United States Department of the Interior
National Park Service

National Register of Historic Places Multiple Property Documentation Form

This form is used for documenting property groups relating to one or several historic contexts. See instructions in National Register Bulletin *How to Complete the Multiple Property Documentation Form* (formerly 16B). Complete each item by entering the requested information.

__X__ New Submission _____ Amended Submission

A. Name of Multiple Property Listing

Common Farm and Ranch Barns in North Dakota

B. Associated Historic Contexts

(Name each associated historic context, identifying theme, geographical area, and chronological period for each.)

Farms in North Dakota Historic Context, 2014

C. Form Prepared by:

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D. Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this documentation form meets the National Register documentation standards and sets forth requirements for the listing of related properties consistent with the National Register criteria. This submission meets the procedural and professional requirements set forth in 36 CFR 60 and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

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Signature of certifying official Title Date

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I hereby certify that this multiple property documentation form has been approved by the National Register as a basis for evaluating related properties for listing in the National Register.

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United States Department of the Interior
National Park Service

Common Farm & Ranch Barns in North Dakota — North Dakota
Name of Multiple Property Listing — State

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Provide narrative explanations for each of these sections on continuation sheets. In the header of each section, cite the letter, page number, and name of the multiple property listing. Refer to *How to Complete the Multiple Property Documentation Form* for additional guidance.

STATEMENT OF HISTORIC CONTEXTS

INTRODUCTION

This Statement of Historic Contexts section of this Multiple Property Documentation Form provides an overview of historic common farm and ranch barns in the State of North Dakota. It provides a context for understanding and evaluating the barns built on farms and ranches throughout the state from the time of early settlement through 1966.

This document is not intended to be a comprehensive history about farming and ranching in North Dakota nor about its agricultural buildings. Detailed accounts of various historic events in the state's history are recorded in several books and journal articles, some of which are listed in the bibliography section of this document. In addition, the State Historical Society of North Dakota recently published *Farms in North Dakota A Historic Context* (2014), which provides an overview of the development trends and patterns of North Dakota farms and their buildings from 1880 to 1975. Several of these books and articles will provide additional information and may assist researchers in identifying and evaluating historic agricultural sites and resources in North Dakota.

This document will further define, describe and establish criteria for evaluating common farm and ranch barns specifically. For the purposes of this document, a "common barn" is defined as the largest freestanding agricultural outbuilding on a farmstead or ranch. Its historic function was to provide shelter for animals, crops, farm implements, and farm-related activities. The primary historical significance of the common barn is its association with the broad patterns of agricultural history and development. A secondary significance may be related to barn design, construction, or information value. To be considered historic, a common barn must be at least fifty years of age.

BRIEF OVERVIEW OF NORTH DAKOTA HISTORY

The Setting

North Dakota comprises an area of 70,665 square miles and is rectangular shaped, stretching about 335 miles east and west and 210 miles north and south. Immediately south of the 49th parallel, North Dakota is bordered by Canada on the north, Montana on the west, Minnesota on the east, and South Dakota on the south. The U.S. census in 2000 showed a population of 642,200 people, the estimated population in 2005 was 634,366, and in 2015 it was estimated at 756,927.[1]

Located almost in the center of the North American continent, North Dakota is considered part of the northern Great Plains region. The state is divided into three basic geographic regions: the Red River Valley, the Drift Prairie, and the Missouri Plateau (from east to west). A fourth region, the Badlands,

[1] US Census Bureau statistics.

is located in the southwest corner of the Missouri Plateau. Topographically, the state is flatter and lower in the east (the lowest point is 792 feet above sea level at Pembina); the land rises in elevation and becomes more rolling as one moves west (the highest point is 3506 feet above sea level at White Butte). The Red River, which flows north to the Hudson Bay, drains the fertile farm lands of the Red River Valley, considered one of the best agricultural regions of the world. The Missouri River drains the Drift Prairie and the Missouri Plateau. Precipitation patterns coincide with the topography; the lower the elevation, the greater the precipitation, averaging from about 21 inches a year in the east to about 15 inches a year in the west.[2] Generally speaking, winters are cold, summers are warm and sunny, rainfall is light, and humidity is low. It can also be a place of extremes with blizzards in the winter, hailstorms and tornadoes in the summer. There are cycles of wet and dry resulting in droughts and floods. Howling winds create dangerous, subzero windchill temperatures in the winter; summer winds can feel like a blast furnace, desiccating the landscape, kicking up dust, and fanning the flames of prairie fires.

Agriculture has long been and will continue to be a major part of North Dakota's economy. The rich soils and climate of the Red River Valley have supported the production of various crops, while wheat farming has dominated the Drift Prairie and portions of the Missouri Plateau. Cattle ranching is also well suited to portions of the Missouri Plateau. Historically, crops in the state included potatoes, sugar beets, corn, soybeans, sweet clover, and alfalfa, in addition to wheat, oats, barley and flax.[3] The state is currently number one in the production of barley, sunflower seeds, and flaxseed and number two in production of wheat in the country.[4]

In addition to agriculture, the state boasts a variety of mineral resources, many of which have contributed to the state's economy historically. These resources include clay and fuller's earth (a type of clay); sandstone and limestone; sodium sulfate (used in the manufacture of paper, glass, soap, and stock feeds); and bentonite (used in the manufacture of soaps and cosmetics). Substantial lignite coal reserves are located in the western portion of the state; coal mining operations have existed since the 1880s. The discovery of oil in 1951 resulted in extensive exploration and drilling.[5] Today, North Dakota has 80 percent of the country's lignite coal reserves and oil production in fourteen western counties.[6]

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[2] Kazeck, Melvin E. *North Dakota: A Human and Economic Geography* (Fargo: North Dakota Institute for Regional Studies, 1956): 39, 45.

[3] Kazeck, 51-70.

[4] Library of Congress. American Memory website.

[5] Kazeck, 156-173.

[6] Library of Congress, American Memory website.

Early History

Archaeological evidence indicates that nomadic Paleo-Indians traveled through the western portions of what is now known as North Dakota, hunting prehistoric mammoths, mastodons, camels, saber-toothed cats, and musk oxen during the years late in the Ice Age. As the climate changed, so did the vegetation and eventually the Ice Age animals disappeared, driving the human population from the area as well.[7]

Eventually native Indian tribes moved into the area where vast herds of bison provided a constant food supply. The first to arrive were the Mandan, who in about A.D. 1300 moved west into the Missouri River bottoms. A sedentary people, they were the first tribe to make permanent settlements in the area.[8] After the Mandan came other tribes. By the time the first white explorers arrived, there were several distinct Indian groups in the area, including the Mandan, Hidatsa, and Arikara (sedentary groups who lived in relatively permanent settlements), and the Dakota or Lakota (also called "Sioux"), Assiniboine, and Cheyenne (nomadic groups who followed the bison herds). Groups of Chippewa (or Ojibway) moved into the northern parts of the Red River Valley around 1800, and groups of Crow, Blackfeet, and Cree hunted in the western ranges.[9]

The first recorded white visitor to the area was Pierre Gaultier de Varennes, Sieur de La Verendrye, a French explorer who reached the Missouri River from Canada in 1738. Others followed, including La Verendrye's sons in 1742. Fur traders arrived soon thereafter, led by the Hudson's Bay Company and the North West Company.[10] In 1804, the Lewis and Clark Expedition reached Fort Mandan, where they spent the winter before continuing their "Voyage of Discovery." The increasing number of Euro-Americans who came to the area in the early to mid-nineteenth century brought much change. The Indians were decimated by European diseases to which they were particularly susceptible, including tuberculosis, measles and smallpox. A smallpox epidemic in 1837 killed an estimated fifteen thousand on the Upper Missouri. By 1854, it was estimated that between disease and warfare, the Cree population had been cut by an eighth, the Arikara by a fifth, the Blackfeet and Sioux by a third, the Assiniboine and Crow by half, and the Mandan by three-fourths.[11] In the 1860s, major military expeditions resulted in a number of battles between the U.S. government and the Indians and by 1870 many tribes had submitted to reservation life to avoid starvation.[12]

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[7] Robinson, Elwyn B. *History of North Dakota* (Lincoln: University of Nebraska Press, 1966), 18.

[8] Wilkins, Robert P. and Wynona Huchette Wilkins. *North Dakota: A Bicentennial History* (New York: W.W. Norton & Company, 1977), 23-24.

[9] Remele, Larry. *North Dakota History: Overview and Summary* (North Dakota Blue Book 1989; State Historic Society of North Dakota website, 2006).

[10] Robinson, 30-32, 35.

[11] Wilkins, 27-28.

[12] Remele.

Agricultural settlement in the Red River Valley had its start with the early settlements of the Selkirk colony and Pembina. It was not until the arrival of steamboats on the river in the late 1850s and the organization of Dakota Territory by Congress in 1861, however, that settlement of the area began in earnest.[13] The Homestead Act of 1862 encouraged farm settlement; the first claim west of the Red River was filed in 1868. The arrival of the railroad in the early 1870s spurred a settlement "boom" between 1879 and 1886 when more than 100,000 people settled in Dakota Territory. New towns sprang up along the railroads, including Fargo and Bismarck, to serve the growing number of settlers.[14]

By the time North Dakota became a state on November 2, 1889 (the same day South Dakota gained statehood) the "Great Dakota Boom" had ended. Following the national Panic of 1893, however, better conditions and renewed promotion of settlement ushered in a second boom that began before the turn of the century.[15] The population increased 67 percent between 1890 and 1900, growing from 191,000 to 319,000. Only seventeen percent of the state was developed as farmland in 1890; by 1900 more than 35 percent of the state was in farms, an increase of 103 percent of farm acreage. By 1910, there were 74,000 farms containing 28,400,000 acres; North Dakota had become the leading wheat state, ahead of Kansas, its closet rival.[16] This second boom continued through World War I. By 1920, the population had grown to 646,900.[17]

NORTH DAKOTA'S AGRICULTURAL HISTORY

Early Agriculture

North Dakota's agricultural history is largely a part of the story of the westward movement of the farming frontier from the Midwest onto the Great Plains. Spurred in part by Federal land policies in the 1860s and 1870s, followed by the arrival of the railroads in the 1870s and 1880s, more and more land was opened for acquisition, settlement and production. Prior to this, however, there is evidence of earlier agricultural undertakings in the state.

The earliest evidence of agriculture in North Dakota was along the Missouri River where the Mandan Indian tribe settled and grew crops of corn, squash, pumpkins and sunflowers. It was with this tribe that the Lewis and Clark Expedition stayed during the winter of 1804-1805.

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[13] Robinson, 113; Remele.

[14] Remele.

[15] Robinson, 218.

[16] Robinson, 227, 247.

[17] Remele.

Euro-American agricultural practices came to the state when Alexander Henry, Jr.'s fur trading post, established in 1801 at Pembina, became the center of agricultural colony sponsored by the British crown in 1812. A number of Scottish immigrants from Canada settled in the area and developed a thriving agricultural outpost. In 1818, the 49th Parallel became the official boundary between Canada and the United States (just two miles north of Pembina) and following crop failures in 1820, many of the settlers moved back into Canada. Further agricultural development was limited until Charles Cavileer established a permanent settlement at Pembina in 1849.[18]

Dakota Territory was organized by the Federal government in 1861. In 1862, Congress passed the Homestead Act allowing any U.S. citizen, including women and freed slaves, to claim up to 160 acres of Federal land. The land would be given to the homesteader for free if he or she lived on the land for at least five years, built some sort of residence, broke at least ten acres of land, and planted a crop. The Timber Culture Act of 1873 provided an additional 160 acres free in exchange for the planting of trees on a minimum of ten acres, if the trees survived for eight years.

The first homestead claim in North Dakota was made by Joseph Rolette in 1868; his claim was located in the northern Red River Valley.[19] Others followed, but it was not until the coming of the railroads in the 1870s that Euro-American settlement begin to spread and agriculture expand.

The Red River Valley, with its rich fertile soil, was the first area of the state to experience widespread settlement. The area, originally accessible via the Red River, was made further accessible via the railroads when the Northern Pacific Railroad crossed the Red River at the site of present-day Fargo in 1871 and on to Jamestown in 1872 and Bismarck by 1873. The St. Paul, Minneapolis, and Manitoba Railroad (which eventually became the Great Northern Railway) crossed into the valley at Grand Forks in 1880, and rail lines connected Fargo to Grand Forks and to Winnipeg, Canada soon thereafter.

In 1870 there were 1,720 farms in Dakota Territory with an average size of 176 acres; by 1880 the number of farms had increased to 17,435 with an average size of 218 acres.[20] The average farm size continued to be about 200 acres for several years. An early agricultural success in northern Dakota Territory, however, involved large, corporate farms known as "bonanza farms."

Bonanza Farms

Rail lines were built on expansive tracts of land granted by the Federal government to rail companies. Following the national economic Panic of 1873 many rail stocks became worthless. To continue rail

[18] http://legendsofamerica.com/nd-timeline

[19] http://legendsofamerica.com/nd-timeline

[20] Lisa L. Steckler, "Farms in North Dakota A Historic Context" (Bismarck, ND: State Historical Society of North Dakota, 2014), 14.

operations and expansion, many rail companies were forced to sell or trade for stock much of their land. Rail lines in Dakota Territory were no exception, especially the Northern Pacific.

James B. Power, the land commissioner for the Northern Pacific, was the originator of the bonanza farm idea. In an effort to boost land sales, he hoped to demonstrate the potential of the area by developing one-crop, large-scale commercial farms known as bonanza farms. The first of these, the Cass-Chaney farm (named for its owners, Northern Pacific president George W. Cass and Northern Pacific board member, George Cheney) was established in 1874 and was located approximately twenty miles west of Fargo. It began with 5000 acres and eventually grew to 32,000 acres.[21]

Bonanza farms operated as corporate enterprises. Absentee owners hired professional to manage and operate the farms. The Cass-Cheney owners hired Oliver Dalrymple from Minnesota to manage their farm (the farm became commonly called the Dalrymple farm). Dalrymple had been a manager of a large-scale wheat operation in Minnesota and was a reputed wheat expert. Wheat was quickly becoming the primary agricultural product in northern Dakota Territory and the bonanza farms became the biggest wheat producers.[22]

Two factors led to the success of wheat-growing in Dakota Territory. First was a new milling process developed by Minneapolis millers in the early 1870s. Patented processes of easy separation of the hard wheat bran from the flour and the introduction of steel roller belts, which replaced traditional mill stones, enabled superior flours to be made from spring wheat, which grew well in Dakota Territory. The second was the Red River Valley's proximity to the major grain processing centers in Minneapolis and easy transport developed by rail lines.

Spring wheat was highly valued and quickly became the primary agricultural product and export. In 1873, wheat acreage in northern Dakota Territory included only scattered plots; by 1875, more than 2000 acres were planted in wheat. By 1879, more than 145,500 acres were wheat. Wheat planting continued to increase for several more years; by 1890, more than 2,655,990 acres were wheat, by 1900 it had increased to more than 4,030,000 acres, and more than doubled again to 8,345,416 acres in 1910. The all-time high was 1933, when 11,372,000 acres were planted with wheat.[23]

Following the success of the Cass-Chaney farm, a number of other bonanza farms were established. The second big bonanza was the Grandin operation created in1876 via a stock-for-land exchange with the rail line. Holdings included four separate farms, one northwest of Mayville, another west of Hillsboro, one near Grandin, and the last near Halstad, Minnesota. [Buildings associated with the Mayville operation, including a large barn, are listed on the National Register.]

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[21] Lauren McCroskey, "Bonanza Farming in North Dakota" National Register of Historic Places Multiple Property Documentation Form (Washington, DC: National Park Service, U.S. Department of the Interior, 1990), E-3.

[22] McCroskey, E-3.

[23] Hiram M. Drache, The Day of the Bonanza (Minnesota: Hobar Publications, 1964), 28-29.

Others included the Amenia and Sharon Land Company farms in Cass County, the Helendale farm in Cass County, the Kentucky farm near Larimore, the New York Farm also near Larimore, and the Dwight farm at Dwight (several others are noted in McCroskey's "Bonanza Farming in North Dakota" National Register documentation and in Drache's *Day of the Bonanza*). The Bagg farm, near Mooreton, with its extensive collection of bonanza farm buildings in North Dakota, was listed on the National Register in 1985 and, in 2005, was designated a National Historic Landmark.

Not all bonanza farms were established through sale or exchange of railroad lands. The Elk Valley Farms near Larimore, for example, was acquired through a buy-out of homestead claims. Some of the farms occupied lands acquired from a combination.

Apparently there was never established a minimum number of acres necessary for a farm to be considered a bonanza farm. Some studies used a minimum of 1000 acres, others used a minimum of 3200 acres. The average minimum in the literature seems to be 3000 acres. The range in overall size varies greatly, ranging from 1000 acres to over 64,000 acres.

Bonanza farms included much more than land. The size of these farms required substantial investments in buildings and structures needed to manage the operations. Most farms included a manager/superintendent's house, bunkhouses, carriage houses, machine sheds, blacksmith shops, granaries, liveries, dining halls, silos, elevators, and various stables and barns for livestock.[24] In addition, buildings such as ice houses, butcher shops, and general stores could be found on the farms.[25]

The bonanza farm boom was relatively short-lived. It started with the Cass-Cheney farm in the early 1870s and ended during the first two decades of the twentieth century. Several things contributed to the decline. The large-scale labor force and machinery required was costly and eventually became a liability for bonanza farms. Single-crop farms were more vulnerable to failure from disease and overuse. Diversification of crops, which had become more common on small farms, proved to be profitable and stable under fluctuating conditions. Labor problems and poor management also contributed to the eventual demise of the bonanza farms.[26]

The Great Dakota Boom

Even as thousands of acres of farmland were taken into ownership of the bonanza farms, thousands more were being homesteaded or purchased by settlers. Free land was a powerful incentive to move to Dakota Territory and the success of the bonanza farms proved that northern Dakota Territory was promising land.

[24] McCroskey, F-1 – F-8.

[25] Drache, 122-23.

[26] Drache, 204; McCroskey, E-6.

The Great Dakota Boom, the busiest period of Euro-American immigration to northern Dakota Territory, began in 1878. Between 1878 and 1890, the population climbed from 16,000 to 191,000. The total number of farms in Dakota Territory climbed from 17,235 in 1880 to 27,611 in 1890. By the time North Dakota became a state in 1889, approximately 40,000 people took advantage of the Homestead Act and 20,000 filed for an additional 160 acres under the Timber Culture Act.[27] Perhaps as many as half of the settlers were emigrants from Norway, Sweden, England, Ireland, Germany, Russia and Canada; others migrated from other regions in the United States.

Initial settlement was in the Red River Valley. As time passed and land in the valley was claimed settlement spread westward, first to the Drift Prairie and then the Missouri Plateau. Although the Great Dakota Boom ended in 1890, settlers continued to move to North Dakota into the 1930s. A second boom occurred between 1898 and 1915. Farming changed during these years, becoming more diversified in crop production as farming spread westward. In addition to wheat, farmers grew flax, barley, oats, rye, speltz, corn, potatoes, millet, alfalfa, timothy, clover and prairie hay. Several technological changes during this period also helped change the face of farming in North Dakota.

Ranching

The first ranch in what is now North Dakota was established in 1870 by George Grinnell. His ranch was located approximately thirty miles east of Williston on the north side of the Missouri River.[28] According to the USDA National Agricultural Statistics Service, there were 2000 cattle in northern Dakota Territory that year.[29] In 1879, three traders at Fort Buford established the Star Ranch, also on the north side of the Missouri. The Dickey Brothers also brought cattle into northern Dakota Territory in 1879 locating them on the Little Missouri River.[30] By 1880, there were 70,000 cattle.[31] Several cattle ranches were established in the 1880s. Among them were the Custer Trail Ranch (owned by Howard and Eldon Eaton); the Maltese Cross Ranch (owned by Ferris, Merrifield and Theodore Roosevelt); the Continental Cattle Company (owned by Hughes and Simpson); the Berry, Boice Cattle Company (better known as the “Three-Sevens” ranch; owned by D.B. Berry and Henry C. Boice); and the Bad Lands Cattle Company (owned by H.B. Wadsworth and W.L. Hawley). Further information about these and other ranches of the 1880s, their locations, and their owners can be found in two scholarly articles: “Ranches in the Great American Desert” by Usher L. Burdick (*North Dakota Historical Quarterly*, Vol. 8, No 4, 295-300) and “Ranching in the Dakota Badlands” by Ray H. Mattison (*North Dakota History*, Vol. 19, No. 3, 93-128 and Vol. 19, No. 4, 167-206).

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[27] “The Great Dakota Boom 1878-1890: Overview” on North Dakota Studies website (www.ndstudies.org)

[28] Usher L. Burdick, “Ranches in the Great American Desert,” in North Dakota Historical Quarterly (Vol. 8, No. 4), 295-296.

[29] “History of Cattle Production in North Dakota,” on NDSU/ND Agricultural Experiment Station website (www.ag.ndsu.edu/archive/streeter).

[30] Burdick, 296.

[31] “History of Cattle Production in North Dakota.”

Perhaps one of the more significant ranch stories is that of Pierre Wibaux. Wibaux was just twenty-two when he left France to move to the United States in 1882. Upon arriving in the U.S., he traveled to Chicago where he met the Marquis de Mores and in 1883 traveled with the Marquis to his ranch in western Dakota Territory. Wibaux selected the Beaver Valley in eastern Montana for the site of his ranch operation, where he began to prosper in the cattle business. In 1886-1887, many of his neighbors, especially those in Dakota Territory, suffered devastating losses during the severe winter. Wibaux bought out several ranches, purchasing their livestock remnants for low prices. He built his fortune on the misfortune of others and became one of the largest and wealthiest cattle owners in western Dakota and eastern Montana. He was known as the Cattle King.[32]

The first man to engage in horse ranching in western Dakota Territory was A.C. Huidekoper from Meadville, Pennsylvania. He was a partner, with the Eaton Brothers, in the Custer Trail Ranch. In 1883, they moved their cattle to a new ranch location on Deep Creek (approximately ten miles west of the present site of Amidon). This ranch, like many others, lost many of their cattle during the winter of 1886-1887. Huidekoper noticed that his horses, however, faired well through the winter and he established The Little Missouri Horse Company later that year. Huidekoper bred purebred Percherons and developed the greatest herd of Percherons in the United States at that time. The ranch, including 4000 horses, was sold in 1906 to the Pabst Brewing Company.[33]

By 1890, the era of the big cattle ranches was done. The number of cattle in the state, however, continued to increase, as cattle became a valuable commodity throughout the state. According to the USDA National Agricultural Statistics Service, the number of cattle in North Dakota was 346,000 in 1890; 561,000 in 1900; and 1,335,000 by 1920. That number stayed relatively steady until 1960, when there were 1,758,000. There were more than 2,000,000 in both 1970 and 1980. Since that time, the numbers have declined.[34]

Dairying

When the wheat bonanza in the eastern part of the state and the large ranches in the western part of the state came to an end in the early 1890s, farmers and ranches became more interested in dairy cattle. The North Dakota Agricultural Experiment Station in Fargo had introduced a Dairy Department and managed a dairy herd in 1894. By the end of 1895, there were forty-one creameries and cheese factories in North Dakota. In less than ten years, that number doubled. In 1909, an Experiment Station was opened at Hettinger to conduct dairy research. The first dairy cattle were generally Jersey cows; by the early 1900s, Holsteins and Guernseys were the primary breeds used for the dairy industry.[35]

[32] Donald H. Welsh, “Pierre Wibaux, Cattle King,” in North Dakota History (Vol. 20, No. 1), 5-23.

[33] Burdick, 296-297.

[34] “History of Cattle Production in North Dakota” on NDSU Agricultural Experiment Station website (www.ag.ndsu.ed).

[35] “History of Cattle Production in North Dakota.”

The number of dairy cows in North Dakota was never very large and little information was found during this study that indicates the total number of dairies operating in the state historically. The North Dakota Year Book (1913) claimed that 1912 was a prosperous year for dairy interests and that 1913 should be as well. There were approximately 191,000 milk cows in the state at that time. Eight-six creameries producing butter, milk and cream were valued at $4,237,180.[36]

It is known that as milk production increased due to better nutrition, genetics, and management of the milk cows, the number of cows decreased. Today there are still some dairies operating in North Dakota and the total number of dairy cows is around 28,000.[37]

Politics and Organizations

A discussion about North Dakota's agricultural history would be incomplete without mention of farm politics and organizations. Agricultural protest movements spread across the Midwest and the Plains in the nineteenth century. To cope with issues of increasing political importance, farm organizations were created. The first nationwide movement was the Grange, organized in 1867 by Oliver Kelley. Its aim was to improve farm life and farming methods. The Grangers were successful in securing state regulation of railroads in a number of states, but by the late 1870s the political importance of the Grange was declining.[38]

By the time the Great Dakota Boom began in the late 1870s, newer farm organizations, known as Farmers Alliances, were being established to support cooperative farming efforts and encourage political action. In the 1880s, Farmers Alliances grew in popularity and found some political success, mostly on a state or local level. Nationally, the Alliances called for government ownership of railroads, abolition of national banks, and for free coinage of silver.[39]

The North Dakota Farmers Alliance was formed in 1889. By that time, the power of the movement was in question following limited success nationally. In 1890, the Alliance was reborn as the People's Party (commonly called the Populist Party). Although the Populist Party's candidate, James B. Weaver, failed to win the 1892 presidential election, many of the party's candidates for Congress and state legislatures were elected, giving the organization some political power. North Dakota farmers wanted to see more farmers in the state legislature as well and elected one man to the State Senate and six men to the State House of Representative. By 1896, the Populist Party began to fade and the Farmers Alliance's issues were eventually absorbed by mainstream politics.

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[36] North Dakota Year Book (Bismark, ND: Agricultural Department, 1913), 3.

[37] "History of Cattle Production in North Dakota" on NDSU Agricultural Experiment Station website (www.ag.ndsu.ed).

[38] D. Jerome Tweton, "The Golden Age of Agriculture: 1897-1917" in North Dakota History (Vol. 37, No.1), 44.

[39] Tweton, 45.

The next farm organization to find favor in North Dakota was the first Farmers Union in 1913. Founded in Texas in 1902, the Farmers Educational and Cooperative Union of America (commonly called the Farmers Union) claimed to have more than five million members nationally by 1913. Information about the Farmers Union was introduced to North Dakota by Howard P. Knappen, a newspaper editor, and an initial meeting was held in Bismarck on June 23, 1913. Growth was slow, but by April 1915, eight counties had chartered County Unions and a number of Farmers Union cooperative elevators were located throughout central North Dakota. The North Dakota State Union was formed on April 1, 1916 and additional cooperative businesses followed. In addition to business ventures, the unions served to bring together farm families through various social events. The unions stayed strong through 1917, but in 1918 memberships began to decline and businesses faded. By 1920, the first Farmers Union organization all but disappeared, although remnants of their business ventures continued to survive.[40]

While the first Farmers Union had several political concerns, they viewed the Nonpartisan League (the NPL) as their political vehicle. The NPL was founded in 1915 by A. E. Bowen when his idea for a nonpartisan political organization for farmers gathered growing support. Led by A.C. Townley, the NPL took control of the Republican Party in 1916, dominated all state government by 1918, and by 1919, had passed laws to enact their five-point plan aimed to benefit the state's farmers. This plan included (1) the creation of the Industrial Commission to manage the state's business enterprise, (2) the creation of the Bank of North Dakota to provide low-cost rural credits, (3) the creation of the North Dakota Mill and Elevator Association to establish a system of warehouses, elevators, flour mills, and factories, (4) to establish a Home Building Association, and (5) to amend the state hail insurance program. Many elements of this program left its mark on the state for many years. The Bank of North Dakota was opened in Bismarck in 1919, the State Mill and Elevator opened in Grand Forks in 1922, and the state hail insurance benefitted many farmers until it was discontinued in the 1960s.[41]

Even with its success, the NPL was relatively short-lived. By late 1918, an anti-NPL group known as the Independent Voter's Association (IVA) was gaining strength and working to oust corrupt leadership. In 1920, the IVA took control of part of the legislature and in 1921 forced a recall election that deposed Governor Frasier and others. Following this recall election, the NPL's political hold on North Dakota shifted. The NPL continued to have a few candidates elected, but the powerful control of the party was gone.[42]

The North Dakota Wheat Growers Association was organized on January 23, 1922. Its purpose was to stop the dumping of wheat on the market after the fall harvest. Members pooled their wheat and the Association was responsible for selling it throughout the year, avoiding the low prices of the fall glut. Although the Association had grown to more than 16,000 members by 1924, but the amount of

[40] Larry Remele, "North Dakota's Forgotten Farmers Union 1915-1920" in North Dakota History (Vol. 45, No. 2), 4-21.

[41] Michelle L. Dennis, "The North Dakota Nonpartisan League's Home Building Association, 1919-1922," National Register of Historic Places Multiple Property Documentation Form, 2006.

[42] Dennis, E-10.

wheat in the pools declined. Several economic factors negatively affected the Association's efforts over the next few years and by 1931 most the pool elevators were closed or had been turned over to others to manage. It was an effort to assist North Dakota's wheat farmers that failed.[43]

A new Farmers Union was established in 1927 with the aim of counteracting economic injustices through cooperation, legislation, and education. This Farmers Union picked up where the first end left off, fostering cooperative purchasing and marketing that led to Farmers Union oil and elevator companies. The first legislation sponsored by the Farmers Union was the Farm Storage Act of 1929, which allowed farm granaries to serve as public warehouses. Other legislative efforts included the creation of a law in 1932 that required corporate farm owners to dispose of their lands by 1941. In 1933, a group of North Dakota farmers sent a delegation to Washington, DC to lobby for Missouri River diversion to bring water to farms across the state. In the area of education, the Farmers Union worked to disseminate information to farmers and their families through a variety of avenues. Among these were radio programs, print publications, community meetings, conferences and camps. In 1935, they established a correspondence study program for high schools in the state and in 1937, the first collegiate chapters of the Farmers Union were established at North Dakota State, Minot State and Valley City State colleges.[44] This organization, which still exists today, continues to advocate for the farmers of North Dakota.

Education, Research and Extension

Agriculture in North Dakota was greatly influenced by education, research and extension. One year after statehood, the North Dakota state legislature established the North Dakota Agricultural College, the state's land-grant institution, in Fargo. Land-grant institutions were the products of the Morrill Acts of 1862 and 1890 in which Federal lands were granted to states to sell and raise funds to endow "land-grant" colleges. The mission of land-grant colleges was to teach the practice of agriculture, science, engineering and military science. Classes at NDAC opened in 1891. NDAC became North Dakota State University of Agriculture and Applied Sciences in 1960.

Also approved by the first state legislature in 1890 was the creation of the North Dakota Agricultural Experiment Station (NDAES). The first station, located in Fargo, was established in accordance with the Hatch Act of 1887, which acted "to promote efficient production, marketing distribution and utilization of products of farm….to assure agriculture's position in research equal to that of industry."[45] The experiment stations, often in conjunction with the land-grant colleges, focused research on the development of new crops and seeds, new farming methods (including irrigation and dryland farming), plant disease, weed control, livestock, and technological advancements. Several methods were used to disseminate information to farmers including *The Bulletin*, a regular publication with a

[43] Elwyn Robinson, History of North Dakota, 384-86.

[44] North Dakota Farmers Union website (www.ndfu.org).

[45] North Dakota Agricultural Experiment Station website (www.ag.ndsu.edu/research/history).

wide variety of articles of interest to farmers and their families. A number of experiment stations were established in North Dakota. They included a station at Dickinson (1905), Williston (1907), Langdon (1909), Hettinger (1909), Minot (1945), and Carrington (1960). Currently, the NDAES operates seven research centers throughout the state; the main station continues to be located at Fargo.[46]

Better Farming Clubs were established in North Dakota in 1905 and in 1911, the Better Farming Association (BFA) was chartered. Funded by private business interests, the BFA placed agents trained in agricultural practices in several counties in the state. These agents traveled from farm to farm sharing information about the latest farming technology and practices, and they organized meetings where farmers could see demonstrations and share information with one another. Information and demonstrations were also aimed at homemakers, promoting the use of modern devices to make farm homes more livable.[47]

Just two months after President Wilson signed the Smith-Lever Act in 1914, which established and funded the Cooperative Extension System in conjunction with land-grant institutions, the North Dakota State Extension Service was created. Better Farming Association agents became North Dakota Extension Service employees and outreach to farmers and ranchers expanded. Educational programs and services included information on crop varieties, livestock production research, livestock and crop prices, crop disease information, and insect and weed management. In addition, a number of informal educational efforts for all residents in the state were part of the Extension Service. These efforts included administering of the statewide 4-H program; providing information of nutrition, home maintenance, gardening, and financial planning; advising families on farm and ranch safety and security issues; and stimulating personal growth through local leadership programs. Today, the NDSU Extension Service continues to help farmers and ranchers and their families through its programs on livestock, farm, crop, and natural resource management; family economics; 4-H youth development; nutrition, food safety and health; horticulture and forestry; and community, economic development and leadership.[48]

Agricultural Journalism

The “farm press” began in the early nineteenth century with the publication of *The American Farmer* in 1819 (in print until 1833). Other early examples included *The Cultivator* (1834-1853) and the *American Agriculturalist* (1842-79). With more than 100,000 subscribers, there were at least thirty periodicals in print by the 1840s. Perhaps one of the most influential farm journals in the Midwest was *The Prairie Farmer*. Founded in 1840 as the *Union Agriculturalist and Western Prairie Farmer*, the weekly newspaper had a readership of more than 12,000 in 1859; circulation peaked in 1950

[46] North Dakota Agricultural Experiment Station website (www.ag.ndsu.edu/research/history).

[47] NDSU Extension Service website (www.ag.ndsu.edu/extension).

[48] NDSU Extension Service website (www.ag.ndsu.edu/extension).

at 370,000.[49]

Founded in 1881 in Aberdeen South Dakota, the *Dakota Farmer* was the first widely distributed farm journal in Dakota Territory. The *Northwestern Farmer and Breeder* started publication in Fargo in 1883. Both papers merged in the late 1880s and became the *Northwestern Farmer*, and after the publisher, Edward A. Webb, moved his company to Minneapolis in 1898, the journal became known as *The Farmer*. This publication included special editions aimed at geographic areas; *The Dakota Farmer* served North and South Dakota. Another widely read farm periodical was the Chicago-based *Breeder's Gazette* (1881-1931).[50]

In addition to a wide variety of information on farming practices, many of these publications included specific information on barns and other farm buildings and structures.

Technological Advancements

Perhaps the thing that most changed the face of farming was the tractor. When settlers first started farming in North Dakota, they relied on horses for farm work. Steam-powered engines for farming had been introduced in Pennsylvania in 1849 and eventually found their way to the northern Plains and western Canada for use in threshing operations. They were big and cumbersome and required a crew of men to use them, even after improvements were made to power the wheels making them more transportable. A more practical farm tractor was unavailable until the invention of the Otto internal combustion four-stroke engine in 1876. Widespread use of this engine came in the early 1890s when Otto's patents expired and more than 100 companies began manufacturing steam farm tractors.[51]

The first gasoline engine tractor was built in 1892 when John Froelich of Iowa retrofitted a steam tractor chassis with a gas-powered engine. The tractor worked for his farm operation but did not catch on elsewhere. In 1901, Charles Hart and Charles Parr, engineering students at the University of Wisconsin, developed a gasoline tractor and opened a factory in Iowa where they began selling tractors in 1902. Reportedly the word "tractor," which was short for "traction engine," was coined by their company. These tractors were big, most in the 20,000-pound class. Other companies soon followed and by 1910, International Harvester became the leading producer of these big tractors.[52]

It was not long before the industry realized they needed to produce smaller machines for the small farmer. In 1913, Bull Tractor Company of Minneapolis produced the first of these smaller tractors.

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[49] Robert C. Vogel, Common Farm Barns of South Dakota, 1857-1958 Multiple Property Documentation Form (Washington DC: National Park Service, 2007) E-10.

[50] Vogel, E-10.

[51] "A Short Tractor History to 1924" on the Farm Collector website (www.farmcollector.com).

[52] "A Short Tractor History to 1924."

They weighed only 3,000 pounds and sold for the price of $395.00. Other companies, including International Harvester and Case, followed suit. When the United States entered World War I in 1917, the demand for tractors escalated; production doubled from the previous year with almost 63,000 tractors being built. Production again doubled in 1918. This was the same year that Henry Ford introduced the Fordson tractor, which quickly became the best-selling tractor of the time. International Harvester's Farmall multi-purpose tractor was introduced in 1924. It was this tractor that led the way to further labor-saving innovations on the small farm. It became the leading brand of all-purpose tractors in the 1940s and 1950s.[53]

The introduction of the use of the combine also contributed to changes in farming in North Dakota. The combine was a machine that could perform three separate operations of harvest - reaping, threshing, and winnowing. This innovation was used for the harvest of small grains throughout the state. Introduced in the 1920s, the machinery continued to improve over the decades and allowed farms to become larger and more profitable.

Technological advancements occurred in other ways. Mechanized milking machines and cream separators enhanced the dairy industry. The use of trucks for movement of livestock and crops was an improvement over horses and wagons. Advancements in weed control with the use of herbicides reduced the need for cultivating. The use of fertilizer expanded. Seed research and development proved to be a continued advancement through the years. Science, research, and technology have continued to provide new opportunities to farmers and ranchers throughout the state.

Agriculture Since World War II

North Dakota continued to be a leader in the country's agriculture following World War II. Several changes, however, occurred in farming and ranching during that time. The total number of farms decreased, but the size of the average farm increased. The value of farms increased. The economy of farming improved and cash receipts grew. The number of farms operated by owners increased while the number of farms operated by tenants decreased. Production costs increased.[54]

Technology and mechanization continued to improve. These changes required fewer hands to run the farm and the population shifted. Rural farms populations decreased while urban populations increased. This shift in population affected more than just the farms and ranches themselves. The number of rural schools decreased; the number of rural churches declined. While much of this may have seemed negative, new technology led to improvements to farm homes and the quality of life. The number of farms with electric lights, televisions, telephones, running water, flush toilets, and bathtubs/showers greatly increased.[55]

[53] "A Short Tractor History to 1924."

[54] Fred R. Taylor, "North Dakota Agriculture Since World War II" in North Dakota History (Vol. 34, No. 1) 49-57.

[55] Fred R. Taylor, 58-61.

Summary

North Dakota's history is one of agriculture. From the earliest settlers to the farmers and ranchers of today, agriculture was and continues to be one of North Dakota's top industries. According to current statistics, there are nearly 31,000 family farms and ranches in the state. Ninety percent of the state's total land area is used for agriculture. Farming and ranching is a major employer in North Dakota; more than twenty-four percent of the population is employed in agricultural related businesses. North Dakota is the number-one producer of several crops and products in the nation including durum and spring wheat, navy and pinto beans, canola, flaxseed, rye, oats, soybeans, sugar beets, and honey.[56]

THE HISTORY OF THE COMMON BARN

An Overview of North American Barn Types

Perhaps the most identifiable building of a farm or ranch is the barn. Barns originated in England. Their function was that of storing farm produce; livestock was sheltered in other structures such as stables and "cow houses." When the barn was brought to America, it quickly assumed the functions of both sheltering animals and storing crops.

As different regions of the country were settled, characteristics of different barns developed. Barns in New England were different from barns in the south; barns in Appalachia were different from barns that developed in the Midwest. These differences were in part due to different functional needs – crops in the northeast required different storage needs than crops in the south or those of the Midwest; livestock in the Midwest may have been different than that of the western Plains. In addition, different ethnic groups, bringing various building traditions with them, introduced different types of barns. As time progressed, building materials and construction methods changed as well resulting in barns that differed from their earlier predecessors.

Regardless of the type, function or location, however, most barns had common features. Most were rectangular (exceptions include the round and octagonal), most were large and built of primarily of wood, and most were set apart from houses on the farm or ranch. The overall arrangement of farm buildings depended on a number of factors including the topography, the weather, convenience and/or labor efficiency, land survey systems, and tradition.[57]

Among the oldest barn types in America is the Dutch barn. Dating to the seventeenth and early eighteenth centuries, this barn was found in areas of New York and New Jersey settled by Dutch immigrants. It was rectangular in shape and has been called "basilican" in that the plan included

[56] "North Dakota Ag Facts" website (www.nd.gov/aitc/agfacts)

[57] Allen G. Noble and Hubert G.H. Wilhelm, Barns of the Midwest (Athens, OH: Ohio University Press, 1995), 8-10.

stalls and stables along the long sides with a central working floor between them. Wagon doors were located in each end of the barn. It was timber-framed with exterior walls of wood, stone, or brick.[58]

Another early barn type was the English barn, also known as the three-bay barn. Generally a small barn, it consisted of two bays and a threshing floor between them. The wagon doors were centered on the longer side walls rather than the ends of the barn. The English barn was widespread throughout New England historically, but the type spread to the Midwest and to Canada. Early examples in New England were constructed with stone. Early English barns were usually timber-framed and often clad with log or vertical board siding.[59]

Other early barn types in America included the Pennsylvania barn and connected barns. The Pennsylvania barn's American development harkened to German and Swiss traditions. Characterized by a forebay, this barn type originally included space for animals on the ground level and living space for a family on the upper level. This tradition was abandoned in America and the upper floor was used for threshing and storage. Pennsylvania barns were timber-framed and clad with wood or stone, or a combination thereof.[60] Connected barns were found in eastern Canada and New England. This barn type did not have European precedent, rather was developed to accommodate harsh winter conditions. Generally, the farmhouse was connected to a series of sheds and haymows that led to the barn itself.[61]

Open forebay Pennsylvania-style barn located in Ohio (photo from Noble and Cleek, *The Old Barn Book*)

[58] Eric Arthur and Dudley Witney, The Barn A Vanishing Landmark in North American (New York: Arrowood Press, 1972), 37-39.
[59] Arthur and Witney, 59-63.

[60] Arthur and Witney, 88-89.

[61] Arthur and Witney, 143-145.

Circular and polygonal barns (often simply called “round barns”) date to the nineteenth century and are found throughout North America. The type apparently originated in the United States as there is no evidence of European precedent. Hexagonal and octagonal houses were being built in America as early as the 1790s. The first circular barn in North America was the Shaker barn at Hancock, Massachusetts (1826). Polygonal barns outnumber circular barns in that the structural set-up was easier. They were used for a variety of purposes from dairy barns to horse barns and were constructed of stone or wood.[62]

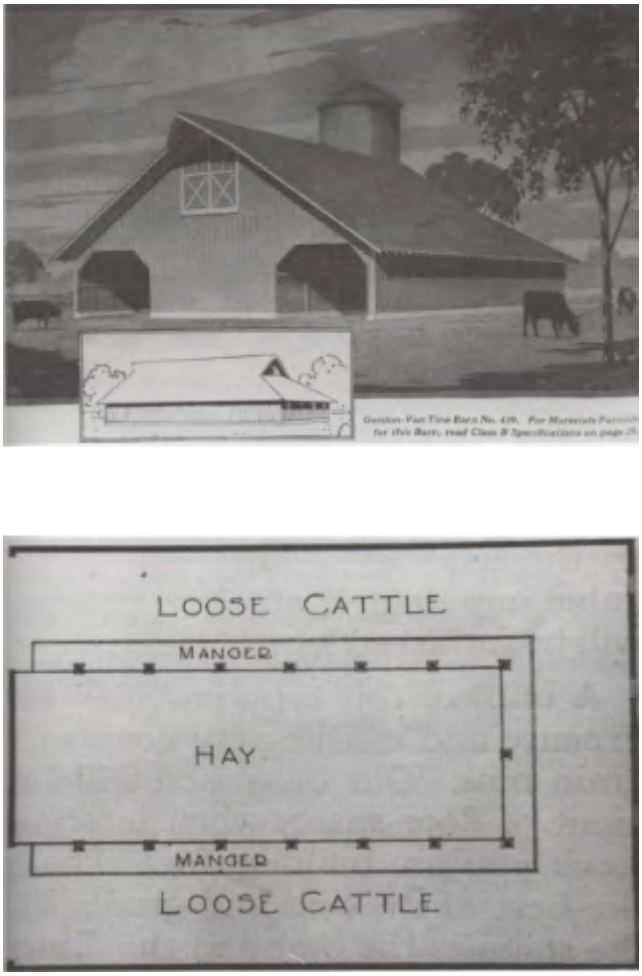
In the early 1800s, a number of barn types appeared in Ohio, Indiana and Illinois, the core of the Midwest. The most common were the variations of the English three-bay barn and the Pennsylvania barn. As settlement spread westward, first to Michigan, Wisconsin, Iowa and Minnesota then onward to the Dakotas, these barns types, with slight modifications, became the conventional barns throughout the Midwest and the upper Plains. While some of these modifications were simply influenced by regional agricultural developments, the most pervasive changes were due to mass production and availability of machine-sawn lumber, machine-cut nails, door and window hardware, and window glass.

As settlement spread further west on the Plains, settlers were ranchers on lands too arid to grow crops and barely enough grass to feed cattle and horses. Livestock roamed free, loosely attended. The Western barn (sometimes called a transverse barn or shed barn) that developed on these ranches was specialized and used primarily to store feed to supplement winter grazing rather than to house herds of animals. Relatively small in size, the barns usually included a few stalls and foaling pens, a tack room, and perhaps an office. Built from local indigenous materials, these barns were low to the ground to minimize the effects of strong winds that would have toppled taller, bigger Midwestern barns.[63] The early forms of these barns evolved into what were known as Western feeder barns (sometimes called loafing barns) in which cattle were allowed to feed at will to fatten them prior to sale for slaughter.

The Western Barn (photo from Noble and Cleek, *The Old Barn Book*).

[62] Arthur and Witney, 147-156.

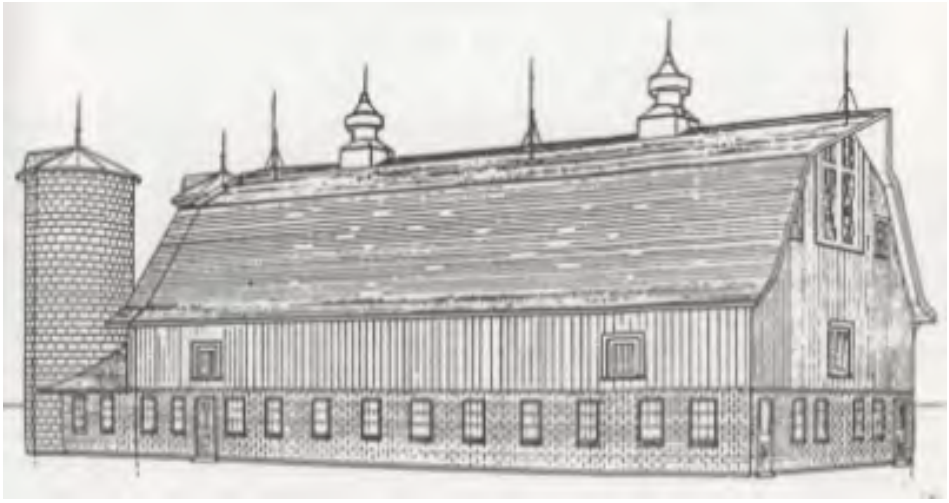
[63] Randy Leffingwell, *Barns* (St. Paul, MN: MBI Publishing company, 2001), 49-50.



Western Feeder Barn pre-cut kit from the Gordon-Van Tine Company catalog, 1921.

In addition to cultural traditions, barns were influenced by the growing field of agriculture science, engineering and journalism. Initially, agricultural science's focus was on soil chemistry, plant science, and animal husbandry but by the 1890s, the science of farming included topics in farm planning and structural engineering of buildings. Among the research of agricultural engineers was the importance of barn ventilation and sanitation and the use of new material and construction methods to improve barns throughout the Midwest and upper Plains. Publications from universities and colleges, agricultural experiment stations, and cooperative extension services, in addition to periodicals distributed by agricultural organizations, also addressed barns and other farm and ranch buildings. An example of this influence was a barn was developed for dairy farmers by agricultural engineers at the Wisconsin Agricultural Experiment Station in Madison, Wisconsin in the late nineteenth century. The design reflects state-of-the-art structural engineering and the influence of new government

regulation of the dairy industry. It was the first common barn designed by agricultural engineers, although in appearance it retains traditional barn design.[64]



The Wisconsin Dairy Barn (drawing from Noble and Wilhelm, *Barns of the Midwest*).

One of the ways in which barn plans were widely disseminated was through pattern books. Plans for barns were found in early architectural books such as A. J. Downing's *Cottage Residences* (1842) and *The Architecture of County Houses* (1850). Following the Civil War, architectural patterns books again became popular and they continued to include barn plans. By the 1890s, however, a new genre of barn plans appeared when commercial barn planning services developed and distributed barn plan catalogs.

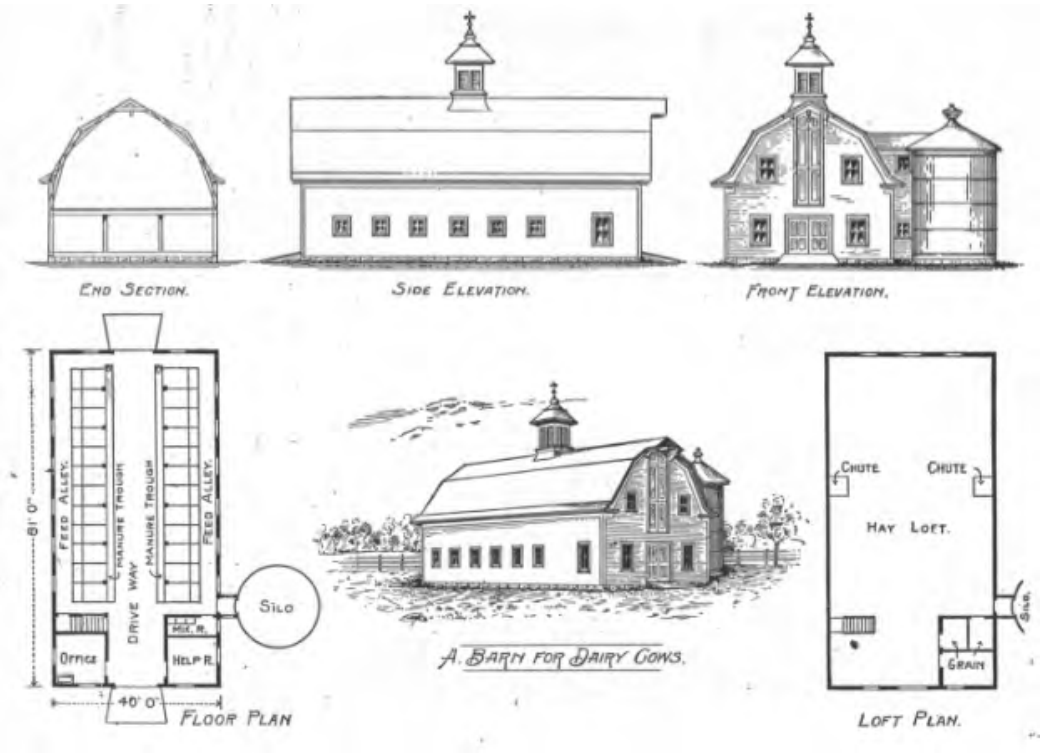
The Louden Machinery Company of Fairfield, Iowa, was the most successful of these. In 1906, they started a free barn planning service and between 1907 and 1939, Louden reportedly drew plans and specifications for more than 30,000 barns around the country. The James Manufacturing Company of Fort Atkinson, Wisconsin also offered barn plans through its *Jamesway Barn Book* catalog throughout the Midwest.[65]

There were hundreds of different barn plans available through plan services and trade books. William A. Radford, an architect in Chicago, published several volumes of barn plans. James H Sanders and

[64] Nobel and Wilhelm, 107.

[65] Vogel, E-13.

his son, Alvin, publishers of the *Breeder's Gazette*, devoted much of their publication to barns and other farm buildings. Textbooks for university and college courses in farm management and agricultural engineering also influenced the broad patterns of barn design.



Example of dairy barn plan from *Radford's Practical Barn Plans*, 1907

Between about 1910 and 1930, there was an interest in factory-produced, mass-distributed farm buildings available through mail-order catalogs as "kit" barns. Among the most prolific of the companies selling kit barns was the Sears, Roebuck and Company. Another company that offered kit barns was the Gordon-Van Tine Company (see illustration on page E-19). Farmers could select a model of a barn from a catalog, place an order and submit a down payment. The lumber, hardware and fixtures for each barn were manufactured then shipped, with assembly instruction, to the farmer via the railroad. Some barns sold for as little as $800.[66] Several other companies offered mail-order barns including the Montgomery Ward & Company, the Aladdin Company, the Hodgson Company, the Lewis Manufacturing Company, the Sterling Company, the Harris Brothers Company, and the

[66] Vogel, E-14.

Ray H. Bennett Lumber Company. Most of these companies were located in the Midwest making it easy for farmers throughout the Midwest and upper Plains to have access to barn kits.[67]

Kit barns were standardized as functional requirements, mass production, materials and costs dictated. Standard roof forms included gable, gambrel and gothic. Windows were standardized multi-light and numerous allowing improved lighting and air circulation. Doors varied slightly in the use of decorative cross-bracing by company. All made use of lighter wood-framed structures, abandoning the use of heavy timber farming for the more affordable, easier to transport, and easier to erect cut lumber. Pre-cut barns do not have any physical characteristics that distinguish them as being pre-cut kits. Only in the use of wooden cupolas on early barns (c.1900 to 1920) and metal ventilators on later barns (c.1920 to the 1930s) could the era of kit barn be determined. To most observers, kit barns look no different than those built by hand by a farmer himself.[68]

Advertisement for an octagonal barn kit in Sears, Roebuck, and Company catalog, 1917

[67] Joy E. Sears, Barns by Mail: Pre-cut Barns by Mail-Order Catalog in the Midwest From 1900 to 1930 (University of Oregon thesis, 2001), 16-17.

[68] Sears, 66-67.

In 1929, the Midwest Plan Service was established as a "university-based publishing cooperative dedicated to disseminating research-based…publications" for agricultural communities.[69] Twelve land-grant institutions comprised the consortium to develop and distribute state-of-the-art farm building plans. North Dakota State Agricultural College (now University) was among the original twelve institutions. The Midwest Plan Service is still in operation today.

H. Howard Doane and B.G. Perkins "invented" the pole barn in 1930. Arguing that traditional barns were obsolete for twentieth century operations, they set out to develop a one-story barn with no loft utilizing a system of vertical poles set directly into the ground. A framework of girts, bracing and sheathing are attached to the poles with heavy steel bolts. The barn was sometimes called a loafing barn where dairy cows were allowed to roam in and out of the barn at will, especially when one wall was left open. The popularity of pole barns did not occur until World War II, when the Federal government imposed a limit of $1500 for the cost of a new farm building. Pole barns used less than one-third of the lumber required for traditional barns and following the war, there were several companies manufacturing pole barns using all metal products.[70]

The use of metal for barn and other farm buildings extended to Quonsets, which were popular immediately after the war. These half-round and quarter-round buildings had metal hoop frames and corrugated metal cladding. Originally developed for use during World War II, the end of the war left a number of manufacturers without customers. Companies such as the Great Lakes Steel Corporation of Detroit quickly identified the use of Quonsets for farm buildings and began manufacturing Quonsets large enough for use as dairy barns. Quonsets were relatively low-cost, fire-proof, and durable. Many Quonsets were erected on farms throughout the Midwest and upper Plains.[71]

As the need for space in traditional barns increased, a number of farmers and ranchers simply built additions to existing structures. Perhaps the most common way to extend space by adding "sheds" to the long sides of the barn. This was usually created by extending the roof line outward from the walls to create a shed roof, which was sometimes enclosed and sometimes left open. Another way of gaining additional space in an existing barn was to enclose space beneath a forebay. If a farmer needed a substantial increase in space, it was possible to add a wing (or two) perpendicular to the original structure (note: not all wings are additions, some barns were built with a cross-wing and are sometimes referred to as "three-end barns"). Examples of cross-gable and cross-gambrel roofs exist through the Midwest and upper Plains. Another way in which space could be greatly expanded was to build a second barn, usually identical to the first, and "twin" them together with a structure between them to connect them.[72]

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[69] Midwest Plan Service website (www.mwps.sws.iastate.edu).

[70] Vogel, E-20; Noble and Wilhelm, 225-226.

[71] Noble and Wilhelm, 226.

[72] Noble and Wilhelm 16-17.

Closely related to barns, and usually adjacent to them, are silos and milk houses. Silos are structures for storing grain or fermented feed known as silage. Earliest silos were covered pit silos built inside barns. The first upright silo adjacent to the exterior of a barn was constructed in 1873 by Fred Hatch in McHenry County, Illinois.[73] In the 1880s, silos were square or rectangular in shape and built of wood. A transition to circular silos occurred in the 1890s; circular silos eliminated air space and thereby reducing spoilage. A number of materials and construction methods were used for silos including the wooden-hoop silo, the wooden-stave silo, the fieldstone silo, the masonry silo (concrete blocks or clay tile), the poured concrete silo, the cement-stave silo, and the fiberglass and metal panels silo.[74]

Milk on dairy farms was originally stored in the coolness of the springhouse, but government regulation and commercial standards forced changes in milk cooling and resulted in the development of the milk house. Usually small and rectangular in shape, it may have been constructed of stone, concrete or clay tile blocks. It was well insulated and had little or no ventilation. Although required by law to be separate from the barn for sanitary reasons, they were usually built as close to the barn as possible, often as an appendage accessed through exterior doors rather than from the barn directly.[75]

Most farms had a number of other buildings on site. Among them may have been granaries, corncribs, machine sheds, springhouses, windmills, chicken houses, hog sheds, smoke houses, summer kitchens, storm and storage cellars, and privies. Not all farms had all of these types of buildings and structures, but a variety of them is likely to be found on many farmsteads.
The arrangement of farm buildings was important. Most farms building were arranged with utility, efficiency and sanitation in mind and often in a “U” shape so as to create a large open court, protected from the wind, in front of the barn and other outbuildings. This court is sometimes referred to a the “barn yard” or “farm yard.” The buildings housing animals were sited farthest from the house and downwind so as to avoid unpleasant smells too close to the house.

Overview of Barn Types in North Dakota

The history of barns in North Dakota reflects the history of barns throughout America. The earliest were designed and built by homesteaders. These settlers brought with them traditions of barn building either from their European homelands or from the East and Midwest areas in which they may have originally settled before moving to Dakota Territory. According to *Plains Folk: North Dakota’s Ethnic History*, immigrant settlers included English-speakers (Scots, Scotch-Irish, Irish and English), German-speakers (Germans, German-Russians), Scandinavians (Norwegians, Danes, Swedes, and

[73] Arthur and Witney, 231.

[74] Allen G. Noble and Richard K. Cleek, *The Old Barn Book* (Rutgers, NJ: Rutgers University Press, 2014), 157-161.

[75] Noble and Cleek, 140.

Finns), and Slavic people (Ukrainians, Czechs, and Bulgarians).[76]

These traditions were most often found in variety of forms or use of materials in the earliest barns. For example, German-Russian immigrants sometimes used a traditional long house-barn structure where humans and animals all lived under the same roof.[77] This ethnic group was the most likely to build structures of sod, rammed earth, stone and clay.[78] Scandinavians, on the other hand, kept humans and animals separate, using sod or dugouts for their homes until wood-framed houses could be built. Examples of their earliest barns may have resembled the elongated log or crib barns built by Swedes and Finns in northern Minnesota.[79]

Many of the early settlers in Dakota Territory emigrated from the Midwest. The barns they built were like those they had on earlier farms, typically of the type of barn that had evolved as the Midwest barn. The Midwest barn derived from the early English three-bay and the Pennsylvania barns, being adapted and modified as needed for changing farming needs, available materials, new construction methods. In the earliest cases, these may have been timber-framed, although the use of balloon and plank framing was widespread by the time much of North Dakota was settled. Likewise, the barns commonly found on ranches in western North Dakota were variations of the Western barn.

Interestingly, there was a small number of round and polygonal barns built in North Dakota. In 1986 a thematic resource nomination for *North Dakota Round Barns* was listed on the National Register. Forty-one round and polygonal barns were identified as having been constructed historically. At the time of the site survey, only seventeen were still standing. They were evaluated and eleven were listed on the Register. Further information about these barns can be found in that nomination, which is available through either the State Historic Society of North Dakota/State Historic Preservation Office or the National Register of Historic Places.

Niels Neilsen Fourteen-Sided Polygonal Barn, built 1914, Noonan Vicinity, ND (National Register photo 1986)

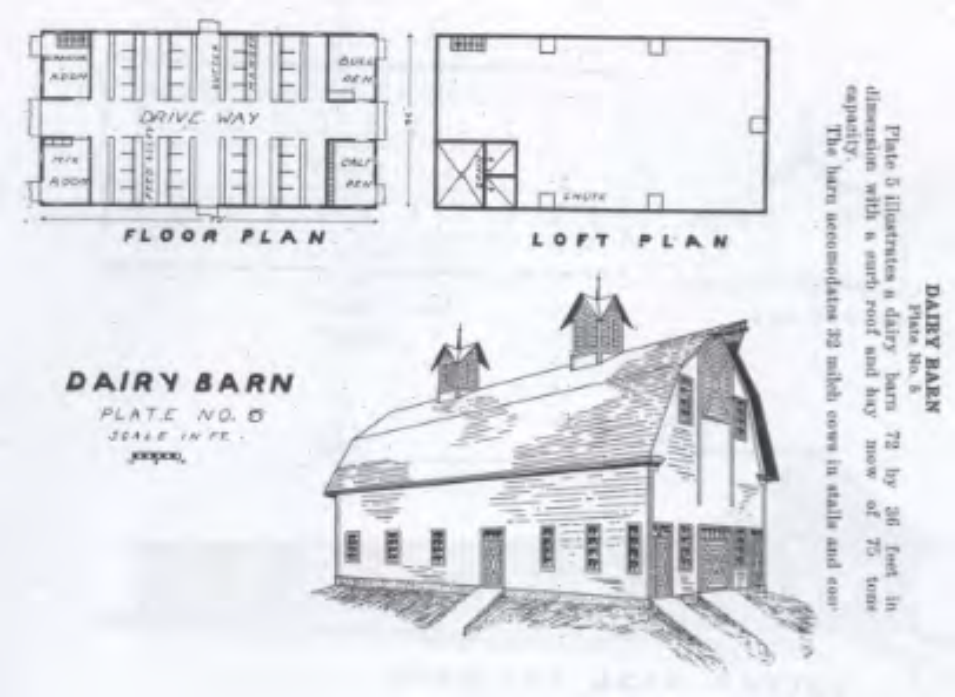
[76] William C. Sherman and P. V. Thorson, eds. Plains Folk: North Dakota's Ethnic History (Fargo, ND: North Dakota Institute for Regional Studies, 1986), 37-261.

[77] Sherman and Thorson, 63.

[78] Steckler, 45-46.

[79] Noble and Wilhelm, 11-12.

It is highly likely that there were barns built in North Dakota from plans purchased from pattern books and plan services, or based on barn plans published by North Dakota's Agricultural Experiment Station at North Dakota Agricultural College. *Bulletin No. 97, Barn Plans*, was written by R. M. Dolve and published in 1912. It was written in response to numerous requests from farmers around the state seeking advice for building the barns that would best accommodate their farm needs while being sanitary and modern in construction.[80] Included in this publication were plans for dairy barns (and milk houses), beef cattle barns, horse barns, sheep barns, hog houses, laying houses for hens, feeding sheds for cows, and combination horse and cow barns. It also included detailed information about construction framing, foundations, floors, mangers, manure gutters, stalls, windows, ventilation and silos.



A sample plan from *Bulletin 97, Barn Plans* by
North Dakota Agricultural Experiment Station.

Due to the proximity of several Midwest mail-order companies that manufactured barn kits, it is also likely that there were a number of kit barns erected in North Dakota. Because they are not easily distinguishable, thorough research may be needed to determine if indeed a barn is of the mail-order variety. Some companies maintained records, but the larger companies such as Sears, Roebuck did not. Some companies marked or labeled the building parts and it may be possible to identify a kit barn if one can find evidence of the labeling.

[80] R.M. Dolve, "Barn Plans," Bulletin No. 97 (Fargo, ND: North Dakota Agricultural College Government Agricultural Experiment Station of North Dakota, May 1912), 4-5.

Pole barns and Quonsets appeared on North Dakota farms following World War II, just as they did throughout the Midwest and upper Plains. Because a number of companies were manufacturing these metal buildings, they were available through catalogs and barn plan services. It is likely that they were erected at farms and ranches throughout the state.

While there are no definitive records of the number and types of barns built in North Dakota, there are references to or photos of various barns in some of the county extension reports, the *North Dakota Year Book*, and archival files of individual barn builders. Examples from the 1913 *North Dakota Year Book* include photos of gambrel roof barns in Burke, Foster, LaMoure, McHenry, McLean, Oliver, Sargent, Stutsman, Ward, and Wells Counties; gable roof barns in Cavalier, Grand Forks, McIntosh, and Towner Counties; a gothic arch roof barn in Griggs County; a cross-gable roof barn n Ramsey County; barns with shed additions on gambrel and gable roof barns in Burke, Cavalier, McIntosh, Ramsey, and Sargent Counties. There were also photos of silos and milkhouses.[81] The 1925 McKenzie County Extension Agent Annual Report noted that there were nine barns built that year with an average cost per barn of $900.

Little information about barn builders, architects or contractors was found during this study. Only one, Emil Linke, was identified specifically as a barn builder. Manuscript records for Linke, who built several barns in North Dakota, contain information about projects on which he worked. Linke was born in 1873 near Winona, Minnesota and moved with his family to a farm near Lynchburg, North Dakota in 1881. He was a carpenter and building contractor for twenty-five years and he lived on a farm near Chaffee, North Dakota until his death in 1942. Included in these records are drawings for several barns, most of which were gambrel roofs, throughout the state. Examples include barns for:

W.A. Buttke near Buffalo (no date)
Mrs. Bansford and Joe Runke near Chaffee (1915)
Reinhold Ditmers near Chaffee (1911)
August Erbstoesor near Chaffee (1914)
John Marthin near Chaffee (1907)
John McGuigan near Chaffee (no date)
D. Affersmann near Chaffee (no date)
Nick Seiferd near Durbin (1916)
M. Flath near Embden (1914)
Tedor Erbstoesor near Leonard (1916)
William Schmming near Leonard (no date)
John Watt near Leonard (1915)
Charly Wickermann near Leonard (1912)
P.J. Bayle near Sheldon (1914)
Charley Zeskie near Watson (1907)
Tedor Eckelbarg in rural Cass County (1912)
Fred Gill in rural Cass County (1911)

[81] North Dakota Year Book, 38-248.

John Shea in rural Cass County (no date)
August Seaward in rural Cass County (1912)[82]

No information was found to confirm the construction of the barns depicted in the architectural drawings. It is clear, however, that Emil Linke was a fairly prolific barn builder in North Dakota. Research for this project did not uncover any other barn builders during North Dakota's historic period.

As with farms throughout the Midwest, farms in North Dakota also had silos adjacent to barns and milk houses on dairy farms. By the time most of the state was settled and farms were being developed and built, silos were of the circular variety and milk houses were adjacent to dairy barns. It is likely that these structures will regularly be found near North Dakota's historic barns.

The arrangement of farm building in North Dakota was as important as in other parts of the country. In 1916, the North Dakota Agricultural Experiment Station in Fargo published Circular #10 for distribution to farmers. The article titled "The North Dakota Farmstead – Its Arrangement and Adornment" was written by H. O. Werner. Much of the circular pertains to the planting of various trees, shrubs and flowers to beautify the farmstead. But a discussion about the arrangement of farm buildings is included. The recommendations were to site buildings and structures in a systematic relation to each other, with easy access from the house and requiring the fewest possible steps in doing daily chores. The barn was seen as the main farm building; other buildings and structures were secondary to the barn. The circular also included recommendations for fencing.[83]

CONSTRUCTION METHODS AND MATERIALS

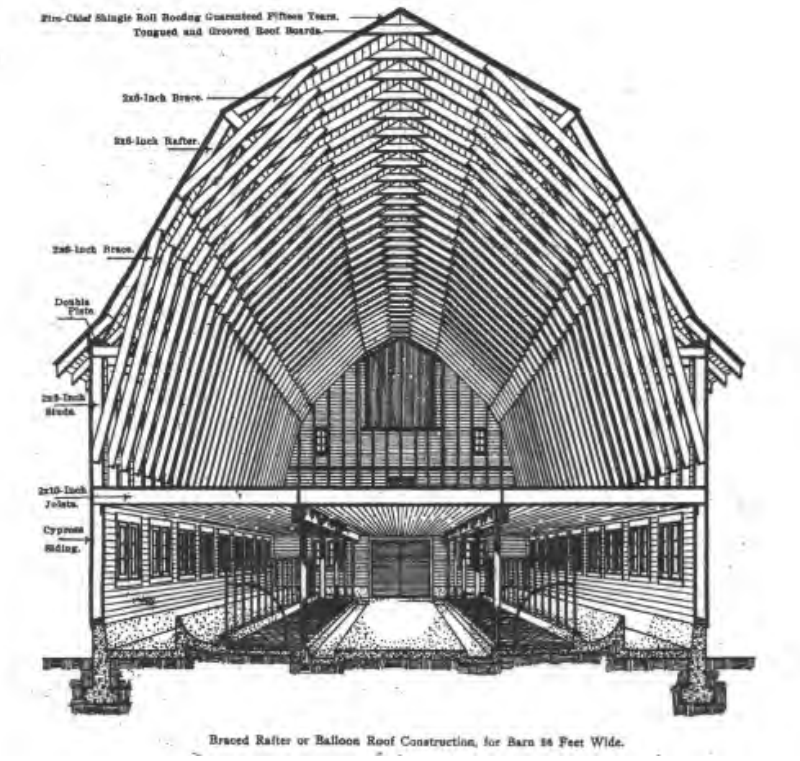
As mentioned, the most common type of barn in early American agriculture was the timber-frame barn. Also known as "post and beam" construction, the timbers were hewn and held together with mortise and tenon joints. They were usually constructed in sections called "bents" – a grouping of posts, beams, rafters, struts and knee braces – which were assembled on the ground and then raised up to create the structure. The space between the two bents is called a "bay."

Balloon framing, followed by plank framing, became the standards for construction by the 1890s. These methods of construction utilized milled lumber fastened together with nails as opposed to wooden pegs. This light-framing approach was cheaper, faster, and required less skill that traditional timber framing. Once sawmills were established or railroads could deliver milled wood to lumber yards, barns were built using these methods. Balloon framing and plank framing also relied on bents for the interior structure.

[82] Emil Linke manuscript files (Fargo, ND: North Dakota State University Archives), 1596-18-1 through 1596-18-9.

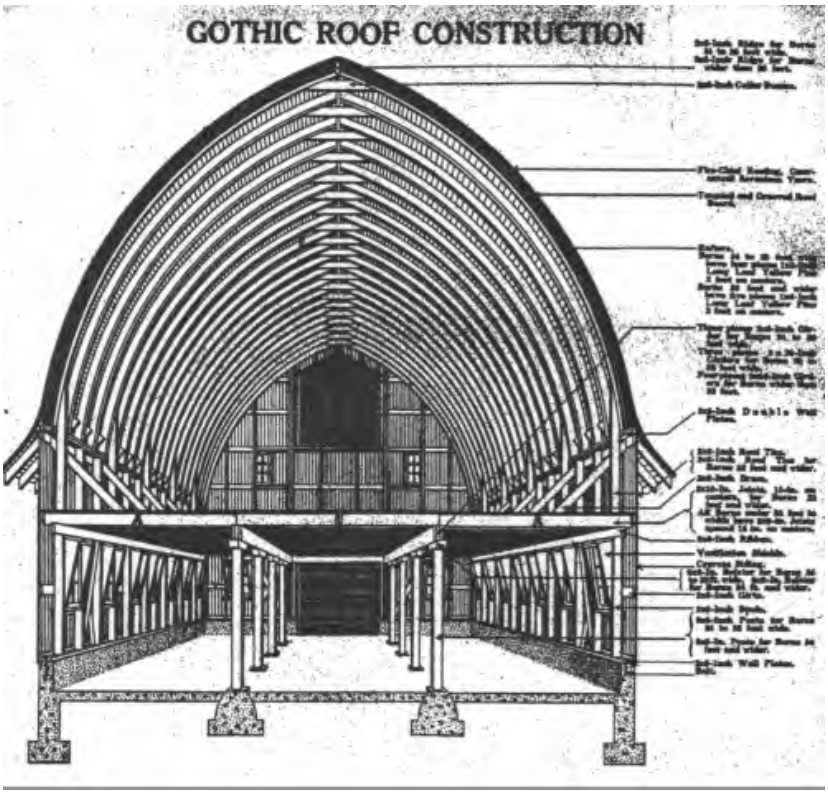
[83] North Dakota Agricultural Experiment Station Circular #10 (Fargo, ND: North Dakota Agricultural College, January 1916), 33.

Most early barn roofs were gabled. Early gable roofs were usually framed with a ridge board and various bracing. By the turn of the century, a variety of trusses were developed which aided in roof construction of plank-framed barns. These truss systems allowed for the further development of gambrel and gothic arch roofs. The use of plank-frame trusses allowed for larger haymows by eliminating the need for tie-beams and purllns. Among the early truss systems was the Shawver truss which led the way to gambrel roof barns. The gothic arch roof form began to appear in the Midwest in about 1905 when they were widely promoted through farm journals and barn planning services. Bent arches appears in plans published around 1916 and laminated truss systems were common by the 1920s. Most roofs were clad with machine-cut wood shingles until asphalt and asbestos shingles were available. The use of tar-saturated rolled roofing was sometimes used in the 1920s and 1930s. The use of terne (tinned iron) was not often seen until after 1940.[84]



Example of gambrel roof framing from the 1918 Sears' *The Book of Barns*.

[84] Vogel, E-28 -E-32.



Example of gothic arch roof framing from 1923 Sear's *Modern Farm Buildings*.

Most common barns have continuous masonry foundations resting on broad, flat footings substantial enough to support the entire weight of the barn. Native stone (sandstone, limestone and fieldstone) was most often used until concrete became available for wide usage. Some barns have lower levels referred to as basements. These, too, are usually masonry construction.

The predominant wall material is wood. Very few barns were constructed entirely of stone or brick. The earliest use of wood for barns was as log or crib barns, in which the entire wall structure was comprised of rounded or hewn logs. Sometimes these barns were clad with vertical wood siding as well. Wood siding was used on timber-framed and plank-framed barns. Boards were attached either horizontally or vertically. Horizontal boards were overlapped to create a weather-tight wall. Vertical boards, which did not overlap, often have battens placed over the joints to keep weather out.

Most early barns had few openings. Doors provided access, a few windows provided light, and louvers and slits provided ventilation. Initially the doors were located in either the gable ends or side walls depending on the type of barn. As settlement spread throughout the Midwest and upper Plains, the distinctions disappeared. Most doors are either large, double wagon doors for animals and equipment or small doors intended for human pedestrian traffic. Until the 1880s, doors tended to be

hinged; after 1880 they were usually sliding doors attached on metal rails, at least for the larger doors.[85]

Light was important for both the health of the livestock and convenience of farm work. Windows in nineteenth century barns were limited in size and number and often appear in a random pattern. Twentieth century barns usually had more windows, often larger than earlier barns, spaced at regular intervals. Because dairy barns required even greater light and ventilation, they usually had long banks of windows. Barns built from plan books or plan services, as well as kit barns, took advantage of improved window framing and glass to ensure sufficient lighting in barns. Other openings included gable end vents, owl holes, and ventilation slits.[86]

Most farmers could not afford separate buildings dedicated to hay storage, so they built tall barns with loft space for hay. The haymow, as it was known, was located over part or all of the stable area at the upper part of the barn (corresponding to the attic level). As farms grew, the need for more haymow space led to expanded roof forms such as the gambrel roof. Initially hay was loosely stored in the loft where it could easily be passed down to livestock in the stable. Hay was transported to the mow through the hay door in the end of the barn. With the advent of the hay baler around the turn of the century, new equipment was installed to lift the bales to the loft area; this equipment included a bale spear, a pulley and a track system that took the hay through the hay doors into the loft. The hay doors were often covered by an extension of the barn roof, creating a hood that provided some protection for the pulley mechanism. Early barns were usually retrofitted with this equipment.[87]

Ventilation in barns was critical, especially in lofts where hay was stored, which was subject to spontaneous combustion. In some early barns in the eastern United States, the uppermost triangle of the gable wall was left open, sometimes behind an overlapping wall with open space, on the end facing away from the prevailing winds.[88] By the time barns were built in the Midwest and upper Plains, barns were most frequently ventilated by means of a cupola. Cupolas varied in size and shape, but all acted as a chimney drawing air up from the barn and exhausting it through the roof. Cupolas were usually constructed of wood, had louvered walls, and often topped with a weathervane. Although most common barns had little or no decorative adornment, cupolas were sometimes decorated with various trimwork.[89] As early as the 1920s, many barns were fitted with metal ridge ventilators, which worked the same as a cupola. As electrical power reached farms, rotary fans were added to the ventilators to improve their functioning. There were several different ventilators available through mail order catalogs and barn plan services.[90]

[85] Noble and Cleek, 51-52.

[86] Noble and Cleek, 49-51.

[87] Vogel, E-34.

[88] Noble and Cleek, 43-44.

[89] Vogel, E-37.

[90] Vogel, E37-E38.

ASSOCIATED PROPERTY TYPES

There has been no comprehensive survey of common barns in the state of North Dakota. Much of the information about barns built in the state comes from local and county survey efforts. In 1985-86, a survey of round and polygonal barns was sponsored by the State Historic Preservation Office and was conducted by Marty Perry. Perry identified 41 possible sites and determined through his survey that only seventeen still existed. Upon further evaluation, it was determined that eleven of the barns were eligible for inclusion in the Thematic Resource nomination *North Dakota Round Barns* (1986).

In addition to barns listed in association with the round barn nomination, there are some barns listed in the National Register individually or as contributing features in farm or ranch districts. These include the barns at the Bagg Bonanza Farm (Richland County), the Ellingson Farm District (near Hillsboro), the H-T Ranch (west of Amidon), the Peaceful Valley Ranch (north of Medora), and the Louis Rehm Barn (near Hebron).

Louis Rehm Barn, located near Hebron, ND (National Register photo, 1994)

Barns have been identified in most of North Dakota's counties. A quick scan of survey records in 2014 showed approximately 300 records for barns. They represented barns built from early settlement through barns built in 1960 and included examples of various sizes and types of barns.

Common barns in North Dakota are an endangered species. Because more are being lost each year, it is important to identify, evaluate and protect those that are significant. This Multiple Property Document Form is intended to assist in the process.

PROPERTY DESCRIPTIONS

The "common farm or ranch barn" is a large agricultural outbuilding built to shelter livestock and harvested crops. For the purposes of this Multiple Property Documentation only barns constructed between 1849, the date of the first permanent Euro-American settlement in North Dakota, and 1966, the standard 50-year mark as designated by the National Register of Historic Places, are included. Specialized farm outbuildings, such as granaries, stables, corn cribs, hog houses, chicken coops, sheds, and garages are not considered farm barns. Likewise, barns with limited distribution throughout the state, such exhibition pavilions or barns with unique architectural features, are not included in this study.

Common farm and ranch barns can generally be classified as vernacular architecture rather than high-style design. Based on early barn building traditions, historic common barns in North Dakota illustrated individual builders' interpretations of barn design or the standardization of barn designs that came with pattern books, barn plan services, farm journals, and cooperative extension services.

While there is little consensus about the names of barn types, the following descriptors will aid in categorizing barns in North Dakota.

Log Barns/Crib Barns

Log barns, also called crib barns, consist of rectangular cribwork of horizontally laid logs with either a single-pitch or gable roof. The logs were either round or hewn; the notching may have been a standard saddle notch, square notch, or half-dovetail notch. The earliest of these barns were likely single-crib or pen barns; double-pen barns developed as farmers needed additional space and usually consisted of two pens with a passageway between the two pens. A common roof covered the entire structure. The size of these barns was somewhat determined by the length of log available. They may be been constructed with whatever type of tree was available. Many early log barns were not chinked, except in cases where the structure served as a combination dwelling and barn. Occasionally log barns were clad with vertical board siding to further protect them from the elements.

Barns of log construction are likely rare in North Dakota and probably located in the geographic areas of earliest farm and ranch settlement. By the time farming and ranching was expanding throughout the state, sawn lumber was available for barn construction. Where early log barns were dismantled or demolished, they may have been converted to other uses when a farmer was able to construct a larger barn.

H-T Ranch log barn, near Amidon, ND (National Register photo)

Multi-Level Barns with Gable Roofs

One of the earliest, widespread barn types was the gable roof general purpose barn. Usually one-and-one-half stories, it was wood framed (first as timber-framed, later as balloon and plank-framed), rectangular in shape, with a roof slope between 30 and 45 degrees. The roof is always oriented to the barn's long axis. Siding is either horizontal boards or vertical board-and-batten. The barn usually sits on a continuous masonry foundation. Stables are located on the ground (main) level; the conventional plan separates cows and horses on opposite sides of a center aisle, with room for feed, grain, and farming implements. Lofts over a portion of the stable area provided additional storage for hay. Doors may be either in the gable ends or in the side walls.

Sub-types of the gable roof barn are the traditional bank barn (described separately in a following section) and the cross-gable barn. [See photo on next page; also see photos in Section E, pages 17 and Section F, page 38.] Barns of this type may be found throughout the state.

Multi-level gable roof barn (also a bank barn), Midway Stock Farm, Van Buren County, Iowa (National Register photo)

Multi-Level Barns with Gambrel Roofs

It is the gambrel roof barn that is the iconic farm barn. Its distinction comes from the dual-pitched roof form made possible with self-supporting trusses. In plan, these general purpose barns are similar to the gable roof barns, with stables on both sides of a center aisle, room for feed, grain, and implements. The major difference between the two barn types, however, is the vastly enlarged space at the upper level for hay storage. Gambrel roof barns vary in size, from relatively small to quite large, but are almost always longer than they are wide. Wall cladding on small versions of the barn tend to be vertical board-and-batten while larger barns are often clad with a horizontal board siding. Occasionally the barns will have window dormers; cupolas or ventilators are common. These barns were suited to use on livestock ranches as well as farms. Doors are most commonly located at the ends of the barn.

Sub-types of the gambrel roof barn include the Wisconsin dairy barn and the cross-gambrel barn. [See illustration of Wisconsin barn in Section E, page 20.] Barns of this type may be found throughout the state; dairy-specific barns will be located in dairy regions of the state.

Multi-level gambrel roof barn, near Mandan, ND (National Register photo)

Grandin's Mayville Farm cross-gambrel roof barn, Mayville, ND (National Register photo)

Multi-Level Barns with Arched Roofs

Usually referred to as a gothic arched roof barn, sometimes also called a rainbow roof barn, this barn type is characterized by a curved roofline. This roof form evolved in an effort to create unobstructed loft space free from interior bracing. The first type of curved roof construction involved sawn lumber laminated together then sawn into shape. A second major type of construction involved bent rafters rather than sawn. The appearance was pleasing and the increased loft space desirable, but construction could be complicated so many of these barns were either pre-cut or kit barns offered through catalogs in the 1910s and 1920s. These barns were almost always rectangular in shape and had raised basement masonry walls (often clay tile or concrete block, but occasionally stone), horizontal weatherboard siding, and metal ventilators. The doors are more commonly located at the ends of the barn.

Arches roof barns are more likely to be found in the eastern part of North Dakota.

Arched roof barn on Herman Michael Farm near Brookings, SD (National Register photo)

Bank Barns

The bank barn is characterized by its location at a hillside slope. These barns derived from German traditions and the Pennsylvania barns. The lowest level of the barn is built into the bank of a hillside, which in turn provided wagon access to the upper level via a ramp or bridge on the slope of the hillside. If no hill was available, an earthen ramp was constructed to provide access to a door in the side of the upper level. Bank barns are rectangular in shape and have either gable or gambrel roofs.

The lower level, or basement level, was usually masonry; the upper levels were clad with horizontal boards or vertical boards (sometimes with battens).

This barn was historically associated with mixed grain and livestock farming, although it was also well-suited for small-scale dairy farming. Plans for bank barns were widely distributed through plan services, pattern books, and cooperative extension services, and kits were available through mail-order companies. This barn type may be found throughout the state.

Ralph Hall Farm bank barn, near Carrington, ND (National Register photo)

Raised Basement Barns

The raised basement barn is similar to a bank barn, but unlike the bank barn, it is built on level ground rather than against a hillside. The upper level is plank-framed and clad with wood siding. Roofs were either gable, gambrel or arched. Often the entire upper level is used as a hay loft. The lower level is a tall masonry basement in which the stables are located similar to the bank barn. The lower level sometimes has two center aisles.

A sub-type of the raised basement barn is the Wisconsin dairy barn. [See photo next page; also see drawing of a Wisconsin dairy barn in Section E, page 20.] This barn type may be found throughout the state.

Raised basement barn, McConn Farm, Lee County, Iowa (National Register photo)

Wisconsin Dairy Barns

The Wisconsin Dairy Barn is a raised basement type of barn, one-and-one-half stories in height. The imposing structures are topped with gambrel or gothic arch roofs. The basement walls are either concrete or clay tile; the upper wood-framed walls are clad with clapboards or drop siding. Unlike many other and earlier barns, there are banks of windows along the sides of the barns, usually equally space, which provide light and air to the stable. The main doors are located in the ends of the barn; secondary doors may be located along the side walls providing additional access. The stable had washable concrete walls and floor and was usually arranged with two continuous, lengthwise rows of stalls where the cows were fed, bedded, and milked, plus service alleys, feed rooms, a milk room, and confinement pens. The upper level was a wide-open hay loft sometimes lighted by dormer windows. Cupolas or ventilators were located along the top of the roofs. The standard width for most Wisconsin dairy barns is 34 feet; lengths varied from about 36 feet to 66 feet, sometimes longer. Silos and milkhouses were associated with the dairy barns and located either adjacent to and nearby the barns.

A sub-type of this barn was a cross-gable/cross-gambrel barn where a wing of the same design was added to the original barn. [See illustration in Section E, page 20.] This barn type is likely to be found primarily in dairy regions of the state.

Western Barns

The Western barn (also called the traverse barn and later, the western feeder barn) is most likely to be found in the western part of North Dakota and associated with the ranching industry. Although these barns may have included space for wagons, equipment, horse stalls, cattle pens, and feed rooms, their primary function was to store hay, grain, and other rations used to “finish” beef cattle (or sheep) prior to sale for slaughter.

The Western barn consists of a central section, one-and-one-half stories in height with a low-pitched broad gable roof and short side walls. The core of the building is often flanked by shed roof extensions, which create a side aisle along each long side of the barn. If the center portion is tall enough, the shed roofs connect below the eave of the original gable creating a “monitor” type of roof, but more commonly the shed roofs simply extended directly from the gable roof, giving the roof the appearance of a double-pitch when viewed from the end. There were usually three doorways into the barn located on the gable end; one to each of the side aisles and one into the center section. One end of the gable roof often extended into a hood over the upper door to the hay loft. Some early Western barns were constructed of log; most were plank-framed and clad with wood siding applied vertically or horizontally.

[See illustrations in Section E, pages 18 and 19.]

Round or Polygonal Barns

Round or polygonal barns are relatively rare in North Dakota in comparison to other barn types. Their design was promoted as one of efficiency by writers in the mid- to late-nineteenth century. They were primarily wood-framed with vertical board wood siding. True round forms were most rare as it was easier to frame buildings with eight sides. The number of sides, however, varied with examples found in the Midwest with as few as six sides or as many as fourteen sides. The barn was most often one story on a raised masonry basement. The roof shape corresponded to the number of sides – conical on round barns, and pyramidal on multi-sides barns. Most often a cupola was centered at the top of the roof.

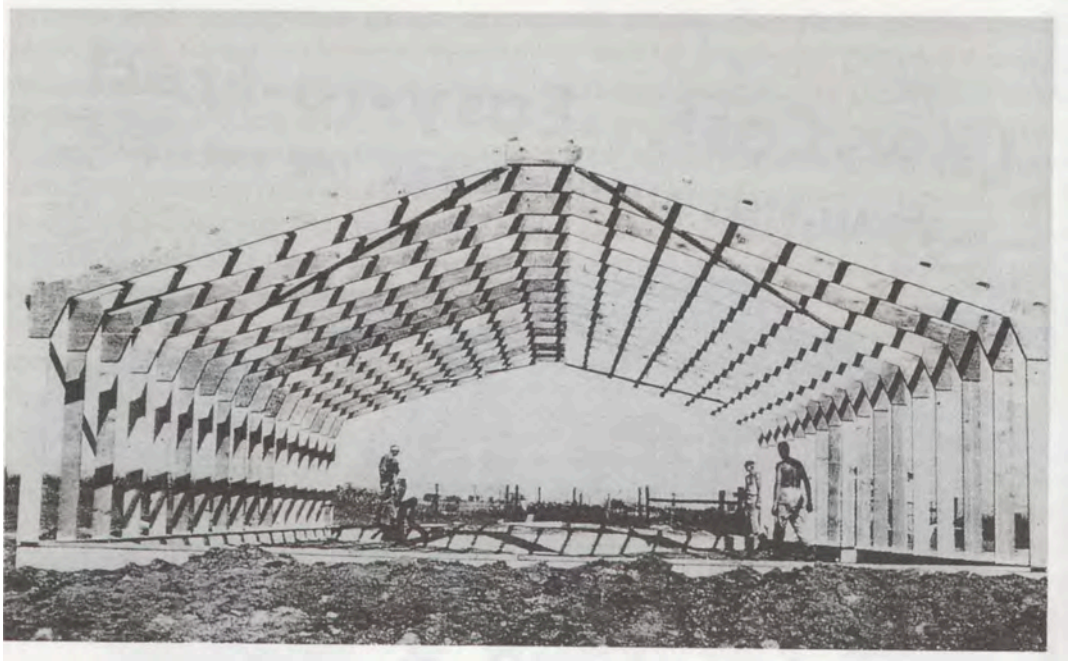
This barn type is located throughout the state. Refer to the *North Dakota Round Barns* National Register of Historic Places Thematic Nomination by L. Martin Perry for detailed information about round and polygonal barns in the state. [See photo in Section E, pages 22 and 25.]

Pole Barns

Pole barns became popular following World War II. They are distinguished by their single-story, post-frame structural system. The poles are the primary load-bearing structural elements upon which a framing system is attached and exterior walls (usually metal) are hung. The earliest examples of the

barn have creosote-treated wooden poles; later examples have pressure-treated timbers or steel posts. The clear-span roofs were created with prefabricated truss systems. There was no loft space. Originally pole barns were built on dairy farms; later they appeared on cattle feed lots. Sometimes a wall was left open so that cows could come as go as they pleased; this is why this type of barn is also known as a “loafing barn.”

Pole barns are likely found throughout North Dakota. They exemplify the evolution of the barns used in the state and illustrate the transition of type and materials used in barn construction.



The framing of a 1950s pole barn (photo from *Barns of the Midwest*).

Quonset Hut Barns

Quonset hut barns are the prefabricated metal-clad farm buildings that evolved from the Quonset huts built during World War II. They consist of arched steel ribs attached to concrete floors, clad with corrugated metal fastened to the ribs in a semi-cylindrical shape. The “half-round” version has no side walls; the roofs begin at the floor. The “quarter-round” versions have one flat side wall; the rounded portion of the roof forms both the roof and the other side of the structure. There are usually few windows (if any); access is through doors in each end, unless a sliding style of barn door has been installed along the flat side of a quarter-round Quonset hut.

Originally advertised as a machine storage shed, the Quonset hut was also adapted for use as a grain storage facility or a combination of storing grain and machinery. Quonsets could be cold and damp, so unless well-insulated and retrofitted with windows for ventilation, they probably were not used extensively for sheltering animals. Due to the proximity of manufacturers in the Midwest, it is likely that several Quonsets huts are located through the state.

A 1946 ad for the Great Lakes Steel Corporation.

Mail-Order/Kit Barns

Without written records and visual evidence, it is often very difficult to determine if a barn was a mail-order or kit barn. Barns available through mail-order companies were of conventional barn types in terms of form, structure, and materials and they appear identical to custom barns built by farmers themselves or barn builders. Careful examination of joists, rafters or other structural members may provide evidence of company stamps, labels or other markings. It is not known how many kit barns may be been built in North Dakota, but they may appear statewide. [See illustrations in Section E, pages 19 and 22.]

SIGNIFICANCE

The most recognizable, enduring symbols of North Dakota's agricultural history are the common farm and ranch barns. Unfortunately more and more historic barns are being lost as time goes by; rendered obsolete by many farmers, they have been dismantled, burned to the ground, or allowed to fall victim to demolition-by-neglect. They are non-renewable cultural resources that make a significant contribution to the state's distinct agricultural heritage. Historic common farm and ranch barns represent settlement patterns in North Dakota and reflect developments in agricultural science and engineering. They also reflect regional building types, practices, and materials.

CRITERION A

All eligible resources associated with this context should be considered significant under Criterion A. They are important for their contributions to the broad patterns in history associated with trends in the development of farms and ranches throughout the state of North Dakota.

CRITERION B

Barns associated with this context might also be eligible under Criterion B. To be considered eligible under this criterion, it must be demonstrated that the barn is associated with a significant person's productive life and it must be shown that that person gained importance within his or her profession or group. The barn must represent the most important property associated with the person, or be the last remaining resource associated with that person, to be considered eligible under this criterion.

CRITERION C

Barns may also be considered eligible under Criterion C in this context. Architectural and engineering significance may be derived from the design and construction characteristics which make the barn an outstanding example of a particular type of common barn. Barns that are otherwise undistinguished by their design, construction or materials, but which retain good integrity, may be considered individually eligible if they represent sole or rare survivors of a common barn type that was once abundant but is now rare within its particular locale or region. Common barns that are not individually eligible may be considered as contributing features in a National Register district.

CRITERION D

Common barns in North Dakota might also be considered eligible under Criterion D. A barn's potential to yield historically important information is not limited to archaeological remains or ruins. Standing structures may yield information perhaps pertaining to structural systems, engineering concepts, or materials that is unavailable elsewhere.

REGISTRATION REQUIREMENTS

To be considered eligible for listing on the National Register in association with this context, the following must apply:

1. A property must be demonstrated to have been constructed in North Dakota between the time of first Euro-American settlement (1849) and 1966 (the standard 50-year NPS age mark).

2. A property should be considered significant on a statewide level under Criterion A. If the property is also eligible under Criterion C, it should be considered significant on a local level under this criterion. If a property is also eligible under Criterion B, the level of significance (local or state) will depend on the significance of the person and whether he or she was significant to the history of the state or significant to local history only. The level of significance under Criterion D should be evaluated individually.

3. A property must possess sufficient integrity to convey its significance. Generally, a resource will possess several, and usually most, of the following seven aspects of integrity:

a. Location: Because the relationship between a resource and its historic associations is usually destroyed if the resource is moved, it is most desirable that the resource remain in its original location. If the resource has been moved from its original location must meet Criterion Consideration B for moved properties as indicated in the National Register guidelines.

b. Design: A resource should retain a combination of elements that conveys its original design. These elements may include the form, plan, organization of space, structural systems, technology, materials, and style. Generally, a resource should retain its overall original form and massing. Additions made to resources after 1966 should be set back so as to not obstruct the original form, should be of a compatible scale, and should not be on the primary façade of a building. Window replacement in buildings may be acceptable if fenestration patterns remain intact; enlargement of window or door openings may render a building ineligible if the alterations significantly change the wall-to-opening ratio. The filling of openings, if the original openings are readable, may be considered on secondary facades only. Original plans and organization of space should be evident, even if the use of the space has changed over time. Original surface materials should remain intact. The type, amount and style of ornamentation must reflect the original design.

c. Setting: The physical environment in which the resource exists should reflect its historic features, including topography, vegetation, simple constructed features, and the relationship between the resource and its surroundings. Natural and created landscape features should be evaluated for significance in relation to the resource.

d. Materials: A resource must retain the key materials dating from the period of its historic significance. If a resource has been rehabilitated, historic materials and significant features must be preserved. A resource whose historic materials have been lost and then reconstructed may be eligible only if it meets Criteria Consideration E for reconstructed properties as indicated in the National Register guidelines.

e. Workmanship: A resource must retain the physical evidence of workmanship.

f. Feeling: A resource should retain sufficient original physical features that, when taken together, convey the resource's historic character. This will generally include the combination of original design, materials, workmanship, and setting. Because feeling depends on individual perceptions, its retention alone is never sufficient to support eligibility for the National Register.

g. Association: To retain association, the direct link between the resource and its association with an important historic event or person must be sufficiently intact to convey that relationship to an observer. Association, like feeling, requires the presence of original physical features that convey the resource's historic character. Because association depends on individual perceptions, its retention alone is never sufficient to support eligibility for the National Register.

4. A resource need not retain its original function if its historic physical integrity is intact.

5. Associated outbuildings should be included as contributing resources when appropriate.

In addition, if any of the National Register Criteria Considerations apply, the property must be demonstrated to meet the required degree of significance associated with the applicable criteria consideration.

GEOGRAPHIC DATA

The geographic area included the entire state of North Dakota.

Common farm barns will be concentrated in the eastern two-thirds of the state while common ranch barns are more likely located in the western third of the state.

SUMMARY OF IDENTIFICATION AND EVALUATION METHODS

The purpose of this study was to gather historical, architectural, and other descriptive information regarding common barns in North Dakota. The result is the development of a statewide historic context study in the form of this Multiple Property Documentation Form. The context includes brief discussions about the history of agriculture in general and a history of agriculture in North Dakota, as well as descriptions of common barn types, design variations, materials, and distribution.

The study did not include a comprehensive survey of common barns throughout the state. Instead, it relied upon an intensive, comprehensive literature search and review of records at the State Historical Society of North Dakota, North Dakota State University archives, North Dakota Agricultural Experiment Station records, publications of the Cooperative Extension Service in North Dakota, and the North Dakota State Archives. A wide range of resources was found including popular and scholarly books, monographs, manuscripts, articles in scholarly and professional journals, trade publications, agricultural periodicals, technical information publications issued by government agencies, abstracts, atlases, catalogs, bibliographies, research papers and theses and dissertations, and photographs. Previous contexts, surveys and National Register nominations that included information on North Dakota barns were also reviewed.

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