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H6
1.11.18

From: Jonathan Appell [mailto:historicstone@msn.com]
Sent: Saturday, December 23, 2017 5:18 PM
To: Robbin Kelley <rkelley@town.harwich.ma.us>
Cc: atlaspreservationinc@gmail.com
Subject: Re: Mount Pleasant Cemetery

Atlas Preservation Inc.
122 Spring Street B1
Southington, CT 06489
860-558-2785
sales@atlaspreservation.com

December 22, 2017

Harwich Cemetery Department
100 Oak Street, Harwich, MA 02645
Project Manager: Robbin Maria Kelley- Cemetery Administrator
508-430-7549 rkelley@town.harwich.ma.us
Town Committee: Harwich Cemetery Commission, Historic Commission

Regarding: Mount Pleasant Cemetery Gravestone Conservation Proposal

Dear Robbin,

Thank you for the opportunity to offer this proposal for the conservation of the unstable, leaning, cracked and fractured gravestones and historic cemetery monuments in the older sections of The Mount Pleasant Cemetery, in Harwich, MA.

This proposal includes historical background information in an attempt to clarify many of the most common misconceptions, regarding historic memorials in America.

Concise Memorial History Relating to Monument Preservation:

Gravestones are one-piece tablet style memorials set directly into the ground.
They are monolithic in nature and were often placed directly in the soil, sometimes with loose rocks against them under ground. In the colonial era bases were rarely employed. A typical tablet stone installation was set with about 1/3 underground and 2/3 above ground.

During the 1800's cemetery memorials began to evolve and bases were often used as part of the installation, at first only underground as a sort of anchor to hold up the visible portion of the stone. This is referred to as a mortice & tenon joint. The base stone can have varying names such as slotted base, socket base, or base with a keyway.

This method of installation reduced the amount of expensive monumental-grade stone needed as the bases could be created from lower grade, locally available materials such as sandstone, limestone, granite etc.

Cemetery monuments are considered to be any memorial, composed of more than one piece of stone, or a headstone set into or sitting on a base stone with the base visible and partly above ground level. Monumental elements should always be fastened or joined together structurally or they can easily topple if pushed, leaned against or brushed by maintenance equipment even lightly in some situations.

The earliest gravestones in America were composed from locally available materials like slate and sandstone. During the 1800s, marble became the preferred and most common material employed to make headstones. Marble memorials can be either gravestones or monuments. They were most often white or gray in color when first installed, but many have become badly discolored due to varying kinds of soiling, largely biological growth.

By the late 1800's and into the early 1900s, quarrying and manufacturing techniques greatly improved. Granite in turn, then became the preferred monumental material due to its strength and weathering resistance.

When gravestones or monuments are installed on a slope or uneven ground, or due to the settling of historic graves, the stones will tend to lean and or be pushed down hill slowly through the forces soil movement and erosion.

Once leaning, stones are at a far greater risk of breaking, and or falling over. If fallen, gravestones become an unsightly hazard, which may then be subject to further damage from all the elements in nature, as well as maintenance equipment. Broken, fallen and badly leaning gravestones may also encourage vandalism, as it appears the cemetery is not well cared for.

Resetting & Conservation of Unstable Monuments

There are numerous reasons why a historic cemetery monument can become unstable or disconnected from its associated base stone.

A great deal of confusion has arisen relating to what the historical installation methods were.
In an attempt to be historically accurate and sensitive to the historic fabric, and in tune with conservation and preservation ethics various resetting and "restoration" techniques have been employed.

The fact of the matter is that there never was any one method of historic monument installation. Techniques varied greatly from region to region and even within the same time frame, assorted techniques and materials were employed.

Drilling and blind pinning was very common in some regions, and fairly rare in other parts of America. The composition of metal rods or dowels also varied greatly and if it was composed from a common ferrous metal like mild steel or iron rusting and expansion often took place, sometimes actually causing the headstone to become unstable, crack or even topple.

Nearly always, there was some material placed between the headstone and base, however it was not always actually joining the stones.

Marble, Multiple Piece Monuments

With marble monuments, the bonding material was often some kind of lime mortar, plaster, powdered lead, sulfur or some combination of these materials, sometimes mixed with other binders like fly-ash for added strength.

Whatever was employed to join the stones was used either alone or with some kind of metal pinning. The wider and larger the monuments rarely had pinning at all, pinning was most common on the thinner headstones.

Granite Multiple Piece Monuments

Granite became very common around 1890 and began to take over as the most common material for cemetery monuments.
After 1900, and especially after the end of WW1, with advances in manufacturing granite became the stone of choice for most memorials in America.

Monuments composed from granite tended to become larger, wider and heavier then, the earlier marble memorials. It became an accepted state of the art installation practice to place granite headstones on bases with only a strip of lead wedge around the perimeter. This "sealed' the two pieces, and soft lead notched itself, in effect mating the 2 pieces. However, is did not actually bond the two pieces together, instead they were held together by gravity with the lead preventing any lateral movement.

Gravestone & Monument Preservation Proposal

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All of the memorials that are included in this proposal are either unstable leaning, in m=need of foundation repair or replacement and or detached from there associated base stones.

Many of the stones are also badly soiled from biological growth.
There is also advanced erosion in progress on many of the marble stones.

After this project is performed and completed the unstable gravestones and monuments will be safe from accidentally toppling. Some are currently in a precarious state, and could easily fall if leaned against, bumped into slightly or climbed on by a child.

All conservation procedures performed will be documented with a before and after photograph, and in most cases photos during the conservation process additional photos of each stone will be included.
A flash drive will then be provided at the completion of the project documenting all the conservation treatments along with a short completion report listing all the materials and specific products employed.

All conservation work performed will follow the standards established, by the Association for Gravestone Studies, the National Trust for Historic Preservation, and the American Institute for Conservation of Historic and Artistic Works. I am a member of all the for-mentioned organizations.

This "2018" preservation project, will consist of at least 150 broken, fallen, and or badly leaning, cracked and or eroded gravestones and monuments.

The memorials included in this proposal are composed primarily from marble with some granite and a lessor amount other materials such as sandstone.

Project Scope & Overview:

At least 42 gravestones & monuments with cracking and or fractures will be reset and repaired.

At least 108 gravestones & monuments needing foundation repair & resetting.

At least 150 gravestones & monuments, (42+ 108) will be treated and cleaned with the premier historic stone cleaner in America, D/2 Biological Solution.

Eroded gravestones & monuments will be treated & consolidated with a stone strengthener to protect and preserve.

A completion report for entire project and documentation relating to each of the 150 stones conserved, including before and after conservation photos of each stone.

Time Frame: Project to be performed and completed during 2018.

Total Cost including all labor and materials:
$ 49,900.

Regards, Jonathan Appell
Ceo, Atlas Preservation Inc.

Thank you for the opportunity to provide this gravestone preservation proposal.

Regards, Jon

Jonathan Appell

860-558-2785
www.gravestonepreservation.info
https://www.facebook.com/pages/Gravestone-Monument-Preservation/645872742131960

From: Robbin Kelley <rkelley@town.harwich.ma.us>
Sent: Tuesday, October 3, 2017 10:15:41 AM
To: historicstone@msn.com
Subject: Mount Pleasant Cemetery

Jonathan

I am attaching my CPC Article, could you give me a price when you get a chance.

Robbin Marie Kelley
Cemetery Administrator
Town of Harwich
Office: 100 Oak Street
Mailing: 732 Main Street