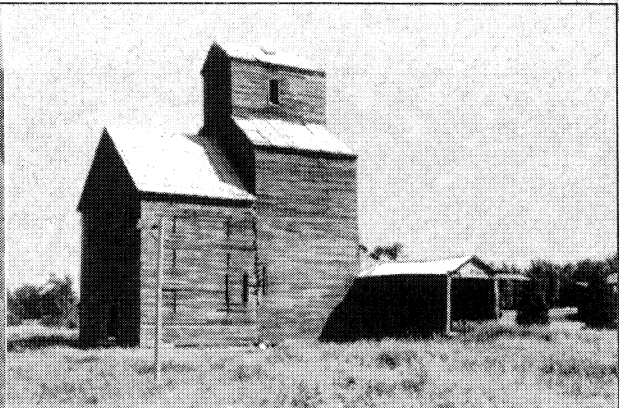


HOMESTEADING AND AGRICULTURAL DEVELOPMENT CONTEXT

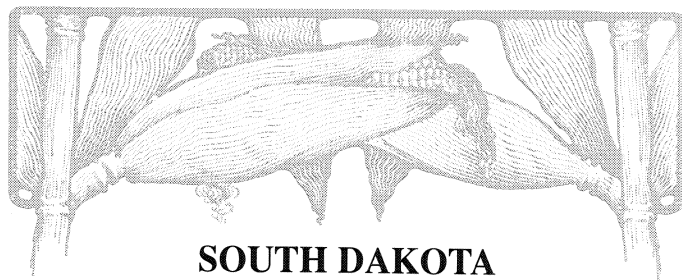


Allyson Brooks and Steph Jacon Edited by Michael Bedeau

South Dakota State Historical Preservation Center
Vermillion, South Dakota

1994

**HOMESTEADING
AND
AGRICULTURAL DEVELOPMENT CONTEXT**



**SOUTH DAKOTA
STATE HISTORICAL SOCIETY**

**SOUTH DAKOTA
STATE HISTORICAL PRESERVATION CENTER**

VERMILLION, SOUTH DAKOTA

1994

Number 359 of 600

This program receives Federal financial assistance from the National Park Service. Under Title VI of the Civil Rights Act of 1964, Section 504 of the Rehabilitation Act of 1973, and the Americans With Disabilities Act of 1990 the U. S. Department of Interior prohibits discrimination on the basis of race, color, national origin, age, sex, or handicap in its federally assisted programs. If you believe you have been discriminated against in any program, activity, or facility as described above, or if you desire more information, please write to the Office for Equal Opportunity, U. S. Department of the Interior, Washington, D.C. 20240.

This activity has been financed with Federal funds from the National Park Service, Department of the Interior through the South Dakota State Historical Preservation Center. However, the contents and opinions do not necessarily reflect the views or policies of the Department of the Interior, nor does the mention of trade names or commercial products constitute endorsement or recommendation by the Department of the Interior.

Cover corn graphic is from the September 7, 1906 issue of the *South Dakota Farmer*.

Cover photographs clockwise from the bottom left:

The National Register listed 1910 Ashcroft Ranch House was built of native fieldstone and stuccoed. It stands near Reva in Harding County.

The woodframe octagonal exhibit pavilion at the Butte-Lawrence County Fairgrounds was built in 1921. This National Register building is located near Nisland in Butte County.

Located near Irene in Yankton County, the Ramsley Homestead dugout was built in 1889. The one room structure measures 8 x 12 feet.

The Appleby Atlas Grain Elevator, individually listed on the National Register, rises above the railroad tracks in the now defunct town of Appleby near Watertown in Codington County. Built in 1883, the elevator features cribbed construction in its main section.

The oblong hollow tile swine barn located on the Nold Farm near Lebanon in Potter County was built in approximately 1903. The barn contained a grinder, well, windmill to pump water, pit scale and movable pens. A 16 sided house was also located on the site.

The sod house pictured in this historic photo also had a sod roof.

All photographs except the sod house are from the State Historical Preservation Center. The sod house photo is from the South Dakota State Archives, State Historical Society.

600 copies of this book were printed at the University of South Dakota at a cost of \$7.376 per book.

Table of Contents

Introduction.	5
Agricultural History and Development in South Dakota	
The Role of Geography and Climate.	7
The Acquisition of Land	
Settlement.	8
Federal Legislation and the Public Domain.	11
Agricultural Development	
Settlement Patterns.	14
Chronological History of Agricultural Development	
1860s.	14
1870s.	14
1880s.	16
1890s.	18
1900s.	20
1910s.	23
1920s.	25
1930s.	27
1940s and beyond.	29
National Register Evaluation Criteria and Significance Statements	31
Integrity and Agricultural Properties.	31
National Register Criterion A.	33
National Register Criterion B.	35
National Register Criterion C.	36
National Register Criterion D.	38
Boundary Considerations.	39
Property Type Analysis	
Importance of the Big Picture.	41
Evaluating a Site: Considerations.	41
Property Types	
Claim Era Resources.	42
Farms.	47
Ranches.	74
Fairgrounds.	78
Agribusiness.	78
Government Sponsored/Institutional/Communal Agricultural Operations.	82
Archaeological Research Issues.	85
Architectural Research Issues.	89
Bibliography.	91

HOMESTEADING AND AGRICULTURAL DEVELOPMENT CONTEXT

Introduction

The Homesteading and Agricultural Development context document is an attempt to provide a broad perspective to the history of agriculture in South Dakota and to its structural and archaeological legacy. The importance of this theme to the overall history of the state is obvious. One hundred plus years after statehood, South Dakota remains a predominantly rural and agricultural place. In addition, recent contractions in the rural economy and population have made cultural resources associated with agricultural heritage some of the most endangered property types in the state.

This document has been drafted to supplement the organizational framework outlined in *Historic Contexts for Historic* and *Architectural Resources in South Dakota* and in conformance with *The Secretary of the Interior's Standards for Preservation Planning*. Bearing this in mind, the reader will note that a different method of organizing context material has been employed in the creation of this material than is present in the South Dakota Historic Contexts document. This decision reflects the different purpose of each work. The Historic Contexts document is organized chronologically, reflecting its use as a tool for institutional planning efforts and academic pursuits. This document is designed to be a guide for the identification, evaluation and treatment of a particular set of physical elements and archeological remains which exist in and derive significance from various time periods. As such, the chronological approach was exchanged for an overall thematic grouping of agricultural resources. Thus, this document contains contextual information for most agricultural sites in South Dakota from initial agriculturally oriented European settlement (c.1858) to the present day.

There are certain resources that might appear to belong in this context that are either left out entirely or are mentioned only briefly. For the purposes of this document, agriculture does not include the processing of agricultural products for resale except at a very local scale. Therefore, a local cooperative creamery will be included here, while a large meat processing plant will not. Resources that fall between production and processing, such as grain elevators, sale barns and feed lots, have also been included in this context.

Unique ethnic building traditions that have an agricultural character, such as German-Russian rammed earth housebarns, are mentioned only briefly in this document. The importance of these traditional structures dictates that they be accorded a separate context document. Unique agricultural properties associated with the settlement of Native Americans on reservation lands will be addressed in a separate document for similar reasons.

The authors wish to stress this is a working document which will continue to evolve as research and careful consideration dictate. It is intended to address a wide audience from the cultural resource management professional to the layperson interested in researching the family farm. There are still many gaps in our understanding of the development of agriculture in South Dakota. The authors have endeavored to identify holes in the existing knowledge base and wish to encourage all readers to participate in the continuing evolution of this document.

HISTORY OF HOMESTEADING AND AGRICULTURAL DEVELOPMENT IN SOUTH DAKOTA

The Role of Geography and Climate

The importance of geography and climate in South Dakota's agricultural industry cannot be underestimated. Herbert Schell stated in *History of South Dakota*, "By virtue of the environmental influences, the history of South Dakota agriculture has been essentially a story of adjustments and modifications in farming methods and land use" (Schell 1975:342).

Agricultural historian Gilbert Fite observed, "Success in western farming was closely associated with adjustment to the geography and climate . . . adjustment meant a recognition of the region's scanty and uncertain rainfall as a permanent condition . . . The basic problem was one of working out and adapting farm organization patterns to fit natural conditions on the Great Plains" (Fite 1966:222-223).

South Dakota is divided into three major geographic regions: the Black Hills, the Central Lowlands (the area east of the Missouri River-often called "East River"), and the Missouri Plateau (the area west of the Missouri River excluding the Hills-often called "West River"). *See Figure 1.*

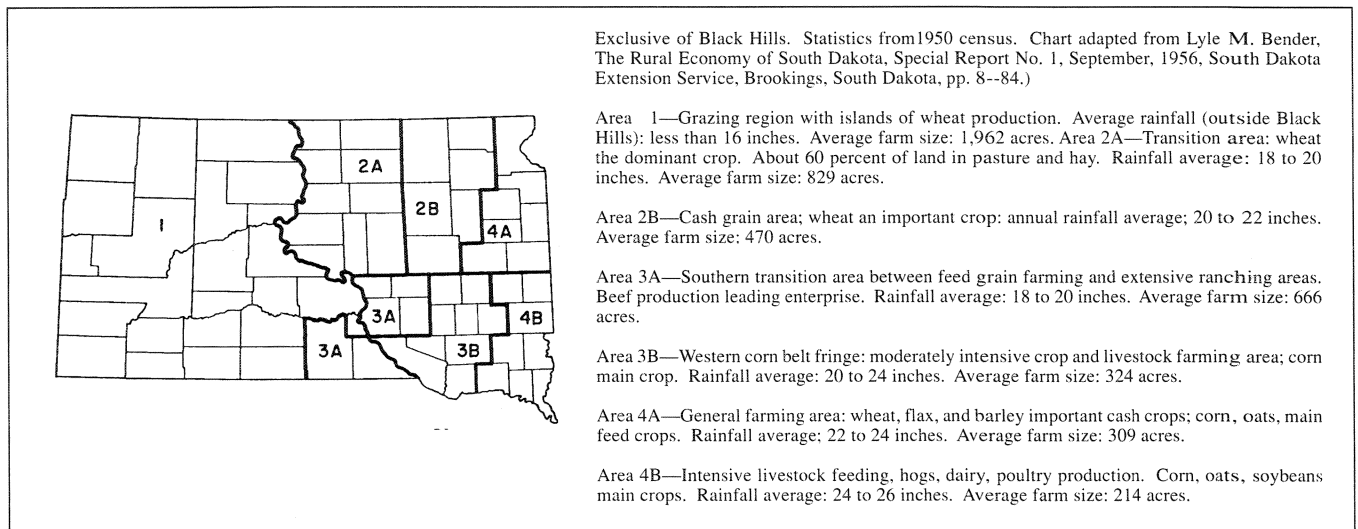


Figure 1 from Schell 1975:358

Several generalizations can be made in comparing these regions. The eastern part of the state contains flat to gently rolling land covered by tall to medium height grasses. The soil of this region is relatively rich. Temperature variation tends to be less extreme than in the west. The region has a longer growing season and greater annual rainfall than the western regions.

Exclusive of the Black Hills, western South Dakota is unglaciated Great Plains with rolling hills, buttes, badlands, canyons and stretches of flat tableland covered by short to medium height grasses. This is a dry region with an annual rainfall of less than 20 inches. Temperature variations are more extreme than in the eastern portions of the state. Compared to an average growing season in South Dakota's southeast corner of 150 days, the average growing season in northwestern areas is 118 days (Hogan 1991:11).

The Black Hills rise abruptly out of the West River High Plains from an elevation of 3247 feet at Rapid City to a maximum height of 7242 feet at the summit of Harney Peak. The central Hills contain deep gulches and steep peaks. A flat valley often called the “racecourse” surrounds the central Black Hills. The racecourse is in turn ringed by an outer hogback ridge. Conifers are the natural vegetation. Typical of mountain areas, temperature and precipitation levels change according to elevation. The growing season ranges from 101 days in the highest areas to 130 days in the foothills (Hogan 1991:11).

The Acquisition of Land

Settlement

Homesteading in South Dakota, and across the American West in general, can be interpreted as a product of a fundamental American ideology that land ownership is linked to economic, social and spiritual status. This ideology was expressed in a succession of federal legislation opening the West to settlement. In “*The Only Thing Worth Working For: Land and Its Meaning for Pioneer Dakotans*”, historian Gilbert Fite writes, “The acquisition of land provided an improved social status and an enhanced self-image. With land, one could be his own man, he could be independent, self-supporting, proud, hopeful of the future, and as good as anyone” (Fite 1985:4). In addition to socioeconomic considerations there was a strong spiritual component to land acquisition that originated in Jeffersonian philosophy. It was Thomas Jefferson who wrote that farmers were the chosen people of God. Fite elaborates,

Land, of course, is usually not separated in people’s thought from farming. The idea of men and women producing a living on their own land, working in harmony with God, is an idealized picture that has had a strong fascination for Americans. This concept is called the agrarian tradition or agricultural fundamentalism. But whatever name is used, the idea was, and is, that when man has a close relationship to the land, this relationship has special meaning for him and for society. Farmers, it has often been claimed, were better people because they lived on the land. Besides being morally superior, they were more independent, more wedded to liberty and democracy, more honorable, and possessed a greater love of man and God than other people (Fite 1985:4).

In addition to the philosophical appeal of farming one’s own land, many came West for a variety of other reasons. Edith Eudora Kohl homesteaded a quarter section in western South Dakota along with her sister. In *Land of the Burnt Thigh* she wrote that her decision to move West was based on a desire for both adventure and improved health, “. . . there would be new people, new interests, and in the end 160 acres of land for Ida Mary. Perhaps for me the health I had sought so unsuccessfully” (Kohl 1986:7). Walker Wyman, a South Dakota rancher also recalls heading to South Dakota in search of adventure. He planned to make a fortune in the Black Hills and then use the money to open a cattle and horse ranch (Wyman 1954:4).

Euro-American settlement in South Dakota began with small groups of traders. They were followed by men and women engaged in service operations to both Indian encampments and trading posts. In the 1850s the first Euro-american settlers arrived establishing themselves between the Big Sioux and Missouri Rivers. This area, known as the Yankton Triangle, contained more than eleven million acres of good agricultural land. In 1858, a treaty with the Yankton Sioux officially opened the Yankton Triangle to public entry. By 1860 the region was legally open to survey and settlement. By 1861 it was the main area of activity in Dakota Territory (Hoover 1988, Schell 1975).

The initial settlement rate was moderate. By 1860 just 500 settlers had located in the southeastern section of Dakota Territory. Deterrents included the harsh climate and Native American upheavals. As a result, settlement remained low until the mid-1870s. Most of the early settlers were Norwegians, Irish, Swedish, Dutch, Danish and British immigrants. By 1869 a sizable Czech community had developed between Yankton and Bon Homme. In 1873 and 1874 there was a wave of German-Russian immigration. Religious groups such as the Hutterites, the Mennonites and two small communities of Jewish farmers from eastern Europe also found their way to South Dakota.

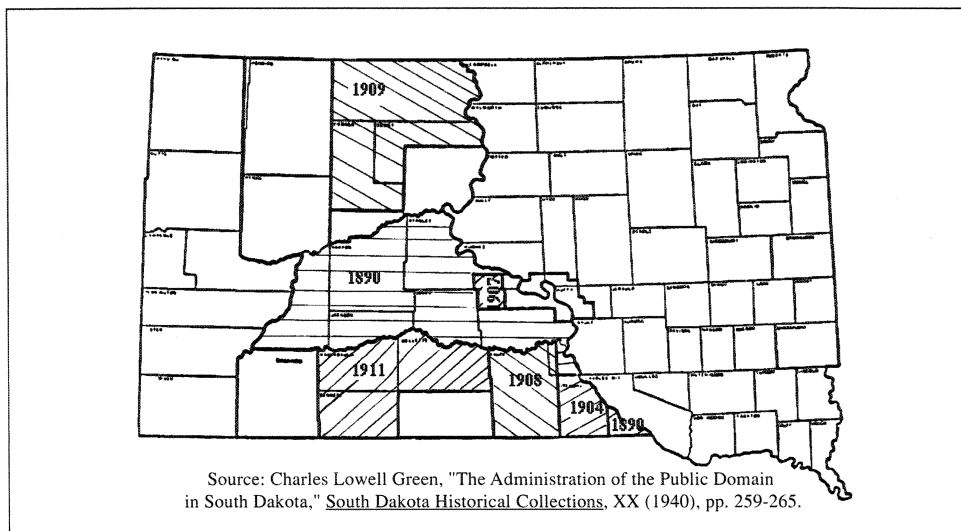
Immigration increased dramatically in the late 1870s when climatic conditions became more favorable, Indian hostility subsided, and the railroads arrived. The Great Dakota Boom began in 1878 and lasted until 1887. From 1880 to 1885 Dakota Territory took the lead in the amount of land entered under the Preemption, Homestead and Timber Culture Acts. In 1880 alone, the amount of land entered in the Territory was almost a fourth of the disposal for the entire United States. In 1884, entries recorded at the Huron land office exceeded the total entry of any other state or territory except Nebraska. When the boom ended, almost all the land east of the Missouri River had been taken. Railroads played a predominant role in increasing the population. They actively publicized South Dakota by distributing pamphlets and brochures boasting of favorable crop yields and climatic conditions (Green 1940, Hoover 1988, Schell 1975).

In 1889 South Dakota became a state along with North Dakota, Montana and Washington. That same year the Sioux reluctantly ceded nine million acres of the Great Sioux Reserve to the federal government. Before the land was officially opened to settlement, the Sioux Commission needed to obtain the signatures of three-fourths of the adult Indian males. Prior to completion of this task, "sooners" began to appear in the towns along the Missouri River with the intent of being the first to file claims within the reservation. Some prospective homesteaders even invaded the reservation before completion of the agreement. In response, the Government placed troops opposite Pierre, Chamberlain and other entry points to prevent an early invasion. An estimated five thousand people waited in Chamberlain for the reserve to be opened while another five thousand assembled in Pierre. On February 10, 1890 the reserve was officially opened. After the initial land rush, settlement of the area slowed as a result of semi-arid conditions of the region and fear of Native Americans who had become involved in a messianic religion.

At the end of 1889 surplus lands on the Sisseton reservation were opened to homesteaders and by 1895 Yankton Reservation lands were also opened to entry. The final wave of homesteaders arrived between 1904 and 1913 on the Rosebud, Pine Ridge, Lower Brule, Cheyenne River, and Standing Rock reservations. *See Figure 2.* Over four million acres became available for purchase. A unique feature of these later openings was the allocation of property by lottery. Applicants lined up at registration offices in order to register for the land drawing. Thus, unlike eastern South Dakota which was settled by those choosing their location, West River was settled by a throw of the dice (Green 1940, Karolevitz 1975:228-230). As a result, the experience of the West River homesteader was different from those who settled East River.

Between 1898 and 1920, a final rush of settlers filled in the remainder of West River land. In general, land use of western South Dakota differed from that in the eastern sections. Much of the Euro-american settlement of western South Dakota was tied into ranching. The Black Hills Livestock Association formed with sixty members in 1880. The following years were considered the bonanza period of cattle ranching. Large cattle companies financed by capital from England, Scotland and the eastern United States dominated western South Dakota. By 1884 700,000 to 800,000 head of cattle roamed the range. The severe winter of 1886-1887, along with the ensuing encroachment of the homesteaders, brought an end to large ranching operations. By the mid-1880s the large cattle era was finished. It was replaced by the appearance of moderate size

ranches. The ranching industry peaked again in the 1890s when approximately fifty companies were running medium sized herds. West River homesteaders finding it difficult to farm the semi-arid portions of South Dakota had turned to cattle, sheep or horses and started small ranching operations. By the turn of the twentieth century, South Dakota had a general distribution of settlers across the state (Schell 1975, Green 1940, Hoover 1988).



*Figure 2: A Map Showing Cessions of Land in the Great Sioux Reservation and Dates When They Were Opened to White Settlement from James Fredric Hamburg. **The Influence of Railroads Upon the Processes and Patterns of Settlement in South Dakota** (NY:Arno Press, 1981), figure 38.*

The 1930s heralded the end of settlement of South Dakota's public lands. One of the most fundamental changes was the withdrawal of public lands from entry, which began with the Taylor Grazing Act of 1934. In 1935, President Roosevelt removed the last of the public acreage from entry and set them aside for grazing and other purposes. With the exception of Alaska, this ended the homestead era across the United States. Two other events during the 1930s drastically effected and the homesteaders, particularly those in western South Dakota. One was the Great Depression and the other was the environmental disaster known as the "Dust Bowl". The full force of the depression reached South Dakota in 1931. Farms prices collapsed at the same time that the six year drought known as the "Dust Bowl" began. One storm in May of 1934 carried away an estimated three hundred thousand tons of topsoil from the Great Plains (Malone and Etualin 1989).

In the spring of 1933 the Roosevelt administration and Congress began a series of measures designed to relieve public suffering and help bolster the economy. The Agricultural Adjustment Act of 1933 was designed to help raise farm prices to the comfortable levels they had been prior to World War I. This began the national policy of providing direct subsidies to farmers. The law created the Agricultural Adjustment Administration which provided payments to farmers who reduced their acreage. This policy helped boost the flow of cash through rural economies (Malone and Etualin 1989).

The other agency that became central to farming during and after the Great Depression was the Soil Conservation Service. The SCS was established in 1935 along with the Rural Electrification Administration which promoted the building of electrical lines across rural areas. The SCS was founded to help prevent erosion through the reseedling of native grasses, provide technical assistance to farmers to establish workable

soil, develop water conservation procedures and promote other conservation efforts. Erosion of topsoil was a particular problem, and in response, the SCS assisted Great Plains farmers with a rain conservation program. Contour plowing was done so rain could accumulate in gaps for distribution. One of the agency's other major initiatives was to plant shelterbelts to help diminish the terrible dust storms. By 1940 more than forty million trees had been planted along twenty-five hundred miles (Malone and Etulain 1989:94-96, Lowitt 1984:38).

Some of the wind erosion that occurred on the Great Plains was caused partly by poor farming techniques and overgrazing. Wheat had been planted on marginal lands that were more suited to grazing. In 1930 it was estimated that over 100 million acres of land in the United States was being harvested for crops in areas having soil unfit for agricultural production. The solution was to take these areas out of crop production, restore exploited soils and regulate grazing lands. The Resettlement Administration was established in the spring of 1935 to manage this policy, dubbed the Land Use Program. Part of its mission was to repurchase 10 million acres of marginal and submarginal farming lands across the United States, although more than half of this acreage consisted of the dust-burned homesteads in the Great Plains. Land was purchased from bankrupt farmers, mortgage companies and tax deeds. Families from whom land was bought were required to resettle in other areas. By August of 1936 approximately 4 million acres of land had been bought in the Dakotas, Montana, Nebraska and Wyoming (United States Resettlement Administration 1936:22-23, Lowitt 1984:38-39, Boscoe personal communication). These areas were reseeded with native grasses, waterholes for cattle were built and grazing districts were formed for leasing purposes. Another half million acres were reforested, developed as parks and turned into wildlife refuges. The Land Use program was particularly applicable to the West River homesteads in South Dakota. The federal government purchased 850,000 acres of submarginal land in the western part of the state. As these properties were bought by the Government the homestead buildings were torn down and the land restored. In 1937 the Farm Security Administration replaced the Resettlement Administration. In 1938 the Land Use Program was placed under the direction of the Soil Conservation Service and continued until 1954 when Congress created the National Grasslands out of the repurchased properties. In South Dakota the National Grasslands were divided into three areas: Grand River, Fort Pierre and Buffalo Gap. All three are presently administered by the Nebraska National Forest (United States Resettlement Administration 1936:22-23, Schell 1975:293, Boscoe personal communication). Generally, nothing more remains on these grasslands than depressions and their associated artifacts. Tar paper claim shacks were often sold or moved elsewhere. Sod houses that were left exposed may have "melted" into the soil and are no longer identifiable as former structures. Grass seeding and general reclamation activities obliterated physical evidence of a former occupation. Although much of the architectural legacy of homesteads in the grasslands has been lost, there is still the possibility of archaeological significance (Polk 1989).

Federal Legislation and the Public Domain

Federal land policy, until the end of the nineteenth century, consisted of four objectives; the provision of revenue to the government, the settlement of new communities, a means of rewarding veterans, and promoting education through the establishment of schools and institutions of higher learning (Gates 1971:365).

The first piece of federal legislation establishing the layout of public land for distribution was the **Land Ordinance** of 1785. This set up a system dividing the land into squares of six miles on a side, constituting a township. A township was subdivided into square mile sections. Each section contained four quarter sections of 160 acres. Land was to be auctioned by township and any remaining land could be sold for \$1.00 an acre at the land office. In 1796 the price was raised to \$2.00 per acre. This ordinance designated

the federal government as the distributor of land across the United States. Its underlying premise was to allow every citizen access to property. It was hoped that this would prevent a European class system from developing. The Land Ordinance encouraged small freeholders to improve their property, which in theory would create an equitable distribution of wealth across the country (White 1991:138-139).

Even with the Land Ordinance of 1785 in place, problems developed as settlement preceded government surveyors. Eventually, the rights of these squatters were legalized by the **Preemption Act** of 1841. It allowed them to buy up to 160 acres of their illegal holdings at \$1.25 per acre after the land was surveyed. The purchased property had to have a dwelling and improvements. When the land was ready for sale the squatter was to appear at the land office and pay the minimum price to prevent auction. The Act did not extend to settlers on unsurveyed parcels. The law was widely abused, often resulting in quick cash settlements through the sale of property. It was eventually repealed in 1891. The importance of the Preemption Act was the legalization of pioneer settlement and the recognition of squatting as a legitimate means of establishing a farm (White 1991, Gates 1968:240-246).

In 1862 Congress adopted five measures that helped promote the settlement of Western lands. First, land grants were given to four transcontinental railroads. Second, the Homestead Act of 1862 was adopted granting 160 acres to anyone willing to live on a property and improve it for five years. Third, Native American populations continued to be relocated to reservations which opened more territory to settlement. Fourth, thirteen new territories were admitted into the Union. Finally, to encourage productive farming, land was granted to each state for the development of agricultural colleges (Gates 1971:369).

The **Homestead Act** of 1862 was the embodiment of the Republican ideal of an agricultural society founded upon small land holdings (White 1991:143). Land was made available to any head of family or person over 21, who was a citizen of the U.S. or had filed a declaration to become one. Quarter sections of land were distributed free provided the property was lived and worked on for a period of five years. There was also an option to purchase the land after six months of residency for \$1.25 an acre. Originally, the Homestead Act applied only to surveyed land but in 1880 it was expanded to include unsurveyed land (Gates 1968:394, White 1991:144). The first individual to file an entry in South Dakota was Mahlon Gore of Vermillion. Gore is considered to be one of the first three homesteaders to file claims in the United States. The first to receive his final certificate was Frank Veranzi of Vermillion, South Dakota (BLM 1962).

In 1873 Congress passed the **Timber Culture Act** encouraging the planting of trees in the arid west. If a settler planted forty acres of timber and fostered their growth for ten years, the individual was entitled to that quarter section. The Act also permitted homesteaders who occupied their property for three years, and had an acre of trees under cultivation for two of those years to receive a patent to their land. During the next five years, drought, grasshoppers and the difficulties of caring for 40 acres of saplings in an arid climate led Congress to relax the requirements of the law. In 1878 the forty acres was reduced to ten. The law was repealed in 1882 as a result of abuses to the system. In Nebraska, Kansas and Colorado ranchers had their hired help file timber culture claims along rivers and streams to prevent settlement by farmers (Robbins 1962:218-219, White 1991:151). A federal agent in the Dakotas found 90 percent of the entries under the Timber Culture Act were made entirely for speculative purposes. One company in the Dakota Territory claimed twenty-six section entries located entirely along streams (Robbins 1962:248-249).

In 1877, still wrestling with problems of settling an arid region, Congress further eased the land distribution system by passing the **Desert Land Act**. This Act was designed specifically to foster settlement of the arid and semi-arid west. Only applicable to California, Oregon, Nevada, Washington, Idaho, Montana, Utah,

Wyoming, Arizona, New Mexico and the Dakotas, the Act allowed one to purchase 640 acres of land if it was irrigated within three years of filing. Initial land costs under this Act were twenty-five cents per acre at the time of filing. A settler could receive title at anytime within the three years if compliance with the law were proved and an additional one dollar per acre were paid. Under this act only one entry could be made per person (Robbins 1962:219, Gates 1968:401). Once again, this legislation assisted speculators more than the settlers. One only had to pay twenty-five cents per acre to hold land off the market for three years. Although the land was to be irrigated, the law did not specify what constituted adequate irrigation. Typically, speculators plowed a few furrows and then claimed they were irrigation ditches. In 1890 Congress set standards for both necessary improvements and the amount of irrigation required (White 1991:152).

The Desert Land Act and Timber Culture Act were a boon to cattle ranchers. Ranchers had their cowboy employees file claims under these two acts as well as using homesteading entries and preemption entries to expand their grazing territory. Shortly after the land was proved up deeds were turned over to the cattle company. One person could theoretically claim up to 1280 acres of land by combining all the settlement laws (Robbins 1962:251).

The **Timber and Stone Act** of 1878 became another means of using land legislation for fraudulent purposes. The act permitted settlers to purchase 160 acres of nonagricultural land for \$2.50 an acre. However, the timber and stone they obtained from their property could only be used for their own needs. They could not be sold. The act proved to be a bonanza for the lumber industry. Lumbermen had proxies file claims and then in clear violation of the law stripped the claims of timber (White 1991:150).

By the beginning of the twentieth century it was apparent that large portions of the semi-arid and arid west could not accommodate the ideal 160 acre homestead. In 1904, Moses Kinkaid, a congressman from Nebraska, introduced a bill that allowed 640 acre claims in semi-arid regions. The **Kinkaid Act** permitted settlers in the western two-thirds of Nebraska to homestead 640 acres. The provisions entailed living on the property for five years and constructing improvements worth \$1.25 an acre. Irrigable Platte River land was excluded. Settlers already possessing 160 acres could increase their holdings to obtain an entire section. Between 1904 and 1920 the Kinkaid Act pushed remaining public land in Nebraska into private ownership. One of its results was allowing larger ranches to increase their holdings in a legitimate manner.

The success of the Kinkaid Act led to the **Enlarged Homestead Act** of 1909. This act permitted the acquisition of 320 acres on nonirrigable and non-mineral land that had no marketable timber. In 1912 a further incentive was added to the law by reducing the proving up period from five to three years. Although the original act excluded South Dakota, the response in other states was so great it was asked to be included in 1915. The Act unintentionally broke up the public range which hurt the livestock industry. This concern prompted the introduction of the **Stock Raising Homestead Act** in 1914. It passed in 1916. This legislation authorized 640 acre homesteads for grazing. Land improvements of \$1.25 per acre were required which could include fences or wells. Settlers possessing claims under earlier acts could use this legislation to increase their holdings to 640 acres. Claims filed under this act reached a peak in 1921 averaging five to seven thousand claims annually. The Stock Raising Homestead Act caused tremendous damage to the range and was misleading to many settlers. Six hundred and forty acres could not support a viable ranch. In portions of Utah a 640 acre ranch could support only nine head of cattle.

The decline of the range led to the **Taylor Grazing Act** of 1934. Its purpose, stated in the title of the act, was to prevent injury to the public grazing lands by preventing overgrazing and soil deterioration, to maintain their orderly use and to support improvement and development (Green 1940:192). The Act assigned the

Department of Interior responsibility for managing, preserving and conserving 142 million acres of grazing land. It also authorized the establishment of grazing districts. The Secretary of the Interior was to issue permits for range use. Stockmen, landowners and settlers were to be given preference. It was also the responsibility of the Secretary of the Interior to determine fees and the amount of livestock allowed in each district. Numbers of livestock could be reduced in the event of a drought or disease. Lands included in the districts were withdrawn from public entry (Gates 1968). The underlying concept of the Taylor Grazing Act was the joint administration of grazing districts by the federal government and stock raisers. District administration fell under the authority of the Grazing Service and local advisory boards. In 1946 the Grazing Service was merged with the General Land Office to become the Bureau of Land Management (White 1991:479). The Taylor Grazing Act heralded the closing of the west to settlement on public lands. The only state to continue homesteading into the mid-twentieth century was Alaska. The advent of the Taylor Grazing Act meant that from this point on, public lands were to be managed rather than relinquished to private ownership. In the spring of 1935 President Roosevelt withdrew the remaining 165.7 million acres of public domain and set them aside for grazing and other usages (Malone and Etulain 1989).

Agricultural Development

Settlement Patterns

South Dakota acquired most of its population during one of the two Dakota booms: 1878-1887 and 1902-1915. First Dakota boomers settled in East River (portions of the state east of the Missouri River) and Black Hills areas. Second boomers filled non-reservation land west of the Missouri River. Given the varied geologic and climatic conditions in the state, location often determined what type of agricultural operation was feasible on a long term basis. Generally East River was the home to crop growing operations while ranching was the primary operation West River (portions of the state west of the Missouri River). The nature of the agricultural operation determined what the permanent structures looked like and what types of alterations were made to the land. Settlers intent on pursuing an agricultural operation often constructed a temporary structure followed by permanent structures and landscape alterations as time and finances permitted.

Chronological History of Agricultural Development

A general chronological consideration of the factors affecting agricultural operations such as weather, economic conditions, politics and technological advances creates a context to explain the type, distribution and number of South Dakota's agricultural cultural resources.

1860s

Non-native settlement within the boundaries of present day South Dakota was sparse during the 1860s. An act of Congress organized Dakota Territory in 1861. The 1868 creation of the Great Sioux Reservation included all of present day West River South Dakota and North Dakota. Settlement in South Dakota during the 1860s was in the extreme southeastern part of the state around Vermillion and the Territorial Capital, Yankton. Drought in 1863 and grasshopper plagues from 1863-65 made farming difficult.

1870s

South Dakota's population increased approximately eight times during this decade to a figure of 81,781 in 1880 (Schell 1975:159). Despite a slow start to the decade caused by the financial panic of 1873, settlement increased dramatically toward the end of the decade, the beginning of the First Dakota Boom (1878-1887). The majority of settlers who came to the state during the Boom occupied land between the Missouri and James Rivers (Fite 1985:11). *See Figure 3 for settlement advances by decade.*

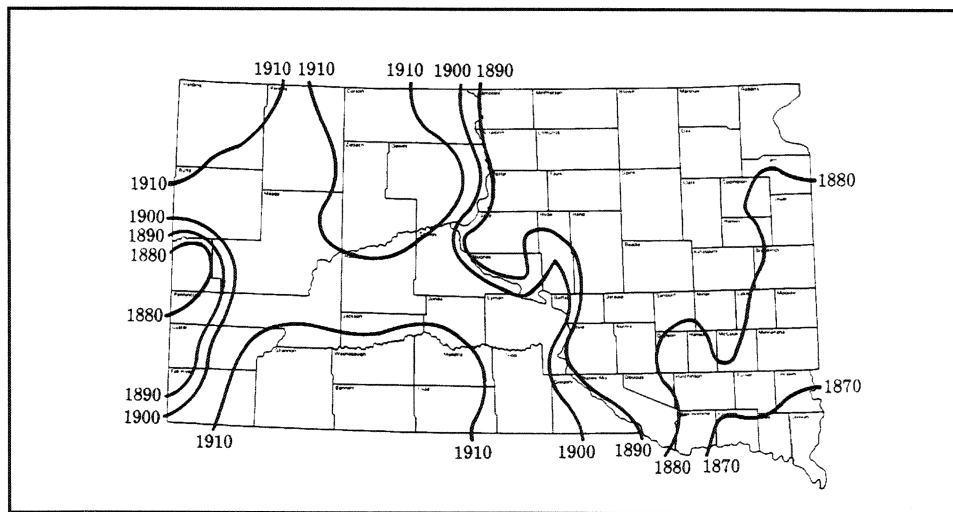


Figure 3 from Ostergren 1983:54

Initial settlement in West River South Dakota began in the 1870s with the discovery of gold in the Black Hills in 1874 and the opening of the area to white settlement in 1877. Mining towns such as Deadwood and Lead sprang up in the mid 1870s.

Natural factors such as the blizzard of 1873 and the grasshopper plagues of 1873, 1874 and 1876 made the middle years of the decade difficult for farmers. Gilbert Fite declared that these factors caused more hardship than the poor economic times (Fite 1966:73). Conditions were so bad that the federal government distributed supplies and seed to the area stricken during the grasshopper plague. Fite knowingly points out that besides the altruistic motives in the relief effort, the government had an economic interest in keeping the newly arrived population intact (Fite 1966:71).

Although the number of Dakotans engaged in agricultural pursuits rose during this decade, the average size and value of the operations were small. Gilbert Fite indicated, “. . . capital formation was a long, slow process on most western farms. . . . Most farmers reinvested into the farm practically everything they made . . . At the outset, most frontier farmers operated on a very small scale” (Fite 1966:46).

For those who could afford it, technological advances aided the farmer of the 1870s. Product innovations of the era included the self-binding reaper that cut grain and bound it into sheaves, plow blades of improved design with “a hard surface that resisted wear and a soft core that resisted shock” (McKinley 1980:7), riding plows and the application of steam power to threshing machinery. These products and features combined to make a farmer’s job easier. Crop developments such as an improved milling of hard spring wheat were also distinct advantages for Dakota farmers.

Contrasted with the small scale, relatively permanent farming East River, the West River ranching industry consisted mainly of large, mobile operations. The initial appearance of cattle in South Dakota began with companies from neighboring states driving cattle into the Territory to serve the growing Black Hills regional market especially after the 1877 opening of the area to white settlement and an increased government demand for rations on the reservations (Pulling 1940:470).

Word of the nutritive value of Dakota prairie grasses and shelter potential of the broken West River topography for stock raising spread through a variety of methods including two books published in Yankton in 1870

(*Outlines of History of Dakota and Emigrant's Guide* by J. S. Foster and *A Sketch of the History and Resources of Dakota* by G. A. Batchelder) and an 1875 report by the federal government geologist W.P. Jenney assigned to investigate the Black Hills (Briggs 1928:423 and Pulling 1940:471). The 1875 Jenney report stated “ ‘The abundance and fine quality of the grasses and the shelter afforded to stock by the densely timbered slopes and deep valleys will make it a region well adapted to stock-raising purposes. It constitutes the great future wealth of this region and its value can hardly be over estimated’ ” (Briggs 1928:423-424). The dry climate also contributed to the area’s grazing potential by preventing nutrient loss from the grass by leaching due to rainfall (Schell 1975:242).

In her history of the range cattle industry in Dakota, Hazel Pulling stated that by 1880, “Dakota had fairly well established her reputation among cattle-men as range-cattle area”(Pulling 1940:475) and “the future of Dakota’s cattle country looked promising.” (Pulling 1940:476) Reasons for this outlook included the drastic reduction in the number of buffalo on potential grazing land, placement of Indians on reservations (Pulling 1940:473), successful early ranching operations indicating the potential for large scale ranching operations (Pulling 1940:476), the greater cattle weight gain during the Northern Plains grazing season compared to Southern ranges, the unrestricted range free of fencing and ever increasing transportation/shipping possibilities resulting from continuing railroad expansion (Pulling 1940:474). Herbert Schell noted, “By 1880 the cattlemen had occupied most of the range between the eastern foothills [of the Black Hills] and the confluence of the Belle Fourche and Cheyenne and the also the area comprising present-day Fall River County” (Schell 1975:156).

1880s

As a result of the First Dakota Boom, South Dakota’s population increased approximately fourfold during this decade to 348,600 by 1890. Desire for a piece of land of their own and the growth of the railroad brought settlers into Dakota Territory during the Boom (Fite 1966:97-98).

The influence of the railroad on settlement in South Dakota during the 1870s and 1880s cannot be underestimated. The railroad reached Yankton in 1873 before building stopped due to the national financial depression. Construction began again in 1878, spurring on the First Dakota Boom. Railroads promoted the new areas they entered to generate a population for the towns they created. ***See Figure 4, a promotion for the Chicago and North Western Railroad dating from the First Dakota boom.*** In their efforts to promote settlement, railroads had to compete against detractors from a variety of backgrounds. One detractor was Major John Wesley Powell, author of the 1878 publication ***Report on the Lands of the Arid Region of the United States***, (Fite 1966:97) who claimed that it was very difficult to successfully farm in the fairly arid regions of the American West. Present day South Dakota was considered to be on the very edge or actually within the section of the West considered to be too arid for farming.

Despite skeptics such as Powell, settlement continued at a phenomenal pace. At the height of the Boom in 1883, homestead entries in Dakota Territory accounted for 39% of the total filed in the entire United States (Fite 1966:99).

Favorable rainfall in the first half of the decade helped produce impressive crop yields. This was an encouraging sign to potential Dakota settlers. Spring wheat was an especially important crop in the central and northern portions of East River South Dakota. As more farm operations became mechanized, many more acres could be planted. A market for farm machinery developed throughout the newly settled regions of South Dakota. Equipment available in the 1880s included endgate seeders, corn planters, drills, binders, hay rakes, threshers and gang plows.

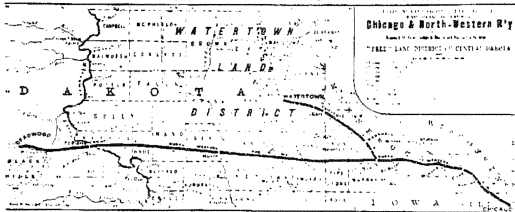
2,000,000 FARMS of Fertile Prairie Lands
to be had Free of Cost

CENTRAL DAKOTA

The United States offers 2,000,000 Farms to Two Million Farmers who will occupy and improve them. These lands lie between the 40th and 45th degrees of latitude, and between Minnesota and the Missouri River. In the year 1900.

30 Millions of Acres

Of the Best Prairie Land in the World. The attached Map shows the location of these lands.



YOU NEED A FARM!

Here is one you can get simply by occupying it. It will be noticed that the

CHICAGO AND NORTHWESTERN

Has Two Lines of Road that run through to these lands. It is the only Rail Road that reaches them.

In the District to the West, North and South of Western, are many millions of acres that you can reach by the CHICAGO & NORTHWESTERN RAILWAY. Along the line in Dakota have been set out a number of Towns in which are located the Baraboo, Rosebud and Lakota. CENTRAL DAKOTA is now for the first time open to settlement. The Government has reserved and then surrendered these lands to those who will occupy them.

HOW TO GET THERE


AT CHICAGO YOU CAN BUY TICKETS AT
62 CLARK STREET, 75 CANAL STREET, Corner of Madison, at the WELLS STREET DEPOT on Kinzie Street, north of Wells Street Bridge, and at KINZIE STREET DEPOT, on the Corner of Kinzie and Canal Streets.

BEAR IN MIND you will not get to this territory the same as you would to the West. You must go by the CHICAGO & NORTHWESTERN RAILWAY. The fare is \$10.00. You must go by the CHICAGO & NORTHWESTERN RAILWAY. The fare is \$10.00. You must go by the CHICAGO & NORTHWESTERN RAILWAY. The fare is \$10.00.

Chicago & North-Western R'y.


Figure 4 from Rick Mills. *Railroading in the Land of Infinite Variety - A History of South Dakota's Railroads* (Hermosa, SD: Battle Creek Publishing Company, 1990), page 7.

ISN'T IT TIME YOU OWNED A FARM?



THREE THOUSAND GOVERNMENT HOMESTEADS

IN THE
Pine Ridge and Rosebud Indian Reservations



DIRECT ROUTE TO
GREGORY, DALLAS AND RAPID CITY
WHICH ARE POINTS OF REGISTRATIONS

Time of Registration, October 2 to 21, 1911

Figure 5 from Schell 1982:101

Evidence of the development of agriculture as an important South Dakota industry was the creation of permanent institutions to serve and promote the farming profession. The State College of Agriculture and Mechanical Arts (now South Dakota State University) was founded by the Legislature in 1881 with an Agricultural Experiment Station established at the College in 1887. The first Territorial Fair was held in Huron in 1885. The first issue of the *Dakota Farmer*, a voice of South Dakota farmers for years to come, was published in Alexandria in 1881.

The first agricultural political organization to receive notable support in South Dakota, the Farmer's Alliance, gained popularity during the middle to late 1880s. Earlier agricultural political groups such as the Grange and the Greenbackers failed to attract much attention in South Dakota. Historian Herbert Hoover lists "sagging crop and livestock prices coupled with credit problems, high retail rates, and increasing resentment toward railways, elevator companies and middlemen" (Hoover 1983:132) as the factors that made the party attractive to South Dakota farmers in the second half of the 1880s. The main concern of the Alliance was the "government regulation of the business methods employed by railroaders and middlemen" (Hoover 1983:133). Alliance ideals were eventually incorporated into the Populist movement beginning in the early 1890s.

A decline in the business economy and a series of droughts in the second half of the decade brought the prosperous Dakota Boom years to an end. As a result, the nature of many South Dakota farming operations

changed, especially in the wheat producing areas of central and northern East River South Dakota. Farmers diversified their operations to decrease their dependence on the successful production of one crop. Dairying, livestock raising and production of crops other than wheat such as corn and alfalfa increased in East River South Dakota (Fite 1966:107-108). Diversified farming had come earlier to southeastern South Dakota where dairying and corn and oat production were “well established” (Schell 1975:343) by 1880.

1889 brought statehood for South Dakota and a serious drought over most of the state. The drought began an eight year period referred to as the Great Dakota Bust during which a record number of counties lost population.

Ranching

Ranching operations continued to expand during the 1880s. In the early years of the decade the industry moved north through Butte and Harding counties. Herbert Schell states that the cattlemen followed the progress of the northward moving buffalo hunters (Schell 1975:243).

A number of large cattle companies with main offices outside South Dakota formed during the first years of the decade. This was corporate rather than family ranching consisting of long cattle drives ending at seasonal camps. As a result, the resources associated with this era of cattle ranching will mostly be processing facilities and associated corrals and pens.

The difficult winter of 1886-87 brought substantial losses to South Dakota's cattle industry especially in the Belle Fourche area and brought about several changes in the nature of the industry (Schell 1975:244). Schell summarized,

The experiences of 1886-87 made reorganization of the range cattle industry imperative. The lure of big profits had led to overextended operations and overstocking. The disastrous winter also indicated clearly that year-round grazing was impractical on the northern range; it needed to be supplemented with feeding at sheltered corrals. The shortage of pasturage and the necessity of retiring their debts compelled the cattlemen to retrench as well as change their methods of operation. They began to store hay for winter feeding and to give more attention to the improvement of breed herds. They also had to resolve the many new problems connected with the influx of homesteaders and cowmen with small herds who were running barbed-wire fences around their lands and waterholes (Schell 1975:245).

Efforts by homesteaders to protect their lands from free ranging cattle resulted in a 1885 law that made the owner responsible for any damage cattle caused (Pulling 1940:507). In her history of the range cattle industry, Hazel Pulling commented on the industry in the years after the winter of 1886-87,

... the industry became a safe, conservative venture wherein only men who had sufficient financial resources partook. It became a settled, routine procedure; the hectic, speculating days were over. Henceforth profits were to be made, but not without the initial investments in land leases or land purchases, hay lands and machinery for haying purposes, shelter for stock and fences (Pulling 1940:504).

1890s

The agricultural economy experienced hard times during the first seven or eight years of the decade due to unfavorable climatic conditions and a depressed economy made worse by the Panic of 1893. Droughts in

1889-90 and 1894 dramatically reduced crop yields and forced many farmers to rely on private contributions to survive. The federal government contributed to the relief efforts by granting many homesteaders amnesty from the requirements of land laws (Schell 1975:343). "Following the recommendations of Governor Mellette, the State Legislature in February, 1890, authorized county commissioners to furnish seed grain to drought-stricken farmers. . . . In some counties the distress was so great in 1894 that officials abandoned all efforts to collect taxes. Legislation passed in February, 1895, empowered county and township officials to furnish seed grain" (Schell 1975:344).

Although South Dakota showed a net gain in population during this decade, from 348,600 to 401,570, the 1895 figure, 330,975, indicates the population loss resulting from the poor conditions. The area between the James and Missouri Rivers, the most recently settled area of the state, experienced the greatest losses (Fite 1966:111).

Approximately one half of the existing Great Sioux Reservation or about 9,000,000 acres opened to settlement in 1890. Desire for more rangeland by the cattle industry was one reason for the opening (Schell 1975:247). Fite suggested the depressed farm economy and poor growing conditions of the post Boom years may also have contributed to the decisions to open these lands for settlement (Fite 1966:109). As a result of drought conditions, the opening produced little permanent settlement with the exception of the rapid development of Fort Pierre and Oacoma and the appearance of isolated small ranches. "The north side of the White River Valley and the valley of the Bad River were especially favored by small ranchers operating on a free range basis, who frequently lived thirty miles apart" (Schell 1975:247). Permanent settlement of the area occurred after the turn of the century.

At the end of the nineteenth century East River South Dakota was fully settled. The average farm size in South Dakota in 1890 was 227 acres. By 1900 the average size was 362 acres as successful farmers acquired land abandoned during the difficult years of 1889-97. Fite listed "summer fallowing, planting more drought-resistant crops, placing greater reliance on livestock and resorting to irrigation where water was available" (Fite 1966:112) as techniques used by South Dakota farmers to establish successful operations. Schell summarized the agricultural development of southeast South Dakota,

The farming pattern that emerged in the southern half of the east-river section had its origins in the diversified or mixed farming practices developed by the early settlers. After a decade of trying experiences at a bare subsistence level, the settlers, when the railroad arrived in the early seventies, eagerly turned to the small grains as their cash crops, with special emphasis on spring wheat. Believing that the growing season was too short for corn, at first they raised it mainly as a sod crop. By 1880 corn and oats had displaced wheat as the main crop. Dairying was also well established at this time. Succeeding years saw larger acreages of corn and oats and a greater number of hogs raised. In this region agriculture was settling into its present-day pattern by 1900 (Schell 1975:342-343).

Schell noted the "distinct trend toward diversification" (Schell 1975:345) that occurred in the areas just recently settled during the Dakota Boom (west from the James River to the Missouri River),

The dual handicap of drought and low prices was forcing readjustments in the farm economy. Farmers placed less reliance on wheat as a cash crop. Stock-raising became important. The number of cattle in Hand, Hyde, Hughes and Sully counties increased from 34,500 to 110,000 between 1890 and 1900, while wheat acreage showed a decline.

... The advance in sheep-raising in this area was even more marked. During the same period the number of sheep increased from 79,000 to 270,000 within the counties lying between the Missouri River and a line extending from Aberdeen to Woonsocket. A pronounced change in the size of farm holdings accompanied the movement toward diversification. In a number of counties the acreage per farm doubled during the decade. The farms ranged from 400 to 700 acres in size.

... The most important new development was a stronger interest in dairying. By 1900 South Dakota was recognized as a leading dairy state, and its butter was widely advertised (Schell 1975:345-346).

Efforts were made to promote irrigation activity during hard times in the 1890s. "Ventures to utilize artesian waters for irrigation, likewise, gained impetus during the drought years. Real estate dealers, railroads, and elevator companies encouraged the movement. ...Between November 1889 and July 1892, seventeen corporations were organized to provide irrigating water east of the Missouri in South Dakota" (Hargreaves 1957:64-65). Interest in irrigation died out when better weather returned in the late 1890s.

A precursor to the extensive experimentation and propaganda generated about the dry farming movement during the first decade of the twentieth century was Hardy Webster Campbell. Campbell was a Brown County homesteader who practiced and publicized dry farming techniques. His farming efforts began in 1879 and continued through the drought years following the First Dakota Boom. "The principles of a packed subsoil with a loose surface mulch were the essential elements of Campbell's system during the drought period of the nineties and formed the basis of the program which he sought to publicize through the Western Agricultural Improvement Society in 1895." (Hargreaves 1957:86) Campbell called his system the "Scientific Soil Culture" and invented a subsurface packer for use with the system (Koupal 1992:213). Railroad companies were the most interested in Campbell's work and hired him to manage their demonstration farms and to give lectures along the rail routes. "Campbell's contribution to the publicity of dry farming was not alone his emphasis upon a method, but also the support which he gave to that procedure from the scientific learning of the period in which he formulated his views" (Hargreaves 1957:90).

1900s

Historians refer to 1902-1915 as the Second Dakota Boom. Robert Ostergren stated,

Much of this last surge was motivated by the propaganda of the so-called dry-farming movement, which promoted the idea that the semiarid western plains could be conquered agriculturally through the use of new dry-farming techniques such as deep plowing, cultivated fallow, and drought-resistant plant varieties. Many who came to the west-river area were disciples of the movement, but not experienced farmers. ... Many found dry-farming to be far more difficult and uncertain than they had anticipated and eventually left. The hardy ones that persisted became the core of the west-river agricultural population (Ostergren 1983:60).

The majority of West River South Dakota was settled during the first decade of the twentieth century. The most intense settlement activity occurred during the second half of the decade when the West River population more than doubled in five years (Schell 1975:256). Newly settled areas were reservation lands opened in the 1890s and reservation lands opened during this decade. "Between 1904 and 1913 the government negotiated a series of agreements with the Teton subtribes on the Rosebud, Lower Brule, Pine Ridge, Cheyenne River and Standing Rock reservations whereby over half of the reservation lands, a total of over million acres, were made available for purchase by white settlers" (Schell 1975:253).

Much of the West River growth followed the progress of the railroad across the Missouri. The two railroads interested in crossing West River South Dakota were the Chicago and North Western and the Chicago, Milwaukee and St. Paul. “Fierce competition developed between the two lines as they raced west in 1905, each hoping to beat the other to the Black Hills” (Nelson 1986:17). *See Figure 5 on page 17, a Chicago and North Western promotion from 1911.* Boomtowns appeared wherever the railroad halted construction for the season. The bulk of the growth of these West River towns occurred within the span of a few years. By 1907 rail lines linked Pierre and Chamberlain with Rapid City and Lemmon with Mobridge. These transportation corridors increased homesteading activity.

Experimental farming took place at the USDA Newell Field Station beginning in 1907. Early work on the farm provided information on dry farming techniques in the dry Northern Plains climate. Investigations into irrigation techniques began in 1912 when the Newell Station began to receive water from the Belle Fourche Irrigation Project (USDA 1957:2). The farm produced data on a wide variety of agricultural topics including which tree species produced the best shelterbelts, the rotation and tillage methods which produced the best results, plowing methods to reduce erosion, effective fertilizers and livestock raising techniques. The farm published its results every year and held an annual open house to provide information to the general public.

The Belle Fourche Irrigation project, authorized in 1904 to develop 100,000 irrigable acres (Storey n.d.:7) of land in the Belle Fourche River valley, is notable as a government effort to promote permanent agriculture based settlement of the area or “homemaking” (Storey n.d.:41). Initial estimates by the United States Reclamation Service (later known as the Bureau of Reclamation) of the number of farmers who could successfully farm in the area served by the project were high. Establishing a farm on irrigated land required additional expenses associated with preparing the land for irrigation and making regular water payments (Storey n.d.:42). If an irrigated farm received enough natural moisture, the operator still had to pay the irrigation fee (Storey n.d.:41). Irrigation did not guarantee absolute protection from drought. The Belle Fourche project was unable to meet the water demands of the area it served during the 1911 and 1919 droughts (Hargreaves 1957:459). Dry farming historian Mary Hargreaves points out one of the inherent difficulties with irrigation, “As the larger projects were undertaken after 1900, the capital investment increased enormously; and it was not offset by increase in irrigable acreage” (Hargreaves 1957:459). By the middle of the 1920s only 45% of the originally plotted farms in the project area were occupied (Storey n.d.:43). Efforts were made to recruit farmers with more skills, but eventually the USRS abandoned the idea that its primary role was “homemaking.” (Storey n.d.:46)

Dry farming came to be recognized as preferable to irrigation in the semiarid regions of South Dakota and the Northern Great Plains. “Accordingly reclamation programs met less and less favor as dry farming appeared practicable. . . . On the Belle Fourche project, . . . settlers’ preference for free homesteads led the Government in 1909 to open a large area originally segregated for reclamation development. . . . The homesteader was in the majority who said he would rather not be bothered with irrigation” (Hargreaves 1957:463). Hargreaves noted, “. . . the preference for dry farming continued through the twenties” (Hargreaves 1957:463).

The decline of interest in irrigation signalled an important transition in South Dakota agricultural development. During this decade attention and financial support turned to developing methods to farm the drier regions of the state. State sponsored agricultural research was conducted at the Highmore farm of the South Dakota Agricultural Experiment Station (established in 1897 but not publicly funded until 1903) and the Eureka State Experiment Farm (established and first funded in 1907). The mission of the Highmore

farm was to “test and develop grasses and forage crops for the region” (Hargreaves 1957:63). “The experiment station at the Agricultural College in Brookings gave increasing attention to experiments on the renovation of native pastures and the culture of grasses and forage plants without irrigation. Hardy grasses introduced from Manitoba and Siberia became a special object of experimentation” (Schell 1975:345). Crested wheatgrass, one of these “hardy grasses” which was first tested at Newell and Highmore, became “important in the middle 1930s for the seeding of abandoned wheatland” (Quisenberry 1977:225.).

Schell determined that, “The most important single contribution for the period was the introduction and adaptation of a Siberian strain of alfalfa by Professor N.E. Hansen of South Dakota State College” (Schell 1975:347). This imported variety did well during the drought of 1911 when native plant strains failed. “Alfalfa soon became a highly valued crop for both stock-raiser and farmer throughout the entire state. In subsequent years, the production of alfalfa seed was an important source of income west of the 100th meridian.” (Schell 1975:348) Hansen’s initial investigations of alfalfa occurred during an 1897 trip he made to Siberia as an employee of the USDA. He is credited with introducing a number of plants suited to the dry climate of West River South Dakota and with improving existing plants.

The opinions of these early agricultural researchers differed from those of Campbell, the dry farming researcher and promoter whose influence continued into the twentieth century, as to the type of farming operation best suited to the semiarid portions of the Plains. Campbell placed his faith in “a small grain economy based upon intensive operations.” (Hargreaves 1957:101) USDA researchers, most notably E.C. Chilcott who held several major research positions including agronomist at the South Dakota Agricultural Experiment Station and Chief of the Office of Dry Land Agriculture for the USDA, recommended “crop rotation and diversification” (Hargreaves 1957:101).

Railroads had a stake in helping to promote agricultural education because, “As areas ‘settled up,’ the quality and quantity of produce transported over rail lines, rather than passenger volume, became the keys to profitability for routes serving agricultural regions. . . . Railroads across the country employed combinations of like techniques in their efforts to educate the rural population: free or reduced fares for farmers and agricultural experts; informational literature; traveling exhibit cars or static displays at community fairs; contests and prizes; demonstration farms; and special trains” (Myers 1992:138-139). Special trains, a cooperative venture between railroads and the agricultural education community, made short stops in towns where farmers could view promotional literature and speak to experts. These trains first came to South Dakota in 1905, reached their peak around 1913-1915 and experienced a brief resurgence in popularity in 1927 with the “Alfalfa and Sweet Clover Special.” This train, endorsed by the Governor and the South Dakota Secretary of Agriculture, promoted the cultivation of drought resistant legumes. It made longer stops than the early specials, hosting 49,395 visitors in 77 stops in 38 East River counties (Myers 1992:152).

Mechanical advances offered farmers of this era include corn pickers, threshing machines, large gas tractors, silos and elevators.

Ranching

Small ranches came to replace the huge West River grazing ranges. Rather than create a farm based economy as in East River, the homesteading movement of the Second Dakota Boom produced the railroad town, small ranch and reservation landscape.

Large range cattle operations leased land from Indian reservations not yet opened for settlement such as

Cheyenne River and Standing Rock. Pulling cited the opening of reservation lands for settlement in the second half of this decade as the blow that “defeat[ed] the range cattle industry in its final stand” (Pulling 1940:508).

Railroads and cattle operators made special arrangements to create more efficient transportation networks. One example is the Milwaukee Railroad’s agreement with northwestern South Dakota cattlemen to transport cattle across the Missouri to the new rail facilities at Evarts in present day Potter County.

To avail themselves of this direct and shorter route to the Chicago market, the cattlemen on the upper reaches of the Grand and Moreau Rivers made an agreement with railroad officials. The ranchers secured a six-mile right-of-way along the northern edge of the Cheyenne River Reservation, while the railroad company provided stockyards and dipping pens on the Missouri’s west bank. The Indians received a toll of twenty-five cents per head for all cattle and horses driven over the eighty-seven mile stretch across the reservation. Sheep were excluded from the trail. The railroad maintained a pontoon bridge for a year and then provided a ferry service. It also placed stock dams at regular intervals across the strip (Schell 1975:251). As a result of railroad expansion, long cattle drives became unnecessary and ranchers were able to graze their cattle for longer periods in the summer. This allowed the cattle more time to increase their weight for the coming winter (Pulling 1940:506).

Sheep ranching grew to be an important South Dakota industry during this decade. In response to financial problems and the risks associated with producing a single commodity, former cattle ranchers either switched to sheep raising or raised both cattle and sheep. The severe 1886-7 winter (Anderson 1982:119) and financial panic of 1907 (Schell 1975:349) both contributed to the increase in sheep ranching. Advantages of sheep ranching over cattle ranching were that less money was required to start a sheep operation and sheep produced two commodities—lambs and wool (Schell 1975:349 and Anderson 1982:119). Shepherders generally made more money than cattleherders (Anderson 1982:120). The majority of sheep ranching activity was and continues to be in the extreme northwest region of South Dakota.

1910s

The opening years of this decade were the tail end of the Second Dakota Boom which included the settlement of surplus Indian lands in West River. Severe drought conditions in 1910-11 and subsequent poor weather created problems for many of the new West River settlers. Oscar Micheaux, a Tripp County homesteader and later an author and filmmaker, wrote, “ ‘ . . . during that time I could not find a cool place. The wind never ceased at night, but sounded its mournful tune without a pause. Then came a day when the small grain in T[r]ipp county was beyond redemption, and rattled as leaves in November. The atmosphere became stifling, and the scent of burning plants sickening’ ” (Micheaux quoted in Nelson 1986:128). Historian Paula Nelson summarized, “The struggle for solutions to the practical problems posed by drought, deprivation, and depopulation dominated west river life after 1911” (Nelson 1986:156).

The proliferation of detailed information about dry farming techniques during the opening decade of the twentieth century apparently did not sway the typical West River homesteader of the teens. Schell commented on the non-ranching agricultural economy of West River,

The West River homesteading boom which began so auspiciously after 1900 was cut short by drought. The settlers who did not join the exodus from the area following the droughts of 1910 and 1911 gradually learned to adapt themselves to the region. Since they were mostly of Midwest origin, it was easy for them to follow a production pattern that included corn, hay, cattle and

hogs. For the most part, they ignored such dry-farming techniques as subsoiling and fallowing, preferring less intensive methods of tillage in a system of diversified farming that included crop rotation. Although wheat had less appeal as a cash crop in the north-central counties, the farmers in that area continued to extend wheat culture whenever favorable seasons coincided with high prices (Schell 1975:346-347).

Because of its length and severity, the 1910-11 drought forced many West River homesteaders to face the fact that the area's climate would always vary wildly. Variation made it difficult to consistently operate a successful farm. "No longer did accusations of poor farming techniques provide a comforting rationalization of the disaster" (Nelson 1986:132). West River newspapers used a variety of arguments to convince homesteaders to stay including: emphasizing the large area affected by drought in a "would it be any better there than here" appeal; invoking the myths of the 19th century homesteaders who did not give up when faced with similar hardships; asking the difficult question "Where are you going to go?" (Nelson 1986:132); and equating the wealth of residents of previously settled areas with the fact they had "stuck it out" when faced with difficult times (Nelson 1986:132-134).

Newspapers attempted to help those who remained by presenting information on alternative farming methods and calling on the settlers, the railroad and governments to organize relief efforts. For a short time, the railroad offered free passage for certain relief supplies but this program was discontinued in February 1912 (Nelson 1986:137). In 1912, Congress passed a bill "allowing settlers without money but with the required residency time to prove up and pay later" (Nelson 1986:138). No state government relief program was undertaken and efforts on the county level had "no guiding philosophy to govern relief efforts. Therefore counties functioned in hit-or-miss fashion on the aid question. Some settlers received relief, such as it was, while others received nothing. Many observers, including state and federal government officials, suggested plans for relief, but little was done" (Nelson 1986:141).

Due in part to agricultural operators attempting to diversify their operations following the disastrous drought, dairying as an industry began to develop during this decade. "By 1915 cooperative creameries had made their appearance in a number of communities along the Milwaukee and the Chicago and North Western lines across the state to Rapid City; a similar venture at Lemmon enjoyed a wide patronage in the northern part of Perkins County" (Schell 1975:347).

In 1911 the herd law which made owners responsible for damage done by their livestock was invoked on a statewide basis. This was another signal that the open range years of the cattle industry were over (Schell 1975:257).

The end of the open range did not prevent further conflict between West River homesteaders and ranchers. While West River residents argued whether grain farmers should fence their land to help prevent livestock damage, questions remained in many people's minds about what effect a predominantly grazing economy would have on West River population and permanent settlement. "The trend toward stock raising worried those who feared that the recommended changes in farming practices might diminish the way of life and the institutions they had struggled to build as a farming people, and possibly even return the land to open range. Because they believed farming to be the true work of the world and therefore much more virtuous than mere herding, they occasionally fought proposals to encourage dairying or livestock production" (Nelson 1986:151).

The dissemination of agricultural information during this time was greatly aided by the creation of the

South Dakota Agricultural Extension Service in 1915. Within several years the Service contained “experts in dairying, livestock, poultry, farm management, agricultural engineering, horticulture, animal disease, pork and beef production, crop disease, boys’ and girls’ clubs (4-H), and women’s home-demonstration groups” (Marten 1982:163-164). Agricultural operators formed their own local groups to exchange technical information and assist each other in the cooperative marketing of products such as cream, butter and eggs which were produced on a fairly small basis by a number of people (Nelson 1986:158).

The election of Peter Norbeck as South Dakota’s Governor in 1916 led to several important laws affecting the agricultural industry. A rural credit law allowing the state government to make loans to farmers went into effect in 1917. The Legislature “created the office of marketing commissioner under a law which declared the business of marketing farm products was in the public interest and subject to control by the state” (Schell 1975:266). Norbeck’s recommendation for a state hail insurance law was passed by the Legislature during his second term as Governor. Voters did not approve a proposal by the 1917 Legislature to create an amendment to the State Constitution to allow the state to “construct and operate grain elevators, warehouses, flour mills, and packing houses” (Schell 1975:266).

Political debate during the second year of Norbeck’s first term was fueled by the appearance of the Nonpartisan League, a political organization dedicated to “exemption of farm improvements from taxation, the operation of rural credit banks at cost, state inspection of grain, state hail insurance, and state ownership of terminal elevators, warehouses, flour mills, packing houses and stockyards” (Schell 1975:267). The League was founded in North Dakota by Socialist Arthur Townley in 1915. The League’s candidate for Governor in the 1918 election was soundly defeated by a two-to-one margin by the incumbent Norbeck. The League candidate did, however, receive substantially more votes than the Democrat (Schell 1975:268). In addition to the changes for agriculture brought about by Progressive politics during this decade, the 1910s brought federal financial support for farmers. The initial legislation passed by Congress in 1916 that helped establish the federal system of support for farmers was the Federal Farm Loan Act of 1916. This act established 12 federal loan banks and set out a program of giving long term loans ranging from 5 to 40 years with interest not to exceed 6%. The program was founded to help out farmers who could not obtain private loans. The Federal Warehouse Act was also passed in 1916. It established a system so farmers could store crops as collateral to borrow money for short term loans, serving as a federal guarantee to private lenders (Hoover 1991).

World War I greatly increased food demand and production during the second half of the decade. Statistics reveal this startling increase. “Wartime demand had driven beef exports 126 percent over the 1910-1911 levels, pork 207 percent, and wheat 418 percent. Prices soared in the resultant seller’s market. Beef prices vaulted from the 1910-1915 average of \$7.72 per hundredweight to \$15.45 by 1919, while hog prices rose from \$7.82 to \$17.85, and wheat jumped from \$.83 to \$2.40 per bushel during the same period” (Marten 1982:164).

1920s

Farmers and ranchers required more land to meet the rising demands of the war economy. As a direct result, land prices rose dramatically. When the wartime demands disappeared as the European agricultural economy recovered, farm prices plummeted, creating a farm depression. Farm products generated less income but operating and machinery costs remained the same.

This farm depression affected South Dakota through the remainder of the decade. The rural credit system started in 1917 proved to be a “financial failure” (Fite 1985:17) during the early 1920s. “Politics, poor business practices, the agricultural depression of the 1920s, some dishonesty, and other causes combined to

destroy the system” (Fite 1985:17). By 1924 South Dakota had “the highest per-capita state debt in the nation” (Schell 1975:276).

“Banks failed or foreclosed mortgages to keep from failing; land values decreased by as much as one-third or even one-half; and farm tenancy rose alarmingly—all before the Great Depression began in 1929” (Marten 1982:164). The farm depression did not, however, notably change existing South Dakota “farming patterns” (Schell 1975:351).

One machinery cost a fairly large number of farmers incurred despite the depression was the tractor. In 1920, 16% of South Dakota farmers owned a tractor—the highest percentage in the country (Fite 1989:280). Gilbert Fite considered the introduction of the International Harvester Company’s Farmall Tractor in 1924 as the beginning of the “tractor age” (Fite 1989:280). *See Figure 6, the cover of a 1928 instruction book for Farmall Tractors.* “Unlike the earlier tractors, the Farmall was a fairly small, maneuverable machine that could fit most farm and field operations. It was efficient in that it produced more power at the drawbar, moved faster through the field, and did not need the rest periods that horses commonly required” (Fite 1989:280). Important advances in tractor technology during the late 1920s and early 1930s included the creation of the power takeoff, the hydraulic lift which lifted the plow out of the ground at the end of a

furrow, rubber tires for greater efficiency and comfort and implements specifically designed to be dragged behind a tractor (Fite 1989:282).

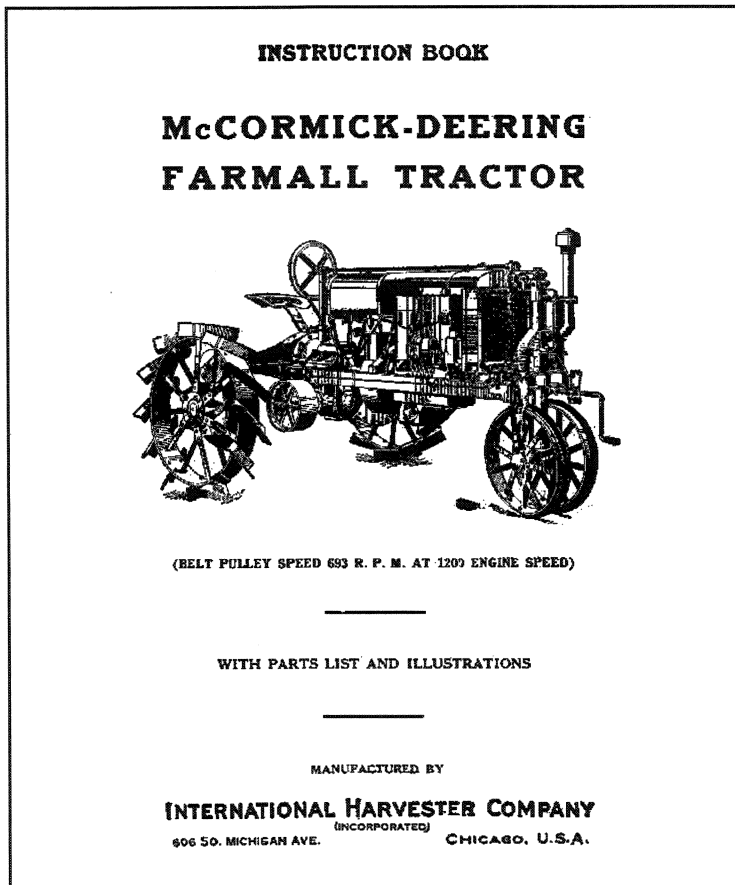


Figure 6 courtesy of the Beckman Archive, State Agricultural Heritage Museum, SDSU, Brookings, SD (#90:143:02)

Another important piece of machinery first available in the 1920s was the combine that could harvest and thresh grain in one operation. “More than electricity, telephone, or tractor, however, the combine did the most to revolutionize small grain farming in South Dakota.” (Fite 1989:291) Threshing had previously been performed by large itinerant crews. The ability of the farmer to complete his own threshing greatly reduced labor costs.

Some problems with shattering or breakage of the plant stalk occurred with combine use because grain had to dry out enough for the combine to work. The introduction of the windrow harvester solved this problem. A prototype of the windrower had been developed around 1910 by two brothers in Grant County, August and Ole Hovland (Isern 1980:110). The windrower harvested the grain and left it in a row resting on stubble

to dry. The combine picked it up and threshed it. The introduction of the windrower increased combine use in South Dakota. Large scale adoption of these machines by South Dakota’s farmers, however, had to wait until after the Great Depression (Isern 1980:111-113).

Thomas Isern summarized the major results of the coming of the combine,

Perhaps most important, the combine played a part in the process whereby farms on the plains became larger and more capital-intensive, a process that also produced a reduction in farm population. Relieved of the bottleneck of harvesting, successful farmers were able to expand their acreage, purchasing more tractors and other machinery to complement their combines. With operating costs lowered, wheat farming also extended farther into marginal lands on the high plains (Isern 1980:117).

Additional effects of the combine included a shorter harvest period which created the need for more storage and distribution facilities such as grain elevators and railroad cars. Isern stated the high cost of the combine led operators to plant a variety of crops so the machine was useful over a range of harvest times (Isern 1980:116-117).

Car and truck use increased noticeably on farms during this decade. Approximately 6% of South Dakota farmers owned a car and 69% owned a truck in 1920 (Fite 1989:287). Small vehicle use greatly reduced the time it took to get products to a central shipping/marketing point.

The results of increasing mechanization during this decade were an increasing number of acres under cultivation, fewer but larger farms and the extension of agricultural activities to areas that were substandard for cultivation (Schell 1975:352).

1930s

The economic woes of the Great Depression and a series of difficult natural conditions including drought, dust storms, grasshopper plagues and severe winters plagued South Dakota during the 1930s. From 1929-32 statewide crop revenue dropped from \$17 million to \$6 million and livestock revenue went from \$150 million to less than \$45 million. Foreclosures on farm land were common. In the 1930s, South Dakota suffered the greatest population loss in the nation (7% of the state's total population) and had the highest one-time percentage nationwide of residents who received public assistance, 39% in December, 1934 (Schell 1975:292). Many former rural residents who did not leave the state moved to urban areas where the net population gain for the decade was 20% (SDSU Census Data Center 1988:3).

Schell commented on the state of South Dakota agriculture during the early 1930s,

A decade of heavy debts, relatively low prices, expanding production and shrinking export markets had left South Dakota agriculture in particular unprepared for the depression of the thirties. Prevailing low prices accentuated the distress. Especially hard hit were the counties in the south-central and western parts of the state (Schell 1975:282).

Spurred on by the threat of a general farmer's strike advocated by groups such as the Farm Holiday Association, by 1933 the federal government began to respond to the difficult economic times with relief programs aimed at establishing a federal farm price support system and sound land conservation programs. The Agricultural Adjustment Act and Farm Credit Act of 1933 were the first two major pieces of legislation designed to aid the farmer. "The major objectives of the legislation were to raise farm prices through a program of production controls and to establish a farm credit program that would include the refinancing of farm mortgages" (Schell 1975:288). The farm credit program also included loans for a variety of purposes including "long-term amortized loans from the Federal Land Bank, seed and feed loans, crop and livestock loans, and drought relief loans" (Schell 1975:291).

Under the Agricultural Adjustment Act of 1933 farmers and ranchers would receive payments based on reductions they made in the number of acres under cultivation or the number of livestock they raised. Payments were funded by a tax on the first middlemen in crop and livestock processing. After the tax was declared unconstitutional in 1936, D.B. Gurney, a successful Yankton businessman and president of Gurney Seed and Nursery, led an unsuccessful campaign to return the revenue from the processing tax to hog farmers who believed processors had recovered the tax expense by paying lower prices for hogs (Choate 1992:156-172).

A one-time cattle buying program was started in 1934 to reduce the effects of a drought which was especially devastating to West River South Dakota. Approximately one half of all cattle in South Dakota were involved in this program (Marten 1982:179) which was heralded as a “miracle” and “an act of mercy” by the Spearfish Livestock Association (Marten 1982:179). Schell succinctly summarized the later versions of the Act,

In February, 1936, the Soil Conservation and Domestic Allotment Act replaced the Agricultural Adjustment Act of 1933 which had been declared invalid because of the processing tax. The new legislation emphasized soil conservation rather than production adjustments, offering “soil-conserving” benefit payments for shifting acreage from soil-depleting crops as well as “soil-building” payments for the planting of soil-renovating crops and for soil conservation practices. . . . About 88 per cent of the state’s cropland was covered by applications for benefit payments at the time.

Two years later a new Agricultural Adjustment Act retained the soil conservation features of the 1936 law and re-established the principle of acreage allotments as a means of adjusting crop production (Schell 1975:290).

The conservation district system was established in 1937 and began helping many individual agricultural operators develop their own conservation programs. Federal conservation programs initiated during the 1930s included shelterbelt plantings to counteract soil erosion and the buying of land which was being inappropriately cultivated. Surplus lands acquired through the buy-out program were used as “community pastures” and “recreation areas and game refuges” (Schell 1975:354).

Farm families at or near the poverty line were the beneficiaries of the efforts of the Farm Security Administration, founded in 1937 to replace the Resettlement Administration which was created in 1935. Farm Security Administration programs included rehabilitation and resettlement efforts. “The rehabilitation program was a combination of financial aid and advisory assistance in farm and home management” (Schell 1975:294). Moving families from marginal to productive land as part of the resettlement efforts proved to be expensive and, in the end, this program assisted relatively few South Dakotans (Schell 1975:294). (See Government Sponsored/Institutional/Communal Agricultural Operations in Property types Section). Buoyed by federal programs that effectively raised crop prices toward the end of the decade, South Dakota farmers had more money to invest in farm equipment. “The newer machines were more efficient, more reliable, needed fewer repairs, and could operate at cheaper cost” (Fite 1989:283). By 1940 just over half of the state’s farmers had tractors, a thirteen percent increase from 1930 (Fite 1989:283).

The move to mechanization started in the 1920s and 1930s changed the face of South Dakota agriculture forever. Gone were many small operators unable to purchase increasingly expensive equipment and the additional land needed for efficient operation of the machinery. More products could be produced and shipped in a shorter time, reducing the demand for farm labor and allowing farmers to operate on larger

tracts of land. In the second half of the 1930s, the average farm size increased by 100 acres to 545 acres (Fite 1989:292). “In short, greater return resulted from operating a larger business, and tractors were most practical for these larger operations” (Fite 1989:286). Schell mentioned the “level terrain” of most of the state as a factor that allowed for increased mechanization (Schell 1975:355).

A great boon to agricultural operations was the establishment of the Rural Electrification Administration in 1935. Fite summarized,

The program got off to a slow start in South Dakota, and by the end of 1939 only five electric cooperatives had been organized, extending power to a mere 4 percent of the state’s farms. In the late 1940s, however, rural electrification made giant strides in the state, and by 1950, 69 percent of the farms had electric power. . . . Indeed, electricity, more than anything else, reduced the difference in country and city living and brought farmers into the modern age. The changes it wrought on farms were little short of revolutionary (Fite 1989:290-291).

1940s and beyond

The major contribution made by South Dakota to World War II lay in the field of agriculture. Increased demand induced by the war needs, higher prevailing prices, and favorable growing conditions brought farm production to a high level. During the war years farmers were especially called upon to grow more flax, and soybeans and to increase the production of meat animals, milk and poultry products. The total number of cattle on farms and ranches on January 1, 1944, was the highest since 1920, a marked contrast with the situation facing the cattle industry a decade earlier in 1934 when the cattle-buying program of the federal government was in progress.

The increased production of grain, including wheat, was achieved with a smaller cropland acreage than had been utilized during the late 1920s. This was made possible through more intensive farming methods and the utilization of cropland that had been lying idle or was in fallow as a result of the A.A.A. crop-reduction program (Schell 1975:302).

Agricultural prosperity and production increased through the 1940s because of favorable weather, improved farm and ranch management practices made possible by public education efforts and increased mechanization including the introduction of hydraulic systems and the self-propelled combine harvester-thresher (Schell 1975:355 and Fite 1989:298).

Following the Korean War, South Dakota agriculture experienced a “cost-price squeeze” (Fite 1989:299-300) similar to the early 1920s. Operating costs remained the same while prices for agricultural products dropped. Farm income finally reached the 1951 wartime level again in 1962 (Fite 1989:299).

The East River cattle feeding industry developed by the 1950s. This industry combined with the traditional West River cattle raising and grazing operations made up the major part of livestock production which accounted for 79% of South Dakota’s total agricultural production in 1966 (Schell 1975:355). Currently approximately 60% of South Dakota’s agricultural income is from livestock production (Hogan 1991:26).

Fite noted a key change, first visible in 1950, in the nature of South Dakota’s agricultural community. “The gap between bigger, more prosperous farmers and those who were just getting by was widening perceptively” (Fite 1989:297). Faced with increasing operating costs and competition from operators who were farming ever larger tracts of land with increasingly efficient machines, many smaller farmers left the business.

Although the number of farms in South Dakota declined every five year period from 1935 to 1987 except one (1964-69), the greatest drop over any one period was from 1954 to 1959. Accompanying this steady decrease has been a corresponding steady increase in farm size from 1935 to 1987 (SDSU Census Data Center 1989 Vol. 4(5):2-3). The decline in farm population also meant the decline of small rural towns and the growth of urban centers, a trend that continues today.

As the number of farms decreases, the nature of the remaining operations has changed. Although more than 87% of South Dakota's farms were individual or family operations in 1987 (SDSU Census Data Center 1989 Vol. 4(7):1), "over half (53.6%) of all South Dakota farms are non-commercial" (Arwood 1990:1). The SDSU Census Data Center concludes,

Three trends in commercialization have emerged in South Dakota and the U.S.: (1) The proportion of all small, non-commercial farms is increasing. (2) The number and proportion of large, capital-intensive commercial farms is increasing. (3) The number and proportion of the traditional, mid-size family farms are declining (Arwood 1990:1).

The 1990s will see more small non-commercial farms, more large commercial farms, and fewer mid-size family farms.

Factors over which they have no control will continue to force farmers to consolidate or seek other employment. Profit or loss from farm products is determined by domestic farm and non-farm economic policies, international trade, the strength of the American dollar, government spending, commodity programs, interest and tax rates, prices for inputs, and still many more factors (Arwood 1990:3).

Characteristics of the small, non-commercial farms that are increasing in proportion are 1) many "operate at a loss," 2) "most operators of these small farms are part-time or semi-retired" and 3) "most small non-commercial farms are located near urban areas where their operators can take non-farm employment" (Arwood 1990:2).

National Register Evaluation Criteria and Significance Statements

A property can be eligible to the National Register if it meets one or more of the following criteria:

- A. It is associated with events that have made a significant contribution to the broad patterns of our history; or
- B. It is associated with the lives of persons significant in our past; or
- C. It embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or
- D. It has yielded, or may be likely to yield, information important in history.

An agricultural property is an interrelated set of buildings, structures and archaeological features, all which are part of a production system. Therefore, whenever possible, a building, structure or archaeological feature should be evaluated as part of a whole, rather than individually. However, this may not always be possible and in the instance when only one part retains its integrity it may be the only portion of the site eligible for the National Register of Historic Places.

Aside from significance, which is discussed in the following pages, a property must also have integrity. The National Park Service has defined integrity as “the ability of a property to convey its significance” (NPS Bulletin 15:44). There are seven aspects to integrity: location, design, setting, materials, workmanship, feeling and association. For the purpose of eligibility, a site does not necessarily have to meet each of those seven qualities. A property may possess sufficient integrity to be nominated to the National Register based on just one or more areas. The overall question that should be asked is, do the areas of integrity that the site possesses sufficiently convey its significance?

It is also important to remember that integrity considerations should be applied over the entire period of historic significance. Evolutionary changes to a property, either architectural or organizational, that are within the historic period are a substantial part of its significance and may not detract from the assessment of integrity.

Integrity and Agricultural Properties

Although a great number of agricultural properties exist in South Dakota, a correspondingly large number have not been nominated to the National Register. Much remains to be learned about the state’s agricultural cultural resources. These resources need to be further studied on both a regional and statewide basis. Surveys and Register nominations serve as our main data gathering routes. Given the need for more extensive analysis, integrity standards for deciding whether a property should be nominated to the Register need to be inclusive.

The following considerations should be used as a guide in determining an agricultural property’s integrity.

1) Nonhistoric metal roofs are a quick, cheap method used by many farmers and ranchers to make their agricultural outbuildings weatherproof and useful as cold storage. In general, a nonhistoric metal roof will not make an outbuilding ineligible. The combination of nonhistoric metal siding with a nonhistoric metal roof, however, has usually altered an outbuilding’s historic integrity enough to make it ineligible (Lindeman and Williams 1985:11-12).

2) If the property type being evaluated originally consisted of a complex of buildings, such as a farm or ranch, and only an individual building remains, the property's integrity has been seriously affected. In this situation, the individual building is usually ineligible under Criterion A. The building may be eligible if it is associated with a famous person (Criterion B) or possesses individual architectural or engineering merit (Criterion C)(Lindeman and Williams 1985:12). "Keep in mind that most farmsteads [and ranches] will not have all of the original buildings and features intact . . ." (Lindeman and Williams 1985:13).

Location: In general, a homestead or later agricultural property should be in its original location. The buildings or structures to be nominated should be on the original homesteading claim in order to be significant as an example of an original homestead. "Integrity of location is of basic and paramount importance to homestead properties. Without it, the precious link between the land and settlement activity pursuant to the 1862 act (and its successors) is severed" (Stein 1990). Any property that has been moved would only remain eligible for the National Register of Historic Places if it were architecturally significant (i.e. unique for its property type or a rare example of a property type) or if it were an architect-designed structure.

Design: The National Park Service defines design as being "the combination of elements that create the form, plan, space, structure, and style of a property" (NPS Bulletin 15:44). In addition to the particular design aspects of individual structures, the arrangement of features on an agricultural property must also be considered. One must judge whether enough remains to convey a sense of how the property was organized and how the features were interrelated.

Setting: Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the character of the place in which the property played its historic role. It involves how, not just where, the property is situated and its relationship to surrounding features and open space (NPS Bulletin 15:45). For agricultural properties, to retain integrity of setting, the property should have the majority of its historic visual qualities. One should also take into account the condition of the surrounding landscape during the evaluation.

Materials: "Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and combination of materials reveals the preferences of those who created the property and indicate the availability of particular types of materials and technologies" (NPS Bulletin 15:45). In the case of South Dakota's agricultural activities one should be particularly alert to ethnic and regional material preferences. Keep in mind changes in available material that may be reflected in the evolution of a property.

Workmanship: The National Park Service defines workmanship as "the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory" (NPS Bulletin 15:45). Like materials, be aware of the influence of ethnic and regional bias reflected in the structures. Workmanship can also be representative of other types of phenomena such as socioeconomic status, or immediate need vs. permanent construction.

Feeling: "Feeling is a property's expression of the aesthetic or historic sense of a particular period of time" (NPS Bulletin 15:45). Feeling is used as the overall summary of the historic character of the property. Does the property convey a reasonable sense of its historic time and place?

Association: "Association is the direct link between an important historic event or person and a historic property" (NPS Bulletin 15:45). Integrity of association means that assumptions derived from the physical

evidence is supported by historical archival data or oral tradition. Be aware the physical evidence can mean either standing structures or archaeological data. Archaeological data can be a particularly useful tool with which to corroborate oral history.

National Register Criterion A

Properties may be eligible for the Register if they are associated with events that have made a significant contribution to the broad patterns of our history.

Properties can be eligible for listing to the National Register under criterion A if they are associated with events that have made a significant contribution to the broad patterns of our history. Homesteading is a significant event in the history of South Dakota as it was the phenomenon that led to permanent settlement of the state. Agriculture is significant as it was the basis for homesteading and became the foundation of the region's economy.

For the purposes of criterion A, homesteading can be defined as the initial settlement of South Dakota conducted under federal legislation for the purposes of land distribution. These early settlements could consist of anything from the remains of a sod house or claim shack, to a well developed set of domestic and agricultural resources that evolved over time. Thus a property might be significant as an example of initial settlement, it may consist of a group of buildings and structures that are representative of a specific period of agricultural development in South Dakota's history, or it may contain elements of both.

Aside of the broader theme discussed above there are numerous other areas of significance that fall under criterion A. Some of the ones listed on the National Register forms include exploration/settlement, agriculture, land acquisition (law), invention, and engineering. Other areas could include ethnic history and settlement, or recreation (i.e. dude ranches, agricultural fairgrounds) etc.

Exploration and Settlement: Examples of agricultural properties that have been determined eligible for the National Register of Historic Places under criterion A have included a number of ranches in Custer County. These properties were found to be significant in the area of Exploration/Settlement as they represented the development of the legal homestead rancher in southwestern Custer County. One nominated property, the William Stearns homestead, represents one of the earliest methods of land acquisition known as "squatting", which was living on a parcel of land without filing a claim. The Charles and Ollie Lampert ranch represents the acquisition of land through both homesteading new claims and purchasing previously established ranches. Furthermore, both properties are an example of homestead ranchers who mark a shift away from the earlier open range period, when the owners and workers of large cattle companies were living in town rather than on their ranches.

Also in Custer County, the Williams Ranch has been determined eligible to the National Register under criterion A, its significance being in the area of Exploration and Settlement. The Williams Ranch is representative of the shift from large cattle ranches to smaller ones, and the fact that it had a sawmill associates the property with growth of the timber industry in the Black Hills.

In Clay County, the Rice Farm was nominated to the National Register under criterion A as an example of an early 1870s log building that represents Norwegian settlement. The cabin displays Scandinavian features such as construction with squared logs, notching on both sides of the log and the top of the gable ends built

with log instead of board. However, other features were incorporated into the structure which are not characteristic of Scandinavian buildings such as the full dovetail notching and the placement of the boards. It is believed that the latter details were assimilated when Inglebrit Severson, who first purchased the homestead, settled for a time in Nebraska. Thus, aside of Norwegian settlement, the cabin represents the process of partial assimilation to the Great Plains by immigrants from northern Europe.

In Perkins County, the Donald Beckon Ranch is considered to be a significant agricultural property as an example of settlement as it contains one of the few early twentieth century homestead period sod houses in the region and has a complete arrangement of buildings and structures historically associated with Northern Great Plains turn-of-the-century ranches.

Agriculture: An agricultural property might be significant if it raised unusual or experimental crops or livestock, or consists of a building or structure related to agricultural production. An example of a property nominated under agriculture is the Appleby Atlas Elevator in Codington County. This is a small wooden grain elevator of cribbed and balloon frame construction. The structure is significant in the area of agriculture as it served local farmers as a principal buying and transportation station for their cash grain crops for over seventy years. Built around 1883 by the Atlas Grain Company, the property is one of the few 19th-century all-wood elevators in the region to survive in an unaltered condition at its original location.

In Clay County the Anderson farm was found to be significant under agriculture as the type of production at the farmstead, and the layout was found to be representative of the regional norm. The excellent preservation of the buildings makes the Anderson farmstead a typical site of its kind and provides the material for further study of the state's agricultural history.

The Belle Fourche Experiment Farm at Newell, SD, is significant for its role in agricultural development through the systematic study of crops and livestock. The site was important in the development of dryland farming and other agricultural experiments. The main purpose of the station was to develop innovative techniques to farm in the semi-arid Plains region. Research conducted at the station included the study of shelter belts, various methods of irrigation and tillage, climate, soil-crop adaptation, wind erosion, and fertilizer. Crops such as flax, corn, alfalfa, wheat and livestock were also part of the experimentation.

Recreation: The Butte-Lawrence County Fairground was nominated to the National Register as being significant under recreation. The fairground is considered the best example of a county fairground in western South Dakota and is representative of an early 1920s educational and recreational facility. The site is also considered one of the most architecturally complex of its type.

Law: The Charles A. Barber Farmstead in Day County is not only considered significant under exploration/settlement because it is one of the region's earliest homesteads, but also because it is an example of a homestead acquired under the Timber Culture Act of 1878. Homesteaded in 1889, the property includes twelve buildings all protected by a grove of trees that the family planted in compliance with the 1878 law.

Technology/Invention: An agricultural property may be significant under technology or invention if the inhabitants were known for local, regional or national innovations to farming equipment. Some of this equipment may remain on the property. As discussed in the research section of this document, examples of technological innovation include a Dodge truck turned into a tractor at one homestead in South Dakota and another instance where a small tractor was built entirely from spare parts found around the farm. It is

important to remember that it is the property, rather than the object, that is eligible for the National Register. The site becomes significant as the place where these types of innovations occurred.

National Register Criterion B

Properties may be eligible for the National Register if they are associated with the lives of persons significant in our past.

In order for a site to be eligible under criterion B, the person it is associated with must be individually significant in an historic context. In most cases the person must have been associated with the property during the period of significant achievement. For example, the farmstead where a pioneering farmer developed a crop strain better adapted to South Dakota's dry western climate would be eligible. The Tom Jones Ranch in Midland, Jackson County, is locally significant under Criterion B because of its association with pioneer rancher Tom Jones. Tom Jones settled on the property in the 1890s and steadily built one of the largest and most successful ranching operations in the area. He held major offices in agricultural operations such as the South Dakota Stock Growers Association and the Rapid City Production Credit Association. "During the Depression years of the 1930s, the state instituted a program to sell unused state parcels to private owners to get those lands back on the tax rolls. Governor Tom Berry appointed Tom Jones to serve as an appraiser for that program. Over the years as the open range became settled, he helped to organize counties, to establish a system of roads, and to create a much-needed telephone network" (Jones 1990:Section 8, page 2).

Birthplaces are usually not eligible unless no other property exists that is associated with a significant person. The property should be compared to other properties (if extant) associated with a person to insure that the property is associated with a significant aspect of the person's life. Additionally, the property must represent the person's area of significant achievement. The farmstead in Gregory County where accomplished black author and filmmaker Oscar Micheaux first homesteaded in 1904 would be eligible because it provided him with material for his later books and films and was where he wrote his first autobiographical novels (Koupal 1988:193). Alex Johnson, a longtime South Dakota resident who rose from the position of station agent to eventually become vice-president of the Chicago & North Western Railway (CNW), was part owner along with other CNW executives of a farm near Frankfort and a ranch near Midland (Kant 1991:382). These properties would be eligible under criterion B because they were associated with Johnson during his period of significance. Given the makeup of the ownership, these operations most likely served as demonstration farms for the CNW and, therefore, would also be eligible under criterion A.

Individual significance must be able to be documented in detail and accomplishments must be outstanding compared to others in the same group or profession unless the accomplishments are unique (uniqueness and significance must be documented) or the person is nationally well known (a summary of significance is sufficient—see National Register Bulletin 32, page 10 for a definition of nationally well-known). A person is not significant solely because she/he held an important position such as the head of an agricultural experiment station. The person must have distinguished herself/himself from others who have held the same position. National Register Bulletin 32, "Guidelines for Evaluating and Documenting Properties Associated with Significant Persons," uses the example of a "farmer whose business acumen or practical innovations in agronomy established or revived an area's agricultural economy" as someone who would be locally significant.

Emil Loriks of Oldham achieved individual significance on both the state and national levels for his role in agricultural politics, especially in the New Deal era of the early 1930s. Loriks served in the South Dakota Senate from 1926-34. In 1932, he became co-chairman of the Joint Appropriations Committee. He was one of the organizers and officers of the Farm Holiday Association, a farmers political group active in the early 1930s. The Farm Holiday advocated a general farmers strike to force government to take action “to prevent farm mortgage foreclosures and to prevent the marketing of low-priced farm products.” (Williams 1986:289) Other achievements of Loriks’ career include serving as president of the South Dakota Farmers Union from 1934-38 and helping to form “what would become the largest grain marketing cooperative in the nation-the Farmers Union Grain Terminal Association” (Williams 1986:289). The farm where Loriks lived in the 1930s, the period when he achieved significance, would be eligible under criterion B. Loriks’ accomplishments can be documented in detail, are outstanding compared to others in the same field and are unique. In addition, Loriks was nationally known as an agricultural leader.

The Magnus O. Bergstrom house in Canton, is listed on the National Register for both its architecture and its association with Bergstrom. Magnus Bergstrom attained local significance through the manufacture of farming equipment which helped modernize turn of the century agricultural techniques in southeastern South Dakota. A Norwegian immigrant, he relocated his family to Canton, South Dakota in 1885. Dissatisfied with the plows being used at the time, he began to make improvements. In 1900 he established the Bergstrom Plow Company. By 1914 the company was also producing harrows, cultivators and other types of farm equipment.

If a property is associated with a family or group of individuals, specific members must be identified and their accomplishments described in the manner described above. See page 7 of Bulletin 32.

The number of South Dakota resources eligible under this criteria is small. Expected areas of achievement related to agricultural history include biological innovators who developed or discovered new crop strains or farming methods, mechanical innovators who developed or refined farm and ranch equipment and well known authors who wrote about their homesteading experiences.

National Register Criterion C

Properties may be eligible for the National Register if they embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components lack individual distinction.

The majority of agricultural properties nominated to the National Register under Criterion C will be eligible as embodying the distinctive characteristics of a type, period, or method of construction because, as National Register Bulletin 15 states, this part of Criterion C “encompasses all architectural styles and construction practices” (p. 18). Both individual resources and districts can be nominated under this criteria.

National Register Bulletin 15 lists “form, proportion, structure, plan, style, or materials” as distinctive characteristics. These characteristics can be defined on a general or specific basis depending on the resource. Whatever resource class a property is nominated under, these distinctive characteristics must, according to Bulletin 15, show: 1) the pattern of features common to a particular class of resources, such as the details commonly associated with an architectural style, OR 2) the individuality or variation of features that occurs within the class such as modifications made by an individual farmer to a barn purchased from a catalog, OR

3) the evolution of that class such as a early round barn that had common features of later round barns added to it such as an internal silo and a hay dormer, OR 4) the transition between classes of resources such as an ethnic form farmhouse that had elements of a recognized architectural style added to it (p. 18).

For example, house barns nominated to the National Register as part of the German-Russian Folk Architecture in South Dakota displayed a common general form—a rectangular plan and a gable roof—and a specific construction method—puddled clay. The Herman F. Micheel Gothic Arched Barn in Brookings County was nominated as an excellent locally significant example of a specific construction technique—the cut-rafter version of the laminated arched-roof barn—and as an illustration of the changes in agricultural building design after 1900. The Nicholas T. Ries farmstead in Codington County was nominated as a district containing intact examples of rural pattern book architecture from the period 1902-1940.

Examples of agricultural properties that represent the work of a master or possess high artistic value will be relatively rare in South Dakota. Properties nominated as the work of a master must, according to Bulletin 15, “express a particular phase in the master’s career, an aspect of his or her work, or a particular idea or theme in his or her craft” (p. 20). The Rammed Earth Machine Shed and Experimental Walls on the SDSU campus represent a significant phase in the work of Dr. Ralph Patty, the head of the SDSU agricultural engineering department in the 1930s. In an effort to identify inexpensive construction methods that farmers could use in the Great Depression years, Patty experimented with using rammed earth to build several different types of agricultural buildings. His later research centered on developing an effective method for bonding stucco to rammed earth to serve as a protective covering. He experimented with a variety of stucco combinations on the exterior of the Machine Shed.

Another South Dakota example of a property from a “particular phase” in a distinguished career is a barn located in Minnehaha County attributed to Wallace Dow, South Dakota’s first prominent architect who designed buildings such as the Minnehaha County Courthouse, State Penitentiary at Sioux Falls and Old Main on the USD Campus. Should research eventually prove that Dow did design the Minnehaha County barn it could be nominated under Criterion C as the work of a master. It is a rare existing example of Dow’s design for a small scale woodframe agricultural building which contrasts sharply with his commissions mentioned above which are primarily large, institutional buildings constructed of Sioux quartzite.

Properties possessing high artistic value must “so fully articulate(s) a particular concept of design that it expresses an aesthetic ideal” (NPS Bulletin 15:20). An agricultural example would be a farmstead laid out according “to (a) published plan, that possesses high artistic qualities” (McClelland et al. n.d. Draft National Register Bulletin 30:16).

Agricultural property types expected to be eligible as districts, defined in Criterion C as “significant and distinguishable entit(ies) whose components lack individual distinction” include farms, ranches, fairgrounds or a collection of buildings and structures associated with a particular agribusiness composed of more than one contributing resource. A collection of farms built by early Danish settlers in western Clay County that share common building forms and site layout would be eligible as a rural historic district. A district can be linked by one or several interrelated historic activities. It may or may not contain resources that are individually significant. Typically, a house or barn will be the most significant building in a farm or ranch district.

National Register Criterion D

Properties may be eligible for the National Register if they have yielded, or may be likely to yield, information important in prehistory or history.

In general, archaeological sites are considered eligible for the National Register of Historic Places if they meet criterion D, ability to yield information. These sites must also retain their integrity. It is important to remember that determination of integrity for historic archaeological sites is different than for architectural sites. Integrity for archaeology becomes a question of whether enough material culture remains for the researcher to answer questions about human behavior.

Historical archaeology is a useful tool for establishing significance as it uses both the historical record and physical remains to evaluate a site. When history and archaeology are combined a researcher is able to obtain a broad picture of life on the prairie and use this to understand the nature of human behavior. For example, if one had a wealth of historical records that include letters from a homesteader describing life on the plains, archaeology could be used to verify or negate the authors descriptions. Does the archaeological record show that life was just as the homesteader described, or were the homesteaders trying to paint a brighter picture of a harsh reality? What was life really like, and does it appear from the archaeological record that it was easier for some than for others? These types of questions, along with the following research issues developed for homesteads, allow us greater insight into the homestead era and to further understand how people react and adapt to difficult conditions. Therefore, one can consider a site to be significant when the archaeological record contains information that could add to existing historical knowledge.

For the purposes of conducting archaeological research on homesteading and agricultural development, it is suggested that the concepts of the household and community be used as primary units of analysis. The term household in this instance is not equated with the nuclear family. A household or community on the prairie could consist of a nuclear family, siblings, single men or women, or even a group of acquaintances. Many immigrant groups worked the land in a communal fashion. Myrtle Twedt of Spink, related how her family homesteaded around Brule Creek in a semi-circle in the 1860s. Each family had its own unit to farm but also functioned as a communal group. A Jewish agricultural settlement in Aurora County consisted of single men who lived together as members of one family and worked the land communally (Goering 1982). These types of communal working and living arrangements were similar to those of the Hutterite colonies in South Dakota and may have been similar to some other ethnic groups.

The Ringsrud and Walsh families homesteaded near the Badlands. Two adjoining tar paper shacks were each on their own claims but placed side by side so the wives could live on their claims and still keep each other company while their husbands worked in town. The houses, although separate, were connected by a passageway. Together the two properties form one household. Thus, the key to understanding the eligibility of small homesteads may not be looking at them as individual entities but as part of a larger group.

A definition of the household that could be used as a baseline theoretical model for South Dakota is the one developed by Susan Henry for her studies of consumer behavior in urban areas. She defines a household as a domestic residential group, consisting of the inhabitants of a dwelling or set of premises. Although considered coterminous with the family (extended, nuclear, fraternal, etc.) it may also include nonrelated family members such as boarders or servants (Henry 1991:7). In South Dakota it may also include ethnic community members, friends or relatives who live in a number of different residences. Therefore, under criterion D, an agricultural property could be considered significant if enough of an archaeological

assemblage remains to increase our knowledge of how the homesteaders adapted to life on the plains as part of a household or community.

Boundary Considerations

According to National Register Bulletin 16A, two options are available for nominating rural properties. “Boundaries for rural properties may be based on: 1. A small parcel drawn to immediately encompass the significant resources, including outbuildings and associated setting, or 2. Acreage, including fields, forests, and open range, that was associated with the property historically and conveys the property’s historic setting. (This area must have historic integrity and contribute to the property’s historic significance.)” (McClelland 1991:56).

In deciding which approach to take in defining boundaries, consider 1) why the property is significant and 2) what role the land associated with the site plays in defining significance.

If a successful West River ranch was nominated under criterion A as an operation historically assembled over a period of time through a variety of methods, all the land historically associated with the ranch should be nominated, not just the main buildings. All 4,750 acres of the Frawley Ranch in Lawrence County were nominated to the National Register. The boundaries include land originally purchased by the ranch’s first owner, Henry J. Frawley, land he bought from unsuccessful homesteaders and land he later inherited. The period of significance for the Frawley Ranch ends in 1913, the year the ranch reached its present size.

If a farm is being nominated under criterion C because all the buildings are made of rammed earth, a distinctive construction method associated with German-Russian immigrants who arrived in southeastern South Dakota beginning in the 1870s, only the farmyard including the buildings should be nominated.

For abandoned homesteads boundary considerations need to include any remaining structures and associated archeological features such as water management systems (i.e. irrigation ditches, check dams, springhouses), animal management features, etc. If the claim structure sits on the original 160 acres then consideration should be given to placing the boundaries around the entire property. In cases when homesteaders used the Timber Culture Act, any of the original tree belts should be included within the boundaries.

After considering why a resource is significant and deciding how much of the surrounding land should be included, boundaries can be drawn (McClelland et al. n.d. National Register Bulletin 30:24-28). National Register Bulletin 30: Guidelines for Evaluating and Documenting Rural Historic Landscapes, states on page 26, “The following are commonly used to define the edges of rural historic landscapes:

- Historic legal boundaries . . .
- Boundary demarcations that are relatively permanent, such as stone fences, irrigation or drainage ditches, . . .
- Rights-of-way . . .
- Natural features, such as rivers, lakeshores, . . .
- Changes in nature of development or spatial organization, such as the departure of a community having vast tracts of communally owned farmland from the typical midwestern grid of 160-acre farms, when differences are related to significance.
- Edges of new development . . .
- Current legal boundaries, when they coincide with the area retaining historic landscape characteristics today . . .

- Lines drawn along or between fixed points, such as stone walls . . .
- Long-standing vegetation that is visible at all seasons, . . .”

A combination of these items may be used to define a resource’s boundaries (McClelland et al. n.d. National Register Bulletin 30:28).

See “Importance of the Big Picture” at the beginning of the Property Type Analysis section and Archaeological Research Issues “Research Area 1: Physical Manifestation of Legislation” and “Research Area 3: Land Use and Settlement Patterns” for more discussion on rural landscape evaluation.

PROPERTY TYPE ANALYSIS

Importance of the Big Picture

The future usefulness of survey data is heavily influenced by the analytic approach used by the surveyor in observing, interpreting and evaluating an agricultural site. A surveyor must be thorough in collecting all data available from an individual site. In order to achieve the most complete possible understanding of the resource, however, this data must be interpreted and the site evaluated within a broader context. It may be easier to see and understand subtle relationships between “things dispersed over a broad area and intermixed with other things” (Murphy 1993:3) if a surveyor adopts an “aerial map” point of view. Is an individual site part of a larger ethnic settlement? Is a farm one of several in a given area producing a specific type of corn to meet a specific need? Any individual place “is the way it is” due to a layering of many factors. The danger in using a small number of neatly defined categories to evaluate the significance of a site is the generation of a sterile, limited view of a large and varied world.

The big picture approach should be used during on-site recording. “What was the process that was taking place on the site? How did the site function as a whole? These are the important questions. The plan of the farmstead/ranchstead is not just an interesting landscaping feature, but serves to pull the site together for overall analysis” (Torma 1993:1, see also Spude 1987).

No matter what category or scale a surveyor uses to evaluate a site, there is always a larger category or scale, i.e. a bigger picture, that the site is a part of. Surveyors must realize that without sufficient knowledge of the temporal, spatial, informational and other boundaries of the category or scale they are using to evaluate a site, it will be difficult to decide what is and is not important at a site (Reno 1994:5).

Landscape studies can be a great help in placing an individual site within a “big picture”, but few, if any, exist for South Dakota. National Register Bulletin 30:Guidelines for Evaluating and Documenting Rural Historic Landscapes offers the following which may be helpful in defining the “big picture”.

Historic properties may be evaluated at various geographic scales. A rural property, such as a farm, may have its own significance, but also be part of a significant collection of neighboring farms or an entire community with a village cluster, outlying farms, and interconnecting roads, that form larger historic districts. The initial step in selecting the boundaries of a rural historic landscape is to determine the extent to which properties at the smallest scale, such as a single farm, are intact and form larger properties that may be listed as large and cohesive historic districts (McClelland et. al. n.d.:25).

It is left to the surveyor to select the appropriate category or scale. Accurate analysis of the range of human decisions and priorities that went into creating a site requires the surveyor to gather and closely examine more information than raw site data.

Evaluating a Site: Considerations

Assessing the significance of a site is the surveyor’s chief objective. Mary Panelli lists several factors to consider when determining what information a site can convey (Panelli 1990:3):

- 1) What was the building and/or site used for and did this change over time;

- 2) Availability of building materials: did the builder use what was readily available or import supplies;
- 3) Does the structure or site evidence any innovative behavior or solution to a site specific problem or condition: isolated, unique structural innovations, especially those that predate expected construction dates, are good examples;
- 4) Ethnicity/cultural affiliations: are ethnic building traditions and/or forms used at the site;
- 5) Wealth: is the financial status of the occupant evident;
- 6) Economic expectations: does the site consist of an original structure added on to at a later date or was a larger building constructed of more permanent materials added to the complex at a later date; and,
- 7) Personal data: is the age or gender of the occupant evident from the site in any way and are these patterns repeated at other sites.

Property Types

Claim Era Resources

Farms

Ranches

Fairgrounds

Agribusiness

Government Sponsored/Institutional/Communal Agricultural Operations

Resource types are listed alphabetically under each property type.

Agricultural sites can be examples of a single property type or a combination of several. A working cattle ranch with an intact claim structure used as a storage shed is an example of both the ranching and claim era resources property types.

PROPERTY TYPE

CLAIM ERA RESOURCES

Many claim era resources are examples of ethnic building forms. Consult the surveys and National Register multiple property nominations at the South Dakota State Historical Preservation Center for more information on specific ethnic forms. National Register multiple property nominations are available for German-Russian, Czech and Finnish resources. Survey data is also available for these groups and Swedish and Danish resources.

It should be noted that although claim era resources are presented with agricultural resources, many claim filers never intended to actually farm or ranch on their land. In South Dakota many homesteaders filed claims 1) to allow for future land speculation or 2) as part of a cattleman's organized effort to create a large ranch.

In general, claim era resources are smaller and contain less detail and decorative finishes than more permanent residences. A variety of inexpensive, locally available materials were often used for both construction

(native stone, sod, logs) and interior coverings/decoration (newspaper, whitewash). Usually, these buildings were intended to be temporary structures until the settler possessed the material and financial resources to construct a more permanent dwelling. According to agricultural historian Gilbert Fite, “it generally took a few years for the ordinary pioneer to earn enough money to build with lumber” (Fite 1966:40).

Some homesteaders wanted mobile structures that could be either be moved to another claim after “proving up” or could be sold to other settlers. Others pushed their structures together to enjoy each other’s company. The claim shacks at the Ringsrud and Walsch homesteads were connected by a passageway. At the Praben Lee homestead in Turner County, two brothers shared one dugout. As the dugout was situated across the section line and the brothers slept on opposite ends, each was considered to be living on a separate claim.

A claim era site may contain physical evidence of the type of homestead method/legislation used in establishing the claim (Panelli 1990:7). For example, a shelter belt could represent a claim filed under the Timber Culture Act. Additional features that may be found at a claim era site include a privy hole, root cellar remains/depression, wells, dumps, clustered settlement, evidence of plow animals and evidence of cultivated fields such as rock piles, non-native surface coverage, and machinery remains (Panelli 1990:8). In the Black Hills, many homesteads had their own sawmills.

When evaluating an agricultural property it is important to be aware that a former claim structure may have been recycled. What was once the initial building on the property may have been turned into an outbuilding as the claim gave way to a more developed farm or ranch complex. It may stand by itself or be some distance from an established property. At the Praben Lee farmstead in Turner County two of the outbuildings were initially claim structures. One was moved from another property and reused as a storage shed. The larger, was the initial farmhouse that is now used to store agricultural equipment. Some claim era structures, mostly wood frame and log buildings, are incorporated into the permanent house.

Claim Era Resource Types

***Dugout**

Description/Notes:

•Dugouts are usually built into the side of a hill above the high water mark of any nearby water source (Noble 1981:14) and featured either a sod, stone or wooden facade. “The ridge line normally was set at right angles to the slope of the land . . .” (Noble 1981:16). Doors were positioned out of the wind (Noble 1981:16). The idea that dugouts were placed above a high water mark of any nearby water source may not apply to western South Dakota as it did in the eastern half. Because there was no choice in the selection of parcels due to the lottery system the placement of dugouts and other types of claim era resources, particularly in the National Grasslands, will be more random than in the eastern half of the state.

Noble (Noble 1981:14) notes “Typical dimensions were 8 to 9 feet deep and perhaps 12 feet wide, frequently with only a single door . . .”. Yost states size ranges from 10x10 feet to 12x14 feet (Yost 1983:56). Typical interiors contained a single room.

The advantages of a dugout were that they were inexpensive, fireproof and easy to construct. A typical dugout cost about \$10.00 to construct (White 1991:228).

Example-Photo 1: John Ramsley Homestead, Irene vicinity, Yankton County

1889, approximately 8x12 feet, dugout built into the southern face of a hill, walls are fieldstone, wood shingle gable roof, brick chimney on inside southern wall, one interior room

SHPC photo



***Log Shack**

Description/Notes:

- Cottonwood is often used.
- Notching logs on the bottom prevents water from pooling in notches (Yost 1983:69).
- Shack size ranges from 16x18 feet to 21x29 (Yost 1983:72).

Example: Johnson Ranch, Harding County, survey number HN-GV-3

17x17 feet, one story, square hewn logs with round log beams, chinking appears to be mortar, sheet metal roof (addition?), 2 windows, 2 doors

Example: Joe Lewis Homestead, Short Pines vicinity, Harding County, survey number HN-HE-1

1880s?, 26x16 feet, two story, fieldstone footers, vertical logs approximately halfway along long side, dove tail notching at corners, mud chinking, log plate notched to receive rafters, wood shingle gable roof, 1x12 inch trim along eaves side, 2x6 inch corner board covers dovetail notching, two interior rooms

***Sodhouse**

Sod houses were usually more elaborate, substantial and costly than dugouts. An average family sized dwelling cost between \$80 and \$100 to construct. Fields were plowed to cut the sod into one foot by two foot bricks. The bricks were then used to construct houses. Some of the “soddies” were reused as outbuildings after a frame farmhouse was built (White 1991:228).

Description/Notes:

- These resources may be free standing structures made of sod bricks or sod may be one building component such as the facing on a dugout.
- Once very prevalent, the number of sod resources has dwindled significantly.
- Yost states most sod houses were not incorporated into permanent dwellings but were adaptively used as outbuildings (Yost 1983:36).
- Advantages:** Advantages of this resource type cited by Allen Noble include availability of the building material, low building cost, insulating ability in both winter and summer, ability to stop arrows and bullets, ability to withstand prairie winds and fires, little skill needed to build with sod, a sod house could be

erected quickly; ability to withstand fire could be greatly increased with the use of a fire break (“constructed by plowing seven or eight furrows around the property, leaving a space of 10 to 12 feet and then plowing seven or eight furrows again. The grass in the space was then carefully burned on a windless day”) (Noble 1981:13-14).

- Disadvantages:** Disadvantages include a dirty interior, leaky roof, difficulty in making a sodhouse entirely weatherproof, the presence of vermin in dirt walls and a dirt roof and difficulty in getting walls and structural members “even” (Noble 1981:14).

- Typical Dimensions and Location:** Sodhouses are usually 12-16 feet wide and 14-20 feet long, one story, contain 1-2 interior rooms and are ideally located in some type of valley to reduce wind exposure (Noble 1981:16).

- Construction Details:** Walls are 1 1/2 to 3 feet thick and made of sod bricks 12-18 inches long and 18-36 inches wide. Builders laid the lowest course on the ground, staggered the joints and placed headers every second or third course (Yost 1983:22). Outer walls are often tapered while inner walls are as straight as possible. Posts or wire protect exterior corners (Yost 1983:17). Interior walls may be left as dirt, whitewashed or covered with newspapers.

Window and door frames are often held in place with wooden pegs driven into the sod (Yost 1983:22). Windows can be flush with the outer wall or placed inside (inside the window received greater protection from the elements)(Yost 1983:22). East, west or south walls contain windows (Yost 1983:35). Some builders whitewashed their window and door reveals to reflect light inside (Yost 1983:20). Window openings are often wider on the outer wall to allow more light to enter (Yost 1983:19). Alternatives to glass for windows were animal skins, blankets, oiled paper or wooden shutters (Yost 1983:22-23). Wood board and batten construction is a popular construction method for **doors** (Yost 1983:23). **Vestibules** afford protection from the elements.

Most sodhouse **roofs** are gabled, but shed and hip forms are also used. Roof materials include wood planks, shingles, tar paper, canvas or a layered system of branches followed by hay, sod (grass side either up or down) and mud/plaster (Noble 1981:18).

Floors may be hard packed dirt, wood planks or carpet/other covering.



Example-Photo 2: A contemporary photograph of a sod house

SD State Archives, State Historical Society photo

Example: The following sodhouses are listed on the National Register: Prairie Homestead (contains a sod component), Cactus Flat, Jackson County; Anna Carr Homestead, Bison, Perkins County and Joseph Baker House, Hereford, Meade County

Example: Rare instance of a sod house still being used as residence—Donald Beckon Ranch, 5 1/2 miles SE of Zeona, Perkins County, National Register listed as part of the Harding/Perkins Multiple Resource Nomination

1910, rectangular plan, one story, exterior has been stuccoed, hip roof, gable roof extension on east side, asphalt shingles on roof, main door on south side, windows are double hung 2/2 in main portion, 1/1 in east side projection

Example: Dragoo Sod House, 22 miles south of Hettinger, ND on Highway 75, Perkins County

built in 1910 by O.F. and Molly Dragoo; 42x22 feet; 1 1/2 story; sod pieces were 14 inches wide, 2 feet long and 4 inches thick; walls are 2 feet thick and 7 feet high, gable roof, 2 doors on S side, 1 on N side, five 2 over 2 double hung windows, interior divided in half by 2 foot sod wall, loft used as children's bedroom, partial cellar, interior walls plastered

***Stone House**

Description/Notes:

- These structures were a more permanent alternative to sod where wood was not available or cost prohibitive. Window and door frames were often wood. See example of Ramsley Homestead under dugout section.

Example-Photo 3: Clevens Stone House, on North Fork of Grand River before it empties into Shadehill Reservoir, Shadehill vicinity, Perkins County, site number 39PE155, possibly National Register eligible

c 1912 according to a local informant, approximately square plan 26x26 feet, one story, cemented fieldstones, wooden window and door frames, property owned by Hans Cleven from 1907-37, site also consists of two smaller fieldstone foundations thought to possibly be a storage building and a swine barn and a larger depression measuring approximately 75x55 feet which may have been a barn (Toom and Kordecki 1994:149-151)

Photo courtesy of U.S. Bureau of Reclamation, Missouri-Souris Projects Office



***Woodframe Shack**

Description/Notes:

- Shack size is typically 10x12 feet according to Edith Eudora Kohl's *Land of the Burnt Thigh*. These were the dimensions required by federal legislation. Tar paper was often used as an exterior covering. Red or blue building paper was used to cover interior walls (Kohl 1986:26).

Example: Newhall Homestead, Turner County, National Register listed along with farmhouse

c 1879, 13x25 feet, one story, unmortared stone foundation, walls clad with rough clapboard and horizontal boards, wood shingle gable roof, originally possessed a brick chimney, four 4 over 4 double hung windows, woodframe lean-to originally covered the doorway, interior consists of two rooms with plain woodwork, exposed wood floors and plaster walls

PROPERTY TYPE

FARMS

For the purposes of this document, the key difference between the farm and ranch property types is what the site produces. Farms typically produce row crops supplemented by limited livestock production, predominantly swine and poultry. For organizational purposes, dairy operations are included in the farm property type. Stock raising, primarily beef cattle and sheep, characterizes ranching. In South Dakota, farms are generally found East River and ranches are generally found West River. Ranches are usually substantially larger in area than farms. Surveyors should be aware that many exceptions to these generalizations do exist.

Farms and ranches possess physical features indicating permanence. Improvements made to the property indicate the owner intended to stay. Improvements can include additions to a claim era resource, a permanent dwelling, individual outbuildings, fencing, shelterbelts and irrigation evidence. One Custer County farm even contains a concrete, brick rimmed fishpond as evidence the homesteaders intended to stay. (Roland & Millie Skinner Farm, c 1910, Phase III, Custer County survey number CU-HA-1). Like any site used over an extended period, farms and ranches continue to evolve as time passes and perceived needs change. An example of site evolution is an underground bomb shelter with an above ground turret built by Leonel Jensen on his ranch near Wall in 1962. Surveyors should attempt to link improvements with a specific time period.

A farm or ranch is a unit unto itself and should be evaluated as such. Make note of both the overall site and farm/ranch yard arrangement. For example, where is the entrance road located in relation to the main dwelling? Outbuildings and landscape features such as fences or orchards contain valuable information about a site that is lost if only the main living quarters or largest barn is examined.

One typical farm/ranch yard arrangement places the main house in the foreground with the outbuildings forming a courtyard toward the side and rear. Livestock operations will often be farther removed to reduce odor and contamination of ground water. Early twentieth century agricultural experiment station bulletins advocate placing barns 100-150 feet away from the main dwelling and “placing the main buildings, particularly the dwelling and the barn, that the prevailing winds in the locality blow at right angles to a line connecting these buildings” (Valgren 1930:3) for fire protection.

Repetition in farm/ranch yard arrangement, farm/ranch house architectural style and outbuilding design is expected, especially after the rise of agricultural experiment station, United States Department of Agriculture bulletins, Midwest Plan Service (“an organization of extension and research agricultural engineers from the twelve states of the north central region” that began publishing standardized plans for farm buildings in 1933-MWPS 1993:1) catalogs and manufacturer’s catalog or “pattern book” buildings after the turn of the twentieth century. Farm/ranch houses featured in agricultural experiment station bulletins during the 1910s are indistinguishable from contemporary suburban residences. Farm and ranch families often ordered their homes from one of many available catalogs.

Farm and Ranch Yard Examples:

Example: Veal Ranch, Perkins County, National Register listed (Harding/Perkins MRN)

relatively high style house to west of courtyard formed by two barns and sheep shed built from 1916-1927, chicken coops located slightly closer (northwest and south sides) to house

Example: Beckon Ranch, Perkins County, National Register listed (Harding/Perkins MRN)

house, bunkhouse and four associated outbuildings form a domestic unit on the east side of the driveway, agricultural unit is located on west side of drive and consists of nine structures including a barn, chicken coop, sheepherder's wagon, pump house and associated sheds both modern and historic

Example: Gabriel Ranch, Perkins County, survey number PE-AC-3

earliest house and outbuildings extend in a line away from main ranch house on one side of driveway only, several of the outbuildings were moved in, some after historic period including a store building

Example-Figure 7: Tom Jones Ranch, Jackson County, National Register listed

site located in shallow valley of Brave Bull Creek; buildings located on slight rise to the southwest of the creek; first building moved onto site in 1898;

complex includes fenced center unit with simple, one story, T plan ranch house (additions 1899 and 1905-see farm/ranch house discussion below), 1913 bunkhouse which was connected to ranch house in 1915, and c 1900 privy; c 1915 chicken coop located

just outside northwest corner of fenced yard; U shape driveway separates center unit from 1910 garage/ice house to the south and 1927 long, rectangular cattle shed and c 1915 windmill to the east

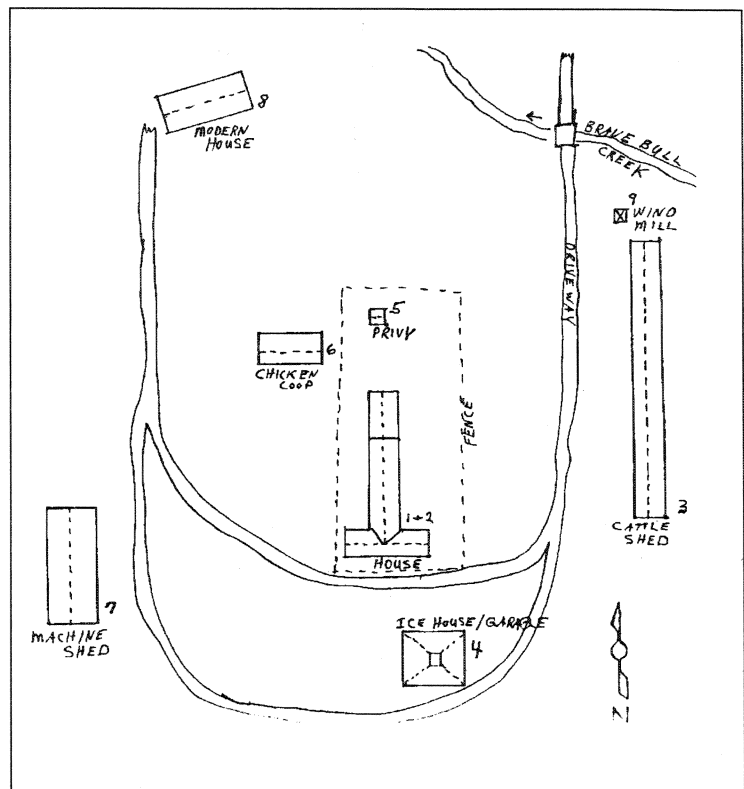


Figure 7 from Tom Jones Ranch National Register Nomination Form

Farm Resource Types

Note: Resource types that are the same for the Farm and Ranch Property Type Sections are listed under Farm Resource Types.

***Barns** (divided into subsections)

Note: Small barns associated with a specific livestock type such as swine barns, horse barns and brooder barns (chickens) are listed individually rather than in this section.

Description/Notes:

- Use, building materials, and form help to classify them.
- A variety of construction methods and truss systems were used.
- Early barns (approximately pre 1880) feature exclusive use of heavy timber framing. South Dakota examples of this type of construction are extremely rare and can be expected to occur in the southeast corner and Black Hills region.
- Log barns and outbuildings in a variety of styles can be found in the Black Hills vicinity dating from the last quarter of the nineteenth century into the 1920s. Logs were a cheap, readily available building material.
- Later barns feature a combination of heavy timber and dimension lumber framing and, later (post 1900 but the further west a resource is located the later this date will be), exclusive use of dimension lumber.
- Beginning in the last quarter of the 19th century and especially after 1900, agricultural extension bulletins and the agricultural press were responsible for disseminating information on structural innovations in a short amount of time to a wide audience.
- Specialized construction details used in dimension lumber barns to increase stability in strong winds include sills fastened to the foundation with anchor bolts or angle irons, diagonal wall sheathing, knee braces used on supporting posts, doubled up studs around doors and windows on end walls, knee braces and collar ties on roof rafters and wall buttresses in masonry barns (Betts 1932:1-6).
- Innovative truss systems such as those used in gable, gambrel and gothic arch roofs were created for larger, uninterrupted loft spaces and to withstand winds (see “Light Truss” section below).

***Barns-Bank Barns**

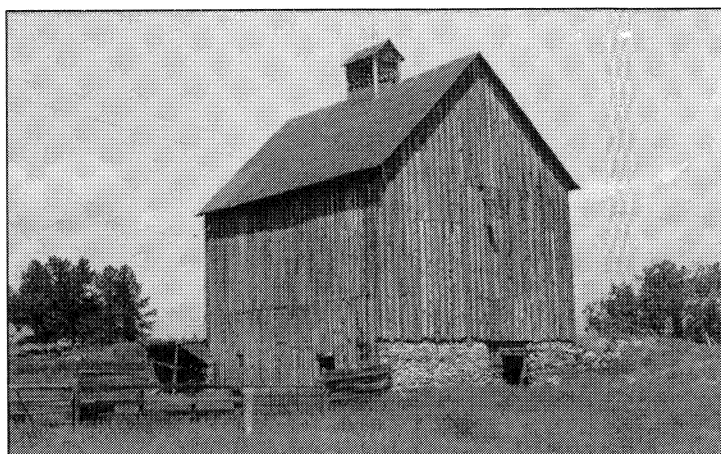
Description/Notes:

- The bank feature appears on barns of many different styles. The bank usually meets the barn on the long, usually the eaves, side. Banks can be manmade or the barn can be built into the side of a hill. Most South Dakota bank barns are built into hills.

Example-Photo 4: John Kirk Ranch, Pringle vicinity, Custer County, survey number CU-PR-2, National Register eligible

c 1914 built to replace original early 1890s log barn, 3 story including basement, rectangular plan approximately 35x24 feet, rough dressed fieldstone and lime mortar foundation, wood frame with board and batten exterior, gable roof with asphalt shingles and wooden ventilator, few windows

SHPC photo



***Barns-Catalog Barns**

Description/Notes:

•Affordable and readily available after 1900, catalog barns featured popular barn styles (see above descriptions particularly light truss and round/polygonal barns sections). Popular companies included Sears, Roebuck and Company of Chicago using the “Honor-Bilt” product name; Crane-Johnson Company; Gordon VanTine Company; Rilco Laminated Products Company of St. Paul and the Radford Company.

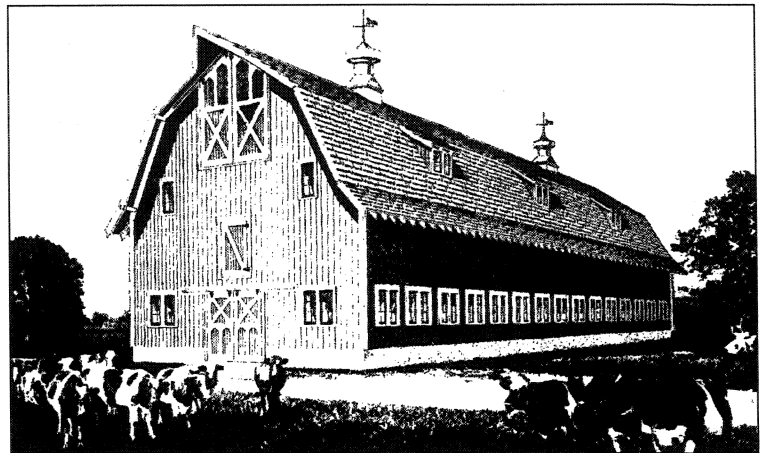
***Barns-Dairy Barns**

Description/Notes:

•Most barns used exclusively for dairying will be post 1910 correlating with the rise in the dairying industry.

The Wisconsin Dairy Barn (a product of University of Wisconsin’s Agricultural Experiment Station) was a popular standard form from the turn of the century to 1930. It featured a long rectangular plan, gambrel roof, stanchions on either side of a large central aisle, poured concrete floors (a later sanitary feature added to many early dairy barns) often containing a built in manure track and feed manger, and rows of windows on the long side. Ventilator shafts and ridgeline cupolas on many of these barns attest to the importance of ventilation for large dairy facilities. *See Figure 8 for a catalog version of this barn type.*

Figure 8 from Sears, Roebuck and Company. The Book of Barns: Honor-Bilt-Already Cut (Chicago: Sears, Roebuck, c 1925), page 9.



***Barns-English/Three Bay**

Description/Notes:

•A standard type listed in the literature, this gable roof barn has a rectangular plan with the entry on the long, typically the eaves, side. The middle bay on the eaves side often serves as a drive through. Gordon lists traditional ratio of length to width as 2:1 with typical dimensions ranging from 24x48 feet to 32x64 feet (Gordon 1992:143). *See Figure 9.*

Expect to date this barn form to the beginning of the period when the particular area of South Dakota was settled. In South Dakota, barns of this form will generally predate light truss barns in the area.

This form was typically used for small, subsistence farming operations that used and produced small numbers of livestock.

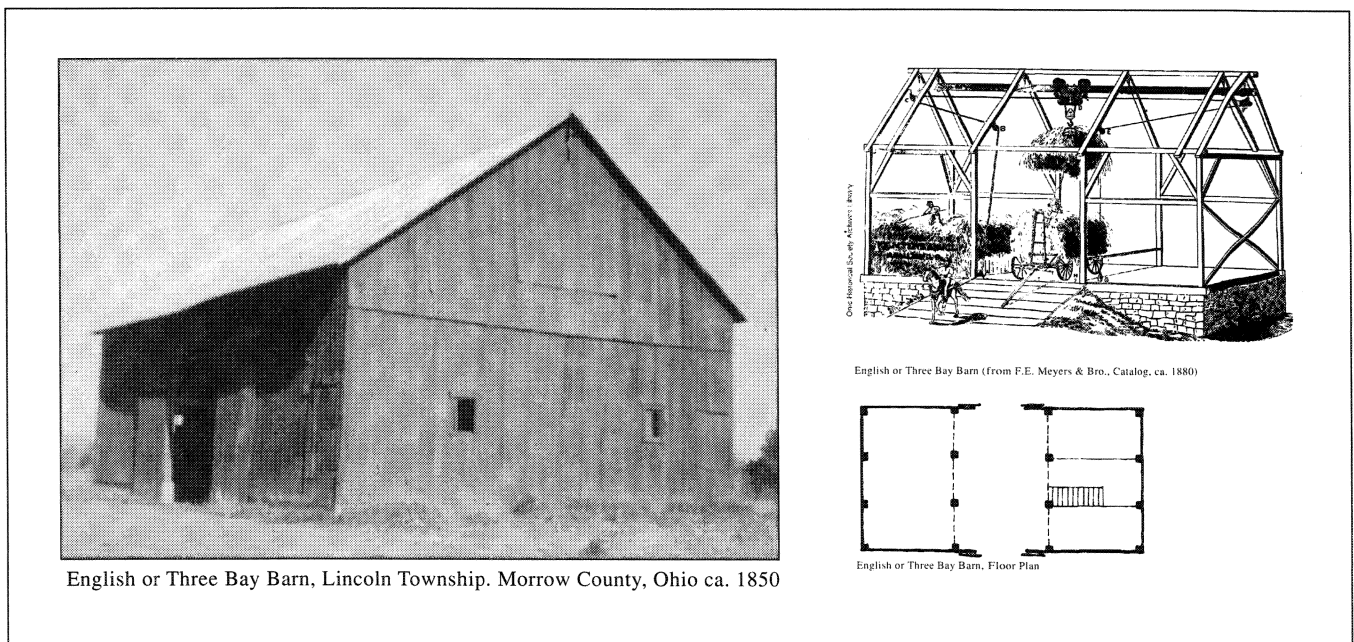


Figure 9 from Gordon 1992:143

*Barns-Ethnic Barns

Description/Notes:

- Expect to date these barns to the period when the particular area of South Dakota was settled.

Consult the survey forms and National Register multiple property forms at the South Dakota State Historical Preservation Center for more information on specific ethnic forms. National Register multiple property nominations are available for German-Russian, Czech and Finnish resources. Survey data is also available for these groups and Swedish and Danish resources.

*Barns-Light Truss Barns

•Variations include gothic arch, gambrel, gable, and monitor roofs. Roof arches on later barns are generally flatter due to improved design and greater barn width.

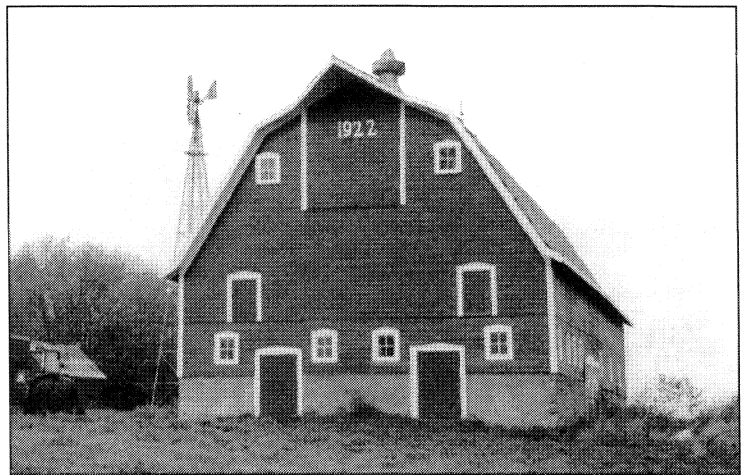
•**Gambrel:** Many gambrel examples from the first half of the 20th century use the Shawver Truss, developed in 1904. Made of dimensional lumber, the Shawver Truss transferred the load of the roof out to the walls with no interior posts. This truss system used a relatively large amount of lumber and took up some of the loft space. Building dimensions were limited by the size of lumber that could be obtained (Rau 1990:Section 8, page 1).

Two specific types of gambrel barns appear in the literature: the Erie Shore and Wisconsin Dairy barns. Noble describes the Erie Shore as a small (30x40 feet) gambrel roof barn with one story and a loft. The plan of this barn features a drive at one end separated from stables at the other end by grain and miscellaneous storage areas. A large, asymmetrically placed door often appears on the long side of these barns (Noble 1984:44). See the dairy barn section above for a discussion of Wisconsin Dairy Barns.

Example-Photo 5: Tuntland Farmstead, Beresford vicinity, Lincoln County, National Register listed

1922, 2 story, rectangular plan, balloon frame construction, open hay mow

SHPC photo



Example: Lincoln County, survey number LN-CN-7

1911, 2 story, brick with matching brick silo

•**Gothic Arch:** Gordon gives 1916 as the date when the Gothic Arch barn came to the Midwest (Gordon 1992:151).

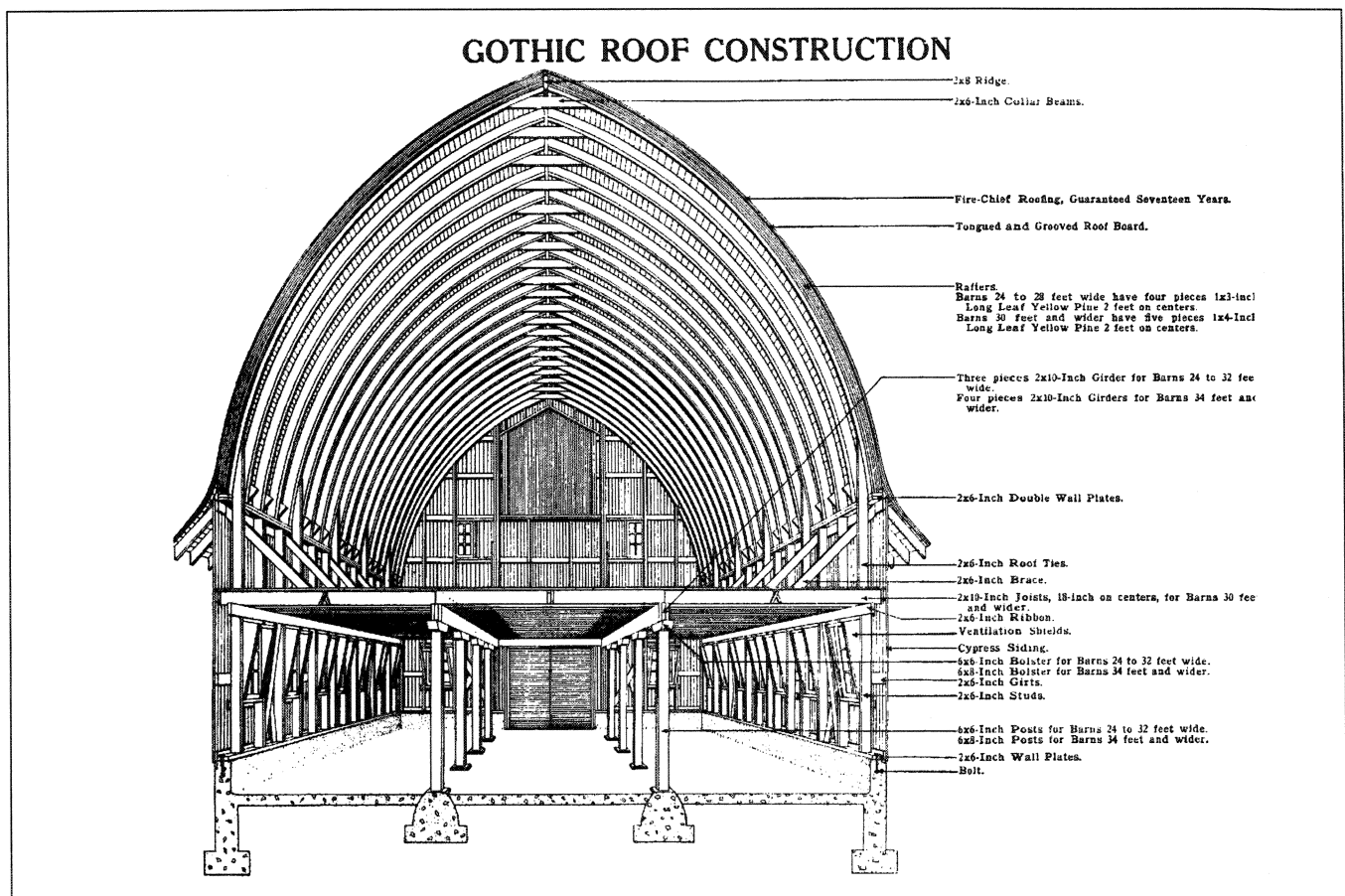
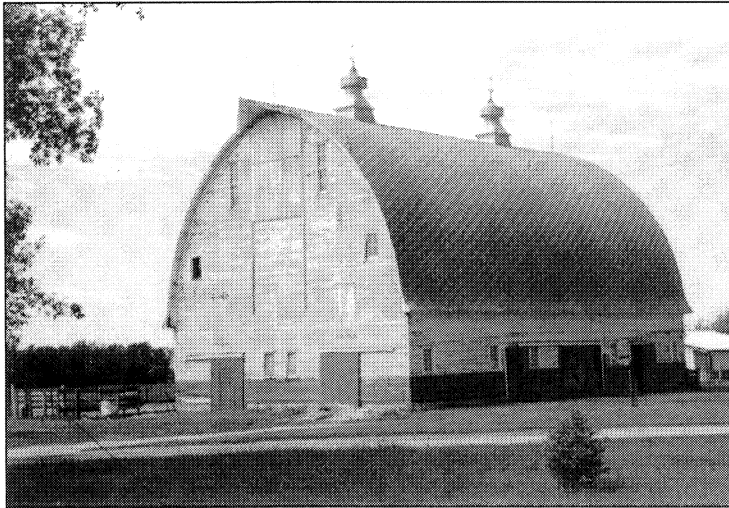


Figure 10 from Sears, Roebuck and Company.
The Book of Barns: Honor-Bilt-Already Cut (Chicago: Sears, Roebuck, c 1925), page 6.

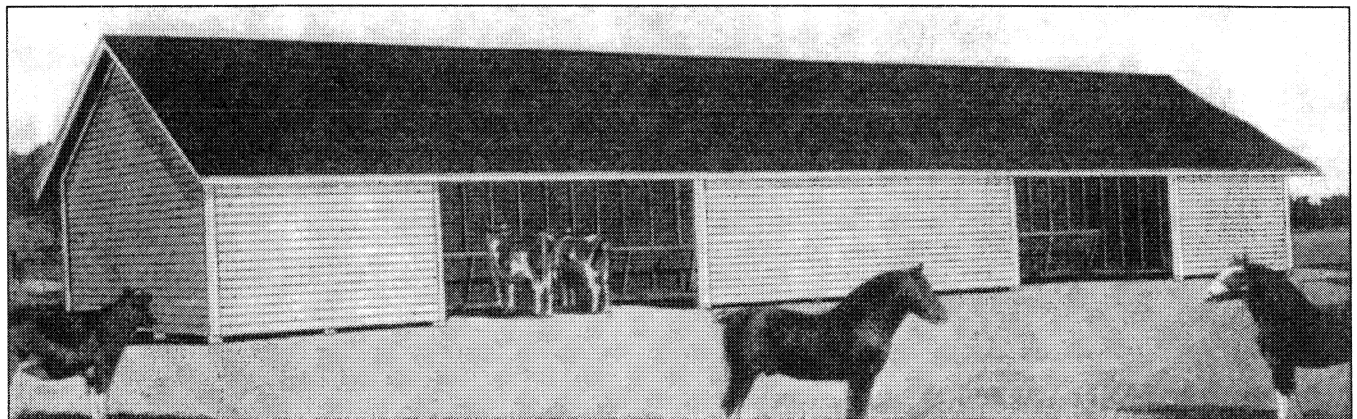
Two types of the gothic arch barn evolved out of efforts to develop a “self-supporting roof(s) constructed of arched rafters that generally needed no internal trusses and could be built to larger proportions. . . . The first type, which actually had its origin in the late 19th century (the cut rafter roof reportedly was first used as early as 1885 in Isabella County, Michigan), utilizes a rafter composed of short laminated sections pre-cut to form the arch. Like the Shawver truss, this system necessitates a considerable amount of materials and labor. Thus, a second type was developed with rafters fabricated from longer sections bent to form the arch. Soon, this later technique replaced the Shawver and other trussed-roof types as the system preferred by engineers and architects. . . . Nevertheless, bent rafter barn roofs were susceptible to sagging and experiments to make them stronger and more wind resistant continued” (Rau and Olson 1990:Section 8, page 1). *See Figure 10 for a cutaway view of a Gothic Arch Barn from a c 1925 Sears Roebuck Catalog.*



Example-Photo 6: Herman F. Micheel Gothic Arch Barn, White vicinity, Brookings County, National Register listed

1920, 42x60 feet, 2 1/2 story, concrete foundation and floor, wood frame, clapboard siding, asphalt shingle gothic arch roof, short-sectioned laminated rafters are cut to form the roof arch, loft contains hay mow and 2 small granaries, originally housed dairy cows and horses now houses feeder hogs

SHPC photo

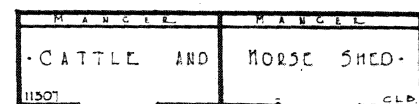


CATTLE AND HORSE SHED F-11507

Frame construction on concrete piers, two open doors 16 feet wide on the south side, gable roof, manger on north side with door in wall for throwing feed.

Designed by the "Iowa State College" and approved by experienced cattle breeders.

We recommend this building to those who handle large quantities of cattle and who realize the necessity of protecting them during stormy weather.



OUTSIDE DIMENSIONS
Size: 20'0" x 80'0"

Figure 11 from Crane-Johnson Company. Our Latest Book of Practical Farm Buildings (N.p.: Building Age Publishing Co., 1930), page 53.

***Barns-Loafing Barn**

Description/Notes:

•Often attached to the side of a larger barn, these structures are used as free access shelter for cattle to rest or “loaf.” Loafing barns are usually able to be opened on the south side for sun exposure. “If the barn is part of a dairy operation, the milking parlor is also nearby. Next to the loafing barn is a feed area that can be paved and sloped for easy cleaning” (Minnesota Historical Society 1980:9). *See Figure 11 from a c 1930 Crane - Johnson Company catalog.*

***Barns-Midwest or Transverse Frame Barn**

Description/Notes:

•Often used to house livestock, these late 19th to early 20th century barns contain three doors on the gable or gambrel end which is often wider than the eaves side. Two side aisles may be part of the original barn, but are often added on at a later date. A broken roofline is often a clue to such an add on. Most of these barns have gable or gambrel roofs that flare out to cover side aisles, Noble notes a type of this barn where the central aisle has been reduced to a walkway (Noble 1984:14). The low, wide feel of the gable or gambrel ends of these barns is a distinctive feature.

Example-Photo 7: Jacob Goosen Barn, Onida vicinity, Sully County, National Register listed

1919, 50x100 feet, 2 story, Shawver truss system, open hay mow, used for cows and horses

SHPC photo



***Barns-Pole Frame Barns**

Description/Notes:

•These one story, very low pitch gable roof metal buildings from the post WWII years often have a dirt or concrete slab floor. Sheet metal supported by a spaced framework attached to poles makes up both the walls and roof. Pole frame barns are relatively inexpensive to build compared to traditional barns because less material and skilled labor are required for a pole frame barn. *See Figure 12.*

***Barns-Quonset/Arch Rafter Type**

Description/Notes:

•These post-1945, long, rectangular plan structures, “called Quonsets because of the large numbers of them used by the Navy and Marines at posts like the Naval Air Station at Quonset Point, Rhode Island”

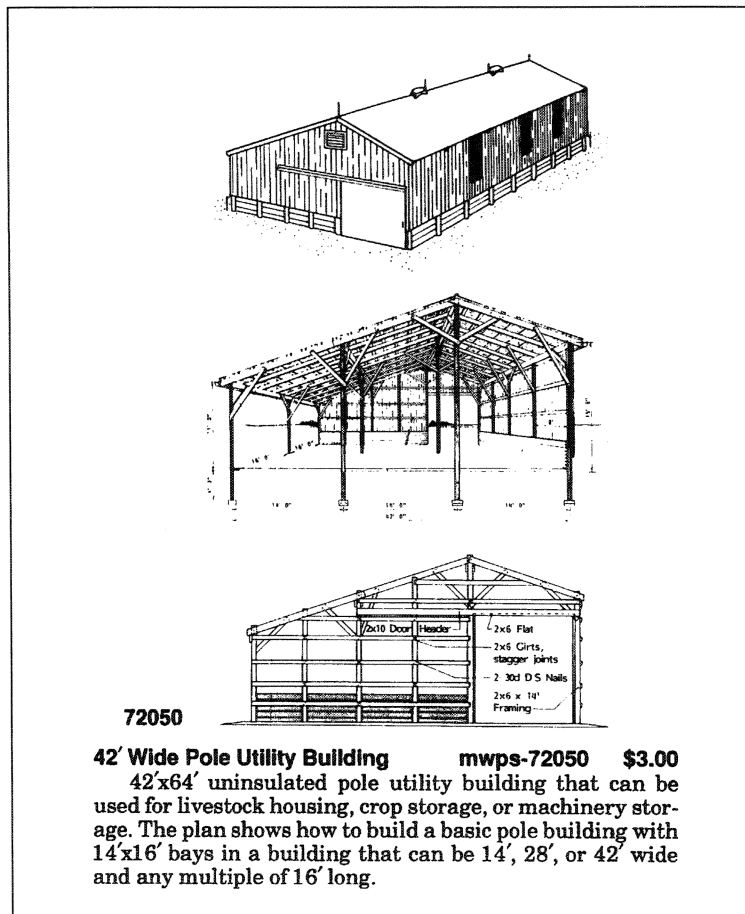


Figure 12 from MidWest Plan Service 1993:9

(Garner 1993:30) during World War II, feature a semicylindrical roof of metal sheets and low or nonexistent side walls. End walls usually contain a large sliding door(s) and may contain a person door. These structures “provide high, clearspan areas over 40 ft. wide” (Johnson 1980:4) and are usually used for machinery or grain storage. *See photo 8 of a c 1948 Quonset Type Barn from Lawrence County.*

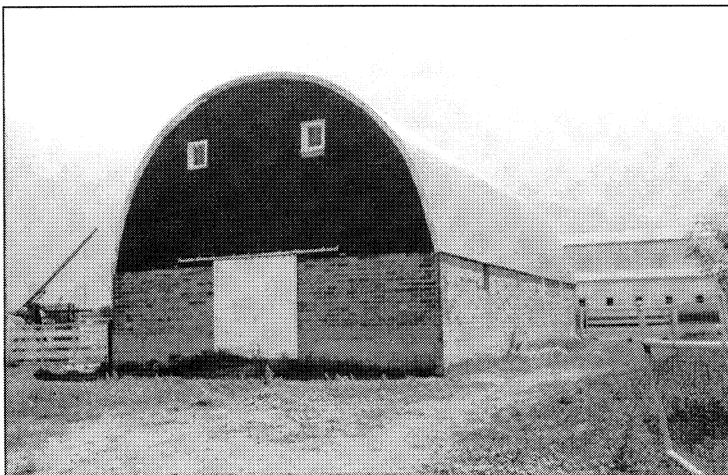


Photo 8: This rectangular plan Quonset Type Barn was built on a ranch near St. Onge, Lawrence County in c 1948

SHPC photo

The U. S. Army Air Signal Corps first used a smaller, 16 foot wide version of the modern day Quonset Hut, called the Nissen Bow Hut, during World War I. “The early Nissens combined both wood and metal components. They are identified by their unique form, a semi-cylindrical roof of galvanized corrugated sheet metal attached to timber purlins and supported by steel ribs. Hook bolts with nuts and washers connected the purlins to the ribs. The semicircular ends of the building were of board-and batten construction, with a door at center and two windows with two over two lites each. Lumber was also used in the foundation and floor of the building. Bearers carried joists placed 18 in. on center, and these in turn were decked with 4x9 foot panels of plywood. The Quonsets of World War II were of metal construction throughout, except for the windows and flooring” (Garner 1993:30).

During World War II, the Davisville Construction Battalion Center at Quonset Point Naval Air Station in Rhode Island manufactured two sizes of Quonsets, 20 and 40 feet wide, to be used for barracks. A number of other firms including Stran Steel, part of Great Lakes Steel in Detroit, began producing Quonsets (Garner 1993:56).

“Because of the rapid expansion of Navy and Marine training stations after 1942, Quonset Huts were used in place of tents for emergency construction. But because of their durability and adaptability, they continued to be used in place of frame-constructed barracks and other temporary buildings, and are still in use today” (Garner 1993:58).

***Barns-Round/Polygonal Barns**

Description/Notes:

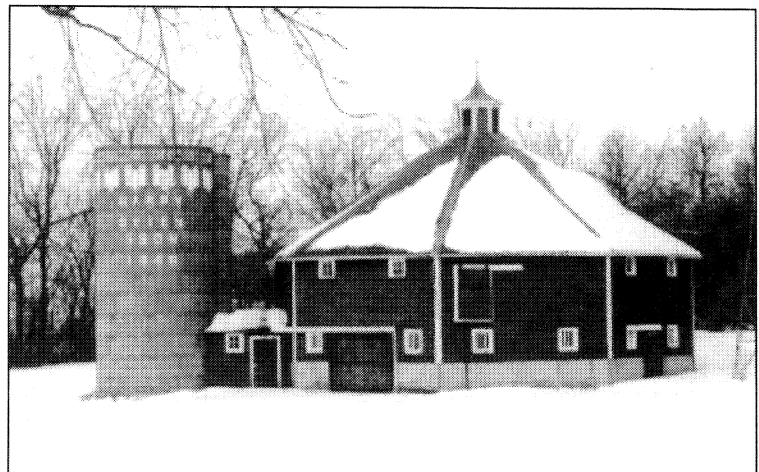
- This is a rare type in South Dakota. Approximately 40 round/polygonal barns were constructed in South Dakota. Approximately 30 of these structures remain. Construction dates of South Dakota round/polygonal barns range from 1903-21 with the majority of the buildings constructed around 1910 and 1917-21.

Early examples of this type are wood frame, polygonal or true round barns with no interior silo and a roof that may or may not be self-supporting. Linear stall arrangements are a feature associated with early examples. Interior silos, roof hay dormers and circular stall arrangements are features found in later examples. In 1890, Professor Franklin King of the Wisconsin Agricultural Experiment Station in Madison published plans for what was probably the first true round barn with an interior silo (Soike 1983:27,29). A number of firms offered pre-cut round/polygonal barn kits beginning around 1905.

Example-Photo 9: Svien Octagon Barn, Lily, Day County

1910, wood frame, original stone foundation replaced with concrete in 1946, no interior silo, originally stall arrangement was linear, housed cows

SHPC photo



Work at the Illinois Experiment Station at Urbana and the Iowa State University Experiment Station in Ames from approximately 1905-1910 paved the way for the evolution of this type to its final form. This form was a true round barn constructed of clay tile with a self supporting roof, interior silo, circular stall arrangement and a concrete floor. A number of manufacturers such as the Johnston Brothers of Fort Dodge, Iowa, sold tile round barn kits to farmers. Most of the South Dakota round barns built after 1917 are made of clay tile. "Kit" barns usually contain a builder's plate featuring the name of the company. Johnston Brothers barns feature deep red tiles with a purple/blue cast. Small tiles are used up to or a few courses beyond the windows. Larger tiles are used on the remainder of these barns.

Example: Hodne Barn, Winfred, Lake County

1920, true round built of hollow clay tile, has a Johnston Brothers builder's plate, interior silo, originally built for beef confinement

***Brooder Barns (Chickens)**

Description/Notes:

- These buildings may have a rectangular, circular, or polygonal plan. Interiors feature nesting/hatching equipment and supplemental heating units.

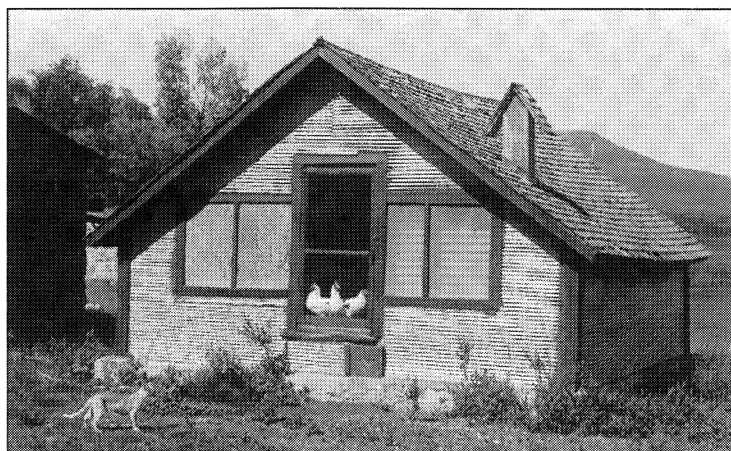
***Chicken Coops**

Description/Notes:

- Chicken coops are usually relatively small, one or one and a half story, rectangular wood frame buildings. Half monitor roofs were often used to increase sun exposure and aid ventilation and air movement. Windows and doors are on the south side for maximum sun exposure. Compared to other outbuildings, chicken coops have more openings for light and ventilation. Noble notes a change to "open or curtain-front type" chicken coops around the turn of the century (Noble 1984:116).

Distinctive interior features include a horizontal roost, nesting boxes, dustbath area and food/water facilities. A distinctive exterior feature is the "chicken walk." The walk, essentially a ladder for the chickens to reach the roosts, is an inclined plank with small pieces of wood nailed horizontally at regular intervals (Noble 1984:116-117).

Very few chicken coops are still used for their original purpose.



Example-Photo 10: Giannonatti Ranch, Ludlow, Harding County, National Register listed (Harding/ Perkins MRN)

late 1920s, square plan, 1 story, corrugated metal wall cladding, wooden shingled gable roof with wood ventilator, door and 4 windows on south side

SHPC photo

Example: Veal Ranch, Perkins County, National Register listed (Harding/Perkins MRN)

1916?, rectangular plan, wood frame, half monitor roof has banks of windows on south facade

Example: Blake Farm, Brown County, 91 survey number BN-LN-11

c 1917-1920, unusual plan is an elongated octagon, wood frame, wood shingle roof, 4 pane fixed windows, swinging door, no chimney/vent

Example: Kjeldseth Farm, Irene vicinity, Yankton County, site National Register eligible

c 1896 (date on adjacent barn foundation), L plan, long leg of “L” banked into a hill, 1 1/2 story, fieldstone and mortar foundation, wood frame construction, bank of fixed pane windows on south side of long leg of the “L”, gable roof with metal sheeting containing one ventilator, foundation built by John Ramsley who also did adjacent barn foundation, Ramsley homesteaded nearby in the late 1870s and built a variety of structures and foundations in the area

Example: Jim Soper Homestead, Custer County, survey number CU-WP-2, site National Register eligible

rectangular plan, one story, horizontal log construction, window on south side, door on east side, gable roof with log rafters

***Cisterns**

Description/Notes

- Cisterns are circular or rectangular underground structures designed to screen and store water runoff from building roofs or wells. Cisterns usually have concrete or stone walls that may angle inward at the top to form a bottle neck and a wooden or concrete lid. They “can be built in the top of a hill near the buildings or beside the house to catch water from the roof. A cistern should not be built under the house for sanitary reasons” (North Dakota Agricultural College Extension Service 1945:1). Late 19th and early 20th century houses may have cisterns located in the cellar with an eave and gutter downspout collection system.

“The vital features of a cistern for potable water are: 1) Absolute water-tightness, top, sides, and bottom, and close screening of inlet and waste pipes; 2) provision for excluding from the cistern the first portion of each rainfall until the roof or other collecting area has become rinsed thoroughly; 3) a first-class filter of clean, well-selected sand and thoroughly burned charcoal; 4) a waste pipe which removes surplus inflow from the bottom of the cistern where impurities tend naturally to settle; 5) periodic and thorough cleaning of the cistern and filter; 6) no connection between the waste pipe and a sewer or a drain which may carry impure drainage” (Warren 1933:7) and 7) “capacity sufficient to carry over protracted dry spells” (Garver 1946:44).

Example: Ward Ranch, Custer County, National Register listed (Ranches of SW Custer County)

1932-34, cut into the top of a hill, rectangular plan, concrete cover with round access door, gravity run, 2000 gallon capacity

*Corn Cribs

Description/Notes:

•Nineteenth century examples are usually wood frame, rectangular plan, gable or shed roof structures built on piers to protect against vermin. “One of the functions of the corncrib is to permit the slow, steady drying of the corn, in order to reduce losses from mold and mildew. . . . First, the walls must contain a high proportion of open area, usually attained by use of widely spaced, narrow slats. Second, the structure must be narrow in order to ensure adequate circulation of air or it must be artificially dried” (Noble 1984:105-6). Given this necessary narrowness, “several cribs are often spaced a few feet apart and enclosed under a single roof” (Minnesota Historical Society 1980:6).

Noble also notes several other distinctive features: 1) small doors located at the bottom of one wall for unloading corn, 2) entry door in the gable end able to be opened to the inside because the corn was held back by a barrier able to be raised or lowered according to the level of the corn and 3) a skirt made of either metal or wood running just above the base of the crib to keep vermin from climbing the walls (Noble 1984:106-107).

Gordon states, “Many corncribs have outwardly sloping sides, which prevent rodents from climbing the walls and direct rain away from the corn. Larger frame examples have two cribs under a gable roof with a center passage for wagon access and equipment storage. In contrast, many 20th century corncribs are circular or oblong galvanized steel structures topped by ventilators” (Gordon 1992:152). “Round cribs of wire mesh stretched over metal frames and capped with conical or rounded metal roofs often replaced wood corncribs” (Minnesota Historical Society 1980:7). Consult Midwest Plan Service plans or building catalogs for prefabricated 20th century examples.

Another crib form is a long, narrow rectangular plan shed roof structure with either wood or wire mesh sides. This crib type was filled through the roof (Noble 1984:106).

South Dakota also has examples of what Noble refers to as “Iowa masonry corncribs” (Noble 1984:108) which consist of commonly one or two connected cylinders built of slotted concrete block. These structures usually feature a cupola. Noble gives 1920-1950 as a construction date for this building type. This building type can be expected in the southeastern counties of South Dakota. Inadequate air circulation was a problem in this style corn crib.

Use of corn cribs began to decline in approximately 1965-1970 when many operators switched from using corn pickers to using corn combines. Corn combines automatically shell the corn, eliminating the need to dry ears in a corn crib.

Example-Photo 11: Single Cylinder Iowa Masonry Corncrib, southeast of Freeman, Turner County, survey number TU-NO-6

1950, circular plan, slotted concrete block construction

SHPC photo



***Farmhouses/Ranch Houses**

Description/Notes:

•Virtually every residential architectural style has been used in farmhouses. Popular styles from the first quarter of the twentieth century include the two story Foursquare with a hip or pyramid roof and the Bungalow. One typical vernacular form is a L shape building with the 1 1/2 or 2 story main block connected to a one story kitchen. The main entrance was often through the kitchen rather than a formal front door. The main residence may contain a claim era resource. See discussion of Tom Jones Ranch House below as an excellent example of a claim era resource incorporated into a constantly evolving ranch house.

Farmhouses may contain a variety of additions built to house two and three generations of the same family or a separate, second farmhouse may have built to solve the space problem. A cheaper, modern alternative to building a separate house is a mobile home.

Large, high style farmhouses are extremely rare in South Dakota and are expected to be associated with “gentleman farmer” type operations. See the Baker House entry below for a remarkable example located in Union County on the banks of the Big Sioux River.

When recording these structures make special note of the number of additions and the house’s position in the farm or ranch yard/site plan.

Example: Tom Jones Ranch House, Jackson County, National Register listed

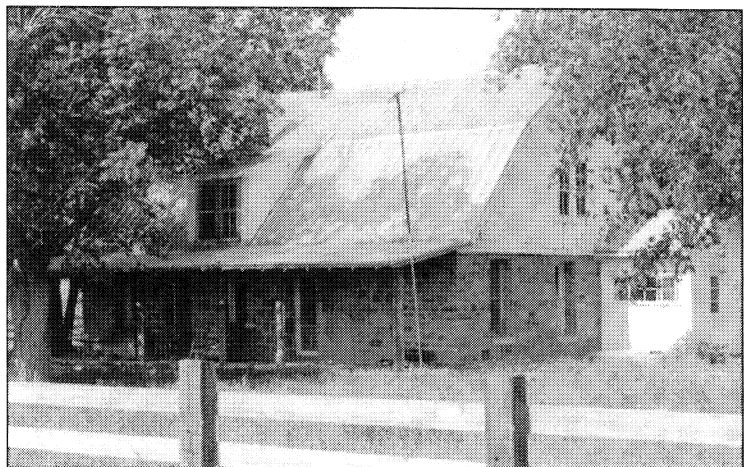
1898-1915, one story, T plan, log and wood frame, concrete foundation, intersecting gable roof with asphalt shingles contains two brick chimneys, symmetrical fenestration with 2/2 and 2/1 double hung windows, interior finish is plain plaster with short wainscot and wood floors

originally a two room log building moved to the site in 1898 by Tom Jones, in winter 1899-1900 a log room was added to the south facade creating a three bay linear building with a north-south axis, in 1905 a three bay log section was added perpendicular to south facade thereby making a T, interior plaster and wood work added in 1905 to both new and old sections, front door moved to new section at this time, in 1913 a 16 x 28 foot wood frame bunkhouse built just north of the house, bunkhouse had seven windows in case it ever needed to be used as a school, wooden siding added to ranch house in 1913, bunkhouse connected to house in 1915 (Jones and Rau 1990:Section 7, page 1)

Example-Photo 12: Young Ranch, Dewey vicinity, Custer County, National Register listed (Ranches of SW Custer County)

1912, rectangular plan, constructed of red sandstone from the “racetrack” area just inside Black Hills foothills, gambrel roof covered in tin panels, irregular fenestration

SHPC photo



Example: Foster Ranch, Perkins County, National Register listed (Harding-Perkins MRN)

1918, 1 1/2 story Foursquare plan from the Radford Architectural Company, concrete block foundation and walls, concrete blocks manufactured on site, rock face on block, hip roof with flair, clapboard roof dormers with exposed rafter tails, dormers echo main roof shape, clapboard square column porch stretching across the front and approximately 1/3 of sides

Example: Palmer Ranch, Perkins County, survey number PE-DC-1

I house, gable roof, shed roof addition

Example: Ireland Ranch, Jackson County, National Register listed

1923, Alhambra Model, Sears Honor-Bilt Pattern, Spanish Revival style, two story, stucco exterior, hip roof covered with asphalt shingles

Example: Baker House, Union County, National Register listed

1912, eclectic Neo-Classic/English Country style, designed by Sioux City architect G.W. Burkhead, two and a half story, formal Neoclassical symmetrical facade, cut stone foundation, concrete walls applied to resemble stucco, red tile gable roof, full height entrance portico with red tile roof features four giant order doric columns, built for F.P. Baker- an Oxford graduate who emigrated to America and was one of a group of Englishmen who settled in the adjacent area of Iowa during the 1880s, most of the Englishmen had left the area by the 1890s

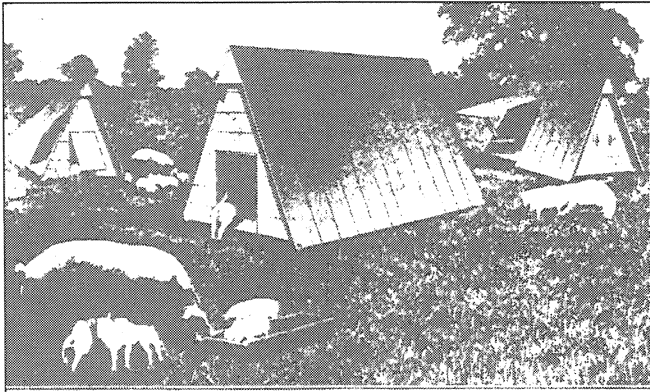
***Farrowing Barn**

Description/Notes:

•Individual portable farrowing barns are mentioned as early as 1905 in the *Dakota Farmer*. Perry notes, “The shape, roughly equivalent to a small teepee or A-frame, was ideally suited to the needs of the brood sow. The slanting of the walls above an eight-foot square base afforded space to the newborn pigs but prohibited the sow from accidentally rolling over on them. The slanting walls reduced air space above the sow, retaining body heat and maximizing capture of sunlight through a window. Restriction of the space to a single brood allowed better management by the farmer. Since the small buildings could be relocated as necessary with little effort, farmers could maintain clean conditions more easily” (Perry 1986:Section 7, pages 10-11). *See Figure 13 from a c 1925 Sears, Roebuck catalog.*

Variations on this individual farrowing barn design had shed rather than gable roofs.

Perry explains the rise of the polygonal farrowing barn, “Sometime during the late 1920s or early 1930s an innovative designer created a structure which combined the advantages of the individual hog house with space for multiple brooders. The builder laid the triangular elevation horizontally, and circled it around, creating a series of six or eight pie shaped stalls pivoting about a common center. Each sow was given a compartment within the communal structure, as well as an individual exit portal and window. However heat conservation was increased through both additional tenants and a small vented stove installed in the corner. The survival of early-born (March-April) pigs was enhanced by the arrangement” (Perry 1986: Section 7, page 11).

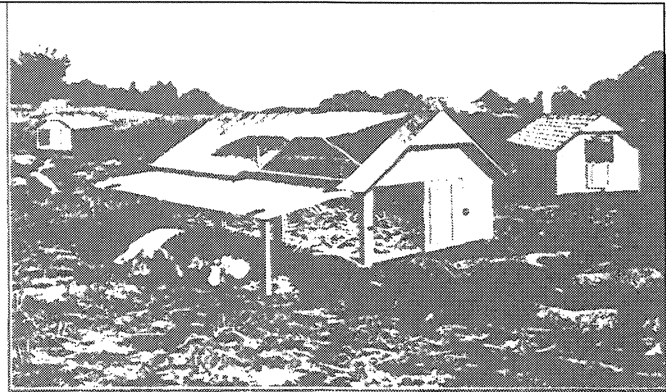


"Wigwam" Movable Hog House No. 56A2076

Size, 8 Feet Long, 6 Feet Wide.

Price, "Already Cut" and Fitted, with Fire-Chief
Shingle Roll Roofing and Paint, each \$62.00
The same, without Fire-Chief Shingle Roll Roofing and
without Paint, each \$52.00

Hardware Included.



"Colony" Hog House No. 56A2077

Size, 8 Feet Long, 6 Feet Wide.

Price, "Already Cut" and Fitted, with Fire-Chief
Shingle Roll Roofing and Paint, each \$58.00
The same, without Fire-Chief Shingle Roll Roofing and
without Paint, each \$51.00

Hardware Included.

The advantages of a movable hog house are many. They are especially desirable for the isolation of swine with their litter. They also permit of pasturing the herd at distant places from the general farmstead, providing necessary comfort at such places and eliminating much work otherwise connected with the chores.

*Figure 13 from Sears, Roebuck and Company.
The Book of Barns: Honor-Bilt-Already Cut (Chicago: Sears, Roebuck, c 1925), page 34.*

***Fencing, Corralling, Loading/Squeeze Chutes**

Description/Notes:

•Squeeze chutes are used for dehorning, branding and other cattle treatment operations. Loading chutes will be located for easy pickup/delivery. Stone fencing is rare. For a discussion of fence types, see Chapter 7 in Allen Noble's *Wood, Brick, and Stone: Volume 2*.

Example: Stone Corral, Guy Doll Ranch, Reva vicinity, Harding County, survey number HN-PD-1

constructed in approximately 1917, relatively rare construction method, dressed dry laid stone extends in a horseshoe off north side of gambrel roof barn

***Garages/Carriage Houses**

Description/Notes:

•Obviously, a garage will feature a large door for an automobile. Doors may be folding or overhead. Many barns were converted to garages. See bunkhouse entry in Ranch property type section for unique bunkhouse/garage example.

***Granaries/Grain Bins**

Description/Notes:

•Granary form depends on how the grain is loaded into the building. Wood frame is a common building method but cribbed or stacked lumber is also used. Common features are a cube or rectangular plan, gable roof, double/single storage cribs, no windows and interior sheathing. Granaries are usually elevated on piers of stone or wood to protect the grain from vermin and moisture.

Some early granaries feature steps on the gable end so grain sacks could be carried up and dumped. Grain was removed through small chutes. Early granaries with a top load system that used a portable elevator had a small trap door just below the peak of the gable. Later examples were akin to grain elevators and may have an elevator leg and a conveyor belt with scoops. The elevator is usually located near the center of the building. A movable chute guides the grain to different bins when it reaches the top of the conveyor.

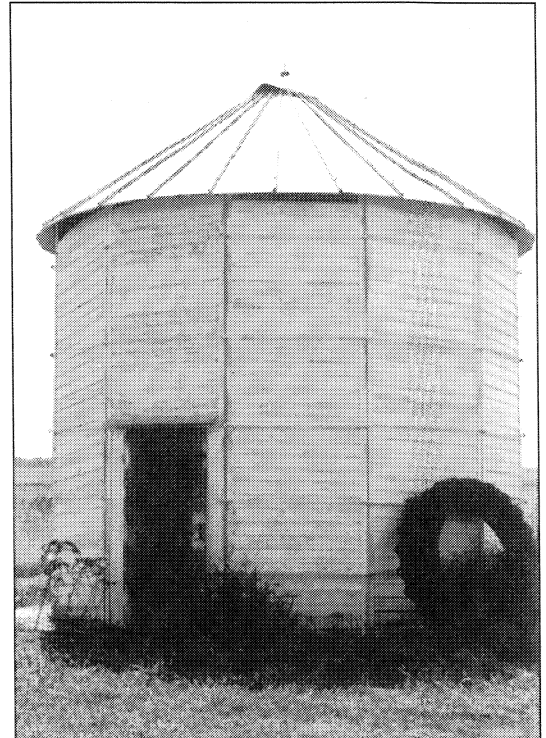
Other precursors to modern, true round, prefabricated examples are polygonal, wood frame prefabricated models.

Post 1940 examples are typically round all metal grain bins. “A fan can be added to the base of the bin to dry shelled corn and prevent molding, thus eliminating the need for corncribs” (Minnesota Historical Society 1980:7).

Example-Photo 13: Wagner vicinity, Charles Mix County, survey number CH-KD-4

12 sided wood frame, square concrete base, conical metal roof, metal exterior skeleton

SHPC photo



Example: Union County, survey number UN-VA-11

exact date unknown, features three wooden circular bins covered by a wooden gable roof with a cupola

***Horse Barns**

Description/Notes:

•While not characterized by a specific style, barns designed exclusively for horses are expected to be found on larger, relatively successful farms and ranches. These barns often contain more detail than other outbuildings and are the large “showpiece” of the farm or ranch yard.

Example: Anderson Farm, Alsen, Clay County, National Register listed

1894, two story, rectangular plan, wood frame, board and batten exterior, symmetrical main facade features a central wall dormer with large doors on the first two stories and a palladian window in the gable peak, all windows feature decorative lintels

Example: Courtyard Barns, Frawley Ranch, Spearfish, Lawrence County, National Historic Landmark

originally constructed in the 1890s and reconstructed in 1912 following a fire, courtyard form is unique in the state, stone and wood frame, housed horses on one side and cows on the other

***Icehouses**

Description/Notes:

- Icehouses exhibit a variety of forms. Part of an icehouse may be underground for cooler temperatures. Many feature “thick walls of nonconducting material” (Noble 1984:85) and a roof ventilator.

Example: Virginia Township, Union County, survey number UN-VA-9

c 1870s-80s, built into a hillside, stone walls, wooden gable roof, wooden door

Example: Richardson Ranch, Custer County, survey number CU-DY-16

square plan, 1 story, square hewn log walls, L shape corner notching, horizontal boards in gables, gable roof

Example: Mann Ranch, Custer County, National Register listed (Ranches of SW Custer County MRN)

c 1917-39, 1 1/2 story, roughly square plan, wood frame, looks like a privy with an extra half story, doors on south and east elevations

***Irrigation Systems**

Description/Notes:

- Dams, canals and gates are expected types. Note the water source. See entry for pumphouses.

Example: Poole Homestead, Custer County, 39CU440

2 earthen dams

***Laundries**

Description/Notes:

- The extent of separate laundry facilities on farms and ranches in South Dakota is largely unknown. Laundries may have also been used as summer kitchens.

Example: John Frydrych Farmstead, Tyndall vicinity, Bon Homme County, NR listed in Czech Folk Architecture of Southeastern South Dakota MRN

land homesteaded in 1870s, rectangular plan, one story, wood frame, concrete floor, gable roof with jerkin head treatment on north end, central chimney used for stove to heat water, drainage trough in the center of the floor (Rau 1986:CZ-25, page 2)

***Livestock Dip**

Description/Notes:

- Livestock passed through these deep, narrow tanks, often constructed of poured concrete for sanitary reasons, for cleaning and delousing purposes. A dip tank had to be narrow enough so the animal could not turn around and deep enough so the animal would be forced to swim, insuring the greatest degree of safe submersion. Expect some form of a loading or squeeze entry chute leading to the tank entry area. Entry to

the tank would be a ramp or a platform if the animal would not walk into the tank itself. The floor of the tank would be deepest in the middle and then slope upward to allow the animal to exit. A pen or holding area may be adjacent to the dip tank.

Example: Charles and William Schneider Farm, Fairburn vicinity, Custer County, survey number CU-HA-3, site National Register eligible

c 1910, poured concrete 6" thick walls, approximately 33 feet long, small entry ramp, adjacent fenced area



Example-photo 14: Lou Downen Ranch, Fairburn vicinity, Custer County, survey number CU-WM-3, site National Register eligible

c 1920, metal walls with exterior horizontal board cladding, approximately 17 feet long, built up against concrete foundation from a former building, adjacent fenced area

SHPC photo

***Machinery Storage Buildings**

Description/Notes:

- Most machinery storage buildings are wood frame, rectangular buildings with large doors for machinery. One unusual type is a wood frame, polygonal (often 8 or 12 sided) building with a sectional conical roof.

Example: Harlon Nelson Farm, Mission Hill vicinity, Yankton County

1913, octagonal plan, wood frame, sectional conical roof with asphalt shingles and cupola, sliding door

***Milkhouse**

Description/Notes:

- Milkhouses are small, shed or gable roof, one story, rectangular plan structures located adjacent to or attached to a dairy barn. Noble (Noble 1984:116) notes that although early milkhouses were made of wood, concrete and tile were used in later versions because of their ability to withstand the high moisture content of this building type. The interior of a milkhouse, most often featuring a poured concrete floor, usually had areas for the cooling, storage and washing of milk containers (Noble 1984:116). Milkhouses

may contain a raised door on an exterior wall for loading milk containers into a truck. Most of these structures were built after 1910, corresponding with the rise in South Dakota's dairy industry.

***Power/Battery Plant House**

Description/Notes:

- Expect power plants to be small buildings located a short distance from the main house in the farm or ranch yard. The generator or battery plant may be located on a raised platform to protect it from moisture.

Example: Horatio Hawthorne Homestead, Fairburn vicinity, Custer County, survey number CU-HA-6, site National Register eligible

c 1920, square plan approximately 8x8 feet, one story, wood frame, concrete floor with raised platform measuring 2x3 feet with anchor bolts for generator, horizontal wood wall cladding, one window and door opening on south facade, small hole in wall may have been for exhaust, wood shingled gable roof

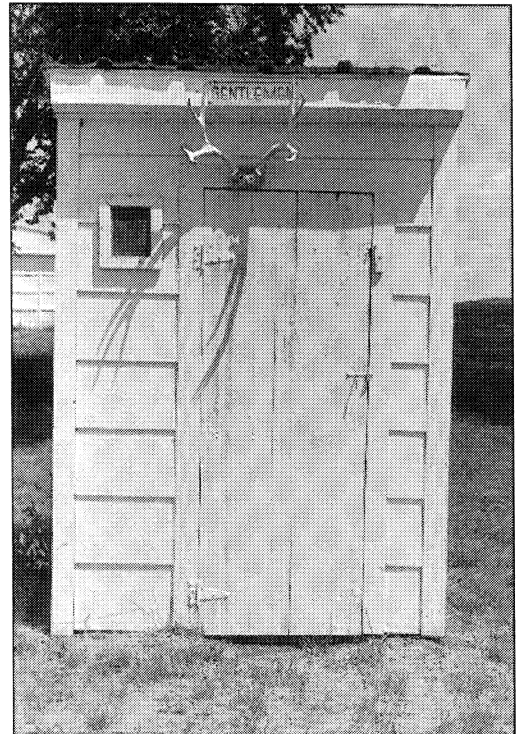
***Privies**

Description/Notes:

- Privies are square or rectangular plan depending on the number of seats and usually have a gable or shed roof. Many privies were designed to be portable. Thousands of standard form, wood frame privies were built as WPA projects during the Depression. *See photo 15.* WPA privies may feature concrete construction.

Photo 15: The small square window is a distinctive feature of WPA privies such as this Perkins County example.

SHPC photo



***Pumphouses**

Description/Notes:

- Often located at the base of a windmill, these structures housed the pump and associated windmill machinery. They are usually small, one story, square or rectangular plan buildings. The windmill may rise directly over the pumphouse. Pumphouse floors are usually poured concrete so the pump can be bolted firmly into place. The floor slopes away from the raised platform the pump rests on to promote drainage. Pumphouses containing power pumps will be insulated and may contain heating equipment to prevent freezing.

Agricultural extension bulletins promoted insulated, above ground pumphouses over well pits because the pump, associated machinery and the surrounding area “can be kept dry, clean and sanitary” and the equipment is easier to reach for “service and repairs” (Schulz and McLellan 1955:1).

If the pump is used for irrigation, “the pump should be located at the highest point of the land from which water may be conveyed economically through the ditches to all parts of the field, unless conveyance through pipelines is planned, when a lower and more central location may be desirable” (Ewing 1924:4).

“The types of pumps most commonly used for irrigation are the horizontal and vertical centrifugal, the deep well turbine centrifugal, the plunger and the air lift” (Ewing 1924:2).

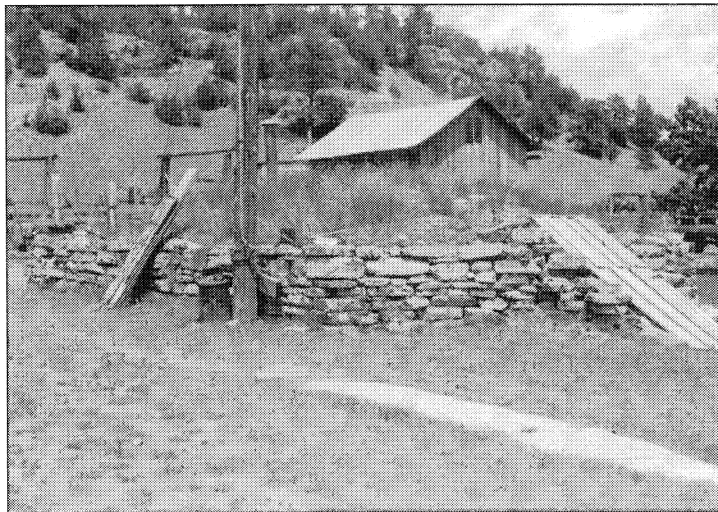
***Root Cellars/Storm Cellars**

Description/Notes:

- Typically, these structures are simple dugouts either attached to or adjacent to the main house. Often dug into a hillside, they were used for food storage and had natural ventilation and temperature modification. In addition to a main door often made of wood, some root cellars featured a trap door in the roof for easy filling (Minnesota Historical Society 1980:5).

Example: Williams Ranch, Pringle Vicinity, Custer County

dug into bank behind house, wooden door, interior shelving



Example-Photo16: Mann Ranch, Schenk Canyon, Custer County, National Register listed (Ranches of SW Custer County)

1917, unique built up 7 course high rock walls, sod roof, sloping wood door on southern exposure, located within 25 feet of the main house

SHPC photo

***Shops (ex. Blacksmithing)/Storage Sheds**

Description/Notes:

- Expect these buildings to be simple, rectangular plan, one or one and a half story buildings located close to the main machinery storage building or main barn. Blacksmith shops will have chimney holes in the walls or roof for the forge hood.

Example: Blacksmithing Shop, Bulldog Ranch, Lawrence County, survey number LA-NA-2

rectangular plan, wood frame

***Silos**

Description/Notes

- Ideally silos are airtight to permit fermentation of silage without rotting.

Reportedly the earliest silo in South Dakota is a 1894 square plan, wood frame, gable roof structure at the Anderson Farm, Alsen, Clay County (National Register listed). Square silos were replaced by round forms so silage would settle better and consolidate more to exclude air and avoid rot in the corners.

In 1891, Franklin King, a professor at the Wisconsin Agricultural Experiment Station in Madison, published the first scientific study that “would give persuasive strength to the case for adopting cylindrical silos and for building what became known as the Wisconsin or King all-wood silo” (Soike 1983:26).

Starting in the early 20th century, wood frame and wood stave silos came to be replaced by rot resistant hollow tile, steel, concrete, and concrete stave silos with conical, gambrel or domed roofs. Staves were usually bound with round steel hoops, steel bands or cable. “A number of Minnesota companies still build concrete tongue-and-groove stave silos, held together by steel bands. Decorative, checkered patterns at the top indicate the manufacturer” (Minnesota Historical Society 1980:10).

Oxygen limiting Harvestore type silos date from the post WWII years-especially after 1950 (Noble 1984:78-79). Popular brands include “the dark blue Harvestore, light blue Sealstore, and dark green Cropstore” (Minnesota Historical Society 1980:10). Built of glass fused to sheets of metal, these silos were more durable and provided greater storage capacity (due to their increased height) than earlier types. Noble lists the advantages of Harvestore silos as 1)increased insulation prevented silage freezing and allowed silo unloading throughout the year, 2)The silo was mechanically unloaded from the bottom thereby reducing the dangerous practice of the operator climbing to the top of the silo and allowing both use of the silo contents and refilling with new material and 3)“because all oxygen was eliminated . . . no heat was produced, decomposition was effectively eliminated, and the ensilage was preserved in optimum condition.” (Noble 1984:77-78) These silos “preserve high-moisture corn as well as corn and alfalfa silage” (Minnesota Historical Society 1980:10).

Most trench/bunker (horizontal) silos are contemporary with Harvestore models, but references to the wide use of trench silos appears in agricultural literature in the mid 1920s. Often dug into the side of a hill, excavated trench silos were lined with wood or concrete. These silos are much less airtight than upright models. As a result, these silos “are usually found on feedlot operations where rapid use allows the silage to be consumed before it spoils” (Minnesota Historical Society 1980:11).

Silos often feature an exterior ladder (may be enclosed) for unloading (earlier examples) and/or maintenance (sole purpose in later examples).

Example: Walloch Farmstead, Lesterville vicinity, Yankton County, National Register listed (Yankton County MRN)-also see Czech survey files

c 1915, two round plan silos constructed of rubble stone

***Slaughterhouse-See swine barn section.**

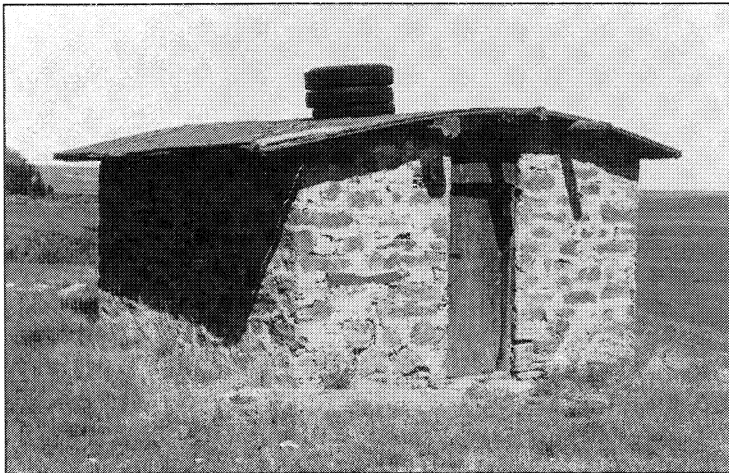
***Smokehouses**

Description/Notes:

•Smokehouses are used for smoking/curing meat, meat products and sometimes fruits and vegetables. They are usually one story, rectangular plan, gable or semicircular roofed, windowless, masonry structures with a door in the gable end and some vent openings in the masonry. See the examples for form variation. Smokehouses may be located some distance from the central core of buildings due to fire danger.

Example: Buntrock Farm, Brown County, 91 survey number BN-GD-02

1910, rectangular, fieldstone walls about 15" thick covered with thin concrete on interior and exterior, single light window, wood shingle gable roof, swinging door is missing, interior retains hanging bars



Example-Photo 17: Giannonatti Ranch, Ludlow, Harding County, National Register listed (Harding/ Perkins MRN), survey number HN-NH-15

1926, approximately 13x15 feet, approximately 7 feet high, rectangular plan, walls of dressed fieldstone, round logs serve as purlins supporting a low semicircular roof covered with tar paper, small fixed pane window on north facade, narrow wood door on south elevation, initials BG and J 16-26 etched into concrete above door

SHPC photo

Example: Tony Holt Homestead #1, Harding County, survey number HN-BN-3, Ralph SW USGS Quad

rectangular plan, dry laid dressed stone, gable roof, milled fascia trim

Example: Walloch Farm, Lesterville vicinity, Yankton County, National Register listed (Yankton County MRN)-see also Czech survey files

1917, circular plan, rubble stone construction, poured concrete roof with ceramic tile pipe chimney in the center, wooden door

***Springhouses/Wash Houses/Springboxes**

Description/Notes:

•Springhouses are usually small, rectangular or square plan gable roof buildings built to keep animals and plants away from the water and to provide a cool place to store foodstuffs, especially dairy products. Stone or brick construction provided the coolest environment. "The springhouse generally was located at the base of the slope where the spring issued from the ground. In order to capture the flow of water, the building often was excavated into the hillside" (Noble 1984:81). Many of these buildings contained troughs

or berms to create pools for the water to collect in. Some springhouses may also have been used as wash houses.

Springboxes are smaller, primarily underground structures for collecting and protecting springwater. They are usually constructed of concrete. Minimum size requirements are 4' deep and 3' wide. The structure must extend at least one foot above the ground (Midwest Plan Service 1979:22).

A shallow trench may be dug above the springhouse or springbox to divert potentially contaminating surface water away from the spring. The springhouse or springbox may also be fenced to keep livestock away.

Example-Photo 18: Site 39SH145, Shannon County

Log springhouse built into the side of a hill, gable log roof

Photo courtesy Jeff Buechler, Dakota Research Services



Example: Anderson Ranch, Lawrence County, Frawley Ranch National Historic Landmark

1888, one story, built into side of hill, cut stone, gable roof, originally used to keep dairy products cool now used for cattle watering

Example: Nicolls Ranch, Pringle vicinity, Custer County, survey number CU-PR-11, site National Register eligible

c 1930, square plan, one story, built into the base of a hill, walls are mortared rough dressed native stone, gable ends are clad in horizontal boards, gable wood shingled roof, metal water tank on side of building

Example: Bull Dog Ranch, Lawrence County

Log construction

***Summer Kitchens**

Description/Notes:

- Most summer kitchens are one story, rectangular plan structures attached to the rear or located a short distance from the farmhouse. Summer kitchens prevented the heat associated with cooking from entering the main house.

Example: Young Ranch, Dewey vicinity, Custer County, National Register listed (Ranches of SW Custer County)

one story, wood frame, attached to northwest corner of main house

***Swine Barns**

Description/Notes:

•Compared to other outbuildings, swine barns have more openings for light and ventilation. Most windows and doors are on the south side for maximum sun exposure. A swine barn will most likely be positioned away from the farm or ranch house because of odor, stored feed and manure handling.

Examples that predate the pattern book era are often rectangular plan, one story, gable roof wood frame structures with a door on the eaves (long) side. Eaves may extend close to the ground. Standard metal ventilators are often found on the roof. Hollow tile was occasionally used as a building material.

Pattern book examples from after the turn of the century can look like large chicken coops with a rectangular plan and a half monitor or gable roof.

Noble notes interior arrangement usually consists of an aisle along the long side of the building with pens filling the rest of the building. Swine barns may also house slaughtering quarters (Noble 1984:117).

***Tankhouses**

Description/Notes:

•“The evolution of the American farm windmill is intimately tied to that of the domestic tankhouse. The most natural and logical extension of the farm windmill was an elevated storage tank to hold the water pumped by the windmill” (Noble 1992:11). Pitman mentions the development of the “ ‘suction and force pump,’ a positive force plunger pump capable of pumping water above the level of the pump; and the practice of storing water in elevated tanks, a practice introduced by railroad companies” (Pitman 1992:13) as two other factors that contributed to the rise of the tankhouse in California during the mid 1860s. The elevated tanks were covered over to make them look better and to create storage space beneath the tank (Pitman 1992:13).

Larger tankhouses often featured a tapered tower design. “Tapering the top of the upright support posts inward to a position under the tank platform or to the roof eaves will support more weight than a structure having vertically straight support posts” (Pitman 1992:15). See Volume 24, No. 1 Spring 1992 special issue of “Material Culture” on farm windmills & domestic tankhouses. Expect rectangular elevations in tankhouses that support smaller farm and ranch operations that require less water.

The distinctive features of the tankhouse will be its tall, narrow profile and the presence of a tank in the upper story. The upper half may consist of only the unenclosed tank. A study of Nebraska’s tankhouses (Boucher and Kent 1992:56-57) found straight tower forms with the a concrete block first floor predominated in the southwestern regions of the state. Circular brick or concrete block tankhouses characterize the central region. In the eastern regions, tankhouses consist of a 4-5 foot circular brick or concrete block base supporting an unenclosed tower. Reportedly, the R.B. Tank Company of Sioux Falls still “sells a ‘redwood tank’ which includes the tank as well as the accompanying pipes and bricks for the construction of the base” (Boucher and Kent 1992:55) for \$3,100.

Example-Photo 19: Middle Ranch, Frawley Ranch, Spearfish, Lawrence County, National Historic Landmark

may be contemporary with 1888 main house, two story, rubble masonry, square plan, gable roof, adjacent to main house, windmill no longer present

SHPC photo



***Underpass/Pass-Through**

Description/Notes:

- These structures allow livestock to pass below an obstruction such as a road or railbed.

Example: Mann Ranch, Custer County, National Register listed (Ranches of SW Custer County)

Allowed cattle to pass below a road

***Wash House-see Springhouse**

***Well/Well Pit**

Description/Notes:

•Well types vary based on equipment and peoplepower available at the time of construction, subsurface composition (rock, soil, sand) and the watertable depth. Ideally, wells will be located uphill and far away from potential sources of contamination such as cesspools and privies. "Only when the surface of the water in a well or spring is at a higher level at all times than any near-by sources of filth is there assurance of safety from impure seepage." (Warren 1933:5) A tight well cavity and cover guarantee against seepage and contamination from a variety of sources.

Expect earliest wells and wells associated with claim era resources to be hand dug and have a bucket or hand pump. Hand digging was the least expensive and simplest method available. These wells are usually lined or "cased" with brick, stone, tile or concrete. Other methods of constructing a well mentioned in a 1933 USDA bulletin are boring, driving, jetting and drilling (Warren 1933:18-21).

All wells except artesian wells require a pump to raise water. A power pump may be located above ground in a pumphouse or below ground in a well pit to prevent freezing. Well pits are underground structures usually lined with concrete. In addition to a pump, the pit may contain a pressure tank unit. See the pumphouse entry above for the advantages of a pumphouse over a well pit. Current literature states well pits should not be used "because of the danger of contamination entering the well from the pit. And, the wet pit environment is corrosive to the pump, motor, and accessories" (MidWest Plan Service 1979:34).

Natural pressure on the water table in an artesian well automatically delivers water to the surface. The 1933 USDA bulletin *Farmstead Water Supply* advised, “By using sound, heavy casing and valves to regulate the flow as needed, and by capping or plugging abandoned wells [which may draw from the same water table], farmers can aid greatly in conserving artesian supplies” (Warren 1933:21).

Example: Larson Artesian Well, Reliance vicinity, Lyman County

hand dug in 1896 to a depth of 18 feet, lined with rocks, lining extended a short ways above ground level, originally had a board top with a flap door, bucket attached to a long rope used for retrieving water, originally not fenced, popular stopping point for travelers and homesteaders, by 1976 the well had been lined with a culvert that was topped by a board, the site had been fenced and an electric pump was being used to deliver water from the well to a nearby house

Example: Berens(?) Stone-Lined Well, Shadehill vicinity, Perkins County, site number 39PE127, possible NR eligible

likely hand dug c 1910, very good condition, no cover, well is about 6 1/2 feet (2 meters) wide and 13 feet (4 meters) deep, stone lined, stones “stacked vertically, one on top of each other, forming a tightly interlocking, circular-shaped pattern,” probably constructed after 1910 by John Berens who owned the site from 1910-1940, patent title to property granted in 1908 (Toom and Kordecki 1994:145)

***Windmills**

Description/Notes:

- Windmills were originally used to pump water and later to generate electricity. Wooden windmills typically predate metal models. Different windmill manufacturers used different forms and styles. See *A Field Guide to American Windmills* by T.Lindsay Baker, University of Oklahoma Press, for details on individual manufacturers. See also Volume 24, No. 1 Spring 1992 special issue of “Material Culture” on farm windmills & domestic tankhouses.

Many examples of metal blade “Aermotor” models exist in South Dakota. The wooden “basket” type is not as common.

***Woodshed**

Description/Notes:

- Wood sheds may be open on the sides.

***Other Features Worthy of Recordation:**

Beehives, Clotheslines, Demonstration Plots, Depressions, Hay/Straw Stacks, Machinery, Mailboxes, Man-Made Ponds, Orchards, Salt Licks, Shelter Belts (positioned-often on the north and west sides of a farm-to block prevailing winds), Trash Dumps, Troughs, and Yard Art.

PROPERTY TYPE

RANCHES

Early operations were mobile and generated few, if any, standing structures. Expected property types from early, pre 1890s ranches are small, seasonal dwellings that could be easily moved and associated corrals and pens. These property types can be expected throughout prime range land claimed by the earliest ranchers. A reliable water source was a key component of prime range land (see HO ranch example under Temporary Homes/Seasonal Structures resource type). See the Farms section for a brief discussion and examples of yard arrangement.

Ranch Resource Types

Note: Resource types that are the same for the Farm and Ranch Property Type Sections are listed under Farm Resource Types.

*Associated Industrial Buildings

Description/Notes:

- Examples include sawmills on Black Hills ranches used to supplement ranch income by making railroad ties. This may be a regional phenomenon.

Example: Sawmill, Williams Ranch, Pringle vicinity, Custer County

*Bunkhouses

Description/Notes:

- These “minihouses” are usually 1 story, rectangular plan, wood frame, gable roof buildings with heating equipment. The entry is often in the short gable side.

Example photo 20: Nicolls Ranch, Pringle vicinity, Custer County, survey number CU-PR-11, site National Register eligible

c 1930, unique 2 story combination bunkhouse(on second floor)/garage(on first floor) built into a hill, rectangular plan, foundation/garage walls of rough dressed native stone, 2 leaf garage door of horizontal boards, bunkhouse walls are clapboard, pair of 4/1 double hung windows on main facade, gable front roof covered in metal sheets

SHPC photo



Example: Beakon Ranch, Perkins County, National Register listed (Harding/Perkins MRN) rectangular plan, gable roof, one story,

small gable roof entry, windows are 1/1 double hung, outside clad in modern siding

***Cattle Barns/Sheds**

Description/Notes:

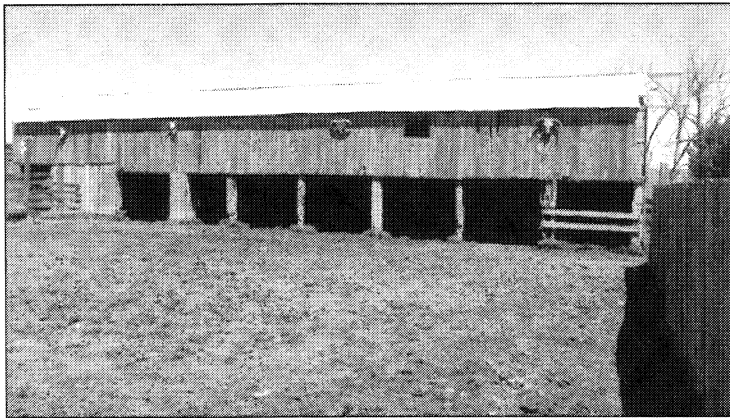
•Many cattle barns located on ranches use the Midwest or Transverse style described in the Farm property type section. A cattle shed has a distinctive narrow, linear rectangular plan. It may be open or contain doors on the south facade. Modern cattle barns and sheds feature pole frame construction.

Example: Harding County, survey number HN-WC-3, Bowman-Haley Dam SD-ND USGS Quad

Midwest style cattle barn, rectangular plan, wood frame, gable roof with shed roof wings, sliding door on long gable side, only window is a fixed 4 pane sash in gable above door

Example: Jones Ranch, Midland vicinity, Jackson County, National Register listed

1927, long and narrow rectangular plan, wood frame, concrete footings, dirt floor, gable roof with asphalt shingles



Example-Photo 21: Charles and William Schneider Ranch, Fairburn vicinity, Custer County, survey number CU-HA-2, site National Register eligible

c 1900, combination cattle shed and hay mow, 2 story,

long and narrow rectangular plan measuring approximately 17x62 feet, post construction, dirt floor, vertical board cladding, 9 openings on south side, no windows, gable roof with galvanized metal sheets over board sheathing, four cattle skulls fastened to south wall

SHPC photo

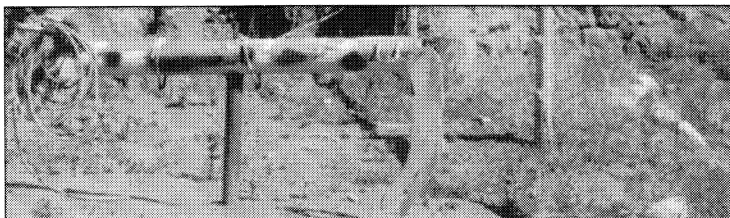
Example: Norman Streeter Homestead, Buffalo Gap vicinity, Custer County, survey number CU-ST-1, site National Register eligible

pre 1901, one story, L plan cattle shed, each leg of the “L” measures approximately 22x85 feet, post construction, dirt floor, corrugated metal cladding over vertical board wall covering, 10 stalls open to the south, pair of 4 pane fixed windows on south wall, corrugated metal gable roof

***Practice Bull**

Description/Notes:

•These structures are used to practice roping and may be constructed of a variety of materials. They are usually located in or near the ranch yard.



Example-Photo 22: Custer County, survey number CU-WP-6

wooden legs, metal pipe body, metal handlebar horns

SHPC photo

***Ranch Gates or Overthrows**

Description/Notes:

- Most of these structures are of simple wood construction consisting of two uprights and a cross piece. The name of the ranch or an object such as a horseshoe or skull may be displayed on the cross piece.

***Ranch Houses-See Farms property type section.**

***Sheep Barns**

Description/Notes:

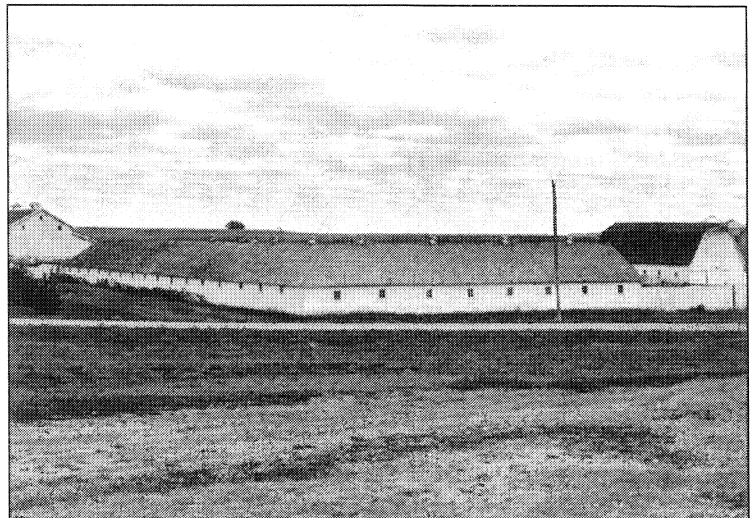
- Noble explains key features of a sheep barn, “Providing shelter from extreme exposure conserved both body weight and feed, but if closely confined in quarters that were too warm, sheep suffered ill effects. Therefore, the sheep fold had to be a substantial structure, yet partially open to an exercise and feeding yard. Most important of all, the sheep fold had to be commodious” (Noble 1984:117). It is unknown if Noble’s observation (Noble 1984:117)—that sheep barns are often two story buildings with sheep on the first floor and hay storage on the second—applies to a majority of South Dakota’s sheep barns. Known examples indicate an “L” shape sheep barn arrangement is popular.

Noble emphasizes the sheep yard fencing had to be sturdy (Noble 1984:117). Surveyors should note fencing construction materials and construction methods.

Example-Photo 23: Veal Ranch, Harding County, National Register listed (Harding/Perkins MRN)

“L” shape sheep barns built in two stages 1916 (ranch house construction date) and 1927, forms “courtyard” with gambrel roof 1916 barn and 1920 monitor roof barn, one story, wood frame construction, sliding doors on south and east facades, regularly spaced 4 pane fixed sash windows on eaves sides

SHPC photo



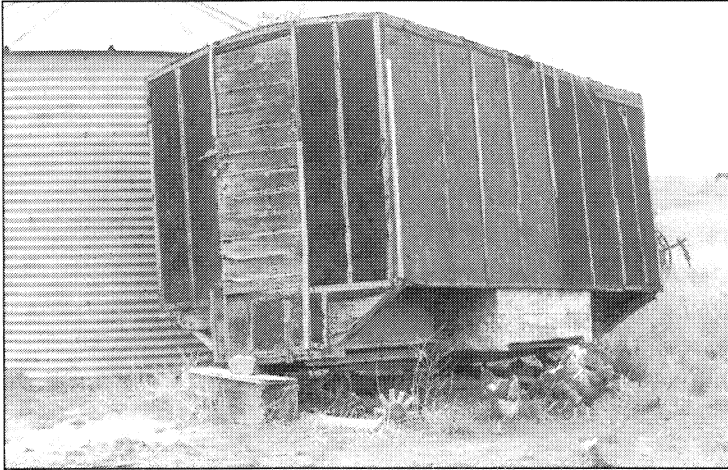
Example: Reder Ranch, Perkins County, survey number PE-DU-2

“L” shape sheep barn, historic but clad in aluminum siding, doors on east and south sides, regularly spaced fixed sash 4 pane windows on south facade, ventilators on roof ridge

***Sheep Wagons**

Description/Notes:

- Wagons were often built on skids for mobility to follow the herd or move from ranch to ranch for seasonal employment during shearing season. Sheep wagons are usually small, wood frame, narrow, rectangular plan, one story structures. They may have segmental arch roofs.



Example-Photo 24: Beakon Ranch, Perkins County, National Register listed (Harding/Perkins MRN)

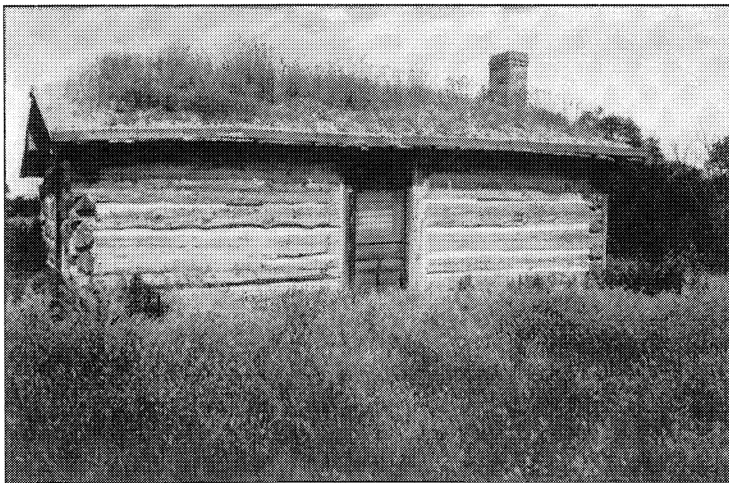
c 1910, wood frame structure covered with tar paper, segmental arch roof, door of wood planks

SHPC photo

***Temporary Houses, Seasonal Structures**

Description/Notes:

- Examples of this resource type may originally have been associated with early ranching operations that were largely mobile operations often headquartered in an established town. A variety of seasonal structures were used on large ranches. Expect these structures in remote areas. Many, like the example below, will primarily be used for housing purposes.



Example-Photo 25: HO Ranch Log Building, Marcus vicinity, Meade County, National Register individually listed

originally built as fur trader cabin in 1878, moved to present location in 1898 and used as winter quarters for hands tending winter grazing stock for giant HO Ranch operation that ran cattle from Rapid Creek to Bismarck, ND, later used as summer haying camp and winter feeding camp, 16x22 feet, single story, hand hewn timber walls, inverted V notching, chinking of earth, wood fiber and cement, broad gable roof covered with tarpaper and native hard pan-grass

SHPC photo

PROPERTY TYPE

FAIRGROUNDS

Fairgrounds Resource Types

***Fairgrounds**

Description/Notes:

•The state fairgrounds are located in Huron. Virtually every county in South Dakota has its own fairgrounds. Judging pavilions and main exhibit halls will usually be the largest and most elaborate buildings on a fairground. Storage sheds, livestock barns, grandstands and show and rodeo rings are also expected resource types.

According to the National Register nomination for the Butte–Lawrence County Fairgrounds, “Throughout rural western South Dakota most of the fairgrounds are small, consisting of one or two buildings and a grandstand . . . ” (Novick 1986:Section BU-44, page 3).

Example: Butte–Lawrence County Fairgrounds, Nisland, Butte County, National Register listed (Butte/Meade MRN)

most buildings date from 1921, complex contains 23 buildings including a 2 1/2 story octagonal wood frame exhibit pavilion, grandstand, groundskeeper’s house, 4-H building, four exhibition buildings, six livestock barns, two outhouses and a picnic area

***Rodeo Grounds**

Description/Notes

•Typical components of rodeo grounds include a show ring with attached entry chutes, grandstands or bleachers and an announcer’s box/platform.

Example: Deadwood, Lawrence County, Days of ’76 Rodeo Grounds

PROPERTY TYPE

AGRIBUSINESS

The process of turning an agricultural product into a consumer product can be divided into four phases: production, processing, distributing and marketing. Agribusiness resources are associated with the initial distribution of a product to a processing point. Storage facilities such as grain elevators are included in this group. Resources associated with processing, subsequent distribution and marketing of agricultural products are part of the industrial context.

Agribusiness Resource Types

***Cream Station**

Description/Notes:

- Farmers brought cream and eggs to these local facilities where these products were placed in containers and shipped to processing plants. Expect these buildings to date after the 1910 rise in the dairy industry.

These facilities will be most prevalent in northeastern South Dakota, historically and currently the location of the greatest concentration of dairying operations.

***Creamery**

Description/Notes:

- Located in town, these facilities processed cream into products such as butter. Expect these buildings to date after the 1910 rise in the dairy industry. These facilities will be most prevalent in northeastern South Dakota, historically and currently the location of the greatest concentration of dairying operations. Early wood frame examples were replaced by masonry structures as the industry began to grow in earnest after 1910. “Refrigerated, bulk transport changed dairying . . . , and consolidation has since reduced the number of creameries” (Minnesota Historical Society 1980:21).



Example-Photo 26: Wallace, Codington County

1929, one story, rectangular plan

hollow tile construction

SHPC photo

***Farmstands**

Description/Notes:

- Examples include melon stands between Huron and Mitchell.

***Flathouses/Grain Elevators**

Description/Notes:

- Flathouses were the precursors of the grain elevator. These structures were “generic one-story, gable-roofed, wood-frame warehouse(s).” (Frame 1989:Section E, page 1) As the name implies, these structures lacked the loading advantages associated with elevators. This is expected to be a rare property type in South Dakota dating from the early years of railroad operation in the late nineteenth century. Flathouses

were rapidly replaced by the elevator. Surviving flathouses may have been incorporated into an elevator office complex or may serve as a miscellaneous storage building. A systematic survey of South Dakota grain elevators in the early 1990s did not find any surviving historic flathouses (Stubbles personal communication).

Grain elevators first appeared in South Dakota in the last two decades of the 19th century when farmers began moving beyond subsistence operations and needed a place to store their surplus grain. The rapidly developing East River railroad network provided a means of transporting grain. Expect the construction date of early elevators to coincide with the arrival of the railroad in a town. The city of Eureka in McPherson County was one of the largest wheat shipping points in the world from 1887-1902. "In 1897, two-thirds of the world's wheat crop, 1,136,480 bushels were shipped out of [Eureka]" (Samp 1988:25).

Cooperative organizations that could afford high construction and maintenance costs owned many elevators. These cooperatives consisted of the farmers who used the elevator services.

Agribusiness resources are those structures involved in transporting and storing an agricultural product on its way to a processing point. Using the elevator typology developed in the National Register Multiple Property nomination form for grain elevators in Minnesota, country and terminal elevators should be included in the agribusiness section.

The country elevator is "relatively small and simple. ...the country elevator's function is to receive grain from the farmer/producer in wagon or truck lots and ship it to the terminal elevator via rail in railcar lots. It will have more or less of a storage function, depending on the flow of grain in the market" (Frame 1989:Section E, page 7).

The terminal elevator receives grain from country elevators and ships it out to the receiving elevator at a processing facility. Storage and grain sorting were two major functions of terminal elevators. As can be expected, terminal elevators are much larger than country elevators, usually located at major rail hubs and owned by larger cooperatives and operators. In South Dakota, major rail hubs for grain shipment were historically located at Rapid City, Huron, Mitchell, Sioux Falls, Aberdeen and Watertown. Historically, South Dakota's largest grain elevator operators include Shanard Elevators, currently based in Mitchell; the Sexauer Company, based in Brookings and the Flandreau based Duncan Brothers Elevator (Samp 1988:25,31).

The Minnesota grain elevator nomination also lists transfer and cleaning elevators as types that would fall under the agribusiness section. "A transfer elevator is an elevator facility that is designed for maximum handling capacity with minimum storage. A cleaning elevator is designed for maximum cleaning capacity with minimum storage" (Frame 1989:Section E, page 2). Further research is needed to determine if any of these types of elevators exist in South Dakota.

The elevator complex, usually located next to the railroad tracks, consisted of a multistory elevator, scale house, office and assorted bins. This industrial complex was, and continues to be, the heart of many small South Dakota towns. In 1988, South Dakota had 147 active grain elevators (Samp 1988:31).

Expected construction materials for grain elevators, both country and terminal, include wood used in both balloon frame and cribbed fashion, steel, reinforced concrete, tile and, in relatively rare instances, brick. Expect early elevators to be wood frame structures which may have been covered in corrugated, galvanized

metal siding. Newer metal or poured concrete elevators often stand next to the wood frame buildings they replaced or supplemented. Expect cribbed construction in bins because of its ability to create a tightly sealed space that was less susceptible to wind damage than balloon frame construction. Expect balloon frame bins to have metal tie rods “that pull the walls toward each other” for additional support (Long 1990:Section 8, page 2).

Example: Appleby Atlas Elevator, Watertown vicinity, Codington County, NR listed

1883; located next to a main line of the Chicago and North Western Railroad which reached Appleby in 1883; complex consists of square plan main elevator of cribbed construction, balloon frame annex for extra storage and scale house; annex contains metal tie rods for additional support; elevator and annex exteriors feature wooden clapboard siding, scale house exterior covered in pressed metal, gabled roofs of galvanized tin panels



Example-Photo 27: Faith Elevator, Meade County, survey number MD-FA-FA-17

wood frame covered in corrugated, galvanized metal, complex consists of granary, office, storage building and 7 silos

SHPC photo

***Livestock Receiving/Selling Facilities**

Description/Notes:

•Sale barns and their associated holding pens, dipping pens, and chutes make up this resource type. Most larger towns have a sale barn that houses a weekly livestock sale. Large ranches may include their own sale barn. Some sale barns in the state are polygonal including barns at Gregory and Gettysburg. These polygonal sale barns often include one or two projecting wings built as additions. From a livestock sale cattle may be transported to a processing facility or be purchased to supplement an existing herd or serve as feeder calves.

Example: Sale Barn: The Bones Sale Barn, Turner County, survey number TU-HM-5

1942; 120x160 feet; the gambrel roof, two story central aisle containing clerestory windows is flanked by two shed roof lean-tos; the western end of the building features a two story oblong structure that is the “arena” area

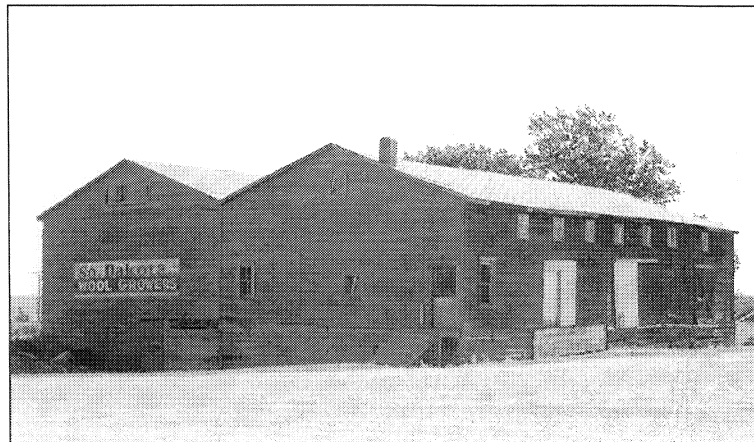
***Wool Warehouses**

Description/Notes:

•Because they are associated with the sheep ranching industry, these resources will occur in the northwestern portion of the state. Expect warehouses to be located near railroad tracks for efficiency in transportation. Typical warehouses are multistory, wood frame buildings with open interiors.

Example-Photo 28: South Dakota Wool Growers Warehouse, Faith, Meade County, survey number MD-FA-FA-5

SHPC photo



1935, demolished c 1989, built adjacent to railroad tracks, wood frame, 1 1/2 story with basement, 2 rectangular plan, low pitch gable adjoining buildings, clapboard siding, large sliding door w/ loading dock on N side, interior Fairbanks scale, interior open and unfinished

***Other Resources Worthy of Recordation:**

Egg or Potato Receiving/Selling Facilities, and Rural Hay Buying Station

PROPERTY TYPE

GOVERNMENT SPONSORED/INSTITUTIONAL/COMMUNAL AGRICULTURAL OPERATIONS

GOVERNMENT SPONSORED/INSTITUTIONAL/COMMUNAL AGRICULTURAL OPERATIONS RESOURCE TYPES

***Communal Agricultural Operations**

Description/Notes:

•See the National Register nomination for Historic Hutterite Colonies.

***Experimental Farms/Agricultural Experiment Stations**

Description/Notes:

•Most of these resources are associated with SDSU in Brookings and programs of the United States Department of Agriculture. More research is needed on the experimental farms established as recruiting tools by the railroads in the late 19th century. The state of South Dakota established a state experiment substation at Highmore in 1897 and other substations at Cottonwood, Eureka and Vivian from 1909-1913

(Schell 1975:345,347). During the same period, the federal government established a dry-land experiment station at Ardmore and an experimental farm at Newell (Schell 1975:347,359).

Example: Newell Field Station, Butte County, National Register listed

Established in 1907, conducted investigations in dryland farming, irrigation (begun in 1912), livestock production and adobe building (1 structure)

Example: Rammed Earth Machine Shed and Experimental Walls, SDSU, Brookings County, NR listed

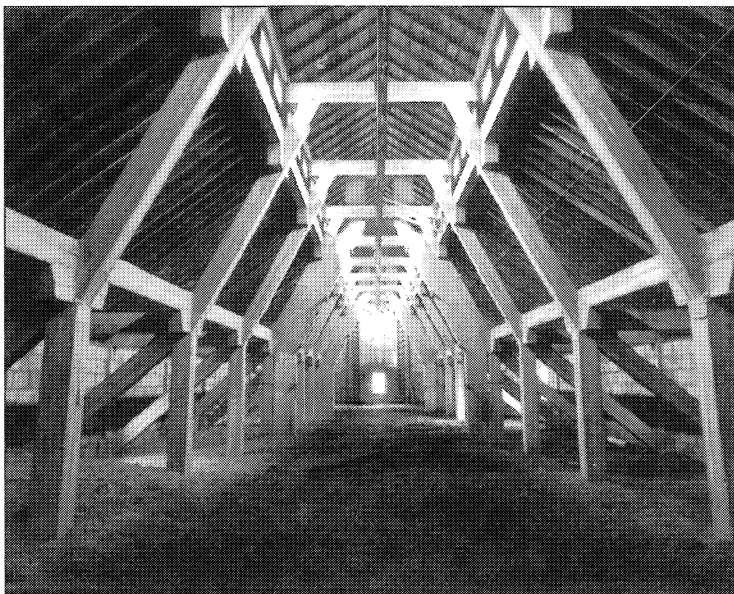
built by Agricultural Engineering Department professors and students in 1930s to test applicability of rammed earth construction in agricultural buildings, rammed earth was an ideal construction method for the Great Depression because it was inexpensive and readily available, Machine Shed is a rectangular, one story structure with a gabled asphalt shingle roof, walls of the Machine Shed are covered with experimental panels comprised of different stucco mixtures

***Government and Private Institutions**

Descriptions/Notes:

- Agricultural buildings located at prisons, state hospitals and schools are included in this resource type. State institutions include the Human Services Center, Yankton; School for the Feeble Minded, Redfield; and the State Training School for Boys, Plankinton. Some South Dakota counties had their own poor farms but the extent of organized agricultural activity at these organizations is largely unknown. An historically private institution, the Battle Mountain Sanitarium in Hot Springs, now serves as the Veterans Administration Hospital.

The extent of agricultural resources at these institutions will vary depending on the institution's mission, both historic and modern, and the number of people it served. Resources such as barns may be extremely large. Resources may feature top of the line equipment and building materials and/or innovative construction materials and methods that only an institution could afford.



Example-Photo 29: Loft of Dairy Barn, Human Services Center, Yankton, Yankton County, National Register listed

Dairy Barn (21,800 square feet) and Calf Barn (11,680 square feet) are main agricultural buildings, Dairy Barn measures 38 x 236 feet-built 1915-17, Calf Barn measures 43 x 143 feet-built 1922-24, built of large concrete blocks manufactured on site, both these barns feature unusual monitor roofs to light the hay lofts, poured concrete truss systems in the lofts, Dairy Barn has ventilation system built into the trusses

SHPC photo

***Government Relief Programs**

Description/Notes

- Resources associated with these programs are rare in South Dakota. The one known example is a federal subsistence farm program launched in 1936 in Sioux Falls as part of the resettlement programs of the Resettlement Administration which changed its name to the Farm Security Administration in 1937 (Schell 1975:293-94).

Archaeological Research Issues

There has been a great deal of confusion concerning how to evaluate agricultural complexes and small homestead remains from an archaeological perspective. Part of the problem is that the archaeology of agriculture is a relatively new and evolving field.

A particular point of debate has been the analysis of small homesteads which, unlike more developed agricultural properties, have less artifacts and features to analyze and interpret. The majority of archaeological homestead remains in South Dakota tend to consist of one or more depressions in the ground along with a few scattered artifacts. Individually, the majority of these do not appear to be eligible for the National Register of Historic Places. However, the key to understanding their eligibility may not be looking at them as individual entities but as part of a larger group. In a broader perspective these sites can begin to answer questions about settlement patterns, homesteading laws, cultural landscapes, consumer behavior, market accessibility, ethnicity, gender, the pioneer lifestyle and frontier adaptation.

Research Area 1: Physical Manifestation of Legislation

When recording a homestead site or sites it is important not just to record what is found at the site but to conduct thorough historical research. This should include who initially settled the site, under what homestead act and any subsequent land transactions. Much of this information can be found at the county courthouse. By determining under what act the site was initially settled one can begin to get a broader perspective as to the types of legislation that were being utilized by homesteaders to maintain their claims. When analyzing more than one homestead one should try to analyze why different sites may have been homesteaded under different legislation, i.e. is this reflected by temporal or spatial differences across the state? How was settlement effected by railroad development? Legislation may also have affected the feature systems found at a homestead. One could compare the feature systems of sites settled under the original Homestead Act of 1862 with claims established under the Enlarged Homestead Act of 1909, the Stock Raising Act of 1916, the Timber Culture Act of 1873, etc. (Panelli 1990). Eventually, one should be able to ascertain how different feature systems are reflective of the different homesteading laws. This type of study becomes useful when the archaeologist must evaluate a site that lacks historical documentation. Ideally, one could match the feature systems at a site in question with those at the “control” sites in order to determine the probable legislation used to claim the homestead.

Research Area 2: Economic Aspects of Agricultural Settlement

Consumer behavior is the study of behavior associated with the acquisition, use and discard of material things (Henry 1991:11). There are four parts to this behavior: the decision to consume, acquisition, use and post-use deposition. For archaeologists, the study of these activities can be used to understand how this type of economic and social behavior was used to satisfy physical, social, cultural and economic needs (Henry 1991:8).

Issue 2(a): Consumer behavior and gender studies

In *Land of the Burnt Thigh*, Edith Eudora Kohl describes the differences in the living conditions of men and women on the frontier. She recounts the women as doing their best to turn their frontier dwellings into some kind of a home by utilizing such belongings as tablecloths, dishware etc. Men on the other hand tended to ignore such “frivolities” and stuck to the basics such as eating directly out of cans. She describes

being able to recognize the claim shack of a single male by the amount of cans strewn outside the dwelling.

If the shack had gone down, or had been moved in the night by some more ambitious homesteader, there was always the pile of tin cans to mark the spot. They stayed and rusted.

And from the cans ye knew them. Bachelor's huts were always surrounded; where there was a woman to do the cooking there were fewer cans (Kohl 1986:17).

In the book's introduction Glenda Riley states that,

Women expressed great pride in the improvements they added to their claim shacks, shanties, sod huts and dugouts. Edith Kohl explained that "from the moment we began to make improvements, transforming the shack, it took on an interest for us out of all proportion to the changes we were able to make" (p. 27). In other words, women quickly began to invest part of themselves in these strange dwelling places, turning them bit by bit into homes that functioned as effective workplaces, sometimes even boasting a small touch of elegance. The things that could be accomplished by a determined woman within the walls of a diminutive claim shack were often remarkable (Kohl 1986:xviii).

Thus, based on the historical documentation, one could postulate that the consumer behavior of women was different than that of men. This should be reflected in the artifact patterns at homestead sites related to gender or marital status. Are certain types of artifacts more reflective of women on the frontier than men? Is there a pattern for sites that were homesteaded by families? What is the difference in the types of artifacts identified and does this substantiate the historical record? What do the artifacts say about the ideology of women on the frontier? How did they work to elaborate the domestic sphere to counteract the harshness of the physical environment?

Issue 2(b): Consumer behavior, ethnicity and social class

Studies of consumer behavior can also be used to examine choices determined by cultural or social influences. Current theory poses that the choices a consumer makes are not random but are made from a range of available commodities. Decisions are made according to market availability and are influenced by social and cultural persuasions. These in turn are conditioned by such phenomena as social status or class, ethnicity, household size and organization and political status (Hardesty 1990:44-45). Thus, such entities as trash dumps, buildings, equipment, livestock and crops at homesteading sites can be used to understand the "choices" made by household consumers. Is there a relationship between ethnicity and agricultural equipment brand preference such as the apparent Hutterite preference for International Harvester equipment? It is up to the archaeologist to try to determine how ethnicity, class or other phenomena affected the choices made on the frontier.

Issue 2 (c): Market Accessibility

Miller and Hurry's 1983 accessibility model for the 19th century postulates that households in rural areas with limited access to major markets will purchase and use ceramic assemblages whose total economic value is lower than assemblages from households within and near these markets. There will also be a time lag in the types of ceramics that are available in rural areas as compared to urban locations (Klein 1991:78). When developing a research orientation for homesteading sites on the Plains one could broaden this model

to examine a range of commodities such as agricultural equipment, canned goods, seeds, etc. Is the brand of agricultural equipment used on an agricultural site, or group of sites, related to the closest dealership? For early sites one could examine a possible relationship between distance to the railroad or townsite and the quality and quantity of artifacts located at a property. Conversely, the local transportation network established by the settlers away from the railroads and towns may invalidate any connection between an artifact assemblage and proximity to railroads. One other area that could be explored is whether this model becomes invalid in the late nineteenth/early twentieth century when rural households had access to a wide range of commodities through mail order catalogs.

Research Area 3: Land Use and Settlement Patterns

Issue 3 (a): Settlement Patterns

The Arizona homesteading context looks at patterns of land use as one of its research areas. From studies in Arizona the author discusses how land use patterns can provide insight on how homesteads were organized and how they functioned economically and socially. Using an example from Arizona, the author, Pat Stein, describes an examination of four homesteads that were settled by an extended family. She found that family members had filed on adjacent claims that were in a block-like configuration, and had placed their houses at the junction where the four claims met. An oral history of the area revealed that the claimants had shared equipment and supplies, worked each others claims and had eaten communally. Thus, what were four distinct homesteads on paper were actually managed as one large unit (Stein 1990:32). Similar situations may be found in South Dakota either in a family situation or as part of an ethnic community.

The study of land use patterns may also assist a researcher in distinguishing between various types of agricultural activities. Agricultural patterns could be attributed to the environment, ethnic preference or a combination of both. Many ethnic groups arrived in South Dakota from agricultural areas in northern Europe. The transfer of land use practices from their homeland to South Dakota may be reflected in the land use patterns of a site.

Issue 3 (b) Landscape

According to the National Park Service archaeology can be used to examine different landscape characteristics. These characteristics may include walls, road remnants, trail ruts, foundations and refuse sites. Historic archaeology can use palynology and soil analysis to determine historic planting patterns, historic patterns of field division and land use; analysis of sequential land use based on existing vegetation or plant succession; remote sensing to detect buried walls, foundations, and roadways; and excavation to uncover buried irrigation systems, canals, or planting beds (McClelland et al. n.d. *Draft National Register Bulletin* 30:17).

The study of landscapes can also be used to answer ideological questions. Mark Leone studied the colonial garden of William Paca in Annapolis to understand how it functioned to create and/or reinforce social and political relationships.

Patricia Rubertone defines landscape as,

land that has been shaped and modified by human actions and conscious design to provide housing, accommodate the system of production, facilitate communication and transportation, mark social

inequalities, and express aesthetics. . . . the landscape is an active force in creating the social order, in legitimizing it, and bringing about changes in it (Rubertone 1989:50).

She believes that landscape studies should not just be used to examine the way people organized their economic activities in space but should go further and explore the way people used space to define social relationships, attain political ends and express beliefs (Rubertone 1989:51).

Research Area 4: Perspectives on frontier adaptation

Frontier adaptation that is reflected in the archaeological and architectural record can be approached from numerous anthropological perspectives such as cultural ecology, cultural materialism, semiotics, etc.

One might consider the general layout of a site to be an adaptive strategy devised to cope with such phenomena as the environment and the exploitation of resources (Panelli 1990:3). Thus, claim era and later agricultural sites are a reflection of human behavior. Differentiation in building styles and layout may reflect various factors such as availability of building materials, permanency of habitation, innovative behavior, ethnicity, gender, age, class status, environmental conditions and access to technology (Panelli 1990). It is up to the researcher to determine which of these factors played a role in the development of a site and how the site transformed over time as a response to a change in any of the above variables.

In terms of ethnicity one could approach the question of adaptation from the standpoint of particularistic cultural ecology, the idea that within any one environment there is more than one means of adaptation and the method that is chosen is a function of culture. The way in which one adapts to their new surroundings can be seen as a combination of the physical environment and the unique culture that is attempting to survive within that environment (Jordan and Kaups 1989). For claim era and later agricultural sites in South Dakota that can be assigned an ethnic identity, one could examine the layout of a site and use of materials in terms of adaptation to the environment from an ethnic perspective. What unique features did an ethnic group bring with them that allowed them to function on the South Dakota prairie? How are these reflected in the architectural, archaeological and/or agricultural record?

Research Area 5 - Evolution of Agricultural Technology

Issue 5 (a): Evolution of farming equipment/machinery

In *The Evolution of Technology*, George Basalla contends that technology is not the result of necessity but the avenue through which people choose to pursue their lifestyle. Technological artifacts are not a record of how humans ensured their survival but illustrate the various ways that people chose to live their life. He also demonstrates that no artifact is unique but part of a continuous development from previous entities (Basalla 1988). The agricultural history of South Dakota is a good example of how developments in technology are usually generated by innovations to presently existing systems. Technological change and evolution is often found at individual homesteads as personalized adjustments were made to agricultural equipment for a specific purpose. For example, at the Willy Guildes homestead outside Dell Rapids a Dodge truck was turned into a tractor. At the Sorenson farmstead outside Toronto, South Dakota, a small garden tractor was built out of different parts the family already owned. Therefore, when researching an agricultural property one could examine whether any innovations made to existing equipment were later diffused throughout a community or region. The Magnus O. Bergstrom house is considered significant as Bergstrom achieved local importance through his improvements to existing farm equipment. These helped

modernize local agricultural techniques. The Bergstrom Plow Company was opened in 1900 and by 1914 it was producing a variety of farm equipment and parts.

Issue 5 (b): Crops

Agriculture in South Dakota was the product of numerous experiments with ethnic crops. Some individual homesteads may be associated with experimental crops like the hybridization of wheat. John Overbee from Mellette invented Spinkota wheat, a hard wheat, through cross-breeding. Edgar McFadden invented Hope wheat at a garden plot in Brookings. Wilmer Davis was an agricultural high school teacher who developed Sokota hybrid seed corn and invented machinery to work specifically with his seed corn business. An examination of the agricultural practices at a site may reveal that it could yield information on crop experimentation. This should be considered not only at privately owned sites but for sites like the Belle Fourche experiment farm which were public institutions.

Issue 5 (c): The effect of technological change on the cultural landscape

Agricultural properties need to be considered processual systems rather than static entities. Therefore, instead of evaluating the significance of each structure or feature individually, whenever possible, it is important to examine them as part of a larger complex. Don Hardesty suggests that mining sites be investigated at the level of feature systems. These are defined as “clusters of buildings, structures, features, strata and objects that came from the same human activity” (Hardesty 1988). For example at a mining site one feature system might consist of a mill and its interrelated parts. Another might be the transportation system used to ferry ore from its point of origin to the processing area. This approach is very useful when analyzing agricultural properties. Feature systems for agricultural sites could include management features, consisting of structures or the remains of structures related to water, animal or crop management. Manufacturing features which could include blacksmithing sites, kilns or in the Black Hills, sawmills. Domestic features which could be a site related to permanent habitation as opposed to temporary shelters such as those at sheep camps or logistic features such as transportation routes and shipping stations (Hardesty 1982). If an agricultural property is investigated as an evolving dynamic process made up of feature systems then, in theory, a change to any one part of the system should generate changes in its other parts. For example, a change in the animal management system that created a greater surplus may have translated into better profits which was ultimately reflected in architectural elaborations used to display financial gain and increased social status.

Architectural Research Issues

1) Baled hay construction

Baled hay was used as a construction method for claim era resources in the north central region of Nebraska. What, if any, is the extent of hay bale construction in South Dakota?

2) Hay derricks and stackers

What is the geographic distribution of hay derricks and hay stackers in South Dakota? It is expected that these property types will occur in extreme western South Dakota given their known distribution.

3) Use of published resources by agricultural operators

To what extent were published resources used by South Dakota operators in positioning, designing and building agricultural resources? Did operators located near agricultural experiment stations and farms use publications from these institutions to a greater extent than other South Dakota operators? Was there one source that was used or trusted more than another? Published resources include agricultural encyclopedias, agricultural extension bulletins from state experiment stations and the USDA and agricultural periodicals such as the *Dakota Farmer*.

4) Farm and Ranch Yards

A typology of South Dakota farm and ranch yard arrangements needs to be developed. Are there noticeable differences in the arrangement of farm versus ranch yards? How were fencing and vegetation used to define a farm or ranch yard? Geography, climate, type of agricultural operation and ethnic group of the property owner are expected to be factors affecting the choice of yard arrangement.

5) Grain Elevators

South Dakota's grain elevators need to be systematically analyzed. It is anticipated the classification system developed in the Minnesota National Register Multiple Property Nomination for grain elevators can be used in this analysis.

6) Prefabricated buildings

Mail order, prefabricated buildings most likely make up a great percentage of the buildings in the agricultural landscape. Existing and future survey data gathered from agricultural resources needs to be analyzed to determine approximately what percentage of existing agricultural buildings are prefabricated. More precise dates for the appearance of prefabricated individual building types need to be established. A comprehensive study of prefabricated agricultural buildings needs to be completed.

7) Transition from temporary to permanent housing

Another set of research questions can be developed around the transition from the temporary housing erected when homesteads were first occupied to the more permanent and higher status housing put up as soon as family finances allowed. How and why did this transition proceed? Did the frame houses go up faster on claims with better soil and water? Or was this prosperity just a matter of personal skill and ambition? Did acquisition of land or farm equipment take precedence over improved housing? Are the floor plans of the temporary and the permanent housing at individual homesteads linked or were old ideas of the organization of living spaces abandoned when the new houses were put up? (Sundstrom 1994:2).

Bibliography

Anderson, George M. (ed.)

- 1982 A Marylander Herds Sheep in the West: The Letters of R. Bowie Vinson, 1903-1904. In *South Dakota History* Vol. 12(2 and 3):118-146.

Arwood, Don

- 1990 Commercial and non-commercial farms in South Dakota and the U.S. In *SDSU Census Data Center Newsletter* Vol. 5(5) SDSU Census Data Center, Brookings, SD.

Basalla, George

- 1988 *The Evolution of Technology*. Cambridge University Press, NY.

Bernstein, Rebecca S.

- 1990 Ranches of Southwestern Custer County, South Dakota National Register of Historic Places Multiple Property Documentation Form. South Dakota Historical Preservation Center, Vermillion, SD.

Betts, M.C. and Wallace Ashby

- 1932 Wind Resistant Construction for Farm Buildings: Leaflet No. 87, U.S. Department of Agriculture. U.S. Government Printing Office, Washington, D.C.

Boland, Beth Grosvenor

- 1989 National Register Bulletin 32: Guidelines for Evaluating and Documenting Properties Associated with Significant Persons. U.S. Department of the Interior, Washington, D. C.

Boscoe, Daryl

- 1993 Interview with authors. Vermillion, SD, 10 December 1993.

Boucher, Aaron S. and Robert B. Kent

- 1992 Tankhouses in Nebraska: Distribution, Construction Styles and Use. In *Material Culture* Vol. 24(1):43-58.

Briggs, Harold E.

- 1928 Ranching and Stock Raising in the Territory of Dakota. In *South Dakota Historical Collections* Vol. 14:417-465.
- 1930 The Great Dakota Boom, 1879 to 1886. In *North Dakota Historical Quarterly* Vol. 4:78-108.
- 1931 The Development of Agriculture in Territorial Dakota. In *Culver-Stockton Quarterly* Vol. 7(1):1-37.
- 1934 Grasshopper Plagues and Early Dakota Agriculture, 1864-1876. In *Agricultural History* Vol. 8(2):51-63.

- Choate, Jean
 1992 "Dear Mr. Gurney": D.B. Gurney's Campaign to Recover the Hog-Processing Tax for Farmers. In *South Dakota History* Vol. 22(2):156-172.
- Ewing, Paul A.
 1924 Pumping from Wells for Irrigation: Farmers' Bulletin No. 1404, United States Department of Agriculture. United States Government Printing Office. Washington, D.C.
- Fite, Gilbert
 1966 *The Farmers' Frontier:1865-1900*. Holt Rinehart and Winston. New York.
- 1985 "The Only Thing Worth Working For": Land and Its Meaning for Pioneer Dakotans. In *South Dakota History*:Vol. 15(1 and 2):2-25.
- 1989 The Transformation of South Dakota Agriculture:The Effects of Mechanization, 1939-1964. In *South Dakota History* Vol. 19(3):278-305.
- Frame, Robert M. III
 1989 Grain Elevators in Minnesota National Register of Historic Places Multiple Property Documentation Form. State Historic Preservation Office, Minnesota Historical Society, St. Paul.
- Garner, John S.
 1993 *World War II Temporary Military Buildings: A Brief History of the Architecture and Planning of Cantonments and Training Stations in the United States*. USACERL Technical Report CRC-93/01 March 1993. U.S. Army Corps of Engineers, Construction Engineering Research Laboratories. Champaign, IL.
- Garver, Harry L.
 1946 Safe Water for the Farm: Farmers' Bulletin No. 1978, United States Department of Agriculture. United States Government Printing Office. Washington, D.C.
- Gates, Paul W.
 1968 *History of Public Land Law Development*. U.S. Government Printing Office, Washington D.C.
- 1971 Land Issues in the United States. In *The Western Historical Quarterly* Vol. 2(4):363-376.
- Gordon, Stephen C.
 1992 How to Complete the Ohio Historic Inventory. Ohio Historic Preservation Office, Ohio Historical Society, Columbus.
- Green, Charles L.
 1940 The Administration of the Public Domain in South Dakota. In *South Dakota Historical Collections* Vol. 20:7-200.

Hardesty, Don

- 1982 Farming/Ranching Activities. In Archaeological Element for the Nevada Historic Preservation Plan. MS on file with Nevada State Historic Preservation Office. Carson City, NV.
- 1988 The Archaeological Significance of Mining Districts. In *Proceedings of the Workshop on Historic Mining Resources:Defining the Research Questions for Evaluation and Preservation*. South Dakota Historical Preservation Center, Vermillion, SD.
- 1990 Evaluating Site Significance in Historical Mining Districts. In *Historical Archaeology* vol. 24(2):42-51.

Hargreaves, Mary Wilma M.

- 1957 *Dry Farming in the Northern Great Plains:1900-1925*. Harvard University Press, Cambridge.

Henry, Susan

- 1991 Consumers, Commodities, and Choices: A General Model of Consumer Behavior. In *Historical Archaeology* Vol. 25(2):3-14.

Hogan, Edward Patrick

- 1991 *South Dakota:An Illustrated Geography*. East Eagle Company, Huron SD.

Hogan, Richard

- 1990 *Class and Community in Frontier Colorado*. University Press of Kansas, Lawrence.

Hoover Herbert T.

- 1983 Farmers Fight Back:A Survey of Rural Political Organizations, 1873-1983. In *South Dakota History* Vol. 13(1 and 2):122-157.
- 1988 South Dakota: An Expression of Regional Heritage, In *Heartland:Comparative Histories of the Midwestern States* edited by James H. Madison. Indiana University Press, Bloomington.
- 1991 Lecture notes from Twentieth Century Frontier, course taught Fall 1991 at University of South Dakota

Isern, Thomas D.

- 1980 Adoption of the Combine on the Northern Plains. In *South Dakota History* Vol. 10(2):101-118.

Johnson, Dexter

- 1980 Selecting a Farm Building:Circular AE-693, Cooperative Extension Service, North Dakota State University. Cooperative Extension Service, North Dakota State University of Agriculture and Applied Science, and U.S. Department of Agriculture cooperating. Fargo, ND.

Jordan, Terry G. and Matti Kaups

- 1989 *The American Backwoods Frontier, An Ethnic and Ecological Interpretation*. The Johns Hopkins University Press. Baltimore, MD.

- Jones, Faye B. and John Rau
 1990 Tom Jones Ranch National Register of Historic Places Nomination Form. South Dakota State Historical Preservation Center. Vermillion, SD.
- Kant, Joanita, ed.
 1991 The Dakota Years of Alex C. Johnson: A Memoir. In *South Dakota History* Vol. 21(4):380-431.
- Klein, Terry H.
 1991 Nineteenth-Century Ceramics and Models of Consumer Behavior. In *Historical Archaeology* Vol. 25(2):77-91.
- Kohl, Edith Eudora
 1986 *Land of the Burnt Thigh*. Minnesota Historical Society Press, St. Paul.
- Koupal, Nancy Tystad, ed.
 1992 Dakota Images: Hardy Webster Campbell. In *South Dakota History* Vol. 22(2):213.
 1988 Dakota Images: Oscar Micheaux. In *South Dakota History* Vol. 18(3):193.
- LeeDecker, Charles
 1991 Historical Dimensions of Consumer Research. In *Historical Archaeology* Vol. 25(2):30-45.
- Lindeman, Glen and Keith Williams
 1985 *Washington: Agriculture Study Unit (Statewide)*. Office of Archaeology and Historic Preservation, Olympia.
- Lindgren, H. Elaine
 1991 *Land in Her Own Name*. The North Dakota Institute for Regional Studies, North Dakota State University, Fargo, ND.
- Long, Barbara Beving
 1990 Appleby Atlas Elevator National Register of Historic Places Nomination Form. South Dakota State Historical Preservation Center. Vermillion, SD.
- Lowitt, Richard
 1984 *The New Deal and the West*. University of Oklahoma Press. Norman.
- Malone, Michael P. and Richard Etulain
 1989 *The American West: A Twentieth Century History*. University of Nebraska Press. Lincoln.
- Marten, James
 1982 A "Golden Opportunity": The South Dakota Agricultural Extension Service and the Agricultural Adjustment Administration, 1933-1935. In *South Dakota History* Vol. 12(2 and 3):163-181.

McClelland, Linda Flint

- 1991 National Register Bulletin 16A:How to Complete the National Register Registration Form. U.S. Department of the Interior, National Park Service, Interagency Resources Division, National Register Branch. Washington, D.C.

McClelland, Linda Flint, J. Timothy Keller, Genevieve P. Keller and Robert Z. Melnick

- n.d. Draft National Register Bulletin 30:How to Identify, Evaluate, and Register Rural Historic Landscapes. U.S. Department of the Interior, National Park Service, Interagency Resources Division. Washington, D.C.

McClelland, Linda Flint, J. Timothy Keller, Genevieve P. Keller and Robert Z. Melnick

- n.d. National Register Bulletin 30:Guidelines for Evaluating and Documenting Rural Historic Landscapes. U.S. Department of the Interior, National Park Service, Interagency Resources Division. Washington, D.C.

McKinley, Marvin

- 1980 *Wheels of Farm Progress*. American Society of Agricultural Engineers. St. Joseph, MI.

MidWest Plan Service

- 1979 *Private Water Systems Handbook*:MWPS-14. MidWest Plan Service, Iowa State University. Ames.
- 1993 *Catalog 1993*. Iowa State University. Ames.

Minnesota Historical Society

- 1980 *Minnesota farmscape:Looking at change*. Minnesota Historical Society. St. Paul.

Mowry, J.L.

- 1916 House Equipment for Running Water:Minnesota Farmers' Library, Agricultural Extension Bulletin Number 61. University of Minnesota, College of Agriculture, Extension Division. Minneapolis.

Murphy, David

- 1993 Letter to author, 27 September 1993.

Myers, Rex C.

- 1992 Cultivating South Dakota's Farmers: The 1927 Alfalfa and Sweet Clover Special. In *South Dakota History* Vol. 22(2):136-155.

National Park Service

- 1991 National Register Bulletin 15: How to Apply the National Register Criteria for Evaluation. U. S. Department of the Interior, National Park Service, Interagency Resources Division. Wahington, D. C.

Nelson, Paula M.

- 1986 *After the West Was Won: Homesteaders and Town-Builders in Western South Dakota, 1900-1917*. University of Iowa Press. Iowa City, Iowa.

- 1992 "Everything I Want is Here!": *The Dakota Farmer's Rural Ideal, 1884-1934*. In *South Dakota History* Vol. 22(2):105-135.

Noble, Allen G.

- 1981 Pioneer Settlement on the Plains: Sod Dugouts and Sod Houses. In *Pioneer America Society Transactions* Vol. IV:11-19.
- 1984 *Wood, Brick, and Stone: The North American Settlement Landscape*. Vol. 1, *Barns and Farm Structures*. The University of Massachusetts Press. Amherst.
- 1992 Windmills in American Agriculture. In *Material Culture* Vol.24(1):1-12.

Novick, Elisa

- 1986 Historic Resources of Rural Butte and Meade Counties, South Dakota National Register of Historic Places Nomination Form. South Dakota State Historical Preservation Center, Vermillion, SD.
- 1986 Historic Resources of Harding and Perkins Counties, South Dakota National Register of Historic Places Nomination Form. South Dakota State Historical Preservation Center, Vermillion, SD.

Ostergren, Robert C.

- 1983 European Settlement and Ethnicity Patterns on the Agricultural Frontiers of South Dakota. In *South Dakota History* Vol. 13(1 and 2):49-82.

Panelli, Mary A.

- 1990 Farm and Ranch Cultural Resource Sites Below the Supersonic Operations Area, Naval Air Station, Fallon, Nevada. Report prepared for the Office of Community Services, Carson City, NV.

Perry, L. Martin

- 1986 North Dakota Round Barns National Register of Historic Places Nomination Form. State Historical Society of North Dakota. Bismarck.

Pitman, Leon S.

- 1992 The Domestic Tankhouse as Vernacular Architecture in Rural California. In *Material Culture* Vol. 24(1):13-32.

Polk, Michael

- 1989 Addendum to: A Cultural Resources Survey of Proposed Land Exchange Parcels, 1988, Buffalo Gap National Grassland, Pennington and Jackson Counties, SD. MS on file at the State Historical Preservation Center, Vermillion, SD.

Pulling, Hazel Adele

- 1940 History of the Range Cattle Industry of Dakota. In *South Dakota Historical Collections* Vol. 20:467-521.

- Quisenberry, Karl
 1977 The Dry Land Stations: Their Mission and Their Men. In *Agricultural History* January 1977:218-228.
- Rau, John
 1986 Czech Folk Architecture of Southeastern South Dakota National Register Nomination Form. South Dakota State Historical Preservation Center. Vermillion, SD.
- Rau, John and Michael Olson
 1990 Herman F. Micheel Gothic Arched-Roof Barn National Register of Historic Places Nomination Form. South Dakota State Historical Preservation Center. Vermillion, SD.
- Reno, Ron
 1994 Letter to author, January, 1994.
- Robbins, Roy M.
 1962 *Our Landed Heritage: The Public Domain, 1776-1936*. University of Nebraska Press, Lincoln.
- Rubertone, Patricia
 1989 Landscape as Artifact: Comments on "The Archaeological Use of Landscape Treatment in Social, Economic and Ideological Analysis. In *Historical Archaeology* Vol. 23(1):50-54.
- Russell, J. Clayton and Arthur H. Schulz
 1945 How to Build a Cistern: Circular AE-20, North Dakota Agricultural College Extension Service. North Dakota Agricultural College Extension Service. Fargo, ND.
- Samp, Ardyce H.
 1988 Country elevators remain tributes to farm prosperity. In *South Dakota High Liner* Vol. 41(9):25,31.
- Schell, Herbert
 1975 *History of South Dakota*. University of Nebraska Press, Lincoln.
 1982 Widening Horizons at the Turn of the Century: The Last Dakota Land Boom. In *South Dakota History* Vol. 12(2 and 3):93-117.
- Schulz, Arthur H. and Daniel J. McLellan
 1955 Above Ground Water Systems: Circular AE-34, NDAC Extension Service. North Dakota Agricultural College Extension Service. Fargo, ND.
- SDSU Census Data Center
 1988 Droughts Past and Present. In *SDSU Census Data Center Newsletter* Vol. 3(5) SDSU Data Center, Brookings, SD.
 1989 South Dakota Farms: Changes since 1910. In *SDSU Data Center Newsletter* Vol. 4(5) SDSU Data Center, Brookings, SD.

- 1989 Farm Facts:Ownership and the Family Farm in South Dakota.In *SDSU Data Center Newsletter* Vol. 4(7) SDSU Data Center, Brookings, SD.

Soike, Lowell

- 1983 *Without Right Angles: The Round Barns of Iowa*. Iowa State Historical Department, Office of Historic Preservation, Des Moines.

Spude, Robert L.S.

- 1987 Mining Technology and Historic Preservation with Special Reference to the Black Hills. In *Proceedings of the Workshop on Historic Mining Resources:Defining the Research Questions for Evaluation and Preservation* edited by Jeff Buechler. South Dakota State Historical Preservation Center, Vermillion, SD.

Stein, Pat

- 1990 Homesteading in Arizona, 1862 to 1940:A Guide to Studying, Evaluating, and Preserving Historic Homesteads. MS on file at Arizona State Historic Preservation Office.

Storey, Brit Allan

- n.d. Draft Cultural Resources Management Plan:Belle Fourche Project, South Dakota: Including a Historical Overview of the Belle Fourche Project. MS on file with Bureau of Reclamation, Denver, CO.

Stubbles, Russell

- 1993 Personal communication with author, 10 December 1993.

Sundstrom, Linea

- 1994 Letter to author, 3 February 1994.

Swierenca, Robert P.

- 1977 Land Speculation and Its Impact on American Economic Growth and Welfare: A Historiographical Review. In *The Western Historical Quarterly* Vol. 8(3):283-302.

Toom, Dennis L. and Cynthia Kordecki

- 1994 Review Draft Shadehill Reservoir Project Area Cultural Resources Inventory, Perkins County, South Dakota, 1992 Field Season. University of North Dakota Department of Anthropology. Grand Forks.

Torma, Carolyn

- 1993 Letter to author, 15 November 1993.

USDA

- 1957 50 Years of Agricultural Research at the USDA Newell Field Station Newell, SD. United States Dept. of Agriculture, Newell, SD.

United States Resettlement Administration

- 1936 First Annual Report:Resettlement Administration. Washington D.C.

Valgren, V.N., Harry E. Roethe and M.C. Betts

1930 Fire Safeguards for the Farm: Farmers' Bulletin No. 1643. U.S. Department of Agriculture, Washington, D.C.

Vichorek, Daniel N.

1987 *Montana's Homestead Era*. Montana Geographic Series No. 15, Montana Magazine, Helena.

Warren, George M.

1933 Farmstead Water Supply: Farmers' Bulletin 1448, United States Department of Agriculture. United States Government Printing Office. Washington, D.C.

Webb, Walter Prescott

1931 *The Great Plains*. Ginn and Company, Boston.

White, Richard

1991 *It's Your Misfortune and None of My Own: A New History of the American West*. University of Oklahoma Press, Norman.

Williams, Elizabeth Evenson

1986 Emil Loriks: Agrarian Exponent and Leader in South Dakota History. In Centennial Book Committee, *Oldham: Our Heritage and History*. Leader Printing Co., Madison, SD, 1987.

Wyman, Walker D.

1954 *Nothing but Prairie and Sky: Life on the Dakota Range in the Early Days*. University of Oklahoma Press, Norman.

Yost, Josie Lee

1983 A Summary of Homestead House Types in South Dakota 1860-1910. Report on file at South Dakota Historical Preservation Center, Vermillion, SD.