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Regarding: Historic Iowa City marker, which is located near the house at 331 S. Summit Street.

The activity that is the subject of this project has been financed in part with Federal funds from the National Park Service, U.S. Department of the Interior. However, the contents and opinions do not necessarily reflect the view or policies of the Department of the Interior, nor does the mention of trade names or commercial products constitute endorsement or recommendation by the Department of the Interior.

Summit Street Monument Assessment & Conservation Options Plan

Historical Background:

The Summit Street Monument is a six-foot tall limestone obelisk that acted as survey marker for the original 1839 town plat of Iowa City. The obelisk marks the southeast corner of the original boundaries of the city, as surveyed by Robert Ralston, John Ronalds, and Chauncey Swan, who were commissioned to select a site in Johnson County for the Territorial Capital of Iowa. In addition to its historical significance, the monument is an example of the early 19th century interest in ancient art and architecture. The monument's architecture mirrors the form of ancient Egyptian obelisks, made up of a monolithic tapering rectangular shaft that ends in a pyramid.

Though this monument predates residential development in this area, it is located within the Summit Street Historic District, the first historic district in Iowa City to be recognized by the National Register of Historic Places in 1973. This district is recognized for its architectural and historical significance, as it was home to many of Iowa City's middle-class business and professional residents in the late 19th and early 20th century. The obelisk is one of the most significant historic resources in the district and is considered a key object.

The monument was vandalized in the 1890s and restored in 1935 by the local chapter of the Daughters of the American Revolution. Their restoration included the attachment of bronze plaques that carry the monument's original inscription, which described the purpose and history of the monument.

The monument has deteriorated significantly, and the original inscription has been worn away. The stone itself shows many cracks, chips, and holes, and is discolored in many places. The areas behind the plaques show significant wear as well.

There is an interest in preserving this historic monument in some manner. Due to the type of limestone it is composed from, over one hundred fifty years of outdoor weather exposure, and past vandalism, the monuments current condition is poor. The object and scope of this assessment is to document the marker's current condition, and to provide the best possible options for conservation at its current location or preservation at an indoor climate-controlled location. If the monument is moved, possible replacement or duplication options will be considered.



Figure 1. Photo of the monument from about 1900 when the inscription was still visible.

Note- uneven edges & irregularities including holes from which aggregates had filled when the stone was formed geologically.

Limestone is a carbonate- based stone which is formed under what were ancient sea beds. Limestones vary in durability but are adversely affected by acid deposition/ acid rain.



Figure 2. Southwest face of monument. July 2019.



Figure 3. Southeast face of monument. July 2019.



Figure 4. Northeast face of monument. July 2019.



Figure 5. Northwest face of monument. July 2019.



Figure 6. Photo looking north along S. Summit Street. July 2019.



Figure 7. Photo taken from E. Court Street looking west. July 2019.



Figure 8. Plaque added to monument by Daughters of the American Revolution in 1935. Photo shows copper staining, which has leached out from the bronze and deeply stained the limestone along the water runoff channel. June 2017.



Figure 9. Missing chunk from the monument. June 2017.



Figure 10. The limestone of the monument is weathered and deteriorating. June 2017.



Figure 11. Damage to monument where plaques were attached. June 2017.



Figure 12. Cracking located at the lower portion of the monument. June 2017.



Figure 13. Uneven weathering and wear patterns attributed to the specific geology and formation of limestone which is composed of layers of compressed sand and shell fragments cemented together with mineral binders, primarily calcite crystals. June 2017.



Figure 14. Cracks and holes in the limestone. June 2017.



Figure 15. Missing chunk from the monument. June 2017.

Site Visit:

Visit monument, photograph, measure and excavate to research underground depth & condition.

On the afternoon of May 12 of 2019 a site visit was conducted to assess and document the monument's current condition and to suggest conservation treatments if it is to remain in its current location. An extensive number of still photos and a group of short videos were made. If desired additional photos and or videos can be added to complement this assessment report. The weather was overcast with occasional light drizzle.

Conservation Treatment Options if Monument is Left at Its Current Location:

1) Cleaning.

Biological Activity:

Biological activity of lichens and molds are located on some portions of the monument to varying degrees. This can be cleaned and removed with a biological cleaning solution and is not to be considered a major issue.

Copper Staining:

When cast bronze is displayed in an outdoor environment, it should be protected and maintained periodically in some manner. Depending on when the plaque was first created, varying techniques have historically been incorporated into the final manufacturing and display of bronze plaques. A lacquer, wax, or combination of both is commonly applied as a sacrificial coating to protect from weathering as the final treatment prior to installation. After installation, ideally the waxing process is performed annually as a maintenance procedure. However, this rarely occurs under most circumstances. If untreated bronze is exposed to weather conditions for extended periods of time it will begin to oxidize, turn green, and leach out copper from within the bronze.

Removing copper staining can be difficult as it will permeate under the surface and into the pores of the stone similar to the way a sponge will absorb soapy or dirty water. A poultice is a material similar to a mayonnaise or papier-mâché like substance and is applied to the surface for an extended period of time. When allowed to dry, it will in principle draw out the staining from the stone into the poultice. Once the poultice is completely dry it is carefully scraped away and then rinsed off with water. If successful, the staining would be diminished or entirely removed. Poultices can be bought in ready-made form or can be created by a conservator for a specific application like removal of copper staining.

It can be especially tricky to clean metal staining from marbles and limestones because they are composed primarily of calcium carbonate, which is highly sensitive to many cleaner like acids which will cause degradation to the stone if applied in a high concentration. As part of the cleaning process, first, a small test area in an inconspicuous place should be employed in order to see if the cleaning procedure is effective before upscaling to the entire stained area.

2) Consolidation & Water Repellants.

There is a long history of attempting to protect and to attempt to preserve monuments in an outdoor environment since ancient times. However, many treatments can trap moisture and in the long run might do more harm than good.

A consolidation treatment is a stone strengthener, and if effective will re-bond the molecular structure filling the voids that have developed from weathering. A water repellent will act to reduce water infiltration, creating a sheeting effect which encourages water to run off instead of being absorbed.

Any surface treatment must be breathable or water will become trapped within the stone and over the course of time do more harm than good. The most important thing to understand when considering the application of any surface treatment is that if properly selected they can help slow down erosion and general weathering for some time period, usually on longer than 10 years and would then need to be re-applied.

The weathering can only be completely stopped in a climate controlled indoor environment such as a museum.

3) Raising and/or Re-grading of the Landscape Surrounding Monument

The monument is currently set directly into the soil. Test excavation indicates approximately 12- 18 inches of the monument is underground with a somewhat irregular bottom. There are possibly some rocks placed underground in an attempt to help stabilize. It is currently leaning towards S. Summit Street. Interestingly, the historic photograph seems to indicate that the monument might have originally been closer to the city roadway.

All stone and masonry absorbs moisture from capillary action that climbs up the stone from rising damp if in direct soil contact or in a wet area. Creating an above ground foundation or adding a stone base would greatly reduce the amount of rising damp getting into the stone from below. However, every time it rains it will still get wet from above. It should also be considered that adding a base stone would alter the monument visually and that logistics involved are unknown as its impossible to know exactly what the bottom looks like, unless it is completely unearthed.

4) Possible Interpretive Signage

Due to the historical significance of the monument, the addition of some kind of signage is highly advisable. Signage could include the original inscription only and/or tell the basic story of the monument's local history.

There are many possible options ranging from bronze which is costly and unfortunately can be a target of theft to granite which is considered to be permanent and has no resale value. There are many other less enduring options.

Technical Advice on Possible Relocation Options, Indoor Conservation & Support

The only way to entirely stop all additional erosion and the continued deterioration of the monument is to carefully move and relocate it into an indoor climate-controlled environment. Due to the regional historical significance this would be my professional recommendation. Since there has always been a monument occupying this location from before the region was largely settled, it would seem wise to create a replica monument to replace the original and place in the exact same location.

Recommendation on Moving the Monument:

The monument is highly weathered and has become gradually more fragile since it was initially installed. Great care needs to be exercised if it is to be relocated. First, it should be carefully excavated around the bottom until the entire monument is visible. Then, the monument should be carefully laid over onto a padded cradle and lifted onto a truck for transporting. Once delivered to its new location, it would then be lifted off while cradled, brought to its new location and raised back to a vertical position and placed into a custom made base or platform.

Drawings:

In order to display the obelisk in an upright position, a weighted base needs to be employed. A mortise and tenon or similar support mechanism means that the obelisk would fit into a recess, called a keyway. A keyway is a socket within a piece of stone or cast cement. Then, the small area between the obelisk and the keyway would be filled with a soft mortar or plaster to prevent movement.

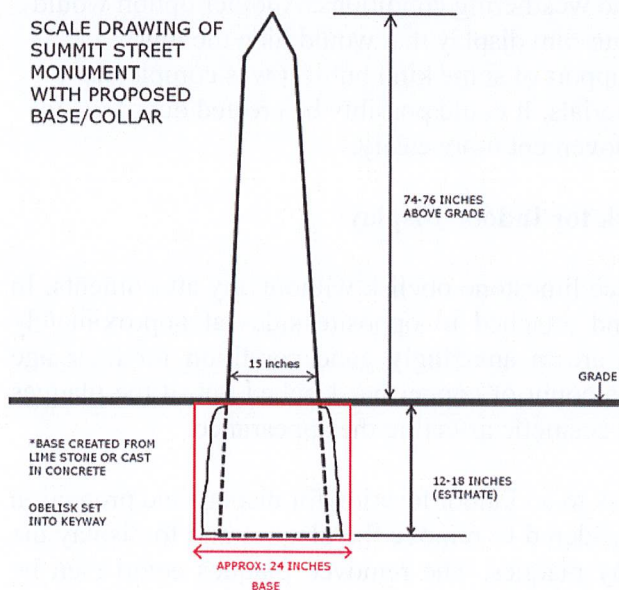


Figure 16. Scale drawing of the Summit Street Monument.

Possible Display Options if Monument is Moved to a Protected Location:

The obelisk is monolithic, meaning it is a one-piece monument. The underground portion, holds up the visible above ground portion of the stone. It is impossible to know exactly how deep or how symmetrical the underground portion of the stone is until it is unearthed and removed from the ground. If the determination is made to move the monument indoors for protection, the final display plan will need to be created once it is completely out of the ground and can be accurately measured and assessed. At that time, the exact dimensions and shape of the lowermost portion will be understood. If the decision is made to move the monument to an indoor museum setting, a dialogue would ideally occur with that facility to collaborate and create a viable plan that fits their needs.

A few different options for display are possible. Ultimately there needs to be something created at the lowest area acting as an anchor to stabilize, and to keep it upright, and make it safe for display purposes. A base should be created that has a recess in it to accommodate the entire lower portion of the stone. The most economical option would be to cast a base out of a modern concrete which could be pigmented. The exact width and height would need to be determined once the obelisk is completely visible out of the ground. A more desirable option would be to create a base out of natural stone. The process would be very similar whether it was created from concrete or natural stone. Once the base is created in the proper dimensions, a mortise within the base will allow the obelisk to fit into it and hold it upright structurally. Stability will be created from the weight at the very bottom, where it meets the ground, like an anchor. The mortise needs to have some extra tolerance, in other words a small space about $\frac{1}{4}$ - $\frac{1}{2}$ inch, that should then be filled in with some material to completely lock it into place and prohibit movement. For indoor display this small space could be filled with a soft mortar, a plaster, or some other combination of materials because it does not need to withstand weathering conditions. Another option would be to create a simulated landscape feature in a museum display that would hide the lower portion. Ultimately it would still need a lower support of some kind but if it was completely hidden it could be made from many varying materials. It could possibly be created out of wood and propped up with sandbags to allow future movement more easily.

Possible Bronze Plaque Removal from Obelisk for Indoor Display:

The Monument was originally a one-piece limestone obelisk without any attachments. In the 1930's, 2 bronze plaques were created and attached to opposite sides at approximately the center of the obelisk. The bronze plaques are in amazingly good condition for their age however, over the course of 80+ years a small amount of copper has leached out of the plaques and stained the obelisk. This staining is primarily cosmetic affecting the appearance.

If the decision is made to move the obelisk to an indoor location for display and protection from the environment, the option should be considered to remove the plaques and to display the obelisk as it was originally created without any plaques. The removed plaques could then be cleaned, waxed, and reinstalled on a new replica monument or incorporated into new signage at the site of the original obelisk. However, if the plaques are to be removed there would be four

holes where each plaque is attached in addition to the previously mentioned copper staining located just below where the plaques are affixed to the obelisk.

Recommendations on How to Mark This Location for the Future:

There are many signage options. As previously stated, the residential neighborhood has grown around this monument, so it seems the most sensitive and practical solution is to have a replica monument created and placed in the exact location of the original. The new replica monument should then have inscribed into it attribution and replacement information. This should be clearly visible and stated to avoid any possible confusion to visitors and future generations.

Thank you for the opportunity to provide our historic preservation planning services.

Regards, Jonathan Appell

Jonathan Appell
Monuments Conservator

