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Mount Dearborn Project (38CS307): Initial Survey of an Early 19th Century Arsenal, Big Island, Great Falls, South Carolina

By Jonathan Leader

The Katawba Valley Land Trust and the Town of Great Falls joined with Duke Power, a division of Duke Energy Corporation (Duke), to explore the potential of one of the more interesting sites located on Duke land. Big Island is located in the middle of Duke’s Great Falls hydroelectric facility compound and is the location of historic Mt. Dearborn. The island is approximately 594 acres in size and Mt. Dearborn, an early federal period arsenal and armory, is located at the northern tip. Although 523 acres were purchased by the federal government for the establishment of the site, it actually comprises approximately 80 acres. This includes the core buildings and the original workmen’s staging areas that were partially inundated by the middle section of present day Great Falls Lake just down slope from the Town of Great Falls. The extant buildings on Big Island itself comprise very close to 40 acres. Mt. Dearborn is believed to be a significant cultural property at both the state and federal levels.

The Office of the State Archaeologist, South Carolina Institute of Archaeology and Anthropology, agreed to assist the Katawba Valley Land Trust in the conducting of an archaeological reconnaissance and testing at the Mt. Dearborn site. The fieldwork produced an inventory of the site’s primary features, which were then checked against historic documentation to determine which of the original features had survived to the present. All the features were plotted on a 10-meter grid system with multiple datum points. The resulting map of the site permitted systematic controlled testing and provided data to assist resource management. Systematic testing of the site was accomplished through 10-meter interval shovel tests and selected 1 X 1 meter test pits, which provided information concerning the integrity of the site.

The survey methodology relied on tested techniques. The first technique was extensive walk through of the immediate and extended areas. This was greatly assisted by the die-off of the dense under-story vegetation in the immediate area during the fall. It must be noted that some locations, such as the area immediately north of the main arsenal compound, are remarkably dense even under winter conditions and were therefore inadequately visible during survey. These areas will need to be resurveyed after careful removal of under-story. The establishment of permanent primary and secondary datum points were then established. These permanent datum points were used to anchor the site grid system. This in turn anchored the shovel testing that was conducted every 10 meters across the main compound. All shovel tests were screened using 1/4-inch hardware cloth. The permanent grid extends.

Fig. 1: Robert Mills water color of Mt. Dearborn. Artist is standing on hillside across present day Great Falls Lake and looking east. Original included in Mill’s Manual on Railroads in the Tulane University Archives, New Orleans, and believed to rendered in 1820s.
across the entire site, not just the main compound, but shovel testing was not extended beyond the main compound due to other constraints.

All major building foundations, datum points and secondary features of interest were shot in by theodolite and globally positioned with a Trimble GeoExplorer 3. The Trimble unit is accurate within three meters and has post-processing capabilities that bring it to sub-meter accuracy. Satellite acquisition for this area is difficult. Significant rectification after the fact was required to provide usable results. Future geographical positioning system work in this area should rely on higher quality equipment.

Three one-meter test pits were excavated in selected areas to provide additional data. One was dug in front of the Northwest barracks under what was determined to be its front porch. One was placed in the floor of a remnant-building floor down slope to the west on the terrace leading to the lake and corresponding to an unidentified structure shown on the Macomb 1809 military district map. And the final test pit was placed in another remnant building floor further down slope to the west on the terrace leading to the lake and corresponding to another unidentified structure shown on the Macomb 1809 military district map. All test pits were screened using 1/4-inch hardware cloth.

Probes were used to identify buried rubble and architectural features, as well as possible burials. This was successful for the former, but not the latter. No burials were identified.

**Summary of Results**

The walk through provided the gross data for positioning the grid for subsequent tests and for the placement of datum points. Grid north was rotated 15 degrees east of true north to capture the majority of the site in the northwest quadrant. This facilitated orienting the volunteers and helped to minimize confusion as to which corner to use for all measurements (e.g., southeast). The permanent primary datum was placed off site to the south and east of the main compound in a natural cul-de-sac bounded by a very large boulder. It consists of a 3/4-inch iron rebar of 30 inches sunk 2/3 into the ground. The section proud of the ground is striped in orange and blue. Secondary permanent datum points, also comprised of 3/4-inch diameter, 30-inch lengths of rebar were placed for convenience along the north axis at mid site, in front of and slightly south of the round powder magazine, and in front of and to the south of the artillery shed. An additional permanent datum was placed at right angles to the mid site datum and centered in the parade ground of the compound.

Galvanized 12-inch timber nails with polypropylene circle tags permanently marked for grid coordinates were laid out along the north/south axis from prime to the artillery shed every 10 meters.

In the course of the walk through and grid work a hitherto unknown building made from the same materials and using the same techniques as the foundations in the central compound was found almost exactly midway between the compound and the powder magazine. It does not appear on any map nor is it discussed in any texts researched to this point. It does appear in the 1820s watercolor done by Robert Mills of the abandoned site. The watercolor does label the various buildings. Unfortunately, the writing is illegible for this structure. Perhaps with advanced digital techniques, and the permission of Tulane University in New Orleans where it is housed, the writing can be made legible. Until then, the building remains a mystery.

The shovel tests (30 X 30 centimeters) were uniformly positive. The most common artifact recovered was fractured brick. The second most common artifacts recovered were nails. These ranged from small clinchers often associated with flooring to spikes often associated with heavier beam construction. Interestingly, many of the nails were of the later "B" cut variety that became available after the original construction and abandonment of the arsenal by the federal government (e.g., soldiers left in 1817, retrocede to state in 1829). This strongly suggests that the area was reused by others and kept in some form of repair. The exact extent of this use and repair has yet to be determined. The shovel tests were taken down to natural undisturbed layers as much as possible. In those instances were flooring was discovered or where fill dirt had been used to significantly level the landscape, an arbitrary limit of the floor or 30 cm was imposed.

It is interesting to note that with the exception of a single artifact, no American Indian artifacts were found in situ on site. This is surprising. There are lithic scatter sites to the north of this area and to the south roughly a mile away. The area meets the modeling criteria often used by archaeologists as being a prime location for prehistoric use. It is very likely that the sites are there, just not in the areas tested.

The three test pits provided mixed results. The two down slope structures were located in an area identified as a blacksmith's shop and
a shed. Neither pit produced clinkers, ore nor other items normally associated with blacksmithing. Brick fragments, cobbles, and a very few nails at the surface were about it. Nothing was found at depth and no features were encountered. The profiles showed an undisturbed natural horizon. The test pit in front of the northwest barracks, on the other hand, was much more interesting. Not only did it yield nails from the porch and beam construction of the barracks, but it also yielded a very nice square shovel dug posthole precisely where the federal building plans said one should be. Indeed, the federal plans were shown to have been followed very closely throughout the site, with the exception of the unidentified structure near the magazine. The lack of blacksmithing debris in the other two test pits may suggest that the buildings had other functions than the one originally intended.

Additional excavation is necessary to prove or disprove this suggestion.

The test pit in front of the barracks also provided a remarkable dark organic fill. Macro fauna, such as deer bone, were visible in the fill as was the fragment of what was initially thought to be a bone handle to a utensil. Unfortunately, it later proved to be another fragment of deer bone. Flotation is clearly warranted for any future work in this area. Surprisingly, most of the shovel tests through the compound, while showing dark organic stains, did not produce large quantities of glass, ceramics, or bone. This leads to the possibility that discard may have been occurring in a removed area. Military establishments rarely want night soils, food items, or glass on their parade grounds. Since discarded trash was not found on the slopes to the west, it is suggested that they may have discarded items to the east down the considerably steeper slope and well away from any work areas. Again, this suggestion waits further testing to ascertain its accuracy.

A full regiment of soldiers, workers, servants and craftsmen were at this site according to federal records. Considerable debris should remain. Burials should be on or near site, not only as a matter of expectation for the times and remote location, but also as a statement of fact. Senf, the original engineer, tasked with constructing the site, is recorded as having been buried near there. Oral history has a private and several soldiers buried “hard by” the site as well. None of the burials were apparently marked with anything other than fieldstones. Unfortunately, no burials were found or identified during this fieldwork. Due diligence would require that any alteration of the landscape be carefully monitored to ensure that the graves are identified early and protected.

The arsenal originally extended to the west across the creek, which is now Great Falls Lake. This site has been recognized in the state archaeological site file and the site record places the boundaries up the slope across the lake to the west. This area has not been investigated. In addition, there are several structures that may have been drowned by the formation of the lake, including the arsenal. Please contact me if you have any questions.