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United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

For NPS use only
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See instructions in *How to Complete National Register Forms*
Type all entries—complete applicable sections

1. Name

historic North Dakota Round Barns (thematic nomination)

and/or common N/A

2. Location

street & number N/A (various, see individual survey sheets) N/A not for publication

city, town N/A N/A vicinity of

state N/A code N/A county N/A code N/A

3. Classification

Category	Ownership	Status	Present Use	
___ district	___ public	X occupied	X agriculture	___ museum
X building(s)	X private	X unoccupied	___ commercial	___ park
___ structure	___ both	___ work in progress	___ educational	___ private residence
___ site	**Public Acquisition**	**Accessible**	___ entertainment	___ religious
___ object	___ in process	X yes: restricted	___ government	___ scientific
thematic nomination	___ being considered	___ yes: unrestricted	___ industrial	___ transportation
	N/A	___ no	___ military	___ other:

4. Owner of Property

name Multiple Ownership (see individual survey sheets)

street & number N/A

city, town N/A N/A vicinity of state North Dakota

5. Location of Legal Description

courthouse, registry of deeds, etc. Register of Deeds, County Courthouse, various counties;

street & number N/A see individual survey sheets.

city, town N/A state North Dakota

6. Representation in Existing Surveys

title Class III Inventory of Seventeen Sites With Extant Round Barns and Class I Literature has this property been determined eligible? ___ yes X no

date July, 1986 Search of Twenty-four Sites With Demolished Round Barns (Draft) N/A federal ___ state ___ county ___ local

depository for survey records State Historical Society of North Dakota

city, town Bismarck state North Dakota

7. Description

Condition		Check one	Check one
X excellent	___ deteriorated	___ unaltered	X original site
X good	___ ruins	X altered	___ moved date _____
___ fair	___ unexposed		

Describe the present and original (if known) physical appearance

This thematic nomination consists of twelve contributing buildings. The nomination's theme of round and polygonal barns as a type of construction describes the resources. The geographical area considered encompasses the entire state.

SURVEY METHODOLOGY

A survey to identify North Dakota's remaining and historic round and polygonal barns (generically referred to as "round barns") was sponsored by the State Historical Society of North Dakota and conducted by staff architectural historian L. Martin Perry between the months of August, 1985 and July, 1986. The purpose of the survey was to locate and record barns which represent the theme of round barn construction and to nominate those with sufficient age and integrity to the National Register of Historic Places. An effort was made to locate all round barns ever erected in the state as a point of departure for inspection of extant properties.

Present owners of property where round barns stand or once stood were contacted before survey. If in interview with the present property owner it was learned that demolition or decay had occurred which would render the barn ineligible for National Register listing, the site was not visited. Documentary information for all sites was gathered to provide a basis for comparison between the state's round barns, both standing and non-standing.

Definitive study of the state's round barns would involve on-site inspection of all sites of round barns, regardless of the condition or presence of such buildings. Information from such a survey would answer further questions about the place of these barns in North Dakota agricultural and architectural history. Issues such as the nature of the evolution of farm operations, change in spatial organization and distribution of farm buildings and structures, the ultimate adaptability afforded by experimental and/or folk structures, reflections of ethnic cultures in farm buildings, and a catalogue of agricultural building types, represent studies to which round barns would contribute. Furthermore, on-site survey would include examination of earth disturbance to determine precise measurement of the barns, adding accuracy to information from interviews and refining the accumulated body of information on the subject.

On-site survey was conducted simultaneously with documentary research, and followed guidelines found in the revised NDSHPO survey manual (Snortland-Coles and Perry, 1986). The survey manual required recording of all features on the site, including the farmstead and associated features, rather than recordation of simply the thematic representative (see, for instance, Pedersen and Stafford, 1984b). The limited staff time available for the project and requirement to record the entire site imposed limits upon on-site survey. Those limitations resulted in the the management decision to visit and record only those sites which contained potentially eligible round barns. The survey involved no subsurface testing, for the prehistoric archeological component of any site was not felt to contain information relevant to the theme. Surface remains were examined at the sites for evidence of structural and/or mechanical parts which once functioned in the barns but which had become dislodged in the course of time.

A surprisingly rich stock of sources exist for background and documentary research related to this resource whose numbers may never have exceeded 1000 nationally. The low numbers of these farm buildings give a manageability to comprehensive statewide studies of round barns, allowing individual consideration of each representative (e.g., Jost, 1980; Pederson and Stafford, 1984b; Soike, 1983; Welsch, 1968 & 1970). General interest has led to publication of numerous newspaper and popular magazine articles on the theme. Farm journals from 1870-1920 published many designs, articles, notices, endorsements, etc., introducing the reader to these innovative buildings. Occasional literature directed at farmers, such as Experiment Station bulletins, agricultural encyclopedias (e.g., Better Farming Association, 1915), farm building plan books (e.g., Fowler, 1854), and major pre-cut home building company catalogues (e.g., Gordon-Van Tine Company, 1917 & 1926), present various versions of the theme. North Dakota county atlases, whose publication coincided with one period of round barn construction, were found to provide several photographs of previously unidentified round barns.

Sources listed in the previous paragraph were consulted as background for the project. All county atlases published before 1930 on file at the North Dakota State Historical Society (see attached list) were inspected for photographs of farmsteads. All 1884-1917 issues of Dakota Farmer, a leading agricultural journal (Willson, 1928: 98), were examined for reference to round barns. Other agricultural journals at the North Dakota Historical Society Archives were scanned for treatment of the subject within the period spanned by Dakota Farmer, as available (for specific titles and dates see general bibliography). Centennial and other written histories for communities and counties where round barns have appeared were consulted. Extensive telephone interviews were conducted with present owners and former operators of farms with round barns. Search through key issues of historic county and local newspapers was undertaken for information on round barns found especially difficult to document.

NATURAL GEOGRAPHY AND ROUND BARN LOCATION

Geographic and climatological factors were evaluated as variables affecting the location of round barns in the state. The distribution of round barns in North Dakota appears not to have been influenced by the very diverse geographical and/or climatological factors present throughout the State. Every physiographic region, soil, region, natural vegetation area, temperature range and rainfall pattern has representatives but does not appear to have favored the decision to construct. Distribution of round barns (Figure 1) is related more sociological-demographic factors such as type-of-farming, number of farms, and population. Apparently round barns, neither more nor less suited for any natural geographical regions, could be adapted to the most extreme conditions faced by farmers throughout the State. Compare Figures 1-5 for distribution vis-a-vis region.

With an area of 70,665 square miles, or about 45,000,000 acres, North Dakota ranks seventeenth in size among the states. Approximately 210 miles separate the state's Canadian border from the boundary with South Dakota. East to west the State extends from about 300 miles at the northern border to nearly 360 miles at the southern

boundary. A variety of terrain characterize the physical appearance of the State in which relatively flat plains in the east with elevations of 800-1000 feet escalate to rugged hills of 3000-3500 feet in the south west (Omodt, et al. 1968:1).

The physiography of the State is described by three regions (Omodt, et al.:1; Fenneman 1931:8): the Red River Valley Drift Prairie, and Missouri Plateau, with a fourth area (Goodman and Eidem 1976:13), the Slope Region, within the Missouri Plateau. Geographical features, elevation, soil composition, and temperature range are among the factors which define each region.

The Missouri plateau, largest and western most of the State's three land regions, covers nearly 38,000 square miles. The Missouri River and its tributaries form the drainage network for this region. The division between the Missouri Plateau and the Drift Prairie region to the east approximates the course of the Continental divide, beginning in Divide County at the northwest corner of the state and travelling southeasterly to Wells County. At Wells County the two lines diverge: the Missouri Plateau - Drift Prairie separation cuts sharply southward through western Stutsman, LaMoure and Dickey Counties west of the James River drainage, while the Continental Divide wraps around east of the James drainage. Contained within the Missouri Plateau are the State's highest average elevations, from 1700-2000 feet in the eastern portion to 2000-3000 feet west and north of the Missouri River (Omodt et al.:1).

The unglaciated slope region, properly considered part of the Missouri Plateau, contains the most varied landscape features within the State. The limit of glaciation serves to separate this area from the remainder of the Missouri Plateau to the north and east. The State's highest peak, Black Butte (3468 feet), along with the badlands occupy the Slope Region. Rolling plains that flank the badlands to the east and west provide a stark contrast to the system of gorges and ravines along the Little Missouri River, of the slope region. Hills and buttes punctuate the rolling plain in rises of several hundred feet above their surroundings. (Omodt et al.:2; Hainer 1956:10-13). Conditions of inconsistent topography, semi-arid climate, and availability of grasslands for grazing has allowed range livestock ranching to compete with wheat production as primary land use of the area (Goodman and Eidem:68).

Natural vegetation types and major soil groups for the entire State nearly coincide with physiographic regions. Chestnut soils provide a foundation for agricultural activities not only in the Missouri Plateau, but also in the western portion of Great Plains states Kansas, Nebraska, and South Dakota. They have developed in temperate, semi-arid climates (14-20 annual precipitation) under mixed mid and short - grass vegetation, and without the influence of subterranean water sources. Yields of cultivated crops and grasses within these soils are strongly affected by precipitation. Wind erosion of soils is a danger resulting from over grazing or water poor vegetation (Soils of the North Central Region 1960:28-29). Wheat grass and needlegrass, the former of value to range animals, dominate the Missouri Plateau (Goodman and Eidem:21).

The Drift Prairie occupies the middle portion of the State, beginning in a 225 mile

wide corridor at the Canadian border and constructing to about 75 miles at the southern boundary. Elevations are lower than in the Missouri plateau, from 1700-2000 feet at the northwest to 1000-1500 feet in the southern and eastern portions of the region. Eighty percent of the Drift Prairie is described as till plain, an undulating plain with low rounded knolls, disparate streams, and frequent closed depressions (Omodt et al:3-4).

A combination of chestnut and chernozem soils permeate the region (Goodman and Eidem:20). Chernozem soils evolve in temperate sub-humid climates with tall grass vegetation and without the aid of subterranean water. Chernozem soils often form from the introduction of organic matters to the surface. The organic matter makes Chernozem soils among the most fertile in the world for cultivation of wheat and other cereal grains (Soils of the North Central Region:27-28). The region's natural vegetation includes wheatgrass, bluestem, and needlegrass, as well as Oak Savanna (Goodman and Eidem:21). Wheat is the dominant agricultural product of the region except where a combination of wheat and cattle raising occurs in the Missouri Coteau at the Drift Prairie's western edge (Goodman and Eidem:68).

Furthest east and narrowest is the Red River Valley or Lake Agassiz Basin. For most of its 7000 square miles it extends thirty to forty miles west from the Red River while stretching the length of the State's north-south borders. The region contains the States lowest elevations from 800-1100 feet. Natural vegetation consists of bluestem prairie grass and northern floodplain forest embedded within a high proportion of chernozem soil group. General farming is conducted in the region (Goodman and Eidem:20, 21, 68).

General differences exist in weather activity between eastern and western portions of the State, but patterns created by distribution of temperature and annual rail fall do not correspond with physiographic regions (Goodman and Eidem:17, 18; Soils of the North Central Region:14). The eastern portion of the state enjoys more moisture than the western portion (ranges:15-21 inches). Winter temperatures (-2° F. to + 14°F. in January) are milder in southwestern North Dakota than in the east.

RESULTS OF SURVEY AND RESEARCH

In all, 41 sites were identified and evaluated according to their representation of the theme of round barn construction in North Dakota. Data relating to geographical location (Table 1), physical character (Table 2), and historic associations (Table 3) were gathered in recording. Since little of the state's agricultural architecture bears the mark of individual design via an architect, the basis for significance rests upon sociological, locational, and material factors. Such factors include, but are not limited to, analyses of distribution, construction systems, material and formal composition, ethnic associations, age, and condition. The compiled information allowed comparisons of the round barn phenomenon within the state and against trends apparent in other states.

The history of round barn construction is a small and recent chapter in the long

narrative that traces human efforts to provide shelter for livestock. Before the 1870's few farm structures, and fewer barns, took advantage of the round shape. Antecedents of the barn type exist among European and American constructions. None of these, though, conclusively account for the erection of seminal round barns in the source areas Iowa, Indiana, and Wisconsin.

The round ban plan for buildings appears very early in antiquity, although its use in agricultural structures is recent. Even a brief treatment of that subject goes beyond the scope of this survey. Perhaps prehistoric peoples influenced ancient Greek and Roman cultures to build circular altars for worship of dieties. Resembling temples from the classical period are round buildings which appeared as early as the twelfth century in the Baltic region. These buildings doubled as churches and fortresses, the latter function served by the circular shape (Paulsson, p. 76). This tradition seems to have confined itself largely to Scandanavia. European architects after the middle ages generally molded buildings in conformance with rectangular or trapezoidal lots.

Given the practical nature of rural buildings, later European agricultural structures took the round shape for functional reasons. Jost cites two features of the British cultural landscape as having potential for influencing round barn construction. The "gin-gang," a housing for a threshing machine's drive gear, and the hay rick, a corn storage enclosure, both profited from their circular plans. A farm in Compton-Martin parish is noted which had a semi-circular yard surrounded by a stone retaining wall and surmounted by a circular hay rick. Smaller outbuildings, such as an 1804 pigeon house, a "dovecote," were invested with the experimental plan. One presumes from the criticism foisted upon round and polygonal farm structures by the local press in 1812 that such structures were growing in popularity in Britain (Jost, p. 3-5).

Across the Atlantic by the close of the eighteenth century several hay ricks existed in New Jersey and the first recorded round barn had been built for George Washington. Washington designed the sixteen-sided structure in 1793 for his Dogue Run Farm in Fairfax County, Virginia (Pederson and Stafford, p. 1; Soike, p. 5). Before the Civil War a scattering of the radical form appeared, including the low-roofed true-round barn built in 1824 by the Shakers of Hancock, Massachusetts.

New Yorker Orson Fowler's successful A Home for All; of The Gravel Wall and Octagon Mode of Building, first published in 1848, touched off a spate of eight-sided home construction particularly in New England and the Middle Atlantic states. Some researchers have linked the beginnings of round barn construction with Fowler's popular house form since the earliest round barns in most states, including those in North Dakota, assumed octagonal shape. Fowler's enthusiasm for the form contributes to this view. Thoroughly convinced of the octagon's virtues, he included a discussion on adapting the form to barns and outbuildings in A Home for All (pp. 174-178). Other historians, (particularly Soike, p. 6) point out that the octagon mode had virtually ceased to inspire new construction by the time of the Civil War, and that few, if any octagonal barns have been directly attributed to Fowler. Regardless of whether the inspiration is direct, three themes present in Fowler's work infuse the earliest

documented octagonal barns: experiment, comprehensive use of space, and folk design.

Above all, Fowler stressed the innovative nature of the octagon plan as the source of its advantage. He sought in the plan a spatial design of utmost practicality even at the expense of conventional exterior. The flexibility achieved by the plan can be seen as embryonic expression of the form-follows-function dictum credited to Louis Sullivan nearly five decades later.

The work of another New Yorker, farmer and agricultural researcher Elliott Stewart, popularized the form explored by Fowler. Stewart applied principles of functional economy to farm construction and developed the octagonal shape for barns. Both Fowler and Stewart acknowledged the space savings of the true-round over straight-walled buildings, but found the difficulty associated with erecting circular walls cut into its economy. The octagon plan provided a worthy compromise because it was, they argued, as easily constructed as a rectangular structure but imbued with many of the advantages of the true round building. They noted that octagonal construction enclosed greater volume than a rectangular building with equal wall area. Both, too, observed an economy of motion associated with the interior that conventional barns lacked.

Stewart's barn had a number of features not discussed by Fowler. The roof on his barn was self supporting. Such a roof opened space for hay storage where, in a conventional barn, supporting posts and beams would reside. He also spoke of the wind resistance of his building which resulted from its streamlined surface (Soike, p. 11).

Fowler, though, suggested one benefit of round barn construction which became a standard among later architects of the form, that of curving the stalls into a circle so that the stock faced the center. This arrangement facilitated feeding and, with the addition of manure carriers on tracks, waste removal. The generation separating Fowler's book from the first round barns appears to have obscured this benefit, for many early octagonal barn builders placed straight rows of stalls within the octagonal shape. An irony exists in such an arrangement, for those builders selected the plan presumably to take advantage of its additional space but they were at the same time unwilling to fully exploit the form's possibilities when it came to stall placement. This ambivalence persisted even into the later phase of round barn construction, as seen in the Jens Myhre barn from the survey, built in 1919 with a linear stall plan inside of true-round walls.

Comprehensive use of space is another theme Fowler developed relative to the form. His diagrams and floor plans for houses show many space saving ways to partition spaces--into closets, stairwells, ventilation, etc. Although he offers no suggestions on carving up the interior of octagonal barns, one senses that his efficient divisions of space within human habitations would work equally well for animal shelters. An illustration on page 175 of A Home for All implies that small outbuildings would become superfluous on a farm with octagonal barns. He believed that a farm could be completely served by the efficient octagonal structure partitioned in an appropriate manner.

At the end of the section on barns in A Home for All Fowler suggests that the farmer arrange the barn in "accordance with his grounds, wants, and tastes" (p. 178). In this, he invited carpenters to adapt folk designs, a third theme, to octagonal barn construction. It was logical for him to expect varied construction and appearance when he urged builders to engage in experiments of design that consolidated all farm functions into a single building. However, the two threads of innovation and organization alone would not account for all variation. Differences of region and ethnic group, available material resources, local building traditions, and requisites related to the type-of-farming, would also influence the final product.

For instance, of the thirteen octagonal barns built in Iowa from 1878-1890 (some estimated dates), no less than four different roof-types were observed (Soike, p. 16). Further differences could be noted among the structural system, diameter, presence or absence of a ramp or banking for mow access, exterior material, and stall arrangement of individual barns. Each of these building features became a problem for the builder to solve in a personal way. Knowledge of those solutions was transferred in a number of methods. The presence of somewhat similar barns within a limited geographic area suggests that the builder was familiar with a nearby structure, and may have discussed advantages of particular features with the builder. The appearance of two very similar barns in two distant locations suggests the influence of printed sources of plans, elevations and perspectives. Some features are truly unique, particular to a single building. Once freed from the traditional four-sided enclosure, builders of early round barns employed a number of interesting strategies for erecting enduring, functional buildings.

North Dakota's earliest known round barn, the former Luman Rodman Octagonal Barn in LaMoure County, displays an interior arrangement which bridges earlier barn conventions and novel round barn solutions. Its interior hugs an atrium-like well of central space formed by an opening in the mow floor. The stall-less barn's operational space superficially resembles that of an earlier form, the rectangular three-bay barn. In the three-bay barn a wagon enters through the long side's central alley which is flanked by two bays with mows. Hay is then unloaded from the wagon upward to either side mow. Because stalls generally partitioned these barns, they required individual feeding of animals. The Rodman barn takes advantage of the three-bay barn's ease of mow loading, but goes one step further. Its exterior walls wrap around to enclose the livestock. The farmer could quickly throw hay through the mow's central opening to feed the herd below. Rodman is said to have built his barn in 1882, an early date for its modern design.

The source of Rodman's design has yet to be documented, but the barn's exterior design is unique. Only the Stenehjem barn in Williams County, a true-round built in 1914, repeats the projection of the middle bay and hay dormer found in Rodman's barn. That projection, incidentally, became detached from the latter barn, causing demolition of the structure in 1979. The frontal feature on the barns represent one of many innovative features added by experimenting builders.

North Dakota's octagonal barns show some differences from national norms, as well. The

most important are wall and floor structural systems. In states with larger numbers of round barns, several were identified with heavy timber structural systems (compiled from Jost, Soike, Welsh). No extant barns in the North Dakota survey, octagonal or round, were found with heavy timber construction on walls or floor. Only one owner of a site where a round barn formerly stood (Robeson Octagonal barn, north of Langdon) reported heavy timber framing. Two facts account for this. The state's few timber resources made heavy frames an expensive alternative to the cheaper balloon and western frame systems which used dimension lumber. Indeed, few North Dakota barns of any kind have been identified with heavy timber frames. Also, in states with many round barns, construction of the barns began to appear a decade or more before those in North Dakota. That is, the older the barn, round or otherwise, the greater the chance it contains large, rough-hewn timbers. By the time many North Dakota barns, round and rectangular, were constructed, stud wall and medium-sized posts were typical of regional resources and construction technologies.

The survey identified and included fifteen sites with octagonal structures. Two of these were constructed late, in the 1930's, for use as pig farrowing barns. Two others included in the survey, eight sided grain elevators, contribute to an understanding of the generic form while not precisely representing the theme. The remaining eleven sites with octagonal structures conform to the pattern found in states of Iowa, Wisconsin, and Nebraska, where octagonal barns generally predate true-round barns. Six of the eleven in North Dakota apparently date from before 1900. Only one true-round barn, the former Berlin barn near Dazey, was built before 1900, being erected in 1893. From 1900-1910 the two forms were chosen with roughly equal frequency. By the first World War and afterward, round barns became the more favored of the two. After 1910 only one octagonal barn was built, the Hazelton Stock Show barn in 1920.

Decline in octagonal barn construction accompanied an increase in the number of true-round barns--an event which took place nationally as well as in North Dakota. The rise of the silo in importance to agricultural operations and the role played by educational institutions in disseminating information on progressive agriculture greatly influenced this transition. Professor Franklin H. King at the Madison, Wisconsin, Agricultural Experiment Station, had conducted experiments during the late 1880's on the benefits of circular over polygonal silos. It was not long afterward that he began to apply his findings to barns. Specific impetus appears to have come from his brother, C.E. King, who requested plans for a barn. King's brother had not specified the shape, but required an interior silo, elevator, grain bin, and cleaning and feeding alleys. Seeking efficient placement of the many members, King anchored the structure on and designed it around a central wood stave silo. By the spring of 1889 carpenters were shaping a circular barn on the farm. The following year King entered the plan in the Station's annual report. By 1893 the plans were available to a general audience through publication in J.H. Sanders' Practical Hints About Farm Building (Soike, pp. 26-29). In that same year Barney Berlin, of Pennsylvania Dutch origin, erected a 72' high barn in Griggs County.

Berlin's biography does not state whether King's design inspired or provided the actual plan for the Griggs County barn. Although the earliest in North Dakota with a

cylindrical plan, Berlin's barn differed from King's in the substitution of a central grain elevator for the silo. Another modern feature of the barn was its roof-mounted wind turbine which provided mechanical power to interior operations. The Berlin barn is typical of early North Dakota round barns in its absence of a silo. This contrasts with round barns described in Wisconsin and Iowa. Soike lists 91 true round barns, in which at least 45 have central silos, or approximately half. Likewise, Jost names 37 of 87 true round barns with interior silos. The proportion of round barns with central silos to all true-round barns in those states is probably even higher for several reasons. The presence of a silo in a demolished true-round barn might not be apparent to surveyor/researcher from available evidence. Second, to eliminate tedium, Soike and/or Jost may have dwelled upon a particular barn's more striking features and failed to mention the interior silo. A few barns in the Iowa survey, and many in the Wisconsin survey, were visited but not inspected on the interior, so naturally the presence of a silo would not be indicated. Accounting for these factors in the surveys, perhaps as many as two-thirds of the true round barns were erected with silos in those states. On the other hand, only six true-round barns of eighteen in North Dakota contain an interior silo.

During the period 1909-1923, construction of round barns with interior silos occurred at a pace nearly equal to that of round barns without silos. The Glomseth barn (1909) in Bottineau County was the first North Dakota round barn to take advantage of central silo placement. That beginning coincided with the general promotion of silos by agricultural press and experiment station publications a decade prior to the first World War. Prior to the second half of twentieth century's first decade, though, the silo was less the object of mass marketing and more a folk phenomenon. Its adoption into round barns in North Dakota awaited until it had become a consumer item. A cursory inspection of one most popular publication, the Dakota Farmer, will help reveal changing attitudes toward the silo which culminated in its adoption in North Dakota's round barns.

Articles in agricultural journals as early as 1888 attempted to sell farmers the idea of a silo rather than an actual plan or product. Several entries in the Dakota Farmer took up the cause of the silo, by distinguishing the various kinds ("The Silo," p. 10), calculating their costs (Gould, p. 2), and enumerating their virtues (Alvord, p. 17; Minnesota Experimental Station Bulletin #2, p. 2). The periodical functioned through the close of the nineteenth and early years of the twentieth century as a repository for the latest advancements in silo technology, as well as a forum for debate on the subject. Although the journals editors appeared pro-silo, they offered space to the anti-silo viewpoint.

Even nineteenth century advertisements relating to silos, while obviously promoting the novel structure, offered more information than a material product. The majority of ads were placed by lumberyards and publishers and with books such as Orange-Judd's Silos, Ensilage, Silage or S. Freeman & Son's How to Build a Silo (Dakota Farmer, September, 1889, p. 10 and November 1, 1891, p. 14). The silo at that juncture was a product of folk wisdom and processes. A farmer would gather whatever data about silos he could and construct one, using available skills and materials, which met his needs.

Beginning in 1906 prefabricated silos were offered for sale by metal pipe and culvert producers who had already established an outlet for their goods in dairy industry. A few companies, the Creamery Package Manufacturing Company of Minneapolis, the Minnesota Tank Company of Minneapolis, and the Kalamazoo (Michigan) Tank and Silo Company, risked the price of an ad to sell their experimental silos (Dakota Farmer, 3/1/1906, p. 11; 6/1/1907, p. 22; 4/15/1908, p. 35, respectively). These companies marketed their silos with little of the fanfare with which companies hawked silos only months later.

Other companies recognized the sales potential of the new market and began to offer silos by name: the "Indiana Silo" and Puffer Hubbard's "Minneapolis Silo." By 1909 no fewer than eight manufacturers offered ready-made silos or portable steel grain bins in Dakota Farmer ads. By 1909 the silo had ceased existence as an individual creation or folk phenomenon, it had become part of a newly emerging industry.

Agricultural researchers (and the agricultural press) began to raise serious questions about the viability of bonanza farming after the turn of the century. Two avenues appeared open as alternatives: diversified farming on smaller acreage and intensive dairy farming. The Dakota Farmer concentrated on the latter by publishing articles which portrayed dairy activity in North Dakota within the context of a fully developed industry. Reports conveyed production figures and plotted locations of creamery stations throughout North Dakota ("Interesting North Dakota Creamery Figures, '06") and suggested that dairying had begun to penetrate new areas of the state ("Dairying in Western North Dakota," 9/15/1907, p. 10). The successful campaign for dairy farming led to the establishment of 83 local creameries by 1909 in North Dakota and 133 by 1923. However, the unsuitability of the activity was indicated by 107 failures among the 133 creameries, with insufficient cream volume due to lack of cows the leading cause of failure (Benton, pp. 12-14).

The editorial attention given to (encourage) the growth of the dairy industry contributed to its development. As the silo became intimately linked with that development, promoted as the signpost of the state's new agricultural base, it was converted from a folk artifact into a regionally-marketed mass-produced consumer item. Interestingly, the period of construction for all North Dakota round barns with central silos, 1909-1923, approximates the initial phase of dairy industry development which relied heavily on promotional efforts. Efforts by the media to stimulate dairy production and attention given to the silo caused the inclusion of silos in round barns where before they were absent.

Several barns in the survey typify the transition from individual- and folk-designed structures to mass-produced buildings which parallels events in the silo's development. The Cecil Baker true-round (1921) in Stutsman County and fourteen sided barns of Nels Nielsen in Divide County (1912) and Christ Kjos in Grand Forks County (1915), were ordered as pre-cut kits from home building supply houses such as Gordon-Vantine Company in Davenport, Iowa. A fourth barn, the George Madden barn of a dozen sides, resembles the two polygonal barns, though its origin unknown. It is likely from a competing outfitter. Interestingly, all four barns have interior silos.

Two other round barns in the survey from the 1909-1923 period also have interior silos. Iowan John Miller, owner of a construction company, acquired land in North Dakota and erected a familiar feature from the Iowa landscape, appropriately equipped with a silo (1910). It is conceivable that Miller ordered plans, specifications, and materials from a pre-cut manufacturer. John Glick, member of the Surrey area Mennonite settlement, constructed the state's only hollow clay tile wall round barn (1923) during the period. His true round barn originally enclosed a wood stave silo which eventually deteriorated and was replaced by a concrete silo during 1949 reroofing. That Glick's barn was inspired by the Levi Kauffman barn (see below) is evidence of the close ties maintained by Mennonite communities throughout North Dakota. Glick's barn could be a mass-produced item similar to the sixteen hollow clay tile barns identified in Iowa produced by the Johnston Brothers Clay works of Ft. Dodge. The ventilation holes near the eave of the Glick barn wall suggest an experienced barn supplier who understood the physics of passive air exchange.

A few North Dakota round barns were constructed from 1909-1923 without interior silos. Possible explanations are the builder's unfamiliarity with the round barn form or the persistence of folk building practices. The Jens Myhre barn, for instance, erected late in the period (1919) contains rectilinear rows of stalls on its inside. Such an arrangement is a throwback to the earlier period of octagonal barn building. The Funseth barn (1909), in Grand Forks County, perhaps evidences the dominance of folk design in its embellished diamond-shaped hay-dormer windows. The barn was the second round barn constructed on site by the original owners, Svend and Ole Olson, Norwegian immigrants. The Olsons' first round barn, an 87' octagonal, burned after being struck by lightning. Their replacement may be more akin to the earlier barn or to traditional Norwegian barns (which bear the diamond window in the gable) than to modern round barns which were under construction.

John Glick's was the final round completed with a central silo. The next round barn housing cattle awaited construction until 1942. In the interim a smaller kind of round barn was identified in the survey which sheltered hogs. The single site nominated to represent this tradition is the Gerhardt barn in Stark County, but several others are still standing. These barns are typically hexagonal or octagonal, although a circular pig house was found on the Levi Kauffman farm near Kenmare (ca. 1916). Kauffman, who came to North Dakota in 1899 as part of a colony of Mennonites, also had an 84' true-round barn on his farm, which may explain the atypical plan of the 35' pig house.

Polygonal pig brooder houses evolved from specialized portable structures conceived as early as 1905 ("Individual Farrowing Houses", Dakota Farmer, May 1, 1905, p. 15). The shape, roughly equivalent to a small teepee or A-frame, was ideally suited to the needs of the brood sow. The slanting of the walls above an eight-foot square base afforded space to the newborn pigs but prohibited the sow from accidentally rolling over on them. The slanting walls reduced air space above the sow, retaining body heat and maximizing capture of sunlight through a window. Restriction of the space to a single brood allowed better management by the farmer. Since the small buildings could be relocated as necessary with little effort, farmers could maintain clean conditions more

easily.

The agricultural college at Fargo began to publicize the small buildings in 1910 ("Portable Hog Houses," Dakota Farmer, April 15, 1910, p. 56). Their example maintained the vertical gable-facade, but included three 2"x6" runners to aid portability.

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

The architectural development of the polygonal pig house coincided with the historic development of hog raising throughout the state. The west River region of the state, in which Stark County and the Gerhardt barn is located, was not as active in pork production from 1900-1925 as was the southeastern portion of the state. Stark county increased its total number of hogs steadily during the period, but still only raised one-half to less than one-fifth the number found in hog rich counties east of the River in 1925. Willard and Fuller note a general rise in total production throughout the state during the 1920-25 period, and explain it as a response by farmers to the general rise in hog prices. They conclude that the number of hogs raised would decline with prices, and that few farmers had actually made a permanent conversion (p. 241, 243, 261). The construction of a small brooder house, such as appeared on the Gerhardt farm, is consonant with the tentative approach to hog farming during that period in that part of the state.

The rare occurrance of round barns in the west River area parallels an equally unusual attempt at hog raising by the Gerhardts. The Gerhardt barn is a building modern in its design and specialized function as was the practice of short-term hog farming during the 1920's. Architecturally the building is related to others found in the state within the same period and function. In Pembina County, at the state's northeast corner, no less than four hexagonal pig brooders were built during the 1930's. Of those, the Pettis farm's brooder survives today, though in deteriorated and much altered condition. Its eligibility is questionalble because of its low material integrity and its removal from the original site to the present location in 1970. Informants from the Pembina County area reported the use of a small centrally located heater to abate cold temperatures of early spring (see citations in individual surveys). Although no stove is present, the Gerhardt brooder has space for a central heater and has a roof ventilator.

One feature common to the Pembina County brooders is not a characteristic of the Gerhardt's. The Pembina County barns were slightly smaller (16-18 feet between opposite walls) and on skids. This provides them mobility similar to that of the

earliest individual farrowing houses. Their portability allowed a farmer to enter inexpensively into the hog business when prices rose, and to abandon it without a significant loss when profits fell. A mobile building could more easily be sold and moved to another farm which would be initiating pig raising. By contrast, the Gerhardt pig barn rests upon a poured concrete foundation and is somewhat larger. It is a building more permanently situated than those common in Pembina County. This suggests a somewhat greater commitment by the Gerhardts to hog raising and it may point to an earlier construction date, when the transience of hog farming was not as fully conceived. The barn is an important representative of these trends and changing historic attitudes toward and practices of farming.

One informant (Interview with Leo Vetter, July 3, 1986) reported that polygonal hog houses are far from an extinct building type. He added one to his Emmons County farm in 1970, and many others populate the area. The Wahoo Built Company in Wahoo, Nebraska continues to construct polygonal grain storage and animal shelters. Because of the recentness of Vetter's hog house and the prospect of adding many sites to the survey without increasing the number of historic hog houses, Vetter's hog house was not recorded.

The final two round barns in the survey were built during the Second World War, the Abell Round (1942) and the Cote Round (1943) barns. Both of these abandon the sameness of pre-cut round barns, returning to folk building patterns.

Urbain Cote and his father, Albert, worked in north-central North Dakota as carpenters specializing in the construction of barns. The Cotes were familiar with the Glick barn, approximately 100 miles to the southwest and desired to erect a similar building. Without formal plans the pair constructed a masonry wall barn with the intent of using the second floor as a dance hall (Interview with Urbain Cote). The structure's double mow floor, gracious stairway, decorative shingling, lack of interior silo, and opposing dormers (for ventilation) all testify to the function. While barn dances were a common entertainment, few round barns were available for such a use. The Patterson Octagonal barn in Dickey County is said to have served that purpose, even with the intrusion of its central silo.

The Abell Round barn, in south central North Dakota, signifies the change in building technology which ultimately changed the way in which subsequent barns were built in North Dakota. The explanations given for the building's unique structural design mark it as a folk building, although it is forward-looking in its structure. The present owner recalls the barn's completion in the absence of formal plans. He cited the conventionally recognized benefit, the efficiency of space and more square feet per construction dollar, as reasons for its construction (Interview with Bert Abell, November 27, 1985). However, many features of the barn are variations on the round barn theme.

The most noticeable departure is the single-story construction. The absence of a mow covered by a self supported roof, as well as the use of roof support posts also were not common round barn construction solutions after the advent of interior silos

beginning 1909. Its spartan interior of dirt floor and no stalls are also departures from the norm.

These abnormalities may be best explained with reference to the other structures on the farm. The buildings built on site prior to the round barn are of stud frame construction and are permanently sited. On the other hand, those erected after the round barn are of pole construction or were moved to the site. These later buildings enjoy ease of mobility and flexibility of enclosed space, necessities as relocation might become necessary. Casual observation suggests that structural systems which offer transient location and spatial enclosure are typical of recently constructed farm buildings throughout the area. Since the Abell round barn employs both stud frame and pole structural systems, it is situated in the center of the farm's temporal-architectual continuum. Not surprisingly, its pivotal place in the site is marked by its cental location on the farm. The barn's hybrid structure speaks of its transitional nature in the architectural history of the farm. Its support system is a product of the vernacular building knowledge possessed by its builder.

It is also a product of a phenomenon which is national in scope, that of designing buildings in the most efficient manner possible. That impulse led farmers to experiment with the octagonal, and eventually the round shape for farm structures. The elder Abell, apparently without direct influence, engaged in that experiment in creating his barn. The barn's present owner, the builder's son, recalls no plans or other design inspirations which might account for the unusual expression. Its anomalous appearance testifies to its creation in a cultural vacuum. Its exceptional importance derives from its presence as an experimental solution to farm economics.

Those same experiments led to the abandonment of the traditional barn during the 1940's for more flexible pole barns and metal frame structures throughout the state. The stud frame portion of the structural system of this round barn probably would have been conceived as obsolete for any date after the mid-1940's. The Abell barn is architecturally related to the historical barn building practice, and is nominated thusly. Its mow-less roof with post supports introduces the pole structural system and barn types which succeeded historic barns. Thus, it is an especially important indicator of changing building technologies and farming practices in general. And it is exceptionally significant for providing a temporal limit for the round barn phenomenon specifically.

TABLE 1: NAMES AND GEOGRAPHICAL INFORMATION

NAME	COUNTY	LEGAL LOCATION	VICINITY OF
1 Abell	Logan	SW 34, 134-70	Burnstad
2 Baker	Stutsman	NW 35, 144-65	Edmunds, Kensal
3 Balfour	Pierce	NW 1, 157-69	Wolford
4 Bellamy	Pembina	SE 5, 159-51	Drayton
5 Berlin	Griggs	SE 27, 144-61	Wimbeldon
6 Boettcher	Emmons	NE 8, 132-74	Linton
7 Cote	Rolette	NE 1, 161-73	Dunseith
8 Christiansen	Barnes	N1/2 2, 142-59	Dazey
9 Early Granary	McKenzie	NW 35, 149-100	Arnegard
10 Fairview Farm	Richland	SE 22, 132-49	Mooreton
11 Funseth	Grand Fords	SW 29, 150-54	Northwood
12 Gandrud	Mountrail	SE 8, 157-88	Blaisdell
13 Gerhardt	Stark	NW 12, 139-94	Gladstone
14 Glick	Ward	NE 26, 155-82	Minot, Surrey
15 Glomseth	Bottineau	NW 33, 163-76	Carbury
16 Gordon	Nelson	E1/2 30, 152-58	Michigan City
17 Gronlie Granary	Grand Forks	SW 20, 150-53	Northwood
18 Harlow	Pembina	NE 8, 159-51	Drayton
19 Kauffman	Ward	SE 9, 159-88	Kenmare
20 Kauffman	Ward	SE 9, 159-88	Kenmare
21 Heskin	Grand Forks	NW 28, 149-56	Aneta
22 Koch	Morton	SE 33, 140-90	Hebron
23 Madden	Bowman	NW 21, 131-104	Rhame
24 Marriage	Eddy	NW 28, 148-66	New Rockford
25 Miller	Pembina	NW 22, 160-52	Bowesmont
26 Myhre	Eddy	SW 2, 149-67	New Rockford
27 Nielsen	Divide	NW 25, 162-95	Noonan
28 Ohnsager	Steele	NW 35, 148-56	Sharon
29 Olson	Grand Forks	SW 29, 150-54	Northwood
30 Patterson	Dickey	S1/2 10, 130-60	Oakes, Guelph
31 Pettis	Pembina	W1/2 19, 160-51	Drayton
32 Robeson	Cavalier	NE 23, 162-60	Langdon
33 Rodman	LaMoure	NE 24, 134-65	Edgeley
34 Sanderson	Pembina	W1/2 33, 160-51	Drayton
35 Stock Show Barn	Emmons	SW 29, 135-76	Hazelton
36 Stenehjem	Williams	NW 32, 155-100	Williston
37 Storelee	Ransom	NW 18, 136-56	Nome
38 Toay Plans*	Stutsman	---	---
39 Wasdahl	Sargent	NW 35, 131-58	Straubville
40 Wermedahl	Traill	SE 27, 148-53	Hatton
41 Zoldahn	Pembina	NE 34, 160-51	Drayton

*Barn was unconsructed. Copies of plans and specifications on file SHSND

TABLE 2: PHYSICAL DESCRIPTIONS

BARN	YEAR BUILT	YEAR DEMOL.	DIA.	TYPE: ROUND	TYPE: OCTAGONAL	TYPE: POLYGONAL	STRUCTURE: TIMBER	STRUCTURE: STUD	STRUCTURE: MASONRY	RAMP/ BANK	SILO
1	1942	---	60'	X				X			
2	1921	---	60'	X				X	3'		X
3	1914-5	1940'S	?	X				X			
4	1930'S	1960'S	16'			6		X			
5	1893	1935	?	X				X			
6	1902	1910	94'	X				?			
7	1943	---	60'	X					X		
8	1910-20	1965	?	X				X		B	X
9	1910	---	34'		X			X			
10	1915	---	35'	X				X			**
11	1909-10	---	46'	X				X			
12	1914	1960'S	60'	X				X			
13	1930'S	---	24'		X			X			
14	1923	---	X					X			X
15	1909	1980	X				M	G		B	X
16	?	1902	?		X			?			
17	1900-08	---	34'		X			X			
18	1940	1980	16'			6		X			
19	1916	1965	84'	X				X			X
20	1916?	1965?	35'	X				X			
21	1915	1967	60			14		X			X
22	1890's	1920's	?		X			X			
23	1915	?	?			12		X			X
24	1901	---	64'?		X			X			
25	1910	1960'S	?		?			?			X
26	1919	---	68'?	X				M	G	R	
27	1914	---	56'			14		X			X
28	1912	1980'S	80'?	X				M	G		
29	1890	1909	87		X		?				
30	1905	---	58'		X			X			X
31	1930'S	---	22'		X			X			
32	1908-10	1950'S	86-96		X		X			ER	
33	1882-8	---	?		X			X			
34	?	?	?	X				?			
35	1920	---	?		X			X			
36	1914	1979	80'	X				X			X
37	1895-99	1960'S	96'		X			M	G	B	
38	UNBUILT		72	X				M	G	B	X
39	1930'S	---	16'			6		X			
40	1895	1985	?		X		?	?			
41	1930'S	1982-4	22'			6		X			

B= Barn built into bank of hill
G= Ground level of barn
R= Ramp entry to mow
M= Mow level of barn
ER= Earthen ramp
** Originally built as a silo, converted to barn one year later.

TABLE 3: HISTORICAL ASSOCIATIONS

BARN	BUILDER	ORIGINAL OWNER/NATIONALITY	CAPACITY/USE
1	Robert Abell	R. Abell/Anglo-American (Missouri)	70 cows, no stalls
2	Cecil Baker	Cecil Baker/Anglo-American (Iowa)	50 dairy cattle
3	?	George Balfour	?
4	Joseph Brosseau?	William Bellamy/Anglo-Ontarian?	6-sow pig brooder
5	Barney Berlin?	Berlin, Dutch-American (PA)	cattle; elevator
6	Horace Duncan	William Boettcher/German-American	beef cattle
7	Urban/Al Cote	Urbain Cote/French-Ontarian	20 cows/ 8-12 calfs
8	?	Pearl Painter/Anglo-American	70 head
9	Ellsworth Early	Early/Anglo-American, Mass?	granary
10	?	J.Q. Adams/Anglo-American, Ill.	originally silo
11	Svend/Ole Olson	Olson/Norwegian (Minnesota, Iowa)	20 head
12	Andrew Gandrud	Gandrud/Norwegian (Minnesota)	
13	?	?	8-sow pig brooder
14	Mylo Kauffman	John Glick/Mennonite-Amer. (MO)?	dairy cattle
15	?	L.J. Glomseth/Norwegian	dairy cattle
16	?	?	?
17	?	J.L. Parmenter/Unknown	granary
18	Jos. Brosseau?	Harry Harlow	6-sow brooder
19	?	Levi Kauffman/Mennonite (MO & PA)	
20	?	Levi Kauffman/Mennonite (MO & PA)	
21	Christ. T. Kjos	Kjos/Norwegian	80 cattle
22	?	Benno Koch/German	horse barn
23	?	George Madden/Canadian (Ontario)	
24	local mason	Sylvannus Marriage/Ang.-Amer. (IA)	horse barn
25	J.G. Miller Cons.	John Miller/American (Iowa)	125-150 beef cattle
26	Jens Myhre	Myhre/Norway	25 cattle stantions
27	?	Nels/Nielsen	18+ head
28	Anton/Gilbert O.	Ohnsager/Norwegian	40 cattle
29	Svend/Ole Olson	Olson/Norwegian (Minnesota, Iowa)	
30	?	Patterson Land Company/American	
31	Jos. Brosseau?	Stan Pettis/American	6-sow pig brooder
32	John Robeson	Robeson/Canadian (Ontario, Scot.)	50 cows, 100 pigs, +
33	?	Luman Rodman/American	Horses
34	?	?	
35	?	Kurtz Bros. & Greenbloom/German	Stock show barn
36	Mr. Peterson	Tom Stenehjem/Norwegian?	32 dairy cows
37	Albert Peterson	Edward Storelee/Norwegian-Amer.	80 horses/60 cattle
38	UNBUILT		
39	?	Peter Wasdahl/Unknown	6-pig brooder
40	Hans Vermedahl	Vermedahl/Western Norwegian	horses-cattle
41	Jos. Brosseau?	Karl Zoldahn/Unknown	6-pig brooder

8. Significance

Period	Areas of Significance—Check and justify below			
___ prehistoric	___ archeology-prehistoric	___ community planning	___ landscape architecture	___ religion
___ 1400–1499	X archeology-historic	___ conservation	___ law	___ science
___ 1500–1599	X agriculture	___ economics	___ literature	___ sculpture
___ 1600–1699	___ architecture	___ education	___ military	___ social/ humanitarian
___ 1700–1799	___ art	___ engineering	___ music	___ theater
X 1800–1899	___ commerce	___ exploration/settlement	___ philosophy	___ transportation
X 1900–	___ communications	___ industry	___ politics/government	___ other (specify)
		___ invention		

Specific dates 1882-1943 **Builder/Architect** Various, see individual survey sheets

Statement of Significance (in one paragraph)

North Dakota round barns individually and as a group meet eligibility criterion C because they exhibit a distinguishable type of architecture related to their design. That is, they are significant in the area of architecture. Ironically, their significance in the history of agriculture is minimal, for they appear to be isolated occurances with little impact on conventional rectangular barn construction. Within the group some illustrate changes, events, and trends occuring in the history of agriculture. Thus, their importance is historical rather than historic.

Other historical associations which normally apply to rural/agricultural buildings do not help establish the significance of round barns. The ethnic associations of original owners, shown in Table 3, do not reveal any special associative patterns. The primary ethnic associations in the state's architecture relates to the two dominant immigrant groups, Germans from Russia and Norwegians. However, original owners of Anglo, Canadian, and American descent account for a percentage of round barns that exceeds their portion of the population.

Other bases for historic significance which normally apply to agricultural architecture do not further the case for the significance of round barns. The barns do not congregate in any one area, and are found in all of the state's three major physiographic regions. Only in one small area do as many as four round barns reside near each other, within fifteen miles of a common point between Aneta, Sharon, and Kempton. In this area the sites are close enough to each other so that the early barns could have influenced the construction of later ones. So, with largely uniform geographic, ethnic, temporal, and physiographic distribution, architectural characteristics provide the most obvious bases of significance.

Five phases of round barn construction in North Dakota can be defined. The earliest barns, phase I, appeared in the state in the 1880's, and, consistent with national trends, assume an octagonal plan. A good bit of variety is found among these barns in their arrangement of internal space and functions to which the space was put. A greater amount of consistency in structure (dimension lumber frame) and surface treatment (horizontal siding) exists among North Dakota round barns of all periods, especially those of phase I, than among those recorded throughout the nation. Octagonal barns were constructed until 1910, with the exception of one in 1920.

True-round barns were constructed in the state from 1893-1908, phase II. These resemble their octagonal predecessors in variability of spatial arrangement and design, and maintain consistent framing and exterior material. Although phase II falls within the span of phase I, the two are distinguished by the forms of their members. Phase II might more be more accurately described as a transitional period, where the circular form is merely substituted for the octagonal form. Phase II true-round barns differ

from barns in phase III in that classic round barn features such as a central silo are not yet present. Phase II barns explore the circular form, but attendant advantages of the shape were not yet fully realized. That is, phase II true-round barns work like those in phase I and look like those in phase III.

Phase III extends from 1909-1923 and includes true-round and polygonal barns. During this period the functional possibilities of round barns become fully realized, with interior silos occupying the center of about as many barns as those without interior silos. Nationally a roughly equivalent period, from about 1904-1920, sees the greatest share of round barns constructed (Price and Scully 1983: p. 3). Barns throughout the country during that period more frequently contain an interior silo than the proportion in North Dakota. Thus, by national standards, North Dakota lagged temporally, structurally, and numerically behind Iowa, Wisconsin, Indiana, and Illinois, leading states of round barn building. The proportion of round barns to all barns, however, may be equivalent between North Dakota and other states, for the number of all farms historically has been fewer in North Dakota.

A fourth phase with vaguely defined temporal limits occurs beginning in the late 1920s-early 1930s and continues until the present. Construction of small, portable hog houses with octagonal and hexagonal plans occurred. The minimal expense of these buildings allowed farmers to make tentative entry into hog farming and quick exit, depending upon market fluxuations. Phase IV barns represent continued efforts by farmers to devise progressive farming practices--a desire which the large round barns most dramatically signify. Development of the round barn form resulted from an urge to construct a structure whose advantage resided in efficiency of plan and operation. The barns of phase IV reflected to similar efforts, where progressive farming was identified with type-of-farming responsive to market forces. These structures have a folk origin, but quickly gained the attention of agricultural college engineers. The remaining structures which relate to the theme appear to be the product of mass production, typical of large round barns in phase III.

Finally a latent phase of large round barn construction is represented by two barns constructed at opposite sides of the state around 1942. These barns are the product of folk designing practices as opposed to the popular source of plans which characterize phase III. These barns are exceptionally significant because of their high state of integrity, their extremely personal designs, and their representation of round barn building as a folk phenomenon. Their existence as vernacular products links these buildings to the earlier barns of phases I and II.

Evaluation ofr the round barn's architectural significance can occur with a brief reference to the entire milieu of North Dakota architecture. Construction of circular structures certainly was not limited to farm structures such as barns and the more common metal grain bin and stock tank of most farms. Numerous round buildings dot the early state landscape. Perhaps the most ubiquitous was the railroad roundhouse, a device commonly employed to reverse the direction of railroad cars at the end of the line or to switch cars on the line.

Another early manifestation of the form is seen in the brick Gas Works building in Grand Forks (Grand Forks Illustrated 1891: 28). Little is known about the building's designer, internal structure, or precise operation. It was constructed by a private corporation who supplied natural gas to the city before the utility came under municipal control (Grand Forks Illustrated 1891: 7).

Residences in the state indulged in the circular form. Aside from the thousands of teepees erected by Native Americans, the remnants of which exist today as stone circles, a few immigrants to North Dakota tried their hand at circular spaces. An unusual primitive structure, William Muzzy's round sod house, took advantage of the heat conservation inherent in the form (Christiansen n.d.: n.p.). A more polished example is a false round house in Wells County, the Hurd Round House. Actually a rectangular dwelling capped by a slightly truncated bellcast roof and dormers, the feature's dominant roof profile and circular porch create the illusion of a true-round building ("Hurd Round House" 1973?: n.p.). The home was built in 1904 for wealthy land speculator, Warren Hurd, who obviously enjoyed its novelty.

Public buildings also partook of the form. In 1922 an octagonal religious structure was erected for the Germans from Russia of Evangelical Protestant faiths near Lehr (Ashley Tribune May 25, 1922, p. 1). The design for polygonal and round religious buildings are numerous, extending at least as far into the past as the ancient Greeks, and more recently were reintroduced in A Home for All (Fowler 1854: 156).

Occasional use buildings such as the gazebo and more massive county and state fair exposition buildings exploited the allure of the round shape. Few cities with pretension in Victorian America could be found without one or the other of these structures.

The list of round buildings certainly goes beyond the realm of agricultural structures. However, the unusualness of the round shape in the very linear farm setting, as well as the bold experiment which construction of a round barn represented, makes them significant. Their historic importance is of a magnitude to make any barn with round sides with sufficient age and material integrity eligible to the National Register

Consistency in a light structural system and horizontal exterior siding, as well as a random geographic distribution are characteristics which distinguish North Dakota's round barns from those in other states. Other states with greater populations of round barns have a variability in structural system and surface treatment, and also have concentrations in localities (Jost indicates 20 barns in a single county!). The combination of advanced age and dimension lumber has resulted in another major difference: more are demolished in North Dakota than are still standing. The decay of North Dakota's round barns (and rectangular barns, too) reflects an inability of farmers to adapt the structures to changing demands of agricultural practices. North Dakota's small dairy base and similarly undeveloped pork industry have not allowed farmers to fit the barns to livestock production patterns as successfully as farmers in other states, where extant barns outnumber demolished barns by as many as three-to-

one. Of the 41 sites identified in the survey, only seventeen buildings are still standing, two of which are grain elevators, and another two which are non-contributing farrowing houses and a fifth which is without a roof. Because of the rarity of the structures, sufficient integrity was defined as at least three-quarters of the material of the barn.

9. Major Bibliographical References

See continuation sheets

10. Geographical Data

Acreage of nominated property See indivudual survey shtets

Quadrangle name See individual survey sheets **Quadrangle scale** 1:24000

UTM References N/A see individual survey sheets

	Zone	Easting	Northing		Zone	Easting	Northing
A				B			
C				D			
E				F			
G				H			

Verbal boundary description and justification

N/A see individual survey sheets

List all states and counties for properties overlapping state or county boundaries

state	N/A	**code**	N/A	**county**	N/A	**code**	N/A
state	N/A	**code**	N/A	**county**	N/A	**code**	N/A

11. Form Prepared By

name/title L. Martin Perry/Architectural Historian

organization State Historical Society of North Dakota **date** July 29, 1986

street & number Heritage Center **telephone** 701-224-2672

city or town Bismarck **state** North Dakota

12. State Historic Preservation Officer Certification

The evaluated significance of this property within the state is:

___ **national** X **state** ___ **local**

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

State Historic Preservation Officer signature James E. Sperry *James E. Sperry*

title State Historic Preservation Officer (North Dakota) **date** August 21, 1986

For NPS use only

I hereby certify that this property is included in the National Register

for *Beth Grosvenor* **date** 10/1/86

Keeper of the National Register

Attest: *See Continuation sheet for listings* **date**

Chief of Registration

GPO 911-399

MAJOR BIBLIOGRAPHIC REFERENCES

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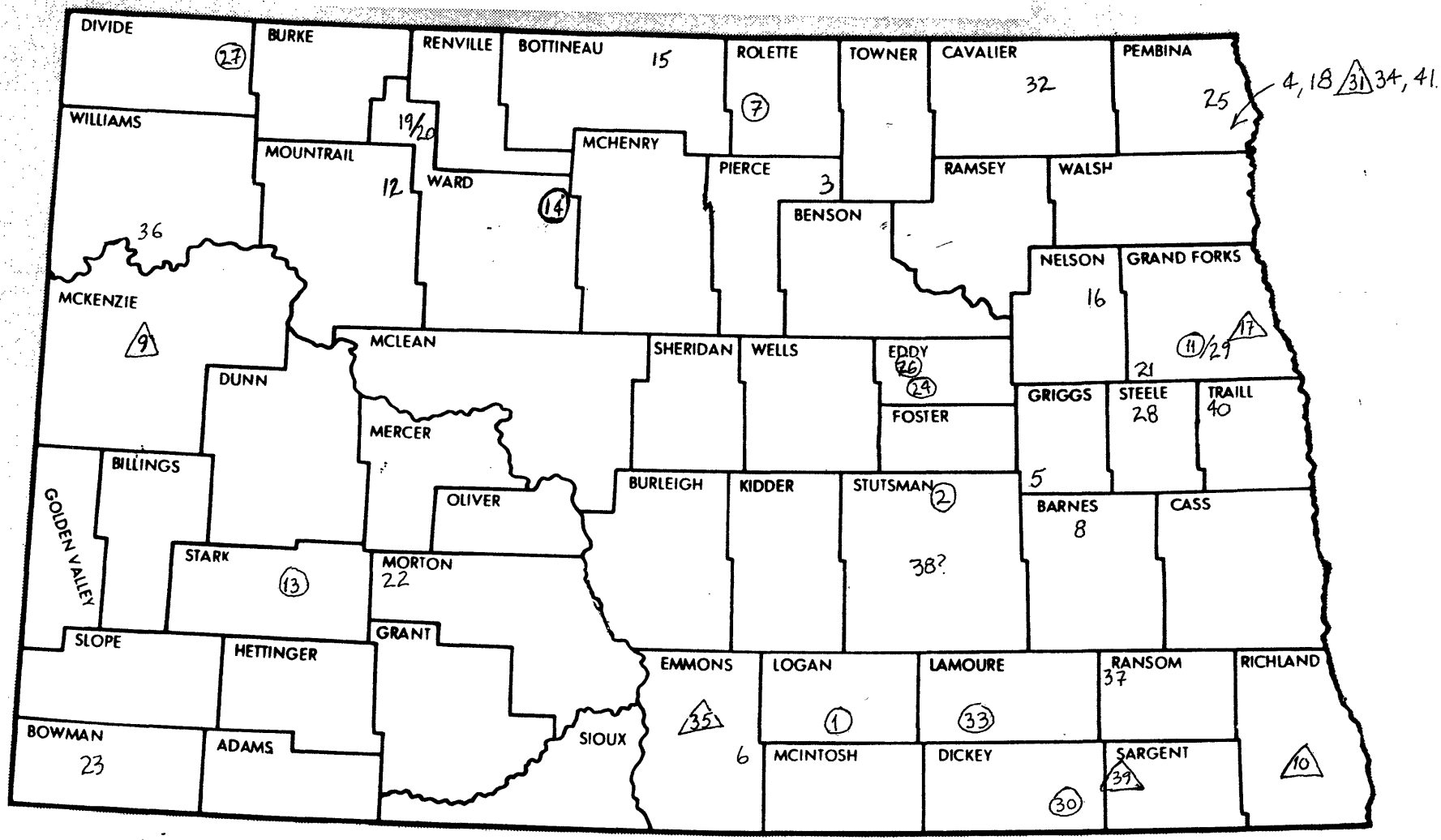


FIGURE 1: Relative Locations of Round Barns, for comparative use with Figures 2-5
Numbers correspond to property numbers used in Tables 1-3
○ Circled barns are being nominated
△ Non-contributing but extant properties

Source: Standard Rates and Data Service

RELATIVE HEIGHTS OF MAJOR LANDFORMS

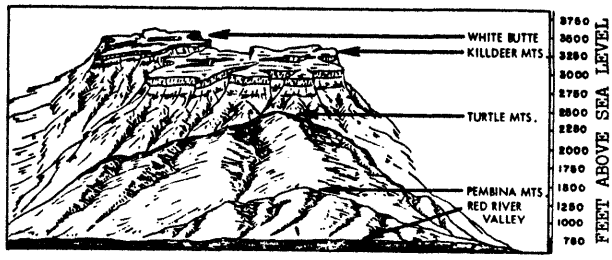


FIGURE 2A

TOPOGRAPHIC VARIATIONS

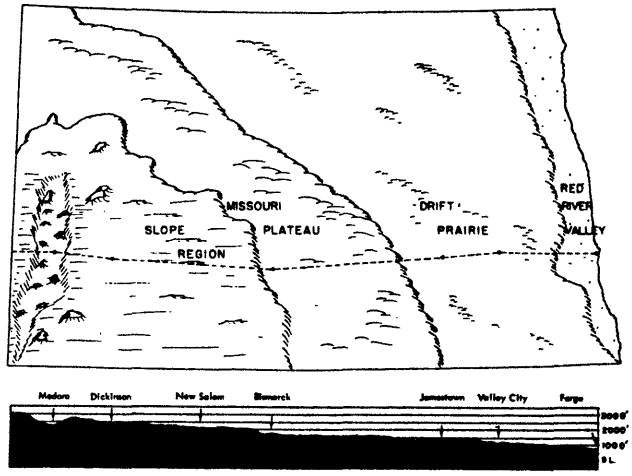


FIGURE 2B

FIGURE 3A

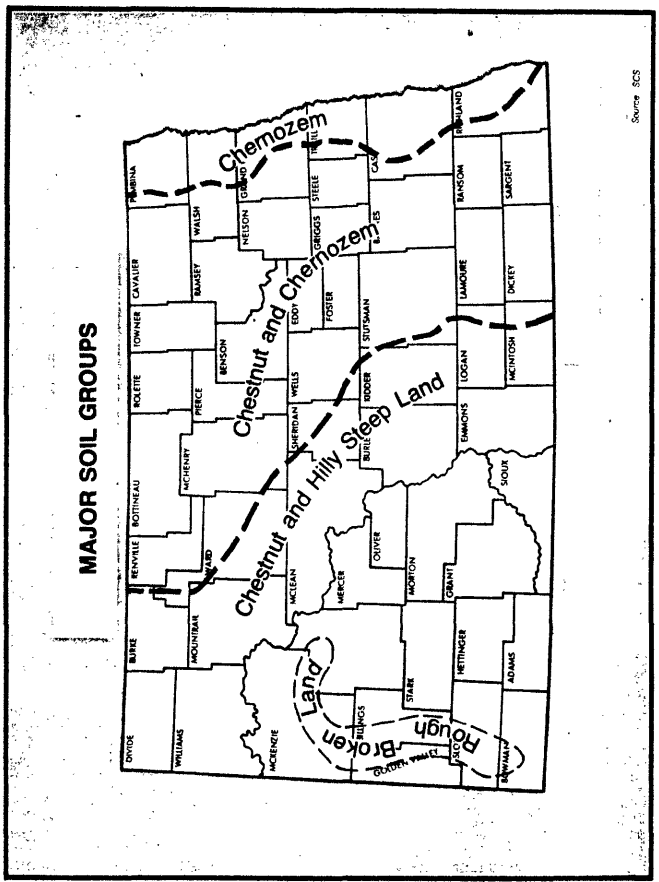
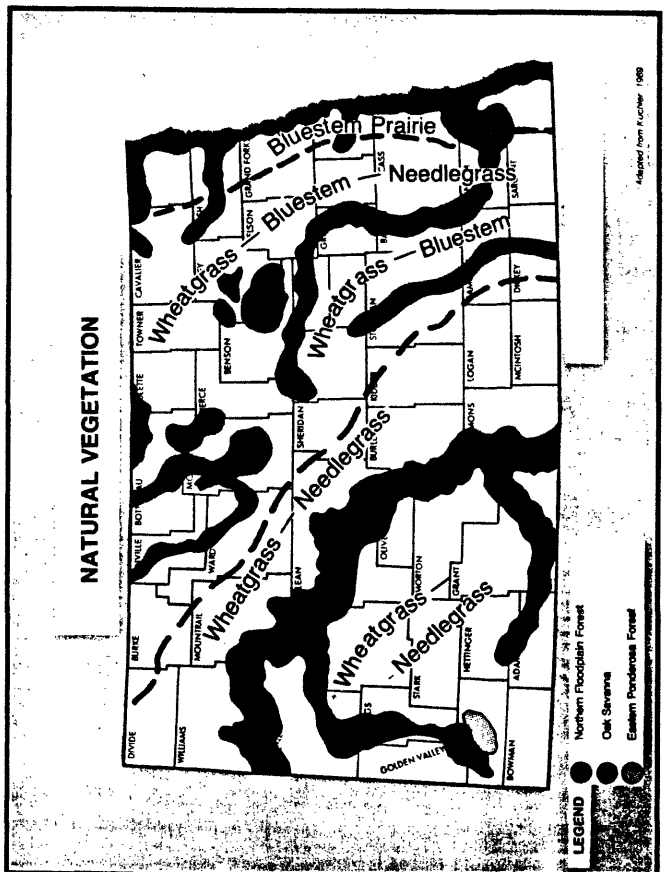
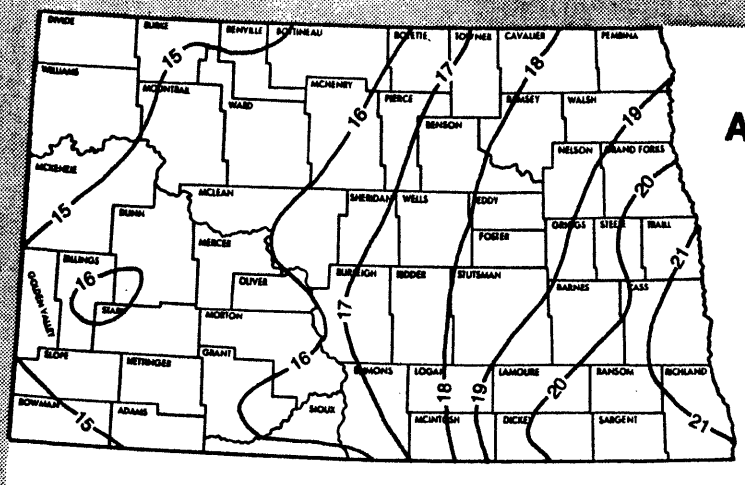


FIGURE 3B





AVERAGE ANNUAL PRECIPITATION

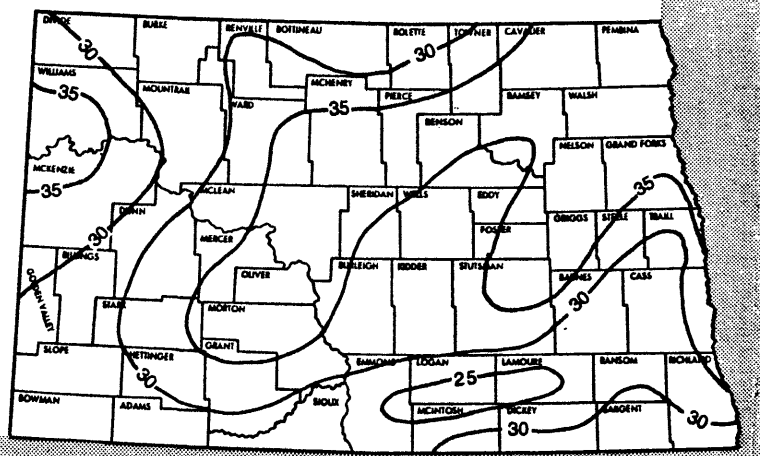
inches

FIGURE 4A

AVERAGE ANNUAL SNOWFALL

inches

FIGURE 4B



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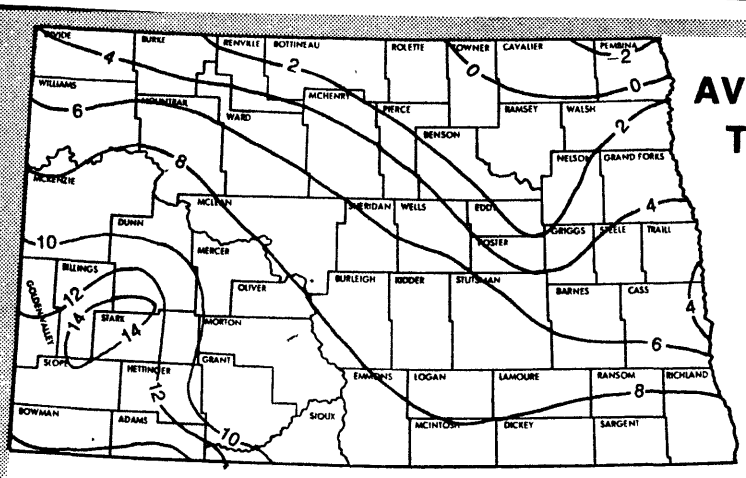


AVERAGE JANUARY TEMPERATURES

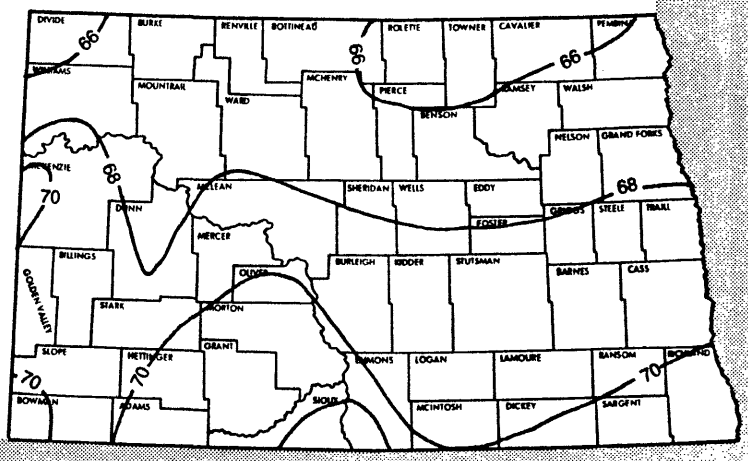
(^{o}F)

FIGURE 5A

AVERAGE JULY TEMPERATURES

(^{o}F)

FIGURE 5B



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OMB No. 1024-0018
Expires 10-31-87

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

[redacted]

Continuation sheet | Item number | Page

Multiple Resource Area
Thematic Group

dnr-11

Name North Dakota Round Barns Thematic Resources
State Divide and other counties, NORTH DAKOTA

Comm Beth Grosvenor 10/1/86

Nomination/Type of Review			Date/Signature
1. Baker, Cecil, Round Barn	[illegible]	for Keeper	Delores Byers 10/7/86
		Attest	
50 2. Abell, Robert, Round Barn	Substantive Review	Keeper	10/7/86
		Attest	
3. Funseth, Carlott, Round Barn	Entered in the National Register	for Keeper	Delores Byers 10/7/86
		Attest	
50 4. Cote, Urbain, Round Barn	[illegible]	Keeper	10/9/86
		Attest	
5. Gerhardt Octagonal Pig House	Entered in the National Register	for Keeper	Delores Byers 10/7/86
		Attest	
6. Glick, Levi, Round Barn	[illegible]	Keeper	Beth Grosvenor 3/25/87
		Attest	
7. Marriage, Sylvanus, Octagonal Barn	Entered in the National Register	for Keeper	Delores Byers 10/7/86
		Attest	
8. Myhre, Jens, Round Barn	Substantive Review	Keeper	Beth Grosvenor 10/1/86
		Attest	
9. Nielsen, Niels, Fourteen-Side Barn Farm	[illegible]	for Keeper	Delores Byers 10/7/86
		Attest	
10. Patterson Octagonal Barn	Determined Eligible [illegible]	Keeper	
		Attest	Eligible: Beth Grosvenor 10/1/86

DOE/OWNER OBJECTION

NPS Form 10-900-a
(3-82)

OMB No. 1024-0018
Exp. 10-31-84

United States Department of the Interior
National Park Service

National Register of Historic Places Inventory—Nomination Form

Continuation sheet | Item number | Page

Multiple Resource Area
Thematic Group

Name North Dakota Round Barns Thematic Resources
State NORTH DAKOTA

Nomination/Type of Review		Date/Signature
11. Rodman Octagonal Barn	for Keeper	Delores Byers 10/7/86
	Attest	
12.	Keeper	
	Attest	
13.	Keeper	
	Attest	
14.	Keeper	
	Attest	
15.	Keeper	
	Attest	
16.	Keeper	
	Attest	
17.	Keeper	
	Attest	
18.	Keeper	
	Attest	
19.	Keeper	
	Attest	
20.	Keeper	
	Attest	