Investigations at the McDonald-Peavey House, 13620 95th St. S.E., Otsego, Wright County, MN.

Prepared for the City of Otsego

by Richard Rothaus, PhD

With contributions from David Radford, Douglas George, Joseph McFarlane and James Cummings

25 January 2012

McDonald-Peavey House in the 1880s

Minnesota: 1965 W. Highview Dr.. Sauk Rapids, MN 56379
North Dakota: PMB#149, 4302 13th Ave S, Suite 4, Fargo, ND 58103

Phone: 320-761-9090
Fax: 866-651-5859

Email: rothaus@trefoilcultural.com
Skype: richard.m.rothaus

Management Summary

The McDonald-Peavey House was demolished in 2011. Prior to demolition the City of Otsego authorized Trefoil and the Heritage Preservation Commission to "deconstruct" the house in an effort to clarify its history and construction techniques. This work was completed during October 2011. The investigation determined that there were two early phases of the house, the first from 1880-1898, the second from 1898-1905. The construction phases had not been noticed before, and could be discerned only by taking the house apart to see wall boards and construction details. Trefoil also conducted a small archaeological investigation behind the house, which uncovered numerous artifacts related to the occupation of the structure. The work was done with the help of the Heritage Preservation Commission and volunteers.

The McDonald-Peavey house was long a problematic structure for the community of Otsego, and created some tension between the City of Otsego and the Heritage Preservation Commission. While the structure was of obvious historic importance, the decision was made to demolish it rather than undertake an extensive restoration. Once that decision was made, Trefoil recommended a systematic "deconstruction" of the house to gain as much information as possible before it was gone. This is not standard practice, but we suggest that it should be. The deconstruction greatly increased our knowledge and understanding of the structure and the peopled who lived there.

Table of Contents

List of Figures

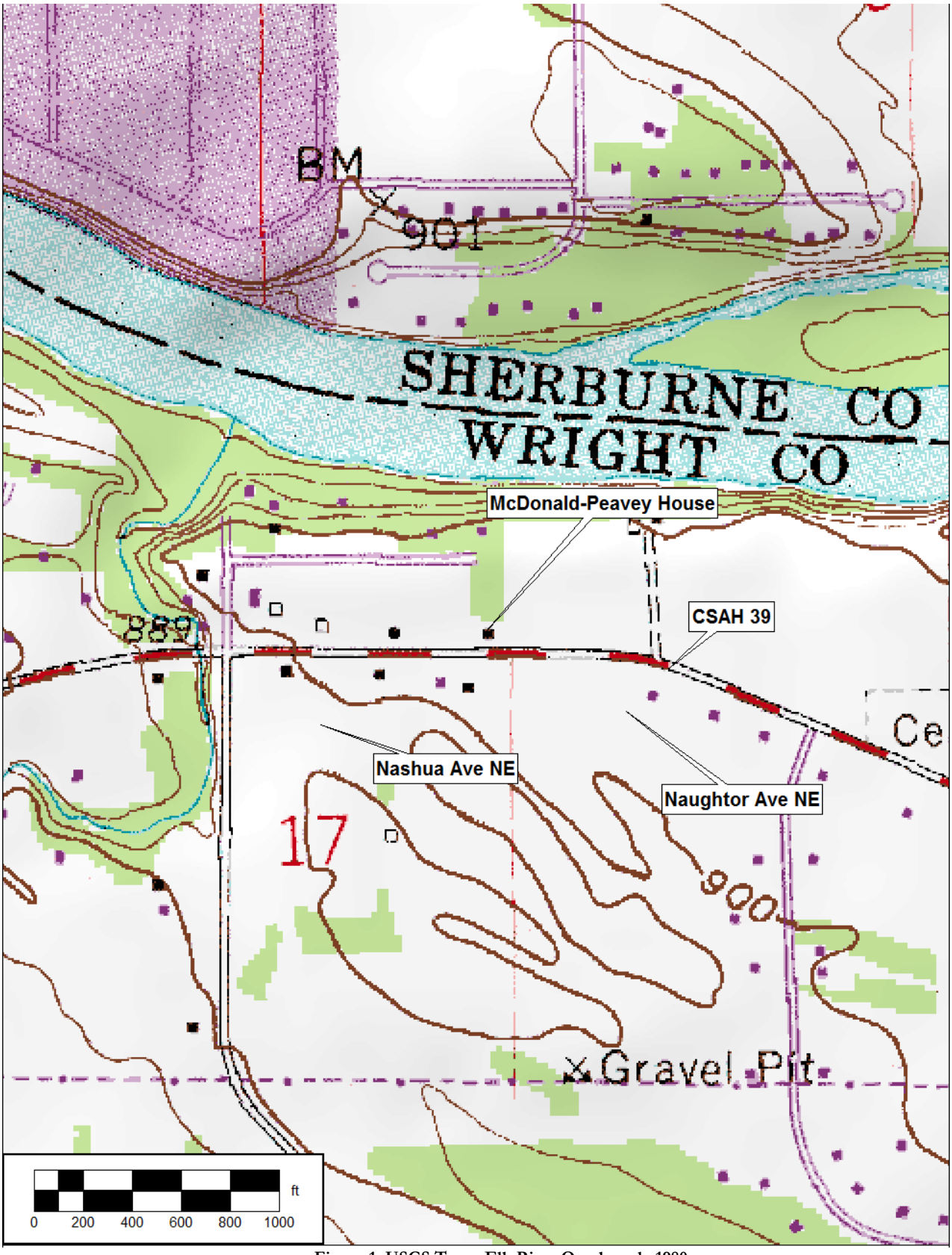


Figure 1: USGS Topo, Elk River Quadrangle 1980

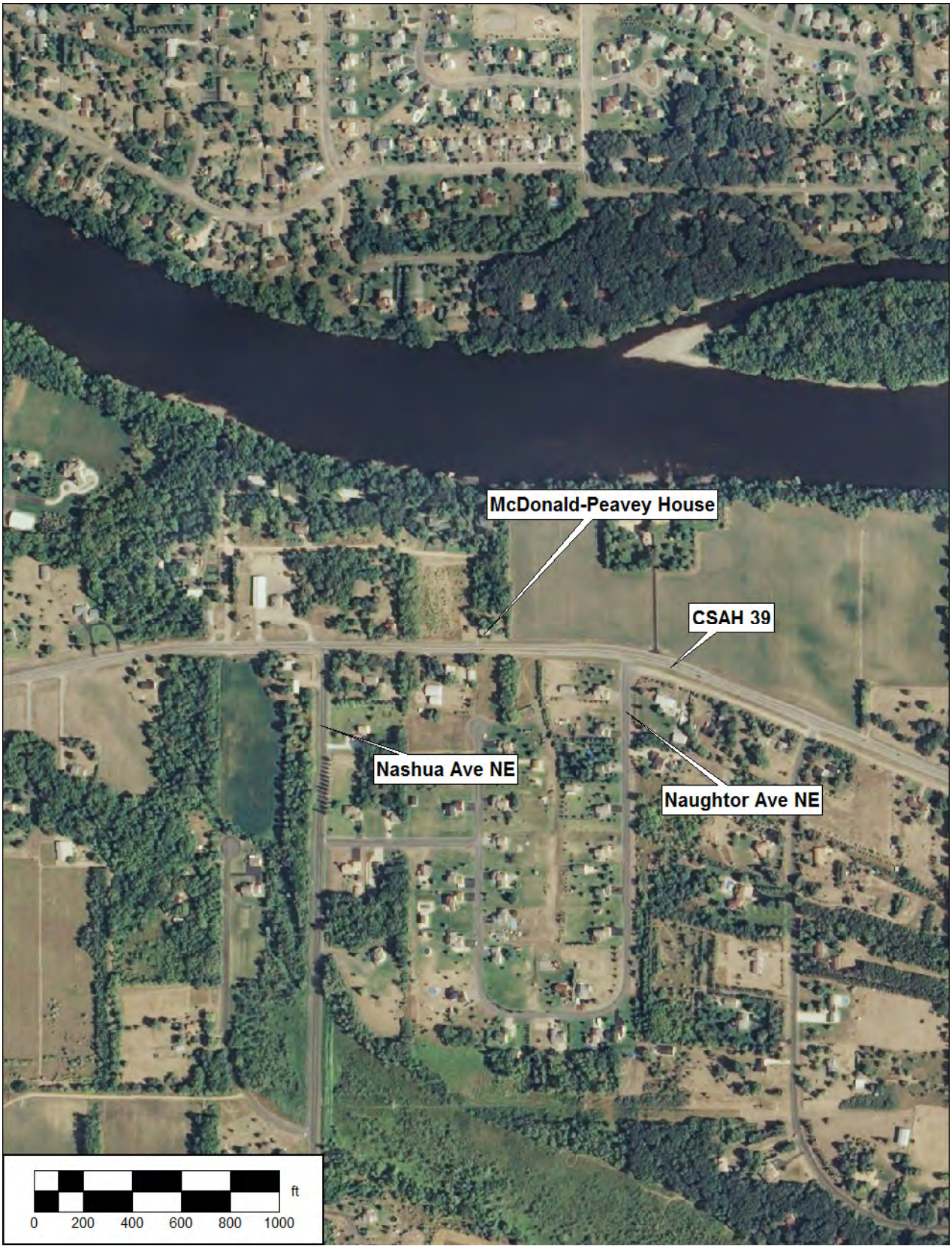


Figure 2: Aerial Photo (2009)

Acknowledgments
The Otsego City Council approved and provided funding for this project. The Otsego Heritage Preservation Commission (Gail Anderson, Toni Seroshek, Chris Wilson, John Noll and Thomas Constant) provided essential support and information during this project, and several Commission members were able to help with the fieldwork. Chris Wilson seemingly was there every step of the way, and her help was much appreciated. Likewise, the community volunteers brought knowledge, labor and curiosity to the project. Archaeologists Joe McFarlane, Jim Cummings, David Radford, and Doug George were essential for the fieldwork and the analysis, and contributed many hours beyond those originally anticipated. Donald W. Johnson joined us at short notice to do a geophysical survey.

Project Overview
The McDonald-Peavey House was demolished in 2011. Prior to demolition the City of Otsego contracted with Trefoil to investigate and document the structure, as the McDonald-Peavey house was one of the oldest structures in the county. Despite numerous additions and building modifications, there was no doubt that a 19th century structure at the core of the house. A project was designed that included public participation, with two main tasks: 1)investigate and document the structure through targeted dismantling of later additions and select architectural features, and 2)conduct test excavations in the yard to determine if substantial archaeological materials and deposits related to the house were present.

Fieldwork occurred during September and October 2011. During the week of September 25th, Richard Rothaus and Joseph McFarlane did an initial investigation of the house, including removal of some wall finishings. During this preliminary investigation, we began to suspect that there might be two phases to the 19th Century structure, and an appropriate deconstruction plan was devised to investigate this. Also during this week a metal detector survey was conducted in the yard. This survey focused on finding concentrations of non-iron metallic objects (nails and other iron items were ubiquitous in the yard.) Four shovel tests were dug and backfilled to confirm the accuracy of the metal detector survey. The remaining "hot spots" were shovel tested by volunteers.

Intensive fieldwork occurred on 14-16 October 2011. Fifteen volunteers signed up to assist with the project. Once work began, many people noticed the activity and dropped by to help; we lost count but more than 25 people helped out before the project ended. During the three days, all of the walls and most of the ground floors were opened up for study. Approximately one-half of the external siding was removed. Eleven shovel tests and two formal excavation units were dug. On the 15th, Donald W. Johnson did an electrical resistivity survey of the backyard area.

The results of the project are detailed in this report. Our investigation determined that there were three construction phases for the house: Phase I (1880-1898), Phase II (1898-1905), Phase III (post-1905). There are some hints at additional renovations in the 19th century. The archaeological excavation found material primarily from the 20th century, much of which can be related to the sewing activities of the Peavey sisters. The geophysical survey identified a probable outhouse location, and preliminary archaeological testing supports that identification.

Background
The McDonald-Peavey house was located at 13620 95th St. S.E., Otsego, MN (T121. R23, SW ¼ of NE ¼ of Sec 17; UTM NAD 83 15T 0452214, 5015349). The house was the subject of a survey and evaluation in 2004 and 2008 (Vogel 2004; Claybaugh 2008). Prior to this survey the structure was identified as a

vernacular Gabled Ell type structure of undetermined date (1870-1900). This project indicated that the structure was originally a gable-front house that was expanded to a Gabled Ell shortly after its construction. The community had long considered it the oldest house in Otsego.

The house stood on Lots 1 and 2 of Block 78. The property was part of an 1852 preemption land claim of John McDonald (1807-1887). McDonald and his wife Zilpah were probably the first permanent Euroamerican settlers in Wright County. McDonald and his partners platted Otsego village in 1857. Like many similar properties, the land changed hands several times (Vogel 2004):

1857: Preemption claim by John McDonald.
1870: John and Zilpah McDonald transfer their land in Block 78 to Mary B. and Clarkson B. Roberts.
1871: Lots 1 and 2 deeded to Lewis McDonald (son of John and Zilpah McDonald).
1881: Land transferred to John McDonald.
n.d.: Land willed to Laura McDonald and her husband Edmund Peavey.
1908: Orrin Peavey (son of Laura and Edmund Peavey) and his wife Edna Mae Davis acquire land.
1990: Land sold to the City of Otsego

Tax records for the property are incomplete, and only indicate a house stood there about 1900. As noted below, the earliest phase of the house dated between 1880-1898, with a second phase built between 1898 and 1905. This presumably means the structure was built by John McDonald; the expansion may have been done by John or his daughter Laura.

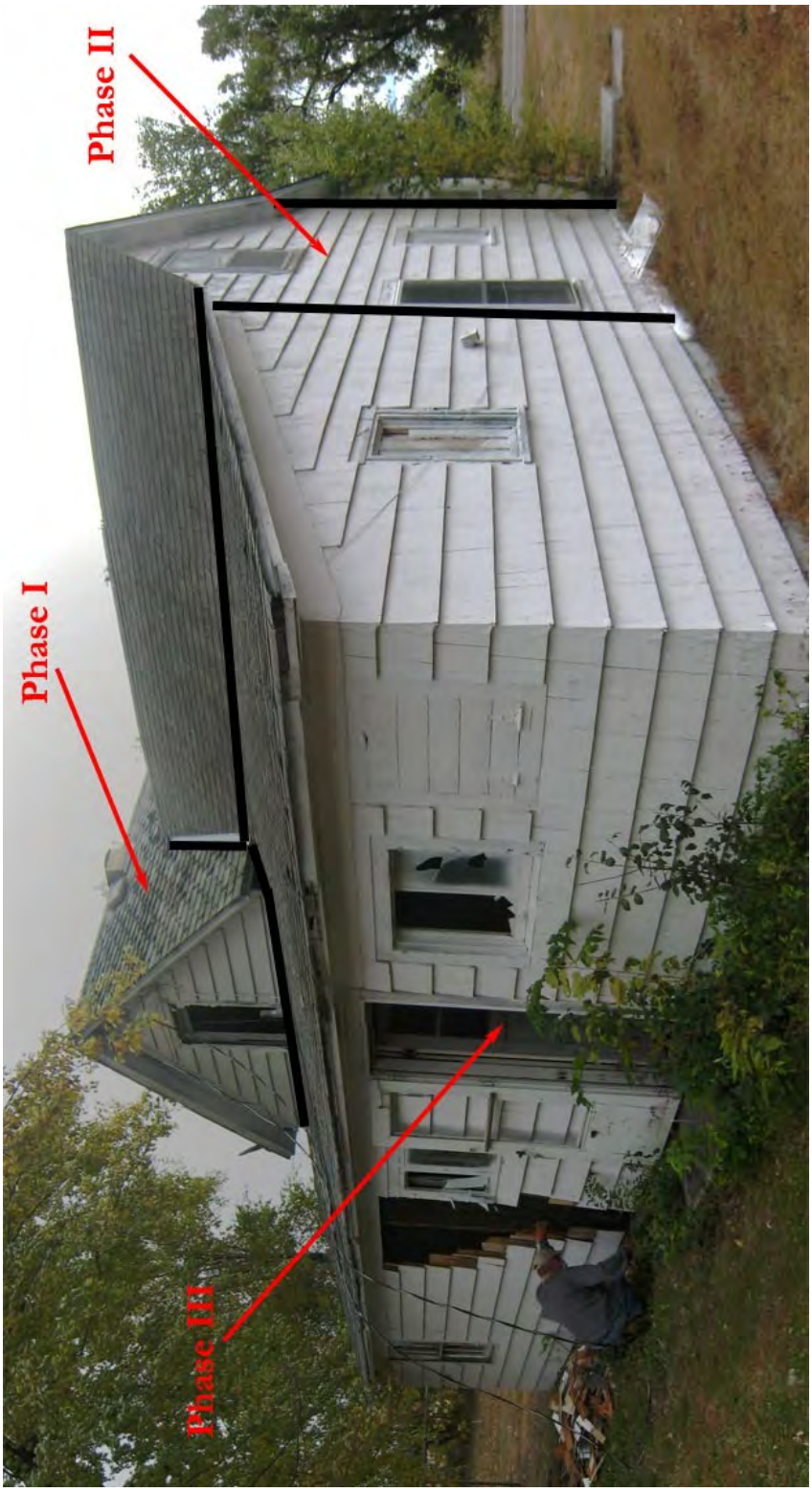


Figure 3: McDonald -Peavey House, looking southeast

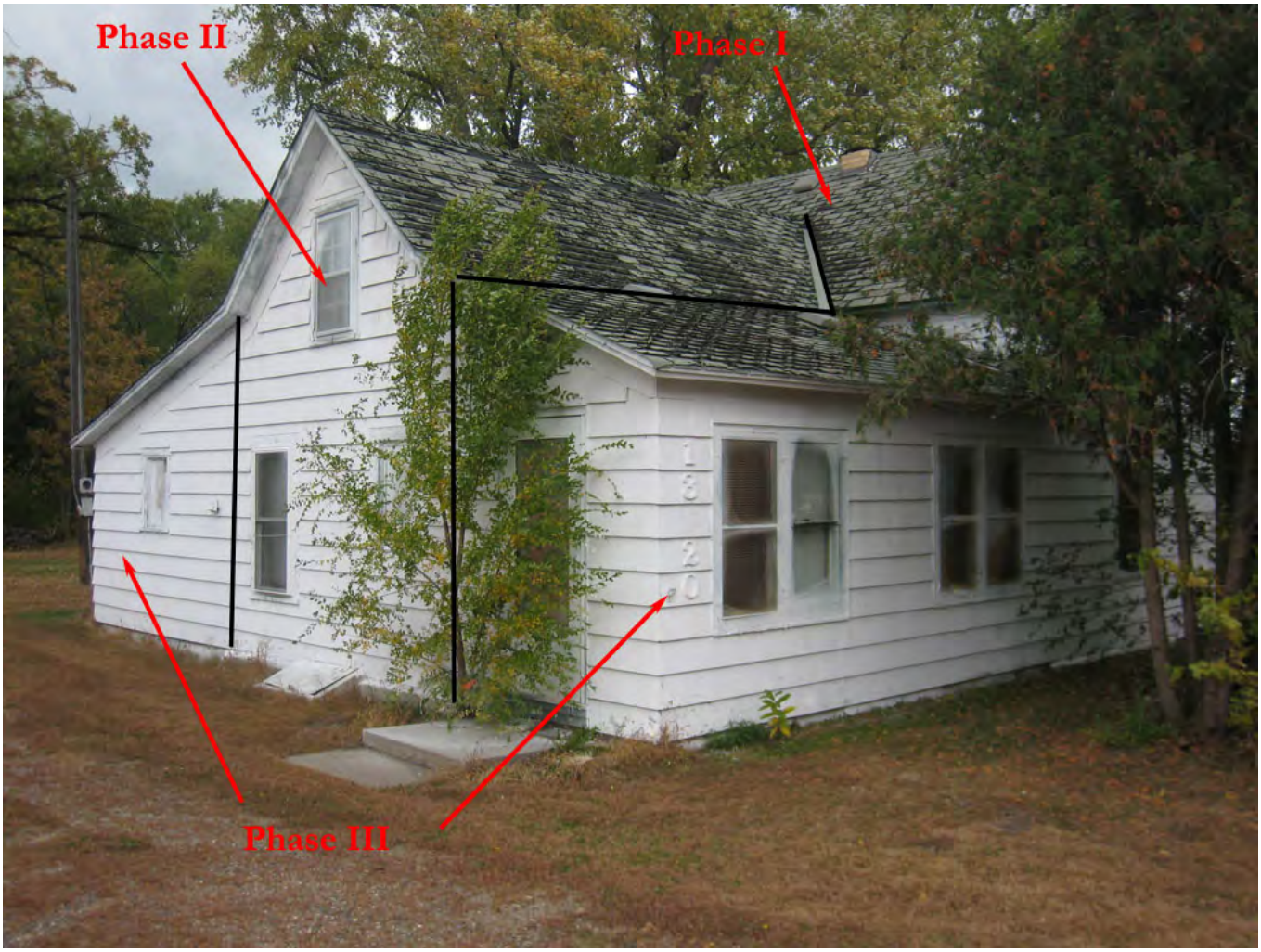


Figure 4: McDonald-Peavey House, looking northeast

Phase I (1880-1898)

The original structure was a simple gable front 1.5 story house (20' N-S, 15' ½" E-W). The construction date of the house is unsure, and a date as early as 1852 (the year McDonald acquired the land) has been conjectured. The style of the structure is not distinctive and was common into the early 20th century. After exposing several original architectural elements, including wall boards and structure beams, it became apparent that all of the lumber was cut with a circular saw. The lumber was rough cut rather than finished. Circular saws were not commonly in use at sawmills until the 1880s. There is nothing in the construction techniques or artifacts found that would indicate a construction date before the 1880s, and a 1852 construction date is not likely. This does not mean there was not an earlier McDonald house built on the property in 1852. It would not be unusual for a settler to build two houses on a new property, with the first being utilitarian and the second more elaborate structure coming later. An earlier house may have stood on this location, or may have been located at another spot on the property (Vogel 2004; Larson 1972; Claybaugh 2008).

The Phase I structure was divided into three rooms: one upstairs and two downstairs. A simple ladder or stairwell was probably located in the northwest corner of the structure (the stairs have been rebuilt several times and no original elements remain). A perched brick chimney was placed centrally on the interior dividing wall. External doors were located on the south and west walls. On the ground floor, the southern (larger) room had three windows, the northern (smaller) room had two windows. The upstairs landing and room each had one window (north and south ends of house). The downstairs rooms were presumably a parlor and small kitchen. The upstairs likely was used as a sleeping room. The house had (of course) no indoor plumbing, and was heated with a wood stove. Construction materials were pine and cut nails.

Figure 5: Phase I Computer Model [upper window not to scale] (looking NE)

Figure 6: Phase I Computer Model [upper window not to scale] (looking SW)

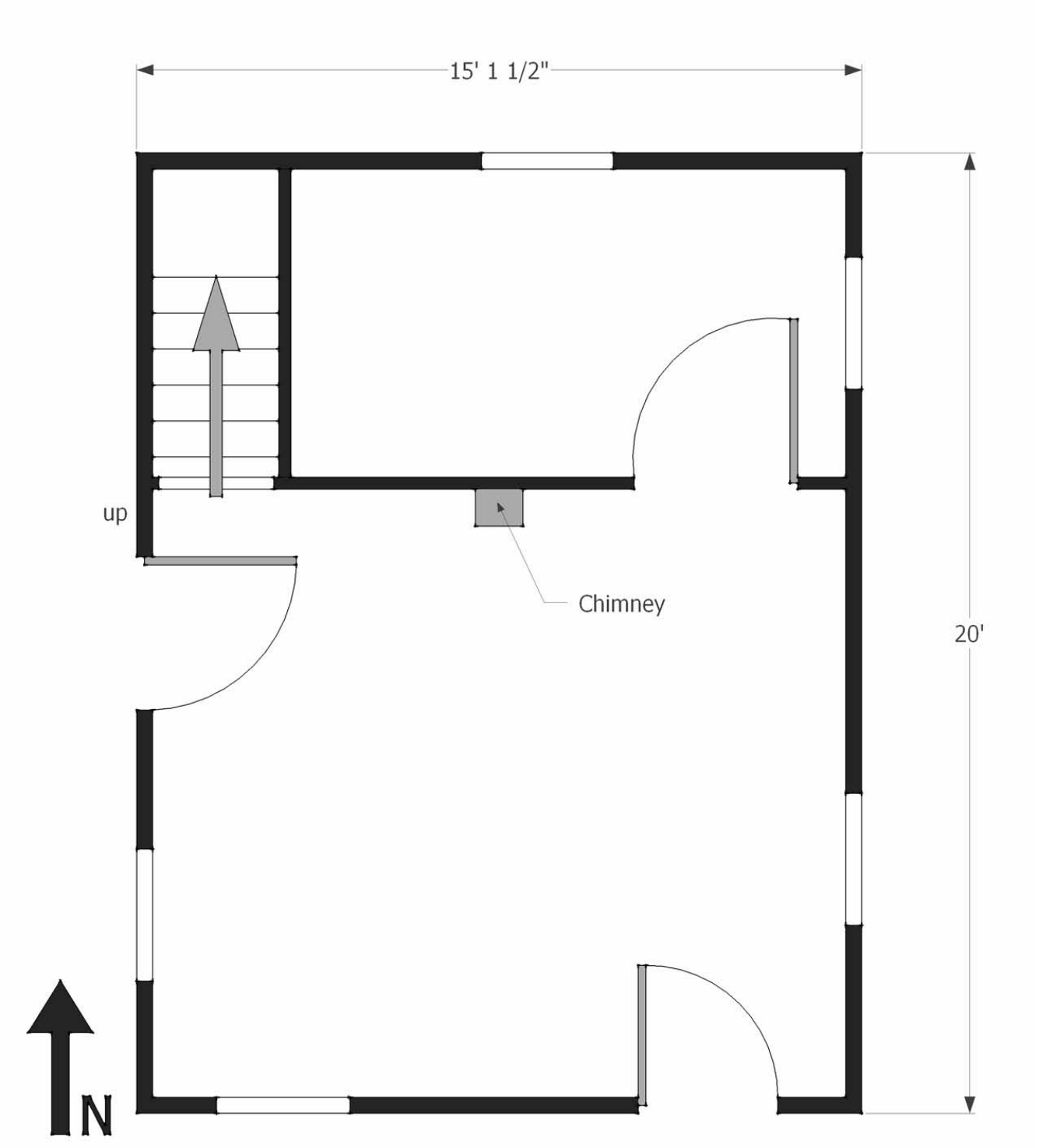


Figure 7: Phase I Ground Floor

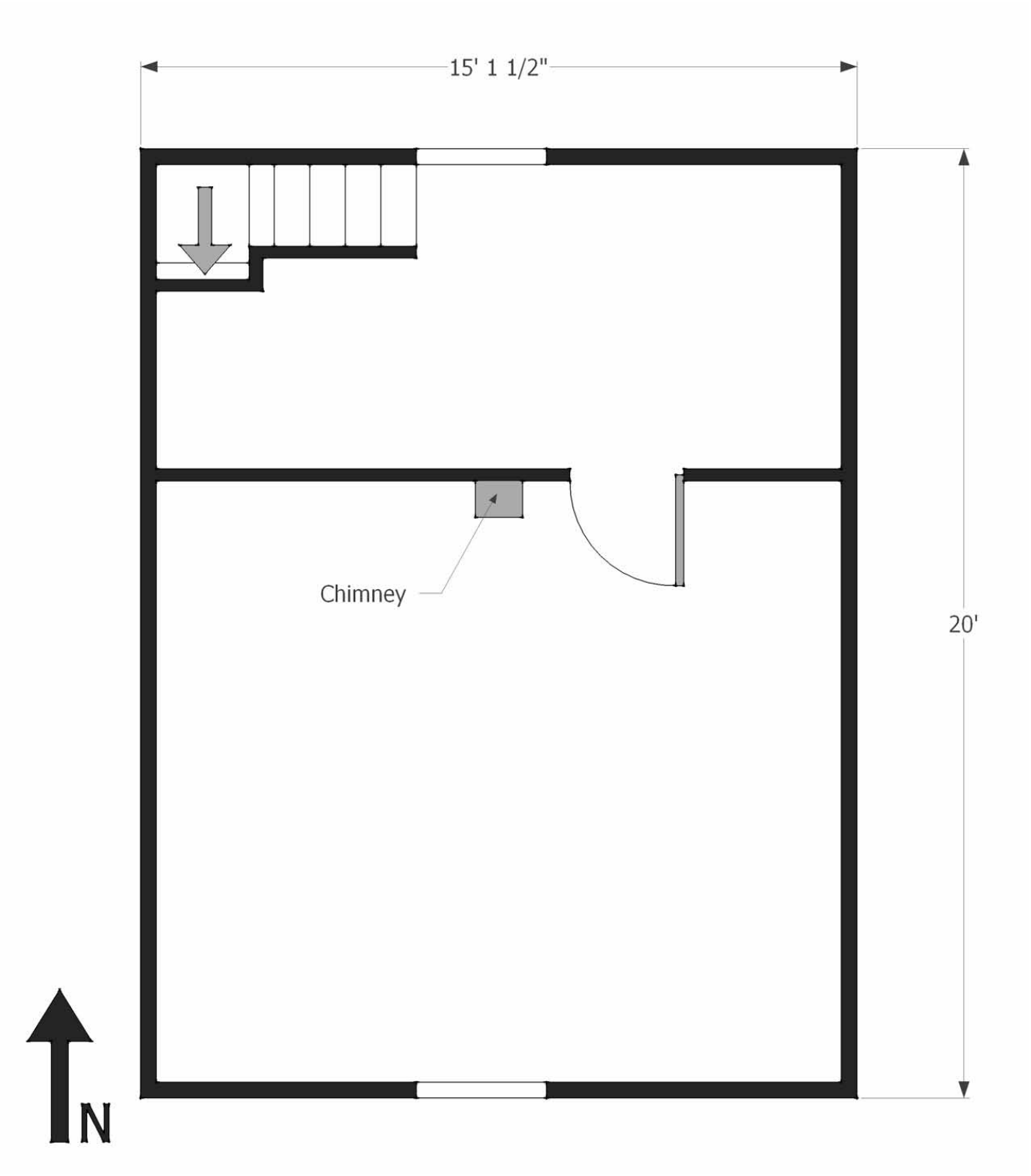


Figure 8: Phase I Upper Floor

Ground Floor

Layout: The ground floor was divided into two rooms, with a chimney placed along the dividing wall.

Framing: The structure is balloon framed. Lumber is dimensioned rough-cut. Corner posts were 2x4s; studs were 2x4s. Posts and studs extend up and into top floor. The SE corner of the structure has been heavily repaired, probably indicating some structural damage in this part of the house. The repair is late (post-1970s), based on lumber, nails, and associated floor replacement.

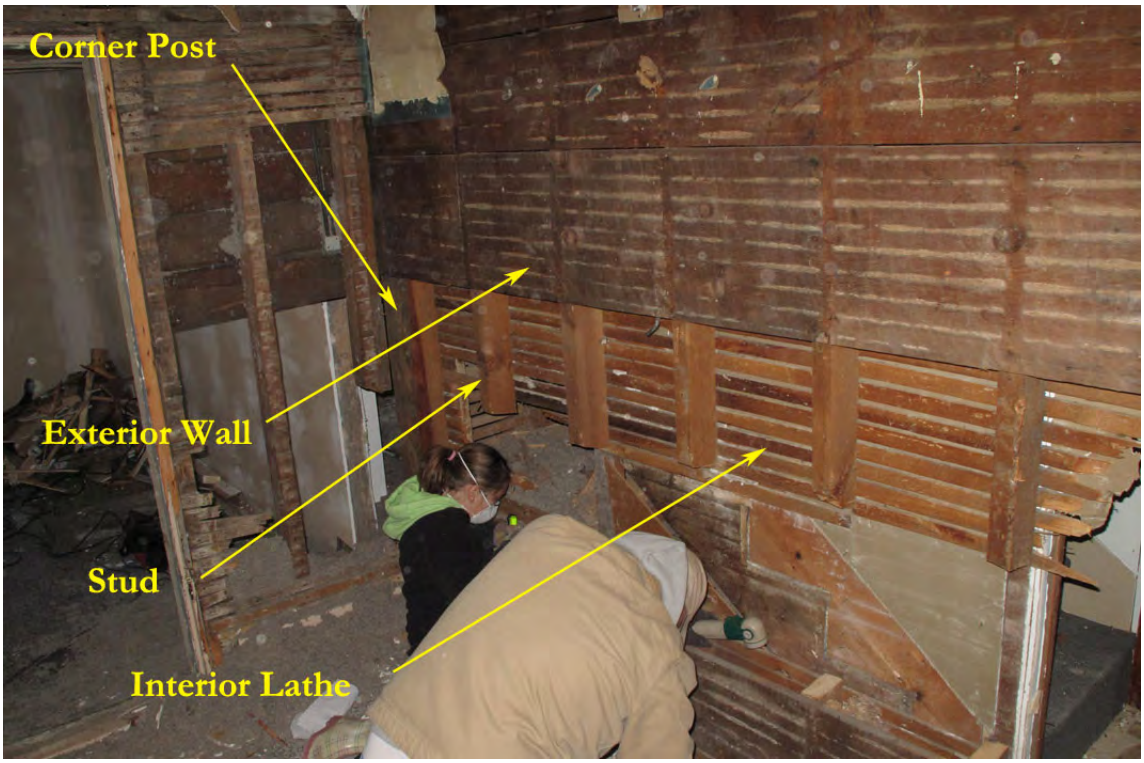


Figure 9: Phase I, West Wall, Looking NE (sample from this location by the Otsego HPC)

Walls: The exterior walls were wide planks of varying dimensions, rough cut with a circular saw. The interior walls were a narrow closely spaced lathe and plaster. Wall board dimensions were quite large; the largest noted in this investigation was 18" x 13'. Rock wool insulation was used in the original walls.

Exterior Finish: The exterior wall sheathing was covered with tar paper and shingles were added. Tar paper remnants were found, but no shingles were preserved. Use of shingles was determined by the presence of numerous shingle nail holes that predate all other exterior finishes.

Figure 10: Phase I Exterior Wall Sheathing and Tar Paper

Figure 11: Phase I Wall Sheathing, Circular Saw Marks

Interior Finish: No interior finishes were preserved. Fragments of horsehair plaster were preserved in some locations (most notable the chimney shelf). While this plaster presumably is from the Phase I construction, this cannot be determined with certainty as the Phase II building also contained horsehair plaster.

Doors: The structure had two exterior doors, one on the south wall (east corner), and one on the west wall (center). The west wall door had notches (approximately 1 3/4"x2") above the door frame. The notches were cut through the exterior sheathing into the frame headers and were presumably to support a porch hood over the doorway. This door was 37" wide and 81" high.

The south wall door was 84 3/4" x 34 3/4". The south wall door was infilled recently, probably at the time of the 1970s reconstruction.

There is also evidence of a third door in the north side (west corner) of the house. This door was infilled with rough cut wide planking. The date of this door and the infilling could not be determined. The door conflicts with the stairwell and may represent an earlier phase of the building when the stairwell was placed elsewhere.

Figure 12: Phase I West Door

Figure 13: Phase I West Door Hood Notches

Figure 14: Phase I South Door (Infilled)

Figure 15: Phase I North Door (Infilled)

Windows: Windows were present on all walls downstairs, and one the north and south walls upstairs. All windows had been replaced or infilled, and original window styles have not been determined. Original window size was approximately 38"x32". The size of the windows suggests that they were multipaned. The west wall window had porch hood attachment notches like those over the west door. This suggests a set of matching porch hoods.

99999Figure 16: Phase I Hood Attachment Notch, West Window

Floor: No original flooring was investigated (the floor in the south room was two 2" sheets of plywood, probably to be associated with the reconstruction of the southeast corner of the house). A hole was cut through the two 2" sheets of plywood that replaced the floor in the south room. The original floor joists were in place; most were rough cut 2"x4"s, some were rough cut 4"x4"s. The joists were resting on large 4"x4" subfloor beams. These beams were resting on large rocks and bricks, which themselves were resting on bare ground.

A large floor beam was recovered by Chris Wilson of the Heritage Preservation Commission at the time of demolition (Figures 17 and 18). The joist was found to be coated with a black material, probably creosote of coal-tar. Such treatments were commonly intended to preserve wood from decay.

Figure 17: Floor Joist (Photo by Chris Wilson)

Figure 18: Floor Joist Coating (Photo by Chris Wilson)

Chimney: The chimney is red brick of unknown origin and rests on a chimney shelf in the center of the ground floor cross wall. An opening for a stove pipe is incorporated into the south face of the chimney; this opening was part of the original chimney construction.

Stairs: The stairs have been remodeled, and the original configuration cannot be determined. Ladders were not frequently used to access second floors at the time of the Phase I structure.

Foundation: The foundation is cemented stone (visible on exterior of building).

Other: The Phase I building did not contain a cellar.

Figure 19: Phase I Subfloor and Joists

Upper Floor

Layout: The upper floor is a half floor. The floor has a room in the south and a small landing adjacent to the stairs.

Walls: The exterior walls were wide planks of varying dimensions, rough cut with a circular saw. The interior walls were a narrow closely spaced lathe and plaster. Horsehair plaster was preserved on the ceiling and also on the chimney wall. Rock wool insulation was used in the original walls.

Exterior Finish: The exterior gable wall was not exposed in our investigation. Presumably it was finished in a manner similar to the first floor. A different shingle size or design in the gable would not have been unusual for the time period.

Interior Finish: No interior finishes were preserved. Horsehair plaster is preserved in places, especially the dividing wall in the landing. While this plaster presumably in from the Phase I construction, this cannot be determined with certainty as the Phase II building also contains horsehair plaster. Three layers of wallpaper were preserved on the dividing wall of the landing. No date has been determined for the wallpaper patterns. Wallpaper was not uncommon in the 1880s, but it is doubtful the paper is that old.

Doors: The floor had one door between the landing and the room. Precise door size could not be determined (the door had been replaced).

Windows: Windows were present centered on the north and south walls. The windows were smaller than those on the ground floor and the existing 2/2s were probably original.

Floor: Not examined.

Chimney: The chimney is incorporated into and forms an offset corner of the dividing wall. It is constructed of red brick of unknown origin.

Roof/Attic: A small attic space is preserved above the upper floor. The roof joists are abutted instead of attached to a ridge post; this is a non-standard construction technique.

Figure 20: Phase I South Window, Upper Floor

Figure 21: Phase I Chimney, Upper Level

Figure 22: Phase I Roof and Gable, Interior

Phase II (1898-1905)

The house was expanded between 1898 and 1905 with an addition of a room on the northwest corner. The dimensions of the house at this period were 33' 4" (E-W) x 20' (N-S). The lumber and exterior finishing of Phase II is almost identical with Phase I. The use of rough cut dimensional lumber suggests a date prior to c. 1905, as finished lumber becomes common about that time. The Phase II addition was not known prior to our investigation. The addition was indicated by the slightly different roof lines on the exterior. Deconstruction of the house revealed that the balloon framing of the addition abutted the Phase I structure. Additionally, the exterior of the west wall of the Phase I structure was originally covered with tar paper and shingles, indicating it was definitely an exterior surface.

One piece of discrete dating evidence was recovered for Phase II. Inside the wall in the southeast corner of the addition a serger thread spool was recovered from between the interior and exterior wallboards. The original header was still in place above the boards, and there is little chance this spool reached this position at anytime other than during construction. The spool is of a type used by an overlock (serger) machine, which was invented in 1868 by Joseph Merrow of the Merrow Machine Company. Sergers became commercially available in 1893 and their use quickly became widespread (Unknown 2011).

The spool is labeled "Sold by The Spool Cotton Co., New York". The exterior of the spool contains an incomplete label: "MADE BY . . . . ARK THREAD CO"; while we cannot be certain, this likely read "Made by the Coats and Clark Thread Co." The Spool Cotton Company was founded in 1864, and became the sole selling agents for the British Coats and Clark Co. in 1898. The spool presumably dates to about 1898; a date that fits with the other evidence (Coats & Clark Co. n.d.; Fabrics.net n.d.). The date of Phase II is thus sometime between 1898 and 1905.

Figure 23: Phase II Thread Spool Label

Figure 24: Phase II Thread Spool

Figure 25: Phase II Thread Spool

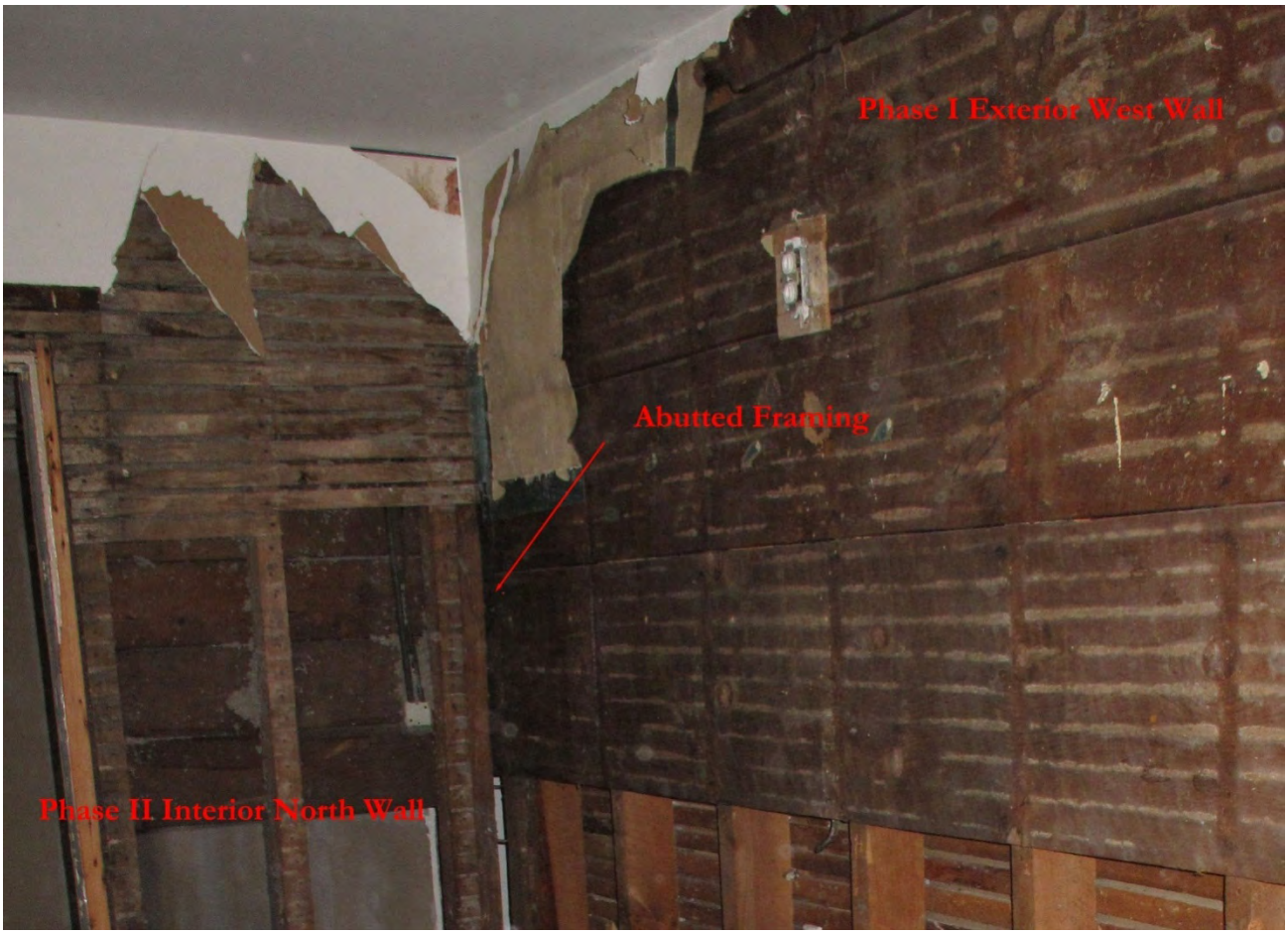


Figure 26: Phase I and II Abutted Framing

The Phase II structure was divided into six rooms: four downstairs and two upstairs. With the addition, the west exterior door of Phase I was converted into an interior door. A new exterior door was placed on the south wall of the addition, making for two exterior doors (both on the south wall) during Phase II. The added room was divided by a wall that included a perched chimney for a second wood stove. The west half of the added room has been extensively remodeled, and the Phase II layout is uncertain. In Phase III of the house, an additional room was located at the southwestern corner of the addition. This would not have been possible during Phase II, as the exterior door would not have functioned in such a layout. There likely was one or more windows on the south wall of the addition; later remodeling had removed most of that wall, so no evidence of windows could be recovered. It is likely that the northwest room was a pantry and the addition was used as a kitchen. The southeastern room was likely a parlor, and the northeastern room may have been a sleeping room. The two upstairs rooms were likely sleeping rooms. The second floor additional room may have been subdivided along the dividing wall present on the ground floor. No evidence for this was uncovered during our investigation, but we did not fully dismantle the upstairs looking for such evidence. The house continued (of course) to have no indoor plumbing, and now was heated with two wood stoves. Construction materials were pine and cut nails. A front porch was probably added to the structure at this time.

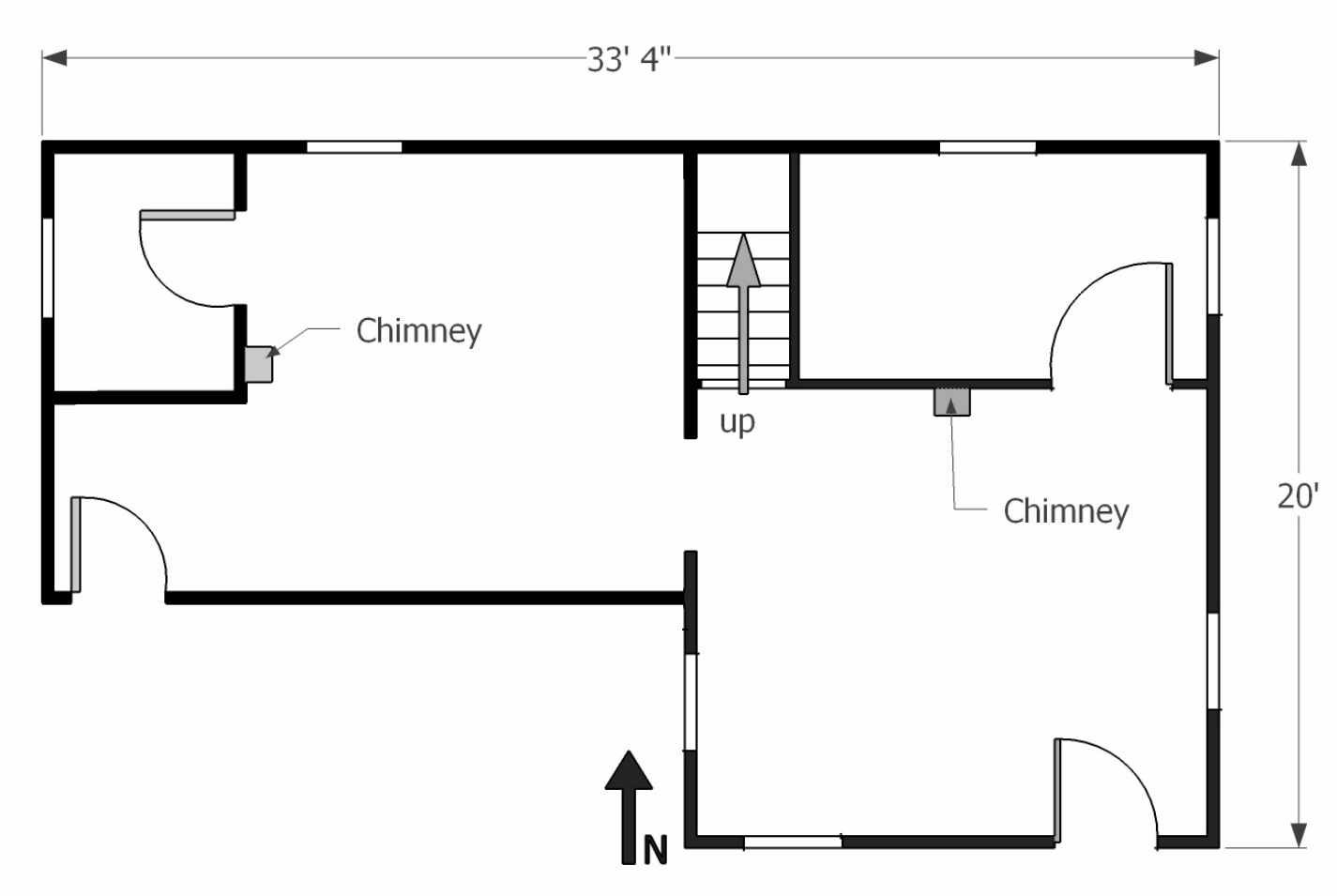


Figure 27: Phase II (1890s), Lower Floor

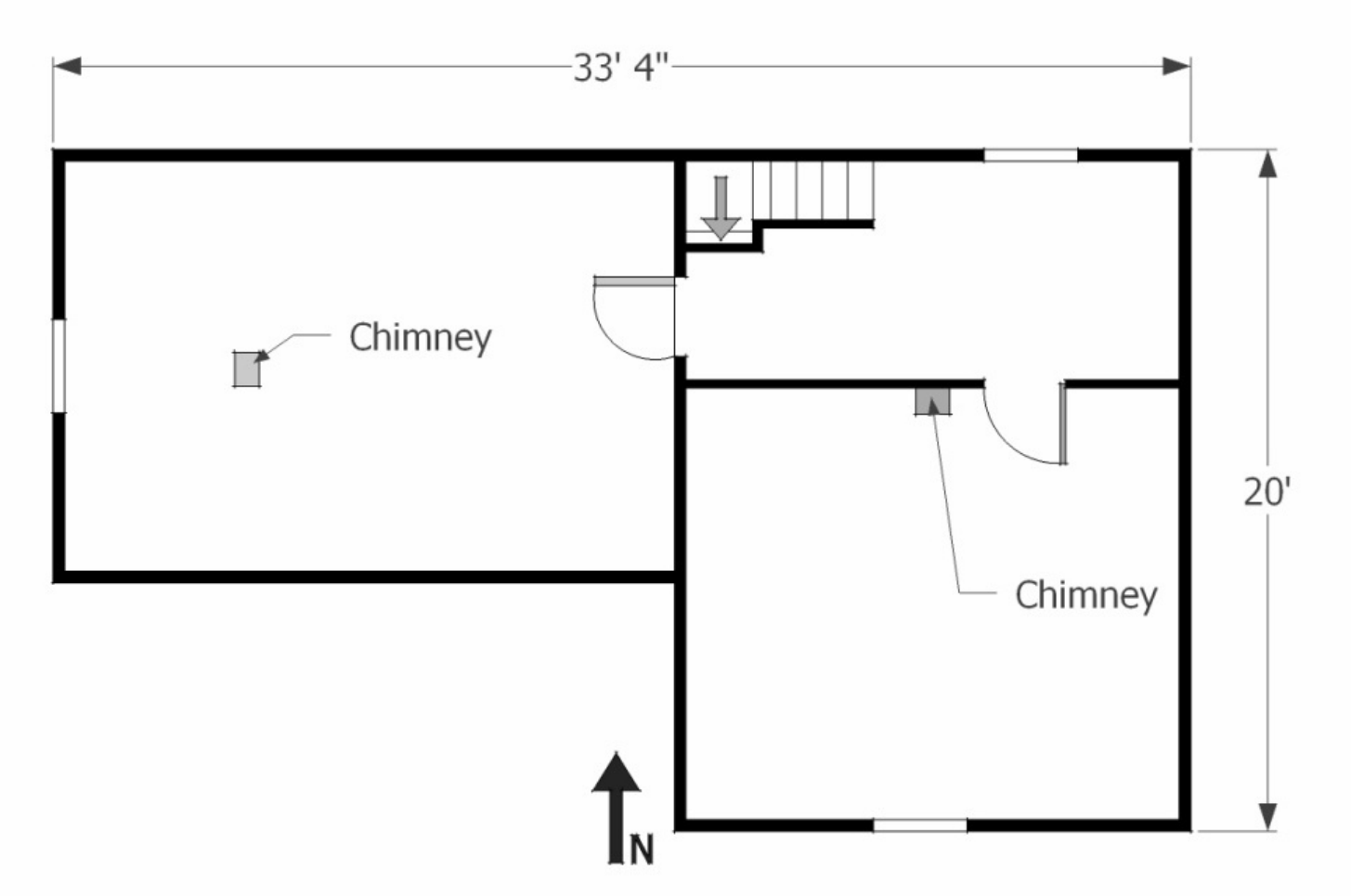


Figure 28: Phase II (1890s), Upper Floor

Ground Floor

Layout: The ground floor was divided into four rooms, with a chimneys placed along the dividing walls.

Framing: Same as Phase I.

Walls: Same as Phase I.

Exterior Finish: Same as Phase I.

Interior Finish: Same as Phase I.

Doors: The structure had two exterior doors, both on the south wall. The new exterior door was >77" x 33". Notching above the door indicates the presence of a porch hood; it may be that the porch hood from the Phase I west door was reused.

Windows: Windows were certainly present on the north and west walls of the addition, and likely were present on the south wall. All windows had been replaced or infilled, and original window styles has not been determined. Original window size was approximately 38"x32". The size of the windows suggests that they were multipaned.

Floor: Not investigated.

Chimney: The additional chimney is identical to the Phase I chimney.

Stairs: The stairs have been remodeled, but the Phase II configuration likely was identical to the final Phase III configuration.

Foundation: Not investigated.

Other: The Phase II building did not contain a cellar.

Figure 29: Interior East Wall, Phase II Addition (wall paper is later)

Figure 30: Exterior Wall and West Doorway, Phase II

Figure 31: Perched Chimney, Phase II Addition

Upper Floor

Layout: The additional room may have been subdivided with a wall adjacent to the chimney.

Walls: Same as Phase I.

Exterior Finish: Same as Phase I.

Interior Finish: Not investigated.

Doors: The addition had one door between the landing and the room. Precise door size could not be determined (the door had been replaced).

Windows: A window was present centered on the west wall of the addition. The window was smaller than those on the ground floor and the existing 2/2s were probably original.

Floor: Not examined.

Chimney: The chimney was removed by later renovations and could not be investigated.

Phase III

The house was expanded and modified more than once after Phase II. The details of these modifications were not fully documented, and have been lumped together in Phase III. The front porch was enclosed, and a new entrance placed on the west wall, southwest corner. A large two room addition was added to the north side of the house. A cellar was added in the northwest corner of the house. The plaster was removed from interior walls, and walls were covered with paper. Some of the paper was painted (see Figure 29).

Archaeological Investigation

Eleven shovel tests and one formal excavation unit were dug in the backyard of the house to check for features and artifacts possibly related to the Phase I and Phase II structures. The subsurface tests indicated modern soil disturbances as deep as 0.50m below the current ground surface. Artifacts recovered were typical for a residential area. Some artifacts (cut nails, whiteware ceramics, burned bone, glass) are of appropriate date to be associated with Phase I and Phase II, but no clear stratigraphic correlation or features were uncovered. A large number of the artifacts are fabric and sewing related. These are related to the Peavey sisters, who made money by converting scrap clothing and rags into blankets and rugs.
A catalog of artifacts is included as Exhibit 1.

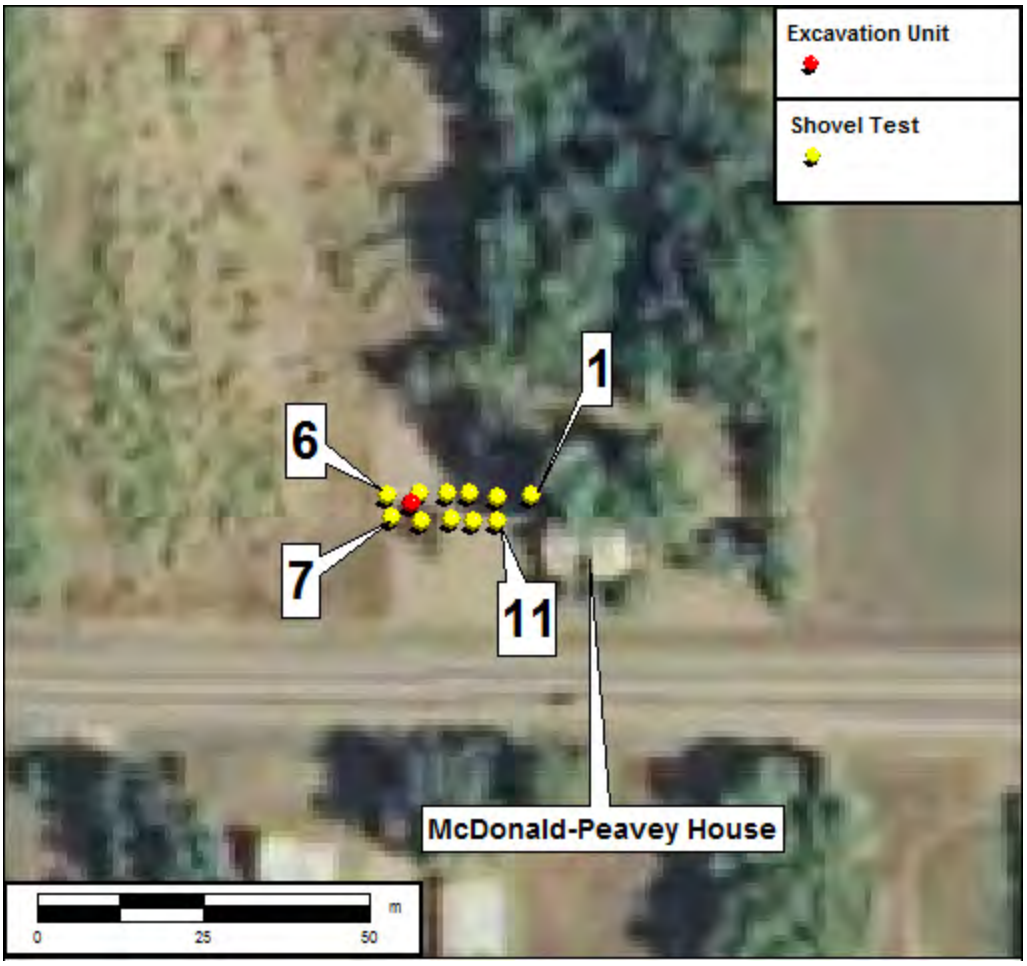


Figure 32: Excavation Unit and Shovel Tests

Figure 33: Excavation Unit 1, Blue Plastic Star

Figure 34: Excavation Unit 1, Ceramic Button, 1920 Penny, Bone Handle

Figure 35: Excavation Unit 1, Dome Button, Ceramic Mouse

Figure 36: Excavation Unit 1, Fabric Tracing Wheel

Figure 37: Shovel Test 2, Blue Glass and Metal

Figure 38: Shovel Test 2, Jewelry Fragment

Figure 39: Shovel Test 5, Butchered Cow Vertebra

Figure 40: Shovel Test 6, Cup Fragment

Figure 41: Shovel Test 8, Metal Bracelet

Figure 42: Shovel Test 8, Fastener

Figure 43: Shovel Test 10, Knife

Figure 44: Shovel Test 11, Porcelain Cup

Figure 45: Archaeologist David Radford Shows Artifacts to Visitors

Geophysical Investigation

An electrical resistance survey was completed by Donald W. Johnson. This survey identified two circular anomalies. Area B was exposed by excavation and determined to be a concrete tank (probably septic). Area A was close to a tree and covered by temporary structures (toilets) at the time of the project. Excavation of the top 20cms of soil at the location recovered a large amount of ash. The geophysical results suggest an outhouse, and the location (c. 40ft from the structure) is appropriate. It was common to periodically cover outhouses with ash. The geophysical report is included as Exhibit 2.

Best Practice Review

The McDonald-Peavey house was long a problematic structure for the community of Otsego, and created some tension between the City of Otsego and the Heritage Preservation Commission. While the structure was of obvious historic importance, the decision was made to demolish it rather than undertake an extensive restoration. Once that decision was made, Trefoil recommended a systematic "deconstruction" of the house to gain as much information as possible before it was gone. This is not standard practice, but we suggest that it should be. The deconstruction greatly increased our knowledge and understanding of the structure and the peopled who lived there.

While preservation is always preferable to demolition, the reality is that demolition is by far the more common end of historic structures. Often this end comes with a long battle between preservation and development proponents. We suggest that a decision to demolish should not mark the end of interest from the preservation community. As this project demonstrated, there are things that can be learned from a

house only by prying it apart. Such actions are perhaps counterintuitive to the preservation minded, but in this case proved to be the best way to leverage some good from the loss of an historic structure.

The use of community volunteers made the process a success. This was not just a matter of additional labor, but also knowledge and interest. It quickly became apparent that the people most interested in taking a house apart are people who know a great deal about houses. Likewise, those who volunteered their time to help with the archaeological excavation were able to identify recent domestic artifacts which were beyond the expertise of the archaeologists.

One thing we were unprepared for was the large community interest and emotional attachment to the property. Because our work was visible (and covered by the media), people came by to see what we were doing, tell us their memories of the Peavey sisters, and share their thoughts about the loss of the house. We also had relatives of the Peaveys come by. While we knew this would be an emotionally difficult project for the preservation community, we did not expect such a large turnout of individuals with stories and concerns. Based on this experience, we now recommend that a staff person be present to take notes and collect information from the people who will come wandering in.

Summary of Results

The McDonald-Peavey House was demolished in 2011. Prior to demolition the City of Otsego authorized Trefoil and the Heritage Preservation Commission to "deconstruct" the house in an effort to clarify its history and construction techniques. This work was completed during October 2011. The investigation determined that there were two early phases of the house, the first from 1880-1898, the second from 1898-1905. The construction phases had not been noticed before, and could be discerned only by taking the house apart to see wall boards and construction details. Trefoil also conducted a small archaeological investigation behind the house, which uncovered numerous artifacts related to the occupation of the structure. The work was done with the help of the Heritage Preservation Commission and volunteers.

The McDonald-Peavey house was long a problematic structure for the community of Otsego, and created some tension between the City of Otsego and the Heritage Preservation Commission. While the structure was of obvious historic importance, the decision was made to demolish it rather than undertake an extensive restoration. Once that decision was made, Trefoil recommended a systematic "deconstruction" of the house to gain as much information as possible before it was gone. This is not standard practice, but we suggest that it should be. The deconstruction greatly increased our knowledge and understanding of the structure and the peopled who lived there.

Figure 46: Chris Wilson Removing Shingles

Works Cited

Claybaugh, Robert. 2008. *Historic Structures Report, John McDonald House, Otsego, Minnesota*. Taylors Falls, MN: Claybaugh Preservation Architecture Inc.

Coats & Clark Co. n.d. "History of Coats & Clark." *Coats & Clark*. http://www.coatsandclark.com/about+coats/history/.

Fabrics.net. n.d. "Vintage Thread Chart." *The Fabrics Network*. http://info.fabrics.net/vintage-thread-chart/.

Larson, Agnes M. 1972. *History of the White Pine Industry in Minnesota*. New York: Arno Press.

Unknown. 2011. "172 Years of Business." *Merrow Sewing Machine Company*. http://www.merrow.com/overlock-history.

Vogel, Robert C. 2004. *Intensive Survey & Evaluation of the McDonald-Peavey House in the City of Otsego, Minnesota*. New Brighton, MN: Robert C. Vogel and Associates.

Exhibit 1: Artifact Catalog

Shovel Test	Level (cmbs)	Description	Quantity
1	5-15	Fabric, red rose pattern	Many fragments
		Fabric, mesh or veil or screen	2
		Nail, wire, 10d	2
		Nail, finishing	1
		Grommet	2
		Metal rod, ¼ inch rod in oval shape, 5x9 inches	1
		Bone, burned fragment	1
	15-20	Fabric, red rose pattern	6
		Nail, wire, 10d	1
		Nail, wire, 6d	1
		Nail, wire, 5d	1
		Nail, finishing	1
		Nail, tip and shank, fragment	1
		Nail, wire, shank, fragment	1
		Button, flat, brass, applied iron shank, paper filler	1
		Ferrule, metal, for a pencil	1
		Ceramic, whiteware, dark green glaze, rim, fit together, ca. 1920s	2
		Glass, clear, bottle base, fragment	2
		Glass, carnival, raised beaded design	1
	20-25	Nail, wire, 6d	1
		Nail, wire, shank, fragment	1
		Button, suspender	1
		Ceramic, whiteware, plain, fragment	1
		Milk cap, soft metal, folded	1
		Bolt head with washer	1
		Metal object, claw tip, folded, fragment	1
	25-30	Spike, wire	1
		Nail, finishing, 8d,	1
		Washer, thin fragment	1
		Sheet metal, fragment	1
		Object, metal, possible tool fragment	1
		Fabric, cloth, compressed, fragment	1
	30-35	Nail, wire, 8d	1
		Sheet metal, fragment	1
2	0-5	Can, aluminum, crushed	1
		Shell, fragment	1
		Asphalt, fragment	1
	5-10	Object, metal, decorative, possible jewelry piece	1
		Nail, wire, 6d	1
		Zipper, pull	1
		Tooth, cow	1
	10-15	Nail, finishing	1
		Nail, shank, fragment	1

		Staple, fence	1
		Nail, head, decorative, fragment	1
		Grommet, brass	2
		Shingle, asphalt, fragment	1
		Bone, animal, burned	7
		Shell, fragments	3
		Putty, window, fragment	1
		Foil, aluminum, fragment	1
		Clinker	2
	15-20	Spike, wire	1
		Nail, wire, 3d	1
		Nail, wire, shank fragment	1
		Bolt, iron, machine	1
		Shell, fragment	7
		Bone, burned, animal, fragment	2
		Clinker	5
	20-25	Nail, roofing	1
		Shell, fragment	2
		Brick, fragment	1
		Clinker	3
	25-30	Object, blue glass covered by thin metal, fragment	3
		Nail, wire, shank, fragment	1
		Glass, clear, burned, fragment	1
		Shingle, asphalt, fragment	1
		Shell, fragment	4
		Clinker	12
	30-35	Nail, wire, shank, fragment	1
		Shingle, asphalt, fragment	1
		Foil, aluminum, fragment	1
		Shell, fragment	1
		Bone, animal, burned, fragment	1
	45-50	Nut, burned, fragment	1
3	5-10	Can, aluminum, soda, crushed	1
	10-15	Asphalt, fragment	2
	15-20	Ceramic, copper luster, fragment	1
		Glass, clear, bottle, fragment	1
		Asphalt, fragment	1
	20-25	Asphalt, fragment	1
	25-30	Nail, roofing	1
		Nail, finishing, 5d	1
		Glass, clear, bottle, mold seam, fragment	1
		Shingle, asphalt, fragment	1
		Asphalt, fragment	1
		Bag, plastic, fragment	1
		Plastic, fragment	1
	30-35	Bone, animal, unburned, fragment	1

	35-40	Plastic, fragment	1
		Cup, Styrofoam, fragment	1
	40-45	Cup, Styrofoam, fragment	1
		Paper, fragment	1
4	15-20	Box, metal, cloth or leather covered, 3.5x6 inches, pos. cigar box	1
		Crown cap	1
		Glass, clear, bottle, fragment	1
	25-30	Nail, twisted shank	1
		Nail, wire, shank, fragment	1
		Carbon rod, fragment	1
		Glass, flat, fragment	1
		Glass, clear, bottle, fragment	5
		Bone, bird, burned, fragment	1
5	0-5	Nail, wire, 10d	3
		Nail, finishing, 4d	1
		Nail, finishing, 4d, fragment	1
		Spring, iron, fragment, 5/8 inch diameter	1
		Glass, amber, bottle, fragment	1
		Glass, clear, bottle base, fragment	1
		Ceramic, whitewater, fragment	1
		Button, suspender	1
		Clinker	1
	5-10	Nail, wire, 16d	3
		Nail, wire, fragment	12
		Screw, wood	1
		Nail, square, 6d	1
		Nail, square, fragment	1
		Hook and eye, fragment	1
		Ceramic, rim, soft-paste porcelain , speckled brown glaze, fragment	1
		Glass, clear, flat, fragment	2
		Glass, clear, bottle, fragment, mold seam	2
		Glass, molten, fragment	1
		Foil, tin, fragment	1
		Clinker	3
	10-15	Nail, wire, 12d	1
		Nail, wire, fragment	5
		Nail, square, various sizes	6
		Ceramic, soft-paste porcelain, maker's stamp, fragment	1
		Glass, clear, flat, fragment	3
		Glass, fragment, burned, fragment	1
		Coal, fragment	2
		Clinker	4
	15-20	Nail, square, fragment	1
		Nail, fragment	23
		Glass, clear, fragment	4
		Glass, clear, bottle, fragment	1

		Coal, fragment	1
		Clinker	3
		Wood, carbonized, fragment	1
	20-25	Nail, fragments	4
		Nail, plaster attached	1
		Glass, clear, flat, fragment	3
		Brick, fragment	1
		Bone, unburned, fragment	1
		Clinker	2
	25-30	Nail, square, shank and head, fragment	5
		Nail, shank, fragment	6
		Glass, clear, flat, fragment	2
		Glass, clear, bottle, fragment	2
		Bone, long bone, fragment	1
		Bone, vertebrae, cut, fragment, cow	1
	30-35	Nail, wire	2
		Pipe, iron, sewer pipe, fragment	1
		Glass, clear, flat, fragment	1
		Glass, clear, bottle, fragment	1
		Bone, animal, burned, fragment	3
		Clinker	4
	35-40	Nail, wire, 12d	1
		Nail, square	7
		Nail, wire, 5d	2
		Sheet iron, fragment	1
		Brick, fragment	1
		Clinker	3
	40-45	Nail, square, head and shank, fragment	1
		Nail, head, brass, decorative, fragment	1
		Glass, brown, bottle base, fragment, fit together	3
		Brick, fragment	2
		Plastic, fragment	1
		Clinker	4
	45-50	Nail, fragment	3
		Glass, clear, flat, fragment	2
		Clinker	3
	50-55	Ceramic, stoneware, gray-brown glaze, fragment	1
		Bone, bird, burned, fragment	1
		Clinker	7
6	5-10	Nail, square shank fragment	1
		Nail, 6d, wire	1
		Ceramic, semi-porcelain, brown print, "emi-porcel", fragment	2
		Glass, clear, flat, fragment	2
		Sheet metal, fragment	1
		Shingle, asphalt, green, fragment	1
		Plastic, fragment	1

		Cement, fragment	13
		Clinker	6
	15-20	Grate, iron, fragment	1
		Plastic, fragment	1
		Cement, fragment	3
		Clinker	7
	20-25	Nail, square, 10d	1
		Ceramic, soft-paste porcelain, cup fragment	1
		Glass, clear, flat, fragment	1
		Clinker	5
6 Extended	20-25	Ceramic, soft-paste porcelain, decorated, cup, fragment, rim, partial handle	1
		Brink, red, fragment	1
7	0-5	Glass, clear, flat, fragment	1
		Brink, red, fragment	1
		Cement, fragment	2
		Clinker	1
	5-10	Spike, wire	2
		Nail, square, shank and tip, fragment	3
		Nail, roofing	1
		Glass, clear, flat fragment	2
		Glass, clear, globe, fragment	1
		Glass, clear melted, fragment	1
		Ceramic, whiteware, blue transfer print, fragment	3
		Brick, fragment	1
	15-20	Nail, wire, 6d	1
		Nail, square, head and shank, fragment	1
		Glass, clear, bottle, patinated, fragment	2
		Glass, clear, flat	3
	20-25	Glass, carnival, amber, fragment	1
		Can, metal, rim, fragment	1
8	5-10	Wood, fragment	3
		Plastic wrapper, fragment	1
	10-15	Nail, wire, 16d	1
		Nail, wire, 10d	1
		Nail, wire, 8d	1
		Nail, square, 8d	2
		Nail, wire, 6d	1
		Nail, roofing	1
		Nail, finishing	2
		Nail, wire, shank and tip fragment	1
		Nail, square, head fragment	1
		Wire, fragment	1
		Grommet	1
		Strap, metal, 2 holes	1
		Curved metal, fragment	1

		Glass, clear, curved, fragment	2
		Glass, clear, flat, fragment	1
		Glass, clear, thick, fragment	1
		Glass, dark amber, bottle, fragment	1
		Putty, window, fragment	3
		Ceramic, porcelain, pink and white, saucer, fragment	1
		Plastic bag, fragment	1
	15-20	Spike, wire	1
		Nail, wire, 10d	1
		Nail, wire, 8d	1
		Nail, square, 8d	2
		Nail, wire, 4d	2
		Nail, square, finishing	2
		Nail, square, head and shank, fragment	1
		Bracelet, metal, thin*	1
		Hook and eye*	1
		Glass, dark amber, bottle, fragment	2
		Glass, amber, fragment	1
		Gasket, fragment	1
		Wood, fragment	1
		Ceramic, whitewater, exfoliated fragment	4
		Shell, fragment	6
		Coal, fragment	1
		Ceramic, sewer pipe, fragment	1
		Can lid, metal, sardine, "Coastal Kitchen"	1
	20-25	Nail, wire, finishing	1
		Clinker	2
9	0-5	Ceramic, whiteware, exfoliated fragment	1
	5-10	Nail, wire, finishing	2
		Glass, clear, fragment	1
		Glass, melted, fragment	1
	10-15	Nail, wire, finishing	1
		Cap, metal, pencil	1
		Foil, aluminum, fragment	1
		Sheet metal, fragment	1
		Brick, red, fragment	1
	15-20	Nail, roofing	1
		Nail, wire, finishing	2
		Plastic, molded, black, fragment	1
		Brink, red, exfoliated fragment	1
10	5-10	Nail, square, 12d	1
		Glass, clear, flat	11
		Plastic rod in cap, clear plastic	1
	10-15	Nail, roofing	1
		Nail, wire, head and shank, fragment	1
		Nail, wire, finishing	2

		Brick, fragment	1
		Cement, fragment	1
	15-20	Nail, square, 10d	1
		Nail, roofing	2
		Nail, wire, finishing	1
		Nail, head and shank, fragment	1
		Glass, clear, flat, fragment	2
		Knife, metal, broken blade	1
	20-25	Nail, roofing	1
		Nail, square, 4d	1
		Nail, square, shank and tip, fragment	1
		Ceramic, whiteware, cream glaze, fragment	1
		Plaster, fragment	1
	25-30	Nail, square, tip, fragment	1
11	10-15	Asphalt, fragment	1
	15-20	Plastic, fragment	1
	20-25	Nail, head	1
		Coal, fragment	1
	25-30	Nail, square, 4d	1
		Nail, wire, 6d	1
		Nail, square, finishing	1
		Nail, wire, finishing	3
		Nail, tip, fragment	1
		Ceramic, porcelain, cup, decorated, fragment	2
		Glass, clear, bottle, rim, fragment	3
		Glass, burned, fragment	1
		Glass, flat, fragment	1
		Iron piece, square, fragment	1
		Sheet metal, fragment	12
		Coal, fragment	3
		Wood, burned, fragment	3
		Clinker	6
		Bone, burned, fragment	2
	30-35	Nail, square, head and shank , fragment	1
		Nail, square, head, fragment	2
		Ceramic, porcelain, cup, decorated, fragment	3
		Glass, burned, fragment	2
		Glass, flat, fragment	3
		Wood, burned, fragment	2
		Bone, burned, fragment	3
		Brick, red, fragment	1
		Metal can, fragment	8

Excavation Unit	Level (cmbs)	Description	Quantity
1	10-15	Nail, wire, 10d	2
		Nail, wire, 8d	2
		Nail, wire, 7d	1
		Nail, square, 7d	1
		Nail, wire, 6d	2
		Nail, wire, shank fragment	1
		Nail, wire, finishing	2
		Nail, roofing, shank and tip	1
		D-Ring	2
		Buckle	1
		Suspender adjuster, metal	1
		Tracing wheel, metal wheel, plastic handle, melted (sewing)	1
		Plastic, white, weather stripping piece? (0.5 inch wide x 5 inches long)	1
		Zipper pull, metal, fragment	3
		Button, jean, "LEE"*	1
		Button, jean, "MAVERICK"*	1
		Button, metal, 2 hole	1
		Button, plastic, 2 hole	1
		Metal strap, fragment	7
		Button, ceramic, domed-shaped, white*	1
		Plastic piece, blue, 2 lobes, melted	1
		Buckle, metal, fragment	1
		Staple, metal, box	3
		Rubber, red, melted	1
		Glass, melted, fragment	8
		Mirror, mica, fragment	1
		Glass, clear, flat, fragment	1
		Glass, clear, bottle	1
		Glass, blue, rim, fragment	1
		Glass, milk, white, fragment	1
		Ceramic, whiteware, fragment	1
		Metal strap, fragment	2
		Shell, fragment	4
		Bone, cut, fragment	1
		Bone, bird, unburned, fragment	1
		Bone, burned, fragment	2
		Plastic piece, melted	9
		Clinker	12
		Ceramic, mouse figurine, fragment	1
	20-25	Nail, wire, 8d	2
		Nail, wire, 6d	1
		Nail, wire, 3d	3
		Nail, wire, shank and tip, fragment	1

		Nail, wire, head and shank, fragment	1
		Nail, shank, fragment	3
		Nail, square, head and shank, fragment	1
		Screw, wood	1
		Machine part, metal, 1 inch long	1
		Wire, metal, fragment	1
		Safety pin, metal, 1 inch long	1
		Toothed, metal, fragment, possible zipper	1
		Penny, wheat, 1920	1
		Zipper pull, metal, fragment	7
		Snap, metal fragment	5
		Watch frame, wrist, metal	1
		Sheet metal strap, fragment, hole	1
		Button, ceramic, dome-shaped	1
		Graphite lead, fragment	1
		Button, plastic, 4 hole, 1 inch diameter	1
		Ceramic, earthenware, planter, fragment, tan, raised decoration (fit together)	2
		Glass, clear, flat, fragment	5
		Glass, melted, fragment	8
		Plastic screen, fragment	1
		Staple, metal, box, fragment	1
		Rubber, flat, hardened, red, fragment	3
		Rubber wire insulation, black, fragment, cut	1
		Bone, unburned, fragment, possible shaped tool	1
		Bone, unburned, fragment	2
		Bone, burned, fragment	1
		Shell, fragment	1
		Plastic piece, melted, fragment	3
		Plaster, fragment	1
		Brick, red, fragment	3
		Clinker	20
	25-30	Nail, square, finishing	1
		Nail, wire, finishing	6
		Glass, clear, flat, fragment	2
		Glass, green tint, bottle, fragment	1
		Glass, clear, melted, fragment	2
		Washer, metal	1
		Iron piece, flat, riveted, possible machine part or hardware	1
		Can, metal, fragments	14
		Bone, burned, fragment	1
		Plastic piece, fragment	1
		Rubber wire insulation, cut, fragment	2
		Brick, red, fragment	1
		Clinker	5
	30-35	Wire, metal, fragment	1

		Nail, head, fragment	2
		Bone, burned, fragment	2
		Glass, clear, flat, fragment	1
		Glass, clear, globe, fragment	1
		"star" decoration, thin metal sheet	1
		Clinker	7

Exhibit 2: Geophysical Survey

Donald W. Johnson
Geophysical Consultant
11235 Magnolia St.
Coon Rapids, MN 55448

October 25, 2011

Dr. Richard Rothaus
Trefoil
1965 W. Highview Dr.
Sauk Rapids, MN 56379

RE: Resistance Survey at the McDonald House in Otsego, MN

Dear Dr. Rothaus:

This letter presents the results of a geophysical survey conducted October 14, 2011 at the McDonald House in the City of Otsego in Wright County, Minnesota (Figure 1). The objective of the investigation was to map features near the house that could be tested during public archaeological digs. A resistance survey was used as it is good for mapping both privy holes and other dug features and foundations of previously existing buildings.

In archaeological surveys, buried stone or brick foundations frequently appear as resistance highs, whereas zones of ground disturbance such as produced by pits often are associated with resistance lows. The resistance lows are due to the higher moisture content of the less compacted fill soil within the pits as compared to the surrounding undisturbed soil.

The area investigated was in the yard on the north side of the house. The yard was short grass covered with a few fallen leaves and conditions were ideal for the survey. The total area covered was 40 meters by 15 meters.

The purpose of a resistance survey is to determine the subsurface electrical resistance distribution by making measurements on the ground surface. Resistance surveys are performed by taking measurements in a regular grid pattern which are used to create a plan map of resistance values.

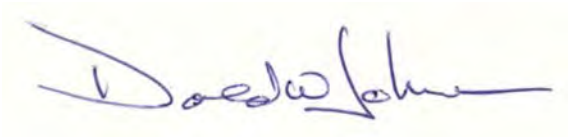
The first step in conducting the survey was to establish a grid over the area to be investigated. A north-south base line was established by aligning a tape with the west side of the house foundation. An east-west baseline was then established parallel to and 4 meters north of the north side of the house. This base line extended 20 meters either side of the north-south base line.

Electrical measurements were made with the Geoscan RM15 resistance system manufactured by Geoscan Research of West Yorkshire, England. A multiplexer was used to enable simultaneous collection of data with mobile electrode spacings of 0.5 meter and 1.0 meter. The electrode configuration used was the twin-probe electrode configuration. These mobile electrodes were moved along survey lines at intervals of 0.5 meter. Survey lines were one meter apart. A color image of resistance values were created using a software package called Surfer.
Color image maps of the resistance data are shown in Figure 2. Areas of higher resistance are shown in shades or yellow and red while areas of lower resistance are shown in shades of blue.

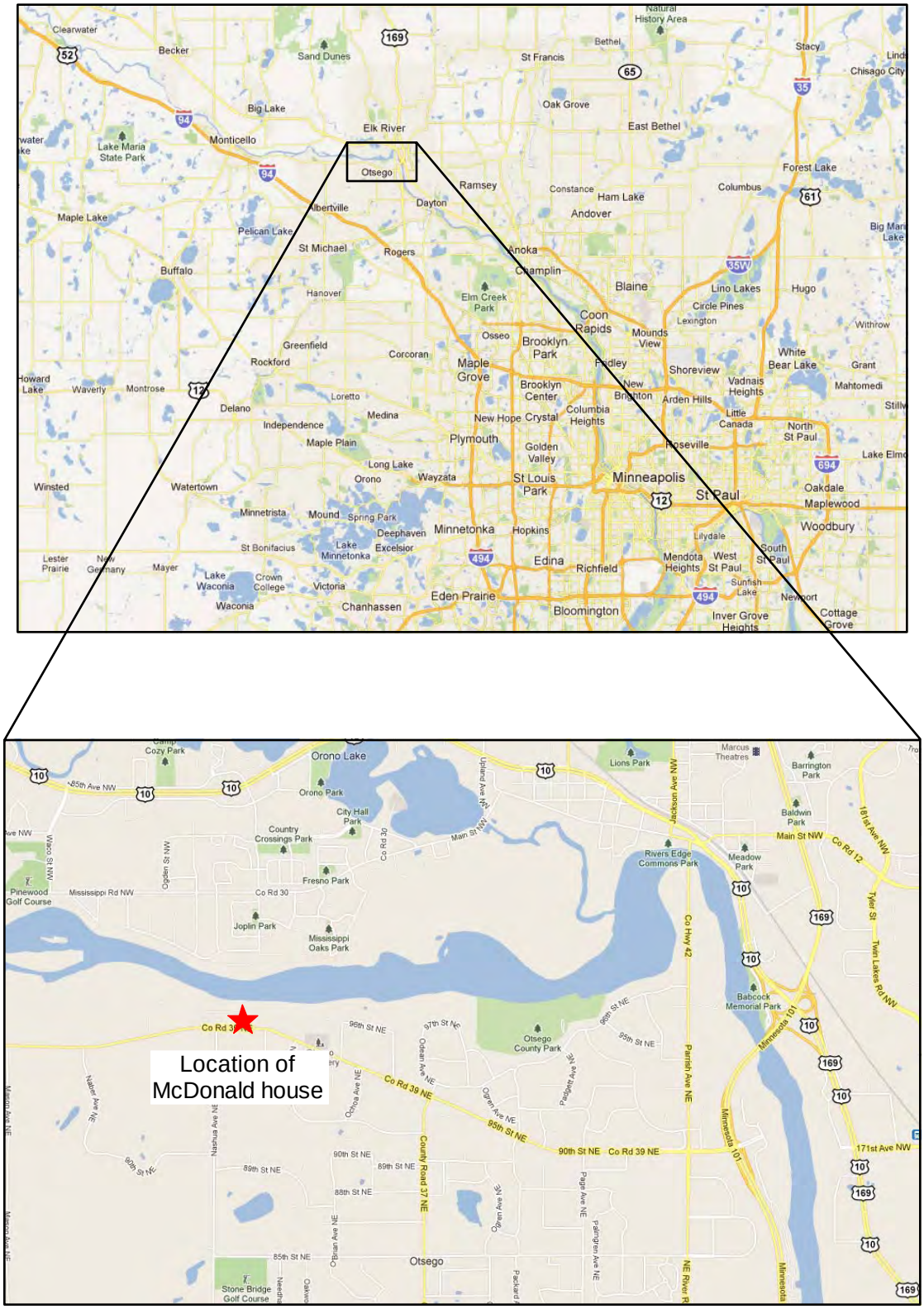
I made a preliminary interpretation of the data while still at the site and identified two areas as being of possible interest. Area A is an area of low resistance that might have been indicative of a privy hole. Excavation of this area was started while I was still at the site, but I left before it was completed. Area B is a circular pattern in the data and I interpreted it as due to a cultural feature rather than a natural one. A portion of a curved concrete wall was encountered, which was thought to be a septic tank. Another area of low resistance is along the south edge of the survey area, along a line between the northwest corner of the house and Area A. This was not recommended as a target for testing because it was within the graveled driveway that was present along the west side of the house.

I enjoyed working with you on this project. I hope you will keep me in mind for any future projects that come up.

Best Regards,



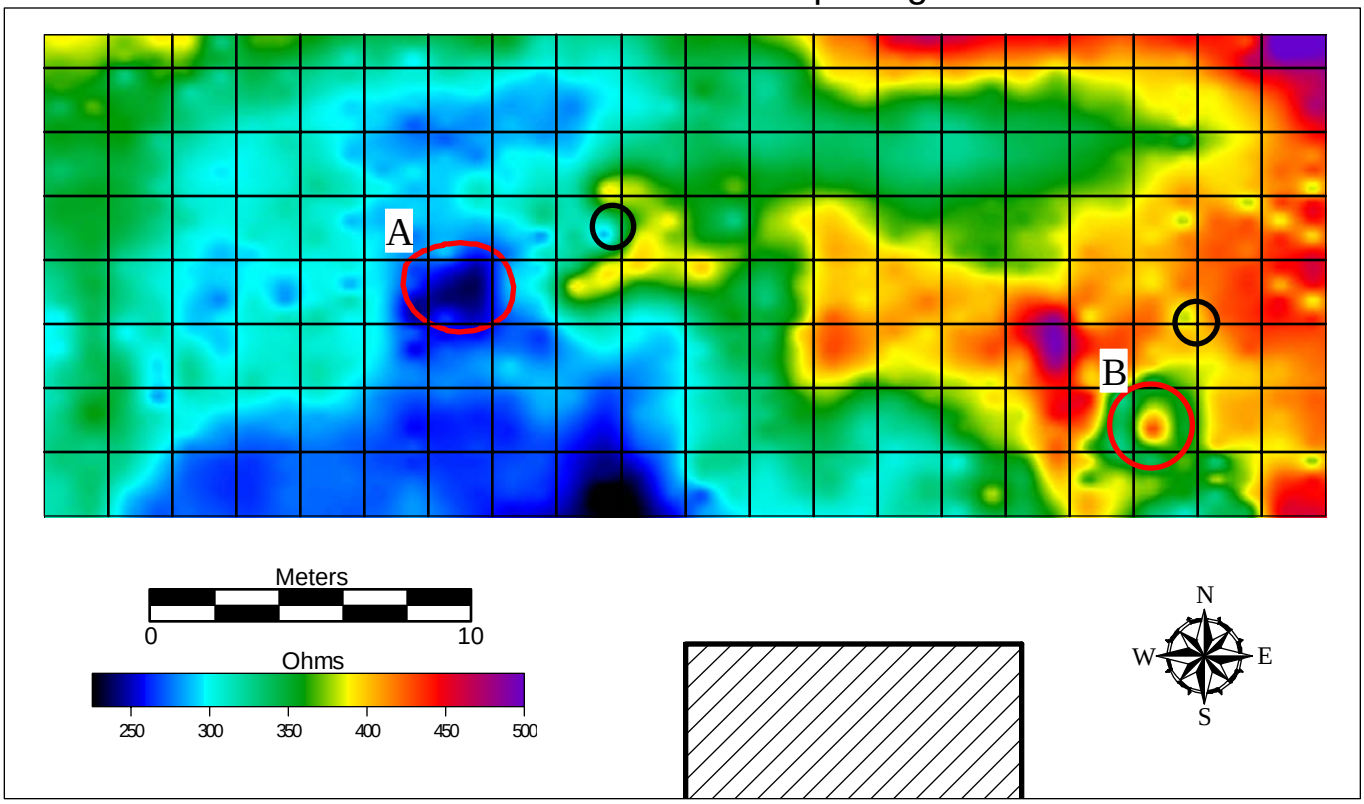
Don Johnson



Source: Google Maps

Figure 1
Location Map
Geophysical Investigation
McDonald House
Otsego, MN

0.5-Meter Electrode Spacing



1-Meter Electrode Spacing

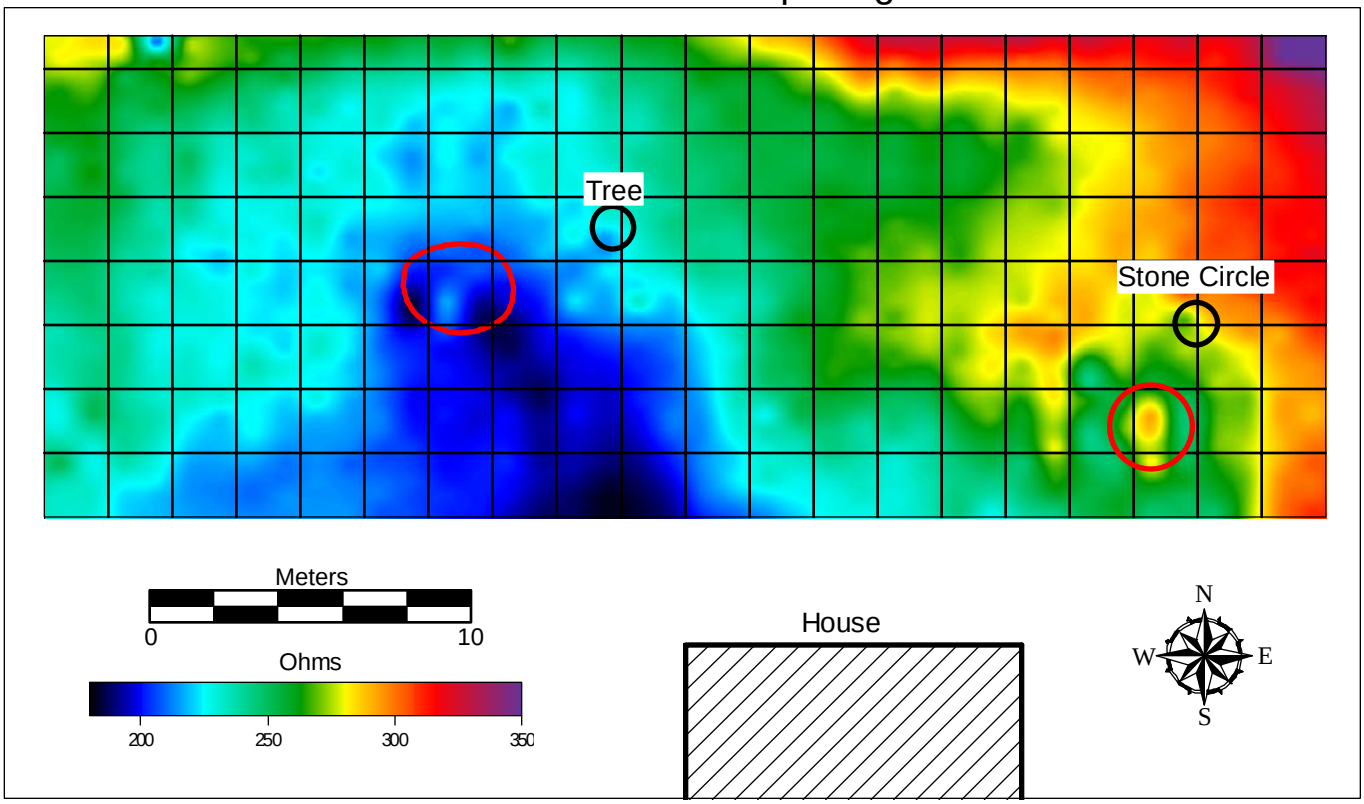


Figure 2
Results
Geophysical Investigation
McDonald House
Otsego, MN