:497) explained that the Glen lake maintenance could be done in phases. Chairman Thoft (73:A:501) said he thinks it needs to be determined how contaminated the Glen Lake area is before the entire project is done. Chairman Thoft asked if the project funding can be reduced by $125,000.

Hr. Hyyppa said he would suggest the committee use the estimated cash balance in the park acquisition trust ($50,000) and reduce the Glen Lake appropriation by $75,000.

Senator Van Valkenburg (73:A:537) made a motion to delete $75,000 from the earlier approved sum for the Glen Lake Improvement Project, which was to come from the Coal Tax Park Acquisition Trust. The motion passed unanimously.

Senator Van Valkenburg (73:A:549) moved to authorize $125,000, from the Coal Tax Park Acquisition Trust, for the purchase of a site, at Fort Benton, for use as an agricultural museum, and authorizing further that such site is to be leased to the city of Fort Benton for continued operation and maintenance.

Chairman Thoft (73:A:564) said it is his understanding that the later part of Senator Van Valkeburg's motion should be amendments to House Bill 509. He said Representative Manuel will have to carry the bill with the understanding that the money for the purchase has been reserved.

Senator Van Valkenburg (73:A:577) agreed to delete the portion of his motion concerning leasing, maintenance and operation of the site. The motion passed unanimously.

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION, WATER DEVELOPMENT PROJECTS

Senator Van Valkenburg (73:A:654) said in regard to the Water Resources Research Center at MSU, he feels the committee should be interested in a possible duplication of effort by the center and the Water Development Program. He asked Ms. Cheney to get more information on the center.

Chairman Thoft (73:B:024) asked if groundwater study projects and the Groundwater Research Center at Montana Tech study the same issues. Caralee Cheney (73:B:026) said the Bozeman Fan Project and the Missoula Aquifer Study are separate projects from the studies being

performed at Montana Tech. She said the two projects could compete for Water Resources Research Center monies, but that money is quite limited and the grants are much smaller than what is needed for these two projects. If the projects are deleted from the Water Development Program, the chances of them being picked up by other sources is not good.

Senator Tveit (73:B:038) said water studies are needed throughout the state and the location of the project does not matter.

Chairman Thoft (73:B:049) asked what will be studied in the Missoula project. Ms. Cheney said the project will study draw down effects on the Missoula aquifer, which is the city's only water source. Senator Van Valkenburg said the city is concerned about possible contamination of this source because there are 35,000 people living outside Missoula who use septic systems for disposal of sewage.

Representative Bardanouve (73:B:065) moved to approve $50,000 for the Bozeman Fan project. Senator Van Valkenburg (73:B:072) said he would ask Representative Bardanouve to withdraw his motion until the entire committee can be present to vote on it. (Representative Ernst was presenting a bill in another committee.) Chairman Thoft agreed that all members should be present before voting on the motion.

Chairman Thoft (73:A:100) asked Ms. Cheney to see if the Bozeman Fan and Missoula Aquifer Study could be done for less money. She said DNRC has looked at all of these projects in terms of scope and they have been cut back as far as possible, without redefining the studies.

There being no further business before the subcommittee the meeting was adjourned at 10:55 a.m.

ROBERT THOFT, Chairman

DAILY ROLL CALL

LONG RANGE PLANNING SUB COMMITTEE

49th LEGISLATIVE SESSION -- 1985

Date March 8, 1985

NAME	PRESENT	ABSENT	EXCUSED
Rep. Robert Thoft, Chairman	X		
Sen. Fred Van Valkenburg, Vice Chair	X		
Sen. Dave Fuller	X		
Sen. Larry Tveit	X		
Rep. Francis Bardanouve	X		
Rep. Gene Ernst	X		

ROLL CALL VOTE

SUBCOMMITTEE LONG RANGE PLANNING

DATE March 8, 1985 BILL NO. Forensic Unit Option A TIME 8:30 a.m.

NAME	AYE	NAY
Senator Fred Van Valkenburg, Vice Chairman	X	
Senator Larry Tveit	X	
Senator Dave Fuller	X	
Representative Gene Ernst	X	
Representative Francis Bardanouve	X	
Representative Robert Thoft, Chairman		X

Janet Pallister
Secretary, Janet Pallister

Robert Thoft
Chairman, Robert Thoft

Motion: A substitute motion to have the Architecture and Engineering Division present the committee with suggestions on where reductions, amounting to $419,000, should come from, within the Long-Range Building Cash Program.

ROLL CALL VOTE

SUBCOMMITTEE LONG RANGE PLANNING

DATE March 8, 1985 BILL NO. Park Acquisition Kleffner/Child Ranch TIME 8:39 a.m.

NAME	AYE	NAY
Senator Fred Van Valkenburg, Vice Chairman		X
Senator Larry Tveit	X	
Senator Dave Fuller		X
Representative Gene Ernst	X	
Representative Francis Bardanouve		X
Representative Robert Thoft, Chairman	X	

Janet Pallister
Secretary, Janet Pallister

Robert Thoft
Chairman, Robert Thoft

Motion: To not purchase the Kleffner Ranch as a state park, with the understanding that the Department of Fish, Wildlife and Parks can negotiate with Mr. Kleffner during the interim on a purchase price for the property.

ROLL CALL VOTE

SUBCOMMITTEE LONG RANGE PLANNING

DATE March 8, 1985 BILL NO. Park Acquisition Kleffner/Child Ranch TIME 8:45 a.m.

NAME	AYE	NAY
Senator Fred Van Valkenburg, Vice Chairman	X	
Senator Larry Tveit		X
Senator Dave Fuller	X	
Representative Gene Ernst		X
Representative Francis Bardanouve	X	
Representative Robert Thoft, Chairman		X

Janet Pallister
Secretary, Janet Pallister

Robert Thoft
Chairman, Robert Thoft

Motion: To authorize the Department of Fish, Wildlife and Parks, through a combination of funding sources, including $35,500 from the Cultural and Aesthetic Program, to offer Mr. Kleffner $100,000 as a downpayment on his ranch.

ROLL CALL VOTE

SUBCOMMITTEE LONG RANGE PLANNING

DATE March 8, 1985 BILL NO. Centennial Center TIME 9:50 a.m.

NAME	AYE	NAY
Senator Fred Van Valkenburg, Vice Chairman	X	
Senator Larry Tveit		X
Senator Dave Fuller	X	
Representative Gene Ernst	X	
Representative Francis Bardanouve	X	
Representative Robert Thoft, Chairman		X

Janet Pallister
Secretary, Janet Pallister

Robert Thoft
Chairman, Robert Thoft

Motion: To approve $25,000 for planning of the Centennial Center.

ROLL CALL VOTE

SUBCOMMITTEE LONG RANGE PLANNING

DATE March 8, 1985 BILL NO. Long-Range Building Cash Program funds for Ft. Benton TIME

NAME	AYE	NAY
Senator Fred Van Valkenburg, Vice Chairman		X
Senator Larry Tveit	X	
Senator Dave Fuller		X
Representative Gene Ernst	X	
Representative Francis Bardanouve	X	
Representative Robert Thoft, Chairman	X	

Janet Pallister
Secretary, Janet Pallister

Robert Thoft
Chairman, Robert Thoft

Motion: $55,000 be allocated from the Long-Range Building Cash Account, for the purchase of a museum site in Fort Benton.

ROLL CALL VOTE

SUBCOMMITTEE LONG RANGE PLANNING

DATE March 8, 1985 BILL NO. Cultural & Aesthetic Funds for Ft. BentonTIME

NAME	AYE	NAY
Senator Fred Van Valkenburg, Vice Chairman		X
Senator Larry Tveit	X	
Senator Dave Fuller		X
Representative Gene Ernst	X	
Representative Francis Bardanouve	X	
Representative Robert Thoft, Chairman	X	

Janet Pallister
Secretary, Janet Pallister

Robert Thoft
Chairman, Robert Thoft

Motion: To apply the $35,000 in the Cultural and Aesthetic Program toward the purchase of property for the agricultural museum, with the community of Fort Benton to provide matching funds of $35,000 toward the purchase.

ROLL CALL VOTE

SUBCOMMITTEE LONG RANGE PLANNING

DATE March 8, 1985 BILL NO. Eastern Montana College Brick Repair TIME

NAME	AYE	NAY
Senator Fred Van Valkenburg, Vice Chairman		X
Senator Larry Tveit		X
Senator Dave Fuller		X
Representative Gene Ernst		X
Representative Francis Bardanouve	X	
Representative Robert Thoft, Chairman		X

Janet Pallister
Secretary, Janet Pallister

Robert Thoft
Chairman, Robert Thoft

Motion: That the funding for the brick repair project at Eastern Montana College DO NOT PASS.

Exhibit #1 3-8-85 Quinlan

RECEIVED
1985
LEGISLATIVE FISCAL ANALYST

MONTANA ARTS COUNCIL

TED SCHWINDEN, GOVERNOR
35 SOUTH LAST CHANCE GULCH
STATE OF MONTANA
(406) 444-6430
HELENA, MONTANA 59620

DATE: March 6, 1985

TO: Madalyn Quinlan, Legislative Fiscal Analyst
FROM: Bill Pratt, Director of Organizational Services
RE: Contingencies for 1986-1987 Cultural and Aesthetic Project Grants

I will be out of town till March 18, so I thought I'd better get this information over to you. I'd suggest checking them gainst the committee's minutes.

Appl.	Organization	Contingency
88	Univ. of MT-MT Humor	No Funding
89	Clack Musuem-	For expenses associated with archaeology
90	Yellowstone Chamber Players	Funds to support only concerts outside Billings
91	Garfield Co. Museum	No Contingencies
92	Helena Trad. Jazz Soc.	No Funding
93	Paris Gibson Square	For exhibit and catalogue
94	Fox Theatre Corporation	No Contingencies
95	Helena Film Society	No Contingencies
96	Eastern MT College-Barstow	C&A grants should not be considered a continuing source of funds to care for the collection. EMC should consider the cost of receiving a gift prior to acceptance, and these collections should become a "bona fide" responsibility of the college.
97	Eastern MT College-Gallery Expansion	No Funding
98	Owl Creek Press	No Funding
99	Butte Arts Chateau	Restricted to antique furniture restoration

publications & graphics

P. 2 Cultural and Aesthetic Project Grant Contingencies

100	Shakespeare in the Parks	No Contingencies
101	Lambrecht, Richard	No Funding
102	Garnet Preservation Assoc.	Contingent upon raising of $10,000 in cash match. Funds must go to non-profit organization.
103	Copper Village Museum	Contingent as match for application to Urban Development Action Grant and/or Block Grant programs and other sources sufficient to complete the project.
104	MT School of Creative Arts	CAPAC suggests use of consultant to refine focus, develop marketing plan and determine realistic level of service. CAPAC members Jim Poor and Arnie Malina are available for assistance.
105	Fort Peck Tribes	Grant to be handled through Ft. Peck Archives
106	Growth Through Art	No Contingencies
107	Ad Hoc Comm. for MT	Grant for committee travel, typing of manuscript, copyrights, releases, and commission fees. $2,500 to each of the two co-editors. Contingent upon Northern Montana College Foundation or other responsible body acceptable to MAC to handle funds after grant period is complete.
108	Culbertson Library Board	Contingent upon contacting the State Historic Preservation (SHPO) office to determine eligibility of their building for designation on National Register of Historic Sites. If eligible, must comply with National Standards. To release funds, MAC will need proof of contact with SHPO and compliance with standards for conservation and remodeling if deemed necessary by SHPO. If not eligible, project may proceed as outlined in proposal.

P. 3 Cultural and Aesthetic Project Grant Contingencies

109	Very Special Arts MT	No Contingencies
110	Montana Historical Soc.	Contingent upon purchase of ranch by state
111	Helena Civic Center	For purchase of the sound shell. Contingent upon $25,000 in local government cash match
112	Young Audiences	No Contingencies
113	MT Art Gallery Directors Association	Funding for mounting of two exhibits--Montana Neon and one other
114	MT Performing Arts Consort.	No Contingencies
115	Carbon Co. Historical Soc.	No Contingencies
116	KUFM-MT Gallery	No Contingencies
117	Broadway 215	No Contingencies
118	Laurie Hill Library	No Contingencies
119	Lewistown Art Center	No Funding
120	Broadwater Productions	No Funding
121	Howard, Stanley W.	No Funding
122	MT Assoc. of Symph. Orchs.	For consultant expenses
123	Madison Co.-Watkins Museum	No Funding
124	Stacey Histor., Cultur. and Memorial Hall	Funds limited to museum part of building
125	MT Inter-Tribal Policy Brd.	No Funding
126	MSU-Fine Arts Gallery	Not a continuing source of funds for the MSU collection received to date. MSU should consider the cost of receiving a gift prior to acceptance. The collection should become a "bona fide" program of the University.
127.	Bozeman Women's History Group	No Contingencies
128	Bigfork Summer Playhouse	No Funding
129	Custer Co. Art Ctr	No Contingencies

130	Hockaday Ctr. for the Arts	Require that they contact the State Historic Preservation Office (SHPO) regarding historical restoration standards and that they maintain contact with SHPO. MAC must receive proof of contact to release funds.
131	Havre-Hill Co. Library	Must contact State Historic Preservation Office (SHPO) for an appraisal of the old Carnegie Library. If it is determined possible, they should make an effort to find an appropriate reuse. MAC must receive proof of contact to release funds.
132	KGLT-FM	Grant contingent upon raising $9,100 in cash match by 7/1/86
133	Powell Co. Museum & Arts	No Funding
134	Livingston Middle School	No Funding
135	Univ. of MT-Art Collection	C & A grants should not be seen as a source of continuing funds for the UM permanent collection. UM should consider the cost of receiving a gift prior to acceptance. The collection should become a "bona fide" program of the University.
136	Rattlesnake Productions	No Contingencies
137	Huntley Project	Grant to be used for interpretive presentation not for "warehousing" or storage. Funds can not be used to "construct a hill and landscape it with native grasses, flowers, shrubs and plants"
138	Ctr. for Public Vision	No Contingencies
139	Dept. of Drama/Dance Magic Movers	No Contingencies
140	Polson City Library	No Contingencies

141	LOGON	No Funding
142	Upper Musselshell Histor. Society	No Contingencies
143	UM-MT Repertory Theatre	No Contingencies
144	Mineral Co. Mus.	No Contingencies
145	Montana Chorale	No Funding
146	Blaine Co. Public TV	No Funding
147	Watershed Foundation	Funds contingent upon documentation that Mansfield acknowledges the project and that $50,000 in cash match is raised before C & A funds are released
148	Huntley Project Schools	No Contingencies
149	Carbon Co. Arts Guild	No Contingencies
150	Rocky Boy Tribal H. S.	Grant for costs other than camera equipment purchase and travel
151	Western Heritage Ctr.	No Contingencies
152	Renne Library	No Contingencies
153	Flathead Valley Comm. College	No Funding
154	Beall Park Art Center-Energy Conservation	No Contingencies
155	Beall Park-Renovation	No Funding
156	Beall Park-Program	No Funding
157	Butte-Silver Bow Library	No Funding
158	Yellowstone Art Center	Seed Grant to stimulate private donations for acquisitions
159	Ft. Peck Tribal Archives	Grant to be used for completion of comprehensive historical and pictorial record of Ft. Peck Assiniboin and Sioux tribes and the reservation. Contingent on cash match to complete project.

P. 6 Cultural and Aesthetic Project Grant Contingencies

160	Sunnyside Library	No Funding
161	Parmly-Billings Library	No Funding- Return in two years with revised application after discussion with MAC
162	Vigilante Players	No Contingencies
163	Golden Valley Historical	No Funding - recommend they reapply for next biennium
164	Sterling Restoration	No Funding
165	Archie Bray Foundation	No Contingencies
166	MSU-Dept. of Theatre Arts	Funds for research and production of one script
167	Reservation Wide Committee	Funds for Montana Indian Art Show and marketing workshops
168	St. Mary's Mission Histor. Preservation Trust	No Contingencies
169	MT Historical Society Oral History Project	No Contingencies
170	MT Arts Council	No Contingencies

Exhibit #2
3-8-85
LFA
Quinlan

Capital Construction Projects
Approved by the
Long-Range Planning Subcommittee
as of March 7, 1985

Agency	Capital Projects Fund	Other	Total
I. Architecture & Engineering Ranked Projects			
Dept. of Military Affairs			
1. Roof Replacements	$ 292,580	$ 103,000	$ 395,580
2. Ft. Harrison Main	40,000	1,845,000	1,885,000
3. Indoor Firing Ranges	22,600	1,195,540	1,218,140
4. Retrofit Facilities	5,000	150,000	155,000
5. Armory Storage Additions	10,600	426,400	437,000
Organizational Shops			
6. Chinook	25,300	532,000	557,300
7. Billings	70,300	532,000	602,300
8. Kalispell	40,200	562,800	603,000
9. Milloula	40,200	562,800	603,000
10. Belgrade	45,200	562,800	603,000
11. Culbertson	25,200	562,800	588,000
12. Paint Armories and Shopts	67,325	71,775	139,100
13. Vehicle Security Compnds.	24,750	79,650	104,400
14. Federal Contingency Fund	-0-	200,000	200,000
Total Dept. Military Affairs	$709,255	$7,386,565	$8,095,820
University System			
1. Replace Roofs	$ 310,000	$ -0-	$ 310,000
2. Health and Safety	421,400	-0-	421,400
3. Major Maintenance	213,950	-0-	213,950
4. UM Electrical Distribution	550,000	550,000	1,100,000
5. Brockman Center, NMC	27,000	-0-	27,000
Total University Request	$1,522,350	$ 550,000	$2,072,350

Capital Construction Projects
Approved by the
Long-Range Planning Subcommittee
as of March 7, 1985

Agency	Capital Projects Fund	Other	Total
Department of Administration			
1. Fire Protection, Capitol	$360,778	$168,877	$ 529,655
2. Parking Improvements	248,680	-0-	248,680
3. Energy Conservation Retrofit	-0-	400,000	400,000
4. Asbestos Abatement	250,000	-0-	250,000
Total Dept. of Administration	$859,458	$568,877	$1,428,335
Montana Historical Society			
1. Renovate Museum	$ -0-	$425,000	$ 425,000
Montana School for the Deaf & Blind			
1. Roof Repair, Aspen Hall	$ 67,700	$ -0-	$ 67,700
Department of Highways			
1. Highway Facilities Maint.	$ -0-	$ 750,000	$ 750,000
2. Energy Retrofit, Butte Hdqtrs.	-0-	225,000	225,000
3. North Section Facility, Billings	-0-	130,000	130,000
4. Maintenance Garages	-0-	199,000	199,000
5. Storage Building, Helena	-0-	113,000	113,000
6. Sandhouses,	-0-	107,200	107,200
Total Department of Highways	$ -0-	$1,524,200	$1,524,200
Department of Commerce			
1. Gallatin Co Airport Roof	$ -0-	$ 50,000	$ 50,000

Capital Construction Projects
Approved by the
Long-Range Planning Subcommittee
as of March 7, 1985

Agency	Capital Projects Fund	Other	Total
Department of Institutions			
1. Roof Replacement at Boulder and Mountain View	$ 18,500	$ -0-	$ 18,500
2. Expand Sewer System, Prison	250,000	-0-	250,000
3. General Maintenance, State Hospital	61,470	-0-	61,470
4. Boiler Repair, MT State Hosp. and Pine Hills	26,100	-0-	26,100
5. Install New Flooring, Pine Hills	9,900	-0-	9,900
6. Riprap Prickly Pear Creek, Mountain View	14,950	-0-	14,950
Total Dept. of Institutions	$ 380,920	$ -0-	$ 380,920
Department of Fish, Wildlife & Parks			
1. Miles City Fish Hatchery	$ -0-	$4,900,000	$4,900,000
2. Washoe Hatchery, Anaconda	-0-	250,000	250,000
3. Big Springs Hatchery, Lewistown	-0-	300,000	300,000
4. Regional Headquarters	-0-	2,575,300	2,575,300
5. Fishing Access Site Protection	-0-	600,000	600,000
6. Headquarters Building, Glasgow	-0-	30,000	30,000
7. Wildlife Habitat Acquisition	-0-	1,000,000	1,000,000
8. Fishing Site Acquisitions	-0-	600,000	600,000
9. Deep Creek, Missoula	-0-	150,000	150,000
10. Boat Facilities	-0-	1,197,000	1,197,000
11. Site Improvements	-0-	150,000	150,000
12. FWP Agency Hdqtrs.	-0-	112,000	112,000

Capital Construction Projects
Approved by the
Long-Range Planning Subcommittee
as of March 7, 1985

Agency	Capital Projects Fund	Other	Total
FWP Continued			
13. Relocation of Sign Shop	$ -0-	$ 40,000	$ 40,000
14. Spring Meadow Lake Improvements	-0-	125,000	125,000
15. Les Mason Development	-0-	180,000	180,000
16. Glen Lake Improvements	-0-	165,000	165,000
17. Lake Elmo Improvements	-0-	24,000	24,000
Total Fish, Wildlife, & Parks	$ -0-	$12,398,300	$12,398,300
Department of Agriculture			
1. Envirnomental Management Lab at MSU	$ 80,000	$ 20,000	$ 100,000
Total A & E Ranked Projects Approved by LRLP Subcommittee	$3,619,683	$22,922,942	$26,542,625

LONG-RANGE PLANNING SUBCOMMITTEE

Capital Construction Program

Capital Project Funds
1987 Biennium

Revised Revenue Estimate:	$10,587,167
Projects Approved to Date (3-7-85):	(3,619,683)
Funds Available for Appropriation:	6,967,484
Remaining Requests:	
Fort Benton Agric. Museum	$ 125,000
Brick Repair at MSU	1,976,000
Brick Repair at EMC	25,000
Ag. Exp. Station, Farm Shop	120,000
DSL-Fire Crew Qtrs.	44,000
Publications and Graphics	120,000
Center for the Aged Laundry	215,000
MSP Warehouse W/Equipment	195,500
MSP Expansion Equipment	189,000
BRSH, Fire Protection	17,250
BRSH, Remodel Cottage 16	33,400
Total Additions	$3,060,150
Funds remaining for appropriation:	$3,907,334

mqleg:cp 3-7-5

LONG-RANGE PLANNING SUBCOMMITTEE
Forensic Building Funding

Option A: Full funding of the Forensic unit approved by 1985 Legislature (Bid Let 1/86)

Inflation Rates:	1985 6%	1985 5%	
	1986 10%	1986 5%	
	1987 10%	1987 5%	
Total Project cost:	$6,369,777	$6,005,477	
Funds Available:[1]	5,585,798	5,585,798	
Additional Funding necessary to complete project	$ 783,979	$ 419,679	Difference: $364,300

- -

Option B: Incremental funding by 1985 and 1987 legislatures (Bid let 1/87)

Inflation Rates:	1985 6%	1985 5%	
	1986 10%	1986 5%	
	1987 10%	1987 5%	
	1988 10%	1988 5%	
Total Project Cost:	$6,817,200	$6,297,300	
Funds Availalbe 1985:[1]	5,585,798	5,585,798	
Appropriation required by 1987 legislature	$1,231,402	$ 711,502	Difference: $519,900

---

*Funds Available 1985:	1983 LRBP Appropriation	$1,678,464
	1985 Funds Remaining:	3,907,334
		$5,585,798

Exhibit #3
3-8-85
O'Connell

Revised 3/7/85

Proposed language for inclusion in the Appropriations Bill for the Long Range Building Program

New Section: Section 1. Building Demolition. The Department of Administration may solicit bids for demolition or sale and removal of the following buildings:

Boulder River School and Hospital

Building Name	Building Number
Cottage	5
Old Admin. Building	22
Old Laundry Storage	2
Tire/Rubber Storage	28
Garage	4
Hog House	Ranch Building
Old Granary	Ranch Building
Turkey House	Ranch Building
Ranch House	Ranch Building
Garage	Ranch Building
Chicken House	Ranch Building
Old Machine Shed	Ranch Building
Root Cellar	Ranch Building

Montana Veterans Home

Building Name	Building Number
Old Main & Annex	10
Old Dorm	3
Boiler Room	9

Montana State Hospital

Building Name	Building Number
Bolton	17
Former Children's Unit	18
Apartment Building "A"	No #, North of #13
W.S.Superintendent's residence	21
Old Butcher Shop	No #, North of Commissary #29
Byron Hall	24 (Galen Campus)
Former Lighthouse	22
Maintenance Shop	6
Lumber Storage	5
Old Barn	No #, West of Bldg. #6

Pine Hills School

Lewis and Clark Lodge	4

The Director of the Department of Institutions must certify to the Department of Administration that each of the above buildings is surplus to the needs of the department and the state by reason of the building's age, deteriorated physical condition, life/safety, or license deficiencies and has no residual economic or useful life. If the cost of the deficiencies would preclude reasonable restoration and refurbishing efforts, the Director of the Department of Administration may grant an order to proceed with demolition on condition that:

(a) a successful contractor or bidder agrees to demolish or remove the building and reclaim the building site based on the salvage value of the building itself; and

(b) the demolition or removal of the building does not violate the provisions of the State Antiquities Act relative to established heritage properties under state ownership.

New Section: Section 2. Use of Prison Industries in Demolition Projects. The Director of the Department of Administration may permit the Director of the Department of Institutions to utilize the Prison Industry Program to demolish and remove selected institutional buildings listed in Section 1. The proceeds from the sale of salvageable material obtained through the demolition process shall be deposited in the Prison Industries Proprietary account. Permission may only be granted after the Office of Budget and Program Planning and the Legislative Finance Committee determine that the proceeds from the sale of salvageable material will support the cost of demolition and removal.

New Section: Section 3. Construction of MSP Warehouse. For the purposes of expediting the acquisition and construction of a warehouse building authorized in this bill, the Department of Institutions is given authority to use inmate labor to construct the building and is exempted, for the purposes of completing this project, from the provisions of 53-1-301(7).

New Section: Section 4. Sale of State Land at Montana State Prison. Pursuant to the provisions of 77-2-302 MCA requiring that the Board of Land Commissioners consult with an appropriate legislative committee prior to the sale of buildings formerly used by a state institution, the Board is hereby authorized to sell the following properties, if it determines this sale to be in the best interest of the state. Sale proceeds shall be deposited in accounting entity 05007. The Board is authorized to pay costs of necessary surveys and appraisals and all other costs associated with the sale of land from the proceeds of the sale.

(a) approximately 10 acres of land formerly known as the Bratten Ranch with approximately 14 structures. This property borders on main street in the City of Deer Lodge and the Montana Power Company substation and the Department of Highways garage in Deer Lodge, Montana.

(b) approximately 10 acres of land formerly known as the Valiton Ranch located 1 mile south of the Deer Lodge City limits. Included on this property are seven out buildings and a duplex residence.

(c) approximately ½ acre of land and a single family residence with detached two car garage. This property is commonly known as the Brick Yard property, south of the city of Deer Lodge, Montana.

(d) approximately ½ acre of land and a single family residence with detached garage located on the prison ranch about 7 miles north of Deer Lodge on the frontage road.

New Section: Section 5. Any excess revenues in the capital projects fund received over the amount appropriated herein are appropriated to the forensic building at Montana State Hospital in an amount not to exceed $_____.

Exhibit #4
3-8-85
O'Connell

Proposed Language for
Long-Range Building Appropriations Bill

Section 1

(6) "Major maintenance plan" means a 6-year schedule of anticipated major maintenance requirements and costs for the first two years of the schedule, developed for each state building, as determined by the department of administration. The plan shall include a record of major maintenance performed in the five previous years.

(7) "Major maintenance" means building maintenance or repair projects that are not needed on an annual or biennial basis or are not the function of the permanent maintenance staff of the agency.

Section 5

For all new construction proposals submitted to the legislature and for all existing applicable state buildings as determined by the department of administration, each agency, in consultation with the architecture and engineering division of the department of administration, shall provide a major maintenance plan. This plan shall be submitted by the agency to the department of administration by July 1 of each even numbered year along with the proposed long-range building program required under 17-7-202.

Exhibit #5
3-8-85
DOMA

DEPARTMENT OF MILITARY AFFAIRS

TED SCHWINDEN, GOVERNOR

P.O. BOX 4789

STATE OF MONTANA

OFFICE OF THE ADJUTANT GENERAL
(406) 444-6910

HELENA, MONTANA 59604

MODIFICATIONS TO LRBP FOR DEPARTMENT OF MILITARY AFFAIRS

	Existing Federal Authority	Proposed Federal Authority
Chinook #27	$532,000	$632,000
Billings #28	$532,000	$632,000
Kalispell #29	$562,800	$675,000
Missoula #30	$562,800	$675,000
Belgrade #31	$562,800	$675,000
Culbertson #32	$562,800	$675,000

H.B. 833, from the 1983-85 Legislature, appropriated $804,688 in other appropriated funds.

Request the 1985-87 Legislature increase the other appropriated fund by $150,000 to $954,688. This increases the Federal spending authority only and does not require State matching funds.

Exhibit #6
3-8-85
Hyyppa

Montana Department of Fish, Wildlife & Parks

1420 East Sixth Avenue
Helena, MT 59620

March 6, 1985

The Hon. Robert Thoft, Chairman
Long Range Building and Planning Committee
Room 420
State Capitol
Helena, MT 59620

Dear Mr. Thoft: RE: Gartside Reservoir Dam

I am writing in response to your request for a written report regarding the issues attendant to project neighbor, William Wyman's complaint that the project floods his property.

As mentioned in previous testimony, we were quite surprised when Mr. Wyman notified us of his concerns in late December 1984. The reservoir has existed for at least 50 years and the Department's proposal is to simply repair the existing structure. However, at the Committee's request, we did ask our consulting engineer to inspect Mr. Wyman's property in an effort to identify the problem and to recommend mitigation, if necessary.

I will summarize the results of that investigation and have attached copies of the Engineer's report and color photographs for your inspection as well.

Mr. Wyman's property is located several hundred feet upstream from the reservoir and approximately 20 - 25 feet above the normal high water surface.

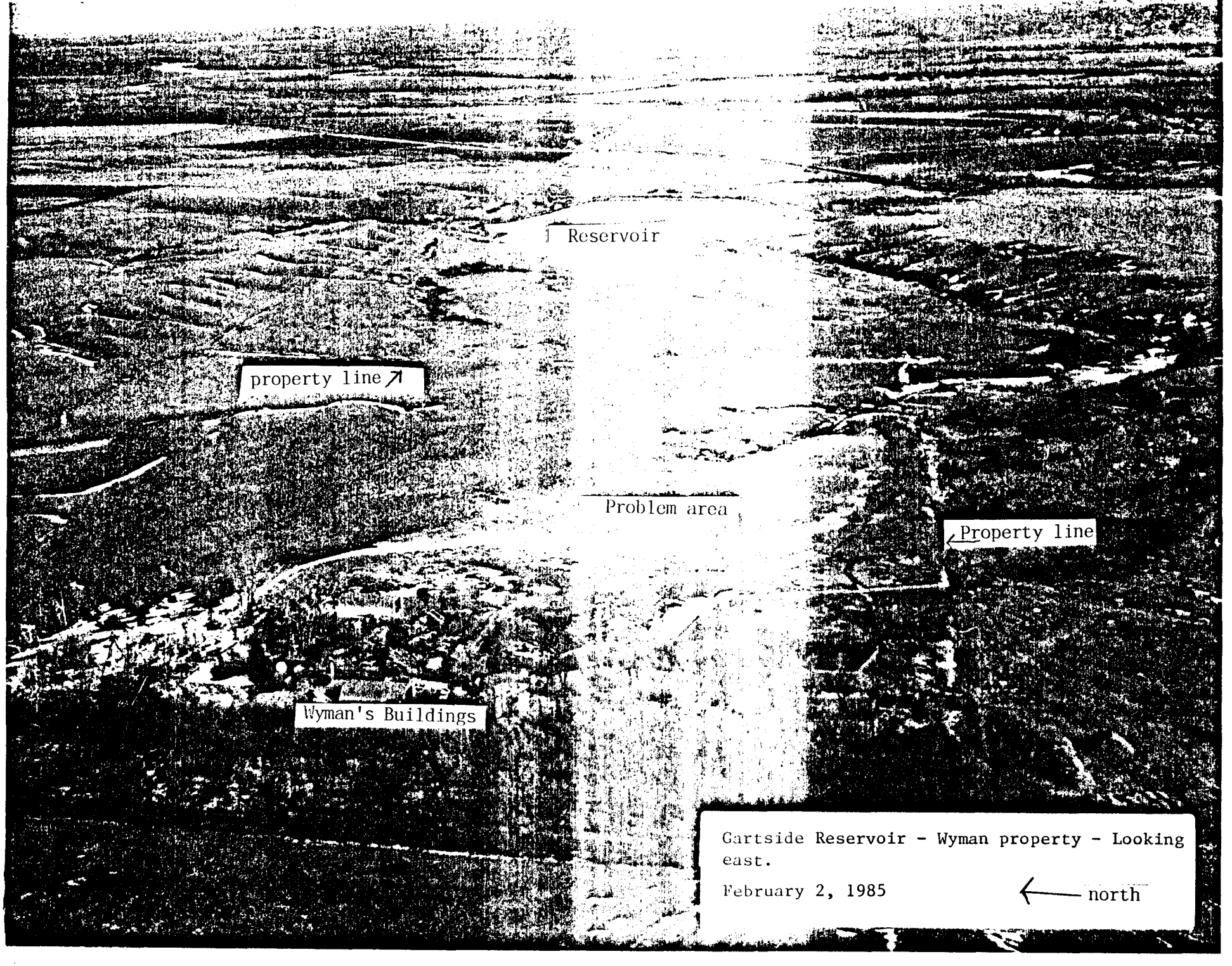
Apparently, there has always been a considerable amount of ground water surfacing in the area. In fact, the subirrigation of this property was one of the reasons Mr. Wyman's father homesteaded on it. This ground water is apparently flowing through the same coal seam which outcrops in the reservoir spillway. Under normal circumstances, the reservoir itself would not have an effect on Mr. Wyman's ground water situation. However, in this case it is possible that the relatively impervious soil above the coal seam causes it to act as a conduit. Consequently, it is possible that when the reservoir is full, the flow through this conduit is retarded causing more water to surface on the Wyman property.

Thank you for your consideration.

Sincerely,

DON HYYPPA
Administrator
Parks Division

b
Enclosures
cc: Jim Flynn
William Wyman
Rick Bondy, DNRC
Keith Seaburg



Gartside Reservoir - Wyman property - Looking east.

February 2, 1985

← north

TRIP REPORT
GARTSIDE PROJECT
IMPACTS OF RESERVOIR UPON WYMAN PROPERTY

On Friday afternoon, February 15, 1985, a request was made by DNRC for a representative of HKM Associates to travel to Gartside Reservoir. The purpose of this trip was to observe the Wyman property above Gartside Reservoir with respect to possible elevated ground water tables, supposedly caused by the reservoir pool, and to observe damages claimed by Wyman. On Monday, February 18th, a trip was made by:

. Mr. Richard Bondy	Chief of the Engineering Bureau, DNRC
. Mr. Richard E. Mayer	Chief, Design and Construction Bureau, Fish, Wildlife and Parks
. Mr. Roger Perkins	Director of Water Resource Design, HKM Associates
. Mr. Richard Shoening	Warden, DFWP, Crane, Montana

This trip report will summarize observations by HKM and includes a cursory analyses of the situation and recommendations for further monitoring.

The group arrived on site about 11:00 am. Mr. Bill Wyman and Mr. Greg Wyman then met with us and we walked the property.

The out buildings and residence were observed. We were informed that the residence has an eight foot basement which has been historically wet. These buildings were located on a bench above the meadows and are approximately 20' to 25' above the normal high water surface of the reservoir (see Exhibit 1). A shelter belt was observed to the west of the buildings. Most of the trees in this grove appeared to be living. A stand of cottonwood trees were observed in the yard of the house.

These trees were quite large and portions of the trees had died. Mr. Wyman told us that these trees were planted in the early 1900's by his dad. It appeared to us that the trees have lived out their normal life span and were slowly dying back as a result of age. An older willow tree was doing quite well and several younger trees had established themselves in the area.

We then proceeded out into the meadow of Crane Creek east of the buildings. A large portion of the meadow was covered with ice from snowmelt runoff. The lower portion of the meadow had a hummocky surface typical of silty soils which are subirrigated. Examination of the soils near a shallow surface drain indicated a silty clay loam texture. The meadows are heavily grazed. The native vegetation in these meadows is primarily Prairie Cordgrass and Indiangrass.

No defined Crane Creek channel existed across most of the Wyman property. A defined channel 8' to 10' deep appears just before Crane Creek leaves the Wyman property. In a reach of about 500 feet, approximately 200 to 300 gpm appears in the defined channel. No ice cover existed on this reach of stream due to warm ground water inflow. Many of the springs contributing to the stream were leaving iron oxide stains.

A good stand of shrubs and trees were observed where the valley floor met the hillside south of Crane Creek. These shrubs and trees are indicative of ground water discharge.

An excellent stand of Prairie Cordgrass, Indiangrass and Forbs was observed between the Wyman property and the reservoir pool. This area has not been grazed by cattle as it is part of the recreation area. A band of cattails and other hydrophytes existed at an elevation near the normal pool of the reservoir on the west side. The reservoir was approximately 1/3 full.

The west side of the Wyman property was observed from the County Road. At this point, the vegetation was changing from a

low land, subirrigated Prairie Cordgrass to upland native grasses. An older stand of cottonwood trees was observed to the west, located approximately 1 mile and 30 feet above the reservoir. This grove also had dying trees within its population.

Analysis

Pertinent information, available without field work, was obtained and analyzed. This information included geotechnical work completed for the dam; U.S.G.S. Quads; Soil Survey of Richland County, a U.S.G.S. report entitled "Coal Resources and Cenozoic Geology of the Girard Coal Field, Richland County, Montana; Plants of South Dakota Grass Lands"; aerial photography and reference to other similar studies completed by HKM.

Soils

The soils, according to the SCS Richland County Soil Survey, are silty clay loam in the lower portions of the meadow and fine sandy loam on the higher portions (see Exhibit 3). The presence of silty soils was verified in the field. The important consideration is the "effective capilliary fringe". Information concerning effective capillary fringe is provided in Exhibit 4. Silts can wet the surface by capillary action when the water table is as much as 6' to 7' below the surface. This characteristic is a factor in the "osasis" effect that reportedly attracted Mr. Bill Wyman's dad when he decided to purchase this 80 acre parcel of State land years ago. Natural subirrigation provided a good native meadow for haying. The soils are productive; however, wetness can be a potential limitation to crop growth as well as an asset.

Source of Ground Water

The source of ground water is the key question in this analysis. Typically, a small amount of water moves down

through alluvial deposits of most valleys; high flows in the spring, low flows in the fall. An estimate of the amount of water that could move down the Crane Creek valley was made by a simple application of Darcy's law, Q = KIA, and extending information obtained from the geotechnical investigation to a section upstream. A section was located as shown on Exhibit 1 extending across the valley through the Wyman buildings. Judging from logs on Drill Holes 1, 4, 6 and 7 of the Gartside Rehabilitation Study, the depth to siltstone bedrock is typically 15' to 20'. The alluvial deposits were silty sand with dirty gravel zones approximately 5' deep near the bottom. Permeabilities ranged from 2400 to 4100 feet/year near the bottom of the hole. The silty sands exhibited low permeabilities as an aquifer, typically 100 to 500 feet/year.

Assuming a permeability (K) of 5000 ft/year for the lower 5 feet and 1000 ft/year for the upper alluvial deposits; a 20 foot saturated depth, a valley 1700 feet wide; Area (A), Lower A = 5'x1700' = 8500 ft^2, upper A = 15'x1700' = 22,500 ft^2 and a hydraulic gradient (I) equal to the stream channel slope (0.01). Calculations are as follows:

Lower Flowrate Q = (5000 ft/yr)(0.01 ft/yr)(8,500 ft^2)
= 425,000 ft^3/yr = 6 gpm

Upper Flowrate Q = (1000 ft/yr)(0.01 ft/yr)(22,500 ft^2)
= 225,000 ft^3/yr = 3.5 gpm

These calculations indicate a total underflow of 9 to 10 gpm down the valley. Even if conditions were substantially different from those assumed in this analysis, it can be concluded that only a small amount of water can flow down the valley.

However, 200 to 300 gpm were observed flowing into Crane Creek above the reservoir (see Exhibit 2, Recharge Area). This

suggests the presence of an aquifer other than the alluvial deposits is contributing water to the lowland area. Analysis of the Girard Coal Field Report (Exhibit 5) indicates that Crane Creek intercepts the " Pust" coal seam which is 10 to 14 feet thick (see Exhibit 2 for assumed cross section location). Observed crops of coal indicate that this seam slopes upward from the exposure in the spillway of the dam at a slope of 0.003 ft/year in a southwesterly direction. This slope supports the coal structure contours as shown in Exhibit 5. Since coal is typically a good aquifer, this explains the large contribution of water to Crane Creek near and on the Wyman property. This also explains the high water tables in the area of concern on the Wyman property.

Since the discharge area is well above the normal pool, it is unlikely that the reservoir impacts the piezometric heads in the coal. There is a chance that the reservoir covers a portion of discharge area of the coal, possibly causing a flatter hydraulic gradient (I). This process could be equated to a check in a canal to raise the water surface. This can be determined only by installation of monitoring wells. This flatter gradient could cause an increase in water tables for a short distance upstream of the reservoir.

Aerial Photography

Aerial photographs taken in 1948 and 1956 are available. Examination of these photographs indicate that the area had a high ground water table before construction of the dam. This further supports the natural occurrence of high ground water in this area before construction of Gartside Reservoir.

Proposed Monitoring Program

Questions as to whether the reservoir contributes to high water tables on the Wyman property can only be determined by monitoring and analysis. All evidence collected to date

suggests the reservoir does not impact water tables at the Wyman house, Water tables are likely a function of recharge from rains and snowmelt and other climatological factors and how much water is consumed by the vegetation during the summer months.

To obtain the needed answers, it is proposed to drill 10 wells as located on Exhibits 1 and 2. Three of these wells will be tested for permeabilities for ground water or drainage analysis, if needed. All wells will be completed with small diameter plastic casing with very fine slots at the lower end. At least one of the wells will have a multiple casing to monitor ground water levels in the coal and in the alluvium. The estimated cost to install these wells is $6,000 to $7,000. An additional $3,000 would be allocated for monitoring and analysis. It is assumed that the monitoring will be completed monthly through the growing season (approximately 6 months) and every 3 months thereafter. The monitoring would be completed by the local game warden or by Greg Wyman. These wells will detect a response to increased water levels in Gartside Reservoir (if there is one), provide information about the aquifer recharging the area, allow plotting of ground water table contours for analysis and, if necessary, provide the information needed for the design of a drain system.

Possible Solutions to Problem

If the reservoir is impacting water levels, a logical solution would be to install agricultural drains as needed to control water tables. Drain spacing would likely be 200 feet (see Exhibits 2 and 6) over about 20 acres. This would probably require about 5000 feet of drain @ $5/ft (see Exhibit 7) or $25,000 of expenditure.

A second solution may be management of the reservoir to keep water tables low during critical periods of the year. This may be a trial and error process until a suitable plan is developed. The monitoring wells would provide essential information in developing this plan. This will only work if the reservoir really does affect the ground water levels on the Wyman property. Substantial project benefits would be lost.

Assessment of Damage Claims

In our opinion, the claim that the cottonwood trees have been damaged by the Gartside Reservoir is unfounded. The trees are very old and are dying of natural causes. Cottonwood trees are "water loving" plants and thrive in the Yellowstone River on islands very near the water surface (often flooded). Cottonwoods must have a high water table or irrigation to survive. It is unlikely that the naturally high water tables are a detriment to these trees, but in fact, are probably an asset.

It has been claimed that production of that has dropped off in the meadows. Exhibit 8 is a copy of a description of prairie cordgrass and indiangrass. It should be noted that "prairie cordgrass decreases with heavy grazing pressure". This area is obviously heavily grazed instead of hayed. This causes another problem in that the estimated 20-30 acres of meadow affected on the Wyman property can consume over 200 gpm of water during peak consumptive use periods when the grass is growing actively. If the prairie cordgrass is not doing well, less water is consumed, adding to high water table conditions existing naturally. An additional factor is that Eastern Montana has experienced a severe drought over the past two years. This could be affecting production of the hay meadows as well; not from too much water as claimed but not as much as needed.

CONCLUSIONS AND RECOMMENDATIONS

The Wyman property is generally 20 to 30 feet above the reservoir pool. A coal aquifer subcropping beneath Crane Creek but above and west of the Reservoir is the likely cause of high water tables. A monitoring program is needed to confirm the source of the water. There exists an outside chance that the reservoir pool in some way restricts discharge from the coal. If the profile shown in Exhibit 2 is correct, this condition is unlikely. Damage claims are unsubstantiated in our opinion.

It is recommended that rehabilitation of Gartside Reservoir proceed as planned. It does not seem prudent to delay repair of an unsafe dam, with potential for very large damage claims in light of unsubstantiated claims or minimal claims, whatever the case may be. A monitoring system should be installed before spring runoff occurs. If the reservoir somehow impacts the Wyman property, a drain system should be installed. The only positive way to determine that the property is impacted is to install a monitoring well system and monitor the ground water after construction is complete and the pool is filled.

EXHIBIT 1

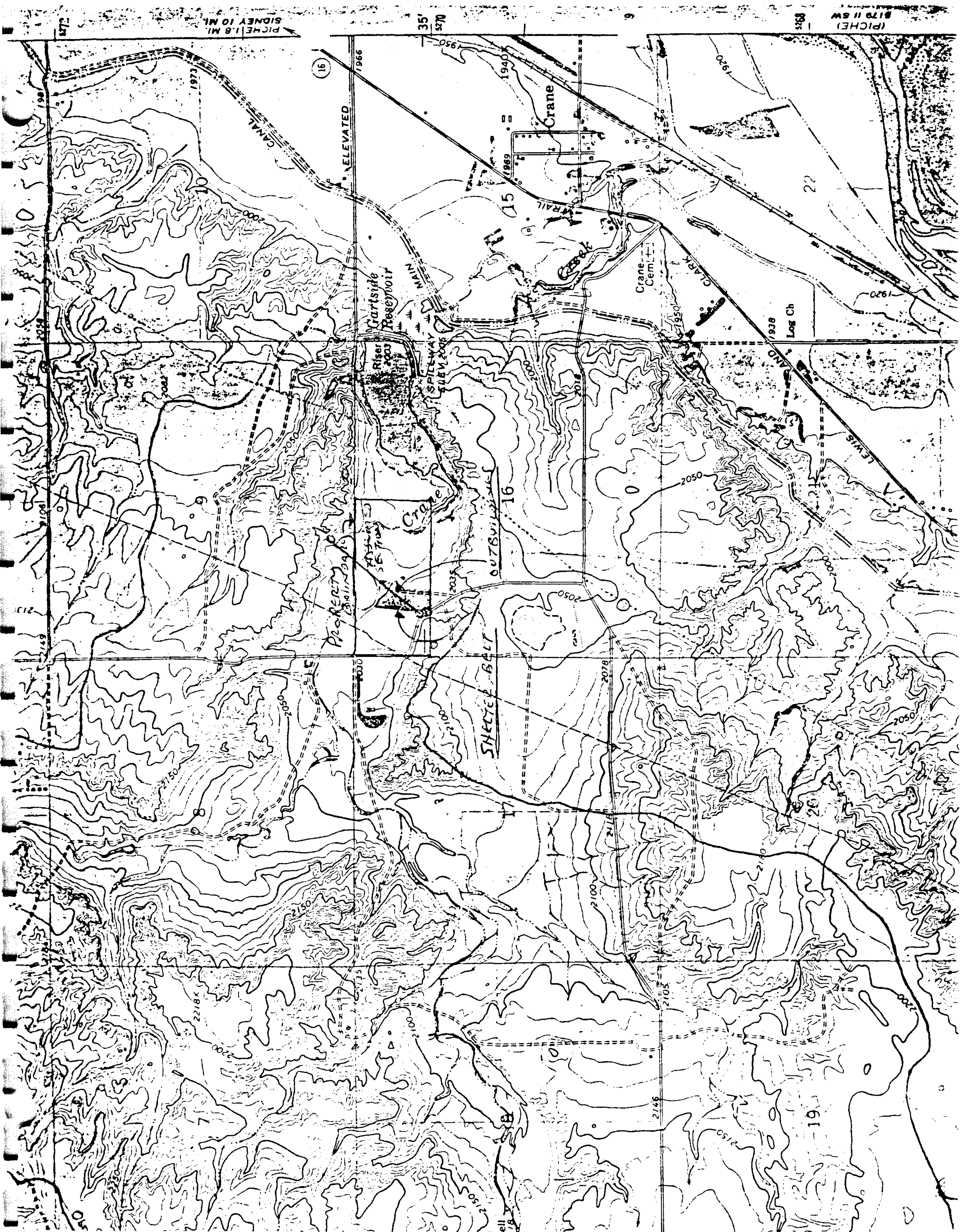

PICHE 1.8 MI.
SIDNEY 10 MI.
(PICHE)
CANAL
ELEVATED
MAIN
Crane
TRAIL
Creek
Gartside Reservoir
Riser 2003
SPILLWAY ELEV. 2005
Crane Cem
CLARK
Log Ch
LEWIS
AND
PROPERTY BOUNDARY
Crane
OUTBUILDINGS
SHELTER BELT
15
16
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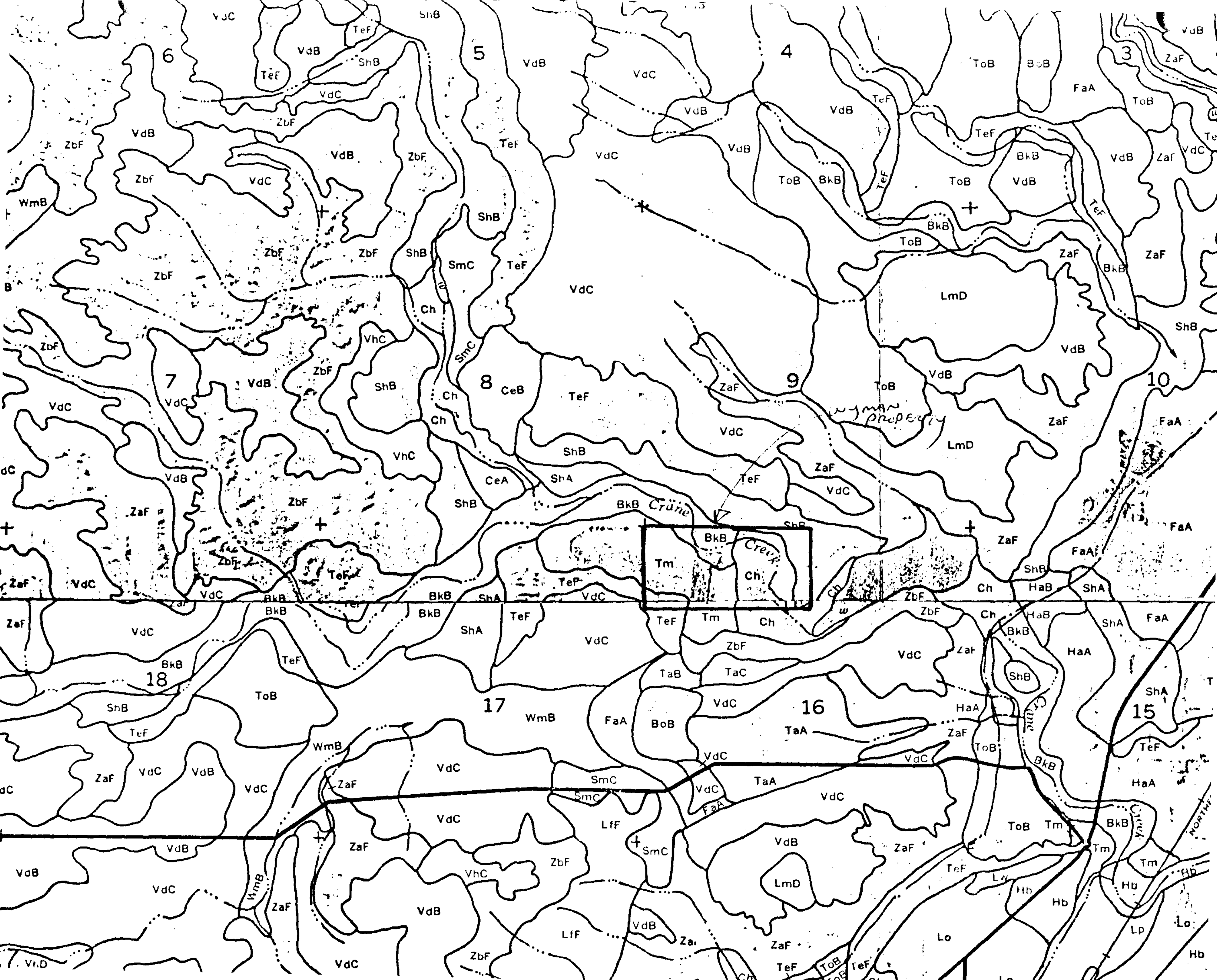
EXHIBIT 2

EXHIBIT 3

SOIL SURVEY OF

Richland County, Montana

United States Department of Agriculture
Soil Conservation Service
In cooperation with
Montana Agricultural Experiment Station


Crane Creek
Nyman property
NORTH
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SOILS INFORMATION

Upper Meadow	BkB	Banks loamy fine sand
Lower Bottom of Meadow	Ch	Cherry, Havrelon and Tremble Soils, occasionally flooded. Silty clay loam
Area of House	Tm	Trembles fine sandy loam
Opposite Side of House	ShB	Shamb loam (silty)

BkB: Uniform to 5' deep - stratified loam fine sand, fine sand and fine sandy loam - (SM) - 6.0 to 20.0 inches per hour permeability - sandy soil.

Ch: Uniform to 5' deep - silty clay loam (CL) 0.2 to 0.6 inches/yr - slow permeability - extreme frost action potential - 85% to 95% passing 200 sieve, mostly silt.

Tm: Uniform to 5' deep - fine sandy loam (SM) 2.0 to 6.0 inches per hour (good farm land) - 35% to 50% passing No. 200 sieve. Formed on low terraces and flood plains.

ShB: Loam - uniform to 5' - (CL-ML or ML) - 0.6 to 2.0 inches/yr - 60-75% passing No. 200 sieve - moderate frost action.

EXHIBIT 4

Table D-11-1. Summary of Streamlaid Deposits Within Buckskin Mine Plan Area in Rawhide Creek and Spring Draw Valleys.

Respective Area	Acres of Streamlaid Deposits				Total Acreage
	fa	Qt_1	Qt_2	Qt_3	
Rawhide Creek	53.2	44.6	62.7	12.7	173.2
Spring Draw	4.0	0.2[1/]	0.0	0.0	4.2
Total	57.2	44.8	62.7	12.7	177.4

1/ These deposits are questionable and may contain up to 11.6 acres of (fa) deposits. (See discussion on page 8). For purposes of AVF determination, a total of 11.8 acres was utilized in Spring Draw.

2/ Because of the intermittent and minor areal extent of these deposits in Spring Draw, they are not reflected on Map D-11-1B.

C. Identification of "Subirrigation or Flood-Irrigation Agricultural Activities".

1. Identification of Extent of Subirrigation.

1.a. Vegetation.

Subirrigation is a process by which water is made available for use by vegetation, commonly by movement of water from the water table up through the root zone by capillary action. In semi-arid and arid climates natural subirrigation establishes an upward movement of water which tends to increase salt concentrations in the soil profile. High salt concentrations often limit the type of vegetation that can exist under these conditions. Therefore, bottomland vegetation sub-types are often the most visible identifiers of the limits of subirrigation. A vegetation study was completed by Stoecker-Keammerer and Associates (Keammerer, 1980); the results of the study are presented in Appendix D-8. Keammerer identifies the following bottomland vegetation sub-types: Spike Rush/Bull Rush Community; Tall Perennial Forb

Community; Tall _ass Meadow; Cattail Community; _altgrass Meadow; and Annual Forb Community. The location of the above mentioned vegetation was a primary factor in determining the limits of subirrigation. The results of these studies are presented in the "Detailed Vegetation Studies of the Valley Bottom" in Appendix D-8.

Subirrigation is found in the channel bottoms and on the overbank areas adjacent to the stream channel. The terraces are not subirrigated as the effective capillary fringe exists below the root zone of the vegetation (see Section 1.b. and Addendum D-11J). This conclusion is supported by the fact that the bottomland vegetation sub-types discussed previously are not found on the terraces. However, overland flow from the valley sides adds to the rainfall used by the vegetation on the terraces and is a factor in increasing production over that of the uplands. This increased production should not be confused with the subirrigation found in the channel bottom and overbank deposits.

In summary, only the tall grass meadow and saltgrass meadow discussed in Keammerer's report in Appendix D-8 are considered to be useful to agriculture. The channel and overbank areas produce more vegetation than the terraces while the terraces produce more than the uplands. Subirrigation plays an important role in maintaining vegetation in the channel and overbank areas. Overland flow from the valley sides adds to the effective rainfall used by vegetation on the terraces and is a primary factor in increasing the production compared to the uplands.

1.b. Effective pillary Fringe.

A second requirement of subirrigation is the presence of roots in the capillary fringe above the water table. Most researchers agree that substantial portions of a plant's root biomass must be within the effective capillary fringe for subirrigation to occur. The effective capillary fringe is defined as that portion of the capillary fringe which can supply water to the overlying plant community at a sufficient rate for growth. A study by Dollhopf (1979), concluded that "substantial root biomass would be needed within 90 cm or 3 feet of the water table before the crop would be considered significantly subirrigated by capillary rise". Thus, a study was conducted by Stoecker-Keammerer and Associates (Keammerer, 1980), based on Dollhopf's conclusions, to determine the characteristics of plant rooting and the normal effective capillary fringe. This information is presented in Addendum D-11J.

The effective capillary fringe concept was taken one step further by HKM Associates by constructing a map depicting the depth to effective capillary fringe during the summer of 1979, Map D-11-7. Effective capillary rise from the water table was estimated based on soil texture and the expected rate of consumptive use in the spring, summer and fall. The position of the effective capillary fringe during these three periods is shown on the salinity profiles in Addendum D-11O. Most roots exist in the top three feet of the surface profile (see

Addendum D-11J) and mid-summer is a critical time for the plants in terms of extracting sufficient quantities of water. Thus, if the depths from the land surface to the effective capillary fringe exceeds three feet, subirrigation cannot be a major source of water for most vegetation.

This paragraph details the assumptions and approach for determining the effective capillary fringe in the spring, summer and fall months. As with most studies, several simplifying assumptions must be made to analyze the problem. It was assumed that capillary action produces a steady state upward flow through a relatively uniform soil. Although soils are seldom uniform in nature, the capillary fringe is usually effective in a layer of soil that is uniform. The process of capillarity is the most pronounced in soils possessing a high percentage of fines such as: 1) clays and clay loams; 2) loams; and 3) silts and silt loams. Clay will lift water the highest distance, but clay does not have sufficient permeability to move water upward at a rate which will meet a significant portion of a plant's moisture demand during the summer months. Loams exhibit the greatest permeability, but will not move water as far above the water table as silts or clays. Silts will lift water relatively high and still have sufficient permeability to move significant amounts of water. Thus, depth to water, texture of the soil and rate of water movement to satisfy evapotranspiration requirements will determine the height of the effective capillary fringe.

Peak daily use requirements for rushes and sedges (indicator plant species for subirrigation) were taken from Addendum D-11M as follows:

Peak Use Requirement	Spring (April)	Summer (July)	Fall (October)
Consumptive Use (inches/day)	0.10	0.35	0.10

The relationship between rate of water movement, texture and water table depth is presented in Figure 13I-4, page 221 of the Agronomy No. 11 Monograph, (American Society of Agronomy, 1967), based on the work of Gardner and Fireman (1958). No curves were found for silt soils. However, the effective capillary fringe was increased by 25 percent over that of clay based on numerous geotechnical studies of silt soils. Using these values, the following distances for the effective capillary fringe were determined:

Table D-11-2. Effective Capillary Fringe Estimates

Soil Texture	Distance Above Water Table (Inches)	
	Spring and Fall	Summer
Clay	60"	20"
Silt (125% of Clay)	75"	38"
Loam	55"	30"

The following sample calculation is provided:

Step 1. Determine peak use requirement by going to the computer printout located in Addenda D-11M, Rushes and Sedges, "Con. use/day

(in.)" line, Ap ' and October, and read 0.09 -ounded to 0.10) and 0.10, respectively. No adjustment for salinity or density was made to any values and all of the water was assumed to originate from subirrigation. For July, go to the "U Peak" line and read 0.50 inches per day. As shown in Table D-11-4, page 24 of Volume XIII "Source of Water", 70% of total consumptive use is furnished by subirrigation. The peak daily consumptive use of 0.50 inches per day was multiplied by 0.70 to obtain 0.35 inches/day. This value reflects that amount of water moving up through the soil profile by subirrigation to be evaporated or transpired by vegetation.

Step 2. Determine the depth, given a uniform soil texture, at which the water table must exist versus an evaporation (or transpiration) rate at a point above the water surface. This was done by using Figure 13I-4 as referenced on page 18. For example, in July, for clay the evaporation rate is 0.35 inches per day or .889 cm/day. The curve yields a water table depth of 50 cm or 19.7 inches (rounded to 20 inches) necessary to support this rate.

The most limiting values are for the hot summer months when the Potential for evapotranspiration is high. Thus, the vegetation must be able to send roots down within 20 to 38 inches of the water table to utilize significant amounts of water from this source.

In summary, Map D-11-7 depicts those areas where the effective capillary fringe was close enough to the surface to be useful to vegetation in the summer of 1979. This map was constructed by plotting

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over 200 point and drawing contours betwe the points. Basic information included water table and topographic contour maps, and soil survey data and maps such that the three soil textures could be identified. This map covers essentially the same areas as Map D-11-4 which depicts the areal extent of subirrigation within the mine plan area. Map D-11-4 was based primarily upon information given in Appendix D-8, "Vegetation Studies Along Rawhide Creek and Spring Draw of the Buckskin Mine" by Stoecker-Keammerer and Associates dated November, 1980. Other indicators of subirrigation which influenced the mapping of the areal extent of subirrigation will be subsequently discussed in detail.

1.c. Daily Water Table Fluctuation.

A third method of verifying subirrigation can be accomplished by examining automatic water stage recorder charts during the growing season months. The water table will exhibit daily fluctuations in response to evapotranspiration (ET) losses when subirrigation is occurring. Two wells exhibited this characteristic (E-7 and MW1-A4, which are located on Maps D-11-2A and 2B) verifying the existence of subirrigation. A third well, E-11-0, was also monitored, but did not show evidence of subirrigation. Many wells would be necessary to define the limits of subirrigation by this method.

Examination of the recorder charts offers the opportunity for actual measurement of evapotranspiration. Records for a typical 14-day period from June 21 to July 4, 1981 are presented in Table D-11-3. These

Table D-11-3. Evapotranspiration Calculated From Water Table Diurnal Fluctuations, MW1-A4
June 21 to July 4, 1981
Reeds and Rushes, Gillette, Wyoming

Date	Rate of Recovery (r)[1] 12:00 AM to 4:00 AM		Net Fall of Water (d)[1] 24-hour Period		Daily q[1] Subirrigation		[2] Mean Temp.		[2] Precipitation	
	cm/hr.	in/hr	cm	in	cm	in	°C	°F	cm	in
6/21	.135	.053	2.032	0.80	.92	0.36	17.8	64		
6/22	.084	.033	1.626	0.64	.64	0.25	18.3	65		
6/23	.084	.033	1.524	0.60	.62	0.24	18.3	65		
6/24	.107	.042	2.083	0.82	.81	0.32	18.9	66		
6/25	.107	.042	1.651	0.65	.74	0.29	20.6	69		
6/26	.137	.054	1.575	0.62	.85	0.34	27.2	81		
6/27	.036	.014	1.575	0.62	.43	0.17	22.2	72	0.94	0.37
6/28	.069	.027	0.762	0.30	.42	0.17	15.6	60		
6/29	.091	.036	1.676	0.66	.68	0.27	17.8	64		
6/30	.076	.030	1.372	0.54	.56	0.22	23.3	74		
7/1	.061	.024	0.914	0.36	.42	0.17	26.1	79	0.18	0.07
7/2	.137	.054	1.473	0.58	.83	0.33	20.0	68		
7/3	.114	.045	1.422	0.56	.74	0.29	22.2	72		
7/4	.152	.060	1.676	0.66	.94	0.37	22.8	73		
Totals					9.60	3.79			1.12	0.44
Averages	0.10	0.039	1.53	0.60			20.8	69.4		

1/ $q = S_y (24\ r + d)$; S_y = Specific yield (0.175) which is assumed to be the difference between saturation (35%) and field capacity at 1/3 bar (17.5%) determined in the sandy loam soils in which the water table fluctuates. See U.S.G.S. Water Supply Paper 1662-D.

2/ Source: Gillette 2E Weather Station data

EXHIBIT 5

Coal Resources and Cenozoic Geology of the Girard Coal Field, Richland County, Montana

GEOLOGICAL SURVEY BULLETIN 1310

Prepared as part of the Department of the Interior program for the development of the Missouri River basin

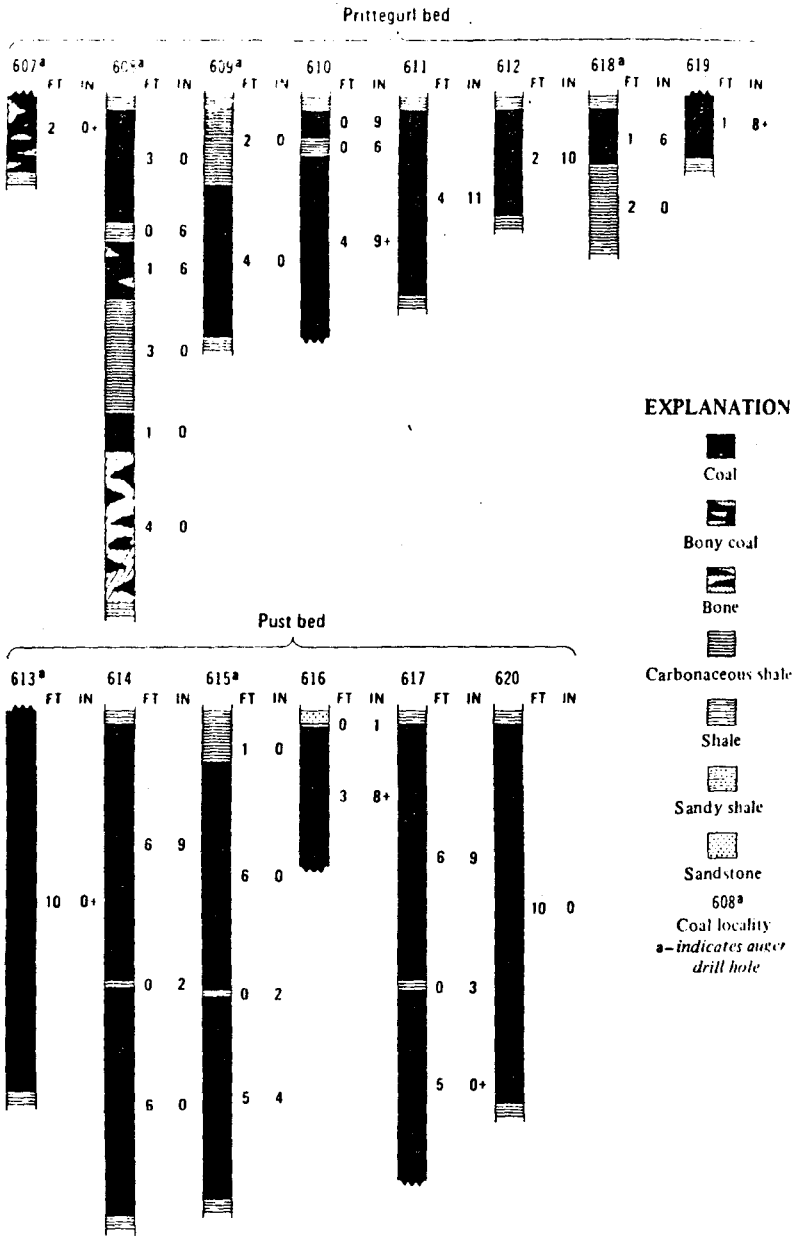


FIGURE 14.—Graphic sections of coal beds in T. 21 N., R. 57 E.

PRITTEGURI COAL BED

The Prittegurl coal bed, about 100 feet above the Pust bed, is exposed in the valleys of Fox Creek, Crane Creek, Sears Creek, and their tributaries. The coal bed was not mapped in all parts of the township, because of a lack of exposures. At locality 611 the coal bed measures 4 feet 11 inches in thickness, and 13 feet of coal, bony coal, bone, and carbonaceous shale is present at locality 608.

UNEXPOSED COAL BED

The Sears bed, exposed in sec. 31, T. 21 N., R. 58 E., is 9 feet 3 inches thick at locality 606 and is believed to underlie the southeast corner of T. 21 N., R. 57 E., about 75 feet below the Pust coal bed.

T. 21 N., R. 58 E.

(fig. 15)

SEARS COAL BED

The Sears bed crops out where Sears Creek and Crane Creek empty onto the entrenched valley of the Yellowstone River at the level of the Crane Creek Gravel. The bed ranges in thickness from more than 7 feet at locality 595 under the town of Crane to 10 feet with a 6-inch-thick shale parting 1 foot below the top near the mouth of Sears Creek at locality 605. The Sears bed is about 55–100 feet below the Pust bed in the Sears Creek–Crane Creek area.

PUST COAL BED

The Pust bed crops out in the steep slopes below the Cartwright Gravel terraces. The bed ranges in thickness from 8 feet 8 inches at locality 600 to about 14 feet in an auger hole at locality 594.

PRITTEGURL COAL BED

The Prittegurl bed is present in the northwestern part of the township, but it is concealed by surficial deposits, or perhaps was removed prior to deposition of the surficial deposits, in some parts of the township. The bed ranges in thickness from about 3.5 feet in an auger hole at locality 586 to 4 feet 11 inches at locality 599.

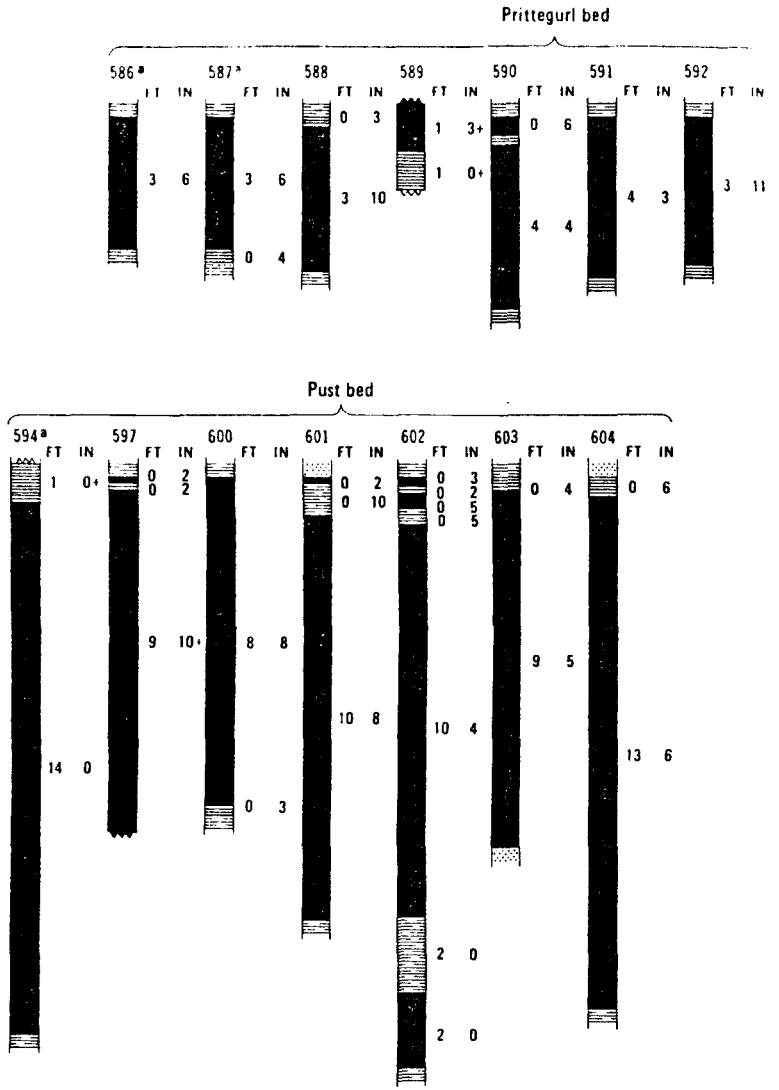
T. 22 N., R. 56 E.

(fig. 16)

PRITTEGURL COAL BED

The only mappable coal bed in T. 22 N., R. 56 E., crops out on the south side of Fox Creek valley. The bed ranges in thickness from 7 feet 8 inches at locality 535 to 2 feet of clean coal at locality 537.

UNEXPOSED COAL BEDS



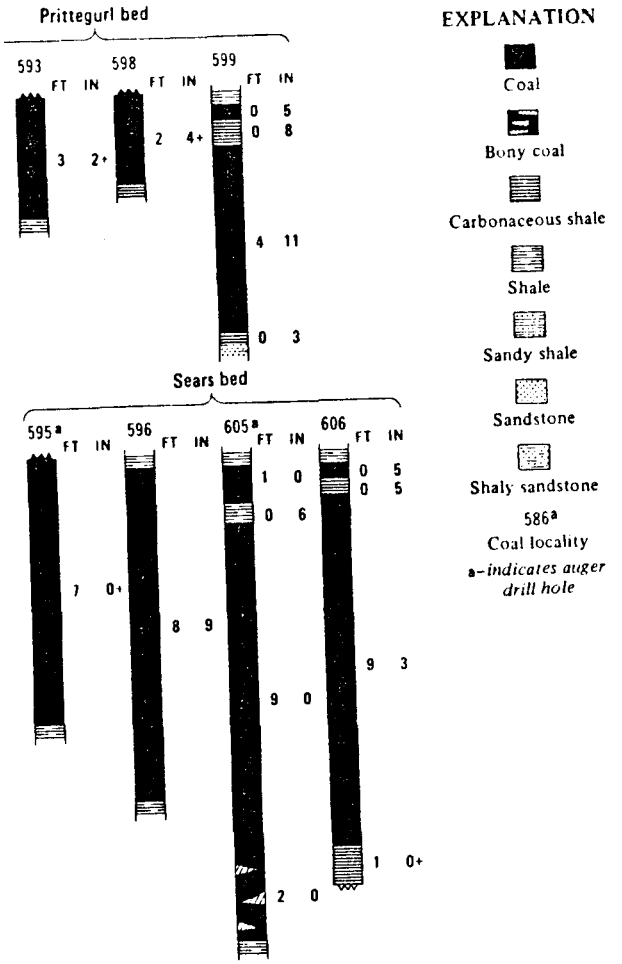


FIGURE 15.—Continued.

FIGURE 15 (above and facing page).—Graphic sections of coal beds in T. 21 N., R. 56 E.

exposure, in sec. 17, in the township. However, it is 7.5 feet thick in sec. 1, T. 21 N., R. 56 E.

T. 22 N., R. 57 E.

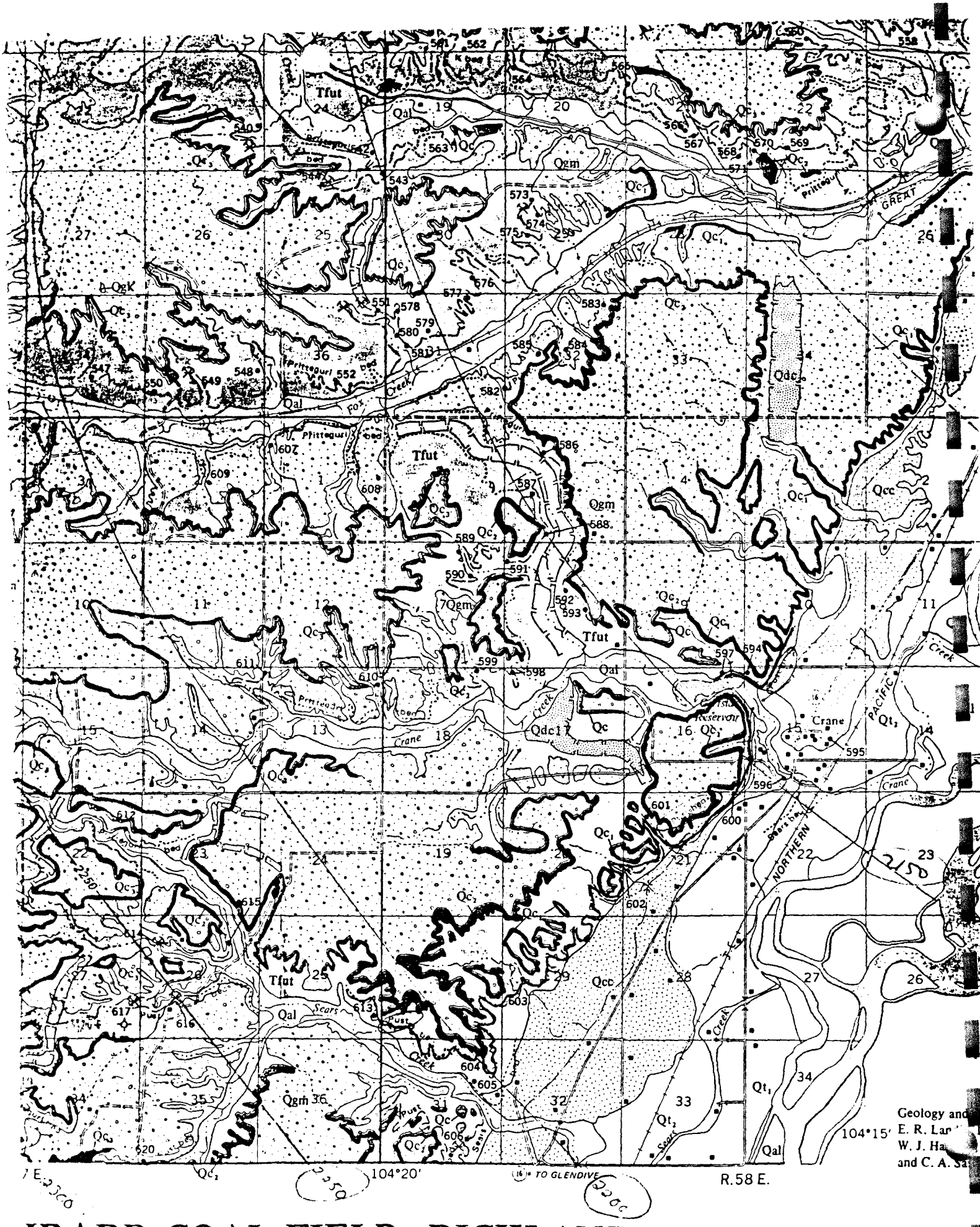
(fig. 17)

PRITTEGURL COAL BED

The lowest coal bed exposed in the township crops out in the valleys of Fox Creek and North Fork Fox Creek, about 100 feet above the Pust coal bed. It usually has a parting near the middle, but in some places the parting is absent. The bed ranges in thickness from 21 feet, with an 11-foot-thick shale and sandstone parting 7 feet above the base, at locality 546 to 3 feet 3 inches at locality 542.

K COAL BED

The coal bed exposed in the valley of North Fork Fox Creek about 120–130 feet above the Pust bed ranges in thickness from 7 feet, with a 2-foot-thick carbonaceous shale parting 4 feet above the base, at locality 540 to 3 feet at locality 543.



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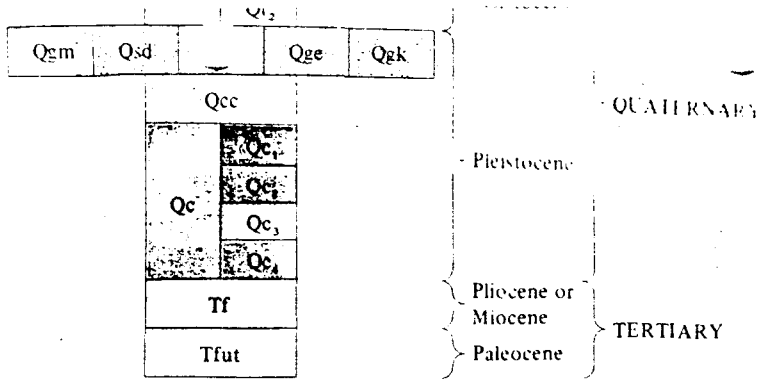
and C. A. Sa

IRARD COAL FIELD, RICHLAND COUNTY, MONTA



DESCRIPTION OF MAP UNITS

Qal — FLOOD-CHANNEL ALLUVIUM (HOLOCENE AND PLEISTOCENE)

Qt_1 — Younger and lower flood-plain terrace gravel

Qt_2 — Older and higher flood-plain terrace gravel

GLACIAL DRIFT (PLEISTOCENE–EARLY WISCONSIN?)

Qgm — Ground moraine – Till and ice-crack morainal deposits

Qsd — Stratified drift – Undifferentiated proglacial sediments; includes some ice-contact deposits

Qdc — Melt-water and diversion channel deposits – Clay and silt

Qge — Esker – Mostly crossbedded sand- to cobble-size material

Qgk — Kame – Mostly crossbedded sand- to cobble-size material

Qcc — CRANE CREEK GRAVEL (PLEISTOCENE–YARMOUTH INTERGLACIATION) – On Crane Creek terrace

Qc — CARTWRIGHT GRAVEL (PLEISTOCENE) – On successively older and higher parts of the Cartwright terrace

Tf — FLAXVILLE GRAVEL (PLIOCENE OR MIOCENE)

Tfut — TONGUE RIVER MEMBER OF THE FORT UNION FORMATION (PALEOCENE)

——— CONTACT – Dashed where approximately located; dotted where concealed

——— COAL BED AND CLINKER – Dashed where approximately located; dotted where concealed by soil or slope wash

——— Clinker formed by the burning of a coal bed along a narrow zone

Large area of clinker

Extent of the clinker – Approximately the limit of burning

•600 MEASURED COAL SECTION OR AUGER HOLE

STRUCTURE CONTOURS – Drawn on the base of the H coal bed about 650 feet above the base of the Tongue River Member of the Fort Union Formation. Dashed where approximately located; short dashed where projected. Contour interval 50 feet

GLACIAL MELT-WATER OR DIVERSION CHANNEL

APPROXIMATE LIMIT OF GLACIATION

COAL MINE

GRAVEL OR CLINKER PIT

OIL WELL

UNSUCCESSFUL TEST WELL

BUREAU OF LAND MANAGEMENT LAND CORNER – Located

U.S. COAST AND GEODETIC SURVEY TRIANGULATION STATION

☆ U.S. GOVERNMENT PRINTING OFFICE: 1976—677-209/27

EXHIBIT 6

EXHIBIT 6

7. Drain spacing computed by the following steady state formulae:

Drains above a barrier

$$L^2 = \frac{4K\ (b^2 - a^2)}{Qd}$$

where L = Distance between parallel drains (ft.) which must be corrected for convergence for drains above a barrier (Correction to be subtracted from L)

K = Weighted hydraulic conductivity from root zone depth to top of barrier = $(ft^3/ft^2)/day$ = ft/day

a = Distance from drain to barrier (ft.)

b = Distance from bottom of 3-foot root zone to barrier (ft.)

Qd = Uniform steady recharge rate $(ft^3/ft^2/day)$

In arid or semiarid areas Qd can be estimated using the following equation:

$$Qd = \frac{\text{Computed deep percolation per irrigation (ft)}}{\text{Irrigation frequency during period of maximum consumptive use (days)}}$$

K = 1000 FT / YEAR = 2.75 FT / DAY

b = 17 FEET 3 FEET BELOW 20' SATURATED DEPTH

a = 11 FEET 6 FOOT DRAIN DEPTH

Qd = 200 GPM OVER 20 ACRES (ASSUMED INFLOW FROM COAL)

.44 CFS OVER 871,200 FT^2

38,500 FT^3/DAY OVER 871,200 FT^2

$$Qd = \frac{38,500}{871,200} = .044$$

$$L^2 = \frac{(4)(2.75)(17^2 - 11^2)}{.044} \qquad L = 200'$$

EXHIBIT 7

ECONOMICAL DRAIN DEPTH FOR IRRIGATED AREAS

J. N. Christopher[1] and R. J. Winger, Jr.,[2] M.ASCE

INTRODUCTION

Drainage engineers should consider many factors in selecting design depth for subsurface drains. For some conditions, the engineer chooses drain depth based on his experience with local practices. If local custom is to build shallow drains, the engineer will likely continue the practice. Often he continues practices common to an area because drain laying machines have been adapted to local conditions and design standards.

By far the largest majority of subsurface drains the world over are placed at shallow depths - less than 6 ft (L8 m). The custom of using shallow subsurface drains on irrigation projects is probably a carry-over from the days of hand installation. Even today in much of the world, the primary trenching method is still the tiling spade or shovel.

Shallow drain construction can be justified for humid areas. The main purpose of shallow-type drainage in humid areas is to lower water tables rapidly at the beginning of the growing season so crops can be planted. Once the water table has been lowered, deep percolation from rainfall usually is not great enough to cause the water table to rise again until after harvest. The primary consideration in selecting a drain spacing in humid areas is a rapid decline of the water table to depths that permit planting of crops. After the water table drops sufficiently for planting crops, the rate of decline should be reduced and stopped. The shallow water table allows capillary rise of water in the soil to supply all or part of the crop's consumptive use. Closely spaced shallow drains accomplish this job.

In irrigated areas, the drainage function has a different purpose - particularly in arid climates. The fundamental purpose of drainage in irrigated areas is to remove salts from the root zone and control the maximum rise of the water table during the growing season. Rapid lowering of a water table is seldom the main concern in irrigated areas. However, cost per unit area drained is always a major concern.

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[2]Chief, Drainage and Groundwater Branch, Engineering and Research Center, Bureau of Reclamation, U.S. Department of the Interior, Denver, Colorado.

THE CASE FOR DEEP SUBSURFACE DRAINS

Since its beginning, the Bureau of Reclamation has had to deal with irrigation projects having serious drainage problems. Techniques formerly used to select lands for irrigation failed to predict accurately the need for drainage. In the 1950's Bureau engineers began developing new techniques for determining drainage requirements. The techniques they developed grew from a motive to provide adequate drainage at least cost. An accurate spacing was one of their main concerns. Methods used by the Bureau for determining drain spacing and the relationship of spacing to other factors have been amply presented in papers written by L. D. Dumm and R. J. Winger, Jr.

In general, less total length of deep drain is required to drain a unit of land than is required with shallow drains. This is true because drain spacing increases as the allowable height of water table between drains increases. Less drain per unit area implies less costs. However, the cost per unit length of drain increases with depth and tends to offset the cost reduction realized with wider spacings. Because of the offsetting tendency, economic limits for drain depths can be determined.

In the late 1950's, Bureau of Reclamation drainage engineers developed economic guidelines for selecting drain depth, and adopted the practice of installing drains about 8 or 9 ft (2.4 or 2.7 m) deep. Contractors and shallow drain advocates have criticized the Bureau for this practice. Their criticism generally has centered around the apparently excessive cost per unit length of deep drain. However, cost per unit length of drain does not indicate directly an economic or optimum drain depth.

Unit prices and drain laying equipment have changed rapidly in recent years. This paper has been written to show current relationships between costs and drain depth.

PREPARING DATA FOR ANALYSIS

Economic design depth of drains can be determined by analyzing costs. To do so, drainage engineers need data on cost for excavation, gravel envelope, furnishing, and laying pipe, etc. Weighted average costs per foot of drain from bid abstracts should be determined and tabulated, as in the example that follows:

Summary of Bids in Cost Per Foot of Completed Drain for An 8-foot Deep Drain

	Excavation*	Envelope	CMP*	Manholes*
Cost per foot	$1.48	0.56	0.03	0.27
Cost per meter	4.85	1.84	0.10	0.88

*Includes separable items that have been combined for simplicity.

Pipe - Diameters in Inches (Centimeters)

	4 (10.16)	6 (15.24)	8 (20.32)	10 (25.40)
Cost per foot	$0.10	$0.35	$0.30	$0.14
Cost per meter	0.33	1.15	0.98	0.46

	12 (30.48)	15 (38.10)	18 (45.72)	21 (53.34)	24 (60.96)
Cost per foot	$0.09	$0.09	$0.06	$0.04	$0.01
Cost per meter	0.30	0.30	0.20	0.13	0.03

This data can be simplified by combining related items and expressing costs as a percent of the total.

Summary of Cost Per Foot for An 8-foot Deep Drain

Excavation	42 percent
Pipe	42 percent
Envelope	16 percent
Total	100 percent

The data are used in the latter form to estimate costs of drains at various depths when specific data are not available. Also, the latter form of the data is useful in projecting costs to nearby areas where drains have not been constructed.

The most important factor to know, other than material costs, is the travel speeds of drain laying equipment. A wide variety of pipe laying machines are available on the market. For an analysis, some idea of the rate of installing drains with commonly used equipment must be obtained through manufacturers' literature or developed from time-motion studies. In this study, trenching machinery has been grouped into three broad categories:

1. High speed trenchers - Various designs of machines that install pipe at maximum rates up to 3,000 ft per hr (915 m per hr).

2. Conventional trenchers - Consist primarily of ladder and wheel-type trenchers normally used on pipe laying jobs. These machines usually have a maximum speed of about 600 ft per hr (183 m per hr).

3. Constant-speed trenchers - Although no commonly manufactured machine truly fits this category, a few slow moving heavy duty trenchers have been manufactured that justify this category. Rate of installation varies little with depth of operation.

This analysis does not include data on all types of machines.

Figure 1 shows rates of installation versus drain depths that have been experienced on Bureau projects.

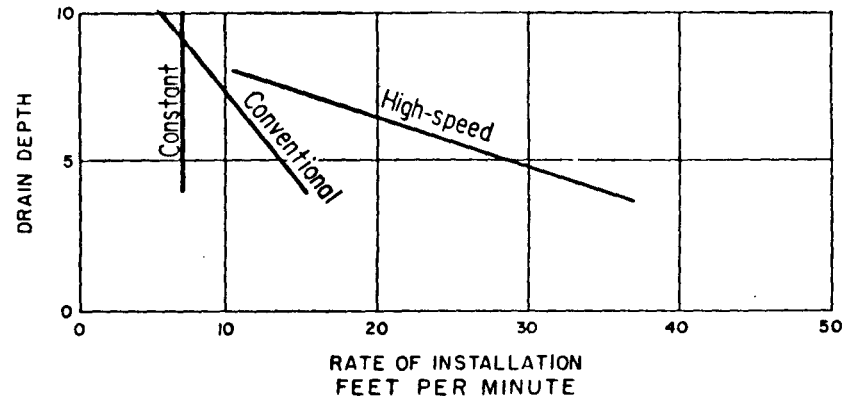


Fig. 1 - Rates of Drain Installation Versus Drain Depth

The rate of installation and the length of drain required per acre drained were used to determine the relationship between cost per acre and depth of drain.

In the calculations for the example that follows, drain spacings were determined by standard Bureau procedures. Cost information was taken from bid abstracts for USBR designed drains.

1. Average total cost of an 8-foot-deep drain was $3.52 per linear foot 1975 Costs USBR Index 195/169 = 1.153 x $3.52 = $5.80/ft

2. Costs for the 8-foot-deep drain were distributed as follows:

   42 percent: Excavation
   42 percent: Pipe
   16 percent: Gravel envelope

3. Drainage requirement varied with drain depth as follows:

Drain depth in feet	Drain spacing in feet	Length per acre in feet
4.5	355	123.0
5.0	498	87.5
5.5	605	72.0
6.0	693	62.9

Drain depth in feet	Drain spacing in feet	Length per acre in feet
6.5	768	56.8
7.0	835	52.2
8.0	945	46.1

4. Cost per minute of operating the trencher at the 8-foot drain depth was calculated as follows:

   Excavation cost = $3.52 x 42% = $1.48/ft
   Cost/acre for excavation = ($1.48/ft)(46.1 ft/ac) = $68.23/ac
   Rate of installing an 8-foot drain = 10 ft/min (from Fig. 1)
   Cost of excavation/minute = ($68.23/ac)(10 ft/min)/46.1 ft/ac
   = $14.80/min

5. Cost per foot for envelope and pipe was 16 percent and 42 percent of the total cost of a drain installed at 8 feet, or $0.56 and $1.48, respectively. The cost per foot for furnishing and installing pipe was $1.48.

This information and the rate of installation was combined with material quantities for various depths of drain. Results of this process are shown in Table 1.

The cost of excavation is obtained by multiplying the dollars per minute value by the minute per acre value to install the drain. Pipe and gravel envelope cost per acre is calculated by multiplying feet of pipe per acre by the appropriate cost in dollars per foot for materials used in construction.

ANALYZING RESULTS

Drainage costs per acre in Table 1 are least for drains placed about 7 feet (2.14 m) deep. The cost per foot of drain increases with depth but gives no clue as to optimum drain depth. Figure 2 graphically represents data shown in Table 1.

Similar studies were made for conventional and constant speed trenchers using the same approach as in the above calculations.

Figure 3 shows relationships between cost per acre and drain depth for all cases studied.

Figure 3 shows that drains at depths of 7 feet (2.14 m) will cost least if installed with high-speed trenchers. If conventional trenchers are used, drains placed about 8.5 feet (2.59 m) deep will result in the least cost per acre. Constant-speed trenchers approach a constant cost level at about 10 feet (3.05 m).

TABLE 1. - Cost Relationships for Drains Installed with High-speed Trenchers

Drain depth in feet	Drain spacing in feet	Length per acre in feet	Time per acre in minutes	Cost in dollars per acre: Excavation	Pipe	Envelope	Total	Cost per foot
4.5	355	123.0	3.73	55	182	69	306	2.49
5.0	498	87.5	2.92	43	130	49	222	2.54
5.5	605	72.0	2.67	40	107	40	187	2.60
6.0	693	62.9	2.62	39	93	35	167	2.66
6.5	768	56.8	2.84	42	84	32	158	2.78
7.0	835	52.2	3.07	45	77	29	151	2.89
8.0	945	46.1	4.61	68	68	26	162	3.52

Note: 1 ft = 0.305 m

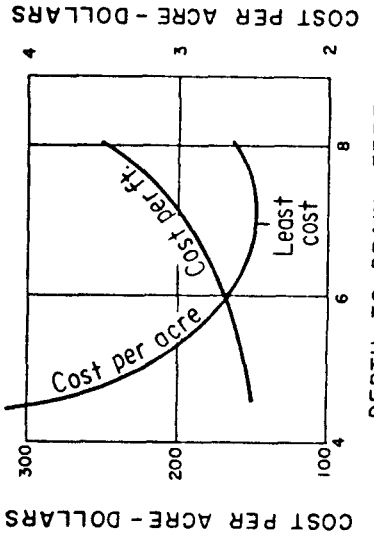


FIG. 2 - Cost Relationships Shown in Table 1 for Drains Installed with High-speed Trenchers

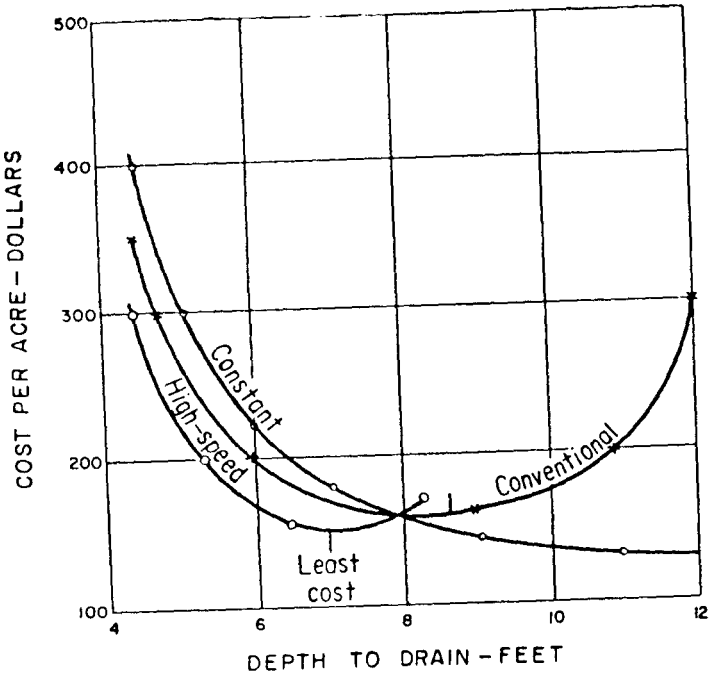


FIG. 3 - Cost Per Acre by Drain Depth for High Speed, Conventional and Constant Speed Trenchers

EFFECT OF CHANGING COSTS

Figure 4 shows effects of reducing excavation and pipe costs by one-half, based on drains installed with a conventional trencher. Reducing excavation costs by 50 percent does not affect selection of drain depth. However, reducing pipe costs by 50 percent changes optimum depth of drain to 8.0 feet (2.44 m) instead of 8.5 feet (2.59 m).

Because of these and similar studies, Bureau of Reclamation engineers design drains at depths ranging from 7 to 10 feet (2.14 to 3.05 m) deep. They generally place the drain on barrier when the barrier layer is 9 feet (2.75 m) or less below the ground surface. For layered soils with deep barriers, the drain is placed in the most permeable material at depths ranging from 7 to 9 feet (2.14 to 2.75 m).

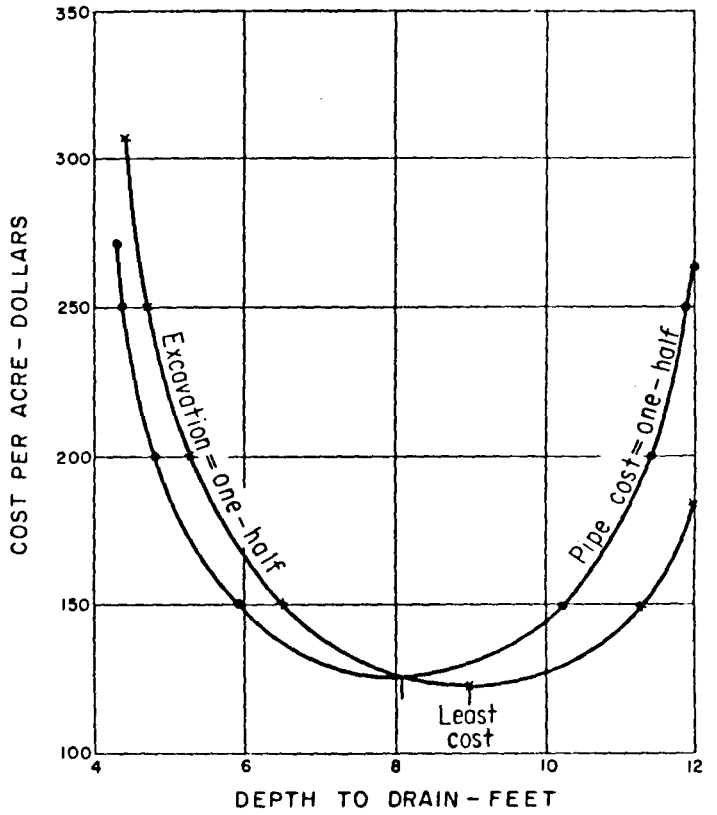


FIG. 4 - Cost Per Acre by Drain Depth for Conventional Trenchers

SUMMARY AND CONCLUSIONS

The study shows that the cost per unit length of drain by itself is not a valid indicator of an economic drain depth. In irrigated areas, total drainage cost per unit area drained is an important criterion for selecting drain depth. The study further shows that drain costs vary primarily with spacing, drain depth, and rate of installing the drain. To select the most economic depth, relationships between these variables should be analyzed. In this study, the rate of construction proved to be the most important factor in determining economic drain depths.

For drainage of irrigated land, economic drain depth ranges from 7 to 10 feet (2.14 to 3.05 m). However, the final depth selected for design

EXHIBIT 8

Plants of South Dakota Grasslands

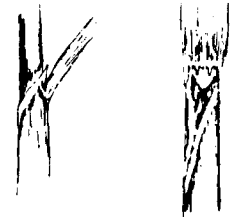
A Photographic Study

Bulletin 566 • December 1970 • Agricultural Experiment Station • South Dakota State University, Brookings

Indiangrass

Sorghastrum nutans

Two indiangrass fertile florets. Notice twisted awns and both pairs of sterile florets attached at the base of each fertile floret. (Actual length of parts shown is about 7/8 inch.)



Indiangrass leaf blade and sheath showing double split ligule.

Indiangrass or yellow indiangrass, is a native, warm season, tall grass which spreads by seed and short rhizomes. Golden-yellowish, lance-shaped, rather dense panicles are 4-12 inches long on erect stems 4-8 feet tall. Leaves are rather stiff and straight, arising from the stems at 45° angles. Prominent vertical projections are located on both sides of the sheath throat. Leaves are lighter green than those of big bluestem, a common associate.

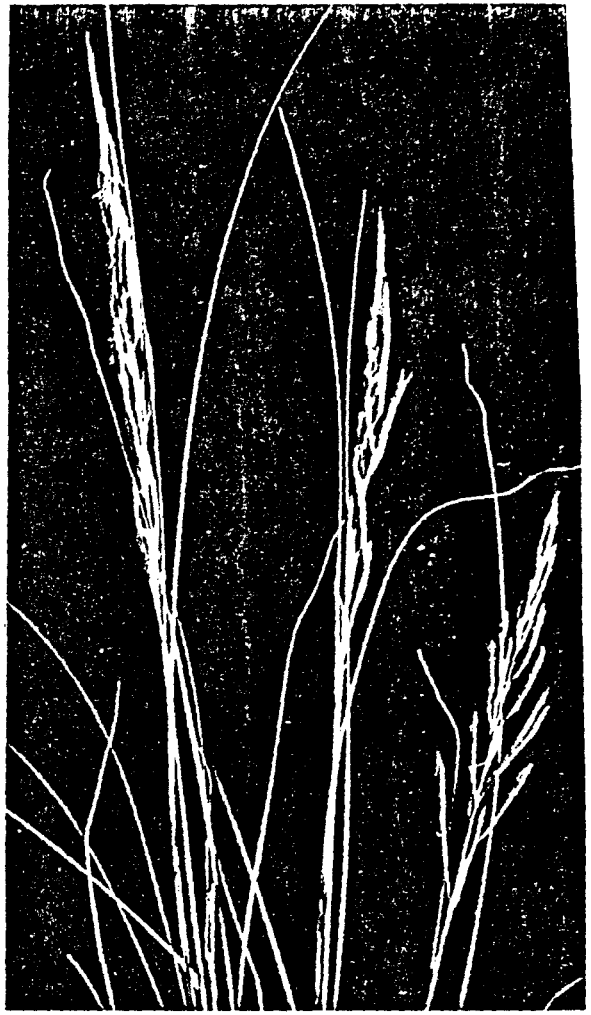
Indiangrass is found in eastern Canadian provinces and in all but six far western states. It is most commonly associated with bluestem grasses, particularly in the Central Lowlands and eastern portions of the Great Plains. It is seldom a dominant, but may be found in nearly pure stands in lowlands. In South Dakota it occurs in the eastern part and in the southwestern sand hills.

This grass, relished by livestock, produces excellent hay if cut before the flower stalks develop, producing almost as much as big bluestem. In recent years it has been seeded in mixtures with other native tall grasses in the true prairie region.

Prairie cordgrass

Spartina pectinata

Typical dense stand of prairie cordgrass in a wet swale.



Prairie cordgrass, also known as cordgrass, sloughgrass, or tall marshgrass, is one of the tallest grasses that is native to North America. It grows 4-10 feet tall. The name cordgrass probably was suggested by the toughness of the long coarse leaves and thick, tough stems. Leaf blades may be up to 30 inches long with sharp teeth or points on the margin. As many as 10-30 spikes may be on each flowering stem. Spikes, although much larger, closely resemble those of blue grama. Soil beneath stands of prairie cordgrass is filled in the upper inches with a mat of coarse, thick, woody, many branched rhizomes.

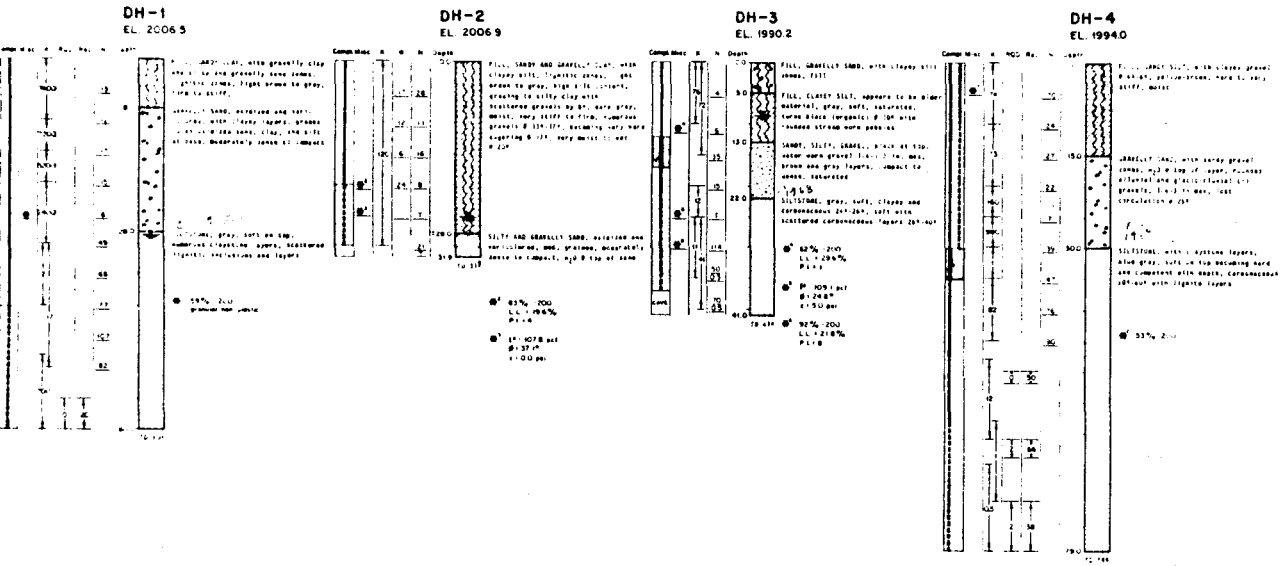
This warm season, somewhat alkali tolerant, grass occupies wet soils of the prairie provinces of Canada and is native in all but eight states of the southwest and southeast. In South Dakota it is more abundant in the eastern part, but is present in drainageways of the western portion of the State as well. Vigorous rhizomes and dense shade produced allows cordgrass to grow in pure stands near sloughs. With drought or draining of lowlands, prairie cordgrass gives way to big bluestem and western wheatgrass. On the water side of cordgrass communities, tall sedges, rushes, and marshgrasses are common. On the drier side, switchgrass or Canada wildrye communities are common. Prairie cordgrass communities are seldom plowed because of their marshy location. Because of coarse stems, and very rough edged leaves, cordgrass is not readily eaten by livestock except in the spring or when other forage is dry. Prairie cordgrass decreases with heavy grazing pressure. Cordgrass is commonly used for hay with two or three cuttings a year being a desirable practice to prevent coarseness.

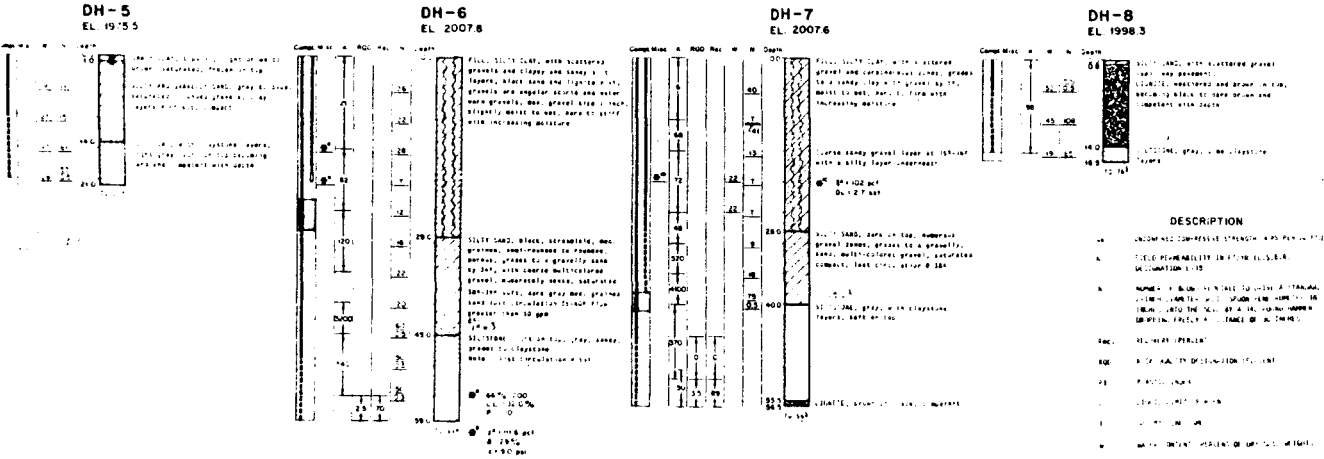
Alkali cordgrass, *S. gracilis*, is similar in appearance to prairie cordgrass, but is shorter, 2-3 feet tall, and more common on wet alkali and saline meadow areas. In addition to the shorter height, the spikes are smoother. It is found locally throughout South Dakota.

Leaves and stems of prairie cordgrass, and possibly alkali cordgrass, were used by pioneers for thatching roofs and covering haystacks. Prior to that, Indians thatched lodges with cordgrass before covering the grass mat with soil.

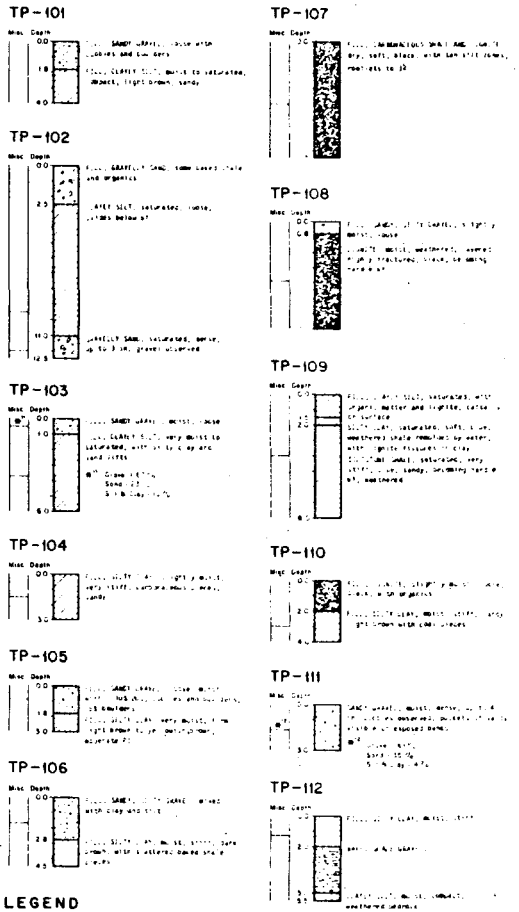
EXHIBIT 9

DRILL HOLE LOGS





TEST PIT LOGS



DESCRIPTION

LEGEND

DRILL HOLE COMPLETION

GEOLOGIC SYMBOLS

SCALE: DRILL HOLE LOGS 1" = 4'; TEST PITS

GARTSIDE DAM
REHABILITATION PROJECT
LOGS OF EXPLORATION HOLES

HKM ASSOCIATES
ENGINEERS-PLANNERS
Airport Industrial Park — Branch Offices
P.O. Box 31318 • Libby, Montana
Billings, Montana 59107 • Sheridan, Wyoming

Sheet No. 2

EXHIBIT 10

EXHIBIT 10

GARTSIDE DAM
ANALYSIS OF GROUND WATER TABLES ABOVE RESERVOIR
VICINITY OF WYMAN RANCH

ASSUMPTIONS

1. Normal pool on USGS Datum EL. 2002 (compares to EL. 1997 on HKM plans).

2. Area of concern in the N1/2 NW1/4 Section 16.

3. Characteristics of alluvium above reservoir are similar to those found at the dam.

4. Flow through alluvium is generally down valley.

5. Stream channel intercepts water table during high water conditions.

6. Slope of subsurface soil, gravel and eroded bedrock contours approximate down valley slope.

7. Insignificant recharge from valley sides.

8. Possible recharge from coal aquifer.

Montana Department of Fish, Wildlife & Parks

227.9

Office Memorandum

TO : Gartside File **DATE:** Feb. 22, 1985

FROM : R. Mayer R. MAYER

SUBJECT: William Wyman Property Field Trip

On February 18, 1985, the following people met at the Wyman property northwest of Gartside Reservoir:

William and Greg Wyman
Roger Perkins, HKM
Rick Bondy, DNRC
R. Mayer, FWP
Rich Schoening, Warden, FWP

William Wyman showed us his property and took us down to the west side of the reservoir. His area is relatively flat with Crane Creek openly flowing down through it. His property has been heavily grazed. The field is unirrigated "slough grass mixture." Water seeps up throughout the field and freezes into areas of ice. His ranch building sits on ground about 20' above the 1997 reservoir level. Existing trees are Cottonwood, Willow, Russian Olive, and Buffalo Berry. Some Cottonwood were dying.

Mr. Wyman told us that his father, Dan, had bought this parcel from the State in the 1920's. At that time, he said it was an "Oasis." He estimated the Cottonwood started growing there about 1900. During the 1920's, Dan Wyman and old Jim Roberts built a diversion dam and channel on the State property to protect a Roberts pond in the vicinity of the existing Gartside Dam. William said the water keeps getting worse in the field and they can no longer cut the grass. Mr. Wyman said that the house basement has water seeping into it.

William Wyman indicated he would like to have the State investigate the following options (in priority):

1. Develop Seven Sisters FAS and breach Gartside Dam;

2. Excavate Gartside so the water level is about 30' lower;

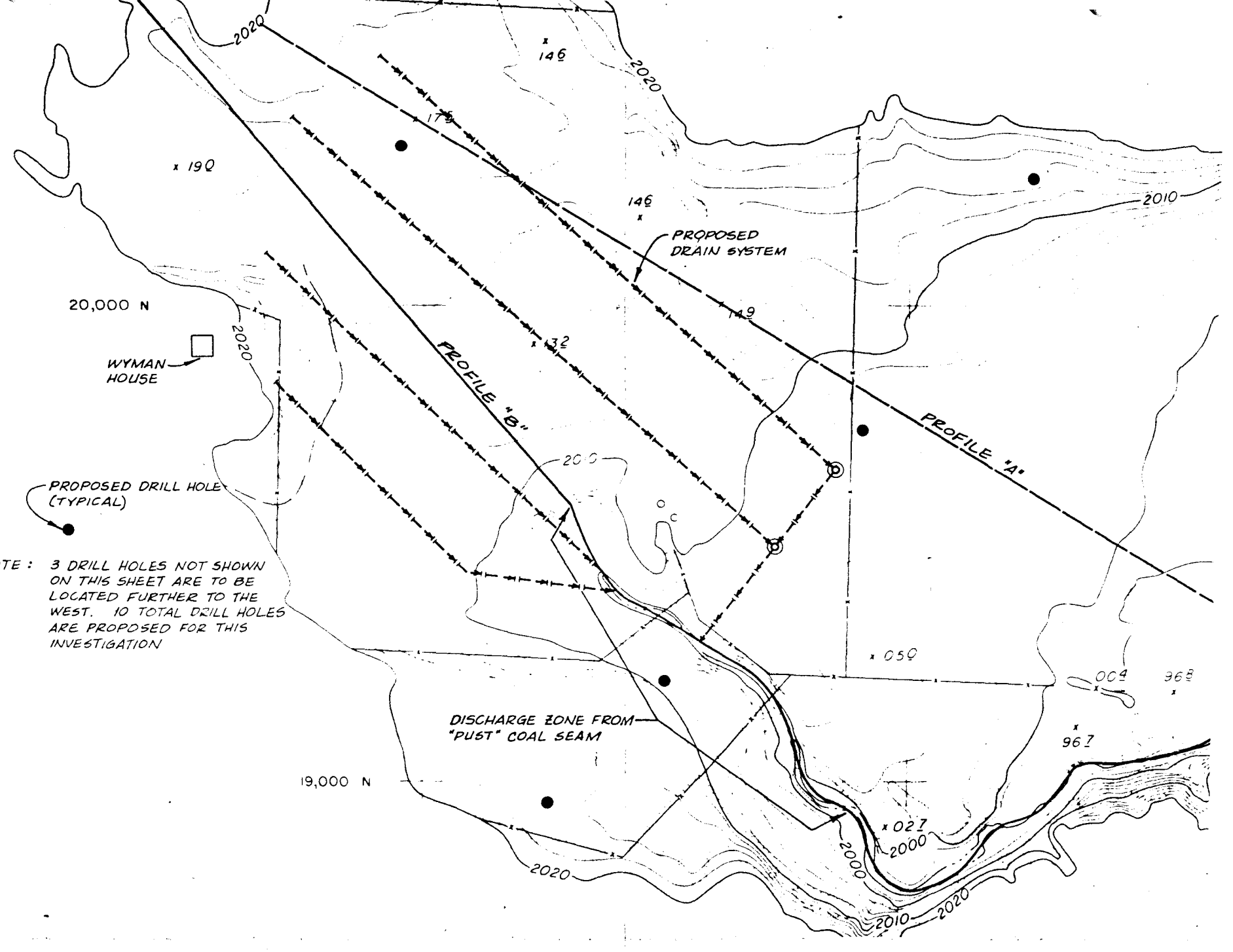
3. Drain his field (he does not really want this option).

William said he would not sell his property but wanted to pass it on to his children. He did not seem to want any money for damages he feels have been caused by the State.

Roger Perkins will prepare a trip report by the end of the week and analyze the situation. He will collect existing aerials of the site that document the ground conditions. He also will contact water and oil drillers of the area and the Bureau of Mines in Butte for well logs. He will estimate costs for testing the site and also drain pipe installation.

This Wyman property appears to historically have been a very wet site. Ground water surfaces in this area from underground strata that carry it for many miles. Solutions will not be cheap.

lmp
Photos in photo file
cc: Doug Monger - Keith Seaburg
Don Hyyppa


2020
146
2020
179
x 190
146
2010
PROPOSED
DRAIN SYSTEM
20,000 N
2020
WYMAN
HOUSE
32
149
PROFILE "B"
PROFILE "A"
200
PROPOSED DRILL HOLE
(TYPICAL)
NOTE : 3 DRILL HOLES NOT SHOWN
ON THIS SHEET ARE TO BE
LOCATED FURTHER TO THE
WEST. 10 TOTAL DRILL HOLES
ARE PROPOSED FOR THIS
INVESTIGATION
x 050
004
968
DISCHARGE ZONE FROM
"PUST" COAL SEAM
967
19,000 N
x 027
2000
2000
2020
2010
2020

VISITORS' REGISTER

LONG-RANGE PLANNING SUB COMMITTEE

BILL NO. WORK SESSION - Long-Range Building Program, RRD, Water Development, C&A Bill and Kleffner Ranch DATE MARCH 8, 1985

SPONSOR

NAME (please print)	RESIDENCE	SUPPORT	OPPOSE
Tom O'Connell	Helena		
PHIL HAUCK	Helena		
RALPH DeCUNZO	Clancy		
MICHAEL BOLIN	HELENA		
DON HUYPER	DFWP HELENA		

IF YOU CARE TO WRITE COMMENTS, ASK SECRETARY FOR WITNESS STATEMENT FORM

PLEASE LEAVE PREPARED STATEMENT WITH SECRETARY.