

# Cemetery Monument Conservation:

a selected English-language bibliography with an emphasis on stone

## Books/pamphlets

Anson-Cartwright, Tamara. Landscapes of Memories: A Guide for Conserving Historic Cemeteries, Repairing Tombstones. Toronto: Ministry of Citizenship, Culture and Recreation, 1997.

Ashurst, John and Francis G. Dimes (eds.). Conservation of Building & Decorative Stone. Oxford: Butterworth-Heinemann, 1998.

Baer, Norbert S. and Rolf Snethlage (eds.). Saving Our Architectural Heritage: The Conservation of Historic Stone Structures: Report of the Dahlem Workshop, Berlin, March 3-8, 1996. New York: John Wiley & Sons, 1997.

(Chicora Foundation) Recording Historic Cemeteries: A Guide for Historical Societies and Genealogists. Columbia: Chicora Foundation, 1998.

(City of Boston) The Boston Experience: A Manual for Historic Burying Grounds Preservation. Boston: Boston Parks and Recreation, 1989.

Fidler, John (ed.). English Heritage Research Transactions, Volume 2. Stone. London: James & James, 2002.

Hosley, William and Shepherd M. Holcombe, Sr. By Their Markers Ye Shall Know Them. Hartford: The Ancient Burying Ground Association, Inc., 1994.

Maxwell, Ingvál, Ratish Nanda and Dennis Urquhart. Conservation of Historic Graveyards (Guide for Practitioners No. 2). Edinburgh: Historic Scotland, 2001.

Naude, Virginia N. and Glenn Wharton. Guide to the Maintenance of Outdoor Sculpture. Washington: American Institute for Conservation of Historic and Artistic Works, 1993.

Smith, B.J and P.A. Warke (eds.). Processes of Urban Stone Decay, Proceedings of SWAPNET '95, The Queen's University, Belfast. Shaftesbury (Dorset): Donhead Publishing, 1996.

Strangstad, Lynette. A Graveyard Preservation Primer. Nashville: American Association for State and Local History, 1988.

Strangstad, Lynette. Preservation of Historic Burial Grounds (Information Series No. 76). Washington: National Trust for Historic Preservation, 1993.

Thiel, M.J. (ed.). Conservation of Stone and Other Materials. London: E & FN Spon, 1993.

Thompson, Sharyn. Florida's Historic Cemeteries: A Preservation Handbook. Tallahassee: Historic Tallahassee Preservation Board, 1989.

Trippe-Dillon, Tammie. Grave Concerns: A Preservation Manual for Historic Cemeteries in Arkansas. Little Rock: Arkansas Historic Preservation Program, n.d.

Webster, Robin G.M. (ed.). Stone Cleaning and the Nature, Soiling and Decay Mechanisms of Stone. Shaftesbury (Dorset): Donhead Publishing, 1992.

Whitford, M.J. Getting Rid of Graffiti: A Practical Guide to Graffiti Removal and Anti-graffiti Protection. London: E & FN Spon, 1992.

Winkler, E.M. Stone in Architecture: Properties, Durability. New York: Springer-Verlag, 1994.

Zielinski, A.K. Conservation of Cemeteries. Toronto: RestorTech Press Toronto, 1988.

## **Websites**

(AGS) The Association for Gravestone Studies <http://www.gravestonestudies.org/>

(Anon.) Gravestone restoration and cleaning  
<http://www.geocities.com/scvinfo/restoration.html>

(Arkansas Historic Preservation Program) Preservation of Arkansas's historic cemeteries  
<http://www.arkansaspreservation.org/preservation-services/cemeteries-preservation/>

Blett, C., L. Geiser, and E. Porter, "Air-Pollution-Related Lichen Monitoring in National Parks, Forests, and Refuges: Guidelines for Studies Intended for Regulatory and Management Purposes," Report. U.S. Fish and Wildlife Service Air Quality Branch, Denver, CO, and U.S. Department of Agriculture, U.S. Forest Service, Corvallis, OR, June 2003,  
<http://www2.nature.nps.gov/ard/pubs/index.htm> and  
<http://www.fs.fed.us/r6/aq/natarm/document.htm>.

(CGN) Connecticut Gravestone Network <http://www.ctgravestones.com/>

(Chicora Foundation) Cemetery preservation  
<http://www.chicora.org/cemetery-preservation.htm>

(Conservation Solutions) Case studies  
[http://www.conservationssolution.com/work\\_casestudies.html](http://www.conservationssolution.com/work_casestudies.html)

(CSP) Cathedral Stone Products <http://www.jahnmortars.com/index.html>

Dunk, J., and J. Rugg. 1994. *The Management of Old Cemetery Land: Now and the Future - A Report of the University of York Cemetery Research Group*. Crayford: Shaw & Sons.

<http://www.york.ac.uk/inst/chp/crg>

Grimmer, Anne E., "Dangers of abrasive cleaning to historic buildings," Pres. Brief 6

<http://www2.cr.nps.gov/tps/briefs/brief06.htm>

Griswold, John and Sari Uricheck (JAIC online), "Loss compensation methods for stone"

<http://aic.stanford.edu/jaic/articles/jaic37-01-007.html>

Mack, Robert C., FAIA and Anne Grimmer, "Assessing cleaning and water-repellent treatments for historic masonry buildings," Pres. Brief 1

<http://www2.cr.nps.gov/tps/briefs/brief01.htm>

Mack, Robert C., FAIA and John P. Speweik, "Repointing mortar joints in historic masonry buildings," Pres. Brief 2 <http://www2.cr.nps.gov/tps/briefs/brief02.htm>

McGanee, Susan H. and Mary W. Edmonds. South Carolina' Historic Cemeteries: a preservation handbook. South Carolina Department of Archives and History, 1997

<http://www.state.sc.us/scdah/hstcm.pdf>

McGee, Elaine, Acid Rain and Our Nation's Capital. <http://pubs.usgs.gov/gip/acidrain/>

(McKay Lodge) Monument preservation <http://www.monumentpreservation.com/>

Mackay, R. 1990. *Cemetery Conservation*. Technical Information Bulletin No. 27. Sydney: Royal Australian Historical Society. <http://www.rahs.org.au/publications.html#TIS>

(MCC) Monument Conservation Collaborative <http://www.mcc-monument-conservation.com/>

Mossotti, Victor G. et al., "The effect of selected cleaning techniques on Berkshire Lee marble: a scientific study at Philadelphia City Hall" <http://geopubs.wr.usgs.gov/prof-paper/pp1635/>

Nagy, Eleonora E. (JAIC online), "Fills for white marble: properties of seven fillers and two thermosetting resins," 1998 <http://aic.stanford.edu/jaic/articles/jaic37-01-006.html>

(NIST) Building stone of the United States: The NIST test wall <http://stonewall.nist.gov/>

(Pennsylvania Lime Works) Lime mortar supplies <http://www.palimeworks.com/>

(Preservation Resource Group) Publications available from PRG

<http://www.prginc.com/Publications/index-pubs.html>

Price, C.A. (The Getty Conservation Institute) Stone Conservation: An Overview of Current Research. <http://www.getty.edu/conservation/resources/stoneconservation.pdf>

(ProSoCo) Restoration & conservation <http://www.prosoco.com/ProductList.asp?m=0&i=3>

(Robert Gordon University) Masonry Conservation Research Group  
<http://www2.rgu.ac.uk/schools/mcrg/mcrghome.htm>

(Save Our Cemeteries) Restorations <http://www.saveourcemeteries.org/restoration/index.htm>

(Saving Graves) Lifting stones with a tripod hoist  
<http://www.savinggraves.com/education/bookshelf/tripod.htm>

(Sculptor.Org) Cemeteries <http://www.sculptor.org/Cemeteries/default.htm>

Siegesmund, S., T. Weiss and J. Ruedrich, "Integrated study of provenience and state of preservation: Jewish cemetery in Hamburg," in Geophysical Research Abstracts, vol. 5, 2003  
<http://www.cosis.net/abstracts/EAE03/05806/EAE03-J-05806.pdf>

(The Texas Historical Commission) Historic cemeteries in Texas  
<http://www.thc.state.tx.us/cemeteries/cemdefault.html>

(US Heritage Group) Masonry restoration, mortar testing and matching, lime mortar and stone patch supply. <http://www.usheritage.com/>

(University of Portsmouth) Gravestone weathering  
<http://www.envf.port.ac.uk/geo/inkpenr/graveweb/gravestone.htm>

(Virginia Lime Works) Lime mortar supplies. <http://www.valimeworks.com/>

Weaver, Martin E., "Removing graffiti from historic masonry," Pres. Brief 38  
<http://www2.cr.nps.gov/tps/briefs/brief38.htm>

## Articles

Arino, X. and C. Saiz-Jimenez, "Factors affecting the colonization and distribution of cyanobacteria, algae and lichens in ancient mortars," in J. Riederer (ed.) 8<sup>th</sup> International Congress on Deterioration and Conservation of Stone, Berlin 30 September – 4 October 1996, Moller, Druck and Verlag gmbh, Berlin, 1996, pp. 725-731.

Bettini, C. and A. Villa, "Description of a method for cleaning tombstones," in Rossi-Manaresi, R. (ed.), The Conservation of Stone II: Bologna, 27-30 October 1981, Part B, Treatment, Bologna, Centro per la Conservazione delle Sculture all'Aperto, 1981, pp. 523-534.

Cooke, R.U., R.J. Inkpen and G.F.S. Wiggs, "Using gravestones to assess changing rates of weathering in the United Kingdom," Earth Surface Processes and Landforms, 20, 531-546 (1995).

Dove, J., "A comparison of gravestones in two country churchyards," Proc. of the Geologists' Association, 103, 143-154 (1992).

Dragovich, D., "Weathering of sandstone tombstones in a coastal environment, Sydney (Australia)," in Marinos, P.G. and G.C. Koukis (eds.), The Engineering Geology of Ancient Works, Monuments and Historical Sites: Preservation and Protection, Athens, 19-23 September 1988, Rotterdam, A.A. Balkema, 1988, pp. 853-858.

Dragovich, D., "Weathering of marble tombstones in a near-coastal environment, Australia," in Marinos, P.G., et al. (eds.), Engineering Geology and the Environment, Rotterdam, A.A. Balkema, 1997, pp. 3129-3134 (vol. 3).

Feddema, J. and T. Meierding, "Marble weathering and air pollution in Philadelphia," Atmospheric Environment, 21, 143-157 (1986).

Feddema, J.J. and T.C. Meierding, "Marble deterioration in the urban atmosphere," in Baer, N.S. et al. (eds.), Science, Technology, and European Cultural Heritage: Proceedings of the European Symposium, Bologna, Italy, 13-16 June 1989, Oxford, Butterworth-Heinemann, 1991, pp. 443-446.

Gehrmann, C.K., K. Petersen and W.E. Krumbein, "Silicole and calcicole lichens on Jewish tombstones: interactions with the environment and biocorrosion," in J. Ciabach (ed.), Vith International Congress on deterioration and conservation of stone, Supplement, Torun, Nicholas Copernicus University, 1989, pp. 33-38.

Inkpen, R.J., "Representing surface loss on gravestones: does the mean, mean anything?" in D.J. Mitchell and D.E. Searle (eds.), Stone Deterioration in Polluted Urban Environments, Science Publishers, Inc., Plymouth, UK, 2004, pp. 203-216.

Inkpen, R.J., "Gravestones: problems and potentials as indicators of recent changes in weathering," in Jones, M. and Wakefield, R. (eds.), Aspects of Stone Weathering, Decay and Conservation, London, Imperial College Press, 1998, pp. 16-27.

Inkpen, R.J. and J. Jackson, "Contrasting weathering rates in coastal, urban and rural areas in Southern Britain: preliminary investigations using gravestones," Earth Surface Processes and Landforms, 25, 229-238 (2000).

Klein, M., "Weathering rates of limestone tombstones measured in Haifa, Israel," Zeitschrift fur Geomorphologie, NF 28, 105-111 (1984).

Krumbein, W.E., A.A. Gorbushina, K. Sterflinger and B. Wolf, "Biological aspects of deterioration and consolidation of selected tombstones in Jewish cemeteries," in J. Riederer (ed.) 8<sup>th</sup> International Congress on Deterioration and Conservation of Stone, Berlin 30 September – 4 October 1996, Moller, Druck and Verlag gmbh, Berlin, 1996, pp. 687-694.

Laurenzi Tabasso, M., "Stone cleaning as a conservation treatment: aims, requirements and available techniques," in Preservation and Restoration of Cultural Heritage: proceedings of the 1995 LCP Congress, Montreux, 24-29 September, Lausanne, Switzerland, 1996, pp. 465-468.

Livingston, R.A. and N.S. Baer, "The use of tombstones in the investigation of the deterioration of stone monuments," in Marinos, P.G. and G.C. Koukis (eds.), The Engineering Geology of Ancient Works, Monuments and Historical Sites: Preservation and Protection, Athens, 19-23 September 1988, Rotterdam, A.A. Balkema, 1988, pp. 859-867.

Martinek, R. "Criteria for evaluation of cleaning methods on stone cladding materials: the geological perspective," in Standards for Preservation and Rehabilitation, ASTM, West Conshohocken, PA, 1996, pp. 367-375.

Matthias, G.F., "Weathering rates of Portland arkose tombstones," Journal of Geological Education, 15, 140-144 (1967).

Mayer, L.R., "The care of old cemeteries and gravestones," Markers, 1, 119-142 (1979/80).

Meierding, T.C., "Marble tombstone weathering rates: a transect of the United States," Physical Geography, 2 (1), 1-18 (1981).

Meierding, T.C., "Marble tombstone weathering and air pollution in North America," Annals of the Association of American Geographers, 83 (4), 568-88 (1993).

Melbourne, D., "Burial marker conservation--models for the conservation of building stone," Stone World, 14 (10), 80-92 (1997).

Mitchell, R. and G. Ji-Dong, "Changes in the biofilm microflora of limestone caused by atmospheric pollutants," International Biodeterioration & Biodegradation, 46 (4), 299-303 (2002).

Modenesi, P. and L. Lajolo, "Microscopical investigation on a marble encrusting lichen," Studia geobotanica, 8, 47-64 (1988).

Rahn, P.H., "The weathering of tombstones and its relation to the topography of New England," Journal of Geological Education, 19 (3), 112-118 (1971).

Roby, T.C., "The conservation of funerary monuments at the Protestant Cemetery (Cimitero Acattolico) in Rome: initial treatment of the Lady Temple Memorial," in Bridgland, J. (ed.), ICOM Committee for Conservation, 11th Triennial Meeting, Edinburgh, 1-6 September, 1996: Preprints, London, James & James, 1996, pp. 810-815.

Sramek, J., "Determination of the source of surface deterioration on tombstones at the Old Jewish Cemetery in Prague," Studies in Conservation, 25 (2), 47-52 (1980).

Wakefield, R.D. and M.S. Jones, "Some effects of masonry biocides on intact and decayed stone," in J. Riederer (ed.) 8<sup>th</sup> International Congress on Deterioration and Conservation of Stone, Berlin 30 September – 4 October 1996, Moller, Druck and Verlag gmbh, Berlin, 1996, pp. 703-716.

## CONDITIONS SURVEY DEFINITIONS

**Site:** Full name of cemetery with no abbreviations

**Street Address:** Approximate address of the cemetery, with no abbreviations.

**City:** City in which the cemetery is located, with no abbreviations.

**Parish:** Parish or county in which the cemetery is located, with no abbreviations.

**State:** State (no abbreviations) in which the cemetery is located, followed by the two-letter postal abbreviation for the state (ex. Louisiana--LA).

**UTM Coordinates:** A set of coordinates (easting and northing) that indicates a unique location according to the Universal Transmercator Grid appearing on maps of the United States Geological Survey (USGS). Indicate the centermost coordinate within the cemetery boundary (include Zone, Easting and Northing coordinates).

**Owner:** Full name of the owner of the cemetery, with no abbreviations.

**Contact:** The name of the person representing the cemetery owner.

**Phone:** The telephone number of the contact person for the cemetery.

**Surveyor:** The first and last name of the surveyor.

**Date:** Date of the survey (ex: 01/01/2002)

**Weather:** Weather conditions at the time when survey form completed.

### IDENTIFICATION:

**Plot identification:** Includes block number and plot number on site map.

**Natchitoches Cemeteries #:** Marker number listed in *The Natchitoches Cemeteries* by Prud'homme and Christensen (1986).

**Harrington plot designation:** Plot number assigned by Carolyn Harrington (1995)--available at the Natchitoches Genealogical Society.

**Name(s) of interred:** First and last name(s) of interred.

**First burial date:** Date of earliest interment (ex: 1802)

**Last burial date:** Date of most recent interment (ex: 2002)

**Inscription:** A transcription of the tomb or marker inscription recorded in the language in which it has been written. Include abbreviations, punctuation and historic spellings. The transcription is a document of what the surveyor sees and *should not include any guesses*.

**Stone carver (if known):** First and last name (if available) of stone carver. The stone carver may "sign" his or her work on the base of the marker or tomb, on the rear elevation, or on the top of the marker. Often, the carver's "signature" is in a different font than the inscription on the tomb or marker.

**Location of mark:** Location of the stone carver's "signature" in terms of geographic orientation. It may be found on the top, rear, bottom, or on the side of the stone.

### DESCRIPTION:

#### **Type of interment:**

**Tomb:** mortuary structure associated with or containing one or more burial vaults.

Type of tomb present in the American Cemetery, Natchitoches, LA:

- *Mausoleum:* a tomb with accessible interior space, often containing wall or subterranean vaults and a small area intended for private prayer or contemplation accessed by a door. (Note: there is only *ONE* mausoleum in the American Cemetery, that of John Gideon Lewis, Sr.)













**Marker:** any non-tomb mortuary structure which does not accommodate an interment and whose form is often sculptural.

Types of markers present in the American Cemetery, Natchitoches, LA:

- *Headstone:* An upright slab embedded in the ground or in a separate stone base and which is inscribed.
- *Footstone:* An inscribed upright slab embedded in the ground or in a separate stone base that is associated with and commonly smaller than a headstone.
- *Ground tablet:* An inscribed marker laid flush with or slightly above ground level.
- *Basal:* A table grave supported by a low, solid wall base. It does not contain a casket or coffin within the walls.
- *Ruin:* A marker that has been destroyed and no longer retains its original shape.
- *Cross:* a cross, with or without inscription, placed in the ground or supported by a pedestal.
- *Pedestal obelisk:* A monumental, four-sided stone shaft, usually monolithic and tapering to a pyramidal tip, and stands on a pedestal.
- *Woodmen of the world:* a marker carved in the shape of a tree stump or wood stack, often including an inscription and a Woodmen of the World insignia. The Woodmen are a benevolent fraternal organization founded in 1890.
- *Pedestal column:* A single pillar standing alone as a monument surmounting a pedestal or pedestal base.
- *Funeral home plaque:* A small metal plaque that is the only marker (for recent burials).
- *Bedstead:* a marker with a headstone, footstone, and side rails designed to imitate the form of a bed.

**TYPES OF MARKERS:**

<p><b>Headstone</b></p> 	<p><b>Footstone</b></p> 	<p><b>Ground tablet</b></p> 	<p><b>Funeral home plaque</b></p> 		
<p><b>Basal</b></p> 	<p><b>Pedestal column</b></p> 	<p><b>Pedestal obelisk</b></p> 	<p><b>Cross</b></p> 	<p><b>Woodmen of the World</b></p> 	<p><b>Bedstead</b></p> 





Family name marker

**Family name marker:** A large headstone inscribed with the name of the family to whom the plot belongs. A family name marker does not indicate a burial--it only indicates a family plot.

**Dimensions:** The height, width and depth (or length) of the primary stone, base, and other features of the tomb or marker, in inches.

**Orientation:** Compass direction of the primary face or surface that contains the inscription (the orientation of unmarked graves is "unknown").







**Interment status:**

- *Active:* A body has been interred in the past twenty years.
- *Inactive:* No bodies have been interred in over twenty years, but the space is still usable because it is sealed. (Most grave markers and tombs in the American Cemetery are "inactive.")
- *Abandoned:* The tomb/marker is open, vacant, or derelict.

**State of interment:**

- *Standing:* The tomb or marker maintains its structural form and support.
- *Ruin:* The tomb or marker has been destroyed through collapse or demolition.
- *Fragment:* A piece or pieces of a tomb or marker that have dissociated from the original fabric. The tomb or marker no longer reads as a whole.
- *Relocated:* The tomb or marker has been moved from its original site and relocated to another portion of the cemetery. (Note: relocation of a tomb or marker must be verified through historic documentation.)
- *Altered:* The tomb or marker has been modified through patching or reassembly, or by replacing parts of the monument.
- *Replica:* The original tomb or marker has been removed from its original site and replaced with an exact copy. (Note: replication of a tomb or marker may be indicated on the new gravestone inscription, but this must be verified through historic documentation.)
- *Tilted:* The tomb or marker has shifted horizontally due to settling of the earth.
- *Sunken:* The tomb or marker has shifted below or partially below grade.

**STATES OF INTERMENT:**

<p style="text-align: center;"><b>Standing</b></p> 	<p style="text-align: center;"><b>Ruin</b></p> 	<p style="text-align: center;"><b>Fragment</b></p> 
<p style="text-align: center;"><b>Altered</b></p> 	<p style="text-align: center;"><b>Tilted</b></p> 	<p style="text-align: center;"><b>Sunken</b></p> 

**Type of interment:**

- *Individual*: The tomb or marker contains only one interment.
- *Family*: The tomb or marker contains two or more interments from the same or related family.
- *Undeterminable*: Interment representation is not clear (unmarked graves are *always* "undeterminable").



**Pedestal**

**Pedestal**: A support for a column, statue or urn consisting of a base, dado or die, and a cornice, surbase or cap. A pedestal has more tiers than a base.

**Base**: The lowest visible element of a tomb or a marker that is above ground level. (Many unmarked basal markers have lost their primary stone and only have a base showing.)



**Base**

**Ornament**: Ornament is *integral to the structure of the tomb or marker*.

- *Urn*: A cylindrical container with a foot that is integral to the structure of the tomb or marker. It may be open or closed.
- *Sculpture*: Any masonry ornament integral to the structure of the tomb or marker which is not a plaque, urn, or relief or incised decoration.
- *Cross*: A cross that is integral to the structure of the tomb or marker.
- *Plaque*: A thin, flat piece of cast metal applied to a tomb or marker.
- *Relief decoration*: Decorated carved relief above a background plane.
- *Incised decoration*: Decorated carved incision below a background plane.
- *Ornamental vase*: Vase that is integral to the structure of the marker.
- *None*: No ornament present on the tomb or marker.





**TYPES OF ORNAMENT:**

<p style="text-align: center;"><b>Urn</b></p>	<p style="text-align: center;"><b>Sculpture</b></p>	<p style="text-align: center;"><b>Cross</b></p> <p style="text-align: center;">ELMA N. HINTON MAY 19, 1909 MAY 25, 1999 TRUST IN THE LORD</p>	<p style="text-align: center;"><b>Plaque</b></p> <p style="text-align: center;">MORRIS S. COHEN EMP. US. COAST GUARD WORLD WAR II FEB. 24 1921    †    MAY 30 2001</p>
<p style="text-align: center;"><b>Relief decoration</b></p> <p style="text-align: center;">RICHARD W. SEBORN BORN IN LENEXBURG CO. VA MAY 9 1873</p>	<p style="text-align: center;"><b>Incised decoration</b></p> <p style="text-align: center;">DOWDEN HENS GRANT    ELIZA RHOD FEB. 6, 1846    JAN. 10, 1873 MAR. 8, 1929    SEPT. 1, 1954</p> <p style="text-align: center;">Great loves live on.</p>	<p style="text-align: center;"><b>Ornamental vase</b></p>	

**Furniture:** objects related to but *not permanently attached* to the tomb or marker.

- *Sculpture:* Any three-dimensional object not permanently attached to the tomb or marker. Sculpture may include urns, figures, crosses, etc.
- *Container/vase:* A container not permanently attached to the tomb or marker that holds flowers or other immortelles.
- *Plaque:* A commemorative tablet or medallion unattached to the tomb or marker.
- *Immortelles:* Temporary ephemeral offerings.

**TYPES OF FURNITURE:**

Sculpture	Container/vase	Plaque	Immortelles
			

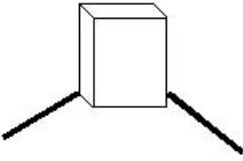
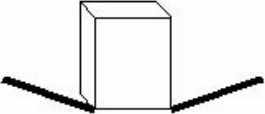
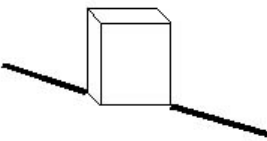
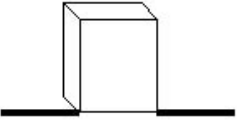
**Landscape:** The setting surrounding the tomb or marker. May include one or more of the following: brick, asphalt, concrete, soil, grass, vegetation or other ("other" includes leaves).  
**Enclosure:** A curb, wall or fence separating a tomb, marker or family plot from the remainder of the cemetery.

- *Curb:* A low edging that surrounds the plot and is six inches high or less.
- *Wall:* A structure that surrounds the plot and is greater than six inches in height.
- *Fence:* A metal enclosure that surrounds the plot.

**Grade slope:** The slope of the land on which the tomb or marker lies.

- *Positive:* The tomb or marker is at the top of a rise.
- *Negative:* The tomb or marker is at the bottom of a rise.
- *Cross-slope:* The tomb or marker intersects a slope.
- *None:* The tomb or marker is on flat ground.

**TYPES OF GRADE SLOPE:**

Positive slope	Negative slope	Cross-slope	No slope
			

**Degree of slope:** Rated from 0 (low) to 3 (high). (Degree of grade does not need to be indicated if there is no slope).

## **MATERIALS:**

**Primary structure:** The portion of the tomb or marker which contains the inscription.

**Base:** The lowest element of the tomb or marker that supports the primary structure (ex: bricks or concrete supporting a basal marker).

**Surface finish:** The stucco, concrete and/or paint applied to the surface of the tomb or marker.

**Ornament:** Decorative elements that are an integral part of the tomb or marker. These include most urns, crosses, sculpture, plaques, and all relief and incised decoration.

**Roof:** The top covering of a tomb. (Note: this applies only to the mausoleum.)

## **Types of material:**

- *Marble:* A metamorphic stone, white or variously colored and sometimes streaked or mottled; can take a high polish. Usually white and crystalline, although may be pink.
- *Limestone:* A sedimentary rock consisting mainly of calcium carbonate or magnesium carbonate often containing fossil remains. May be cream, tan or dark gray.
- *Granite:* A hard igneous crystalline rock consisting of small, visible amounts of other materials. Usually red or gray variegated.
- *Brick:* A solid masonry unit of clay or shale molded into a rectangular shape while plastic and burnt in a kiln. Usually red, salmon, or red-orange colored.
- *Concrete:* A hard, compact material consisting of cement mortar, sand aggregate, gravel and water. Usually gray or white, although may be colored.
- *Metal:* Includes wrought or cast iron.
- *Stucco:* A plaster made of lime, cement and sand used for surface finishes and decorative work.
- *Modern coating:* A thin exterior coating based on oil or emulsion.
- *Limewash:* A thin exterior coating of calcium or magnesium carbonate (lime) and water. Usually white, although may be tinted.
- *Cement wash:* A thin exterior coating of cement which is harder and more durable than limewash.

**History of repairs:** Indicate visible or historical repairs made to the tomb or marker. Indicate repairs on the primary structure, base, ornament, surface finish and roof.

## **CONDITIONS:**

**Conditions:** Indicate degree of deterioration for the primary structure, base, surface finish, ornament and roof.

**0 = no deterioration**

**1 = slight deterioration**

**2 = moderate deterioration**

**3 = significant or total deterioration**

Forms of deterioration include:

- *Collapse:* Complete or partial failure of the structure.
- *Loss:* Absence of all or a portion of the original fabric.
- *Fragmentation:* Fragments from a tomb or marker that have dissociated from the original fabric. The tomb or marker no longer reads as a whole.
- *Disaggregation:* The loss of granular material when a masonry unit is touched or rubbed.
- *Erosion:* The gradual surface loss of material and/or detail caused by weathering that results in an overall granular texture.
- *Cracking:* Fractures of various lengths on the surface material that have not developed into fragments. Indicates structural damage.

- *Exfoliation*: Loss of material along the surface of a masonry unit (especially in brick).
- *Efflorescence*: White, crystalline surface deposits caused by the presence of water-soluble salts.
- *Finish detachment*: The failure of surface finish attachment to masonry resulting in flaking, peeling or complete loss of material.
- *Corrosion*: Surface oxidation of metals resulting in color, texture and dimensional changes.
- *Bio-growth*: Growth of microflora (usually algae, fungi or lichen) on the surface of the tomb or marker.
- *Vegetation*: Growth of macro plant forms (ivy, moss, grass, vines, etc.) or their roots.
- *Alterations*: Intentional modifications to the original fabric.
- *Open/missing joints*: Loss or deterioration of mortar between masonry units.
- *Soiling*: Surface deposits usually dark in color that are caused by moisture, pollution or anthropogenic origins (bird droppings, paint, etc.).
- *Graffiti*: Intentionally inscribed or applied markings, often the result of vandalism but may also occur from gravestone rubbings. May include visible footprints or cat scratches.
- *Metallic staining*: Colored stains on masonry units caused by the corrosion of metals.

**Overall condition:** Rank the overall state of the entire tomb or marker.

**0 = extremely deteriorated condition** (structural failure)

**1 = poor condition** (significant threat to structure and/or total loss of decorative features)

**2 = moderate deterioration** (structurally stable, significant or progressive loss of decorative features)

**3 = good condition** (structurally stable, decorative features and finishes largely intact)

**Overall integrity:** Rank the overall authenticity and retention of original fabric for the entire tomb or marker.

**0 = total loss of integrity** (25% or less of original materials remain, or an overwhelming presence of inappropriate replacement materials or alterations)

**1 = low integrity** (26% - 50% of original materials remain, or a significant presence of inappropriate replacement materials or alterations)

**2 = moderate integrity** (51% - 75% of original materials remain, or an obvious presence of tolerable replacement materials or alterations)

**3 = high integrity** (76% or more of original materials remain, or a minimal presence of tolerable replacement materials or alterations)

*Inappropriate replacement materials or alterations:* Replacement materials or alterations that are not in keeping with historic materials and/or use of the tomb or marker.

Examples include the application of a concrete surface finish, repointing brick with cement mortar, etc. (Does not include traditional maintenance regimens).

**Comments:** Please include any comments you may have regarding the tomb or marker.



<b>Surveyor:</b>	<b>Date:</b>	<b>Plot identification:</b>
<b>Weather</b> ( <i>circle all that apply</i> ): hot      warm      cool      cold      dry      humid sunny      rain/snow/fog      overcast      windy		

**MATERIALS:** *Check appropriate fields*

Type of material	Primary structure	Base	Surface Finish	Ornament	Roof
Marble					
Limestone					
Granite					
Brick					
Concrete					
Metal					
Stucco					
Modern Coating					
Limewash					
Cement wash					

	Primary structure	Base	Surface Finish	Ornament	Roof
History of Repairs					

**CONDITIONS:** *Rank conditions from 0 (low) to 3 (high)*

Conditions	Primary structure	Base	Surface Finish	Ornament	Roof
Collapse	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Loss	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Fragmentation	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Disaggregation	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Erosion	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Cracking	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Exfoliation	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Efflorescence	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Finish detachment			0 1 2 3		
Corrosion	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Bio-growth	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Vegetation	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Alterations	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Open/missing joints	0 1 2 3	0 1 2 3		0 1 2 3	0 1 2 3
Soiling	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Graffiti	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Metallic staining	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
Other (describe):	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3

*Rank conditions from 0 (poor) to 3 (high)*

	<b>Primary structure</b>	<b>Base</b>	<b>Surface Finish</b>	<b>Ornament</b>	<b>Roof</b>
<b>Overall Condition</b> (0=poor 3=high)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3
<b>Overall Integrity</b> (0=poor 3=high)	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3	0 1 2 3

**Comments:**



# SAMPLE CEMETERY SURVEY FORM

Name of Cemetery \_\_\_\_\_  
Location Ref. No. \_\_\_\_\_  
Name of Recorder \_\_\_\_\_  
Date of Recording \_\_\_\_\_

County \_\_\_\_\_  
Photo Date \_\_\_\_\_  
Negative No. \_\_\_\_\_

NAME(S):

Last

First

Middle

### MARKER AND ASSOCIATED OBJECTS:

- |                                |   |
|--------------------------------|---|
| <input type="checkbox"/> head  | <input type="checkbox"/> tablet with slotted base |
| <input type="checkbox"/> foot  | <input type="checkbox"/> curbing                  |
| <input type="checkbox"/> crypt | <input type="checkbox"/> fencing                  |
| <input type="checkbox"/> slab  | <input type="checkbox"/> other _____              |

### MATERIAL:

- |                                    |                                      |
|------------------------------------|--------------------------------------|
| <input type="checkbox"/> granite   | <input type="checkbox"/> concrete    |
| <input type="checkbox"/> marble    | <input type="checkbox"/> metal       |
| <input type="checkbox"/> limestone | <input type="checkbox"/> combination |
| <input type="checkbox"/> sandstone | <input type="checkbox"/> other _____ |
| <input type="checkbox"/> wood      |                                      |

### ORIENTATION (marker faces):

- N     S     E     W     NE     SE     NW     SW

OVERALL DIMENSIONS: Width \_\_\_\_\_ Height \_\_\_\_\_ Depth \_\_\_\_\_

### CARVED SURFACES:

- |                                |                                      |
|--------------------------------|--------------------------------------|
| <input type="checkbox"/> front | <input type="checkbox"/> side panels |
| <input type="checkbox"/> back  | <input type="checkbox"/> end panels  |
| <input type="checkbox"/> top   | <input type="checkbox"/> other _____ |

### CONDITION OF CARVING:

- |  |                                      |
|--|--------------------------------------|
| <input type="checkbox"/> mint            | <input type="checkbox"/> traces      |
| <input type="checkbox"/> clear but worn  | <input type="checkbox"/> illegible   |
| <input type="checkbox"/> mostly readable | <input type="checkbox"/> underground |

DESCRIPTION OF DESIGN: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

### OVERALL CONDITION:

- |   |   |   |
|---|---|---|
| <input type="checkbox"/> soiled                 | <input type="checkbox"/> biological activity                  | <input type="checkbox"/> tilted/fallen/sunken |
| <input type="checkbox"/> stained                | <input type="checkbox"/> erosion                              | <input type="checkbox"/> open joints          |
| <input type="checkbox"/> delaminating           | <input type="checkbox"/> blistering/flaking/scaling/powdering | <input type="checkbox"/> fragmented           |
| <input type="checkbox"/> graffiti               | <input type="checkbox"/> cracked                              | <input type="checkbox"/> losses               |
| <input type="checkbox"/> other damage _____     |   |   |
| <input type="checkbox"/> previous repairs _____ |   |   |

### RECORD INSCRIPTION:

**Photo**

Repairs (date) \_\_\_\_\_  
Work Performed \_\_\_\_\_  
\_\_\_\_\_

# DEFINITION OF TERMS USED IN SAMPLE CEMETERY SURVEY FORM

## Condition of Carving

**Mint:** carving is in perfect condition, as though it was just carved

**Clear but worn:** carving shows some wear but legibility is not affected

**Mostly readable:** carving is difficult to read without directing light across the surface with the aid of a mirror or a flashlight

**Traces:** parts of the carving are visible but difficult to read or to determine the whole design

**Illegible:** none of the carving can be read

**Underground:** stone is laying face down or buried so carving cannot be read

## Overall Condition

**Soiled:** the surface is covered with dirt but can be easily washed off with water

**Stained:** the surface exhibits stains that cannot be easily removed with water

**Delaminating:** the stone is splitting off in layers, similar to what happens when interior plywood is subjected to moisture

**Graffiti:** designs not part of the original design are drawn, painted, sprayed or scratched on the stone

**Biological activity:** lichen, mold, or mildew found on the surface

**Erosion:** sections of the stone are worn off, usually from wind or water

**Blistering/flaking/scaling/powdering:** small or isolated areas are missing or surface of the stone is loose

**Cracked:** stone is cracked but not broken into separate parts

**Tilted/fallen/sunken:** the stone is not in its original alignment or is partly below the surface

**Open joints:** the mortar in the mortar joints is missing

**Fragmented:** sections of the stone are broken into many parts

**Losses:** parts of the stone are missing, such as a finial (terminating detail on the top of the gravestone)

## Previous Visible Repairs

**Adhesive repairs:** repairs to the stone with epoxy or some other adhesive have not been cleaned off the surface following repairs (may have turned a butterscotch color because of ultra-violet light)

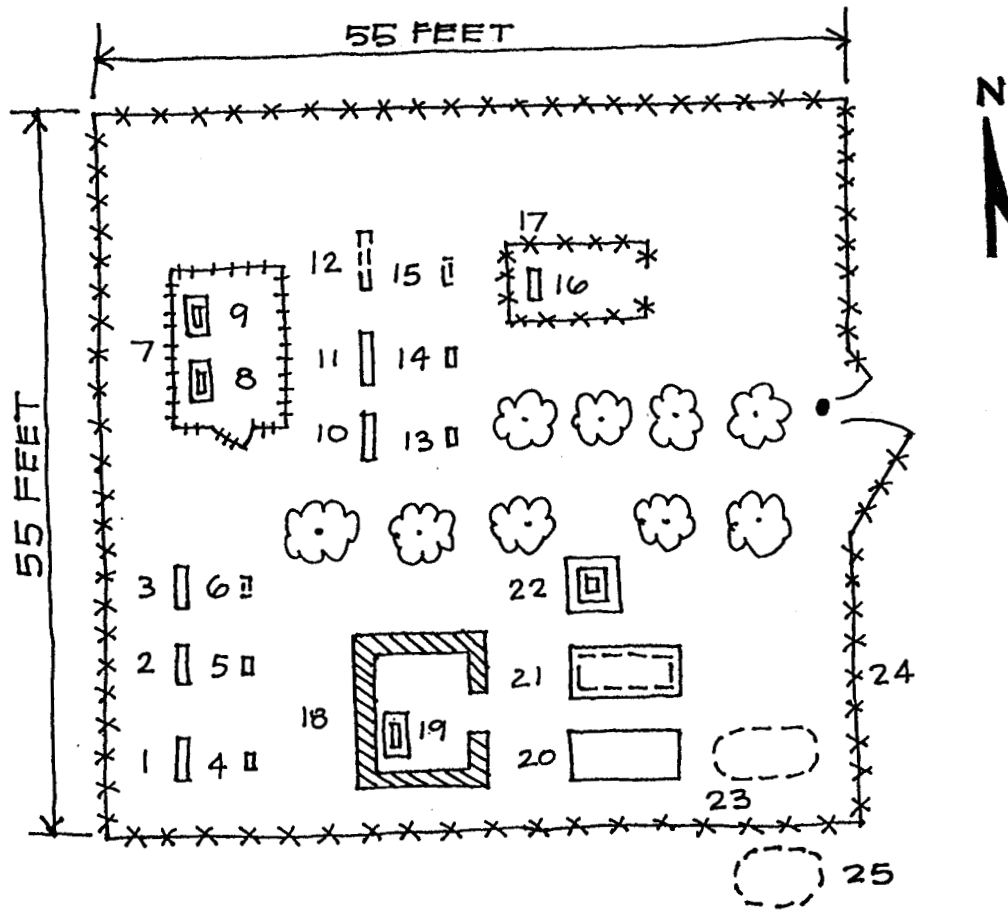
**Replacement:** total replacement of the original stone which can be determined by the date of death or the newness of the stone

**Portland cement:** a hard gray material improperly used to repair gravestones or encase fragments (this material is commonly used to construct sidewalks and foundations of buildings)




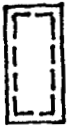









**Coatings:** used on some stones to extend the life of the material; however, most coatings are not appropriate (limestone and marble with a shiny or milky finish probably have a coating on them)

**Iron pins/braces:** improper method to secure pieces of stone together or to support the stone which usually results in the iron rusting and staining the stone

# SAMPLE MAP OF CEMETERY



## LEGEND

- |  |  |  |   |
|--|--|--|---|
| <br>TABLET  | <br>MISSING-<br>TABLET        | <br>SLAB                | <br>CRYPT                 |
| <br>FOOTSTONE                                     | <br>MISSING-<br>FOOTSTONE     | <br>DEPRESSION          | <br>CYPRESS<br>TREE       |
| <br>MONUMENT<br>(OBELISK,<br>COLUMN,<br>PEDESTAL) | <br>TABLET W/<br>SLOTTED BASE | <br>STONE<br>WALL       | <br>WOVEN<br>WIRE<br>FENCE |
|  |  | <br>CAST IRON<br>FENCE |   |

# Definitions for Rapid Cemetery Assessment Form

## *Structures*

**Marker** - sign or indication of a burial placed at the head of the body.

**Footstone** - sign or indication of a burial placed at the foot of the body, usually smaller.

**Box tomb/basal** - box shaped monument built above ground; burial usually takes place below ground, usually about 3' by 6' and 2'-3' high.

**Vault** – burial chamber commonly below ground.

**Mausoleum** – large structure or building built above ground for burials.

**Bedstead** – resembles the framework of a bed with side pieces and end pieces in addition to marker.

**Obelisk** – stone pillar with a rectangular cross section tapering towards a point (Example Washington Monument).

## *Materials*

**Marble** – A hard usually white rock with visible crystals that fizzes with a drop of vinegar. This metamorphic rock contains calcium and is usually polished.

**Limestone** - This medium to soft rock consists mainly of calcium, and is white to buff color. It also fizzes with vinegar or other acids.

**Granite** – This igneous rock has visible medium to large crystals, usually grey in color but commonly found in pink, red, or black.

**Slate** – A fine-grained metamorphic rock, with naturally smooth finish that tends to separate along bedding planes, commonly a grayish color.

**Sandstone**- (also known as brownstone), a sedimentary rock consisting of sand consolidated with binder, porous and easily worked, and susceptible to separating.

**Schist** - metamorphic rock with banded layer and medium crystals, color is streaky, silver, black, white, and green.

**Brick** – used in foundations for markers and construction of monuments, historically pointed with lime-based mortar although if it was repointed a Portland based mortar possibly (and incorrectly) used.

**Wood** – Produced from trees, this material is used commonly in fences and markers, deteriorates much more quickly than stone.

**Cast Iron** – An iron-based metal that is fabricated in sections and bolted together, cast in a mold allowing for greater detail. Sections are usually bolted together.

**Wrought Iron** – An iron based metal that is shaped by forging allowing for more delicate pieces, lighter than cast iron.

**Bronze** – A copper and tin metal alloy that usually forms a brown or possibly green patina.

**Lead** – A soft malleable metal with several historical uses including to hold fence pieces together or in place, to shim stones, and cast in sculpture.

**Zinc (White Bronze)** – cast metal that has a bluish color and is very durable.

**Concrete** – lime or Portland cement based used in construction and markers themselves, concrete markers often with a less refined appearance.

**Glass** – commonly found as windows in mausoleums, may be leaded or stained glass.

## *Coatings*

**Limewash** – finish made from lime and water used to protect surfaces.

**Cement Wash** – more modern wash with a cement additive.

**Stucco** – finish made from sand, water, and lime to coat exterior, also concrete stucco.

**Paint** – pigment suspended in liquid used to coat a surface.

## *Types of Damage*

**Collapse** – loss of structural integrity.

**Fallen** - monument is not in its original position.

**Broken** – forcibly separated into pieces.

**Missing Pieces** – parts of the stone are no longer there.

**Stained** – surface shows signs of stains that can not be removed with water alone.

**Biological Growth** – lichen, mold, or mildew found on the surface.

**Erosion** – areas have been removed by wind or water.

# Rapid Cemetery Assessment Form

## Inspection

 Inspection date/ time \_\_\_\_\_  AM  PM

Inspector \_\_\_\_\_

Affiliation \_\_\_\_\_

## Page 1 of \_\_\_\_\_

### Attachments

- 
- Documents
- 
- Photographs
- 
- 
- Sketches
- 
- Other

photo #s \_\_\_\_\_

## Cemetery Description

Cemetery Name \_\_\_\_\_

 Address \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

County/Parish Name \_\_\_\_\_

Est Cemetery Size \_\_\_\_\_

### Total Lot/Section Damage Estimate

- 
- None
- 
- 
- 1-10%
- 
- 
- 10-30%
- 
- 
- 30-60%
- 
- 
- 60-90%
- 
- 
- 90-100%

### Owner/Contact Info

 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

 Repairs begun?  Yes  No

## Record , \_\_\_\_\_

 Interment Type  Individual  Family  Multiple  Other

## Lot/Section # or I.D.

 Est number of structures  1  2-4  5-6  6-10  >10

*This section of assessment describes the damaged structures and resources found within this section or lot. Check all items that display damage.*

Structures	Materials Found	Coatings found	Type of damage	Level of damage	
<input type="checkbox"/> Marker <input type="checkbox"/> Footstone <input type="checkbox"/> Box tomb/basal <input type="checkbox"/> Vault <input type="checkbox"/> Mausoleum <input type="checkbox"/> Bedstead <input type="checkbox"/> Obelisk <input type="checkbox"/> Other	<input type="checkbox"/> Marble <input type="checkbox"/> Limestone <input type="checkbox"/> Granite <input type="checkbox"/> Slate <input type="checkbox"/> Sandstone <input type="checkbox"/> Schist <input type="checkbox"/> Brick <input type="checkbox"/> Wood <input type="checkbox"/> Cast Iron	<input type="checkbox"/> Wrought Iron <input type="checkbox"/> Bronze <input type="checkbox"/> Lead <input type="checkbox"/> Zinc (White Bronze) <input type="checkbox"/> Concrete <input type="checkbox"/> Glass <input type="checkbox"/> Other	<input type="checkbox"/> Limewash <input type="checkbox"/> Cement Wash <input type="checkbox"/> Stucco <input type="checkbox"/> Modern Coating <input type="checkbox"/> Paint <input type="checkbox"/> Unknown <input type="checkbox"/> None <input type="checkbox"/> Other	<input type="checkbox"/> Collapse <input type="checkbox"/> Fallen <input type="checkbox"/> Broken <input type="checkbox"/> Missing Pieces <input type="checkbox"/> Stained <input type="checkbox"/> Biological Growth <input type="checkbox"/> Erosion <input type="checkbox"/> Other	<input type="checkbox"/> None <input type="checkbox"/> 1-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-60% <input type="checkbox"/> 60-90% <input type="checkbox"/> 90-100%
Enclosures	Materials Found	Coatings found	Type of damage	Level of damage	
<input type="checkbox"/> Curb <input type="checkbox"/> Fence <input type="checkbox"/> Gate <input type="checkbox"/> Wall <input type="checkbox"/> Other <input type="checkbox"/> None	<input type="checkbox"/> Marble <input type="checkbox"/> Limestone <input type="checkbox"/> Granite <input type="checkbox"/> Slate <input type="checkbox"/> Sandstone <input type="checkbox"/> Schist <input type="checkbox"/> Brick <input type="checkbox"/> Wood	<input type="checkbox"/> Cast Iron <input type="checkbox"/> Wrought Iron <input type="checkbox"/> Bronze <input type="checkbox"/> Lead <input type="checkbox"/> Zinc (White Bronze) <input type="checkbox"/> Concrete <input type="checkbox"/> Other	<input type="checkbox"/> Limewash <input type="checkbox"/> Cement Wash <input type="checkbox"/> Stucco <input type="checkbox"/> Modern Coating <input type="checkbox"/> Paint <input type="checkbox"/> Unknown <input type="checkbox"/> None <input type="checkbox"/> Other	<input type="checkbox"/> Collapse <input type="checkbox"/> Fallen <input type="checkbox"/> Broken <input type="checkbox"/> Missing Pieces <input type="checkbox"/> Stained <input type="checkbox"/> Biological Growth <input type="checkbox"/> Erosion <input type="checkbox"/> Other	<input type="checkbox"/> None <input type="checkbox"/> 1-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-60% <input type="checkbox"/> 60-90% <input type="checkbox"/> 90-100%
Landscapes	Materials Found	Type of damage	Level of damage		
<input type="checkbox"/> Trees <input type="checkbox"/> Plants <input type="checkbox"/> Ground Covering <input type="checkbox"/> Roadways <input type="checkbox"/> Walkways <input type="checkbox"/> Others	<input type="checkbox"/> Annual plants <input type="checkbox"/> Perennial plants <input type="checkbox"/> Ornamental trees <input type="checkbox"/> Shade Trees <input type="checkbox"/> Hedges <input type="checkbox"/> Grass	<input type="checkbox"/> Gravel/pebbles <input type="checkbox"/> Shell <input type="checkbox"/> Concrete <input type="checkbox"/> Brick <input type="checkbox"/> Pavers <input type="checkbox"/> Other	<input type="checkbox"/> Fallen <input type="checkbox"/> Fallen on monument <input type="checkbox"/> Broken <input type="checkbox"/> Downed limbs <input type="checkbox"/> Uprooted <input type="checkbox"/> Missing pieces <input type="checkbox"/> Other	<input type="checkbox"/> None <input type="checkbox"/> 1-10% <input type="checkbox"/> 10-30% <input type="checkbox"/> 30-60% <input type="checkbox"/> 60-90% <input type="checkbox"/> 90-100%	

## Comments/observations

 Visible human remains/coffins?  Yes  No  Don't know \_\_\_\_\_

## Storm Data

Storm Name \_\_\_\_\_ Storm Date \_\_\_\_\_

 Nature of water  Standing  Flowing  Seepage  Water Marks  Other \_\_\_\_\_

 Sediment deposited  On Site  In Structure Site erosion  Yes  No  Don't know

## Further Actions

 Further actions  Emergency Stabilization  Urgent Attention  Brush/Tree Clearing  Cleaning  Repairs

Other recommendations \_\_\_\_\_


**Posting**  Inspected  Unsafe  Restricted Use  Historic Designation  Detailed Evaluation Needed
