Recording Buried Tombstones

Moray Burial Ground Research Group
Recording Buried Tombstones

by

Keith L. Mitchell
M. Helen Mitchell
and Bruce B. Bishop.

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Acknowledgements

This document has evolved through various stages, originating from a preliminary set of protocols set out in 2002, which were designed to clearly lay out a set of guidelines on the way in which buried tombstones could be satisfactorily uncovered and properly recorded. Over time these procedures have gradually been enhanced by the valuable contribution made by several individuals, among whom it is pertinent to record the consistent support and guidance of Dr Susan Buckham (CSA Carved Stones Adviser) along with more specific advice given by Dr Sally Foster, Ms Audrey Dakin and staff at Historic Scotland. Gratitude is also expressed to Tessa Asquith-Lamb for her drawings to illustrate the buried tombstone methodology.

Thanks are due to the Moray Council for permission to research the buried tombstones in Moray churchyards, and particular acknowledgment is extended to Gary Morrison, the Cemeteries Manager. Graeme Wilson and Margaret Heron at the Moray Heritage Centre have been of great assistance in providing churchyards plans.

The committee and membership of The Moray Burial Ground Research Group have provided a wealth of suggestions and practical ideas for the evolution of the methodology, and have committed valuable time to the field work trials of the project. However, particular mention should be made of William Windwick for his work on designing and constructing the probe currently in use by the group and to Keith Mitchell for designing the original prototypes. Photographs and drawings of the probe by William Windwick, turf cutter head and turf cutter guard drawings by Bruce Bishop and other photographs by Keith Mitchell.

The objectives of The Moray Burial Ground Research Group are:-

1. to research the historical development of burial grounds in Moray up to the present time,
2. to research them as repositories of information concerning community and family heritage,
3. to share the knowledge accumulated from the above research with a wider public and to circulate the results of the above research in family history or scientific publications.

For further information contact www.mbgrg.org
Foreword

This booklet is an excellent example of the benefits of collaboration between community groups involved with local heritage and conservation professionals. The Moray Burial Ground Research Group have developed a methodology to locate and record buried tombstones in a way that is sensitive to conservation and heritage management issues. The CSA’s Carved Stones Adviser Project is delighted to support the Moray Burial Ground Research Group in sharing their expertise with others by publishing this booklet. The Carved Stones Adviser Project unites cemetery professionals, heritage specialists, community groups and individual members of the public to work collectively to safeguard the future of Scotland’s Historic Graveyards. For more information about the Carved Stones Adviser Project and Scotland’s historic burial grounds visit www.scottishgraveyards.org.uk To learn more about the admirable and varied work of the Moray Burial Ground Research Group see www.mbgrg.org

Dr Susan Buckham
Carved Stones Adviser
Council for Scottish Archaeology.

Figure 1: Group discussion at Alves Churchyard
Section 1: Method and Protocols

1.0. Introduction

The following protocols and methodology covers the retrieval of information from gravestones buried beneath a shallow layer of turf, to a depth of approximately 15cms (6ins). For guidance on the removal of moss and lichen etc. from gravestones see The Conservation of Historic Graveyards, Guide for Practitioner 2 published by Historic Scotland and Council for Scottish Archaeology’s graveyard website: www.scottishgraveyards.org.uk

1.1. Objectives and Priorities

The buried tombstone methodology supports the following objectives and priorities:

1. To systematically locate tombstones which have become concealed beneath the soil surface, because of settlement, neglect, or the re-landscaping of the burial ground, and of which there is perhaps no documentary evidence. The stones may be the only surviving record of the people interred there; they may also contain important art-historical and histo-archaeological information. It is NOT an objective to interfere with, or to remove or reinstate any tombstone. However, in exceptional circumstances evidence from buried tombstone recording may make a subsequent case for this. Any initial reservations held by the public, cemetery managers or heritage professionals regarding this type of project, should be allayed by the fact that tombstones will not be uncovered beyond an approximate depth of 15cms (6ins).

2. To produce an accurate plan of the burial ground and to systematically and accurately record and illustrate any buried tombstones. Guidance on making a graveyard plan is available on www.scottishgraveyards.org.uk

3. Undertaking a buried tombstone project should be considered as a 'one-off opportunity' at any given site and the complete and accurate recording and dissemination of any findings is therefore essential.

4. To undertake work in a manner which recognises and respects the sensitivities of interested parties, including descendants, churchgoers, landowners, local authorities, archaeologists, conservation officers and occupiers of neighbouring properties. During research the needs of visitors to the burial ground should be borne in mind, especially if they are visiting nearby graves or if a funeral is due to take place during the period of research.

5. To ensure that the project team have appropriate permissions to undertake work (see Section 1.3), which is not necessarily the same as respecting the sensitivities described above. Other key contacts to consult and liaise with include the local priest or minister, cemetery manager, Historic Scotland, Scottish Natural Heritage, the Council for Scottish Archaeology and the local authority conservation officer (see Useful Contacts).

6. To conduct activities in a manner which takes account of personal and public health, safety and hygiene. For more information see The Treatment of Human Remains in Archaeology, Operational Policy Paper 5 published by Historic Scotland and their electronic leaflets on gravestones and graveyards (see Bibliography for availability).

7. Work should not be started on any site unless it can be completed within a satisfactory timescale.
1.2. Selection of Research Site

The age of the burial ground should be taken into consideration. In general, burial grounds associated with churches which were established before 1855 will be the most suitable for this type of research. Planned town cemeteries are unlikely to have buried stones, although the same research techniques are equally applicable to more modern cemeteries if the plant growth, neglect and vandalism has led to stones becoming buried.

The legal status of a graveyard should be ascertained from the outset, since this will determine the types of permission required and nature of project work that can be completed (see below).

1.3. Permissions and Notifications

The ownership of the burial ground should be ascertained through the local council, who are likely to have a record of both ownership and a site’s statutory status. Permission for a buried tombstone project should be obtained before any work is commenced and this permission may take some time to obtain.

Checks should be made to establish whether or not any part of the burial ground is Scheduled, Listed, or covered by any other cultural and / or natural heritage designations. For information on how to check the legal status of a graveyard, and the implications of this, see Historic Scotland’s electronic leaflet Working in a Scheduled or Listed Graveyard or Burial Ground (see Bibliography for availability). The PASTMAP website at www.pastmap.org.uk provides access to Historic Scotland’s Listed Buildings of Scotland and Historic Scotland’s Scheduled Ancient Monuments of Scotland datasets.

Prior permission will be needed from the local authority if any part of the graveyard is Listed or from Historic Scotland if any part of the site is Scheduled. If Scheduled, prior permission (Scheduled Monument Consent) would be required to de-turf for recording purposes. Historic Scotland considers all applications for scheduled monument consent on their own merit. De-turfing for recording buried tombstones runs the risk of destroying archaeological evidence, disturbing human remains and damaging carved stones, so each application requires careful consideration. Applicants wishing to secure consent should demonstrate that they have undertaken full background research, are using an appropriate methodology and that they have the appropriate experience, expertise and resources to undertake and complete their project.

If certain natural heritage designations apply to a graveyard permission to carry out work may be required from Scottish Natural Heritage and the local authority. The owners / managers of the individual graveyard will also have a view on what permissions are required for their own purposes.

The local authority archaeologist should be informed of any site which you have selected to record buried tombstones (see the “Advice and Information” section of the CSA website: www.scottisharchaeology.org.uk for contact details).

Once permission has been obtained, then as a matter of courtesy all interested parties should be advised when the work is to start. Contacts include the minister, priest or kirk session if the church is still in use, as well as the landowners, and, if necessary, any neighbouring landowners if access is required across their land.

A risk assessment should be carried out before any work of any kind is undertaken on the site (see Section 1.1, 6).

1.4. Site Plans

The location of any existing site plans should be ascertained. Lair plans held by the local councils are sometimes schematic and may offer little practical assistance for identifying or plotting the location of buried tombstones. The local authority’s local history library or local heritage centre may hold plans relating to earlier recordings of monumental inscriptions.

Other sources to consult include Local Authority Sites and Monuments Records (SMRs) and the National Monuments Record of Scotland (NMRS), which can be accessed online at www.pastmap.org.uk. The “Advice and Information” section of the CSA website, www.scottisharchaeology.org.uk, gives details of each local authorities’ SMR provision. Any existing plans should be carefully checked on
site, and may need to be redrawn to take account of more recent interments, removal of unstable tombstones, the re-landscaping of the burial ground or any omissions within earlier surveys.

Information on locating existing plans and consulting libraries and archives can be found in the free booklet *Researching Your Graveyard* published by Historic Scotland in conjunction with the CSA’s Carved Stones Adviser Project.

If there are no plans available then the site should be visited and, if it is decided that there are a worthwhile number of buried stones, then the site will need to be surveyed and a site plan drawn. This plan will be required for field recording, the project’s archive and for inclusion in any published findings. All above-ground tombstones should be numbered on the plan. Other information to be added includes the location of any survey lines (see Section 1.6) and the position of any buried tombstones. The CSA’s Carved Stones Adviser Project has produced guidance on making a graveyard plan, which is available from: www.scottishgraveyards.org.uk

1.5. Preparation and Documentation

A notice should be placed at the entrance or entrances to the burial ground to inform visitors about the purpose of a buried tombstone project and the status and identity of the researchers. Ideally a contact telephone number should be included on this notice.

The history of the church and burial ground should be researched and documented before any fieldwork commences. Research may indicate any problems which might be encountered on the ground, produce information to help organise fieldwork and provide background for analysis and publication.

In the case of a burial ground where the church has been demolished, site plans, if they exist, may not indicate the location of former buildings. Documentary research may be necessary in order to locate the position of an earlier church, which should then be backed up by a site visit. Care should be taken not to confuse remains of structural foundations with buried tombstones.

Ideally, a buried tombstone project should comprise of a minimum of three, preferably four, people, who are able to build up experience in all aspects of the methodology. It is recommended that each team member spends time assembling and becoming acquainted with using all of the equipment detailed in Section 3. Each project team should complete the work on any one tombstone before commencing the next.

1.6. Location of Buried Tombstones

An above-ground survey and plan should be completed before any disturbance of the site takes place. The site plan should be drawn up in metric measurements at a scale of 1:100 for the graveyard as a whole and 1:20 for individual areas around gravestones. The above-ground survey will help to indicate the likely duration and overall logistics of fieldwork at an individual burial ground. It may be necessary, in the case of a large graveyard, to divide the work into more manageable sections.

There are two basic ways to carry out a survey to locate buried tombstones and the choice of which method to use depends upon the size, geography and layout of an individual graveyard, as well as the number of people involved. The first method to locate buried tombstones uses string survey lines (Figure 3), while the second uses a freehand technique (Figure 4). In both cases it is important that when a buried tombstone is identified its precise location is measured and recorded. This step will allow a gravestone to be re-located at a later stage for uncovering and recording.

The position of all buried tombstones should be marked on the site plan and their location should be confirmed by taking measurements from a fixed datum point. A datum point is a specific, fixed location from which all measurements on a site are made or to which they are calibrated. Each buried stone should be allocated a unique reference number or letter. The reference should identify the individual tombstone and year of survey. If the tombstones or monumental inscriptions have been recorded in the past, check whether a buried tombstone has a reference number from an earlier survey. All earlier references need to be cross-referenced to the present survey.

Any conspicuous bumps or hillocks, especially on the perimeter of the burial ground, may
indicate an area used to dump broken or damaged stones which have since become buried. A quick examination beyond the graveyard wall may reveal discarded tombstones and fragments outside the burial ground. Permission to make such a survey may be necessary from the landowner.

**String Line Survey Technique**

The use of string lines are particularly advisable where the survey is being conducted in a large cemetery that contains significant areas of grass, or other covering and where visible reference points are limited (Figure 3). This technique provides more accurate location measurements than a freehand approach, meaning that the later re-location of tombstones for uncovering and recording is more straightforward. The string line system requires a minimum of two people; one for probing and one to record the findings (Figure 2).

Survey lines should be laid out to give the maximum coverage across the burial ground, with the least possible disturbance to the site. It is probably not necessary to have the survey lines closer than about 60cms (2ft) to one another as this distance should give at least two probe contact “hits” on any buried stone. Lines at this distance are also likely to pick up fragments and small sized stones. The fieldworker soon recognises the difference in contact sounds when a probe locates a tombstone and when it finds rubble, stones and boulders.

The lines should be surveyed by inserting a probe into the ground at about 30cms (12 inch) intervals, to a depth of approximately 15cms (6ins). This depth is the optimum level for excavation and reinstatement of the graveyard. Beyond a 30cm depth the risk of disturbing archaeologically significant deposits increases. Instructions for making a probe in the approved design are set out in Section 2 (Figure 15).

Figure 2: Probing with string lines

Figure 3: String lines across the graveyard site
Freehand Survey Technique
The freehand method uses a synchronised line of people to walk with probes across the graveyard (Figure 4). The freehand method needs sufficient people to cover the ground if this technique is to give comparable accuracy in results to the string line method. This approach can be used where the width between tombstone rows is smaller than 366cms (12ft), or the probing space for each person amount to less than 91.5cms (3ft). Some cemeteries contain very narrow strips of ground between headstone rows where only one or two people can work comfortably next to one another. However, in wider areas up to four people can easily walk abreast and take accurate readings.

![Figure 4: Freehand survey](image)

When using the freehand system each person should aim to probe to their left, centre and right in unison with their colleagues (Figure 5). Probing should continue while moving forward at intervals of 30-45cms (12-18ins). It may take some time to develop a suitable uniformity of technique using this method.

Both survey methods should only use the recommended probe (see Section 2), as other designs may be liable to damage a tombstone’s surface. The approved probe’s tip is designed to avoid damage on contact with stonework and the probe has an in-built depth indicator to show when a level of 15cms (6 inch) has been reached (Figures 15 to 17.). For further details of the probe, including the tip’s design and construction, see Section 2.

1.7. Exposure of Buried Tombstones

Preparation
When ready to uncover a buried tombstone, check the site plan for its location measurements. The area around the tombstone should be probed in more detail to establish the extent of a gravestone below ground. Non-metallic garden canes, or gardening tags can be used to mark out the gravestone’s extent above ground (see Figure 6). Broken tombstones or fragments tend to exhibit an irregular outline but are often worthy of examination.

Before commencing any de-turfing, the stability of neighbouring tombstones should be checked. For guidance see [www.scottishgraveyards.org.uk](http://www.scottishgraveyards.org.uk) and Historic Scotland’s electronic leaflet *Emergency Measures for Historic Memorials. A Short Guide for Cemetery Managers* (see Bibliography for availability). Any loose or unstable tombstones should be reported to the authority responsible for maintaining the graveyard. If there is any possibility that a neighbouring gravestone could fall, then do not attempt de-turfing in this location.

Photography and Recording
It is strongly recommended that a comprehensive photographic record is made of each buried tombstone throughout the entire process of exposure. Before removing turf it is good practice to photograph the area to be uncovered to show the approximate dimensions of each buried tombstone, or other concealed objects or structures. As noted above, measurements should be plotted out using markers (see Figure 8). Photographs will also assist the relocation of a tombstone at a future date, so it is useful to include adjacent tombstones or other landmarks within the cemetery in at least one shot. A photograph should be taken when approximately half of the turf has been removed from above the tombstone. Once the turf is completely removed, if a layer of clay, soil, rubble or other material is present, it is prudent to take a photograph at this stage too. It is good practice to keep a written record of each stage of uncovering a buried tombstone.
Initial Assessment of Cover
The texture of grass, turf, soil type and ground conditions can vary considerably between different graveyards and these factors should be taken into account before, during and after the de-turfing process.

It is crucial to gauge any variation in the thickness of grass or turf cover on top of a tombstone before cutting commences. Depth of cover can be tested by carefully inserting the probe, with approved plastic tip, at the central point, at each end and side of the gravestone (Figure 6). The depth to which the probe can be pushed down into the grass or turf should be temporarily marked on the probe using masking tape and a pen. The distance from the probe tip to the temporary mark should then be measured to establish the minimum and maximum depth present. Gravestones may sometimes lie at a sloping angle (Figure 7). If a considerable part of the gravestone slopes to a depth of more than 15cms (6ins) the feasibility of uncovering the tombstone and the problems that this might present for the conservation of archaeological features needs to be seriously considered.

Using a Turf Cutter
The technique and equipment used to uncover a tombstone will depend on the depth of turf present and whether the stone is only covered by grass. All methods use cutting tools to make incisions that stop short of direct contact with the surface of the stone.

A turf cutter can be used without guards when the depth of turf to be removed is greater than the length of turf cutter blade by at least a 2.5cms (1 inch) margin (Figure 7). When the difference in size is less than 2.5cms (1 inch) a guard should be used to prevent the cutter blade from coming into contact with the tombstone surface (Figure 7). Using a guard is particularly necessary when the length of the cutter blade exceeds the depth of turf to be removed. An approved turf cutter guard design is set out in Section 3 (Figure 19).

Figure 5: Marking out the buried tombstone

Figure 6: Using turf cutter guards

Figure 7: Turf cutting round plastic markers
Cutting Around the Buried Tombstone

The first step to remove turf or grass cover from a buried tombstone is to cut around the four borders of the stone using a turf cutter (Figure 9). There should be a distance of at least 7.5cms (3ins) between where cuts are made and the gravestone’s edge to avoid damaging any carved or chamfer edges.

Removing a Layer of Turf

To remove turf from above a gravestone, the layer should be first cut into manageable sized sections (see Figure 10). In most cases this amounts to dividing the turf surface into rows of three or four squares down the length of the tombstone. These squares can then be removed using a turf cutter. Remember to set the cutter guards at a height appropriate for the depth of turf being removed (see earlier section on Using a Turf Cutter). Cuts should reach a depth just above the surface of the gravestone. Any remaining loose soil above the tombstone will be cleared away once all of the turf squares have been removed.

So that the turf can be restored neatly and easily after the gravestones has been recorded, each square should be removed and placed in sequential order next to the tombstone (see Figure 10). Turf sections should be laid aside on protective sheeting to avoid damaging the ground surface, especially grass. To ensure turf sections are restored in their proper order, it is best to avoid placing them upside down beside the gravestone and rotating them in the opposite direction from which they were removed. Mistakes can easily occur and checks should be made throughout the turf removal process.

Removing a Layer of Grass or Shallow Turf

In some cases, a tombstone will be partly, or completely, covered with a very thin layer of grass or shallow turf (measuring less than 5cms or 2ins). Grass or grass with a rooting system but little or no soil should not be cut with a normal turf cutter, as contact with the gravestone is unavoidable. This type of covering is normally able to be rolled up, or folded over and can be removed using a sharp small bladed implement, such as a pizza cutter or Stanley knife, and a protective cutting board.

Before making any cuts into the grass surface it is important to slide a protective plastic or wooden board underneath the grass layer (it might take two people to tackle this; one to lift up the grass and the other to slide the board below). A kitchen bread or chopping board can be used as a cutting board, which ideally should measure about 31.5cms (12ins) long by about 22cms (8ins) wide. The board will prevent the blade of the cutting tool scoring the surface of the tombstone (Figure 11).
Using a sharp small bladed implement, such as a pizza cutter or Stanley knife, cut the grass along the full length of the stone so that it is divided in half. A string line, or another suitable guide, can help achieve a straight cut. If needed to help the rolling back of grass, make a transverse cut across the middle to create four grass sections. The cutting and rolling back process needs at least three people; one to do the cutting and two to roll or fold the grass at the same time. After the first incision has been made, lift both sides of the cut grass or shallow turf to a sufficient height to see how the next area should be cut. If this is not possible, lift the grass and manually feel the gravestone surface to determine how to proceed with cutting. Any carvings or raised decoration and loose or cracked areas of stonework will require extra care during cutting and rolling back of ground cover. Remember to slide the board under the grass before cutting. Once the cuts have been completed, the grass or shallow turf sections can be rolled or folded over the edges of the tombstone (Figure 12).

Trees and Shrubs
Very small tree or shrub roots can be carefully cut away from the edges of an excavation area once the turf has been removed. However, if roots are substantial, careful consideration should be given to whether or not it is appropriate to continue uncovering the tombstone.

Removing Loose Soil
Having removed the turf or other surface, any remaining soil or rubble should be cleared away to expose the full surface area of the tombstone.

Spoil should be removed to allow access to the side of the gravestone to ascertain its thickness, and any edge decoration.

Metal bladed trowels (as used by archaeologists) may be used where there is no possibility of contact with the tombstone. Non-metallic tools should always be used when working in contact with, or close to, stonework. Non-metallic options include plastic trowels, shovels and plastic or Teflon coated kitchen equipment such as fish slices, spatulas or spoons. Spoil (loose soil or other material) should also be placed on protective sheeting next to the gravestone. As areas of the tombstone are revealed, they should be covered over with a protective plastic or canvas sheeting. This is especially important if it becomes necessary to kneel or stand on the gravestone. Covers will protect the tombstone surface and avoid additional cleaning of stonework, especially in conditions where the tombstone and soil are wet.

To ascertain the tombstone’s thickness and the presence of any edge decoration make a small exploratory opening at a convenient place along one edge. While working at the edge of a tombstone a plastic trowel or similar tool should be used at all times. If the stone is lying at a steep angle, or proves to be of exceptional thickness, exposure of edge areas with carved or inscribed detail may involve a considerable amount of digging. This should not be attempted without on-site professional archaeological guidance and will require additional permissions.

Treasure Trove
Researchers should bear in mind the possibility of encountering bone fragments or artefacts of archaeological importance. Artefacts such as coins, pottery, fragments of Pictish or Roman Stones, etc. may be brought to the ground surface by burrowing animals. Such discoveries may fall under Treasure Trove law (see www.treasuretrove.org.uk) and in which case they belong to the Crown. Your local authority archaeologist or local museum will be able to offer more advice or contact the Treasure Trove Advisory Panel for Scotland directly (see Useful Contacts). Historic Scotland should also be advised of any discoveries in Listed or Scheduled graveyards.

Figure 11: Peeling back grass cover
Human Remains
Any human remains, whether in situ or not, should be reported to the local police or Procurator Fiscal’s office. The likelihood of encountering in situ remains at a shallow depth is low, however, bone fragments may be exposed as the result of animal disturbance. Indeed, it may be advisable to inform the local police of your project in advance of any ground disturbance. For further guidance see Historic Scotland’s Operational Policy Paper 5 The Treatment of Human Remains in Archaeology and their electronic leaflets on graveyard health and safety (see Bibliography for availability).

Cleaning the Tombstone
Once the loose soil has been cleared off the tombstone, a final cleaning can be carried out using various sized soft brushes (new or clean paint brushes are ideal). Basic recording (description of size, shape, material, visible carvings and inscription) should be carried out before any brushing takes place in case damage occurs at this stage. Inscription lettering and carved motifs can be cleaned first with a toothbrush and then again with a fine wooden implement such as a lollipop stick or even a toothpick so that soil trapped within carved areas is fully removed. A magnifying glass may also be useful for this stage of the work.

Soft brushes, toothbrushes and wooden tools should only be used on gravestone surfaces which are stable and not likely to suffer as a result of treatment. It is not advisable to brush damp or wet stonework as this is liable to have little useful effect, merely clogging up the brush. If the gravestone surface shows any signs of crumbling, flaking or cracking the stone should not be brushed.

If there is any doubt regarding the ability of the surface to withstand brushing, treatment should either be avoided or consult a stone specialist (Historic Scotland’s Conservation Bureau can advise on stone conservators working in your area). Guidance on assessing tombstone condition and stone decay by non-professionals can be found on www.scottishgraveyards.org.uk
1.8. Recording the Tombstone

Tombstones should be measured, drawn and photographed. Basic recording should be completed before soft brushing as a safeguard in case any damage occurs at this point (see previous section). It is recommended that Council for Scottish Archaeology Gravestone and Graveyard Recording Forms are used to make a permanent record of each tombstone and graveyard site. Both forms are available to download, along with an accompanying handbook An Introduction to Graveyard Recording, from: www.scottishgraveyards.org.uk

Photographing a Tombstone

A scale indicator should be included in each photograph. A meter ranging rod can be used for full scale shots, with a smaller scale up to 25 cm in length for use in detail shots (see Section 3). A small set of steps properly founded and secured, or portable scaffolding can provide an overhead view of a tombstone and help to reduce the effects of parallax in a photograph. Health and safety requirements should be considered when setting up a shot like this. For more detailed guidance on photographing gravestones see Betty Willsher’s How to Record Scottish Graveyards and Tom Gray and Lesley Ferguson’s Photographing Carved Stones. Drawings and photographs should complement each other to provide a complete overall record of the stone.

Scale Drawings

Drawing equipment should include the usual draughtsman’s implements (see Section 3), along with a tape measure suitable for both survey work and tombstone measurement. An A3 or larger clipboard, or a portable drawing board, will provide a secure platform.

To produce a scale drawing of the tombstone, all dimensions should be recorded (i.e. gravestone length, width, thickness, width of border, location of breaks or cracks, depth at which buried, etc). Measurements should be given in metric. As stonemasons originally worked in imperial units, a tombstone’s dimensions and key measurements should also be given as imperial figures in parentheses. The sketch should be labelled to show the type of stone or other materials used to make the tombstone, and annotated to show any areas of decay or damage.

A drawing scale of at least 2mm to 2.54cms (2mm to 1 inch) will allow details to be clearly reproduced at a size suitable for publication.

Field drawings should accurately document the design and layout of each buried tombstone. All emblems of mortality or immortality, trade symbols and other decoration should be detailed, as separate individual drawings if necessary. The free booklet An Introduction to Graveyard Recording lists the more common symbols found on gravestones (see Bibliography for availability).

Drawing should also accurately document the content and layout of the tombstone’s inscription and where possible the style and details of the lettering. It is useful to draw individual specimen letters for later reference. The recording system developed for the Research in Inscription Palaeography Project by Dr George Thomson is a useful indicator of different lettering types (see Bibliography). The inscription should be deciphered as completely as possible. It is advisable that more than one person independently reads and checks both the inscription transcription and figures so that any uncertainties may be clarified. Uncertain and/or blank areas within the inscription should be indicated on the drawing. Transcriptions should be recorded faithfully “as is” to show for example, line breaks, upper and lower case letters and a (?) should be used where there is any uncertainty. Surnames can be checked against adjacent stones to identify possible family links.

Worn and Illegible Inscriptions

Experiment with differing light angles when recording inscriptions as this can help with any text which is difficult or almost impossible to read. Illegibility can be particularly acute in bright sunlight. A small mirror angled towards the sun can cast an area of light back onto the stone surface to help make text easier to read. A similar and often better effect may be produced using a torch with a beam equivalent to 2,000,000 candle power or better (available from most D.I.Y. stores). For both of these techniques try various angles and heights until you find the most suitable. The difference in clarity can sometimes be quite startling.
Where letters or numbers are very difficult to read, one method to enhance legibility is to use a finger(s), to feel the shapes in the stone. A tactile approach frequently compliments what can be read visually. A fine jet or spray of water can also help make text more legible, especially in areas where the inscription is extremely faint (Figure 18). Another ploy is the use of a fine sprinkling of sepiolite to settle into any carved recesses. Sepiolite is an inert clay in fine powder form. Contact the Moray Burial Ground Research Group at www.mbgrg.org for help with obtaining sepiolite. Sepiolite is less likely than other substances (such as domestic plain flour) to encourage biological growths if inadequately brushed off or washed away. It is important to note that this procedure should only be attempted if the surface of the tombstone is dry. Do not use talcum powder as chemicals in these preparations may interact adversely with the stone.

Broken Stones
Broken stones should be recorded in situ, with details of the break(s) documented both by field drawings and by photographs. Very fragmented stones should also be recorded in situ. Reconstruction should take place on paper and not involve moving stones. This is to avoid the risk of damage to the stone and possible loss of archaeological information.

“Blank” Stones
Researchers may find un-carved or “blank” stones which may variously be un-worked faces of a gravestone, bases from table or altar stones, or previously inscribed gravestones where the inscription has worn away. It is only through experience that stones without inscriptions or which are devoid of all detail can be confidently identified as either being intentionally blank, eroded, or lying face down. The location of these stones should still be included on the graveyard site plan, and recorded in a similar manner to other buried tombstones.

Moving and Lifting Stones
The lifting and turning of tombstones should not generally be encouraged. If an exceptional discovery is made and it becomes desirable to lift a stone in order to retrieve information from an obscured face, then the case for lifting should be referred back to the appropriate authorities for consideration. Lifting stones risks damage both to the stone and the persons lifting it, and has the potential to destroy archaeological information. A decision of whether to lift and remove a stone from its position should include consultation with the local museum and / or local authority archaeologist and Historic Scotland in the case of Scheduled or Category A Listed graveyards. Under no circumstances should any attempt be made to excavate around the plinth, socket or stump of a stone which is discovered in situ.

After consultation, and if permission is granted, whether to lift a stone must be at the discretion of the buried tombstone project team. Their decision should take into account all legal and health and safety considerations for both the team members and any visitors to the site. The members of each project team who are conducting the work bear sole responsibility for their individual safety and for any damage to any stone. No outside authorities, nor the authors of this research method, accept any responsibility for any consequences arising from attempts to lift tombstones. Guidelines on best practice for moving tombstones are set out in Historic Scotland's leaflet Emergency measures for historic memorials. A short guide for cemetery managers (see Bibliography for availability).

There are occasions when a small fragment of a full sized tombstone may be effectively lifted and replaced with no damage to the researcher(s) or the stone itself so long as common sense precautions are taken. Each small fragment must be carefully considered on an individual basis. A Risk Assessment should be completed before any lifting work is carried out. Due consideration should be given to the size, weight and condition of the stone, and the risk to both the team members, and to the stone itself, if lifting is attempted. There also may be difficulties in replacing the stone without also disrupting archaeological evidence. The stability of nearby stones should also be taken into account. Researchers should be clear on insurance requirements for such activities.

After a tombstone has been lifted, at the point of re-turfing a layer of washed sharp sand should be placed below the tombstone. Only lay down a layer of sand if this can be achieved without further ground disturbance. A layer of sand will lessen the chance of damage to the stone should
future settlement occur, facilitate the resettling process and improve drainage around the stone.

1.9. Backfilling and Reinstatement of Site

After recording a tombstone ensure that all excavated areas are immediately backfilled and re-turfed before the end of the working day.

Backfill with soil and make sure any stone fragments are re-placed in the positions in which they were originally found. Lightly consolidate the replaced soil before relaying the turf (or other ground cover) in as seamless a manner as possible. Grass or turf should not be replaced until the fieldwork co-ordinator, or other supervisor, is satisfied that all relevant information has been recorded. Grass or turf should be replaced in as careful a manner as possible. Turf should be brushed with a hard bristle brush to leave no obvious traces of disturbance. If any loose soil remains this can be unobtrusively disposed in the joints between the turf sections.

Turf should be replaced sequentially, so that each piece is fitted back into its original position. If a turf section broke when initially removed it may not easily fit back into place. In this instance replace as much of the broken soil and grass as possible and if there are any large gaps these may need to be reseeded. Turf may need watering to assist its reinstatement and provision should be made for this.

Check all tools and equipment are removed from the graveyard and that the site is safe for the general public and for operation of grass-cutting equipment etc. The graveyard should be revisited a few weeks later to check that the turfs have become re-established and that no problems have occurred.

1.10. Archiving and Publication

Making your results of your buried tombstone project available to others can take several forms including:

* Publishing the results in a format useful to the genealogist and family historian and depositing a copy of your work with the local Family History Society.

* Submitting details of your project to *Discovery and Excavation in Scotland*, an annual publication by the Council for Scottish Archaeology which details all new archaeological findings and research in Scotland. For more details and an entry form. See [www.scottisharchaeology.org.uk](http://www.scottisharchaeology.org.uk) or [www.scottishgraveyards.org.uk](http://www.scottishgraveyards.org.uk)

* Publishing results as a scientific or academic case study.

* Depositing a copy of your project archive and associated reports with the National Monuments Record of Scotland in Edinburgh as well as with the local Sites and Monuments Record.

In addition to the records of individual tombstones, the buried tombstone project archive should include the following:

* A statement of the project objectives.

* A description of the site selection process.

* A methodology statement (i.e. adoption of these published guidelines).

* A copy of the graveyard site plan.

* Copies of old plans or other documents discovered during background research.

* A list of sources consulted, including where appropriate a description of how this information refined the project’s methods and analysis.

* A list of those who took part in the survey (to include fieldworkers but also any contact with graveyard owners and heritage specialists etc.)

1.11. Health and Safety

In addition to the health and safety guidelines raised in the main body of the text, project workers should follow health and safety best practice including:

* Using protective clothing, such as safety boots and gloves.

* Ensuring that tetanus injections are up-to-date before commencing work.

Historic Scotland has produced a series of free electronic graveyards and gravestone leaflets on health and safety in burial grounds, including guidance for visitors and volunteer workers (see Bibliography for availability).
Section 2: Building a Probe

The model probe has been designed for ease of use and involves only low cost materials. The main shaft consists of an outer 14mm and an inner 10mm steel tube with a 7mm plastic rod inside (Figure 14). To prevent the inner tube and plastic rod falling out, a steel plug is fitted with a conical aperture inside the end of the outer tube (Figure 17). At the end of the inner tube which has been tapered, cut four 50mm (2 inch) long slits so that when the tube is pressed downwards it closes like a vice around the plastic rod.

The handle end is fitted with a brass 15mm pipe connection with stop end cap (Figure 16). The cap is fixed into a recess in the wooden handle by means of a small nut and bolt. When the cap is screwed down it presses onto the top ends of both the inner tube and the plastic rod and closes them down and out through the conical end.

The probe and its plastic tip work in a similar manner to a propelling pencil and lead. When the plastic tip wears down, the handle is unscrewed, the tip end is pressed or tapped against a hard surface, which pushes the inner tube upwards releasing its grip on the plastic rod (Figure 17). The plastic rod can now be pushed down to expose more of the tip. To prevent the plastic rod from being pushed upwards, a short length of the rod is inserted into the inner tube at the handle end. This is repeated each time the tip wears until the whole rod requires replacing (Figure 16).

The depth to which the probe is inserted into the ground is limited to approximately 150mm (6ins). A jubilee clip should be attached to the main shaft at the appropriate distance from the tip, to give both a visual and physical depth stop (Figure 15). The probe’s overall length can be tailored during manufacture to suit the individual who will be carrying out probing. If any difficulties arise when making a probe, contact the Moray Burial Ground Research Group at www.mbgrg.org for assistance.
Figure 16:
Detail of the probe’s shaft and handle

Wood Handle
Brass Pipe fitting with stop end
Inner Tube
Plastic Rod
Outer Tube

Figure 17:
Detail of the probe’s tip

Outer Tube  Inner Tube  Plastic Rod  Slits in Inner Tube
Plug with Conical Aperture  Plastic Tip
Section 3: Buried Tombstone Equipment Inventory

Where only a very small number of people are involved in a buried tombstone project, it may be impractical to acquire, store or utilise all the equipment listed here, therefore all items marked with an asterisk (*) are recommended, but not essential to any project. Figures 18 and 19 illustrate selected buried tombstone equipment.

### Initial preparation

01) **Notice or Sign** - a note covered in clear plastic for protection against the rain should be hung at each entrance to a graveyard while work is in progress. Information should ideally include:
   - The name of the group carrying out the project with a contact name and address.
   - Who the project is sponsored by (if appropriate).
   - A short summary of the work to be carried out and where your information will eventually be available.

02) **Clothing** - while clothing is a personal matter, it is important that safety factors and the effects of the weather be taken into account.
   - **Footwear** - strong / heavy duty shoes or boots.
   - **Gloves** - worn when working with tools and excavating soil to protect against nails, glass or other sharp objects and to lessen the possibility of infection.
   - **Knee pads**.
   - **Safety helmets** - as appropriate.

03) **First Aid** - a well stocked first aid kit should be permanently on hand.

### Surveying and planning

01) **Measuring tapes** - 30 metres (100 feet) long.
02)* **1 metre and ½ metre ranging rods**, alternate red and white - while not essential, ranging rods are very useful for measuring purposes. They are quite expensive to buy, but you can make your own quite easily by cutting sections of dowel rod to the right length and painting them or using electrical tape to mark off 30cm sections in alternate colours of red and white (Figure 13).
03)* **Surveyor’s wheel** (57cms / 22½” wheel dimension) - can be used to accurately measure the graveyard’s layout and position of each tombstone.
04)* **Surveyor’s meter extension pole** - used in conjunction with surveyor’s wheel for cemetery layout.

### Locating buried tombstones

01) **String lines** (2 minimum) - balls of string wound round a piece of wood would be adequate but gardeners’ metal string holders are best.
02) **Balls of string** (approx. 30-50 metres, 2 minimum) - for when string lines cannot be laid out in a straight line due to intervening grave markers.
03) **Probes** - for how to make a probe, see Section 2 (Figures 15 to 17).
04) **Wooden or plastic covered canes** - to mark the spot where a ‘hit’ has been made with the probe. Available from Garden Centres or D.I.Y. stores (Figure 8).

### Vegetation pruning or removal

Small branches and roots may be removed only with permission of the graveyard owner. Larger material may require specialised action by cemetery staff.

01) **Plastic bin bags** - for carrying or removal of vegetation.
02) **Heavy duty gloves** - to protect against cuts and scratches.
03) **Kneeling pads**.
04)* **Sécateurs** - for removing small roots and branches.
05)* **Rose cutters**(or similar) - for removing medium roots and branches.
### Turf and soil removal

To ensure that any surrounding grass or other cemetery surface is returned to its original condition, any soil, turf or other material which is excavated should be placed on plastic bags or sheeting.

1. **Plastic sheeting** - a roll of plastic approximately 1 metre x 2 metres for laying at one side of a gravestone to place cut turf squares upon. This plastic should be of a reasonably heavy-duty type and not easily torn.

2. **Bags / sacks** - any excess soil should be bagged in small coal type sacks or strong plastic bags, similar to the type that hold compost, etc. as found in local garden centres. These should only be filled to a level that allows them to be easily emptied back onto the tombstone.

3. **Turf cutter** (standard) - the blade should be sharp, as a blunt one is liable to damage grass, as well as making the turf more difficult to cut. (Figure 19). All metal cutters are preferable to the old fashioned, wooden handled variety.

4. **Turf cutter guards** (see Figure 19) - ideally there should be a minimum of three sizes available, to accommodate different depths of turf.

5. **Pizza cutter** - to be used in conjunction with plastic or wooden protective guard.

6. **Plastic / wooden guard** (approximately 20cms x 31cms / 8” x 12”) - to stop metal blade of pizza cutter from scraping the stone surface of the tombstone.

7. **Metal trowels** - standard archaeological type trowels. Used to loosen up the upper soil levels above and around a tombstone. These should on no account be used on the soil level immediately above the tombstone.

8. **Non-metal trowels in plastic or nylon** - for general use immediately above and on the surface of a tombstone (Figure 18). Version 1: blade length approximately 10cms to 13cms / 4” to 5”. Version 2: blade length approximately 10cms to 13cms / 4” to 5” to access difficult edges, corners, or cleaning out lettering where appropriate. Both versions may be used with confidence on the surface of an undamaged tombstone. Due to wear, these trowels will require to be renewed from time to time. Trowels shown in 2.3 are adapted from “Prestige” Nylon Palette Knives, which are widely available from Ironmongers and D.I.Y stores. These knives can easily be fashioned to the required shape by using a fine bladed saw such an electric Jig-Saw.

9. **Plastic shovel** (full size) - to remove bulk amounts of soil (Figure 18). These may be used with confidence on the surface of an undamaged tombstone. This type of shovel may be purchased from some D.I.Y. stores or specialist Ironmongery shops.

10. **Plastic scrapers** - If a metal scraper is being used in place of a trowel then it should not be used near to, or on the surface of a tombstone. In almost every situation, a plastic / nylon trowel will do the same task as its metal counterpart, but be entirely safe to use.

11. **Byre brush / besom** (or similar) - to sweep up loose material from the surrounding grass or other ground surface.

12. **Garden rake** - to rake up loose material from the surrounding grass or other ground surface.

13. **Flat spade** - to help lift turf sections. It should be inserted underneath each section while it is being separated from the stone surface. The leading edge, top and bottom surface should be covered by a strong layer of Duck Tape to ensure the metal surface does not scrape the stone surface (Figure 18).

### Tombstone cleaning

1. **Plastic cover / sack** - to place over areas of tombstone not being worked on while excavation is in progress. This will help to minimise damage to the stone surface in general, as well as protecting worn text or embellished designs.

2. **Assorted brushes** - for cleaning purposes. Do not use old, dirty brushes that have paint or other chemical residues or brushes with hard bristles (e.g. scrubbing brushes). Paint brushes or dust pan brushes are ideal. As brushes may get dirty quite quickly, so you should ensure water is on hand to clean them.

3. **Plastic scrapers** - as described above.

4. **Cloth sapper** - to remove excess water from the surface of a tombstone. Water will frequently enhance difficult or faint text. Clean old towels or similar material make good sappers.

5. **Pressure spray** - used to remove soil from text, or clean stone surface where thought appropriate. This should not be used where the surface of the tombstone is fragile or damaged. This type of spray should only be of the hand pump variety as used for emitting a fine spray to water plants. Available
in most garden centres (Figure 18).

**06)** *Bucket* - where running water is available, this will ensure a plentiful supply for cleaning.

**07)** *Byre brush* (or similar) - if the stone surface is free from damage, including any form of splitting, crumbling, flaking or weakness, and it requires cleaning to enhance legibility of text, it may be appropriate to use this type of brush. However, it may on occasion be worth using it in a scrubbing brush action, rather than in the standing position.

**08)** *Plastic container* - to hold water for cleaning purposes. Not all graveyards have running water available, so you may need to bring your own.

### Aids to tombstone recording

**01)** *Torch* (2-3 million candle power) - depending on lighting conditions this can greatly enhance faint inscription text.

**02)** *Mirror* (15cms x 31 cms) - use to reflect sunlight onto tombstone to reveal faint inscription text.

**03)** *Sepiolite* - sprinkle on very faint text or designs. This should then be very lightly brushed over the area concerned. Once it is finished with, the residue should be removed. Do not use talcum powder, shaving foam or any other substance that contains man-made chemicals.

### Drawing equipment

**01)** *Clipboard* - suitable for holding up to A3 size sheets of paper.

**02)** *Drawing paper* - A3 and A4 sheets of standard paper.

**03)** *Pencils* - suitable for drawing.

**04)** *Ruler and geometry set* - including a protractor, squares, French curves etc. as required.

**05)** *Measuring tape* - The most suitable variety are the plastic covered, metal retracting type available from D.I.Y. stores. These are generally sold at 5 metres / 16 feet lengths.

### Photographic equipment

**01)** *Camera* - every gravestone that is uncovered will need to be recorded photographically. It is also important to document the different stages of the un-covering process. Cheap, instamatic cameras are unlikely to produce suitable images. It is preferable to use a 35mm SLR with either colour or black and white print film. If using a digital camera, images should be taken at the highest possible resolution. Thought should also be given to how images are processed and stored. See [www.scottishgraveyards.org.uk](http://www.scottishgraveyards.org.uk) for more information on archiving photographs.

**02)** *Ranging rods* (1 metre and ½ metre) - to be used with at least one view of each grave marker.

**03)** *Small photographic scale* – around 25cm in length, marked off as 1cm blocks in alternative red and white. A scale can be easily printed from a computer and laminated so it is suitable to use outdoors.

**04)** *Folding steps* - small pair of kitchen type folding steps to gain additional height. It is very important for safety reasons to ensure that these steps are absolutely stable when in use. It may be necessary to provide a sufficiently large wooden base to support the steps where the ground is not entirely level.

### Other tools

**01)** *Dumping spade* - to assist in the turf flattening process when squares or sections are being replaced.

**02)** *Finds bags* - polythene bags of varying sizes should be available for the purpose of holding any "Finds" that are discovered. Any bones uncovered should be immediately re-interred, but any other pieces of glass, pottery, coins, etc. may be retained, and where appropriate, handed in to the proper authorities. The date, and other relevant details should be recorded on the bag. Proper museum type bags with text blocks are most practical. See [www.treasuretrove.org.uk](http://www.treasuretrove.org.uk) for advice.
**Figure 18: Selected buried tombstone equipment**

- Assorted Tools
- Pressure Hose
- Nylon Trowels
- Lifting Spade with Protective Tape
Figure 19: Turf cutter and guards

Turf cutter fitted with guards

Sketch showing design of turf cutter guards

Drilled bolts fitted with wing nuts for ease of fitting

Sketch showing turf cutter drilled to receive guards to limit penetration of soil to a specified depth

Drill hole

Turf Cutter Guard
Section 4: Useful Contacts

Council for Scottish Archaeology
c/o National Museums of Scotland
Chambers Street
Edinburgh EH1 1JF
Telephone: 0131 247 4119
www.scottishgraveyards.org.uk
www.scottisharchaeology.org.uk

Historic Scotland
Historic Scotland’s Conservation Bureau
Longmore House
Salisbury Place
Edinburgh EH12 9EB
Telephone: 0131 668 8600
www.historic-scotland.gov.uk

National Monuments Record of Scotland
(see Royal Commission on the Ancient and Historical Monuments of Scotland.)

Royal Commission on Ancient and Historic Monuments of Scotland
John Sinclair House
16 Bernard Terrace
Edinburgh EH8 9NX
Telephone: 0131 662 1456

Scottish Association of Family History Societies
www.safhs.org.uk

Scottish Natural Heritage
12 Hope Terrace
Edinburgh EH9 2AS
Telephone: 0131 447 4784
www.snh.org.uk

The Moray Burial Ground Research Group
www.mbgrg.org

Treasure Trove Advisory Panel for Scotland
c/o National Museums of Scotland
Chambers Street
Edinburgh, EH1 1JF
Telephone: 0131 225 7534

www.scottishgraveyards.org.uk
(see Council for Scottish Archaeology)
Section 5: Bibliography


* Free booklet available to download from www.scottishgraveyards.org.uk

** Free booklet available from the Publications Dept, TCRE Group/Historic Scotland Conservation Bureau, Historic Scotland, Longmore house, Salisbury Place, Edinburgh, EH9 1SH. Tel: 0131 668 8638. Email: hs.conservation.bureau@scotland.gsi.gov.uk

*** Free booklet available to download from www.scottishgraveyards.org.uk or from the Publications Dept, TCRE Group/Historic Scotland Conservation Bureau, Historic Scotland contact details as above.