

Montana State University Report on State-owned Heritage Properties to the Preservation Review Board
Pursuant to MCA 22-3-424 (4)

Due by February 7, 2012

- (a) A list of the heritage properties managed by the agencies as those properties have been identified pursuant to this section.

Montana State University Historic List Provided by SHPO (June 17, 2011):

24GA0352	Ft. Ellis Military Site (Archaeological)	Eligible (CD)
24GA1629	Montana State University Heating Plant	Eligible (CD)
24GA1796	MSU-Bozeman, Danforth Chapel (Post WWII)	Eligible (pending)
24GA1797	MSU-Bozeman, Langford Hall (Post WWII)	Eligible (pending)
24GA1798	MSU-Bozeman, Reid Hall (Post WWII)	Eligible (pending)
24GA1799	MSU-Bozeman, McCall Hall (Post WWII)	Eligible (pending)
24HL0329	Fort Assiniboine (Agricultural Station, MSU)	NR Listed
24HL1382	MSU Northern, Havre Gymnasium (Post WWII)	Eligible (pending)
24JT0162	Central MT Agricultural Exp Station, Moccasin (MSU)	Eligible (CD)
24MA0262	Red Bluff Stage Stop (burned; other buildings?) (MSU)	Eligible (CD)
24YL1859	MSU-Billings, Academic Support Center (Post WWII)	Eligible (pending)
24YL1860	MSU-Billings, Apsaruke Hall (Post WWII)	Eligible (pending)
24YL1861	MSU-Billings, Physical Education Building (Post WWII)	Eligible (pending)

- (b) The status and condition of each heritage property.

24GA0352	Ft. Ellis Military Site	Status: Unknown	Condition: Unknown
24GA1629	MSU Heating Plant	Status: Satisfactory	Condition: Good
24GA1796	MSU-Bozeman, Danforth Chapel	Status: Satisfactory	Condition: Fair
24GA1797	MSU-Bozeman, Langford Hall	Status: Satisfactory	Condition: Good
24GA1798	MSU-Bozeman, Reid Hall	Status: Satisfactory	Condition: Fair
24GA1799	MSU-Bozeman, McCall Hall	Status: Watch	Condition: Fair
24HL0329	Fort Assiniboine (Agricultural Station)	Status: Watch	Condition: Fair
24HL1382	MSU Northern, Havre Gymnasium	Status: Watch	Condition: Fair
24JT0162	Central MT Ag Exp Station, Moccasin	Status: Watch	Condition: Fair
24MA0262	Red Bluff Stage Stop	Status: Threatened	Condition: Poor
24YL1859	MSU-Billings, Academic Support Ctr	Status: Unknown	Condition: Poor
24YL1860	MSU-Billings, Apsaruke Hall	Status: Unknown	Condition: Excellent
24YL1861	MSU-Billings, Physical Education Bldg	Status: Satisfactory	Condition: Failed

- (c) The stewardship efforts in which the agencies have engaged to maintain each heritage property and the cost of those activities

24GA0352	Ft. Ellis Military Site	Total stewardship expenses:	\$0
24GA1629	MSU Heating Plant	Total stewardship expenses:	\$49,831
24GA1796	MSU-Bozeman, Danforth Chapel	Total stewardship expenses:	\$850
24GA1797	MSU-Bozeman, Langford Hall	Total stewardship expenses:	\$34,949
24GA1798	MSU-Bozeman, Reid Hall	Total stewardship expenses:	\$259,168
24GA1799	MSU-Bozeman, McCall Hall	Total stewardship expenses:	\$35,615
24HL0329	Fort Assiniboine (Agricultural Station)	Total stewardship expenses:	\$170,355
24HL1382	MSU Northern, Havre Gymnasium	Total stewardship expenses:	\$88,217
24JT0162	Central MT Ag Exp Station, Moccasin	Total stewardship expenses:	\$2
24MA0262	Red Bluff Stage Stop	Total stewardship expenses:	\$0
24YL1859	MSU-Billings, Academic Support Ctr	Total stewardship expenses:	\$43,150
24YL1860	MSU-Billings, Apsaruke Hall	Total stewardship expenses:	\$59,000
24YL1861	MSU-Billings, Physical Education Bldg	Total stewardship expenses:	\$318,435

- (d) A prioritized list of the maintenance needs for the properties.

MSU collects maintenance needs for all facilities regarding deferred maintenance and capital renewal and records maintenance needs in:

- 1. Facilities Condition Inventory – Deficiency Report (from cyclical assessments)**
- 2. Capital Improvements Projects (capital renewal database)**
- 3. Long Range Building Program (project priority list to the Legislature)**
- 4. Code and Deferred Maintenance Projects (includes Roof and ADA project priorities)**
- 5. Preventative Maintenance Database**

These databases were consulted in providing maintenance needs listed on the individual property report forms.

- (e) A record of the agencies' compliance with subsections MCA 22-3-424 (1) and (2).

MSU-Bozeman has demonstrated compliance with MCA 22-3-424 (1) and (2) with the adoption of the MSU Heritage Building and Sites Policy, in effect since May 2010. The following link connects to the Policy:

http://www2.montana.edu/policy/Heritage_Building_and_Sites_Policy.htm

The MSU Policy is in addition to the University's compliance with the Board of Regents Heritage Properties Policy 1003 (5) and (6).

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g 24YL0001): 24YL1861 (# obtained from SHPO upon receipt of site form)

Property Name: Physical Education Building

Property Town/Vicinity of: Montana State University Billings, MT

Property Date (Year of Origin/Construction or "Precontact") 1957

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): District 1 Building(s) Structure(s) Site(s) Object(s)

Status (Choose one): Satisfactory

Comment:

Condition/Integrity (Choose One): Failed

Comment:

The building has lost its heritage values/eligibility. Painter states "It is significant as (reputedly) Montana's first thin-shell concrete building... Although the building retains most of the aspects of integrity, the aspects of design and feeling are sufficiently important for this building to undermine its integrity."

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ 22,050 Heritage Research/Documentation project activity

\$ Heritage Interpretation/Education/Awareness project activity

\$ Heritage Promotion/Tourism/Marketing project activity

\$ Heritage Preservation/Conservation Plan Development

\$ 298,385 Regular/routine maintenance

\$ Monitoring (reported upon)

\$ Project designed/redesigned to avoid adverse effect to property's heritage values

\$ Other heritage stewardship effort/activity (Explain)

Comment:

Tim Urbaniak our Drafting & Design instructor at the College of Technology engaged his Fall semester students to document our Heritage properties utilizing the latest surveying/architectural technology as their Capstone project (final project prior to matriculation). Approximately 700 hours will have been expended on this endeavor. The report will be completed at the end of the semester, December 15th, 2011 and forwarded separately.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 1 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

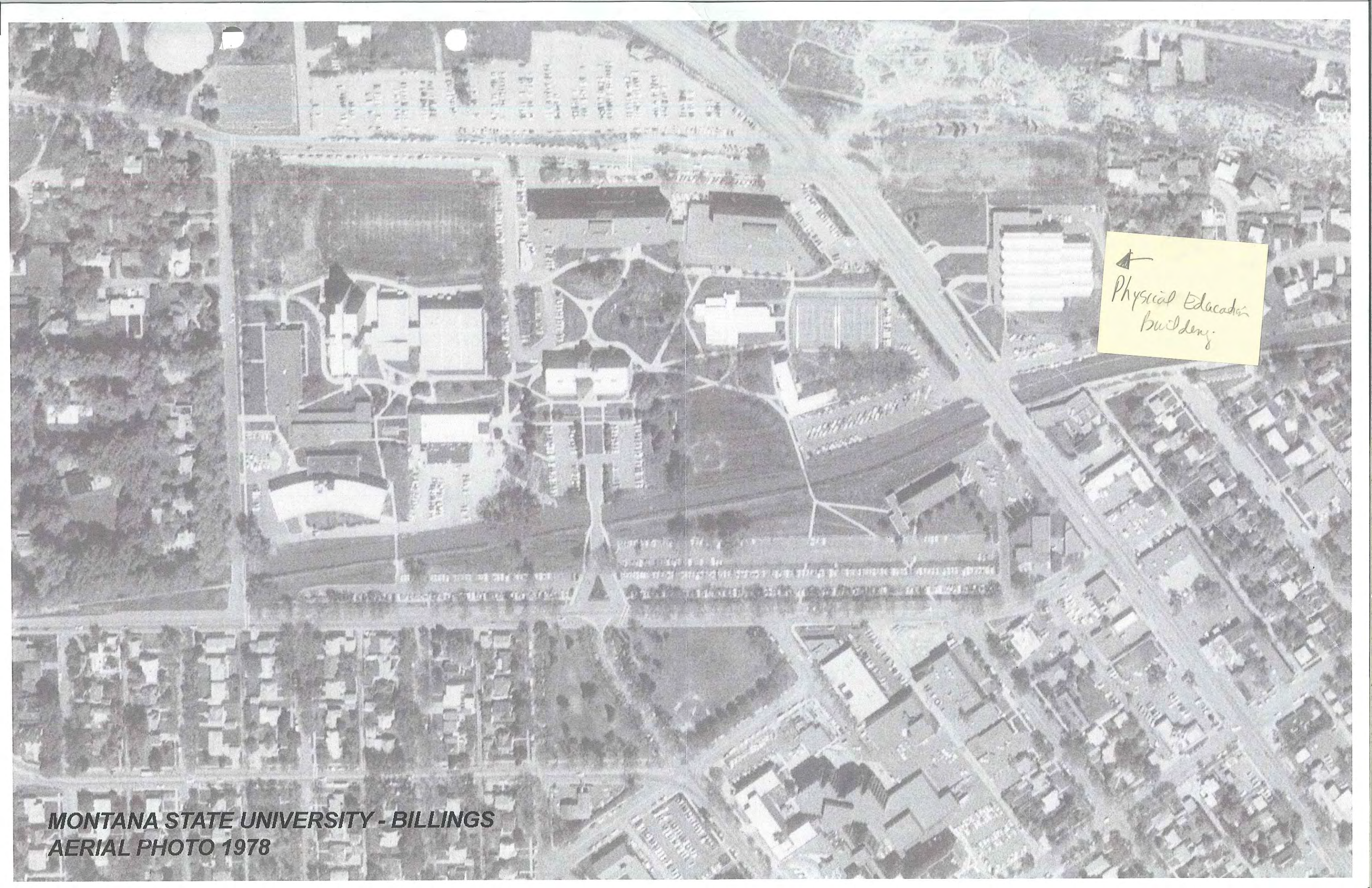
The Facilities Condition Inventory (Jul 2011) identifies some \$4,861,494 of renewal costs with a Deficiency Ratio of 18.9%. (scale: 0-5% = Good, 5-10% = Fair, & >10% = Poor) The deficiencies listed by priority category are: #1 (Safety) = \$250,741, #2 (Damage) = \$1,597,608, #3 (Codes) = \$165,417, #4 (Environmental) = \$34,826, #5 (Energy Conservation) = \$1,003,978, #6 (Aesthetics) = \$0, #7 (Enhancements) = \$1,074,375

Other Comment:

Reported by (Name): Eakle Barfield **Date (MM/DD/YYYY):** 11/11/2011

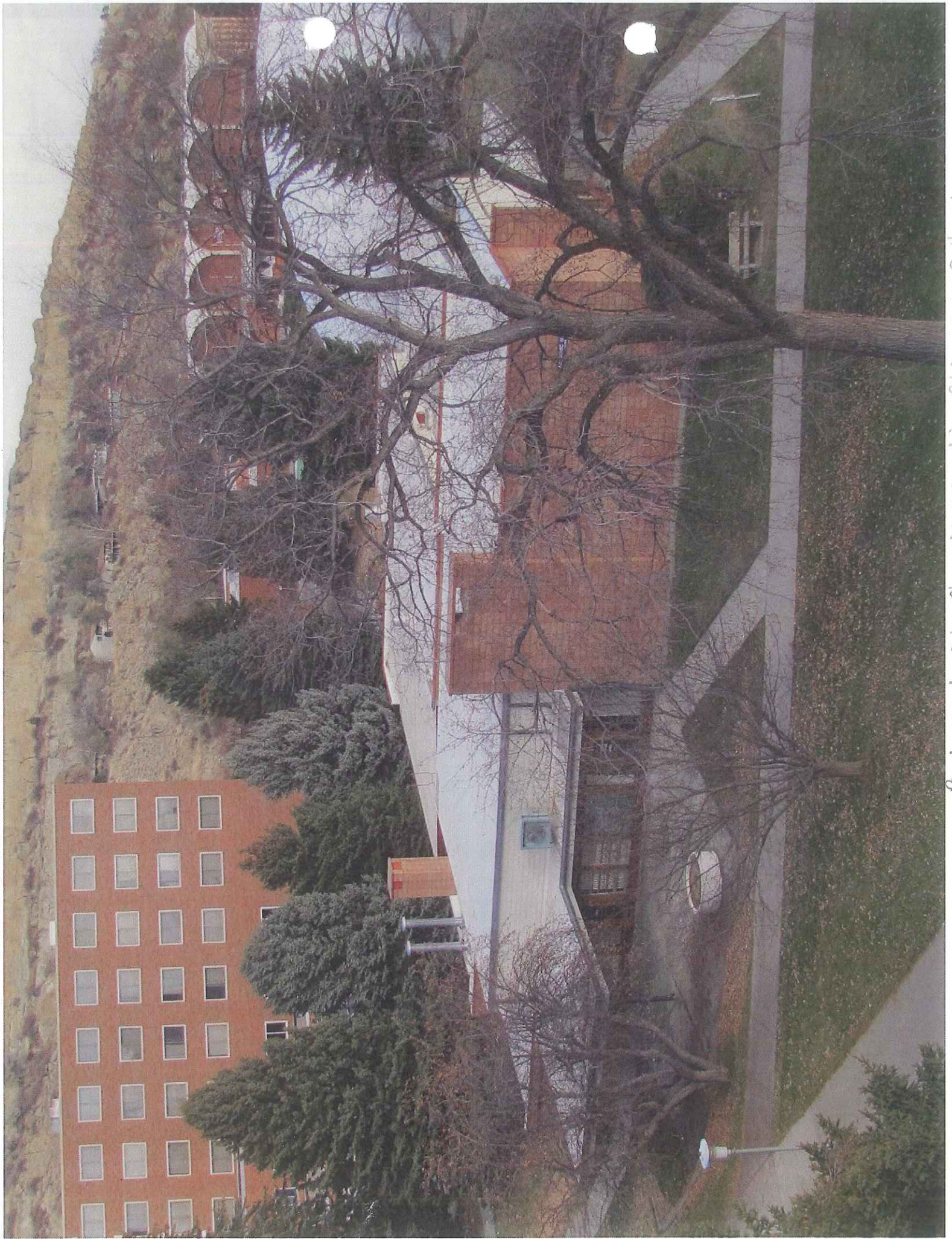
Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)



Physical Education
Building

MONTANA STATE UNIVERSITY - BILLINGS
AERIAL PHOTO 1978



Background right: Physical Education Bldg. MSU Billings

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24YL1860 (# obtained from SHPO upon receipt of site form)

Property Name: Apsaruke Hall

Property Town/Vicinity of: Montana State University Billings, MT

Property Date (Year of Origin/Construction or "Precontact"): 1957

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): District 1 Building(s) Structure(s) Site(s) Object(s)

Status (Choose one): Unknown

Comment:

Current information is inadequate and incorrect. Your records indicate "The first building on the campus was Old Main, which was constructed from 1924 to 1927. It appears, judging from photographs of the campus taken in the 1920s through 1939, that the early campus buildings, with the exception of Old Main, are no longer extant." The historic context and photographs upon which Painter's evaluation was based were of the University of Montana Western in Dillon rather than the Billings campus.

Condition/Integrity (Choose One): Excellent

Comment:

Concur, as your records state "the building retains most of the aspects of integrity" however, I question that "the building is additionally significant as the work of the well-known Billings firm of Cushing, Terrell and Associates" when almost 50% (7 of 16) of our buildings are attributed to CTA.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ 22,050 Heritage Research/Documentation project activity

\$ Heritage Interpretation/Education/Awareness project activity

\$ Heritage Promotion/Tourism/Marketing project activity

\$ Heritage Preservation/Conservation Plan Development

\$ 36,950 Regular/routine maintenance

\$ Monitoring (reported upon)

\$ Project designed/redesigned to avoid adverse effect to property's heritage values

\$ Other heritage stewardship effort/activity (Explain)

Comment:

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MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24YL1859 (# obtained from SHPO upon receipt of site form)

Property Name: Academic Support Center

Property Town/Vicinity of: Montana State University Billings, MT

Property Date (Year of Origin/Construction or "Precontact"): 1955

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): 1 District 1 Building(s) 1 Structure(s) 1 Site(s) 1 Object(s)

Status (Choose one): Unknown

Comment:

Current information is inadequate and incorrect. Your records indicate "The first building on the campus was Old Main, which was constructed from 1924 to 1927. It appears, judging from photographs of the campus taken in the 1920s through 1939, that the early campus buildings, with the exception of Old Main, are no longer extant." The historic context and photographs upon which Painter's evaluation was based were of the University of Montana Western in Dillon rather than the Billings campus.

Condition/Integrity (Choose One): Poor

Comment:

Does not meet use needs. Your records state "It does not retain integrity of design or materials. The setting has been altered slightly by the addition of buildings around the structure, but most of these buildings were constructed within 7-10 years of the Student Union Building itself." Although the location remains unchanged the setting, feeling and association have been significantly altered. In fact, the building is surrounded by a high-rise Residence Hall/Student Union complex built between (continued)

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ 22,050 Heritage Research/Documentation project activity

\$ Heritage Interpretation/Education/Awareness project activity

\$ Heritage Promotion/Tourism/Marketing project activity

\$ Heritage Preservation/Conservation Plan Development

\$ 21,100 Regular/routine maintenance

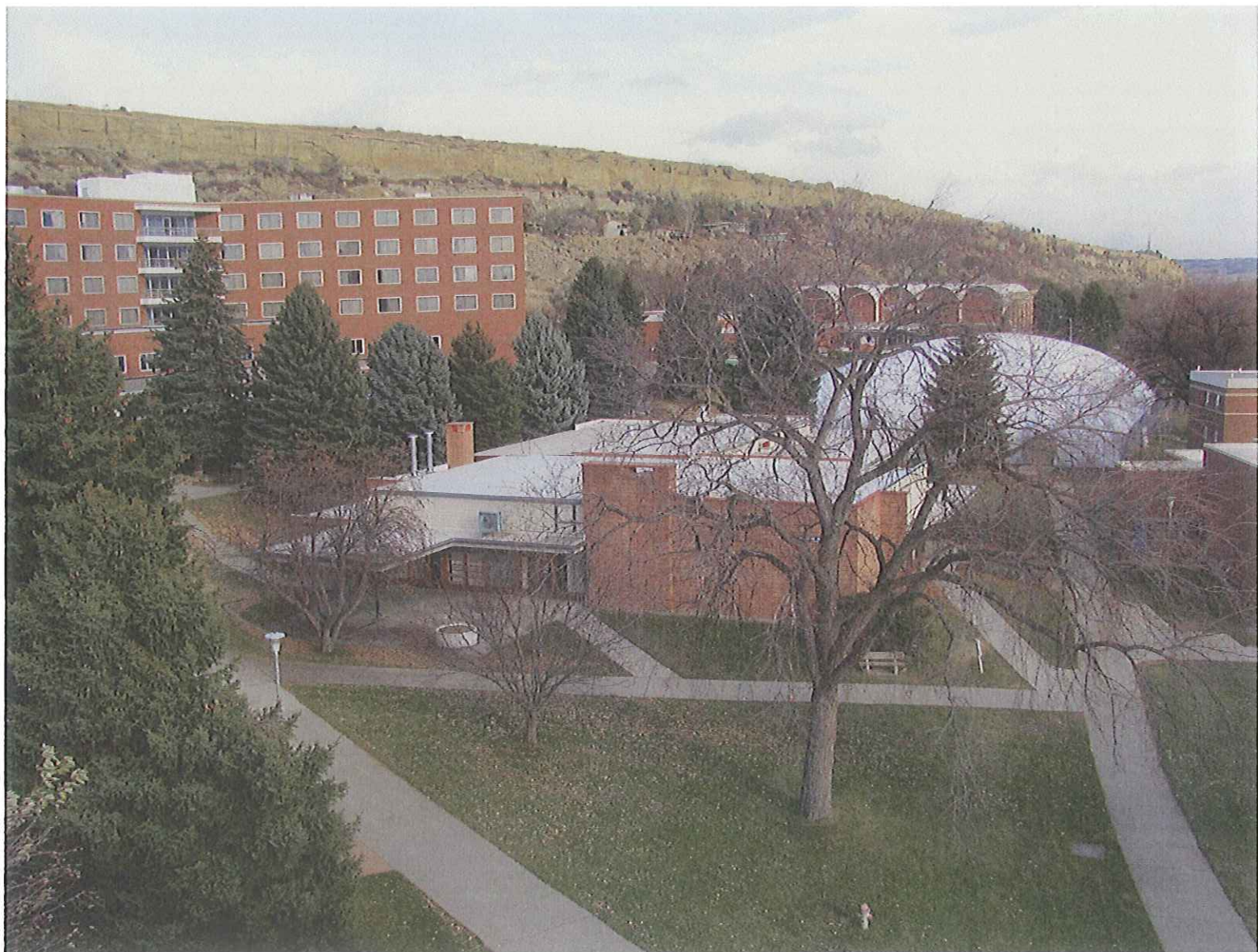
\$ Monitoring (reported upon)

\$ Project designed/redesigned to avoid adverse effect to property's heritage values

\$ Other heritage stewardship effort/activity (Explain)

Comment:

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MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24MA0262 (# obtained from SHPO upon receipt of site form)

Property Name: RED BLUFF STAGE STOP - Montana Agricultural Experiment Station - BART Farm

Property Town/Vicinity of: Norris, MT

Property Date (Year of Origin/Construction or "Precontact"): 1880's

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): 1 District Building(s) Structure(s) 1 Site(s) Object(s)

Status (Choose one): Threatened

Comment:

As a historic district or site, the most publicly visible and culturally historic building was the 2-story stone building known as the Isaacs/Wann residence (also used as a stage stop hotel) was destroyed by fire in July 2006. As chronicled in the Bozeman Daily Chronicle newspaper, the three walls that survived the fire were deemed unsafe and demolished. The building had been on the State's endangered historic property list since 2002 due to its historical significance and deteriorating physical condition.

Condition/Integrity (Choose One): Poor

Comment:

Although the buildings of the district/site have been maintained over time, many of the building MSU inherited were constructed quickly to meet an immediate and possibly temporary need for either mining or farming operations. Use of some buildings has exceeded the beneficial lifecycle use of the materials and construction.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ Heritage Research/Documentation project activity

\$ Heritage Interpretation/Education/Awareness project activity

\$ Heritage Promotion/Tourism/Marketing project activity

\$ Heritage Preservation/Conservation Plan Development

\$ Regular/routine maintenance

\$ Monitoring (reported upon)

\$ Project designed/redesigned to avoid adverse effect to property's heritage values

\$ Other heritage stewardship effort/activity (Explain)

Comment:

Over the years several buildings have been lost due to fire, including the 2-story Isaacs/Wann stone building that was a residence and stage stop inn. The fire insurance claim insurance for the buildings lost in the 2006 fire helped fund a new shop building with an office and restroom, a new calving barn, and two residences with attached garages. These new operations were moved away from the original density of the historic site to a location south of Norris Road. A memorial plaque was placed at the Isaacs/Wann stone house building site. The attached aerial photo, 1955 appraisal, 2005 report from MAES Director, 1999 update to site map identifies structures & buildings that have been lost over time and the current site. No stewardship expenses identified for this reporting period.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 4 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

Near the site where the Isaacs/Wann stone 2-story building once stood, is an 1880 stone cow barn that survived the 2006 fire. It is a contributing feature to the history of the area and may be worthy of conservation efforts.

The site and remaining buildings are significant physical reminders of how western landscapes were transformed by boom-and-bust mining operations, as well as depicting turn of the century, family-owned cattle ranching in Montana and the use of local materials in building construction.

Other Comment:

Red Bluff Ranch property owned by the State is part of what was the 1864 Red Bluff Gold Mine and stage stop community outside Norris that had a peak population of several thousand in the 1880's and then faded in the depression of the 1890's. In 1956 the Rowe Brothers sold 9,746 acres to MSU Ag Exp Station. Part of the purchase funds (\$16,000) was from the original Morrill Permanent Agricultural College Land Grant Fund. The contingency was that all proceeds from the MSU Red Bluff operations would pay station operators salaries & repay money borrowed to US Range Station Bonds (excerpted document by Darlene Wruck, MSU Office of the Dean, 1995; and the 1983 Dick Storbo and Kingston Heath "Red Bluff, MT Photographic and Written Documentary Report to the Office of the President, MSU" attached).

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 12/01/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)

HISTORY OF MAES LANDS

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1994	Legal Opinions
1994	Historic Preservation, Archeological activities
1995	Easement-U.S.West Fiber Optic easement - DuBray Land Services MAES was paid \$3,000 for easement.
Misc.	Full Land Description and Maps; Montana Power and other Electric company agreements Shadoan, John-trailer, junk vehicles; Land use - Administration and Ani and Range Sci depts. Miscellaneous

GIRVEN FARM - ANIMAL AND RANGE SCIENCES DEPARTMENT

History	Purchased in 1957 from Donald and Mae Girven to be used for livestock and for certain breeding and feeding experiments in lieu of land presently used adjacent to the campus and which are needed for expansion of faily housing and campus development. Price: \$59,000. The 1957 Legislature appropriated \$354,262 for special items including "land to consolidate instruction program". The money to pay for the Girven property was taken from this fund.
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RED BLUFF RANCH - ANIMAL AND RANGE SCIENCES DEPARTMENT

History	The Red Bluff Ranch occupies most of the once thriving late 19th-early 20th century gold mining community in the Hot Springs Mining District which was second only in gold production to Alder Gulch. At its peak of activity, there may have been a population of approximately 3,000. There are two cemeteries dating from the 19th century that are still legally active. Historic thoroughfares include a well-preserved portion of the original Virginia City-Bozeman Stage coach route. Gold mines: there are 38 gold mines on the land; approximately 23 are privately owned. The Red Bluff Mine was the initial 1864 gold producer. The ranch nearly surrounds the town of Norris. The founder of Norris, Alexander Norris may have owned much or all of the Red Bluff Ranch at one time.
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Stone House - was constructed for Samuel Wann and/or Alexander McAndrew of McAndrew, Wann & Co., a mining firm operating out of Staten Island, New York. It was built as an office-residence by James P. Isaacs, also of Staten Island, who functioned as superintendent of all of the firm's operations in Montana. The same year the company dismantled and moved a stamp mill to Red Bluff from the Sterling Mining District, Madison County. That mill is referred to as a reference point in the discovery claim made by Golconda Lode. In all, Isaacs put up five buildings that year, including the rebuilt stamp mill and the stone house.

McAndrew and Wann sell out to the Madison Mining Company. Frederick Merk, a Virginia City merchant, purchased the Madison Mining Company properties, including the stone house at a Madison county sheriff's sale.

Frederick Merk sells the stone house to Robert H. Foster, who runs it as a hotel and stage stop on the Virginia City to Bozeman road.

Foster sells "Foster's Hotel" to Franklin M. Weaver, a principal member of a large family from Missouri.

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The Weaver family sells the hotel to Albert W. Tanner who continues to employ the building in the hotel business.

About this time, "Tanner's Hotel" is purchased by the Rowe Brothers and incorporated into their ranch.

The Rowe Brothers sell their ranch to Montana State University for use as an Agricultural Experiment Station. For a number of years the building is used as a home and headquarters for ranch staff.

See file for additional information on the house.

1889 Northern Pacific and Montana Railroad Co. Right of Way purchased from Alexander Norris (Red Bluff owner) for \$1250

1934 Northern Pacific Railway Right of Way purchased for \$25.00 (.82 acres)???

1950 Northern Pacific Right of Way

1956 Purchase
AES 100050 The Red Bluff Ranch (previously known as the Rowe Brothers Ranch) was purchased for \$164,000 (\$16.83 per acre). The total acreage was 9,746. Two U. S. Forest Service Grazing Permits (Muddy Creek, Cache Creek) in the Gallatin National Forest came with the Rowe property.

Part of the purchase price, \$16,000, was from the First Morrill Permanent Agricultural College Land Grant Fund. The balance was paid according to a state statute: "All monies collected by the experiment station and the animal husbandry department shall be set aside in a special fund, from which fund there is hereby appropriated for the use of the Montana Agricultural Experiment Station so much thereof as may be necessary for the payment of salaries and expenses, including purchase of land." Title 75, Chapter 2, of the Revised Codes of Montana, 1947, as amended by Chapter 186, Laws of 1955. The Experiment Station had some land in Bridger Canyon that was sold and the money was used to help with the purchase (Drummond). Money was borrowed from the U.S. Range Livestock Experiment Station "Trust" account (\$75,000). This was repaid with interest at \$8000 per year beginning July 1, 1957. The final payment was made in 1968. In an opinion dated May 18, 1956, Arnold H. Olsen, Attorney General for Montana concluded that the Executive Board of Montana State College may take title to the lands known as the Rowe Brothers Ranch in trust for the MAES and may execute a mortgage, giving title to such lands as security to cover such part of the purchase price as may not be met with funds derived the Montana trust and legacy fund.

Source of funds:

1st Morrill Permanent Ag College LG fund #154	\$61,850
US Range Station Bonds (borrowed and paid back)	75,000
1955-56 Special Appropriation(A.I. Income)	5,000
Fund #163 to 271-Land Purchase fund	<u>25,000</u>
Total	\$166,850

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Title to the land was taken in the name of the Executive Board of Montana State College. (See a statement by Director M. M. Kelso in file). Board of Education approved purchase on February 14, 1956 item #15727.

Water Rights

1. 20 miner's inches decreed water in Hot Springs Creek; 100 miner's inches (flood water) in Hot Springs Creek.
2. 155 miner inches in Bradley Creek
3. Estimated 20 miner's inches in Woods Creek

Key Players:

Maurice Kelso, MAES Director
Everett Shuey, Executive Director of the Montana Wool Growers
Jim Drummond - Extension wool specialist and Professor of AnSci
J. L. Van Horn - Professor of An Sci. (sheep)
Joe Asleson - Assoc. Director, MAES Bozeman
Wool Growers - Their influence got legislation passed to make purchase possible.

Mining Claims

Mining claims were included in the sale to MAES of the Rowe Brothers (Red Bluff Ranch) in 1957, but many of the mines which appear to be owned by MAES are not, we have only the surface rights. The patented mining claims are:

Black Chief Lode MS5965 Patent #34805
No action has occurred on this claim since purchase of the ranch

Eureka Lode MS6683 Patent
1984 - Quit claimed to Hughes Mining Co. in trade; MAES received one-half interest in Water Mill Site located near ranch headquarters (also see Nevada Lode). Title clear

Nevada Lode MS6684
1984 - Quit claimed to Hughes Mining Co. in trade; MAES received one-half interest in Water Mill Site located near ranch headquarters (also see Eureka Lode). Title clear.

Gambetta Lode MS 5940 Patent #34920
1960-claim purchased from estate of O. D. Utley
1985-Mt. Dept. of State Lands, Abandoned Mine Reclamation Bureau, began reclamation work. Backfilled mine and fenced hazardous mine shaft. Title clear

Golconda Mill Site MS1472B Patent #12080
Mt. Dept. of State Lands, Abandoned Mine Reclamation Bureau, began reclamation work in 1985. Backfilled mine and fenced hazardous mine shaft.

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Home Lode MS2675 Patent #19289
No action has occurred on this claim since purchase of the ranch

Lone Star Lode MS5941 Patent # 34921
1960-claim purchased from estate of O. D. Utley
1985-Mt. Dept. of State Lands, Abandoned Mine Reclamation Bureau, began reclamation work.
Backfilled mine and fenced hazardous mine shaft.

May Queen Mill Site MS1272B Patent #9033
No action has occurred on this claim since purchase of the ranch

Water Lode MS1254B Patent #8898
and Mill Site
Quit claimed to MAES by Hughes Mining Company in 1984 Title clear

Wide Awake Lode MS5942 Patent #34922
1960-claim purchased from estate of O. D. Utley Title Clear
1985-Mt. Dept. of State Lands, Abandoned Mine Reclamation Bureau, began reclamation work.
Backfilled mine and fenced hazardous mine. shaft.

Mohegan Mill Site MS1253A Patent #9553
1957-Warranty Deed shows MAES with an undivided 2/3 interest in this claim. Title clear
1961-BOR authorized MAES to trade a cabin site for the undivided 1/3 interest owned by Jesse Green.
1985-Mt. Dept. of State Lands, Abandoned Mine Reclamation Bureau, began reclamation work.
Backfilled mine and fenced hazardous mine shaft.

Phillippo Lode MS5943 Patent#34919
No action has occurred on this claim since purchase of the ranch
Title clear

Red Bluff North MS1264 Patent #8897
1985-Mt. Dept. of State Lands, Abandoned Mine Reclamation Bureau, began reclamation work.
Backfilled mine and fenced hazardous mine shaft.

Red Bluff Mill MS107A Patent #1194
Red Bluff East MS2191 Patent #15130
Red Bluff West MS5966 Patent #34804
No action has occurred on these claims since purchase of the ranch

Zero Lode MS2645
No action has occurred on this claim since purchase of the ranch

Silver King Lode MS1467
No action has occurred on this claim since purchase of the ranch

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Joe Glenn Mining Lode

See the file for information on this claim

1958 Lease/purchase agreement with Arliss R. McKinnon (later Moon). 600 acres in Sec 25, 320 acres in Sec 30, 680 acres in Sections 32 and 33.

1958 MPC Right of Way Easement-Sec 7,8

1960 BOR Authorization received authorizing the MAES to purchase patented mining claims within the boundaries of the Red Bluff Ranch as they become available. This was done to facilitate the Utley mining claims.

1960 MPC Right of Way Easement-Sec 7

1960 Madison Valley Telephone Co. construction and equipment agreement (\$1,200) Sec 7

doesn't show purchase of 100055 44.69 acres Utley
1962 Prospective Seismograph Site

AES 100046
1967 1,000 acres purchased from Arliss McKinnon Ewalt for \$20,640. Money came from the AES Director's Office Reserve. In May 1959 AES entered into a lease agreement with Ewalt which contained an option to purchase. Board of Regents item 203-301 authorized AES to exercise this option.

AES 100032
1979 12.09 acres purchased from Burlington Northern Railroad for \$6,000. Recorded in Madison County, Book 265, Page 502, No. 71069. Mineral rights reserved to Burlington Northern. Quitclaim Deed dated 9/17/79.

1980 May 23, 1980-Red Bluff Hotel and Stage Stop reviewed by the Historic Preservation Review Board.

1980 BLM-EIS for Wilderness Designation of Bear Trap Canyon area

1981 Highway Department Right of Way Sale-MAES received \$4,700; 11.81 acres in Sec. 26 and Sec 23.

1981 Property, known as 97 acres. A group of 8 mining properties purchased by Dudley Baldwin, Jr. in 1890, 1891 and 1892. By the time of his death in 1916 the properties had been neglected for years. Assays made in 1919 showed traces of copper and gold but not in commercially productive amounts. In 1952 the Montana Highway Department acquired quit claim easements over two parcels for a road right of way, paying a total of \$87.50 for 1.8 acres in the Water Mill Site and 2.09 acres in the Cordwainer Lode Site. There was some interest shown in leasing the property in 1939 but nothing came of it. Mr. Baldwin's estate was never probated in Montana because of concern that the cost could exceed the value of the property. However, the taxes have been paid through the years in hopes that the property would become more valued in the future. The assessed value is \$885, but we do not have information as to the relationship of assessed value to market value. The tax paid in 1972 was \$110.28. The mining claims are: Blizzard Point, Curlew Lode, Dimon Lode, Chessang, Porphery Lode, Topaz Lode, Topaz Mill

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Disclaimer: While the majority of information in this document is taken from actual deeds, legislation and original correspondence, no attempt was made to verify all information through records search in the MSU Archives, the Office of the Commissioner of Higher Education, the Secretary of State's Office or any other office or agency.

Site, Cordwainer Lode, Cordwainer Mill Site and Water Mill Site.

In 1981 AmeriTrust acting on behalf of Mr. Baldwin's heirs wanted the MAES to lease the 97 acres because we had been allowing cattle to graze the land. Their lease price was \$2,160, which was not acceptable since MAES was leasing the Moon property (600 acres) for \$750/year. AmeriTrust was approached about selling the property, but declined and wanted a lease. Correspondence from AmeriTrust stopped on September 1, 1982.

- 1982 SCS Red Bluff Cooperative Field Evaluation Planting
- 1982 History Department Workshops (MSU, Wash State, Portland State)
- 1983 Bausch land trade. Approximately 320 acres traded with Mr. & Mrs. Bausch. \$1.00 was paid to the Bauschs.
- 1983 MPC Right of Way Easement-Sec 16,17,19 (\$1,100)
- 1983 Town of Norris dumpsite agreement
- AES 100058*
1984 BLM land purchase. AES purchased 142.47 acres from the Bureau of Land Management under the Recreation and Public Purpose Act. The parcels were located within the boundaries of the Red Bluff Ranch. Price paid \$356.18; most likely paid from the Director's Office reserve.
- 1987 Easement Deed - Leslie E. and Shelley R. Owens of Norris for operation, replacement and maintenance of a domestic septic tank and drain field over, across and under certain Red Bluff Lands
- 1989 Federal Aviation Administration Lease - radio communications link
- 1990 MPC Right of Way Easement-Sec 8,9,17,19,20
- 1990 Cyprus Minerals Company-Access Agreement (30 day access)
- 1994 Highway Department Maintenance Stockpile Lease - \$100 per year. Amended: Montana Department of Transportation - Stockpile Site lease payment increased to \$200 annually.
- 1993 MPC Right of Way Easement-Sec 7,8,9,18,17,16
- 1993 Historic Preservation Correspondence, etc.
- 1993 Rawhide Realty-boundary fence dispute
- 1993-1994 Proposed Ground Lease with SeaWest Energy-wind generation
- 1994 Arliss R. Moon deeded property to her adopted daughter, Arlene Hoem; lease renewed for \$1400/year commencing May 1, 1994-April 30, 1996.

Red Bluff - Relevant SHPO Buildings Norris, Montana

FACILITY INVENTORY BUILDING LIST

STRUCTURE CLASSIFICATION ABBREVIATIONS									
LS	Livestock Shed (loafing, etc.)	BR	Barn	FE	Fencing				
LH	Livestock Housing (has water/elec)	OF	Office	CO	Corrals				
GR	Grain Bins / Silos	CR	Conference Room	RD	Roads				
LB	Lab (can include animal handling)	RR	Restroom	IR	Irrigation				
ES	Equipment Storage(has lights/elec)	R	Residence	PH	Pump House				
GH	Greenhouse	WS	Weather Station	SP	Shop				
SD	Shed (no utilities)	FT	Fuel Station/Tank						
Bld No	Building	Structure Type	Date Occupied	GSF	Notes				

Mark Y if Yes				
Conditioned	Environment/human	Electrical Power	Fire Sprinklers	

2423	RED BLUFF LUMBER SHED	SD	1961	656					
2426	RED BLUFF COW BARN(STONE)	BR, LH	1880	1,000	DO NOT INUSRE				
2432	RED BLUFF LAMBING BARN	BR, LH	unknown	8000				Y	
2437	RED BLUFF MIXING BARN	BR, LH	unknown	7500					
2438	RED BLUFF SHEEP OFFICE	OF	1930	600		Y	Y		

INACTIVE BUILDING ON SITE THAT ARE NOT USEABLE

2413	RED BLUFF FIELD SHED #5		1920	384	UNUSEABLE				
2414	RED BLUFF FIELD SHED #4		1920	256	UNUSEABLE				
2415	RED BLUFF FIELD SHED #3		1920	384	UNUSEABLE				
2435	RED BLUFF HOUSETRAILER		unknown	600	SOUTH OF SHEEP CORRALS NOT USEABLE				

INACTIVE BUILDINGS NO LONGER ON SITE

2406	RED BLUFF ROOT CELLAR - GONE		1925	96	Do not insure				
2407	RED BLUFF BUNK HOUSE (OFFICE)		1915	402					
2408	RED BLUFF GRANARY #1-GONE		unknown	864					
2409	RED BLUFF SHOP GARAGE		1928	594					
2410	RED BLUFF SHEEP SHED #1 -GONE		1920	6464	BURNED DOWN 09/00				

FACILITY INVENTORY BUILDING LIST

STRUCTURE CLASSIFICATION ABBREVIATIONS					
LS	Livestock Shed (loafing, etc.)	BR	Barn	FE	Fencing
LH	Livestock Housing (has water/elec)	OF	Office	CO	Corrals
GR	Grain Bins / Silos	CR	Conference Room	RD	Roads
LB	Lab (can include animal handling)	RR	Restroom	IR	Irrigation
ES	Equipment Storage(has lights/elec)	R	Residence	PH	Pump House
GH	Greenhouse	WS	Weather Station	SP	Shop
SD	Shed (no utilities)	FT	Fuel Station/Tank		

Bid No	Building	Structure Type	Date Occupied	GSF	Notes	Conditioned Environment/human	Electrical Power	Fire Sprinklers
2411	RED BLUFF SHEEP SHEARING-GONE		1938	1440	BURNED DOWN 9/00			
2416	RED BLUFF BOPP TRAPPER'S CABIN		1928	506	Demo'd in FY04			
2421	RED BLUFF HORSE BARN-GONE		1965	884	BURNED DOWN 9/00			
2422	RED BLUFF SHEEP SHR SHED-GONE		1928	1,464	BURNED DOWN 9/00			
2424	RED BLUFF LOAFING SHED-GONE		1958	600	gone FY04			
2425	RED BLUFF LOAFING SHED-GONE		1960	656	gone FY04			
2428	RED BLUFF JEEP GARAGE-GONE		1960	154				
2430	RED BLUFF FRAME POLE SHED-GONE		unknown	1,296				
2431	RED BLUFF SHEEP SHED-GONE		unknown	1,512				
2433	RED BLUFF SHOP-GONE		unknown	375				
2434	RED BLUFF SHEEP SHED-GONE		unknown	1512				
2436	RED BLUFF MOBILE LAB-GONE		unknown	600	duplicate # as 2439			
2439	RED BLUFF MODULAR LAB (drying)- GONE		1985	600	duplicate # as 2436			

Building Pictures of Red Bluff

Photos 1/28/2011

Pictures ordered by building number except where noted



Bldg #2414 (on left) & #2413 (on right) – Field Sheds



Bldg #2414 (in front) & #2413 (behind) – Field Sheds



Bldg #2414 & #2413 – Field Sheds



Bldg #2415 – Field Shed #3



Bldg #2415 – Field Shed #3



Bldg# 2423 – Lumber Shed



Bldg# 2423 – Lumber Shed



Bldg #2426 - Stone Cow Barn



Bldg #2426 - Stone Cow Barn



Gate near bldg #2426



Bldg #2432 – Lambing Barn (large building behind),
Bldg #2438 – Sheep Office (smaller building in front)



Bldg #2432 – Lambing Barn (large building left),
Bldg #2438 – Sheep Office (smaller building on right)



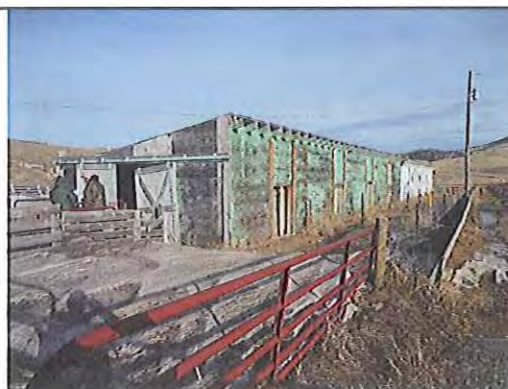
Bldg #2432 – Lambing Barn



Lambing operations



Lambing Operations



Bldg #2437 - Mixing Barn (mixing lambs with ewes)



Bldg #2437 - Mixing Barn



Bldg #2438 - Sheep Office (smaller building in front),
Bldg #2432 - Lambing Barn (large building behind)



Bldg #2438 - Sheep Office



Unnumbered Grain Bin (East of Bldg #2432)



Unnumbered shed (closest bldg is 2423)



Unnumbered shed (closest bldg is 2423)



Next to NE old headquarters of site



Next to NE old headquarters of site



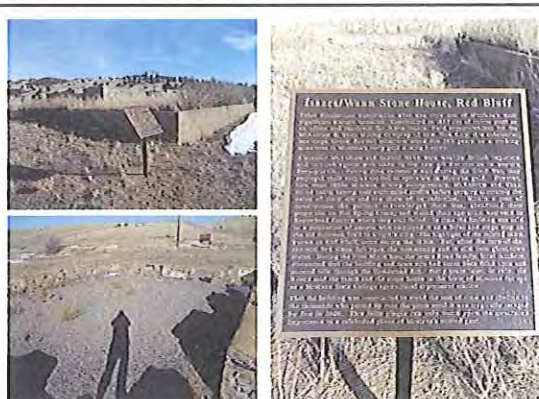
Corrals in NE old headquarters of site (Bldg #2423 in back)



Site of Historical Isaacs/Wann Stone House



Site of Historical Isaacs/Wann Stone House



Site of Historical Isaacs/Wann Stone House



Next to NE old headquarters of site

RED BLUFF MAP (PAGE 1 OF 2)



*STATION BUILDINGS MOVED SOUTH
ALONG BRADLEY CREEK ROAD AFTER FIRE

BRADLEY CREEK ROAD



2423 - LUMBER SHED



REMAINS OF
HISTORIC
STONEHOUSE

FIELD SHEDS

2415



2413



2414



2426 - STONE COW BARN

Google

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Image USDA Farm Service Agency

2440 - CALVING BARN
(1800 FEET SOUTH)

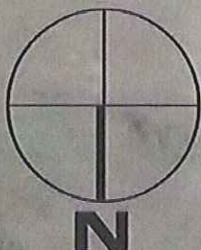
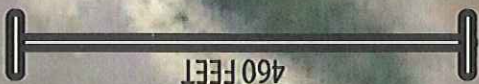


BRADLEY CREEK ROAD

2435 - HOUSETRAILER

PLASTIC STORAGE CONTAINERS

*BUILDING DIMENSIONS AND
ORIENTATIONS ARE NOT EXACT



SHEEP QUONSET

SHEEP QUONSET

2438 - SHEEP OFFICE

2432 - LAMMING BARN

2442 - RESIDENCE #2

2445 - GARAGE #2

SHEEP
CORRALS

2437 - MIXING BARN

2443 - SHOP

GRANARY

2429 - BUTLER

2441 - RESIDENCE #1

2444 - GARAGE #1

2419 - BUTLER

BIN

Up in smoke

Fire claims historic MSU stone building near Norris

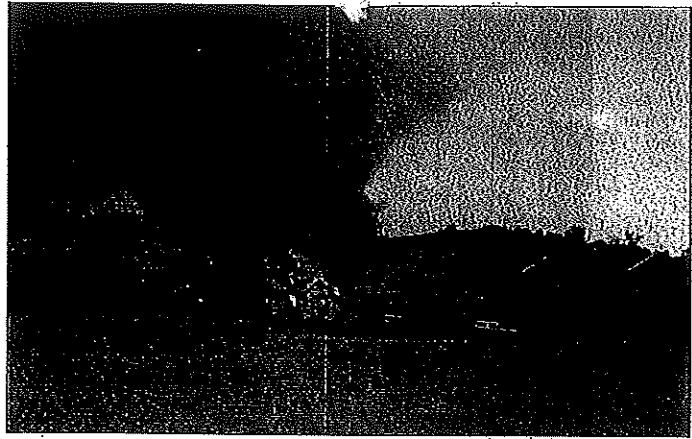


PHOTO COURTESY OF LES GASPAY

Flames consume a building Saturday afternoon on the Montana State University Red Bluff Ranch near Norris.



Fire/ from page A1

Firefighters from Harrison, Virginia City, Anaconda and Butte helped put out the blaze.

Bean said fire danger is high all over the region because of hot temperatures and steady

winds, but the windiest weather has been today so far.

"That is kind of the first sign this way," he said. "If you don't have to burn don't do it."

Beck Griffin is an agricultural journalist.

Montana State animal science employee Russell Maack places a fence post into the ground to support a perimeter of fire line tape around the burnt out shell of a stone structure, Sunday. The structure and two other outlying sheds of the MSU Red Bluff Research Ranch Agricultural Experimental Research Station caught fire Saturday afternoon destroying outlying buildings and burning about 300 acres of grassland.

SEAN SPERRY/CHRONICLE

By **BROOK GRIFFIN**
Chronicle Staff Writer

NORRIS — The stone house at Red Bluff Ranch is no more.

Fire ripped through the 140-year old structure two miles east of Norris in Madison County Saturday afternoon causing the roof and the south side wall to collapse.

Only the east, west and north side walls were still intact after the fire was put out, but officials said the structure was extremely unstable and might need to be torn down.

The house is part of Montana State University's Red Bluff Research Ranch which is made up of about 13,000 acres of land.

Cattle and sheep are raised on the ranch for education and research work.

The blaze sparked a grass fire that cut a black swath north from the structure and over the hills.

State fire investigators were called to the scene and are investigating the blaze.

"Right now the fire cause is undetermined," said Doug Bean, a state deputy fire marshal at the scene.

No one was injured in the structure fire.

Bean said the fire most likely started in a shop complex behind the stone house. The shop, along with a lean-to type structure against the side of the stone house were completely consumed.

While three walls remained of the stone and mortar main house,

Bean said there is not much hope for it staying up. Winds on Sunday blew pieces of debris off the walls and the sound of crumbling stone could be heard all morning.

"I've been a firefighter for 16 years and I wouldn't go in there," Bean said. "It's highly dangerous."

Pete Olind is the caretaker for the stone house and the ranch and has lived in a house only a few feet away from it for more than a decade.

Olind and his wife used the stone house for storage.

"Just some of my wife's antiques and some of the kid's toys," he said were inside the house when the fire started.

Olind and his wife had just left the ranch half an hour before the blaze started, but he said there was no one in the shop at the time.

Prevailing winds blew the flames away from Olind's home but the heat was so intense that another unoccupied structure about 25 yards from the fire had its metal siding melted.

"They were very lucky," Bean said.

Les Gaspay, was driving by the stone house when it was on fire Saturday.

"It was pretty spectacular actually," he said. "This building and the ones next to it were all in flames."

Frank Ford, director of emergency management for Madison County, estimated that the fire consumed between 250 and 300 acres of grassland before being contained.

(More on Fire, page A10)

Historian laments loss of MSU's landmark stone home

BDC 20 July 2006

By CAROL FLAHERTY
MSU News Service

Last weekend's fire at Montana State University's Red Bluff Research Ranch did little harm to the agricultural research there, but gutted the landmark stone home that once was a stagecoach stop on the Bozeman-Virginia City route.

The cause of the July 15 fire might not be determined, Deputy State Fire Marshall Doug Bean said Tuesday. He was asked to investigate by the Madison County Sheriff's Office.

"I collected a few things from there to have a further look, but the building is so damaged, it didn't leave a lot of clues," Bean said.

A 911 call reported the fire at 1:09 p.m. Saturday.

In addition to the 139-year-old stone home, an attached machine shed, another residence and about 100 acres of range-land burned.

The ranch foreman lives in a home near the historic stone structure, but he and his wife weren't home when the fire started, Bean said. That house did not burn.

The Montana Preservation Alliance listed the stone house — located 35 miles from Bozeman, halfway to Virginia City — as one of the Montana's most endangered historic properties in 2002.

"The stone house was historically significant as one of the best-preserved stone structures representative of early Montana Territorial gold mining," retired MSU historian Jeff Safford said of the building he calls "the old Lady."

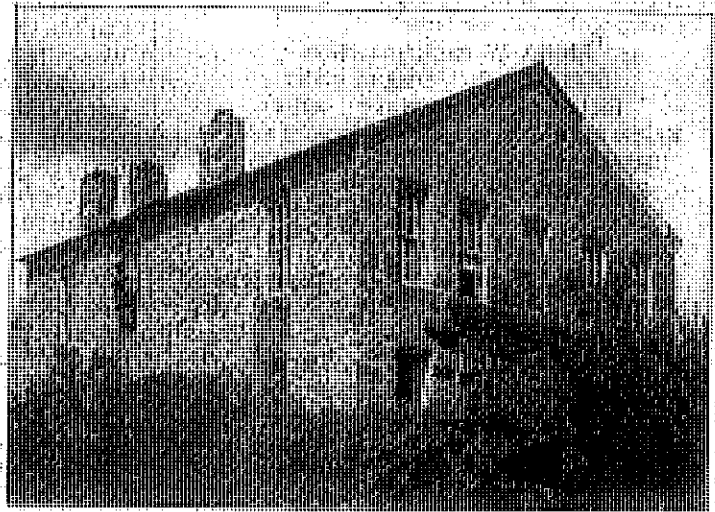
"It was also architecturally significant as one of only three existing Montana examples of

the Greek Revival style," he said.

The house was built in 1867 as a house and office for James Isaacs, field superintendent for a New York City gold mining company, according to retired MSU historian Jeff Safford.

Isaacs was fired a year later, partially for having lavished \$8,000 on the home without the permission of his employers, Safford said. But the gold mining enterprise was failing and the mining company abandoned the house.

(More on Loss, page A6)



The stone house and stage stop is pictured in an early photo.

Loss / from page A3

In 1870, Virginia City merchant Frederick Merk bought the building at a Madison County sheriff's sale. Seven years later, he sold it to Robert Foster, who ran it as a stage stop and hotel.

Red Bluff became a boom town in the 1890s, when

cyanide made it possible to extract gold from low-grade ores and when the Northern Pacific Railroad built a spur from its main line on the Jefferson River to Norris.

"Foster's Hotel" later sold to Franklin Weaver and then Albert Tanner. It continued in

use as a hotel until about 1916, when it was purchased by the Rowe Brothers for a ranch.

The Rowes sold it to MSU in 1956 for use as part of the Montana Agricultural Experiment Station. The livestock and range-research operation is managed by MSU's ani-

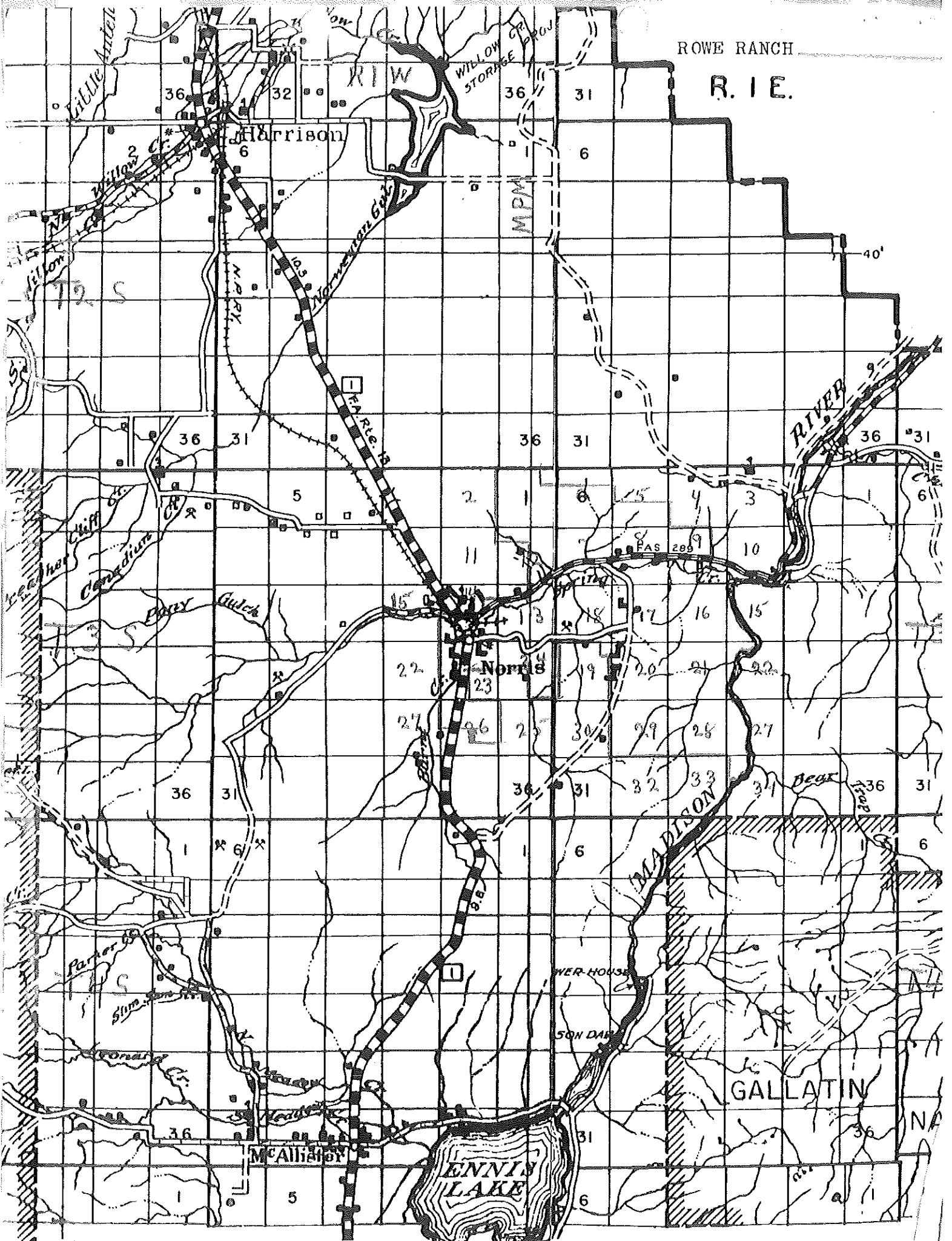
mal and range sciences department.

MSU Fire Marshall Skip Hougland said earlier this week that the remaining three sides of the stone house might have to be demolished because of weakened mortar and the basic instability of a partial structure.

APPRAISAL REPORT
ROWE RANCH OF NORRIS, MONTANA
by

Mont H. Saunderson
Ranch Consultant

Bozeman, Montana 3/12/55



OFFICE IN
HOTEL BAXTER
BOZEMAN, MONTANA
TELEPHONE
427 OR 1939-J

MONT H. SAUNDERSON
WESTERN RANCHING AND LANDS CONSULTANT
P. O. BOX 415
BOZEMAN, MONTANA
March 12, 1955

APPRAISALS
DEVELOPMENT PLANS
ECONOMICS AND BUSINESS
STUDIES
MANAGEMENT

Dr. M. M. Kelso
Dean of Agriculture
Montana State College
Bozeman, Montana

Dear Dr. Kelso:

Pursuant to your instructions given me in your office on January 19, 1955, I have made a detailed examination and appraisal of the Rowe brothers ranch of Norris, Montana.

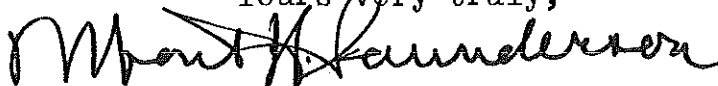
My appraisal of the present market value of the realty of this ranch is \$152,056.00. This is for the 9,746 acres of deeded land with buildings and improvements and including the two national forest grazing preferences and the public domain lease. The Norris town property and the Norris Hot Springs part of the Rowe brothers holdings are excluded.

Due to the recent open winter conditions in this area I have been able to observe most of the deeded lands of this property. I have not of course been able to view the national forest grazing allotments, at this season of the year. I do have, however, the assurance of Mr. Luer, the Gallatin National Forest assistant supervisor in charge of grazing, that these two forest grazing allotments are in satisfactory condition and that no change is planned in their use.

I do not hold any financial interest in the subject property. In appraising it I have used the official sources of the information regarding deeded land acreage, water rights, national forest grazing permits, public domain leases, etc. For the purposes of this report, this official information is presumed to be correct. No representation is hereby made, however, as to the correctness of the lands surveys or as to the legality of the land titles and the water rights.

In the following pages of this report, of which this covering letter is numbered page 1, there is given, I) The valuation summary, II) The valuation analysis, III) The appendices. If it should be desired, I can supplement the information given in this report with additional detail from my work file of this appraisal.

Yours very truly,



Mont H. Saunderson

MHS/dj

2. Valuation of stock

the areas to the south of the 40th parallel.

I. Valuation summary

The Rowe brothers ranch of Norris, Montana

- | | | |
|-------|---|--------------|
| 1. | 9,473 acres of deeded land classed as range land, located in T1W, R3S, and in T1E, R3S, M.P.M., rated at an average livestock grazing capacity of one ewe month per $\frac{1}{2}$ acre and one cow month per 2.5 acres, valued at \$12 per acre - | \$113,676.00 |
| 2. | 273 acres of deeded land classed as irrigated or irrigable land, located in sections 14 and 23, T1W, R3S, with an annual average hay yield of 1 & $\frac{1}{3}$ tons per acre, valued at \$60 per acre - | 16,380.00 |
| 3. | The George Rowe dwelling, frame & stucco, modern - | 5,500.00 |
| 4. | " Ted " " " " " " " " " " " " | 5,500.00 |
| 5. | " Ray " " " " " " " " " " " " | 5,500.00 |
| 6. | " Henry " " " " " " " " " " " " | 3,500.00 |
| 7. | Various outbuildings, total valuation - | 2,000.00 |
| Total | | \$152,056.00 |

Availability of the water rights of this property and of the
 production of the water supplies is given in detail in the
 discussion of this report. The water rights information was ob-
 tained from the records of the water rights on file in the office
 of the clerk of the court at Virginia City, Montana, and from the
 water resources survey of the Montana State Engineer. The irri-
 gation water rights now held by the owners of this ranch are ade-
 quate for the requirements of the ranch. The available irrigation
 water supplies have not been used efficiently in the irrigation
 farming operations of this ranch. This is just about the only
 weak spot in the present operations and management of this ranch.
 These points do not take us "beyond".

II. Valuation analysis

The Rowe brothers ranch of Norris, Montana

The property

This stock ranch, which is now operated as a combination sheep and cattle ranch, consists of 9,746 acres of deeded land, with buildings and improvements, two national forest sheep grazing preferences for 1,100 ewes and lambs each, and a public domain lands grazing lease for 1,387.12 acres of land. The public domain lands are intermingled with the deeded lands of the ranch. (See map in the appendices of this report.) Of the deeded land acreage, 9,473 acres are classed as range land, and 273 acres are classed as irrigated and irrigable lands.

The records of the owners of this ranch show a total deeded land acreage of 9,780 acres. However, this includes several lots in the town of Norris, which is unincorporated and which lies within the boundaries of this ranch. The Madison county assessor's records show the total deeded land acreage of this ranch as 9,746 acres, excluding the town lots. For taxation assessment this land is classed as 8,548 acres of range land, 1,097 acres of mining claims land (Mostly grazing land), and 201 acres of tillable land.

The Montana State Engineer's water resources survey for Madison county shows 165 acres of irrigated land and 108 acres of irrigable land for this ranch. All of the land classed as irrigable and irrigated lies in the same area, west and southwest of Norris, in sections 14 and 23. All of this land is substantially similar in soils and productivity. The 108 acres of land classed as irrigable is now under ditch, but this land has in recent years been used for dry-land grain production.

An analysis of the water rights of this property and of the irrigation uses of the water supplies is given in detail in the appendices of this report. The water rights information was obtained from the decrees of the water rights on file in the office of the clerk of the court at Virginia City, Montana, and from the water resources survey of the Montana State Engineer. The irrigation water rights now held by the owners of this ranch are adequate for the requirements of the ranch. The available irrigation water supplies have not been used efficiently in the irrigation farming operations of this ranch. This is just about the only weak spot in the present operations and management of this ranch. These people do not like to "farm".

The range lands of this ranch have generally adequate natural stock water for good livestock operations and for good range land.

The two sheep grazing preferences, held by the owners of this ranch on the Gallatin national forest, each are for 1,100 ewes with lambs and are for a 75 day grazing season starting around July 1. The location of these two national forest grazing allotments are shown on the Gallatin national forest map given in the appendices of this report. These two national forest grazing preferences are very important to the operations and to the value of this ranch.

From the U. S. Department of the Interior's Bureau of Land Management district office at Whitehall, Montana, it is learned that a ten-year lease was executed on September 17, 1953 for the public domain lands used in the ranch operation. Because of the location of this land within the ranch and because of the policy of the Bureau of Land Management of making the lease for such lands appurtenant to the deeded lands of a ranching operation, the use of this public domain land by this ranch is regarded as well assured.

Of the total acreage of 9,473 acres of deeded grazing land in this ranch, approximately 3,000 acres are in the present ranching operation used as the sheep winter range. This is the part of the ranch area that lies to the north of the county road from Bozeman to Norris. This road traverses the ranch, following the route of Hot Springs creek. This north part of the ranch area slopes to the south, and it is somewhat more warm and dry than the lands south of the road, which slope to the north. A view of the winter range part of the ranch is given by photo no. 2 in item no. 7 in the appendices of this report. This photo, taken on February 15, last, is from the high part of the south-side range, looking north to the winter range. The south-side part of the ranch area is used as the sheep fall and spring range, and for the cattle range seasonlong. These south-side lands are a bunchgrass range, primarily. The north-side lands are primarily a grama grass range, with a mixture of the blue-bunch wheatgrass.

Because of the considerable moisture deficiency in southwestern Montana during the past several years, there has been a downtrend in the condition of the ranges of this ranch, and especially for the north-side lands. The grama grass of the north-side lands is definitely a summer grass, that grows in the warmth of summer when moisture is available. The recent warm and dry summers in this area during the past several years have been quite unfavorable for the grama grass. However, the grama grass sod on the north-side range remains mostly intact (see photo # 4) and with more nearly normal seasons this range probably will recover fairly rapidly. The fact that the recent years have been climatically unfavorable in this area is shown by the weather data given as item # 5 in the appendices.

The range lands of this ranch have generally adequate natural stock water for good livestock operations and for good range use.

For the present owners of this ranch, the operating policy has been to grow and to use the minimum amount of hay, and to carry only small reserves of hay. They have been able to have such an operating policy because of the high dependability of the winter grazing for the sheep and because of their good opportunity to combine winter pasture and limited hay feeding for the cattle. They have an unusually good wintering area for the cattle in the sub-irrigated natural meadow along Hot Springs creek.

The present hay production from the 165 acres of irrigated hay meadow is estimated at 200 to 250 tons, with 48 acres in alfalfa and 117 acres in native hay. With the improvement possible in the hay production the yield from the present acreage could be substantially increased, and the irrigated acreage of hay meadow could be increased. The owners say that they know this, but that they have not needed additional hay production.

The hay requirement for the present ranching operation is estimated at around 225 tons a year, with 90 tons for the 100 head of cattle for 120 days and 135 tons for the sheep for 90 days. They winter only 2,000 ewes, since it is their practice to buy their ewe replacements and to take delivery of these in the spring of the year. They use Hampshire bucks with the fine-wool ewes. The cattle and sheep winter feeding rates given above are not of course full hay feed rates. They use hay and pelleted concentrate feed to supplement the sheep winter grazing, and they give the cattle a limited hay feed along with the meadow pasture. The cattle wintering site has good brush shelter and easy access to running water.

The ranch fencing is generally adequate and in fairly good shape. Native cedar posts have been used. If the deal is made for this ranch, with the present owners retaining possession and use through this operating season, an understanding should be reached with them as to the fence maintenance that they are to do during this season. Present maintenance needs are now probably more than average.

The ranch housing is ample and pretty good. There are four dwellings, one for each of the four families. Three of these are fairly new or partially so, and one is a very old stone building that has been partially modernized. (See the photos in the app. # 7.) All of the dwellings have modern bath and toilet facilities, Montana Power electricity, and oil-fired stove heat. The old house has no heating upstairs. There is no phone to the ranch. There is phone service to Norris, from the Harrison exchange.

The outbuildings at the site of the homes consist of a garage and shop, equipment shelter, livestock shelter, grain and feed storage, and barn. These are old but generally serviceable.

This ranch has a very good recent earnings history. The average number of livestock on the ranch during the past five years and the 1950 to 1954 average annual production, operating costs and earnings are given in appendix # 6 of this report. These data, taken from the Rowe brothers records, show that the average annual net income for this five-year period was \$41,603.33. This net income calculation does not however include any wage charge for the work of the four brothers, all of whom work full time on the ranch. The partnership net income for the year 1954 was around \$30,000.00.

Things influencing the value of the property

An all-weather road runs through the ranch, past the ranch homes. Bozeman is 40 minutes away by auto, and Butte around 75 minutes. Grade school facilities at Norris are reportedly good. Livestock shipping facilities are available at Norris, on the Northern Pacific branch out of Sappington Junction.

The ranch has no unusual or serious operational problems. The sheep trail to the national forest is rather long, with the first leg of it on the highway from Norris to Ennis. December is a rather difficult month in the sheep winter range operations. Through this month the sheep are still on the south-side range, on dry bunchgrass feed and in locations sometimes exposed to the winter winds of the Madison valley. These winter winds make use of winter ranges possible in this area, but they also make out-of-door work disagreeable, sometimes. This is true throughout the Madison valley.

As may be seen from the map in the appendices, the deeded lands of the ranch are well blocked and easily accessible from the ranch homes location. The site of the homes and other buildings has a very good water supply.

Though the location of this ranch does not have the spectacular scenic beauty that has attracted many ranch buyers to the Madison valley and so has enhanced the ranch market values there, this influence extends out from the Madison valley and is evident in the area of this ranch.

The valuation methods used in this appraisal

All of the several recognized valuation approaches have been used in making this appraisal. An analysis was first made of the recent sale prices of comparable range lands, hay lands and ranching properties in the area of this ranch. This analysis was made to determine both the per-acre sale prices of comparable lands and the realty investment per animal unit of well-balanced year-round ranching capacity, for the area.

Range lands in this area judged to be similar to those of the Rowe brothers ranch have during the past several years sold at

prices varying principally between \$10 and \$15 per acre. The higher prices are paid for the deeded range lands that are tied in with national forest grazing permits. Irrigated lands that are judged similar in type and productivity to those of the Rowe brothers ranch have in recent years sold in this general area at prices varying mainly between \$40 and \$70 per acre. The total realty investment per animal unit of ranching capacity for well balanced ranches has in this area varied mainly between \$250 and \$350, as indicated by the ranch sales of recent years.

It is my judgment that the Rowe brothers ranch has, with the national forest grazing and the public domain leases, a well-balanced year-round capacity for approximately 600 animal units, or for 2,500 ewes and 100 cattle. This relationship between cattle and sheep numbers can be varied, within limits. Because of the recent weather situation and it's effects upon the north-side ranges, especially, there probably should be somewhat fewer sheep and perhaps more cattle. The bunchgrass range on the south side has stood up considerably better than has the range forage on the north side.

The primary method used to derive the valuation result that is given in this appraisal was to value the different types of land on a per-acre basis through sale comparison and to make a summation of such per-acre values and buildings values. Buildings were valued at present reproduction cost minus depreciation.

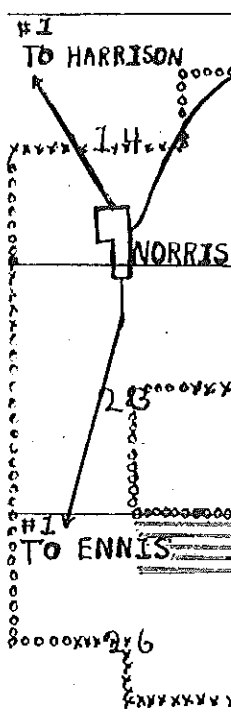
The second valuation method used, and mainly as a check upon the result of the primary method, was to value the ranch on an animal unit of capacity basis, through comparison with the sale prices of similar ranching properties in the general area. This method indicates a present value for this ranch of around \$250 per animal unit of capacity, for the ranch realty. This gives a total for the ranch realty of \$150,000.00 (600 x \$250).

Finally, the method of valuation through income capitalization was used, again mainly as a check upon the results of the primary method described previously. Use of income capitalization as a method for valuation of income properties nearly always involves the use of estimates of operator wages and of other cost items. My analysis of the market value of the work and management supplied by these four brothers and of the interest return to be calculated upon the investment in the livestock and the equipment indicated a probable remainder imputable to the ranch realty of around \$18,000 annually. This income capitalized at a 10% rate gives a value of \$180,000 for the realty of this property. The ten per cent rate for income capitalization is the most probable one, for western ranching enterprises.

This is a good ranching property. The operations have been on a frugal plane, and under the leadership of the elder brother, Henry Rowe, the operations have been efficient and the business management has been good. The buildings are ordinary and not at all "Showy", but they are generally serviceable. This ranch would not convert well into a straight cattle ranching operation, and this limits it's sale outlet to the "Gentleman rancher" bunch buyer so much in evidence in the Madison valley.

III. Appendices

The Road Route of New York
Outside boundary line, unimproved by
Public Domain Land and Under Payable

[illegible]

App. # 2

Decreed water rights on the streams used as irrigation water sources for the Rowe brothers ranch. (Hot Springs creek, Bradley or Burnt creek, and Woods creek.)

1. Hot Sp. cr.

Owner of right	Miners inches	Date of decree
Reel	50	10/1/65
Rowe	20	4/1/69
Reel	35	4/1/72
"	40	4/1/83
MacLeod	60	4/1/83
Reel	15	4/1/85
"	20	4/1/93
Johnson	15	5/1/95
Miller	25	5/1/95
"	10	5/1/98
Rowe	100	4/1/05 (Flood water)

(In addition to the above water rights on Hot Springs creek, Rowe bros. have a decreed water right on lower Hot Springs creek for 300 inches, for power generation.)

2. Bradley cr.

Rowe	40	4/1/72
"	60	4/1/72
"	15	4/1/78
Hadzor	20	4/1/79
"	30	4/1/80
"	15	4/1/86
Rowe	20	4/1/89
Hadzor	5	4/1/90
"	15	4/1/98
"	15	4/1/00
Rowe	20	4/1/03

3. Woods cr.

Rowe All (est. 20'') 4/1/03

App. # 3

Irrigation operations by the Rowe brothers ranch
(Source, Montana State Engineer)

Decree #	Name of stream	Name of ditch	acres irrigated	acres irrigable	acres total
D - 122	Hot Springs cr.	Grove ditch	48	0	48
"	Bradley creek	Bradley "	117	0	117
"	Woods "	" "	0	50	50
"	Hot Springs "	Rowe "	0	58	58
	Totals		165	108	273

The 48 acres of irrigation on Hot Springs creek under the Grove ditch, is in alfalfa. The 117 acres is in native meadow. The alfalfa field can also be irrigated from the Bradley ditch, and the lower part of the native meadow land can be watered from Hot Springs creek. This means that they can make good use of the hundred inches of flood water right, for the early irrigation.

The present water rights not counting the 100 inches of flood right on Hot Springs creek should in the average season yield four to five cubic feet per second, or enough water to irrigate at a rate of 12 to 15 acres per work day. This is sufficient for the present irrigated acreage, and probably enough for most seasons to irrigate the entire 273 acres.

Acreage and classification of deeded lands for the Rowe brothers ranch. (Source, the Madison county assessor, 3/2/55.)

Tillable lands	201 acres
Grazing	8,548 "
Mining claim lands	1,097 "
Total deeded land	9,746 acres

App. # 5

Annual and growing season deficiencies in precipitation at Norris, Montana. (Source, U. S. Weather Bureau records at the Montana Power Co. dam on the Madison river, near Norris.)

<u>Year</u>	<u>Year's total precip.</u>	<u>Departure from average</u>	
1950	17.84 inches	plus	.38 inches
1951	15.47 "	minus	1.99 "
1952	14.70 "	"	2.76 "
1953	14.15 "	"	3.31 "
1954	12.73 "	"	4.73 "

<u>Month</u>	<u>1953</u>		<u>1954</u>	
	<u>Precip., inches</u>	<u>departure from ave.</u>	<u>Precip., inches</u>	<u>departure from ave.</u>
April	2.37	plus .63	.60	minus 1.14
May	2.19	min. .88	2.36	" .71
June	2.40	" .39	2.84	plus .05
July	.57	" .74	.59	minus .72
August	.50	" .65	1.88	plus .73
September	.55	" 1.26	1.52	minus .29
Totals	8.58	min. 3.29 (27%)	9.79	minus 2.08 (17%)

(The accrued deficiency in the total annual precipitation during the past four years of deficiency is 12.69 inches, which is approximately 18% of the long-time average.)

App. # 6

The 1950 - 1954 five-year average stock numbers, production and income for the Rowe brothers ranch of Norris, Montana

1. Numbers of livestock

2,250 breeding ewes (They sell all lambs and buy replacements)
 80 cows and replacement heifers
 30 yearling cattle
 4 bulls
 65 bucks
 20 horses

2. Production, sales and gross income

2,063 lambs, ave. wt. 87#, @ 23¢, sale income =	\$41,280.63
150 yearling sheep, ave. price per hd. \$21.50 =	3,225.00
23,090 # wool @ 56¢ =	12,928.60
37 head of cattle, mixed ages and kind, @ 156.90 =	5,805.30
200 aged and cull ewes @ \$8.90 =	<u>1,780.00</u>

Average gross income per year, for the 5 years, \$65,019.53

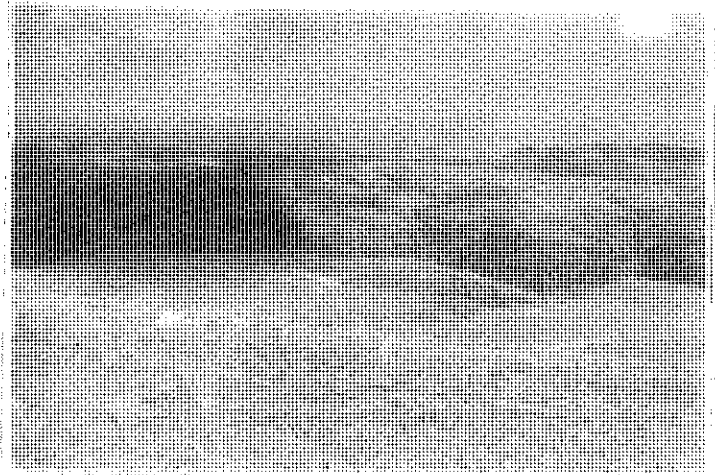
3. Operating expenses

Hired labor	\$ 3,875.00	
Board & supplies for labor	1,398.50	
Taylor grazing lease	37.45	
National forest grazing fees	713.84	
Property taxes	1,386.00	
Truck, machinery & equipment expense	2,107.00	
Auto expense charged to ranch	887.53	
Feed supplements (pellets & salt)	3,850.00	
Ewe replacements, 300 @ \$22.40	6,720.00	
Bulls, 1 head @ \$285	285.00	
General ranch expense	1,055.88	
Bucks, 25 head @ \$44	<u>1,100.00</u>	
Total operating expense		<u>\$23,416.20</u>

4. Partnership net income, for the 5 Yr. average \$41,603.33



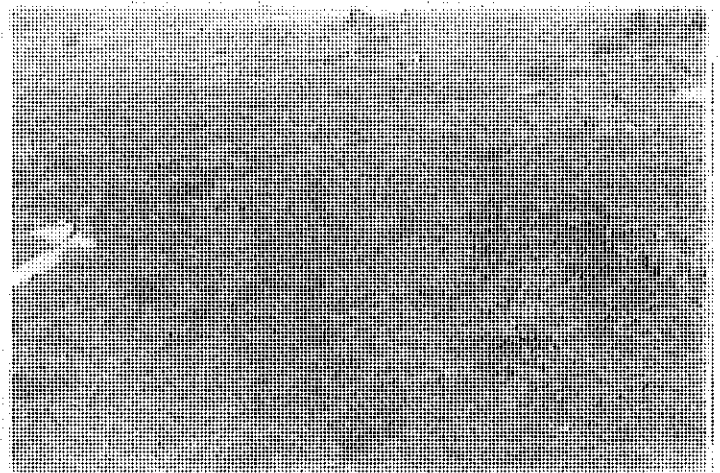
1. Typical view of the bunch-grass range of the south side



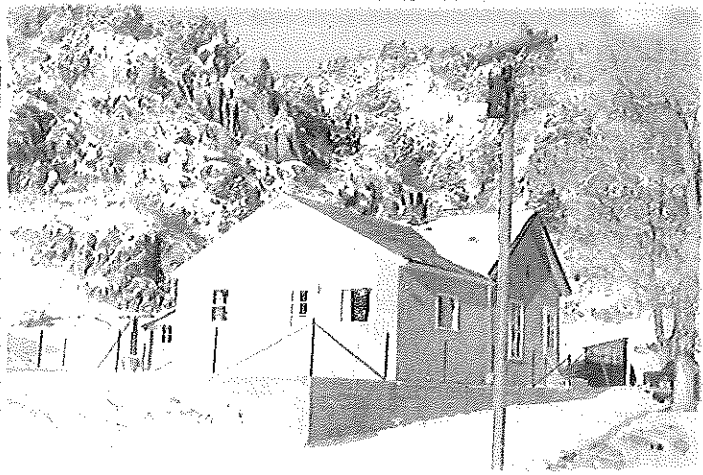
2. The north-side range, looking north across Hot Springs creek



3. The sheep winter range blows clear of snow. Photo 3/5/55.



4. The grama grass sod of the north side has stood up pretty well



5. George Rowe dwelling



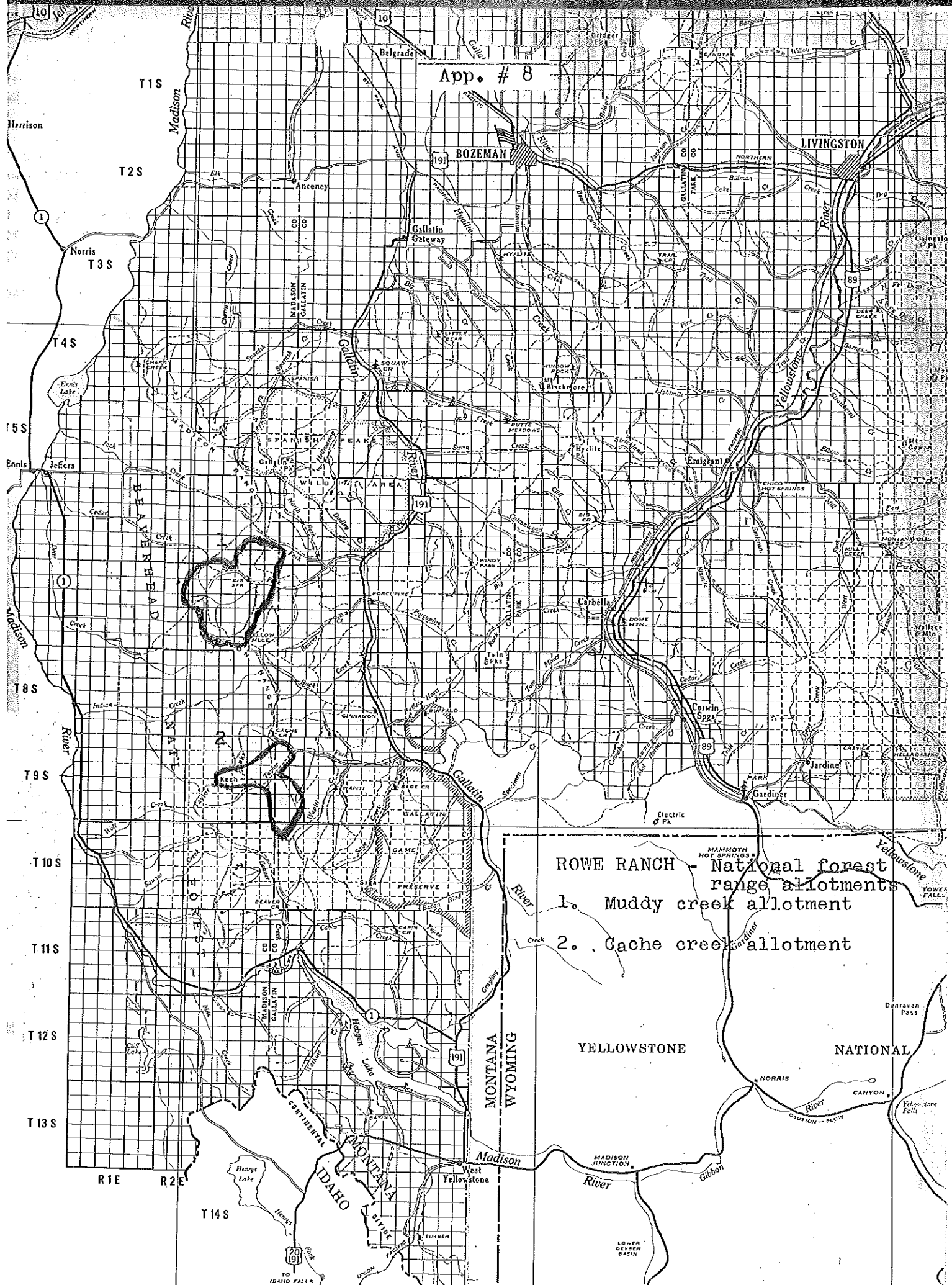
6. Ray Rowe dwelling



7. Ted Rowe dwelling



8. Henry Rowe dwelling



App. # 8

ROWE RANCH - National forest
range allotments
1. Muddy creek allotment
2. Cache creek allotment

YELLOWSTONE

NATIONAL

MONTANA
WYOMING

IDAHO

West Yellowstone

Madison Junction

Madison River

Gibson

LOWER
GEYSER
BASIN

T14 S

R1E

R2E

T13 S

T12 S

T11 S

T10 S

T9 S

T8 S

T7 S

T6 S

T5 S

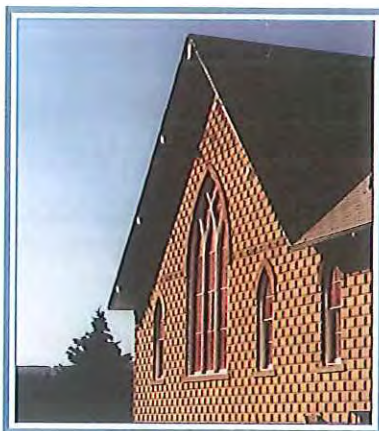
T4 S

T3 S

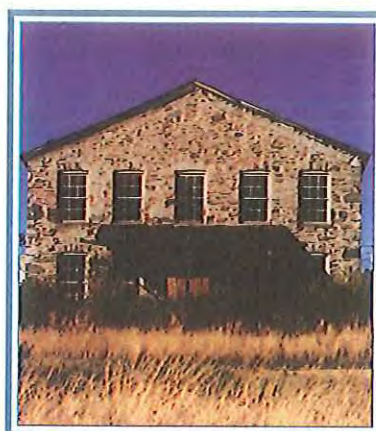
T2 S

T1 S

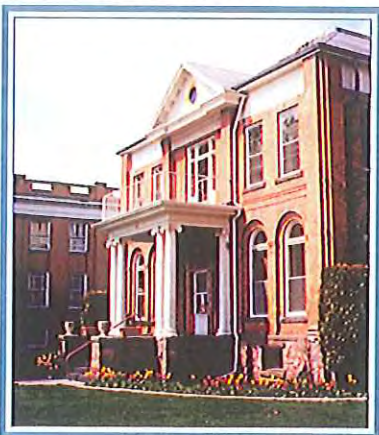
ENDANGERED PLACES 2002



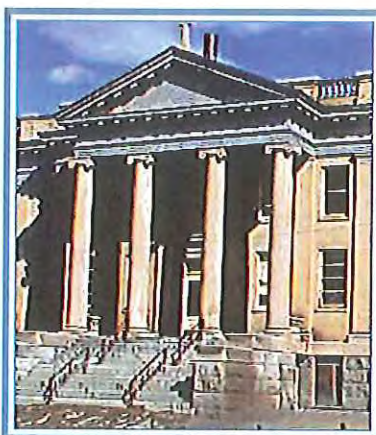
United Methodist Church
Willow Creek, Montana



Red Bluff Stage Stop



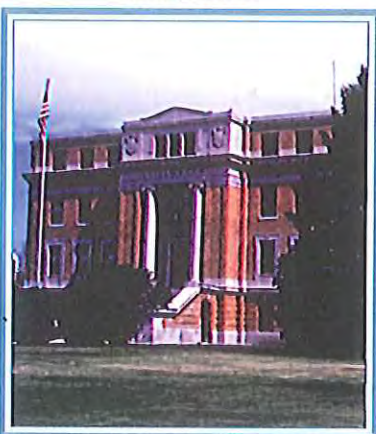
St. Francis Rectory
Missoula, Montana



Bishop Gilmore School
Helena, Montana



T. Byron Story Mansion
Bozeman, Montana



Stillwater County Courthouse
Columbus, Montana

MONTANA'S MOST ENDANGERED HISTORIC PLACES

2002

Historic Church Properties

Churches were founding institutions in the annals of Montana history, as the territory and state took form. While ministering to people's spiritual needs, religious orders and missions also offered much-needed social services to Montana's burgeoning population.

COUNTY CHURCHES

Nestled into quiet valleys or leaning into the prairie winds, the country churches of Montana have withstood many tests of time. Long after homesteaders pulled out and mining camps shut down, the churches remain to mark a time when bygone settlements were thriving and the local church was the center of community. Population has shifted in the state, and many rural communities that once supported these churches are in decline. As congregations dwindle and churches fall into disuse, creative options and local commitments are needed to rescue these beautiful buildings before they are lost.

RED BLUFF STAGE STOP

In the mid-1860's, the tiny gold-mining community of Red Bluff was born, drawing hundreds of hopeful miners to the area. Amidst the grime and clamor of mining and milling operations, this stone stage stop and hotel was built, probably during the late 1870's. The town existed only a short time, but the stage stop lived on to mark the settlement's short, energetic history. In 1956, the property became part of Montana State University's Agricultural Experiment program, and sadly, the stage station has fared badly in the years since then. Used now for limited storage, the stately old stage stop has been allowed to deteriorate to an alarming degree. Today, only the pigeons and mice spend their nights in the old sleeping rooms. If the college does not make repairs soon, this building will become a classic example of demolition by neglect.

T. FRANCIS XAVIER PARISH BUILDINGS, MISSOULA

BISHOP GILMORE SCHOOL / ST. HELENA SCHOOL, HELENA

Schools, hospitals, and orphanages were all opened under religious auspices long before the government was able to meet these needs. Today, in Helena and Missoula, this legacy is in immediate danger of being destroyed. Classes were last held in St. Helena School in the 1970's, and the school's fate is teetering as the parish considers its future. Designed by Montana architect C. S. Haire, it is one of the finest Neo-Classical buildings in the state. In Missoula, the block associated with St. Francis Xavier parish contains the 1892 church, 2 historic schools, and a rectory, designed by the city's most prominent architect, A. J. Gibson, ca. 1910. Today, pressure to demolish one or all of the auxiliary buildings for parking turns its back on the wonderful heritage of these imposing buildings.

STORY MANSION

Built in 1912 for T. Byron Story, a member of one of Bozeman's founding families, the Story Mansion is a striking example of Tudor Revival architecture, and one of Montana's most outstanding residences. The mansion was sold to the SAE fraternity during the 1920's, and has been home to the young men of SAE since that time. The home is now in need of critical repair, and SAE plans to sell the property and move elsewhere. Development pressure and the cost of renovation threaten this building today as preservationists work with public groups and private individuals to see that the Story Mansion and its spacious grounds continue to grace Bozeman's oldest neighborhood for generations to come.

MONTANA COURTHOUSES

During the late 19th and early 20th century, Montana was organized into 56 counties. Newly-built courthouses, temples of American democracy, opened their doors and invited county residents to participate. Within those walls people found the public institutions upon which Montana society was constructed - government, justice and education. The courthouses range from the simple false-fronted Daniels County courthouse to imposing Romanesque buildings of sandstone and granite, yet today they share one thing in common: most are now aging and many are in serious need of repair. At the start of the 21st century, Montana counties must step into the future, expand services, upgrade telecommunications and provide accessibility to all. Montana leaders are challenged to find solutions and preservationists must join in; these stately buildings are keystones in state and local history that we simply cannot afford to lose.

MONTANA PRESERVATION ALLIANCE

The Stage Don't Stop Here No More:



Reviving the Red Bluff Stage Stop

A Montana Preservation Team Workshop

Saturday, May 17, 2003

Red Bluff Agricultural Research Station

Sponsored by Montana Preservation Alliance

With

Montana State Historic Preservation Office

Montana State University

The Montana Preservation Team is an MPA outreach activity made possible by the generous participation of our board and other historic professionals in Montana.

Red Bluff Research Ranch

Property Number	Original Acres	Current Acres	Date
900100032	12.09	12.09	9/17/1979
900100046	680.00	680.00	8/16/1967
900100046	320.00	320.00	8/16/1967
900100050	9746.00	9752.00	3/8/1956
900100055	44.69	44.69	3/21/1962
900100058	142.47	142.47	9/8/1984
Total Current Acres	10945.25	10951.25	

RED BLUFF RANCH PURCHASE

The Red Bluff Ranch (previously known as the Rowe Brothers Ranch) was purchased in 1956 for \$164,000. The total acreage was 9,746. Part of the purchase price, \$16,000, was from the First Morrill Permanent Agricultural College Land Grant Fund.

The balance was paid according to state statute: "All monies collected by the experiment station and animal husbandry department shall be set aside in a special fund, from which fund there is hereby appropriated for the use of the Montana Agricultural Experiment Station so much thereof as may be necessary for the payment of salaries and expenses, including purchase of land". Title 75, Chapter 2, of the Revised Codes of Montana, 1947, as amended by Chapter 186, Laws of 1955.

Two U. S. Forest Service Grazing Permits (Muddy Creek, Cache Creek) in the Gallatin National Forest came with the Rowe property.

Key players in this sale:

Maurice Kelso, retired Dean
Everett Shuey, former Executive Director of the Montana Wool Growers

Jim Drummond - Bozeman
J. L. Van Horn - Bozeman
Joe Asleson - Bozeman

Wool Growers - influence that got legislation passed to make purchase possible.

The Experiment Station had some land in Bridger Canyon that was sold and the money was used to help with the purchase (Drummond)

Additional purchases:

- | | |
|------|---|
| 1967 | 1,000 acres purchased from Arliss McKinnon Ewalt from \$20,640. Money came from the AES Director's Office Reserve. In May 1959 AES entered into a lease agreement with Ewalt which contained an option to purchase. Board of Regents item 203-301 authorized AES to exercise this option. |
| 1979 | 12.09 acres were purchased from the Burlington Northern Railroad for \$10.00. |
| 1983 | Bausch land trade. Approximately 320 acres with traded with the Mr. & Mrs. Bausch. \$1.00 was paid to the Bauschs. |
| 1984 | AES purchased 142.47 acres from the Bureau of Land Management under the Recreation and Public Purpose Act. The parcels were located within the boundaries of the Red Bluff Ranch. Price paid \$356.18; most likely paid from the Director's Office reserve. |

rbrhist.vau

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Montana State University

Land File Archive Box

Contents:

Various Correspondence concerning land transactions.

History of MAES Lands as compiled by Darlene Wruck

Various Notes, Maps and worksheets used to create land value worksheets

Files:

Property Number	Description - Acquired From	Description - Current	1056	State Real Property Description	Warranty Deed	Abstract of Deed	Miscellaneous Correspondence
100001	Atkinson, Ham, Hamilton Richter	Hannon Hall	x	x	x		
100002	Brewer, Wm & Mabel	Garfield & 7th	x	x	x	x	
100003	Burke, E & S / Fisher, RW & Mattie	Lewis & Clark Dorm Lawn	x	x	x		
100004	Cobb, BP & Sarah	10th & College	x	x	x	x	
100006	Dearborn, Charles & Florence	Hannon Hall	x	x	x		
100007	Dier George & Lois	Cobleigh Roberts/ EPS/ Heat Plant	x	x	x	x	
100008	Finlay, Robert & Gertrude	Parking Lot - 11th & College Park	x	x	x	x	
100009	Gallatin County	Quads	x	x	x		
100010	Gallatin County	Family Housing/ FWP/ Intramural Fields/ Single Family Housing/ Daycare/ SOB Barn/ Dorms/ McCall/ CAC/ PGC/ AgBio/ Parking/ Intramural Ball Fields	x	x	x		x
100011	Hamilton, James / Linfield, FB & Mary	Hannon Hall Lawn	x	x	x	x	
100012	Hauseman, McCall	Quads	x	x	x	x	
100013	Koch, Errol & Mattie	Physical Plant Yard	x	x	x		
100014	Koch, Peter & Laurentza	Hamilton Hall & Danforth Chapel	x	x	x	x	
100015	Northern Trust Company	Sherrick Hall	x	x	x	x	
100016	O'Connell, Michael & Ada	Hannon Hall	x	x	x		
100017	Patterson, James L	Lewis & Clark (Johnstone)	x	x	x	x	
100018	Purdy, Wilfred N	Hapner Hall, Lewis & Clark Lawn	x	x	x	x	
100019	Reid, James & Ella	Langford Hall	x	x	x	x	
100020	Robinson, Lester	Spur to Heat Plant Through Thompson Land	x		x		
100021	Standard Construction Company	Plew Physical Plant	x	x	x	x	
100022	Story, Nelson & Ellen	Duck Pond	x	x	x	x	
100024	Thaler, Joseph & Mabel	Lewis & Clark Lawn	x	x	x		
100025	Velkamp	Foundation		missing from file....			
100026	Victoria Land Company	Wilson/ L Johnson/ Linfield/ Taylor/ Cooley/ ARC/ Lewis Hall/ Montana Hall	x	x	x	x	
100027	Victoria Land Company	Herrick Hall/ SUB/ Vis Comm/ Gaines Hall/ Romney Gym/ AJM Johnson/ Swingle Bldg/ Parking Lot/ H&PE/ Fieldhouse Parking	x	x	x	x	
100028	Victoria Land Company	Renne Library/ Reid Hall/ Sherrick Hall	x	x	x	x	
100029	Miscellaneous MSU Land		x			x	
100030	Bitterroot Valley Irrigation Co	Western Ag Experiment Station (Summerdale Orchard)	x	x	x		House Bill 216
100031	Boldt, E.F.	EF Boldt Farm	x	x	x		Loan/Escrow
100032	Burlington Northern, Inc.	Red Bluff Research Ranch	x	x	Quitclaim		x
100033	Cooley, A.M. & Margaret	Eastern Ag Station, Sydney, MT (Richland County)	x	x	x		
100034	Denzer, Ronald & Sandra	Western Triangle Research, Conrad, MT (Ponderosa Co)	x	x	x		x
100035	State of Montana	Northern Ag Station, Havre, MT	x				
100036	Congressional Act- U.S. Government	Fort Ellis Ag Station	x	x	x		x
100037	Gallatin Valley Seed Company	Post Research Farm - Agronomy Farm	x	x	x	x	Water Contract
100038	Lutz Farm Property	Lutz Farm Property	x		x		x
100039	Girvin, Donald & Mae	Girvin Ranch	x	x	x		Realty transfer
100040	Grob, Fred P & Corinna	Northwestern Ag Station, Kalispell, MT (Flathead Co)	x	x	x		Appraisal
100041	Hanson, Peter & Mabel	Agronomy Farm - Adjacent to Post Research Farm	x	x	x		Water Contract, Escrow, House Bill 581
100042	Hartman, Joseph	Ag Experiment Station, Joseph M Hartmann Memorial Ranch (Phillips Co)	x				
100043	Hobson, S.S.	Central Ag Research Station, Moccasin, MT (Fergus Co)	x		x		House Bill 405
100045	Martin, Broox & Ella	Technology Park / Marsh Lab	x	x	x		Oil & Gas Lease
100046	McKinnon, Arlis	Red Bluff Research Ranch	x	x	x		Lease - Option to Purchase
100047	O'Hara, R.A.	Western Ag Experiment Station (Summerdale Orchard)	x	x	x		House Bill 170
100048	Richland County	Eastern Ag Station, Sydney, MT (Richland County)	x	x	x		Oil & Gas Lease, Mineral Rights
100049	Roberts, Milo & Edith	Northwestern Ag Station, Kalispell, MT (Flathead Co)	x	x	x		Escrow & Payments
100050	Rowe, Henry & Wilma	Red Bluff Research Ranch (Sheep Ranch)	x	x	x		Payments/Title Ins.
100052	Thompson, Lawrence & Mary	Fieldhouse/ Reno H Sales Stadium/ Faculty Court/ Poultry Barn, Storage & Records Storage	x	x	x		Water Purchase
100053	Towne, Norman & Lola	Various Trades - AES and Foundation Land	x	x	x		Water Rights/Foundation
100054	U.S. Government, Dept of Interior, BLM	Southern Ag Research Station, Huntley, MT (Yellowstone County)	x	x	Patent		
100055	Utley, Omar	Red Bluff Sheep Ranch	x	x	x		
100056	Miscellaneous MSU Land		x				
100057	Aaker	Buffer Zone Between Marsh Lab & Future Development	x	x	x		Survey/ Right of Way
100058	BLM - Recreation & Public Purpose Act	Red Bluff Research Ranch	x		Patent		Correspondence & Maps
100059	Thackery	Northern Research Station, Thackary (Hill County)	x				
100032	Gibson Ranch - Big Timber	Not Currently MSU - Acquired, Traded, Sold					
100049	Hudekuper Ranch - Big Timber	Not Currently MSU - Acquired, Traded, Sold					

Property #	Description	Original # Acres	Current MSU Owned # Acres	Date	Title	Acquired From:	Additional Notation
900100031	Boldt Farm - NE 1/4 (160 Acres) and N 1/2 of the SE 1/4 (80 Acres) and 10 Acres (32 x 50 Rods) of the NE Corner of the SW 1/4 all of Sec 15, T2S, R5E	250.00	MSU Land - 57.8 Acres AES Land - 169.4 Acres Foundation Land - 22.8 Acres (1990 Lutz Farm Trade)	12/13/1958	EF Boldt Farm	Emil F Boldt	Boldt Farm, (Bozeman) 80.6 Acres to ERF for Big Timber Ranch Trades (Value set at \$3,560/Acre in 1980) and 169.4 to AES. Big Timber Portion was traded back to MSU from ERF after the Huldekoper and Gibson Ranch Sales (Value in 1985 set at \$6K/Acre) ERF Received 22.8 Acres in 1990 as part of the Lutz farm trade (Value in 1990 set at \$7,250/Acre.)
900100032	A parcel of land situated in the SE1/4SW1/4, S14 and the NE1/4NW1/4, S23 both of T3S, R1W	12.09	12.09	9/17/1979	Red Bluff Research Ranch	Burlington Northern	
900100036	The SE1/4SE1/4, S10 and the N1/2, the SW1/4, the N1/2SE1/4, and the SW1/4SE1/4 S15 all in T2S, R6E	640.00	640.00	1/30/1923	Fort Ellis Ag Station	Congressional Act - Land cannot be sold - must be returned to the US Government	Nominal Donation
900100037	E 1/2 of SW 1/4 and W 1/2 of SE 1/4 of S7, T2S, R5E	160.00	160.00	5/9/1957	Post Research Farm - Agronomy Farm	Gallatin Valley Seed Company	
900100038	The S1/2 of the NW1/4 and the SW1/4, S24, T1N, R5E and the W1/2, S25, T1N, R5E	560.00	560.00	7/1/1995	Lutz Farm Property	Helen Walsh Lutz	
900100039	SW 1/4, S14, T2S, R5E	160.00	MSU Land - 120 Acres Aaker Land - 40 Acres	10/17/1957	Girvin Ranch (Assumed equal value in Aaker trade which would be ~\$5,100/Acre in 1984)	Donald & Mae Girvin - (traded by MSU to AES for the Original Farm) (Property # 100010)	Homestead on 2 acres. AES exchanged 40 acres of Girvin Farm for 24.02 acres belonging to the Aakers. This exchange provided a buffer zone between Marsh Lab and future development
900100041	A parcel of land situated in S1/2SE1/4NE1/4 and the E1/2SE1/4 of Section 7, T2S, R5E	93.92	93.92	4/6/1977	Agronomy Farm - Adjacent to Post Research Farm	P & M Hanson	
900100045	NE 1/4 of S14, T2S, R5E, except for a (30' x 330') parcel in the NW corner.	160.00	MSU Land - 70.9 Acres Foundation - 89.1 Acres	5/15/1909	Technology Park/ Marsh Lab	B & E Martin	89.1 Acres traded to Foundation for Technology Park in 1990 appraised at \$7,000/Acre
900100046	Tract 1 - N1/2 NW1/4; SW1/4NW1/4; Lot 1; E1/2NE1/4; Lots 3 & 4; NE1/4 SE1/4 all of Section 32, T3S, R1E AND NW1/4; W1/2NE1/4; NE1/4NE1/4; NW1/4SW1/4 all of Section 33, T3S, R1E	680.00	680.00	8/16/1967	Red Bluff Ranch - Tract 1	Arlis McKinnon	
	Tract 2 - Lots 3 & 4; E1/2SW1/4; SE1/4 of Section 30, T3S, R1E	320.00	320.00	8/16/1967	Red Bluff Ranch - Tract 2	Arlis McKinnon	
900100050	Tracts in: T3S, R1E/ T3S, R1W/ Plus numerous mining claims and Mill Sites - Legal Description too long to list	9,746.00	After Trade W/Bausch: MAES ~9,752 Acres	3/8/1956	Red Bluff Sheep Ranch (Red Bluff Research Ranch)	Henry Rowe	~300 Acres traded to J&D Bausch for ~306 Acres in 1982 which was equivalent in value and was to the mutual agreement and benefit of both parties. (See ***Note)
	***Note: 1982 land trade at Red Bluff with the John & Donna Bausch. MSU received 306.22 acres.						
	Bausch Land Legal Description: Approx 306 Acres Lots 1 and 2, N 1/2 of the SE1/4, S23, T3S, R1W (146.22 Acres) and the SW 1/4, S24, T3S, R1W (160 Acres)		MAES Land Description: Approx 300 Acres Portions of S12,13,14,22 T3S, R1W (A portion of the Rowe Ranch Land)				
900100053	NW 1/4 of S14, T2S, R5E (Subject to existing easements.)	160.00	MSU Land - No Acres AES Land - 120 Acres Foundation Land - 40 Acres (1990 Lutz Farm Trade)	7/16/1955		N & L Towne (40 Acres traded to Foundation and 120 Acres traded to AES for Thompson Land)	Towne Farm, (Bozeman) 40 Acres to ERF for Big Timber Ranch Trades (Value set at \$3,560/Acre in 1980) and 120 to AES for Thompson Property. Big Timber Portion was traded back to MSU from ERF after the Huldekoper and Gibson Ranch Sales (Value in 1985 set at \$6K/Acre) ERF Received 40 Acres in 1990 as part of the Lutz farm trade (Value in 1990 set at \$7,250/Acre.)
900100055	3 Mining Claims located in S18, T3S, R5E	44.69	44.69	3/21/1962	Red Bluff Sheep Ranch	Utey (Sorte-Executor of Will)	
900100058	T3S, R1E - Sec 7, Lot 7 and Sec 32, Lot 2 (SE1/4NW1/4) and T3S, R1W - Sec 26, lots 1 & 2	142.47	142.47	9/8/1984	Red Bluff Ranch	BLM - Recreation & Public Purpose Act	

This page sent to Jan Ward (DNRC) along with 9/27/1990 memo to President Tietz from Max Amberson. (Mailed 1/30/2003)

QUITCLAIM DEED

THIS INDENTURE, Made the 17th day of September

in the year of our Lord one thousand nine hundred and seventy-nine, between
BURLINGTON NORTHERN INC., a corporation organized and existing under the laws of
the State of Delaware, successor in interest to Northern Pacific Railway Company,
party of the first part, and the STATE OF MONTANA, FOR THE BENEFIT AND USE OF THE
MONTANA AGRICULTURAL EXPERIMENT STATION, of Bozeman, Montana 59717, party of the
second part,

WITNESSETH: That the said party of the first part for and in consideration of the sum of Ten and no/100 Dollars (\$10.00) and other good and valuable consideration to it in hand paid by the said party of the second part, the Receipt of Which is hereby acknowledged; does convey, remise, release and forever quitclaim, without any covenants of warranty whatsoever, unto the said party of the second part, and to its successors and assigns, the following described real estate,

to-wit:

Red Bluff

That part of the Southeast Quarter of the Southwest Quarter (SE1/4 SW1/4) of Section 14 and the Northeast Quarter of the Northwest Quarter (NE1/4 NW1/4) of Section 23, Township 3 South, Range 1 West of the Montana Principal Meridian, Madison County, Montana, described as follows:

Commencing at the quarter corner on the North line of said Section 23; thence South 71° 27' West, a distance of 889.8 feet to the true point of beginning; thence from said true point of beginning South 70° 00' East, a distance of 190 feet; thence South 20° 00' West, a distance of 103.4 feet; thence South 23° 00' East, a distance of 782 feet; thence South 27° 12' West, a distance of 130.2 feet; thence North 23° 00' West, a distance of 381.92 feet; thence North 70° 00' West, a distance of 446.44 feet; thence South 20° 00' West, a distance of 75 feet; thence North 70° 00' West, a distance of 25 feet; thence South 20° 00' West, a distance of 500 feet; thence North 70° 00' West, a distance of 50 feet; thence North 20° 00' East, a distance of 500 feet; thence North 70° 00' West, a distance of 25 feet; thence North 20° 00' East, a distance of 1,889 feet; thence along a 10° curve to the left having a central angle of 52° 38' to a point 102.06 feet Southwesterly of the track center line of the most Northern leg of the wye track of Burlington Northern Inc.'s Sappington to Norris Branch line; thence North 51° 36' 17" East, a distance of 52.06 feet; thence through an arc of 3° 55' 20" left, radius of 2,915.00 feet, the long chord of which bears South 41° 12' 43" East, to a point 50 feet distant Northeasterly of the Westerly leg of said

we track; thence along a 10° curve to the right having a central angle of $52^\circ 38'$, to a point of tangency, said point being 975.9 feet Northerly of the South line of said Southeast Quarter of the Southwest Quarter (SE1/4 SW1/4) of Section 14 measured along the track center line of the Westerly leg of said wye track; thence South $20^\circ 00'$ West to a point 50 feet Northwesterly of the track center line of the Southerly leg of said wye track; thence Northeasterly along a $7^\circ 30'$ curve to the right having a central angle of $51^\circ 17'$ to a point 300 feet Westerly of the East line of said Southeast Quarter of the Southwest Quarter (SE1/4 SW1/4) of Section 14 measured along a line 50 feet Northwesterly of the track center line of said Southerly wye track; thence Southeasterly at right angles to the last described course, a distance of 100 feet; thence Southeasterly along a $7^\circ 30'$ curve to the left having a central angle of $51^\circ 17'$, a distance of 683.8 feet; thence South $20^\circ 00'$ West, a distance of 340.0 feet to the point of beginning; and also,

A strip of land 100 feet wide in the East Half of the Northwest Quarter (E1/2 NW1/4) of Section 23, Township 3 South, Range 1 West, Montana Principal Meridian, said strip being 51.5 feet wide on the Northerly side and 48.5 feet wide on the Southerly side of the following described line:

Commencing at a point on the North line of said section where the same is intersected by the center line of State Highway, Federal Aid Project No. 171-C as the same is now located and to be constructed; thence Southerly along said highway center line 632.7 feet to a point of curve; thence along a curve to the right, tangent to last described line at last described point and having a radius of 2,864.93 feet, a distance of 661.7 feet to a point of tangent; thence Westerly at right angles along the radius line of said curve at last described point, a distance of 30 feet to the point of beginning; thence continuing along said last mentioned line, a distance of 365.6 feet to a point on the West side of the present county road and the terminal point of this description.

EXCEPTING AND RESERVING, however, unto said party of the first part, its successors and assigns, all of the coal, oil, gas, casinghead gas and all ores and minerals of every kind and nature underlying the surface of the premises herein conveyed, together with the full right, privilege and license at any and all times to explore, or drill for and to protect, conserve, mine, take, remove and market any and all such products in any manner which will not damage structures on the surface of the premises herein conveyed.

The party of the second part hereby releases and forever discharges the party of the first part from any and all present or future obligations of the party of the first part, for the construction of or continued maintenance thereto of any railroad fences, snow fences, road crossings, cattle guards, gates, farm crossings, bridges, drainage or irrigation pipes, if any, located and situate on the premises herein conveyed.

Together with all the tenements, hereditaments and appurtenances thereunto belonging, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof; and also all the estate, right, title, interest, property, possession, claim and demand whatsoever as well in law as in equity, of the said party of the first part, of, in or to the said premises and every part and parcel thereof

Red Bluff Ranch

Deeded December 5, 1956

Description

9,746 acres, Norris Madison County (see deed for full legal description)

T3S, R1E, MPM:

- 1.) Lots 5 & 6, the N1/2 of S1/2, SW1/4 of SW1/4 & SE1/4 of the SE1/4 of Sec 5
- 2.) S1/2 of NE1/4, N1/2 of SE1/4, SE1/4 of SE1/4, & NE 1/4 of SW1/4 of Sec 6
- 3.) Lots 2,4,& 8, NE1/4 of NW1/4, SE1/4 of NW1/4, NE1/4 of SW1/4 & S1/2 of SE 1/4 of Sec 7 *Excepting* from the SE1/4 of NW 1/4 & NE1/4 of SW1/4 of Sec 7 (Black Chief Lode Mining Claim, Survey 5965, Book 64 of Patents pg. 299, Madison County). *Excepting and Excluding* from NE1/4 of SW1/4 & Lot 4 of Sec 7 the area contained within the right-of-way lines of the public highway leading from Norris to Bozeman (Federal Aid Project S 63 (4) Book 162 of Deeds pg. 109 Madison County). *Excluding and Excepting* from Lot 4 of Sec 7 the Red Bluff Cemetery (Book 162 of Deeds pg. 417 Madison County)
- 4.) Lots 4, 14, 15, 17, 19, & SE1/4 of NE1/4 of Sec 8
- 5.) Lots 1&2, the E1/2 of NW1/4, & W1/2 of NE1/4 of Sec 9 *Excluding and excepting* from Lot 2 of Sec 9 the area contained within the right-of-way lines of the public highway leading from Norris to Bozeman (Federal Aid Project S 63 (4) across Lot 2)
- 6.) N1/2 of Sec 17
- 7.) Lots 2,3, & 4, E1/2 of SW1/4, W1/2 of SE1/4 & E1/2 of E1/2 of Sec 20
- 8.) Lots 1,2,4, & 5, NW1/4, N1/2 of SW1/4 of Sec 21
- 9.) E1/2, & SW1/4 of Sec 28
- 10.) Lots 1,2,& 3, Sw1/4 of NW1/4, the E1/2 of NW1/4, W1/2 of NE1/4, S1/2 of Sec 29

T3S, R1W, MPM:

- 11.) Lots 2,3, & 4, S1/2 of NW1/4, SW1/4 of NE1/4, SW1/4 & W1/2 of SE1/4 of Sec 1
 - 12.) N1/2 of NW1/4, & NW1/4 of NE1/4 of Sec 12
 - 13.) NW1/4 of Sec 24
 - 14.) NW1/4, Lots 3 & 4, & N1/2 of SE1/4 of Sec 26
- Excluding and excepting from the foregoing tracts all unpatented lode & placer mining claims.

- 15.) Lots 5,6, & 7, & SE 1/4 of NW1/4, NE1/4 of SW1/4, SE1/4 of SW1/4, & SW1/4 of SW1/4 of Sec 6; & Lots 1,5,9,10 & N1/2 of NE1/4 of Sec 7
- 16.) Lots 1,2,3,12, & 13, & S1/2 of S1/2 of Sec 8; S1/2 of Sec 17; Lots 1,4,6,9,10,11,12, & 13 & SW1/4 of SE1/4 of Sec 18; & Lot 1 of Sec 19; & W1/2 of NE1/4, SE1/4 of NW1/4, N1/2 of NW1/4 of Sec 20; all in T3S, R1E, MPM
- 17.) SE1/4 of NE1/4, & E1/2 of SE1/4 of Sec 1; NE1/4 of NE1/4 of Sec 12; all in T3S, R1W, MPM
- 18.) Lots 3 & 6, & SE1/4 of SW1/4 of Sec 7, T3S of R1E MPM, containing 110.65 acres
- 19.) Lots 2,3, & 5, & E1/2 of SW1/4 of Sec 18, T3S, R1E MPM containing 189.95 acres
- 20.) Lots 3 & 4, & E1/2 of SW1/4 of Sec 9, T3S, R1E MPM Containing 152.12 acres
- 21.) All of Sec 16, T3S, R1E, MPM less 10 acres held by the State of Montana
- 22.) S1/2 of SW1/4, & SE1/4 of Sec 12, T3S, R1W, MPM containing 240 acres

23.) NE 1/4, S1/2 of NW1/4 & SW1/4 of Sec 13 T3S, R1W less 47.54 acres sold by Alexander Norris by deed recorded in Book 52 pg 156, less exception containing 352.46 acres

24.) SE1/4 of NE1/4 of Sec 14 T3S, R1W MPM

See Warranty Deed for rest of legal description.

McKinnon land purchase: (Tract 1: N1/2NW1/4, SW1/4NW1/4, Lot 1, E1/2NE1/4, Lots 3 and 4, NE1/4SE1/4 of Sec 32, T3S, R1E, MPM also the NW1/4, W1/2NE1/4, NE1/4NE1/4, and NW1/4SW1/4 of Sec 33, T3S, R1E, MPM and Tract 2: Lots 3,4, the E1/2SW1/4, and SE1/4 of Sec 30, T3S, R1E, MPM

Owner of Record

"THE STATE OF MONTANA, for the use and benefit of Montana State College" (Warranty Deed December 5, 1956) On the Quitclaim deed for land purchased from the Burlington Northern it reads, "the STATE OF MONTANA, FOR THE BENEFIT AND USE OF THE MONTANA AGRICULTURAL EXPERIMENT STATION" On a patent that grants some BLM land the wording reads; "State of Montana, Agricultural Experiment Station, Montana State University" On the warranty deed for a purchase of land from Arliss McKinnon Ewalt the deed reads "the STATE OF MONTANA for the benefit and use of THE MONTANA AGRICULTURAL EXPERIMENT STATION"

History

The ranch known as the Rowe Brother Ranch (Red Bluff) carries a unique history; gold and silver mining, settlements, and sheep ranching. The ranch headquarters is on the site of the old mining camp of Red Bluff. There is a stone building over 100 yrs old, two cemeteries, and various other buildings. A hot spring is nearby along with a mixture of geological interests.

In the 1950s MSU looked at purchasing Red Bluff Ranch. Dean M.M. Kelso inquired to know if the purchase was feasible. The Board of Education approved the purchase. Then State Attorney General, Arnold H. Olsen approved the purchase. In his letter of approval he says, "that such transaction meets the statutory requirements" and that the purpose was "for the use and benefit of the Montana Agricultural Experiment Station by the Executive Board of the Montana State College."

President R.R. Renne and Dean M.M. Kelso purchased the ranch from the Rowe Brothers for \$164,000 from the first Morrill Land Grant funds and Experiment Station Income Funds. Along with the purchase came the water rights, a list of mineral rights (including various mining claims), 2 Forest Service grazing permits (Muddy Creek Allotment & Cache Creek Allotment), State of Montana Grazing and use leases, and any United States Taylor Grazing rights/leases.

Since the purchase various cattle, sheep, and range research projects have taken place. Ecology, biology, botany, geology, history, archeology, sociology, architectural, and civil engineering students and staff have participated in field studies at the ranch. Various people have worked at the ranch over the years. Some names include: Jim

Williams, Fed Willson, Hary Cockrum, Gene Payne, O.O. Thomas, Farrel Bransom, Art Hoversland, Fred Gomm, J.L. Van Horn, and others. Other projects have gone on as well: various leases, easements, right-of-ways, for telephone, electrical companies, grazing leases, and a BLM land transfer have all taken place. Installation of a seismic station, mining work, removal of a stock crossing under Highway 84, a historical archaeological dig, a wind study, various surveying activities, historical preservation of buildings, mining reclamation work, a 10 yr. sold waste lease, construction of a pole barn, general ranch maintenance, irrigation projects, the sale of fill dirt, weed control measures, and additional land purchases are all some of the many projects MAES has performed.

Water Right

All water rights went with the purchase. 20 miners inches in Hot Springs Creek plus 100 miner's inches (flood water) in Hot Springs Creek. (A correspondence mentions 155 miner's inches in Bradley Creek? but unsure if this is such the case.) Also, an estimated 20 miner's inches in Woods Creek. Water rights are contained in the table below:

Water Rights of Red Bluff						
No.	Priority Date	Source	Use	Flow Rate Claimed		Volume Claimed
107232	12/31/56	Spring, Trib Burnt Crk	Stock	10	GPM	1
107230	12/31/56	Spring, Trib Boaz Gulch	Stock	10	GPM	1
107237	12/31/56	Spring, Trib Burnt Crk	Stock	10	GPM	1
107236	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107135	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107233	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107239	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107260	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107257	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107229	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107228	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107227	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107238	12/31/56	Spring, Trib Burnt Crk	Stock	10	GPM	1
107254	7/1/1872	Burnt Crk	Stock	30	GPM	2
107240	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107248	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107245	12/31/56	Spring, Trib Boaz Gulch	Stock	10	GPM	1
107252	3/63/1884	Spring, Trib Boaz Gulch	Stock	200	GPM	2
107251	4/1/1869	Hot Springs Creek	Stock	30	GPM	2
107250	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107249	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107253	12/31/56	Spring, Trib Boaz Gulch	Stock	10	GPM	1
107246	4/1/1869	Spring, Trib Hot Sprgs Crk	Stock	200	GPM	1
107256	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107244	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107243	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1

107242	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107255	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107241	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107259	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107290	4/1/1878	Burnt Crk	Irrigation	0.38	CFS	60
107292	7/1/1872	Burnt Crk	Irrigation	60	MI	200
107264	12/31/56	Spring, Trib Boaz Gulch	Stock	10	GPM	1
107275	4/1/03	Woods Creek	Irrigation	All (20")	MI	40
107276	4/1/05	Hot Springs Creek	Irrigation	100	MI	240
107283	4/1/1889	Hot Springs Creek	Irrigation	40	MI	160
107289	4/1/1872	Hot Springs Creek	Irrigation	20	MI	80
107262	12/31/56	Spring, Trib Boaz Gulch	Stock	10	GPM	1
107261	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1
107293	4/1/1869	Hot Springs Creek	Irrigation	20	MI	180
107294	4/1/03	Burnt Crk	Irrigation	0.5	CFS	80
107315	12/31/20	Well	Domestic	10	GPM	1.5
107316	4/1/1869	Spring, Trib Hot Sprgs Crk	Domestic	15	GPM	4
107317	7/12/12	Hot Springs Creek	Power	300	MI	5475
107263	12/31/56	Spring, Trib Boaz Gulch	Stock	10	GPM	1
107231	12/31/56	Spring, Trib Madison River	Stock	10	GPM	1
107258	12/31/56	Spring, Trib Hot Sprgs Crk	Stock	10	GPM	1

Mineral Rights

There are around 28-patented claims on the Red Bluff properties. Investigation should be undertaken to determine what rights belong to MAES (surface/full mineral or more).

undertaken to determine what rights belong to MAES (surface/mineral or more).

Mining Claims								
Lode	Lot #	Survey No.	Rng	Sec	Book	Pg	Right	Other info
Silver King	44	1467	1E	7	42	102		
Black Chief	5965	5965	1E	7	64	299		
Home	48	2645 (2675)	1E	7	42	223		
Red B. West Branch	5966	5966	1E	8	64	296		
Eureka	6683	6683	1W	23	64	501	Hughes 100%	
Nevada	6684	6684	1W	26	64	501	Hughes 100%	
May Queen Mill Site	42B	1272 B	1E	7	40	99		
Water	40A	1254A	1E	19	40	177	clear title	Reclamation work
Water Mill Site	40B	1254B	1E	7	40	177	MAES 100%	
Zero	47	2645	1E	8	42	322		
Golconda Mill Site	42B	1472 B	1E	7	40	99		Reclamation work
Phillippo	5943	5943	1E	18			clear title	
Red Bluff East	45	2191	1E	18	42	162	Unclear title	
Red Bluff North	41	1264	1E	18	39	129	Unclear title	Reclamation work
Red Bluff	37A	107A	1E	18	33	127		
Red Bluff Mill Site	37B	107B	1E	18	33	127		
Mohegan	39A	1253A	1E	18&19	40	170	2/3 interest	Reclamation work
Mohegan Mill Site	39B	1253B	1E	8	40	170	100%	Reclamation work
Wide Awake		5942	1E	18			clear title	Reclamation work

Lone Star		5941	1E	18		clear title	Reclamation work
Gambette		5940	1E	18		clear title	Reclamation work
Chain Saw						BLM	Reclamation work
Au-Group						BLM	Reclamation work
Sarah Group						BLM	Reclamation work
Joe Glenn Mining						MSU?	
Blizzard Point		3949					Not owned by MSU
Chessoning		3952					Not owned by MSU
Cordwainer		3955A					Not owned by MSU
Cordwainer Mill Site		3955B					Not owned by MSU
Curlew		3950					Not owned by MSU
Dimon		3951					Not owned by MSU
Porphery		3952					Not owned by MSU
Topaz		3954A					Not owned by MSU
Topaz Mill Site		3954B					Not owned by MSU

A BLM land transfer left all mineral rights involved with the previous BLM land to the United States (this also included geothermal resources). However, BLM land may have been purchased and this may have resulted in mineral right acquisition. MAES traded Hughes mining company the Eureka and Nevada lodes for all interest in the Water Mill Site. Land was traded with Jess Green for an addition 1/3 interest in the Mohegan Mill Site (MSU should now have 100%). MAES bought from O.D. Utley, for \$759.73, the Gambetta, Lone Star, and Wide Awake Lode. It is important to note, that on some of the sites MSU only has surface rights. Burlington Northern Railroad Company reserved the mineral rights on the 12.09 acres purchased by MAES.

Easements

1.) Montana Power Company.

- a. Pipeline easement (Located in T2S, R6E, MPM, Sec 15 NE1/4SE1/4, the W1/2SE1/4, the S1/2SW1/4, & the NW1/4SW1/4)
- b. Overhead Power line right-of-way easement with a right of ingress/egress and right to clear & remove all timber and brush from the right-of-way 5 ft on each side and to remove endangering tree outside of 5 ft.
 - i. (T3S, R1E, MPM Sec 7,8,9,18,17,16, to install a 7200 volt overhead distribution electric line extending E from the Sec line between the SE1/4SE1/4 Sec 7 & the NE1/4NE1/4 Sec 18, along the Sec line between Sec 8 & 17, along the Sec line between Sec 9 & 16 with a tap extending NE from the Sec line between Sec 8 & 17 along the center line of Sec 8 to the center of Sec 8 and a tap extending from the SE1/4SW1/4 Sec 9 to the NW1/4SE1/4 Sec 9)
- c. An easement 60 ft in width upon which to construct, operate, maintain, replace and remove an electric power-line (161 Kv), communication system

- i. (Sec 19 MS#1254 (water Lode); Lot #1; Sec 20 NW1/4NW1/4; Sec 17 S1/2SW1/4, W1/2SE1/4, NE1/4SE1/4, E1/2NE1/4; Sec 8 SE1/4SE1/4; Sec 9 W1/2SW1/4, S1/2NW1/4, NE1/4NW1/4, NW1/4NE1/4)
- d. Overhead Power line right-of-way easement with a right of ingress/egress and right to clear & remove all timber and brush from the right-of-way 10 ft on each side and to remove endangering tree outside of 10 ft.
 - i. (Beginning SW1/4SW1/4 of Sec 21, T3S, R1E thence W for a distance of 1300ft. entering Sec 20 in the SE1/4SE1/4, thence N for a distance of 2700ft, thence W for a distance of 3035ft. in the N1/2N1/2S1/2 of Sec 20. Thence exiting Sec 20 at a point along the W Sec line, N 1950ft of the SW corner of Sec 20)
- e. From 1995 to December 31, 1999 MPC had a storage site lease that paid \$75/month.
- 2.) Right-of-way (ingress/egress) FAA lease for a Radio Communications Site.
- 3.) Leslie E. & Shelley R. Owens have an easement to maintain, replace, and operated a septic tank and drain fields that are on MAES property.
- 4.) 1993-1994 Sea West Energy Co. had a lease and easement for wind studies.
- 5.) Northern Pacific Right-of-way 100 ft wide (Parts in Sec 23 & 14)
- 6.) Montana Department of Transportation
 - a. Stockpile Site Lease (sec 2, T3S, R1W) MMS stockpile No. 012250
 - b. Right-of-way for highway (compensation for land)
 - i. (NW1/4 of Sec26 & E1/2W1/2, W1/2NE1/4 of Sec 23, T3S, R1W)
- 7.) Three Rivers Telephone Inc.
 - a. Easement is 26ft wide to construct, operate, maintain, replace and remove a telephone line, also to access across land. (W1/2 of Sec 23 & NW1/4 of Sec26)
 - b. 20 ft wide easement for buried telephone line (3 Rivers paid \$450 for easement)
- 8.) Madison Valley Telephone Co. (Sec 7 T3S, R1E) to install a telephone line.
- 9.) United States right-of-way for ditches or canals on past BLM transfer land
- 10.) Hughes Mining Co; easement and access from highway 287 coursing through Sec 26.
- 11.) Office of Surface Mining Reclamation and Enforcement, US Department of Interior, and Montana Department of State Lands; right to enter to restore, reclaim, abate, control or prevent the effects of hard rock mining
- 12.) Montana Bureau of Mines for a seismograph in a vault.
- 13.) Under MCA 82-2-201 Owners of a mining claim have a right-of-way over and across the land or mining claim of another. It would be beneficial to

figure any and all other owners of mining claim in and around the Red Bluff property to fully determine right-of-ways or easements.

Buildings/Improvements

Building	Size	SqFt	Condition	Date Built
Residence 2	25 x 38 + 10x 16	1970	good	1910
Stone House	35 x 42 + 14 x 40	3458	very poor	1870
Repair shop + storage	23 x 52 + 18 x 11	2178	fair	1880
Residence 4	28x31+11x20+6x10		poor	1910
Root Cellar/Storage	8x12	96	poor	1925
Bunk House/Office	14x24+6x11	402	fair	1915
Granary 1	18x48x13' high	240	fair	1928
Shop Garage	22x27	594	fair	1928
Cabin demolition in process	22x23	506	poor/fair	1928
Two Butler Feed Tanks	360 bushel		good	
Sheep Lambing Shed	24x61		good	1961
Lumber Shed	16x41	656	fair	1961
Stone Cow Barn	20x50	1000	poor	1880
Jeep Garage	11x14		fair	1960
Butler Grain Bin	18' diameter 13' high	2800	good	1966
Frame Pole Sheep Shed	18x72		good	1971
Sheep Shed (Bopp ranch)	18x72		good	1971
Storage Shed (on skids)	10x12		very poor	1928
Modular Lab		600	poor	1990
Pole Barn		9600	good	2001
Chicken House	8x12		average	1958
Office		600	good	1995

In 1963, one of the old residences burned down. Insurance money was received from the fire. Some correspondences exist requesting to tear down an old horse barn. More recently (2003), the idea of preserving an old stone house for historical reasons has been explored. The idea is to have the house as part of a historical stagecoach stop. The State Historic Preservation Office has been working with MSU and others to carry out the task. Tours have been arranged and different measures undertaken to start the preservation process. In 1984 a historical archeological dig using MSU students took over 25,000 artifacts from its activities. Other changes, not listed, to buildings have occurred. (Additional buildings built, old building removed, various maintenance projects, etc.)

Leases

Two allotments for 2 bands-Gallatin Forest (1100hd. Each [Muddy Creek & Cache Creek]) Forest Service preference permits plus membership in Madison Valley Stock Association for lease of NPRR land. Cooperative agreement between BLM and Red Bluff Experiment Station (there was some talk about trading BLM lands within the borders of Red Bluff for state land to all MAES to graze these lands. This agreement finally took place).

Currently MAES leases ~630 acres from Whitney Lake, (formerly Arlene F. Hoem Trust to the State of Montana) (T3S, R1W, MPM Sec 25 W1/2; NE1/4; S1/2SE1/4; NW1/4SE1/4) The lease ends on June 30, 2006. MAES has fence maintenance responsibilities and pays \$16/AUM.

Lease #	Acres	Animal Unit Months	Cost/yr(2003)	Expiration Date
4960	10	2	9.76	February 28, 2005

Historically, MAES had a lease/purchase agreement with Arliss R. McKinnon for 600 acres in Sec 25, 320 acres in Sec 30 and 680 acres in Sections 32 & 33. MAES has since purchased ~800 acres from Arliss McKinnon. Part of the McKinnon land historically leased by MAES is now included in the Whitney Lake lease.

MAES has leased ground to the town of Norris for a solid waste station. (Information can be found in MAES files)

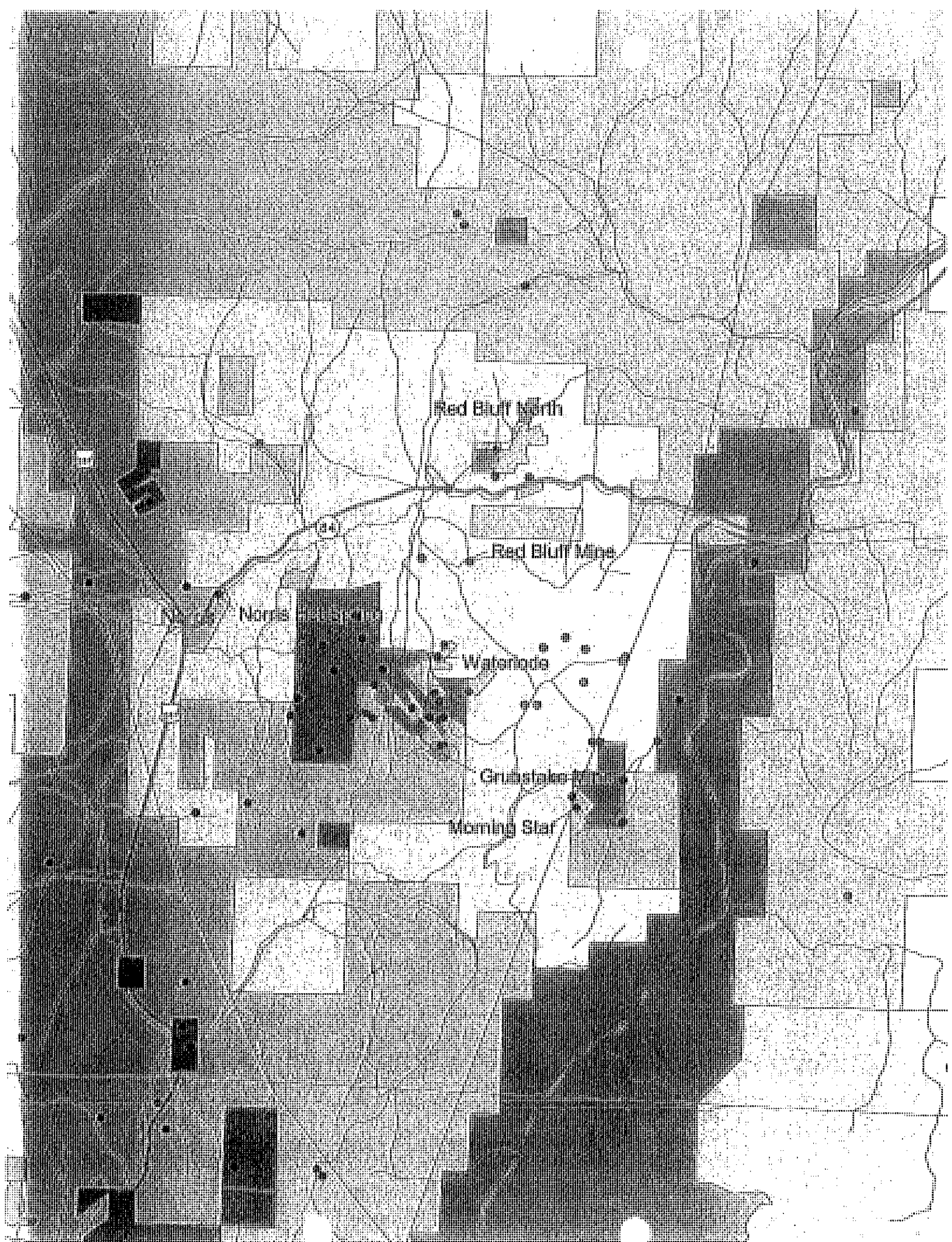
Funding Information For the Purchase of Red Bluff Ranch

September 4, 1956

MAES	No. 10706	\$72,150.00
State Warrant	No. 998818	\$5,000.00
State Warrant	No. 939482	\$25,000.00
State Warrant	No. 939477	\$45,850.00
Sub Total		\$148,000.00
Already in escrow		\$14,500.00
Already received by Rows		\$1,500.00
Total		\$164,000.00

1st Morrill Permanent Ag. College L-G Fund # 154.....61,810
U.S. Range Station (Bonds) Borrowed & paid back by A.I.
Dept. @ 2.5% interest on un-restored balance-\$8,000
annually beginning after July 1, 1957.....75,000*
1955-56 Special Items (fund 802-3) appropriation.....5,000
November 18, 1956, transfer from A.I. Income
Fund # 163 to 271-Land Purchase Fund.....25,000

Total Cost.....\$166,850



Red Bluff

Red Bluff (North)

Red Bluff (West)

Red Bluff (South)

Red Bluff (East)

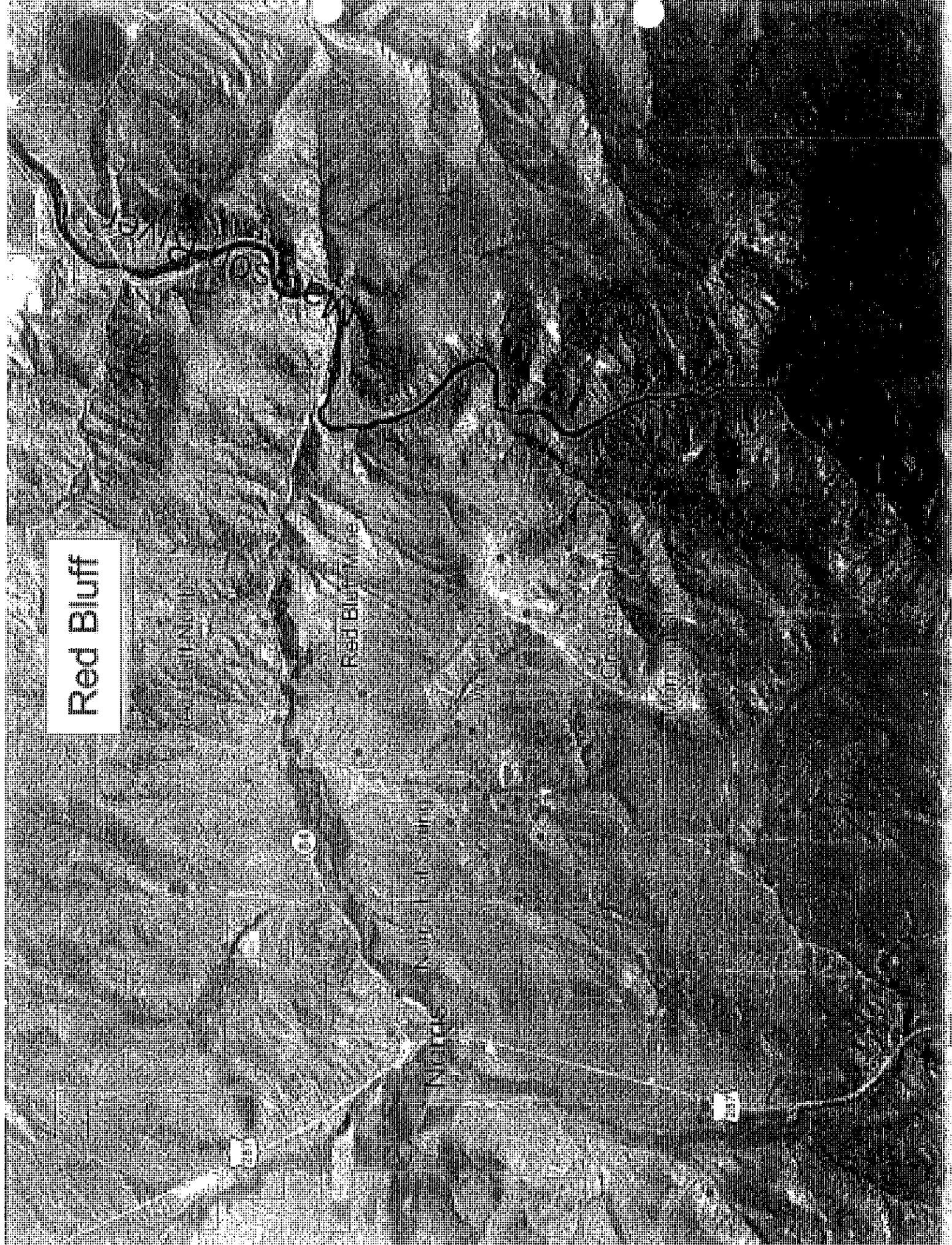
North Fork of the River

South Fork of the River

100

100

100



Not the official Filed
copy

WARRANTY DEED

THIS INDENTURE, Made the 5th day of December, 1956,
between HENRY V. ROWE and WILMA D. ROWE, husband and wife,
RAYMOND R. ROWE and EDITH J. ROWE, husband and wife, GEORGE B.
ROWE, JR., and DORIS L. ROWE, husband and wife, and TED G. ROWE
and CONNIE E. ROWE, husband and wife, all of Norris, Madison
County, Montana, the parties of the first part, and THE STATE
OF MONTANA, for the use and benefit of Montana State College,
located at Bozeman, Gallatin County, Montana, the party of the
second part;

W I T N E S S E T H:

That the said parties of the first part, for and in
consideration of the sum of ONE AND NO/100 DOLLARS (\$1.00),
lawful money of the United States of America, and other good
and valuable considerations, in hand paid by said party of the
second part, the receipt whereof is hereby acknowledged, do by
these presents grant, bargain, sell, convey, warrant and con-
firm unto the said party of the second part, and to its suc-
cessors and assigns forever, the hereinafter described real
estate situated in the County of Madison, State of Montana, to-
wit:

The following tracts located in Township Three South, Range One
East, Montana Principal Meridian, hereafter set forth as fol-
lows:

Lots Five and Six, the North Half of the South Half, the South-
west Quarter of the Southwest Quarter and the Southeast Quarter
of the Southeast Quarter of Section Five.

The South Half of the Northeast Quarter, the North Half of the
Southeast Quarter, the Southeast Quarter of the Southeast
Quarter, and the Northeast Quarter of the Southwest Quarter of
Section Six.

Lots Two, Four and Eight, the Northeast Quarter of the North-
west Quarter, the Southeast Quarter of the Northwest Quarter,
the Northeast Quarter of the Southwest Quarter and the South
Half of the Southeast Quarter of Section Seven.

Continues on



WARRANTY DEED

INDEXED
PLATTED

For Value Received ARLISS McKINNON EWALT, formerly Arliss R. McKinnon, of Columbus, Montana,

the grantor , does hereby grant, bargain, sell, convey and confirm unto
STATE OF MONTANA for the benefit and use of THE MONTANA
AGRICULTURAL EXPERIMENT STATION

the grantee , the following described premises, in _____ Madison _____ County, Montana,
to wit:

Tract One (1): The North Half of the Northwest Quarter ($N\frac{1}{2}NW\frac{1}{4}$), the Southwest Quarter of the Northwest Quarter ($SW\frac{1}{4}NW\frac{1}{4}$), Lot One (1), the East Half of the Northeast Quarter ($E\frac{1}{2}NE\frac{1}{4}$), Lots Three (3) and Four (4), and the Northeast Quarter of the Southeast Quarter ($NE\frac{1}{4}SE\frac{1}{4}$) of Section Thirty-two (32) in Township Three (3) South, Range One (1) East, M. P. M.

Also, the Northwest Quarter ($NW\frac{1}{4}$), the West Half of the Northeast Quarter ($W\frac{1}{2}NE\frac{1}{4}$), the Northeast Quarter of the Northeast Quarter ($NE\frac{1}{4}NE\frac{1}{4}$), and the Northwest Quarter of the Southwest Quarter ($NW\frac{1}{4}SW\frac{1}{4}$) of Section Thirty-three (33), in Township Three (3) South, Range One (1) East, M. P. M.

Tract Two (2): Lots Three (3) and Four (4), the East Half of the Southwest Quarter ($E\frac{1}{2}SW\frac{1}{4}$), and the Southeast Quarter ($SE\frac{1}{4}$) of Section Thirty (30), Township Three (3) South, Range One (1) East, M. P. M.

Together with all the tenements, hereditaments and appurtenances, water rights and water ditches to the same belonging.

TO HAVE AND TO HOLD the said premises, with their appurtenances unto the said Grantee, its successors ~~heirs~~ and assigns forever, And the said Grantor does hereby covenant to and with the said Grantee, that s he is the owner in fee simple of said premises; that they are free from all incumbrances

and that s he will warrant and defend the same from all lawful claims whatsoever.

d: August 16, 1967.

Arliss M. McKinnon Ewalt

STATE OF MONTANA, COUNTY OF Gallatin

On this 16th day of August, 19 67, before me, a notary public in and for said State, personally appeared Arliss McKinnon Ewalt, formerly Arliss R. McKinnon,

to me to be the person whose name is libed to the within instrument, and acknowledged to me that s he executed the same.

Notary Public for the State of Montana

Residing at Bozeman, Montana
My commission expires January 14, 19 68

STATE OF MONTANA, COUNTY OF

I hereby certify that this instrument was filed for record at the request of *Montana Agricultural Experiment Station*

a *24* minutes past *10:00* o'clock *P.* m., this *16th* day of *November* 19 *67*, in my office and duly recorded in Book *221* of Deeds at page *778*

Low Waterman
County Clerk and Recorder

By _____ Deputy

Fees \$ _____
Mail to: *Mont. State University*
Agr. Experiment Station

Platted D.B.

QUITCLAIM DEED

BOOK 100 PAGE 100

THIS INDENTURE, Made the 17th day of September
in the year of our Lord one thousand nine hundred and seventy-nine, between
BURLINGTON NORTHERN INC., a corporation organized and existing under the laws of
the State of Delaware, successor in interest to Northern Pacific Railway Company,
party of the first part, and the STATE OF MONTANA, FOR THE BENEFIT AND USE OF THE
MONTANA AGRICULTURAL EXPERIMENT STATION, of Bozeman, Montana 59717, party of the
second part,

WITNESSETH: That the said party of the first part for and in consider-
ation of the sum of Ten and no/100 Dollars (\$10.00) and other good and valuable
consideration to it in hand paid by the said party of the second part, the Receipt
of Which is hereby acknowledged; does convey, remise, release and forever quitclaim,
without any covenants of warranty whatsoever, unto the said party of the second
part, and to its successors and assigns, the following described real estate,
to-wit:

That part of the Southeast Quarter of the Southwest
Quarter (SE1/4 SW1/4) of Section 14 and the Northeast Quarter
of the Northwest Quarter (NE1/4 NW1/4) of Section 23, Township
3 South, Range 1 West of the Montana Principal Meridian, Madison
County, Montana, described as follows:

Commencing at the quarter corner on the North line of
said Section 23; thence South 71° 27' West, a distance of
889.8 feet to the true point of beginning; thence from said
true point of beginning South 70° 00' East, a distance of 190
feet; thence South 20° 00' West, a distance of 103.4 feet; thence
South 23° 00' East, a distance of 782 feet; thence South 27° 12'
West, a distance of 130.2 feet; thence North 23° 00' West, a dis-
tance of 381.92 feet; thence North 70° 00' West, a distance of
446.44 feet; thence South 20° 00' West, a distance of 75 feet;
thence North 70° 00' West, a distance of 25 feet; thence South
20° 00' West, a distance of 500 feet; thence North 70° 00' West,
a distance of 50 feet; thence North 20° 00' East, a distance of
500 feet; thence North 70° 00' West, a distance of 25 feet; thence
North 20° 00' East, a distance of 1,889 feet; thence along a 10°
curve to the left having a central angle of 52° 38' to a point 102.06
feet Southwesterly of the track center line of the most Northern
leg of the wye track of Burlington Northern Inc.'s Sappington
to Norris Branch Line; thence North 51° 36' 17" East, a distance of
52.06 feet; thence through an arc of 3° 55' 20" left, radius of
2,915.00 feet, the long chord of which bears South 41° 12' 43" East,
to a point 50 feet distant Northeasterly of the Westerly leg of said

ship in
posed
area

wye track; thence along a 10° curve to the right having a central angle of $52^{\circ} 38'$, to a point of tangency, said point being 975.9 feet Northerly of the South line of said Southeast Quarter of the Southwest Quarter (SE1/4 SW1/4) of Section 14 measured along the track center line of the Westerly leg of said wye track; thence South $20^{\circ} 00'$ West to a point 50 feet Northwesternly of the track center line of the Southerly leg of said wye track; thence Northeasterly along a $7^{\circ} 30'$ curve to the right having a central angle of $51^{\circ} 17'$ to a point 300 feet Westerly of the East line of said Southeast Quarter of the Southwest Quarter (SE1/4 SW1/4) of Section 14 measured along a line 50 feet Northwesternly of the track center line of said Southerly wye track; thence Southeasterly at right angles to the last described course, a distance of 100 feet; thence Southeasterly along a $7^{\circ} 30'$ curve to the left having a central angle of $51^{\circ} 17'$, a distance of 683.8 feet; thence South $20^{\circ} 00'$ West, a distance of 340.0 feet to the point of beginning; and also,

A strip of land 100 feet wide in the East Half of the Northwest Quarter (E1/2 NW1/4) of Section 23, Township 3 South, Range 1 West, Montana Principal Meridian, said strip being 51.5 feet wide on the Northerly side and 48.5 feet wide on the Southerly side of the following described line:

Commencing at a point on the North line of said section where the same is intersected by the center line of State Highway, Federal Aid Project No. 171-C as the same is now located and to be constructed; thence Southerly along said highway center line 632.7 feet to a point of curve; thence along a curve to the right, tangent to last described line at last described point and having a radius of 2,864.93 feet, a distance of 661.7 feet to a point of tangent; thence Westerly at right angles along the radius line of said curve at last described point, a distance of 30 feet to the point of beginning; thence continuing along said last mentioned line, a distance of 365.6 feet to a point on the West side of the present county road and the terminal point of this description.

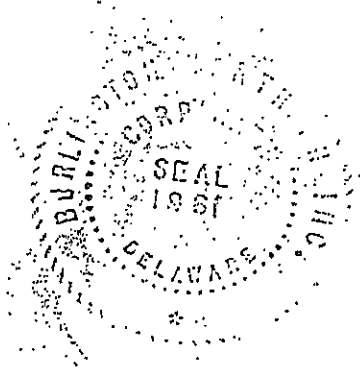
EXCEPTING AND RESERVING, however, unto said party of the first part, its successors and assigns, all of the coal, oil, gas, casinghead gas and all ores and minerals of every kind and nature underlying the surface of the premises herein conveyed, together with the full right, privilege and license at any and all times to explore, or drill for and to protect, conserve, mine, take, remove and market any and all such products in any manner which will not damage structures on the surface of the premises herein conveyed.

The party of the second part hereby releases and forever discharges the party of the first part from any and all present or future obligations of the party of the first part, for the construction of or continued maintenance thereto of any railroad fences, snow fences, road crossings, cattle guards, gates, farm crossings, bridges, drainage or irrigation pipes, if any, located and situate on the premises herein conveyed.

Together with all the tenements, hereditaments and appurtenances thereunto belonging, and the reversion and reversions, remainder and remainders, rents, issues and profits thereof; and also all the estate, right, title, interest, property, possession, claim and demand whatsoever as well in law as in equity, of the said party of the first part, of, in or to the said premises and every part and parcel thereof.

TO HAVE AND TO HOLD, all and singular the said premises, with the appurtenances unto the said party of the second part, its successors and assigns forever.

IN WITNESS WHEREOF, said party of the first part has caused its corporate name to be subscribed and its corporate seal to be affixed, by its proper officers, thereunto duly authorized, on this 17th day of September, A.D. 1979.



BURLINGTON NORTHERN INC.

BY J. C. Kenady
Vice President

ATTEST:

BY J. A. Fleming
Assistant Secretary

ACCEPTED:
STATE OF MONTANA
MONTANA AGRICULTURAL EXPERIMENT STATION

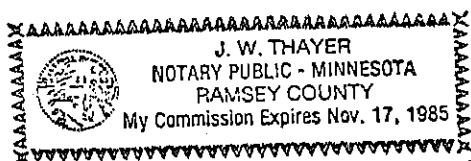
BY J. A. Anderson
Title: Director

ATTEST:

BY Martin J. Burns
Title: Associate Director

STATE OF MINNESOTA)
) ss.
COUNTY OF RAMSEY)

On this 17th day of September in the year 1979,
before me, a Notary Public, personally appeared J. C. Kenady
known to me to be Vice President of the corporation that executed the within
instrument and acknowledged to me that such corporation executed the same.



J. W. Thayer

M 60123

097894

BOOK 306 PAGE 157

The United States of America

To all to whom these presents shall come, Greeting:

WHEREAS, State of Montana, Agricultural Experiment Station, Montana State University, is entitled to a Land Patent pursuant to the Act of June 14, 1926, as amended, 43 U.S.C. 869 et seq., for the following described lands:

Principal Meridian, Montana

T. 3 S., R. 1 E.,
sec. 7, lot 7; and
sec. 32, lot 2 and SE $\frac{1}{4}$ NW $\frac{1}{4}$.

T. 3 S., R. 1 W.,
sec. 26, lots 1 and 2.

The areas described aggregate 142.47 acres, according to the official plat of survey of the said land on file in the Bureau of Land Management.

NOW KNOW YE, That there is, therefore, granted by the UNITED STATES unto the above-named claimant, the land above-described; TO HAVE AND TO HOLD the said land with all the rights, privileges, immunities and appurtenances, of whatsoever nature, thereunto belonging, unto the said Montana Agricultural Experiment Station, and to its successors and assigns forever;

EXCEPTING AND RESERVING TO THE UNITED STATES from the land so granted;

1. A right-of-way thereon for ditches or canals constructed by the authority of the United States pursuant to the Act of August 30, 1890 (43 U.S.C. 945);

2. All the mineral deposits in the lands so patented, and to it, or persons authorized by it, the right to prospect for, mine and remove such deposits from the same under applicable law and such regulations as the Secretary of the Interior may prescribe; and

3. All the geothermal steam and associated geothermal resources in the lands so patented, and to it, or persons authorized by it, the right to prospect for, mine and remove such deposits, upon compliance with the conditions and subject to the provisions and limitations of the Act of December 24, 1970 (84 Stat. 1566).

SUBJECT TO:

1. A 100' road right-of-way (M 09037) granted to the State of Montana, Department of Highways, across lot 7, sec. 7, T. 3 S., R. 1 E., PMM;

2. The provision that if the patentee or its successor attempts to transfer title to or control over the lands to another or the lands are devoted to a use other than as an agricultural experiment station without the consent of the Secretary of the Interior or his delegate, or the patentee prohibits or restricts, directly or indirectly, or permits its agents, employees, contractors, or subcontractors (including without limitation, lessees, sublessees, and permittees), to prohibit or restrict, directly or indirectly, the use of any part of the patented lands or any of the facilities thereon by any person because of such person's race, creed, color or national origin, title to the lands shall revert to the United States; and

Patent Number

25-85-0015

December 6, 1994
This is certified to be a true and exact copy of the original.

Barbara J. Bruck
NOTARY PUBLIC, State of Montana
My Comm. Expires 12/31/95

M 60123

Page 2

3. The provision that if the patentee or its successor in interest does not comply with the provisions of the approved plan of management, filed on January 31, 1984, with the Bureau of Land Management, or by any revision thereof approved by the Secretary of the Interior or his delegate, said Secretary or his delegate, after due notice and opportunity for a hearing, may declare the terms of this patent terminated in whole or in part. Nonuse for the approved purposes for a 5-year period shall be deemed noncompliance with the approved plan of management. The patentee, by acceptance of this patent, agrees for itself and its successors in interest that such declaration shall be conclusive as to the facts found by the Secretary or his delegate and shall, at the option Secretary or his delegate, operate to revert in the United States full title to the lands involved in this declaration.

December 6, 1984

This is certified to be a true and exact copy of the original.

Darlene J. Wauk
 Notary Public for the State of Montana
 Residing at Bozeman, Montana
 My Commission Expires November 9, 1985

Filed for Record on the 20th. Day of December, 1984 at 9:04 O'clock A.M. and recorded
 in BOOK 306 of RECORDS on PAGE 157 - 159 Records of Madison County, Montana.
 Fee \$7.50
 Return To: Lorraine P. Molitor, County Clerk and Recorder

MSU OFFICE OF THE DEAN, OFFICE OF THE DIRECTOR
 COLLEGE OF AGRICULTURE - EXPERIMENT STATION
 BOZEMAN, MONTANA - 59717

25-85-0015

Patent Number

M 60123
Page 3

The grant of the herein described lands is subject to the following reservations, conditions, and limitations:

(1) The patentee or ~~his~~ (its) successor in interest shall comply with and shall not violate any of the terms or provisions of Title VI of the Civil Rights Act of 1964 (78 Stat. 241), and requirements of the regulations, as modified or amended, of the Secretary of the Interior issued pursuant thereto (43 CFR 17) for the period that the lands conveyed herein are used for the purpose for which the grant was made pursuant to the act cited above, or for another purpose involving the provision of similar services or benefits.

(2) If the patentee or ~~he~~ (its) successor in interest does not comply with the terms or provisions of Title VI of the Civil Rights Act of 1964, and the requirements imposed by the Department of the Interior issued pursuant to that title, during the period during which the property described herein is used for the purpose for which the grant was made pursuant to the act cited above, or for another purpose involving the provision of similar services or benefits, the Secretary of the Interior or his delegate may declare the terms of this grant terminated in whole or in part.

(3) The patentee, by acceptance of this patent, agrees for ~~himself~~ (itself) or ~~his~~ (its) successors in interest that a declaration of termination in whole or in part of this grant shall, at the option of the Secretary or his delegate, operate to revert in the United States full title to the lands involved in the declaration.

(4) The United States shall have the right to seek judicial enforcement of the requirements of Title VI of the Civil Rights Act of 1964, and the terms and conditions of the regulations, as modified or amended, of the Secretary of the Interior issued pursuant to said Title VI, in the event of their violation by the patentee.

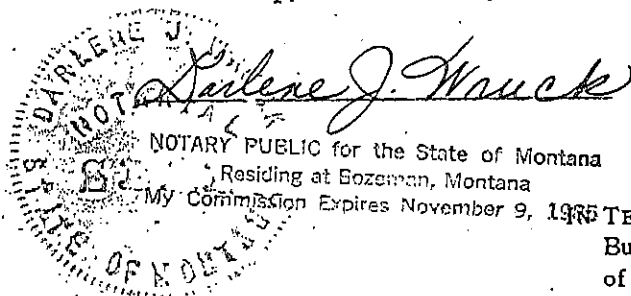
(5) The patentee or ~~his~~ (its) successor in interest will, upon request of the Secretary of the Interior or his delegate, post and maintain on the property conveyed by this document signs and posters bearing a legend concerning the applicability of Title VI of the Civil Rights Act of 1964 to the area or facility conveyed.

(6) The reservations, conditions, and limitations contained in paragraphs (1) through (5) shall constitute a covenant running with the land, binding on the patentee and ~~his~~ (its) successors in interest for the period for which the land described herein is used for the purpose for which this grant was made, or for another purpose involving the provision of similar services or benefits.

(7) The assurances and covenant required by sections (1)-(6) above shall not apply to ultimate beneficiaries under the program for which this grant is made. "Ultimate beneficiaries" are identified in 43 CFR 17.12(h).

December 6, 1984

This is certified to be a true and exact copy of the original.



TESTIMONY WHEREOF, the undersigned authorized officer of the Bureau of Land Management, in accordance with the provisions of the Act of June 17, 1948 (62 Stat. 476), has, in the name of the United States, caused these letters to be made Patent, and the Seal of the Bureau to be hereunto affixed.

GIVEN under my hand, in Billings, Montana,
the second day of November in the year
of our Lord one thousand nine hundred and eighty-four
and of the Independence of the United States the two hundred
and ninth

[SEAL]

By

A handwritten signature in dark ink, appearing to read "James Binando".

James Binando, Acting Deputy State Director,
Division of Lands & Renewable Resources,
Montana State Office

25-85-0015

Patent Number

BEFORE IT WAS THE-----

RED BLUFF RESEARCH RANCH

--IT WAS RED BLUFF



Montana Agricultural Experiment Station
Montana State University, Bozeman

RED BLUFF RESEARCH RANCH



Montana Agricultural Experiment Station
Montana State University, Bozeman

The Red Bluff Research Ranch is located near Norris in Madison County, Montana, along the west side of the Madison River. The operation comprises 13,750 acres of land, 10,000 deeded and 3,750 leased. Most of this land is rangeland, with limited hay meadows along the valley bottoms.

Elevations range from 4,600 feet to 6,200 feet above the Madison River canyon. The annual precipitation averaged around 14 inches at headquarters, increasing to about 17 inches at higher elevations.

The early history of the area is closely related to the gold mining at Alder Gulch, just southwest over the Tobacco Root Mountains. The ranch itself contains numerous diggings, including some that were quite successful. The ranch headquarters is on the site of the old mining camp of Red Bluff. The stone house (see cover) is over 100 years old. Below the house, along Hot Springs Creek, the tunnel to the Gold Cup mine is still visible. South of the highway are the Boaz and Grubstake mines. The former produced over \$200,000 in gold and silver, and operated well into the 20th century.

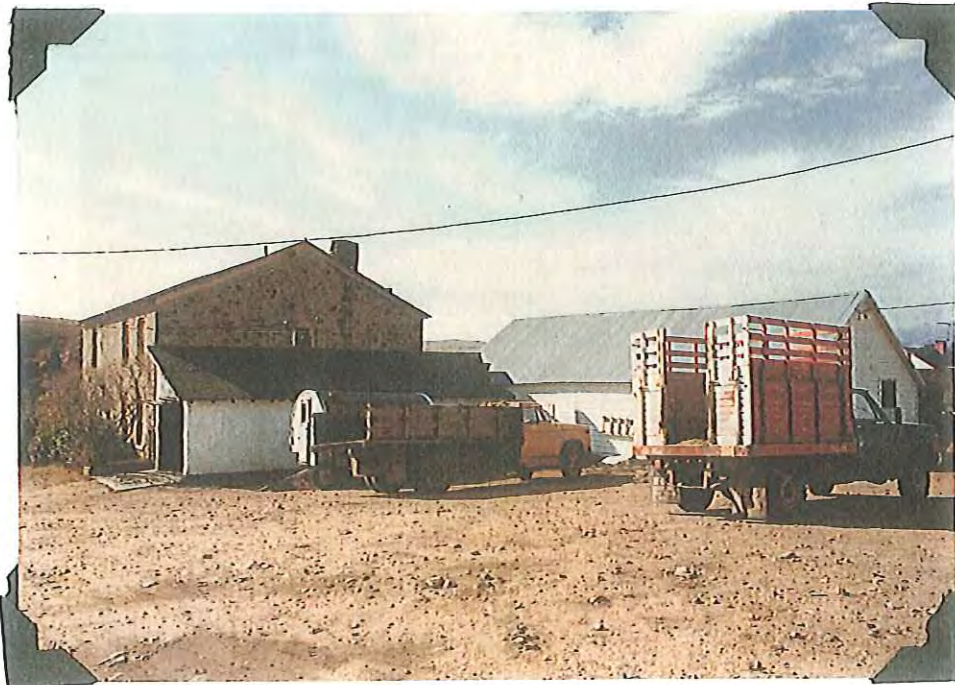
The early agricultural history of the area is less well documented. Since there was so much mining activity there must have been considerable grazing by draft and meat animals, but apparently no records are available. The aerial photographs of the ranch show several old plow lines, which observation indicates must date back many years.

The ranch was acquired by the Montana Agricultural Experiment Station in 1956. In the first field day report (October 12, 1959) Mr. W. A. Denecke said, "We are lucky to get such a ranch. Its past record is all good...I would say it is a typical south central Montana livestock ranch and results from studies carried on here under a representative ranch environment can be applied over a wide area in Montana as well as the west."

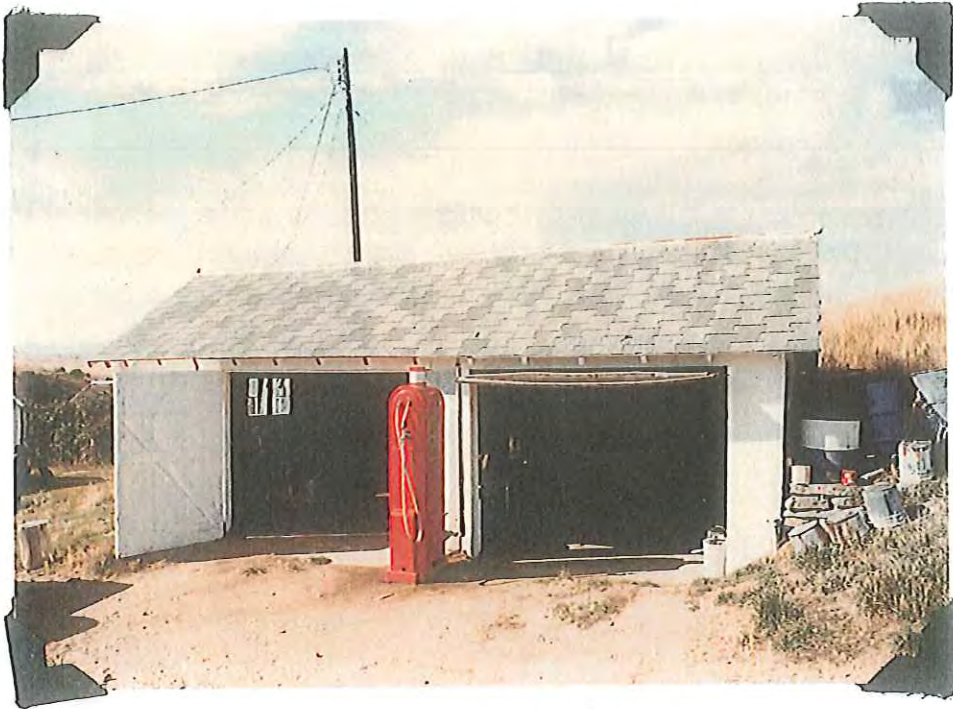
Pictures
taken
1980
Red Bluff
Research
Ranch



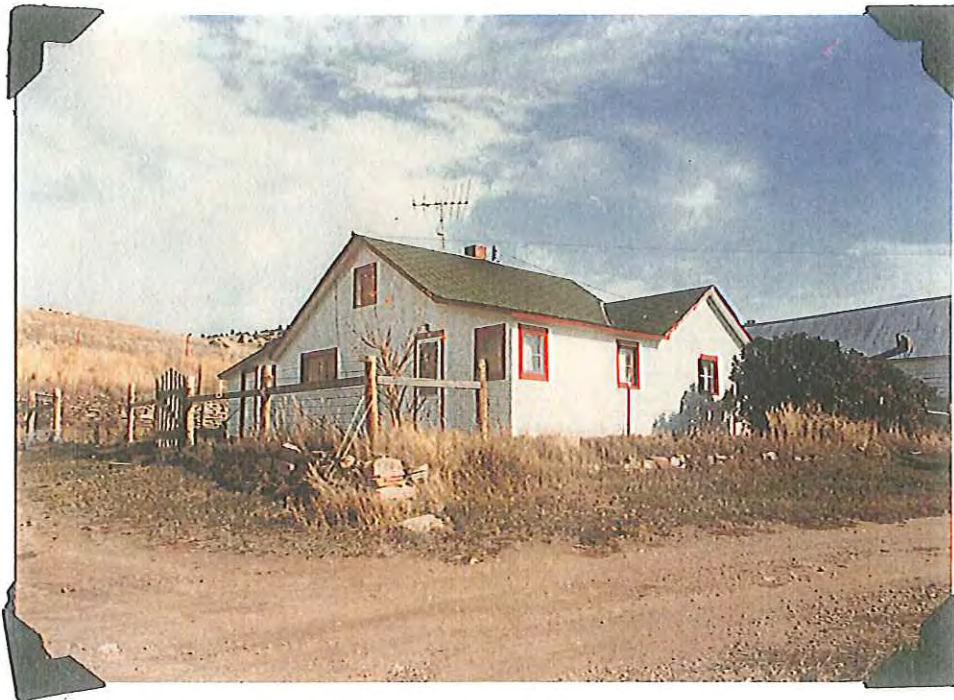
BUILDING NO. 1 (HQS)



BUILDINGS 1, 3, & 4 (HQS)

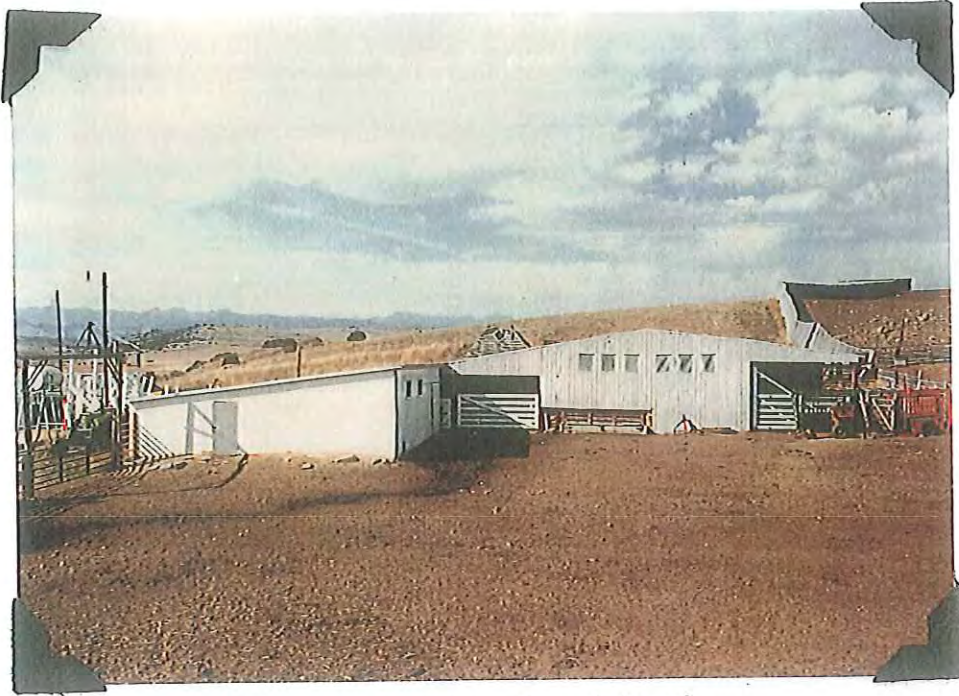


BUILDING 5A (HQS)

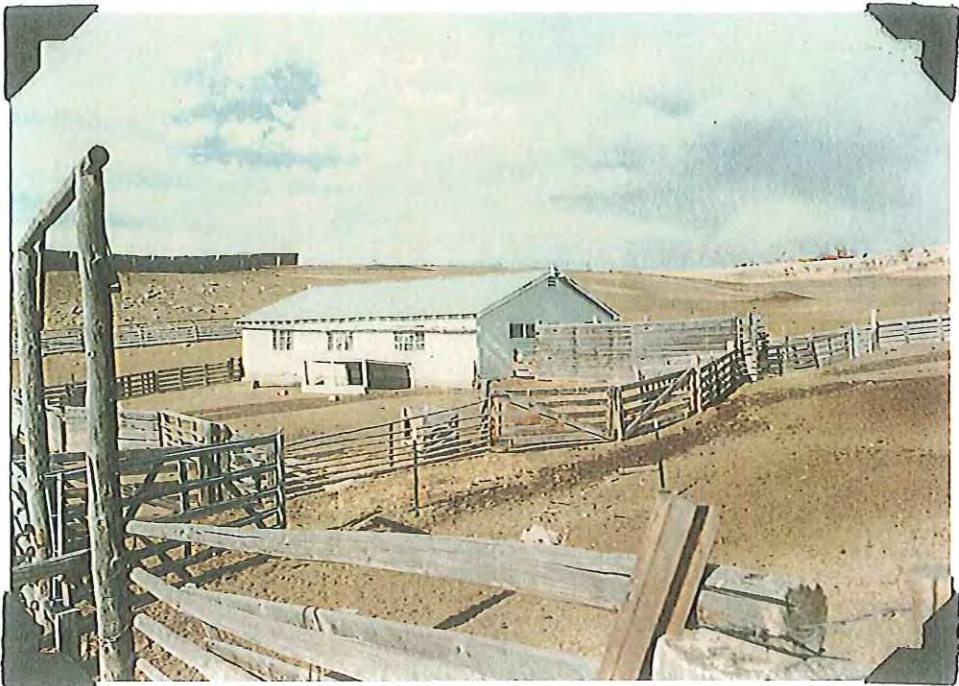


BUILDING 60 (HQS)
"P. 66, 1"

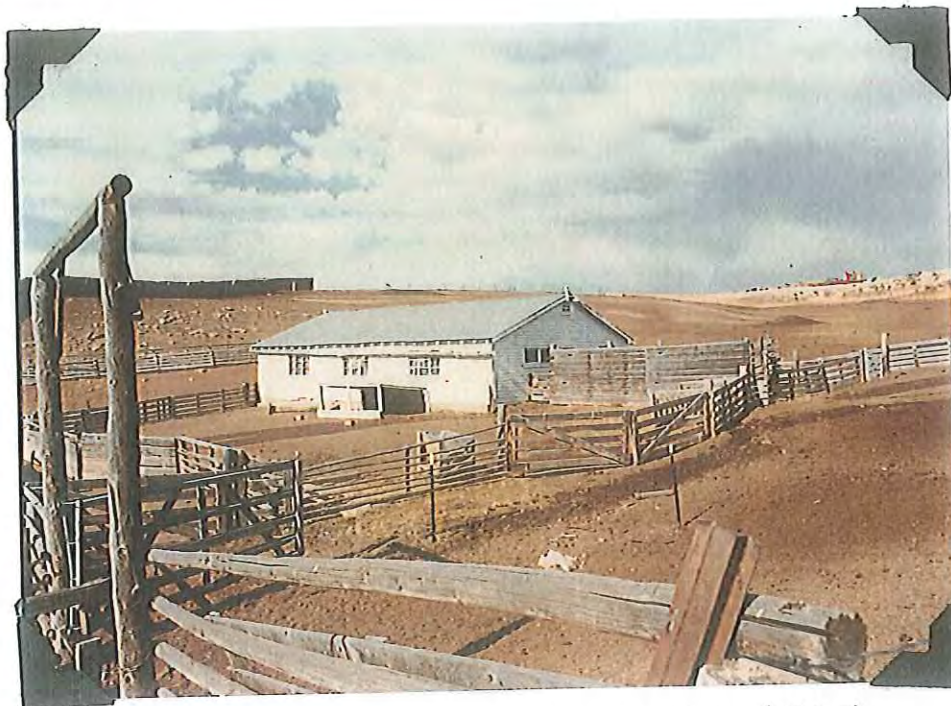
③



BUILDINGS 7, 8, & 9 (HQS)



BUILDING 10 (HQS)

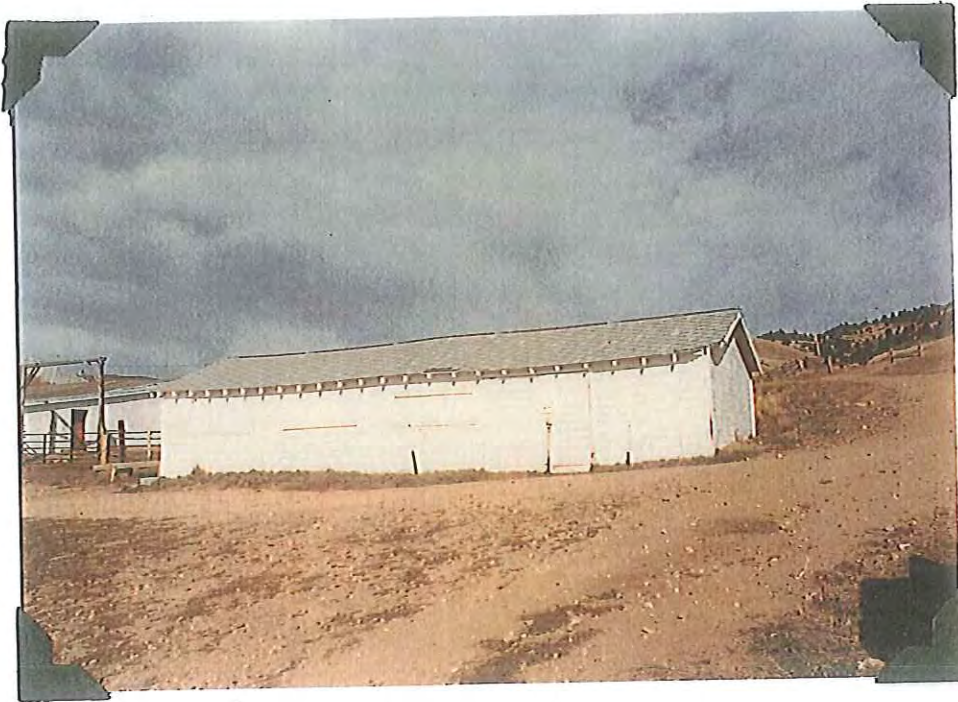


BUILDING 10, FRONT VIEW (HQS)

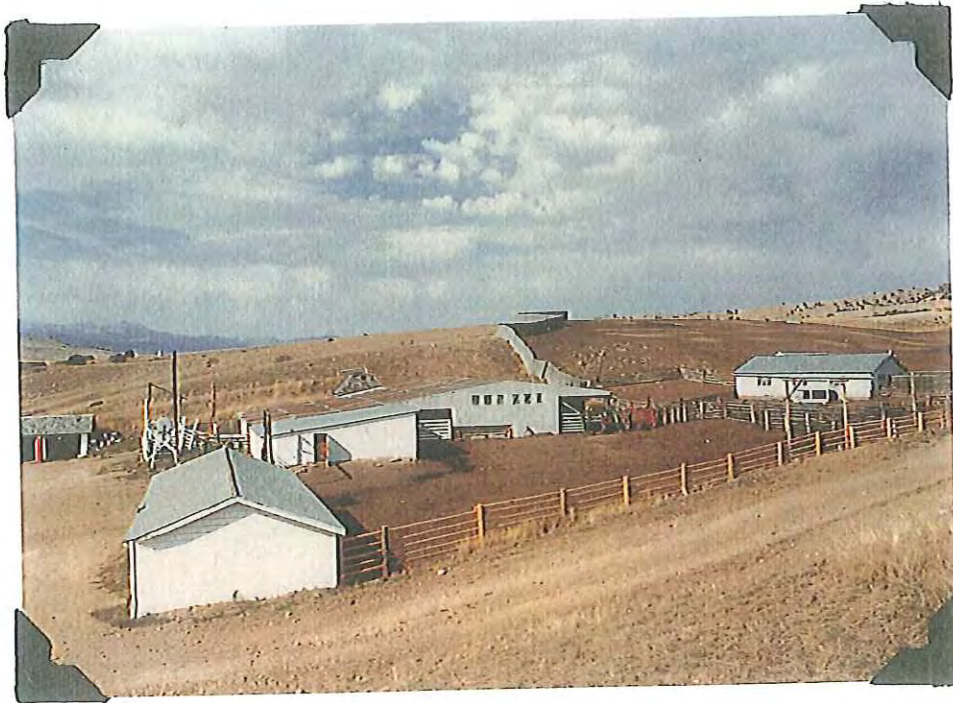


BUILDING 10, BACK VIEW (HQS)

(5)

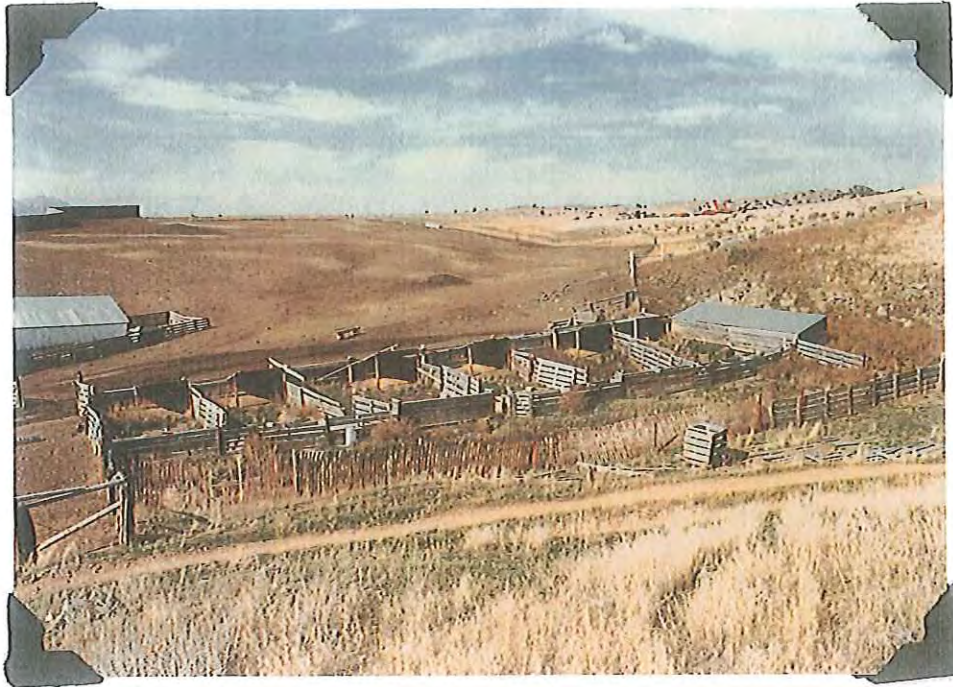


BUILDING 11 (HQS)



BARN & CORRALS (HQS)

(6)

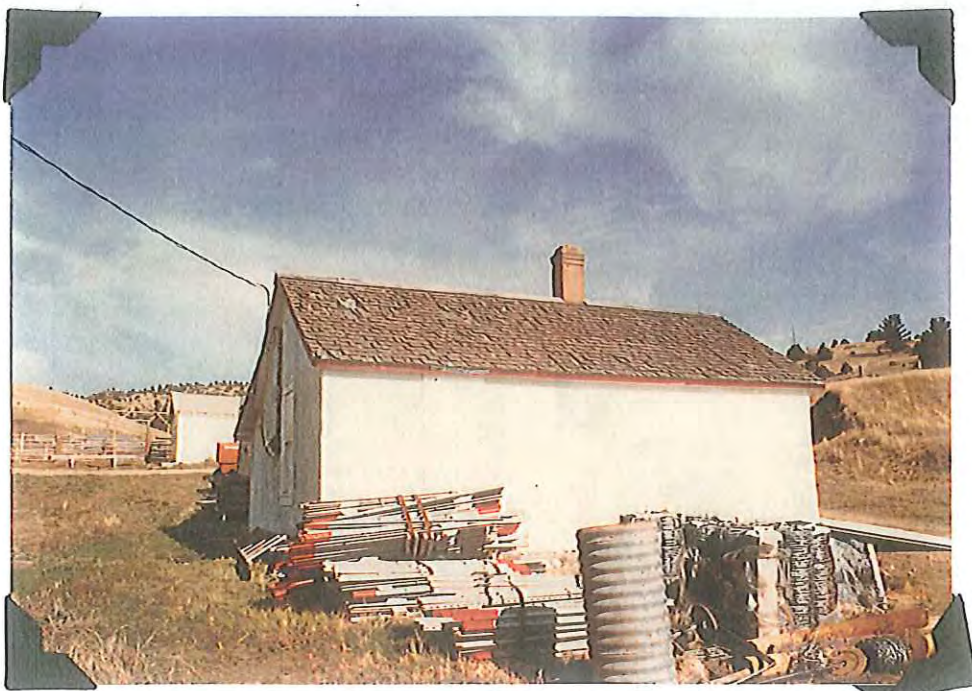


BUILDING 12 (HQS)



BUILDING 13 (HQS)

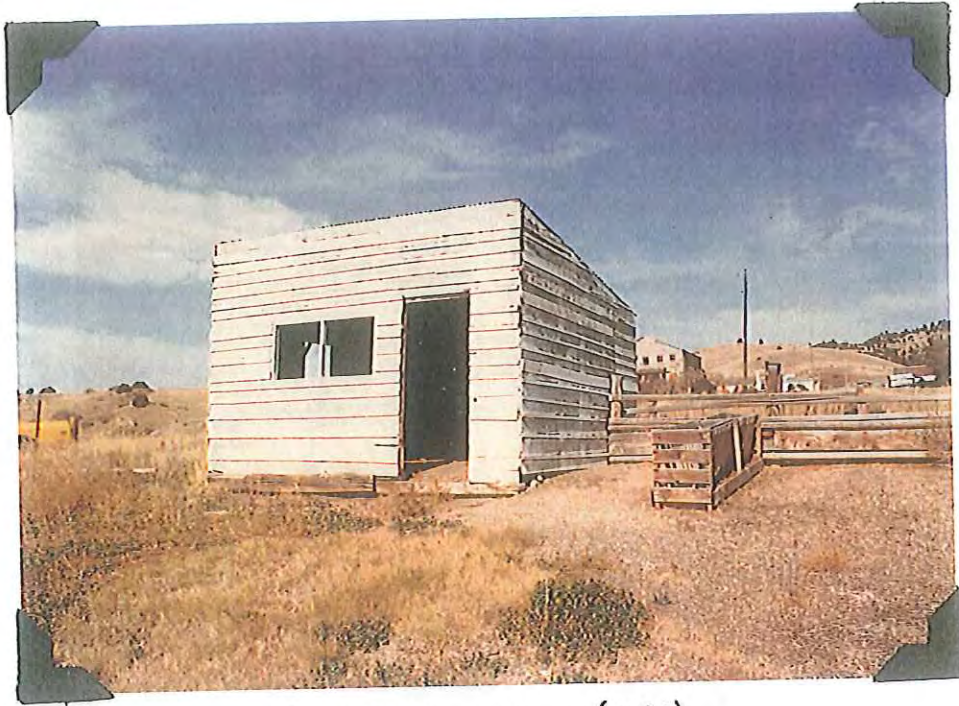
9



BUILDING 14 (HQS)



BUILDING 15 (HQS)



BUILDING 16 (HQS)

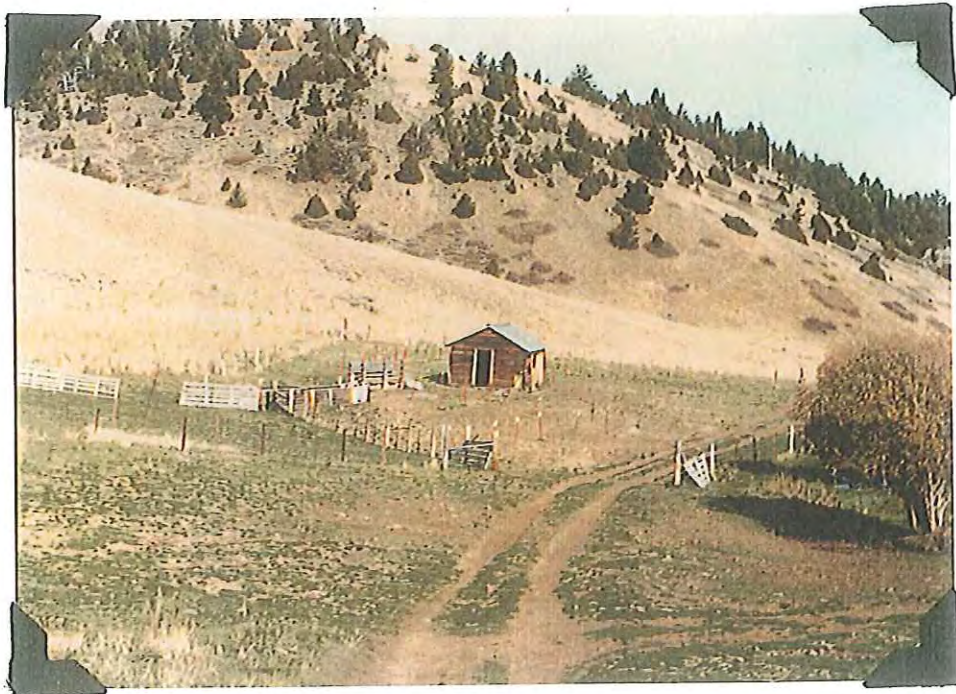


BUILDINGS 17 & 18 (HQS)

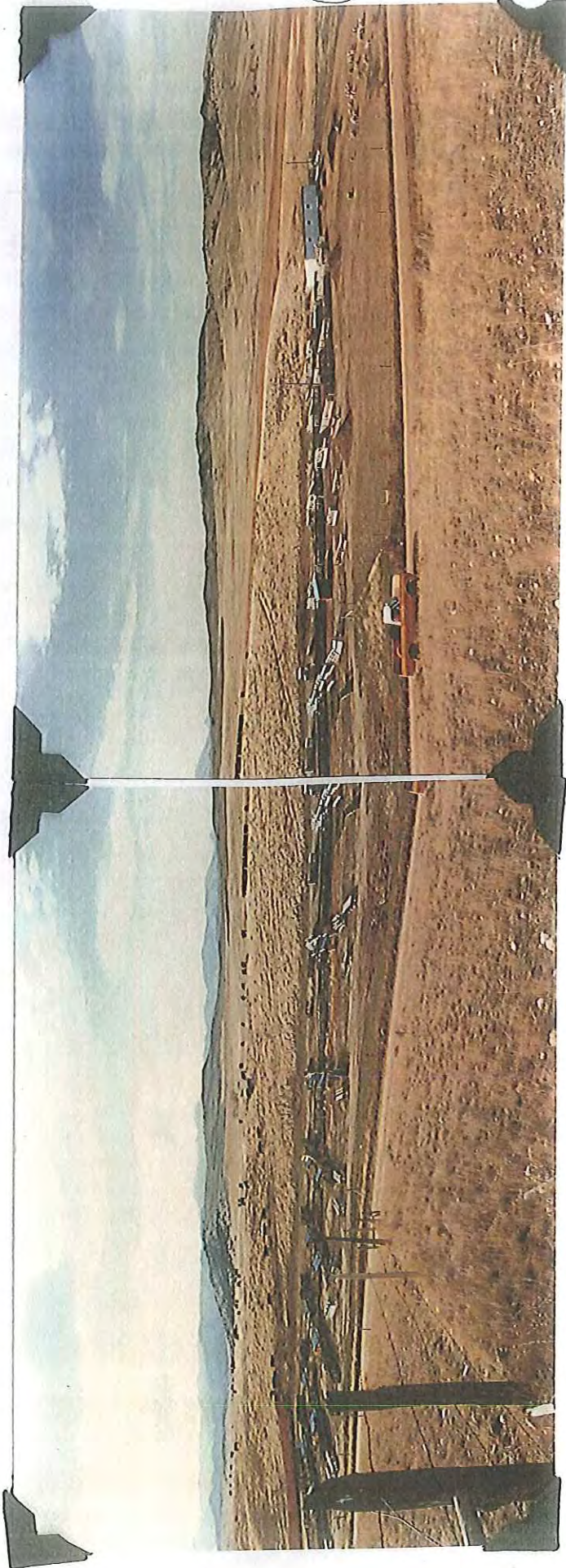
(9)



BUILDING 19 (HQS)



BUILDING 20 (COTTONWOOD CREEK)



BUILDING 21 (NEAR HQS)

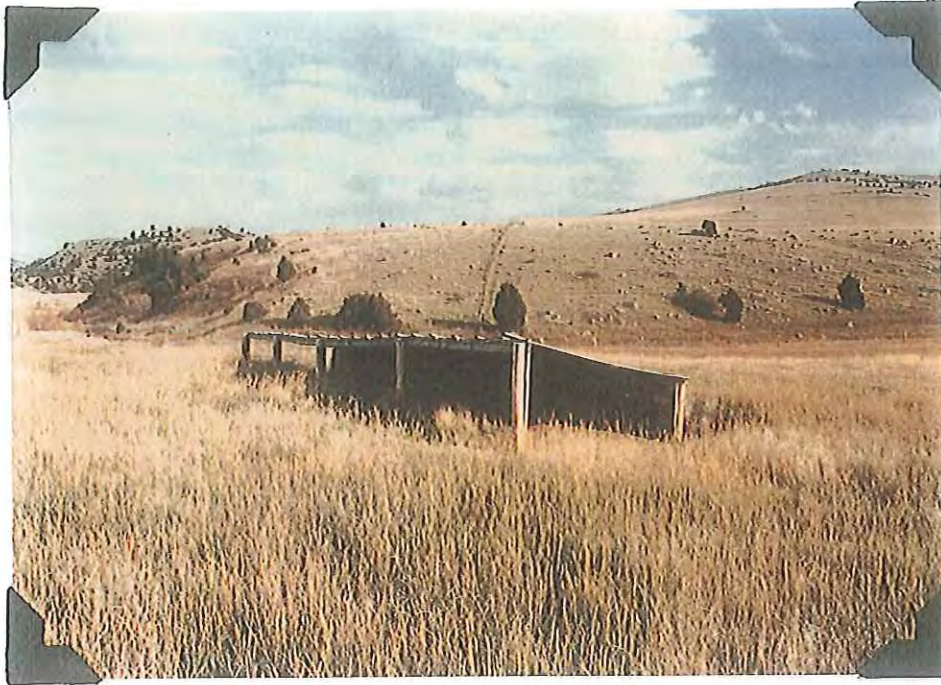
(11)



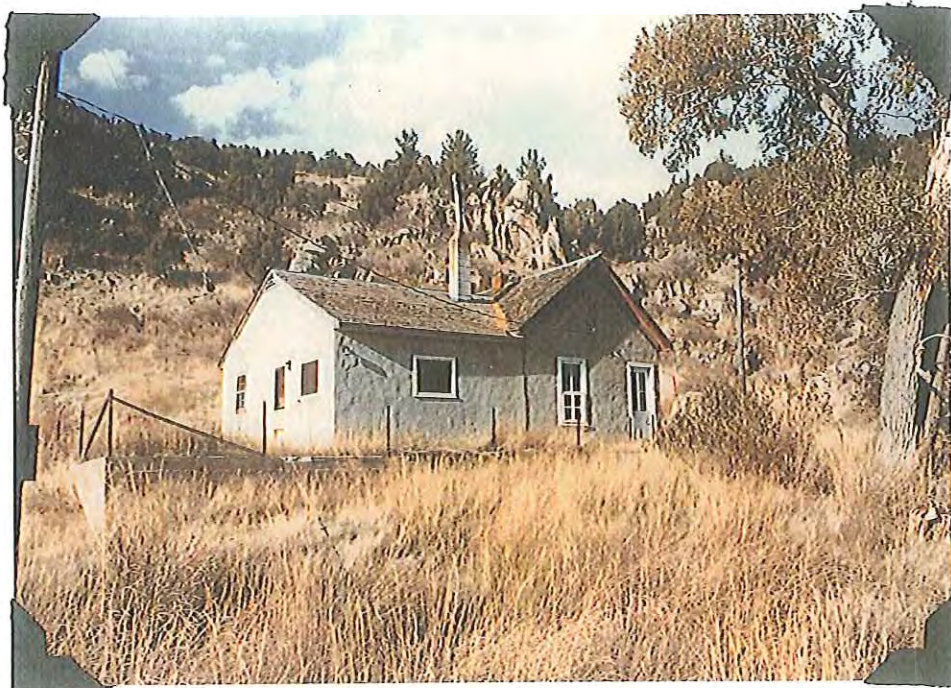
BUILDINGS 23, 22, & 24 (NEAR HQS)



BUILDING 25 (NEAR HQS)

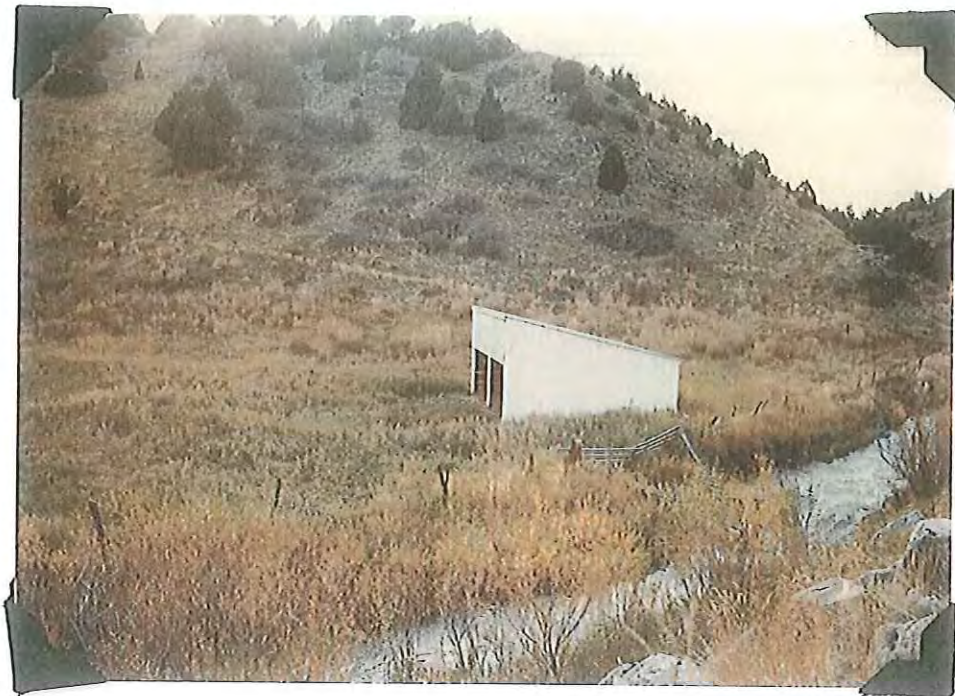


BUILDING 26 (NEAR HQS)



BUILDING 27 ($\frac{1}{2}$ mi E. OF HQS)

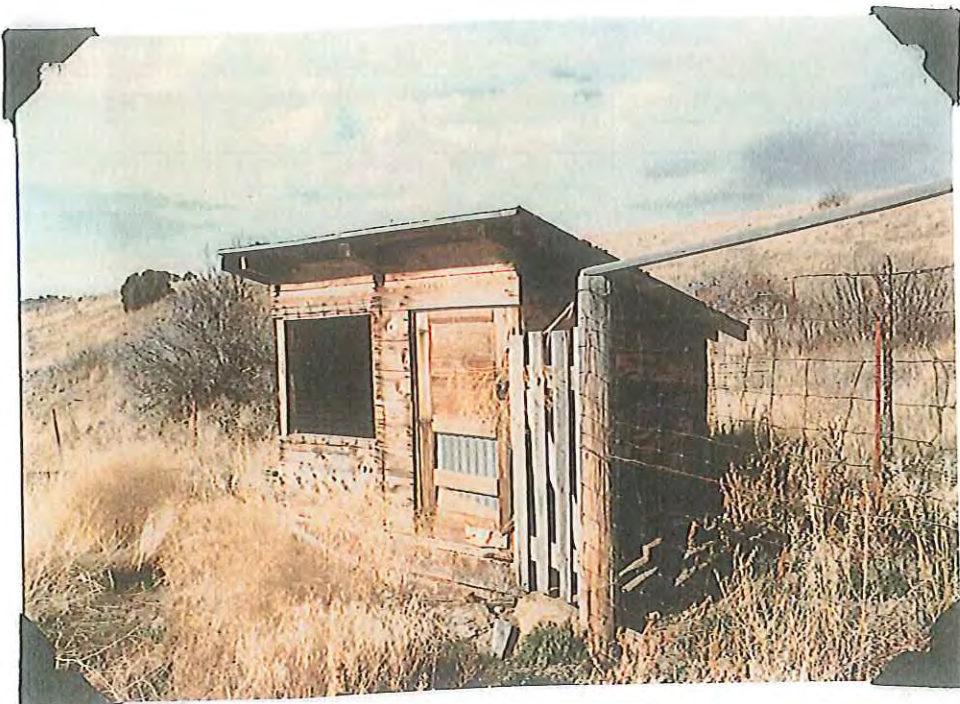
(13)



BUILDING 28 ($\frac{3}{4}$ mi E. OF HQS)



BUILDING 29 (HQS)

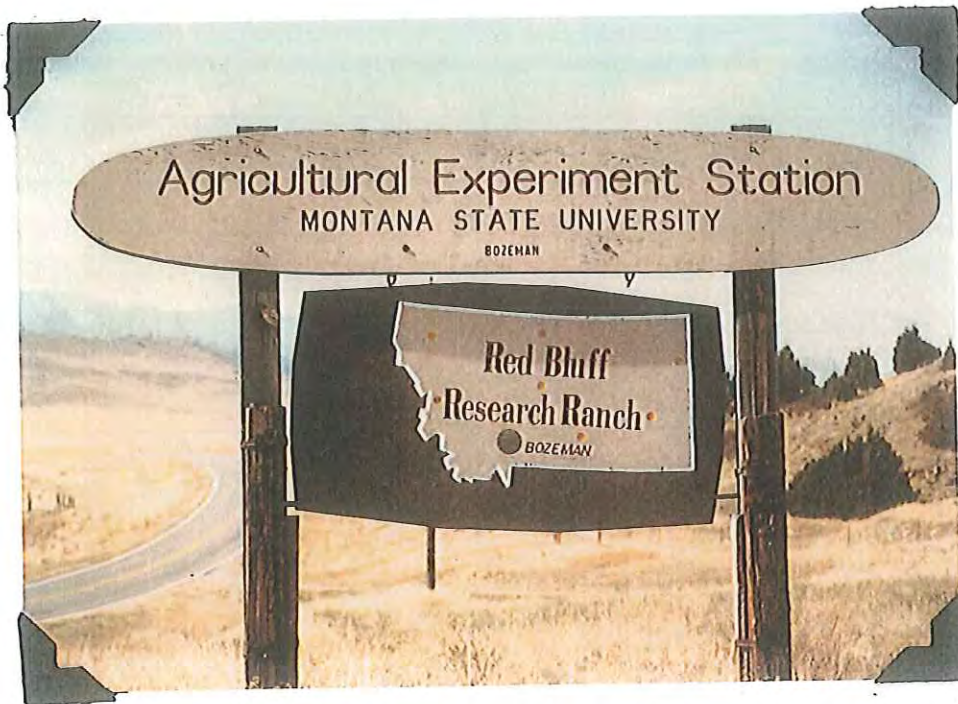


UNUSED CHICKEN HOUSE (HQS)



OUTHOUSE (HQS)

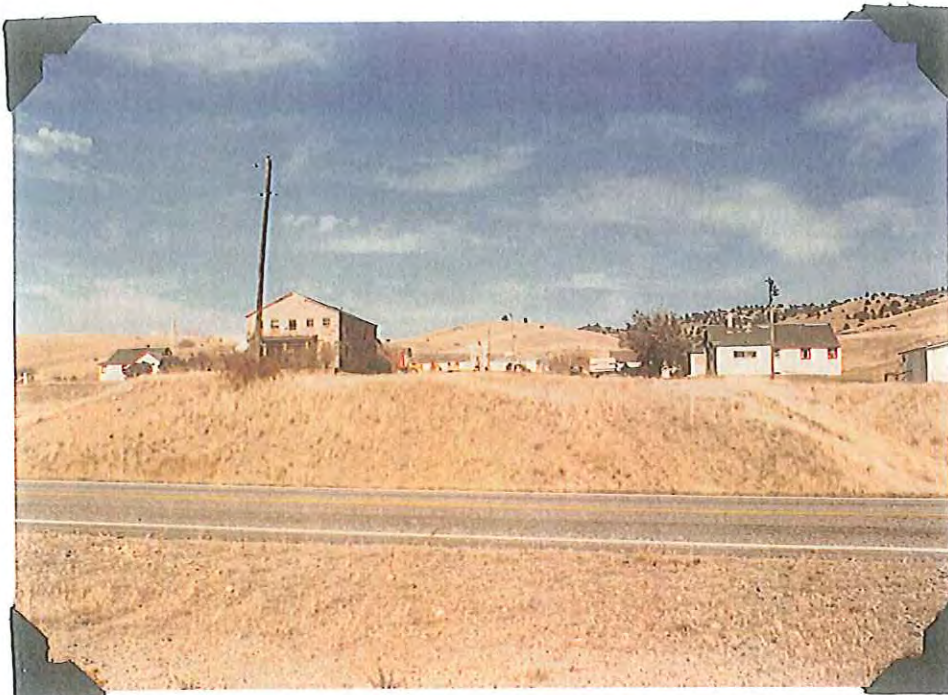
(15)



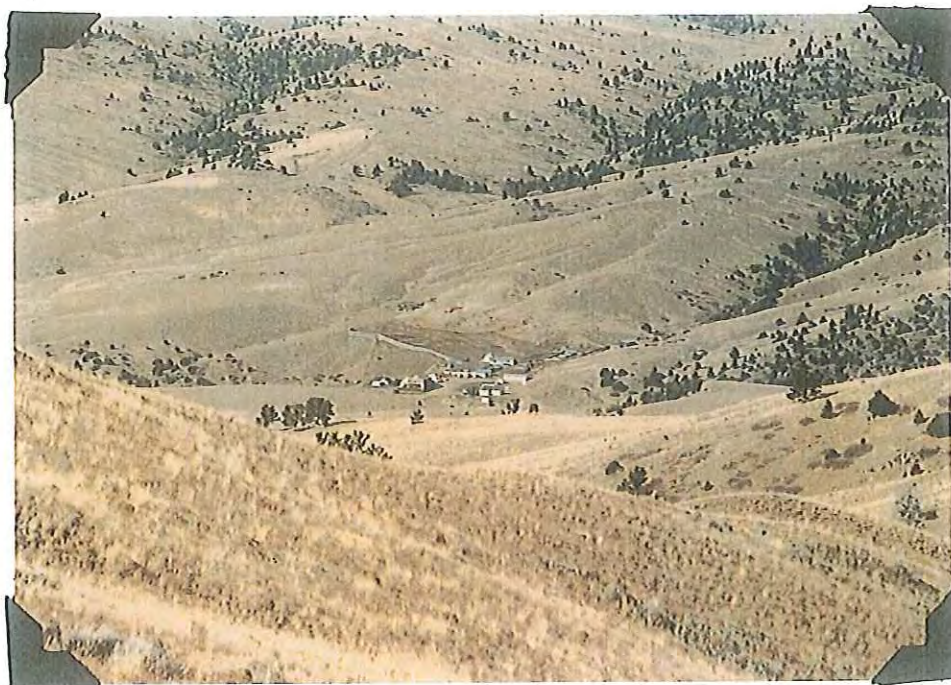
ROAD SIGN (HQS)



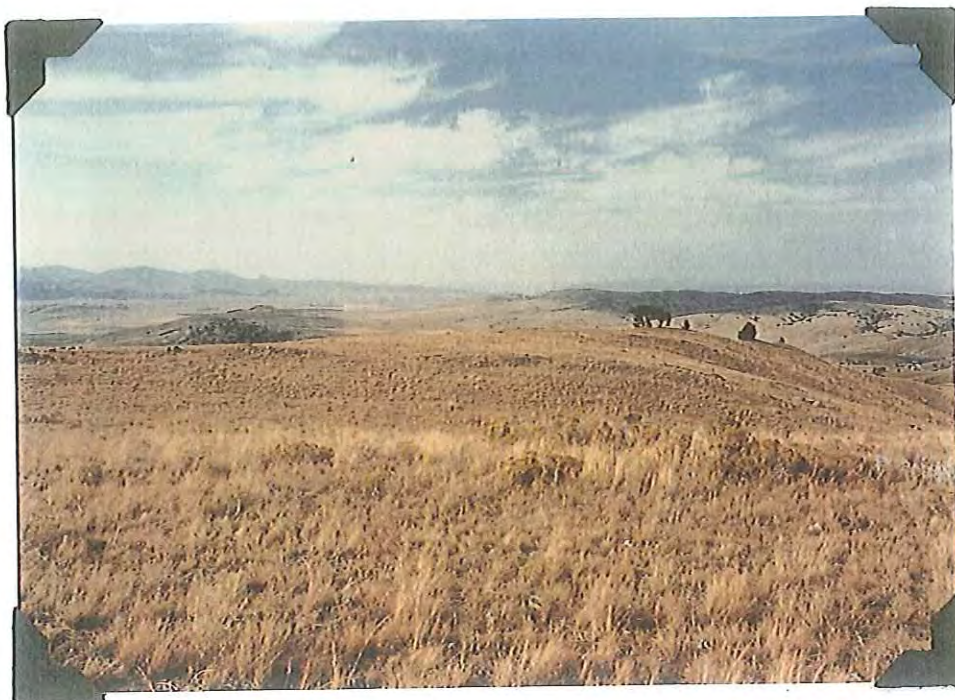
WEATHER STATION (HQ)



HQS FROM ACROSS ROAD



HQS FROM 2 mi SOUTH



MIDDLE OF SECTION 20 LOOKING NORTH



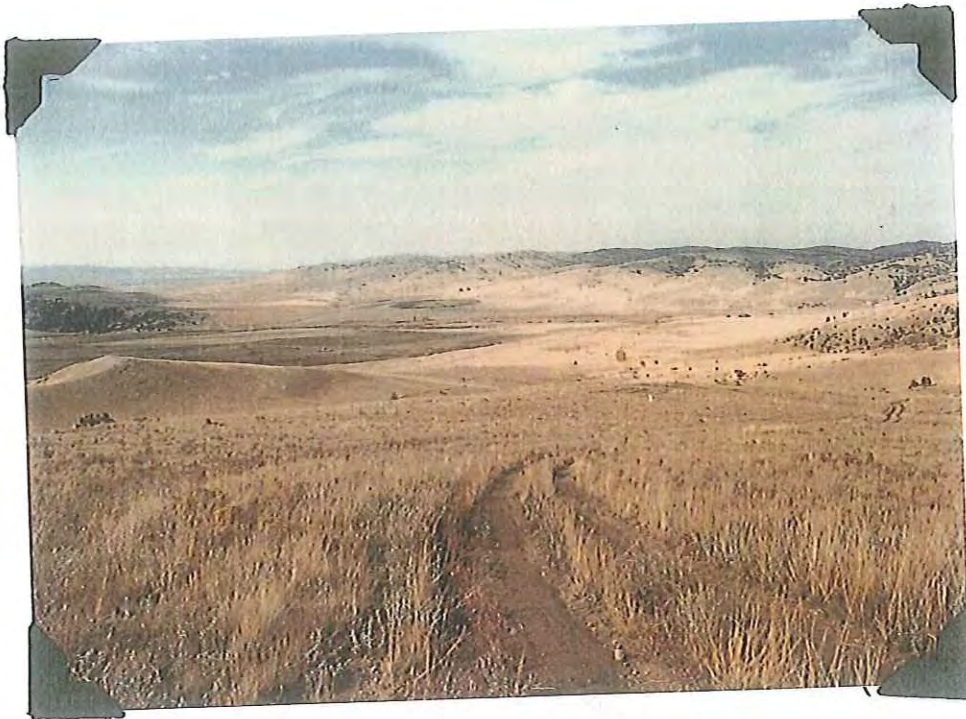
MIDDLE OF SECTION 20 LOOKING SOUTH



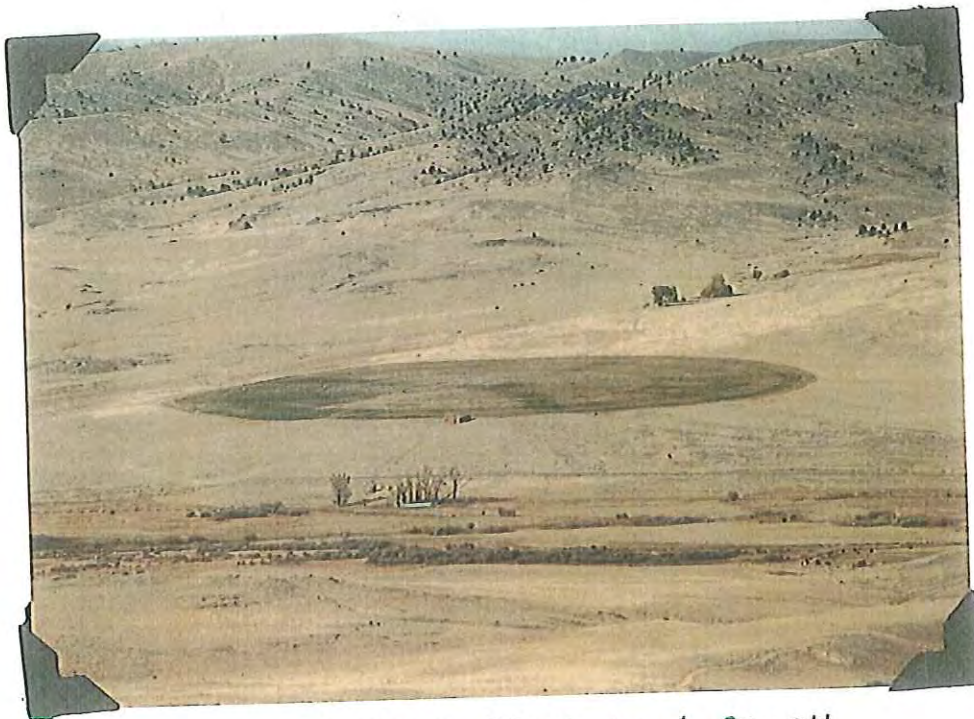
MIDDLE OF SECTION 20 LOOKING EAST



MIDDLE OF SECTION 20 LOOKING WEST



CENTER PIVOT FROM 2 mi SOUTH



CENTER PIVOT FROM 2 mi SOUTH

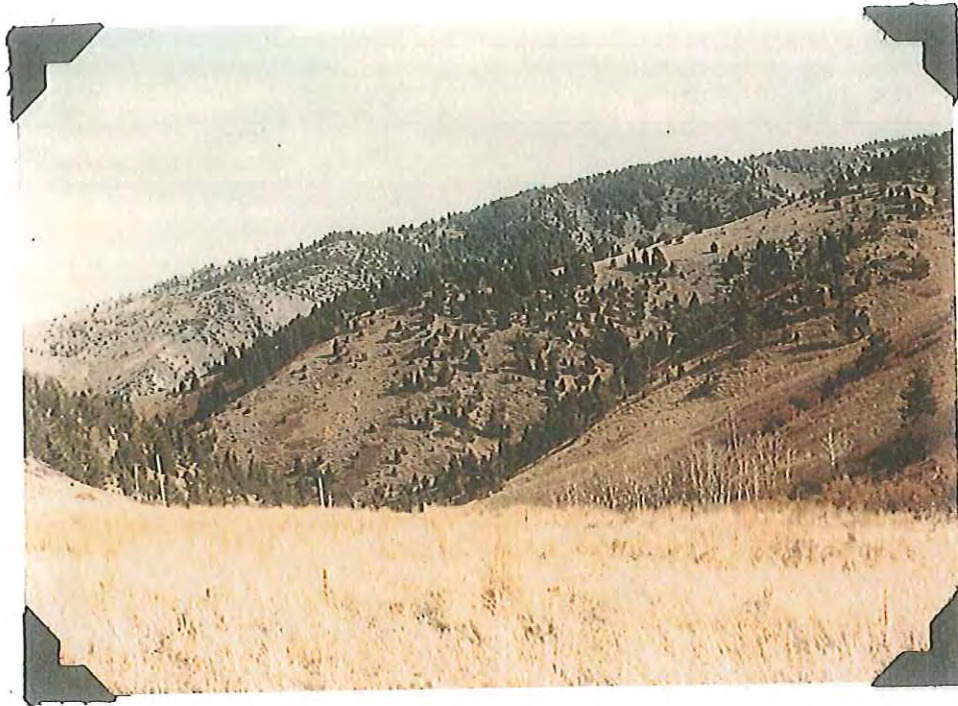


CENTER PIVOT (NEAR HQS)

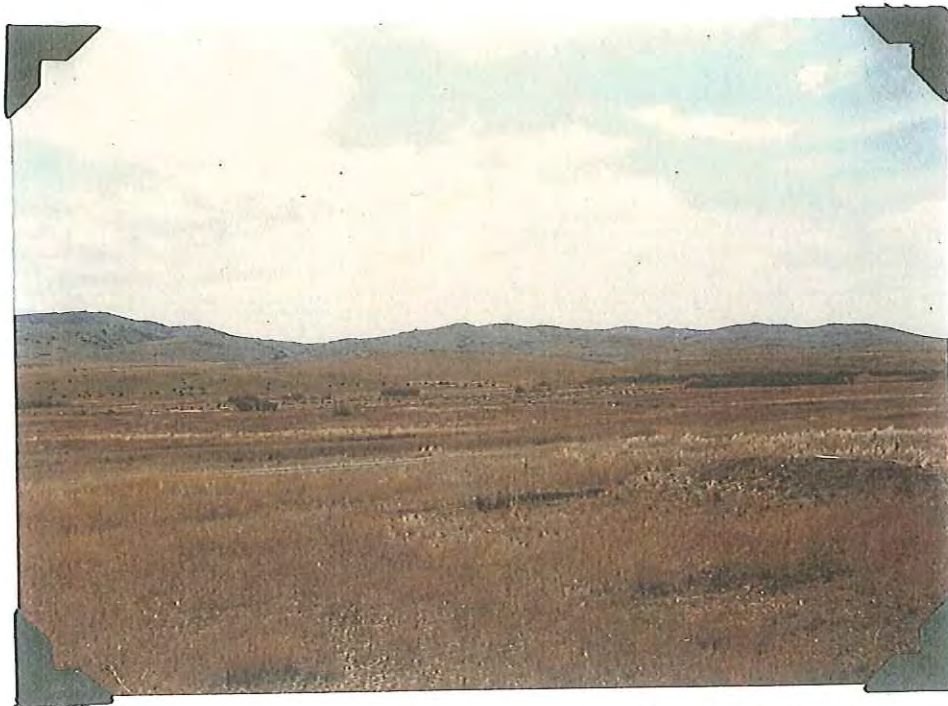
(21)



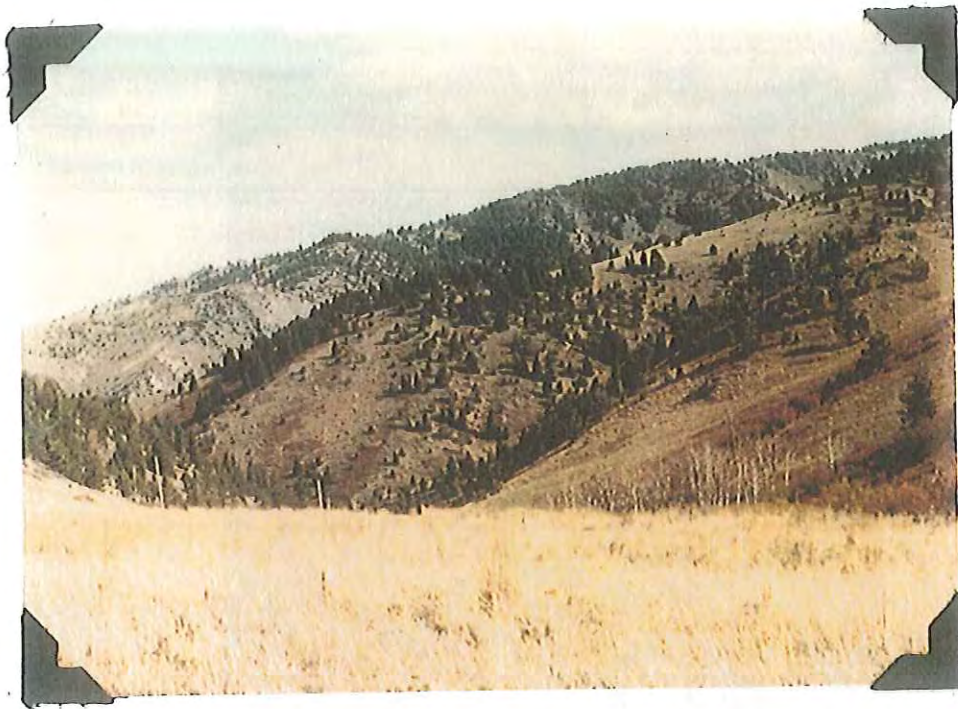
UNUSED BUILDINGS (NEAR HQS)



NEAR COTTONWOOD CREEK LOOKING EAST



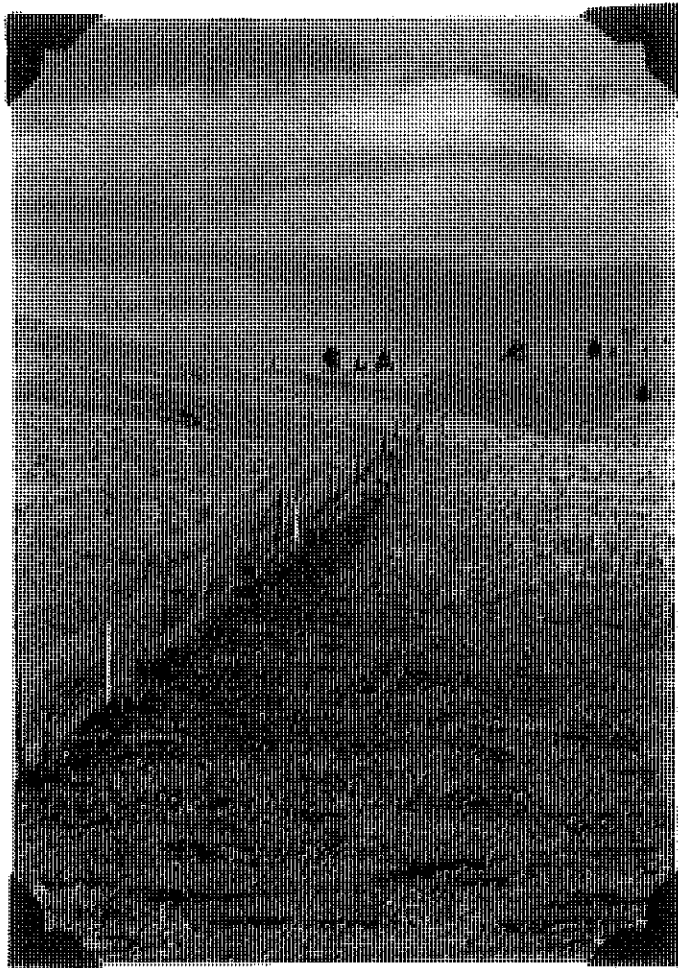
NEAR HQS LOOKING SOUTH ~~ACROSS~~ ACROSS
HAY FIELDS



NEAR COTTONWOOD CREEK LOOKING EAST



NEAR HQS LOOKING SOUTH ~~ACROSS~~ ACROSS
HAY FIELDS



S.W. CORNER OF SECTION 29
LOOKING NORTH

10 Norris West Highway East To Beartrap Canyon

Creek

2424
Loafing sheds
24

2437
MIXING
BARN

2429
Butler
Granary

2419
Butler bins

2432
LAMBING
BARN

2438
office

2416
BOPP
Trappers Cabin

2439
LAB
MOUNTAIN BLDG

Sheep corrals

Redbluff Research
Ranch
South

To Beaz
Mine

updated 5/99

Pete Olund 12/98
685-3301

03/03/99 15:43:47

OFF CAMPUS
AES-Red Bluff Ranch - Norris
Bldg # 24xx

PAGE 1

Bldg#	Bldg Name	NOTES	Gross Area
2401	RED BLUFF RESIDENCE #1		1,208
2402	RED BLUFF RESIDENCE #2		1,970
2403	RED BLUFF STONEHOUSE		3,458
2404	RED BLUFF STORAGE/REPAIR SHOP		2,178
2406	RED BLUFF ROOT CELLAR	Do not insure	96
2407	RED BLUFF OFFICE		402
2409	RED BLUFF SHOP GARAGE		594
2410	RED BLUFF SHEEP SHED #1	Do Not Insure <i>burned down 9/3/00</i>	6,464
2411	RED BLUFF SHEEP SHEARING	<i>burned down 9/3/00; ins filed 9/5/00</i>	1,440
2413	RED BLUFF FIELD SHED #5	Do Not Insure	384
2414	RED BLUFF FIELD SHED #4	Do Not Insure	256
2415	RED BLUFF FIELD SHED #3	Do Not Insure	256
2416	RED BLUFF BOPP TRAPPER'S CABIN	Do Not Insure <i>Demolished 2003</i>	506
2419	RED BLUFF (2) BUTLER BINS		240
2421	RED BLUFF HORSE BARN	<i>burned down 9/3/00; insurance filed 9/5/00</i>	884
2422	RED BLUFF SHEEP SHEARING SHED		1,464
2423	RED BLUFF LUMBER SHED		656
2424	RED BLUFF LOAFING SHED	Do Not Insure	600
2425	RED BLUFF LOAFING SHED	Do Not Insure	656
2426	RED BLUFF COW BARN (STONE)	Do Not Insure	1,000
2429	RED BLUFF BUTLER GRANARY		2,800
2432	RED BLUFF LAMBING SHED		8,000
2437	RED BLUFF MIXING BARN		7,500

bldgaes3

03/99 15:43:47

OFF CAMPUS
AES-Red Bluff Ranch - Norris
Bldg # 24xx

PAGE 2

Bldg#	Bldg Name	NOTES	Gross Area
2438	RED BLUFF OFFICE		600
2439	RED BLUFF MODULAR LAB		600
TOTAL COUNT			44,212 25

* * * E N D O F R E P O R T * * *

bldgaes3

Facilities Bldg Inventory 685-3301 Pete O'Grady

119 Linfield Hall
Animal Range & Science

29/98 10:16:37

OFF CAMPUS
AES-Red Bluff Ranch - Norris
Bldg # 24xx

PAGE 1

Bldg Code	Bldg#	Bldg Name	#Rooms	Gross Area
2401	2401	RED BLUFF RESIDENCE #1	1	1,208
2402	2402	RED BLUFF RESIDENCE #2	1	1,970
2403	2403	RED BLUFF STONEHOUSE	1	3,458
2404	2404	RED BLUFF STORAGE & REPAIR SHP	1	2,178
2406	2406	RED BLUFF ROOT CELLAR	1	96
2407	2407	RED BLUFF OFFICE	1	402
2408	2408	RED BLUFF GRANARY #1 - <i>NO</i> - not on map - Please add if exists	1	864
2409	2409	RED BLUFF SHOP GARAGE	1	594
2410	2410	RED BLUFF SHEEP SHED #1	1	6,464
2411	2411	RED BLUFF SHEEP SHEARING	1	1,440
2413	2413	RED BLUFF FIELD SHED #5	1	384
2414	2414	RED BLUFF FIELD SHED #4	1	256
2415	2415	RED BLUFF FIELD SHED #3	1	256
2416	2416	RED BLUFF BOPP TRAPPER'S CABIN	1	506
2419	2419	RED BLUFF (2) BUTLER BINS	1	240
2421	2421	RED BLUFF HORSE BARN	1	884
2422	2422	RED BLUFF SHEEP SHEARING SHED	1	1,464
2423	2423	RED BLUFF LUMBER SHED	1	656
2424	2424	RED BLUFF LOAFING SHED	1	600
2425	2425	RED BLUFF LOAFING SHED	1	656
2426	2426	RED BLUFF COW BARN (STONE)	1	1,000
2428	2428	RED BLUFF JEEP GARAGE - <i>NO</i>	1	154
2429	2429	RED BLUFF BUTLER GRANARY	1	2,800

bldgaes3

ARS
 Police Bureau
 5573
 Property 3721

28/98 19:00:51

OFF CAMPUS --Banner Bldg Code
 AES-Red Bluff Ranch - Norris
 Bldg # 24xx

PAGE 1

Bldg Code	Bldg#	Bldg Name	#Rooms	Gross Area
	2419✓	RED BLUFF (2) BUTLER BINS <i>Feed tanks</i>	1	240 ✓
	2416✓	RED BLUFF BOPP TRAPPER'S CABIN	1	506 ✓
	2429✓	RED BLUFF BUTLER GRANARY	1	2,800 ✓
	2426✓	RED BLUFF COW BARN (STONE)	1	1,000 ✓
	2430✓	RED BLUFF FRAME POLE SHED	1	1,296 ✓
	2409✓	RED BLUFF ^{Shop} GARAGE	1	594 ✓
	2421✓	RED BLUFF HORSE BARN	1	884 ✓
I	2435	RED BLUFF HOUSETRAILER <i>not on L. or C</i>	0	600
	2428✓	RED BLUFF JEEP GARAGE	1	154 ✓
I	2436	RED BLUFF LAB HOUSETRAILER <i>not on L. or C</i>	0	600
	2424✓	RED BLUFF LOAFING SHED	1	600 ✓
	2425✓	RED BLUFF LOAFING SHED	1	656 ✓
	2423✓	RED BLUFF LUMBER SHED	1	656 ✓
I	2432	RED BLUFF NEW LAMBING SHED <i>not on L. or C</i>	0	5,664
	2407✓	RED BLUFF OFFICE	1	402 ✓
	2401✓	RED BLUFF RESIDENCE <i>NO. 1</i>	1	1,208 ✓
	2402✓	RED BLUFF RESIDENCE <i>NO. 2</i>	1	1,970 ✓
	2422✓	RED BLUFF ^{sheep} SHEARING SHED	1	1,464 ✓
	2411✓	RED BLUFF SHEEP SHEARING	1	1,440 ✓
	2410✓	RED BLUFF SHEEP SHED #1	1	6,464 ✓
	2413✓	RED BLUFF ^{Field} SHEEP SHED #5	1	384 ✓
	2414✓	RED BLUFF ^{Field} SHEEP SHED #4	1	256 ✓
	2415✓	RED BLUFF ^{Field} SHEEP SHED #3	1	256 ✓
A 20	2408✓	Granary <i>NO. 1</i> <i>not on C's</i> <i>not on MAP</i>		864 ✓

bldgaes3.

'28/98 19:00:51

OFF CAMPUS -Banner Bldg Code
AES-Red Bluff Ranch - Norris
Bldg # 24xx

PAGE 2

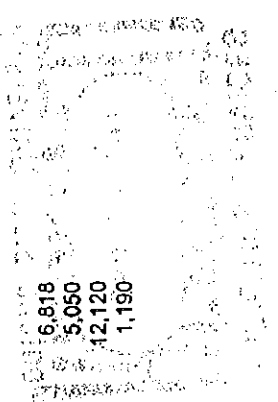
Bldg Code	Bldg#	Bldg Name	#Rooms	Gross Area
2.1	2431	RED BLUFF SHEEP SHED <i>(closed) Not on Map</i>	1	1,512
I	2434	RED BLUFF SHEEP SHED <i>Not on L or C</i>	0	1,512
I	2433	RED BLUFF SHOP <i>Not on L or C</i>	0	375
	2403✓	RED BLUFF STONEHOUSE	1	3,458 ✓
	2404✓	RED BLUFF STORAGE <i>& Repair Shop</i>	1	2,178 ✓
	2406✓	RED BLUFF STORAGE <i>Roof Alter. (Storage)</i>	1	96 ✓
		TOTAL COUNT	24	39,225 29

* * * E N D O F R E P O R T * * *

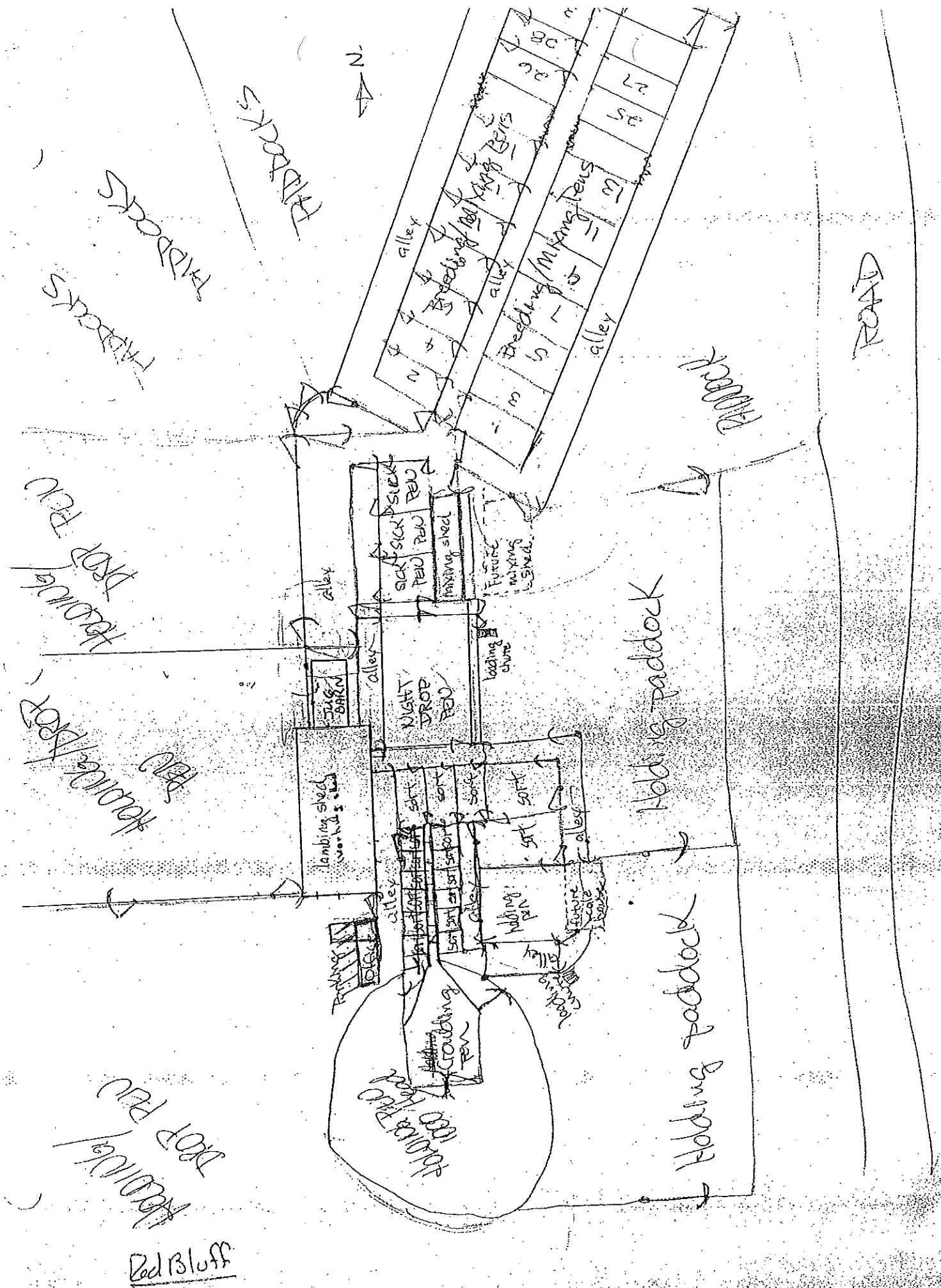
29826

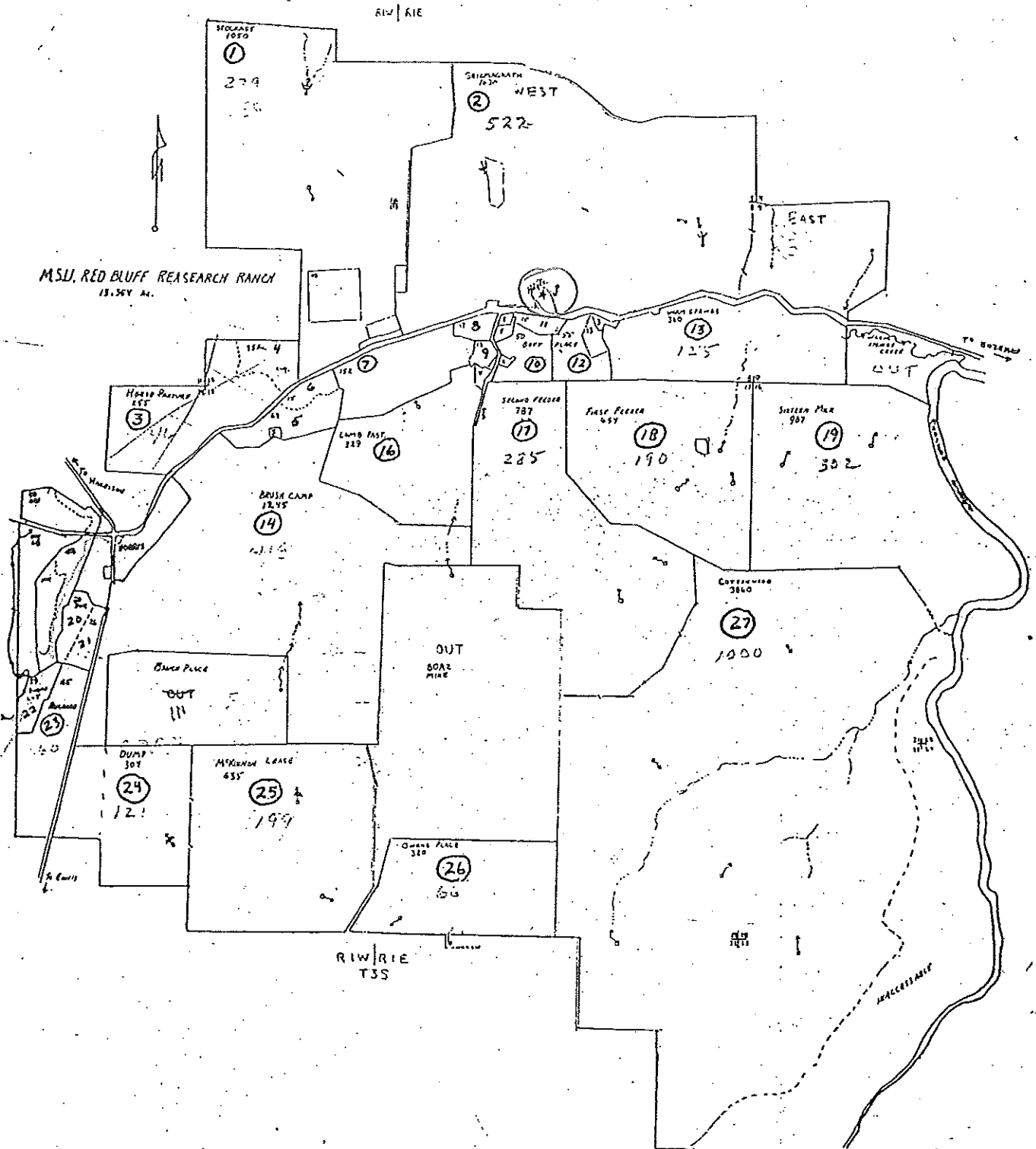
INSURANCE

SEQ. #	BLDG NO	IDENTIFICATION	BLDG CODE	CONT CODE	BUILDING ADDRESS	SQUARE FEET	NO. OF BLOCS	BUILDING VALUE	CONTENTS VALUE	SPECIAL CONTENTS	COMBINE TOTAL
842	5108	AGRICULTURAL EXPERIMENT STATION POST FARM									
843		AGRONOMY & SOIL RESEARCH FARM - BOZEMAN			8341 Huffine. 59717						
844	701	Residence	R	M		1,632	1	65,933			65,933
845	702	Residence Garage	GA	M		330	1	11,232	917		12,149
846	703	Chemical Storage	ST	M	705	312	1	10,620	5,515		16,134
847	704	Machine Implement	ST	M	706	1,800	1	61,267	31,815		93,082
848	707	Shop Storage (Old Granary)	ST	M	712	336	1	11,436	5,939		17,375
849	708	Quonset Implement Storage	ST	M		1,008	1	34,309	17,816		52,126
850	709	Quonset No. 1	ST	M		1,008	1	34,309	17,816		52,126
851	710	Quonset No. 2	ST	M		1,008	1	34,309	17,816		52,126
852	711	Quonset Seed Storage	ST	M		1,008	1	34,309	17,816		52,126
853	713	Seed Cleaning Building	ST	M		1,152	1	39,211	60,600		99,811
854	714	Irrigation Pump House & Pump	PU	M	725 Forage Building	80	1	1,010	7,575		8,585
855	715	Irrigation Pump House & Pump	PU	M		80	1	1,010	7,575		8,585
856	718	Agromony Field Storage Building - So	ST	M		2,640	1	89,858	46,662	140,000	136,460
857	719	Agromony Field Storage Building - No	ST	M		2,640	1	89,858	101,000		190,858
858	720	Extension Building	ST	M		2,640	1	89,858	46,662	140,000	136,520
859	724	Shop (50x60). Plant Storage	ST	M		3,000	1	102,111	78,780		180,891
860		Agromony Field Storage Building - West	ST	M		3,400	1	102,111	78,780		180,891
861		SUB-TOTAL				20,674	16	710,639	464,305	0	1,174,944
862		RED BLUFF RESEARCH RANCH - NORRIS									
863	2401	Residence No. 1	R	R	3 miles east 59745	1,208	1	48,803	3,609		52,412
864	2402	Residence No. 2	R	R		1,970	1	79,588			79,588
865	2403	Stone House Residence	R	R		3,456	1	139,703			139,703
866	2404	Storage Building & Repair Shop	GS	SH		2,178	1	79,258	1,978		81,236
867	2406	Root Cellar (Storage)	SH	SH		96	1	745			745
868	2407	Office	O	GR		402	1	33,135	5,406		38,541
869	2408	Granary No. 1	GR	GA		864	1	8,726			8,726
870	2409	Shop Garage	GA	SH		594	1	20,218	7,015		27,233
871	2410	Sheep Shed No. 1	SH	SH		6,464	1	50,140	5,050		55,190
872	2411	Sheep Shearing Shed	SH	SH		1,440	1	11,170			11,170
873	2413	Field Shed No. 5	SH	SH		384	1	2,979			2,979
874	2414	Field Shed No. 4	SH	SH		256	1	1,986			1,986
875	2415	Field Shed No. 3	SH	SH		256	1	1,986			1,986
876	2416	Residence No. 5 - Bopp Ranch	R	R		506	1	20,442	2,020		22,462
877	2419	Two Buller Feed Tanks	SH	BA		240	2	1,862			3,882
878	2421	Horse Barn	SH	SH		884	1	10,196			10,196
879	2422	Sheep Shearing Shed	SH	SH		1,464	1	11,356			11,356
880	2423	Lumber Shed	SH	SH		656	1	5,088			5,088
881	2424	Cattle Loafing Shed	SH	SH		600	1	4,654			4,654
882	2425	Loafing Shed	SH	SH		656	1	5,088			5,088
883	2426	Stone Cow Barn	BA	SH		1,000	1	11,534			11,534
884	2428	Sheep Garage	GA	SH		154	1	5,242			5,242
885	2429	Buller Grain Bin	ST	ST		2,800	1	30,300			35,350
886	2430	Frame-Pole Sheep Shed	SH	SH		1,296	1	25,250			37,370
887	2431	Leased	LE #								1,190



No inc. - Insurance not needed - 100% available





2423
Lumber shed



2422 Shearing shed

2411 Sheep shearing

2410
Sheep
shed
#1

2421
Horse
barn

Corral

2404 storage ~~404 Shop?~~

2409
Garage

~~2408~~ Chicken house

2402



Residence
No. 2

2406
Shop
Rabbit
Shop

Garage

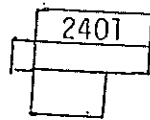
2403
Stonehouse



2407
Bunkhouse

office? yes

Redbluff Research
Ranch North



2401 Residence No. 1

2428 Jeep garage



Norris West

Highway

East to Beartrap
Canyon &
Bozeman

2415

#3

2413

#5

2414

#4

Sheep sheds — Field sheds?

2426 Cow barn

To Norris West Highway East

To Beartrap Canyon

Creek

2424
Loafing sheds

~~2417 Barn
Cattle corrals~~

2429
Butler Granary

2419
Butler bins

~~2416 Trappers Cabin~~

15x40
LAB
Moulder 216y

Redbluff Research Ranch
South

~~2405 Residence~~

To Beaz Mine

~~2430 Frame pole sh~~

50' x 50' Barn

100' x 80' Lambing Barn

2431 Sheep shed #2

office 23410010 20x30

Sheep corrals

Rough Plot Plan showing location of Buildings (no scale)

Animal Industry livestock
Novris, Mass July 1968

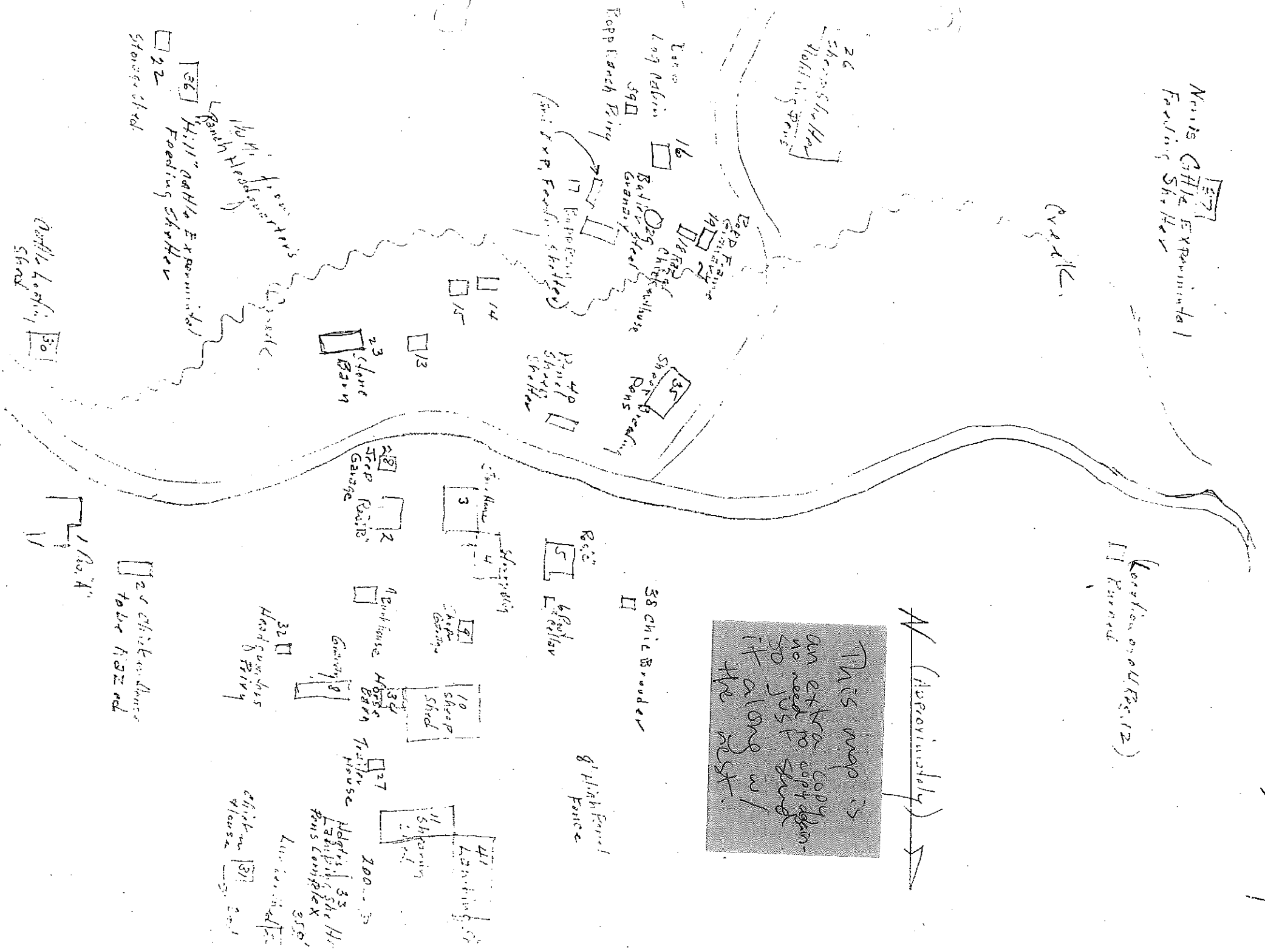
Novris ¹²⁷ GHE Experimental
Feeding Sh. Hse

Location of all Fig. 12
11 Kennel

Crack.

This map is
an extra copy
no need to send
it along w/
the rest.

N (Approximately)

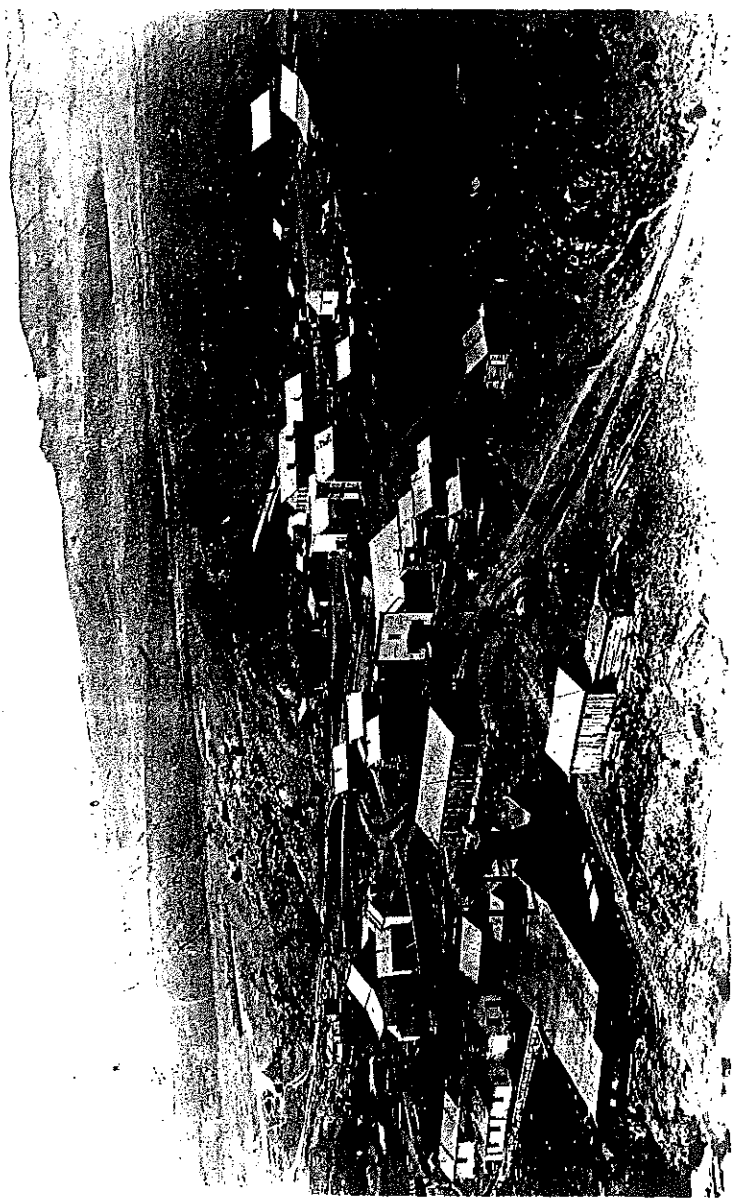


STOP AND HOTEL
NA

JOHN N. DEHAAS, JR.

AT: 1021 S. TRACY
BOZEMAN, MT 59715
THWEST
62

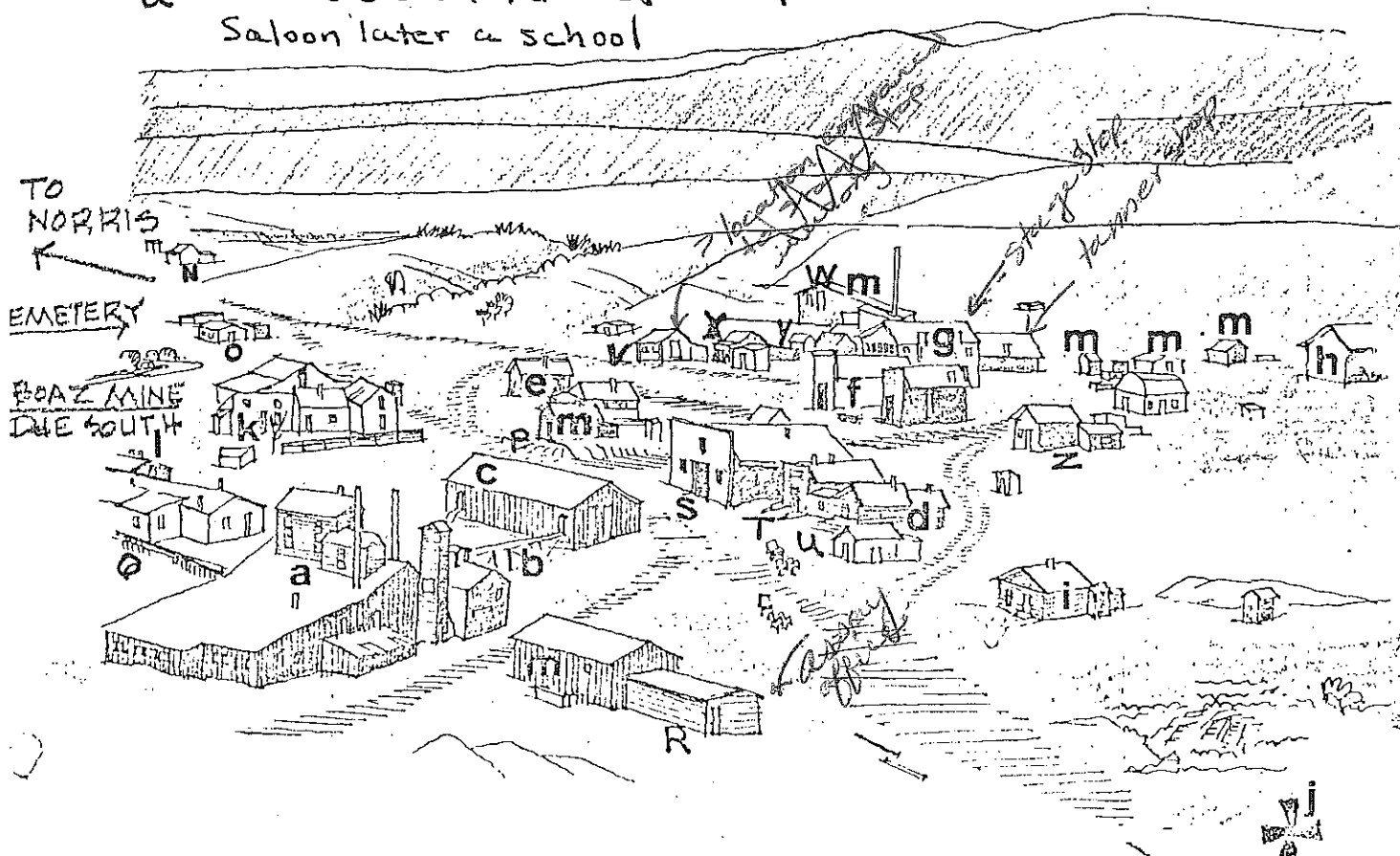
CODE 057



- V - M kees
W - Mill
X - Barbers
Later Dan
Y - Bachelor
Cabin
Z - Peck's
Barn
- a - CYANIDE MILL
 - b - CONVEYOR
 - c - ORE SHED
 - d - SCHOOL (CONVERTED FROM SALOON)
 - e - POST OFFICE (ALSO PHILPOT FAMILY RESIDENCE)
 - f - GENERAL STORE
 - g - STONE HOTEL (STILL STANDING) -- store hidden behind hotel
 - h - TANNER FAMILY BARN
 - i - DRINGLE FAMILY CABIN Earlier Bill Bellas, Fosters
 - j - DRINGLE SILVER MINE (APPROX. LOCATION)
 - k - WHITE HOTEL (REFERS TO COLOR) also called Phoenix Hotel
 - l - STONE BUILDING - USE?
 - m - BUILDINGS THAT WERE NOT THERE (ALREADY GONE) WHEN DRINGLE FAMILY LIVED IN RED BLUFF.
 - n - School
 - o - Old man Bartar
 - p - Peck store and bank
 - q - mine office later Richters
 - r - assay office (with rock face -- now a barn. 1973)
 - s - Livery Barn
 - t - George McLane Saloon
 - u - McKee Saloon later Spaulding Saloon later a school

NOTE: GEORGE DRINGLE CANNOT RECALL THERE BEING A POWDER MAGAZINE IN TOWN.

Additions were made by Merritt McKee who was born in 1893.



earliest person to see this picture was Bill Bellas
TO MADISON RIVER
SUBMITTED BY K. R. SIEBERT

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24JT0162 (# obtained from SHPO upon receipt of site form)

Property Name: CARC Montana Agricultural Experiment Station - MOCCASIN

Property Town/Vicinity of: Moccasin, MT

Property Date (Year of Origin/Construction or "Precontact"): 1907

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): District Building(s) Structure(s) 1 Site(s) Object(s)

Status (Choose one): Watch

Comment:

CARC has been well maintained over the years. Many older buildings have been renovated and adapted for new uses. Some equipment storage structures are functionally obsolete and are destined for demolition.

Condition/Integrity (Choose One): Fair

Comment:

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ 1 Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ Heritage Research/Documentation project activity

\$ Heritage Interpretation/Education/Awareness project activity

\$ Heritage Promotion/Tourism/Marketing project activity

\$ Heritage Preservation/Conservation Plan Development

\$ 1 Regular/routine maintenance

\$ Monitoring (reported upon)

\$ Project designed/redesigned to avoid adverse effect to property's heritage values

\$ Other heritage stewardship effort/activity (Explain)

Comment:

Not included in calculations above, but in 2009 restorations of the dairy barn (used as the analytical lab) and the horse barn (used as the seed processing labs) included extensive electrical wiring, new lighting, and asphalt roof shingles; and vinyl siding (same design as previous wood siding) was installed on the dairy barn (analytical lab) costing approximately \$150,000.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 3 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

The MAES building condition and maintenance needs are determined by the Director of MAES. The President of MSU includes MAES operations in the Long Range Building Program and funding request to the Legislature.

The maintenance and capital renewal needs range from fencing to construction of designed research facilities to replace the inherited farm and residential structures modified to accommodate scientific research.

Other Comment:

Authorized by HB405 in 1907, the state received land donations for MT Ag Exp Station. Mr. S. Hobson, MT legislator, donated to the state 160 acres west of Moccasin for the central area of the state's Ag Exp Station. He provided funds to construct the farm house (1907); the state added the 2-story farm house, horse barn and shed in (1908); a superintendents cottage (1910); and leased 480 adjacent school land (1912) for a total operation of 640 acres (excerpted from document prepared by Darlene Wruck, MSU Office of the Dean, 1995).

Attached - MSU Facilities Planning created a map using aerial photography of the current location site in 2011 that includes building numbers and their current uses.

Reported by (Name): Victoria Drummond **Date (MM/DD/YYYY):** 12/01/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)

HISTORY OF MAES LANDS

Disclaimer: While the majority of information in this document is taken from actual deeds, legislation and original correspondence, no attempt was made to verify all information through records search in the MSU Archives, the Office of the Commissioner of Higher Education, the Secretary of State's Office or any other office or agency.

1994 Montana Power Company - Storage Site Lease - Rent: \$75.00 per month. Lease terminates on December 31, 1995.

TOWNE FARM - ANIMAL AND RANGE SCIENCES

1955 Purchase/trade agreement Price: \$56,000. Purchase authorized by State Board of Education on April 18, 1955. Item #15431. Purchased with Morrill Funds. Purchased from Norman L. Towne and Lola L. Towne. Warranty deed states: "Party of the second part (MSU/MAES) agrees that so long as said lands are used as a farm in connection with the Agricultural Experiment Station of Montana State College that the same shall be named and designated Norman L. Towne Experiment and Research Farm".

CENTRAL AGRICULTURAL RESEARCH CENTER - MOCCASIN

1907 *MS 100043* History - The authority to establish a branch of the MAES in the Judith Basin was given in HB 405 passed by the Legislature in 1907. It was signed by Gov. J. K. Toole on March 9. The original appropriation was only \$2,000; \$1,000 for the support and maintenance of the station in 1907 and \$1,000 for 1908. The same bill authorized the State to receive donations of land, and the MAES to receive donations of money, implements, building materials, animals, and supplies. Mr. S.S. Hobson of Lewistown, who was a legislator in 1907, purchased 160 acres of land west of Moccasin and donated it to the State. The land cost \$1,600 and Mr. Hobson also provided \$2,500 for the erection of a farm house. In 1908 a two-story eight room farm house (one room was an office) was constructed, also a horse barn and implement shed. In 1910, a Superintendent's cottage and seed house was erected. 480 acres of adjoining state school land was leased in 1912 making a total of 640 acres available for research.

An agreement was signed with USDA to supply technical supervision; the superintendent and other staff members were federal employees. After 1955 all federal salary support was discontinued.

1911. Field days: First field day was held in 1911. There were so many people that it was impossible for the staff to accommodate and plan for them. As a result the Judith Basin Farmers' Picnic Assoc was formed. This association helped plan and assist at the field days. In 1914, 4,000 people attended and in 1927 there were an estimated 6,000 people. Local trains from Gt Falls and Billings gave special rates for people attending. The Governor or congressman was usually a guest speaker. A band concert was held twice daily featuring the Elks, Eagles or municipal band from Gt Falls or Lewistown. During the '20s and '30s airplane rides were available and many people took their first ride at the research center. In the evening there was a dance in Moccasin. The association was dissolved about 1941 due to the depression and drought which caused a decrease in attendance.

1926 Mess Club - established in 1926 for the convenience of employees and visitors. It provided a means for feeding people because restaurant facilities were not convenient. Records were kept of the number of meals served each month. (April 1926, 586 meals served)

The Club collected money from employees and others, paid a salary to a cook and bought food

Central Agriculture Research Center - Relevant 2011 SHPO Buildings Moccasin, Montana

FACILITY INVENTORY BUILDING LIST

Bld No		Building	STRUCTURE CLASSIFICATION ABBREVIATIONS		Structure Type	Date Occupied	GSF	Notes	Mark Y if Yes		
			LS Livestock Shed (loafing, etc.)	BR Barn					Conditioned Environment/human	Electrical Power	Fire Sprinklers
			LH Livestock Housing (has water/elec)	OF Office							
			GR Grain Bins / Silos	CR Conference Room							
			LB Lab (can include animal handling)	RR Restroom							
			ES Equipment Storage(has lights/elec)	R Residence							
			GH Greenhouse	WS Weather Station							
			SD Shed (no utilities)	FT Fuel Station/Tank							
4403		CARC HOUSE		R	1908	1,024			Y	Y	
4405		CARC WELL HOUSE		PH	1915	80				Y	
4406		CARC STORAGE SHED/CAR GARAGE		ES	1918	480				Y	
4409		CARC SEED LAB		LB	1911	1,344			Y	Y	
4413		CARC ANALYTICAL RESEARCH LAB		LB	1922	1,200	AKA DAIRY BARN		Y	Y	
4414		CARC IMPLEMENT SHED		ES	1921	3,680				Y	
4417		CARC FERTILIZER SHED		ES	1922	208				Y	

INACTIVE BUILDINGS

4401		CARC SUPT RES-GONE			1910	2148	SOLD AND MOVED AWAY				
4402		CARC OFFICE-GONE			1923	1344					
4407		CARC ASSIST RES-GONE			1910	1879	RAZED				
4408		CARC GRANARY-GONE			1916	1788					
4411		CARC OIL/GAS HOUSE-GONE			1925	108					
4416		CARC EAST LIVESTOCK SHED-GONE			1926	560					
4419		CARC HOG HOUSE/STOR-GONE			1910	480	REMOVED				
4428		CARC ROOT CELLAR-GONE			1910	120	RAZED				

Building and Site Photos of CARC

Photos 4/2011

Pictures ordered by building number except where noted



Bldg #4403 - House



Bldg #4403 - House



Bldg # 4405 - Well House



Bldg # 4405 - Well House



Bldg # 4406 – Storage Shed / Car Garage



Bldg # 4406 – Storage Shed / Car Garage

Oops forgot to take exterior picture!

Bldg # 4409 – Seed Lab



Bldg # 4409 – Seed Lab



Bldg #4409 – Seed Lab



Bldg #4413 – Analytical Research Lab (was Dairy Barn)



Bldg #4413 – Analytical Research Lab (was Dairy Barn)



Bldg #4413 – Analytical Research Lab (was Dairy Barn)



Bldg #4413 – Analytical Research Lab (was Dairy Barn)



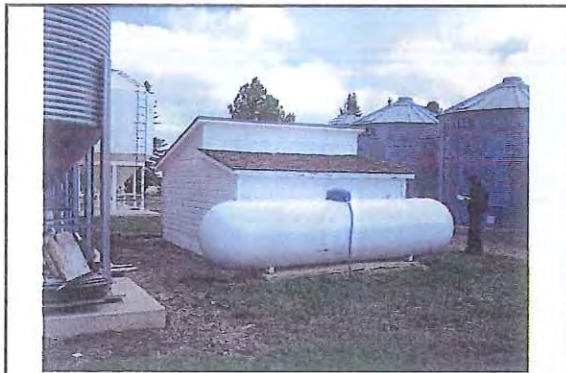
Bldg #4413 – Analytical Research Lab (was Dairy Barn)



Bldg #4414 – Implement Shed



Bldg #4414 – Implement Shed



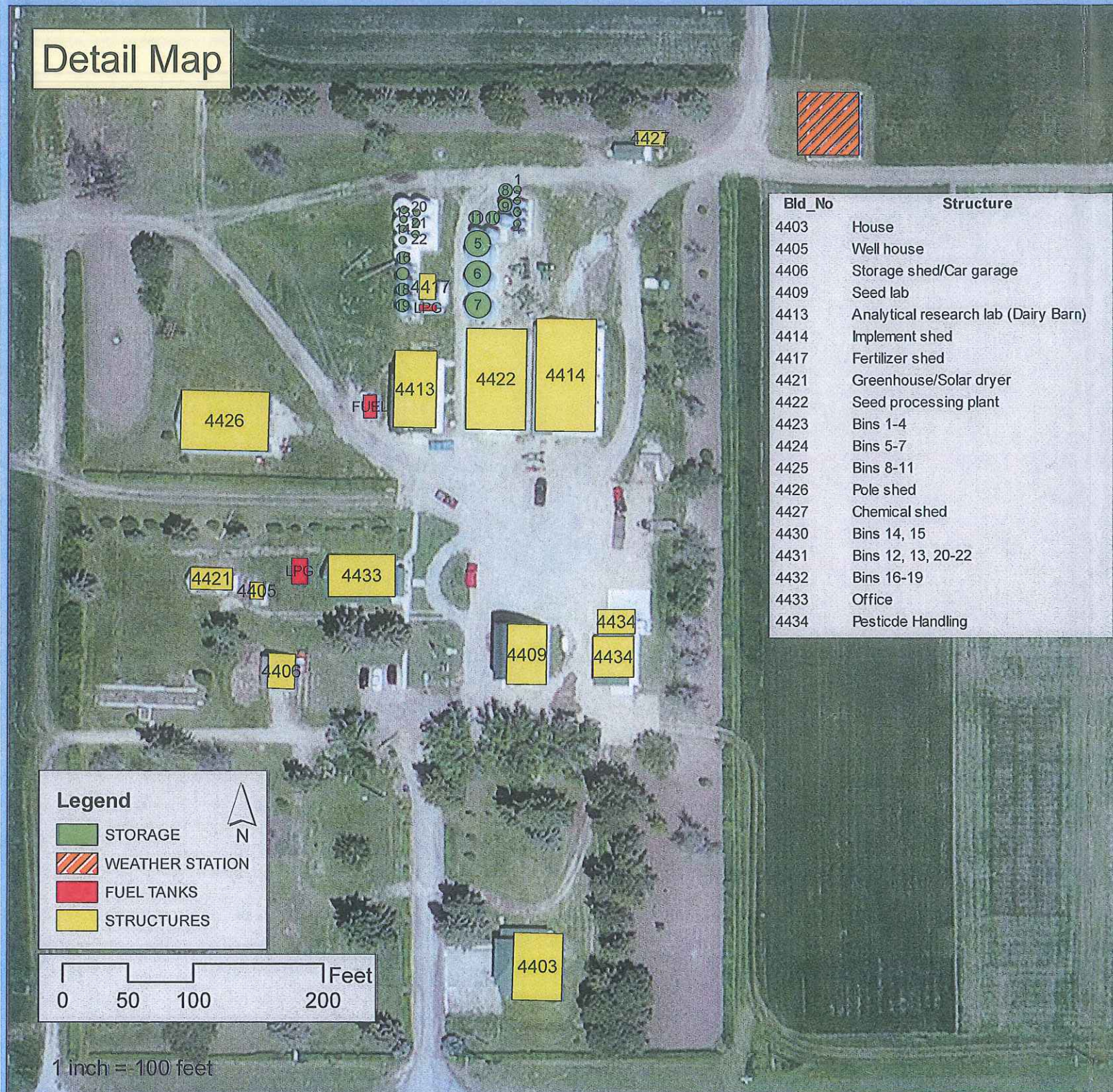
Bldg #4417 – Fertilizer Shed with Unnumbered Propane Tank



Bldg #4417 – Fertilizer Shed

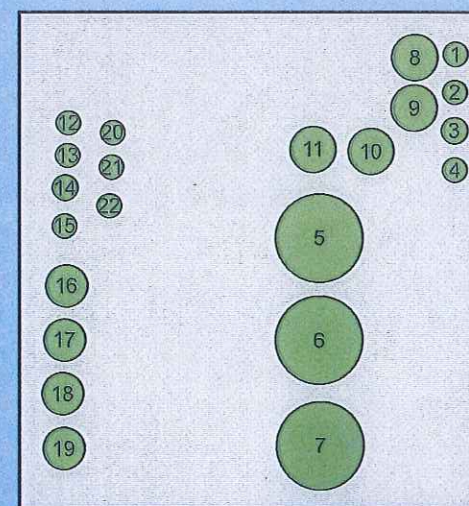
Montana AES: CARC-Moccasin

Detail Map

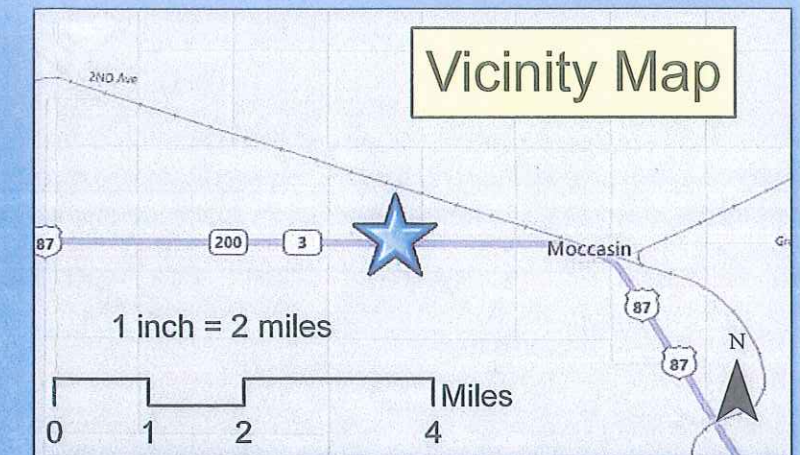


Bld_No	Structure
4403	House
4405	Well house
4406	Storage shed/Car garage
4409	Seed lab
4413	Analytical research lab (Dairy Barn)
4414	Implement shed
4417	Fertilizer shed
4421	Greenhouse/Solar dryer
4422	Seed processing plant
4423	Bins 1-4
4424	Bins 5-7
4425	Bins 8-11
4426	Pole shed
4427	Chemical shed
4430	Bins 14, 15
4431	Bins 12, 13, 20-22
4432	Bins 16-19
4433	Office
4434	Pesticide Handling

BIN #	BIN_SIZE	VARIETY
1	100	HOCKETT
2	100	EMPTY
3	100	HOCKETT
4	200	OTANA
5	2500	STORAGE
6	2500	LAVINA
7	2500	STORAGE
8	550	EMPTY
9	550	EMPTY
10	550	HAXBY
11	550	HAXBY
12	1000	HOCKETT
13	1000	GENOU
14	600	HAYBET
15	600	LUCILE
16	550	EMPTY
17	550	HAYBET
18	550	WILLOW CREEK
19	550	EMPTY
20	1000	VIDA
21	1000	EMPTY
22	1000	CHOTEAU



Vicinity Map



Boundary Map



Date: 11/28/2011

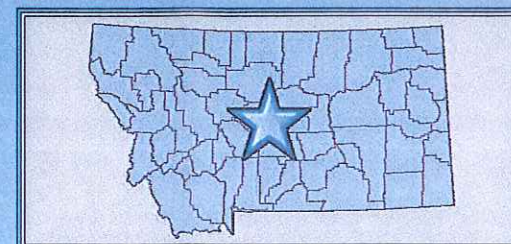
Drawn by Christian Black

Source: Montana GIS Portal <http://gisportal.msl.mt.gov>, Bing Maps,

Facilities Inventory updated 04/2011

Contact FPDC Analyst Matt Hume

47.056031, -109.952259
+47° 3' 21.71", -109° 57' 8.13"



Montana State University
Facilities Planning, Design & Construction

This product is for informational purposes and may not have been prepared for, or be suitable for, legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24HL1382 (# obtained from SHPO upon receipt of site form)

Property Name: MSU NORTHERN - GYMNASIUM

Property Town/Vicinity of: Havre, MT

Property Date (Year of Origin/Construction or "Precontact"): 1956

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): ___ District 1 Building(s) ___ Structure(s) ___ Site(s) ___ Object(s)

Status (Choose one): Watch

Comment:

The building is in use by MSU-Northern as the gymnasium for physical education and recreation courses and sport events that are open to the public.

Condition/Integrity (Choose One): Fair

Comment:

The last significant infusion of capital to address accrued deferred maintenance was in 1987.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$___ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$___ Heritage Research/Documentation project activity

\$___ Heritage Interpretation/Education/Awareness project activity

\$___ Heritage Promotion/Tourism/Marketing project activity

\$___ Heritage Preservation/Conservation Plan Development

\$^{88,217} Regular/routine maintenance

\$___ Monitoring (reported upon)

\$___ Project designed/redesigned to avoid adverse effect to property's heritage values

\$___ Other heritage stewardship effort/activity (Explain)

Comment:

The building has received state financial support over the years, but as an auxiliary's services building it is typically non-state supported. In 2008-09 \$191,676 was invested to upgrade Boiler Heating System and upgrade gym lighting and HVAC controls. The Gym is an intensely used facility for competitive collegiate and intramural sports, as the venue for ceremonial and large events attended by the college and local communities.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 2 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

The university conducts an observable condition assessment of all buildings on a cyclical basis. The most recent Facilities Condition Inventory of the Gymnasium was 7/13/2011 (a non-state supported bldg) and its deficiency ratio was determined to be an 23.3.1% (which is a very high percentage in the Poor range per APPA Industry Standards). The categories of deficiencies are: Damage Wear out; Codes & Standards; and Environmental Improvements; specifically replace windows, exterior doors, plumbing, water heaters, bleachers and balcony seating; repair cracked foundation, floor and walls; add new HVAC, increase ventilation for increased occupancy, and recommission the building.

Other Comment:

On Nov 1, 1955 ground-breaking ceremonies began the construction of the gymnasium, which was jointly financed by MSU-Northern and the National Guard's shared use. Its design is a series of laminated wood arches and a shell roof in the shape of a hyperbolic paraboloid or saddle roof. It opened in 1956 and was named Armory Gymnasium. In 1958 two arches were added that lengthened the building by ~40 feet and increasing the total seating to 2500. It is not documented, but the report author, suggests research to determine whether the nearby 400-ft tall, saddle-shaped rock referred to as the Tower in Captain Meriweather Lewis's 1805 journals, influenced the Mt native and local architect Oswald Berg Jr., in designing the gymnasium, because if so it would strengthen the buildings cultural value as a state asset.

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 12/02/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)

MSU-Northern History

Northern had its beginnings in 1913 when the Thirteenth Legislative Assembly of Montana established Northern Montana Agricultural and Manual Training School to be located at Fort Assinibione. The bill passed on March 8, 1913, but no money was appropriated.

The 1927 Legislature amended the original act to allow certain academic subjects to be taught in the city of Havre. The passage of both acts was a monument to the work of State Representative Florian Carnal, Senators William Cowan of Box Elder and D.S. MacKenzie Sr., and E.C. Carruth of Havre, a longtime member of the State Board of Education.

Funds for the operation of the school were made available by the Legislative Assembly in 1929, and the college opened its doors to 80 students on September 24 of that year (formal ceremonies opening the school were held on September 30th) The faculty consisted of 5 members including Dr. G.H. Vande Bogart, who had been appointed president of the school.

The entire college was originally located in temporary quarters at Havre High School, but in 1932 four departments were moved to East Hall, the first building on the present campus.

1913 1913-1939

The Thirteenth Legislative Assembly of the State of Montana enacts a law establishing the "Northern Montana Agriculture; and Manual Training School" and authorizes the purchase of two thousand acres of land in the Fort Assiniboinne Reservation. However, no money is appropriated for the operation of the school.

1929

Sixteen years after it was first approved, money was authorized by the Twenty-First Session of the Legislative Assembly for the operation of the Northern Montana School. The amount was \$40,000.

The college first opens its doors September 24 in quarters leased from School District A 16. The space consisted of all three floors of the west section of the then high school building located between 4th and 5th Avenues and 7th and 8th Streets. Formal ceremonies for the opening of the School were held at the high school September 30th. Havre High School circa 1929
Havre High School circa 1929

Renovation and remodeling begins at the Park Pumping Station on campus land.

1931

The word "college" is substituted for "school" in the third catalog and the common use of "Northern Montana College" comes into existence.

The first commencement ceremony takes place June 9 in the auditorium of the high school building in which the college offices are housed. Twenty-three diplomas are granted to candidates who have completed the requirements for the authorized two-year program.

1913-1939

1932

NMC is accredited by the Northwest Credit Association.

East Hall

East Hall

Renovation and remodeling of the Park Pumping Station is complete and the building is ready for occupancy. Named East Hall, it houses the departments of art, music, German, engineering drawing

(drafting) and mathematics.

1933

Work on Pershing Hall begins in February with the hauling of 200,000 bricks from Fort Assinniboine using donated trucks and volunteer labor. Construction on Pershing Hall
Construction on Pershing Hall

The first copy of the college newspaper is published under the title of "NoMoCo" in March.

1934

Pershing Hall is completed and occupied.

1936

Donaldson Hall The third building on campus, a girls' residence hall (later named Donaldson Hall), is finished and occupied.

1942

The WPA provides funds for moving and remodeling a 3-story building to make a men's residence hall.

1942

In January the Men's Co-Op (Morgan Hall Annex) is ready for occupancy. This frame building was once used as the County Poor Farm and was moved to campus with funds from the WPA program. Men's Co-Op (Morgan Hall Annex)
Men's Co-Op (Morgan Hall Annex)

1945

Students in the IA Building (Metals Tech)

Students in the IA Building (Metals Tech)

The Industrial Arts Building is constructed at the end of the East Road against the hills bordering the southern edge of campus. (Now known as the Metals Technology Building)

1946

World War II barracks from Gore Field (Great Falls) are moved to Havre. These barracks provide 33 family dwellings for temporary housing of faculty and WWII vets returning to school in the post war period. Though regarded as temporary, these units were in service for over 20 years.
1913-1939

1947

A recreation building from the Moutt Mine near Columbus is purchased and the one story 110x60 foot building is cut into sections and moved to the NMC campus for use as the Student Union Building.

Construction of the east wing of Cowan Hall begins.

A 100x40 foot building is acquired from Gore Field and placed directly west of the IA Building. It serves as the Physical Plant maintenance shop and office building.

1948

After a delay because of lack of funds, the SUB is finally ready for use in the fall.

1949

Construction of Cowan Hall stops when money runs out.

The girls' residence hall is named Donaldson Hall in honor of a deceased NMC English instructor.

A small one story brick vehicle storage building is constructed by campus crews just west of the Physical Plant building. Delayed construction of Cowan Hall causes this building to be pressed into service for classrooms.

The first paving of roads begins in the fall.

1951

The college symbol is designed by Mrs. L.O. Brockmann, wife of the NMC President. The lines in the center represent the Aurora Borealis and the three vertical lines symbolize the three major curricular functions of the college: liberal arts, teacher training, and vocational and technical studies.
NMC Symbol

A small one story building with multiple overhead doors is constructed. It was intended for use as vehicle storage, but due to the delays on the Cowan Hall construction it is pressed into service for classrooms. It is currently known as the Automotive Diagnostic Laboratory.

1953

Cowan Hall is dedicated but is incomplete except for the ground level and main floor. This building is named after a strong advocate and devoted worker for the college, former Senator William T. Cowan of Box Elder who was a strong advocate and devoted worker for the college throughout its history.

The Automotive Mechanics building is completed.

Street lights and sidewalks are added and some leveling and smoothing of the hills around East Hall and Pershing is done. Paved roads were expanded.

The first annual is published at a cost of \$3: \$1.50 down and \$1.50 on delivery.

1954

NMC is authorized to offer the four year Bachelor of Science degree in elementary teacher education.

1955

In early 1955 a gift to NMC by Mrs. George J. Bonine makes possible a later purchase of almost 29 acres of land along the eastern edge of the existing campus.

In October Mrs. F.A. Buttrey donates 15.8 acres of land on the west edge of campus in memory of her husband.

On November 1st, ground breaking ceremonies mark the beginning of construction of the Armory Gymnasium. This building is to be jointly financed and used by the college and the National Guard. During construction wind catches one of the newly installed arches, tilting it into two others and topples the entire structural skeleton.

1956

The City of Havre donates .2 of an acre of land close to the northeast entrance of the campus bringing

the total acreage to nearly 105 acres.

The Armory Gymnasium is completed and the entry hall and lobby are added. Armory Gymnasium
Armory Gymnasium

The Havre Kiwanis Club plants the shelter belt along the western and southern perimeter of campus.

1957

The student body donates a sound system to the gym.

Morgan Hall Male students move into the newly constructed boys' dormitory located just north of the original boys' dorm. Named Morgan Hall in honor of longtime faculty member and interim President of the College in 1953, Dr. Ellsworth A. Morgan.

1958

Two more arches are added to the gym creating an additional 40 feet. Seating capacity is increased to about 2500; wrestling room and offices are gained.

A south wing is added to Morgan Hall.

The dining area in Donaldson Hall is closed and all campus residents are served meals from the new food service facility in Morgan Hall.

Plans are drawn for a new Student Union Building. The entire cost will be borne by students through increased fees authorized by the students.

1959

A fund is established in the memory of Max P. Kuhr. Money from this fund is used to construct the Kuhr memorial pond on the northern side of campus

The 2004-2005 75th Anniversary Celebration

About MSU-Northern

1960-1969

Structural flaws in East Hall make the building unsafe and use of all but two rooms is discontinued.

Two units to provide apartments for married students are under construction.

The enlarged version of the college symbol that was welded by Con Elnes of the Vo Tech division in 1958 is mounted on the curved brick wall planter at the north entrance of the campus.

1961

The new SUB is ready for use.

Student Union Building

Student Union Building

A windstorm rips the roof off the connecting wing between the pool and the gym completely flattening one floor.

Three more units are added to the married student housing bringing the total of two bedroom apartments on campus to 50.

1965

In May the Physical Plant building burns to the ground.

The Pin and Cue area is added to the SUB.

1966

Construction begins on a new Physical Plant structure on the southwest corner of the campus to replace the one that burned down.

Construction also begins on the Math Science building.

Bids are accepted for the Electronics Technology building.

1967

The new Physical Plant building is ready for occupancy.

1968

Math-Science Building and parking lot between Cowan Hall and the Armory Gym

The new Math-Science and Electronics Technology buildings are ready for occupancy.

The area between Cowan Hall and the Armory Gym is paved for a parking lot at a cost of \$40,000 paid through parking fees.

The Morgan Hall Annex is demolished leaving only the cement walls of the current tennis courts just south of Morgan Hall.

1970

Brockmann Center The Engineering Technology and Industrial Arts building is opened. This building is later named after former NMC president L.O. Brockmann.

1971

A new girls' dormitory is constructed to the east and south of the boys' dorms and is ready for occupancy in the fall. This new building is named MacKenzie Hall in honor of Dr. D.S. MacKenzie, Sr. who was an early legislator, executive board member and civic leader who assisted in the founding of the college.

MacKenzie Hall, circa 1972

MacKenzie Hall

A food service unit is added to the west side of the SUB. Dining facilities in Morgan Hall are closed.

First National Bank of Havre donates a set of Carillon bells to the college. The equipment and loudspeakers were located at the top the Armory Gym.

1972

Due to funding problems, Football is dropped as a varsity sport.

1977

The legislature indicates approval for a new library for NMC, but does not allocate funds.

1978

Davey Pioneer Lab

An addition to the Automotive Mechanics building is begun with funding coming from both state funds and community contributions - the Davey Pioneer Laboratory.

1979

The legislative session approved \$2,302,000 for construction of a new library.

Structurally unsafe and abandoned since 1965 for all but storage purposes, East Hall is demolished.

1982

The new library building is opened and named in honor of former NMC President Guy Vande Bogart.

Vande Bogart Library

A fund drive for a Farm Mechanics building is begun.

1984

The Farm Mechanics building is dedicated. All funding for the constuction came from community and corporate supporters.

An Apple computer lab was added to the Math Science Building.

The Northern Alumni Association began a \$175,000 remodeling project to restore the main floor of the west wing of Donaldson Hall for campus use.

President James Erickson proposed a new technology building for campus, but the legislature rejected the concept.

Improvements are made to campus outdoor recreational fields.

President Erickson announces his retirement plans for September of 1985.

1985

KNMC DJ

KNOG increases its power to 10 watts and changes its call letters to become KNMC.
Dr. William Merwin is named President in May.

1986

Montana's legislature cuts state budget when Northern's enrollment is a record high.

Havre Cable TV announces plans to bring PBS TV to Havre.

The Computer Assisted Design (CAD) lab opens in Brockmann Center.

1987

Legislators consider proposals that would make Northern and Western two year colleges and merge Montana Tech with MSU in Bozeman.

Governance of Montana's five vo techs is transferred to the Board of Regents, creating an 11 unit university system.

President Merwin is forced to cut 22 programs and 12 administrators due to state budget cuts. Amid legislative concerns about program duplication Montana's Board of Regents considers eliminating Northern's elementary education program.

Northern's food service facility is renovated in September to better serve students and additional repairs are made to the Gym.

Northern opens the first on campus child care facility in September with a capacity of 28 children.
Northern begins offering a four year bachelor of science degree in nursing.

The Math-Science building is named the Hagener Science Center in memory of L.W. Hagener, long time faculty member and curator of many of the exhibits in the building.

1988

Montana's Board of Regents require all campuses to move from a quarter to semester system and adopt a common calendar. They also re instate Northern's elementary education program and consider plans to re organize the College's of Technology.

The KNMC radio station begins broadcasting the NPR public radio signal from KEMC in Billings.

Northern is awarded a joint water quality training grant in cooperation with the State of Montana.

The college opens a grant funded Women's Center to help attract women students to non traditional careers.

As Carillon bells on the gym aged, it became difficult to find replacement parts for them and they are removed (late 80's)

1989

President Merwin announces his resignation to accept the Presidency at the State University of New York Potsdam campus.

Frank Kerins, retired Carroll College President, is named interim President at NMC.

Northern begins offering the associate of science degrees in business and computer technology in Great Falls through the Vo Tech Center.

An automation lab complete with an IBM Scara robot is added to Brockmann Center.

Facing a space shortage at the Malmstrom Air Force Base Higher Education Center Northern leases the former USDA building in Great Falls.

1990

A five unit University System is proposed by the Presidents of NMC, WMC and EMC.

Northern announces a tractor testing program in cooperation with a Canadian organization.

Governor Stan Stephens calls together the Commission for the 90's and Beyond to study higher education in Montana.

The college issues a private management contract for physical plant and food services.

Dr. William Daehing is named President of Northern and arrives on campus July 1.

A newly remodeled Student Art Gallery opens in the Student Union Building and the college swimming pool is closed for repairs.

1991

Northern wins the NAIA National Wrestling Championships.

A feasibility study begins for construction of a new gymnasium. Over 1.5 million is budgeted for repairs to the current facility.

Northern begins offering the master's of education degree.

Northern sets an all time Fall enrollment record with 1973 students.

1992

Northern wins the NAIA National Wrestling Championships for a second time.

The Board of Regents votes to raise admission standards for the University System.

Northern is awarded a federal grant for a Veterans Upward Bound program.

Governor elect Marc Racicot proposes \$25M in cuts and a single University System.

In the Fall, all Northern moves from a quarter system to a semester system.

1993

A Legislative committee recommends \$23M in cuts for the University System.

The Northern Skylights women's basketball team wins the NAIA Division II national championships.

The Board of Regents establish a system wide core curriculum and re structuring plans that align the

smaller campuses with the two University campuses in Missoula and Bozeman.

Kuhr family donates fund for flagpole and walkway memorial.

Northern's Alumni Association announces the creation of an All Sports Hall of Fame.

1994

Northern receives 2.7 million from a \$14.5 million MSU bond issue using the combined resources of the affiliated campuses.

The last class graduates in May under the name Northern Montana College as the campus officially becomes Montana State University-Northern.

1995

In July MSU-Northern unveiled NorthNet interactive instructional TV venture that is grant funded and offered in cooperation with local telephone cooperatives. The program grows to serve over 60 sites throughout the state.

Northern begins offering the associate of science degree in railroad maintenance and operations.

1996

Northern receives approval for a non-traditional baccalaureate degree in nursing that can be delivered to working RNs.

The MSU-Northern Foundation announces an expansion of the campus based scholarship program to include 20 new \$500 scholarships.

1997

Chancellor Bill Daehling announces his retirement. A search for a replacement begins with a committee appointed by MSU-President Mike Malone.

1998

Northern wins the NAIA National Wrestling Championships for the third time.

Mike Rao, former President at Mission College in California, is named as Daehling's replacement. He begins his administration by implementing a shared governance process involving faculty, staff and students.

1999

Northern wins the NAIA National Wrestling Championships for the fourth time.

Northern completes the move of its Great Falls campus from it's northwest bypass location in to the MSU-College of Technology campus on 16th Avenue South.

Northern became the home of the Montana Motorcycle Rider Safety program. The program was previously administered by the State Office of Public Instruction.

Football is re-introduced to Northern as a varsity sport.

Planning begins for a campus history book - "A Northern Reflection"

2000

Northern wins the NAIA National Wrestling Championships for the fifth time.

Chancellor Rao resigns to accept a position at Central Michigan University.

Dr. Alex Capdeville, former CEO of the Helena College of Technology, receives an interim appointment as Northern's new Chancellor.

Northern begins offering its Bachelor of Science in Nursing (BSN) degree online. The program will allow nursing students the opportunity to complete their BSN over the Internet while continuing to carry out their work responsibilities.

2001

Montana Legislature approves \$2 million in bonding for the proposed Applied Technology Center, and also authorized MSU-Northern to seek and secure additional funding from other sources.

Alex Capdeville receives permanent appointment as Chancellor of MSU-Northern.

NMC/MSUN History Book "A Northern Reflection" is completed.

Northern hosts its first "Legends for Lights Pheasant Jamboree". A fundraising event hosted by the MSU-Northern Foundation, the event features NFL legends and benefits Northern's athletic department.
Book Cover: A Northern Reflection

2002

Starting this year, and for the next 3 years, Northern hosts the NAIA National Championship Wrestling Tournament.

Part of CTEC

Funded in large part by a grant from the U.S. Department of Education, the Community Technology Education Center (CTEC) opens on the lower level of the Library.

2003

Northern officially receives National Council for Accreditation of Teacher Education (NCATE) accreditation.

The Montana Board of Regents approves a new plumbing degree for Montana State University-Northern.

Planning begins for Northern's 75th anniversary celebration with activities planned to take place during the 2004-2005 school year.

2004

Northern wins the NAIA National Wrestling Championships for the sixth time.

In May, groundbreaking ceremonies for the Applied Technology Center are held.

Northern's 75th Anniversary celebration begins with a kick-off birthday party held on the former site of

East Hall.

MSU-Northern's 75th Anniversary Logo

2005

75th Anniversary celebration events conclude in May with the Founders' Excellence dinner and the 2005 commencement exercises.

Northern adopts a new logo designed to put an emphasis on the word "Northern" and to utilize our traditional seal.

MSU-Northern Logo, adopted 2005

Northern receives a Federal grant for \$400,000 to help finish and equip the new Applied Technology Center and the first classes are held in the building during Fall semester.

2006

In April an Grand Opening/Open House is held for the Applied Technology Center.

The Federal Government conveys the old BLM office buildings in Lewistown to MSU-Northern to house our new Lewistown campus and the Central Montana Education Center

2007

In February renovations began on the former BLM building in Lewistown to turn it into classroom, labs and office space. In September the first classes were held in the facility, and in October a Grand Opening ceremony was held.

In December Chancellor Alex Capdeville announced his retirement and Dr. Rolf Groseth was appointed interim Chancellor.

2008

In May a pedestal clock donated by the Havre Rotary Club was installed in the

MSU-Northern's Mission Statement

A comprehensive regional university, Montana State University–Northern offers programs of professional preparation emphasizing discipline mastery, critical inquiry, and social responsibility in:

- * teacher preparation
- * mechanical and engineering technologies
- * business and computer information systems
- * nursing
- * arts and science

MSU-Northern applies emerging technologies in degree programs ranging from the associate to master's level. MSU-Northern prepares well-educated students who are capable of decisive action and application of new ideas. The university is committed to excellence in teaching, service to its region and the state, and applied research and scholarship.

MSU-Northern values individualized attention to its students, experientially-based learning, and creating a

culturally rich and intellectually stimulating environment. From its North Central Montana High Plains main campus, the University serves as a regional cultural center and maintains strong partnerships with communities, education, business

New Montana State University -Northern (MT) | Colleges Universities Scholarships List
<http://www.newuniversitylist.com/2011/02/montana-state-university-northern-mt.html#ixzz1TRNB96xu>

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24HL0329 (# obtained from SHPO upon receipt of site form)

Property Name: FT ASSINIBOINE - Montana Agricultural Experiment Station - NARC

Property Town/Vicinity of: Havre, MT

Property Date (Year of Origin/Construction or "Precontact"): 1880

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): 1 District Building(s) Structure(s) Site(s) Object(s)

Status (Choose one): Watch

Comment:

The district or site includes buildings from 1880's pre statehood that should be watched (e.g. first post office bldg now used for equip storage and fort living quarters being used as soils lab). Other buildings are under the protection and maintenance management of the MT Historical Society, who operates tours of some buildings listed on the Historic Register of Historic Places; and others are TVA property. The attached aerial map shows disturbed areas that mark footprints of former buildings of the 100-bldg fort.

Condition/Integrity (Choose One): Fair

Comment:

Attached are photos of NARC (summer 2011) catalog the historic buildings on the site that are Ft. Assiniboine and Tennessee Valley Authority buildings. The database created by MSU Facilities lists the historic buildings' current uses, documents construction date, identifies the historic uses of the buildings (bldg name), and includes the building number, which correlates to the aerial map.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ 129,445 Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ 1 Heritage Research/Documentation project activity

\$ 1 Heritage Interpretation/Education/Awareness project activity

\$ 1 Heritage Promotion/Tourism/Marketing project activity

\$ 1 Heritage Preservation/Conservation Plan Development

\$ 40,904 Regular/routine maintenance

\$ Monitoring (reported upon)

\$ 1 Project designed/redesigned to avoid adverse effect to property's heritage values

\$ 1 Other heritage stewardship effort/activity (Explain)

Comment:

The categories with \$1 noted are to convey that stewardship efforts and monies were expended; but, the funds were through the MT Historical Society.
Heritage projects (\$129K above) included roof fascia and soffit restoration of Seed Lab.
There are organizations that currently sponsor websites, tours, grant funding, and other historic preservation efforts of what remains of Ft. Assiniboine; but, there are opportunities and needs for greater preservation of buildings in order to honor and teach future generations about the largest military post in the US when constructed and the home of the 10th Cavalry, known as the Buffalo Soldiers.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 5 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

Occupation and use of some Ft. Assiniboine historic buildings kept them heated and operationally maintained; however, now these vacant buildings may not have the same level of routine maintenance.

Other Comment:

In 2010 NARC moved some operations out of historic buildings into Bldg.#5433, a 12,380gsf building designed to accommodate the Seed Lab, a loading dock, conference room, large meeting room, kitchen and restrooms. The new building was located closer to other NARC operations and further away from the historic Ft. Assiniboine buildings - creating a clearer delineation of the historic Fort and the current NARC buildings and uses.

Ft. Assiniboine's history and value as a district is due to its significant impact to our nation, state, western region, to the military, gold mining, individuals and groups of African Americans and Native Americans, the Corp of Discovery, and higher education and specifically MSU-Northern and the Montana Ag Experiment Station.

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 12/05/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)

Fort Assinniboine

◀ Back ▲ Up ▶ Next

Fort Assinniboine

Daily Tours at noon and 5:00 p.m. June 1st - Labor Day -Originating from the H. Earl Clack Museum (Holiday Village Shopping Center).

Special Tours available upon request For more information call (406) 265-8336, (406)265-6233 or (406) 265-4000.

Admission: Adults \$6.00, Seniors \$5.00, Students \$3.00, under 6 free. Group rates of 10 or more.

Location: Six miles southwest of Havre on Hwy 87.

The military fort was one of the largest built in the US with over 100 buildings. Formally established in May 1879, it housed over 500 men at any given time. Many of the officers were accompanied by their wives and children. Fort Assinniboine was a center for such cultural events as theatricals and dances, in addition to daily military duties.



The fort was designed to house ten companies of infantry and cavalry. The troops were charged with monitoring the activities of the region's many Indian groups, patrolling Montana's border with Canada, stopping bootleggers and gunrunners and protecting the state's settlers. In its heyday, nearly 750 officers, enlisted men, and civilians called Assinniboine home.



Montana's grandest military post. The fort was the pioneer outpost of north central Montana, the frontier home of regiments of American infantry and cavalry, and the site of 1st Lt. John J. Pershing's (later General) early field assignment. Its surviving buildings stand today as a monument to our state's exciting past -- to the opening of the frontier.



Havre

Havre Area
Chamber
of Commerce
130 5th Ave
Havre, MT 59501
(406)265-4383

Hosted by Triangle
Communications



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FACILITY INVENTORY BUILDING LIST

STRUCTURE CLASSIFICATION ABBREVIATIONS					
LS	Livestock Shed (loafing, etc.)	BR	Barn	FE	Fencing
LH	Livestock Housing (has water/elec)	OF	Office	CO	Corrals
GR	Grain Bins / Silos	CR	Conference Room	RD	Roads
LB	Lab (can include animal handling)	RR	Restroom	IR	Irrigation
ES	Equipment Storage(has lights/elec)	R	Residence	PH	Pump House
GH	Greenhouse	WS	Weather Station	SP	Shop
SD	Shed (no utilities)	FT	Fuel Station/Tank		

Bld No	Building	Structure Type	Date Occupied	GSF	Historical Notes	Mark Y if Yes			
						Conditioned Environment/human	Electrical Power	Fort Assiniboine Building	Fire Sprinklers
5414	NARC VACANT	-	1887	7,922	Fort Building (Rose Room) - Historic Society Maintains for Tours		Y	Y	
5415	NARC VACANT	-	1886	1,500	Fort Building - Historic Society Maintains For Tours		Y	Y	
5417	NARC EQUIP STORAGE	BR	1886	1,000	Old Sheep Barn		Y	Y	
5418	NARC VACANT	-	1886	1,749	Fort Building (East Guard House) Historic Society Maintains For Tours		Y	Y	
5419	NARC VACANT	-	1886	1,749	Fort Building (Center Guard House) - Historic Society Maintains		Y	Y	
5420	NARC VACANT	-	1886	1,749	Fort Building (West Guard House) - Historic Society Maintains		Y	Y	
5422	NARC GARAGE #2 (2 Car)	ES	1927	420	Tenant Garage - TVA Building (Possibly not part of Ft Assiniboine)		Y		
5423	NARC LOWER CALVING SHED	LS	1927	576	(Possibly not part of Ft Assiniboine)		Y		
5424	NARC VALVE HOUSE		1927	90	Water Supply Building (Possibly not part of Ft Assiniboine)		Y		
5433	NARC OFFICE & SEED LAB	OF, LB	2010	12,380	Construction Cost \$2.1M, Includes Meeting, Conference, And Kitchen	Y	Y		

**Fort Assiniboine included in Northern Agriculture Research Center
Havre, Montana - Relevant 2011 SHPO Buildings**

FACILITY INVENTORY BUILDING LIST

STRUCTURE CLASSIFICATION ABBREVIATIONS				
LS Livestock Shed (loafing, etc.) LH Livestock Housing (has water/elec) GR Grain Bins / Silos LB Lab (can include animal handling) ES Equipment Storage(has lights/elec) GH Greenhouse SD Shed (no utilities)	BR Barn OF Office CR Conference Room RR Restroom R Residence WS Weather Station FT Fuel Station/Tank	FE Fencing CO Corrals RD Roads IR Irrigation PH Pump House SP Shop		

Bld No	Building	Structure Type	Date Occupied	GSF	Historical Notes	Conditioned Environment/human	Electrical Power	Fort Assiniboine Building	Fire Sprinklers	Mark Y if Yes
5401	NARC LIVING QTRS APT 9	R	1886	2,052	Historic N.C.O. Residence - Now Used For Station Mnger	Y	Y	Y		
5402	NARC N DUPLEX APT 7 & 8	R	1886	5,810	Historic Married Officer Qtrs	Y	Y	Y		
5403	NARC SIX UNIT APARTMENT	R	1886	18,525	Historic Bachelor Off Qtrs - Now Staff Housing	Y	Y	Y		
5404	NARC SOILS LAB	LB	1880	5,214	Was 1st Post Office In Area	Y	Y	Y		
5405	NARC EQUIPMENT STORAGE	ES	1908	7,819	Historic Guard House	Y	Y	Y		
5406	NARC VACANT	OF	1908	2,834	Historic building that was being used as Main Office until operations moved to new building in 2011	Y	Y	Y		
5408	NARC BULL BARN	BR, LH	1904	7,965	Historic Ice-House		Y	Y		
5409	NARC GARAGE #1	ES	1885	3,530	Historic Amusement Hall, Low Usage		Y	Y		
5410	NARC RESEARCH STEER BARN	BR, LS, ES	1927	8,976	And Cattle Feed Shed (Possibly not part of Ft Assiniboine)		Y			
5411	NARC MACHINE SHED & OLD SHOP	ES, SP	1937	6,040	(Possibly not part of Ft Assiniboine)		Y			
5413	NARC PUMP HOUSE	PH	1927	312	TVA building			Y		

Building Pictures of NARC

Photos 6/2011

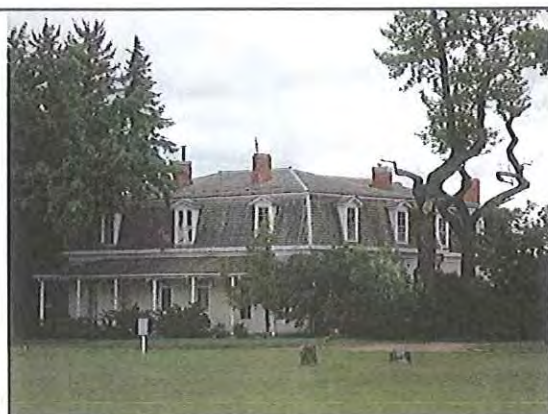
Pictures ordered by building number except where noted



Bldg #5401 – Living Quarters Apt 9



Bldg #5401 – Living Quarters Apt 9



Bldg #5402 – North Duplex Apt 7 & 8



Bldg #5402 – North Duplex Apt 7 & 8



Bldg #5403 – Six Unit Apartment



Bldg #5403 – Six Unit Apartment



Bldg #5404 – Soils Lab



Bldg #5404 – Soils Lab



Bldg #5404 – Soils Lab



Bldg #5405 Guard House (formerly Seed Lab – temporarily used for storage)



Bldg #5405 Guard House (formerly Seed Lab – temporarily used for storage)



Bldg #5405 Guard House (formerly Seed Lab – temporarily used for storage)



Bldg #5405 Guard House (formerly Seed Lab – temporarily used for storage)



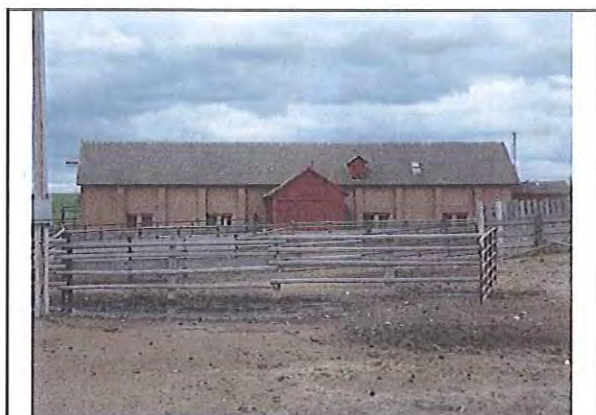
Bldg #5406 – Office Bldg (Former main office – vacant June 2011)



Bldg #5406 – Office Bldg (Former main office – vacant June 2011)



Bldg #5406 – Office Bldg (Former main office – vacant June 2011)



Bldg #5408 - Bull Barn



Bldg #5408 - Bull Barn



Bldg #5408 - Bull Barn



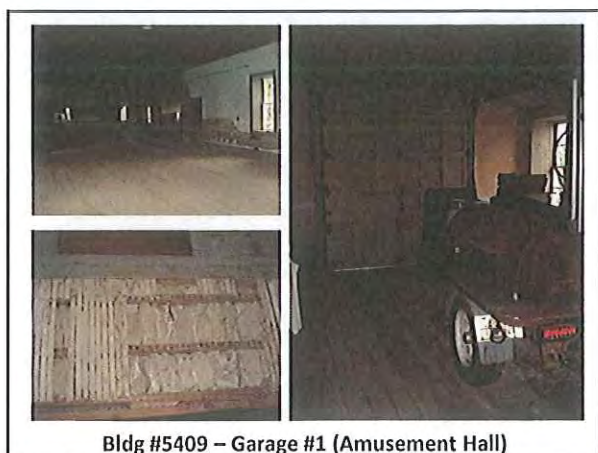
Bldg #5408 - Bull Barn



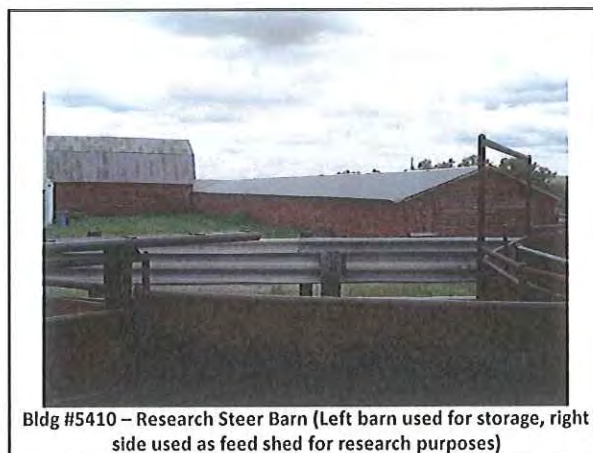
Bldg #5409 - Garage #1 (Amusement Hall)



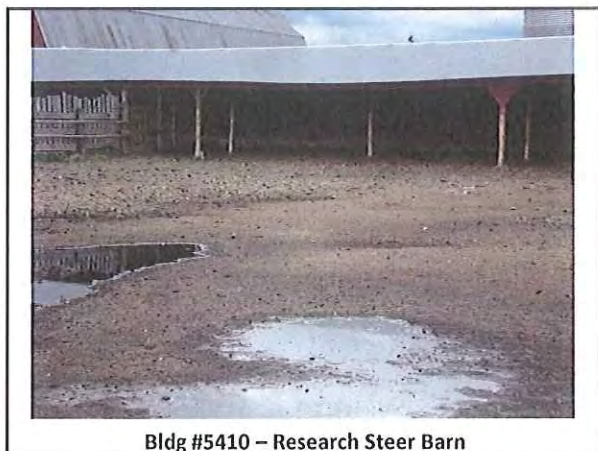
Bldg #5409 - Garage #1 (Amusement Hall)



Bldg #5409 – Garage #1 (Amusement Hall)



Bldg #5410 – Research Steer Barn (Left barn used for storage, right side used as feed shed for research purposes)



Bldg #5410 – Research Steer Barn



Bldg #5411 – Machine Shed & Old Shop



Bldg #5411 – Machine Shed & Old Shop



Bldg #5413 – Pump House



Bldg #5413 – Pump House



Bldg #5414 – Recreation Building (Rose Room - maintained by hist society)



Bldg #5415 – Warehouse (maintained by hist society)



Bldg #5416 - Hog House – Inactive and Not Maintained



Bldg #5417 – Equipment Storage (Old Sheep Barn)



Bldg #5417 – Equipment Storage (Old Sheep Barn)



Bldg #5418 – East Guard House (maintained by hist society)



Bldg #5419 – Center Guard House (maintained by hist society)



Bldg #5420 – West Guard House (maintained by hist society)



Bldg #5422 – Garage #2 (used by tenants)



Bldg #5423 – Lower Calving Shed



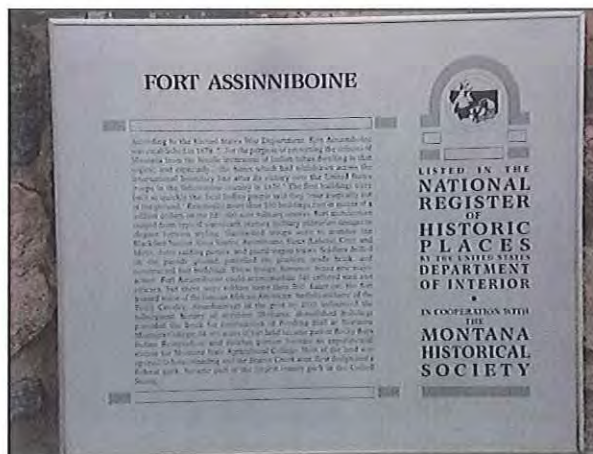
Bldg #5423 – Lower Calving Shed



Bldg #5423 - Lower Calving Shed



Bldg #5424 - Valve House

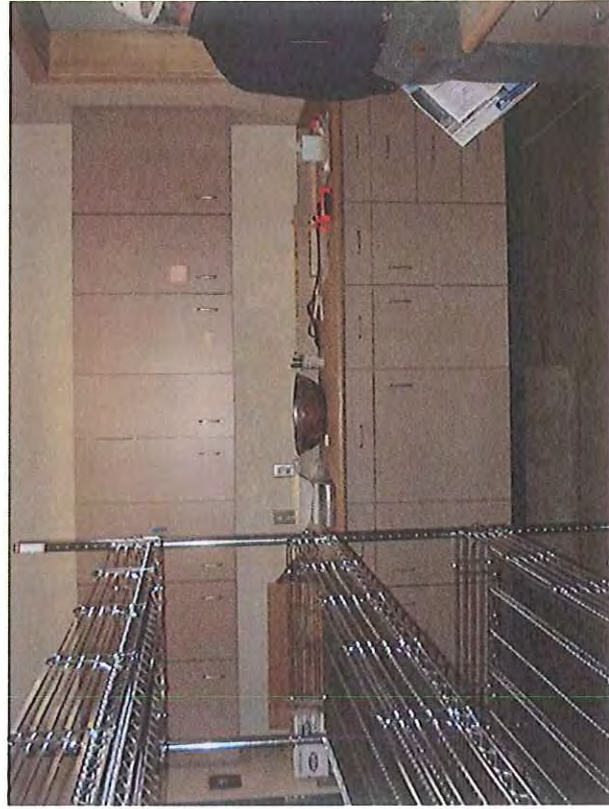




Some Fort Assiniboine buildings mixed among the newer red buildings



Bldg #5433 – Office & Seed Lab



Bldg #5433 – Office & Seed Lab

CONFERENCE



SEED LAB



CLEANING ROOM



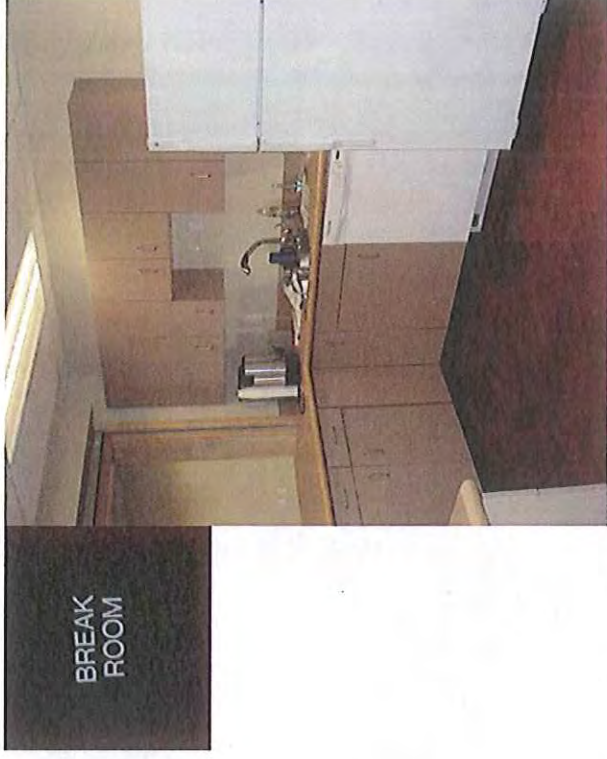
DRYING PREP



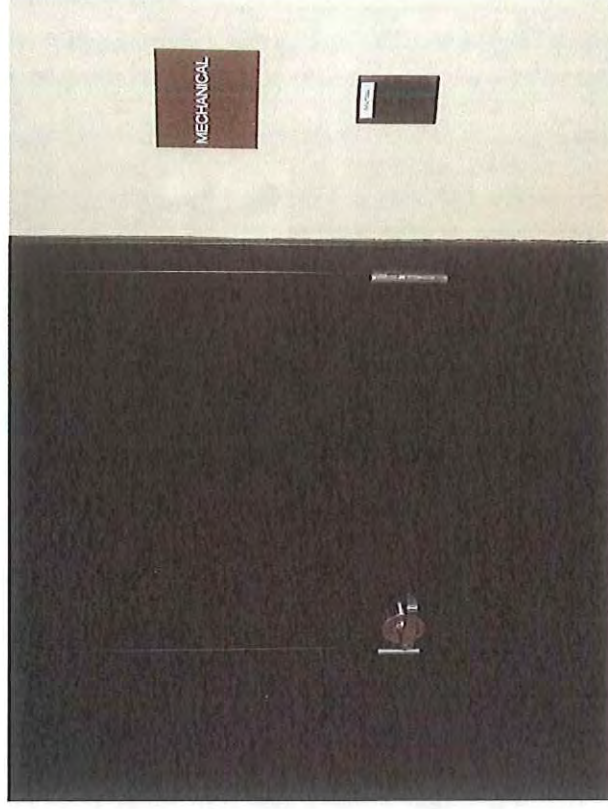
Bldg #5433 – Office & Seed Lab



Meeting Room (no sign)



Looking from Meeting Room into
Break Room.



Bldg #5433 – Office & Seed Lab



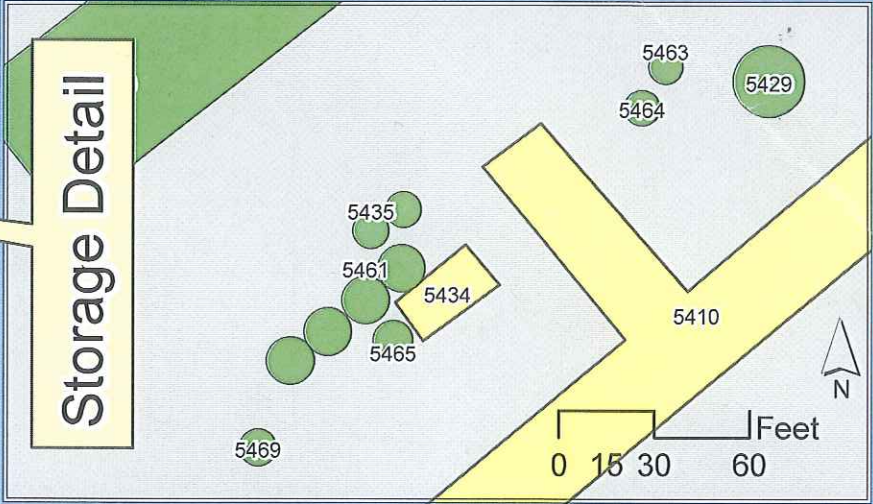
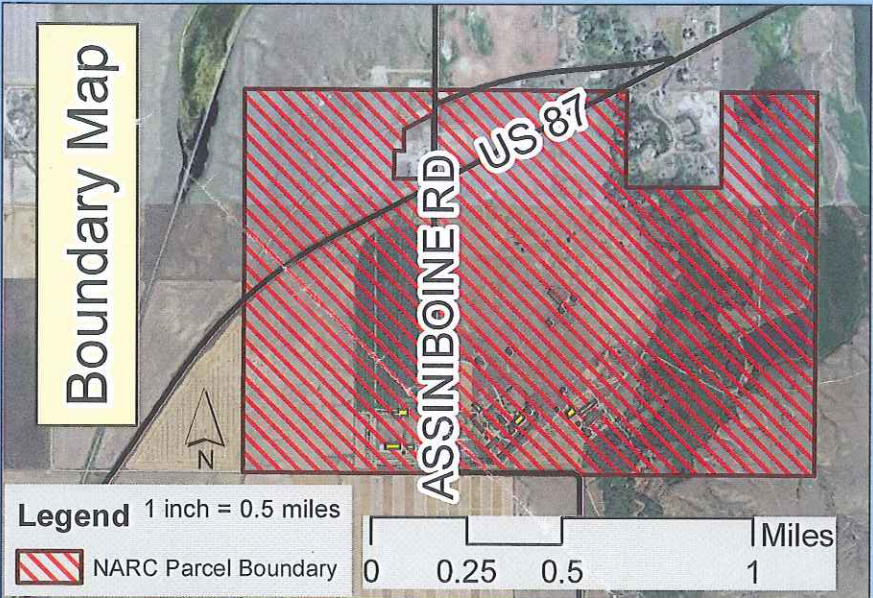
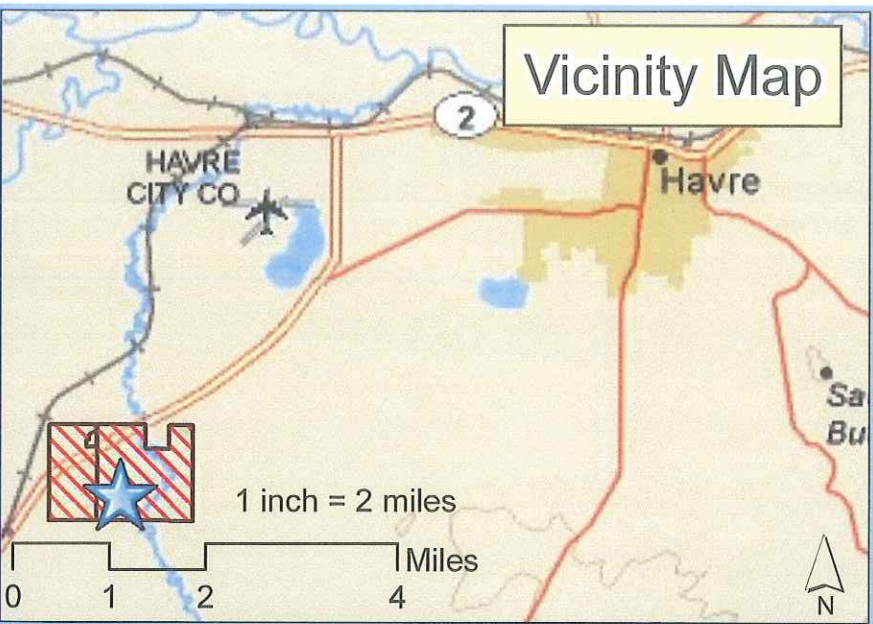
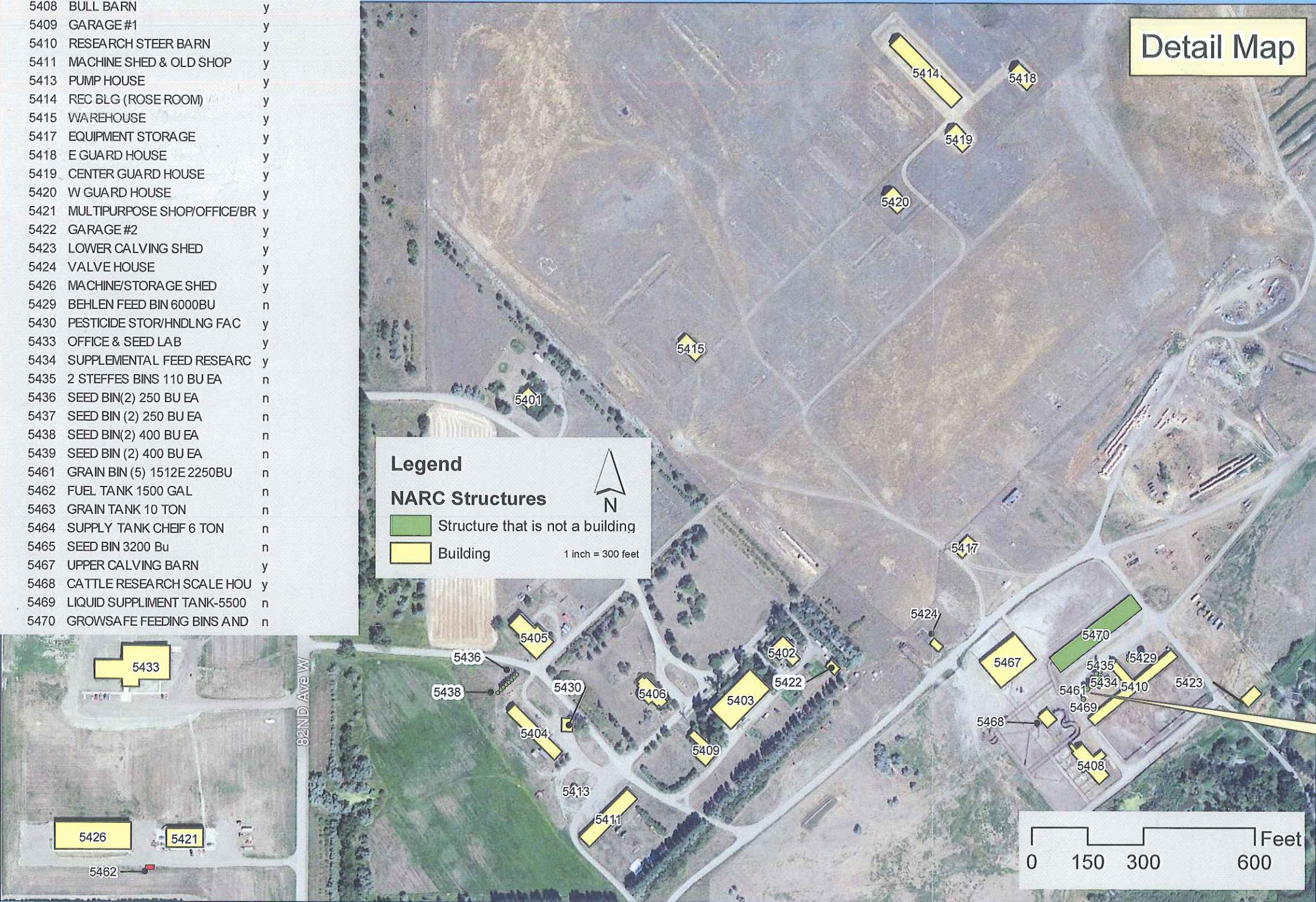
Bldg #5433 – Office & Seed Lab



Bldg #5433 – Office & Seed Lab

Bld_No	Structure	Is th bldg?
5401	LIVING QTRS APT 9	y
5402	N DUPLEX APT 7 & 8	y
5403	SIX UNIT APT	y
5404	SOILS LAB	y
5405	SEED HOUSE/GUARD HOUSE	y
5406	OFFICE	y
5408	BULL BARN	y
5409	GARAGE #1	y
5410	RESEARCH STEER BARN	y
5411	MACHINE SHED & OLD SHOP	y
5413	PUMP HOUSE	y
5414	REC B LG (ROSE ROOM)	y
5415	WAREHOUSE	y
5417	EQUIPMENT STORAGE	y
5418	E GUARD HOUSE	y
5419	CENTER GUARD HOUSE	y
5420	W GUARD HOUSE	y
5421	MULTIPURPOSE SHOP/OFFICE/BR	y
5422	GARAGE #2	y
5423	LOWER CALVING SHED	y
5424	VALVE HOUSE	y
5426	MACHINE/STORAGE SHED	y
5429	BEHLEN FEED BIN 6000BU	n
5430	PESTICIDE STOR/HNDLNG FAC	y
5433	OFFICE & SEED LAB	y
5434	SUPPLEMENTAL FEED RESEARC	y
5435	2 STEFFES BINS 110 BU EA	n
5436	SEED BIN(2) 250 BU EA	n
5437	SEED BIN (2) 250 BU EA	n
5438	SEED BIN(2) 400 BU EA	n
5439	SEED BIN (2) 400 BU EA	n
5461	GRAIN BIN (5) 1512E 2250BU	n
5462	FUEL TANK 1500 GAL	n
5463	GRAIN TANK 10 TON	n
5464	SUPPLY TANK CHEIF 6 TON	n
5465	SEED BIN 3200 Bu	n
5467	UPPER CALVING BARN	y
5468	CATTLE RESEARCH SCALE HOU	y
5469	LIQUID SUPPLIMENT TANK-5500	n
5470	GROWSAFE FEEDING BINS AND	n

Montana AES: NARC-Havre



Date: 12/1/2011

Drawn by Christian Black

Source: Montana GIS Portal <http://gisportal.msl.mt.gov>, Bing Maps,
FacilitiesInventory updated June 2011
Contact FPDC Analyst Matt Hume

48.498258, -109.801914

+48° 29' 53.73", -109° 48' 6.89"



Montana State University
Facilities Planning, Design & Construction

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Montana AES: NARC-Havre



Date: 12/1/2011

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Source: Montana GIS Portal <http://gisportal.msl.mt.gov>, Bing Maps,
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⚠ Though we strive for accuracy, we do make mistakes. We welcome corrections & feedback. Report [HERE](#) or [Email](#).

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MONTANA LEGENDS

Montana Forts of the Old West



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[Fort Assiniboine](#) photo courtesy [Fort Assiniboine Preservation Association](#)



[Fort Yellowstone](#)

Cantonment Jordan (1859-1860) - Located near DeBorgia, Montana, this was the winter camp for Captain John Muller and his building crew, as they were building the Mullan Road which made its way from Fort Benton, Montana to Walla Walla, Washington.

Cantonment Wright (1861-1862) - Located near Milltown, Montana, this was the winter camp for Captain John Muller and his building crew, as they were building the Mullan Road which made its way from Fort Benton, Montana to Walla Walla, Washington.

Fort Alexander (1842-1850) - Also called Fort Crow by the [Blackfoot Indians](#), who opposed its construction, this non-military post was established in 1842 by fur trader, Charles Larpentuer, on the left bank of the Yellowstone River, opposite the mouth of the Rosebud River. Named for Alexander Culbertson, it replaced Fort Van Buren. It was abandoned in 1850 in favor of Fort Sarpy.

Fort Assiniboine #1 (1834-1835) - A temporary post at a point some distance above Fort Union where the steamer *Assiniboine* ran aground in the summer of 1834. Owned by the American Fur Company, the *Assiniboine* was put into service by the company in 1833. The boat was forced to remain through the winter at the mouth of the Poplar River, where the temporary post was established. During the steamboat's return to St. Louis, Missouri a fire broke out, and the vessel, its cargo of furs and skins, and the natural history collection of Prince Maximilian were all destroyed. Initial plans to make the site an outpost of Fort Union were abandoned in April, 1835.



Fort Assiniboine (1878-1911) - Following the [Black Hills War](#), the fort, named after the [Assiniboine Indians](#), was established to ward off any further attacks from the [Sioux](#) and [Nez Percé](#).

At the time of its construction, Fort Assiniboine was the most elaborate post in the United States, featuring over 100 buildings and designed to house ten companies of infantry and cavalry. The troops were charged with monitoring the

activities of the region's many [Indian](#) groups, patrolling [Montana's](#) border with Canada, stopping bootleggers and gunrunners and protecting the state's settlers. In its heyday, nearly 750 officers, enlisted men, and civilians called Assiniboine home.

However, with the [Indian](#) threat subdued, the fort began to decline. In 1916, a portion of

is a softer version of the more bigoted moniker that he was originally given.

While at Fort Assiniboine it has been written that Pershing showed his superior marksmanship while on many hunting expeditions in the region, taking impossible shots at the local Prong Horn (antelope) and killing them with one shot. During his orders at the fort, Pershing's only expedition in the Indian Wars was to round up a renegade band of Chippewa Cree that had been spotted in the area of Great Falls, Montana and leading them back to Canada. In June 1897, Pershing was assigned to West Point as an assistant instructor in Tactics. He was not a popular officer there because the cadets thought his discipline was too strict. John J. Pershing went on to become the highest ranking officer in U.S. military history. His appointment to General of The Armed Forces during World War I was a specially designed rank, a Gold Five Star which has never been achieved before or since.

Another important reason for the construction of Fort Assiniboine was the Nez Perce. The Nez Perce, led by Chief Joseph, were trekking their way across Oregon, Idaho and Montana to escape to Canada after the Battle of Canyon Creek, where they had defeated Colonel Samuel D. Sturgis.

On September 30th, 1877, the same year that construction started on Fort Assiniboine, The Nez Perce, camped out in the Bears Paw Mountains near Fort Assiniboine, spotted their pursuer, Colonel Nelson Miles. Without enough time to retreat, but enough time to fortify, the Nez Perce prepared to battle Miles' forces. The outcome of this battle, The Battle of the Bears Paw, was Chief Joseph's surrender and Chief White Bird's fleeing with 50 Nez Perce to Canada.

At the end of this battle, Chief Joseph handed his Winchester rifle to Colonel Miles and is quoted as saying: "I am tired; my heart is sick and sad. From where the sun now stands, I will fight no more forever."

After the Surrender of Chief Joseph and a majority of the Nez Perce, Fort Assiniboine's mission included, not only the threat from Chief Sitting Bull, but also the threat of Chief White Bird and a hand-full of Nez Perce.

Today there isn't much left of Fort Assiniboine. In 1916 a portion of it was ceded to the Rocky Boy Reservation and its buildings were torn down. A larger portion was ceded to Hill County Montana as part of the 10,000 acre Beaver Creek Park, the nation's largest county park. The few remaining buildings on the post are under the use of the Montana State University system as an agriculture experimentation facility. Tours are rare, but I am planning to see those buildings someday.

The plight of the Nez Perce is an excellent segway to my next blog which will also tie my Bitterroot heritage to that of Havre. Be on the look out for my Nez Perce blog.

Fort Assinniboine

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Fort Assinniboine

Daily Tours at noon and 5:00 p.m. June 1st - Labor Day -Originating from the H. Earl Clack Museum (Holiday Village Shopping Center).

Special Tours available upon request For more information call (406) 265-8336, (406)265-6233 or (406) 265-4000.

Admission: Adults \$6.00, Seniors \$5.00, Students \$3.00, under 6 free. Group rates of 10 or more.

Location: Six miles southwest of Havre on Hwy 87.

The military fort was one of the largest built in the US with over 100 buildings. Formally established in May 1879, it housed over 500 men at any given time. Many of the officers were accompanied by their wives and children. Fort Assinniboine was a center for such cultural events as theatricals and dances, in addition to daily military duties.



The fort was designed to house ten companies of infantry and cavalry. The troops were charged with monitoring the activities of the region's many Indian groups, patrolling Montana's border with Canada, stopping bootleggers and gunrunners and protecting the state's settlers. In its heyday, nearly 750 officers, enlisted men, and civilians called Assinniboine home.



Montana's grandest military post. The fort was the pioneer outpost of north central Montana, the frontier home of regiments of American infantry and cavalry, and the site of 1st Lt. John J. Pershing's (later General) early field assignment. Its surviving buildings stand today as a monument to our state's exciting past -- to the opening of the frontier.



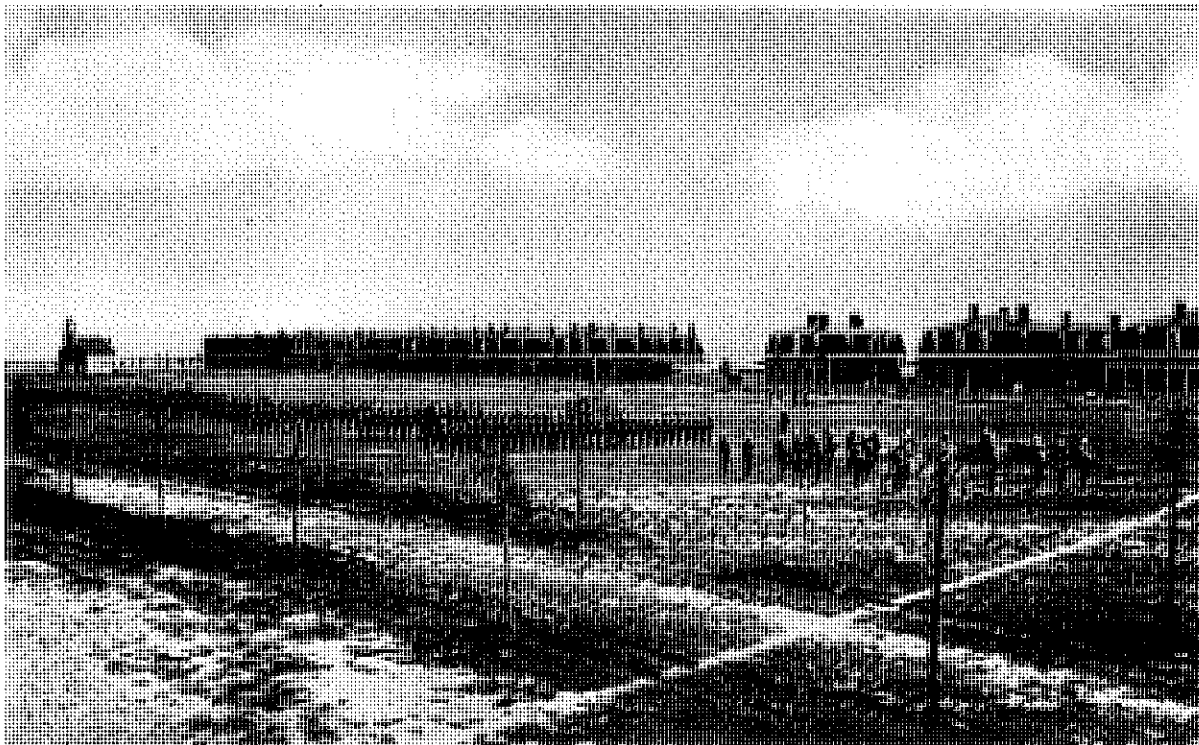
Havre

Havre Area
Chamber
of Commerce
130 5th Ave
Havre, MT 59501
(406)265-4383

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Fort Assinniboine (1878-1911) - Following the [Black Hills War](#), the fort, named after the [Assiniboine Indians](#), was established to ward off any further attacks from the [Sioux](#) and [Nez Percé](#).

At the time of its construction, Fort Assinniboine was the most elaborate post in the United States, featuring over 100 buildings and designed to house ten companies of infantry and cavalry. The troops were charged with monitoring the

activities of the region's many [Indian](#) groups, patrolling [Montana's](#) border with Canada, stopping bootleggers and gunrunners and protecting the state's settlers. In its heyday, nearly 750 officers, enlisted men, and civilians called Assiniboine home.

However, with the [Indian](#) threat subdued, the fort began to decline. In 1916, a portion of the fort was ceded to the Rocky Boy [Indian](#) Reservation (home of the [Chippewa Cree](#) tribe.) Later, more land was ceded to Hill County to create Beaver Creek Park, the largest county park in the United States. Unfortunately, most of the buildings at the Fort were razed.

Today, several buildings survive on an agricultural extension station associated with [Montana](#) State University. Those structures that are left are located six miles southwest of Havre, [Montana](#) on Highway 87.

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THE CREE CROSSING

The Milk River, which flows through this prehistoric valley of the Missouri now filled with glacial debris, is crooked as a dogs hind leg. At certain times of the year it may appear to be somewhat trivial and even dusty. But during the spring thaws it gets right down to business and runs bank full.

One of the best fords across the river in this part of Montana lies a few miles northeast of here. It was used by the Indians to reach favorite buffalo range in the Big-Bend country. Although used by other tribes it became known to the whites as the Cree Crossing.

There are many glacial boulders in this vicinity on which ancient Indian carvings are found.

FORT ASSINNIBOINE



The site of Fort Assinniboiné is just east of here. This old military post was established May 9, 1879 and built by the 18th U. S. Infantry under the command of Col. Ruger. The troops were to protect settlers from possible Indian raids following Custer's defeat by the Sioux and Cheyenne tribes and the pursuit of the Nez Perce tribe under Chief Joseph. Fort Assinniboiné was a base from which the soldiers could sally forth as a reception committee. No serious Indian disturbance occurred, however.

This post was regarded as one of the most strategic points in the Northwest. The Reserve took in the entire Bear Paw Range of Mountains.

General Pershing served here as a lieutenant under General Miles just prior to the Spanish American War.

In 1911 the War Department abandoned the post. In 1916 the landless Chippewa and Cree found a home on the southern part of the military reserve when 30,900 acres were set aside as Rocky Boy's Reservation and the state of Montana purchased the fort buildings, the land they stood on, and 2,000 acres which became the Northern Agricultural Research Center of Montana State University (Bozeman). Over sixty years of research has improved land productivity through experiments in dry land farming, crop rotation, summer fallow, shelter-belt planting, strip farming, improved wheat varieties and livestock research.


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1889 FORT ASSINIBOINE MT GROUP PHOTO SECRETARY OF WAR

Sold For: [Start FREE Trial!](#) or [Sign In](#) to see Price Data.

Sold Date: 05/27/2007

Channel: Online Auction

Source: eBay

Category: Militaria & Weapons

Up for auction is an original and very rare cabinet card photo of Officers and Government Officials that I believe was taken at Fort Assiniboine, Montana. This cabinet photo comes from the estate of Major General William S. McCaskey. Written on the back of the cabinet photo is: "Secretary of War 1889 Group Photo". William McCaskey was a Captain with the U.S. Army and was stationed at Fort Assiniboine, Montana at the time this photo was taken.

This large cabinet photo is 11" by 14" in size and is mounted on stiff paper board stock.

T is no photographer information on the photo.

Written on the bottom border are the names of most of the people in the photo.

The Secretary of War is front and center in the photo. His name Redfield Proctor. He served as Secretary of War from 1889 to 1891. He is credited with modernizing the Armed Forces and improving the living conditions for the enlisted soldier. He was the Governor of Vermont from 1878 to 1880 and was elected U.S. Senator for Vermont in 1891 and served in that position until his death in 1908.

This photo must have been taken around the time that Montana, Washington and North and South Dakota were admitted into the United States of America in November of 1889.

From left to right the names written on the bottom are: Asst. Sec. of War, Dr. Niskern, Lt. Foltz, Capt. Hamner, Capt. Harback, Dr. Byrne, Col. Bates, Maj. Schuwill(?), Lt.?, Gen. Baldwin(?), Sec. of War Proctor, Capt. Coe, Gov. Page, Capt. Rodman, Capt. McCaskey, Capt. Ward, Lt. Brown, Lt. Van Valzah, Lt. Morrison, Lt. Chase, Dr. Smith, Capt. Reynolds, Lt. Howard, Lt. Moon.

Capt. McCaskey is in the back row, standing by the right support column for the building

This cabinet photo is in good condition, with some edge wear. T is a chip off the bottom left hand corner of the border. T is a small hole at the center of the top edge. The photograph itself is clean and attractive. Most of the wear to the cabinet photo is on the border areas.

This photo comes from the estate of Major General, U.S. Army William Spencer McCaskey. is more information on William McCaskey:

The below information comes from a webpage for the 79th Pennsylvania Veteran Volunteer Infantry Regiment 1861-1865.

William McCaskey, younger brother of future Lancaster City mayor, and school principal J. P. McCaskey, joined the 79th Pennsylvania after service in one of the 90 day regiments first called by President Lincoln at the outbreak of the Rebellion. McCaskey was not the only veteran to join the regiment in the fall of 1861, and nearly all of them were soon running the regiment as officers and non-commissioned officers. McCaskey, who's prior service was as a Private, now found himself a Sergeant in Company B. One of his closest friends was the dietician, Private (later Sergeant)



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Throughout the war McCaskey's performance was so excellent that he kept getting promoted. Eventually he was made (Brevet) Captain, Company Commander of Company B. On July 20, 1864, McCaskey led the 79th Pennsylvania in a counter assault against Confederate rifle pits along Peach Tree Creek in northwest Georgia. For his leadership, and success in the assault he was mentioned in dispatches. He was popular with his men, and recognized as an outstanding soldier and leader.

When the war ended McCaskey secured a regular commission as a Second Lieutenant, thanks to the good offices of Lancaster's Representative in the U.S. House of Representatives, the Honorable Thaddeus Stevens. McCaskey embarked on a career in the Army, starting in the 20th U.S. Infantry which served out west. By 1876, McCaskey was a full fledged Captain (no longer a Brevet promotion), and was left in command of the post at Fort Lincoln, Dakota Territory, when Lieutenant Colonel George Armstrong Custer led the 7th U.S. Cavalry out to a rendezvous with an infantry column along the Little Big Horn River.

When the steamboat Far West came down the Platte River some days later with the news of the Massacre at ...

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(2) Group Photos 1890-
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4 15/16" Megalodon
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Information on WWI war bond/stamp posters
Redfin valve (torpedo)
HELP! Alfred Nobel Explosives Co. Sporting Ballistite Shipping Crate

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MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24GA1799 (# obtained from SHPO upon receipt of site form)

Property Name: McCALL HALL

Property Town/Vicinity of: Bozeman, MT

Property Date (Year of Origin/Construction or "Precontact"): 1952

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): ___ District 1 Building(s)___ Structure(s)___ Site(s)___ Object(s)

Status (Choose one): Watch

Comment:

The small scale building occupies prime corner real property that in the university's master plan (Long Range Campus Development Plan 2009) is suited for a parking structure (possibly combined with retail and/or residence units) to accommodate growth & the continued use of the Brick Breeden Fieldhouse & high-rise residential facilities. As a small footprint, single level building, it is an unlikely candidate for a complete building renovation (e.g. Gaines) for its next use and when obsolete it would be replaced.

Condition/Integrity (Choose One): Fair

Comment:

Fair to Poor. The building and it's limited uses are becoming obsolete.
Note the brick unidentified in the Property Record is confirmed to be Lewistown Brick.

The Property Record suggests that the satellites on the south side are abandoned from the prior communication use of the building, when in fact they are still operational and in use.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$___ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$___ Heritage Research/Documentation project activity

\$___ Heritage Interpretation/Education/Awareness project activity

\$___ Heritage Promotion/Tourism/Marketing project activity

\$___ Heritage Preservation/Conservation Plan Development

\$ 8,917 Regular/routine maintenance

\$___ Monitoring (reported upon)

\$ 26,698 Project designed/redesigned to avoid adverse effect to property's heritage values

\$___ Other heritage stewardship effort/activity (Explain)

Comment:

Over the years, McCall Hall has been used for research and diagnostic operations related to animal diseases that would require extensive remediation and renovation of the building to use it for teaching and non-research uses.

Work Order projects including upgrading building lighting to T8 efficiency, and replacing exhaust units and related occupancy controls.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 5 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

The university conducts an observable condition assessment of all buildings on a cyclical basis. The most recent Facilities Condition Inventory of McCall was 4/8/2009 and its deficiency ratio was determined to be a 12.3% (within the Poor range per APPA Industry Standards).

The categories of deficiencies are: Damage Wear out; Codes & Standards; and Energy Conservation. Specific rehabilitation projects include: abate asbestos, replace HVAC and all lab equipment, replace windows with energy efficient options, repoint masonry and patch foundation cracks and steps.

Other Comment:

Note request for correction to the Montana Historic Property Record dated July 20, 2010. According to the As-Built drawings (dated 3-31-52, Facilities Services) the building was originally called "Veterinary Research Laboratory, MSC", and the Architect was Edwin G. Osness, Billings, MT. Please correct date of construction and dispel the suggestion that Fred Willson was the architect. Also, correct the legal location as NW1/4 and NE 1/4 SW 1/4 of Section 13, T2S, R5E, COS 2727.

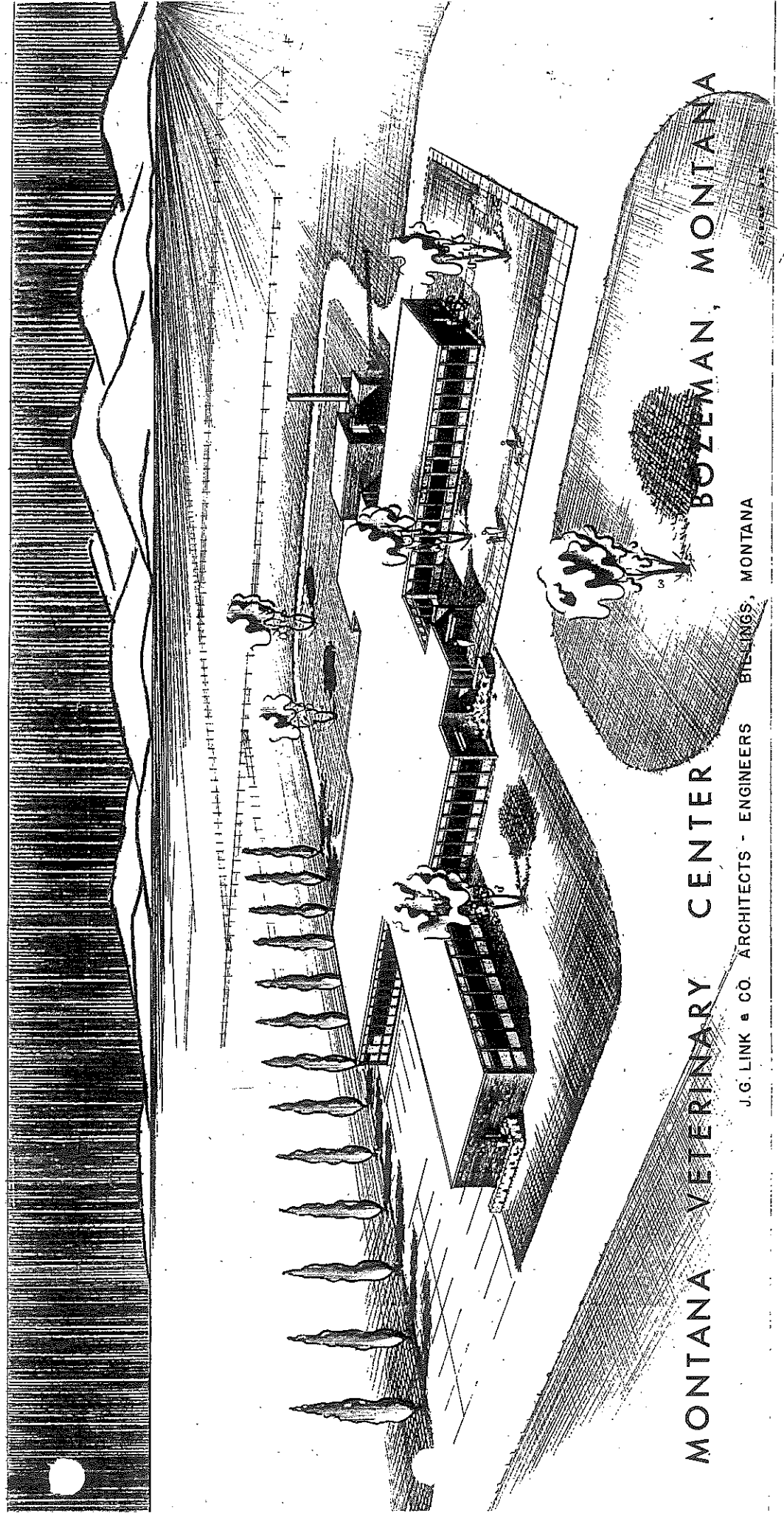
The eventual Marsh Labs (west of S. 19th Ave) was originally called the Montana Veterinary Center (see attached architectural drawing from Presidents file) and Western Regional Animal Disease Research Lab and was confused by the similar name of Veterinary Research Lab - a former name of McCall Hall. Also correct Record to show MT State Diagnostics & MSU Veterinary as the purpose for its construction.

Reported by (Name): Victoria Drummond **Date (MM/DD/YYYY):** 11/01/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)

*President's Fish (Lions)
"Western Regional Animal Disease Research Unit"*



MONTANA VETERINARY CENTER BOZEMAN, MONTANA

J.G. LINK & CO. ARCHITECTS - ENGINEERS BILLINGS, MONTANA

THE STANDARD FORM OF BOND

FOR USE IN CONNECTION WITH THE THIRD EDITION OF THE STANDARD
FORM OF AGREEMENT AND GENERAL CONDITIONS OF THE CONTRACT.

This form has been approved by the National Association of Builders' Exchanges, the National Association of Master Plumbers, the National Association of Sheet Metal Contractors of the United States, the National Electrical Contractors' Association of the United States, the National Association of Marble Dealers, and the Heating and Piping Contractors' National Association.

COPYRIGHT 1915, BY THE AMERICAN INSTITUTE OF ARCHITECTS, THE OCTAGON, WASHINGTON, D. C.

KNOW ALL MEN: That we _____
(Here insert the name and address or legal title of the Contractor.)

Bartholomew and Thompson

hereinafter called the Principal, and _____
(Here insert the name and address or legal title of one or more sureties.)

and

and

hereinafter called the Surety or Sureties, are held and firmly bound unto
(Here insert the name and address or legal title of the Owner.)

The State of Montana, by the State Board of Examiners
hereinafter called the Owner, in the sum of

Five thousand two hundred twenty-six dollars

(\$ 5,226.00)

for the payment whereof the Principal and the Surety or Sureties bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, firmly, by these presents.

Whereas, the Principal has, by means of a written Agreement, dated _____

June _____ entered into a contract with the Owner for

the erection of Poultry Building at Montana State College

a copy of which Agreement is by reference made a part hereof;

Building on 1964 campus map - north of McCann Hall where Howard Hall
was constructed when Poultry demolished

Now, Therefore, the Condition of this Obligation is such that if the Principal shall faithfully perform the Contract on his part, and satisfy all claims and demands, incurred for the same, and shall fully indemnify and save harmless the Owner from all cost and damage which he may suffer by reason of failure so to do, and shall fully reimburse and repay the Owner all outlay and expense which the Owner may incur in making good any such default, and shall pay all persons who have contracts directly with the Principal for labor or materials, then this obligation shall be null and void; otherwise it shall remain in full force and effect.

Provided, however, that no suit, action or proceeding by reason of any default whatever shall be brought on this Bond after twelve months from the day on which the final payment under the Contract falls due.

And Provided, that any alterations which may be made in the terms of the Contract, or in the work to be done under it, or the giving by the Owner of any extension of time for the performance of the Contract, or any other forbearance on the part of either the Owner or the Principal to the other shall not in any way release the Principal and the Surety or Sureties, or either or any of them, their heirs, executors, administrators, successors or assigns from their liability hereunder, notice to the Surety or Sureties of any such alteration, extension or forbearance being hereby waived.

Signed and Sealed this..... day of..... 19.....

In Presence of

.....	}	as to(SEAL)
.....		
.....	}	as to(SEAL)
.....		
.....	}	as to(SEAL)
.....		
.....	}	as to(SEAL)
.....		

President Rennie's

"Western Regional Animal Disease Research ('65)"

February 10, 1971

Congressman Lee Metcalf
1st District of Montana
Congress of the United States
House of Representatives
Washington, D. C.

Dear Lee:

This acknowledges your letter of February 5 concerning the proposed Western Regional Animal Disease Research Laboratory.

We are getting interested groups to send you endorsements of the program. You should be getting these in the next few days.

Prior to our St. Louis hearings in 1966, the states of this area organized the Western Regional Disease Laboratory Association to push for the establishment of a Western Regional Animal Disease Research Laboratory. Before this Association came into being, the Intermountain Veterinary Medical Association had, for some twenty years prior, pushed for such a western laboratory. The present officers of the Western Regional Disease Laboratory are: Dr. A. F. Schneider, President, Boise, Idaho; Dr. E. P. Peterson, Secretary, Salem, Oregon. In addition to the western association, each state organized state committees. Dr. E. A. Tunnick, Head of our Veterinary Research Laboratory here at the College; Dr. Madleigh Marsh, then State Veterinarian with the Montana Livestock Sanitary Board, and since returned to his former position as Pathologist in our Veterinary Research Laboratory here; and Mr. J. S. Brenner, State Senator from Beaverhead County and currently President of the Montana Stockgrowers Association, comprise the Montana committee.

The specific location of such a western laboratory was never agreed upon by the Western Association. Consequently, it would probably be more effective for our Montana Congressional Delegation to get support from the other states of this area for the Montana site than for us to do it from here. The endorsements which you will get will be from the Livestock Sanitary Board, from the Stockgrowers Association, possibly from the Woolgrowers, and other interested groups like the State Veterinary Medical Association.

We feel there are some very good arguments for locating the regional laboratory in Montana and at Montana State College. Montana is one of the major range livestock producing states of the Union and the only two larger states, namely, Texas and California, are not typical

February 18, 1958

of the climatic and related forage and disease conditions and problems of most of the area of the eleven western states. Montana is such more typical of the Rocky Mountain range area and has for many years had an outstanding record in animal disease research through the fine work which has been done under the leadership of such men as Dr. Hadleigh Marsh who has been with our laboratory since 1929. In terms of animal disease research work, the Montana laboratory does not have to take second place to any unit in the western states. I am sure this can be confirmed by consultation with any of the professional veterinary research men in the west, or in the country for that matter.

Now to come to your second request, namely, an estimate of funds required including the first and subsequent years. We estimate that a main building of approximately 100,000 square feet for laboratories and offices would be needed and it would cost in the neighborhood of \$2½ million. This includes necessary electrical wiring, plumbing, sewage system, and heating. Outside animal facilities consisting of the following would also be needed:

1. A minimum of six or eight isolation units varying in size from as low as 30' x 30' to considerably larger, with a total cost for the combined units of about \$100,000.
2. Outside facilities consisting of sheds, paddocks, etc. These are relatively low-cost structures, running around \$4.00 per square foot and with average size of about 25' x 100', would cost about \$10,000 each, and with ten units needed, total cost of approximately \$100,000.
3. A large incinerator, estimated cost \$20,000.
4. An autopsy room, estimated cost \$25,000.
5. A fence around the whole area, probably a minimum of 25 acres, which would be an eight foot cyclone or hurricane type animal proof fence, estimated cost \$8.00 per foot or a total of about \$35,000.
6. Miscellaneous expenses for contingencies, \$20,000.

Total cost about \$3½ million.

The above are the initial costs. We estimate the annual operating expenditures for such a regional laboratory would be in the neighborhood of \$1½ million. At the present time, we are putting in approximately \$150,000 for operation of our Veterinary Research laboratory at the College each year. To do the job that a regional laboratory

February 18, 1958

should do, the annual operating budget should be in the neighborhood of ten times our current State College budget for this animal disease work. He would consider this a minimum for an effective research program.

I expect to be in Washington the first week in March, around March 5 or 6. I shall write you just ahead of my coming when my schedule is firm, but I will certainly want to go over this with you, Ben Stong, of Senator Murray's office, and Mike and Lenny.

Cordially,

Roland R. Rennie
President

RNR:gr

cc: Montana Congressional
Delegation

LEE METCALF
1st DISTRICT OF MONTANA

COMMITTEES:
EDUCATION AND LABOR
INTERIOR AND INSULAR
AFFAIRS

Congress of the United States
House of Representatives
Washington, D. C.

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FIELD SECRETARY

V I A A I R M A I L

5 February 1958

Dr. Roland R. Renne, President
Montana State College
Bozeman, Montana

RECEIVED
FEB 7 1958

MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

Dear Rolly:

I held onto your letter of 30 January for a couple of days until I could talk to the rest of the Delegation about the Western Regional Animal Disease Research Laboratory.

As Senator Murray has written you, we want to go before the Appropriations Committees with a request for funds. To do so, we will need endorsements from interested groups in the area. Ben Stong will be putting our pitch together and will appreciate your suggestions.

One of the things we must have is an estimate of the funds required, including the first year and subsequent years.

Cordially,



CCs: Montana Congressional
Delegation

COPY

**MONTANA STATE COLLEGE
BOZEMAN, MONTANA
OFFICE OF THE PRESIDENT**

February 18, 1958

Dr. John Safford
State Veterinarian
Montana Livestock Sanitary Board
Helena, Montana

Dear Dr. Safford:

I was very happy to have an opportunity to talk to you and John W. Black of Hinsdale about various matters including the proposed Western Regional Animal Disease Research Laboratory last Saturday morning in Billings.

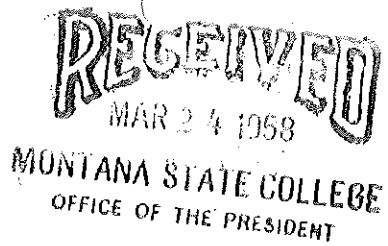
I promised to send you a copy of the letter I sent Senator Murray and other members of the delegation concerning the laboratory. In reply, we received letters from Lee Metcalf and Senator Murray's office asking for an estimate of funds required initially and for operation for subsequent years, and you will find a copy of our letter to Lee Metcalf enclosed.

I have asked Dr. Tunnick to write to the interested state groups for endorsements for the laboratory location in Montana and these should be sent to each of the members of the Montana Congressional Delegation. I sincerely hope that you and Chairman Black can get off letters promptly to our Congressmen. They say they have about a month or a little more to get their pitch ready for the House Appropriations Committee and we will certainly appreciate your co-operation. If we could get such a facility, combined with your diagnostic laboratory and our State Veterinary Research Laboratory, we would have a fine center for animal disease work.

Sincerely yours,

Roland R. Renne
President

RRH:gw
(encls.)
cc: Mr. John W. Black



March 21, 1958

TO: President R. R. Renne ✓
Director Roy Huffman

RE: Western Regional Animal Disease Laboratory

I think the attached copies of Dr. Marsh's letter to Everett Shuey may keep you abreast of our thinking and perhaps add information for your thinking regarding the proposed Western Regional Animal Disease Laboratory.

Sincerely yours,

A handwritten signature in cursive script that reads "E. A. Tunnicliff". The signature is written in dark ink and is positioned above the typed name.

E. A. Tunnicliff, Head
Veterinary Research Laboratory and
Department of Veterinary Science

EAT/dh

Enc.

March 5, 1958

Mr. Everett Shuey
Continental Hotel
Washington, D. C.

Dear Everett:

Referring to the proposal to promote legislation leading to the establishment of a Western Regional Animal Disease Research Laboratory in Montana, I was responsible in 1939 for starting the action toward the creation of a regional laboratory somewhere in the west, which would have the equipment and expert personnel to do intensive research on animal disease problems which were important to the livestock industry of the west, and were not being attacked effectively by other agencies. Each state had a relatively small research unit, but the results were fragmentary. Some progress was made toward providing for such a laboratory, but the war interfered.

The idea was kept alive after the war, but no further concrete action was taken until January, 1956, when a group of men representing livestock associations, the Farm Bureau, and state and federal regulatory and research veterinarians, met in Salt Lake City and organized an association for the promotion of a regional laboratory. Soon after this meeting, it was announced from Washington that the construction of a national animal disease laboratory had been authorized, and later that Ames, Iowa had been selected as the location of the national laboratory. The western group decided that it would not be profitable to push its project immediately, but retained the organization. The organization held another meeting in January, 1957, and went on record as favoring continued effort to get a western laboratory. Several possible sites for such a laboratory were discussed, but no action was taken.

The action taken by the laboratory association in 1957 designated the proposed western laboratory as a federal branch laboratory. This would apparently imply that a western laboratory would not be an independent institution, but would exist as a branch of the central laboratory setup in the west to handle problems more or less peculiar to the western conditions. This seems to me like a good way to get an interest in federal support of such a laboratory.

As one who has worked in regulatory and research work with livestock diseases for the past 40 years, I believe that the sheep and cattle industries of the west would profit much from the work of a well-equipped and manned regional laboratory, where the problems of the area could be solved under the conditions and in the area where they occur. Our conception is that tough problems which have been attacked rather superficially in the state institutions could be fed into the regional laboratory for a comprehensive and intensive investigation. To me this would mean, in general, that the local state laboratories would not need to be further expanded. Since the war there has been considerable justifiable expansion of state facilities for animal

March 5, 1938

disease research, and my idea has been that it would be more effective and more economical to provide a really well equipped regional facility for the more intensive research, to replace the more or less superficial research which might result from lack of men and funds in the local laboratories. This conception would be based on curbing our ambition for our local institutions in favor of a regional cooperative effort.

In the spirit of this view of the problem, I think that the Montana Wool Growers Association should take strong action supporting Congressional action which would provide for the construction and maintenance of a western regional animal disease research laboratory, to be located at the most advantageous site available in the area covered by the eleven western states, whether that location be in Montana or in one of the other states. I do not think that the original legislation which might be initiated should specify the site of such a laboratory.

In the last few years the Agricultural Research Service has participated in several regional disease projects in the western area, which they feel has accomplished somewhat the same purpose as would a regional laboratory. However, the cooperative projects are carried out at the state stations, and we still lack for the range country the fully equipped central research station which we think the western livestock industry needs to get the final answers on some sheep and cattle disease problems which differ from those of the central and eastern states because of the great difference in methods of handling livestock in the range states. I know that in the Montana Veterinary Research Laboratory, as an example of a state institution, we have done much work and accumulated much information, but have not produced as many answers as we should due to limited funds and personnel and also due to the varied pressures on a local laboratory which interfere with the necessary concentration on a problem.

I hope this will give you what you need to prepare your recommendations. I would like to suggest also that your association inform Dr. A. P. Schneider, at Boise, of what is being done, as he is the president of the Western Animal Disease Research Association which was formed to promote a western regional laboratory.

Sincerely yours,

Hadleigh Marsh, Acting Head
Veterinary Research Laboratory and
Department of Veterinary Science

HM/dh



STATE OF MONTANA
LIVESTOCK SANITARY BOARD

J. W. SAFFORD
EXECUTIVE OFFICER
STATE VETERINARIAN

HELENA

February 20, 1958

JOHN W. BLACK, PRESIDENT
HINSDALE
W. G. RAGEN, VICE-PRESIDENT
TOWNSEND
LYMAN BREWSTER, BIRNEY
JOE C. KING, LEWISTOWN
MELVIN PETERSON, WISDOM
ARCHIE WILSON, JR., ST. XAVIER

RECEIVED
FEB 21 1958

MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

Mr. R. R. Renne, President
Montana State College
Bozeman, Montana

Dear Doctor Renne:

I wish to thank you for the letter regarding the western regional research laboratory.

The Montana Livestock Sanitary Board is holding its annual meeting March 11-12, 1958 at Helena. The material you sent will be presented at this meeting of the Board for its consideration.

I believe action from the Board at a regularly convened meeting would be the most effective way to support the location of the western regional research laboratory at Bozeman.

Sincerely yours,

J. W. SAFFORD
State Veterinarian

JWS'h

CLASS OF SERVICE
This is a day message
which is delivered during
the day and is subject to the
usual rates.

WESTERN UNION TELEGRAM

TRANSMITTED
ON 12-10-35
AT 10:35
BY 131

THE FOLLOWING MESSAGE IS BEING TRANSMITTED TO YOU BY THE WESTERN UNION TELEGRAPH COMPANY. IT IS NOT A TELEGRAM. IT IS A MESSAGE. IT IS NOT A TELEGRAM. IT IS A MESSAGE. IT IS NOT A TELEGRAM. IT IS A MESSAGE.

SPR013 00033 11057

IN SMD005 GOVT PD=SN WASHINGTON DC 3 1207PM-

DR ROLAND R MENNE, PRES

MONTANA STATE COLLEGE BOZEMAN MONT

REFUEL WILL AGAIN LOOK INTO MATTER OF ESTABLISHMENT OF
NATIONAL ANIMAL DISEASE RESEARCH LABORATORY. WILL DO MY

BEST. REGARDS-

SENATOR MIKE MANSFIELD-

RECEIVED
FEB 4 1956

MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

THE COMPANY WILL APPROPRIATE DISCOUNTS FROM ITS RATES FOR CONSUMERS OF ITS SERVICE

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LE ROY ANDERSON
2D DISTRICT, MONTANA

FIELD OFFICES:
521 FORD BUILDING
GREAT FALLS, MONTANA
515 SECURITIES BUILDING
BILLINGS, MONTANA

Congress of the United States
House of Representatives
Washington, D. C.

February 1, 1958

COMMITTEE:
BANKING AND CURRENCY

MIKE DEEVY
EXECUTIVE SECRETARY
130 HOUSE OFFICE BUILDING
PHONE: CAPITOL 4-3121
EXTENSION: 2911

RECEIVED
FEB 5 1958

MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

Dr. Roland R. Renne
President
Montana State College
Bozeman, Montana

Dear Dr. Renne,

LeRoy is out of town this weekend, so I thought I had better reply promptly to your message concerning the possibility of establishing a Western Regional Animal Disease Research Laboratory on the Montana State College campus. I would also like to acknowledge receipt of a letter which you wrote to me, personally, concerning the grasshopper problem, which we discussed during your visit here in Washington.

Both letters are so highly informative that we now have adequate information with which to proceed on these two matters.

When LeRoy returns, I will take up the matter of the Animal Disease Research Laboratory with him, and I am sure that he will take the lead in efforts to secure such an appropriation.

Sincerely yours,

Mike

Mike Deevy

MD:ss

FEBRUARY 24, 1947

Building Facilities
on Campus

Existing Plant
Capacities

NON-HOUSING

Class Room	37,262	sq. ft. Floor space
Laboratory	198,393	
Shop	32,378	
Administration & Faculty Office	24,627	
Library	9,100	
Cafeteria & Food	16,458	
Gym. & Phys. Educ.	47,100	
Auditorium	2,190	
Student Center	36,430	
Child Care Center	3,740	
Infirmery or Hospital	2,728	
Service & Maintenance	11,711	
Other Non Housing	<u>44,998</u>	
Total	467,115	

WOMENS HOUSING

56,210 sq. ft.

Wool Lab - 5760
Usable Space - 42185

*President Hoover's file.
'Veterinary Service - Dr. A. Tunnicliff, Head'*

April 28, 1960

In reply
refer to: RC-423(R)

AIR MAIL

Dr. E. A. Tunnicliff
Veterinary Research Laboratory and
Department of Veterinary Science
Agricultural Experiment Station
Montana State College
Bozeman, Montana

Dear Dr. Tunnicliff:

We are enclosing a copy of our letter to Mr. Elmer Link, Architect, regarding the working drawings and specifications which he forwarded for the Veterinary Research Laboratory and Livestock Sanitary Board Diagnostic Laboratory.

We shall appreciate receiving these floor plans, with the required information, at the earliest possible date.

In response to your inquiry regarding the possibility of a supplemental grant, Section 706(b) of Title VII of the Public Health Service Act, as amended, provides for the submission of a request based upon revision of the estimated cost of construction of the facility. It should be pointed out, however, that the request could not exceed fifty percent of the amount of such additional costs which arose subsequent to the original award. We feel it is only fair, however, to advise you that the National Advisory Council thus far has not recommended approval of applications based solely upon increased costs of the project.

Sincerely yours,

Wilma L. Aber
Administrative Assistant
Health Research Facilities Branch
Division of Research Grants

Enclosures

WLA:ecr

April 26, 1960

Health Research Facilities Branch
Division of Research Grants
U. S. Public Health Service
National Institutes of Health
Bethesda 14, Maryland

Gentlemen:

Attention Mr. F. L. Schmehl

We are enclosing herewith the following forms relative to Public Health Service Grant RC 423(R).

- (1) PHS Form 2844-2 - Construction Schedule and Supplemental Report of Information.
- (2) PHS Form 2844-3 - Application for Quarterly Advance Payment of Grant Funds.

Also submitted are bid tabulation forms on the Veterinary Research Center, and a supplemental sheet showing in more detail the estimated costs for the project.

Bids were opened on this project on February 17, 1960, but we have been delayed in getting this material to you until a definite and firm understanding could be arrived at dividing the cost between the research facilities for Montana State College and the non-research facilities for the Montana Livestock Sanitary Board Diagnostic Laboratory. In conference with the architects and members of the staffs of the Montana Livestock Sanitary Board and the Veterinary Research Department of Montana State College, we have agreed that the total dollar amount for the entire facility should be divided as follows:

Research Facilities	\$511,493.00
Diagnostic Center	<u>278,507.00</u>
Total	\$790,000.00

Much of the outside work for the Veterinary Research Center will be constructed by either contracts let separately from the major building contracts, or by using labor employed by Montana State College. We should like to request permission to handle the following items on this basis:

- | | |
|---|------------|
| (1) Well drilling (through a separate agreement) | \$4,197.00 |
| (2) Land drainage - MSC labor force | 1,377.61 |
| (3) Fencing (including purchase of one post hole driver) - MSC forces | 7,533.00 |

April 26, 1960

(4) Two Open Front Sheds - Purchase order contract plus MSC labor force	12,577.00
(5) Water Lines - MSC labor forces	1,754.00
(6) Hay Elevator - separate purchase order	400.00
(7) Small Lambing Shed, Hay Racks, Panels, Jugs, and small sheds (including purchase of skillsaw) - MSC labor forces	4,582.95
(8) Moving existing wooden shed - MSC labor forces	500.00
(9) Roads, gravel and grading - MSC labor forces	<u>3,964.44</u>
Total	\$36,886.00

We trust this meets with your approval.

Very truly yours,

Roland R. Renne
President

RRR:cm

cc: E. A. Tunncliffe
Bernard Copping

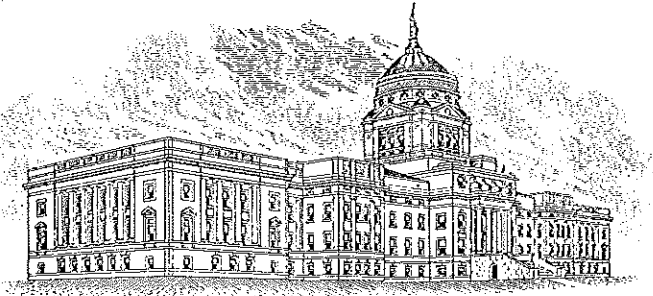
VERNOR J. HUGO ARONSON
PRESIDENT

ATTORNEY GENERAL FORREST H. ANDERSON

SECRETARY OF STATE FRANK MURRAY
SECRETARY

STATE OF MONTANA

STATE BOARD OF EXAMINERS



G. L. BRYANT, EXECUTIVE CLERK

HELENA, MONTANA

July 23, 1958

Dr. R. R. Renne, President
Montana State College
Bozeman, Montana

RECEIVED
JUL 24 1958

MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

Dear Dr. Renne:

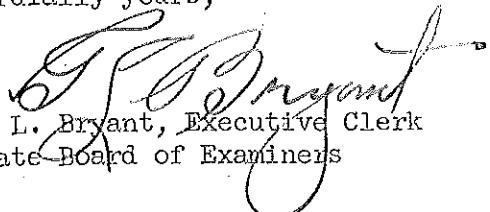
Attention: Dr. P. C. Gaines, Acting President

With regard to an application to the Federal Housing and Home Finance Agency for Advances for planning Diagnostic Laboratory for the Livestock Sanitary Board on the campus of the Montana State College, Bozeman, we have received the following request from the Seattle office of Housing and Home Finance Agency:

"Please provide evidence in writing that the location of this building on the campus of Montana State College is with the approval of the State Board of Education and the President of the Montana State College."

Will you kindly furnish us in duplicate the approval of your office for the location of the Diagnostic Laboratory near the Veterinary Research Building on the Campus of the Montana State College. We will appreciate this information as soon as conveniently possible that we may forward it to the Seattle office for action on the application.

Cordially yours,


G. L. Bryant, Executive Clerk
State Board of Examiners

GLB/jc

CC to Miss Harriet Miller, Secretary
State Board of Education

March 28, 1959

To: J. A. Asleson
H. C. Cheever
F. B. Cotner
G. C. Halver
Hadleigh Marsh
R. H. McBee

J. W. Safford
L. D. Smith
Karl F. Swingle
E. A. Tunnickliff
M. F. Whalen
Stuart Young

Re: Building Committee for new Veterinary Research Center and
Diagnostic Laboratory

Will the above-named individuals please serve as a committee to help plan the new Veterinary Research Center and Diagnostic Laboratory. As you know, the legislature made available \$290,000 for construction of the Diagnostic Laboratory and \$250,000 to match the \$250,000 Federal grant for a new Veterinary Research Center, so that there is a total of \$790,000 available for the total facility. Preliminary planning indicates that many economies would result from having the two facilities -- the Veterinary Research Center and the Diagnostic Laboratory -- under one roof.

The State Board of Examiners on Wednesday, March 25, named Elmer Link of Billings as architect for the facility.

Will Dr. E. A. Tunnickliff please serve as chairman of this committee. It is hoped that planning will proceed in such a way that it will be possible to let bids for the structure in August of this year.

We will appreciate your serving in connection with this assignment.

Roland A. Renne
President

RRR:cm

WESTERN UNION
TELEGRAM

RECEIVED
MAR 6 1959
MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

WU002 GOVT DL PD WASHINGTON DC MAR 5 458PME 1959

DR R R RENNE, PRESIDENT

MONT STATE COLLEGE

WESTERN UNION
TELEGRAM

SENATOR MANSFIELD, CONGRESSMAN METCALF, CONGRESSMAN ANDERSON
AND I WERE ADVISED THAT THE SURGEON GENERAL OF THE PUBLIC HEALTH
SERVICE HAS TODAY APPROVED A GRANT TO MONTANA STATE COLLEGE AT
BOZEMAN FOR A VETERINARY RESEARCH BUILDING IN THE AMOUNT OF \$235,669

JAMES E MURRAY USS

836AM

WESTERN UNION
TELEGRAM

MONTANA STATE COLLEGE
AGRICULTURAL EXPERIMENT STATION
BOZEMAN

April 25, 1961

RECEIVED
APR 26 1961
MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

C
O
P
Y

R. E. Huffman, Director
Agricultural Experiment Station
Campus

Dear Doctor Huffman:

I think it would be appropriate at this time to explain to you and the other interested parties our needs for the outside facilities at the present Veterinary Research Laboratory. Since we do not have sufficient funds to complete our entire research establishment at the new location, it will be necessary for us to use most of the buildings and corral space at our present location. This will not be a sufficiently handy operation; however, I see no alternative since there is obviously no money for the building of the facilities that we need.

The following buildings and reasons will give you an idea of this problem:

- (1) Laboratory animal rearing house. This is used for the raising of healthy breeding stock consisting of mice, rabbits, hamsters, guinea pigs and rats.
- (2) Isolation unit consisting of 2 quonsets and one cement building. Since we have no isolation unit for large animals, there seems to be no alternative except to retain these buildings.
- (3) Shop and garage. We will not have these facilities at the new location and since it is necessary for us to have some storage place for cars, truck and tractor, and to have a work shop where minor repairs can be made, it seems imperative for us to retain this building.
- (4) Corrals and wooden sheds. Since we will need corral facilities and the two wooden sheds now available adjunct to the isolation unit, we should retain these facilities.
- (5) Hay shed. This storage will be retained temporarily until we can afford to dismantle and move to the new location.

I have already talked to Mr. Cook regarding the autopsy-incinerator building which will be left intact for his use. Should you need additional explanation regarding the above matter, please do not hesitate to call me.

Sincerely yours,

cc. W. B. Cook
R. R. Renne ✓

E. A. Tunnicliff
E. A. Tunnicliff, Head
Veterinary Research Laboratory and
Department of Veterinary Science

RECEIVED
JUL 26 1961
MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

July 25, 1961

President R. R. Renne
Montana Hall
Campus

Dear President Renne:

I believe you will be interested in the attached copy of three resolutions passed by the Advisory Committee to the Montana Veterinary Research Laboratory at its regular meeting in Bozeman on July 6, 1961.

You will also be interested in the fact that the Advisory Committee passed a resolution to the effect that the new laboratory building which houses the Livestock Sanitary Board Diagnostic Laboratory and the Montana Veterinary Research Laboratory be named "The Hadleigh Marsh Laboratories". I am not sure whether this is an appropriate action at the present time but at least you should have this information.

Sincerely yours,



Roy E. Huffman
Dean of Agriculture

REH:mh
enc.

44-14

Resolutions Adopted
by the
Montana Veterinary Research Laboratory Advisory Committee at Bozeman

July 6, 1961

Resolution #1

WHEREAS, It appears to the Advisory Committee that insufficient funds were made available for the operation of the Veterinary Research Laboratory,

WHEREAS, It is difficult for the Advisory Committee to function properly without a voice in the proposed budget,

THEREFORE BE IT RESOLVED; That the Advisory Committee be invited to participate in the formation of the budget for the Veterinary Research Laboratory.

Resolution #2

WHEREAS, It is essential that major farm and livestock organizations understand the legislative budget requests and expenditures of the Experiment Station,

NOW, THEREFORE, BE IT RESOLVED, That the Head of the Montana State College Experiment Station be requested to consult with the major farm and livestock organizations in the preparation of the 1963-65 Experiment Station legislative budget.

Resolution #3

We, the members of the Advisory Committee for the Veterinary Research Laboratory, wish to commend Dr. Tunnicliff and his staff for their competent and faithful service in the past and express our confidence in their future efforts in working on our problems.

Realizing that a reduced budget is a fact for the next two years, we recommend that the administrators of the Experiment Station and the Veterinary Research Laboratory use their best judgment in the use of funds now at their disposal to do effective research during this period.

We are agreed on the necessity of research, both basic and applied, and we would cooperate with and assist the Research Center in programming for the future an expanded research program and the means to pay for it.

Also sent to other 3 Congressional men

cc: Dr. Tunnicliff & Ben Stong

January 30, 1958

Honorable Lee Metcalf
U. S. House of Representatives
Washington, D. C.

Dear Lee:

You will recall that in the spring of 1956 hearings were held in St. Louis to consider establishment of a National Animal Disease Research Laboratory. This was later established at Iowa State College, Ames, Iowa.

At the time of the hearings and later, there was much discussion of establishing a Western Regional Animal Disease Research Laboratory to do research on diseases of range livestock under western range conditions. Montana State College was very favorably discussed as a desirable location for such a Western Regional Animal Disease Research Laboratory. The Montana Veterinary Research Laboratory is located on the campus, and in recent meetings with members of the Livestock Sanitary Board approval was given for establishment of a diagnostic laboratory building for the Montana Livestock Sanitary Board on the campus. The diagnostic laboratory will be located adjacent to the present Montana Veterinary Research Laboratory.

There seems to be general agreement among our livestock people that a Western Regional Animal Disease Research Laboratory is a necessary facility to adequately serve the needs of Western livestock producers. The regional laboratory would not conflict in any way with the existing Veterinary Research Laboratory on the campus or the diagnostic laboratory of the Livestock Sanitary Board to be placed on the campus. These two laboratories, along with similar laboratories in other Western states, would serve as clearing houses for the problems originating in these state research and diagnostic centers. The regional laboratory would carry to completion intricate problems that are impossible in the present facilities due to the absence of highly trained personnel and funds in the separate states. The diagnostic laboratory would feed these particular state problems into the respective state research laboratory which would carry those problems as far as it could. When the problem got too detailed and intricate, it would be passed on to the regional laboratory for final study and prosecution of research and investigation to arrive at suitable solutions of the problems.

Honorable Lee Metcalf
Page Two
January 30, 1958

There are many good reasons why Montana is an especially good location for such a western regional laboratory. We are fortunate at Montana State College to have considerable acreage with available water and other utilities for the location of such a Western Animal Disease Research Laboratory adjacent to or near our present Montana Veterinary Research Laboratory and the proposed diagnostic laboratory building. The Livestock Sanitary Board is now drawing up plans for the diagnostic laboratory, and hopes to secure funds from the next legislature for construction of the facility on the campus.

*independently
built labor*
The library facilities of Montana State College and the close location of staffs of all three of the facilities--present Veterinary Research Laboratory, diagnostic laboratory, and the regional laboratory--would make for a much more effective over-all research and instructional program and contribute to more efficient utilization of funds and resources in the successful diagnosis, preventive methods, and treatment of major diseases common to the Western range areas. *Wetall Hall*
Washlups

We will certainly appreciate your efforts in securing an appropriation for such a Western Regional Animal Disease Research Laboratory, and can assure you of available land and utilities on the Montana State College campus if such a regional laboratory materializes.

Sincerely yours,

Roland R. Renne
President

RRR:pm

President's File "Veterinary Science, E.A. Tunnichiff, Head"

**MONTANA STATE COLLEGE
AGRICULTURAL EXPERIMENT STATION
BOZEMAN**

VETERINARY RESEARCH LABORATORY

MONTANA LIVESTOCK SANITARY BOARD
MONTANA STOCKGROWERS ASSOCIATION
MONTANA WOOLGROWERS ASSOCIATION
COOPERATING

April 27, 1959

RECEIVED
APR 28 1959
MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

Dr. R. R. Renne
President
Montana State College
Campus

Dear Dr. Renne:

I thank you for your letter of April 20 forwarding to me a copy of a resolution passed by the State Board of Education upon my retirement from the staff of Montana State College.

I am very appreciative of the consideration I have received from you and the other administrative officers under whom I have worked here, and I am glad that circumstances are such that I will be able to continue as a member of the staff of the Veterinary Research Laboratory as an employee of the Livestock Sanitary Board.

Very truly yours,

Hadleigh Marsh
Hadleigh Marsh
Veterinary Pathologist

HM/dh

April 20, 1959

Dr. Hadleigh Marsh
Veterinary Research
Campus

Dear Dr. Marsh:

The attached resolution passed by the State Board of Education at its meeting April 6 in Helena expressed the appreciation of the Board for your very fine services to the livestock industry over the years. The sentiment expressed in the Board's resolution is indicative of the very high regard in which you and your work are held and all of your associates and friends, I am sure, will agree fully with the sentiments expressed in the Board's resolution.

With kindest personal regards and best wishes.

Sincerely,

Roland R. Renne
President

RRR:gw
Enc.

Item 170-301 Retirement of Dr. Hadleigh Marsh, Montana Agricultural Experiment Station

RESOLVED, That upon the occasion of the retirement of Dr. Hadleigh Marsh from the faculty of the Montana Agricultural Experiment Station, Montana State College, the State Board of Education wishes to express its appreciation for his long and faithful services to the institution, to the University of Montana, and to the people of the State of Montana.

Dr. Marsh started his career of service to the State of Montana in 1919 by serving as Bacteriologist-Pathologist in charge of the Montana Livestock Sanitary Board. In 1929 he was appointed as Veterinary Bacteriologist-Pathologist and Head of the Veterinary Research Laboratory at Montana State College. He continued to direct the research program of the Laboratory until 1950 when he voluntarily asked to be relieved of his administrative duties in order that he might devote his full time to research work in the field of livestock diseases. In December of 1954, Dr. Marsh was granted leave of absence from the staff of Montana State College to serve the State of Montana as State Veterinarian for a period of two years. At the close of this assignment, he returned to the staff of Montana State College and undertook the task of reviewing and editing a book on sheep diseases. The revision of this book has earned for him international renown in the field of sheep diseases.

Throughout the years of his service to the livestock industry, Dr. Marsh has contributed much to the technical literature in the field of livestock diseases. He has written, either as author or as co-author, 84 scientific bulletins or journal articles in the field of livestock diseases. Through these writings and his outstanding research work, Dr. Marsh is known nationally and internationally as one of the foremost authorities on animal pathology with special emphasis in his chosen field of sheep diseases.

In addition to his service to the livestock industry, Dr. Marsh has taken a keen interest in civic responsibilities. He has always been interested in young people and has done much to promote the Scouting movement in his community and state. He has contributed much to the organization of the Montana State Fair and is also a charter member of the American Legion and served as its Commander in 1921.

For these and other important contributions, the people of Montana, Montana State College, and the University of Montana are indebted to Dr. Hadleigh Marsh. The State Board of Education is pleased to confer on Dr. Hadleigh Marsh the rank of Professor Emeritus of Veterinary Medicine at Montana State College and wishes him well for many pleasant years in the future.

DR. HADLEIGH MARGH

Born November 21, 1888, Ripon, Wisconsin

Academic

- 1909 B. S. (cum laude,) University of Chicago
1912 D.V.M. (with distinction), George Washington University

Professional Experience

- 1908-12 Assistant in Poisonous Plant Investigations, U. S. Bureau of Animal Industry.
1913-17 Veterinary Inspector, U. S. Bureau of Animal Industry
1917-18 U. S. Army, Cavalry and Veterinary Corps, Lieutenant to Captain
1919-29 Bacteriologist-Pathologist in charge of Montana Livestock Sanitary Board
1929-50 Bacteriologist-Pathologist and Head Veterinary Research Laboratory, Montana State College
1949 Travelled and studied in New Zealand, Tasmania and Australia for three months studying diseases of sheep
1950 Resigned as Head to devote entire time to research.
1950-54 Veterinary Pathologist, Montana Veterinary Research Laboratory
1954-56 Executive officer and State Veterinarian of Montana Livestock Sanitary Board--on leave from Montana State College
1954-date Consultant to U.S.D.A., A.R.S.
1956-date Veterinary Pathologist, Montana Veterinary Research Laboratory
1958 Travelled as consultant for U.S.D.A., A.R.S. to Scotland, Great Britain, and France on special problem of enzootic ovine abortion.

Memberships, Honorary and Professional

- U. S. Livestock Sanitary Association
American Veterinary Medical Association
Montana Veterinary Medical Association, Sec.-Treas. 1922-38, Pres. 1941
Intermountain Veterinary Medical Association, President 1940
Research Workers Conference in Animal Diseases, President 1941
American Society of Veterinary Pathologists
American Association for the Advancement of Science
Sigma Xi
National Research Council, member of Committee on Diseases of Agricultural Board

Recent Honors

CENTENNIAL AWARD of 1955 presented by Michigan State College in recognition of work as "Scientist, conversationalist, humanitarian, and eminent ovine pathologist. Early in your chosen career you employed the experimental method in order to ascertain the specific cause of various animal diseases. Your distinguished endeavors in the halls of science and on the ranches of America have contributed much to the welfare of agriculture and to the strength and stability of our nation's economic structure. For your profound interest in the etiology of disease among food production animals, and for your pioneering researches in those areas of science to which Michigan State College has long dedicated itself, Michigan State College is proud to award you this citation."

Recent Awards (Continued)

TWELFTH INTERNATIONAL VETERINARY CONGRESS CITATION of 1956 was awarded by the American Veterinary Medical Association for outstanding service by a member of the American Veterinary Medical Association to veterinary science and the veterinary profession.

Civic

He has always been keenly interested in young people, and particularly in introducing them to the wonders of nature. He helped establish a camp for boys and girls in one of the high alpine valleys in Montana where they could become acquainted with unspoiled mountain country. His activities with the Boy Scouts has included having a troop of his own, serving as examining counselor, scout commissioner, and as local representative of the National Council from Montana. He received the citation of Silver Beaver from the national organization in 1950 in recognition of his leadership and service.

He was president of the Hyalite Junior Recreation Camp Association of Montana. He also has served on the Community Concert Association committee, both served on and headed the Community Chest drives over quite a span of years.

The study of a coordinated and mutually beneficial program of recreation, livestock grazing, and wildlife conservation in the National forests has been one of his hobbies for many years. In particular, he has taken an active interest in the study and the controlled grazing of the native elk and mountain sheep.

His organization work with the Montana State Fair, and other livestock exhibitions, has been greatly appreciated for many years by the livestock industry of the state.

He has been an active member of the Episcopal Church for many years, and has served as Senior Warden of the St. James church in Bozeman, as well as singing in the choir since 1919 and working on many committees.

He is a charter member of the American Legion, and served as the first commander of the Helena, Montana American Legion post, and as State Commander of the American Legion in 1921.

Hedleigh Marsh - Bibliography

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+ 3 more bibliography pages

March 20, 1959

President R. R. Renne
Campus

Dear President Renne:

Dr. E. A. Tunnicliff, Head of the Veterinary Research Laboratory, has recommended that since Dr. Hadleigh Marsh has passed his 70th birthday and will be retiring from the staff at the end of this fiscal year, he be given the title of "Professor Emeritus". This office concurs in this recommendation and suggests the following material which might be used in the preparation of an item for presentation to the State Board of Education relative to the retirement of Dr. Marsh.

Montana Appreciation Station

Resolved: That upon the occasion of the retirement of Dr. Hadleigh Marsh from the faculty of Montana State College, the State Board of Education wishes to express its appreciation for his long and faithful services to the institution, to the University of Montana, and to the people of the State of Montana.

Dr. Marsh started his career of service to the State of Montana in 1919 by serving as Bacteriologist-Pathologist in charge of the Montana Livestock Sanitary Board. In 1929 he was appointed as Veterinary Bacteriologist-Pathologist and Head of the Veterinary Research Laboratory at Montana State College. He continued to direct the research program of the Laboratory until 1950 when he voluntarily asked to be relieved of his administrative duties in order that he might devote his full time to research work in the field of livestock diseases. In December of 1954, Dr. Marsh was granted leave of absence from the staff of Montana State College to serve the State of Montana as State Veterinarian for a period of two years. At the close of this assignment, he returned to the staff of Montana State College and undertook the task of reviewing and editing a book on sheep diseases. The revision of this book has earned for him international renown in the field of sheep diseases.

Throughout the years of his service to the livestock industry, Dr. Marsh has contributed much to the technical literature in the field of livestock diseases. He has written, either as author or as co-author, 84 scientific bulletins or journal articles in the field of livestock diseases. Through these writings and his outstanding research work, Dr. Marsh is known nationally and internationally as one of the foremost authorities on animal pathology with special emphasis in his chosen field of sheep diseases.

President R. R. Renne

-2-

March 20, 1959

In addition to his service to the livestock industry, Dr. Marsh has taken a keen interest in civic responsibilities. He has always been interested in young people and has done much to promote the Scouting movement in his community and state. He has contributed much to the organization of the Montana State Fair and is also a charter member of the American Legion and served as its Commander in 1921.

For these and other important contributions, the people of Montana, Montana State College, and the University of Montana are indebted to Dr. Hadleigh Marsh.

Very truly yours,



H. G. Cockrum
Associate Dean

HGC:mh
enc.

President Renne's File "Veterinary Science, E. A. Tunnickliff, Head"

MONTANA STATE COLLEGE
AGRICULTURAL EXPERIMENT STATION
BOZEMAN

May 31, 1961

RECEIVED
JUN 1 1961
MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

C
O
P
Y

To: Alex Christie
Walter Donahoe
Pete Hill
J. S. Safford
E. A. Tunnickliff

John Bacus
H. E. Furgeson
Jim Murphy
R. E. Huffman
H. Marsh

Re: Advisory Committee Meeting of the Montana Veterinary Research
Laboratory

Gentlemen:

The regular annual meeting of the Montana Veterinary Research Laboratory Advisory Committee will be held July 6, 1961, in Bozeman at the new Montana Veterinary Center.

We should start by 9:30 a.m. with time out for lunch at 12:30 p.m. The business should be concluded by late afternoon, giving most of you time to return home the same evening.

I have planned a change from the usual type of research review previously given. Your discussions, ideas and conclusions are of utmost importance to the successful future laboratory operation. I do hope you all will be able to attend.

Thanking you for your past cooperation and continued support, I am,

Sincerely yours,

E. A. Tunnickliff
E. A. Tunnickliff, Head
Veterinary Research Laboratory and
Department of Veterinary Science

EAT/as

cc: R. R. Renne ✓
Everett Shuey
Ralph Miracle
Joe Asleson
Wayne Bratten
Wesley Sterns
Don Tavenner
Henry S. Hibbard

MONTANA LIVESTOCK SANITARY BOARD
HELENA, MONTANA



June 5, 1961

RECEIVED
JUN 7 1961
MONTANA STATE COLLEGE
OFFICE OF THE PRESIDENT

Advisor, Committee
Montana Veterinary Research Laboratory

Consideration:

I would like to offer a suggestion for the change of the name of the new laboratory building for the "Montana Veterinary Center" to the "Hedleigh Marsh Laboratories." The "Hedleigh Marsh Laboratories" houses the Montana Veterinary Research Laboratory and the Livestock Sanitary Board Diagnostic Laboratories.

To offer the following resolution for consideration of the Advisory Board at their July 6, 1961 meeting:

WHEREAS, Dr. Hedleigh Marsh first inaugurated and established the work at the Livestock Sanitary Board diagnostic laboratory in 1919-1929, and

WHEREAS, he first established and developed the work at the Montana Veterinary Research Laboratory in 1929 on, and

WHEREAS, his work in both laboratories has resulted in untold benefits to the livestock industry of Montana, the United States and the World,

NOW, THEREFORE, BE IT ENJOINED that the new diagnostic laboratory building that houses the Livestock Sanitary Board Diagnostic Laboratory and the Montana Veterinary Research Laboratory, be named the "Hedleigh Marsh Laboratories."

We believe this could be a fitting name for this new laboratory building to honor a man who has dedicated his life to the betterment of the work in both laboratories.

Sincerely,

J. H. SAFFORD
State Veterinarian

Justified

RECEIVED
DEC 29 1959
MONTANA STATE COLLEGE December 28, 1959
OFFICE OF THE PRESIDENT

President R. R. Renne
Montana Hall
Campus

Dear President Renne:

The attached copy of a letter from Dr. J. A. Asleson reached my desk on the same day as the copy of your letter to Dr. Tunnickliff regarding the status of the new Veterinary Research Center. Your letter to Dr. Tunnickliff has clarified some of the points raised by Dr. Asleson. Dr. Asleson's letter is, however, a good total summary of the development of the plans for the Veterinary Research Center and of the estimated costs.

I thought you might like to have a copy of the letter in your files.

Sincerely yours,



Roy E. Huffman
Dean of Agriculture

REH:mh
enc.-1

December 23, 1959

Dean Roy Huffman
Campus

Dear Roy:

At the last faculty meeting, President Renne announced that the plans for the new "Veterinary Research Center" had now been approved. I am not sure what this approval implies but there are several problems that must be resolved before bids can be let and construction started. At the present time, it appears that invitations to bid may be sent out in January with a possibility that bids will be opened before the end of February. Since President Renne will be away from the campus during January and February I strongly recommend that the situation be discussed with him before he leaves.

This memo may remind you of a progress report before I finish but I believe it is the best way to bring out the problems as I see them.

On March 28, 1959 I was appointed a member of a "committee to help plan the new Veterinary Research Center and Diagnostic Laboratory" by President Renne. I have met with the entire committee on two occasions and with the architects, members of the Veterinary Research Laboratory, and Dr. Safford several times. Early discussions centered around such matters as location, general type of building, and problems presented by the location chosen. I did not feel qualified to evaluate the needs of the Veterinary Research Laboratory or the Livestock Sanitary Board in terms of total space or kind of space, so I relied on the judgments of the staffs. Early rough plans called for a main building with a floor space of approximately 24,000 sq. ft. As time went by the "building grew" and other buildings and facilities were added, such as the clinical building, manure pit, and livestock handling facilities.

On July 15 I wrote a letter to Dr. Tunnicliff in an attempt to clarify the financing available and the facilities that must be provided by these finances. It was pointed out in this letter that these funds must complete the entire laboratory including outbuildings, corrals, fences, sheds, etc. as a fully-functioning unit. President Renne has emphasized this point several times.

At the last meeting of the full committee on December 4, 1959, the architects presented preliminary estimates of the cost of the unit based on plans as now drawn. Estimates of the cost for the mechanical contract were not available from Mr. Prussing except in a very general way. The cost estimates provided at that time were as follows:

Main building - Wings A-B-C-D	
General	\$356,500
Move existing equipment	20,000
New equipment	98,400
Electrical	69,000
Mechanical	?
	<hr/>
	\$543,900

December 23, 1959

Isolation wing		
General	\$49,800	
New equipment	6,500	
Electrical	5,000	
Mechanical	?	
		<u>\$61,300</u>
Clinical Building		
General	\$14,500	
New equipment	1,000	
Electrical	2,000	
Mechanical	?	
		<u>\$17,500</u>
Manure pit		
General	\$4,200	
Mechanical	?	
		<u>\$4,200</u>
Roads and Parking		6,500
Total Mechanical (rough estimate)		300,000
Architect's fee		<u>62,379</u>
Total cost		\$995,779
Required for fences, corrals, & sheds		<u>60,000</u>
Grand total cost of facility		\$1,055,779

The above estimates were the first that I had seen on the probable cost of the facility. With a total of \$790,000 available, decisions had to be made on possible cuts. Dr. Tunnickliff insisted that the floor space of the main building (which is now 28,034 sq. ft.) could not be cut. A few modifications were agreed upon such as elimination of the refrigeration and electronic filters in the air-conditioning system. It was also agreed that the requirements for new equipment might be reduced. At the very most these savings might affect a saving of about \$80,000. There seemed to be no inclination to consider any other cuts of consequence.

With the estimates still \$173,000 greater than the funds available, Dr. Tunnickliff suggested two alternatives: (1) to attempt to get more grant money from NIH or (2) to build only part of the facility and continue to use some of the facilities in the present location. It was pointed out that there are no funds available for use as matching funds for an NIH grant. An attempt was then made to arrive at a breakdown of the cost estimates for the main building as to the proportionate share to be paid from Livestock Sanitary Board funds and from funds available to the College for building the research facilities. The breakdown arrived at follows:

Area - Main Building

For Veterinary Research activities	14,449 sq. ft. = 51.8%
For Diagnostic Laboratory activities	7,937 " " = 28.5%
Common area (used by both)	5,648 " " = 19.7%
Total	28,034 " "

Cost estimates - Main building

General & Electrical Contract, equipment	\$543,900
Mechanical contract (preliminary est.)	265,000
	<u>\$808,900</u>
Less air cooling & electronic filter	60,000
	<u>\$748,900</u>
Architect fees	48,000
	<u>\$796,900</u>
Less new equipment	98,400
Total estimated cost	<u>\$698,500</u>

Division of cost based on proportion of floor space.

Veterinary Research

51.8% of floor space	\$361,000
plus 50% of common area	69,250
Total cost without new equip.	<u>\$430,250</u>

Diagnostic Laboratory

28.5% of floor space	\$199,000
plus 50% of common area	69,250
	<u>\$268,250</u>

Cost of new equipment

Veterinary Research Laboratory

Laboratory equipment	\$ 42,142
Walk-in coolers	11,200
Common equipment (50%)	2,400
	<u>\$ 55,742</u>
Installation of equip. (15% of cost)	8,361
	<u>\$ 64,103*</u>

Vet. Res. Lab. share of building cost

Total cost (incl. equip.)	<u>430,250</u>
Funds available	<u>440,000</u>
Shortage	<u>\$ 54,353</u>

* May be reduced

Diagnostic Lab. new equipment

Laboratory equipment	\$ 24,688
Walk-in cooler	2,800
Common equipment (50%)	2,400
	<u>\$ 29,888</u>
Installation of equip. (15% of cost)	4,483
	<u>\$ 34,371</u>

Diagnostic Lab. share of building cost

	<u>268,250</u>
Funds available	<u>290,000</u>
Shortage	<u>\$ 12,621</u>

(Cost of roads and parking areas not included in the above estimates - \$6,500)

December 23, 1959

On the basis of the above estimates it is clear that the funds available will not provide any outside facilities except that \$60,000 is being held out for construction of fences, corrals, and sheds for animals. If the plans, as approved, are used as a basis for bidding the main building will require all the financing available. I am sure that it will be the intention of the Veterinary Research Laboratory to continue using some of the facilities in their present location, such as the clinical building, the small animal quonset and perhaps others. In other words, they will not have a fully functioning unit in the new location. I am sure that the staff of the Veterinary Research Laboratory intends to go ahead on this basis.

As a member of the committee, I tried to impress the architects and Dr. Tunnickliff with the limitations of funds and the need for a fully functioning unit. This I apparently failed to do. I did not feel that I had any authority to go beyond this point. If the bids are let on the main building alone, it will mean that the Veterinary Research Laboratory will be working in two locations until additional funds can be raised to complete the new unit. I believe President Renne should decide if such a plan is in the best interests of the institution before bids are let.

I would also suggest that we determine what might be expected of this office when the bids are opened. If bids are opened before President Renne returns he may wish to give instructions relative to alternates and to commitments that may or may not be made.

Personally, I am convinced that the present plans, if carried through, will mean that we and the President's Office will be under constant pressure for money until the facility is completed. If money must be diverted for this use it means that other aspects of the research program must suffer or badly needed facilities in other departments must wait even longer. I would be very disappointed if a special request had to be made to the legislature for completion of the facilities which might reduce or jeopardize the money that could be available for the livestock facilities we have been trying to get moved for four years.

With the establishment of the new facility in the new location we can look forward to additional costs of operation. Under the present policy of the Physical Plant Department, they will not have any direct responsibility for janitor service, telephone, and maintenance in the new facility. Either these expenses must be paid from departmental funds or other arrangements will have to be made with the Physical Plant Department which would undoubtedly involve increasing the Experiment Station funds budgeted to that department. I also wish to point out that the new facility contains 14,449 sq. ft. assigned exclusively to the research activities of the Veterinary Research Laboratory plus 5,648 sq. ft. to be used jointly with the Diagnostic Laboratory. The present Laboratory has a floor space of approximately 10,000 sq. ft. including a good sized classroom. With an increase in floor space of approximately 100%, I am sure that plans will be made to expand the research program. This will mean demands for additional staff and operating funds. In analyzing our current budget, it is my opinion that we cannot justify increased emphasis

Dean Roy Huffman

-5-

December 23, 1959

on animal research until support in other fields is increased. I am sure you will agree that the prospect for sizeable increases from State and Federal appropriations in the next few years are not too bright.

A final question in my mind concerns the approval of the present plans by the National Institutes of Health. At the time of the last meeting of the committee, I was told that they had not been informed of the present plans for the facility. It would seem to be necessary that such approval be obtained before bids are let. Perhaps this point has been taken care of in actions not known to me.

I would be glad to discuss this situation with you at your convenience.

Very truly yours,



J. A. Asleson
Associate Director

JAA:mh

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24GA1798 (# obtained from SHPO upon receipt of site form)

Property Name: REID HALL

Property Town/Vicinity of: Bozeman, MT

Property Date (Year of Origin/Construction or "Precontact"): 1959

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): ___ District 1 Building(s) ___ Structure(s) ___ Site(s) ___ Object(s)

Status (Choose one): Satisfactory

Comment:

Condition/Integrity (Choose One): Fair

Comment:

The ~91,167 gross square foot building houses two large colleges and its classrooms are highly utilized. Renovation of the entire building may cost \$20 to \$38 million and such a project has been a high priority for MSU in recent Long Range Building Program requests made to the State Legislature.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$___ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$___ Heritage Research/Documentation project activity

\$___ Heritage Interpretation/Education/Awareness project activity

\$___ Heritage Promotion/Tourism/Marketing project activity

\$___ Heritage Preservation/Conservation Plan Development

\$^{122,012}___ Regular/routine maintenance

\$___ Monitoring (reported upon)

\$^{137,156}___ Project designed/redesigned to avoid adverse effect to property's heritage values

\$___ Other heritage stewardship effort/activity (Explain)

Comment:

Of the \$259,168 spent in past two years, projects completed that qualify as preserving the integrity of the building and to extend the effective use of spaces included renovation of select classrooms and offices to improve functionality and to accommodate technology. Other projects were replacement of flooring and upgrades to mechanical heating and ventilation systems and control valves for the comfort and safety of the building occupants.

Note - in the Summer of 2009, MSU invested just over \$600,000 to completely renovate a large lecture hall that is intensely utilized throughout the year for teaching.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 2 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

The university conducts an observable condition assessment of all buildings on a cyclical basis. The most recent Facilities Condition Inventory of Reid Hall was 11/18/2009 and its deficiency ratio was determined to be a 13.7% (within the Poor range per APPA Industry Standards). The categories of deficiencies are: Damage Wear out; Codes & Standards; Environmental Improvement and Energy Conservation. Specific rehabilitation projects needed are: replace all windows and lighting with energy efficient options, renovate and replace all restrooms and elevator for ADA compliance, replace HVAC and building controls, regrout stone columns, add building egress.

Other Comment:

Within the central core and historic area of campus, Reid Hall has building entrances off of the Malone Centennial Mall and Romney Oval, which are main pedestrian corridors and significant features in the master plan layout of the campus and as such are areas continually enhanced and preserved.

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 12/12/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)



INFORMATION ON REID HALL

This building was let to bid August 19, 1957, and was substantially completed on December 1, 1958. Total cost to date is just under 1.5 Million Dollars. Total square feet is 85,588, and it has 68 offices. The design work was done by Cushing, Terrell and Associates of Billings with Wm. Grabow of Bozeman as construction inspector. The General Contract was completed by Haggerty-Messmer of Bozeman with Ollie Edsall as job superintendent. The Mechanical Contractor was Midland Plumbing & Heating of Billings with Jack Tinge as job superintendent. The Electrical Contractor was Yellowstone Electric of Billings with Russ Ballantine as job superintendent.

This building is unique, as it is the first academic building built on our campus by student funds. It was financed by a bond issue to be paid by student fees and has, therefore, been constructed at no cost to the tax-payers of the State of Montana.

The main or first floor has ~~twenty-five~~ (25) staff offices, ~~five~~ (5) classrooms, ~~and five~~ (5) seminar and three (3) work rooms. Total square feet is 24,585. The largest classrooms, 108 and 105, will hold 218 students each. The medium sized classrooms 103 and 104 hold 138 students, and 101 and 102 hold 75 each. Room 124 is an education methods laboratory holding 28 students. Housed on this floor will be the History Department 112-119, the Education Department 131-138 and Psychology Dept. 139-142.

The second floor has 19,701 square feet and two classrooms of 75 each. Housed on this floor are Modern Language 207-212, Dean of Graduate Division 213 and 214, Dean of Faculty 217 and 218, Dean of Education 219 and 253, Dean of Science 249-252, Testing and Counseling 245-248 and Placement 241 & 243. Rooms 223 and 224 are Testing rooms and rooms 228 through 236 are small interview rooms for the Placement office.

The Third floor contains 20,651 square feet, but has not been finished, due to insufficient funds. Cost estimate of completing this floor is just over \$100,000.00. When completed, it will house the Commercial Science Department. *120,000.00*

is to be a separate building at a cost of
Architecture will occupy the entire fourth floor, containing 20,651 square feet. Eleven offices and a library are to be used while the rest of the space is drafting room and classroom area.

Heat for this building is furnished from the central heating plant. Steam from the plant is converted to hot water to the baseboard radiation. Each room has its own individual temperature control. In addition, the entire building is fully ventilated. Two ducts, one of warm air and one of cold, run side by side in the dropped ceiling area. This air is blended at an outlet in the ceiling to provide warm or cool air as required. The system operates 24 hours a day. It is possible to add air-conditioning to this system at a later date, but none is provided at present.

Electricity is provided to this building at 4160 volts from the underground service. The building transformers and main control panel are located in the basement with auxiliary panels on each floor. Telephone and electrical outlet boxes are located on 2' centers longitudinally in each office, allowing versatility of desk locations. The aluminum caps are telephone and the brass covers are electrical boxes.

The windows on the east, south and west, are all equipped with sun screens to reduce glare and the radiant heat from the sun. Note how the upper windows may be opened in, to allow washing inside and out from inside the room.

The floors are Terrazo in the main traffic areas on the first floor, as are the stairs. 1/8" Vinyl tile is used on the rest of the floors throughout the building.

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24GA1797 (# obtained from SHPO upon receipt of site form)

Property Name: LANGFORD HALL

Property Town/Vicinity of: Bozeman, MT

Property Date (Year of Origin/Construction or "Precontact"): 1960

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): ___ District 1 Building(s) ___ Structure(s) ___ Site(s) ___ Object(s)

Status (Choose one): Satisfactory

Comment:

Approximately 100,000 gross square feet.

Condition/Integrity (Choose One): Good

Comment:

The University's master plan (Long Range Campus Development Plan - 2009) identified a possible scenario (50 years out) in which Langford Hall is replaced by a larger academic building that may include retail and housing as a interface building at the edge of MSU's campus and the City of Bozeman's neighborhood commerce. The residence hall was designed with central restroom and shower facilities which is declining as a desirable living option in 2011 and will become obsolete in the future.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$___ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$___ Heritage Research/Documentation project activity

\$___ Heritage Interpretation/Education/Awareness project activity

\$___ Heritage Promotion/Tourism/Marketing project activity

\$___ Heritage Preservation/Conservation Plan Development

\$_{9,294.24} Regular/routine maintenance

\$___ Monitoring (reported upon)

\$_{25,684.8} Project designed/redesigned to avoid adverse effect to property's heritage values

\$___ Other heritage stewardship effort/activity (Explain)

Comment:

Within the two year period, Work Orders were processed and funds expended to renovate several residence rooms and public and residence restroom facilities to accommodate ADA compliance. The main entrance on the south side of the building, consisting of a double door glass in aluminum frame was modified to include an power assist door system for ADA compliance. Other improvements included window repairs and installation of a new building sign.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 3 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

The university conducts an observable condition assessment of all buildings on a cyclical basis. The most recent Facilities Condition Inventory of Langford Hall was 10/27/2010 and its deficiency ratio was determined to be an 14.1% (within the Poor range per APPA Industry Standards).

The categories of deficiencies are: Damage Wear out; Codes & Standards; and Environmental Improvements. Specific rehabilitation projects include: upgrading public and dorm restrooms; ADA compliance, replace windows and lighting with energy efficient options; repoint masonry.

Other Comment:

The building is a residence hall and under the purview of Auxiliaries Services that relies on student fees and other non-state funds for operations and maintenance.

A renovation and addition that affects the building's exterior and footprint, is in conceptual programming (December 2011). The design and construction project scope expanded from an original plan to just comply with ADA egress and restroom requirements, to a broader more inclusive project of upgrades to improve the overall appearance and functionality of key areas of the building. The project scope intends to provide a new, larger and more appealing reception/entry area at the main entrance of the building in response to student surveys and to compete with peer universities residence offerings. Schematic Designs are being sent to SHPO for consultation. Related design costs were not included above.

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 11/28/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24GA1796 (# obtained from SHPO upon receipt of site form)

Property Name: DANFORTH CHAPEL

Property Town/Vicinity of: Bozeman, MT

Property Date (Year of Origin/Construction or "Precontact"): 1952

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): District Building(s) Structure(s) Site(s) Object(s)

Status (Choose one): Satisfactory

Comment:

Photos of building elevation attached.
See book: Burlingame, Merrill G., Anderson, Patricia Stenhjem, Walker, William G. "The Danforth Chapel and Religious Activities at Montana State University 1893-1991", Artcraft Printers, Bozeman, MT.

Condition/Integrity (Choose One): Fair

Comment:

The greatest concern and potential for loss is the large memorial strained glass window that requires professional stabilization and repair. It is called a memorial glass piece because it was donated by the parents of MSC sons who died in WWII.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ Heritage Research/Documentation project activity

\$ Heritage Interpretation/Education/Awareness project activity

\$ Heritage Promotion/Tourism/Marketing project activity

\$ Heritage Preservation/Conservation Plan Development

\$ 850. Regular/routine maintenance

\$ Monitoring (reported upon)

\$ Project designed/redesigned to avoid adverse effect to property's heritage values

\$ Other heritage stewardship effort/activity (Explain)

Comment:

The Chapel building is on a routine maintenance schedule. It is not used intensely, but it is open daily to the community for personal introspection and scheduled events such as funeral services and wedding ceremonies. Sunday religious services were prohibited and stated so in operational procedures printed over time; therefore, since it's opening, the chapel has not been used for church-type congregational services.

No Work Orders in the last two years for activity other than routine custodial.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 5 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

The university conducts an observable condition assessment of all buildings on a cyclical basis. The most recent Facilities Condition Inventory of Danforth was 1/29/2009 and its deficiency ratio was determined to be an 6.6% (within the fair range per APPA Industry Standards).
The categories of deficiencies are: Damage Wear out; Codes & Standards; and Energy Conservation. Specific rehabilitation projects include: repair of stained glass window; replace wall of glass with energy efficient window systems and glass; upgrade fire alarm and install fire suppression systems; replace lighting with energy efficient lighting; replace rotted pressed wood siding - not original material.

Other Comment:

Note request for correction of the Montana Historic Property Record dated March 11, 2010: in two places the document states that Danforth Park was formerly called Iris Garden. The correct description is that the larger landscaped area is officially called Danforth Park and within the park area is Danforth Chapel AND the older Iris Garden (constructed 1929-1930) that has been in continual existence as a destination garden and in 2011 was completely renovated. Also correct Record to credit H.C. Cheever, arch professor as local project manager working with designer Emanuel Milstein and MSU volunteers, including Sam Cox, Ag Engineering and industrial arts students, Ken Harlen electrical engineering, Cyril Conrad's applied arts students constructed all interior furnishings; all glass was donated by the Anaconda Copper Mining Co. The chapel was constructed by the people of Montana. Collection2245.

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 11/22/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)

May 30, 1952

Dear Mr Cheever,

Here at last is the "masterpiece" not quite one year late. Never put off till tomorrow what you can put off till next year.

Dean Harrison sent me news of the Chysel dedication. I am real excited but can not possibly attend.

Please give the copies to the people listed, our faculty, and everyone else that should have copies.

I'll be with you in spirit Sunday.

Sincerely,

Managers

P.S.

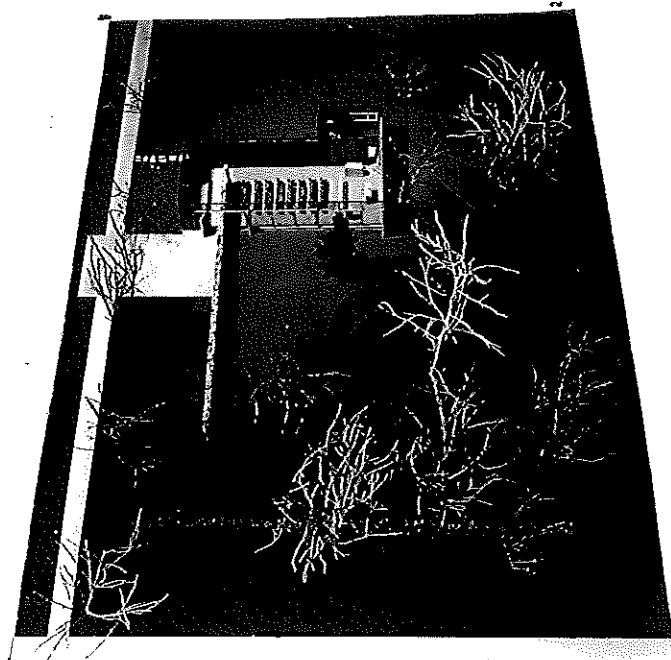
When I left Bozeman Lucille said "all I want is a copy with a personal autograph (in gold script)" — Please attach this to her copy for

Lucille M. Campbell, Secretary to Mr. Cheever

me.

MM

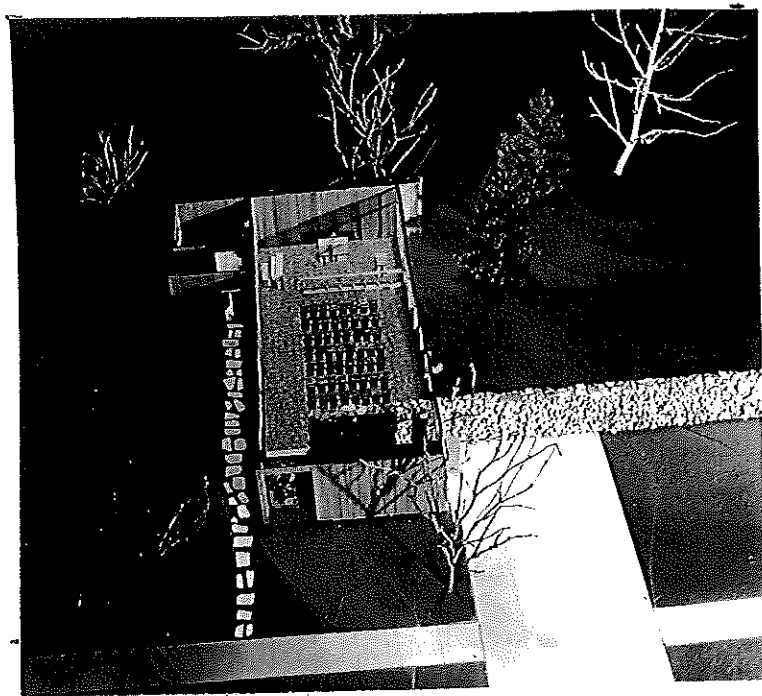
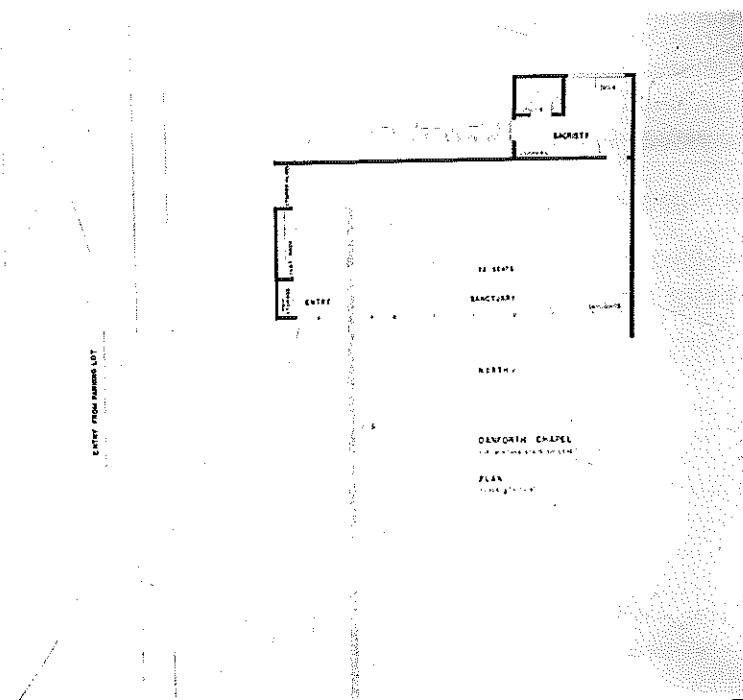
has handled all of our correspondence and typing. and we
L. N. I. the whole movement.



A NON DENOMINATIONAL CHAPEL FOR MONTANA STATE COLLEGE

an undergraduate thesis in architecture by: Emanuel Milstein

Submitted: June 6, 1951



Plan and Model of the Chapel

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But will God in very deed dwell with men on the earth?
behold, heaven and the heaven of heavens cannot contain
thee; how much less this house which I have builded!

Chronicles 6:18

ACKNOWLEDGEMENTS:

Work on ~~the~~ design and construction of the Non-Denominational Chapel at Montana State College has taken over a year and a half.

During both design and construction, Professor H. C. Cheever Supervising Architect at Montana State College, Professor Hugo G. Eck, and instructors Mr. Richard Virge, Mr. David Wessel and Mr. Jack E. Woodman of the architectural department, were constant advisors and critics.

Associate Professor Gordon A. Phillips, now a practicing Architect in Wisconsin, worked with us during the design stages and Lucille M. Campbell, Secretary to Mr. Cheever has handled all of our correspondence and typing.

To all of my fellow students in the department of Architecture for their support, help, and humor goes ~~my~~ fondest thanks.

Professor Cyril Conrad, Jayne Van Alstyne and their Art students had charge of the design of the stain glass window and the interior furnishings.

The greatest part of the actual construction of the Chapel was done by the Industrial Arts Department. The carpentry construction classes worked directly under Mr. Sam Cox with the cooperation of Professor O. W. Ronson.

We all gained a great deal of experience in working together, through a cooperative effort we found solutions to the many problems and decisions that had to be made.

The students and faculty of the Industrial Arts department, including those in the machine and welding shops, can be proud of their achievement.

The design of the radiant heating system was done as part of a masters thesis in mechanical engineering by Leroy C. Horpedahl under the direction of Dr. H. F. Mullickin, head of the Department of Mechanical Engineering, and Instructor Mr. James Hurtle.

Special thanks goes to Mr. J. Verne Dusenberry of the English Department for his enthusiasm and the great deal of help received in writing this paper. Special thanks also to Raleigh Bird for his excellent photographic coverage of the entire job.

It is impossible for me to list the names of all the students, faculty, committee members, administration, service help, technicians, merchants, and townspeople that have contributed to the completion of the Chapel but I would like to thank them all for their wonderful cooperation, interest, and help.

CHAPTER I

INTRODUCTION:

Throughout the history of civilization, a close connection has existed between religious and architectural expression. The first primitive efforts of mankind were to provide protection for himself and to build temples for his gods. The tabernacle for the Ark of Covenant, with its sheepskins and many woven hangings of silk and linen, which was carried by the Israelites through the desert, was the deification of the tent of shepherds in the dawn of man's life on earth.

The ruling purpose of the massive Monoliths at Stonehenge, Wiltshire, approximately dated at 2000 B. C. must surely have been religious. The unchangeable, traditional religious rites of the Egyptians (circa 5000 B.C.) were reproduced in the architecture, both in the tombs and in the temples. The religion of Zoraster as far back as 1000 B. C. held that fire was the manifestation of good; thus the Babylonians and Assyrians built altars for the sacrificial flame.

The Parthenon, the great temple on the Acropolis at Athens (447-432 B.C.), was dedicated to Athena Parthenos, the virgin Athena, and through the centuries was converted into a Christian Church, a Latin Church, and a Mosque. Even today, the Parthenon remains the the greatest historic monument of the Greeks and their most precious heritage. Religious feeling had not so strong a hold on the Romans as on the Greeks, and the position of the Emperor as Pontifex Maximus stamped its character even on temple architecture.

Christianity has inspired the building of some of the greatest architectural monuments. The purpose of the early Christian Church was to shelter worshippers who met for prayer and praise of an unseen Deity; not like the Greeks and Romans to shelter the statues of the gods. This change in architectural expression was occasioned by the change in religious expressions. God preached by Saint Paul was "not like unto gold or silver or stone graven by art and device of man, nor a God that dwelleth in temples made with hands". The religious enthusiasm and zeal of the Romanesque period (700-1100 A.D.) found its material expression in the magnificent cathedral churches and monastic building which were even more charac-

teristic outcomes of this period than the castles of the feudal chiefs. In England the adoration of the Virgin Mary was responsible for the introduction of Lady Chapels. Chantry Chapels for masses for the dead modified the original Gothic plans in the countries during the Gothic period (1100-1500 A. D.)

Probably no other period had such a tremendous effect upon religious architecture as did the Gothic. The cathedrals and churches of that period were built during the full flowering of the absolutism of the Roman Catholic Church and represent the religious aspirations of the period. The gold, the wealth, the labor of those centuries all went into the expression of the glorification of God through the buttresses and the lofty pinnacles of the Gothic. Contrasted to the humbleness and the austerity of the homes of the people of those centuries stand the artistic triumphs of architectural beauty. The names of many of the architects, or master builders as they were called at that time, have been lost. In the creation of a single cathedral, three or four architects may have worked on the plans, each one making changes as he progressed.

The resultant building may have been different from the plans of the first master builder, but represented a unified effort between the master builders and the artists of the periods. Man's humbleness and God's supremacy are symbolized in Gothic architecture.

The influence of Gothic has remained during the succeeding 350 years, although changes have been inserted to manifest man's changing concept of God. Baroque cluttered many of the churches of the Sixteenth century and in the Eighteenth Century the spirit of Classicism, so typical of that so-called "Age of Reason" manifested itself in ecclesiastical architecture. By the end of the Nineteenth Century, the first modernists appeared with a new honest concept in architectural expression and cleared away the Baroque clutter. The great fever and enthusiasm for religious expression in architecture, however, was never again as strong as during the Gothic period. In great part, the Reformation and the subsequent rise of chapels and meeting-houses accounted for the waning interest of architects in religious buildings. Nevertheless, the expression of religion in its place or worship is one of the oldest and most fundamental inspirations of man.

The Bible sets few restrictions on this expression.

" . . . for where two or three are gathered together in my name, there I am in the midst of them." Mathew 18:20.

Here no specifications are given as to size, shape, or style of architecture. And since no one interpretation of Christianity is supreme, the architects have been free to express the desires of people according to their respective beliefs. In recent years there has been a trend toward the establishment of "all-denominational" places of worship--religious buildings where people of all faiths may worship God, pray together, or reflect and meditate.

" . . . even then I will bring to my holy mountain . . . and make them joyful in my house of prayer . . . for my house shall be called the house of prayer for all peoples."

Isaiah 56:7

" . . . And Jesus entered into the temple of God, and cast out all of them that sold and bought in the temple . . . and he saith unto them, it is written, My house shall be called a house of prayer . . . "

Mathew 21:12-13

In furthering the non-denominational movement, the Danforth Foundation is a motivating force in the United States. Through its president, William H. Danforth, the Foundation offers any college in the United States a donation of \$5,000 to be used toward the construction of an all-denominational chapel on its campus.

CHAPTER II

PLANNING AN NON-DENOMINATIONAL CHAPEL AT MONTANA STATE COLLEGE:

Dr. R. R. Renne, president of Montana State College, had entertained an idea for years about a chapel for the campus of Montana State College. After receiving the proposal from the Danforth Foundation, President Renne, on January 5, 1950, formed a committee of faculty members, students, and the Rev. Donald Skinner, rector of St. James Episcopal Church, who represented the Bozeman Ministerial Association, with Dr. John W. Hurst, head of the Math department as chairman. The function of the committee was to study the possibility of securing a chapel for Montana State College and to develop plans regarding the financing and the structure of the chapel.

of the University system of Montana, Arnold H. Olson, Attorney General for Montana, passed on the legality of accepting the Danforth offer, and on January 19, 1950, ruled that:

Montana State College may properly use legal gift, regular in all respects, for the construction of an Non-Denominational Chapel provided that no preference shall be given to any religious denomination or mode of worship which would violate Section 4 of Article III of the Montana Constitution.

On February 1, 1950, I presented the first chapel plans to a meeting of the Chapel Building Committee. The basic scheme with its emotional philosophy was accepted. The Committee asked that the design be brought to a finished state and be presented in the form of a model. When the Committee met again on March 6, 1950, I presented the model to them and to Dr. Ruth Seabury, the representative of Mr. Danforth and of the Danforth Foundation. The design was unanimously accepted, and the fund-raising campaign started.

Elinor Hagerman, Danforth fellow at Montana State College, and I presented chapel proposal and the model to a group of campus leaders on April 5, 1950. After these leaders relayed the information to the rest of the student body, the model was put on display. Another presentation was made to a group of faculty and townspeople on May 16, 1950.

By the end of the 1950 school year, fund-raising had gotten well under way. Through the college newspaper, THE MONTANA EXPONENT, the clarification of the project was made to the students, and their support enlisted. On Memorial Day, 1950, a group of students, committee members, and faculty members of the Architectural department gathered the first truck loads of stone for the chapel wall.

On October 2, 1950, which marked the beginning of the new school year, the Committee met and agreed to go ahead with the construction of the chapel. Mr. Sam Cox and Mr. O. W. Monson, representing the Industrial Arts department were present and agreed to have their students do all carpentry construction work on the chapel as part of their academic program.

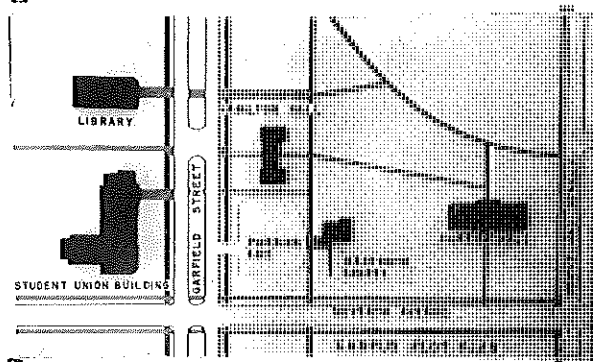
Construction of the building started on October 7, 1950.

CHAPTER III

PHILOSOPHY AND DESIGN OF THE CHAPEL:

On October 27, 1949, a two-day problem -- the design of a small chapel was given students in the department of Architecture. The only specifications were that "the chapel should seat sixty persons and be of such inviting design as to challenge passers-by to enter for a brief period of rest and meditation. . . Since the chapel will be non-secular, the altar shall be flexible and easily convertible for weddings, baptisms, prayers, meditations, or funerals for any denomination. . . A small room adjacent to the altar will serve as a service room, sacristy, and storage for altar fittings. Some provisions should be made for a transitional space between the chapel seating area and the outside; i.e. vestibule." The site for the Chapel was indicated on the campus plan.

After this start, I was given the problem as an undergraduate thesis in architecture. Aside from seating a larger number of people (seventy-two with provision for more on occasion) and having changed the site twice, the original program adequately fits the present building.



The "final" site plan showing
several surrounding buildings.

The program and the non-denominational religions have a fundamental belief in nature and the beauty of natural surroundings. This relationship is expressed by considering the building and the site (with its iris garden, trees, and mountain view) as one unit. The building extends 54 feet north and south, but east and west it extends from the solid west wall through the full glass east wall out into the meditation garden ending at the 9000 ft. peaks of the Bridger mountain range. . . . mountains which provide a natural and inspirational setting. Since the Gothic period, religious structures have been characterized by their upward reaching towers and steeples. The Danforth Chapel uses God's own steeples---the many tall trees of the site.

The Campus lies in an area of heavy snowfall and long winter months. The natural forms in the garden, attractive during the brief summer months, are equally beautiful when covered with snow. During the winter months, the campus is covered almost continuously with a white blanket of snow. The chapel roof plane, with over 6 in. of snow at times, is part of this blanket and ties the building right in with the earth. In the summer months, the heavy foliage on the trees block part of the mountain view, but develop into an exciting multi-colored picture of their own. The Chapel relates to these natural surroundings, for in a way it is a part of them.

The 6---ft. free-standing stone garden wall that interpenetrates the structure relates the indoors with the natural surroundings of the site. Before entering the chapel one sees the 18-ft. section of the wall inside the building through the large glass panels that intersects it. Once in the building, he sees the wall continuing out through the glass into the open, as if it were rising out the grass or snow.

The wall gives the chapel a feeling of solidarity and seclusion. When in the entrance area, one gets the feeling of something beyond as he sees the 10-ft. high ceiling plane continuing over the top of the 7 ft. high wall. As he progresses along the wall, he walks through the area of colored light created by the memorial stained glass window in the south wall. The building opens to the worshipper as he turns into the main worship area. Through the glass east wall, he sees the chapel garden and on out into the mountains and sky. Another prime function of the stone wall is to screen the campus parking lot---located directly south of the site from the worship area of the chapel. Likewise, the wall screens the entry and coat closet directly from the main area.

The 4-ft. roof overhang which covers the main area of the 50 ft. glass wall, protects it from the weather and the occupants from sun glare. To protect those entering and leaving the building, a 10-ft. cantilever is provided over the entrance area. The entrance floor is a finished concrete slab; the main floor is overlaid with cork which makes a quiet and resilient covering. The entrance area has a coat rack and a place for muddy overshoes, so common in the area; also the entrance has a closet for chair storage.

Five plexiglass-domed skylights create an ever-changing light mural on the altar wall and floor. The general lighting reflects off the ceiling and the entrance cantilever from lights recessed in the top of the stone wall. Reading light is furnished by a long, suspended fixture at the glass side and a light cove on the opposite wall. At night, the skylights are artificially illuminated and cast light both downwards into the chapel and upwards into the sky and nearby trees.

Especially important to any structure in Montana is the heating. Radiant heating was installed in the concrete-slab floor to provide an even, uniform distribution of comfortable heat for all of the occupants.

Steam from the campus line runs through a convertor and produces hot water for the system. All heating and utility equipment is in a small room adjacent to the sacristy.

The chapel uses native, natural, indigenous materials which make it warm in feeling and color. Both exterior and interior are finished with native tamarack vertical 7-in. boards, tongued and grooved. The ceiling is plastered with zonalite plaster; the overhang plastered with a cement plaster.

History shows that man has always wanted his house of worship to be a center--a focal point of his community. The Gothic architects created this effect by making their cathedrals the tallest building in the area. The Danforth Chapel (seating only seventy-two people and having a maximum cost of \$20,000) could not possibly have been the tallest building of our college community, but yet it is a campus focal point since it has been made obviously the smallest. Its design has been kept simple. To be self expressive, the building would have to be a structure of great monumentality, or one of quiet humbleness in contrast to the surrounding buildings. To achieve the effect of quietness and humility amidst a natural setting has been

CHAPTER IV

CONSTRUCTION:

Part of the philosophy of the design was to make it simple enough so that the students could do most of the building themselves. All of the excavating and grading was done by college men and women. Other students spent their Saturday vacations gathering granite rocks for the stone wall from rock slides in the near-by mountains. Coupled with the work of the individual student has been the whole-hearted support of various departments on the campus so that the project represents a unified effort.

Student civil engineers surveyed the site; industrial arts students under their faculty supervision did all the carpentry work as part of their own academic program. Faculty and Students of Mechanical Engineering designed and installed the heating system, and art students and faculty designed the stained-glass window and the interior furnishings. This, one of the most important truths learned from the project is the relationship which the architect has for the client, the builder, the engineer, and the artist in creating a contemporary building.

And in broader sense, the combined efforts and cooperation of faculty members and students from the departments of art, engineering and industrial art with the department of architecture has resulted in the application of basic and theoretical training in those fields to a concrete project built in the center of the Montana State Collge Campus.

The sense of accomplishment which has resulted from the combined endeavor of students and faculty members from different departments is heightened also by the fulfillment of a need on the college campus, the erection of a Chapel. For a complete education recognizes the necessity for spiritual as well as technical learning.



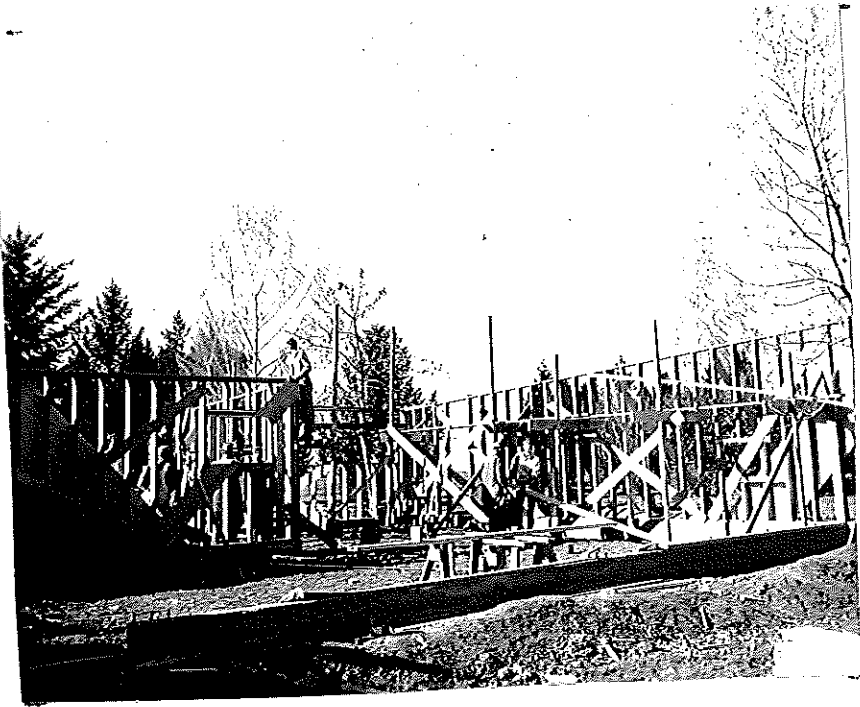
The foundation of the temple of the house of the Lord
 was not yet laid however. But they hired masons and
 carpenters Ezra 3:7



And all the people shouted with a great shout, when they
praised the Lord, because the foundation of the house of
the Lord was laid.

Ezra 3

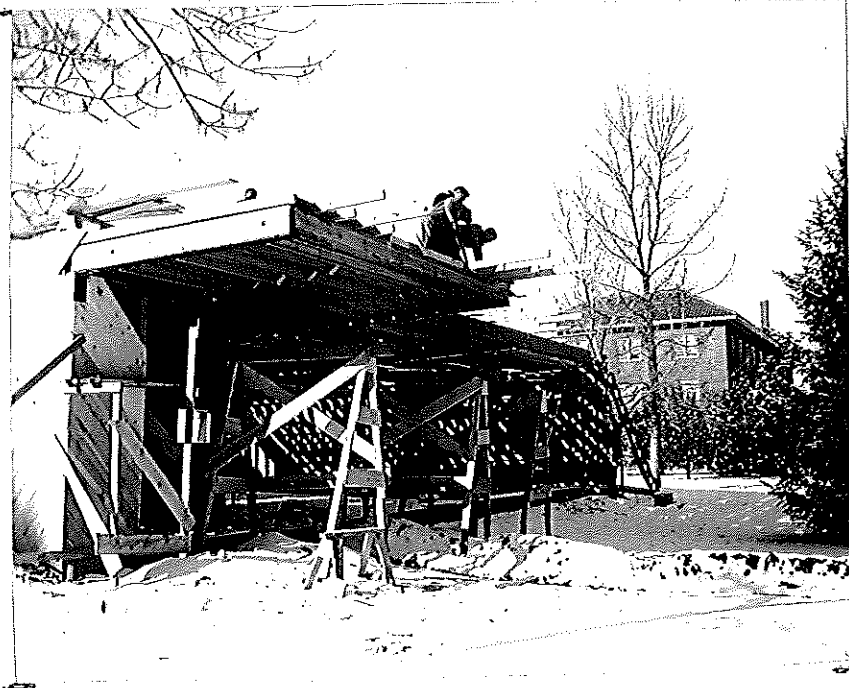
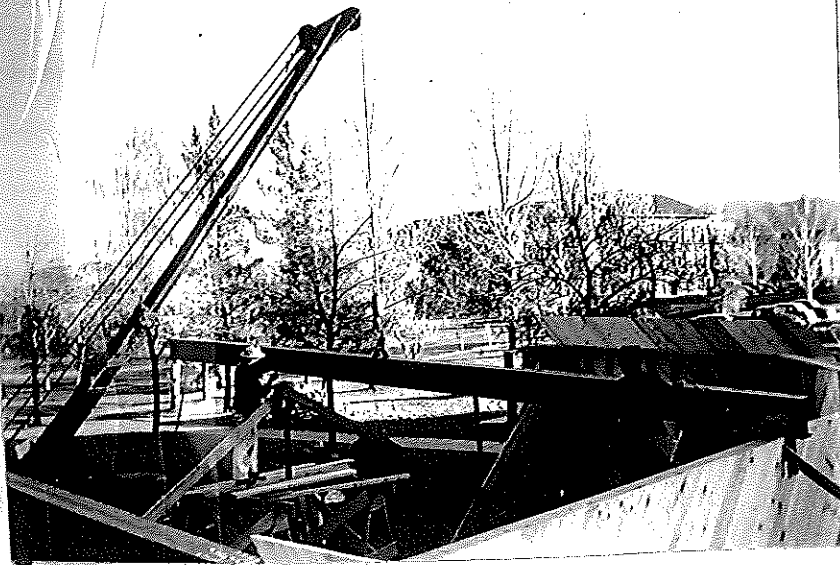
Plate 4



Who gave a decree to build this house and to finish
this wall?

Ezra 5:8

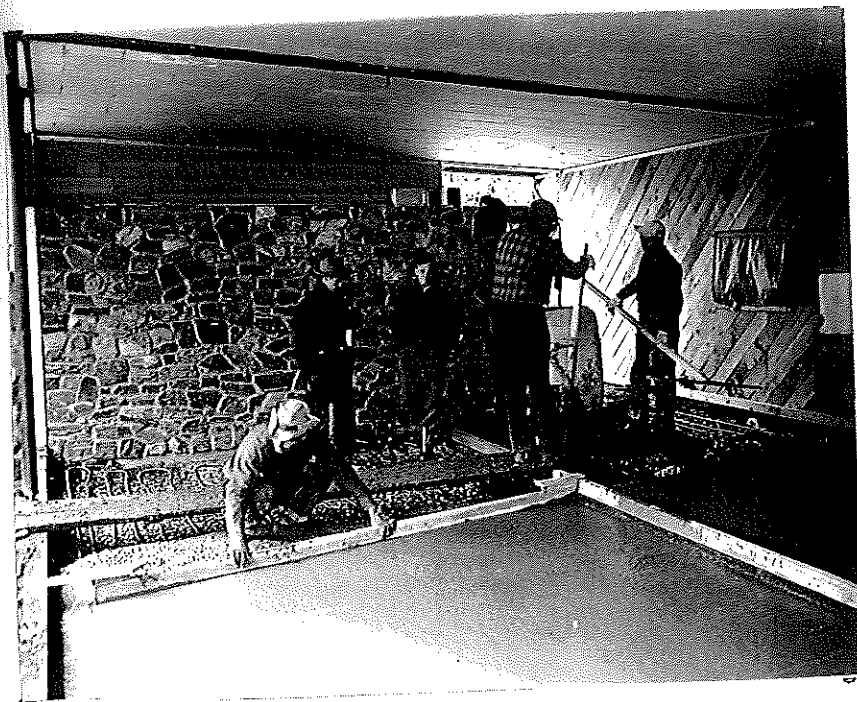
Plate 5



This work goeth on with diligence and prospereth in
their hands.

Ezra 5:8

Plate 6



. and let the foundations thereof be strongly laid.

Ezra 6:3

Plate 7



Unsettled

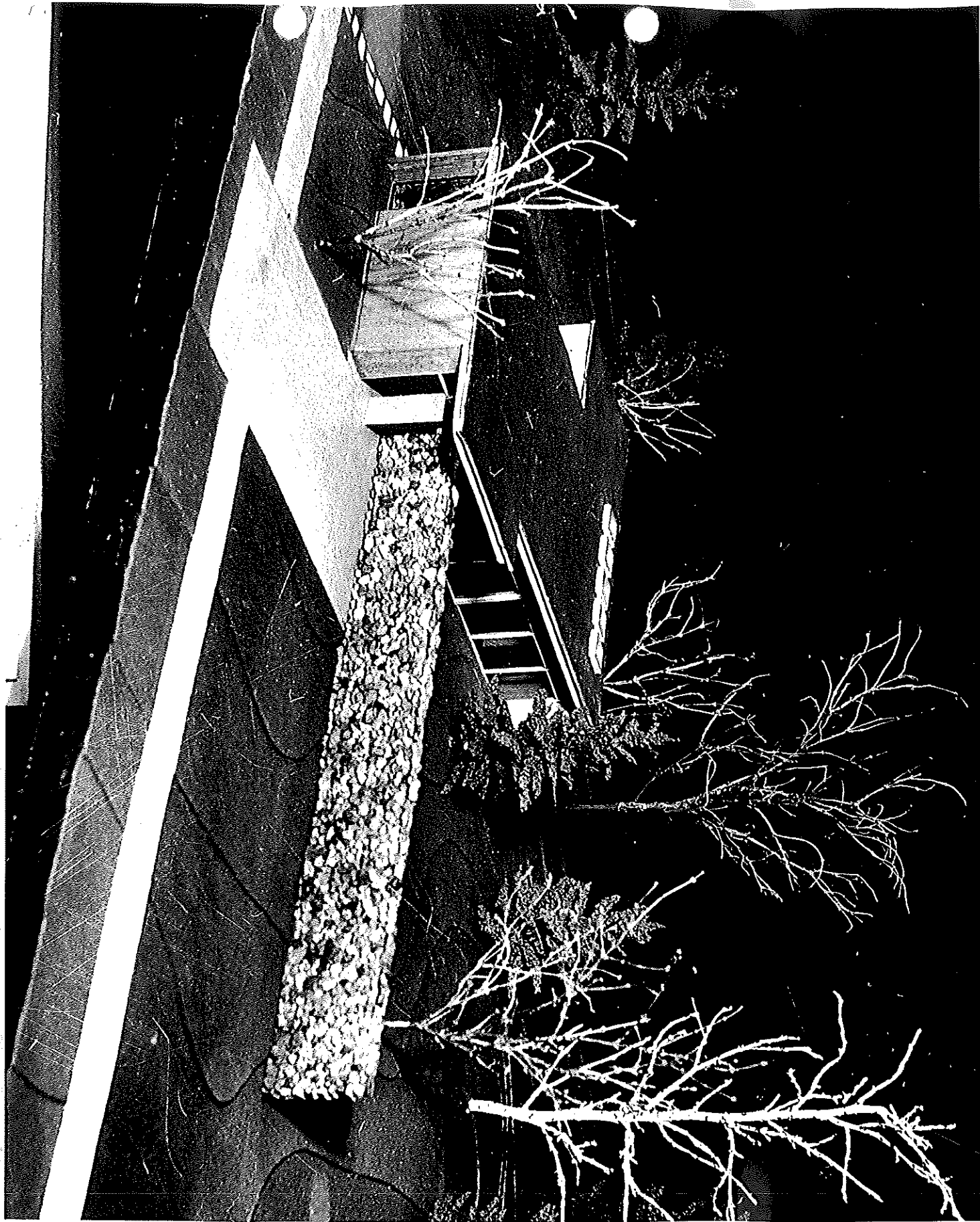
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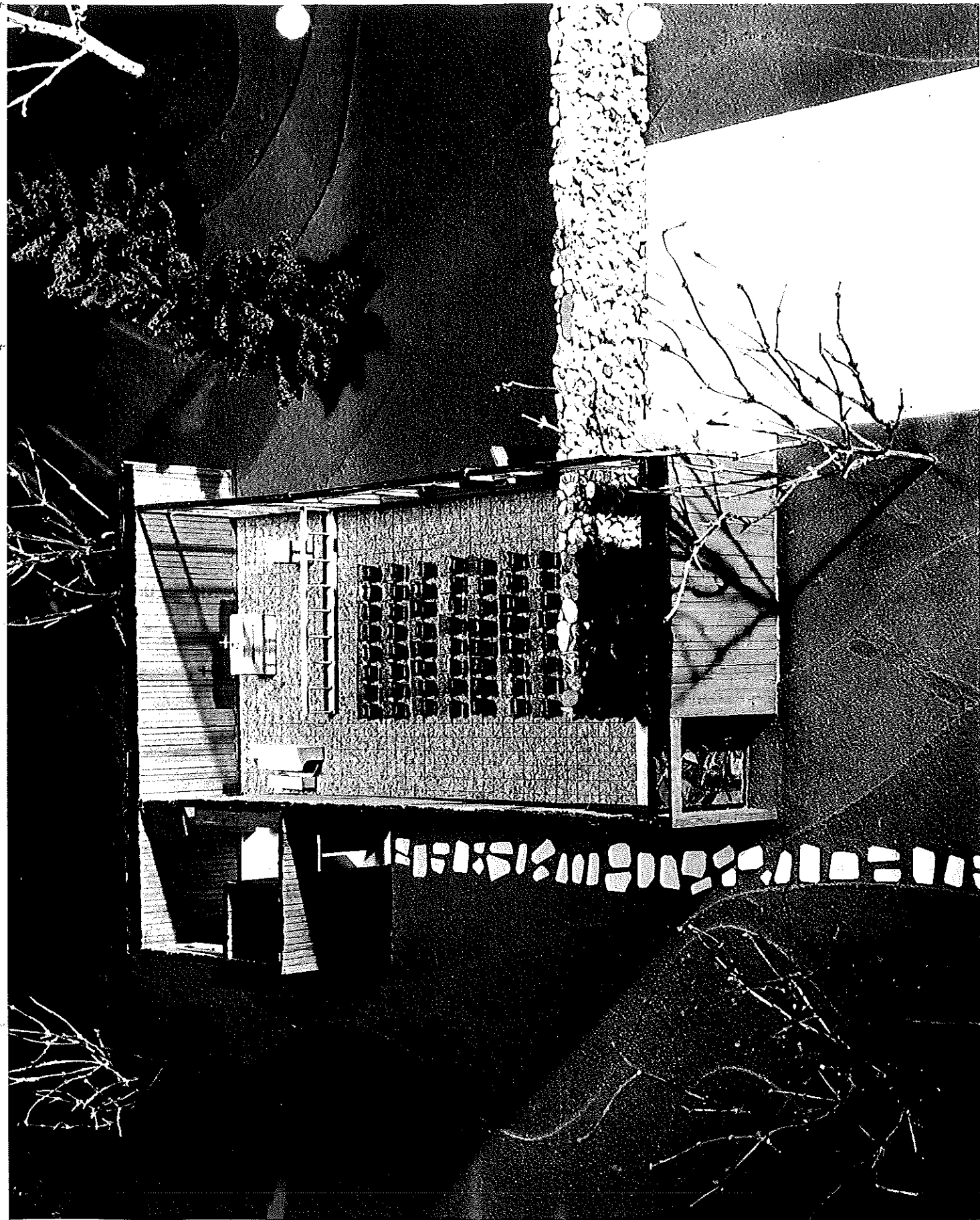
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Stir Tiller

5/14/51
5/15/51





Bellevue

Bellevue 10.10.10

Bellevue 10.10.10

Bellevue 10.10.10

Bellevue 10.10.10

4/15/51



How Beautiful upon the Mountains Isaiah 52:

Worship the Lord in the beauty of holiness Psalm: 95

MONTANA STATE COLLEGE
DEPARTMENT OF ARCHITECTURE

Arch 434

Sketch Prob. #2

Autumn Quarter

A SMALL CHAPEL

Issued: Oct. 27, 1949

Due: 10 P.M. Oct. 28, 1949

A non-denominational religious organization has donated a sum of money to be used for building a small chapel at the college.

The only specifications are that the chapel should seat 60 persons and be of such inviting design as to challenge passers-by to enter for a brief period of rest and meditation.

Since the chapel will be non-secular, the altar area shall be flexible and easily convertible for weddings, baptisms, prayers, meditations, or funerals, for any denomination.

Provide a small room adjacent to the altar which will serve as a service room, sacristy, and storage for altar fittings. Make some provision for a small transitional space between the chapel seating area and the outside; i.e., vestibule.

The site for the chapel is indicated with a red spot on the campus plan posted on the bulletin board.

Required:

Plan, transverse section, and exterior perspective.

CONDITIONS UNDER WHICH THE DANFORTH
FOUNDATION MAY CONSIDER CONTRIBUTING
FIVE THOUSAND DOLLARS TOWARD THE
ERECTION OF A CHAPEL OF MEDITATION
UPON THE CAMPUS OF A COLLEGE OR UNIVERSITY

I - Location

The Chapel shall be located in a quiet, but easily accessible place,
not too remote from the center of all-campus activities.

II - Size and Architecture

The Chapel shall be built of brick or stone (preferably native), or of
such material in keeping with other campus buildings. The Chapel may be
a separate architectural unit or, subject to the approval of the Danforth
Foundation, may be integrated with a larger chapel, with a student service
center, or with an all-campus library, or with an educational building used
by a great majority of students of college and graduate rank. The Chapel
plans must be approved by the architects of the Foundation.

III - The Interior

On one side of the narthex, in a niche deep enough to permit the framed
picture to be flush with the wall, there shall be a copy of the picture
by Hoffmann, Christ in Gethsemane, the original of which is in the River-
side Church, New York. This picture shall be approximately 5'4" x 3'11",
as in other Danforth Chapels. The cost, including suitable frame, is about
\$400.00 and would be a suitable memorial gift from a university friend.

Opposite to, or beside, this picture shall be an inscription, carved in
stone, reading as follows:

THE DANFORTH CHAPEL
DEDICATED TO
THE WORSHIP OF GOD
WITH THE PRAYER
THAT HERE
IN COMMUNION WITH THE HIGHEST
THOSE WHO ENTER
MAY ACQUIRE THE SPIRITUAL POWER

TO ASPIRE NOBLY

ADVENTURE DARINGLY

SERVE HUMBLY

It is suggested that the Chapel be lighted by stained glass windows, free from figures of prophets, saints, etc., but rich in color, and using the symbol of the Cross, and the symbol of the Torch; the windows, as well as the organ, pulpit, pews, etc., might be appropriate gifts of classes, fraternities, alumni, or other friends.

IV - Name

The Chapel shall be called the Danforth Chapel.

V - Use

The Chapel shall be used exclusively for private devotions, for group meditation and worship, for other exercises of Religion, for marriages, and for student and faculty funerals.

VI - The Offer

When additional funds necessary for the completion, furnishing and equipment of the Chapel are in hand, the Danforth Foundation will contribute toward the erection of the Chapel chosen, the sum indicated above, viz. \$5,000

MONTANA STATE COLLEGE
BOZEMAN, MONTANA
OFFICE OF THE PRESIDENT

January 5, 1950

Dr. J. W. Hurst
Prof. H. C. Cheever
Prof. Gordon A. Phillips
Miss Leora Hapner
Prof. Cyril H. Conrad
The Reverend Donald Skinner
Miss Elinor Hagerman
Miss Patricia Stenhjem
Miss Betty Davies
Mr. David Haynes
Miss Mary Ann Soutor
Mr. Emanuel Milstein

Re - Chapel Building Committee

Will the above named individuals please serve as a Chapel Building Committee with Dr. Hurst acting as chairman.

The committee's function is to study the possibility of securing a chapel for Montana State College, together with the details regarding the structure of the chapel, financing, etc.

We will appreciate your assisting us by serving on this committee.

Sincerely yours,

SIGNED R. R. Renne

R. R. Renne
President

RRR:ls

UNIVERSITY OF MONTANA - GIFTS TO UNIT THEREOF - ALL-DENOMINATIONAL CHAPEL -
NON-DENOMINATIONAL CHAPEL - DANFORTH FOUNDATION - DONEE INSTITUTION -
STATE BOARD OF EDUCATION - ACCEPTANCE BY.

Held: Montana State College may properly use legal gift, regular in all respects, for the construction of an all-denominational chapel provided that no preference shall be given to any religious denomination or mode of worship which would violate Section 4 of Article III of the Montana Constitution.

January 19, 1950

Dr. George A. Selke
Chancellor, University of Montana
State Capitol
Helena, Montana

Dear Mr. Selke:

I have your communication of December 28, 1949, inquiring as to the legality of the construction of a non-denominational chapel at any of the units of the University of Montana. Your request is prompted by a gift to Montana State College from the Danforth Foundation for the construction of a small chapel.

Leaving aside for the moment the main question as to the use of the gift, it is necessary at the outset that the gift be made and accepted in the proper manner. Such gift must be made in the legal name of the donee institution as set out in Section 75-311, Revised Codes of Montana, 1947, (formerly Section 851, Revised Codes of Montana, 1935) and must be accepted by the State Board of Education as provided by Sub-Division 11 of Section 75-107, Revised Codes of Montana, 1947, (formerly Section 836, Revised Codes of Montana, 1935). From the information contained in your letter it appears that the above mentioned requirements have been fulfilled in the instant case.

I am also of the opinion that Montana State College may properly use such gift for the construction of an all-denominational chapel. The all-denominational feature is important in view of the provision of Section 4 of Article III of the Montana Constitution to the effect that no preference shall be given by law to religious denomination or mode of worship. The spirit of such provision can be kept inviolate only if all departments of State Government and State Institutions obey its mandate.

I believe that the construction and utilization of such a chapel will be a fine thing for the College and that except as stated above there are no restrictions for such an undertaking. The cases on record in other jurisdictions have held that the construction of a chapel at an educational institution under similar circumstances was within the limits of the law.

Very truly yours,

/s/ ARNOLD H. OLSON
Attorney General

March 29, 1950

Dear Student,

You and one other interested person are requested to attend a meeting of campus leaders Wednesday, April 5th, at 7:15 in the Faculty Lounge of the S.U.B. There will be an advanced presentation of the campus chapel model made at this time. The purpose of this meeting will be to present the true plan of the chapel to a group of students, whom we feel are most capable of relaying the information to the rest of the student body. The scale model will be presented and explained at this time by members of the Architectural Department.

The model will later be placed on display in the college library, for the entire student body to observe.

Campus Chapel Committee

cc Dr. John W. Hurst

July 19, 1950

Chancellor R. R. Renne
Montana State College
Bozeman, Montana

Dear Chancellor Renne:

Your chapel plans, which were returned to you under separate cover a few days ago, are very impressive, and looking at them from a broad viewpoint I am struck with the out-standing use to which you have put the Bridger Mountain Range. It seems to fit in very well with the basic concept of the building itself, and by opening up one side of the structure as you have done, it seems to me you have utilized wonderfully your natural surroundings. With this magnificent vista comes an appreciation of the majesty of the mountains which will add to the value of the location of the chapel.

I was interested especially to learn from Miss Ruth Isabel Seabury, who visited your campus in the spring, how delighted she was with the program you have arranged. One of our local architects, a graduate of your college, agrees that these sketches ought to produce a building which will be wonderfully acceptable to your group.

We would like to suggest that as a part of your program you enlist student help in areas where they could do some of the work. Certainly under the supervision of craftsmen much help could be given and because it would be student labor for a student project, certainly the labor unions would give you the proper permission. For instance, they could pour concrete, do simple carpentry, help with the land-scaping, all of which would give the students a feeling that this is their own handiwork, in addition to the training they would get. In certain skilled areas, proper credit might even be given for "field work," such as part of the building for architectural students and the landscaping for some of the Ag men.

As a further encouragement to your program, the Danforth Foundation, in addition to the amount offered on the attached sheet, will have painted by a competent artist and presented to you a copy of Hofmann's "Christ in Gethsemane" upon the completion of the Chapel.

Now that I have heard so much about these plans and have seen your illustrations, I am eager that final conclusions be reached and the project gotten under way -- not only because I am interested in the program but because the chapel will be a truly great addition to your campus which will enrich the lives of your students.

Sincerely

President R. R. Renne
Chancellor George A. Selke
State Board of Education

REPORT ON DANFORTH CHAPEL

The Danforth Chapel Project was started in the fall of 1949 after a conference with the Danforth Foundation concerning its feasibility on our campus. A committee was appointed by President Renne which placed the plans for the Chapel in the hands of the Architectural Department. After some discussion it was agreed that the cost should be held down to \$20,000.

The State Board approved the Chapel idea at its December meeting.

The Attorney General on January 19th gave a ruling setting forth the legality of the venture.

The Architectural Department expressed a desire to deviate from the specifications outlined in the Danforth proposal. The committee granted the architects the privilege of deviating from the plans, and the Architectural Department agreed to provide a model capable of being studied by the committee. The model was submitted March 6th and discussed in the presence of a Danforth representative. The plans were voted a unique and satisfactory way of constructing the Danforth Chapel. The Architectural Department cooperated in the construction of the model with the designer, Emanuel Milstein, one of the ablest members of the Junior Class.

Plans and photographs were later submitted to the Danforth Foundation. After some discussion a very enthusiastic letter was received endorsing the plans and asking that the building be started as soon as possible.

Meanwhile, local ministers including the two Catholic priests were contacted on the feasibility of the Chapel. The committee found it necessary to point out to the ministerial group the non-denominational feature of the Chapel and that the Chapel policy would be administered by the college; open to all denominations with no attempt being made to start a program which would interfere in any way with programs already in effect in the downtown churches. The purposes were defined as:

- (a) Private worship
- (b) Weekday devotional programs with small groups conducted by the students or a local minister.
- (c) Student advising and consultation.
- (d) Musical programs -- weddings, funerals, etc.

The ministerial association and the Catholic priests endorsed the Chapel and agreed that the program would be supplementary rather than competitive.

The committee divided its work so that the various departments on the campus could all plan the construction of the building. The Architectural Department through their students and the supervision of the students would have the over-all planning of the building. The Art Department took over the furnishing and designing. Various departments of Engineering have given expert help in surveying the site and planning the heating. The Industrial Arts Department

has been contacted to supply large numbers of students for framing the building, constructing furniture, and laying the concrete -- all departments make their contributions from an educational standpoint in order to obtain the greatest amount of training consistent with their own academic program.

The available funds represent only those sums already received and does not include the large number of people who have already pledged or declared their intention of pledging additional amounts.

Enough money is available to purchase the necessary lumber and start construction. It seems desirable to push the drive for additional funds as rapidly as possible during September, purchase the necessary lumber, and start construction thereby utilizing the large amount of student labor which would ordinarily be lost to this project. The estimated value of student labor if it can be made available is at least \$5000 in addition to that which has already been used and probably would be much more.

The local unions have been contacted and have expressed their entire cooperation with the project if handled in the way outlined above.

In summary -- The Chapel can be built and equipped for approximately \$20,000 of which Mr. Danforth has promised.

\$5000 for construction and
500 for the picture

Approximately \$4500 has been raised. A large amount of student labor is available. A number of small donations towards equipping will be forthcoming, but the big needs of equipment will be:

- | | |
|--------------------|--------|
| 1. Electric organ | \$2500 |
| 2. Memorial window | 1200 |
| 3. Furnishings | 2000 |

Prominent citizens interested in the religious program at Montana State College should find this a rare opportunity for making a lasting and useful contribution to campus life.

/s/ John W. Hurst, Chairman
Chapel Building Committee

October 2, 1950

Herbert Cheever
Hugo Eck
Jack Woodman
Dick Virgo
Cyril Conrad
Sam Cox
O. W. Monsen
Leora Hapner
Dean Harrison
Rev. Marvin Adams
Lela Schrolucke
Emanuel Milstein

An important meeting of the Chapel Committee will be held Tuesday, October 3, 1950, at 4 p.m. --- Room 201, North Barracks.

Mr. Sam Cox wishes to know what construction can be undertaken by his classes at once.

Sincerely yours,

Signed: J. W. Hurst

John W. Hurst, Chairman
Chapel Building Committee

JWH:io

Since the war many of us parents whose sons did not return have wished that there might be some memorial to them on the Montana State Campus. So many received their training here and a considerable number of them went into the service directly from the campus. Undoubtedly there will eventually be a suitable memorial sponsored by the College but just when funds will be available is hard to say. It seems as if we parents might, in the meantime, place a memorial of our own that would not only serve as an inspiration to the students of today and of the future but would be a tangible expression of our affection for our sons and of faith in the cause for which they gave their lives.

There has been no feasible way, heretofore, of doing this but a new student venture on the campus now makes it possible.

With little money but much faith the students are planning to build a small chapel on the campus--they plan to do much of the actual building themselves under the supervision of experienced men on the faculty. The Danforth Foundation has offered the school \$5000 toward building the chapel and the cost unfurnished will be raised by private subscription. It is to be placed in the very heart of the campus between Hamilton Hall and Herrick Hall and southeast of the Iris Garden. The windows which make up the whole northeastern wall look out on the Bridger Range. To the left of the entrance the student architect of the chapel has provided for a large stained glass window, which should be very lovely, to complete the beauty of the view from the windows. It seems to us that this window could be a perfect tribute to our sons, and one that would afford a lasting inspiration to the students and faculty.

The nice thing about it is that while none of us probably could afford to give this gift to the chapel individually, we can provide it if we all give toward it as we can afford. Regardless of the amount we are able to contribute the window will express our pride and love for our sons and our faith in their country--theirs especially because they gave their lives for it. The window will also be a bond between us and that College in which they had so much pride.

Montana State College
Bozeman, Montana
May 3, 1951

Dear Faculty Member:

In your capacity on the staff of Montana State College, you are undoubtedly concerned with the functions of the school and its welfare. In view of this fact, we are submitting to you the following information concerning the progress being made on the Danforth Chapel.

The work on the exterior of the Chapel is nearing completion, but much remains to be done on the interior. The majority of the work has been and continues to be done by the students.

At present we are attempting to raise \$4000.00 with which we will be able to complete the entire financial goal for our Chapel. This amount will be distributed as follows:

Electric organ	\$2500.00
Illumination fixtures	350.00
Chairs @ \$10.00	1000.00
Altar and altar rail	150.00
	<hr/>
	\$4000.00

If you would desire to designate your contribution for one specific item, we should be glad to comply with this request.

This Chapel will provide a place for student religious group meetings, weekly worship services and communion services, organ hours, outdoor musical concerts, weddings, and it will be available for frequent private meditation and communion with God in beauty and quiet. If you feel that you would like more information concerning the Chapel, a notification sent to the office of Miss Lela Schrolucke will result in a visitation by student teams.

It is our sincere hope that you will help by the way of personal contributions, by encouraging student labor, and by exerting your earnest efforts to support our Chapel. The students need your assistance in the realization of the extent to which the Chapel may be used, so that through it the necessity for faith in God, not only in our present day, but in the world of tomorrow, may be recognized.

Please send all contributions to the Danforth Chapel Fund in care of the Treasurer of Montana State College.

Sincerely,

OUR DANFORTH CHAPEL SOLICITATION COMMITTEE

The Danforth Chapel
and
Religious Activities
at
Montana State University
1893 - 1991



by
Merrill G. Burlingame
Patricia Stenhjem Anderson
William G. Walter

Printed by Artcraft Printers
Bozeman, mt
purchased Pioneer Museum

Work Under Way on Danforth Chapel

The Danforth Chapel, one of the construction jobs on the campus this fall which was proposed last spring, is going up quite rapidly. This Chapel is located south of Herrick Hall and east of Hamilton Hall in a grove of evergreens with the glass wall overlooking the Chapel Garden, which has its own natural setting, facing the Bridger Mountains; thus situated in a quiet spot where students and faculty members may make temporary retreat from the routine of college life in order to renew their minds and hearts with the beauty of nature, the truth of eternal values, and the silent encounter with their God. From this place of meditation they may return to their tasks refreshed and exalted with the new power to aspire nobly, adventure daringly, and serve humbly. Here also small groups may gather to worship God in the manner of their convictions.

The working drawings and the model Chapel were built by a group of students in the architecture department. The construction for the Chapel is under the direction of H. C. Cheever, professor of architecture. Emanuel Milstein, architecture senior and designer of the Chapel, has been the co-ordinator for the construction work.

October 7, 1950 is now a special day for M.S.C., for it was on that day that the first trenches were dug by student volunteers. Since then other volunteers have helped to dig the foundation for the stone wall, excavate for the heating lines, paint the larch siding and gather rocks for the stone wall which separates the parking lot from the Sanctuary area of the Chapel.

Sam Cox, assistant professor of Agricultural engineering has supervised



Students completed the roof before winter set in.

his fifty industrial arts students in the general construction work, from the building of the forms for the foundation wall through the rough and finished carpentry.

The mechanical engineering department dug the trenches for the steam lines, in addition to installing them. They have also begun to install the heating system which was designed by the staff of the department.

The electrical wiring was done by Ken Harlen and his associates, all M.S.C. students. The general interior lighting reflects off the ceiling from a light trough in the top of the stone wall. Reading light is furnished by a light cove on the west wall and a hanging fixture running the length of the Sanctuary. The skylights are provided with lights for night illumination.

The art department, under the supervision of Cyril Conrad, professor of applied art, and his associates, is designing all the interior furnishings; such as the chairs, the fittings for the altar area, and the stained glass window.

Thus many departments and volunteer MSC students are working together to build this Chapel.

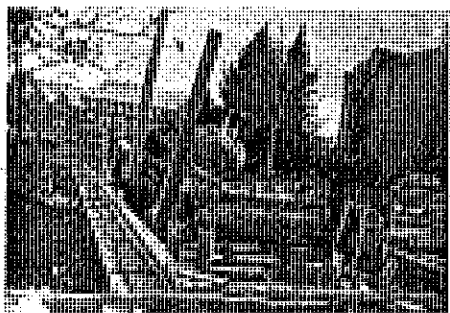
The materials used for this all-denominational Danforth Chapel are native stone for the stone wall; glass for the east glass wall and windows; larch siding, donated by Anaconda Copper Mining Co., for the outside siding and inside wall, which blend with the natural surroundings; concrete for the foundation and sidewalks; acoustical insulation board for the ceiling; and the memorial stained glass window donated by the parents of MSC sons who died in the war.

All these gifts, plus donations by other Montana individuals and groups, total approximately \$6,500. This, plus William Danforth's \$5,000, brings us to a total of \$11,500; lacking \$3,500 for materials and equipment. The rest is to be supplied by labor which will bring the total cost of the Chapel to more than \$20,000 if we allow a modest estimate for the value of the donated services. Lighting fixtures, song books, prayer books, and an organ are also needed. Since no tax-supported state funds are used, it will indeed be a Chapel built by the people and students of Montana.

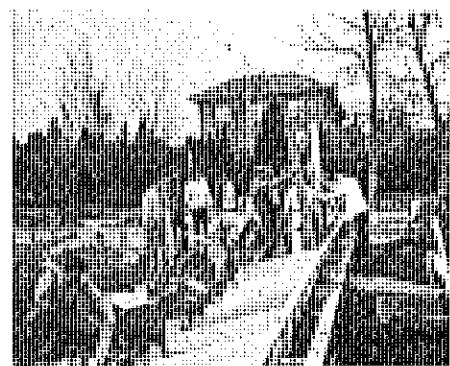
Furthermore, this is a building which may be used by any denomination for scheduling group worship, prayer, and communion services. There has never been any center for religious growth here and this Chapel can be an aid to make religious contributions of each group more effective.

This is a challenge to the various denominations of the state to make it possible for them to take care of their own groups; both directly on the campus, and by supplementing the downtown organizations.

Each individual in Montana can help to build this Chapel—but more important, the Chapel will be the center for the religion in a state school, thus helping to build greater programs for each group and preparing young people for life with a well-balanced education, mentally, socially, physically and religiously. Send your contributions to the Danforth Chapel Fund, in care of the Treasurer of Montana State College, Bozeman, Montana.



Foundations prepared by student labor. The Student Union building is directly south.



Students build forms for the foundation east of Herrick Hall.

No source - found document in
MSU Pennie Library - Special collections
Burlingame Papers
Collection 2245
Series 1 - MSU, Box 42, files 1-6

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24GA1629 (# obtained from SHPO upon receipt of site form)

Property Name: MSU HEATING PLANT

Property Town/Vicinity of: Bozeman, MT

Property Date (Year of Origin/Construction or "Precontact") 1922

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): District 1 Building(s) Structure(s) Site(s) Object(s)

Status (Choose one): Satisfactory

Comment:

According to SHPO, the Heating Plant is an approved Heritage Building. The architect was Fred F. Willson.

Condition/Integrity (Choose One): Good

Comment:

A building addition was constructed in 1990. Seismic retrofits included the removal of the 175 foot tall smoke stack in 2003, and construction of an interior beam system and roof cap in 2005 that was engineered to produce a calculated response to a seismic event - allowing the unreinforced masonry to fall away and leave a supportive skeletal structure protecting the heating operations.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$ Heritage Research/Documentation project activity

\$ Heritage Interpretation/Education/Awareness project activity

\$ 380 Heritage Promotion/Tourism/Marketing project activity

\$ Heritage Preservation/Conservation Plan Development

\$ 25,655 Regular/routine maintenance

\$ Monitoring (reported upon)

\$ 24,176 Project designed/redesigned to avoid adverse effect to property's heritage values

\$ Other heritage stewardship effort/activity (Explain)

Comment:

Not included in the costs above, other scheduled deferred maintenance performed in the two year period consisted of approximately \$116,000 and pertained to the function of this building as a heating plant - that included boiler replacement and repair; cogeneration maintenance, electrical surge protectors and valve replacements and controls.
The marketing expense above is for a color, tri-fold brochure produced for public tours of MSU's Utility Tunnel that connects the steam power produced at the Heating Plant to academic buildings. The tours begin in the Heating Plant and include historical information about the Heating Plant building. Brochure is attached.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 1 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

The university conducts an observable condition assessment of all buildings on a cyclical basis. The most recent Facilities Condition Inventory of the Heating Plant was 10/12/2011 and its deficiency ratio was determined to be an 1.9% (within the excellent range per APPA Industry Standards). The deficiency categories are Damage Wear out and Aesthetics that specifically pertain to masonry repointing and improvements to components dealing with water runoff.

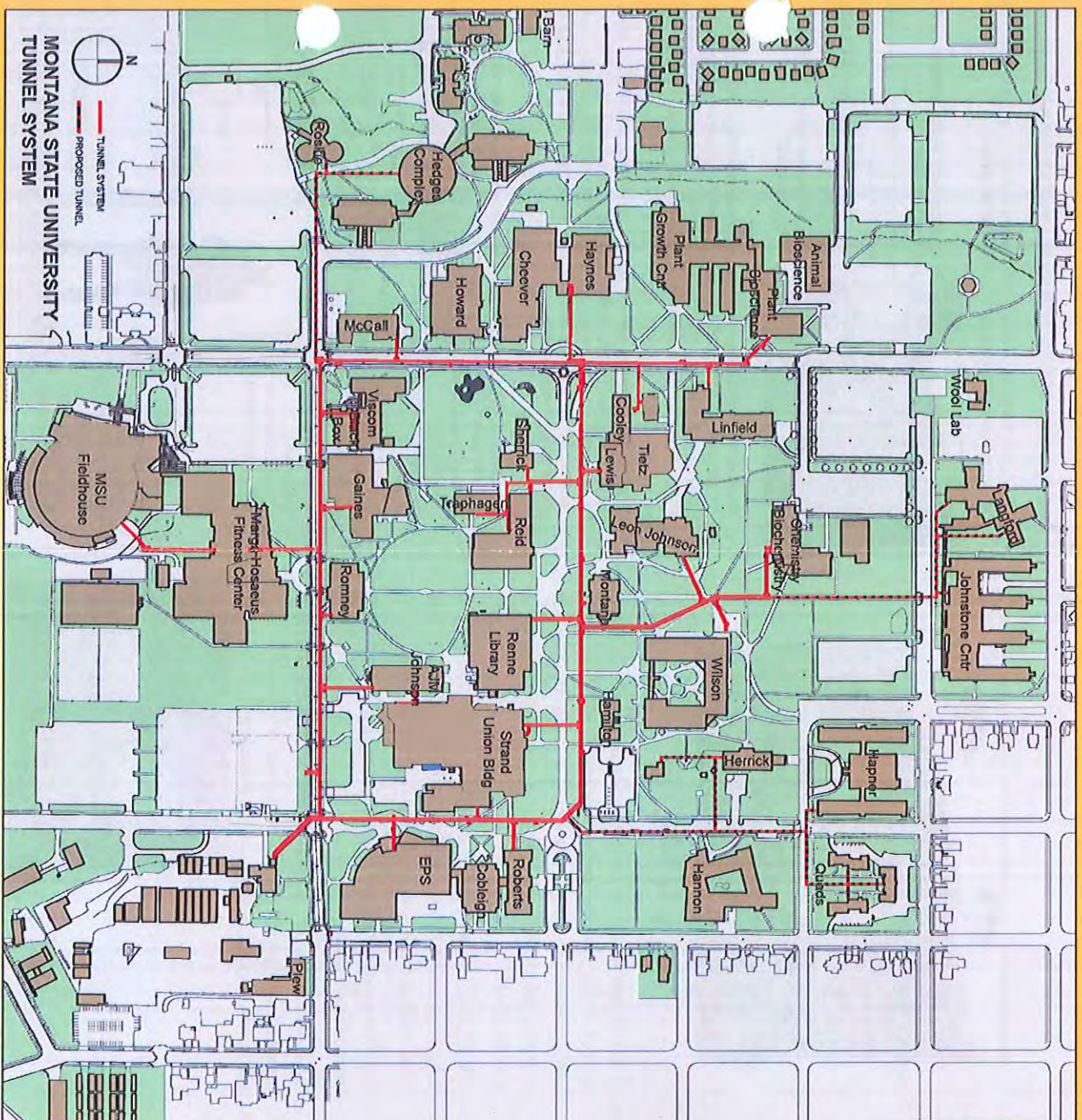
Other Comment:

There are numerous resources within MSU that document the history of the Heating Plant, including the attached: Sutherland, Terry. "The Heating Plant Montana State University", 2009 - with forward by Robert Lashaway.

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 11/22/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)



Facilities Operations & Maintenance Heating Plant & Steam Tunnel Tours



Background and Information of the Heating Plant

- The Heating Plant's construction began in June of 1922 and was completed in February of 1923. The original heating plant was coal-fired but the coal-fired boilers were converted to gas-fired boilers around 1950.
- The Central Heating Plant consumes 350,000+Dkt/year of natural gas and generates 300,000,000+ lbs/year of steam.
- The plant operates around the clock during the academic year and 16 hrs/day in the summer. It is run by 4 licensed boiler operators.
- Electricity is co-generated via a single-stage Coppus steam turbine and serves as a first-stage pressure-reducing station and exhausts steam to the campus distribution system.



- The current output is 800+KW. Generation to-date is over 26,000,000 KWH and the cogen typically supplies 5% of the campus electrical needs. The value of the cogen system is its ability to shave electrical peak demands.

- Campus steam needs in excess of the cogen's capacity are handled by a conventional pressure-reducing station. Steam demand can range anywhere from 10,000 lbs/hr to over 100,000 lbs/hr.

- The three water tube steam boilers combined can generate 250,000 lbs/hour of saturated steam.

- The LPG system provides on-site storage for an emergency fuel source and for peak-shaving of natural gas loads. Liquid LPG is pumped to a steam-heated vaporizer, blended with air to dilute the Btu content to that of natural gas, and delivered to the boiler fuel train without requiring any burner adjustments for proper combustion. Under a peak-load emergency situation, the maximum LPG storage of approximately 25,000 gallons would last about 24 hours.

- Back-up electrical service for the Heating Plant is provided by a conventional 350KW Cummins diesel generator set with automatic transfer switching.

- Due to the Plant, MSU falls under the Title V provisions of the Federal Clean Air Act and its associated permitting requirements. To achieve compliance, MSU installed the first predictive emissions monitoring system (PEMS) permitted in Montana.



FUN FACTS!

- ♦ It would take almost 300,000,000 ping pong balls to fill the entire tunnel! The main tunnel is presently 5800' + in extent while the secondary tunnels are 2300' + in extent. The total length of the present tunnel system is over 8000', roughly 1.6 statute miles.
- ♦ The approximate weight of the concrete used in constructing the tunnel is 45,500,000 pounds! This would take 1,121 trips of an average cement mixer to haul all of the concrete.
- ♦ The temperature inside the boilers reaches over 500°F depending on the boiler load.
- ♦ It would take approximately 1,492 average American males lined up head-to-toe to stretch the tunnel length and approximately 1,620 average American females.



Background and Information on the Tunnel System

- The current tunnel system was constructed in 4 major phases, beginning with the Engineering Physical Sciences building project.



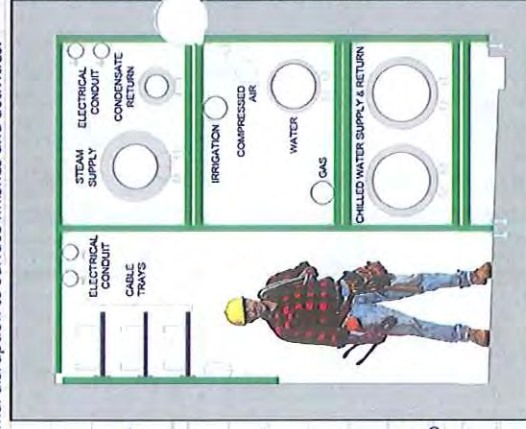
- First phase-completed October 1995 and cost \$865,000.
- Second phase-completed June 2000 and cost \$4,500,000
- Third phase-completed May 2001 and cost \$6,000,000
- Fourth phase-completed May 2001 and cost \$8,108,322

- The tunnel is/will be the home of most non-gravity major utility systems for the core MSU campus. Systems presently installed include steam supply and condensate return, irrigation water, some domestic water, central instrument control air, and communication cabling.

- Support systems for the tunnel itself include lighting, drainage and sump pumps at low points, radio antenna cable, and 480V/3-phase "convenience outlets" which are used with portable transformer carts constructed by Facilities Services. The transformer carts can support power tools or a small welder.

- The tunnels provide ready access for maintenance, modifications, and expansion with minimal disruption to surface finishes and activities.

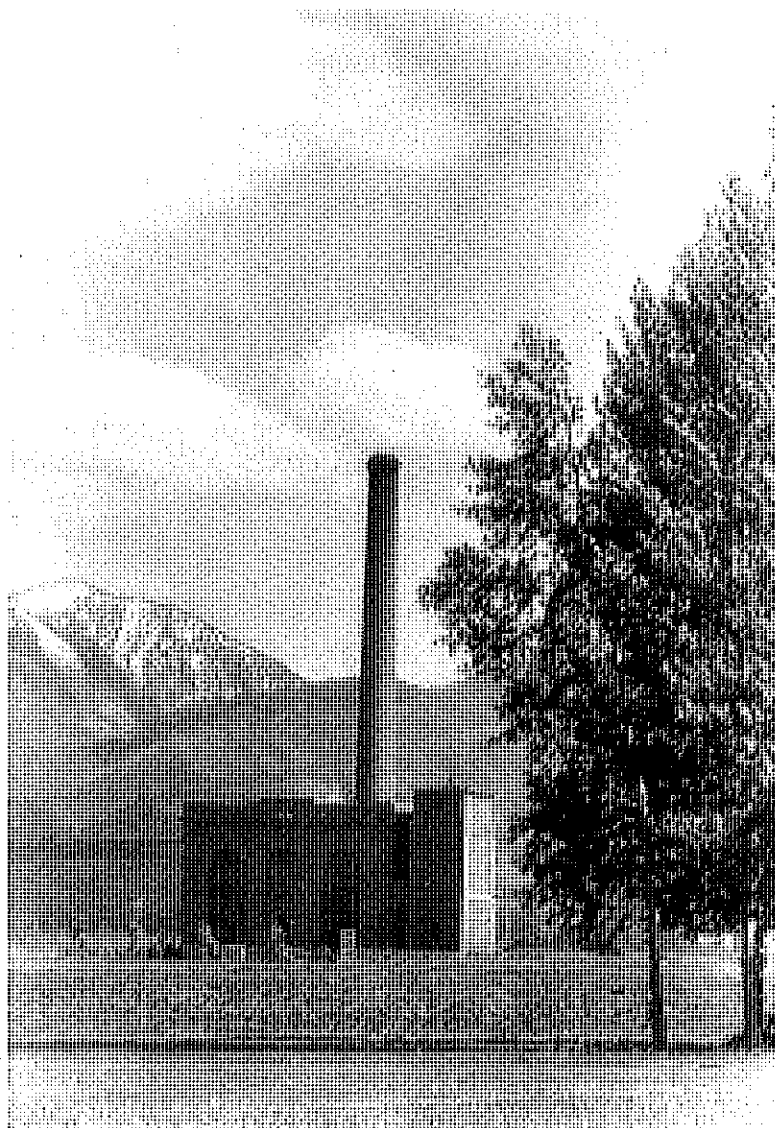
Removable access lids have been installed in various locations to facilitate the future installation of major piping systems.



- The tunnels increase long-term utility system life vs. direct-bury installations.

- Provisions have been made at various locations to extend the tunnel to future building projects or tunnel extension projects.

**THE
HEATING PLANT
MONTANA STATE UNIVERSITY**



By Terry D. Sutherland

2009

FOREWORD

The MSU Heating Plant Upgrade Project, originally funded by the Montana Legislature in 1995, exposed several areas of concern regarding seismic/structural issues relating to the roof, the walls and the smoke stack. Subsequent construction work created a new structural roof diaphragm, and additional structural analysis confirmed the nature of the seismic liabilities related to the smoke stack.

Given the historical issues involved, the State Architecture & Engineering Division commissioned both a primary project structural consultant and a second independent structural consultant to review and comment directly to the owner regarding depth of analysis, potential solutions, and recommendations from the primary consultant. The in-depth structural analysis confirmed that the stack was capable of withstanding only about 25% of the seismic forces required by the Uniform Building Code, and the report concluded that, "Because of the continuing danger that it represents, it is recommended that the school consider removing the chimney to its base at the building roof line." Potential stack retrofit options were explored, however, none of the options could upgrade the existing structure to meet current codes or assure that catastrophic collapse would not occur as the result of a reasonably predictable seismic event.

Prior to concluding a recommendation to demolish the smoke stack, MSU held a series of public hearings, procured a recommendation from the MSU Emergency Response Policy Group, and sought input from the Associated Students of MSU, from prominent seismologist Professor David Lageson, MSU Earth Sciences Department, the State Historic Preservation Office (SHPO), and the local historic preservation group. All information was presented to the University Facilities Planning Board, and the UFPB reluctantly forwarded its recommendation to demolish the smoke stack to the President's Executive Council and the President.

The MSU Heating Plant smoke stack was subsequently demolished to the building roof line in the summer of 2003. To satisfy SHPO requirements, the stack was documented prior to demolition, a commemorative plaque designed and a history of the construction of the building composed.

Terry Sutherland, the person in charge of building archives for the Office of Facilities Services, graciously took on the task of researching the MSU Heating Plant and compiling this excellent, comprehensive historical narrative, for which we are extremely grateful.

Robert V. Lashaway, Director
Office of Facilities Services

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26. Letter from C. O. Voigt, Stearns-Roger Mfg. Co., to Northern Plumbing & Heating Co., Attn: Mr. M. Baer, Pres., May 29th, 1923, Heating Plant Construction File, PPA#22-0001
27. The Montana Collegian, *The Heats been on Me for 35 Years at MSC*, Fleming Davis, January, 1955, Heating Plant Construction File, PPA#22-0001
28. Memorandum from President McIntosh, to Andy van Teylingen, Director of Facility Planning, *RE: Central Heating Plant*, August 6th, 1975, Heating Plant 1920's – 1970's folder, 91004, M3, 605, Records Storage, Montana State University
29. Special News Release, MSU, *Where There's Smoke, There's Work*, September 9th, 1973, The Heating Plant, 1920's – 1970's, folder, 91004, M3, 605, Records Storage, Montana State University
30. Letter from Custodis Construction Co., to Mr. Don Peterson, Director, Physical Plant, *RE: Chimney Inspection*, January 6th, 1978, The Heating Plant, 1920's – 1970's, folder, 91004, ME, 605, Records Storage, Montana State University
31. Letter from Frank W. Wiley, Director Montana Aeronautics Commission, to Arthur J. M. Johnson, Chairman, Montana Aeronautics Commission, State College, Bozeman, Montana, October 26th, 1950, Heating Plant Smokestack Obstruction Lights, PPA#50-0003
32. Letter from Dwayain K. Ford to Dr. A. J. M. Johnson, Montana State College, October 26th, 1950, Heating Plant Smokestack Obstruction Lights, PPA#50-0003

Additionally, general research was conducted at the Gallatin County Pioneer Museum, Bozeman, Montana. The early construction and completion photographs of the Heating Plant were transferred digitally from Archives and Special Collections, Renne Library, Montana State University.

In Chapter 1, sub title Atkinson, Norris, and Plew, personal information concerning Atkinson and Norris was derived from *In the People's Interest A centennial History*

of Montana State University, by Robert Rydell, Jeffrey Safford, and Pierce Mullen, Chapter Three, **The Interim Years, 1919-1943, The Ascension of Atkinson**, page 33, **"Techno Kampus": The Triumph of Engineering**, pages 36 and 37.

INCEPTION PREPARATION PRE-CONSTRUCTION

THE 20'S

Knowing the players in total and the timeline associated with the inception of the Third Heating Plant/Central Heating Plant, or here-in-after referred to as the "Heating Plant" is a sketchy proposition. The confluence of a number of factors, including the demographic trend, political direction, and the national perception of the US populace after WWI, likened to a new start when winter releases its grip and spring is in the air. That freshness was translated partly into new construction for a growing Montana university. As noted by our own Montana historian, Merrill Burlingame; in anticipation of student growth, Chancellor Edward Elliot pressed the legislature to pass legislation assessing a special property tax of 2.5 mills to be used for higher education. During the time period 1920 to 1925, six academic buildings were constructed including the Heating Plant.

This was a period of physical and emotional growth for the citizens of Montana along with the US population. In June of 1921 the first woman engineer graduated from Penn State. In July, Jack Dempsey knocked out French heavyweight Georges Carpentier, broadcast on radio station WJY in Jersey City, New Jersey, the first heavyweight fight aired. In September the first Miss America Pageant is held in Atlantic City, Tarzan of the Apes opened on Broadway, and angry members of the National Women's Party entered the US capitol with buckets, brushes and soap to clean a statue of Lucretia Mott, Susan B. Anthony, and Elizabeth Cady Stanton that had been stored away in a dirty storage closet. October 1921 was the year for Babe Ruth to hit 59 home runs. There was a 100% divorce rate increase since 1896, which was a result, according to the St. Louis Court of Domestic Relations, of women's "growing feeling of independence". The Tomb of the Unknown Soldier was established, with the burial of the unknown soldier at Washington D.C., Arlington National Cemetery. And in October 1921, Montana State College President Atkinson sent a letter to Professor W. R. Plew, Supervising Architect, containing the contract titled "Contract for the Preparation and Plans for the Heating Plant Building For The State College of Agriculture and Mechanic Arts", with Bozeman Architect Fred F. Willson and the State Board of Examiners, State of Montana.¹

¹ Heating Plant Construction File, PPA# 22-0001, Heating Plant, contract, October, 1921

CHARLES PILLSBURY

On May 26, 1921, Edward C. Elliott, Chancellor, University of Montana, communicated through a letter, a request for Charles L. Pillsbury Co., Engineers, Minneapolis, to make a survey of the buildings and grounds at the State College of Agriculture and Mechanic Arts at Bozeman, Montana, for the purpose of rendering a report covering the construction of a new heating plant. On July 9, 1921, Charles Pillsbury Co. returned the eleven page report to the Chancellor, with a cover letter that expressed gratitude for the assistance in this endeavor by President Atkinson, Dean Norris, Professor Therkelson and Chief Engineer Mapes². Charles L. Pillsbury Co., was granted the general contract for construction of Heating Plant.



Charles Pillsbury

the

The report was thorough and well written and was divided into fourteen sections: (1) PRESENT PLANT, (2) PRESENT SERVICE, (3) PRESENT COAL CONSUMPTION, (4) ULTIMATE REQUIREMENTS, (5) IMMEDIATE REQUIREMENTS, (6) LOCATION, (7) TYPE OF PLANT, (8) COAL HANDLING, (9) ASH HANDLING, (10) PURCHASED ELECTRICITY VERSUS ISOLATED PLANT, (11) CONTINUING PRESENT ELECTRIC GENERATION, (12) ESTIMATE OF PLANT COST, (13) UNDERGROUND STEAM DISTRIBUTION SYSTEM, (14) RECAPITULATION.

Until the completion of the Heating Plant in 1923, two plants heated the campus; the "Upper Plant, located near the site of present Renne Library, and the "Lower Plant", located in the basement of the Grain Lab, south and west of present Linfield Hall. The Upper Plant had two water tube boilers, both 125 horse power. One was a Stirling water tube boiler, manufactured by Babcock and Wilcox, and the other was an Abendroth and Root water tube boiler. Both of these boilers were hand fired. We know from the recollections of Fleming "Doc" Davis, the second MSU heating plant Chief Engineer, that the Stirling boiler was not retired, but put to work in Twin Bridges, at the Orphanage. The fate of the Abendroth and Root is unknown. The Lower Plant employed two horizontal return tubular boilers and in the 1950's one was heating the Bozeman Hotel, the location of the other is unknown. The combined plants, according to the Pillsbury Report, heated these buildings/areas: Main, Agricultural, Biology, Chemistry, Hamilton Hall, College Shops, Electric, Engineering, Cement Laboratory, Hospital, Veterinary and the Biology and Agricultural Greenhouses, and Dairy Cattle Barn. There is a discrepancy in the buildings served by the upper and lower plants from the Pillsbury Report, to the recollection of Doc Davis, Stationary Engineer, during the period of the Pillsbury Report. In an article in The Montana Collegian, January 1955, titled, *The Heat's Been on Me for 35 years at MSC*, Doc reflects:

² Heat Plant Construction file, PPA#22-0001
July 9, 1921, Pillsbury Report

"The upper plant furnished steam to heat Montana Hall, Hamilton Hall, Chemistry Building, Engineering shops, and later the Service shop and Play lab, now torn down, and the Engineering Laboratory. This laboratory was later used as a foundry and pattern shop."

"The lower heating plant furnished steam to heat the Aggie building, the Grain laboratory, Dairy barn, the two greenhouses now torn down, the Biology building (now the Extension building), and the Veterinary building, now the Bureau of Entomology."³

Without solid evidence it seems that the Pillsbury (Investigation) Report was conducted through correspondence, probably questionnaires. Fleming Davis, on the other hand worked and resided at MSC and Bozeman and took his life's calling seriously – a betting man would put his money on the accuracy of Doc Davis. Of course if that portion of the Pillsbury Report was inaccurate, a good portion of the balance of the report is also inaccurate. For example Pillsbury submits the calculated aggregate cubical contents of the buildings served by the upper and lower plants at 2,500,000 cubic feet and the radiation served is approximately 25,000 square feet. If one Pillsbury calculation leads to another, it seems that except for its exquisite presentation in its neat type written form, parts of Charles Pillsbury's report exhibited no utility or practical quality. Subsequent correspondence seems to indicate that Charles Pillsbury knew, in his own mind, the difference between the Upper and Lower Heating Plants they were simply misrepresented (interchanged) in his report.

ATKINSON, NORRIS, AND PLEW

Although there is a great deal of recorded information contained in the files for the Heating Plant, it is reasonable to believe that, as in any historical quest, the interpersonal dynamics of the players in the drama are rarely ever documented. Through investigative, scientific method and the process of cause and effect, inferences can be accurately inserted in the historical compilation representing the human factor that is never or rarely captured on paper. So in the form of "superfluous fill", those dynamics and personalities will deliver themselves on an intermittent basis, adding, hopefully, an element of humanism, to peak the readers interest to look ahead to what may be on the horizon of the following chapter; and also to add spice, pluck, and vigor to an otherwise, mundane by nature, endeavor.

Alfred Atkinson was an Agronomy professor at the University of Montana, State College of Agricultural and Mechanic Arts taking that position in 1909, however his first assignment at the school began in 1904. In mid 1919, serving as president from 1904, relinquished the Atkinson. Hamilton took the position of Dean of Men, his interest, serving until his death in 1940. Alfred the fourth president, serving until 1937, when he became the President of the University of Arizona. He Seaforth, Ontario, Canada, and was a student at Iowa



James Hamilton, position to Alfred more in line with Atkinson was now resigned to hailed from State and Cornell,

³ Heat Plant Construction file, PPA#22-0001
January, 1955, The Montana Collegian, Fleming Davis

in the U.S. before his Montana job as an Agronomy instructor. His expertise was dryland farming and was reputed for his work on grain varieties suitable for Montana's inhospitable climate. Atkinson was a practical man, and probably a little tight fisted; his style was that of a reactionary. If a problem arose he reacted by notifying the appropriate member of his inner circle, often reflecting the expected resolution in his communication. An example, trivial compared to the greater operation of the university, was a letter written in 1927 to W.R. Plew, Superintendent of Buildings and Grounds. In his communication he makes note of the pigeon problem they are experiencing at the Main Building (Montana Hall), and asks Plew to ask the night watchman to shoot the nesting pigeons. No written indication of Plew's response has surfaced; however, one suspects that Plew complied. There is a certain irony in the fact that Atkinson took the helm of the school in a time in history when Montanans were ready to accept the higher education system as a permanent fixture, and put their money where their mouth was to replace old temporary wooden university structures with new permanent structures in the form and vision of university system master planner and New York Architect Cass Gilbert. The Italian Renaissance style chosen by Cass Gilbert, however permanent, was not in the realm of the practical, utilitarian wooden structure that Atkinson was accustomed. In the beginning it must have been a daily struggle, and contest, of mental gymnastics for his participation in such a lavish and inordinate project, especially with the construction of not one but six such structures.

Earle B. Norris, dean of the College of Engineering, was a mechanical engineer, schooled at Pennsylvania State University. Between 1908 and 1916 he taught at the University of Wisconsin, climbing to the rank of professor. Some time during WWI he was commissioned as a captain in the Army Ordnance Corps and was promoted to major. He resigned his commission in 1919 during his service as chief engineer for the Rock Island



Arsenal to become dean of the College of Engineering at Montana State College, Bozeman, Montana. He was an aggressive, resourceful and far seeing proponent of the Society for the Promotion of Engineering Education (S.P.E.E.). As Atkinson's predecessor, James Hamilton promoted and embraced "efficiency" in education. An example of his efficiency was the integration of the math and physics disciplines. In the ken of Hamilton, math and physics an ineluctable combination. That concept of "efficiency in education" found or more appropriately manifested itself in College of Engineering. Those combinations of discipline and instruction brought Architecture under the direction of the dean of the College of Engineering, and with it, W. R. Plew.

W.R. Plew had several accomplishments to his credit; he participated as an unpaid consultant in the damage assessment of the schools in Manhattan, Three Forks, Central Park, after the seismic event that took place near Helena, in 1925. He designed the Playground Building at Beall Park in 1927. Most impressive of all however, was his intuitive instinct and pro-active mind- set, (even though it might be interpreted as self serving influence). Just as soon after the ascension of Atkinson as practical, (maybe even

the same day), W. R. Plew submitted a request to President Atkinson to take sabbatical leave. His intent and purpose was a degree in the new field of Architectural Engineering at the University of Illinois. His request was approved by Atkinson, and in August 1919, Plew left Bozeman to spend the remainder of 1919 and 1920 in Illinois. On May 11, 1920, President Atkinson sent a letter addressed to Prof. W. R. Plew, 305 S. Busey St., Urbana Ill., stating that Plew had been appointed Professor of Architectural Engineering for the coming year commencing September 1 1920, at a salary of \$3000 a year. In his letter to President Atkinson, subject: Sabbatical leave, W.R. Plew reports the following:

"The first semester's registration was as follows:

Working Drawings	2
History of Arch. (Arch 33))	2
Design	3
Arch. Engineering	5
Fireproof Construction	2
Special work in design	3
Made a card catalogue of 1000 desirable Books in Ricker library, which ranks as the second best Architectural library in the United States.	
Passed examinations in:	
Lighting and Wiring	2
Mech. Equipment of Bldgs.	5

In the second semester I registered as follows:

History of Arch. (Arch. 14)	2
Design (A E 34)	3
Working Drawings	2
History of Arch. (Arch. 16)	2
Design (A E 36)	3
Arch. Engineering	5
Fireproof construction	2
Estimates and Specifications	4
Special work in History	2
Special work in design	2
Passed Exam in Building Sanitation	2
Taught 4 credits of Descriptive Geometry and was thus a member of the Engineering faculty and attended their meetings. I also had special permission to attend the Senate meetings. Graduated from the department of Architectural Engineering in June this year" ⁴	

His timing for this accomplishment was perfect. He was now qualified to take on the position of Superintendent of Buildings and Grounds (a position that Atkinson, Norris and Plew would create), and also the new position of Supervising Architect for the projects that were on the drawing board. During this time in history W. R. Plew was a resident of the Evergreen Apartments located at the corner of South 3rd and Curtis. This is important only if one guesses that Plew saw himself as itinerant and unsettled as he

⁴ Letter to President Atkinson from W. R. Plew, Dtg November 1, 1920, Subject: Sabbatical Leave

continued his quest for change in his employment status. On December 4, 1920, W. R. Plew submitted a letter to Dean Norris stating in part:

"Dean Norris:

As directed by President Atkinson, I am herein setting forth my ideas and reasons for the desirability of placing the organization of building and grounds in the department of Architectural Engineering.

As the institution grows it is more and more apparent that the organization as it at the present exists is inadequate and that it will be necessary as we emerge from the period of temporary to permanent building and repair to give more careful consideration to the design and construction of such constructive and major remodeling activities as will from time to time arise, as well as to watch more carefully the maintenance of existing structures and to serve in better fashion the building needs of the instructional staff.

This will require an organization composed of the necessary artisans and directed by Someone who adequately comprehends the technical requirements

There seems to be in use at other institutions either one of two methods. At the University of Illinois the department of buildings and grounds, directed by Professor White is Entirely independent of and separate from the department of Architecture. After making a somewhat careful inquiry, I am unable to find another institution organized like this. On the other hand I find Columbia, Cornell, M.I.T., Carnegie Institute, Minnesota, Pullman and several others where the building and maintenance activities are under the department of Architecture. I know that the arrangement at Illinois is a constant source of friction between the department of Architecture and the Supervising Architect. While the fact that the usual practice is to combine at least something of an indicator of what has been found desirable. Many arguments could, no doubt, be made why they should be separated, but they always lead to a—reductio ad absurdum—the separation of theory and practice. No attempt is made to separate Agriculture into two departments. Civil and other departments of Engineering are tied up in a practical manner with State Activities. Why departments of Engineering are tied up in at practical manner with State activities. Why should not the theory and practice of Architecture in the same institution be in one department.

It has been suggested that the building department be organized and equipped to design all new work. I believe this would be undesirable and lead to more or less narrowing of the viewpoint and would lack the freshness furnished by the practicing architect who rubs elbows with all kinds of work."⁵

E. B. Norris, W. R. Plew, and President Atkinson had probably discussed thoroughly these prospects in an unstructured informal setting. One might associate cronyism with the outcome but cronyism or not the suggestion by Plew was a reasonable and satisfactory resolution to each of the three. So, President Atkinson would be credited with the construction of a good number of buildings during his tenure probably with little or no import in his mind. Dean Norris would not have to interrupt his interests with the additional task of construction management and W. R. Plew would be doing just the job that he had hoped for and clearly designed. Plew now resided at 120 W. Cleveland.

Henceforth, W. R. Plew was Supervising Architect for the Heating Plant. He made arrangements for his teaching responsibilities to be fortified by Fred Willson as a lecturer

⁵ Letter to Dean Norris from W. R. Plew, Dtg. December 4, 1920

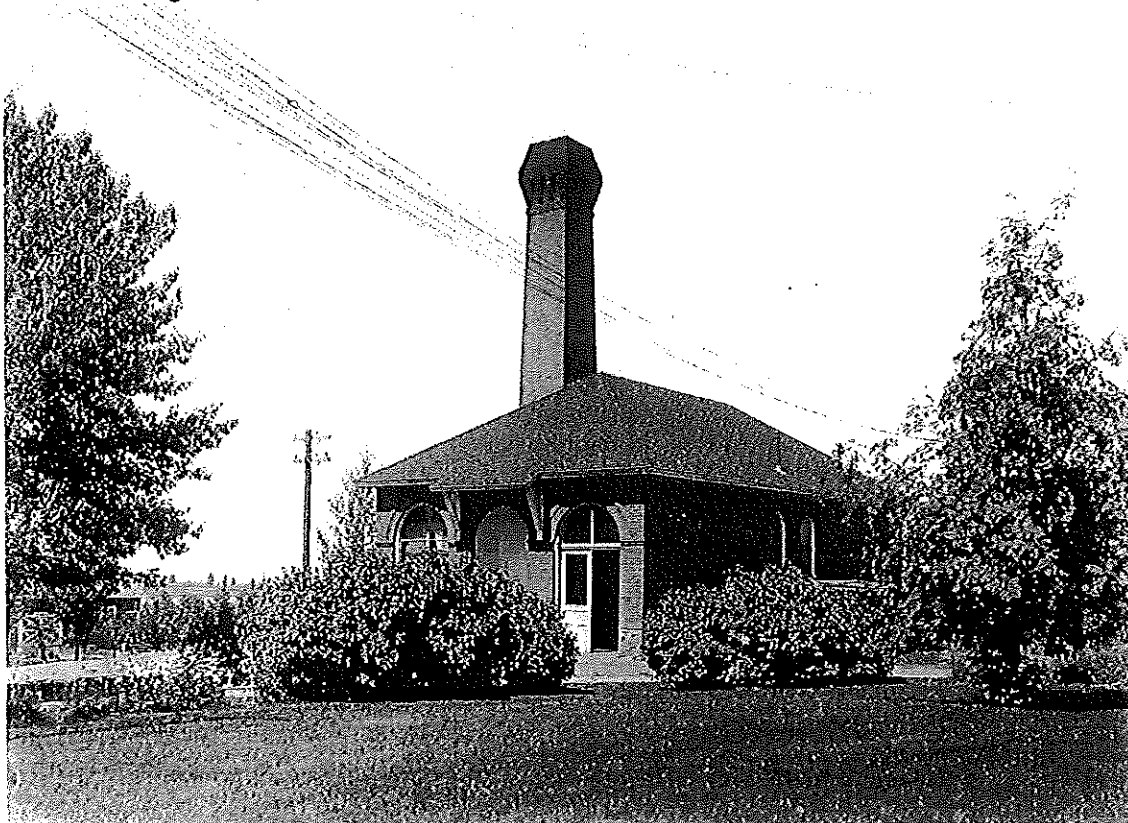
in Architectural Engineering classes. It wasn't long before Professor Plew was out of the teaching business and consumed by project management for new campus buildings.

2

INITIAL CONSTRUCTION

UPPER AND LOWER HEATING PLANT CONNECTION

With the impending construction of the Heating Plant, W. R. Plew, Superintendent of Buildings and Grounds, put his newly acquired Illinois knowledge to use. He reasoned that an underground heat distribution system serving to connect both upper and lower plants would be half the labor for operation of the heat on campus. After the completion of the Heating Plant, it could be tied to the distribution system. In a letter dated August



Lower Heating Plant

25th, 1921, W. R. Plew submitted a letter to President Atkinson, Subject: Connection between Upper and Lower Heating Plants. His letter reflected:

"There has been no connection between the Upper and Lower Heating plants up to the present time and it has necessitated running full shifts in cold weather on both plants. If we could make a connection between these two plants, it would greatly simplify and cheapen our labor problem. It would make it feasible for us to run three shifts in the Upper Plant and one shift in the Lower Plant except in extreme cold weather when it would be necessary to run two shifts in the Lower Plant. This would eliminate misunderstandings due to permissions for the firemen to use judgment in banking the fires and would in many ways work to furnish a better service.

There is a main from the Upper Heating Plant running to the manhole opposite the Chemistry Building. In the new layout by the Charles L. Pillsbury Company there is a proposed main connecting this manhole with the distributing head on the Lower Heating Plant. If this main could be put in this winter, I believe it would be well worth while.

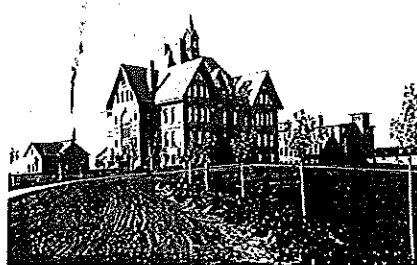
I enclose a letter from the Charles L. Pillsbury Company in reference to this proposition. You will notice that they recommend putting in a temporary main. The real reason of this Recommendation is that Mr. Myers has not settled, in his own mind, the nature of the conduit that should be used, if any. He did discuss the possibility of using none, that is, just laying the pipe in the dirt. If it was decided later to use conduit, the only duplication of work would be opening up the trench next year.

If the Drill Hall is placed on the heating system, this connection would be necessary.

For these various reasons it seems desirable that this should be done, and I herewith Enclose application for permission to expend \$2000.00 for this purpose."

Signed W. R. Plew⁶

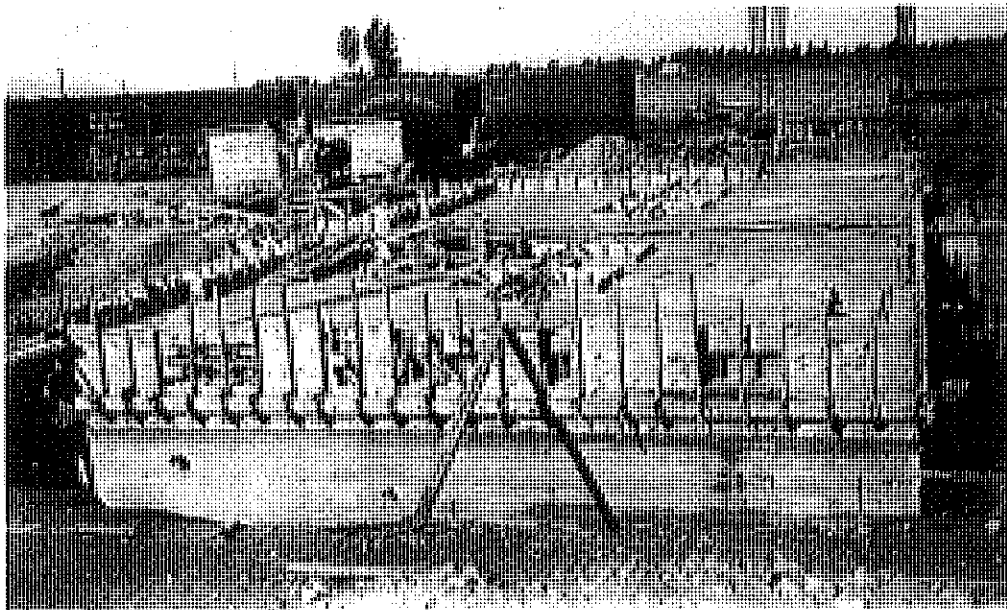
Along with Charles Pillsbury's letter to Plew dated, August 22, 1921, recommending the Upper and Lower Plant connection, W. R. Plew enclosed "The University of Montana, Authorization for Expenditure in Excess of \$250.00, directed ultimately to the Chancellor Of the University of Montana. The buck stopped with Atkinson. Instead of his signature, he simply wrote "disproved".



UPPER HEATING PLANT AND MAIN BUILDING

⁶ Ltr to Pres. Atkinson from W. R. Plew, Dated August 25, 1921, Subj.: Connection between Upper and Lower Heating Plants

THE RAILROAD SPUR



FOUNDATION AND FLOOR OF HEATING PLANT WITH RR CARS

On November 18th, 1921, W. R. Plew, wearing his "Supervising Architect" hat submitted a letter to President Atkinson, Subject: Spur for Heating Plant. He stated:

"In connection with the new heating plant, it is planned to construct a spur from the Gallatin Valley Railroad to the block between Sixth and Seventh streets, and Grant and Lincoln streets. It occurred to me, and I suggested to Mr. Meyers, who was here, that if this spur could be built early next spring, so that the contractors could make use of it, enough would be saved in cartage to pay for it. For instance, the weight of the Engineering Building alone is 14000 tons. Mr. Swanstrom says that he figured the cartage on his work as 75 cents per ton. This would make an expense for cartage on the Engineering Building alone \$10,500.00. On the Heating Plant and the other four buildings under construction, the saving would easily be \$25,000.00, allowing an adequate charge for handling from our spur.

Of course, we will not be able to get the benefit of all the saving, but if the contracts were let with this alternate proposal in it, i.e., how much would be deducted from the contract price, if this spur is built before delivery begins, we could get the major part of the above in reduction.

We have already had communications from prospective vendors, asking about the facility for unloading material, how near to the nearest siding, expense of cartage etc. I talked to Mr. Meyers about it and suggested that he mention this idea to the chancellor the first time he saw him, but I believe it should be brought to the attention of the architects, and that they be asked to include this alternate proposal in their instruction to bidders.

Signed: W. R. Plew, Supervising Architect"⁷

⁷ Ltr. Dated November 18th, 1921, RE: Spur for Heating Plant

With numbers in savings as grand as the ones Plew described, Atkinson was, as always, cautious, but certain to concur. There were obstacles to overcome, but certainly not insurmountable. After just ten days of contemplation and discussion, President Atkinson had his ducks in line and on November 28, 1921, responded to W. R. Plew with the following direction:

"It is desired that the institution proceed promptly with the necessary preliminary information relative to the spur for the heating plant and engineering buildings. In recent correspondence with Mr. Meyers and also out of the suggestion by Dean Norris and yourself, I have gained the idea that it would be better to run the track straight down to the Milwaukee tracks rather than take the curves which would be necessary if it is built around in front of the Robinson house. Will you please have the surveys made to determine the distance and get the exact location of the spur if it runs straight down to the Milwaukee track. It will also be necessary to determine the cost of the right-of-way and it may be that the Milwaukee people can get at this more effectively than we can. Shall be glad if you will see the Milwaukee people regarding this.

Signed: President Atkinson"⁸

It should be noted that the Mr. Meyers that frequents these dispatches was the liaison, representative/project manager for the Charles Pillsbury firm assigned to the Heating Plant project.

To build the rail spur it was necessary to secure right-of-way, at least in one instance. On April 7th, 1922, Lester and Winifred Robinson signed an indenture with the State of Montana, for the sale of a 50 foot wide strip of land for the use of the rail spur. The amount the State paid for the right-of-way was \$5,000.00 plus the cost of maintenance in the form of a three strand wire livestock fence. There was a problem with the sale however and on May 26, 1922, President Atkinson forwarded the following letter to Mr. Lester S. Robinson, Bozeman, Montana:

"Dear Mr. Robinson:

I very much hope that it will be possible for you to arrange for the release of the mortgage on the strip of land which we purchased for the right-of-way, in the next day or two. We must complete the abstract and file it with the Attorney General's office and it will be necessary that this release be gotten before the abstract may be completed. I shall delay a few days before sending the papers to Helena so that you have opportunity to clear this matter up.

Signed: Alfred Atkinson, President"⁹

Bids for the contract for construction of the spur were opened publicly, May 12th, 1922, at 10:00 A.M., at the office of the State Board Of Examiners, Helena. The contract was won by the Standard Construction Company, Bozeman, Montana, and signed by E. J. Rich, P. C. Waite, and J. J. White, secretary. The standard Construction Company agreed to commence the job May 17th, and complete it in thirty days for the total amount, of

⁸ Ltr. To Prof. W. R. Plew, RE: Spur for Heating Plant, Dated November 28, 1921, by President Atkinson

⁹ Ltr to Lester Robinson, From Alfred Atkinson, dated May 26, 1922.

\$8,876.00. After construction was complete, President Atkinson, and the State still did not have an unencumbered title to the right-of-way purchased from Lester and Winifred Robinson. On July 14, 1922, President Atkinson wrote again to Lester Robinson:

"Dear Mr. Robinson:

We are disappointed that you have not arranged for the relief of the mortgage on the strip of ground which the College purchased for the right-of-way across your place. The title to this was to be entirely clear and, as I explained to you before, we want to get this title cleared up so we may have the abstract brought up to date and get it filed with the Attorney General's office.

I have delayed sending the papers forward to Helena until you had opportunity to straighten out the detail of this mortgage release but of course I cannot delay much longer and I very much hope that you can attend to this matter so that all may be clear before the papers go to Helena. I know you will want to do this and it will be much better if they can be cleared up here than through the Attorney General's office in Helena.

Signed: Alfred Atkinson, President"¹⁰

In addition to the Lester and Winifred Robinson ordeal, it appears that the numbers for cartage and switching that Plew mentioned in his rail spur sales letter to Atkinson, although preliminary, were not within the reasonable confines expected by the rail company. On July 13th, 1922, a hearing before the Board of Railroad Commissioners of the State of Montana, held in Helena, the subject of the hearing being "Bozeman Switching Limits and Rates". Those in attendance from the College were Chancellor Elliott, W. R. Plew, E. B. Norris, and J. E. Wood. The report of the hearing consisted of fifteen full typewritten pages including the order which was issued in Helena, August 7th. The order read:

"At a session of the board of Railroad Commissioners of the State of Montana, held in its office at the Capitol, at Helena, Montana, on Monday the 7th day of August, 1922, commencing at ten o'clock A. M., present Chairman Dennis and Commissioners Boyle and Ross, in the matter of an inquiry upon the initial motion of this Board into the nature of the service rendered by the Chicago, Milwaukee & St. Paul Railway Company in hauling carloads of freight from the interchange track of said carrier and the Northern Pacific Railway Company, to the spur track constructed on the line of the former carrier, and owned and maintained by the State of Montana, and into the proper basis of rates or charges for such service, and into the reasonableness of said rates and charges, and generally into Bozeman switching limits and rates therein, these matters being before the Board as aforesaid, and all the parties in interest having been duly heard at regular public hearing, and having submitted their respective cases, and a full investigation of all the matters and things involved having been had, and the Board having this day filed of record its report containing its findings and conclusions herein which is hereby made a part hereof, and the Board now being fully advised in the premises,

IT IS ORDERED That the said spur be subject to applicable rules and regulations covering service on the lines of the Chicago, Milwaukee & St. Paul Railway Company and covering the interchange of traffic with the Northern Pacific Railway Company at Bozeman, Montana, save and except that the charges for switching carload freight and other freight under applicable regulations, to or from the Northern Pacific Railway Company's connection for the college spur, shall be and the same is hereby fixed follows, to-wit:

¹⁰ Ltr to Lester Robinson from President Atkinson, Dated July 14, 1922

(a) 17 cents per ton of two thousand pounds, minimum charge \$3.60 per car, maximum charge \$6.75 per car, on non-competitive freight.

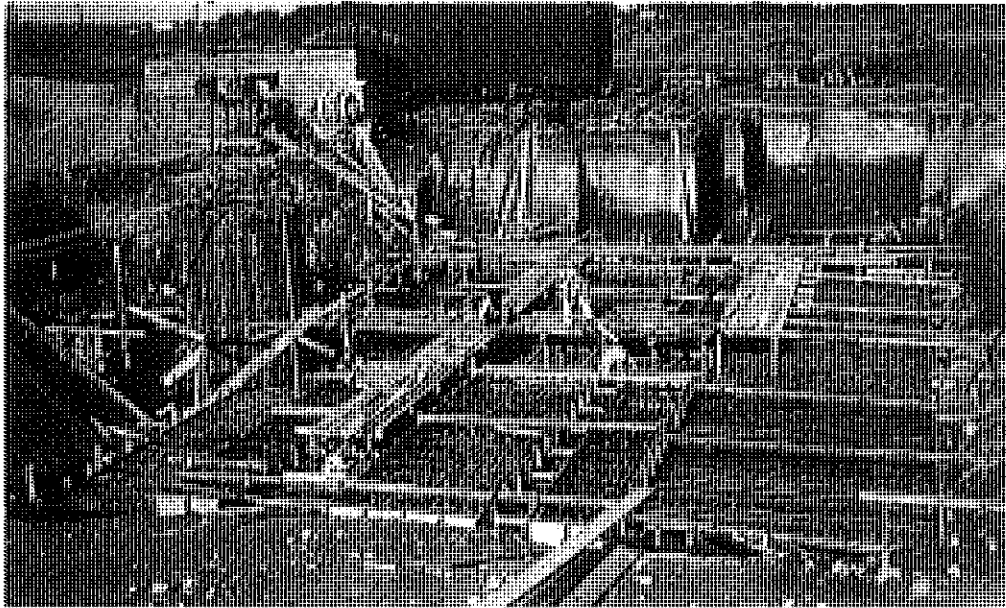
(b) \$6.75 per car, on competitive freight.

IT IS FURTHER ORDERED THAT the Chicago, Milwaukee & St. Paul Railway Company and the Northern Pacific Railway Company, accordingly as they participate in such traffic shall on or before the 25th day of August 1922, file with the Board proper tariffs embodying the above charges, and that the same shall be in full force and effect on and after September first, 1922.

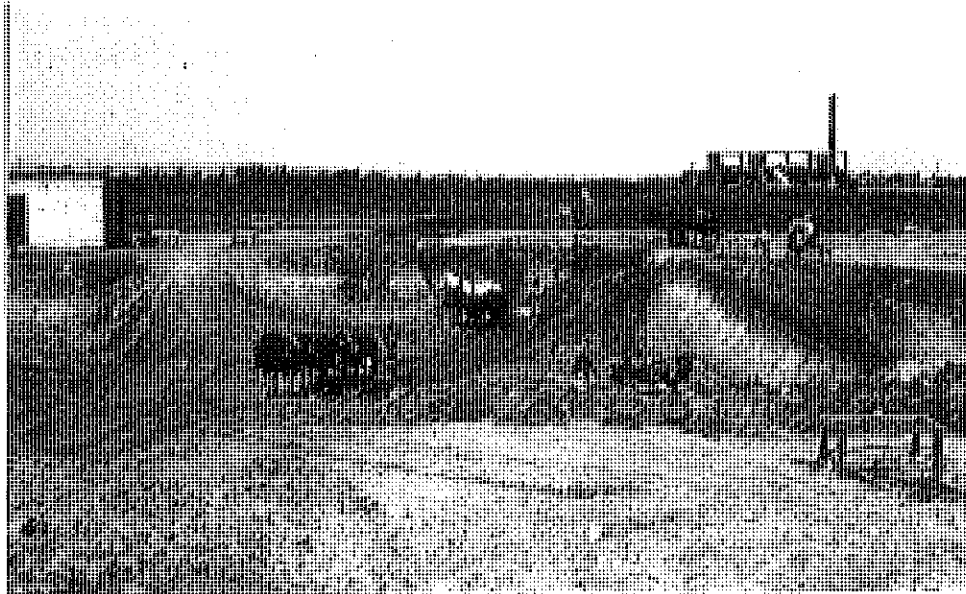
IT IS FURTHER ORDERED That the Secretary shall serve by mail a certified copy of this report and order upon each of the parties hereto and that the same shall be in full force and effect according to its terms forthwith.

Signed: Ted Dennis, Chairman, Daniel Boyle, Commissioner, and Samuel M. Ross, Commissioner¹¹

NP Car on Spur during initial construction of Heating Plant



¹¹ Report of the Board of Railroad Commissioners of the State of Montana, RE: Bozeman Switching Limits and Rates, Dated August 7th, 1922, PPA#22-0003, Spur Track, construction file.



**DIGGING THE HOLE WITH HORSES
AND SLIPS**



CONSTRUCTION

FRED WILLSON

The foundation for any construction project is the plan. The exponent, through his blue prints, (in husbandry with Cass Gilbert, of course), of the Heating Plant, was Fred Willson. Prominent, high profile, and in demand, Fred Willson signed the contract for the plans and specifications for the Heating Plant, on October 19th, 1921. The contract between Fred Willson, Architect, and the State Board of Examiners, was for a fee of 4% of the total cost of construction. The drawings numbered eight sheets of blue prints thirty four inches long by twenty eight inches wide. The location of the preliminary drawings (if there were any) and contractor's sets are unknown. Sets of the record drawings, however, reside in the records Quonset at Facilities Services at MSU and Archives at Renne Library. By all indications, Fred Willson and W. R. Plew were not just associates through their chosen trade, but friends, and colleagues through association on different projects. In his notes, Fred Willson mentioned W. R. Plew often usually in reference to his professional association. For the construction of the Heating Plant their association seems to have gone unrecorded. This probably means that their interaction was done face-to-face, or even on the telephone. There must have been considerable consultation between the two, since the Heating Plant involved them both as Architect, and Supervising Architect. A letter, however, from W. R. Plew to President Atkinson, dated October 29th, 1921, subject: Contract for Heating Plant, seems to indicate that there may have been some discontinuity in their liaison. It reads:

"In reading over the contract between the State Board of Examiners and Mr. Fred Willson, for the construction of the Heating Plant Building, I notice in article 7 that no provision has been made for furnishing the Supervising Architect with a copy of the plans. One is given to the president's office, which no doubt is intended for use by this office, but I believe that we should have two sets of plans on the campus. This is not asking too much, and I believe that any future contracts should be made to read that way, and if it is possible to get it into the existing contracts, I believe that that would be well.

We have been just a little embarrassed by not having sufficient plans covering the present contracts.

Signed W. R. Plew, Supervising Architect"¹²

¹² PPA#22-0001, Heating Plant, construction file, Ltr. from W. R. Plew to President Atkinson, RE: Heating Plant Contract, dated October 27th, 1921

BRICKS

The period of construction in Montana from 1910 to 1930 was of exceptional proportion. It is insupposable that bricks were available in Montana at all. But they were. The Anaconda Company stack completed in May, 1919, used the equivalent of 6,672,214 common 2"x4"x8" bricks. Anaconda Company's "Big Stack", constructed in Great Falls, in 1908 used 18,500 tons of brick and mortar. Montana State Prison Warden Frank Conely had prison construction crews traveling the State of Montana, providing labor for the State's construction projects. Corrections Commissioners authorized the construction of a brick kiln at Deer Lodge. The prison crews used the brick to construct buildings at the Prison and other state institutions including a women's dormitory at the Montana State Hospital in Warm Springs; the women's and men's dormitory at the Institution for the Insane, the sleeping pavilion, power house, kitchen, and dairy barn of the State's Tuberculosis Sanitarium in Galen. A 1,000 seat prison theater was constructed in 1919. Warden Conely, was relieved and his free labor construction company; curtailed when Governor Dixon brought charges of misuse of state funds. Conely was tried and acquitted, but resigned anyway. That was the end of the state's use of free prison labor and the supply from the brick plant. Even with the enormous demand for bricks in all parts of the State, an adequate number seemed to find their way to Bozeman and to the construction of the Heating Plant – not without some problems, however. In May, 1923, when it was time to reconcile invoices, W. R. Plew received the following letter from the Alphons Custodis Chimney Company, New York City:

"Subject: University of Montana – File #19112"

"Dear Sir:

Replying to your favor of May 8th would state we have looked over our records on the above job and find as follows:

- (a) It was an error to charge you for the lining brick and it is therefore Satisfactory for you to cross this item off our invoice.
- (b) The price charged for the face and common brick were accepted by you under date of August 12th. We understand the only discussion in this connection is in reference to quantities.
- (c) The quantities of face and common brick were given us by Foreman Burghardt in a telegram dated Dec. 5th. Our invoice covering same was mailed you on Dec. 6th. We believe at that time there was no question about the accuracy of the quantities of these materials which were on the job. If you failed to take possession of this material at that time and did not attempt to check or locate same until the early part of this month, as your letter would indicate, the most reasonable conclusion we believe is that this material was used by other contractors on the job or removed from the job, for which loss we are in no way responsible.

We would be pleased to hear from you definitely when these quantities were checked and why there was such a delay.

Yours very truly, ALPHONS CUSTODIS CHIMNEY CONSTR. COMP.

Per: F. Bernard O'Connor"¹³

Given the number of construction projects on campus utilizing brick it is certainly within the realm of possibility and even probability that bricks could have been removed from one building under construction to another site. And it is also possible that bricks could have made their way, under cover of darkness, to homes of the local citizenry, but on May 28th, 1923, W. R. Plew responded with this:

"Alphons Custodis Chimney Const. Co.,
New York City.

RE: Your File #19112

Gentlemen:

We note what you say in reference to the face brick which Mr. Burghardt states that he had remaining. Since receiving your invoice which you state was mailed December 6th all the territory around the Heating Plant has been covered with snow two or three feet deep so that there was no chance to check up the brick used.

A careful inquiry brings forth the fact that the brick left on the ground was brick composed Mostly of culls, and had been so picked over that they could not be classed as face brick. This is a very natural conclusion too since the amount of brick left on the job would be little more than cull brick.

We are paying your claim this month for the \$200 additional for the use of brick, for \$35.70 for common brick remaining, \$58.20 for 20000 face brick which is a liberal allowance in this case.

Very Truly Yours, W. R. Plew, Supervising Architect"¹⁴

The construction of the Heating Plant in a time frame of eight plus months was remarkable considering the high demand for bricks not just for face and structure but to set boilers and stokers. The order had to be placed, and the product produced and shipped. As indicated in a letter from the Stearns-Roger Manufacturing Co., in a letter to W. R. Plew, Dated October 9th, 1922, concessions had to be made in the use and origination of the brick:

"Mr. W. R. Plew
Supt. Of Const.,
Bozeman, Mont.

Dear Sir:

At the request of our Mr. Beckham we are canceling our order with the Great Falls Brick and Tile Company for 13,150 face brick and are furnishing in place of this Lewistown common brick for the boiler settings. We understand that our Mr. Beckham has discussed this matter with you and our reason for canceling the face brick with the

¹³ Letter from Alphons Custodis Chimney Co., to W. R. Plew, Dated May 16, 1923, PPA#22-0001, Heating Plant Construction file

¹⁴ Letter to Alphons Custodis from W. R. Plew, Dated May 28th, 1923, PPA#22-0001, Heating Plant Construction file

Great Falls Brick and Tile Company was due to the fact that they are not in a position to furnish these brick.

Yours very truly,
STEARNS-ROGER MFG. CO.
By M.G. Brennan¹⁵

The original letter from The Stearns-Roger Manufacturing Company to Charles L. Pillsbury Co., dated September 26, 1922, subject: Yours September 23rd - Brick Work Bozeman and Missoula Heating Plants, contained the following:

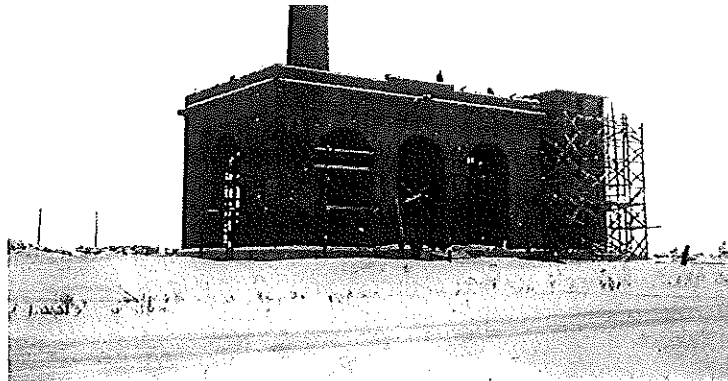
"Gentlemen:

For the Bozeman plant we are furnishing 13,150 Great Falls face brick similar to the Brown sample submitted to the Northern Plumbing & Heating Company, 42,850 Lewis-town common brick, 8400 Acme high grade brick for the high heat zone, the balance of the fire brick to be furnished by the Diamond Fire Brick Company, Canon City, Colorado.

For Missoula we are furnishing 56,000 Helena common brick, 8400 Acme brick first quality and the balance Diamond Fire Brick.

At Bozeman we are figuring on eliminating the last type crediting this towards the Great Falls face brick. Also we are eliminating the Uehling instrument and crediting this also towards the Great Falls brick. In regard to the flow meter we are figuring on the Bailey with attachments for recording the feed water temperature and also the flow gas temperature. The balance of the instruments for both Bozeman and Missoula will be of the Brown manufacture. We will however in another letter cover more fully the instruments for both Bozeman and Missoula.

Yours very truly, STEARNS-ROGER MFG. CO., signed by: M.G. Brennan¹⁶, (with a copy for W. R. Plew, Bozeman)



The Heating Plant, Winter 1922

¹⁵ Letter to W. R. Plew from Stearns-Roger Manufacturing Co., Dated October 9, 1922, PPA#22-0001, Heating Plant Construction file

¹⁶ Letter from Stearns-Roger Mfg. Co., Dated September 26, 1922, to Charles L. Pillsbury, PPA#22-0001, Heating Plant Construction file

COAL AND STOKERS

The odor in the air of burning coal on a cold winter day in Montana in the 1920's emotes probably, both good and bad thoughts for those that lived those days. Good or bad, not withstanding, it must have been a very different olfactory experience than one enjoys today. Coal was the fuel of the times. It was prevalent, inexpensive, and was a reputable fuel source for those that needed heat in the winter.

Division III of the Specifications for the Heating Plant is titled Mechanical Stokers, and specified therein are two (2) four retort underfeed stokers complete with forced draft equipment and stoker drive. In section MS-2. CAPACITY, it reads:

"The stokers are to be of such design that all grades of coal delivered to this territory be effectively utilized at high furnace efficiency. The stokers shall be so designed that their best operating efficiency will occur at 100% of the boiler rating, but must have sufficient capacity in all parts so that sufficient coal of the characteristics mentioned below, can be burned to operate the boiler at 225% of boiler rating, for a period of four hours, the boiler rating to be on the basis of 10 square feet of heating surface per rated boiler horse power, and developed horse power on the basis of the evaporation of the equivalent of 34 ½ pounds of water per hour from and at 212 degrees Fahrenheit.

Forced draft fan equipment, including fan engine, or turbine, is to be of proper capacity for operation of two boilers at 225% of boiler rating.

The stoker engine must be of sufficient size and capacity to operate four stokers when the boiler is operating at 225% of its rating.

An efficient means of preventing adhesion of clinkers to side walls must be provided.

MS-3. COAL

The coal characteristics will approximate the following:

Not less than 10,000 B.T.U. per lb. Of commercial coal
Not more than 12% ash
Approximately 58% volatile
Approximately 36% fixed carbon
Not more than 15% moisture

MS-4. OPERATION WITH LIGNITE.

The stokers must also be so designed that lignite of the following characteristics can be effectively utilized.

Contractor shall state the conditions of operation to be attained with the use of lignite as specified.

Lignite Analysis:

Fixed carbon	30.0%
Volatile matter	29.7%
Moisture	34.4%
Ash	05.9%

In Montana the prevalent coal was and is lignite and its close relative, subbituminous. Lignite coal is a brownish-black coal with generally high moisture content and lower heating value. Significant lignite mining operations are located in Texas, North Dakota, Louisiana, and Montana. Subbituminous coal is lignite coal changed by the increased pressure under which it was created. Most subbituminous reserves are located in Montana, Wyoming, Colorado, New Mexico, Washington and Alaska. It is a dull black coal with a higher heating value than lignite.

R. Sanford Riley, enrolled in Worcester Polytechnic Institute, in 1892. He was a native of Winnipeg, Manitoba where he had served an apprenticeship on the Northern Pacific Railroad. In 1896, "Sandy" Riley graduated 3rd in his class at WPI. After graduating, Riley spent the next eleven years rattling around the east coast involved in a number of banal endeavors, including teaching at WPI, working as a foreman for the Canadian Pacific Railroad and as a marine engineer for the Canadian Pacific merchant marine fleet. In 1905, he became manager of the American Shiphandlers Company in Providence, RI. It was there, that he worked on a newly invented mechanical stoker. This device automatically fed coal into steam boilers; work previously accomplished by a person shoveling the coal. In 1911, Riley started the Sanford Riley Stoker Company in Worcester, Mass., manufacturing and selling stokers that he designed. Up to the time of his death in 1926, he held over fifty patents relating to stokers and steam generation. But, there were problems with the Sanford Riley Co. stokers designed for the Heating Plant at State College of Agriculture & Mechanic Arts.

The stokers were so fuel sensitive for their operation that even the floor on which they stood needed to be designed specifically for the type of stokers that they supported. The stokers for the Heating Plant seemed to be plagued with problems from the beginning. It is not clear even after careful scrutiny of construction documents, the entity that actually retained the Sanford Riley Company to build the underfeed stokers for the Heating Plant. We know that it had to be either the Charles Pillsbury Company or the Northern Plumbing & Heating Company of Billings, Montana, or The Stearns-Roger Manufacturing Company of Denver. Phrases in the correspondence in the Heating Plant construction file seem to strongly indicate that it was The Stearns-Roger Manufacturing company of Denver. A letter dated May 26, 1922, from Charles Pillsbury Engineers, Heating Plant project manager, Hans Meyer, to W. R. Plew, Supervising Architect portrays the following:

"Dear Mr. Plew: -

We are again disappointed in not receiving from the Stearns-Roger Manufacturing Company information relative to the items of coal handling, heater, stokers, boilers, etc. We did the only thing that we could do in the premises, and wrote them again, but we have little hopes of success.

You, of course, appreciate that we cannot finish the final design of the boiler, stoker

¹⁷ Heating Plant Specifications, PPA#22-0001 Heating Plant, Specification File

and heater supports, piping for boilers, stoker engines, forced draft equipment, etc. until the details of apparatus to be used are at hand. I trust that the Northern Heating and Plumbing Company appreciate that they cannot pour any foundations until they receive the new drawings. In fact it seems to me that it would be good policy for you to take the set of drawings in the hands of Mr. Kissinger and red pencil them with the word "super-seded". With the exception of the location of the building and outside well area no drawings are now correct.

The writer again today went over the matter of foundation design and believes that in our discussions we neglected to take one important matter into consideration, and that is the new elevation of the footings. The test log that you sent us was used in determining the location of these footings, which from the log were on solid ground. Now we have raised these footings 1.75 feet and it may be possible that at this point solid ground will not be encountered, requiring extra depth of footings, meaning additional expense.

We are anxiously awaiting word from you as to what will be met with when the excavation is made. Also want to remind you that should you desire, our Mr. Hodnett will come to confer with you at any time.

With kind personal regards,

Very truly yours, Charles L. Pillsbury Co., by Hans Meyer¹⁸ (signed)

The underfeed stoker design that was specified in the specifications for the Heating Plant may have been untried and in the experimental stage. They did not work when they were produced to specification (four retorts). In a study titled Technology of Lignitic Coals – 1954, conducted by the Bureau of Mines Staff, Grand Forks N. Dakota, Washington D.C., 1. COMBUSTION – POWER GENERATION, Methods of Firing, the following is stated:

"Lignite has been successfully burned in power boilers by each of the following methods: Underfeed stoker, traveling-grate stoker, spreader stoker, pulverized firing, and the cyclone burner. The underfeed stoker was never very popular for use with lignite, and it is now considered obsolete. The first real progress in the utilization of lignite for power plants was brought about by the successful development of forced-draft traveling grate stokers. This method of firing lignite was used extensively for a number of years. However, it now has been largely replaced by the more versatile spreader stoker. Most of the power plants constructed in the last few years are fired with spreader stokers used in conjunction with a traveling grate. However, the boiler size limitation inherent in this method of firing, which will be discussed elsewhere in this section, is such that for large installations the unit-pulverizer method has been chosen. The use of pulverized-lignite firing for large central power stations will, no doubt, be further expanded in the future. The recently developed cyclone burner has been found, in one plant test, to give satisfactory operation with lignite.

The various methods of firing lignite in power boilers are discussed in further detail below.

Underfeed Stokers

¹⁸ Letter from Charles L. Pillsbury Co. to W. R. Plew, dated May 26th, 1922, Heating Plant Construction File, PPA#22-0001

In an underfeed stoker coal is introduced through a retort beneath the fuel bed. The volatile gasses are distilled off and burned as the coal moves up through the incandescent fuel bed. Air for combustion is introduced through tuyeres that form the sides of the retort. The fuel bed for underfeed stokers is usually quite thick and requires considerable agitation to move the fuel. Since lignite is a free-burning coal, which does not hold together, and when underfed burns in a very thin layer, it tends to drift or avalanche as a result of the air pressure and bed agitation. For this reason underfeed stokers have not been used extensively with lignite. Other disadvantages common to this method of firing are high maintenance costs and lack of flexibility in operation. Although there have been some reasonably satisfactory installations with underfeed stokers fired with lignite, at present this type of unit is not being used in any power-generating station in the North Dakota lignite-burning region."¹⁹

A convenient sense for mechanical problems was a quality that was probably shared by both engineer and architect in the Heating Plant Project, but it is obvious that the stoker problem blind-sided them all. Circumstance was able to stultify even the expert stoker manufacturers, the Sanford Riley Stoker Co. A telegram dated February 1st, 1923, from the Sanford Riley Stoker Co., L.F. Washburn, to W. R. Plew, Supervising Architect, State College of Agriculture and Mechanical Arts enthusiastically and optimistically stated:

"Dear Sir:

After making certain changes and studying conditions I am now ready to run the necessary test on the stokers and if you will have the necessary testing equipment ready I will run the test February 3rd.

Yours very truly, Sanford Riley Stoker Co., L. F. Washburn"²⁰

There is no indication of the results of this test was, although a letter dated March 5, 1923, from the Sanford Riley Stoker Co. to W. R. Plew indicates that changes in the stokers are necessary, it states:

"Dear Sir:

STOKERS

We wish to acknowledge receipt of your letter of Feb. 27 and are pleased that you take the position you do and want to cooperate in connection with giving us reasonable time for making the changes and getting the stokers running in good shape. It is not impossible to burn your lignite on a Riley Stoker, and we will be successful if time is allowed us.

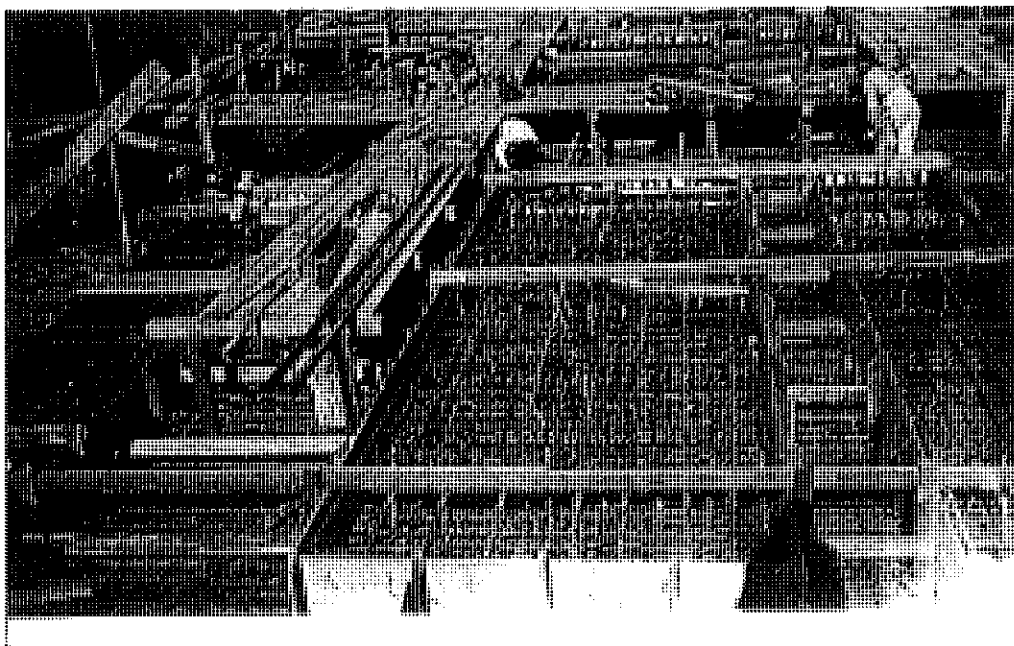
Very truly yours,

Sanford Riley Stoker Company by: J. H. Daniels, General Manager"²¹

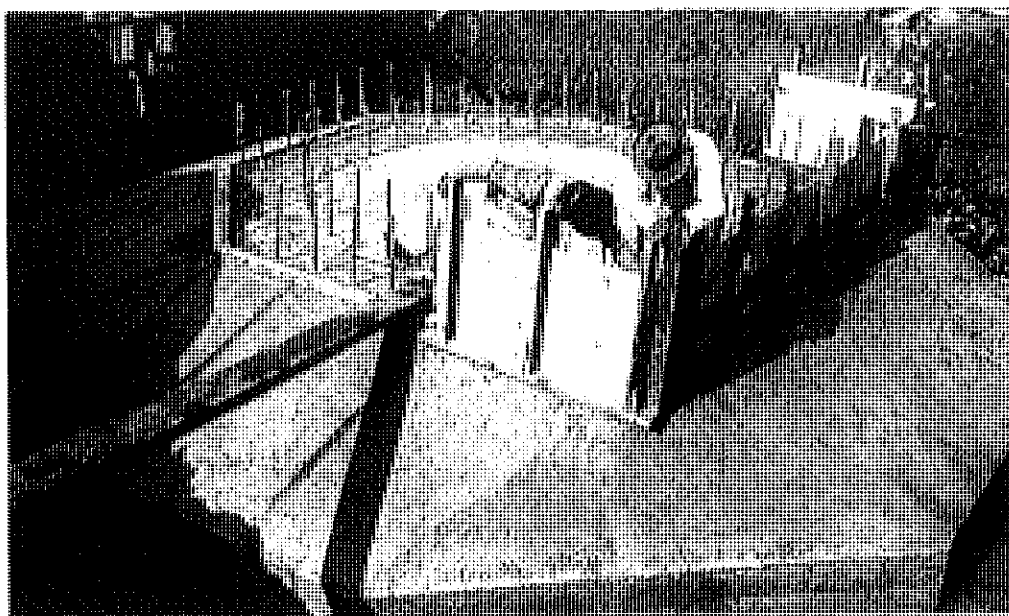
¹⁹ Technology of Lignitic Coals – 1954, Bureau of Mines Staff, Grand Forks, N. Dak., Washington, D.C., Fischer-Tropsch Archive, <http://www.fischer-tropsch.org>

²⁰ Telegram from Sanford Riley Stoker Co., to W. R. Plew, State College of Agriculture and Mechanical Arts, Dated February 1st, 1923, PPA#22-0001 Heating Plant Construction file

²¹ Letter from Sanford Riley Stoker Co., to W. R. Plew, Stokers, March 5, 1923, PPA#22-0001 Heating Plant Construction file



WORKERS TYING REBAR IN THE HEATING PLANT, SUMMER 1922



WORKERS FORMING WALLS IN THE STACK BASE, SUMMER 1922

By April 20th, 1923, J. H. McElroy of the Sanford Riley Stoker Co. had met with W. R. Plew, in Bozeman and had agreed to changes in the stokers. On April 21st, 1923, J. H. McElroy, operating out of Bozeman, wrote a telegram to the Northern Plumbing & Heating Co., Billings, Montana (attn: Max Baer, President), Subject: State College of Agriculture & Mechanic Arts. It reflected the following:

"Gentlemen:

We purpose, as per conversation in Mr. Plew's office on April 20th, 1923, to install an additional retort making the installation five-retorts in place of four retorts as at present. We will take care of expense and time of Mr. Meyer during test on bituminous coal, and make necessary changes in wind box that we consider necessary.

We respectfully ask that sixty days from date be allowed to make above changes, which are subject to the approval of the Sanford Riley Stoker Company, who will write you in detail on above changes and furnish necessary prints.

Respectfully yours,

SANFORD RILEY STOKER CO., by: J. H. McElroy"²²

The stokers had been put in operation January 21, 1923, and since that time had been tested and retested and modified and fixed and discussed and re-discussed – all with the same result. The stokers did not work. All associated with the construction of the Heating Plant had become weary of the stoker problems and tolerances were growing thin. On April 28, 1923, Hans Meyer, project manager for Charles Pillsbury's Heating Plant project, wrote the following letter to W.R. Plew:

"Dear Sir:

We refer to contract of Northern Heating & Plumbing Co. for the construction of your Heating Plant.

We have noted telegram of Sanford Riley Stoker Co., sub-contractors for furnishing stoker equipment. This telegram is a distinct surprise to us in the face of the request that additional time be granted the contractor, made by Mr. McElroy of the Sanford-Riley Stoker Co.

The assertions made in the telegram are not in line with the facts. The coal must be considered a commercial product for it is being successfully utilized at Missoula and other places. It is a fact that the coal is very fine in size but we call your attention to our specifications which provide that the stokers must be designed to utilize all grades of coal delivered to this territory. We did request that steam jets be shut off during test but Mr. McElroy raised no objections thereto.

We have given the contractor all opportunity to indicate to us that his apparatus would meet the contractual requirements and guarantees, however after three months of conscientious experimenting by Mr. Washburn they have failed to produce results.

²² Telegram to Northern Plumbing & Heating Co, Billings, from Sanford Riley Stoker Co, dated April 21, 1923, Subject: STATE COLLEGE OF AGRICULTURE & MECHANIC ARTS., PPA#22-0001 Heating Plant Construction file

Therefore it is incumbent upon us to reject these stokers and we recommend that you instruct the contractor, the Northern Heating & Plumbing Co., to supply other stokers which will meet the requirements. As has been proven at Missoula, the Coxé traveling grates made by the Combustion Engineering Co. are an acceptable piece of apparatus, we would recommend that you suggest to the contractor that he supply these stokers and that they would be acceptable to you.

Awaiting your further commands;

Respectfully Yours, CHARLES L. PILLSBURY CO., by: Hans J. Meyer²³

Plew and Atkinson, in the mean time had again discussed the stokers. Even the president's patience had reduced to a thread and he told Plew that the college and Heating Plant were not a stage for experimental stokers. On May 26th, 1923, Hans Meyer wrote again to W. R. Plew:

"Dear Mr. Plew: -

Saturday, a week ago, I received a telegram from Mr. R. Sanford Riley from Worcester, asking me if I would meet him in Chicago. I deemed it advisable to grant Mr. Riley's request, and accordingly met him in Chicago on Tuesday, May 22nd.

Upon meeting Mr. Riley, accompanied by Mr. Pestell, sales manager of the company, I advised them that the matter of the change in stokers had been entirely disposed of and that any further conversation on the matter must be considered simply a personal conference, and exacted a promise from them that our entire discussion must remain confidential. Mr. Riley and Mr. Pestell, being old friends of mine, with whom we have done business quite frequently, I was able to speak frankly on the entire matter, and advised them in terse terms as to my feelings in the matter, and told them that their telegram to you had closed the matter definitely, - for the statements made in their telegram were at variance with the facts and were a decided slam against you and all that were associated with this. Mr. Riley acknowledged the facts, and using his own expression, said it was a "dead horse", - that he would take back the stokers and the matter would be ended as far as they were concerned.

In discussing this matter I advised Mr. Riley that I was somewhat surprised at the attitude indicated by his telegram; that I felt quite confident that a five retort extra long stoker would have filled the bill and that I was rather anxious that such equipment be installed. He retorted by saying that their engineers thought otherwise, and further discussion was closed.

On Monday, just before my leaving, Mr. Voight of the Stearns Roger Manufacturing Co. at Denver, called me on long distance telephone, requesting that I not see Mr. Riley until he could get there on Wednesday morning, that he desired to have a conference with Mr. Riley before I did. I advised him that I should be glad to concede to his request, providing Mr. Riley wired me that this would be agreeable to him. I told Mr. Voight then that it seemed a waste of money for him to go to Chicago, and that the matter was entirely ended.

On Wednesday night I received a long distance message from Mr. Riley, advising that he had changed his mind after talking with Mr. Voight and that they had decided to supply the five retort, extra long stokers, which he insinuated the Stearns Roger Manufacturing Company had a perfect right to do. I did not enter into any discussion on this matter. Mr. Riley requested that I meet with you and Mr. Pestell in Minneapolis upon your return west. I then advised Mr. Riley that I should be glad to do so, but a request for this interview must come from you.

²³Letter to W.R. Plew from Hans J. Meyer, Dated April 28th, 1923, PPA#22-0001 Heating Plant File

Yesterday I had a long distance message from Mr. Voight from Chicago, advising me that you had already returned west, and asking whether I would have a talk with you at Bozeman. I again replied to Mr. Voight that any requests for conferences must come from you, that as far as I was concerned, the matter was entirely disposed of.

I am simply giving you the above information so that you may be posted, and await your further commands.

Very truly yours, Signed: Hans J. Meyer"²⁴

On May 29th, 1923, W. R. Plew responded to Hans Meyer with the following:

"Dear Mr. Meyer:

I have your letter of May 26 in regard to your conference with Mr. Riley and Mr. Voight in regard to stokers.

Mr. Riley called on me while I was in Washington and we went over the matter very thoroughly. He told me at that time that it was useless trying to do any thing more with his stoker, as it had done all it could do, and that he considered it his business now to retire in as good shape as possible.

I note in your letter that he evidently has changed his mind and that he now considers that he should go ahead and install a different stoker of the same type. I have talked this matter over with President Atkinson and we have concluded that the time for making his trial has passed, and that we will not allow any more experimenting by the Sanford Riley Stoker Company.

I am today writing Mr. Baer that if he does not satisfy us within the next ten days by presenting a satisfactory solution of the problem we shall proceed in such manner as we deem advisable charging all the expense of the new installation to him. It was my understanding with Mr. Baer that this thing was to be settled by May 26th, but it seems no nearer settlement now than it did the day of the test.

It seems to be the sentiment of all concerned that the state will not tolerate any more experimenting. Time is passing and we will do well if we have a satisfactory installation by cold weather.

Very truly yours, Signed: W. R. Plew, Supervising Architect"²⁵

Although now, all the cards were on the table, the Stearns-Roger Manufacturing Company, unaware of Sanford Riley's valedictory, composed a Special Delivery letter addressed to Northern Plumbing & Heating Company dated the same day as W. R. Plew's letter to Hans Meyer, on May 29th, obviously as one last effort to avert a profit eating disaster, and an unfortunate omission; it said:

"Attn: Mr. M. Baer, Pres.

Dear Sir:

²⁴ Letter from Charles Pillsbury Co., Hans J. Meyer, to W. R. Plew, Supervising Architect, dated May 26th, 1923, PPA#22-0001 Heating Plant Construction File

²⁵ Letter from W. R. Plew, Supervising Architect, to Hans Meyer, Charles Pillsbury Co., dated May 29th, 1923, PPA#22-0001 Heating Plant Construction file

Bozeman Stokers

The writer has just returned from Chicago where a conference was held with Mr. Hans Meyer of the Pillsbury Engineering Company, Mr. Sanford Riley, President of the Riley Stoker Company, and Mr. Wm. Pestell, Manager of the Stoker Company.

The stoker problem existing at Bozeman was carefully gone into from all angles and we would appreciate it if you would submit to Mr. Plew at Bozeman the following for his consideration and approval as it was the opinion of all present at the conference that the suggestions made below, if carried out, would undoubtedly result in a stoker installation fully satisfactory to Mr. Plew and would meet the guarantees of the contract..

First, Mr. Sanford Riley who sent the telegram to Mr. Plew upon the return of Mr. McElroy to Worcester, now states that Mr. McElroy did not give him all of the information regarding this job that he has now received from both Mr. Meyer and myself at this meeting in Chicago.

He, being now familiar with all details, specifically asks that Mr. Plew be kind enough to consider this matter entirely on the basis of the following proposals.

Detailed drawings were immediately started at the conclusion of this conference and are now ready to present to Mr. Plew.

These drawings indicate the replacement of the stokers now installed by an extra long stoker consisting of 5 retorts having over 50% more surface than the stokers now installed. The new stokers would also have a considerably greater surface or grate area than the stokers now operating at Missoula.

While Mr. Meyer stated that this matter was entirely up to Mr. Plew and that he was taking his orders from Mr. Plew he frankly gave his opinion as an engineer that these stokers would have no difficulty in meeting the conditions guaranteed in the contract.

These extra long stokers can be gotten out very quickly and installed in the plant at Bozeman much sooner than any other type of stoker in view of the exceedingly large amount of grate area that they will contain there is practically no change that the guaranteed conditions will not be met in full.

If it is Mr. Plew's desire to consider this replacement along these lines in more detail than given in this letter we would be very glad to arrange a conference immediately or at any time to suit his convenience, having these drawings and full details to present to him and also having Mr. Riley or Mr. Pestell together with Mr. Meyer and ourselves present.

If Mr. Plew would consider a trip to Denver we would like very much to have him come here entirely at our expense. Please ask him if he would not consider a meeting here in Denver under this arrangement and if so, if you will wire us immediately we will arrange to have the Riley officials here and if Mr. Plew desires, Mr. Hans Meyer has expressed his willingness to come to Denver to be present. We also presume that you would be glad to be at such a meeting.

The Stoker Company is ready to go ahead with this immediately and start work on the installation of this extra long 5-retort stoker and we believe that in view of the fact that the stoker will be furnished having so much greater area than the previous one and considerably more than the ones operating at Missoula that Mr. Plew will not refrain from giving his consent either to a conference or his approval to proceed.

We believe that if Mr. Plew will consult with Mr. Hans Meyer, Mr. Meyer will also inform him that the stokers now proposed to be installed in place of the ones now there at the present time will meet the contract guarantees.

We believe this arrangement is all that can be asked for under the contract and everybody is ready to start work immediately as soon as Mr. Plew says the word. We have just received a telegram from you saying that you are leaving Billings Wednesday night for Bozeman and are therefore sending this letter to Billings and also to Bozeman so that you will be sure to have same at the time you see Mr. Plew at Bozeman.

Please wire us immediately from Bozeman what Mr. Plew desires are in connection with this matter. We feel however that as we are absolutely willing to proceed immediately in doing everything possible to get this job completed and in view of the fact that the consensus of opinion of the meeting in Chicago is such that these new stokers will do the work easily as called for in the contract, we do not think Mr. Plew will refrain from giving his approval. We regret very much that Mr. Riley sent you the telegram which somewhat confused the issue but it seems that Mr. McElroy did not present the matter to him as he now understands it and he is very anxious to have the job completed in accordance with contract and quick action will certainly be assured to Mr. Plew on this point.

Please be sure to wire us as soon as possible.

Yours very truly,
STEARNS-ROGERS MFG. CO., By: C. O. Voigt²⁶

In his article titled *The Heat's been on Me for 35 Years at MSC*, Fleming "Doc" Davis, Chief Engineer, Heating Plant, in the Montana Collegian, January 1955, recalls:

"In November 1922, a 5-inch steam main was completed from the new heating plant to the Grain Laboratory. Then the two old plants had to furnish heat to the new buildings as well as to the old buildings until the new plant was ready to use. Steam from the new plant was turned into the line at 4:00 p.m., February 20th, 1923.

I ran the first shift, and I believe I was the busiest person in the world on that first shift. Mr. W. W. Mapes, chief engineer at that time, was out closing down the old plants, so I was alone most of the shift. None of the automatic controls were installed at the time, so the dampers, stoker engines, pumps and force draft fan had to be hand controlled.

The new heating plant had two 375 hp. Stirling water tube boilers to start with, stoker fired. The first stokers were Riley underfeed stokers, but were not satisfactory so in September 1923 they were taken out and two Coxie chain grate stokers were installed."²⁷

Quiet and unassuming, Doc Davis must have also been the quintessence of the understatement. His comment portraying how busy he was during his shift for the first day of operation of the Heating Plant must have been a horror repeated daily for the next two months. The average maximum temperature for February, 1923 was 28.8°, for March it was 40.8°, and for April, 52.2°, and the lows were 6.0°, 20.5°, and 28.2°. With the stokers not working or not working properly one can imagine that Doc had to devise a way to manually subsidize the stoker operation. It would have been back breaking labor

²⁶ Letter from C.O. Voigt, Stearns-Roger Mfg Co, to Northern Plumbing & Heating Co., Attn: Mr. M. Baer, Pres., dated May 29th, 1923, PPA#22-0001 Heating Plant construction file

²⁷ Article in the Jan. 1955, Montana Collegian, titled *The Heat's been on Me for 35 Years at MSC*, by Fleming "Doc" Davis, Chief Engineer, Heating Plant

in an operation designed to stoke coal manually; but to have to devise a manual operation in a nonfunctional automated system must have been exhausting. Doc Davis, however was no stranger to hard work. He was one of Bozeman's Exempt Volunteer Firefighters, and in the small brick out building located 50 feet southeast of the Heating Plant he kept and maintained a fire truck to respond to campus alarms. Extinguishing a fire can sometimes be as much work as shoveling coal to keep one going.

On June 15th, 1923, the Combustion Engineering Corporation of New York City, submitted a package containing proposal and specifications for the replacement of the Riley underfeed stokers. The proposal quoted a total material and labor cost for the Coxe stoker equipment of \$11,430.00. For \$2000.00 more Combustion Engineering Corporation package included removal of the Riley stoker equipment. With the exception of Doc Davis's comment indicating that the Riley equipment was replaced in September, 1923, there is no other document in the Heating Plant file that mentions the Sanford Riley Stoker Company again. Knowing the final disposition of the Riley stokers will remain in the realm of speculation unless someday other information surfaces.

4

OPERATION, CHANGES AND ADDITIONS

NATURAL GAS

For reasons unknown, the construction file containing documents with pertinence to the change from coal to natural gas consumption at the Heating Plant does not exist. The Physical Plant Administration number is PPA#49-0001, and the drawings for the construction are on file at the Physical Plant, Records Quonset. The specifications written in 1949 indicate an advertisement for bids for a 417 HP (horse power) Edgemoor Water Tube Boiler to be installed in the power house on the campus of Montana State College. Presumably the switch to natural gas was completed sometime in 1950, evidently an uneventful project. Managing purchase and consumption of natural gas in the "Ford and Carter 70's", was a startling predicament for large volume western consumers in America's most misregulated industry. Oligopolies in the best scenario, but mostly monopolies, described the high-pressure interstate pipelines that linked producing and consuming areas. Circumstances that masked supply and demand portrayed a false natural gas market. Strange economic phenomena developed exemplified by a natural gas surplus that could lead to a 25% increase in cost. Simply stated gas stored by companies purchased before deregulation at a high rate refused to sell at a loss. The uncertainty in the cost and availability of natural gas at Montana State University was

enough to prompt this Memorandum from President Carl McIntosh, dated August 6th, 1975, it stated:

“MEMORANDUM:

TO: Andy van Teylingen, Director of Facility Planning
FROM: Carl W. McIntosh, President
RE: Central Heating Plant

In anticipation of escalating fuel costs, I would appreciate having you secure from Martin Whelen a confirmation of his present estimate of \$1 million to \$1.5 million for construction of a coal fired central heating plant. Set forth the based assumptions concerning the rate of escalation of fuel costs, the loss of interest earnings on the capital investment at the current state investment fund average earnings, and project as nearly as possible that time in the future when a major investment now would result in a savings in our operating budget. Prophecy is an uncertain business but all current indicators are that the cost of gas will either increase sharply or we will reach a point where it must be rationed. If rationed, I have little doubt that homeowners will be given priority of consideration over large industrial and/or educational plants.

We are close to sources of coal and it seems unlikely that cost escalation of coal would parallel the cost increases of gas. It may be that we should move now in anticipation of continuing Energy demands.

Regards.

CWM/lpl

cc: William Johnstone, Vice President for Administration
Martin Whalen, Director of Physical Plant”²⁸

There must have been unofficial discussion of the gas predicament between the Physical Plant Director, Martin Whelen, and other university staff and departments. In June, 1978, the Chemical Engineering Department, prepared and published a report titled CONVERSION OF THE MSU HEATING PLANT TO BABCOCK AND WILCOX F&P COAL BURNING BOILERS (ChE 413 Design Report), Prepared for Dr. Lloyd Berg, Head, Chemical Engineering Department.

In the 1970's, there was an increasing international awareness of the quality of the air we breath. Ambient Air Quality Standards were adopted with the 1970 Federal Clean Air Act Amendments. The air at Montana State University in 1924 would probably never have met those standards. It is likely that the calculated emissions from coal fuel consumption in the 1970's at MSU would not have met those standards either. And for whatever other reason or reasons, MSU did not convert from gas to coal fired boilers. MSU stayed the steady course of natural gas and with careful and persistent market evaluations and smart buys, survived, and even prospered.

²⁸ Memorandum from President McIntosh, to Andy van Teylingen, Director of Facility Planning, RE: Central Heating Plant, dated August 6, 1975, Heating Plant 1920's – 1970's, Archives, M3-605

STACK REPAIR

On September 28, 1973, an article titled "*Where There's Smoke—There's Work*," appeared in the Billings Gazette. Its contents follow:

"BOZEMAN—A lot of smoke has gone up the stack of the heating plant at Montana State University since it began heating the campus 50 ears ago—so much smoke, in fact, that it's eaten clean through the mortar.

According to chief engineer John Dougherty, the stack has never been worked on since its construction in 1923. "There are some cracks in it a good two inches wide."

The cracks were first noticed three years ago when an electrician climbed the venerable Chimney to change the bulbs in the aircraft-warning beacon. It's taken until now to find someone to repair the damage.

"You can't just look in the yellow pages," said Martin Whalen, physical plant director at MSU. "I've had letters out all over the country. As far as I know, these people—the Boedecker Chimney Co. of Portland, Ore.—are the only company west of the Mississippi who can take on a job of this size."

The Boedecker repairmen will clean and paint the stack and girdle it with steel bands just below its rim, 150 feet above ground level. They use scaffolding to work on the chimney proper and haul themselves over its jutting rim in a bosun's chair

"Better them than me," said Whalen. "I've never gone up that stack, and I'm never going to."

Whalen, a 22 year veteran of the University, was hired just about the time the plant converted from coal to natural gas. He has nothing but praise for the system which has never failed to keep an MSU student warm.

"There's been only one disaster in 50 years," he said. "We were running an acceptance test on a new boiler in the winter of 1959 and it malfunctioned. The then-chief engineer touched off the old boilers to take up the heating load, and both of them exploded. We had to run all winter long on the new boiler—one that hadn't even accepted.

The boiler ran all winter with no problems at all. Whalen recalled, however, that a locomotive (borrowed from Northern Pacific) sat on a siding near the heating plant, ready to take over should the new boiler repeat its malfunction. "We didn't have to use it," he said thankfully, "and that was fortunate. I doubt that locomotive could have gotten up enough steam to warm the heating plant, let alone the whole campus."

Currently, three boilers heat the campus and warm its water. The two 50,000-pound-per-hour boilers were installed in 1959 and 1960, and a 100,000-pound monster was installed in 1970. It takes 45,000 pounds of steam hourly to heat the campus and provide its hot water during pleasant weather and as much as 120,000 pounds to cope with the coldest days.

"The system will be more than adequate even when the new construction is completed," Whalen said. "Of course, if a substantial building program is instituted in the future, we'll more than likely have to expand the heating plant as well."

Whalen noted that should a power outage threaten the coziness of campus, an emergency generator is available to keep the boilers boiling away. The generator has never been called into use, though the heating plant crew tests it regularly to make certain it's in working order.

A real bargain, the generator was acquired as war surplus some 20 years ago for just the cost of freighting it from Helena to Bozeman—about \$150.

The repairs to the stack are another bargain, according to Whalen. The crew's week work on the ancient structure will cost MSU just \$5,600—and as a physical plant engineer (who approved the work through binoculars) said, "It would be cheap at twice the price."²⁹

On November 4, 1977, the Custodis Construction Company, of Chicago, Illinois, conducted a chimney inspection of the smoke stack at MSU. On January 6, 1978, they submitted a report titled Chimney Inspection, and it says:

"January 6, 1978

File 2-18102

Montana State University
Bozeman, Montana 59715

Attention: Mr. Don Peterson
Director of Physical Plant

Re: Chimney Inspection

Gentlemen:

On November 4, the writer stopped at your University and made an external binocular inspection of your chimney servicing your heating plant. In this respect, we are submitting herewith, our report on the condition of the chimney.

The chimney is of red common brick construction 125' in height with a top internal diameter of 6'. The inspection made at this time shows the following:

The mortar joints throughout the entire height of the chimney column are full and flush with the face of the brick. The chimney column is free of cracks and the brickwork is sound.

The concrete cap covering the top of the chimney wall was in good condition, but was poured a little too thin.

The outside stepirons appear to be in good condition but are rusting freely.

The lightning protection system consisting of 4 air terminals and 1 downleading cable is intact and appears functional.

The two outside column bands placed around the top of the chimney column are in place and appear to be functional, but are beginning to rust.

The cleanout door at the base of the chimney and the metal breeching are both intact and in good condition.

We are pleased to report that the chimney is in good physical condition and no repairs are required at this time.

²⁹ Special News Release, "Where There's Smoke, There's Work, dated September 9, 1973, The Heating Plant, 1920's - 1970's, Archives, M3-605

We wish to thank you for the opportunity of doing this inspection for you; as in this manner you have a record of the condition of your chimney. Any time it is found there has been unusual deterioration between inspections then repairs should be considered.

We look forward to seeing you again on our next inspection trip at which time we again will make an inspection of your chimney if agreeable with you.

Yours very truly,

CUSTODIS CONSTRUCTION COMPANY, Signed: M. Deurling

MD:ef

cc: John Dougherty
Director of Heating³⁰

OBSTRUCTION LIGHTS

Physics Professor, Dr. Arthur Johnson, affectionately called Alphabet Johnson by campus acquaintances because he used the three letters A. J. M. in place of his first name, was the driving force behind the Obstruction Light project for the Heating Plant stack. A.J.M. Johnson was Chairman of the Montana Aeronautics commission, at least during the year 1950. It seems only reasonable that after WWII the returning aviators, pilots, navigators, and mechanics would bring with them, not only knowledge of aviation but an interest in building and perpetuating the aviation industry. With that reasoning an increase in the number of aircraft in the air was imminent, especially in agricultural areas where crop dusting was a common occurrence. A 150' smoke stack was a hazard for low flying aircraft, and A.J.M. Johnson initiated a work order for aircraft obstruction lights. A letter from Frank W. Wiley, Director, Montana Aeronautics Commission, to Arthur J. M. Johnson, Chairman, Montana Aeronautics Commission, dated October 26th, 1950 reflects:

"Dear Doc:

I had a call from the Board of Examiners requesting information on a purchase order they had received for the obstruction lighting equipment, to be installed on the smokestack of the heating plant at the State College.

I explained to Mr. Fitzsimmons that, as a safeguard against the possibility of low flying aircraft striking the smokestack, the State College had decided to put obstruction lights on the chimney and that the equipment was being purchased to make installation in conformity with CAA standards for the marking of obstructions adjacent to airways. Mr. Fitzsimmons asked us to prepare specifications for the lights as the cost will be over \$500 and require a bid.

I saw Dick Ford of the CAA Airport Section, and he said he would send you a bulletin covering the specifications for obstruction lighting. I thought you might want to give this booklet to your plant engineer

³⁰ Letter from Custodis Construction Co., to Mr. Don Peterson, Director Physical Plant, dated January 6, 1978, RE: Chimney Inspection, Heating Plant File, 1920's - 1970's, Archives, M3-605

Marking that stack certainly won't do any harm, and will fortify the college against any criticism, in event some wandering airplane should try to land by that B-17 on the campus.

With regards,

Yours sincerely,

Signed
Frank W. Wiley, Director
Montana Aeronautics Commission³¹

On the same day, October 26th, 1950, Dwayain Ford, Acting District Airport Engineer, Civil Aeronautics Administration, Department of Commerce, directed a letter to Dr. A.J.M Johnson, Montana State College:

"Dr. A.J.M. Johnson
Physics Department
Montana State College
Bozeman, Montana

Dear Dr. Johnson:

We are enclosing herewith an Obstruction Marking Manual, as we have been advised by the State Aeronautics Commission that the State College desires to mark and light the chimney on the heating plant at the college.

We do not know the exact height of the chimney; therefore, cannot tell you the exact Specification to be used. However, it is suggested that you refer to the specifications for Towers, poles and similar structures, starting on page 14, from which you could select the proper specification to suit the height of the chimney at the college. It is believed that specification "D-1" will probably be the one to fit your case. For additional details, you are referred to Illustration b-7, in the back pages of the enclosed manual.

If you should have any further questions relative to the marking that you desire to accomplish, Please do not hesitate to call upon this office.

Very truly yours,
Signed: DWAYAIN K. FORD
Acting District Airport Engineer
Airports Division

Enclosure³²

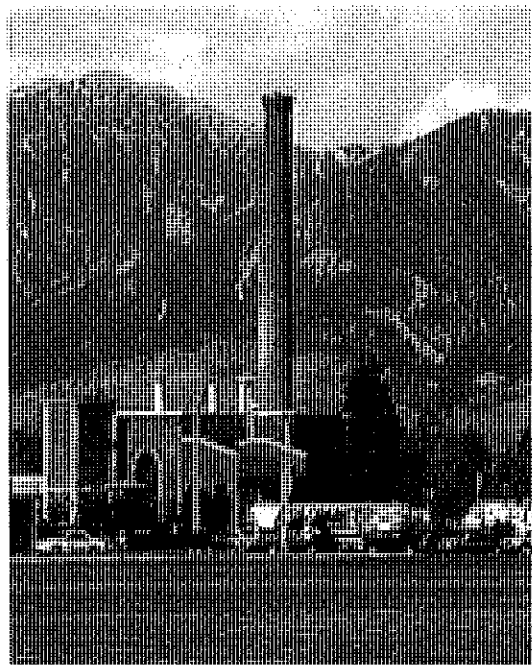
³¹ Letter from Frank W. Wiley, Director, Montana Aeronautics Commission, to Arthur J. M. Johnson, Chairman, Montana Aeronautics Commission, State College, Bozeman, Montana, dated October 26th, 1950, PPA#50-0003, Heating Plant Smokestack Obstruction Lights file

³² Letter from Dwayain K. Ford to Dr. A.J.M. Johnson, Montana State College, Dated October 26th, 1950, PPA#50-0003, Heating Plant Smokestack Obstruction Lights file

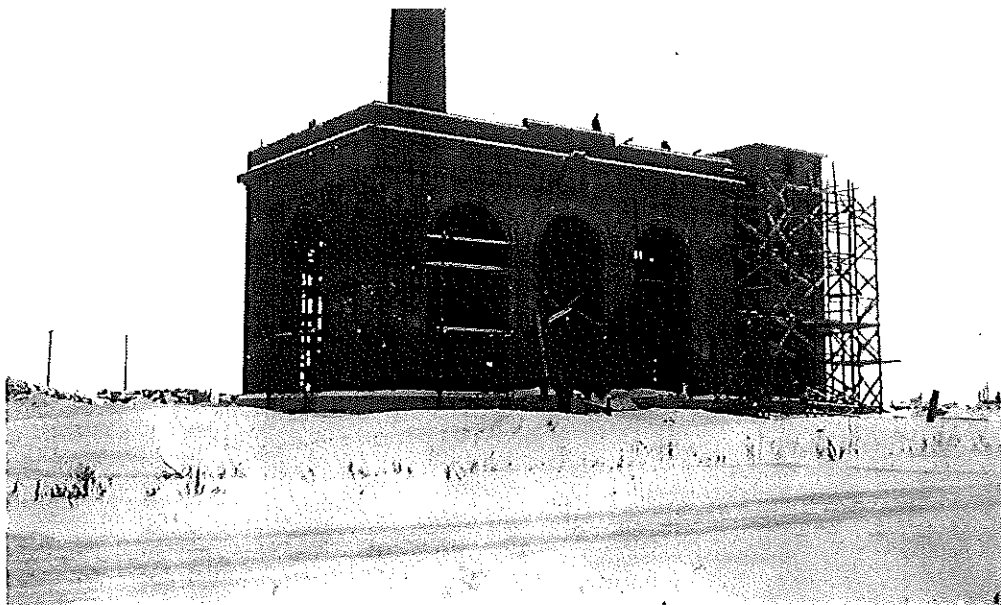
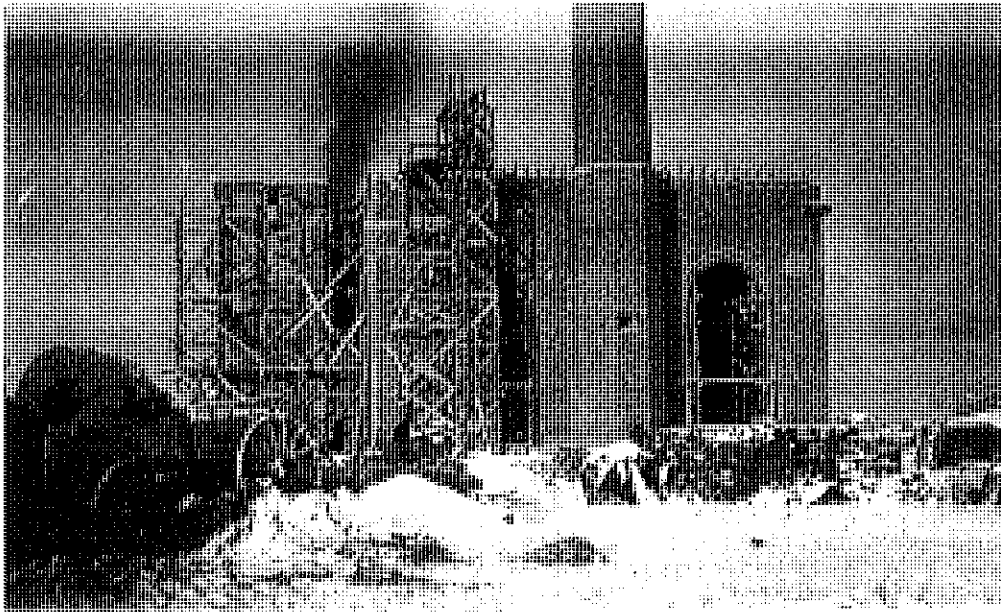
On Thursday, February 20th, 2003, The Heating Plant hosted a small gathering for past employees of the heating plant and Office of Facilities Services members and any others that were interested, in celebration of the 80th year of operation for The Heating Plant. Included in the small list of guests was John Dougherty, retired chief operating engineer and heating plant director. John visited with the other celebrants and reflected an interesting story associated with the smokestack obstruction lights. When the bulb burned out and needed to be replaced, the service shops hired a local electrician to replace it. According to John, a small crowd gathered to witness the electrician ascend the stack, a circus atmosphere prevailed while he changed the bulb. The grand finale included a handstand on the rim of the stack before he descended.

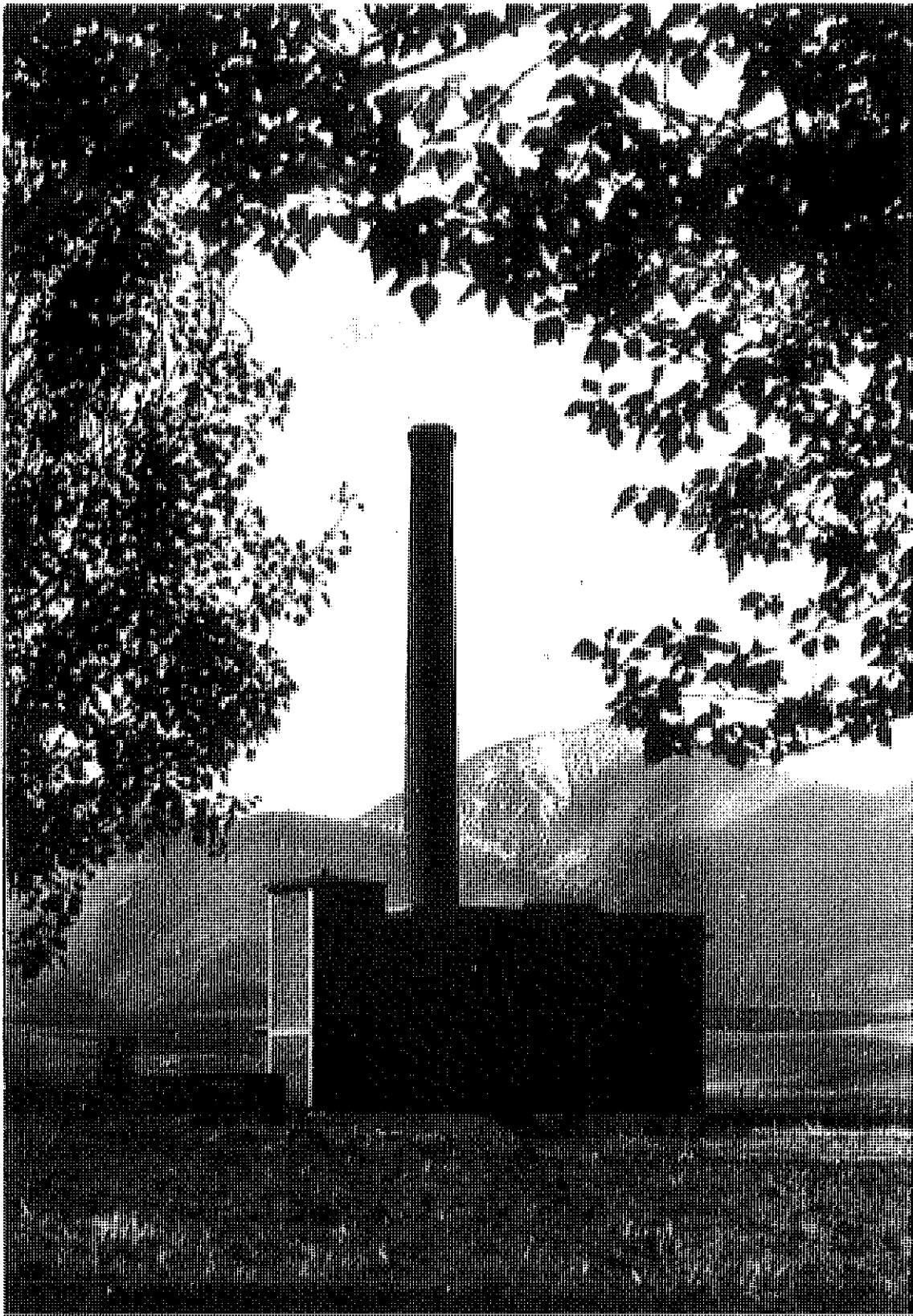
OPERATING TODAY

Today the Heating Plant operates under the supervision of Assistant Director of Facilities Services, Ed Sondeno, and Energy/Mechanical Engineer Specialist, Mark Cusack. The Heating Plant has eleven full time employees, not including Ed and Mark. The Heating Plant operates twenty four hours a day seven days a week, nine months of the year and operates from 4:30 a.m. to 9:00 p.m., three months of the year. Its 1.4 million dollar a year budget is doled out in three areas, maintenance and operations \$500,000, and natural gas, \$900,000. The Heating Plant building itself, constructed in a little over seven months, stood 80 years without structural problems and barring any disaster should stand and serve MSU for another 80.



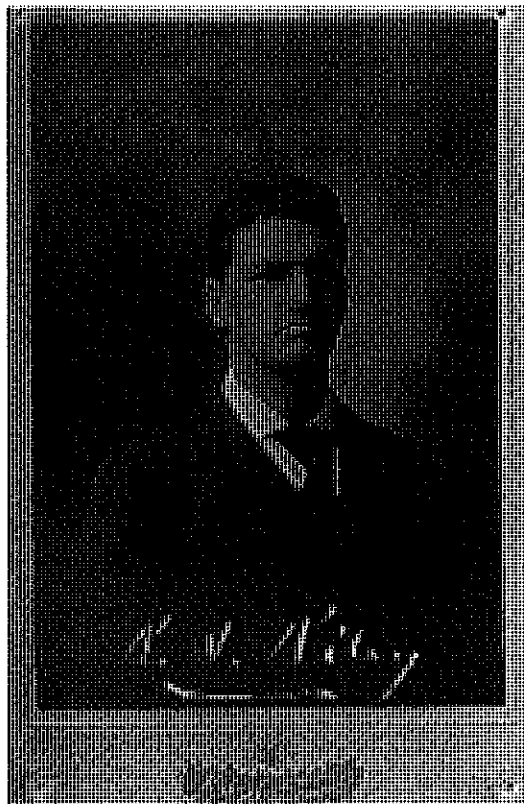
Heating Plant, July 2003







Cass Gilbert



R. Sanford Riley

APPENDIX ONE

LIST OF HEATING PLANT ENGINEERS

THE MONTANA STATE COLLEGE HEATING PLANT
WAS BUILT IN 1922
AND COMMISSIONED AND PLACED
IN OPERATION ON FEB. 20, 1923

W.W. MAPES WAS THE CHIEF ENG.
FROM 7-1920 TO 6-21-1929
W.W. MAPES PASSED ON
6/21-1929

FLEMING DAVIS WAS THE OPERATION ENG.
FROM 12-9-1919 TO 7-1-29
AND WAS THE CHIEF ENGINEER
FROM 7-1-1929 TO 9-1-1959
F. DAVIS PASSED 3-1983

THE BOILER ROOM AT M.S.C. HAD TWO 375 Hp STERLING BOILERS A 404 Hp EDGE MOOR WAS ADDED
IN 1948 IT SERVED UNTIL 1968 TWO 680 Hp BROS BOILERS REPLACED THE 375s UPON THEIR
RETIREMENT, THIS WAS IN 1959, AND THE EDGE MOOR WAS REPLACED AFTER IT RETIRED BY A
BROS 100,000 LB/HR BOILER IN 1969. AN 860 Hp STEAM TURBINE WAS ADDED TO THE PLANT IN 1991.

THE FOLLOWING IS A LIST OF STATIONARY ENGINEERS WHO SERVED
THESE BOILERS AND THIS PLANT THROUGHOUT THE YEARS.

JOHN EDENS
CHAS. HEAGNEY
C.G. MONROE, RETIRED 52
W. H. MCCULLUM
OLLIE BARNS
JOHN ARNOLD
D.A. MEEDS
RAND GEE
GLEN TREAT
ARRON WHITE
V. BLILER
BILL BRENDON
BRUCE EVANS
SMOKY MCDANIEL
EARL OGLE
J.N. BERG 59-64
WM. BOWMAN, RETIRED 70
JOHN KNAPP, RETIRED 71
GORDON PARENT, RETIRED 72
LYLE BERGUM 58-84
BUCK BUCKINGHAM 59-73
BILL KJAR 64-78
JOHN DOUGHERTY 66-82
MERLIN JONES 68-87

M. "SWEDE" ERICKSON 70-91
PAT RIDGEWAY 71-79
BOB PORTNELL 71-74
HOWARD JESSEN 72-83
CLAYTON ANDERSON 73-76
WALT KRUMENAKER 74-86
HANK VOLLMER 76-82
LARRY LEIMKUEHLER 79-80
JIM YOUNG 80-90
DAN LINEBACK 82-98
DON SYVRUD 82-90
LEW OBERRICH
BOB WAGNER 84-90
NANCY SALACINSKI 89-96
RICK BATTLE 89-97
RALPH BETTS 90-94
STEVEN FARRIS 94-96
JOHN ZARDNT 96-97
GREG SMITH 95-98
CHARLES KOMPPA 98-00
JIM TUTTLE 97-99
BILL SHARPE 99-2001
DOUG EDENS 01-02

CURRENT EMPLOYEES

MARK CUSACK 87-
OWEN TAYLOR 87-
VALENTINO RIOJAS 87-
BOB WEBBER 89-
JOHN SHAFFER 92-
DALE HARDING 92-

WM. SULLIVAN 96-
DAVE EKLUND 96-
JOE SUNDSTROM 97-
JACK BURNS 99-
DONOVAN JEDTVIG 00-
JIM COOPER 01-

APPENDIX 2
HEATING PLANT
SMOKESTACK
DEMOLITION DIGITAL IMAGES

MONTANA STATE-OWNED HERITAGE PROPERTY REPORTING FORM

Property Number (e.g. 24YL0001): 24GA0352 (# obtained from SHPO upon receipt of site form)

Property Name: FT ELLIS MILITARY SITE - Montana Agricultural Experiment Station

Property Town/Vicinity of: Bozeman, MT

Property Date (Year of Origin/Construction or "Precontact") 1867

State Agency (Choose One): University System

Reporting Cycle Year: 2011 (e.g. 2011; 2013; 2015, etc)

Property Type (Choose One): Historic

Property Count (#): ___ District ___ Building(s) ___ Structure(s) 1 Site(s) ___ Object(s)

Status (Choose one): Unknown

Comment:

Ft. Ellis operated as a military post from approximately 1867 to 1886 - tasked with protecting miners, settlers, and travellers in the Gallatin River valley of western Montana and just east of Bozeman. MSU Montana Agricultural Experiment Station occupies the site for primarily as a teaching and research center focused on sheep husbandry. The Heritage Report focuses on the archeological aspect of the site as no buildings remain.

Condition/Integrity (Choose One): Unknown

Comment:

There are no buildings or structures attributed to the Ft. Ellis military operations. A commemorative monument is located just off I-90 near the Ft. Ellis site to mark the fort's former presence.

Stewardship Effort and Cost (Enter all that apply in past 2 years)

\$___ Heritage Restoration/Rehabilitation/Preservation project activity (SOI standards)

\$___ Heritage Research/Documentation project activity

\$___ Heritage Interpretation/Education/Awareness project activity

\$___ Heritage Promotion/Tourism/Marketing project activity

\$___ Heritage Preservation/Conservation Plan Development

\$___ Regular/routine maintenance

\$___ Monitoring (reported upon)

\$___ Project designed/redesigned to avoid adverse effect to property's heritage values

\$___ Other heritage stewardship effort/activity (Explain)

Comment:

No funds expended during the specified time period for maintenance or preservation of the archaeological site. No archaeological relics have been uncovered or discovered during the specified time period.
Stewardship of the archeological site includes MAES personnel actively preventing unauthorized persons from the site. Any other stewardship of the archeological site would be through the Museum of the Rockies and its director confirms that no stewardship expenses occurred during this report period.

Prioritized Preservation Maintenance Needs (to correct deficiencies identified above under Condition/Integrity)

Rank property need among all agency heritage properties:

Highest (1 = top 20%) to Lowest (5 = bottom 20%) = 5 (1-5)

Comment: List prioritized property-specific preservation maintenance needs -

Since there are no associated maintenance expenses or deficiency needs related to the archeological site the ranking priority is low.

Other Comment:

Ft. Ellis was established to protect and support settlers moving into the Gallatin River Valley. The post was named for Civil War Colonel Augustus van Horne Ellis who was killed in action in 1863 at the Battle of Gettysburg. Fort Ellis was an important post during the prominent Indian conflicts of the 19th century as well as a base of operations for exploring the region now known as Yellowstone National Park. Also in 1876 - soldiers led by General John Gibbon left Ft. Ellis as one of the three units dispatched to Little Big Horn (the other forts were Ft. Abraham, ND and Ft. Fetterman, WY).

Reported by (Name): Victoria Drummond Date (MM/DD/YYYY): 12/20/2011

Optional: Send photo(s) labeled with Property Number

Save file as Property Number_Property Name (eg: 24YL0001_Pictograph Cave)



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Montana Forts of the Old West - Page 3



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Fort Custer (1877-1898) - Established 1877 by U.S. Army to control the [Crow Indians](#), the post was located on the high point between the Big Horn and Little Big Horn Rivers south of present-day Hardin, [Montana](#). The post was named for [General George A. Custer](#) who died at the [Battle of the Little Bighorn](#). By the time the fort was established, most of the hostile [Indians](#) in the vicinity had been confined to reservations, but the post supplied troops for some of the Plains campaigns, including the Bannock War in 1878 and an uprising at the [Crow Agency](#) in 1886. With the [Indian](#) threat subdued, the post closed on April 17, 1898 and the buildings were sold. Today nothing remains of the fort but a monument. It is located in Big Horn County, on an unimproved road, about 1 mile west of I-90 and 2 miles southeast of Hardin, [Montana](#).



Fort Custer

Fort Dauphin (1860-1865) - A trading post established at the mouth of Milk River by Louis Dauphin, a Creole trapper. He was killed by [Sioux](#) near here in 1865.

Fort Ellis (1867-1886) - Fort Ellis was tasked with watching over the miners and settlers in the Gallatin River Valley of western [Montana](#) and the nearby Bozeman, Bridger, and Flathead Passes. Figuring in the 1876-81 [Sioux](#) campaigns, it was the base at which Colonel John Gibbon, operating out of Fort Shaw, [Montana](#), acquired additional troops in 1876 before proceeding eastward in the ill-fated operation that ended in the Custer disaster. Gibbon also led Fort Ellis troops in the Battle of the Big Hole, [Montana](#). Today, the [Montana State University's](#) Fort Ellis Experiment Station occupies the site, but no buildings remain. A commemorative monument is located just off I-90 in Gallatin County, about 3 1/2 miles east of Bozeman.

Fort Fizzle (1877) - A temporary barricade about five miles above the mouth of Lolo Canyon. It was erected on July 25, 1877 by Captain C.C. Rawn in an attempt to halt the flight of the [Nez Perce](#). It was nicknamed Fort Fizzle after the failure to stop the [Indians](#).

Fort Fox & Livingston (1842-1844) - A trading post established in 1842 to compete with the [American Fur Company](#) by Fox, Livingston & Company. It was located approximately 11 miles below [Fort Benton](#) on the east bank at or near Shonkin Creek. It was moved in 1844 to the site of the first [Fort Lewis](#). It was bought out by the [American Fur Company](#) in May, 1845.

Fort Galpin (1862) - A trading post established in 1862 by Charles Larpentuer for the LaBarge, Harkness & Company. It was named for William and Charles Galpin who were partners in the company. It was located 12 miles above the mouth of the Milk River.

Fort Gilbert (1864-1867) - A trading post established at the edge of the [Fort Buford, North Dakota](#) Military Reservation, it was named for Colonel Charles Gilbert, a one time commanding officer at [Fort Buford](#). Located at the southern boundary of the military reservation on the west bank of the Yellowstone River, the post served the Yellowstone Valley. Though there is nothing left of the post today, a marker designates the site about five miles north of Sidney, [Montana](#) on state highway 200.

Fort William Henry Harrison (1892-Present) - Authorized by Congress in May, 1892, this military post was established as part of a greater consolidation program to close a number of smaller installations which would be replaced by just a few larger posts where troops would be concentrated. It was first called Fort Harrison after the sitting President Benjamin Harrison. It was garrisoned with troops from [Fort Assiniboine](#) in September, 1895. Some years later in 1906, the name was changed to Fort William Henry Harrison because it was discovered that there had already been an Army fort named for Benjamin Harrison in Indianapolis, Indiana. The second name honored William Henry Harrison who was a soldier, governor, and Congressman who served just one month as President of the United States in 1841 before succumbing to pneumonia.



Fort William Henry Harrison

The U.S. Army troops were withdrawn in 1913, the government retained the land. Subsequent history included being used as mustering site for [Montana](#) troops bound for France in 1917, Veteran's Administration facilities beginning in 1922, as a training site for National Guardsmen between the two world wars. It is probably best known as the home base of the First Special Service Force, known as the "Devil's Brigade," in 1942 and 1943.

Today the site continues to house the [Montana National Guard](#), U.S. Army Reserve, and U.S. Navy Reserve, as well as a growing Veterans Administration facility. Some of the fort's original buildings including Officer's Quarters, barracks and the parade ground are located toward the back of the compound. There is a museum on the site, but is only open 1-2 days per

NO ECONOMIC RECOVERY?!



Is President Barack Obama most to blame for the lack of economic recovery?

- ☐ Yes
- ☐ No
- ☐ Undecided

IS OBAMA TO BLAME?



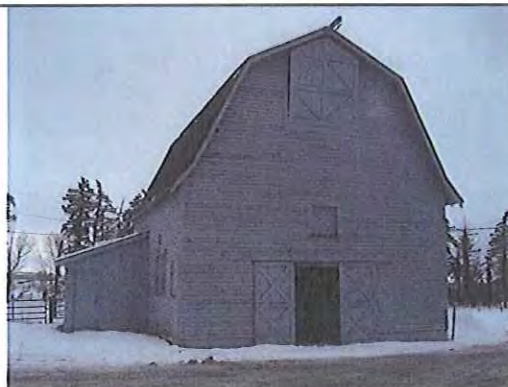
Building Pictures of Fort Ellis

Photos 1/2011

Pictures ordered by building number except where noted



Bldg #721 – Ranch Residence



Bldg #722 – Horse Barn / Lab



Bldg #722 – Horse Barn / Lab



Bldg #723 – Granary & Garage



Bldg #723 – Granary & Garage



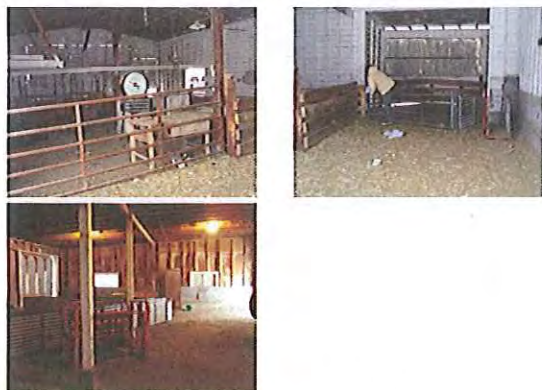
Bldg #723 – Granary & Garage



Bldg #728 – Two Car Garage on right (721 – Ranch Residence on left)



Bldg #729 – Scale House



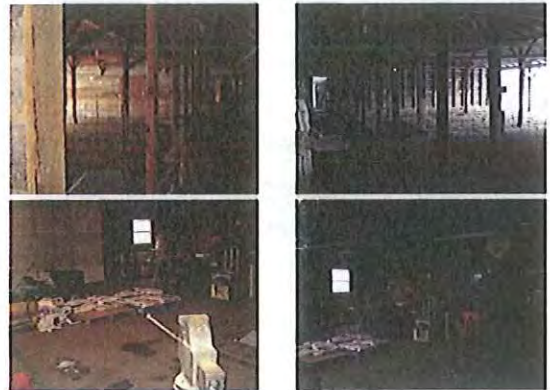
Bldg #729 – Scale House



Bldg #730 – Sheep Shed & Shop



Bldg #730 – Sheep Shed & Shop



Bldg #730 – Sheep Shed & Shop



Bldg #731 Store House (on left) and Bldg #740 Oil House (on right)



Bldg #731 Store House (on right) and Bldg #740 Oil House (on left)



Bldg #732 – Second House



Unnumbered Outhouse next to bldg #732



Bldg #735 – Hay Shelter (in back)



Bldg #737 – Ram Test Shed



Bldg #737 – Ram Test Shed



Bldg #739 Storage



Bldg #739 Storage



Bldg #740 Oil House (on right) and Bldg #731 Store House (on left)



Bldg #743 – Pump House

Fort Ellis Storage Northeast of Main Site



Bldg #751 – NE Wooden Shed #1



Bldg #752 – NE Quonset Shed #1



Bldg #753 – NE Quonset Shed #2



Bldg #754 – NE Wooden Shed #2

Rocky Mountain Anthropological Conference

Abstracts of Papers

Abstracts are listed alphabetically by first author's last name.

ARKUSH, Brooke S.; Weber State University, UT

HEATH, Kathleen; University of Utah

MILLER, Susanne J.; Idaho National Engineering Laboratory

YOHE II, Robert M.; Idaho State Historic Preservation Office

Recent Archaeological Investigations at Weston Canyon Rockshelter, Southeastern Idaho

During October 1996, mitigation-oriented test excavations were conducted at Weston Canyon Rockshelter (10FR4) by Weber State University after a small portion of the site's deposits were disturbed during replacement of a nearby irrigation pipeline. Earlier excavations there between 1968 and 1970 documented repeated, short-term occupation of the site from approximately 8000 to 2000 BP, most of which was associated with big game hunting and processing activities. Our investigations at 10FR4 consisted mostly of backhoe trenching and hand excavations in front of the shelter's dripline, and revealed the presence of stratified subsurface deposits at least 1.5 meters deep. A single test unit yielded a relatively diverse artifact and ecofact assemblage including aboriginal ceramics and arrow points, neither of which had previously been recovered from the site. This paper focuses upon description of time-sensitive artifacts, and results of faunal and botanical analysis, radiocarbon dating, and obsidian sourcing.

(General Session 3)

BARTHOLOMEW, Alan; University of Wyoming

The Wardell Site Projectile Points: Are They Avonlea?

The Wardell Site (48SU301) is a large communal kill located in the northcentral Green River Basin of Wyoming. The site contains three distinct bone levels, all of which date from 990 to 1580 b.p. The projectile point assemblage has been described as Avonlea-like, and would represent the southwesternmost example of Avonlea known. Graphical and statistical comparisons with definite Avonlea sites show that the Wardell projectile point assemblage is indeed Avonlea. The assemblage also denotes morphological drift from traditional Avonlea, which may be due to a loss of contact with the core Avonlea area in southern Canada. Movement of groups and movement of ideas are the reasons for why Avonlea projectile points are found in southwestern Wyoming. If Avonlea cultural groups were moving this far south and west, then there must have been some resource that was drawing them. However, the ceramics and other features at the Wardell Site suggest a movement of ideas rather than people.

(General Session 5)

BAUER, Crystal; Montana State University Bozeman

A Case Study of Interdisciplinary Research: Fort Ellis, Montana

When retelling past events, historians rely on historical records and documents as data for their research. What happens if records have been lost or destroyed? Historians turn to other methods of research, including archaeology. This paper will focus on the importance of combining the historical record with archaeological evidence to obtain a complete history of a particular subject. I will propose a research project using the historic Fort Ellis cemetery, located in Bozeman, Montana, as a case study to examine the relevance of using history and archaeology together.

Fort Ellis, created in 1867 to keep residents safe from Indian attack, was abandoned in 1886. The Fort Ellis cemetery contained the remains of approximately forty individuals. In 1887 the military decided to move these bodies to Fort Missoula. The existing records have little to say concerning the Fort Ellis cemetery and its subsequent removal. In fact, the exact location of the cemetery is unknown. The records that exist contain discrepancies in regard to the number of individuals buried in the cemetery and how many were removed. There is evidence to suggest people are still buried in the abandoned cemetery, which is now an alfalfa field. If the historian depends only on historical evidence the questions about the cemetery will never be answered. By moving from the field of history into archaeology more information can be gathered. An archaeological investigation of the site can reveal the status of the historic remains.

(General Session 2)

BECKES, Michael R.; U. S. Forest Service, MT

Passport In Time

"Passport In Time" is a nationwide volunteer program developed by the National Forest Service in 1989 to provide educational opportunities in public Archeology, History, and Historic Preservation. PIT provides a wide variety of opportunities for individuals and families to work directly with professional archeologists and historians on National Forests throughout the United States. Students, avocationalists, retirees, and people from all walks of life gain understanding and sensitivity to cultural resources through hands-on experience on critically important research and restoration projects. Unforgettable outdoor learning experiences and lasting friendships are common outcomes of participation in "Passport In Time".

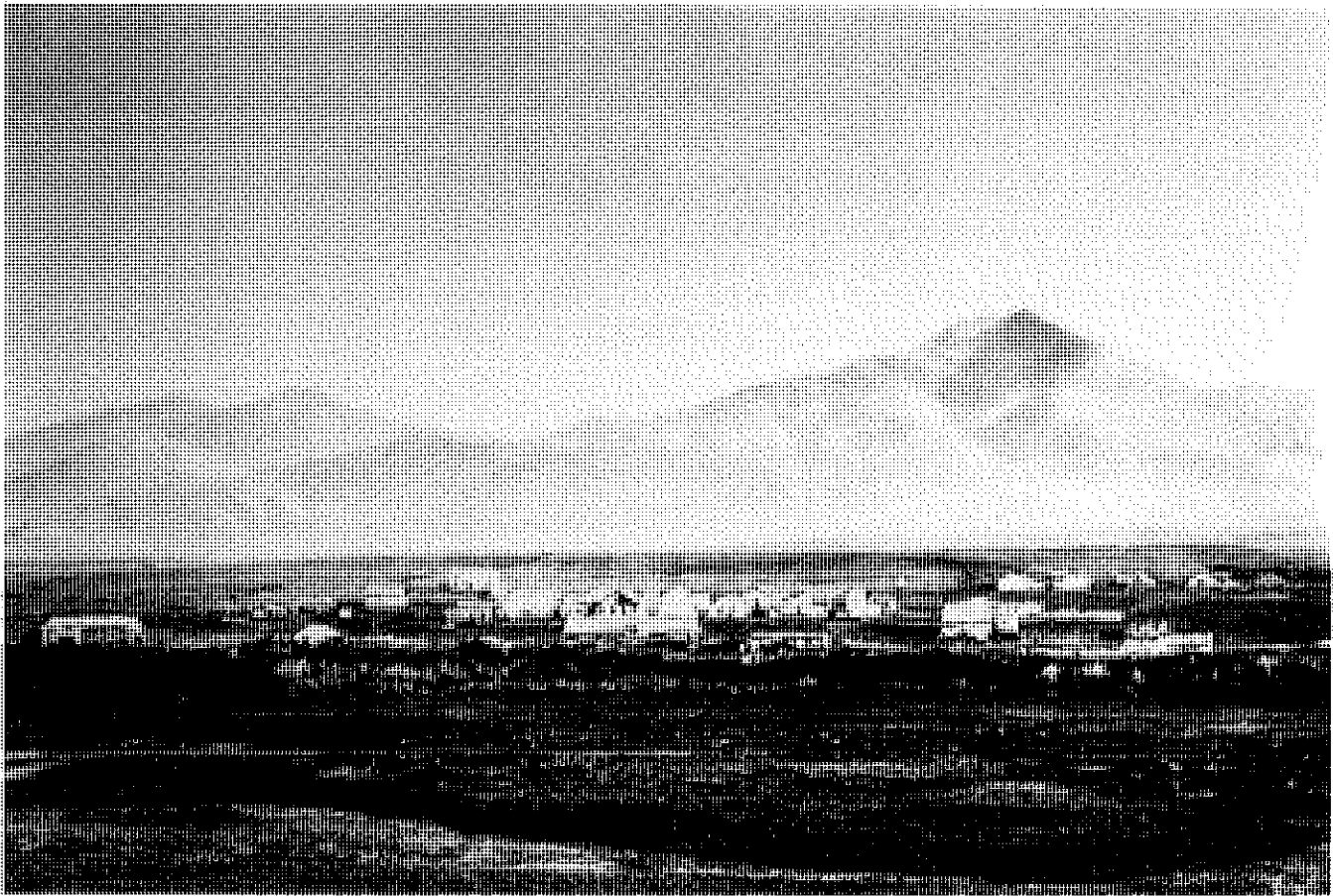
(Forum 2)

BIES, Michael T.; Bureau of Land Management, WY

Express Pipeline Project: Preliminary Findings in the United States and Canada (Forum Abstract)

This forum will provide an opportunity to see and discuss some of the preliminary findings of the archaeological mitigation conducted for the Express Pipeline Project along the entire route. The project examined a corridor from the Battle River on the northwest plains of Alberta, Canada, to the North Platte River in inter-mountain basins of Wyoming, USA, approximately 1,300 Kilometers (800 miles). The project area varies in elevation from approximately 645 meters (2,120 feet) to approximately 1,935 meters (6,350 feet) and crosses a variety of ecological zones. It is anticipated that the project will provide important new information about human use of the Northwest Plains and Intermountain Basins of the Rocky Mountains.

(Forum 1)

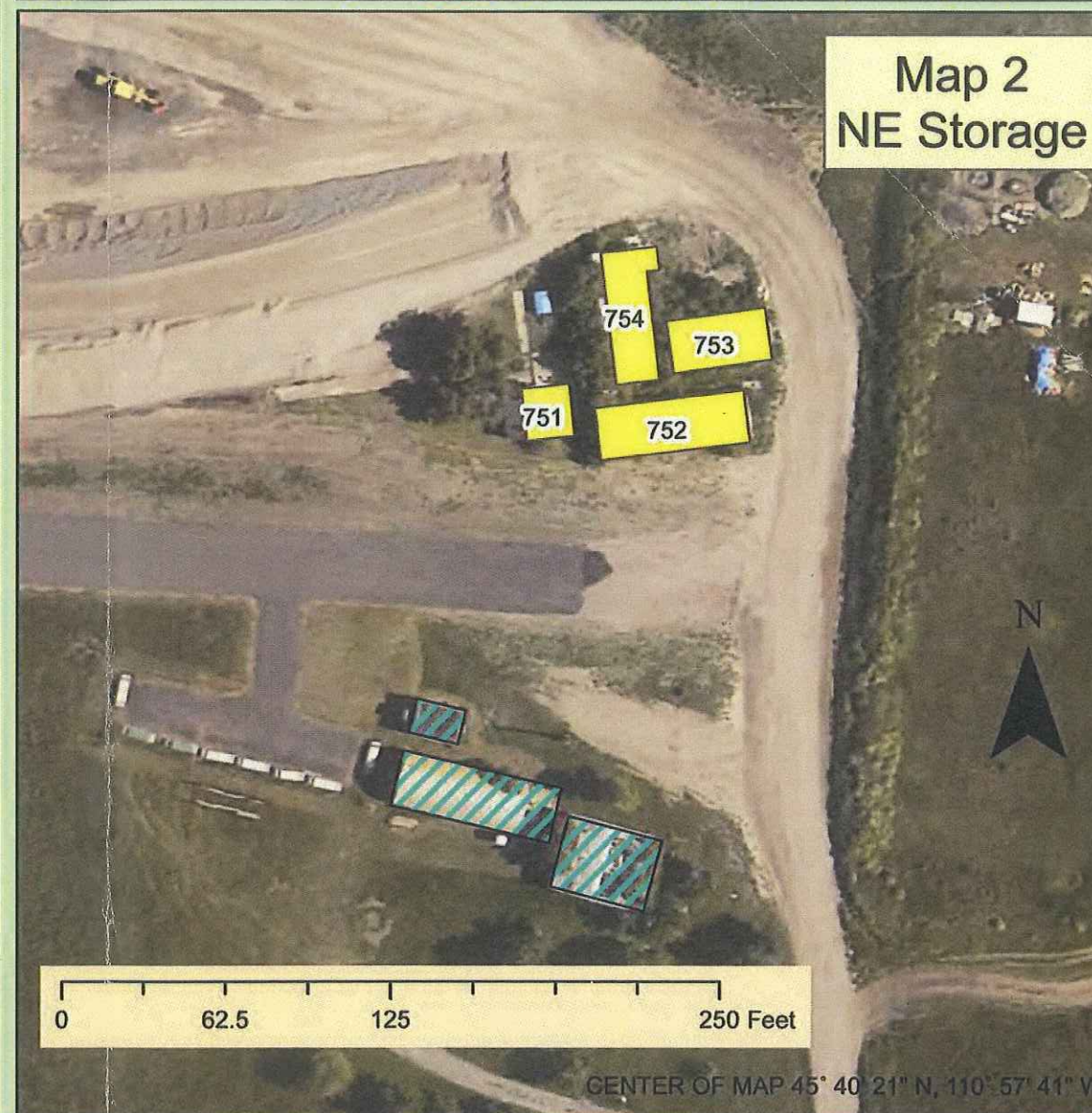
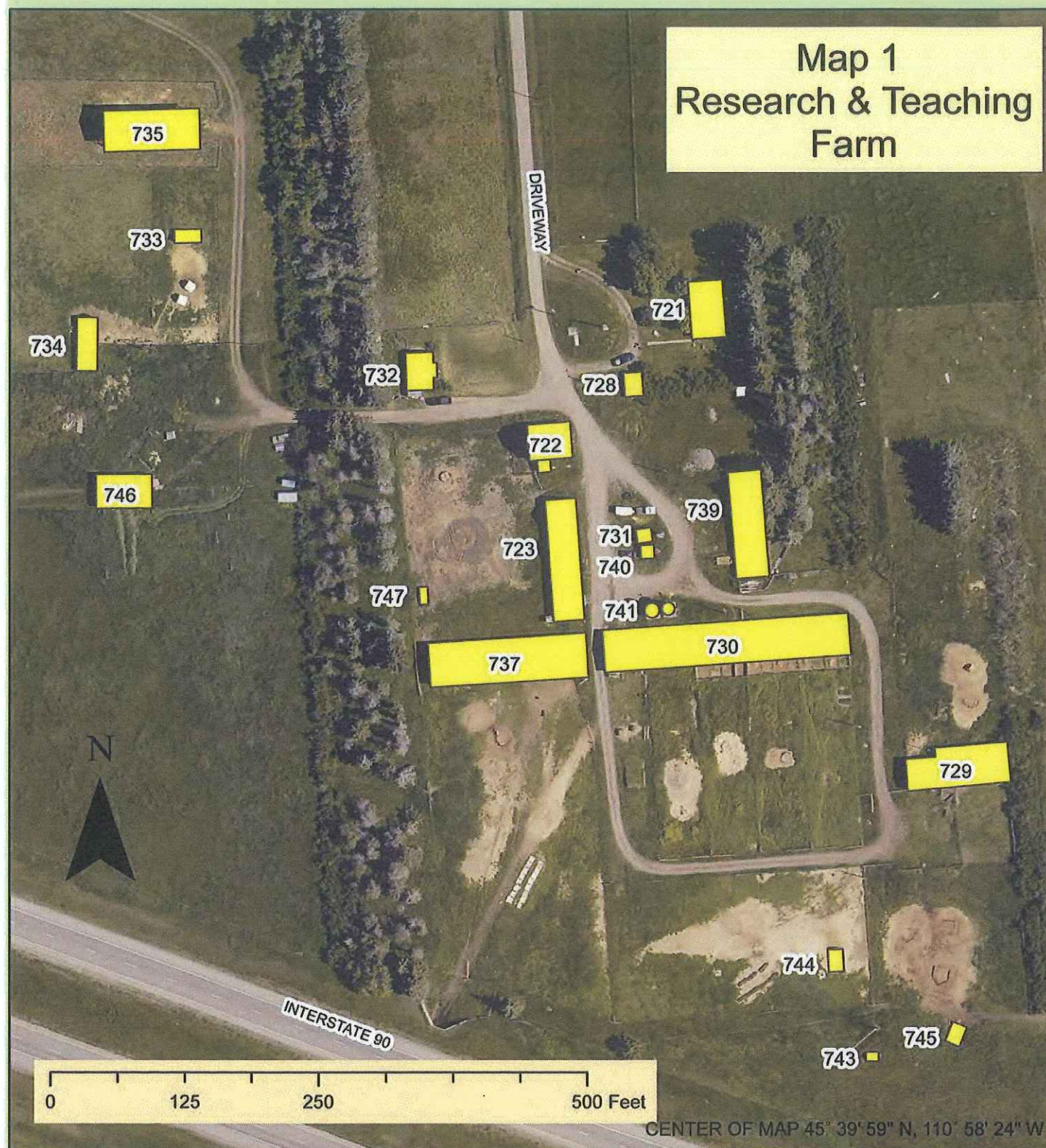


Description

Fort Ellis, Montana, July 1871, Photo by William Henry Jackson taken during Hayden Geological Survey 1871

Date July 1871**Source** National Park Service Photo. See [nps.gov/archive](https://www.nps.gov/archive) for a similar image (k# 64,367)

Montana AES: Fort Ellis



STRUCT #	Name
721	RESIDENCE #1
722	HORSE BARN/LAB
723	GRANARY & GARAGE
728	TWO CAR GARAGE
729	SCALE HOUSE
730	SHEEP SHED & SHOP
731	STORE HOUSE
732	RESIDENCE #2
733	SHEEP SHELTER
734	SHEEP SHELTER
735	HAY SHELTER (WEST)
737	RAM TEST SHED
739	STORAGE
740	OIL SHED
741	GRAIN BIN
743	PUMP HOUSE
744	SHEEP SHELTER
745	SHEEP SHELTER
746	CONFINEMENT SHED
747	SHEEP SHELTER
751	NE WOODEN SHED #1
752	NE QUONSET SHED #1
753	NE QUONSET SHED #2
754	NE WOODEN SHED #2

Legend

- STRUCTURE
- REMOVED STRUCTURE

Date: 3/11/2011
 Drawn by Christian Black
 Source: City of Bozeman Aerial 2007,
 Facilities Inventory updated Feb. 2011
 Contact FPDC Analyst Matt Hume



Montana State University Facilities Planning, Design, Construction

This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

Fort Ellis - Relevant 2011 SHPO Buildings Bozeman, Montana

FACILITY INVENTORY BUILDING LIST

STRUCTURE CLASSIFICATION ABBREVIATIONS			
LS	Livestock Shed (loafing, etc.)	BR	Barn
LH	Livestock Housing (has water/elec)	OF	Office
GR	Grain Bins / Silos	CR	Conference Room
LB	Lab (can include animal handling)	RR	Restroom
ES	Equipment Storage(has lights/elec)	R	Residence
GH	Greenhouse	WS	Weather Station
SD	Shed (no utilities)	FT	Fuel Station/Tank
FE	Fencing	CO	Corrals
RD	Roads	IR	Irrigation
PH	Pump House	SP	Shop

Bld No	Building	Structure		Date	Occupied	GSF	Notes	Mark Y if Yes		
		Type						Conditioned Environment/human	Electrical Power	Fire Sprinklers
721	FT.ELLIS RESIDENCE #1	R		1931		2,129		Y	Y	
722	FT.ELLIS HORSE BARN/LAB	BR, LB		1931		2,232		Y	Y	
723	FT.ELLIS GRANARY & GARAGE	ES		1925		4,186			?	
728	FT.ELLIS 2 CAR RESIDENCE GARAGE	SD		1925		380	DO NOT INSURE		?	
729	FT.ELLIS SCALE HOUSE	LH		1933		2,988			?	
730	FT.ELLIS SHEEP SHED & SHOP	ES, SP		1919		8,249	33336 FRONTAGE ROAD	Y	Y	
731	FT.ELLIS STORE HOUSE	SD		1933		120	DO NOT INSURE			
732	FT.ELLIS RESIDENCE #2	R		1932		1,100		Y	Y	
735	FT.ELLIS HAY SHELTER (WEST)	SD		1958		2,400				
737	FT.ELLIS RAM TEST SHED	SD		1933		5,220			?	
739	FT.ELLIS STORAGE	ES		1933		2,592	DO NOT INSURE			
743	FT.ELLIS PUMP HOUSE	PH		1933		75				
751	FT.ELLIS NE WOODEN SHED #1	SD								
752	FT.ELLIS NE QUONSET SHED #1	SD								
753	FT.ELLIS NE QUONSET SHED #2	SD								
754	FT.ELLIS NE WOODEN SHED #2	SD								

FACILITY INVENTORY BUILDING LIST

STRUCTURE CLASSIFICATION ABBREVIATIONS					Mark Y if Yes		
			Conditioned			Electrical Power	Fire Sprinklers
			Environment/human				
LS	Livestock Shed (loafing, etc.)	BR	Barn	FE	Fencing		
LH	Livestock Housing (has water/elec)	OF	Office	CO	Corrals		
GR	Grain Bins / Silos	CR	Conference Room	RD	Roads		
LB	Lab (can include animal handling)	RR	Restroom	IR	Irrigation		
ES	Equipment Storage(has lights/elec)	R	Residence	PH	Pump House		
GH	Greenhouse	WS	Weather Station	SP	Shop		
SD	Shed (no utilities)	FT	Fuel Station/Tank				

Bld No	Building	Structure	Date	GSF	Notes
		Type	Occupied		

STRUCTURES ON SITE THAT ARE NOT BUILDINGS

740	FT.ELLIS OIL SHED		1965	100			
741	FT.ELLIS GRAIN BINS		1986	900			

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pgs 227 & 228

Talks about one of the 3 pronged
units attached at Little Bighorn
bpt Ft Ellis led by
General John Gibbon

Others were from Ft. Abraham, ND
Ft Fetterman, WY

1876

