

Common Survey and Mapping Techniques

Survey and Documentation

Identifying boundaries and the overall conditions of the cemetery is an irreplaceable first step of a comprehensive cemetery preservation plan. The actions taken while completing the general survey and the individual marker survey will offer information so prioritization of tasks will be made easier. Standardized forms and recordation methods must be employed by all involved so information gathered is consistently recorded. While completing the surveys you will also be able to identify that which is missing and broken, identify repairs that will require expert intervention and assess other site conditions. A photographic record of all findings is a necessary element of the preservation project. General views, as well as individual marker photographs are needed for the survey.

Evaluation of the Monument

A careful documentation of each monument is important as this assessment forms the basis for the overall conservation plan. All types conditions must be identified on the individual marker survey. Consistent terms and methods of identification must be employed.

Listed below are some terms commonly used:

- In Situ* This will indicate that the stone is in its original location. It is important to be sure this is the case and that your assertion is verified by previous cemetery documentation.
- Displaced* If a cemetery will be considered for nomination to the National Register, it is important that the stones are in their original location. If the stone has been moved from its original location, it is no longer a marker serving its initial purpose but is a memorial instead.
- Soundness* The stone should be considered sound if a reasonable inspection shows no sign of damage, no improper previous repairs, and no excessive deterioration
- Cracks* Careful inspection can reveal cracks, seen as narrow fissures or fractures on the stone. Each occurrence should be identified and documented.
- Delamination* This is where the stone breaks along bedding planes; it is most often seen on slate and sandstone markers. Pieces should be located if possible, and recorded, along with the condition of the stone.
- Scaling* Scaling, also referred to as exfoliation or spalling, occurs when water wicks up the stone to a certain point and then evaporates out, producing damage to the bottom area of the stone. Other causes for this include pressures exerted from salts eroding out or the improper bedding of the stone. Scaling causes the outer layer of the stone to peel away, sometimes giving the appearance of a section having been carved out of the inscribed area.
- Chip* Look around the base of the stone to see if the broken pieces are there. Record on your survey the number and location of existing pieces, indications of missing pieces, and chip sizes.

- Erosion* The natural process of wearing away of a stone by weathering, corrosion or dissolution; generally produces a worn look and renders inscriptions or iconography difficult to decipher.
- Sugaring* This is most common with marble markers. The surface of the stone is broken down in such a way as to produce small granules of marble that resemble sugar when the stone is rubbed.
- Efflorescence* This appears as a white film on the surface of the stone. It is an encrustation of soluble salts that could be caused from improper cleaning chemicals or the leaching of free alkaline from concrete or certain mortars.
- Tilted/Sunken* The extent to which a stone is sunken or tilted will determine the priority it is given in resetting. Often if a stone is sound or not tilted more than 15 degrees corrective measures will be taken only after more severe cases have been corrected.
- Broken* If a stone is broken, the pieces should be identified, counted and recorded.
- Discolored* The color of the discoloration should be noted, as well as any indication of the type of staining (see Lichen/Moss below). Different stains require different approaches to cleaning.
- Lichen/Moss* These growths offer certain challenges because removal depends upon the type, condition, and extent of the infestation. Recording them is important to guide plans for removal.
- Overgrowth* Brush, trees and turf may be causing conditions that will damage the stones. Document what is occurring or what has occurred due to the infringement of the overgrowth.
- Mower Scars* These are abrasions, usually near to the bottom of the stone, caused by grass cutting equipment. This should be documented in the survey.

Mapping

Mapping the cemetery is vital to the cemetery project. Knowing where all items are and being able to identify boundaries is important for the preservation project. The map should be considered a working document, to be updated as progress occurs. While computer programs for mapping are available, often handwritten diagrams on ledger-sized graph paper done by volunteers with pencils and rulers will suffice. Paper maps can be scanned later and stored electronically. Aerial photos can also be helpful and might be obtained at the offices of local governments who utilize GIS mapping. The Internet may also be a source for good aerial photos.

Drawing a Map

The map of the cemetery is best put together by dividing the cemetery into grids. Select the size of grid best suited to the size of the cemetery; for example, the grids could be 10-foot squares or 10-yard squares. Dividing the area into grids allows for several teams to record information at the same time.

The process below is one standard way for drawing out a map of the area:

- Begin by identifying a common point from which to begin measuring, ideally a corner of the property or along a fence line.
- Divide the property into grids with each grid being identified with its own number.
- Mark the grids by using small stakes and string.

- In all grids, measure from one consistent point within the grid, such as a centerline or a specific corner.
- Draw the grid out, measuring each feature from the desired starting point.
- Measure to all corners of the item being mapped so exact location can be identified.
- Record all measurements on the drawing of the map.
- Be certain to record the grid number and include an overall grid drawing so points can be relocated at a later date.
- Include photographs to assist in location and understanding overall location conditions.

All maps must include:

- The name of the cemetery
- Legal description of the property if available
- Address including city/town and county
- North arrow
- Date completed
- Name(s) of person making the map
- Key

Pictures

Pictures assist in developing an overall condition assessment and help identify current conditions. Listed below are suggestions for photographing monuments:

- Take pictures of monuments in bright sunlight, ideally when the sun is at a 30-degree angle to the face of the stone.
- Use a large mirror to reflect light onto the face of the marker in the absence of sufficient sun at a proper angle.
- A piece of ¼" plywood painted grey can be used to block out distracting background objects in the photo.
- Place a yardstick at the base of the marker with an arrow on one end pointing north, to distinguish its directional orientation and to add scale to show the stone's size.
- Be certain to photograph elements such as gates, fences, buildings, roads and ponds.
- General views of the area should be taken to record how the individual features interrelate in the landscape.