Farms in North Dakota

A Historic Context

2014

The purpose of this study is to produce a document that will assist the North Dakota State Historical Preservation Office (NDSHPO) and other researchers in more efficiently assessing the significance of historic farm resources in North Dakota. The evaluation of significance is an important step in the preservation of historic resources in the state.

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Objectives and Methods 1
Agricultural History and Development 2
Geography and Climate 2
People in the Northern Plains 10
Land Acquisition 11
Settlement Patterns 14
Historic Periods 16
    Pre-1880 17
    1880-1900 20
    1900-1915 25
    1915-1930 31
    1930-1945 34
    1945-1960 37
    1960-1975 38
Early Property Types 40
    Log Homes 40
    Dugouts 42
    Sod Homes 43
    Claim Shacks 44
Ethnic Architecture 45
    German-Russians 45
    Norwegians 48
    Ukrainians 51
Later Architectural Types 52
    Queen Anne 52
    Prairie Style 53
    Hipped Roof (symmetrical with front entry) 53
    Hipped Roof (symmetrical design and no front entry) 54
    Hipped Roof Asymmetrical 54

Gable Roof 55
Craftsman 55
Minimal Traditional 56
Ranch 57
Split-Level 57
Contemporary Folk Houses 58
Other Buildings 59
Barns 59
Bank Barns 60
Gothic Arch 60
Pole-Frame Barns 60
Quonset 60
Round or Polygonal Barns 60
Machine Sheds 63
Chicken Houses/Coops 64
Calf Creeps 65
Pig Creeps 65
Sheep Sheds/Barns 66
Miscellaneous Buildings 66
Farm Arrangement 68
National Register Evaluation Criteria and Significance 70
Criterion A: Event 70
Criterion B: Person 72
Criterion C: Design/Construction 74
Criterion D: Information Potential 76
Integrity of Agricultural Properties 78
Location 78
Design 78
Setting 79

Materials 79
Workmanship 80
Feeling 80
Association 80
Site Evaluation Considerations 81
Location 81
Design 81
Setting 81
Materials 81
Workmanship 81
Feeling 81
Association 81
Goals and Priorities 82
Works Cited 84

Objectives and Methods

The purpose of this document is to assist the North Dakota State Historical Preservation Office (NDSHPO) and other researchers in more efficiently assessing the significance of historic farm resources in North Dakota. The evaluation of significance is an important step in the preservation of historic resources in the state.

While minimal mentions of farming conditions prior to 1880 are discussed, the focus of the statewide context encompasses resources constructed between 1880 and 1970. This allows for a discussion of the most common farm types while also showing the progression from early homestead farms to relatively modern farmsteads.

This study was designed to focus on North Dakota farms developed or operated by a small group of people, most often a single family. Bonanza farms and other industrialized farms require their own context and will not be discussed here.

Only those resources actually located on individual farms are studied for this context. Community resources such as grain elevators, schools, churches etc. are not within the scope of this context. The most common type of resources discussed will be farm houses, with some discussion of ancillary buildings such as barns, hog houses, poultry houses and other outbuildings. The focus is on standing structures with limited discussion of archaeological resources (Criterion D).

This study was conducted by Lisa L. Steckler, Historic Preservation Planner for the North Dakota State Historic Preservation Office.

Research Resources Used:

Research documents are listed in the Bibliography with the most important sources listed below.

Specialized Literature. Farm periodicals and technical bulletins, farm building plan books, and other published works on farm history in North Dakota were consulted.

National Register Nominations. All nomination forms for North Dakota farm resources currently listed in the National Register of Historic Places were reviewed.

North Dakota Cultural Resources Survey. All inventory forms for North Dakota farm resources recorded in the NDSHPO office were reviewed.

Historic Photographs. Historic photographs in the collection of the State Historical Society of North Dakota and Digital Horizons were used.

Agricultural History and Development

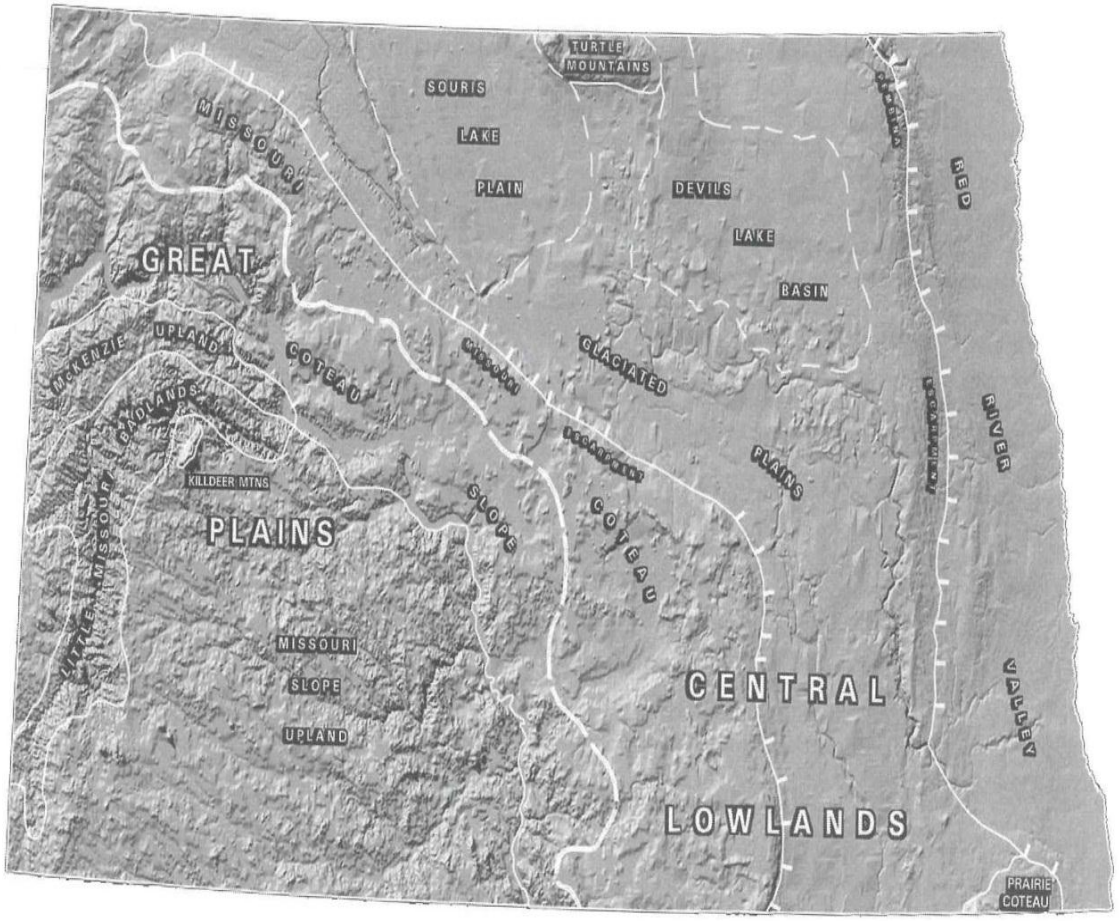
Geography and Climate

North Dakota is located partly in the area commonly referred to as the Great Plains and partly in the Central Lowlands. The dividing line is Southwest of the Missouri River along the Coteau Slope, placing the Badland and Drift Prairie areas in the former while the Red River Valley is in the latter (Bluemle 2000, 3-4).

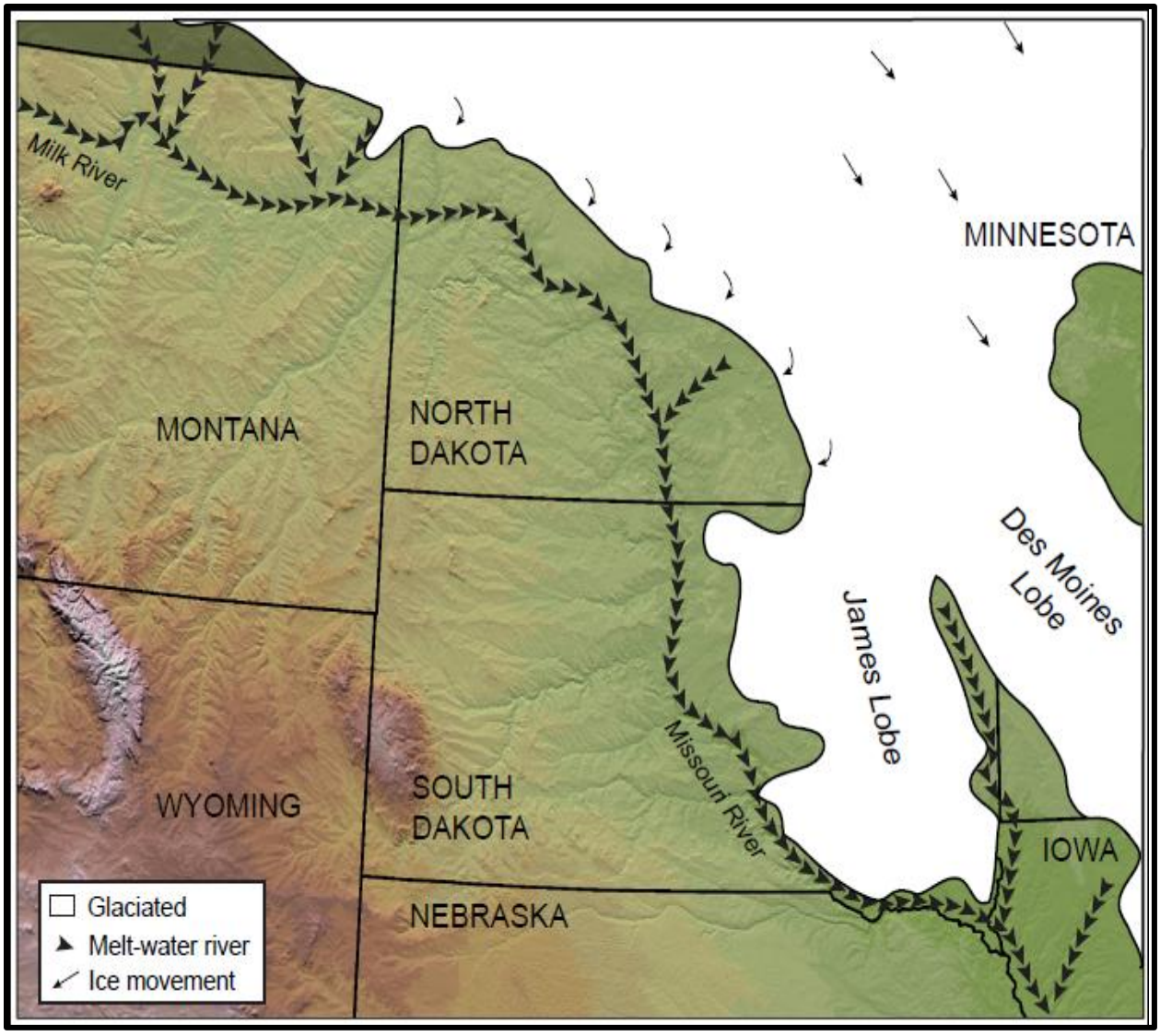
This geographic region is defined by the absence of forests, a semi-arid climate, and a relatively flat topography (the shape of the land's surface). A semi-arid climate means that sometimes there is too much rain, sometimes too little rain, and sometimes, there is just enough. In other words, farmers encounter difficulties planning their crops because the rainfall is irregular. Average rainfall per year is not sufficient to insure good crops.

The Rocky Mountains are generally considered to be the western boundary of the Great Plains while the eastern boundary is debated, with some geographers placing it west of the 20-inch rainfall line while others place the boundary at the 100th, 98th, 95th, or even 88th meridians. A common theme however is that in this area, historically farmers could not make a living year after year working a 160-acre farm, requiring creativity and diversity in farming practices. Though crops do not grow in years when the rains do not fall, the hardy native grasses can support cattle, sheep, and horses unless extreme drought or winter snows hamper access to water or feed. North Dakota's agricultural practices depend on what the land has to offer, and a successful farmer must be flexible.

The physical characteristics of the Northern Plains were shaped by both geologic and climactic forces. Glacial Lake Agassiz once covered the eastern portion of the Plains and eventually dried up leaving behind thousands of feet of sediment. Glaciers also helped create a flat rolling expanse of fertile soil with tall and short grass prairies (Kinsella 2006, 4).



(Bluemle 2000, 4)



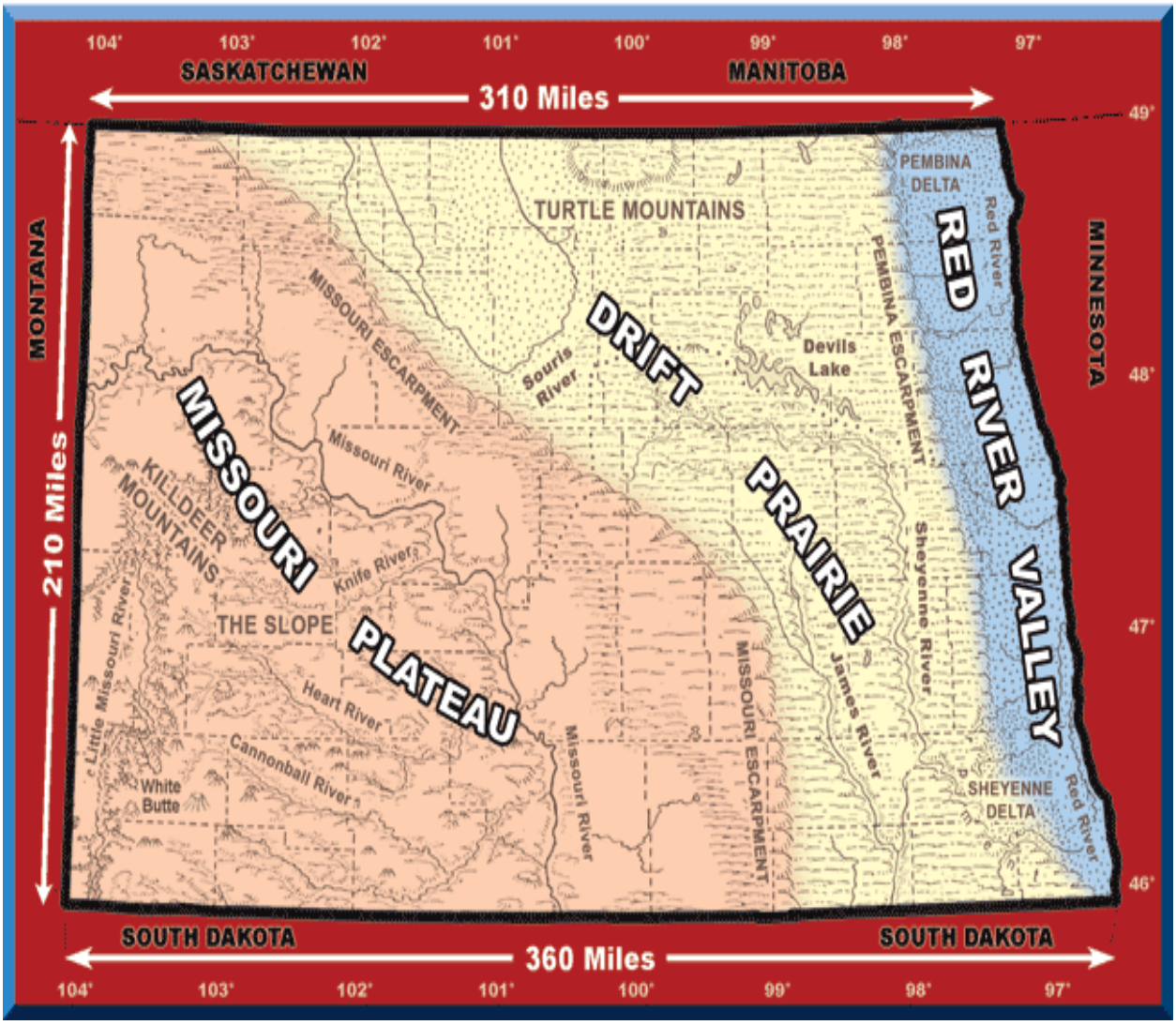
This map shows the extent of glacial movement in the Northern Plains c.1300. Map by Amy Bleier, Research Archaeologist, State Historical Society of North Dakota

The state of North Dakota can be roughly divided into three distinct topographical areas with differing origin, climate, surface features, soil and native vegetation. The furthest east division of the state is referred to as the Red River Valley and reaches from the state's border with Minnesota (the Red River of the North) west approximately 30-40 miles. The Red River Valley makes up roughly 10 percent of the state's area. This portion of the state was once the bottom of glacial Lake Agassiz with the low point about 792 feet above sea level, the lowest elevation in the state (Howe 2007, 17-18). The rivers in this area run north and drain into the Hudson Bay. The Red River Valley is the most fertile of the three areas in North Dakota (Howe 2007, 17-18). On the western edge of the Red River Valley, the Pembina Escarpment separates it from the adjacent area, the Drift Prairie.

The Drift Prairie is about 200 miles wide at the north end and narrows to 70 miles at the South Dakota border. The Drift Prairie occupies 40 percent of the state and varies from 1300 to 1650 feet above sea level. The landscape in this area is little changed by erosion and contains few rivers but many lakes, ponds and sloughs. The Drift Prairie is a rolling prairie with occasional hills, glacial deposits and hundreds of pot-hole lakes (Howe 2007, 18).

Finally, the western area of the state is referred to as the Missouri Plateau, and is a rugged, open country comprising half the area of North Dakota. The Plateau rises 1800 to 2000 feet above sea level east of the Missouri River, and 2000 to 2500 feet west of the river. West of the Missouri are gently rolling hills and flat-topped buttes with small valleys between and includes the area commonly known as the "Badlands." This area of the state was the only part not covered by glaciers and it boasts many buttes, bluffs and colorful rocks (Howe 2007, 19). The area north and east of the Missouri River varies from comparatively level land to sharply rolling hills of glacial origin. Rainfall generally decreases from east to west in this area while temperature and evaporation gradually increase from the Canadian border southwards (Babcock, Martin and Smith 1917, 4). The soil in the Plateau is characterized by sand and clay and contains little native vegetation to check erosion. Erosion has created spectacular canyons, gorges, bluffs and buttes of the Badlands along the Little Missouri River (Robinson 1966, 7-8). The Badlands of western North Dakota is too rough for tillage but is well adapted to ranching (Babcock, Martin and Smith 1917, 3).

North Dakota's 3 Geographic Regions



(Howe 2007, 18)

The state can also be divided into two climatic areas. The western half of the state is a grazing and wheat producing area with light rainfall, short grass and dark brown soils. The eastern half is semi-arid, with tall grass and black soils. The distance from the ocean in part causes the arid nature of the climate (Howe 2007, 25). In fact, the geographical center of North America, the place the furthest from any ocean, is located in northern North Dakota.

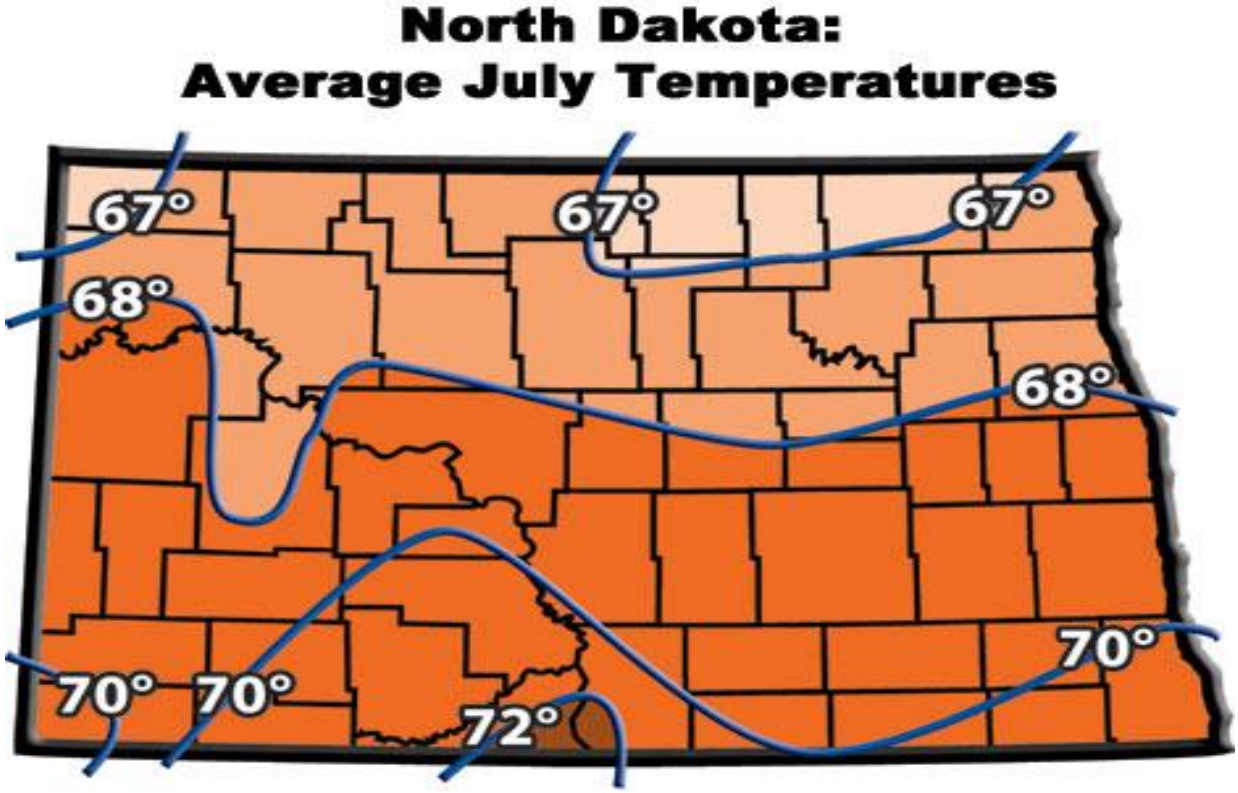
North Dakota has cold winters and hot summers, light rainfall, low humidity and much sunshine. Hot winds and hailstorms often damage crops in summer while blizzards may cause

death of cattle, as well as people who may become lost and freeze before finding their way home in winter (Briggs 1950, 535).

A blizzard is defined as having a temperature below 10 degrees Fahrenheit, winds over 35mph and visibility of ¼ mile or less. A severe blizzard is one in which the wind is more than 45mph and the visibility zero (Howe 2007, 28).

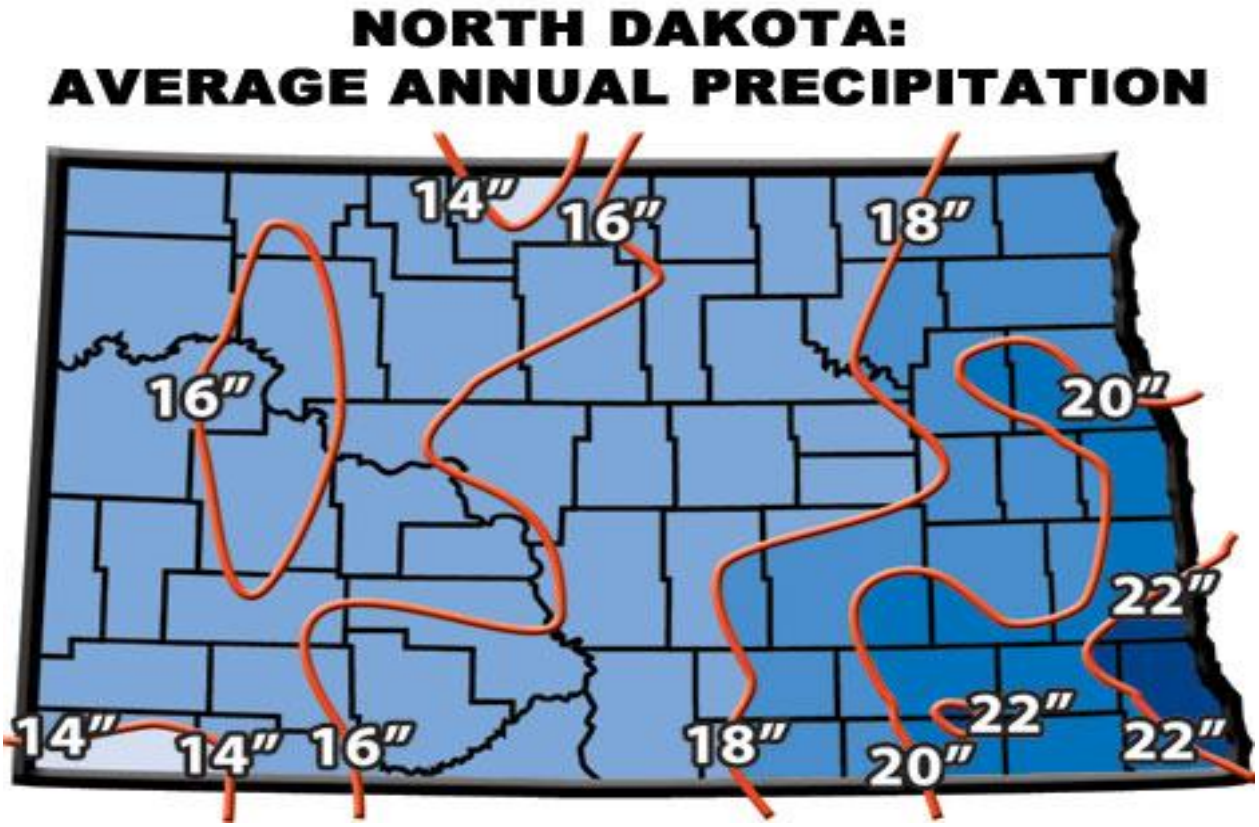
32ML 189-Example of a structure which has been completely covered by snow. The stakes and ropes were added to assist the farmer in locating the entrance. Photo courtesy of Layton Freborg.

The most notable aspect of the North Dakota climate can be found in its extremes. The record low is 60 degrees below zero Fahrenheit and the record high is 121 degrees Fahrenheit (both in 1936). In 1959 the temperature ranged from 105 to 28 degrees within a 24 hour period (Howe 2007, 26). The coldest month is January with an average overall temperature of 7 degrees Fahrenheit and the warmest is July with an overall average of 68 degrees Fahrenheit. The mean temperature is only 40 degrees Fahrenheit, the coldest of all states except Alaska. Rainfall is little at an average of 17.16 inches and humidity averages 68 percent. (Robinson 1966, 8). Rainfall differs from one area of the state to another. The Red River Valley gets the most rain with an average of 22 inches and the Missouri Plateau the least with an average of only 14 inches (Howe 2007, 25). The Drift Prairie gets somewhere in between. These factors all add up top create the sandy/loamy soil found in the western half of the state and the clay soil found in the east (Howe 2007, 35).



(Howe 2007, 26)

Historically, trees grew only in the river bottoms because trees need much more water than grasses to survive. At least half of the Great Plains region gets less than twenty inches of moisture per year with some getting as little as 16 inches or less. The annual rainfall varies in general from 13 to 19 inches with more than half occurring during April, May, June and July (Babcock, Martin and Smith 1917, 4-5). Tall, lush grasses grow in the eastern portion of the state, while in the central area one would find shorter grasses. In the western most section grasses commonly only grow ankle high. The lack of moisture and relative sparseness of trees in the area have granted it the moniker "The Great American Desert" (Kinsella 2006, 5).



(Howe 2007, 25)

People in the Northern Plains

Archaeologists have found evidence that humans inhabited what is now North Dakota for more than 12,000 years (State Historical Society of North Dakota 2008). Prior to ca. 1200 A.D. the people of the Northern Plains were nomadic hunter-gatherers relying on hunting bison and gathering plants for food, however around 1200 A.D. some groups began a transition to semi-permanent settlements (State Historical Society of North Dakota 2008, 5.73). Nomadic Indian tribes such as the Cheyenne, Chippewa, Dakota and Lakota hunted the animals that thrived in the plains, while the Mandan, Hidatsa and Arikara farmed near the rivers and streams.

Native American farmers grew corn, squash, beans and sunflowers, all crops well adapted to the climate of North Dakota. Evidence of these settlements can still be found, some with square house depressions, later villages with round depressions (Schneider 1994, 57).

While this area had been explored by early French explorers, trappers and fur traders, it was one of the last in the United States to be settled by non-Indians (Kinsella 2006, 4).

As non-Indian peoples moved into the area, the Native peoples were removed from their ancestral lands and forced to live on reservations where they were required to adapt the Euro-American way of life, including farming practices which were in many cases much less efficient than their ancestral methods.

As pioneer settlers began to move into the area, the Great Plains were known for long droughts, fierce blizzards, tornadoes, subzero temperatures, grasshopper plagues and prairie fires (Kinsella 2006, 10). The climate of the area was ill-suited for the agricultural practices of the time. The rapidity with which settlement occurred combined with the semi-arid climate, intensified the feelings of being uprooted from the familiar (Robinson 1966, 156) . The vast, open and often barren nature of the plains led to isolation, loneliness and feelings of despair…and the harsh winters did nothing to alleviate these conditions (Robinson 1966, 156).

Land Acquisition

Much of the initial Euro-American settlement of the region was due to a large investment of eastern capital in railroads, banks, elevators and farm equipment (Robinson 1966, 157). Federal land policy focused on providing revenue to the government, settling new communities, rewarding veterans, and promoting education. The first federal legislation that established the layout of public lands was the Land Ordinance of 1785. To aid in determining the extent of land ownership, the Public Land Survey divided the landscape into six-mile-square townships and one-mile-square sections containing four quarter-sections of 160 acres each. The Public Land Survey was the basis of modern land descriptions, civil divisions, road systems and farm ownership and size patterns. Township, section and quarter-section boundaries were marked with corner monuments and witnesses. Original corner monuments from 1847-1903 are rare but are found occasionally in more remote areas (Granger and Kelley 2005, 6.29).

The Preemption Act, as passed in 1841, allowed preemptors (squatters) who located a home on 160 acres and improved the land to buy it for $1.25 an acre after living on the land for a minimum of six (6) months (Kinsella 2006, 5). While this attracted settlers, it also attracted land speculators and investors who used it to make quick money (Kinsella 2006, 5). The act was repealed in 1891.

While many settlers came to claim free land through the Preemption Act allowing them to acquire a quarter-section after five years of residency, later legislation encouraged even more settlement of the west. The Homestead Act, with a requirement to break at least 10 acres during the first year of residency, was passed in 1862 and made land available to any head of household or person over 21 who was a citizen of the United States or had filed a declaration to become one (Robinson 1966, 162), this included unmarried women as well as men, a fact that led to an unusually high number of female homesteaders. While some women proved up their land and continued to farm it on their own, many would make their claim immediately prior to marriage, allowing the new couple to claim twice as much land as would have otherwise been possible (married women were not allowed to claim land). This land was distributed for free if the residency requirements were met, or could be purchased for $1.25 per acre after only six months of residency. That same year the United States Department of Agriculture (USDA) was established and Congress passed the Morrill Land Grant College Act to further agricultural education (Granger and Kelley 2005, 3.15).

Land was also available by tree claim or by purchasing it from railroad or land speculators (Robinson 1966, 158). The Federal Timber Culture Act was passed in 1873, and encouraged planting trees in arid regions of the west by allowing an individual to claim a quarter-section of land by planting 40 acres in trees and tending to them for ten years, however that same year the failure of Jay Cook and the Northern Pacific Railroad and St. Paul and Pacific Railroad caused

concerns as to the accessibility of land that had not yet been reached by the railroad. Without the railroad, farmers could not get their crops to the markets at Minneapolis and Chicago, effectively making farming a losing proposition from a financial perspective. In 1878 James J. Hill and his partners acquired the Northern Pacific St. Paul and Pacific and renewed construction leading to renewed faith in farming the western portions of the state (Granger and Kelley 2005, 3.15). The Timber Culture Act was repealed in 1882 as a result of abuses.

Other Federal programs that encouraged land ownership were: the Desert Land Act (1877) which rewarded settlers for irrigating land, the Timber and Stone Act (1878) permitted settlers to purchase 160 acres of non-agricultural land for $2.50 an acre but was largely abused by the lumber industry, and the Enlarged Homestead Act (1909) permitted the acquisition of 320 acres of non-irrigable and non-mineral land with no marketable timber, amongst other laws.

Federal Land Acts:

Cash Entry Act April 24, 1820 *(3 Stat. 566)* **Preemption Act of 1841** September 4, 1841 *(5 State. 453)* **Homestead Act** May 20, 1862 *(12 Stat. 392)*	**Timber Culture Act of 1873** March 3, 1873 *(17 Stat. 605)* **Desert Land Act** March 3, 1877 *(19 Stat. 377)*

(Howe 2007, 119)

Settlement Patterns

In the mid-1800s many settlers to the Northern Plains came from nearby states such as Minnesota, Illinois, Wisconsin and Iowa, but this gradually gave way to more foreign immigration. The second half of the 19th century brought settlers from Norway, Sweden, Finland, Ireland, England, Scotland, Germany, Russia (in the form of ethnic Germans living in Russia), Holland, Czechoslovakia and other places (Kinsella 2006, 7). In the early 1870s settlers migrated into the Red River Valley in large numbers (Briggs 1950, 493). In 1871 the Northern Pacific Railroad completed a line to the east side of the Red River of the North and by 1872 was rapidly approaching the Missouri River (Briggs 1950, 493). The population of North Dakota grew from 16,000 in 1878 to 191,000 in 1890 (Kinsella 2006, 10). During the winter, settlers near the rivers trapped and sold mink, beaver, muskrat, fox and raccoon to supplement their farm income (Briggs 1950, 493).

The Great Dakota Boom of 1878-1887 was the busiest period of Euro-American settlement in the Northern Plains. From 1880-1885, Dakota Territory led the country in land acquired under the Preemption, Homestead and Timber Culture Acts (Jacon and Brooks 1984, 9). The earliest settlers claimed land along the Red, Wild Rice, Goose, Sheyenne and James rivers as well as near other rivers and streams (Robinson 1966, 158). Later settlers had to locate further from water sources.

Most farm buildings before World War II were designed by farmers themselves, and agricultural engineers bemoaned the lack of professional planning and feeling, that the buildings did not serve the farmers well and made farming more difficult. Farmers were innovators of buildings and equipment as they sought to solve common problems. As a result, building styles were often influenced by what the neighbors were building and variations in architecture tended to develop locally (Granger and Kelley 2005, 5.18). In order to standardize the building styles of farm homes and barns, a variety of mail order catalogs began offering kit barns in the early 20th century. Aladdin Company of Bay City Michigan opened in 1906 and sold kit barns in the 1910s and 1920s. Chicago House Wrecking/Harris Brothers Company of Chicago, Illinois was another popular mail order company, but they went out of business in 1938. Gordon Van-Tine Company of Davenport, Iowa sold kits from 1915-1940 and Montgomery Ward and Company in Chicago began selling them in 1912. Finally, Sears, Roebuck and Company had kits for homes beginning in 1908 and barns starting in 1910 (Granger and Kelley 2005, 5.18).

In 1870 there were 1,720 farms in Dakota Territory with an average size of 176 acres. In 1880 this had increased to 17,435 with an average of 218 acres. By 1890, there were 27,611 farms in North Dakota with an average size of 277 acres. Just over 8% of this was planted in

wheat (Briggs 1950, 521). Settlement continued after North Dakota became a state in 1889 (Jacon and Brooks 1984, 9).

Additional assistance was provided to the farmer by the creation of the Nonpartisan League (NPL) in 1915. The NPL ran on a platform of farm assistance by demanding such things as tax exemptions for farm improvements (Jacon and Brooks 1984, 25). They also lobbied for the operation of rural credit banks at cost, state inspection of grain, state hail insurance and state ownership of terminal elevators as well as the creation of state owned elevators and flour mills, cold storage and packing plants and a state owned bank (Howe 2007, 180). While NPL candidates generally did not do well in elections, the Progressive politics of the time fostered change in the federal government's treatment of farmers and farm policy. One lasting outcome of the NPL is found in the number of co-ops located throughout the state (Howe 2007, 177). Further changes were the implementation of a better grain grating system, the establishment of a state highway commission, the prohibition of using different shipping rates for different shippers, increased educational aid and guaranteed state bank deposits (Howe 2007, 185).

The Federal Farm Loan Act of 1916 realized some of the demands of the NPL and made it easier to be a farmer in the Northern Plains (Jacon and Brooks 1984, 25).

Historic Periods

This context has been divided into the following time periods to identify and understand the historical forces that influenced North Dakota farms:

Pre-1880 **Early Settlement**

1880-1900 **Statehood**

1900-1915 **Wheat is King**

1915-1930 **Technology and Innovation**

1930-1945 **The Great Depression and War Eras**

1945-1960 **Post World War II**

1960- **Modern Farming**

Farm planning is basically concerned with the use of resources, land use, capital, labor etc. to achieve the desired type of life. Changes in technology, changes in costs and process, changes in demand and markets, and government farm programs all serve as impetus to change the management and arrangement of farms. (Loftsgard, Dorow and Herbison 1960, 1-2)**.**

Pre-1880

There were farmers in the area that would eventually become North Dakota long before Euro-American settlers arrived. Various Native American tribes in the Northern Plains cultivated corn and other vegetables well-suited to the dry climate and short growing season (Briggs 1950, 485). These early farmers made use of the then plentiful buffalo for farming tools, utilizing hoes or spades made from their shoulder-blades, and making fertilizer from table refuse, horse manure and buffalo chips gathered from the prairie (Briggs 1950, 486). They planted crops in a fashion designed to best utilize the soil and limited rainfall.

Many early Euro-American settlers migrating westward brought cattle with them and in the early days they were the mainstay in all communities of the area. During the early settlement years with droughts and grasshopper plagues, cattle kept settlers alive (Briggs 1950, 191). These early pioneers, while realizing the importance of stock, combined livestock operation with farming. The unlimited pasture land with its nutritive grasses gave ranching an advantage over grain farming at first (Briggs 1950, 192). However, the large amount of capital required to successfully raise large herds of livestock meant that most farmers developed a system of mixed farming which combined stock-raising with grain crops (Briggs 1950, 192). Cattle remained east of the Missouri until at least 1875 (Briggs 1950, 212).

Early settlement was slow due to a variety of factors, from the Civil War and accompanying Indian conflicts, to general fear of grasshoppers and drought (Briggs 1950, 366). The Homestead Act of 1862 therefore had little initial effect on the territory (Briggs 1950, 366). These factors aside, the early 1870s boasted increased steamboat traffic along the Missouri River as gold-seekers swarmed to Montana and Native Americans began to accept the policy of the United States Government in good faith (Briggs 1950, 376). This early settlement was not without problems however. Jay Cooke and Company, the major investor in the Northern Pacific Railroad Company collapsed in 1873 and the nationwide financial panic that followed continued to slow immigration in to the territory (Briggs 1950, 386) (Granger and Kelley 2005, 3.18). Grasshopper plagues and harsh winters followed from 1874 to 1876, further retarding growth (Briggs 1950, 386). After the failure of Jay Cooke, railroad investors developed bonanza farms on land that had been collateral for railroad bonds (Granger and Kelley 2005, 3.15). These bonanza farms were restricted almost exclusively to the Red River Valley and lasted only until the mid-1890s (Granger and Kelley 2005, 3.18-3.19). Still, the distance to the central markets in

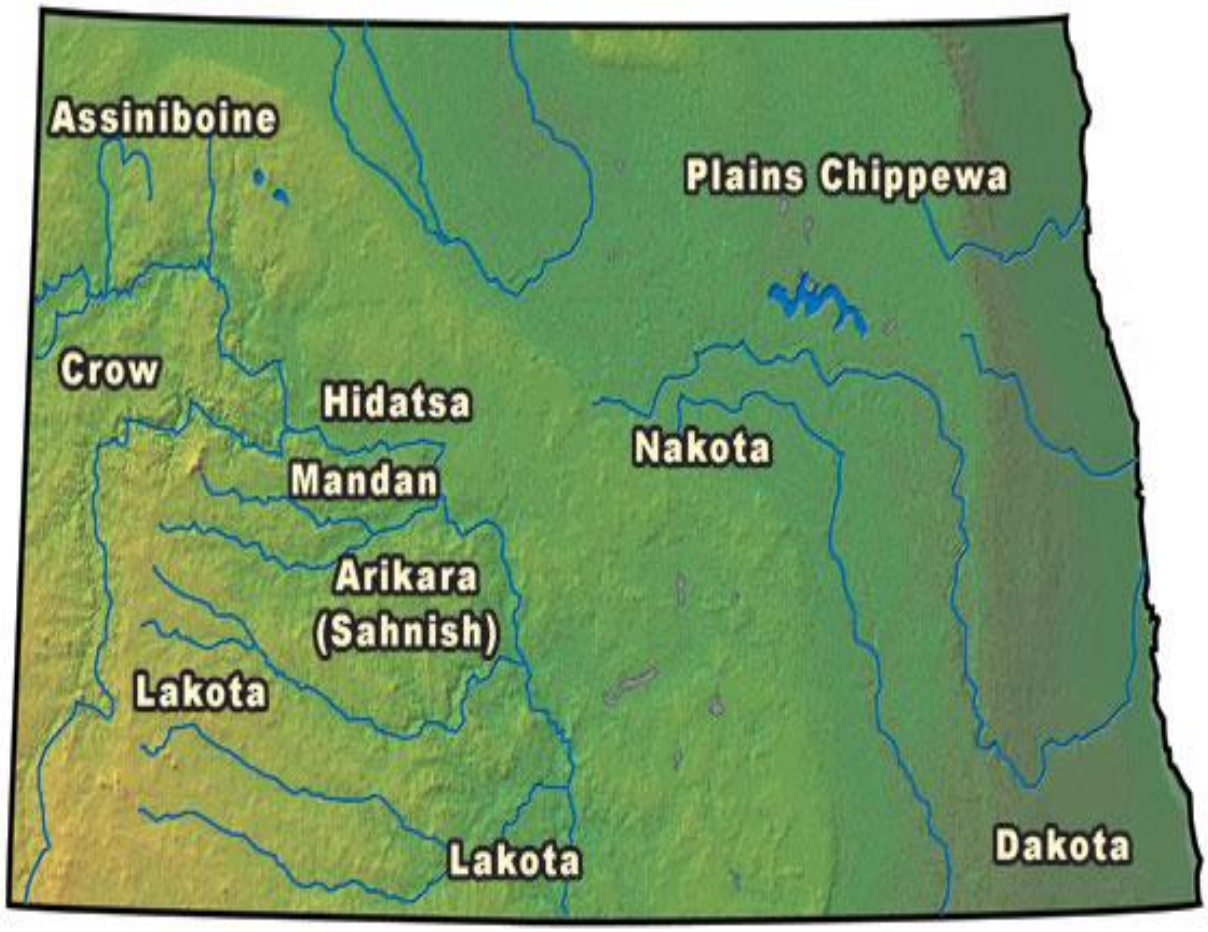
Minneapolis, Chicago and New York, coupled with high shipping rates and grasshopper damage encouraged farmers to practice mixed or diversified farming up until 1876 (Briggs 1950, 494).

Most farmers had at least some cattle as well as hogs, sheep and poultry. However, hard spring wheat was fast becoming the main money making crop throughout the northern part of Dakota Territory. The ability to raise large quantities of wheat was only restricted by the lack of threshing equipment, but in 1874 the Hudson's Bay Company brought in a horse powered thresher to Fargo, offering to thresh grain for local farmers. This was the encouragement many farmers needed to start raising wheat as their main crop (Briggs 1950, 510).

The year 1878 was the beginning of the "Great Dakota Boom" (Briggs 1950, 376). Many new advances in technology including new reapers, threshers, self-binders and others helped farmers. Also at this time, technological advances coupled with cheap or free land allowed individual farmers to cultivate larger areas and caused a shift from diversified or mixed farming to single crop wheat farms in the Red River Valley (Briggs 1950, 512). The first hard spring wheat "Red Fife" was introduced into the United States in the 1850s. This strain of wheat allowed it to thrive in northern latitudes and was grown across the Dakotas, Minnesota, Wisconsin and southern Canada. "Red Fife" was the precursor to other types of wheat including "Marquis" which was introduced in 1912 and became the leading spring wheat in the Northern Plains (Granger and Kelley 2005, 3.16).

In the middle 1800s cows were usually stabled in general barns which were usually dark and damp and had wooden stalls and very likely no running water. Ventilation was usually either too much or too little depending on the size of the cracks and holes in the walls. Milking was done by hand. Feed, water, manure, milk, and everything else was moved by hand. 3.8 man hours of labor were required to produce a hundredweight of milk. A half-century later, it had declined to 1.9 man hours (87th Congress 1962, 414).

North Dakota: General Location of American Indian Groups



(Howe 2007, 68)

1880-1900

Farming began in the 1880s on the Missouri Plateau. In the six counties east of the Missouri River, in the Knife River Valley, along the Northern Pacific lines throughout the Missouri Slope, and to some extent in the five counties north of the Missouri, settlers began moving in to the previously unsettled areas (Robinson 1966, 193). By 1890 there were approximately 11,000 residents in the six counties east of the Missouri River (Robinson 1966, 193).

Access to fuel being a constant problem in the harsh conditions of North Dakota; it was a relief when lignite coal began to be shipped to Bismarck from mines 20 miles to the north in 1896-1897. The coal production in North Dakota was 35,000 tons in 1884 and by 1900 it had risen to 100,000 tons (Robinson 1966, 160). This allowed easier heating of homes during the winter as compared to the buffalo or cow chips previously used for fuel. The German-Russians produced their own fuel source called "Mist" which was manure mixed with straw, trampled by horses, and then cut and dried (Robinson 1966, 162). The increased availability of lignite coal came none too soon. The winter of 1896-1897 was one of heavy snowfall causing spring flooding of the Missouri, James, Sheyenne and Red rivers (Robinson 1966, 168-169).

Climatic conditions had a great effect on the types of homes built during this time. It was important that the home be impervious to rain and high winds, as well as easy to heat in the winter. As a result, farm homes tended to be small one-or-two room structures with low roofs which were more efficient to heat than larger homes. Barns and other structures were also kept as small and low to the ground as possible in order to increase efficiency and to conserve both energy and scant building materials.

32ML189 Early barn example (1900s) Freborg farm, McLean County. Photo by Lorna Meidinger, State Historical Society of North Dakota.

32CSX0248 “Jacobson Mansion” 1895 Queen Anne Victorian in Cass County, North Dakota. The Jacobson Mansion is unusual as an early example of the Queen Anne style in North Dakota. While the Queen Anne style was popular nationwide between 1880 and 1900, there are few examples in North Dakota from that period. The family who built this home would have been very successful and may have built this imposing structure to showcase their success to their neighbors. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

32RI00784-Built in 1882 in rural Richland County, this 2 ½ story square gable front style has a concrete block basement, suggesting that it may have been moved to this site sometime after it was originally built as concrete was not a common material in pre-statehood North Dakota. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

32RI00784 A close-up photo of the house, rural Richland County, North Dakota. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

1900-1915

Wheat was usually the most profitable crop to grow in North Dakota with barley and flax typically next, followed by soybeans and grain corn in certain areas of the state (Loftsgard, Dorow and Herbison 1960, 2). In areas where suitable for wheat (generally that west of the Missouri River), farmers turned to cattle ranching instead (Howe 2007, 129).

Records of China show that wheat was cultivated there around 2700 BC, but the full history of the small grain crop is unknown. Durum wheat was grown mainly in the Dakotas, with hard spring wheat, which is sown in spring and harvested in early autumn or late summer growing best in the Northern Plains. Winter wheat, sown in the fall and harvested the following summer does not grow well due to the harsh conditions and low rainfall (Phillips, Cockefair and Graham 1948, 141-142). Wheat is the most important crop grown in the Northern Plains with North Dakota alone producing over 150,000,000 bushels of spring wheat in 1915 (Babcock, Martin and Smith 1917). As the national bread crop, wheat is more important than all other cereal grains combined.

The production of the small grains in western North Dakota was most profitable when combined with livestock farming and the growing of cultivated crops. It is best to combine live-stock production with growing forage crops for feeding (Babcock, Martin and Smith 1917, 10). A farmer would keep livestock to increase the size of his business by more efficiently utilizing existing labor and available capital. Using feed grains to fatten livestock usually brought higher returns than if sold on the cash market (Loftsgard, Dorow and Herbison 1960, Livestock). Wheat straw could also be used for many purposes including bedding for stock in winter, making the combination more efficient (Phillips, Cockefair and Graham 1948, 143).

Spring wheat, oats, barley and flax were the best small grain crops to grow here. Farmers found it was best to plow the land in the fall and leave it rough during the winter because that allowed even earlier seeding than spring plowing (Babcock, Martin and Smith 1917, 2). It is noted however that sandy soils which tend to drift should only be plowed in the spring (Babcock, Martin and Smith 1917, 7).

Wire communication by telegraph and telephone, wireless communication and the transmission of electric power for industry had evolved by 1900 to the point of having practical value. Rural Electric Agencies provided electric power to farm homes, allowing the farmer to utilize this new technology. The substitution of automatic controls for human supervision is one of the most important principles of farm technology and mechanization. Water pumps could now be used to pump water into a storage tank and a pressure or level switch stopped the flow of water when the established level of water was attainted. When the level fell, the tank was refilled. Thus without the farmer having to do anything, water was available on demand. This change allowed for the use of water bowls or automatic float valves on troughs

for stock waters, and in the winter the water could be heated both at the milk house and in the residence. (87th Congress 1962, 402). Household appliances, furnaces, refrigeration and milking machines came into use and altered the layout both of the farm residence and of the farmstead as a whole.

The turn of the century marked a new phase in agriculture, one based not on traditions but on scientific methods. No longer an art passed from father to son, in this new age of agriculture the application of scientific principles determined the success of the family farm (Granger and Kelley 2005, 3.48). State agricultural experiment stations and land-grant colleges became hubs of research beginning around 1910 (Granger and Kelley 2005, 3.48). Gas-engine tractors also began replacing horses for pulling implements around 1910. The number of farm horses peaked around 1913 and then slowly declined (Granger and Kelley 2005, 3.49). Steam-powered threshing machines and tractors came into use (threshers were often shared by a group of cooperating farmers) and dairy farmers began using mechanical cream separators and milking machines (Granger and Kelley 2005, 3.49). The heyday of steam power stretched from the 1880s to World War I, but steam as a farm fuel was mostly obsolete by 1920.

Advantages of gas powered vs. steam powered tractors

1. Gas powered tractors require less man-power because one did not need horses and a man to pull out the water wagon, feed the steam engine, or a fireman who has to keep shoveling coal, wood, or straw into the engine.
2. There was a lower fuel cost because it was not necessary to buy expensive eastern coal (bituminous or anthracite) lignite is not suitable (BTU-wise) for a steamer.
3. The use of a gas powered tractor required minimal training, virtually anybody could be trained to operate a tractor (including fueling and lubrication) while an engineer was required to ensure that a steam engine did not blow up.
4. The Petroleum industry geared up for refining gasoline, oil, and hard-oil (grease) for use with internal combustion engine and decreased distillation of kerosene.
5. One thing that did not change however was that big tractors used to operate separators (threshing machines) were still as slow in moving as steam traction engines.

The ability to grow larger crops meant that farmers needed to have somewhere to store excess grain until it could be taken to market. Around 1910, wood, masonry, and poured concrete silos became common features on farms (Granger and Kelley 2005, 3.50). New materials were introduced for farm buildings such as poured concrete, cement [concrete] block,

cement [concrete] staves, clay tiles and sheet metal (Granger and Kelley 2005, 3.50). Poultry and hog raisers began using colonies of individual housing units to reduce the spread of disease and even the layout of farms and the location of buildings, roads, fields and pastures were redesigned based on scientific principles (Granger and Kelley 2005, 3.50). For instance, early 20th Century agricultural experiment station bulletins recommended placing barns 100-150 feet away from the house and placing the house and barn so that the prevailing winds blow at right angles to a line connecting them. Typical farms of this period would have the main house in the foreground with the outbuildings to the side and rear. Livestock would be further away due to odor and water contamination concerns (Jacon and Brooks 1984, 47). The occasional exception to this rule was the poultry house, as the care of chickens was generally the domain of the farm wife, so having the poultry nearer the house was more convenient. The importance of poultry cannot be overstated, as the sale of eggs and butter were often the only things that kept a farm going during drought years or those in which grasshoppers or hail destroyed grain crops.

32ML189 Early wood granary. Freborg farm, McLean County. Photo by Lorna Meidinger, State Historical Society of North Dakota.

In 1924 steel fence posts were developed by the American Steel and Wire Company of Duluth. Innovations of this period resulted in improvements in infrastructure, increased fencing, better drainage systems, more windbreaks, more ornamental plantings, larger pastures, specialized dairy barns, grain silos, mechanized milk houses, combination barns for general use, gas engines to supplement horse power, and overall improved layouts of farmsteads (Granger and Kelley 2005, 3.53).

32ML189 Historic photo of the Freborg farm, McLean County, showing the layout of buildings. House is at the left of the photo with barn and chicken coop at the right. Also visible is a windmill. Photo courtesy of Layton Freborg.

32ML189 The side gable wood home on the Freborg farm, McLean County. The addition to the back of the house would have been added as the family required more room. Photo by Lorna Meidinger, State Historical Society of North Dakota.

32ML189 Original water pump still found on the Freborg farm, McLean County. The addition of pumped water would have made life much easier for the farm wife who no longer had to haul water from a well or nearby water source. Photo by Lorna Meidinger, State Historical Society of North Dakota.

1915-1930

The United States' entrance into World War I in 1917 caused widespread farm labor shortages at the same time that farmers were urged to plant more food crops to meet wartime demand from within the country and foreign consumers (Granger and Kelley 2005, 3.44). During the early 20th century, the Ford Motor Company introduced the first mass-produced tractor, the Fordson, which was followed by International Harvester's Farmall tractor in 1924, beginning the widespread use of this labor-saving innovation (Granger and Kelley 2005, 3.44). This allowed the individual farmer to cultivate more land in the same amount of time, and led to increased farm output. Of course the increase in production was not without its pitfalls, food exports and farm prices fell sharply in the summer of 1920, and a 20-year agricultural depression began that would not end until the end of World War II (Granger and Kelley 2005, 3.45). During WWI there was increased use of gasoline powered tractors – 2 cylinders (John Deere) or 4 cylinders (International Harvester, Case, etc.) to replace horses. This saved time, horses tire out, an engine does not, so the limitation was only on the operator of the tractor. It also saved man power – the farmer didn't have to spend man-power to feed horses, water horses, put up hay, grow oats, etc. Less reliance on horses led to more profitable land use. No horses meant no oats for feed, so farmers could put that acreage into a more profitable commodity such as wheat. No horses also meant there was no need for hay meadows and pastures, so farmers could plow that land for wheat as well. However one disadvantage to this increased glut of wheat was that it drove down prices. This was especially true when World War II ended and they began farming again in Ukraine, Russia, and Europe. In 1922 wheat fell from $2.96 per bushel to only $0.92 per bushel due to the overproduction and under consumption of small grains. Land values fell during this time as well (Howe 2007, 193).

Gas tractors first came into general use for farm work in the northern Great Plains. The introduction came at a time when vast areas of new land were opened for settlement and millions of acres of virgin prairie were broken (Yerkes and Church 1919, 3). In North Dakota farming was done on a comparatively extensive scale with farm sizes increasing as a result of the adoption of labor-saving machinery (Yerkes and Church 1919, 8). The number of acres covered per day by a plough drawn by a tractor was usually slightly greater than that covered by the same sized horse-drawn plough without the energy expenditure for either farmer or animal (Yerkes and Church 1919, 17). When International Harvester introduced the 13-horsepower Farmall tractor Midwestern farmers lined up to buy them. The Farmall was the first small, low-priced tractor built especially for row crops (Granger and Kelley 2005, 3.50). In the 1920s, the invention of the combine allowed farms to become even larger and more capital intensive while also reducing farm populations (Jacon and Brooks 1984, 27).

Shortly after the First World War, research programs were begun in the USDA to establish a sounder basis for the design of barns and sheds (87th Congress 1962, 411).

At this time, livestock farmers and agricultural engineers were continually looking for ways to increase production by improving the health of their animals. Concrete floors increased sanitation, well-placed flues increased ventilation, compartmentalized mangers for cows so that they did not share food reduced disease transmission, and moving poultry and farrowing houses on a regular basis so that soil-borne parasites would not harm the animals became standard procedure. Guardrails on pig stalls, cool areas in brooder houses, wider doors in sheep barns, barns no wider than 34 feet for heat conservation, and monitor roofs to allow light were also introduced during this period in an attempt to create the most efficient farm possible (Granger and Kelley 2005, 5.4). [1]

According to historian David Danbom, what had once been a career open to any average man with few specialized talents became at this time more mechanized, scientific and capital intensive. By 1930 farming had become an industry in which a man with no experience or capital could not compete (Granger and Kelley 2005, 3.45). USDA specialists tried during the 1920s to change farming methods on the Plains (McDean 1980, 22). No longer were the Plains a land of opportunity for frontiersmen or the small-time speculator. Opportunity was only available to those who were skilled at farm management, accounting, economics, and most importantly, had the capital needed to purchase large acreages and advanced machinery (McDean 1980, 27). The number of farmers with access to this type of capital decreased dramatically following the stock market crash of 1929 (Granger and Kelley 2005, 3.61). In the 1920s a general farm depression and recurrent droughts in the Plains caused 30% of all farms on the Northern Plains to be abandoned and 60% to go bankrupt (McDean 1980, 26).

[1] Heat conservation also figured into a debate about hog house design. In the early 20th century many hog houses were built with monitor roofs incorporating a row of windows to allow light from the south to shine into the stalls during farrowing. “This was done on the assumption that the sunshine would, first, warm the house, second, keep it dry and, thirdly, to provide for an ultraviolet bath for the little pigs.” Instead, farmers in northern states found that in February and March, when the sows farrowed, the sun only shone directly into the monitor windows for about two hours per day and, for the rest of the time, the monitor caused heat loss as the heat traveled upward into the monitor and out the windows. Water also condensed on the window glass and dripped into the stalls. The result was a cold, damp hog house and pig losses, rather than the warm dry house that had been sought.

32ML189 Arni Gulick Gullickson uses a three-horse team to plow the fields at the Freborg farm in McLean County. The invention of gas tractors made the use of horses for this kind of work impractical and greatly reduced the time and effort required to plow a field, allowing an individual farmer to acquire additional land. Photo courtesy of Layton Freborg.

1930-1945

The 1930s were a decade of drought and depression. In addition to reduced farm outputs, farmers had no control over market prices causing thousands to lose their farms and at least one-third of the population of North Dakota to rely of Federal relief (Robinson 1966, 397). Nine of the 11 years from 1929 to 1939 had less than average rainfall, with June of 1929 being driest on record (Robinson 1966, 398). An average of only 9.5 inches of rain fell in the years between 1934 and 1936 (Howe 2007, 201). Hot, dry winds and dust storms darkened the sky, turning day into night, and as if that were not enough, the Plains were also visited by a plague of grasshoppers at the same time (Howe 2007, 201). Only the Red River Valley was spared and did not lose their crops (Howe 2007, 201).

In North Dakota, Federal relief programs concentrated on alleviating rural poverty that by the late 1930s was widespread in portions of the state (McDean 1980, 25). In 1933 the United States Congress passed the Agricultural Adjustment Act designed to raise farm prices by reducing the supply of commodities. Acreage allotments were issued to restrict the number of acres of cropland under cultivation in exchange for a benefit check. In 1936 the Agricultural Adjustment Act was deemed unconstitutional and Congress passed the Soil Conservation and Domestic Allotment Act which paid farmers to reduce soil-depleting crops and rebuild the land. In 1938 the 2nd Agricultural Adjustment Act, which shaped all future farm policies and forms the basis for farm policies through 2013, was passed. This Act continued acreage restrictions and added direct support to farmers, marketing controls and crop shortage loans and surplus disposal plans. As a result, there was a great wave of grain bin construction on farms so that farmers could store their crops until prices improved (Granger and Kelley 2005, 3.95). In 1941 Quonset-type buildings were introduced and in 1943 prefabricated grain bins, hog cots, and brooder houses were more common (Granger and Kelley 2005, 3.105).

The effects of accumulated natural disasters and economic catastrophe brought decay to land and people. While Federal relief was still aimed to assist people, policymakers encouraged consolidation of farms into units of larger size (McDean 1980, 25). In the late 1930s, the fear of a recurrent Dust Bowl led the USDA to plan the types and sizes of farms that each region in the Plains would need in order to save the soil and yet offer farm units that would be profitable. Under this plan, soil-destroyed areas would be removed from cultivation and planted to soil-building grasses while the lands that were fertile would be zoned for the production of agricultural commodities.

To this end, the United States Forest Service looked into the conditions which contributed to the Dust Bowl and determined that soil erosion was due not only to lack of rain, but also to high winds that blew away the valuable topsoil. One way to stop this erosion was employing the use of “shelterbelts”, rows of trees that blocked wind erosion and also trapped snow drifts

to conserve additional moisture. Farmers were encouraged to plant shelterbelts on all sides of their farms in order to block the winds and stop erosion. A drive around any rural area in North Dakota will show the prevalence of this practice as most farms continue to be surrounded by regularly spaced rows of trees. These shelterbelts are currently in danger as older trees begin to die out and are not replanted.

To insure the best results, experimental forests were created by the Forest Service in order to determine which types of trees (particularly conifers) would best adapt to the harsh conditions of the Northern Plains, the best methods of soil preparation and the most efficient ways to plant and care for seedlings. One such station was located in McHenry County, North Dakota near the town of Denbigh. The Denbigh Station and Experimental Forest was established in 1931 and continued operation until 1942. It is the only intact facility of its kind still in existence from that period in history. The Denbigh Station and Experimental Forest was listed in the National Register of Historic Places in 2010 (Turck 2010) .

Heritage of Depression-era Federal Work Relief (1936-1942). Shelterbelts as designed landscapes. Vicinity of Enderlin (Ransom County) and Niagara (Walsh County). Photo Courtesy of Dr. Steve Martens.

Following the depression and World War I, the Federal government began making payments to farmers for soil conservation and more intelligent use of resources (Robinson 1966, 418). They further recommended that small farms be phased out by government programs geared to encourage purchase by farmers and cattlemen who needed additional acreage to be profitable and conserve the soil (McDean 1980, 23). In some sections of North Dakota, where an unusual number of farms would have to be increased to an average size of 800 acres, about one-fifth of the farm population would need to find different work (McDean 1980, 24).

Since 1930, the Cooperative Farm Building Plan Exchange and the Midwest Plan Service have provided a unifying thread by incorporating the developments of industry and products of research into working drawings of modern farm buildings and equipment plans (87th Congress 1962, 411). Farm housing was established as a field of agricultural research as a result of this service. Under a grant from the Civil Works Administration, hundreds of specially trained workers were employed to obtain facts concerning conditions of farm housing in 46 States (87th Congress 1962, 661-662). In 1933, the USDA began publishing standardized plans for farm buildings in the north central region (Jacon and Brooks 1984, 47). Research programs into proper building designs for barns and sheds gained momentum during the 1930s in an attempt to answer questions about pressures that stored crops exerted on storage structure walls, and testing to determine resistance of walls to wind and snow and environmental conditions that had an effect on production (87th Congress 1962, 411). Laboratory studies in the 1940s defined the physiological responses of cattle, hogs and poultry to environment (87th Congress 1962, 411) and altered the way homes were built for these animals.

As a result of these programs, it was determined that the convenient arrangement of the farmhouse begins with its relationship to the other farm buildings and to the highway. Outside doors and porches should be located as to give convenient entrance from the farm driveway and the path to the barn, and whenever possible should be on the sheltered side of the house. Work portions of the house where the housewife spends the majority of her time should look out over the farm buildings and the entrance roadway. Traffic from the rear entrance to the main portion of the house should not lead through the kitchen (Ashby 1935, 2). Hot and cold running water adds more to the farm home than any other innovation (Ashby 1935, 3). In contrast to the purely utilitarian design of the early farmhouses, farmers of the 1930s wanted a home that was functional and beautiful. The appearance of a farmhouse was enhanced by good taste in proportions of exterior design with materials chosen to suit the local environment. A pleasing color scheme should integrate the house with its surroundings, and proper planning with relation to the natural features of the site; the other farm buildings and the highway were important (Ashby 1935, 4).

1945-1960

Labor shortages during the war years encouraged further farm mechanization (Granger and Kelley 2005, 3.49). Moving from the walking or riding plows, harrowers, grain seeders, corn planers, mowers, rakes, grain-binders and wagons to mechanized versions of the same equipment allowed for still larger farms while also requiring more capital (Granger and Kelley 2005, 3.49). Between 1945 and 1959 the number of small farms fell from 70,000 to 55,000 while individual farm size rose from 590 acres to 755 acres, largely due to increased mechanization of farm activities (Robinson 1966, 444). Another factor which helped to modernize farms was the increase in rural electrification. In 1935 only 2.3% of North Dakota farms had electricity, by 1954 it was 90% (Robinson 1966, 447).

Lessons were learned from the Great Depression as well. By 1952, 98% of the land in North Dakota fell into one of 78 soil conservation districts. Learning from the Depression years, farmers continued planting shelterbelts to protect fields from the wind as well as utilizing new farming techniques such as strip farming, contour plowing and grass rotation. Rather than relying on wells to provide water, they built dams and dugouts to provide water for livestock (Robinson 1966, 447). For the first time, in the 1950s the majority of those employed in the state held non-agricultural jobs (Robinson 1966, 563). The year 1948 saw a revolution in productivity spurred by machines, chemicals and improved plant and animal breeds (Granger and Kelley 2005, 3.107). Not everything was good during this time however, wheat crops in the Midwest were devastated by stem rust in the 1950s and yields dropped by 70 percent. Flax and oat production also declined following World War II (Granger and Kelley 2005, 3.112).

Post-war characteristics of farms include more tractors and trucks, improved farm layouts, increased farm size, the removal of fences and enlarged fields, more specialization, early large-scale livestock and poultry operations, concrete floors and yards for hog barns, low-pitch gable and shed roofs, steel sided buildings, factory-made parts and materials, metal grain bins and corncribs, the addition of automobile garages, and the introduction of pole framed buildings. New building types included Quonsets, prefabricated buildings, those designed for scientific engineering management, pole-barns and garages (Granger and Kelley 2005, 3.118)

With all of these improvements, as recently as 1950, more than half the farm homes of the country still did not have running water (87th Congress 1962, 660).

1960-1975

By the 1960s, 90% of cows were milked by machine (87th Congress 1962, 414). This encouraged dairymen to enlarge their herds, led to the milk pipeline which eliminated the carrying of heavy buckets or pails from the cow to the milk room, and the bulk tank which eliminated the heavy, cumbersome milk can and the lifting and handling that goes with it. Along with this came a new design in the structure of the milking area. Elevated stalls or parlor milking was generally used in loose-housing systems and occasionally with a stall barn. In this type of configuration, the cow stands on a platform elevated about waist high with respect to the farmer. This eliminates the stooping, squatting, bending and reaching to attach and detach the machine that was so tiresome in floor-level milking (87th Congress 1962, 414). The herringbone milking parlor is an elevated stall pipeline arrangement in which the cows stand next to each other in herringbone fashion in stalls on each side of an operator. Cows enter, are milked, and leave in batches the size of the stall. This method is compact, fast and convenient (87th Congress 1962, 415). Additionally, a pie-shaped or wagon-wheel corral was found to be a time and travel saving layout for herds of 100 or more cows. The milking facility is at the center with gates and short lanes at the inner ends of each corral for easy access. This layout requires about one-third the travel required in a rectangular layout (87th Congress 1962, 415).

Cows were not the only stock whose accommodations changed. Housing for poultry was impacted as well. The early immigrants from fairly cold climates erected tight poultry buildings with rather small windows so as to utilize the birds' output of heat to maintain warmth. These houses were often damp in winter and laying hens and broilers required a lot of care for rather poor returns (87th Congress 1962, 415). Poultry housing now progressed to a mechanized unit where one man could easily produce 80,000 broilers a year or care for 10,000 laying hens. The houses were much wider and had mechanical ventilation (87th Congress 1962, 417).

In 1946, 46% of North Dakota's income came from farming; by 1960 it was only 22% (Robinson 1966, 563). As the number of farms decreased, the size of the remaining farms increased. Fewer farms were family-owned and the advent of factory farms reached the Northern Plains at last.

Since the 1970s changes in farms and farming have continued. Factory farms remain dominant while family farms attempt to hang on to their way of life. Specialized farms have returned with sugar beets and corn dominating the eastern part of the state and wheat and other grain crops the west. Some of these changes are due to market forces such as sugar price supports, the development of high-fructose corn syrup and use of corn for ethanol (highly dependent of price supports) as well as the use of corn for livestock fodder. Organic farming has also begun to make itself known in the state, though not on as large a scale as may be found in other states with more welcoming environments.

In 2007, North Dakota produced 227,000,000 bushels of wheat a year (Howe 2007, 296). 59% of all durum in the United States was also grown in North Dakota with 60,000,000 bushels produced in 2007; durum production is concentrated highly in the northwestern part of the state. 74,000,000 bushels of barley were produced, mostly in northern North Dakota due to the shorter growing season (Howe 2007, 297). North-central North Dakota leads in the production of rye (750,000 bushels) and flax (13,000,000 bushels) while south-central North Dakota produces the cold loving oat crop (16,000,000) (Howe 2007, 298). Corn grows well in the southeast (160,000,000 bushels) (Howe 2007, 300) and sunflowers grow on the Drift Prairie (1,300,000,000 bushels, almost the entire crop of sunflowers in the US (Howe 2007, 301)).

The Red River Valley, with its fertile soil and higher rainfall, grows crops such as potatoes (24,900,000 cwt), sugar beets (produced for American Crystal Sugar, a farmer owned sugar operation) and beans (Howe 2007, 302-304).

Other crops grown in North Dakota include soybeans (105,000,000 bushels) canola (35% of all US canola at 1,325,000,000 bushels), safflower (a drought and hail resistant crop), buckwheat (sensitive to heat, high wind and drought), mustard, and canary grass seed (Howe 2007, 305-306).

Early Property Types

It was seen as very important for the farm to be not only efficiently and economically designed, but also that it should convey a sense of natural beauty. Daily surroundings should always be pleasant, with the homestead being the most important of all since so much of the farmer's time was spent there (Phillips, Cockefair and Graham 1948, 294). In addition, the farm was of greater commercial value if it was properly landscaped (Phillips, Cockefair and Graham 1948, 296). A house on a farm should be considered a place of business and every provision should be made to carry forth its business (87th Congress 1962, 660).

One of the first things a settler needed to do when claiming or purchasing a piece of land was to build a home and outbuildings. While important for shelter from the elements, this also met the requirements of the Preemption and Homestead Acts for improvements to the land. Prior to home construction, settlers had to live in tents, in their wagons or with friends. Settlers often built their houses out of native materials (87th Congress 1962, 659). Interiors were often sparsely furnished with wall coverings of newspaper or whitewash. In most cases, these structures were not meant as permanent dwellings, but as temporary shelter until the farmer could amass enough financial resources to construct a more permanent home. Oftentimes, the original homestead property would be reused for another purpose such as a barn or a storage building once the new house was built.

Log Homes

If their claim was near rivers or streams, settlers built homes of logs. (Kinsella 2006, 53). These farms often consisted of a log cabin containing two rooms, with the roof supported by wooden poles supported by beams and covered with a layer of hay and then one of earth (Robinson 1966, 159) The size of these houses was often dictated by the length of the logs the settler could obtain rather than the size of his family. The logs were notched at the ends or hewn on the sides to fit more closely together. The floor might be bare ground, or split logs or rough lumber (Briggs 1950, 582).

An abandon log cabin at Fort Ransom, Ransom County, North Dakota. Photo Courtesy of the State Historical Society of North Dakota (2013-P-024-0184)

Dugouts

Trees generally only grew along rivers in North Dakota, thus timber or log houses were most common in the eastern (Red River Valley) part of the state. Those farmers not lucky enough to acquire wooded land would either build a one room dugout in the side of a creek bank (if one was available) or build a 14x16 foot sod house often with 2 ½ foot thick walls. To build a dugout, one would remove the soil to a depth of a few feet and use strips or blocks of prairie sod to create the front walls. The walls could be from two to three feet thick and the clay soil kept the inside dry (Briggs 1950, 583). Dugouts usually contained only one room and ranged from 10x10 to 12x14 feet. The roofline was generally located at a right angle to the slope of the land and the door on the side away from prevailing winds. These structures were very inexpensive and easy to construct.

A typical dugout style dwelling. Photo courtesy of Metcalf Archaeological Consultants, Inc., 2014

Sod Homes

Settlers on the open prairie built their homes of the most available building material: earth. Sod houses were constructed around a frame of logs or poles with a pitched roof or with one side slightly lower than the other so that the water would drain off. They would stack up alternating strips of prairie sod to create walls, or cut a dugout into the side of a hill or into the ground and then add a sod roof. The inside of the building would sometimes be plastered with wallpaper or cloth to enhance the appearance and comfort of their new homes. (Kinsella 2006, 53).

The design of sod homes was simple; however the construction was physically demanding and difficult (Kinsella 2006, 58). Brush and poles were scavenged from the ground around the claim, however sometimes the settlers would take the sod from an adjacent section of railroad land rather than use their own (Kinsella 2006, 58).

Sod homes were so common in parts of the settlement era that they were often the only type of building one was likely to see on the landscape. Barns and fences were also constructed of sod during this period (Kinsella 2006, 61).

To increase efficiency and also reduce the work required to build and maintain them, sod houses were built low to the ground and snow often drifted over them during the harsh winters until only the chimney was visible (Iseminger, C.C. Becker: McIntosh County German-Russian Pioneer 1983, 9). The disadvantage of this type of structure was that the walls held moisture, making it less than comfortable in the winter (Briggs 1950, 583).

Torval Fosholdt stands with his family outside their sod house near Courtenay, N.D. Three girls stand next to their mother Sophia, and another baby stands in the carriage. Photo Courtesy of State Historical Society of North Dakota.

Claim Shacks

Once the railroads moved into the area, claim shacks became more common. This was basically a board shack covered with tarpaper sitting on the claim. These shacks were cold in the winter and smelled of melting tar in the summer. When a new house was constructed, these shacks were often reused as outbuildings including tool or equipment sheds. (Kinsella 2006, 53).

Claim shacks were also the preferred dwelling for speculators who stayed only long enough to "prove up" their claims. These shacks could be as small as 10x12 feet (the size required by Federal programs) and could be built elsewhere before being moved onto the claim (Kinsella 2006, 69).

Others built tarpaper shanties with materials purchased from the railroads (Robinson 1966, 160). A few loads of lumber would be hauled from the nearest railroad station (lumberyards sprang up on the railroad right-of-way) or sawmill and constructed into a frail one-room shack (or two or three if one was lucky) (Briggs 1950, 583). These houses often looked quite fragile

and only the tarpaper covering the exterior kept the wind and snow out. Sometimes weather-boards were added over the walls and the interior was often whitewashed or covered with newspapers (Briggs 1950, 583). On these early farms, the barn would most likely be a sod-walled building with a straw roof. To combat the loneliness and isolation of this newly settled country, settlers would sometimes band together, building their homes on adjacent corners of separate claims to be near to each other (Briggs 1950, 582). The expansion of the railroads in the late 19th and early 20th centuries also meant that settlers could arrive in the Great Plains by train, stake their claim, and then return later by train with their possessions, including building materials. This meant that fewer sod houses were built and more rough claim shacks would dot the landscape (Kinsella 2006, 30).

Most farmers built structures with salvaged materials to reduce costs and moving buildings around the farm was also common. Adapting structures for new use allowed farmers to keep pace with changing needs without additional capital expenditures (Granger and Kelley 2005, 5.2). Standardization encouraged the factory production of parts and reduced the variety of materials carried by local dealers. It changed building designs in several ways including door and window width standards to allow the use of factory made sashes (Granger and Kelley 2005, 5.3).

After a few good crops, most farmers who intended to stay on the farm would upgrade to a frame house, which signaled financial success and social status (Kinsella 2006, 65).

Ethnic Architecture

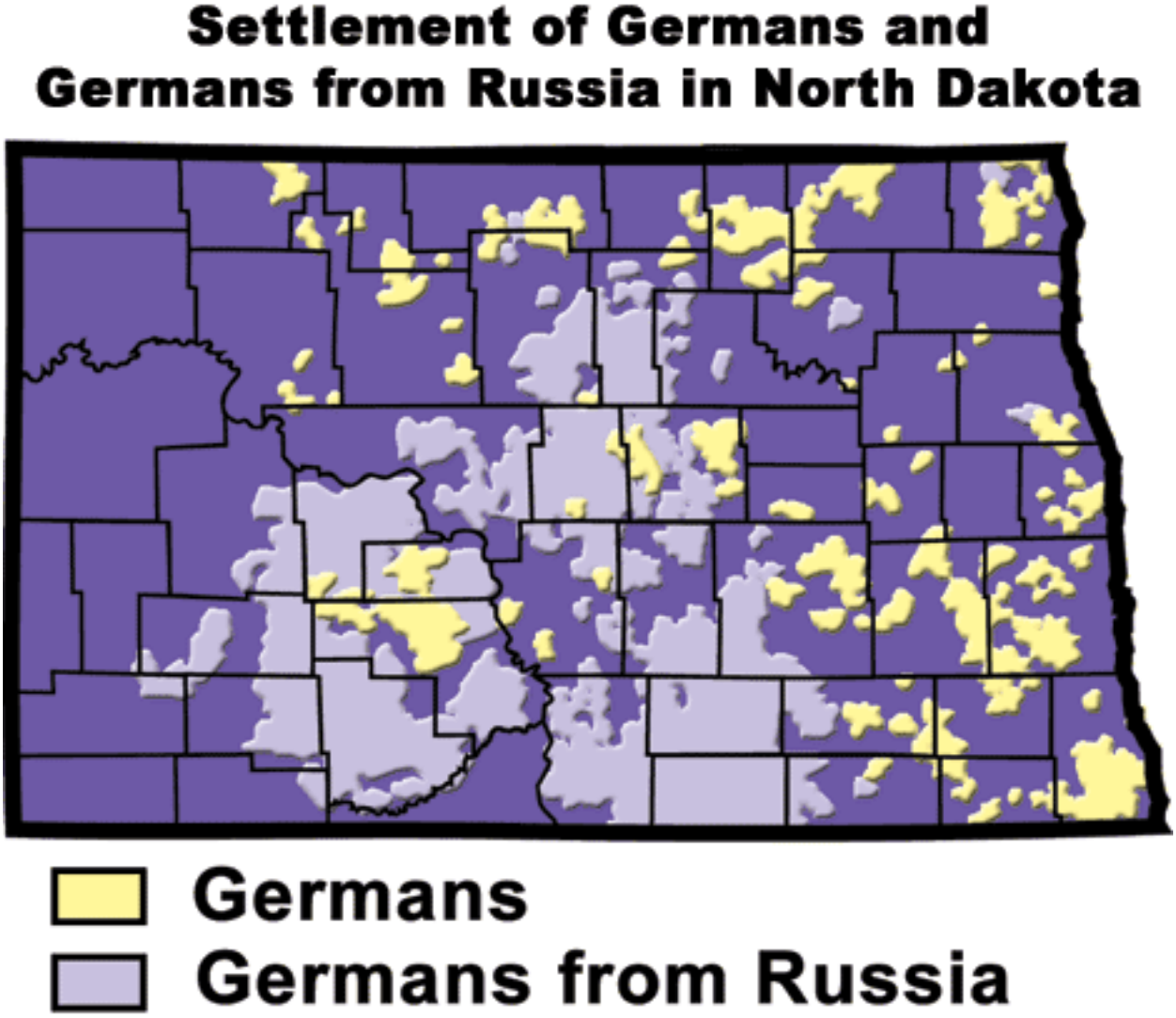
German-Russians

The German-Russians settled in the United States during the late 19th and early 20th centuries (Otto 1988, 23). These German speaking immigrants became the leading wheat farmers in the Great Plains of Kansas, Nebraska and the Dakotas (Otto 1988, 23). The German-Russian immigrants had been quite successful as commercial farmers in their Russian communities, however when the Tsarist government attempted to "Russify" the Germanic settlements in the 1870s they felt it was time to leave Russia (Otto 1988, 24).

A unique style of construction was the sundried brick (baesa) used to construct the homes of many German-Russian and Danish settlers (Robinson 1966, 160) who arrived after the Scandinavian and Canadian settlers and were thus left with poorer land and were less well off than their neighbors (Robinson 1966, 557). German-Russians were the most likely of all ethnic groups in North Dakota to build their first homes from sod. They also utilized rammed earth for walls and floors as well as stone and clay. Originally all types of construction would be covered with a stucco-like finish; this was later upgraded to clapboard siding. They built linear homes

with two or three rooms that often included the family living quarters and barn under one long roof (Otto 1988, 28). Lumber was used to make window frames and doors, but the remainder of the house was sod. In other cases, a typical German-Russian home would be made of clay brick and stone with a thatched roof as many Germans from Russia learned brick making in Russia (Iseminger, C.C. Becker: McIntosh County German-Russian Pioneer 1983, 7). Poorer than other ethnic emigrant groups, German-Russians were more likely to build their houses from whatever found materials available on the prairie whether it was sod, clay or stone. Most first homes were of sod or clay bricks dried in the sun and consisted of two rooms and were 16x24 feet.

German-Russian homes typically had a stove of stones and sun-baked bricks with clay used as mortar. The stove would be four feet wide, five feet long and six feet high. It was often built into the partition between the two rooms in the house to warm both. (Iseminger, C.C. Becker: McIntosh County German-Russian Pioneer 1983, 6). The two rooms were generally the kitchen and a combination living room/bedroom. As the farmer became more successful he would often add on to the house to create a separate living room and/or additional bedrooms. The kitchen was almost always the center room and often had a vestibule entrance at the front in order to protect it from the wind. (Iseminger, The McIntosh County German-Russians: The First Fifty Years 1984, 6). Finally, German-Russians were more likely than any other group to remain on their land (Iseminger, The McIntosh County German-Russians: The First Fifty Years 1984, 7).



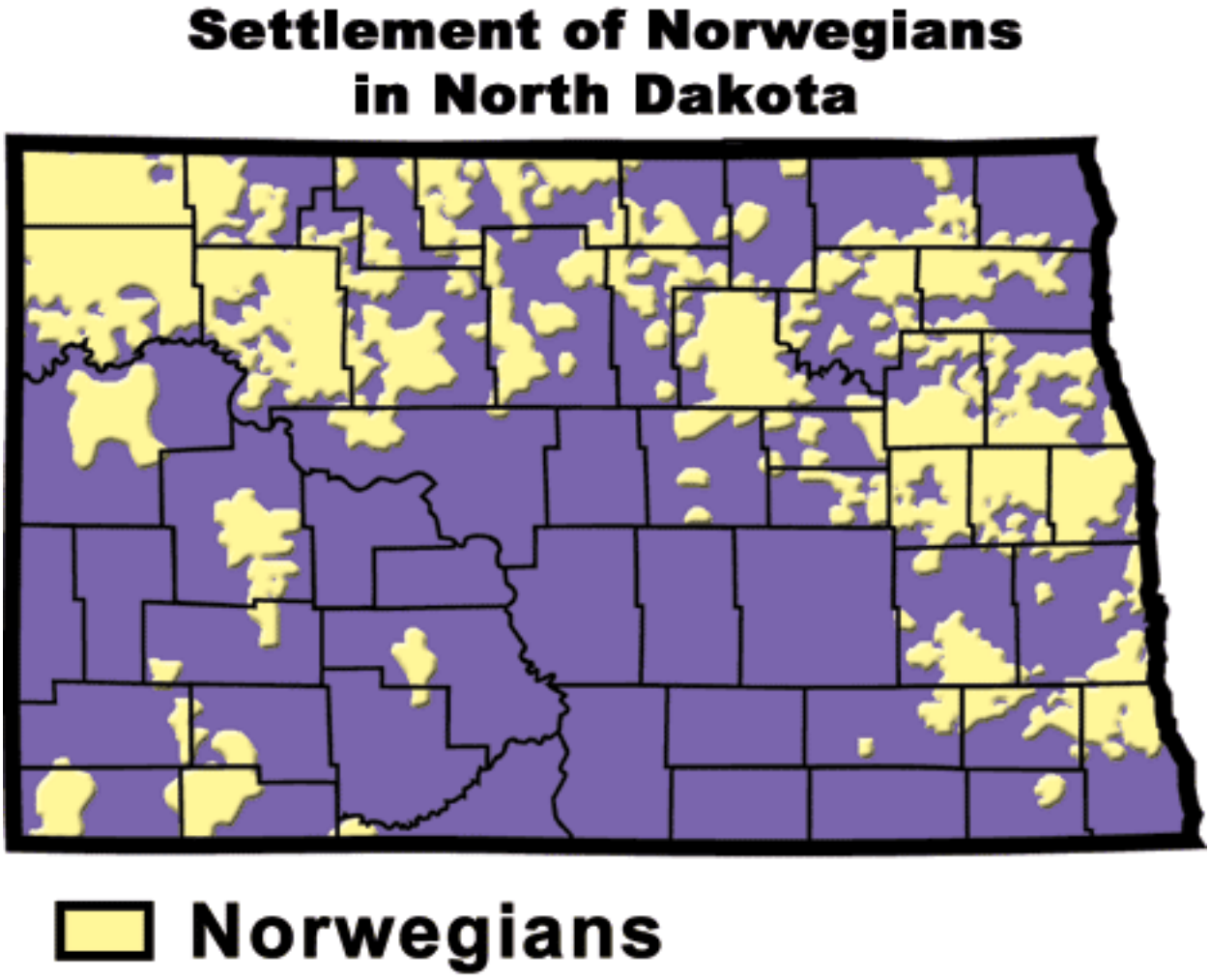
(Howe 2007, 140)

32BA114-Typical example of the house on a German-Russian Farmstead. Materials include earth/clay and uncut stone. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

Norwegians

When Norwegian immigrants first moved into North Dakota, they built dugouts or sod homes much like any other immigrant group, however the goal of any Norwegian farmer was to build a large and stylish farmhouse to provide visual evidence that the American Dream of independence and prosperity had been achieved (Peterson 1984, 10). The American Neo-Classical home symbolized wealth and influence to successful immigrants; however the Herregard type of home back in Norway influenced choices as well. The Herregard house had a two story porch on its broad façade and was usually covered with a simple shed roof. American Herregard homes have a truncated pyramid roof and a variety of additions to the central mass such as kitchens, bay windows, entrance halls and porches (Peterson 1984, 10) however the similarities are enough to suggest that the Herregard was a prototype for Norwegian homes in

the Northern Plains. Back in Norway, the Herregard was an architectural manifestation of the elite class who possessed economic, political and social power (Peterson 1984, 11).



(Howe 2007, 140)

32TR758-Norwegian Farmhouse in Trail County. This farmhouse is of the American Foursquare style with Italianate and Victorian elements. This would be the type of home a prosperous Norwegian farmer would aspire to. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

Ukrainians

The Ukrainian immigrants who settled in North Dakota were among the most impoverished who settled here (Pedeliski 1986, 17). With them, they brought the do-it-yourself culture of their homeland. Ukrainians made many of their own farm implements and built their homes and outbuildings with the mud-wattle construction techniques of the old country. Luckily this style of adobe construction was suitable for the severe climate (Pedeliski 1986, 20). Since they were used to being self-sufficient the Ukrainian immigrants required little adjustment to the necessity of applying hand skills to their lives in North Dakota.

32EM344-George Backhouse home. This is an example of the use of available materials for home construction. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

Later Architectural Types

As railroads continued to move further west, bringing with them access to building materials from the east, farmers with the means to do so began building more permanent and spacious homes. It is not uncommon to find both the original claim house and a newer, more stylized structure on many farms in North Dakota. Housing trends in the Northern Plains followed popular styles from "back east" with modifications for the needs of the farm family. The following styles are commonly found in North Dakota.

Queen Anne

First becoming popular in 1880, the Queen Anne style is identified by a steeply pitched roof with an irregular shape. This style generally has a dominant front-facing gable, patterned shingles, cutaway bay windows and other devices designed to avoid a smooth-walled appearance. The façade is usually asymmetrical with a partial or full-width porch of one story extending along one or both side walls. This style remained popular nationwide until about 1900, however there are few examples in North Dakota farmhouses as only a very affluent farmer could afford such an intricate design which would serve more to illustrate his success than it would function as a farmhouse (McAlester 1984, 262).

32EM991- A Queen Anne Victorian located in Emmons County, North Dakota. Note the irregular shape and upper and lower porches. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

Prairie Style

Low-pitched roof, usually hipped, with widely overhanging eaves; two stories with one-story wings or porches; eaves, cornices and façade detailing emphasizing horizontal lines; often with massive, square porch supports. Prairie Styles include the following variations:

Hipped Roof (symmetrical with front entry)

(Also called the Prairie Box or American Foursquare)

A simple square or rectangular plan with low-pitched hipped roof and a symmetrical façade. One-story wings, porches or carports are subordinate to the principle two-story structure. The entrance can be either centered or off-center and is a focal point of the façade. This is the earliest of the Prairie styles and developed into the most common vernacular version with

hipped dormers and full-width single-story front porches and double-hung sash windows. (McAlester 1984, 438)

32BU3-Ole Crogen farmstead. This house is a good representation of the "American Four-square" style. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

Hipped Roof (symmetrical design and no front entry)

Similar to the American Foursquare but with an inconspicuous entrance and a façade dominated by horizontal rows of casement windows with sharp vertical detailing. (McAlester 1984, 439)

Hipped Roof Asymmetrical

Often high-style with a two- or three-story hipped mass contrasted with equally dominant lower wings porches or carports with hipped roofs. Usually has an inconspicuous front

entrance and having the horizontal casement windows and vertical detailing of the previous style. (McAlester 1984, 439)

Gable Roof

Gables replace the more typical hipped roof. Vernacular examples have a simple front or side gabled roof. Tudor secondary influences are common, particularly false half-timbering on the gable ends.

Vernacular examples of the Prairie Styles were spread widely by pattern books and popular magazines and were most often built between 1905 and 1915 (McAlester 1984, 439).

Craftsman

More often found in town than on a farmstead, the Craftsman style is identified by the low-pitched gabled roof (with occasional hipped examples) with a wide unenclosed eave overhang, exposed roof rafters, decorative beams or braces under the gables, porches either full or partial width, with a roof supported by tapered square columns or pedestals that often extend to ground level without a break at the level of the porch floor. About one-third of craftsman houses have a front gabled roof, one-quarter a cross-gabled roof, one-third side-gabled and less than 10% the hipped variation. (McAlester 1984, 453)

32EM938-This Craftsman style farmhouse in Emmons County, North Dakota was built in 1926. The style is exemplified by the exposed rafter tails and enclosed front porch. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

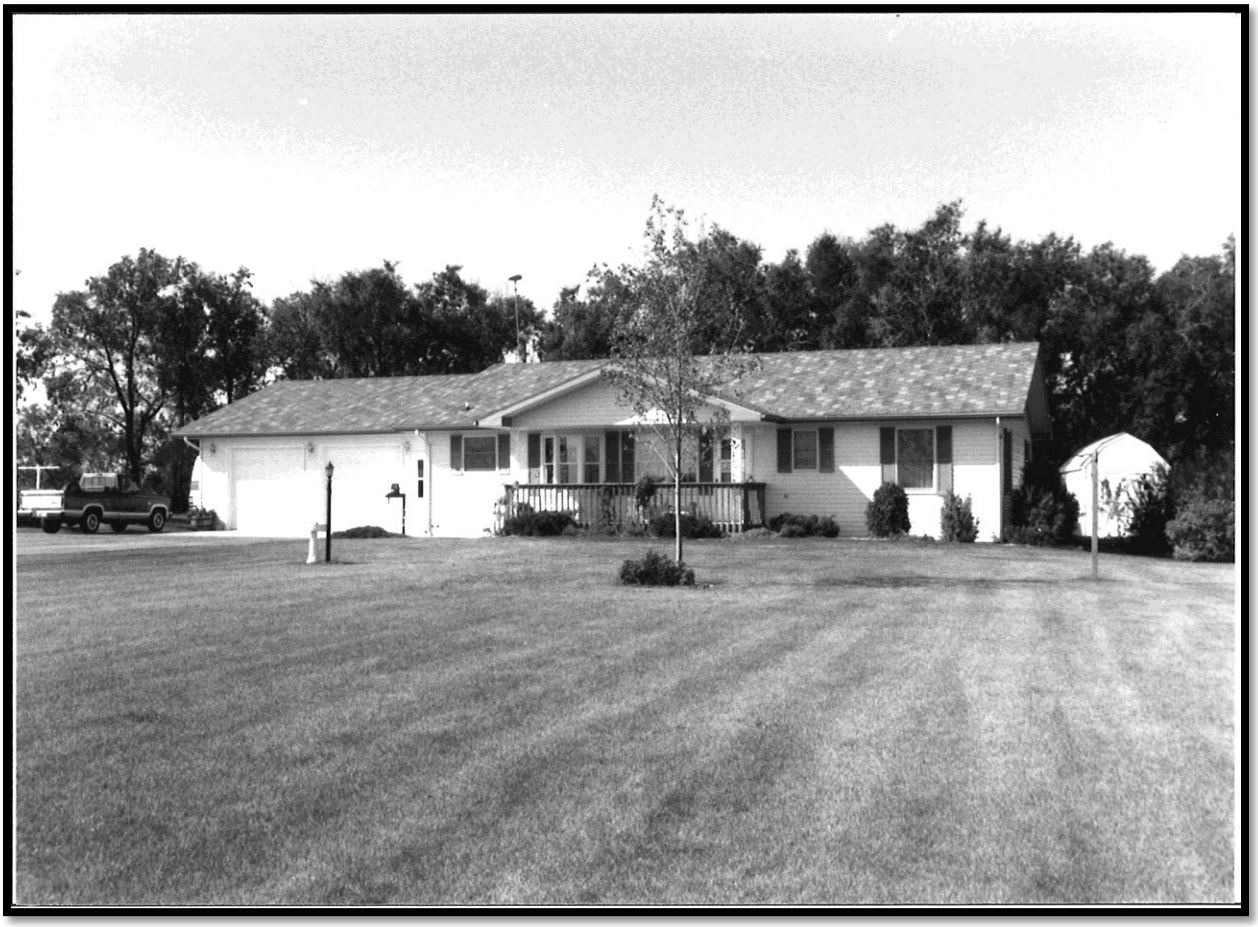
After World War II, home building on farms, as in other areas of the country, moved to the more modern types of architecture still seen today. Common styles in North Dakota include: Minimal Traditional, Ranch and Split-level homes. (McAlester 1984, 477)

Minimal Traditional

Based on the Tudor style, these have a dominant front gable and massive chimney with a lower pitch than traditional Tudor homes and a simplified façade that omits much of the traditional detail. These houses became popular in the late 1930s and were the dominant style of the post-war 1940s and early 1950s. (McAlester 1984, 478)

Ranch

Gaining dominance in the late 1950s through the 1960s and still popular today in many parts of the country (including North Dakota) these are one story houses with very low-pitched roofs and broad rambling façades. Some lack detail but most have decorative shutters, porch roof supports or other detailing loosely based on colonial precedents. (McAlester 1984, 479)



32MN648- This farmhouse in Mountrail County, North Dakota is typical of the Ranch style seen both in farm and urban homes in the later part of the 20th century. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

Split-Level

Split-level architecture emerged during the 1950's and closely related to the ranch style, these have half-story wings and sunken garages. They generally have some traditional decorative detailing but the unusual form marks them as modern houses. (McAlester 1984, 481)

Contemporary Folk Houses

Finally, contemporary folk houses reflect the need for shelter without concern for fashion, style or detailing. The most common example of this found in North Dakota would be the mobile home. Also available at a reasonable price were local lumberyard made homes constructed offsite and then moved on to the farm (reminiscent of the original claim structures). Normally of linear plan both designs allow them to be placed either long side to the road or in narrow lots with the short end to the road. Because they are factory built, mobile homes are now the cheapest and simplest means of acquiring basic housing. (McAlester 1984, 497).

32GF326-Built in 1974, this mobile home is located on a farm in Grand Forks County, North Dakota. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

From the 1960s on, housing styles on farmsteads have become more eclectic with many showing influences of various different styles including Tudor, Colonial and the other styles mentioned above.

Other Buildings

As time went on, farmers found that an all-purpose barn was no longer sufficient for the needs of the farm, and began constructing specialized facilities for everything from machinery to livestock enclosures and grain storage.

32ML189 Main barn at the Freborg farm, McLean County. Photo by Lorna Meidinger, State Historical Society of North Dakota.

Barns

The most noticeable structure on a farmstead besides the main house is generally the barn. Barns require their own context as there are different types that have been used throughout the history of the state. Local innovations have included the octagonal or round barn with an interior silo as well as other regional designs. Barns with shed roofs as well as those with hipped, gabled, and monitor roofs are common. A more prosperous farmer may have a large two-story barn with decorative cupolas as well as other ornamentation, while a less successful or thriftier farmer may be content with a smaller shed-roofed structure of a single story. The

barn is generally the largest structure on the farm and provides an area not only for livestock (specifically cows and horses) but also for feed storage (generally in a hay loft) and a work space for the farmer. Early barns were multipurpose buildings with accommodations for both animals and machinery and farm implements, while later barns tend to be designed for a specific use. Older farmsteads may contain an old barn which has been repurposed to some other use as well as a newer and larger barn.

Bank Barns-Barns built into the side of a hill. These types of barns could be any style, but were most often had a shed or gable roof.

Gothic Arch-These barns were designed to have a self-supporting roof of arched rafters which had no internal trusses and could therefore be built in larger sizes than those which required trusses.

Pole-Frame Barns-One story low-pitch gable roof metal building supported by poles set into the ground rather than footings or foundations. Usually a concrete or dirt floor. Constructed after World War II.

Quonset-Post 1945, long rectangular structure with a semi-cylindrical roof and very low or no sidewalls.

Round or Polygonal Barns-A rare type which may have an interior silo. A linear stall arrangement is an early feature, while later examples have a circular arrangement with roof hay dormers.

32ED33-Jens Myhre Round Barn. Photo courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

32RI00784 Single-story barn, rural Richland County, North Dakota. Photo Courtesy of Division of Archaeology and Historic Preservation, State Historical Society of North Dakota.

Machine Sheds

As farming moved from horse and man power to gas powered tractors, combines and other machinery, it became necessary to store that machinery. Machinery should be housed properly to prevent rust from exposure to rain and snow, therefore the machine shed should be located conveniently in a dry place. It needs to be large and inexpensive and located to fit with the general plan of other buildings on the farm. A shed roof type is best and second-grade or used lumber can be used so long as the walls are tight, the roof waterproof and the floor dry (Phillips, Cockefair and Graham 1948, 447-448), however gable roofs are popular as well. Heating and cooling are generally not required for this type of structure so long as the machinery is dry. Machine sheds were often repurposed barns or granaries and may be identified by the workbench, lack of interior divisions, and miscellaneous machinery found inside. Machine sheds have large doors to enable storing of machinery such as tractors and combines.

Machine shed built by Melford Halvorson in 1959 of lumber re-claimed from 1895 house on farm . Pleasant Lake Township, Benson County. Also shown in this photo is the 8-pound beet grown by his son Mark Halvorson. Photo courtesy of Mark Halvorson.

Chicken Houses/Coops

As a result of the domestication and development of the chicken, the animal is no longer able to provide its own shelter, thus an appropriate structure must be created for it. A poultry house should be placed conveniently for the farmer as they require daily care, and on a well-drained area such as a gentle slope. It should be designed to enhance the overall attractiveness of the farm since it is generally located relatively close to the main house. If possible, the poultry house should be placed so as to afford the protection of a southern slope with a windbreak on the north or west. The most important considerations for the poultry house are the comfort of the bird, convenience for the farmer, and economy (Phillips, Cockefair and Graham 1948, 92-93). Early poultry houses tended to be single room affairs that were almost too weather tight. Chickens require maximum protection from both heat and cold, and an efficient ventilation system, along with a concrete floor to prevent wet conditions is the most comfortable for the chicken (Phillips, Cockefair and Graham 1948, 95). Chickens that are too warm will not produce while those that are too cold will likely die. Brooding hens should be given a special place to roost in order to maximize egg production. More recent chicken houses feature multiple windows on the southern exposure to take advantage of solar heating in the winter as well as a separate area for the raising of chicks.

Chicken coops are usually small and of 1 or 1 ½ stories with a rectangular plan. Half-monitor roofs were often used and windows and doors are traditionally found on the south side.

32ML189 One-story chicken house. Note the rectangular design. This type of chicken house was typical of the time. Freborg Farm, McLean County. Photo by Lorna Meidinger, State Historical Society of North Dakota.

Calf Creeps

Farmers find it economical to feed calves in a creep (a pen with openings just large enough for calves to enter) in the spring and summer. Calves in an open enclosure can be difficult to control and add both time and frustration to the farmer's day. These pens are generally made of second-grade wood and can be moved or adjusted as needed.

Pig Creeps

As soon as pigs begin to eat, a creep should be provided where they can come and go. Pigpens should never be allowed to become dirty or bad smelling, but should be plowed frequently and planted to rape *(Brassica napus)*, wheat, rye or other green crop to provide green feed throughout the year. This necessitates the building of hog houses that can be moved from one pen to another in rotation in order to keep the soil clean and free of disease

(Phillips, Cockefair and Graham 1948, 393). Portable hog houses of a modest size ensure that hogs are not crowded and prevent injury to piglets and smaller pigs as well as providing for sanitation. Generally sows are given their own house with a separate area for the piglets which allows them access to the mother for feeding but prevents the mother accidentally laying on them or crushing them.

Sheep Sheds/Barns

Sheep require a dry, well-drained site as sheep will not prosper in a wet place. Sheds should be located close to pastures and usable both in winter and summer. The building should not be too far from the house. Sheep require only an area which is dry and free from drafts, thus an open shed is a good place for sheep. A shed-roofed building open on the south or east is best. Dirt floors are desirable and openings should be large to prevent crowding through doors (Phillips, Cockefair and Graham 1948, 420). Since the sheep have their own protection against most elements, it is not necessary to provide an enclosed area for their comfort, in fact they do better when allowed to move about in order to keep warm in cold months.

Miscellaneous Buildings

In addition to these structures, it is common to find grain bins, granaries, livestock enclosures, pasture fencing and at least one well on each farm. Depending on the type of farming performed other specialty buildings may be present (such as corn cribs, large stock tanks, Quonsets and others). On an older farm one might find the remains of an outhouse as well as waste dumps that may provide valuable archaeological information. Those farms which have been occupied for several generations may have evidence of former residences and other buildings that were abandoned when they were no longer sufficient for their intended use or those which were repurposed when a new structure was required. It is also common to see buildings moved in from other locations or those built from materials salvaged from older structures. Due to these possibilities, it is important for researchers to evaluate each building carefully in order to determine its origin and relation to the farmstead as a whole.

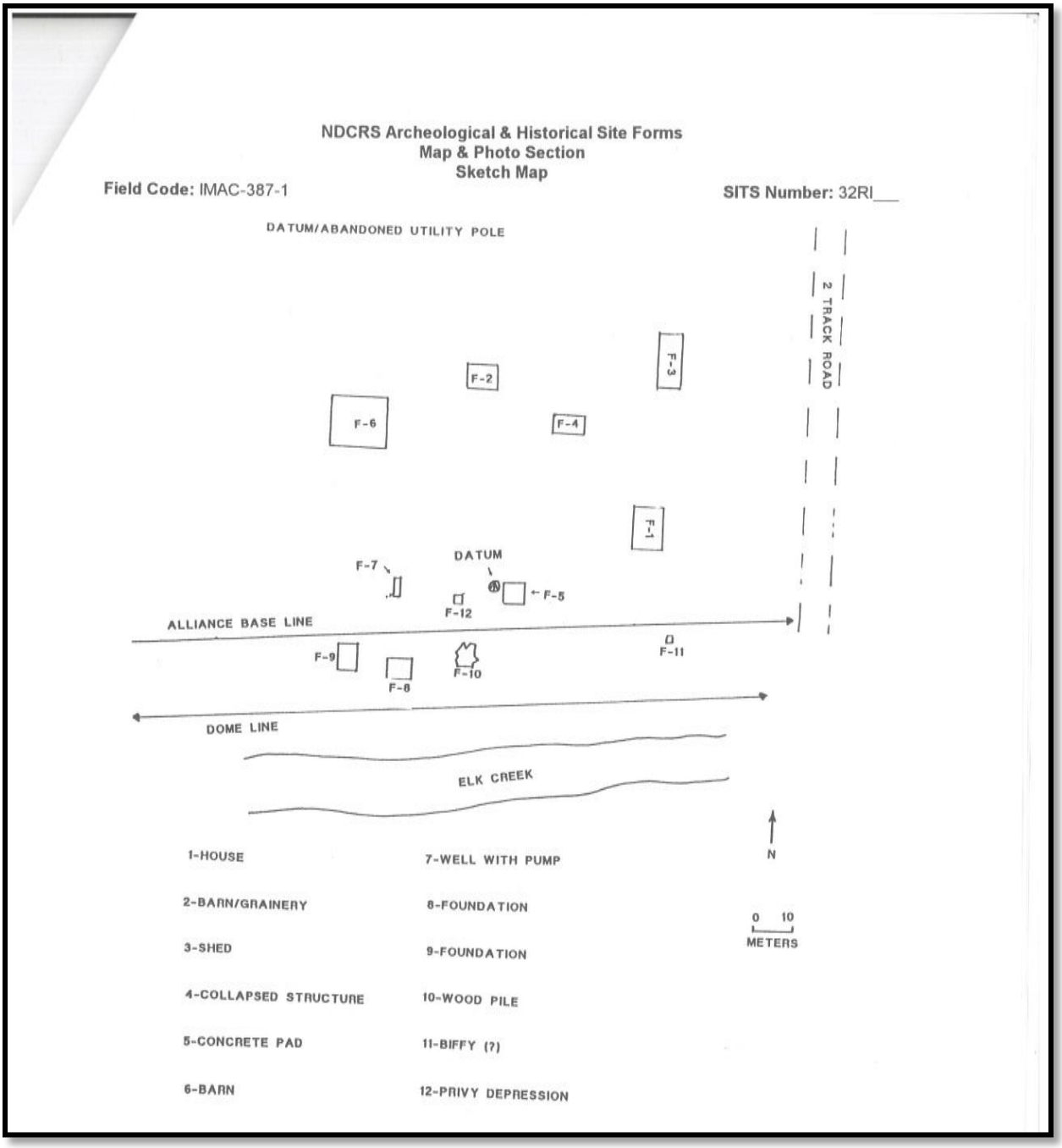
32ML189 Metal grain silo, Freborg Farm, McLean County. Once farmers were able to increase their land holdings due to mechanization, they needed someplace to store excess grain. The use of metal for silo construction was an improvement over the old wood style granaries as it provided superior protection from the elements and vermin such as rats (*rodentia*), house mice (*mus musculus*) and brown rats (*rattus norvegicus*). Photo by Lorna Meidinger, State Historical Society of North Dakota.

Farm Arrangement

In studying historic farm resources in North Dakota, it is important to first determine the area which will be considered part of the farm. In some cases it is advisable to consider the entire acreage originally associated with the farm while in other cases only the main farmstead needs to be included. If a farm is considered important due to improvements such as shelterbelts, irrigation and fencing, then the whole farm must be considered. If the criterion under which the farm is considered eligible is the architecture of the main house, then only the area immediately surrounding the farmyard must be discussed.

One important feature of a farmstead is the arrangement of the structures in relation to both one another and to the landscape. For this reason, it is important to document such things as road locations, local topography, water sources and similar features.

One common farm arrangement puts the main house in the forefront with outbuildings forming a courtyard at the sides and rear. Barns and other livestock operations are generally further from the house due to the odor and concerns about contaminating the groundwater. Early farm plans recommended the barn be at least 100-150 feet away from the house and downwind both for odor control and fire protection. Some ethnic homesteads were arranged in a manner consistent with the homeland of the settlers who lived there, for instance German-Russian farms in Stark County were almost always constructed with the house at the northern point of the property without regard to where the road or other features might be (Iseminger 1984, 6).



The layout of the structures at 32RI00784, rural Richland County, North Dakota. Note the position of the house (F-1) at the front of the property with the door facing the road. The barn (F-6) is placed well away from the house while the shed (F-3) and a collapsed structure (F-4) which may have been a chicken coop are much closer. Also of interest is the original barn (F-2) which was later turned into a granary as a larger barn was needed. Photo courtesy of the Archaeology and Historic Preservation Division, State Historical Society of North Dakota.

National Register Evaluation Criteria and Significance

A farm or ranch is a unit unto itself and should be evaluated as a whole (Jacon and Brooks 1984, 47). However, in some cases a farm consisting of several deteriorated structures may not be eligible for listing in the National Register of Historic Places (NRHP) while an individual structure (such as a house or barn) is eligible individually.

There is also a need to evaluate small farmsteads from an archaeological perspective. While many farmsteads may consist of little more than a number of small depressions and material scatters which are not eligible for listing in and of themselves, there is an increasing desire to study these resources together to discern patterns of settlement, cultural landscapes and other areas related to farming (Jacon and Brooks 1984, 85).

"Significance" in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:

Criterion A: Event

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

To be considered for listing under Criterion A, a property must be associated with one or more events important in a defined historic context. Criterion A recognizes properties associated with single events, such as the founding of a town, or with a pattern of events, repeated activities, or historic trends, such as the gradual rise of a port city's prominence in trade and commerce. The event or trends, however, must clearly be important within the associated context. In addition the property must have an important association with the event or historic trend, and it must retain historic integrity.

Types of Events

A property can be associated with either (or both) of two types of events:

- A specific event marking an important moment in American prehistory or history and
- A pattern of events or a historic trend that made a significant contribution to the development of a community, a State, or the Nation.

Association of the Property with the Events

In order for a farmstead to be eligible for listing under Criterion A, there must be sufficient documentation to determine the age of the structures to evaluate the association with historical events. Archaeological sites can be evaluated using well-reasoned inferences drawn from data recovered at the site.

The following context areas are those most likely to be associated with North Dakota farmsteads:

> **Colonization** relates to the planned and organized immigration, settlement and/or resettlement of groups to, into, or within North Dakota from other areas. Groups may be religious, social, ethnic, or others, such as a Hutterite colony. *Typical property types may include: towns, colonies, settlements, reservations, businesses, residences, and farms.*
>
> **Depression, The Great** relates to the causes, effects of, conditions during, and/or relief and recovery from the Great Depression, 1929-1940. *Typical property types may include: abandoned farms, banks, business buildings, city parks, civic improvements, relief facilities, Works Progress Administration (WPA) projects, Civilian Conservation Corps (CCC) camps and project sites.*
>
> **Farming** relates to the establishment and operation of farms other than those specifically categorized elsewhere. *Typical property types may include single or multiple dwellings, barns, corrals, privies, dumps, grain storage, animal shelters, indoor and outdoor storage facilities, and water sources.*
>
> **Irrigation and Conservation** relates to the conservation and planned use of land and water resources. *Typical property types may include: historically significant shelterbelts, conservation-oriented farming sites, pumping stations, water pipelines, dams, reservoirs, canals, and flumes.*

Significance of the Association

Mere association with historic events or trends is not enough, in and of itself, to qualify under Criterion A: the property's specific association must be considered important as well. For example, a historic farmstead must be shown to have been significant in the history of farming or provide a good example of its historic time period.

Traditional Cultural Values

Traditional cultural significance is derived from the role a property plays in a community's historically rooted beliefs, customs, and practices. Properties may have significance under Criterion A if they are associated with events, or series of events, significant to the cultural traditions of a community.

Criterion B: Person

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

Criterion B applies to properties associated with individuals whose specific contributions to history can be identified and documented. Persons "significant in our past" refers to individuals whose activities are demonstrably important within a local, State, or national historic context. The criterion is generally restricted to those properties that illustrate (rather than commemorate) a person's important achievements.

Significance of the Individual

The persons associated with the property must be individually significant within a historic context. A property is not eligible if its only justification for significance is that it was owned or used by a person who is a member of an identifiable profession, class, or social or ethnic group. It must be shown that the person gained importance within his or her profession or group. In the case of farmsteads this might include: future political figures, famous inventors of farm technology, groups of ethnic farmers, early female settlers, etc.

Association with the Property

In addition to the significance with the individual, properties eligible under Criterion B are usually those associated with a person's productive life, reflecting the time period when he or she achieved significance. Properties that pre- or post-date an individual's significant accomplishments are usually not eligible under this criterion.

The individual's association with the property must be documented by accepted methods of historical or archaeological research, including written or oral history. Speculative associations are not acceptable. For archaeological sites, well-reasoned inferences drawn from data recovered at the site are acceptable.

Comparison to Related Properties

Each property associated with an important individual should be compared to other associated properties to identify those that best represent the person's historic contributions. The best representatives usually are properties associated with the person's adult or productive life. Properties associated with an individual's formative or later years may also qualify if it can be demonstrated that the person's activities during this period were historically significant or if no properties from the person's productive years survives. Length of association is an important factor when assessing several properties with similar associations.

Association with Groups

For properties associated with several community leaders or with a prominent family, it is necessary to identify specific individuals and to explain their significant accomplishments.

Association with Living Persons

Properties associated with living persons are usually not eligible for inclusion in the National Register. Sufficient time must have elapsed to assess both the person's field of endeavor and his/her contribution to that field. Generally, the person's active participation in the endeavor must be finished for this historic perspective to emerge.

Association with Architects/Artisans

Architects, artisans, artists, and engineers are often represented by their works, which are eligible under Criterion C. Their homes and studios, however, can be eligible for consideration under Criterion B, because these usually are the properties with which they are most personally associated.

Native American Sites

The known major villages of individual Native Americans who were important during the contact period or later can qualify under Criterion B. As with all Criterion B properties, the individual associated with the property must have made some specific important contribution to history. Examples might include sites significantly associated with Sitting Bull or Sakakawea.

Criterion C: Design/Construction

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

A property important for illustrating a particular architectural style or construction technique must retain most of the physical features that constitute that style or technique. A property that has lost some historic materials or details can be eligible *if* it retains the majority of the features that illustrate its style in terms of the massing, spatial relationships, proportion, pattern of windows and doors, texture of materials, and ornamentation. The property is not eligible, however, if it retains some basic features conveying massing but has lost the majority of the features that once characterized its style.

Archaeological sites eligible under Criterion C must be in overall good condition with excellent preservation of features, artifacts, and spatial relationships to the extent that these remains are able to illustrate a site type, time period, method of construction, or work of a master.

Resources "that represent a significant and distinguishable entity whose components may lack individual distinction" are called districts.

Applying Criterion C: Design/Construction

Distinctive Characteristics of Type, Period, and Method of Construction

This is the portion of Criterion C under which most properties are eligible, for it encompasses all architectural styles and construction practices.

***Distinctive Characteristics*:** "Distinctive characteristics" are the physical features or traits that commonly recur in individual types, periods, or methods of construction. To be eligible, a property must clearly contain enough of those characteristics to be considered a true representative of a particular type, period, or method of construction.

Characteristics can be expressed in terms such as form, proportion, structure, plan, style, or materials. They can be general, referring to ideas of design and construction such as basic plan or form, or they can be specific, referring to precise ways of combining particular kinds of materials.

Type, Period, and Method of Construction:

"Type, period, or method of construction" refers to the way certain properties are related to one another by cultural tradition or function, by dates of construction or style, or by choice or availability of materials and technology.

A structure is eligible as a specimen of its type or period of construction if it is an important example (within its context) of building practices of a particular time in history. For properties

that represent the variation, evolution, or transition of construction types, it must be demonstrated that the variation was an important phase of the architectural development of the area or community in that it had an impact as evidenced by later buildings. This can include innovative barn designs that influenced later construction as well as certain ethnic structures that convey the influence of Old World construction techniques in the settlement of North Dakota.

Historic Adaptation of the Original Property

A property can be significant not only for the way it was originally constructed or crafted, but also for the way it was adapted at a later period, or for the way it illustrates changing tastes, attitudes, and uses over a period of time. This is often the case with farmsteads in that buildings were often repurposed from their original use and other buildings were added on to in order to increase the usability.

A district is eligible under this guideline if it illustrates the evolution of historic character of a place over a particular span of time. This criterion is important in the case of farmsteads which display several intact structures in their original locations which show how the usage of the land changed over time.

Works of a Master

A master is a figure of generally recognized greatness in a field, a known craftsman of consummate skill, or an anonymous craftsman whose work is distinguishable from others by its characteristic style and quality. The property must express a particular phase in the development of the master's career, an aspect of his or her work, or a particular idea or theme in his or her craft.

A property is not eligible as the work of a master, however, simply because it was designed by a prominent architect. For example, not every building designed by Frank Lloyd Wright is eligible under this portion of Criterion C, although it might meet other portions of the Criterion, for instance as a representative of the Prairie style.

The work of an unidentified craftsman is eligible if it rises above the level of workmanship of the other properties encompassed by the historic context.

Properties Possessing High Artistic Values

High artistic values may be expressed in many ways, including areas as diverse as community design or planning, engineering, and sculpture. A property is eligible for its high artistic values if

it so fully articulates a particular concept of design that it expresses an aesthetic ideal. A property is not eligible, however, if it does not express aesthetic ideals or design concepts more fully than other properties of its type.

Criterion D: Information Potential

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

Certain important research questions about human history can only be answered by the physical material of cultural resources. Criterion D encompasses the properties that have the potential to answer, in whole or in part, those types of research questions. The most common type of property nominated under this Criterion is the archaeological site (or a district comprised of archaeological sites). Buildings, objects, and structures (or districts comprised of these property types), however, can also be eligible for their information potential.

For properties eligible under Criterion D, including archaeological sites and standing structures studied for their information potential, less attention is given to their overall condition, than if they were being considered under Criteria A, B, or C. Archaeological sites, in particular, do not exist today exactly as they were formed. There are always cultural and natural processes that alter the deposited materials and their spatial relationships.

For properties eligible under Criterion D, integrity is based upon the property's potential to yield specific data that addresses important research questions, such as those identified in the historic context documentation in the *North Dakota Statewide Comprehensive Preservation Plan* or in the research design for projects meeting the *Secretary of the Interior's Standards for Archaeological Documentation.*

Archaeological Sites

Criterion D most commonly applies to properties that contain or are *likely* to contain information on an important archaeological research question. The property must have characteristics suggesting the likelihood that it possesses configurations of artifacts, soil strata, structural remains, or other natural or cultural features that make it possible to do the following:

Test a hypothesis or hypotheses about events, groups, or processes in the past that bear on important research questions in the social or natural sciences or the humanities; or

Corroborate or amplify currently available information suggesting that a hypothesis is either true or false; or

Reconstruct the sequence of archaeological cultures for the purpose of identifying and explaining continuities and discontinuities in the archaeological record for a particular area.

Buildings, Structures, and Objects

While most often applied to archaeological districts and sites, Criterion D can also apply to buildings, structures, and objects that contain important information. In order for these types of properties to be eligible under Criterion D, they themselves must be, or must have been, the principal source of the important information.

Partly Excavated or Disturbed Properties

The current existence of appropriate physical remains must be ascertained in considering a property's ability to yield important information. Properties that have been partially excavated or otherwise disturbed and that are being considered for their potential to yield additional important information must be shown to retain that potential in their remaining portions.

Completely Excavated Sites

Properties that have yielded important information in the past and that no longer retain additional research potential (such as completely excavated archaeological sites) must be assessed essentially as historic sites under Criterion A. Such sites must be significant for associative values related to: 1) the importance of the data gained or 2) the impact of the property's role in the history of the development of anthropology/archeology or other relevant disciplines. Like other historic properties, the site must retain the ability to convey its association as the former repository of important information, the location of historic events, or the representative of important trends.

Integrity of Agricultural Properties

To be listed in the NRHP, a property must not only be shown to be significant under the NRHP criteria, but it also must have integrity. The evaluation of integrity is sometimes a subjective judgment, but it must always be grounded in an understanding of a property's physical features and how they relate to its significance.

Historic properties are also evaluated based on the integrity of the existing structures. Within the concept of integrity, the NRHP criteria recognize seven aspects or qualities that, in various combinations, define integrity.

To retain historic integrity a property will always possess several, and usually most, of the aspects. The retention of specific aspects of integrity is paramount for a property to convey its significance. Determining which of these are most important to a particular property requires knowing why, where, and when the property is significant. The following sections define the seven aspects and explain how they combine to produce integrity.

Location

Location is the place where the historic property was constructed or the place where the historic event occurred. The relationship between the property and its location is often important to understanding why the property was created or why something happened. The actual location of a historic property, complemented by its setting, is particularly important in recapturing the sense of historic events and persons. Except in rare cases, the relationship between a property and its historic associations is destroyed if the property is moved, however since many farm buildings were moved from one area to another or even moved in from another place this should be evaluated carefully.

Design

Design is the combination of elements that create the form, plan, space, structure, and style of a property. Design includes such elements as organization of space, proportion, scale, technology, ornamentation, and materials.

A property's design reflects historic functions and technologies as well as aesthetics. It includes such considerations as the structural system; massing; arrangement of spaces; pattern of fenestration; textures and colors of surface materials; type, amount, and style of ornamental detailing; and arrangement and type of plantings in a designed landscape.

Design can also apply to districts, whether they are important primarily for historic association, architectural value, information potential, or a combination thereof. For districts significant primarily for historic association or architectural value, design concerns more than just the individual buildings or structures located within the boundaries. It also applies to the way in which buildings, sites, or structures are related.

Setting

Setting is the physical environment of a historic property. Whereas location refers to the specific place where a property was built or an event occurred, setting refers to the *character* of the place in which the property played its historical role. It involves *how*, not just where, the property is situated and its relationship to surrounding features and open space.

Setting often reflects the basic physical conditions under which a property was built and the functions it was intended to serve. In addition, the way in which a property is positioned in its environment can reflect the designer's concept of nature and aesthetic preferences.

The physical features that constitute the setting of a historic property can be either natural or manmade, including such elements as:

- Topographic features (a gorge or the crest of a hill);
- Vegetation;
- Simple manmade features (paths or fences); and
- Relationships between buildings and other features or open space.

These features and their relationships should be examined not only within the exact boundaries of the property, but also between the property and its *surroundings*. This is particularly important for districts.

Materials

Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property. The choice and combination of materials reveal the preferences of those who created the property and indicate the availability of particular types of materials and technologies. Indigenous materials are often the focus of regional building traditions and thereby help define an area's sense of time and place.

A property must retain the key exterior materials dating from the period of its historic significance. If the property has been rehabilitated, the historic materials and significant features must have been preserved. The property must also be an actual historic resource, not

a recreation; a recent structure fabricated to look historic is not eligible. Likewise, a property whose historic features and materials have been lost and then reconstructed is usually not eligible. Keep in mind however that change to the materials over time is common amongst farm structures and if these changes occurred during the historic period they would not necessarily exclude the property from eligibility.

Workmanship

Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory. It is the evidence of artisans' labor and skill in constructing or altering a building, structure, object, or site. Workmanship can apply to the property as a whole or to its individual components. It can be expressed in vernacular methods of construction and plain finishes or in highly sophisticated configurations and ornamental detailing. It can be based on common traditions or innovative period techniques.

Feeling

Feeling is a property's expression of the aesthetic or historic sense of a particular period of time. It results from the presence of physical features that, taken together, convey the property's historic character. For example, a rural historic district retaining original design, materials, workmanship, and setting will relate the feeling of agricultural life in the 19th century.

Association

Association is the direct link between an important historic event or person and a historic property. A property retains association if it is the place where the event or activity occurred and is sufficiently intact to convey that relationship to an observer.

Because feeling and association depend on individual perceptions, their retention *alone* is never sufficient to support eligibility of a property for the NRHP.

Site Evaluation Considerations

Location

It was, and remains, very common for individual buildings to be moved from one location on the farm to another or even from one farm to another. These properties should still be considered eligible provided that the location to which they were moved is similar to the original.

Design

Many farm buildings tended to start out as a basic structure that was later added on to as the farm's needs changed. This should be considered when evaluating properties which appear to be of disparate styles and uses.

Setting

It is likely that many previously isolated farms may now be closer to urban settings due to the expansion of cities throughout the state. Provided that the setting is still outside the city proper, setting should be considered rural.

Materials

Due to the changing uses and configurations of farm buildings, it is not unusual to encounter seemingly incompatible materials both on a specific building and within the overall farm setting. It is not uncommon for buildings on the farm to have been built several decades apart, therefore many different materials may be used.

Workmanship

Many farm buildings were constructed by the farmers themselves without the aid of a professional architect or builder.

Feeling

Care must be taken in determining the dates of significance for the farm property in order to correctly evaluate the historic feeling of the area. While many original buildings may be present, the feeling portrayed may be that of a later era if more recent structures overshadow the older ones.

Association

Farms are ubiquitous to the rural nature of North Dakota, and thus the researcher may underestimate the importance of events having taken place there. An association with significant advances in farm practices or farm life should be considered as well as those of notable persons or events.

Goals and Priorities

The goal of this study is to create a document which will assist the NDSHPO and other researchers to record and evaluate significant farm resources throughout the state of North Dakota. To that end, an attempt has been made to answer several research questions:

How did government programs that made it easier for Euro-Americans to establish farms in North Dakota shape the agricultural development of the land (e.g., the location, size, and type of farms)?

How did the particular characteristics of the land (e.g., soil types, topography, average temperature, length of growing season) affect the size, arrangement, production, and success of farms?

What are the demographic characteristics of North Dakota farmers and how did these change through time? In particular, in what ways did demographics influence the physical nature of farms?

What were the farming methods, land use patterns, kinds of crops and livestock, and types of structures associated with farming in North Dakota and how did they change through time?

Who developed designs for North Dakota's farm structures? How did farmers decide what to build, and where did they obtain plans? How did the development of new building materials and systems influence the design of structures? Who built the structures? When and how were they modified? Are there characteristics of North Dakota farms or farmsteads that are unique or significant when compared to those found elsewhere in the region?

What was the impact of scientific agriculture on the physical development of North Dakota farms? Where did farmers get technical information on topics such as farming methods, building types, and technological changes?

How did specific changes in technology – including new machinery, improved seeds, livestock breeding, power generation, and better transportation – affect farming methods, farm planning, and the design of buildings and structures?

How did changes in transportation affect farming and how are these changes reflected in the physical characteristics of farmsteads?

How did changes in communication alter farming and how is this reflected on North Dakota farmsteads?

Which major events affected the development of farming in North Dakota and what was their effect? How did government agencies respond to these events and what was the effect on North Dakota farms?

While some of these questions are answered by this study, much more can be learned about farming in North Dakota. In order to ensure that the history of agriculture in the state is preserved for future generations, more research is needed. The following are the priorities for this research:

Particularly useful would be a pilot study selecting one or two counties and completing a comprehensive survey of farm properties using aerial photos, county histories, local historical society records, photo archives and other resources to develop a history of farming and ranching for that region. This could later lead to a more widespread study as funding and time becomes available.

There should also be a focus on resources in the western half of the state. Current oil production in that area poses an immediate threat to farm properties.

Moving toward standard recording of these resources found within the APE of Reviewed projects would allow for additional documentation.

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