Michigan Barn Preservation Network
Spring Barn Tour

Friday 31st May 2019
Washtenaw County

Barns of Washtenaw County

name	location
Krueger Barns	Waters Road
Diuble Barn	Parker Road
K. Hieber Barn	Spies Road
C. and K. Hieber Barn	Steinbach Road
Cox Barn	Guenther Road
Hermosillo Barn	Dancer Road
Ahn Barn	Zeeb Road

Washtenaw County

This tour travels through parts of central Washtenaw County, including Lodi, Scio, Lima and Freedom townships, west of Ann Arbor and northwest of the city of Saline. (see map). The area is the most productive agricultural region within the County, which historically was among the top producing counties in the State. Numerous 19th and 29th century farmsteads, with their houses, barns and outbuildings, were built during this time and remain extant today. The area was initially settled by immigrants from New England beginning in the 1820s, but the population soon expanded with the addition of a significant number of German immigrants and smaller numbers of other groups, including pre-Civil War African-American families. The immigrants occupied the existing infrastructure left by the pioneering settlers and did not rebuild to put their own stamp on the landscape. Until just a few decades ago, much of the tour area looked the same as it did 100 years earlier.

The land is mostly rural in nature, consisting of gently rolling terrain alternating with wide, open flat areas. The land has been groomed primarily as tilled fields, pasture, and woodlands. In addition to the city of Saline, which was established near salt deposits and adjacent Native American campsites along the Saline River, small hamlets are scattered within the tour area. As is the case for much of the state, the main roads run east-west and north-south, reflecting the township and range subdivision of the land as outlined in the Northwest Ordinance of 1787. Highway US-12 (a.k.a., the "old Sauk Trail" or "the Chicago Road"), which runs southwest across the southern portion of the county (and forms Saline's Main Street) is the exception. It originally served as a Native American trail linking the areas now known as Detroit and Chicago.

The dominant theme in the tour area is that of agriculture: 19th century buildings are mixed in with early 20th century farmsteads and landscapes. Because of the quality of the land and the gently rolling topography, the area during the 19th century, in particular, lent itself to sheep farming. This was further encouraged by the presence of a woolen mill in nearby Clinton and trains leading to larger markets beyond. Not every farmer specialized in sheep. The 1880 federal agricultural census provides a detailed glimpse of the 19th century "general" farmstead: most had a number of outbuildings supporting the raising of livestock (horses, cows, sheep, hogs, poultry), grains (corn, wheat, barley, rye), hay, miscellaneous other foods (potatoes, apples and other orchard fruits, honey, eggs and butter), and wood. The 19th century farm typically featured a prominent house that replaced an earlier smaller one, one or more gable-roofed barns and outbuildings, a landscaped house garden usually surrounded by a decorative fence, an orchard, and fields outlined by board and rail fences. Today the surviving remnants of these farms usually include the house and one or several outbuildings.

The early 20th century agriculture in the area was heavily influenced by the modernization of the dairy industry. Many of the farmsteads reflect this period with the presence of large, gambrel-roofed bank barns, milk houses, pump/well houses, silos, and accompanying outbuildings such as tool sheds, machine sheds, larger corn cribs, and storage buildings. Today, most of the farmland is used for cash crops. This use of the land has spawned the addition of the pole barn, which houses larger equipment necessary today for crop farming. The shift from dairying to cash crop farming is making its impact on the landscape. Farm buildings of earlier times often remain, but most are not being effectively used. Many of the smaller outbuildings and some of the larger barns have little purpose and receive little upkeep, resulting in their gradual decay. Barns on today's tour reflect the County's most productive agricultural period, spanning a 100 years from the early 19th century to the early 20th century:

Pre-Civil War era barns	19th century barns	Early 20th century barns
No. 2 K. Hieber Barn	No. 1 C & K Hieber Barn	No. 6 Ahn Barn
No. 3 Diuble Barn	No. 4 Cox Barn	
No. 5 Hermosillo		

Adapted from: Hanel-Gerdenich, Ina, "Criteria for Evaluating Farmstead Properties, SW Bridgewater Township, Washtenaw County, Michigan, 2004; and ibid, *Washtenaw County Thematic Survey. Washtenaw County Historic District Commission, 1997.*

Introduction – Barn Touring

Nobody needs to be told what a barn is, of course not. We learn that from a young age… or do we?

Wikipedia says, "A barn is an agricultural building usually on farms used for agricultural purposes." I find the word 'usually' in that sentence to be particularly interesting. In any case, most definitions explain barns as being places to store (grain / hay / etc.), or house (sheep / cattle / etc.). Wikipedia also goes on to say, "The word *barn* comes from the Old English *bere*, for barley (or grain in general), and *aern*, for a storage place—thus, a storehouse for barley." But of course we also know barns ascribed to being dairy, tobacco, potato, sheep, pig or hog barns; and I could add more. So while one use (the original use?) may have been for grain storage, they certainly have become used to store / house other things.

We also talk about barns having threshing floors; and some did, depending on its age. But a threshing floor is not a place to store or house; it is a place to work. Barns then are also working buildings; sheltered spaces that allow for work to be done. And while it is a place to get out of the weather (the sun & rain) and thresh your grain, it is also a place to use the weather. Older barns were always built with swinging doors on two sides, and were sited to take advantage of the prevailing winds, so that the wind could be directed through the threshing floor to help separate the grain from the chaff.

But what should we think about the physical structure? Nothing in the above suggests the form of the building or its construction. As we know, agricultural buildings come in all shapes and sizes. And over the years we can see that they are built in a variety of ways, depending on the resources available at the time. One thread that seems to connect most barns is expediency; how to get the needed working and storage space as efficiently as possible. Time and time again, we see barn buildings re-worked, renovated, added to, re-assembled, and moved, to fit the needs of its day. Deciphering those changes and understanding why they were made is some of the fun of looking at barns together.

However, there is a particular component of expediency that also seems to connect most barns; or at least it used to. That was the idea that the building would last for multiple generations of use. All barns (or any wood building, for that matter) older than 150 years were timber framed, in one way or another. That is, they were heavy timbered structures employing notched joinery which was pegged or wedged together. The earliest simple versions of timber framing would have been log type structures using corner notching to make solid walls or cribs. A somewhat more complicated approach, but one which yields large buildings more efficiently, is to connect heavy timbers into frames and bents with mortise and tenon connections. These frames are then clad with boards to make enclosed spaces.

In either case, these heavy timber buildings were known to be strong and long-lived structures. As a result their construction was taken seriously. They were planned and designed, carefully over time, by people who understood timber framing; a master builder. They needed the entire community to erect them as no one person, or even one family, could stand one up alone. So they had to be built to last; and they were.

But sadly this concern for longevity is being lost in our agricultural buildings, and elsewhere. Maybe it is because farming is no longer a multi-generational business. Maybe it is because many building technologies and building materials have been squeezed such that the resulting structures are mere 'rain coats' in the weather. "If they blow away we can get another." Maybe our disposable approach to so many things is getting the best of us.

So is this just another version of the lament that, "we don't build 'em like we used to"? It could be interpreted that way, but it is not. Instead it is a call to understand what has gone before, learn from it, embrace what is good and valuable, use what can be used, and adapt what can be adapted. But the first step is to learn. That is why we tour barns.

Barns and Buildings of Washtenaw County

This barn tour features eight barns all of which contribute to tell the story of what kinds of early wood barns were built here in Washtenaw County. The oldest among them were built before the Civil War, which is fairly early for the southeast part of Michigan. While Sault Ste. Marie is the oldest European settlement (1668) followed by Detroit (1701) and Frenchtown (1784) there are all on or near a Great Lake. Settlers only began moving inland to what is now Washtenaw County in the 1820's, settling both Ann Arbor, and the nearby Village of Dexter, in 1824.

The tour is focused on an 'inland' area west of Ann Arbor and South of Dexter that is about 40 miles from Lake Erie. It is an area rich in old wood barns and it is an area that still has many working farms.

In this part of Michigan our oldest surviving buildings date to the 1830's and 1840's. The City of Ann Arbor has a handful of houses that can be dated to the early 1820's and 1830's including the circa 1835 Kellogg-Warden House which was originally located at what is now 1015 Wall Street in one of the oldest Areas of town known as Lowertown. This house is now across the river on Main Street and serves as the Washtenaw County Historical Society's Museum on Main Street. Other notable older houses include the Orrin-White House which was built between 1836 and 1840, and the and early the Judge Robert S. Wilson House, a two-story Greek Revival structure built in approximately 1839. And Ann Arbor's oldest commercial building, the 1832 Anson Brown Building, may be the lodest commercial building remaining in the state.

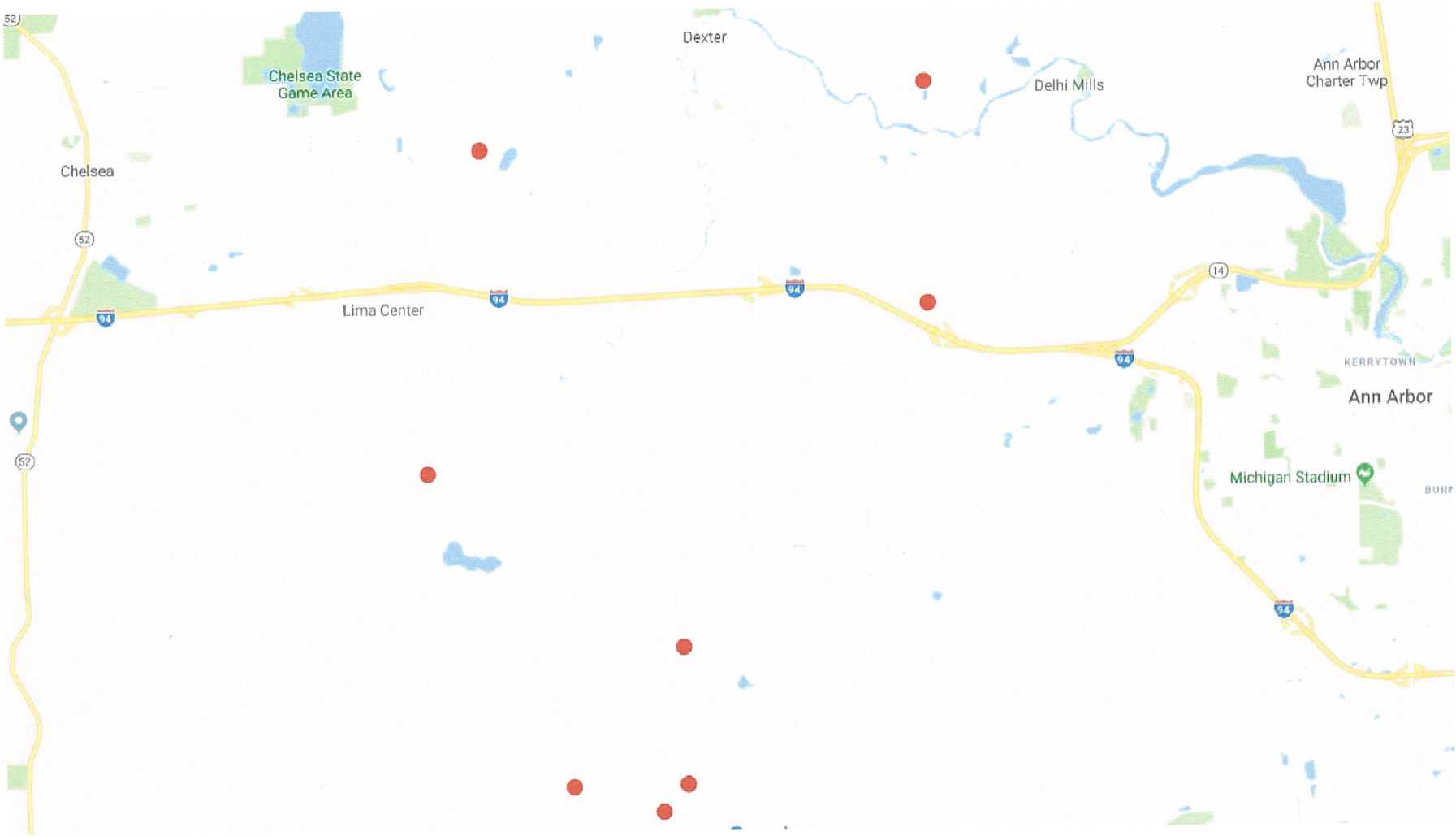
Nearby Dexter also has some older residential structures. Gordon Hall is the first to come to mind as it was built by Judge Samuel W. Dexter House, the founder of Dexter and an early Michigan land baron, from 1841-43. And an earlier Greek Revival house in Dexter was built for a Doctor Grey in 1834; today it is part of a farm and event space owned by Zingermans called Cornman Farms.

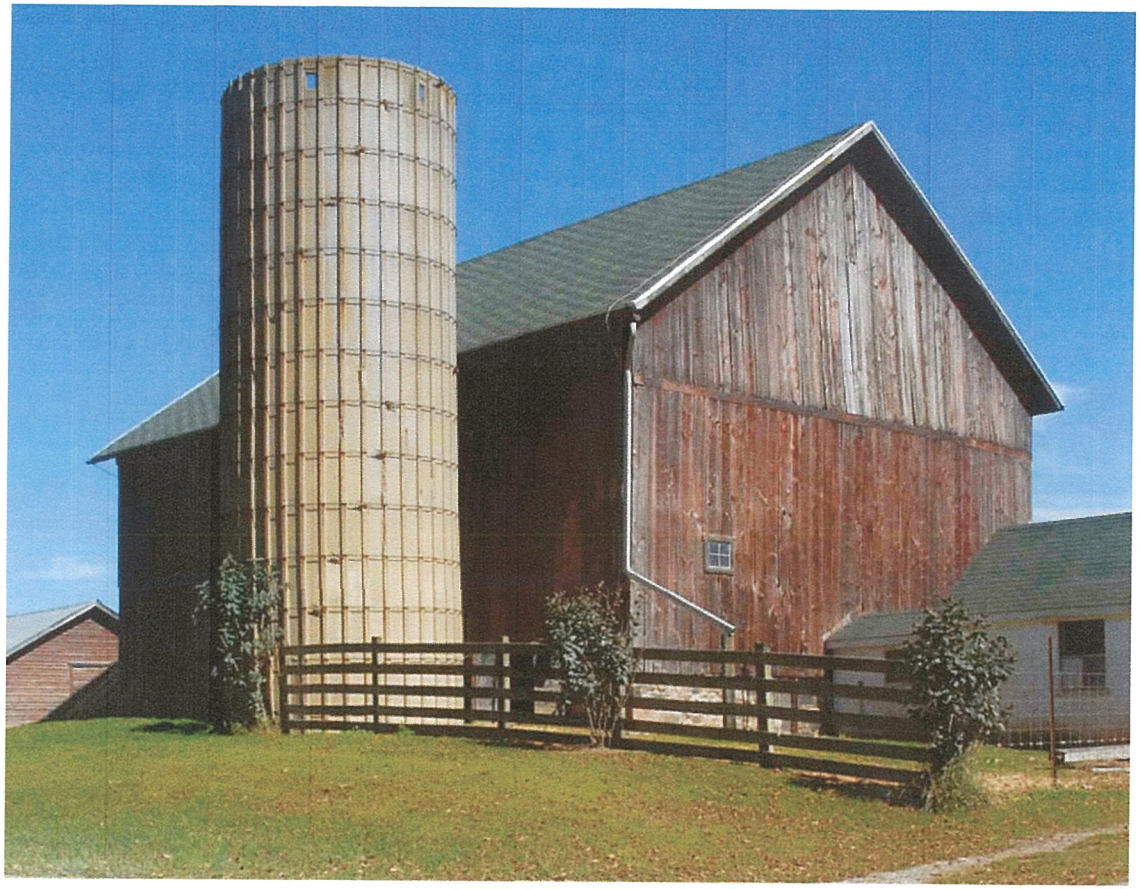
The barns we will see are all in the Ann Arbor / Dexter area, but none on the tour have been specifically dated. Barns don't tend to appear on historical maps, such as Sanborn Maps, and therefore are more difficult to date. Most dating is approximated by noting saw and tool marks, the nails used, and the barns form as it relates to specific farming techniques and inventions; such as threshing grain and / or the presence of a hay carrier. Specific dating of the date th trees were felled can be done by dendrochronology. This is a process where a wood coring from the timbers is mapped into known growth-ring patterns, based on the weather patterns, and the date the tree was cut is determined. And since we know that timber framers always want to hewn and joint 'green' wood, we can be very sure that he year a tree was cut was the year it was made into a building.

As of this writing the oldest barn in the county is said to be built in 1826, but that date has not been proven through dendrochronology. That barn is a 30 by 40 barn owned by the Braun family of Saline, and was on the MBPN fall tour in 2013. The oldest documented barn known in the county is the 30 by 40 barn in Dexter that is on the Cornman Farms property. That barn was dated through dendrochronology as being originally built in 1837 and moved onto a basement in 1895. In 2013 it was restored, and in 2014 it was put on a new foundation. Cornman Farm's barn won a MBPN Barn of the Year award in 2015 for adaptive reuse.

2019 MBPN Spring Barn Tour – Friday, 31 May 2019

8:00 – 8:30 am	Load bus @ Holiday Inn Express & Suites, 323 North Zeeb Road, Ann Arbor 734.827.1100
	8:30 – 8:45 am - drive 9 miles - (Zeeb, Scio Church, Parker, Ellsworth & Steinbach)
8:45 – 10:00 am	C. & K. Hieber barn
	10:00 – 10:05 am - drive 1¼ miles - (Steinbach & Spies)
10:05 – 11:20 am	K. Hieber barn
	11:20 – 11:25 am - drive ¼ miles - (Spies & Parker)
11:25 – 12:25 am	Diuble barn
	12:25 – 12:35 pm - drive 5¾ miles - (Parker, Scio Church, & Guenther)
12:35 – 2:15 pm	Cox barn & lunch (lunch by Last Bite)
	2:15 – 2:25 pm - drive 4 miles - (Guenther, Jerusalem, Dancer)
2:25 – 3:25 pm	Hermosillo barn
	3:25 – 3:40 pm - drive 6¾ miles - (Dancer, Dexter-Chelsea, Main, Central, Joy & Zeeb)
3:40 – 4:45 pm	Ahn barn
	4:45 – 4:55 pm - drive 2½ miles
5:00	Holiday Inn Express & Suites


Dexter
Chelsea State Game Area
Delhi Mills
Ann Arbor Charter Twp
Chelsea
Lima Center
KERRYTOWN
Ann Arbor
Michigan Stadium



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14 American Barns

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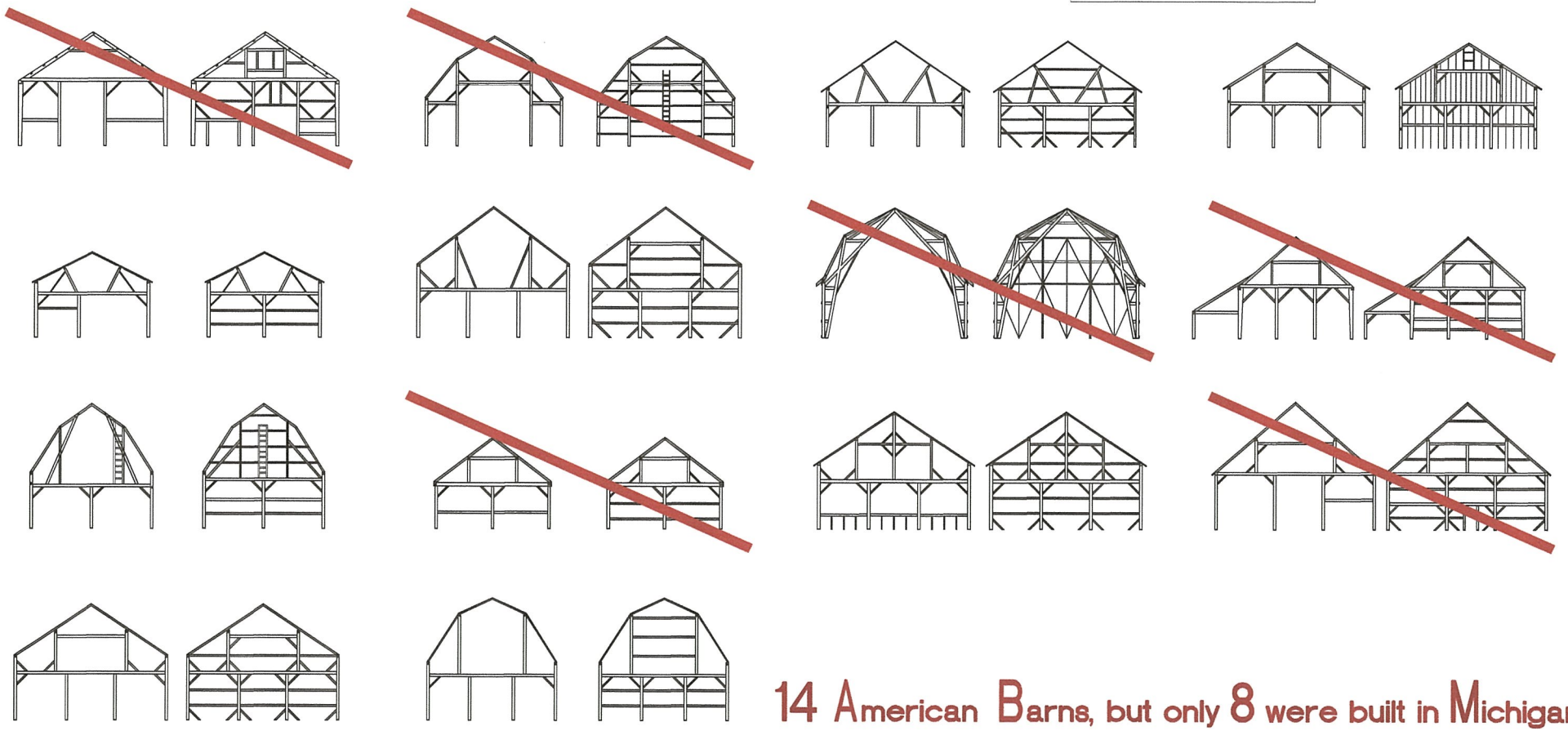

14 American Barns, but only 8 were built in Michigan

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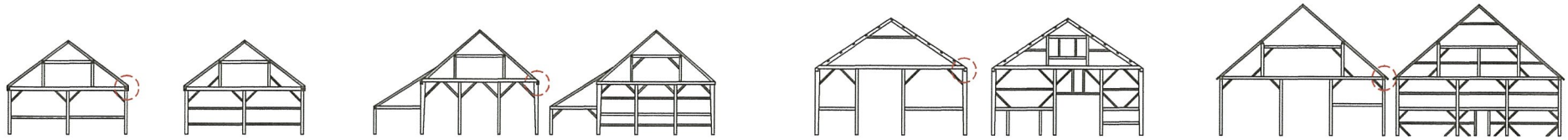
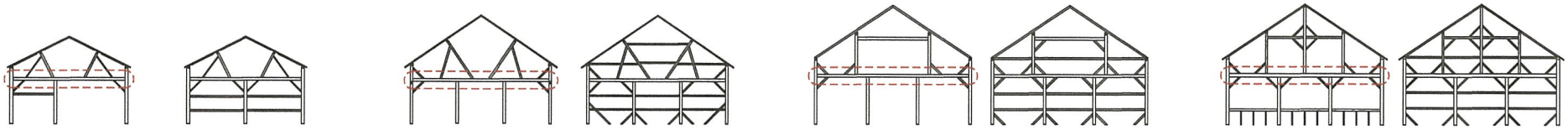
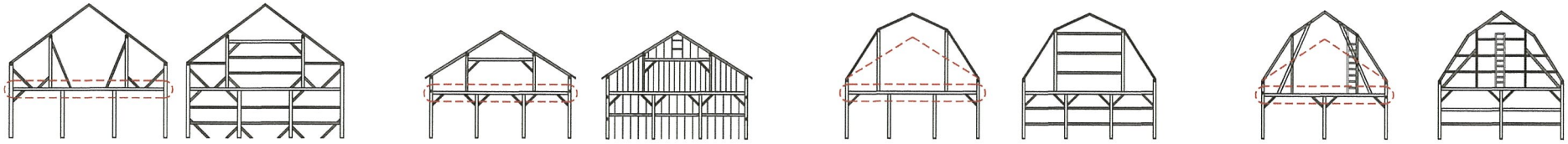


4 New England Barns

These have versions of the English tying joint: where the Tie Beam comes together with the Plate and the Post at the same ppint. Also some posts are flaired



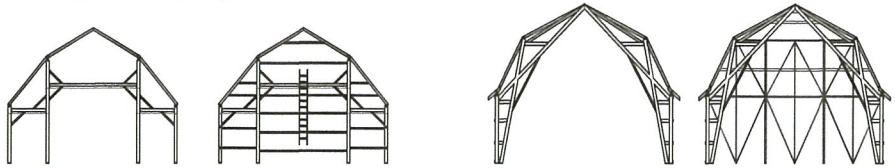
oldest



8 Michigan Barns

Arranged cronologically. The last two were converted to be Gambrel Roofed barns in the late 19th or early 20th century. Notice the dropped Tie Beam in all of them.

newest



2 Midwest Barns - The first is from Illinois and the second is from Wisconsin.

These two are the only barns on the page that were originally designed and built to be Gambrel Barns. Both were built in the first half of the 20th century.

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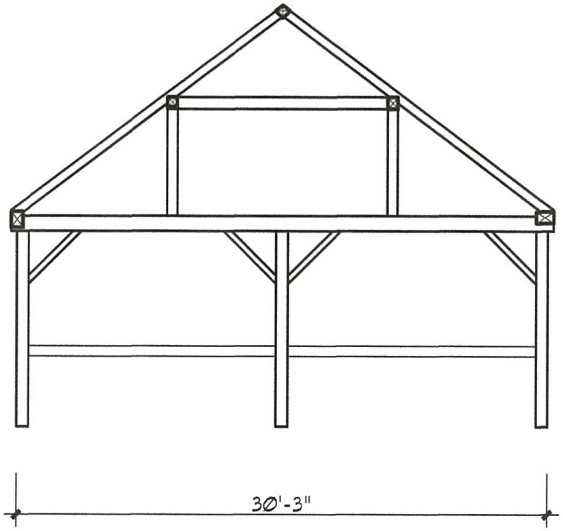
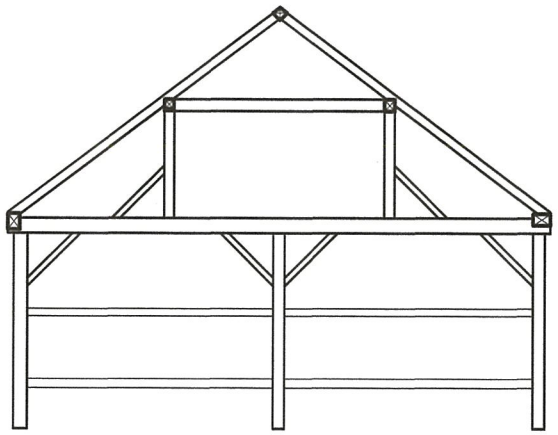
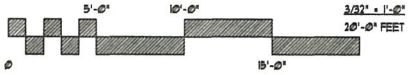
FLORENCE, VERMONT BARN

30'-3" x 40'-3"

3 - BAYS







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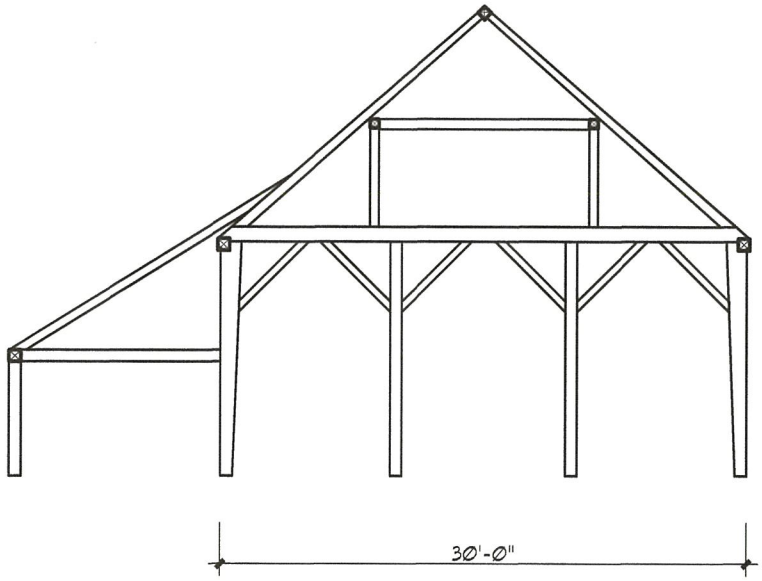
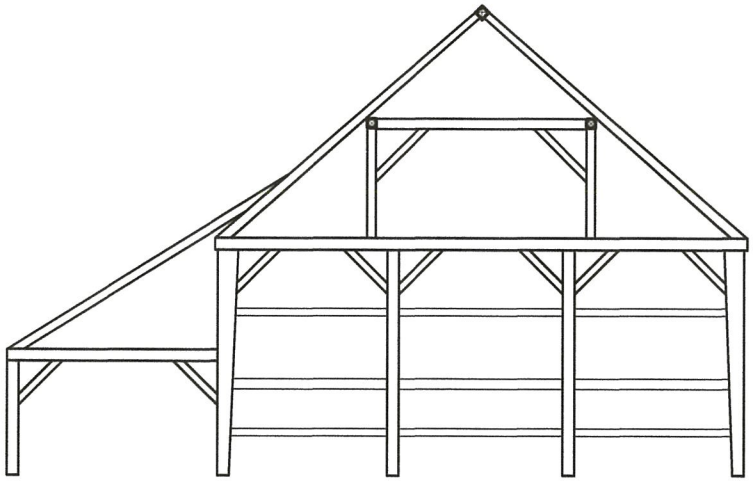
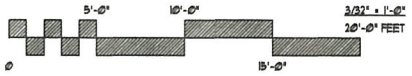
BRATTLEBORO, VERMONT BARN
30'-0" x 40'-0" with 12'-0" SHED ADDITION
4 - BAYS







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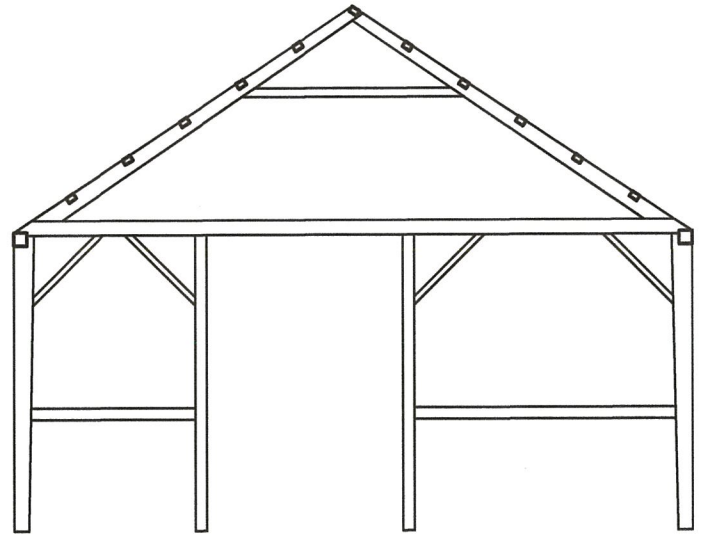
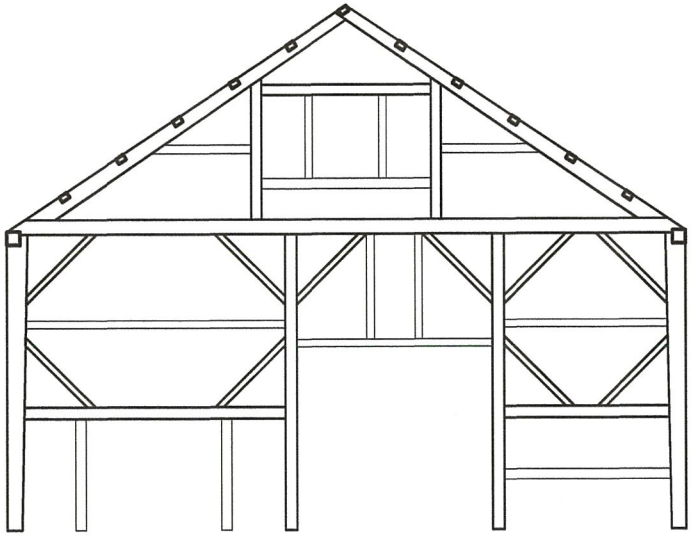
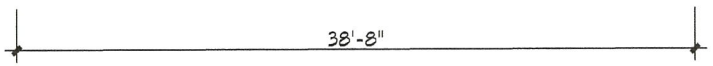
FARMINGTON, NEW HAMPSHIRE BARN

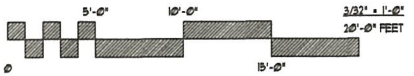
38'-8" x 75'-2"

6 - BAYS









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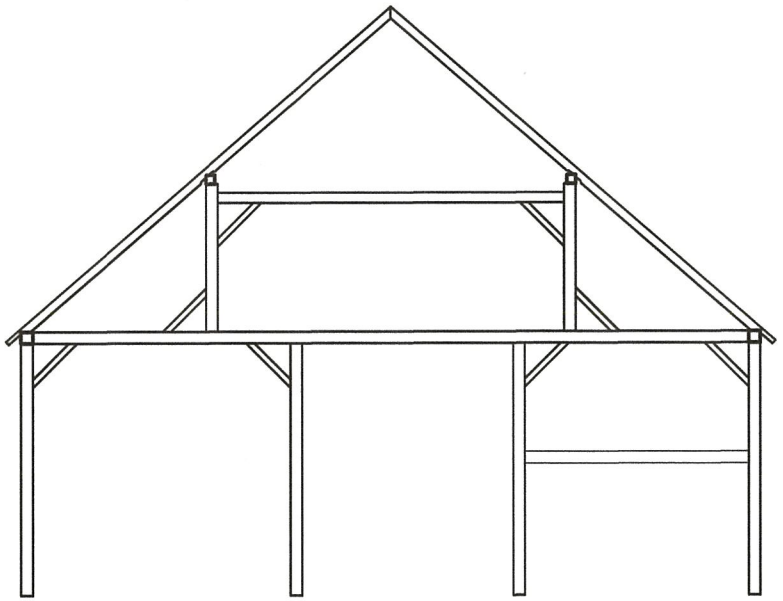
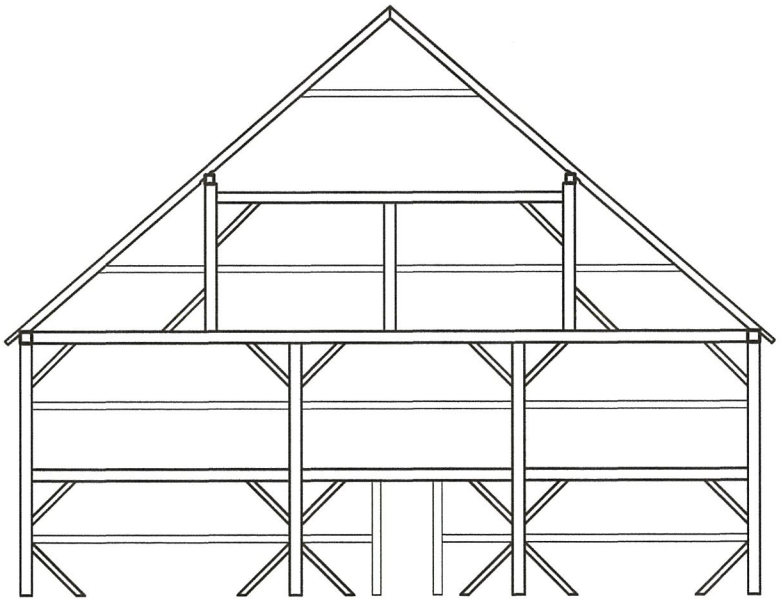
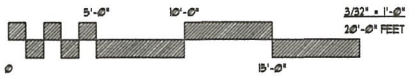
PUTNEY, VERMONT BARN

42'-2" x 60'-0"
4 - BAYS







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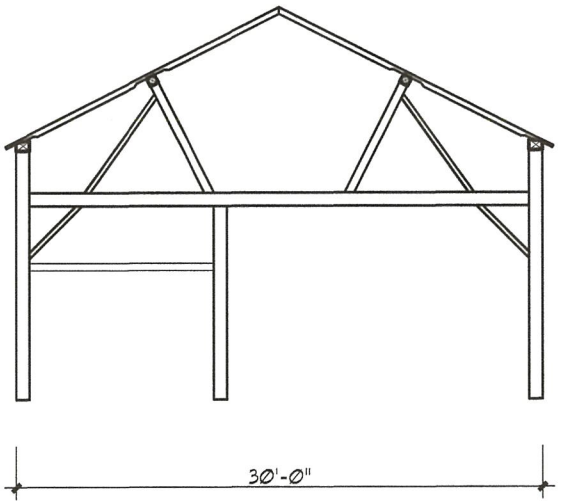
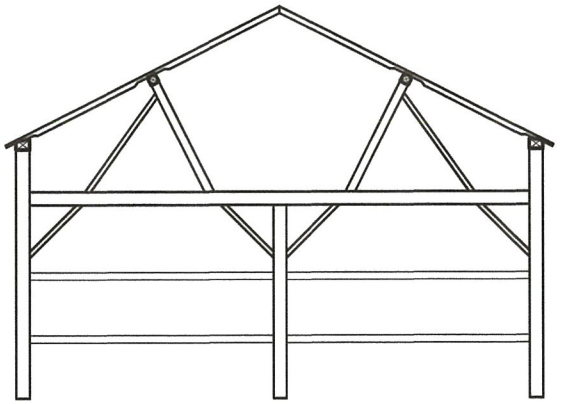
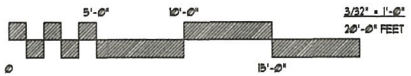
DEXTER BARN
30'-0" x 40'-0"
3 - BAYS







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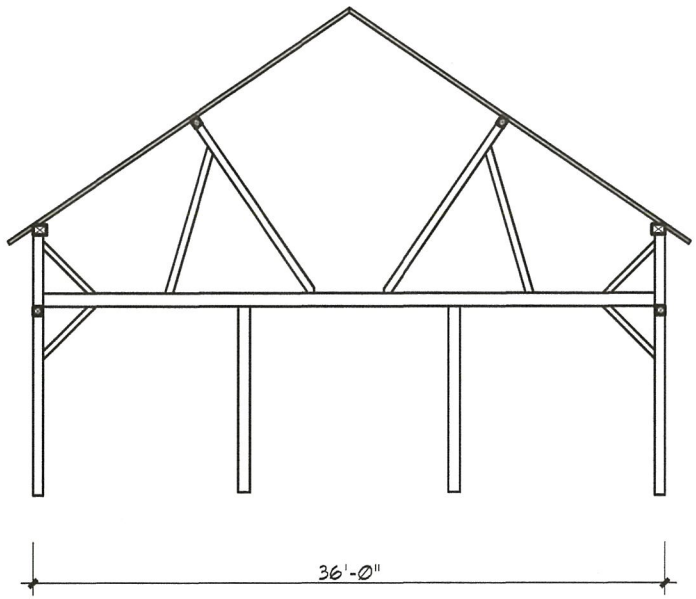
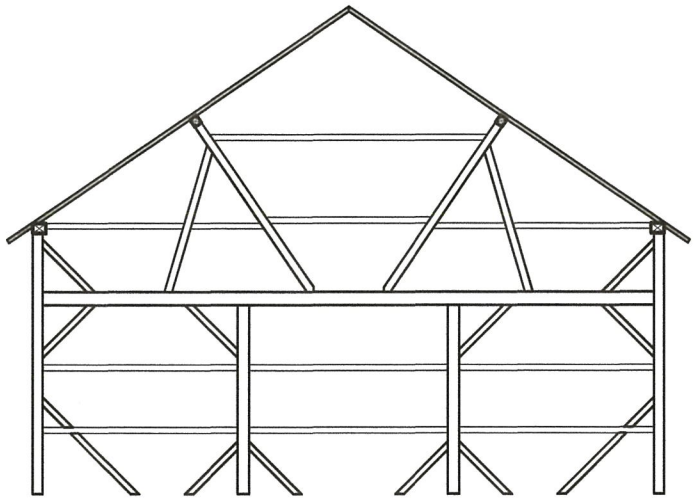
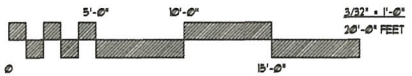
ANN ARBOR BARN

36'-0" x 46'-0"
3 - BAYS







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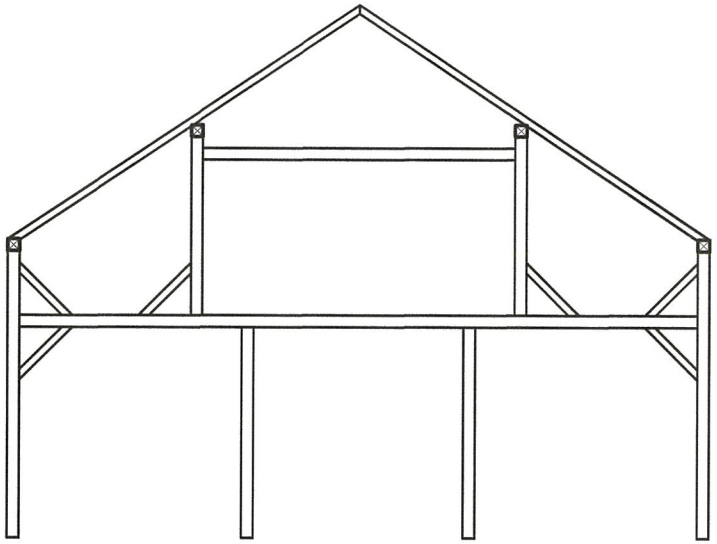
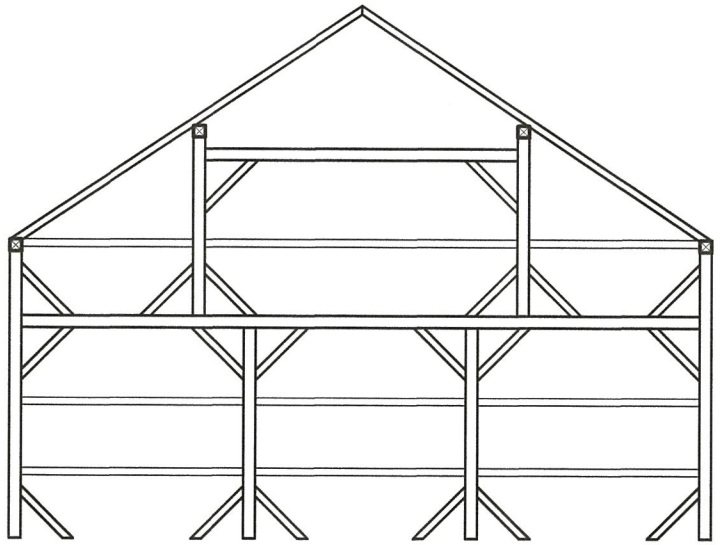
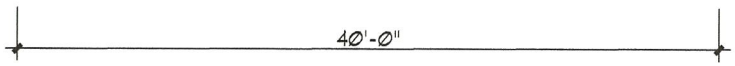
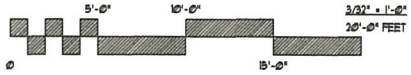
ANN ARBOR BARN
40'-0" x 50'-0"
3 - BAYS









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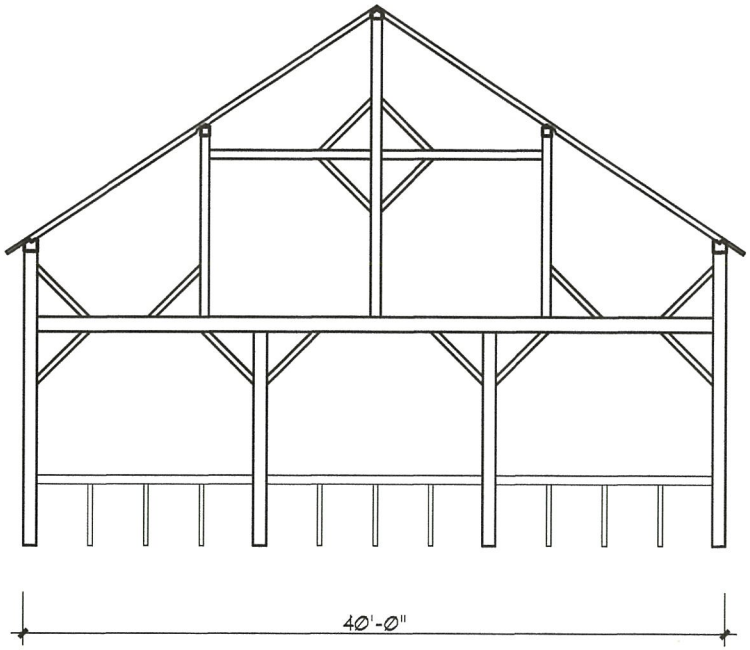
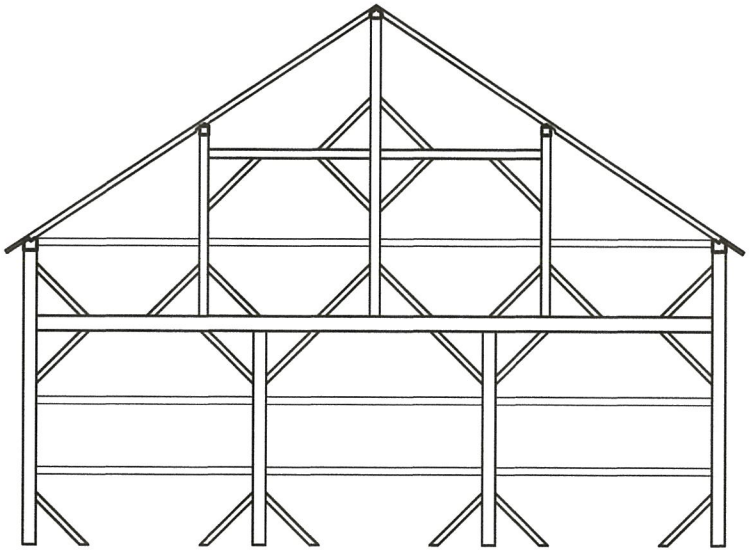
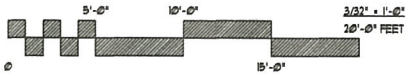
ANN ARBOR BARN
40'-0" x 50'-0"
3 - BAYS







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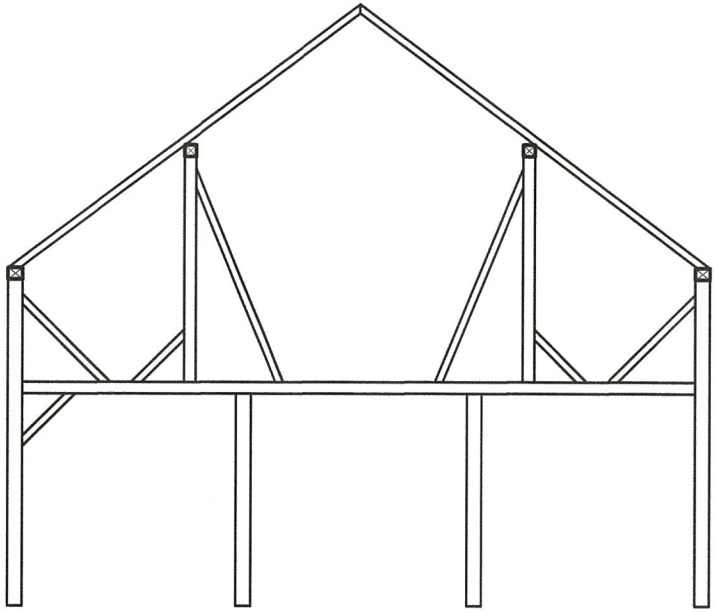
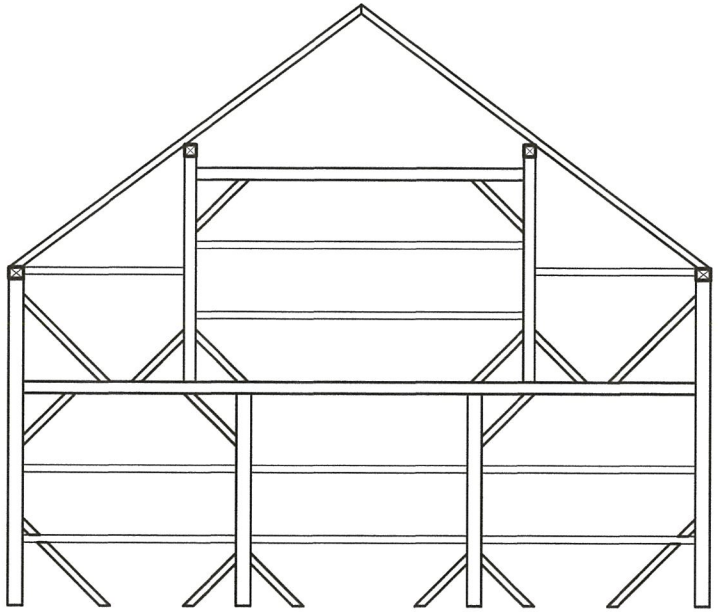
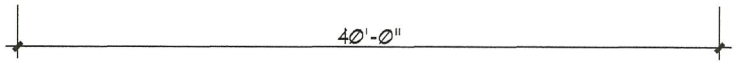
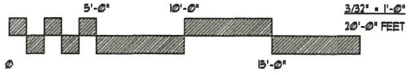
ANN ARBOR BARN
40'-0" x 60'-0"
4 - BAYS









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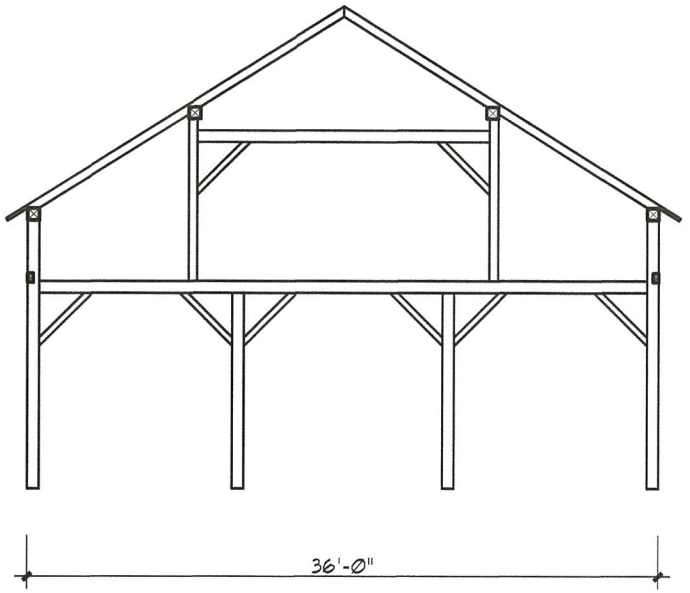
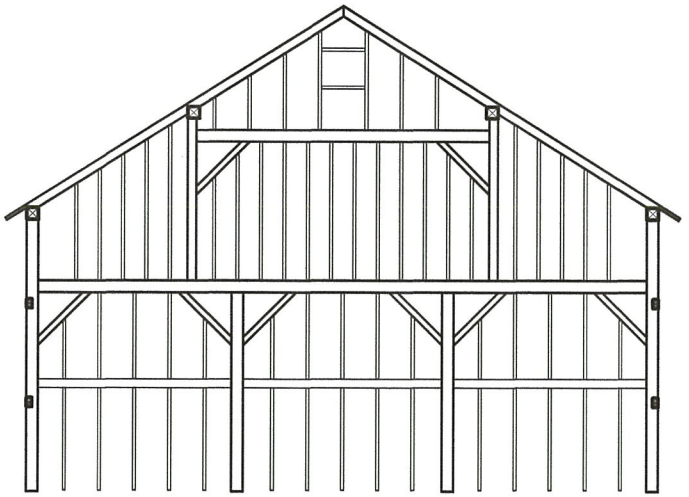
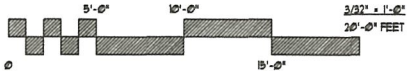
NORTHPORT BARN

36'-0" x 46'-0"

3 - BAYS







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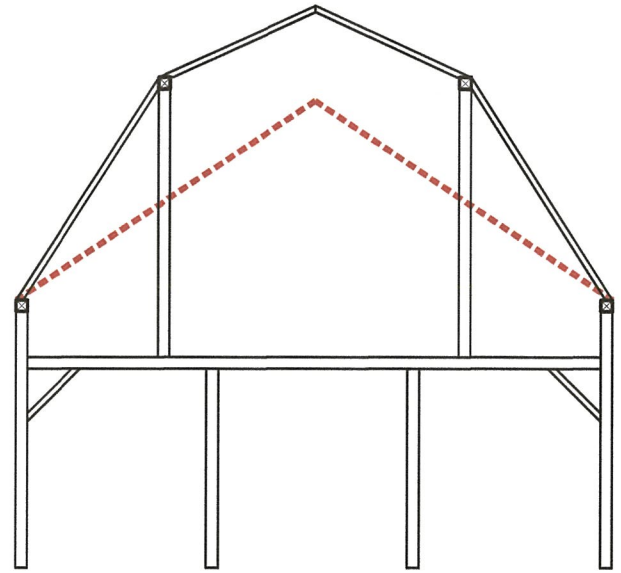
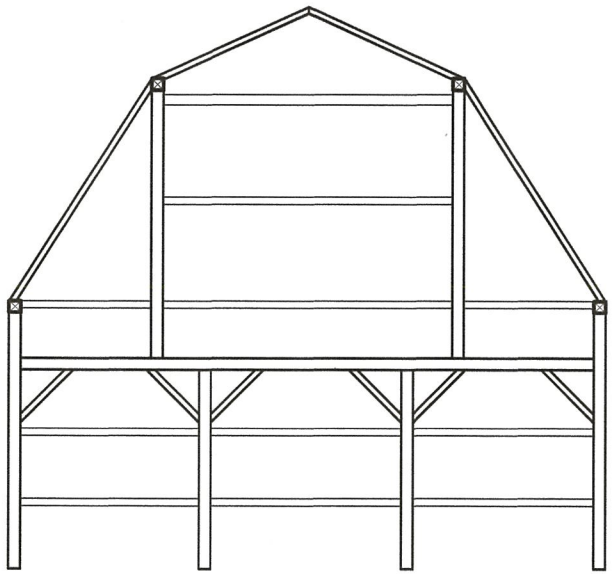
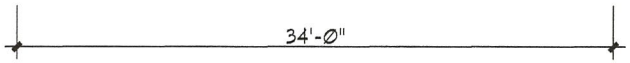
2019 Barn Tour

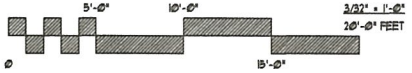
CHELSEA BARN

34'-0" x 50'-0" - (68'-3")
3 - BAYS (ONE BAY ADDED)









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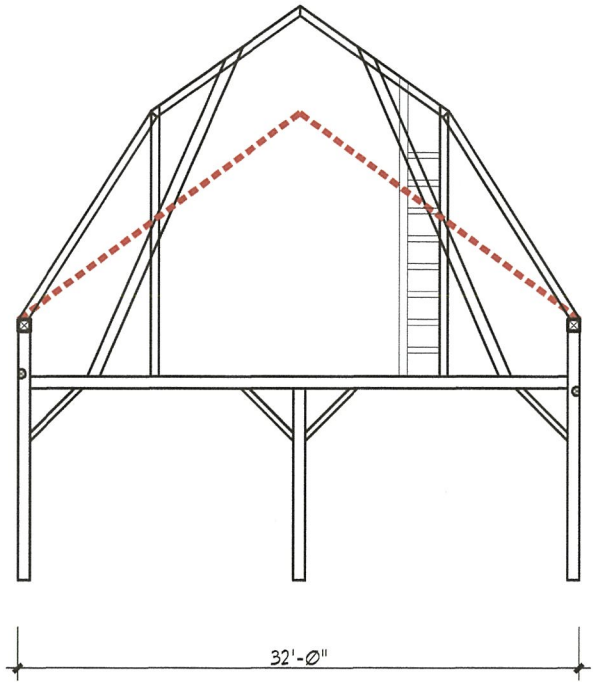
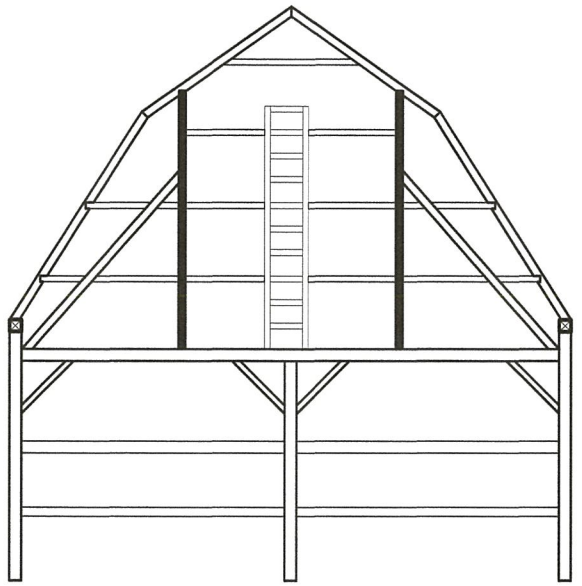
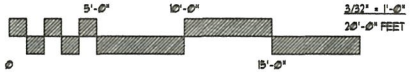
ANN ARBOR BARN
32'-0" x 42'-0"
3 - BAYS







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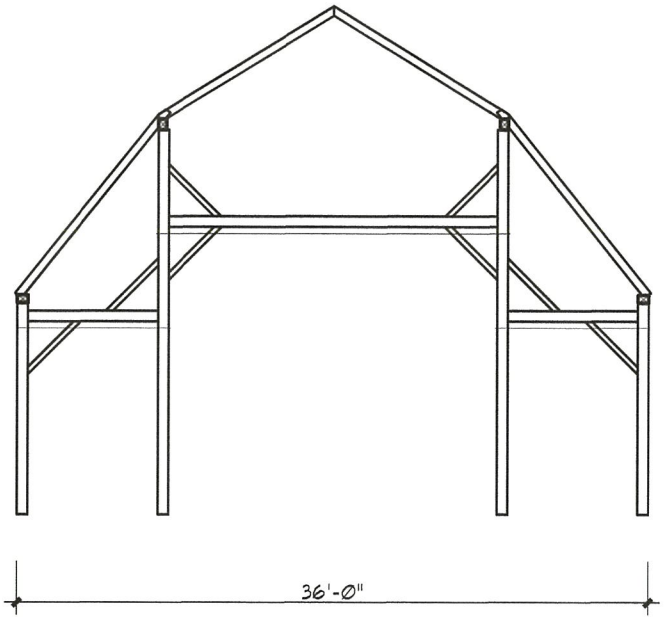
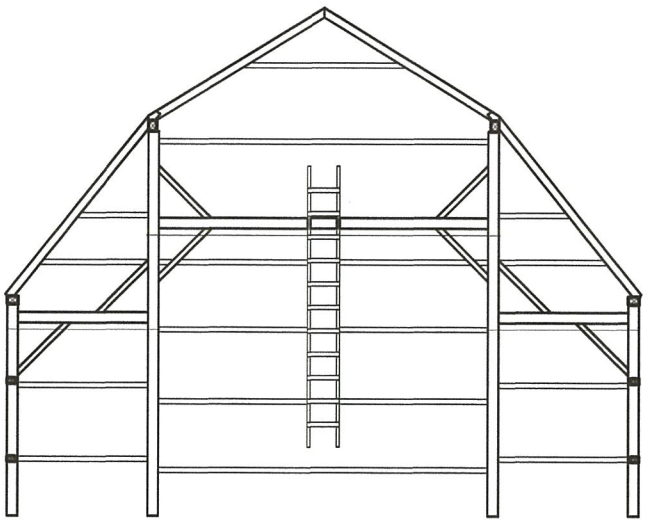
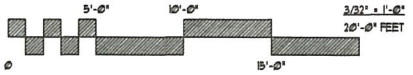
ELGIN, ILLINOIS BARN

36'-0" x 112'-0"
7 - BAYS







Michigan Barn Preservation Network
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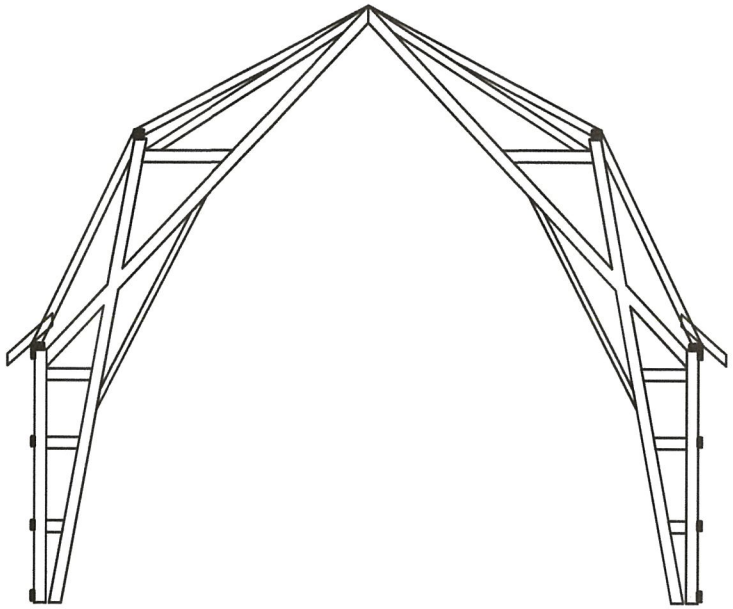
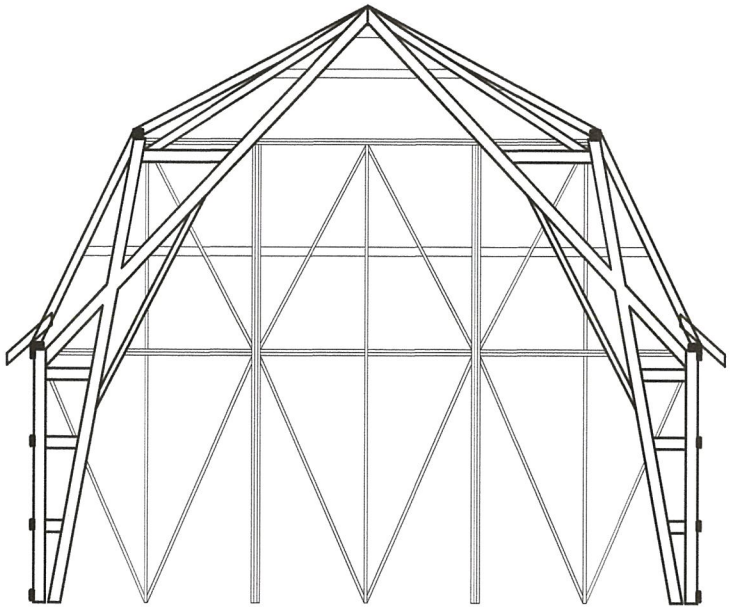
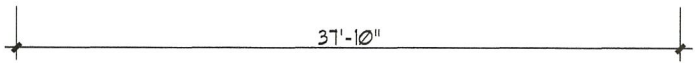
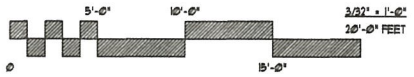
WISCONSIN BARN
37'-10" x 90'-2"
6 - BAYS





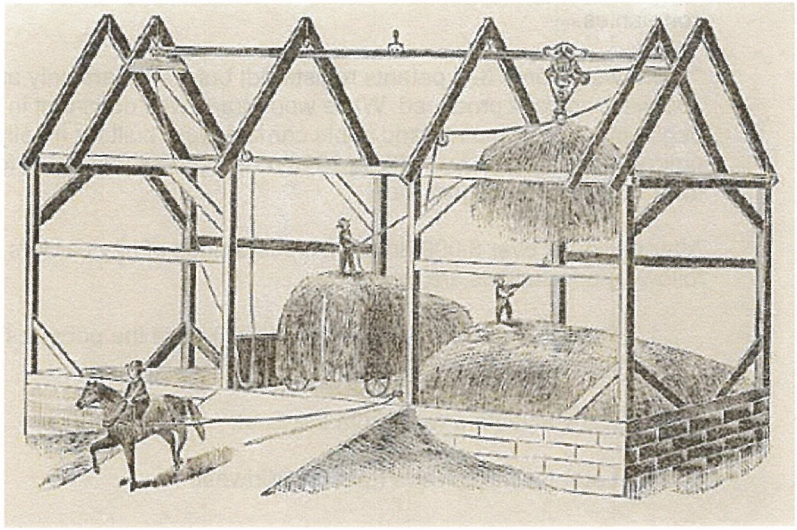




A Bit about Hay Carriers

Dennis McGrew and Doug DeShazer

Published on 28 March 2012



Getting the hay crop in the mow

Putting up hay in the mid-1800s was both time and labor-intensive. When the crop was in blossom at its peak food value, it would be cut by men swinging giant swaths with their scythes. After drying in the sun it would be raked by hand into small piles or gathered into haycocks by "sweeps" pulled by horses. From there it was forked onto a wagon and then forked again into the barn loft.

With the advent of horse-drawn mowers – cutting a swath of usually three or four, sometimes up to six feet at a time – haymaking took a big turn. Hay loaders were developed by the 1870s and dump rakes dragged the hay into crude windrows. Horses pulling a wagon with the loader behind would straddle a row. The loader elevated the hay onto the wagon where it had to be forked into layers making a uniform load.

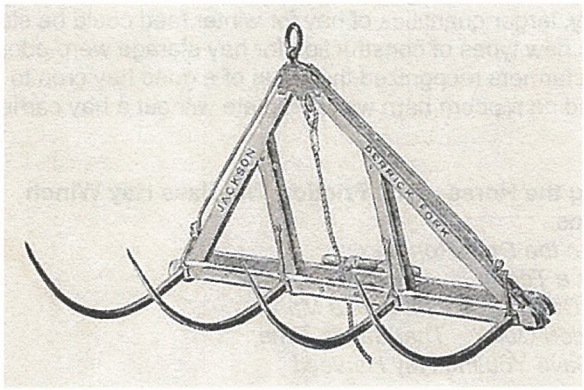
Early hay "handling systems" in the barn were pretty basic; often consisting of an over-sized pitchfork fastened to a draft line running through a pulley made up to a rafter in the barn roof. Experimentation evolved with simple "carriers" made of wood which were pulled along a 4 x 4 wooden track in the peak of the barn. These designs had no locking mechanism which required the horse team to hold the load on the draft rope to keep it suspended as it traveled on the track.

The hay carrier

Company records indicate William Louden received a U.S. patent for the world's first hay carrier on September 24, 1867. In 1868 the first cast iron hay carrier appeared. The development of malleable iron, as opposed to cast, eventually led to all metal hay carrier designs that were stronger and longer lasting. A brake was designed in the carrier which would hold the load; taking the weight off the draft rope and the horses. Hay carriers of the 1880s limited the farmer to only one draw along the barn. He would have to climb to the top of the barn and reverse the carrier and/or the draft rope. Introduction of the Swivel Car and Swivel Reversible models resolved this problem. A design common by 1885 used a ring separating the trolley mechanism from the car. Eventually various styles of steel track, were introduced making the carrier system much easier to operate. Carriers needed to be simple, dependable and strong enough to support the loads. Downtime with a valuable crop on the ground could quickly result in a disastrous loss.

Evolution of the Hay Fork

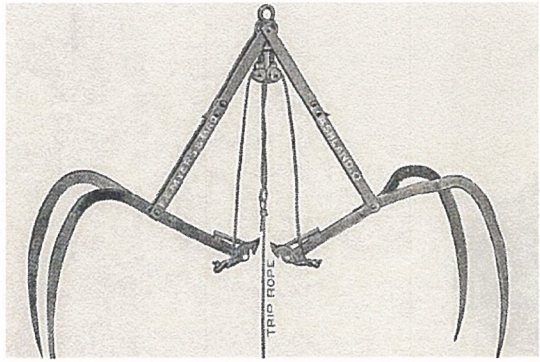
Patents for horse hay forks to "grasp" the hay from the wagon were first issued in 1854 and would total over 600 during the course of the loose hay handling era. The Jackson Fork was a design popular for many decades. An early description of its use is provided:



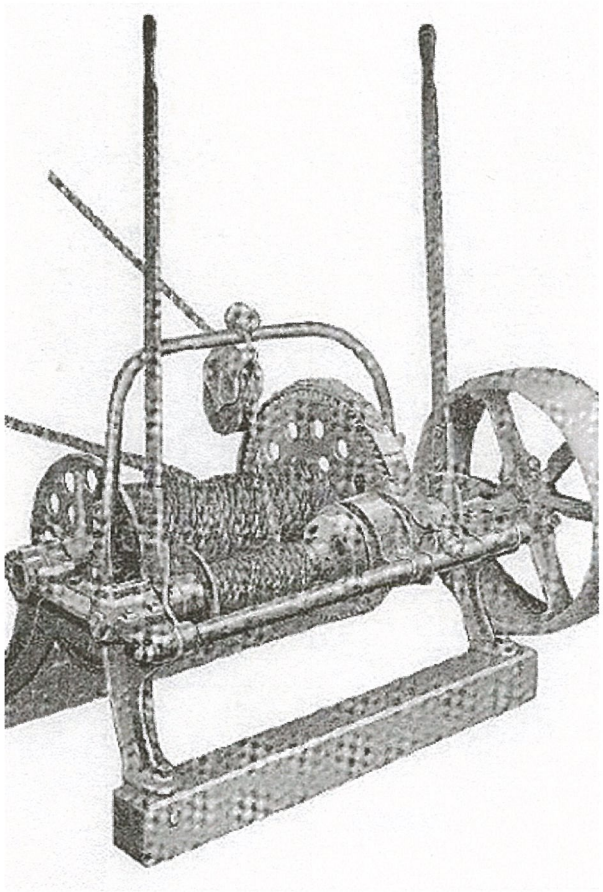
"Made by the Jackson Farm Implement Co., these forks were commonly used by farmers from the mid-1800s onward. A wagon of loose hay was driven under the roof overhang gable. The fork is attached to a "trolley" riding on a track which extends the length of the barn. A rope runs from outside the barn front, through a pulley to the fork, then through a second pulley and out the rear of the barn and hitched to a horse. Once the fork is set into the hay, the horse pulls the fork up to the trolley, thence into the hay loft to the desired spot. The man there pulls a "trip" rope attached to the fork which lets the tines fall to vertical, dumping the hay. The horse is then backed and the rope in front is pulled, returning the fork and trolley to the overhang where the fork is unlatched from the trolley and is lowered again to the wagon."

Mechanical hay forks and other apparatus used to lift and hold the hay from the wagon as it was suspended into the loft evolved from rather crude blacksmith forged single "prongs" into some quite efficient styles. Personal preference as well as the type of hay or bundle being lifted off the wagon dictated popularity of the various forks. One early style in widespread use was Sprout's Shear Fork. Another popular style was the trip handle Single Harpoon style of which the trigger trip version designed by Nellis was in use for many decades.

Various versions of the lever action double harpoon were used throughout the era of loose hay handling and there was even a triple harpoon version.



Grapple-style forks enjoyed a long-lived popularity and numerous patents for four and six-tine versions were issued. A more modern and quite popular improvement was the design of a "loose" grapple that had two pair of tines which could be set into the load for a larger bite.



The windlass could be used with hay carriers and forks, or slings, or with any other conveyors, for handling other kinds of material. It replaced the requirement of a team and appealed to all who preferred power for hoisting hay into the mow. The hay winch, when partnered with appropriate steam or gas propelled engine, would elevate the load and run the carrier to the desired position on the track.
The operator could trip the fork at will and return the carrier to the load – all using the same rope, fork and trolley formerly used in connection with the horse. It could be used in the barn, in the field with a stacking rig or a cable outfit. From four to seven and a half horsepower was required according to weight of load and desired speed.

The machine was composed of two drums, one for the hoisting rope and the other for the trip and return rope. The drums, riding on ball bearing thrust collars, were fitted with automatic brakes under full control of the operator at all times.
The Nelson manufactured machine advertised drum capacity of 150' for 5/8" manila rope with a safe operating load of 1,000 lbs. Porter offered a unit with drum capacity of 250' of 3/4" manila and a safe load up to 2,000 lbs. requiring six horsepower.

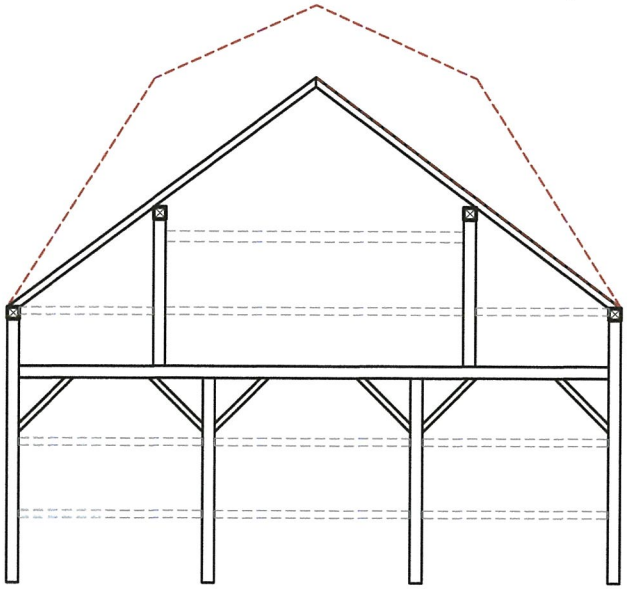
Litter carriers
Litter carriers were also common to many large dairy barns in the Midwest by 1900. They operated on an overhead track system made up of right angle curves, switches and other configurations. Sometimes the track system served double duty to carry a feed car as well, although most were used to carry manure exclusively. Some feed systems used a separate track. Manure track systems extended outdoors where the 10 to 20 bushel capacity tubs were dumped into a manure spreader or onto a pile for later disposition.

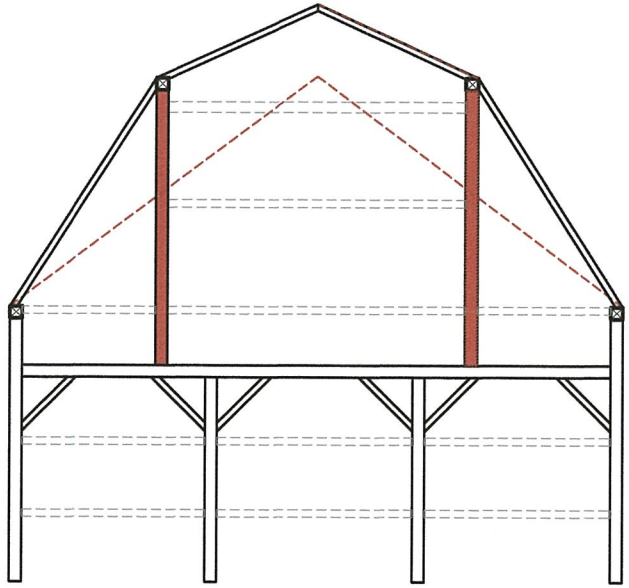
—From North American Hay Tool Collectors Association newsletter, Vol. 2 No. 4, November 2010
Figures courtesy of North American Hay Tool Collectors Association.

Michigan Barn Preservation Network
2019 Barn Tour

A TYPICAL 40 x 50 3-BAY HAY BARN CONVERSION

Gable barn converted to a gambrel . The conversion adds 165 sf of storage (section).
The conversion adds 8,250 cf of storage to a 50 foot barn.
For reference, that is the equivalent of almost 1,200 four-foot hay bales.





Gable end bent
Interior bents would have no purlin tie beam or girts
Only 8 new purlin posts are needed (in red).
Rafters are cut or sourced as new

Barns of Washtenaw County

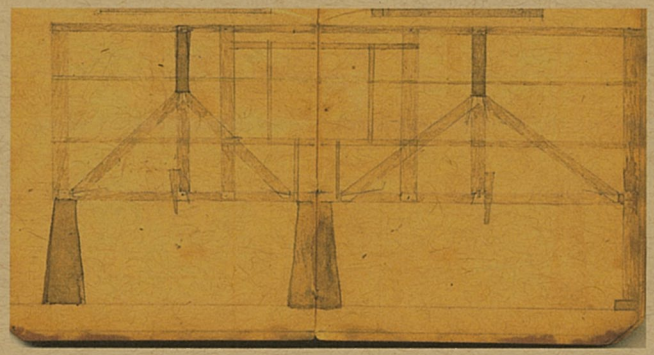
Acknowledgements

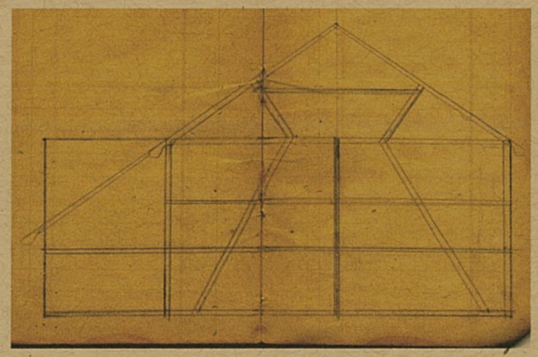
The tour and guide "*Barns of Washtenaw County*" could not have been made without the willing participation of the owners and guardians of these remarkable barns. Our thanks go to: Mr. Kurt & Mrs. Barbara Krueger, Mr. Charles & Mrs. Kara Hieber, Mr. Kenneth Hieber, Mr. Ronald & Mrs. Peggy Diuble, Mr. Richard & Mrs. Rebecca Cox, Mr. Fernando & Mrs. Judith Hermosillo, and Mrs. Grace Ahn for permission to visit their properties. Please note, all of these barns are privately owned and are **not** open to the public on any occasion. Our opportunity to tour these barns was on a one-time, and only one-time, basis. That is what makes these tours so valuable and rewarding. We are very grateful for their generosity.

The tour was conducted as part of the Michigan Barn Preservation Network's 2019 Conference and Tour programming. It was organized by Chuck Bultman of Charles Bultman architect, *LLC*.

Research and text by Ina Hanel-Gerdenich.and Chuck Bultman.
Photos, design and compilation by Chuck Bultman.

May 31, 2019
Washtenaw County, Michigan





Drawings from the sketchbook of Mr. Joseph Overholt of Berks County, Pennsylvania, circa 1860 to 1863; a designer and builder of timber framed buildings.

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