Preservation Suggestions for Grange Hall

Warren County, Tennessee



Tennessee Civil War National Heritage Area

Fall 2021

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Introduction

In April 2020, Jimmy Haley, Warren County Executive and Historian, emailed Stacey Graham, Research Professor for the Center for Historic Preservation, with his concerns over the preservation of several county structures, among them the Grange Hall building. Mr. Haley then put Dr. Graham in touch with Billy Joe Crouch to arrange a site visit. Robert Kurz, a Ph.D. student in the MTSU Public History program and a graduate research assistant with the Center, was attached to the project, due to his expertise in the area of log construction.



(Top right) Figure 1: The Grange Hall log building on a cloudless day, doors open in welcome. (Above) Figure 2: Robert Kurz and Billy Joe Crouch explore the interior structure.

In November 2020, Mr. Kurz and Dr. Graham met Mr. Crouch and Pam Odineal on site at the Grange Hall building, which is located on Crisp Springs Road between Centertown and McMinnville in rural Warren County.[1] Ms. Odineal shared copies of a research report on the history of Grange Hall by Cheryl Watson Mingle in 2018, as well as copies of historic photographs of children from the Grange Hall schoolhouse, deeds records, and genealogical research into some of the families who were both active at the Grange Hall and buried in the adjacent cemetery. After exploring the interior and exterior of the log building, followed by the cemetery, and after listening to the community representatives express their concerns and hopes for the site, the Center decided to produce a short report[2] focused on

1 The COVID-19 pandemic caused several delays in the planning of this project and writing of this report. Proper MTSU protocols concerning face masks and social distancing were adhered to throughout.

2 All the images in this report were taken by either Stacey Graham or Robert Kurz and belong to the MTSU Center for Historic Preservation.

the preservation of the physical structure of the Grange Hall building. Only once this important local resource is stabilized can the community's further plans to use the space for community gatherings come into being.

Brief History[3]

The Grange Hall, known originally as the Barren Fork Grange and Meeting House, was built in the area of Crisp Springs in Warren County as part of the nationwide grange movement, called Patrons of Husbandry, during the 1870s. This organization was formed to address many of the problems small farmers encountered in the aftermath of the Civil War and during Reconstruction, and helped to serve farming communities through local networks of social and economic support. Though this movement soon declined in Tennessee, it did have some impact on populist movements of the 1880s. "The movement ended finally in disaster," reads an article from McMinnville's *Southern Standard* in 1889, "but the memory of it lives to remind us that as an effort of the co-operative and self-help order, it was one of the most brilliant known to industrial history."[4]

The land on which the building sits was originally donated by Y.A. Crisp to his brother-in-law T.J. Henegar in 1875. Both these men were from early settler families in the area, and both were buried in the adjacent Grange Hall Cemetery. The cemetery predates the log building and was deeded to a separate board of trustees in 1912, "for a neighborhood free burying [*sic*] ground so as not to interfere [*sic*] with any school or meeting house."[5] The nearby Grange Hall Chapel is also a separate entity. The Grange Hall building, while serving as a meeting house for the farmers' grange and for cemetery decoration days, served primarily as a school house from its initial construction into the 1930s or later.





(Above left) Figure 3: Intact building interior. (Above right) Figure 4: Close up on old chalkboard area, with notes left by community members from recent years.

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3 This summary is based in part on the report prepared by Cheryl Watson Mingle and genealogical information provided by Pam Odineal.

4 *Southern standard.* (McMinnville, Tenn.), 28 Sept. 1889. *Chronicling America: Historic American Newspapers.* Lib. of Congress. <https://chroniclingamerica.loc.gov/lccn/sn86090474/1889-09-28/ed-1/seq-6/>. See also Fred Arthur Bailey, "The Patrons of Husbandry," *Tennessee Encyclopedia of History and Culture*, https://tennesseeencyclopedia.net/entries/the-patrons-of-husbandry/.

5 Deed Book 41, p. 318

A Note on the Cemetery

The Grange Hall Cemetery is currently treated as a separate property from the Grange Hall building, with separate groups involved in caretaking and separate funds. However, locals certainly recognize the shared history that connects the building and the cemetery, as each were important institutions in this small county community. The oldest recorded tombstone is that of Solomon Crisp (1837-1861), with a number of other graves dating to the 1860s and 1870s marking the family names of Henegar, Jones, Anderson, Crisp, and more. Many of these families were also involved with the school.

The cemetery itself is in good shape and maintained by routine mowing paid for by cemetery funds. It is neatly outlined by a wire fence — ornamental on the south side which separates it from the Grange Hall building, and chain link on the other three sides. There are more than 400 or so graves, mostly facing east in orderly rows, with a sizeable clear area at the north that was acquired for the cemetery's expansion so it could continue to accommodate new burials for years to come. The earlier graves tend to cluster towards the western/northwestern side, bearing tombstones mainly in the tablet style, with at least a couple tall obelisks. Twentieth-century tombstones, the most common throughout the cemetery include marble tablets (both in-ground and in a slotted base), vaulted-top pedestals, pulpits, granite ledger stones, and block die-on-base-style stones. There are also some government-issued markers, most notably those of three brothers (Raymon, Walter, and Orville Holt) who all fought during World War II.

Most of the tombstones are in very good shape. The most common issues throughout the cemetery appear to be erosion on the marble stones, biological growth (though this is not too predominant since there are no trees within the fence), and a few broken or tilting stones that could use professional repair. The community is encouraged to visit the Center's Cemetery Resources webpage at https://www.mtsuhistpres.org/resources/cemetery-resources/ for preservation suggestions, and to contact Dr. Graham directly at stacey.graham@mtsu.edu with specific questions.









Figures 5-8: Grange Hall Cemetery.

Description of Grange Hall



Figure 9: Northeast corner

The Grange Hall is a classic single-story, double-pen log structure. It was originally designed with a vestibule, or what would be considered today as a mud room or coat room, to receive guests. The dividing wall between the vestibule and the main room has been removed, changing the description to a single-pen structure. Having come from first-generation log construction, the logs are rough-hewn of varying sizes with square corner notching. The entrance, which is located on the east-facing gable end of the structure is a double door constructed of milled lumber. The northern and southern walls each have two openings (without glass), and all are sealed with shutters that open to the outside. The west gable has no openings. The upper gable ends are sided with tapered cedar siding. The roof is covered in corrugated steel with a shallow pitch. The foundation of the Grange Hall consists of cinder blocks that have replaced the original, failing limestone blocks. Some of the original blocks still exist.

The floor of the interior is covered in three- to four-inch tongue and groove milled lumber. The walls are covered in planking of random widths. The original ceiling was also covered in three- to four-inch tongue and groove. A drop ceiling was added at a later date with four-by-eight sheets of paneling. The stairs to the entrance are constructed of modern concrete block with a slab as a landing.

Methods of Construction

The Grange Hall is an example of first generation log construction. First generation construction, associated with early settlers, was crude and involved less shaping of the logs.[6] Second generation log structures consisted of more thoroughly shaped logs. The builders were more skilled, and it showed through their methods and precise cuts. In the case of Grange Hall, the builders used square corner notching.

The logs on Grange Hall were shaped using two methods: two-sided planking and four-sided planking. Two-sided planking is commonly found in Midland American log construction, while four-sided planking is uncommon.[7]

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6 Terry G. Jordan, *American Log Buildings: An Old World Heritage* (Chapel Hill: The University of North Carolina Press, 1985), 14-15

7 *Ibid.*, 88



Figure 10: Northwest corner of structure. Upper log represents four-sided planking and lower log represents two-sided planking.

Two-sided planking is hewn on both sides to a thickness of six to eight inches leaving the top and bottom of the log in its natural form. Four-sided planking is hewn on all four sides (Figure 10). Both methods were commonly found in the Alps and Southwestern Germany, originating in Sweden and Switzerland.[8] To achieve this result, logs were scored or chalked creating a straight line on each side of the log marking the depth of the cut. A standard ax was first used to cut V-grooves to the depth of the line. Then a foot adze would be used to remove the excess material and create a flat surface. The cut marks found on the logs are from the use of the foot adze.

Grange Hall is built using "Chink Construction," the method of building walls with logs and leaving a gap between each log (Figure 11). It simplifies the build by allowing for discrepancies and adjustments as the walls are erected. Later, the spacing, or chinks, will be filled with board slats and a chinking mixture, or daubing. To achieve chink construction the corner notching must allow for spacing between logs. Corner notching can be accomplished through a variety of ways. Grange Hall represents square notching. Square notching is the crudest form of notching in log construction. It is mostly found as a traditional style of notching along the Gulf Coastal Plain.[9] Square notching likely originated in Central Sweden, but is found in Fenno-Scandian regions as well as German-Slavic Borderland regions.[10]



Figure 11: Chink construction showing the use of daubing.

The use of square notching in Midland America is less likely a traditional method and more likely one of adaptability and convenience (Figure 12). Square notching is the simplest form of corner notching and was often used by those with less experience who were building a quick shelter or simply building their first log home. Many of the cabins with square notching come apart at the corners. To combat this, pins were often drilled into the notches to hold them together.

A distinguishing feature found at Grange Hall is the notching used in the dividing wall that was removed. Several types of notching have been found in the South with German, Irish and V-notches being the most common in floor joists



Figure 12: Example of square notching.

8 Jordan, *American Log Buildings,* 88, 147

9 *Ibid.*, 20

10 *Ibid.*, 147

for two-story log structures.[11] Grange Hall represents a combination of German and V-notch methods (Figure 13). The German method consists of notching out the lower log to receive the joist (in this case the interior wall logs). This notch is used to level out the floor. In the case of Grange Hall, this notch was used to adjust the logs to create the space needed for chinking (the same concept behind the square notching). In addition to using the German-notch, the builders of the Grange Hall used the V-notch to keep the outer walls level. The notching begins on the fourth row, suggesting that the lower logs making up the interior wall were butted into the interior of the outer walls (Figure 14).



Figure 13: Examples of German and V-notches on the exterior wall.



Figure 14: Example of notching beginning of notching on fourth row.

The floor joists are made from approximately eight-inch logs spaced about twenty-four inches apart (Figure 15). The logs have only been sawn on the top to accommodate for the flooring. This is known as the puncheon method that is commonly used in building log cabins. The ends of the joists are then notched to rest on the sill log (Figure 16). The flooring consists of a subfloor of rough sawn planking running perpendicular with the floor joists (Figure 15). A tongue-and-groove milled flooring material runs perpendicular to the subfloor to make up the finished floor on the interior of the structure.



Figure 15: Puncheon method used in floor joists. Planking used as subfloor.



Figure 16: Notched floor joists seated in sill log.

11 Michael T. Gavin, "Nineteenth Century Hewn Log Architecture in Southern Middle Tennessee: An Artifactual Study" (master's thesis, Middle Tennessee State University, 1995), 58-62. Gavin states that this has also been confirmed by Henry Glassie.

The roof on the Grange Hall is framed with approximately four-inch-diameter logs as rafters that are spaced twenty -four inches apart and attached to a center ridge running the entire length of the building. Purlins were placed running perpendicular to the rafters about sixteen inches apart (Figure 17). The original roof was most likely cedar shakes, but has been replaced by corrugated steel roofing. Logs were then placed spanning the outer walls, also known as runners, to keep the exterior walls from spreading. The original ceiling was three- to four-inch tongue-and-groove milled lumber that looks as though it was significantly damaged by moisture, which explains the later installation of the drop ceiling and the paneling (Figure 18).



Figure 17: Image through an opening in the ceiling showing the rafters, purlins, and runners.



Figure 18: Original tongue-and-groove ceiling and modern framing and paneling.

Preservation Recommendations

Foundation

The foundation of Grange Hall is made of cinder blocks of various shapes and sizes. Some of the original foundation stones are still present and should be saved for historical reference. The cinder blocks look to be in good condition; however, it is most likely that they are not resting on concrete footings. Footings should be placed under the blocks, at a minimum size of twelve inches deeper and two- to four-inches wider than the blocks. Ideally, the cinder blocks should be replaced by concrete piers that are tied to the footings and the sill plates on the building. This will eliminate the spreading that is taking place on the exterior walls.

Floor

The floor is in very good condition, both inside and out. Some minor repairs have been made to the entry, but there were no signs of severe water or termite damage at the time of the site visit. The floor joists have been treated for termites on a regular basis and look to be in good shape. Continued treatment of the exterior floor joists and planking should be practiced. The insects that are most concerning are termites, but carpenter ants, carpenter bees, wasp nests, and powder post beetles are also a concern. Tennessee has moderate to heavy possibilities of termite infestation and the continued treatment by the caretakers of Grange Hall is important.[12] The floor is raised significantly, and the cabin is free of bushes and foliage which can cause moisture damage and house rodents that can cause significant damage to the structure.

Walls

The logs on Grange Hall are showing signs of decay and some are splitting (Figure 19). Depending on the decay of the split log, the entire log may not have to be replaced. Test the logs with an awl to determine the extent of the decay. If the awl goes in a half inch to an inch, then decay has begun, but it is not to the point of replacement. If you can push the awl in all of the way to the handle, the log should be replaced. For logs where decay has begun, there are specific epoxy resins that can be used to fortify the log and make it last longer. There are also preventative preservatives that can be used on logs that will extend their life.[13] Any nails that have been left in the logs should be removed and the holes should be filled with some type of daubing. Nails that are left in the logs draw water in and the metal can speed up the erosion process.



Figure 19: Split log on corner notching.

The square-notched corners and the floor joists are not pinned. Pinning was often used to secure square-notching due to its vulnerability to movement. It is also allowing the sill logs to separate from the floor

12 Harrison Goodall and Renee Friedman, *Log Structures: Preservation and Problem-Solving* (Nashville, TN: The American Association for State and Local History, 1980), 31-32.

13 *Ibid.*, 66-68.



Figure 20: Separation of corner notching.



Figure 21: Complete separation of floor joists from the sill log due to movement.

joists (Figures 20 and 21). By securing the sill logs to a fixed footing and pier, and pinning the corners, it will keep this separation from happening.

Chinking/Daubing

There are several places that are missing chinking and daubing that should be repaired (Figure 22). Check and make sure that proper daubing material is used. The use of a mortar mixture as daubing can draw moisture into the wood and speed up the deterioration process.



Figure 22: Missing daubing.

Roof

It was difficult to get a proper look at the roof framing. The ridge pole and rafter should be checked in the same manner as the logs. Significantly deteriorated wood should be replaced by similar materials. Sections of the roof are showing signs of stress and are sagging. This is specifically noticeable on the gable ends (Figure 23). This is causing the lap siding on the gable to detach (Figure 24). Sagging trusses could be repaired by sistering another rafter next to it. If the runners (logs resting on the top of the exterior walls) show signs of deterioration, they should also be replaced. If the runners are not attached to the top of the exterior walls, they should be done so by pinning or using a type of bracket. The bracket will be hidden by the ceiling. Make sure that the rafters are also fastened to the ridge pole. This will keep the rafters from separating from the ridge pole.



Figure 23: Sag in roof on gable end. Deteriorated fascia. Detaching lap siding due to sag.



Figure 24: Detaching lap siding on gable end due to sagging in roof.

Interior – The interior Grange Hall is covered in planking and tongue and groove milled lumber. The drop ceiling should be completely removed. The paneling is extremely susceptible to humidity and will not hold up in an uncontrolled environment. Remove, repair, or replace the damaged tongue and groove that was originally used to construct the ceiling (Figure 25). The interior woodwork would benefit from a coating of moisture protectant, or a type of polyurethane, if it is warranted.



Figure 25: Paneling and drop ceiling that should be removed and original tongue and groove.

Further Resources

In its construction techniques, preservation concerns, and continuing importance to the local community, the Grange Hall resembles other log buildings that have been the subject of Center for Historic Preservation reports over the years. Some of these other buildings may serve as examples for what custodial groups can do to preserve and promote these historic resources. For example, the Doe Creek School of Henderson County, built around the same time in the 1870s, is similar to Grange Hall in size, shape, and usage as a community school. The report can be accessed at https://www.mtsuhistpres.org/wp-content/uploads/2020/12/2006Doe-Creek-School.pdf; community links to the restoration process can be accessed at http://genealogytrails.com/tenn/henderson/doeschool.html; and a photograph of the restored building can be accessed at https://digital.mtsu.edu/digital/collection/p15838coll7/id/82/. Another example is the Crider corncrib, an 1830s outbuilding along the historic Trail of Tears in Kentucky, which reflects some similar issues with its walls, notches, and foundations; the Historic Structure Report can be accessed at https://www.mtsuhistpres.org/wp-content/uploads/2015/11/Crider-Corncrib-HSR-Final-PDF.compressed.pdf.

Because of its work with many Trail of Tears properties, the Center created a *Restoration Guide for Historic Log Buildings on the Trail of Tears National Historic Trail* (https://www.mtsuhistpres.org/wp-content/uploads/2015/07/Restoration-Guide-for-Historic-Log-Buildings-on-the-Trail-of-Tears-National-Historic-Trail-Final.pdf), which may also be helpful in addressing preservation concerns with log buildings from the later 19th century. Another important resource is Preservation Brief 26 from the National Park Service, "The Preservation and Repair of Historic Log Buildings," which can be accessed and downloaded in PDF form from https://www.nps.gov/tps/how-to-preserve/briefs/26-log-buildings.htm.

Conclusion

Grange Hall still stands today thanks to ongoing efforts by its caregivers. The floor joists and subfloor, which are normally the most deteriorated parts of a historic log home, are in wonderful condition. With exception of a few pieces that show significant signs of water damage, the materials in Grange Hall are in good shape. Some logs have already been replaced and others will simply need to be repaired.



Figure 26: Grange Hall looking east.

The most important issue that needs immediate attention is the structural integrity of the building. The logs are beginning to separate on the corners due to a lack of being pinned. The long walls are bowing out and some floor joists are completely separated from the sill log.

Next steps for the building's preservation should be consultation with a structural engineer or a contractor with extensive experience with shoring up historic log buildings. The Tennessee Historical Commission maintains a list of engineers and contractors whom it recommends for this type of building repair. Please contact Patrick McIntyre, executive director, at Patrick.McIntyre@tn.gov.