



## A Practical Guide to Recording Archaeological Sites





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### The Royal Commission on the Ancient and Historical Monuments of Scotland

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For over 100 years, the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) has been collecting, recording and interpreting information on the archaeological, architectural, industrial and maritime heritage of the nation, creating a unique archive that offers a remarkable insight into the special nature of Scotland's places. Many millions of items, including photographs, maps, drawings and documents are made widely available to the public via the web, through exhibitions and publications, and at the RCAHMS search room in Edinburgh.

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Cover: The Scotland's Rural Past team recording earthworks in the Pentland Hills, Midlothian. DP108302











**Scotland's Rural Past** is a five year project hosted by the Royal Commission on the Ancient and Historical Monuments of Scotland, with partnership funding.

www.scotlandsruralpast.org.uk www.rcahms.gov.uk

# A Practical Guide to Recording Archaeological Sites

## Contents

inis Guide	2
1 Introduction	3

2. Getting Started

**3. Recording your Site** 17

4. Adding Measurements and Details 26

5. Creating Scaled Drawings 35

**6. Photographing your Site** 61

**7. Writing about your Site** 66

**8. Sharing your Work** 72

9. Useful Sources of Information 75





## This Guide

Scotland has a very rich historic environment. From the Borders to Shetland, and from Aberdeenshire to the Western Isles, the landscape bears witness to thousands of years of human activity dating back to the Mesolithic. The most frequent archaeological remains are the abandoned later 18th or 19th century farmsteads, and the preceding fermtouns, townships or *bailtean*, some dating back to the medieval period.

Today, most of these archaeological sites are ruinous – many with very little of the original upstanding structure remaining. Comparatively few have been researched or recorded in any detail. However, each one of them holds a wealth of information just waiting to be discovered.

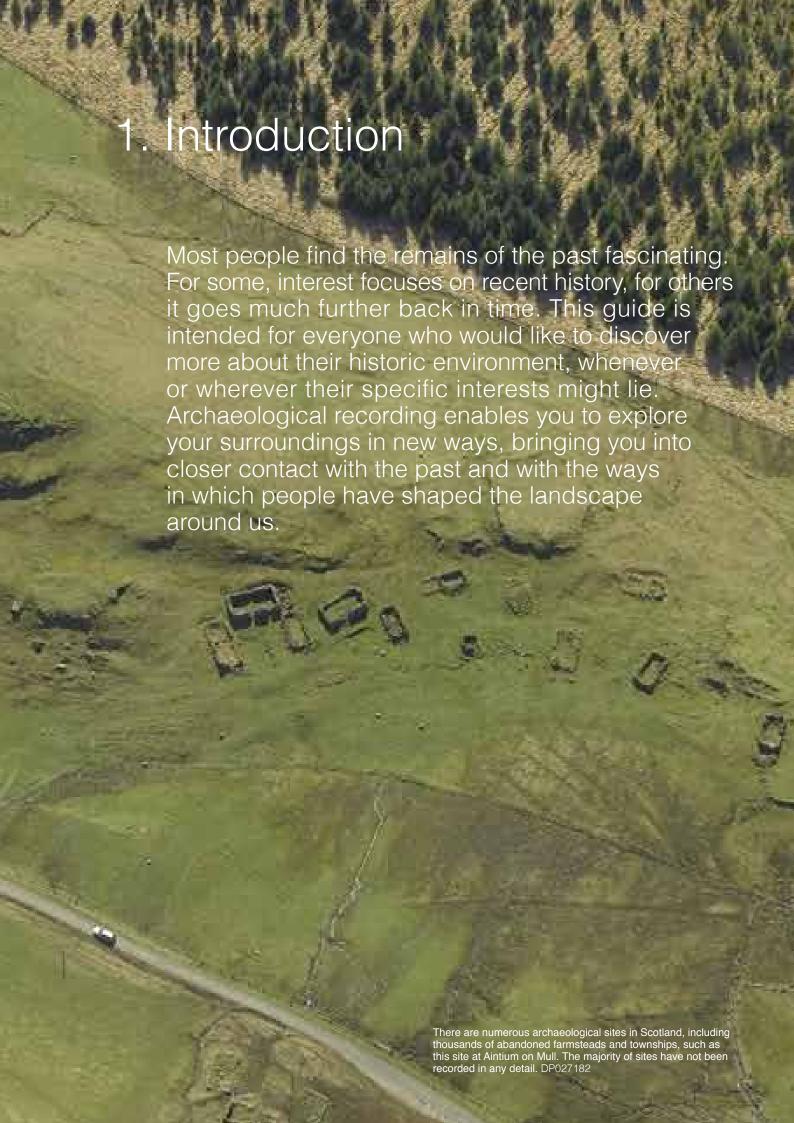
This guide aims to help anyone with some time and curiosity to explore the archaeology of the landscape around them. It focuses on how to record sites, and how to start reconstructing the past. Armed with only a few pieces of equipment, you can bring history alive. Sharing information gathered through fieldwork or research can also open up many more avenues of study. The techniques described in this guide can be used to record any type of archaeological site, however old or complex.

The guide is the product of the Scotland's Rural Past (SRP) project (2006–11). This national initiative worked with local people across the country to enhance understanding and appreciation of Scotland's rural heritage. By providing training and support, SRP encouraged volunteers to actively research, document and promote Scotland's historic rural settlements and landscapes. SRP training also ensured that best practice in archaeological site recording was understood and achieved by all who participated.

With the project now completed, this guide aims to continue the work of SRP by making the techniques used for site recording widely accessible, and by encouraging people of all ages and backgrounds to document and interpret the past. Four short training videos, each covering a specific archaeological recording technique, have also been created by SRP; these complement the information in this guide. Details about how to view these videos are provided in Section 9 of this guide.

Recording an archaeological site, such as a farmstead that may have been lived in as recently as 60 or 70 years ago, can be a very rewarding process. Anyone can have a go, and it only takes a little practice to become quite proficient. DP103105





#### What is archaeological field recording?

Archaeological recording involves choosing a site to study, then visiting it – if possible on several occasions – to understand what is there, to measure and draw it, to make notes, and to photograph the various structures or features that have survived. Recording often includes the study of aerial photographs, historic maps and other archive documents, as well as gathering local information about the place and the people who lived there. Anyone can do this research. It need not be complicated, expensive or hugely time-consuming, but it can often be fascinating, and sometimes even intriguing.

The end product may be a brief note with a sketch and photograph. Alternatively the work may become an in-depth study, with detailed drawings, descriptions and historical information drawn together from a variety of sources. The resulting report with its digital resources should be shared with others, both locally and nationally, for example by making it part of the online national database, Canmore, managed by the Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS).

#### Why record sites?

Sharing histories by investigating the remains of the past is an important aspect of our cultural heritage. Recording sites provides a sense of place, a link to long-gone ways of life and, potentially, connections with specific people who once lived or worked in the area. It can also be very enjoyable. The results can be extremely useful to others studying the past, or to those involved with protecting sites and providing professional advice about an area or particular location. The more detail available on archaeological sites in the national and local records, the greater the potential for appropriate conservation and management of these places.

The information can be used to develop opportunities for access, interpretation and education. Archaeological and historic sites can become an integral part of the present and future; no longer unrecognised, but valued for their own contributions, no matter how small, to the nation's history and our sense of belonging.

Careful observation of an archaeological site is fundamental to good recording. Understanding and interpreting the landscape in which it is located is important as the setting may help you determine what the buildings were used for. DP098328



1. Introduction 5

#### What do we know already?

Information about archaeological or historic sites is gathered, managed and made available by RCAHMS. Its records have information about hundreds of thousands of sites, many of which are accessible online via Canmore (see Section 9). Further information is often available locally. However, the details available for each site can vary enormously, and many thousands of sites have yet to be recorded at all.

While professional archaeologists are recording their excavations and surveys on a regular basis, their input tends to be linked to sites affected by commercial developments. The work of interested individuals and groups is therefore of huge importance if we are to understand more about Scotland's past.

Some volunteers have been recording sites for years. Others have only recently started through their involvement with the Scotland's Rural Past (SRP) project. Although SRP has ended, much more can still be achieved by local people. Hence this guide.

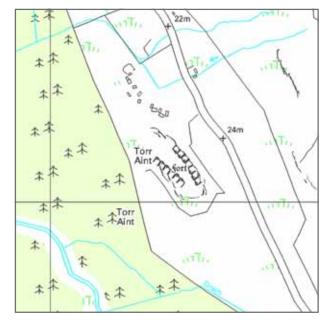
#### What is already mapped?

Modern Ordnance Survey (OS) maps don't just record buildings and features in use today. Depending on the scale, these maps also note roofless structures, old field walls, abandoned industrial features, and other archaeological sites. However, these historical features generally only appear as lines on the map, with little, if any, further description.

Many archaeological sites don't even appear on OS maps. They were either unknown to the OS surveyors, or were not considered worth depicting. Where the remains are merely low walls or bumps in the ground, they may have been below the standard height of features recorded. For features that don't appear on OS maps, an archaeological record may be the only account of that site, and you may be the only person with the opportunity to create it.

The outlines of the roofless buildings that make up abandoned settlements are often noted on Ordnance Survey maps. These two extracts are of the site at Aintium on Mull. The left-hand one is from the recent OS map, the right-hand one is from the 1st edition Ordnance Survey map showing Aintium township (Argyllshire sheet LII. 1882).

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#### The origins of recording

The foundations of systematic archaeological recording through measuring and drawing were laid in the later 18th century by antiquarian societies like the Society of Antiquaries of Scotland (founded in 1780). Antiquarians came to recognise the need to increase understanding of 'ancient monuments'. Recording was also a response to the growing threat to the survival of these monuments in a landscape that was undergoing rapid change due to agricultural improvements.



The use of visual images to record and help preserve sites and buildings was fundamental to antiquarian thinking. Significantly, by the later 19th century, those that led the antiquarian societies also realised the need to employ people with appropriate skills to improve and disseminate knowledge about such sites. Hence the establishment of government-funded organisations such as RCAHMS (founded in 1908).

Glass slide showing a late 19th century drawing of shieling huts at Auchengaich Burn, Argyll and Bute. Original drawing by W A Donnelly but its exact location is now unknown.

J Harrison Maxwell Collection, Copyright RCAHMS.





1. Introduction 7

#### What to record?

Scotland's countryside has plenty of evidence of abandoned settlement and land-use from all periods, from the Mesolithic to the present day. Tapping in to local knowledge or looking at large scale OS maps may provide a focus for study; or perhaps you have stumbled across some intriguing ruins while out walking, and want to find out more. Local history groups or schools may have a study already in mind. Wherever you find ruins or humps and bumps in the ground, a past is waiting to be revealed which may not have been investigated by anybody before. The techniques outlined in this guide can be used to record most types of archaeological site.

#### Who can do it?

Anyone can! Previous experience or knowledge is not essential. All you need to start are good observational skills and an understanding of what you would like to achieve, whether that be a simple record of a single site or an in-depth study of a whole landscape.

#### When to record?

Recording can be done at any time of year, as long as the landowner is sympathetic, the work doesn't interfere with any land management activities or livestock, there isn't snow on the ground, and it is otherwise safe to do so. If the area is bracken-infested, it is easiest to record sites in the spring – after the bracken has died back and before it starts to grow vigorously again. At other times of year you should bear in mind the possibility of tick infestations, the presence of adders, or other hazards, and take appropriate precautions.

#### **Anything else?**

You can work on your own, but it helps to explore with other people who will see things differently from you and can discuss your observations with you. Working with others will also minimise the risk of accidents in the rural environment, or at least enable appropriate action to be taken if you do need to get help. Expensive tools are not required, as you can create an accurate and detailed site record with just a few simple items of equipment.

Some of the techniques used for recording archaeological sites might seem relatively complicated before you try them, but they can soon be mastered by most people, regardless of age or previous experience. DP031236



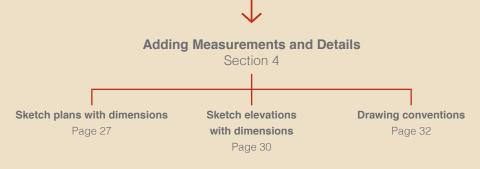
#### How to record?

#### Steps to take

This chart gives you an idea of what recording an archaeological site involves. You may wish to produce summary records for a number of sites, or you might want to study a single site and record it in detail. Whatever the case, following these steps will enable you to achieve your aim.



Having got this far you can develop your skills by recording in a bit more detail...



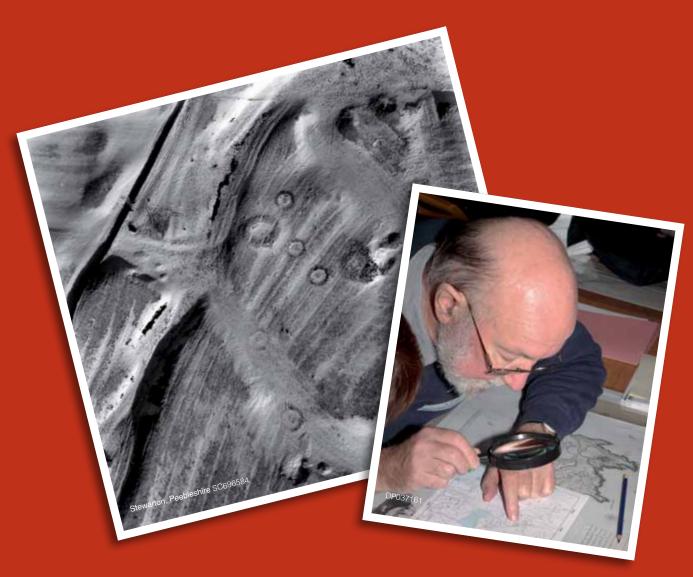
And now you can develop your skills even further...



## 2. Getting Started

In this section you will learn what to do, mainly at home, before you start your fieldwork by:

- Locating a site on a map
- Checking existing sources
- Speaking to others
- Gathering together everything you need



#### Introduction

Exploring the countryside often starts by looking at an OS map of the area. 1:25,000 scale maps are good because they depict field boundaries, old tracks, abandoned buildings or industrial sites, and other archaeological features. Having started to explore using a 1:25,000 map, you may decide to focus on the history of a particular area.

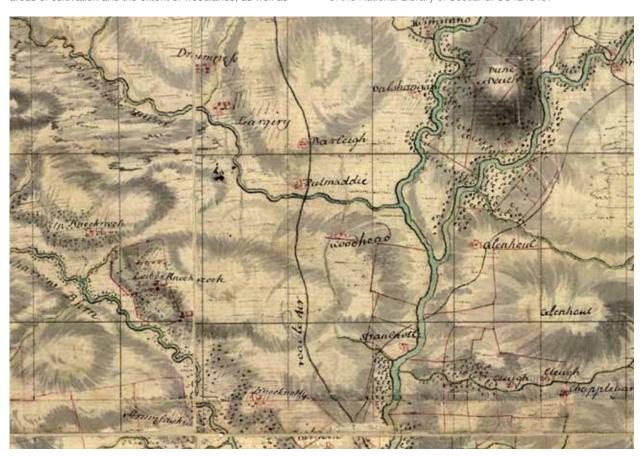
A little background knowledge about what you are likely to find on the ground is crucial for when you start doing fieldwork. There are various sources of information noted in the reference section at the end of this guide, which you might find useful. The Making of Scotland series, for example, consists of twelve slim paperbacks that provide an introduction to all periods of Scottish archaeology and history. The volumes by Robert Dodgshon and Piers Dixon are particularly relevant to rural settlement sites. The Forestry Commission and Archaeology Scotland have both produced extremely useful guides to identifying archaeological features in the landscape which can be downloaded from the internet (see Section 9).

There is a range of books that focus on farm and other buildings, some of which are also noted in Section 9. A useful source of information is *Buildings of the Land*. This book reviews the field evidence for architectural changes on farms across all parts of Scotland from the 18th to the 20th centuries, and demonstrates how useful historic estate plans, drawings and photographs can be. A few of the other references have glossaries that explain the terms commonly used by architects and others.

You could also look at what others have already done, perhaps as part of the Scotland's Rural Past project. Details of all participating projects are given on the SRP website. You could join an active local history or archaeology group, or contact a local authority archaeologist for guidance.

All these approaches will help you develop an understanding of what is likely to have survived in the countryside, the historic information that can be gathered, and how it might be interpreted. Then you can decide which site or area to investigate and record.

Historic maps are fascinating sources of information about how the landscape has changed over time. General Roy's Military Survey of Scotland (1747–55) records the sites of settlements, areas of cultivation and the extent of woodlands, as well as numerous topographical and place names, as shown in this extract centred on Polmaddy in Dumfriesshire. Reproduced with kind permission of the Trustees of the National Library of Scotland. SC1243157



2. Getting Started 11

#### Locating a site

Once you have decided which site you would like to record, the first step is to confirm its location, its name, and its National Grid Reference. The name of the site will either be given on the map or should be taken from the nearest named feature noted on the map.

Using a 1:25,000 map, you will need to note the two-letter map sheet reference, given at the corners of the map. Then it should be possible to record the eight-figure grid reference (as shown below). This information will enable you to search for existing sources held in map-based online systems, like Canmore.

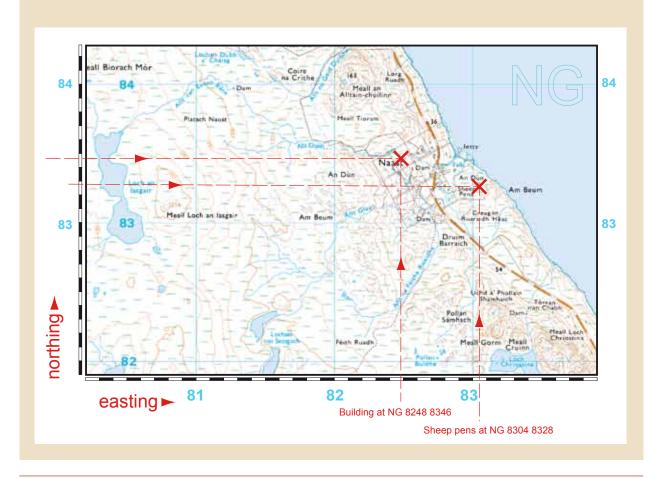
#### Reading a Grid Reference

Reading a National Grid Reference from a 1:25,000 OS map takes a bit of practice if you haven't done it before. The blue lines divide the map into square kilometres, each with a blue number. There are also black and white bars along the edges of the map, representing 100m divisions. Within each kilometre square, there are ten of these divisions, starting at zero and ending at nine. You should be able to take an accurate eight-figure grid reference using these divisions, as shown in this figure.

First note the map sheet reference, which appears in each corner of the map. In this example from the OS Explorer Series Sheet 434, the reference is NG. Next, read the easting – these are the horizontal numbers in blue on you map. The eastings increase across the map from left to right.

You might want a ruler or a straight edge to help you line up the location of your site with the easting. Note the two-digit blue numbers – these form the first two digits of your easting – then count the number of black and white bars to your site within that kilometre square, starting at zero. This should give you the third digit of your easting. Your fourth digit can be estimated by eye from the subdivision of the relevant bar into ten. When you have noted these numbers, read the northing in the same way – the northings are the numbers which increase vertically up the map. When you have noted the northing, you can put your Grid Reference together as shown in this figure.

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#### Checking archaeological databases

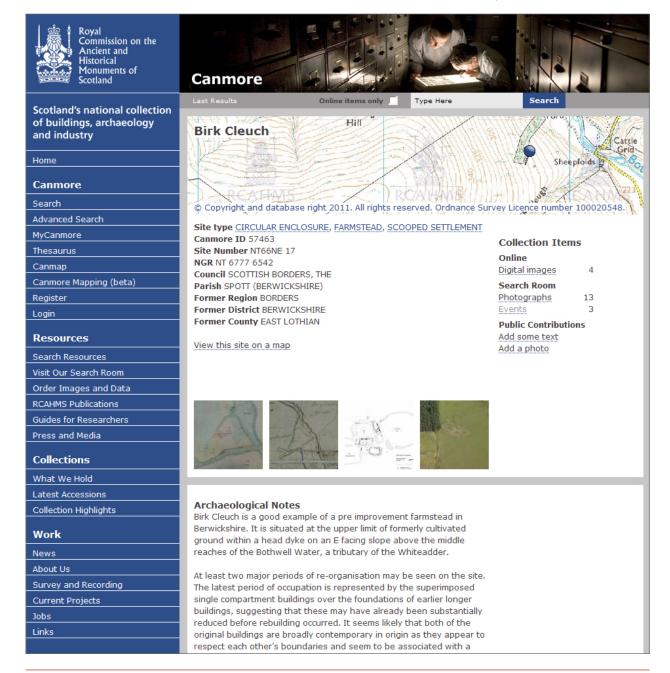
There are a variety of sources you could check for anything that is already known about a site. It may be that it has already been recorded in great detail, in which case you should not be disappointed; there will probably be other sites in the area that have not been documented. Checking existing sources can, in many instances, be done online. The website addresses and contact details for all of the sources mentioned here are listed in Section 9.

Hundreds of thousands of records are held in Canmore, such as this one for Birk Cleuch in Berwickshire. Canmore entries may include maps, descriptions, digital photographs and scans of plans, as well as lists of the documents and images donated to RCAHMS. Members of the public may also have added information.

#### **RCAHMS**

RCAHMS is one of the key sources for existing information about ancient and historical sites. The organisation has been collecting, recording and interpreting information on the archaeological, architectural, industrial and maritime heritage of Scotland for more than a hundred years, and its archive offers a unique insight into the special nature of Scotland's places.

Canmore, the online window to the RCAHMS database, enables you to search for information on buildings, sites and monuments, and maritime features such as wrecks. A search on Canmore may be made via a place-name, a particular type of site, or a National Grid Reference; online searches can also be map-based.



2. Getting Started 13

Records may contain details of sites, images, summaries of previous work, and references to archive material deposited at RCAHMS or elsewhere. Alternatively, your site may just be noted as a name and grid reference, or it may not appear in the national database at all.

#### **Historic Scotland**

Some abandoned rural settlement sites are protected by law: they are known as Scheduled Monuments. You will need to check the Historic Scotland website to find out whether the site you have chosen is scheduled (see Section 9). If it is, you may need to contact Historic Scotland for consent to record it in detail.

#### Regional sources

There are various other sources of information relating to the regional historic environment. These are maintained by local authorities and are known as Historic Environment Records (HERs) or Sites Monuments Records (SMRs). These databases include all known archaeological and historical sites, buildings and some maritime features in that region. Some can be fully accessed online, while others can only be studied in detail by making an appointment to view.

#### Checking aerial photographs

Aerial photographs provide a dramatic visual record of the landscape. Based at RCAHMS, the National Collection of Aerial Photography (NCAP) includes photographs taken by the RAF and Luftwaffe, the OS and, most recently, RCAHMS. Captured over the last 70 years, these images can be a very useful source of information about your site and its setting.

A rapidly growing selection of photographs is available online, but full access to NCAP is only available by visiting in person.

There are other sources of aerial photography that you may find useful. Online resources such as Google Earth and Bing maps may prove particularly helpful.

#### **Aerial photographs**

Aerial archaeology began in Britain in the aftermath of the First World War. It was OGS Crawford, the first Archaeology Officer at the OS, who realised its potential for recording and understanding archaeological landscapes. He recognised that, in the right conditions, aerial survey could even record sites that were no longer visible on the ground. Since the Second World War vertical aerial photographs have increasingly been used by the OS to update maps. This process has led to the transcription of archaeological data from the aerial photographs, a process known as air photo mapping.

The map-like quality of vertical photographs means that details about the archaeology can be added to an existing map base. Rather than vertical shots, the aerial survey programme of RCAHMS takes oblique photographs. These are taken at an angle to the ground, which means that transcribing them onto scaled maps is a more complex process. Nevertheless, the photographs are an extremely useful source of information because they have been taken specifically to record archaeological data.

Bail' a' chlaidh, Argyll and Bute. RCAHMS oblique digital aerial photograph. DP027317



#### Checking maps and plans

Historic maps and plans, both published and hand-drawn, can provide fascinating snapshots of the development of a site and its setting through time. Collections are held nationally in Edinburgh, and in many libraries, museums and archives across the country (contact details for these organisations are on the ARCHON website, noted in Section 9). Other historic maps and plans are held privately. Some have been listed by the National Register of Archives for Scotland, from whom further information is available.

#### Maps at the National Library of Scotland

The Map Library of the National Library of Scotland (NLS) in Edinburgh has the largest collection of printed maps in Scotland. It includes all editions of historic OS maps as well as numerous maps and plans produced for other organisations and individuals. Some of them can be viewed online, including Timothy Pont's Maps of Scotland from the 1590s, William Roy's Military Survey of Scotland (1747–55), and the 1st edition 6-inch OS maps of 1843–82.

#### Plans at the National Records of Scotland

The National Records of Scotland (NRS, previously know as National Archives of Scotland) also has a fine map collection, the catalogue for which is available online. In particular, it holds the largest collection of hand-drawn estate maps and plans in Scotland, compiled during the 18th and 19th centuries. These maps and plans often contain great detail relating to patterns of settlement and land-use, making them an invaluable source of information for understanding how landscapes have changed through time. An increasing number of maps and plans held at the NRS may be viewed online at ScotlandsPlaces. This website lets users search across different national databases, including Canmore, the National Library of Scotland and the National Records of Scotland, using geographic location. More information about the ScotlandsPlaces website can be found in Section 9 of this guide.

#### **Estate maps and plans**

Estate maps and plans were produced in large numbers between the 18th and late 19th centuries. Independent surveyors produced the plans as tools to help landowners to manage and improve the productivity and appearance of their properties. These drawn surveys also provided a means to showcase the extent of an estate owner's holdings.

They are an important reference source because they are often the earliest cartographic record of land-use and settlement at a large scale. Estate maps and plans have particular value when researching landscape-scale change.

Estate plan of Naast Township from Campbell Smith's Gairloch Estate Survey c1844–5.
Reproduced with kind permission of the Gairloch and District Heritage Society. DP087401



2. Getting Started 15

#### **Ordnance Survey maps**

The first national survey of the British Isles began in 1791 under the Board of Ordnance, which was charged with producing accurate 1-inch to the mile maps. Re-named the Ordnance Survey (OS) in 1798, their work expanded during the 19th century. Survey work began in Scotland in the 1840s and precise maps of all areas were published over a 40 year period at 6-inches to the mile (1:10,560). Maps at the larger scale of 25-inches to the mile were also produced at this time, covering about half of Scotland, while selected urban areas were surveyed at 60-inches to the mile (1:1,056, or ten times the 6-inch to the mile scale). Full coverage at the 25-inch scale was never completed, but Britain has been regularly re-surveyed at various scales and new editions of the maps have been issued.

The 1st, 2nd and 3rd editions of 6-inch OS maps (surveyed between 1843 and 1912, and published between 1847 and 1949) give particularly useful information on how a place altered between the mid 19th century and the early 20th century. On occasion, some information on one map is not carried through to a new edition, because decisions changed about what to publish. Nevertheless, large scale OS maps are one of the main sources used when preparing for archaeological recording. Since 1969, the OS have published their maps using a metric scale, 1:50,000, 1:25,000 and 1:10,000 being the ones used and updated most regularly.

Compare this scanned extract of the 1st edition Ordnance Survey map of Naast, Highland, with the estate plan of Naast, shown opposite (Ross-shire sheet XXXII. 1881).



#### Speaking to others

Before you undertake any fieldwork you should get permission from the landowner to access the site. It would be useful to look at information on access rights and responsibilities in Scotland by reading the Scottish Outdoor Access Code (see Section 9). It will also be vital to have consent if you need to cut back any undergrowth, such as gorse, high bracken or brambles, to enable you to see all of the features associated with a site and to record them. Care will be needed to avoid destabilising any upstanding walls while removing vegetation.

The owner may well have a wealth of information about the site. They may also know of others in the area with knowledge of its history, or be able to recommend locally produced publications. It is always worthwhile checking that you are not repeating what others have already done, but may not have passed into the public domain.



Preparing for archaeological fieldwork by checking a range of existing sources can be highly informative and very worthwhile. DP036764



#### Gathering it all together

Gathering together all the various pieces of information already known about your site is a fascinating task. It includes acquiring copies of maps, plans and aerial photographs. It involves speaking with people to find out what they know about the site or area. These may be local archaeologists or historians, local authority staff at the library, museum, archive, historic environment service or planning department, and certainly the landowner and tenant.

Before you go out to look at your site in detail, you will also need to collect together drawing and measuring equipment, as well as a camera and notebook. Once you have everything you need you can go and check what can still be seen on the ground.

#### **Sourcing equipment**

You should be able to source all of the basic equipment you need from art shops, hardware stores and outdoor specialists. More specific tools may need to be sourced via the web. Enter the name of the item in your web search-engine and mail-order survey equipment suppliers will be identified.

#### What to do next

In this section you have learnt how to get started and prepare for fieldwork using maps, plans and existing sources of information.

You are now ready to go out and record your site, and there is a range of techniques that you can use. In the following section, you will learn how to create a summary site record, before moving on to produce more detailed, measured site plans, photographic surveys and written descriptions.

## 3. Recording your Site

In this section you will learn how to understand your site and create a summary record in the field by:

- Observing
- Sketching
- Mapping



#### **Observing**

Preliminary recording of an archaeological site consists of looking and learning, sketching what can be seen, making some notes and taking a few photographs. Each step is important. You will be recording your understanding of the remains, based on what you can see.

Site recording requires a clear understanding of what is there, built on your observations. If it is not understood on the ground, then measuring and drawing is not likely to improve that understanding. The better your understanding, the better your record will be.

As this process of looking and learning is fundamental to creating a good site record, it is worth investing as much time as you can to try to understand the features before you put pencil to paper.

Critical observation is crucial when recording archaeological sites. Walking around and across a site, you may find it helpful to discuss what you can see with other people that are with you. This is because the recording process is often a subjective one and people see or interpret archaeological features in different ways.

These stony, turfed-over humps and bumps are the remains of the pre-improvement farmstead at Birk Cleuch, in Berwickshire. This is one of the sites that features in this guide. It is also in the videos on recording archaeological sites, detailed in Section 9, which can be downloaded from Canmore. DP103169



3. Recording your Site 19

#### **Sketching**

Drawing a sketch is the most effective way to gain an overview of any archaeological site. It is often the most important step in site recording. The process helps you consider the way in which a site is laid out and its place in the wider landscape. It leads to a better understanding and interpretation of the features you observe. Sketches are the sorts of records that professional archaeologists produce when they are surveying landscapes. It is these accounts that provide the details that form the core of the record.

The key features you are aiming to record in your sketch are:

- the approximate size of buildings and other features
- their spatial relationship
- the materials used in their construction
- where possible, the order in which they were built or altered.

The method is straightforward to learn and, once mastered, need not take long to carry out. In addition to the information in this section, a short step-by-step training video is available (see Section 9).

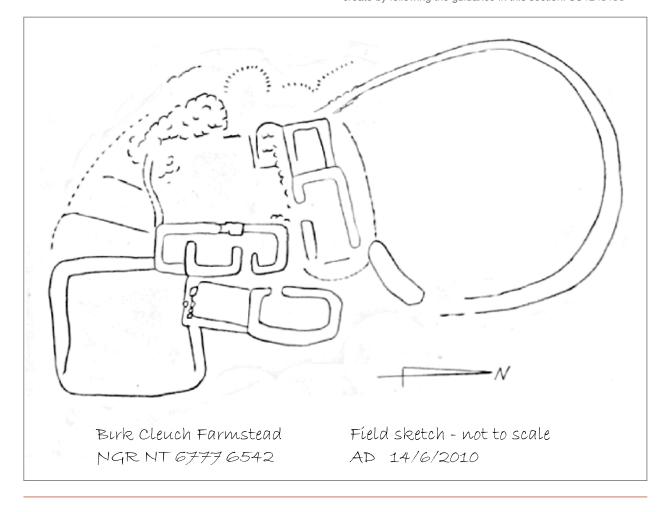
#### Equipment

 Notebook (paper or waterproof paper) or clipboard (with paper, waterproof paper, or polyester film fastened with masking tape)

66666

- 2. Magnetic compass
- 3. Pencil (test whether HB, 2H, 4H or 6H is best for you)
- 4. Eraser and pencil sharpener
- 5. Camera
- 1:25,000 or 1:10,000 OS map of the area
   If available:
- 7. An extract from the 1st and/ or 2nd edition 6-inch OS maps showing the site
- 8. Hand-held GPS

While the photograph shows Birk Cleuch as a series of humps and bumps, this sketch plan makes sense of it all. You can see the footings of three rectangular buildings and the remains of two enclosures. This is the sort of sketch plan that you can create by following the guidance in this section. SC1243196



#### **Starting**

You may like to trace off relevant information about your site from an enlarged copy of the 1st and/or 2nd edition 6-inch OS map, modern 1:25,000, or 1:10,000 OS map, vertical aerial photograph or satellite image (eg from Google Earth) to form the basis of your sketch before you begin. Alternatively, you can start from scratch.

#### Observing

Walk around your site and the surrounding area. It may be possible to find an elevated position from where you can get a good view. Such a location will enable you to observe and understand the site in its entirety.

You will also need to look at individual structures from a variety of angles. There will be a range of features to consider: the number of structures, their shape, and how they relate to each other.

If your site is an abandoned rural settlement, the ruins may have particular elements like door or window openings, or byre drains. There may be evidence of different phases of construction, like blocked openings or abutting walls. You may also wish to include some information about the physical setting of the site on your sketch.

Some sites may have additional features, such as a stack yard, a kiln, a horse-mill, enclosure banks or dykes. These also need to be included on your sketch. Some buildings may have other details, like recesses or fireplaces in their walls, which should be noted too. Examples of the various structures and details that you may encounter can be found in some of the books listed in Section 9.

#### Drawing what you can see

When you are ready, choose which way to orientate your paper or drawing film (ie portrait or landscape) so that, if possible, you can fit all your site on one sheet. Then draw the outlines of the structures or earthworks, as shown on page 19, as far as possible showing the shape of the inside and outside of each structure.

When you are doing this, imagine that you are slicing through each structure horizontally, around 0.5m above the ground. If you are drawing earthworks, you will be recording the ground plan of the features. Add any other features you feel are important, like tracks or field dykes, rocky outcrops, or the route of a burn. Elements like door openings and fireplaces are most easily added if you have drawn the buildings with a thickness to their walls (as opposed to a single line outline).

As you move around the site you may also wish to make a note of the length and width of each structure, or the diameter of circular structures such as hut circles. You can do this by pacing the length of the exterior or interior and recording these approximate measurements on your sketch, noting whether they have been taken from the inside or outside of the structure. You could also note the thickness and height of any walls, using relative measurements, as described opposite.

For turf-covered stone structures where the outline is less obvious, such as Birk Cleuch on page 18, look for any facing stones that define the edges of the structure, and use these to determine its shape and dimensions.

For earthworks with no obvious facing stones, you will need to identify where the angle of the slope of the earthworks changes (called the 'break of slope'). The break of slope defines the edges of a feature and can be used to record its outline and dimensions, as shown in the figure opposite, and in the Hachures box on page 33.

#### Labelling your sketch

It is good practice to label the structures and features on your sketch, adding as much information as you want. Use a compass and record the north point on your sketch, along with the name of the site and the date of your work. In addition, use the 1:25,000 or 1:10,000 OS map to work out the eight-figure National Grid Reference for the approximate centre of the site, and note it on your sketch.

If you wish, you can use your hand-held GPS to note a ten-figure Grid Reference. You should wait until the GPS is receiving data from at least seven satellites to maximise the accuracy of the reading. Even so, if you record the location this way you'll need to note the accuracy of the reading. If your GPS doesn't provide this information, you should still add a note to the sketch stating that the grid reference is based on a GPS reading.

3. Recording your Site 21

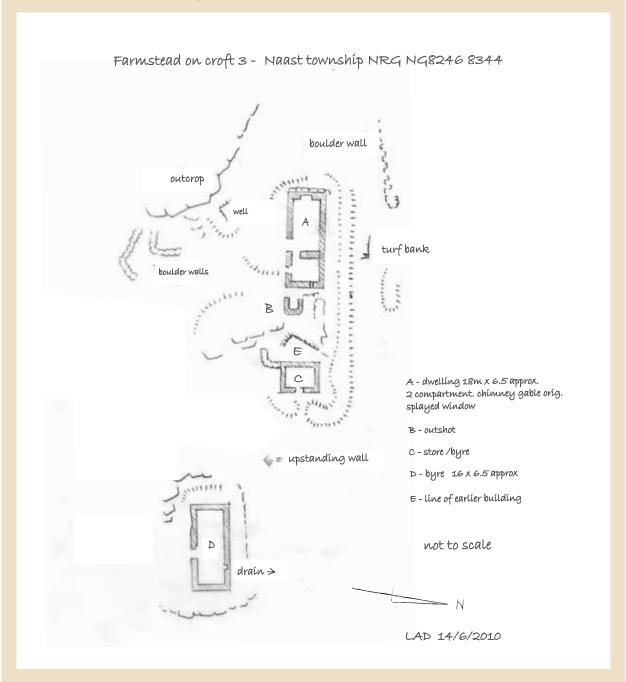
#### **Measurements**

You don't need to have a measuring tape because the dimensions on a site sketch are approximate. However, it may help you to note the following:

- How long is your stride? You can find this
  out by laying out a 30m tape and then walking
  along it using your ordinary stride. Divide the
  total number of strides by the distance walked
  (ie 30m) to get the average length of
  your stride.
- What is the distance from fingertip to elbow?
   You can use this measurement for the thickness of a wall, for example.

 How tall are you and how high is your knee, hip, waist and shoulder? Once you know these measurements you can use them to estimate the height of walls or banks.

This sketch plan of the remains of the farmstead at Naast, in Wester Ross, has been labelled with vital information telling us the name of the site derived from the OS map, where it is (National Grid Reference), its orientation, when the sketch was created, and by whom. Individual structures and features have been annotated so that the record can be easily understood by people who are not familiar with the site. SC1243202



#### **Mapping**

You may also want to record the location and form of archaeological features around your site, in the wider landscape. These might be linear features such as field banks, dykes, tracks, or other archaeological structures. It is not advisable to use GPS for detailed mapping of small features such as buildings.

If these features are already shown on the OS map or aerial photograph, you can simply copy them onto your site sketch. If they are not already recorded, you could map them using a hand-held GPS. In addition to the information in this section, a short, step-by-step training video is available to help you (see Section 9).

#### **Using your hand-held GPS**

Having sketched your impression of the shape or route of a feature that isn't already on the OS map, you need to add GPS grid references to your drawing. If you are recording a small mound or structure it is sufficient to take a single reading over the centre of the feature. If you are mapping a field dyke you will find it useful to note GPS grid references roughly every 100m or wherever there is a major bend in its alignment.

However, a hand-held GPS is generally only accurate to around  $\pm$  7m at best. This means that, even when it is taking data from as many satellites as possible, a hand-held GPS grid reference could be as much as 14m away from the actual point as recorded on an OS map. You will therefore have to adjust your grid references so that you can accurately plot your features onto your site sketch, as shown opposite.

Trainees at Arichonan township, Argyll and Bute, learning how to take hand-held GPS points. DP013573



#### Step 1

First, enlarge your map, as suggested in our guidance below. Then take a sheet of polyester film and draw a grid of 5cm squares over it. This grid will enable you to plot the readings from your GPS. Place this grid sheet over your map enlargement, matching a corner of the map grid with that on your sheet. Secure both sheets to your clipboard.

#### Step 2

Identify three well-spaced features on the map enlargement, at least 50m apart, where you can take GPS readings. Corners of buildings or fields, or wall intersections, are good examples. Check that they are accessible on the ground as these will be your 'reference points'.

#### Step 3

Take a GPS reading at each of the three reference points. Plot them onto the gridded sheet. Don't worry that they do not match the positions given on the underlying enlargement of the map.

#### Step 4

Then take GPS readings along the feature you wish to record. Plot these onto your gridded sheet.

#### Step 5

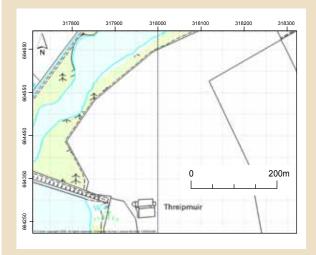
Release the gridded sheet from your clipboard. Slide it over the map until the plots of the three reference points coincide with the actual points on the map. The unmapped feature you are recording will now be in the correct place on the OS map.

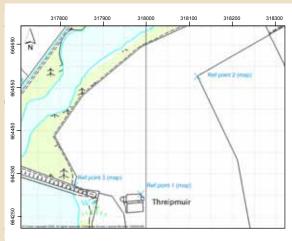
#### Step 6

You can then trace off the site features from the map onto your gridded sheet. This will give you a map of your site. You may wish to add further information from your field observations.

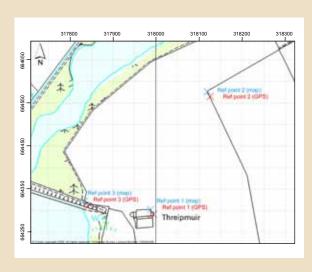
3. Recording your Site 23

#### **Correcting a series of hand-held GPS points**

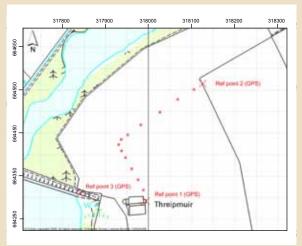




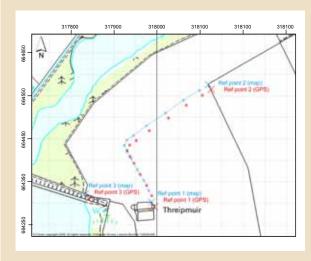
Step 1



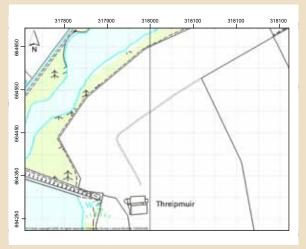
Step 2



Step 3



Step 4



Step 5

Step 6

Threipmuir Farm, Midlothian
© Crown copyright and database right 2011. All rights reserved. Ordnance Survey Licence number 100020548.

#### **Enlarging your map**

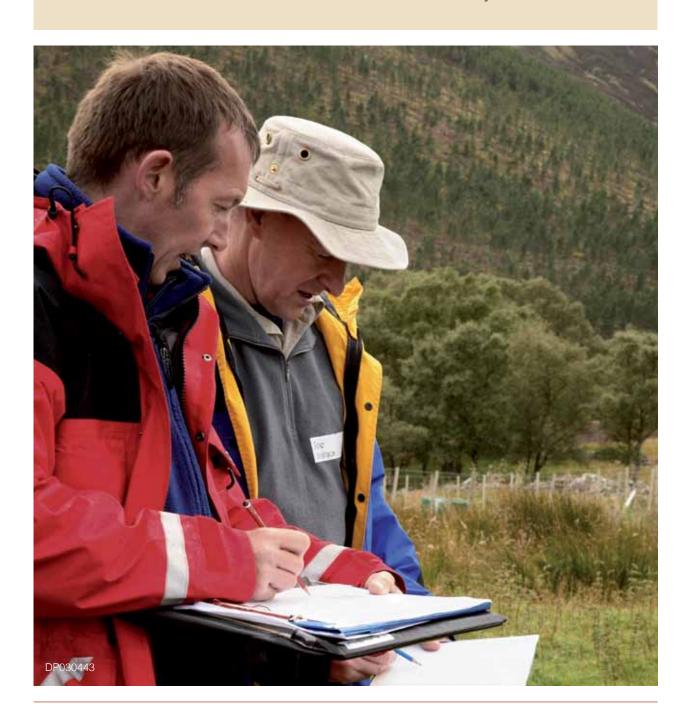
The simplest and most accurate way to enlarge an area of a paper map is by using a scanner. For example, if you have a 1:25,000 map base, scanning the area in which you are interested at 250% will enlarge that area to 1:10,000. If you have a 1:10,000 map, you can increase its scale to 1:5,000 by scanning it at 200%. Remember to select the Colour Photography option on your scanner, where this exists, and to save your scan at a high resolution, such as 300dpi.

It is not generally advisable to enlarge your original map by more than 250% as the quality will decrease.

It is also not advisable to use a photocopier to create a map enlargement, as it will tend to distort your image.

Digital extracts of 1:250,000 and 1:50,000 raster maps without contour lines can be downloaded free for all areas of the country from the Ordnance Survey website, using their Open Data facility. There is also a wide variety of raster maps at other scales and formats, but extracts of these currently need to be purchased via the website.

www.ordnancesurvey.co.uk



3. Recording your Site 25

#### **Next steps**

#### Photographing your site

Once you've completed your sketch, the next step is to photograph your site. More detailed guidelines are given in Section 6, but the key points to remember are:

- your choice of views is important, so choose them carefully
- you may need to return to the site under different lighting conditions to make sure that some parts aren't in deep shadow
- as you take each photo, note what it is showing and where it was taken from. You can add this to your sketch as well as writing it in your notebook.

#### Writing a description of your site

The other useful step is to create a written description of your site. This doesn't have to be very long or detailed, but it does need to contain information about the physical setting of the site, what it consists of, general details of its component parts, and information from historic maps if you have them. Guidelines for writing site descriptions are provided in Section 7.

#### Sharing with others

This is the sort of record that can be submitted for inclusion in national and local records, as detailed in Section 8 of this guide.

#### What to do next

In this section you have learnt how to sketch your site and map features using a hand-held GPS to produce a summary record.

You now might want to complete the summary record of your site by photographing it and writing a site description (see Sections 6 and 7).

Alternatively, you might want to produce a more detailed record of your site. You can do this by adding measurements and detail to your sketch, as set out in Section 4, or by creating a scaled plan of your site, as described in Section 5.

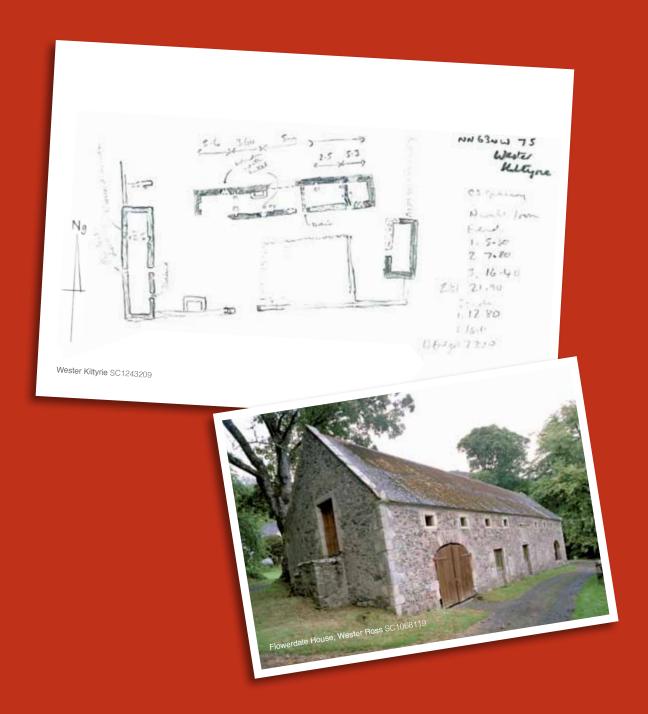
Whatever you do to complete your record, remember to share what you have done with other people, for example by following the suggestions in Section 8.



## 4. Adding Measurements and Details

In this section you will learn how to:

- Produce sketch plans with dimensions
- Create sketch elevations with dimensions
- Add drawing conventions



#### Sketch plans with dimensions

#### What are dimensioned sketches?

Dimensioned sketches are used to record upstanding buildings or ruins with walls standing above the level of the ground-floor window-sill height (ie about 0.5m above the ground). A measuring tape is used so that dimensions can be noted accurately.

As with a sketch, a dimensioned sketch represents a building that has been sliced through horizontally, just above the level of the ground-floor window sill. Even if less height survives, you still need to imagine that your plan is a horizontal slice through the structure at sill level. If a building has more than one storey, then a separate plan is usually produced for each floor, drawn at sill level.

Dimensioned sketches are not generally advised for recording earthworks or turfed-over remains of structures or features. If you are recording a site of this type, adding approximate, paced distances to your site sketch will usually provide sufficient information. If you want to record turfed-over remains or earthworks in more detail, the best next step is to record them to scale using the tape-and-offset or plane table methods described in Section 5.

#### Equipment

- 1. Your site sketch
- 2. Notebook (paper or waterproof paper) or clipboard (with paper, waterproof paper, or polyester film fastened with masking tape)

66666

- 3. Magnetic compass
- 4. Pencil (test whether HB, 2H, 4H or 6H is best for you)
- 5. Eraser and pencil sharpener
- 6. 30m non-stretch metric measuring tape
- 7. Steel survey pins (from your hardware store or via the web)
- 8. Bulldog clip or clothes peg (to clip the far end of the 30m tape tight to the survey pin)
- 3m or 5m metric metal hand-tape
   Optional extras:
- 10. Hand-held GPS
- 11. 1:10,000 or 1:25,000 OS map of the area

Creating a dimensioned sketch is a relatively quick way to add valuable information to your site record. DP022989



#### How to record

Dimensioned sketches are produced by recording a series of measurements, known as 'running sizes', that originate from a single point. As shown opposite, each corner of the building (both inside and out) is a 'point of origin' (marked ¬ L on the figure).

#### Step 1

Place a survey pin at one corner of the building. This represents the first point of origin for your measurements. Use the survey pin to hold the zero end of the 30m tape, and then run the tape out. In our example, we are working in an anti-clockwise direction, but you can work either way from the point of origin.

#### Step 2

Starting at the zero point, note on your sketch all the distances of features, such as doorways or openings, along the tape. Always try to use 'running sizes' from points of origin, as shown opposite, rather than individual measurements of separate features. If you adopt this approach to measuring it is very unlikely that errors will creep in.

#### Step 3

When you have recorded all the dimensions along the first wall, move your survey pin to the next corner of the building (this is your second point of origin), use it to secure the zero end of your 30m tape, and start measuring along the second wall. Repeat this process for each of the wall faces, inside and out.

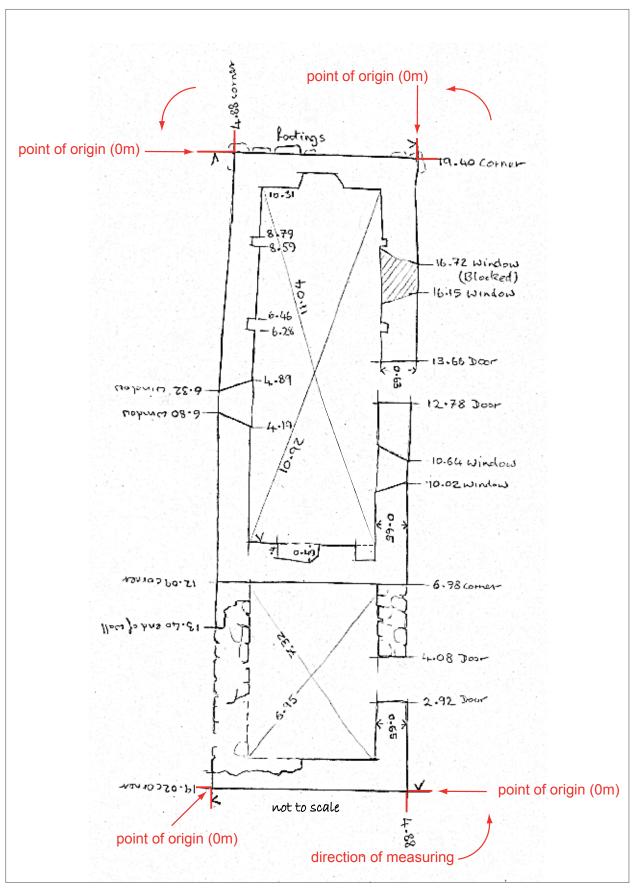
#### Step 4

As well as the running sizes you will need to measure both diagonals across the interior of the building. This ensures that the correct proportions are recorded: old buildings are rarely perfectly rectangular.

#### Step 5

In addition, it is important to note the wall thicknesses and the depths of any recesses, using your hand-tape. Don't forget to label your sketch, adding a north point and an eight-figure National Grid Reference for the centre of the building, as described on page 22.





This sketch plan of a building has had dimensions added to it. Starting at any corner of the building, measurements have been taken from left to right along each wall (running sizes). Door and window openings have also been recorded, as well as internal recesses, fireplaces, and cruck-slots for the timbers that supported the roof. Not to scale. GV004917

#### Sketch elevations with dimensions

#### What are dimensioned elevations?

Dimensioned elevations are measured drawings of vertical features, such as the front of a building, without perspective. They record aspects of a structure that are not visible or well represented in a plan view. In effect, you will be sketching what is standing in front of you, and noting the measurements of each feature.

#### How to record

Dimensioned elevations are produced by recording measurements above and below a horizontal line set up along the upstanding wall of a building. As shown opposite, they are always noted from left to right.

#### Step 1

Set up a horizontal line along the wall of a building, using your builder's line. The line needs to be above the ground – about 1m is ideal if you have enough upstanding masonry. It is important to ensure that the line is taut and firmly secured at both ends using nails or ranging poles.

#### Step 2

The line needs to be truly horizontal. You can check this by hanging the spirit line-level on the line, in the middle between your two nails. When you're sure your line is horizontal, run the 30m tape along it and secure the tape firmly at both ends using bulldog clips or clothes pegs. The zero on the tape should be at one corner of the building.

#### Step 3

Draw a sketch of the elevation, including the approximate position and shape of any features, such as doorways and windows.

#### Step 4

Now you can note the horizontal distances of these features along the tape and, using the metal hand tape, measure their vertical distances above and/or below the builder's line. You can use the plumb-bob to ensure that the hand-tape is held vertically.

#### Step 5

If you wish, you can transform your finished sketch elevation into a drawing. Details can be transcribed from photographs, as shown opposite.

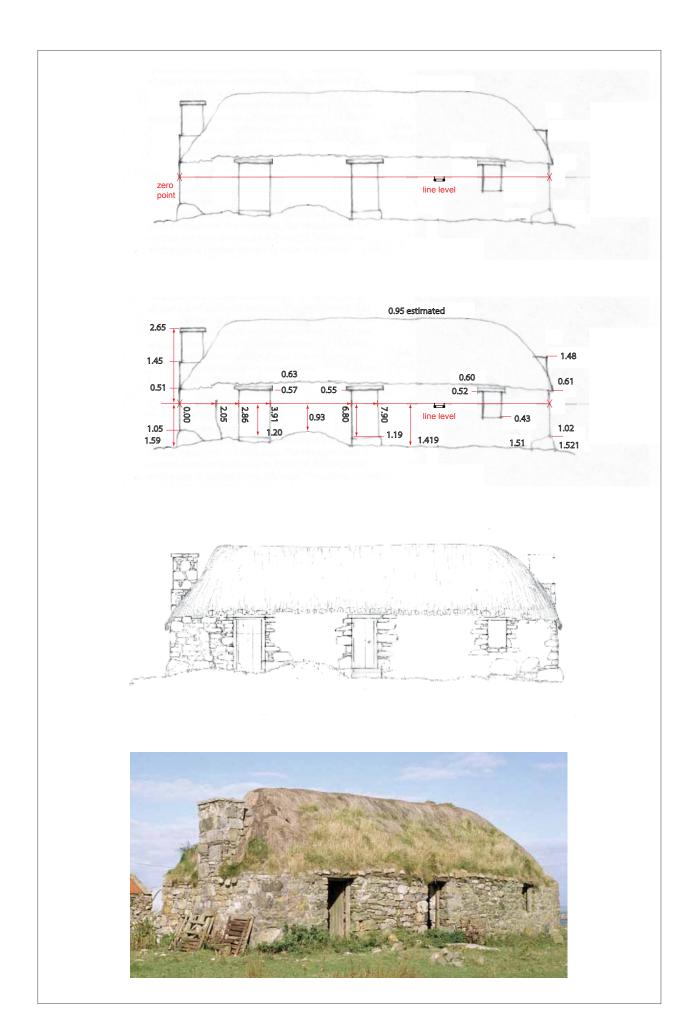
#### Additional equipment for recording an elevation

- 1. Builder's line
- 2. Spirit line-level
- 3. Plumb-bob
- 4. Nails or ranging poles
- 5. Bulldog clips or clothes pegs to secure the builder's line

The sequence of sketches opposite shows three stages of noting an elevation of a blackhouse that has been converted to a byre at Gramsdale, Benbecula. The first step in creating a dimensioned elevation sketch is to set up a horizontal line and tape across the face of the building. You will then note measurements to points of interest above and below the tape, and their horizontal distance along the tape. Finally you can sketch in details, which you can also record by photography. Not to scale. GV004915



Measuring from a horizontal line along the wall of a ruined building to a point of interest. DP103739



#### **Drawing conventions**

Across Britain there is general agreement about how to represent particular archaeological features in a drawing. These conventions are followed by RCAHMS, Historic Scotland and other heritage organisations. The main symbols used in archaeological drawings are shown below.

#### Stone structures

As previously mentioned, stone structures are drawn as if a horizontal slice has been taken across them just above ground-floor window-sill level. These symbols are in the left-hand side of the figure below.

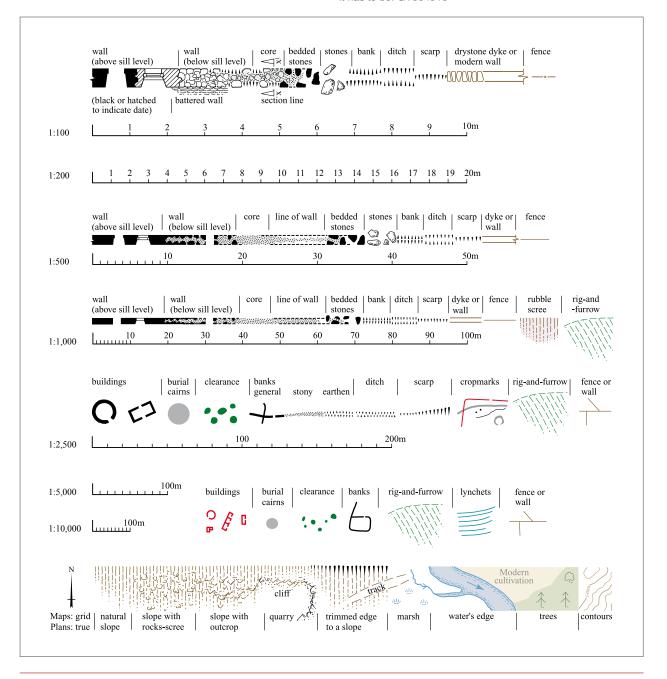
#### Turf-covered features

Turf-covered structures or earthworks are drawn in a slightly different way using hachures, as shown in the box opposite. For these features, the plan is essentially a view looking down on them from above, recording the footprint and general form.

#### Scale

The symbols change with scale: the smaller the scale, the greater the generalisation. Whatever the scale and range of symbols used, you may also need to add written notes to record information such as wall heights or roofing materials.

Specific symbols are used when drawing archaeological features. The larger the scale, the more representative a drawing can be. The smaller the scale the more general it has to be. GV004916



#### **Drawing hachures**

Earthworks and turf-covered features are drawn using a symbol known as a hachure, as shown in the box below.

Hachures are thicker at one end than the other, like a tadpole or extended isosceles triangle. The thick end marks the highest part of the feature, at the point where it starts to slope away (the 'break of slope'). The line of the hachure represents the length and direction of the slope, with the end of the line showing the bottom of the slope.

If there are natural slopes across your site, you will need to use drawing conventions to differentiate between these and archaeological features, as shown opposite. However, it is important that your drawing doesn't become cluttered or confused. Take your time. Ask others if the clarity of your drawing and your use of symbols are successful.

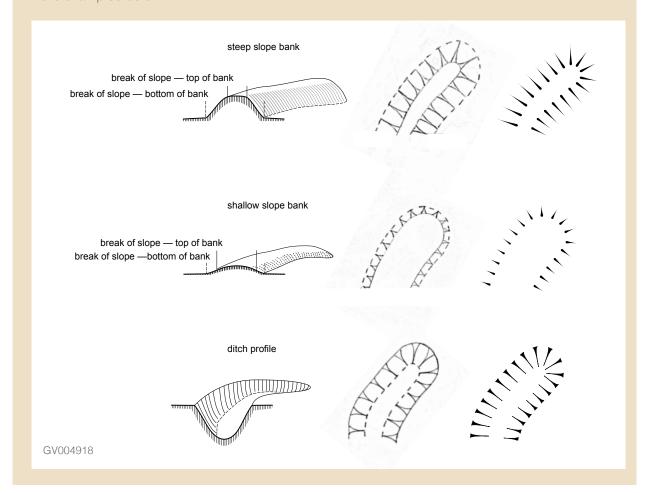
#### **Hachures**

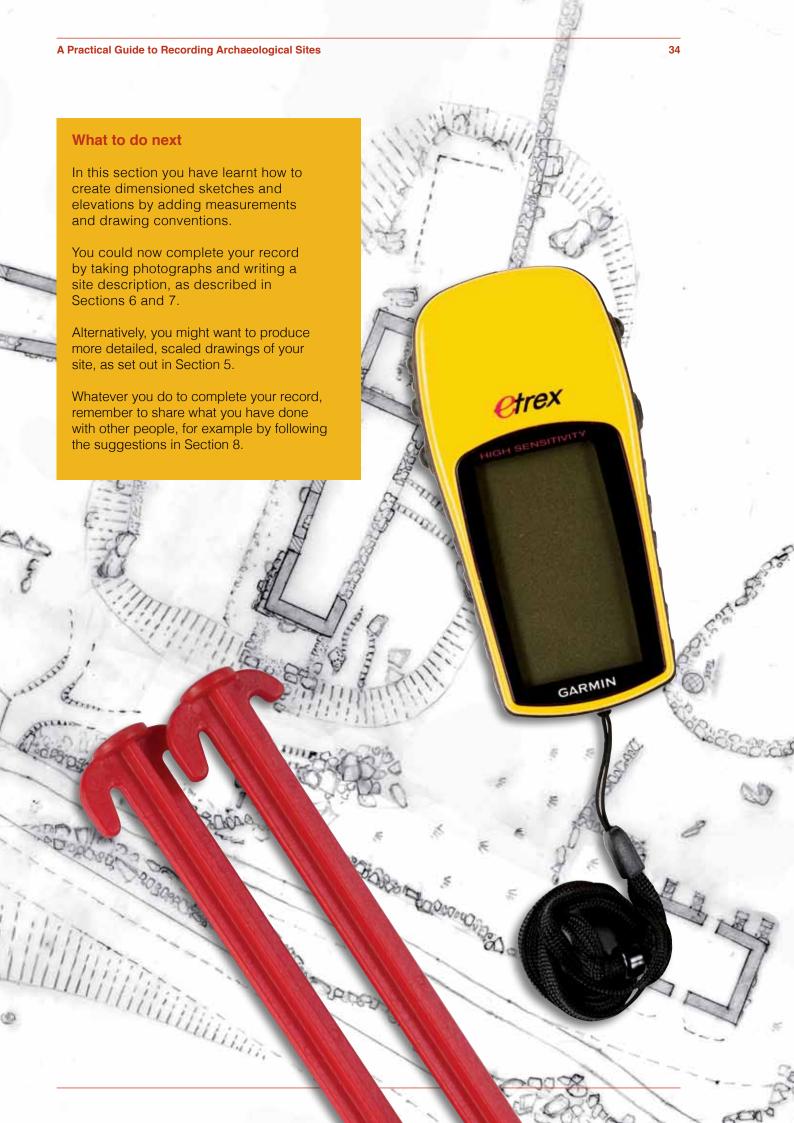
To make hachures understandable, it is crucial to draw each one perpendicular to the break of slope. At all times hachures should follow the direction of that slope. They should also be evenly spaced.

Look especially at how hachures are used here to depict rounded earthworks and depressions. For example, the edge of a very clear break of slope is depicted with more flat-ended hachures, whereas a less well-defined change in slope is depicted with round-ended hachures, as shown in the examples below.

It is not always easy to identify on the ground where the break of slope lies. This is particularly true when the slope has a shallow gradient, or is itself located on sloping ground.

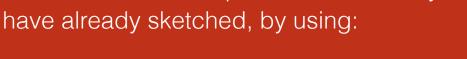
In such cases, it is best to keep the lengths of the hachures relatively short so that they depict the shape of the structure more realistically. If drawn badly, hachures can be more confusing than useful, so do take care.





# 5. Creating Scaled Drawings

In this section you will learn how to produce accurate, measured plans of a site that you





# **Drawing to scale**

Having mastered sketching and dimensioned drawing, you might now wish to create a more detailed record of your site.

The examples used here may, in the first instance, appear quite complicated. However, the techniques used to achieve scaled plans are really quite straightforward. You should soon find that creating a detailed record is an enjoyable and satisfying process.

# What is a scaled drawing?

A scaled drawing provides an accurate plan of a site. It is a drawing where measurements taken directly from the plan can be easily converted into the actual dimensions on the ground.

Creating such a drawing is an important part of the interpretation process. You will be recording what is there today and how it might have changed over time, in both appearance and use.

# Choosing a scale

Initially, choosing which scale to work at may not be obvious, but there are 'rules of thumb' which can be applied. These depend on:

- the area covered by the features you wish to note
- the level of detail that you want to record
- the size of the sheet of paper on which you are drawing.



Scaled drawings can provide an accurate and detailed record of any type of archaeological site. DP103738

# Small and large scales

1:1,000 is a SMALL scale for an archaeological measured drawing, whereas 1:100 is a LARGE scale. The smaller the scale the less detail can be shown.

Planning at the small scale of 1:1,000 means that 1mm on the drawing represents 1m on the ground. Using such a scale, it is impossible to draw any feature that is less than 1m actual size.

This is because you cannot outline a shape less than 1mm thick with your pencil (see box on opposite page).

However, a larger scale, such as 1:200 (when 1mm represents 0.2m) means that features with dimensions of 0.2m or larger can be represented. The table below provides a quick guide to different scales:

Scale	Measurement on ground	Measurement on drawing
1:1,000	1m	1mm
1:500	1m	2mm
1:200	1m	5mm
1:100	1m	10mm

# The width of a pencil lead

Remember that when using a scale of 1:100 the drawing will only be accurate to within 5cm because the pencil lead will probably be up to 0.5mm thick. At a scale of 1:100 the pencil line (0.5mm) will represent 50mm (5cm), so the fine accuracy of your measurements is not absolutely crucial. As the scale of a plan decreases, so the details that can be included in the drawing decrease. At 1:200, any feature measuring less than 20cm will be too small to draw on the plan, because each pencil line will represent 10cm. At 1:500 this applies to features of approximately 50cm in size.

# Scaling a detailed plan

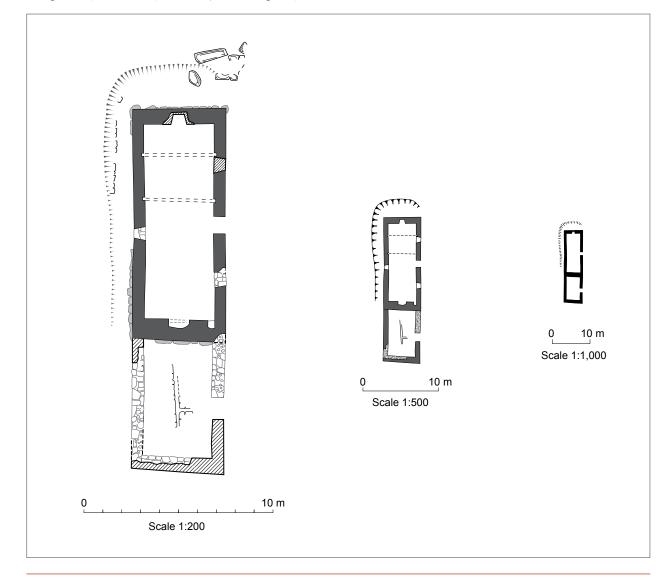
Tape-and-offset or plane table plans of individual buildings are usually drawn in the field at a scale of 1:100 or 1:200. However, if the site is extensive (for example covering more than 50m²) and you want to draw it all on a single A3 or A4 sheet, then it will need to be recorded at a smaller scale, such as 1:500 or 1:1,000.

You might decide to plan the whole site at 1:500 or 1:1,000 before recording one or more particularly interesting structures separately at a larger scale (1:100 or 1:200). However, if the structures lack notable features, more detailed recording may not be necessary. The figure below shows the different degrees of detail that can be recorded when working at different scales.

# Scaling a dimensioned sketch

If you have already produced a dimensioned sketch, this information can easily be converted into a scaled plan. This is usually done at a scale of 1:100 (10mm on the plan representing 1m on the ground) or 1:200 (10mm representing 2m).

This building has been drawn at different scales. Scale has a direct bearing on the way in which particular drawing conventions are applied. The smaller the scale the less detail can be shown. It is therefore important to decide on an appropriate scale when planning your site. GV004919



# **Detailed methods**

This guide describes two ways of producing a detailed scaled plan of a site:

# Tape-and-offset



# The principles

For each method you will be:

- accurately recording the size of buildings and other features
- noting their spatial relationships
- recording the materials used in their construction
- noting the order in which they were built or altered, if obvious.

Neither method requires complex tools, although plane-tabling does involve the use of a special, relatively affordable piece of equipment. Both techniques have pros and cons:

- Tape-and-offset is better suited for more remote sites as the equipment is light and less bulky than that used for plane tabling.
- Both methods of recording work well under most conditions, but are best carried out in calm weather and on relatively level ground.

# Plane table



Whichever method you use, you will need a small group of people – ideally three – to undertake the work in the field

# Tape-and-Offset

Here you will learn how to record a site using tape-and-offset. There is additional guidance available in a short step-by-step video guide (see Section 9 for further information).

# What is tape-and-offset?

This is a method that involves measuring distances to points along a grid of straight lines, created with 30m or 50m tapes, set out across your site. The measured points are plotted at a given scale onto polyester film set over graph paper. You will be joining the dots and annotating the plan to create a detailed record of the site.



Ideally, three people are needed to record a site using the tape-and-offset method. One person holds the tape over specific points to be plotted, the second reads off the measurements at the right-angle crossings of the two tapes, and the third notes the points on the scaled drawing. DP103145

#### Equipment

- 1. Your site sketch
- 2. Three 30m or 50m non-stretch metric measuring tapes

- 3. 3m or 5m metal hand-tape
- 4. Steel survey pins or red plastic survey pegs (from your hardware store or via the web)
- 5. Bulldog clips or clothes pegs (to clip the ends of the measuring tapes to survey pins)
- 6. Three or four 2m ranging poles
- 7. A3 or A2 size board to draw on
- 8. Masking tape to attach the graph paper and polyester film to the board
- 9. Magnetic compass
- 10. Pencil (if you are using polyester film, a high polymer lead 4H or 6H will be best)
- 11. Eraser and pencil sharpener
- 12. Ruler and/or scale ruler

Optional extras:

13. Cross-sight ranging pole



# The primary baseline

Your first step is to set up a primary baseline with one end of a 30m or 50m tape. The primary baseline is the line from which all your initial measurements, and any subsidiary baselines, will be established. You therefore need to consider carefully where to locate it.

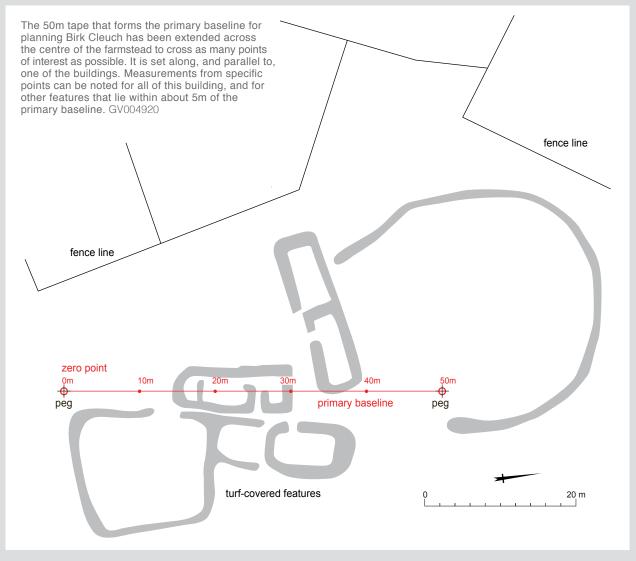
Ideally it should extend the full length of your site, with the start and end points set beyond the limits of the structures to be recorded, as shown below. Don't worry if the primary baseline needs to be longer than your tape. Extending it is straightforward. How to do this is described on page 42.

The line should run parallel to at least some of the structures at your site, and should aim to intersect as many structures as feasible at, or close to, ground level. If any of the banks or walls that the tape runs over are higher than about 1m, you will need to choose a slightly different position for your line. Locate it so that it is alongside the structures and as close to them as possible, so that the tape is more or less horizontal.

Don't worry if your primary baseline is quite a distance from some of the features to be recorded; they can be planned from subsidiary baselines, as outlined on page 46.

Tape-and-offset measurements are taken along a taped line, known as a primary baseline. You will find recording easier if you set up your primary baseline along the long axis of your site, crossing as many features as possible, such as shown here on this oblique aerial photograph of Birk Cleuch. DP020188





# Setting up your baseline



Step 1
Put a survey pin or peg into the ground at one end of your chosen baseline, with the zero point of your 30m or 50m tape attached to it.



Step 2 Next, run out the tape along your baseline, making sure that it is horizontal.



Step 3
Place a pin or peg at the far end point of your baseline, pull the tape tight and secure it to the peg with a bulldog clip or clothes peg.



Step 4
If the tape along the baseline is blowing around then you can keep it in line with a few plastic survey pegs.

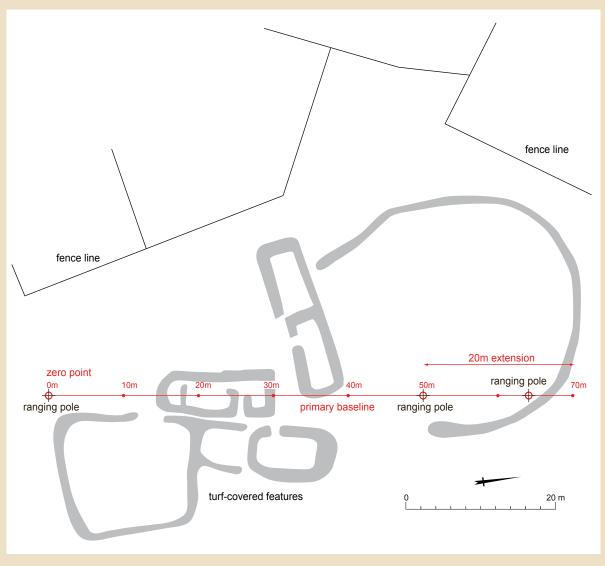
# **Extending your baseline**

If your baseline needs to be longer than your 30m or 50m tape you can extend the line you have just created. The following example presumes you have used a 50m tape.

 Set a ranging pole vertically at the start of your baseline (0m). One person should stand directly behind it so they can look along the line of the tape.



- Place a second ranging pole vertically at the end point you have just created (50m).
- Fix another 30m or 50m tape to a pin at this point and run it out further along the proposed baseline extension to the final end point.
- Hold a third ranging pole vertically at this point and move with it to the left or right until, when viewed by the person standing just behind the ranging pole at the start of your baseline, it is hidden behind the two ranging poles already in place.
- This creates a straight line.
- Once you have found the line with the far ranging pole and secured the tape to a peg at your final end point, you will have established your long baseline.
- You can keep extending the baseline from the start point in this way, until it runs the full length of the area you are recording.



#### Linking to the National Grid

In order to locate your plan accurately in space, you will need to map it onto the National Grid. You can do this by relating one or both ends of your baseline to two or three points that are marked on your OS map. These are your control points.

These control points need to be fixed features, such as corners of fields or structures, which are already accurately located on the OS map, as shown below. Recording the distances to these control points not only anchors your plan into the National Grid, it also enables you, or anyone else, to re-use the plan in the future.

- Use your 30m or 50m tape to record the distance to each control point from both ends of your baseline.
- Mark these on your plan.
- If any of the control points are further away than the length of your tape you will need to use the technique of extending a line to reach them, as described in the box opposite.

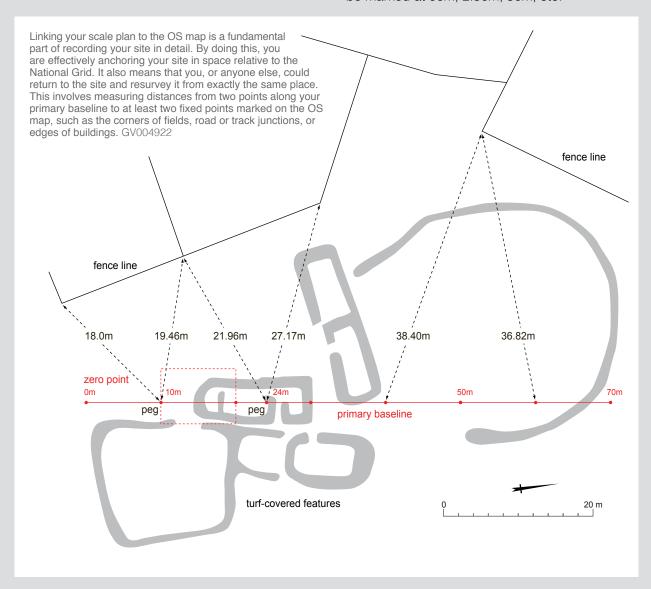
#### Choosing a scale

The scale at which you draw your plan will depend on the size of your site, the amount of detail you wish to include, and the size of your drawing board. Information about choosing scales is given at the start of Section 5.

You will need to decide which way to orientate your drawing board (portrait or landscape) so that you can include as much of your site as possible.

#### Preparing your plan

- Having chosen the scale, using a ruler, draw your primary baseline across the polyester film.
- Locate the baseline so that all the structures around it will fit onto your plan, as on page 40 and below.
- It is helpful to mark the scaled distances of 0m, 5m, 10m, etc, on your drawn baseline. For example, if working at a scale of 1:100, you would label these distances at 0cm, 5cm and 10cm, etc, along the baseline. If you are using a scale of 1:200 the same distances would be marked at 0cm, 2.5cm, 5cm, etc.



# Labelling your plan

In one corner of your plan, note the scale (such as 1:100) and, using the compass, add the direction of north. You should also note the date, the site name, and its National Grid Reference (taken from the centre of the site where possible). It is also a good idea to mark on your reference points, noting what these are (for example, 'left-hand gate post', 'corner of field', etc).

You are now ready to start recording!

#### Recording

Initially we will use an example of a largely turf-covered site, or a site where only low stone footings of structures remain. A description of how to record upstanding, stone-walled buildings using tape-and-offset is given on page 49.

#### Step 1

Starting at the zero end of the primary baseline tape, walk along it and record the points where the tape crosses features of interest. Note them on your plan, at scale.

# Step 2

Next, with the help of two other people, start to record features on either side of the baseline using 'offsets'. An offset is a measurement taken at a right angle from the baseline tape to a particular point you want to record (the point of interest), such as the edge of a wall, or a door or window opening.

baseline incorrect line incorrect line

To take an offset, one person holds the zero end of the second 30m tape at the point of interest. The second person runs out this tape to the baseline, steps over it, and then turns to face their partner. The person by the baseline then holds the second tape taut and swings it in an arc across the baseline until it forms a right angle, as shown below.

The right angle will be at the shortest point on the second tape. Holding the tape firmly at the right angle, note the distance along the primary baseline tape, then note the distance along the second tape (from the point of interest to where it crosses the baseline) and mark this on your scaled plan. You have now put your point of interest on your plan.

#### Step 3

Repeat this process with the next points of interest. As you mark on the points you can start to 'join the dots'. You will need to check the accuracy of your drawing by walking the site with your companions and, if necessary, taking further measurements or checking existing ones.

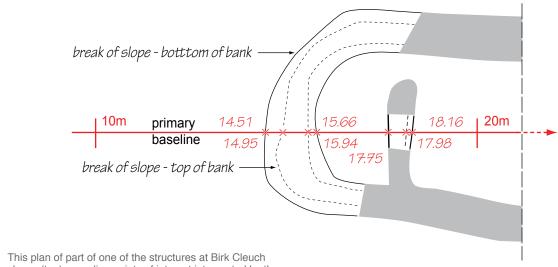
#### Step 4

Once you have recorded all the features you can measure from your primary baseline, the appropriate symbols, including hachures, can be added, as described on pages 32 and 33.

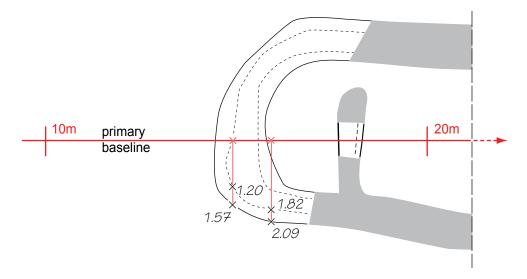
#### Step 5

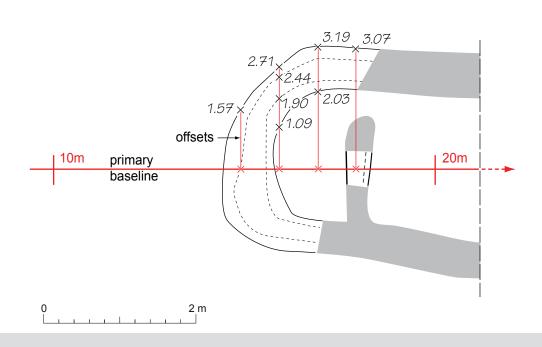
If there are still features that cannot be easily measured from your primary baseline, you may need to establish subsidiary baselines to complete your plan of the whole site. Generally speaking, offsets would not normally extend more than about 5m from your baseline. Any further than this and your measurements will start to be less accurate.

With practice you will find that you can eye in a right angle with tolerable accuracy by looking critically at the point of intersection of the two measuring tapes from directly above. The shortest distance will be the perpendicular line forming a right angle with your baseline. The point of intersection gives you the two measurements you need to plot points of interest.



This plan of part of one of the structures at Birk Cleuch shows (top) recording points of interest intersected by the primary baseline, and (middle and bottom) recording where the baseline intersects with offsets from points of interest. GV004925





# **Subsidiary baselines**

Subsidiary baselines enable you to record features that lie more than 5m or so from the primary baseline. They may be placed either parallel or perpendicular to the primary baseline.

The main method of establishing subsidiary baselines is by triangulation, using the principle of a 3:4:5 triangle (based on Pythagoras' theorem). Once you have established the subsidiary baselines, you can continue drawing features to scale in exactly the same way as already described.

Setting up subsidiary baselines In this description, we are using the distances of 3m, 4m and 5m to create a right angle:

 Put a survey pin, with a tape attached, into the ground at the point on the primary baseline where you wish a perpendicular subsidiary baseline to start.

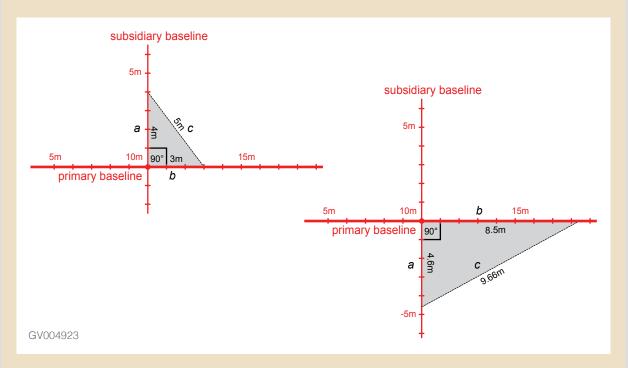
- Run this tape out for 4m in the direction of the subsidiary baseline and leave it on the ground.
- Set another survey pin, with a tape attached, into the ground 3m along the baseline from your first one.
- Run this tape out diagonally for 5m to the 4m point on your first tape.
- Then hold the 4m point of the first tape and the 5m point of the second tape together so that both tapes are taut.
- This crossing point will be one end of your subsidiary perpendicular baseline.

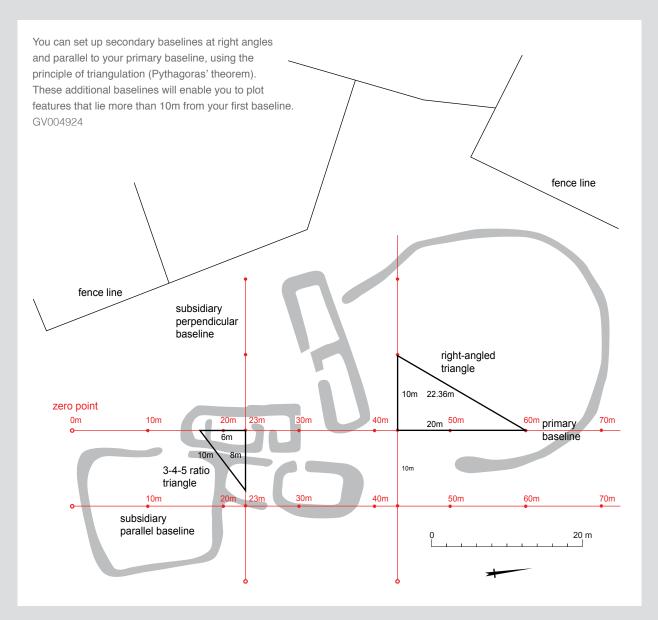
While we have just described the method for establishing a subsidiary perpendicular baseline, the point you have just created could also be one end of a subsidiary parallel baseline. By repeating this exercise you can create as many subsidiary baselines as you wish.

# Pythagoras' theorem

Geometry enables us to set one line perpendicular (at right angles) to another. If the lengths of the sides of a triangle are in a ratio of 3:4:5, a right angle will always be created between the two shorter sides. This is known as Pythagoras' theorem, or the Pythagorean equation, where the square of the two shorter sides added together (in this example, 3x3 + 4x4 = 9 + 16) equals the square of the diagonal side, or the hypotenuse (in this example, 5x5 = 25), as shown below.

This applies to other, easily remembered number sets, such as 6:8:10 and 12:16:20. While these are easiest to use, the equation works for all other numbers too. For example,  $4.6 \times 8.5 \times 9.66$  is a right-angled triangle, as shown below, as is a triangle measuring  $2.5 \times 5 \times 5.59$ , but 3:4:5 is the easiest to remember!







Pulling two tape measures tight to establish one corner of a 3:4:5 triangle.

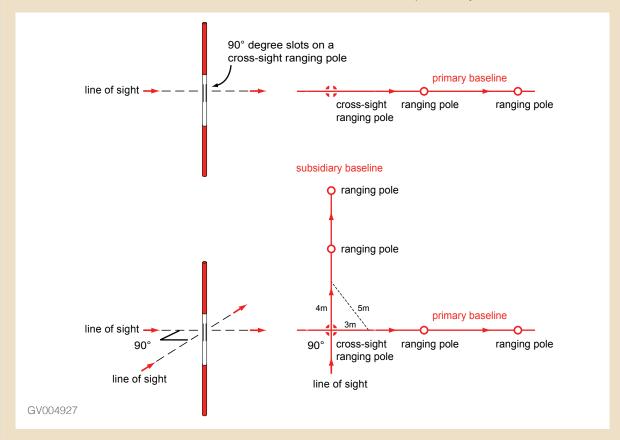


Checking that the intersection between the baseline and subsidiary baseline forms a right angle.

# Using a cross-sight ranging pole

A subsidiary perpendicular baseline can also be established using a cross-sight ranging pole.

- You should set the cross-sight ranging pole at the point on the primary baseline from which you want to run a subsidiary perpendicular baseline.
- Set a normal ranging pole around 10m from it, along the primary baseline.
- Twist the cross-sight pole so that you can see the normal pole through the slits.
- A second person then moves to site a normal ranging pole some 5m along the approximate line of the perpendicular from where the cross-sight ranging pole is set.
- Move round the cross-sight pole so that you can view through the other pair of slits.
- You can now direct the positioning of the second ranging pole so that once it comes into view through the slits it can be set in place.
- The subsidiary baseline can then be extended as described previously.







#### Tape-and-offset: upstanding buildings

If you are planning an upstanding building, a baseline will need to be established along the front of the structure as shown below. Subsidiary baselines will be required, as described above, to create a 'grid' around the structure.

You will also need to establish a baseline within the building in order to plan the interior. This internal baseline is linked to one of the external lines by running a tape through a couple of openings and recording offset measurements (also shown below). If the building has lots of features you will probably find it easiest to draw your plan at a scale of 1:100.

If you are planning several upstanding buildings, each plan will need to be linked to the primary baseline. You can do this by taking measurements from each end of the nearest building baseline to the primary baseline, as shown below. These measurements mean that you can now accurately locate the upstanding building to the rest of the site.

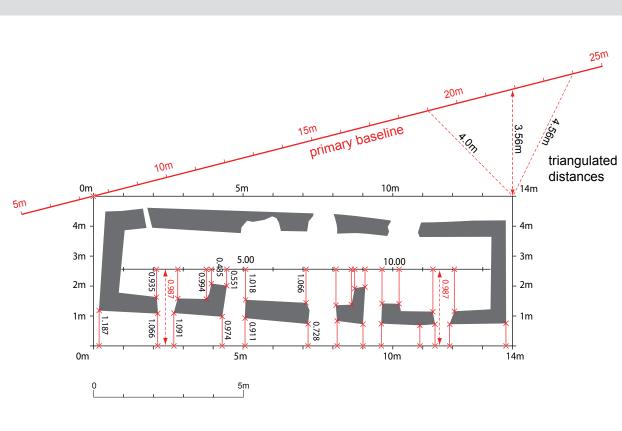
#### **Adding detail**

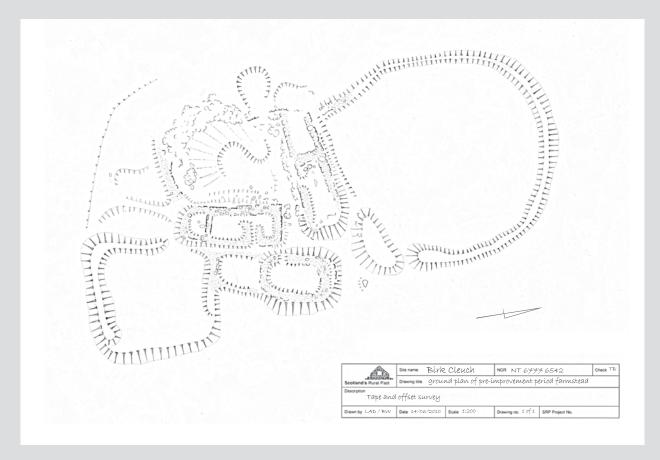
Once you have completed the outline of all the features at your site you can use drawing conventions to add details such as banks or ditches, stones, bedded stones in turf, or built walls. These are described in Section 4.

#### **Next steps**

When you have completed the plan you may wish to take photographs of certain details. Follow the guidelines in Section 6, remembering to note the subject of each photo and from where it was taken. You may also wish to add details to your written description of the site. Guidelines for this are given in Section 7.

It is not possible to run a taped baseline horizontally over buildings with walls that are more that about 0.5m high. Instead, you will need to establish secondary baselines around and inside the building. It looks complicated but, taken step by step, it is actually quite straightforward. GV004928



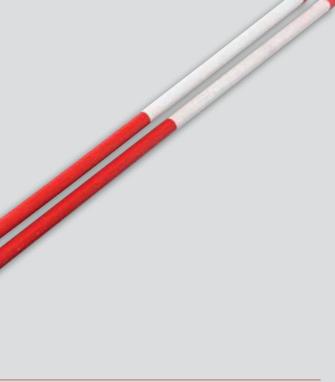


# **Finally**

If you wish to take a break and return another day, make sure that you have mapped the primary baseline, as described on page 40. You should leave two pegs in the ground, one at each end of your baseline. If they remain undisturbed, these pegs will enable you to re-establish your baseline whenever you need it. Placing a few stones around each peg can help protect them from being accidentally knocked out of place, but take care not to remove any stones from the archaeological site. If you do intend to return, remember to mention this to the farmer or land manager before you leave.

Once you have completed your work and are confident that the primary baseline is accurately mapped, you can remove the ranging poles, tapes, survey pins, and any pegs that you have used. If you can, call in on the farmer or land-manager as you leave and show them your drawing, or send them a copy of your site record or report when it's finished.

Having plotted all the points of interest across your site you can complete it by adding the appropriate symbols. Your detailed plan could look like this one of Birk Cleuch. You might wish to achieve this by putting a clean sheet of drafting film over your work so that you don't accidentally rub out any of the details. SC1243046



# Plane Table

Here you will learn how to record a site using a plane table and open-sight alidade. Additional guidance is available in a short step-by-step training video (see Section 9 for further information).

# What is plane tabling?

This method involves sighting and measuring distances to points of interest from a set place on the ground, represented by a pin on a plane table. The direction of each point of interest is recorded by sighting through an 'alidade', and a short line, or 'ray' is drawn on the plan to mark this direction. The measured points are then plotted at a given scale onto polyester film. Joining the dots and annotating the plan creates a detailed record of the site. Ideally, two or three people are needed to carry out the recording.



DP103135

#### Equipment

- 1. Your site sketch
- 2. 30m or 50m non-stretch metric measuring tape

- 3. 2m ranging pole
- 4. Plane table and alidade
- 6. Heavy-duty dressmaker's pins
- 7. Spirit level and plumb-bob
- 8. A3 size polyester film
- 9. Masking tape to attach polyester film to the plane table
- 10. Magnetic compass
- 11. Pencil (if you are using polyester film, a high polymer lead 4H or 6H will be best)
- 12. Eraser and pencil sharpener
- 13. Scale ruler
- 14. Survey pins, plastic survey pegs, or timber survey pegs

Optional extras:

15. Plumbing fork

#### Some unusual tools

This method of producing a detailed scale plan requires some specific equipment that has not been mentioned before in this guide:

- a survey tripod
- a plane table (a drawing board with an attachment so that it can be screwed onto the tripod)
- an open-sight alidade

An alidade is a sighting device, like a gun sight, that is attached to a ruler. While most plane table equipment is available from survey equipment suppliers, an alidade may prove more difficult to acquire. To get round this, some people make their own, as outlined in the box on page 52.

# Positioning the plane table

Choose carefully where to set up the tripod with its plane table. This will be your survey station. It may be possible to set it up so that you can see all of the points of interest that need to be measured. If you can work from just one survey station then you should aim to do so.

However, it may be that you are unable to sight all of the features from your chosen survey station, as shown on page 56. Some may be too far above or below the main area of your site. Others may be too far away, or may be obscured from view by trees or upstanding buildings. Don't worry, as in these instances more than one station can be established, as outlined on pages 55–58.

#### Setting up

Before you go out on site, place a sheet of polyester film on the top of the plane table and fix it with masking tape, avoiding any lumps and wrinkles. It helps to stick masking tape along all the sides of the drawing film to keep it as flat as possible.

When you are on site, set up the tripod and plane table firmly at a convenient height for the user. About waist height is comfortable, but you may find you prefer it higher or lower than this. Press the legs of the tripod firmly into the ground. Use a spirit level to check that the table is level. Ensuring that the tripod is stable and fixed, rotate the table to the best orientation for you to include as much of your site as possible, then lock the table in place with the tripod central screw.

Insert a heavy-duty dressmaker's pin into the centre of the table, through the polyester film. If the plane table is made of a hard material, you may need to make a small hole in it first. You can find the centre of the table by lightly drawing a line across each of the two diagonals of the table and marking where they cross. This pin represents the centre of your survey station.

Now you can mark your survey station on the ground. Hang a plumb-bob from the hook on the tripod central locking screw. When it settles, push a survey pin or peg into the turf directly under it.



Setting up a plane table and inserting a peg to represent the plane table station. DP098324

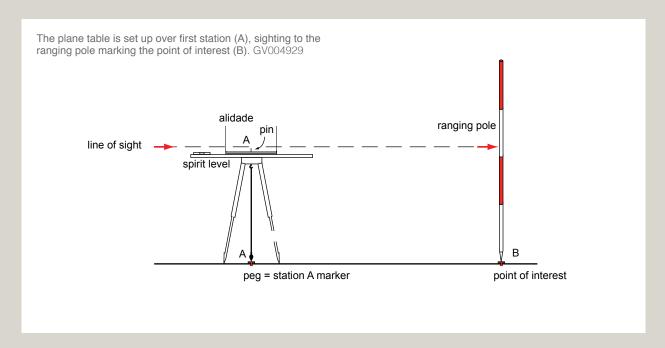
# Making an alidade

- Get a piece of hardwood around 10–20mm thick by 40–50mm wide, and saw it into a 0.3–0.4m length. This will form the base of your alidade.
- Sand the ends smooth with sandpaper.
- Draw a line centrally down the length of this base. It is important that this line is parallel to the edges of the base, and runs exactly down the centre.
- Mark this line at 40mm in from each end of the base.
- Take two long 'conservation' or dressmaker's pins – pins between 50mm and 70mm long and up to 0.5mm thick are best. They will act as the 'sighting-hairs' on the alidade.
- With great care, create tiny vertical 'starter' holes at the two points towards the ends of the base of the alidade.

- Then insert the heavy-duty pins vertically into the holes and tap them further in so that they will not move.
- Your alidade is now ready to use.

It is also worth asking around or doing a general internet search to see whether home-made alidades are available to borrow or buy from any local interest groups.





# Linking to the OS map

Next, you will need to establish some control points to link the location of the survey station to existing points on the OS map. It is important to do this before you start recording so that if you knock the table during your work you can re-orientate it easily.

Try to find two or three vertical features in the surrounding landscape that are already marked on the OS map, like corners of field walls, radio masts, telegraph poles or the corners of structures. They can be some distance away. These control points will be more accurate if they are at least 90° apart, although this is not always possible in remote landscapes.

Use your alidade to establish the direction to each control point:

- Set the alidade snug against the pin in the centre of the table, and rotate it against the pin until the two sighting-hairs in the alidade are aligned on a control point.
- Draw a short line (a ray) along the side of the alidade that is resting against the pin, in the margin of the polyester film.
- Clearly note what each control point is against each ray (for example, Control point 1: radio mast).

- You don't need to measure the distance to the point.
- Make sure you rotate the alidade around the pin so that, when you sight along it, the same side of the alidade is always against the pin.
- Remember to always draw your ray along the side of the alidade that is resting against the pin.

# Choosing a scale

The plane table is just over A2 in size. However, it is probably best if you record the features of the site within an A3 area. This means that there will be plenty of space around the structures for your rays and for making any additional notes.

If your site is around 20m by 30m in area you will be able to use a scale of 1:100. If the site area is greater, then a scale of 1:200 or even 1:500 will need to be used. Alternatively you could plan the site on two sheets. More information about choosing a scale is given in Section 5.

# Labelling your plan

Having chosen your scale you should record it in one corner of your plan, along with the north direction, the site name, the National Grid Reference and the date.

# Recording

Once you have set up your survey station and noted the directions of the control points, you can start recording points of interest. It is best to do this in a logical order, such as noting all points for one structure before starting to record another.



Step 1
One person holds a ranging pole vertically at the first point of interest. In their other hand they are holding the zero (0m) end of the 30m tape against the ranging pole.



Step 3
This person then draws a ray along the side of the alidade that is resting against the pin.



Step 5

The distance between the ranging pole and the pin is noted along the ray in the margin of the drawing. You may also wish to note what the point of interest is against the ray in the margin, as an aide memoire, for example, the left side of a door could be marked as DL, or the right side of a window as WR. You don't need to draw each ray along the full length of the alidade. A short ray drawn in the margin of your plan will be enough to enable you to create the record of the site, and the drawing will then be much less cluttered.

It is a good idea to start with the outside of the building to define its outline and shape first. We will use an example of a farmstead with upstanding buildings. However, the method can be used for all types of sites, whether they are earthworks, turf-covered features or stone structures.



The second person sets the alidade snug against the pin in the table and rotates it against the pin until the two sighting-hairs in the alidade are aligned with the ranging pole.



Step 4
The third person then brings the other end of the 30m tape to the table and holds it taut horizontally, close to the pin, and reads off the measurement.



Step 6

Remember which side of the alidade is sitting against the pin, as you are about to temporarily move the alidade aside. Having moved the alidade, choose the side of the scale ruler with the scale that you are using. Align that side of the rule so that zero is against the pin and it lies along the ray. Find the distance you have just noted along the scale ruler and mark it as a point on your drawing. It helps to make a slight notch at the zero end of the scale ruler to locate it more securely against the pin.

#### Step 7

Move the scale ruler aside. Replace the alidade against the pin, remembering which side is being used, and repeat the process as often as is needed. Once you are familiar with this process, you might find it quicker to convert your rays to points on your plan in batches, rather than one at a time as described here.

#### Step 8

When you have a few dots on your plan, you can start joining them up, and you will soon see the plan developing. Notes or abbreviations about the points of interest, marked on your rays as you record them, will be helpful here to remind you what each point represents.

#### Step 9

Once you have finished taking measurements and outlining the features on your plan, you can start to add the appropriate symbols (see page 32). When you have finished drawing the features that can be easily measured from this survey station, you may need to establish additional survey stations to complete your plan of the whole site.

#### Returning another day

You may wish to return to the site on another day to continue your recording. If so, make sure you note which side of the alidade is sitting against the pin. You should also check that the pin or peg in the ground below the tripod is firmly set. You will then be able to re-establish your plane table over this point whenever you need.

#### Additional survey stations

If you cannot see all your site from your first survey station (A), or the horizontal or vertical distances across the site are too great, then you will need to establish one or more additional survey stations, as follows.

#### Sighting A to B

Decide where you wish to establish the second survey station (B), push a peg into the ground at this point, then hold a ranging pole vertically above it. This has to be visible from station A, and within measuring distance of your 30m or 50m tape. Record its location on your current drawing, using the alidade to create a ray. Note the distance to the new survey station (B) from A.

# Moving to B

Once you have recorded the position of station B from station A, you can move the tripod and plane table from station A and set it up directly over the peg at station B using the plumb-bob, and remembering to level and orientate the table.

There are various options for recording your site from the new survey station. The most straightforward is to set the tripod with its plane table centrally over peg B, using the plumb-bob, and to start recording from here on a new sheet of paper. When you have finished recording the site, you can then join your two sheets together by laying them over each other and lining up common points. The recorded information can then be traced onto the top plan, or onto a clean sheet of drawing film laid over the top of both the plans.

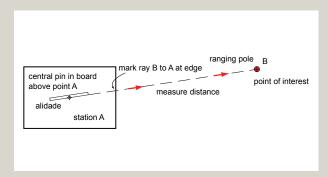


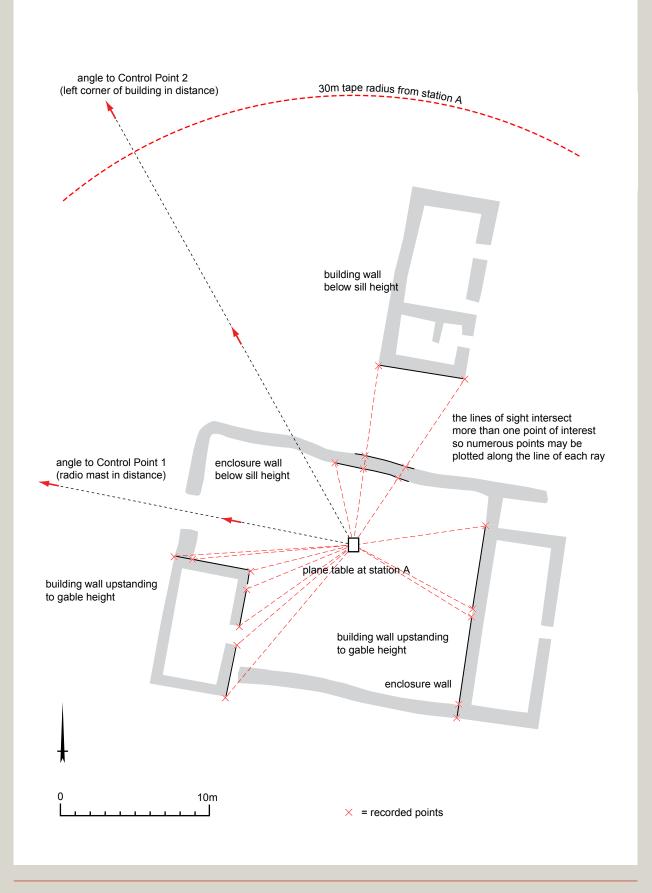
Diagram showing plane table sighting to a point of interest (B).

# Re-establishing the plane table

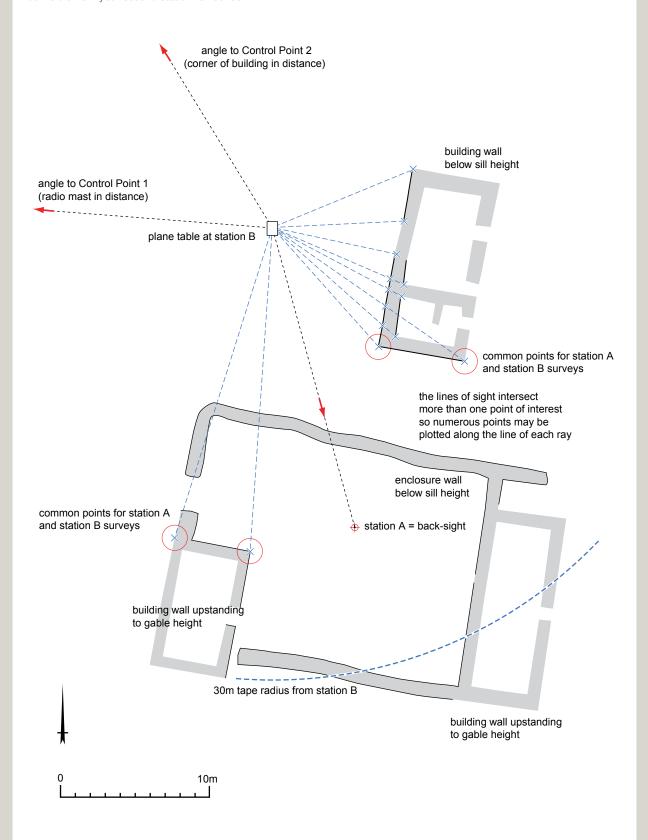
Centre the tripod, with its plane table and drawing, over your survey station peg using the plumb-bob suspended from below the centre of the table. Level the table and carefully rotate it, without shifting the centre, until the drawing is orientated on the control points already marked on your plan. You should check the orientation using the alidade, setting the same side of the alidade against the pin as before. When the orientation is correct, tighten the central screw to lock the table in place.

If the orientation is not quite right you should slightly rotate the table again and check once more. Take care that the centre of the table doesn't shift, as this will move the plumb-bob away from the survey station peg. However, if you are working at a scale of 1:100, 1cm inaccuracy on the ground is 0.1mm on your drawing – an impossible distance to see on your plan. At smaller scales, like 1:200 or 1:500, such an inaccuracy is even less.

By marking the sight-lines and measurements to various points of interest within the radius of your tape measure you will be able to develop an accurate plan of your site. As points of interest are recorded, you can join the dots to form a solid line, as shown here for Gramsdale, Benbecula, and you will see the plan emerging. GV004930



Deciding where to move the plane table to is another important step. Your aim is to record as much of the site as possible that has not already been recorded from station A. However, your second station also needs to be in sight of a ranging pole held over the first plane table station, and a few points of interest already recorded from station A, so that the plans can be joined together. The control points recorded from station A must also be visible from your second station. GV004931



# Recording from additional plane table stations

#### Step 1

Set up your plane table at station B, above the peg, using your plumb-bob. Insert the dressmaker's pin in the centre of the table to represent station B.

#### Step 2

Carefully rotate the table and orientate it so you can see as much of the site as possible, tighten the central screw to fix the table, and caption the plan.

#### Step 3

As with setting up station A, first record two or three control points and mark these on your plan. These can be the same as, or different from, the control points used for station A. Remember to note against each one what it is.

#### Step 4

Now you need to establish the location of station A on the drawing (this is called 'back-sighting'). You already know the distance from B to A – it is on your first plan – but you need to record the direction. Setting the alidade against the pin, back-sight to a ranging pole held vertically over the peg at station A. Station A can now be marked accurately and clearly on your new, scaled plan. This information will help you join your two drawings together once you have finished your planning.

#### Step 5

You should also aim to record several points of interest that have already been included on your plan from station A, as shown on page 57. These points will act as further checkpoints when you join the two plans together. All of the other sightings will be fresh, but don't forget to set the same side of the alidade against the pin each time you record a sight line, and to work at the same scale as used for the station A plan.

#### Other plane table stations

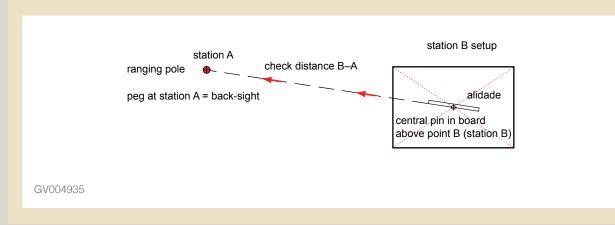
Additional stations can be added as required, as long as they are linked to at least one other established survey station and a few common points of reference are recorded.

#### Other ways of resetting a plane table

If you wish to continue using the same sheet of polyester film for your planning from a new survey station, there are two ways of doing so, although neither is particularly straightforward:

- You could move the polyester film on the plane table, as described in the box below.
- Alternatively, if you have a plumbing fork, you can establish a new point on your drawing for station B, as described in the box opposite.

- Add the location of the peg at station B to your plan at station A.
- Move the tripod, with the plane table attached, and set them up centrally over peg B, using the plumb-bob. Orientate the table as already described.
- Remove the pin and the masking tape that is holding the polyester film in place.
- Slide the plan across the surface of the table until the point of station B is over the pin-hole in the centre of the table.
- Push the pin through the point for station B and into this hole.
- Check that the orientation of the drawing is accurate by back-sighting to station A, using the alidade and a ranging pole held vertically at the peg at station A.
- If it is not right, slightly rotate the plan until it is aligned.
- Use masking tape to fix the drawing in place once again.
- You are now ready to continue planning



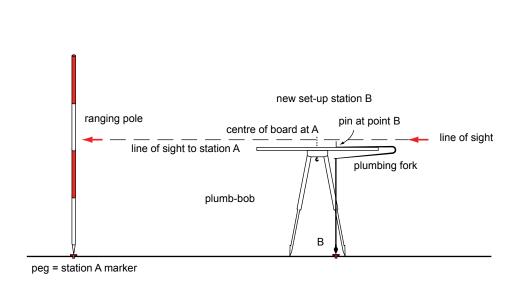
# Establishing a new station point on your drawing using a plumbing fork

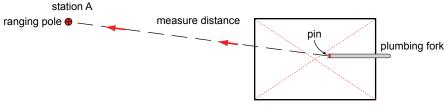
This method uses a plumbing fork to align the point marked 'station B' on your drawing directly over the survey station peg B. A plumbing fork is an angled pair of metal prongs, set up so that the plumb-bob can be hung from the end of the lower prong directly below the pin in the plane table.

- Set the tripod with its plane table and drawing at station B, so that it is orientated on station A, and point B on the table is roughly over peg B. Level the table.
- Lay the plumbing fork over the edge of the plane table, with the plumb-bob hanging from its lower prong. The end of the upper prong needs to be held at point B.

- Slide the plane table on its central screw until the plumb-bob is over the survey station peg.
- Then check that the orientation of the drawing is accurate, by back-sighting to station A using the alidade with the ranging pole held vertically over the station A peg.
- When the orientation is correct, tighten the central screw to lock the table in place.
- You can now set a pin into the drawing at point B and start planning

If the orientation is not quite right you should slightly rotate the table very carefully and then reassess the alignment. Establishing the plane table over a new survey station in this way can be a matter of trial and error. It may take a little time.





pin in board moved to point above station B

GV004936

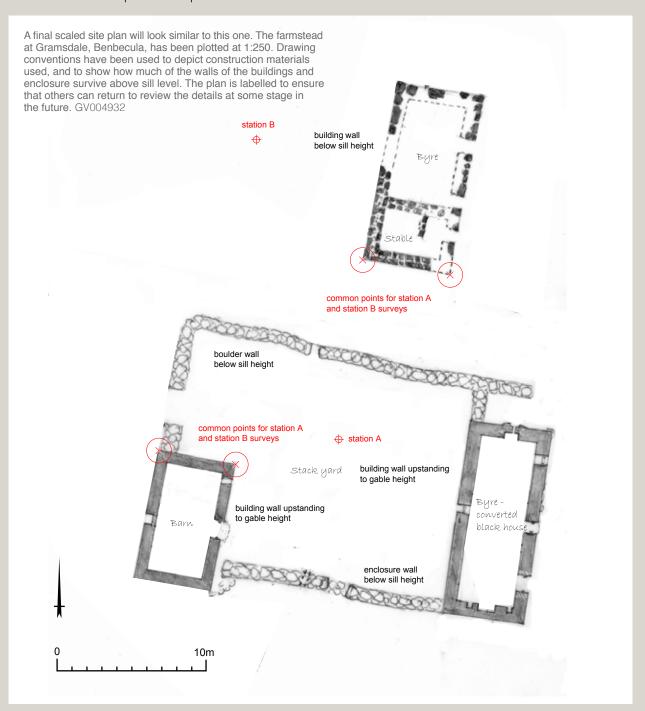
# **Finally**

When you have finished recording the site, you can use the drawing conventions shown on page 32 to add the details to your outlines for banks or ditches, stones, bedded stones in turf, built walls, as illustrated below. You can also use drawing conventions to show different phases of construction. If you have used more than one sheet of film, you will need to amalgamate all the information you have recorded onto one single sheet. You can do this easily by laying all the sheets over each other so that the stations and the common points you have recorded line up exactly. The recorded information can then be traced onto the top plan, or onto a clean sheet of drawing film secured over the top of all the plans.

# What to do next

In this section you have learnt how to create a detailed plan of a site by drawing to scale, using tape-and-offset and plane tabling

You could now complete your record by photography, writing, and sharing the information with others, as described in Sections 6, 7 and 8.



# 6. Photographing your Site

In this section you will find out about:

- What to photograph
- Viewpoints and composition
- Sunlight and shadow
- Interior photography
- Downloading your images



# **Photography**

Taking a photograph is perhaps the simplest way of capturing information about your site. Photographs are certainly more trustworthy than our memories. They provide a complementary record of features that can be used alongside drawings and written notes.

However, don't be tempted to take hundreds of pictures! You should only take a photograph if it adds clarity to your record of the site. In other words, it is better to take a few photographs that focus on specific aspects, rather than taking too many that provide little, if any, additional information.

Your digital camera may enable you to save photographs in various formats, such as tif or jpg files. For archaeological site recording purposes jpgs are quite adequate, but aim to keep your camera on a high resolution setting so your images are not less than about 1.5Mb. If you do take higher resolution images (eg over about 3Mb), it is a good idea to also save lower resolution versions which you can use for presentations, site reports and site records, to avoid creating unnecessarily large files.

Producing a good photograph is not always easy, particularly when weather and lighting conditions are poor. The following guidance suggests ways of getting the best image possible with whatever sort of camera you are using.

The abandoned township, St Kilda, showing the layout of the settlement. DP103139

# Preparation

In the same way as you would approach creating a plan of a site, don't rush in and snap away at the first thing that grabs your attention. You need to get a feel for what is relevant and where the most advantageous viewpoints are. It is suggested that you look and study, sketch and record, and only then take photographs.

#### What to photograph

Aim to take (or end up with) only a handful of photographs, each one capturing a different element of the site and its setting. Start by finding the best view of the whole site and the surrounding landscape. This can often be found on higher ground, looking down on the site. You might even want to go some distance away and use a zoom lens.

Next, concentrate on individual buildings or features, although it is not necessary to photograph every single one. Think instead about capturing a representative sample that best depicts the history of the site and how the structures might have been used.

A drystone or mortared building may have numerous surviving features – windows or doors, blocked openings, fireplaces or evidence for phasing of construction. You might decide that some of these warrant being photographed separately. Some details, such as date stones or masons' marks, may be photographed in close-up.



#### Some suggestions

It is good practice to:

- Get into the habit of using a tripod when taking site photographs, and to set your camera on the self-timer to minimise camera shake.
- Always make a note of what you have photographed. You should ideally do this when you take each photograph, rather than waiting until later when you may have forgotten some of the details.
- Mark each viewpoint and the direction from which the shot was taken on a copy of your sketch of the site, eg 'looking north'.

# Photographic tips

Viewpoints

Viewpoints and composition are very important. By carefully selecting where to take a photograph from, important features can be highlighted and distracting ones hidden or subsequently cropped. However, in some cases 'clutter', such as old farm machinery, can be relevant to the site and can be kept in the shot.

#### Composition

Aim to compose your photograph to include as much information about the site, or specific features, as possible. For example, if photographing a ruined building, you may be able to include detail about both the interior and exterior of the structure by composing your shot strategically.

Photograph of an elevation of a barn and byre at Aisgernis, South Uist. SC1109468



# Sunlight

April to September is a good period for photographing buildings and upstanding structures because the sun is higher in the sky and there are more hours of daylight than in the winter. However, there are other issues to take into account during these months. For example, after May the vegetation is higher and may mask certain features. If you have to take a photograph in bright sunlight a lens-hood may reduce or eliminate any flare, or simply holding your hand flat above the lens (but out of the picture) can reduce flare.

# Low light

The length of daylight is greatly reduced in winter months, and it is best not to try to take photographs of upstanding buildings in January and December. The light is of a poor quality, there tends to be too much contrast between light and shade, and the shadows can be particularly long.

However, these can be good months for photographing low-lying features, such as turf-covered footings, earthworks, rock carvings, or rig-and-furrow, which can be virtually invisible on cloudy days or when the sun is high. The shadows created by low sunlight can make indistinct features much clearer. Other weather effects, such as light snowfall or heavy frost, can also increase the visibility of low-lying features.

# Return visits

Return visits to your site are often worthwhile, to take advantage of better weather and lighting conditions. For buildings, for example:

- the east face of a building will catch the morning sun
- the south face will be lit for most of the day
- the west face will catch the sun after about 1pm
- the north face will be best photographed in overcast conditions

# Interior photography

When photographing the interior of a roofed building, some sort of artificial light will be required. Most cameras have a pop-up flash, but you will only be assured of a focused image if you use a tripod and the self-timer on the camera or a remote shutter release.

# Using a tripod

A tripod will help you to accurately frame your photograph, as well as reduce the risk of a blurred image. If you have a semi-automatic or manual camera on a tripod, then you can use lower shutter speeds to take account of low light conditions, helping you achieve even better images.

# Artificial lighting

Lighting can be supplemented by a flash-gun or powered lights. However, if you do decide to use either form of additional lighting, you will need to set your camera onto a tripod and use a remote shutter release.

If you are trying to capture detail in relief you should try side lighting – a torch will do if you don't have access to powered lights or a flash gun. Direct flash-lights produce flat, shadow-less photographs which are not very satisfactory, while the built-in flash on compact digital cameras will only work up to the first 5m or so.



The interior of the croft building at Laidhay Croft Museum, Caithness, showing the cruck construction of the roof at the barn end of the building. SC692963

Low light on abandoned field systems at Baile na Cille, Lewis, shows the detail of the lazy beds. DP103137



# **Downloading your photographs**

As soon as you have downloaded the digital photographs onto your computer, you should back them up onto an external hard drive, a CD or DVD.

After downloading you should catalogue them, adding the photograph number to the information in your notes. You may wish to crop some, and straighten others. Some or all can then be included in your written report, but they will need to be resized so that the digital version of the report is not too large. Digital images of around 280Kb are adequate for this purpose.

# What to do next

In this section you have learnt about photographing your site as part of your field recording.

You might now want to complete your record by writing a site description, as described in Section 7, and sharing what you have discovered, as suggested in Section 8.

A photographic record of your site supplements the information you have gathered in your sketches, plans and written descriptions. DP103128



# 7. Writing about your Site

In this section you will learn how to:

- Compose a summary site description
- Create a detailed site description



#### Introduction

Whether you are writing a summary or a fuller account, there are specific pieces of information that should be included in your description. Here, we will use the example of Grumby farmstead that was recorded during fieldwork in Sutherland by RCAHMS.

A site description does not need to be long. In fact, short summaries can often be more useful and accessible than lengthy, highly detailed descriptions. Two or three sentences can easily summarise the key information about most sites.

Then, if you wish, you can go on to provide an in-depth description of particular buildings, structures or other features. If a basic record already exists for the site, then a more detailed written text may be more appropriate.

# Using your sketch plan

The text will generally complement your sketches, measured plans and photographs. Much of the detail about the site will already be recorded in these illustrations.

Any written description, therefore, should aim to set your site concisely into its landscape context, clarify and summarise information captured in your visual records, provide a historical context, if there is one, and add any further data that may not already be recorded.

#### **Basic information**

The most fundamental information you will need to provide is a site name, National Grid Reference, and a short description of what you have found. This is the basic locational data that will enable someone else to find your site on a map or on the ground. You can then decide how much written detail to provide.

# For example

The farmstead of Grumby (NR 7126 0971) comprises the largely upstanding remains of a stone-built 19th century farmstead with stack-yard, and the grass-grown footings of an earlier farmstead consisting of four structures and an enclosure.

Grumby farmstead, Rogart, Highland, looking towards building A (see the plan on page 68). Note the circular stack stands in the stack-yard. SC576044



# Writing a summary description

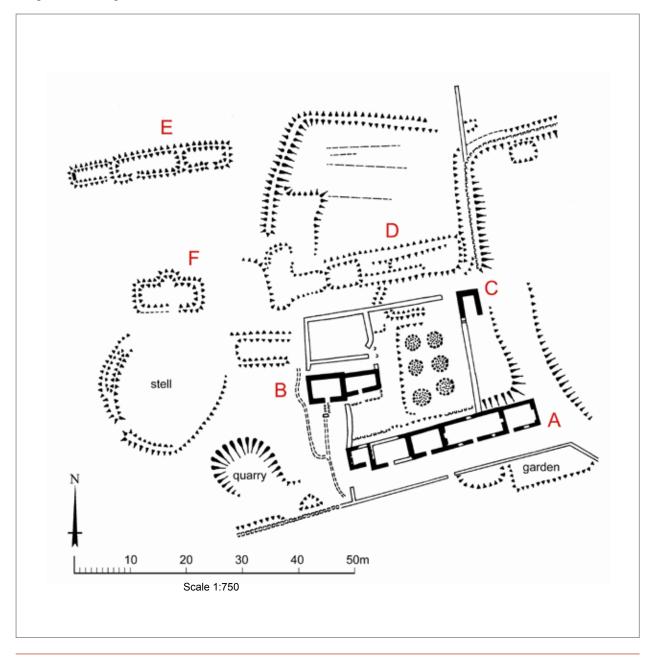
A summary description should begin by providing information about the physical setting of the site, as if you are approaching it from a distance.

# Step 1

The text will start with a sentence describing the site location, and its physical surroundings. Assessing the relationship between the site and natural features can help us understand the function of the site as well as the reason for it being where it is. For instance:

- Is the site on level ground, a slope, a mound, or a terrace?
- Is it close to any specific topographic features, such as a burn?
- What is the orientation of the site eg south facing?

Site plan of Grumby farmstead, Rogart, Highland. SC385622



#### Step 2

The next part of your summary description should detail the individual site components, such as buildings and other features, and how they relate to each other. This may include information about the number, general appearance, and shape of any buildings and related features, such as yards or cultivation remains.

# For example

Grumby comprises the largely upstanding remains of a stone-built 19th century farmstead and the grass-grown footings of an earlier farmstead.

The 19th century farmstead comprises a long range, a byre, and the fragmentary remains of a further rectangular building, arranged around a stack-yard; all the buildings are constructed of faced rubble and stand to gable height.

The earlier farmstead, which lies to the W and N of the 19th century farmstead, comprises four rectangular buildings and an enclosure; all the buildings are aligned approximately E–W and appear to be of turf-and-stone construction.

You should also give a general impression of how high any surviving structures stand (knee or shoulder, wall-head or gable height) as this provides a mental picture of the state of the structures recorded.

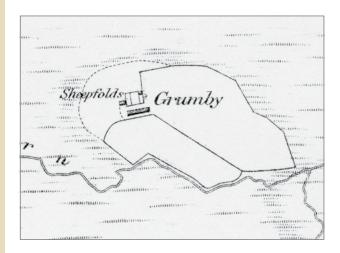
#### Some suggestions

You don't always need to describe the functions of the buildings and features, just try to present an accurate picture of what currently exists on the ground. Such a summary record, if accurate and well written, contributes a great deal to our understanding of the site.

# **Documentary information**

Either the summary account or fuller description may have some historical context that you might wish to add. This may be derived from maps or other available documentary evidence. For example, the 1st edition 6-inch OS map helps us to understand Grumby.

Extract from 1st edition Ordnance Survey map showing Grumby farmstead (Sutherland, sheet XCVI, 1879) SC1243594



# For example

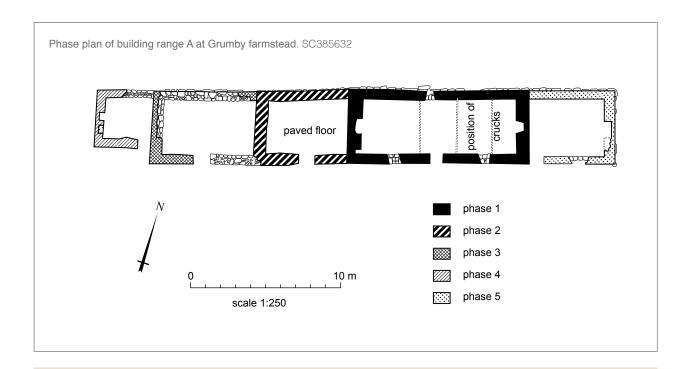
The 19th century farmstead is depicted as roofed on the 1st and 2nd editions of the OS 6-inch map (Sutherland 1879, 1907, sheet XCVI). On the 1st and 2nd edition maps a further roofed building, of which only a fragment now remains, is shown in the NE corner of the yard. The stack-yard and a drystone enclosure around this building are annotated as sheepfolds on these maps.

# Writing a fuller site description

There may be details relating to individual structures and other features that you wish to provide in a fuller description.

If your site is complex, assigning numbers or letters can be helpful in identifying particular structures or other features, as here for Grumby, and in the plan on the previous pages.

Details of structures A–F, shown on page 68, can then be added to your summary and any text relating to historic map information. However, it is important to distinguish clearly between your factual descriptive text and any subsequent interpretation that you might have made. In particular, try to avoid speculation.



# For example

The most complete part of the 19th century farmstead consists of a long range (A) which lies along the S side of the stack-yard. The principal building, a dwelling, lies at the core of this range. This building has fireplaces at both ends and a single wall cupboard in the W gable wall. Windows flank a central door on the S side of the dwelling and a further window is located in the rear wall opposite the doorway. A blocked cruck-slot is visible in the N wall of the dwelling just to the left (W) of the window.

Three successive phases of outshot have been added on to the W end of the building, all of faced-rubble construction in common with the dwelling. At the E end of the dwelling an outshot with mortared-rubble walls and a fireplace in the E end has been added. This possibly represents the latest phase of construction on the site.

On the W side of the yard there is a byre (B) with an outshot to the E. A drain empties from in front of the byre door, on the S side of the building. The fragmentary remains of the third building (C) are located at the NE corner of the yard and there is a sheepfold in the NW corner. The central portion of the yard has been levelled and supports six stone stack stands each measuring up to 3m in diameter and 0.3m in height. On the hillside to the W of the farmstead there is a quarry scoop and the partially removed remains of a turf stell.

The remains of the earlier farmstead have been severely denuded by later ploughing and by turf-stripping to provide capping for the drystone yard of the later farmstead. The largest building (D) is L-shaped and is situated with its long axis parallel to the N side of the 19th century stack-yard. It measures 33m by 4m. Its turf and stone walls now spread up to 1.5m in thickness and stand 0.4m in height.

It may have had four compartments, with the leg of the L extending to the N at the W end. The eastern compartment has a drain hollow and may have been a byre.

The other buildings are less substantial, measuring internally between 7m and 10.4m in length and 2.5m and 3.5m in breadth. A long building to the north of the group, (E), has been extended by two successive out-shots, while a further building (F) has a bed-neuk opening out of the interior. To the E of the farmstead (outwith the planned area) there is a U-shaped hollow measuring 5m by 3.6m and 0.6m in depth which may have been a grain-drying kiln.

A stone dyke runs along the front (S) side of the range. In front of this there is a midden hollow and a small trapezoidal garden plot, containing some rhubarb.

# Specific details

Useful specific details to include in a fuller description are:

- the size and shape of each structure, including wall thickness and height, remembering to note whether the measurements are internal or external
- the size of ditches, openings, or banks, all of which are said to have a width or breadth rather than thickness
- the type of building materials, such as turf, turf and stone, stone, dressed stone, or rubble
- whether there are any distinctive features, like fireplaces, cruck-slots, or wall cupboards
- if there are any indications of phasing, such as blocked openings or butted walls
- whether there are any indications of function, such as a byre drain, a fireplace or opposed door openings that would denote a threshing barn
- features that are obviously of an earlier or later period, as they are an integral part of the site as it appears today.

Additional information for Grumby might read as shown in the example on the page opposite.

Many people prefer, when on site, to record all the information about their site as short notes or a series of bullet points. These can be then worked up into a proper site description when you're back home. DP103143

# **Finally**

For most people, writing a coherent site description is a skill that needs to be developed over time. Don't let that put you off from trying – the more you do, the easier it should become.

As outlined above, there are various stages in preparing a descriptive text, so take it one step at a time. Bear in mind that supplying concise information can often prove more difficult than providing a detailed description.

Your written description, sketches, measured plans and photographs may not be the final word. Other people might add information relating to your site, but this may not be for many years. Whatever the case, your data will be another valuable piece of the jigsaw that enhances our understanding of past ways of life and land-use.

#### What to do next

In this section you have learnt about writing summary descriptions and more detailed accounts of your site.

Once you are satisfied with your written description, you can put it together with your photographs, site sketch, dimensioned drawing or scale plan, and share it with others, as set out in Section 8.



# 8. Sharing your Work

In this section you will find out how to share the information you have created by making it available to:

- RCAHMS
- Discovery and Excavation in Scotland
- Local authority archaeologists
- The landowner



8. Sharing your Work 73

#### Introduction

Gathering information and making a record of an archaeological site is a journey of discovery. The journey isn't over until you have shared the details that you have assembled with a wider community. Indeed, the work is arguably never complete, as others may have further information to add. Sharing research is a crucial part of this sort of work. Here are some of the steps you can take to do this.

# Sharing your work nationally

#### Canmore

If the site that you have been recording is already in the RCAHMS database, Canmore, you can add your information online, either as a summary or in its full form. Many others have already done so, and their work is now accessible to all – nationally and internationally. You can view some of the existing contributions by looking at the column of 'Recent Public Contributions' in Canmore.

To add your work to Canmore, bring up the pre-existing entry for your site and then access 'Public Contributions' on the right-hand side of the page. Just follow the instructions, add the text, scanned drawings or digital photographs as you wish, and next time you visit the site your work will be accessible to all.

The way in which data are added to the RCAHMS database is changing, and more opportunities are opening up for uploading information over the internet, for both sites that are already in the database and sites for which no record currently exists. Please visit the RCAHMS website or contact RCAHMS to check for changes.

#### **Discovery and Excavation in Scotland**

If the site is not already in Canmore then you should create a summary for *Discovery and Excavation in Scotland* (DES), as described below. Each year the data that appear in DES are up-loaded into Canmore, so you can then add further details if you return to the site at a future date.

The North of Scotland Archaeology Society leads visitors on a guided walk around archaeological sites surveyed and recorded by the group in Strathconon, Highland. DP103138



DES is published annually by Archaeology Scotland. The publication reports on all archaeological work undertaken in Scotland by volunteers, commercial archaeological companies, universities, and others. You don't have to be a member of Archaeology Scotland to contribute.

Information about submitting an entry is currently available on the Archaeology Scotland website. However, the submission process is being reviewed and it would be well worth keeping an eye on the DES pages of the Archaeology Scotland website to check for updated information.

# Sharing your work regionally

The local authority archaeology service will be very interested in receiving a copy of any information that you have gathered. Your illustrated written report, preferably as a pdf, may prove extremely useful in their work. Some Sites and Monuments Records (SMRs) and Historic Environment Records (HERs) have facilities for submitting digital data directly, using an online form. Alternatively your report will appear in the HER/SMR when it is updated by those who manage the database.

# **Sharing your work locally**

Your local library or archive may also be interested in receiving a copy of your work. Their local history sections are accessed by many people. Finding out about work done locally is likely to encourage others to want to discover more, and local school pupils may find the information useful for their projects.

Remember to give a copy to the landowner and any other people who have helped you. They may be able to support you again in the future.

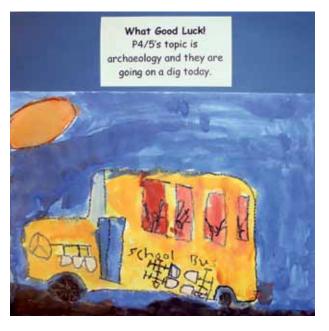
# **Inspiring your community**

There are many ways in which members of your community could find out more about your discoveries, other than through a site record. You could present your work through talks, displays and newspaper articles, for example, or you could actively involve people through guided walks, excavations, and hands-on training days.

You might want to be even more imaginative, and engage a wider audience, through drama, art, poetry, film-making, model-building, and so on. You could talk to your local school or youth group about using the site you have been recording as a catalyst for young people to learn about past ways of life.

The opportunities are endless, and the more imaginative you can be in how you share what you have learnt, the more widespread the benefits for others.

Schools are often keen to get their pupils involved with local archaeological projects. DP103126







#### Websites and other resources

# Royal Commission on the Ancient and Historical Monuments of Scotland

The Royal Commission on the Ancient and Historical Monuments of Scotland (RCAHMS) collects, records and interprets information on the architectural, industrial, archaeological and maritime heritage of Scotland. Its archive contains drawings, maps, plans, manuscripts, photographs, and aerial photographs. Members of the public can view original items from the collection in the Search Room. Appointments are not essential but are encouraged to ensure you get the most from your visit (opening times are given on the website). Much of the collection material can also be viewed online at the websites below.

# www.rcahms.gov.uk info@rcahms.gov.uk

John Sinclair House, 16 Bernard Terrace, Edinburgh, EH8 9NX 0131 662 1456

#### Canmore

RCAHMS is responsible for Canmore, which provides online access to information about known archaeological and historic sites, including written descriptions, plans and photographs. Canmore also shows if RCAHMS holds associated information, such as estate maps, notes, reports or more detailed research, not yet available digitally. The original records can be viewed in person in the RCAHMS Search Room, as above.

#### www.canmore.rcahms.gov.uk

#### **PASTMAP**

PASTMAP is a web-based searchable map that includes historic environment data from a variety of sources including Canmore, Historic Scotland and local authorities. Details relating to Listed Buildings, Gardens and Designed Landscapes, Scheduled Monuments and other features can be accessed via this site.

#### www.pastmap.com

#### The National Collection of Aerial Photography

The National Collection of Aerial Photography, curated by RCAHMS, has been partially digitised, and a growing number of images are available to view online. However, for access to the whole collection you will need to make a viewing appointment, using the online booking form.

#### www.aerial.rcahms.gov.uk

#### Scotland's Rural Past

The website for the SRP project, managed by RCAHMS, contains a wealth of information, guidance and practical advice, developed specifically for non-professionals wishing to do archaeological fieldwork and historical document research. There is also information about the volunteer projects set up under SRP. Two very helpful glossaries have been put together by the Scotland's Rural Past team. These cover terms used for (1) Vernacular buildings and architectural features, and for (2) Agricultural settlements and landscapes. Both are available on the SRP website in the Doing fieldwork section.

#### www.scotlandsruralpast.org.uk

**ScotlandsPlaces** is a very useful website that lets users search across different national databases using geographic location. The results pages provide all the available digital images held by RCAHMS, the National Records of Scotland (NRS), and the National Library of Scotland (NLS).

#### www.scotlandsplaces.gov.uk

#### Historic Environment Records and Sites and Monuments Records

Site records for every region in the country are accessible via the local authority's own website, as well as PASTMAP. HERs and SMRs are sometimes the first repository for updated information on individual sites, buildings and landscapes for that region, and can contain information that is not yet available in Canmore. Contact details for all of the Scottish HERs and SMRs are available from the 'Links' page on the RCAHMS website.

# **National Library of Scotland Map Library**

The NLS Map Library has digitised much of its collections, including 6-inch and 25-inch 1st edition OS maps, Roy's Military Survey of Scotland, and Pont's Maps of Scotland, which can all be viewed online on the NLS website. Items that are not available online, including 2nd and 3rd edition OS maps, can be viewed in person. Appointments are advisable to ensure you get the most from your visit.

#### www.maps.nls.uk maps@nls.uk

159 Causewayside, Edinburgh, EH9 1PH 0131 623 3970

#### **National Records of Scotland**

The National Records of Scotland (previously the National Archives of Scotland) holds vast collections of estate maps and other papers which may be of interest to your research. You can search for records using the NRS online catalogue. Use the 'Maps and Plans Search' to look for maps and plans, and the 'Simple Search' to look for all other records. However, this is a complicated catalogue, so do read the 'Help' pages before you begin.

For most records you will need to visit in person to see any archive material you are interested in, but a growing number of maps and taxation records are available on the ScotlandsPlaces website (see above). A booking is always advised as some material is held off-site. The NRS will issue you with a reader's ticket on your first visit. For this, you will need to take proof of your identity and of your current address, and two passport sized photographs.

#### www.nas.gov.uk enquiries@nas.gov.uk

HM General Register House, 2 Princes Street, Edinburgh, EH1 3YY 0131 535 1314

# The National Register of Archives for Scotland

This website contains information and advice about how to view archives held in private hands in Scotland.

#### www.nas.gov.uk/nras

# **ARCHON Directory**

This website, maintained by The National Archives, contains contact details for all libraries, museums and archives in the British Isles.

#### www.nationalarchives.gov.uk/archon

#### Other sources of information

#### **Historic Scotland**

Historic Scotland is the Scottish government's built heritage body. Its website includes a list of all Scheduled Ancient Monuments in the country.

#### www.historic-scotland.gov.uk

#### Discovery and Excavation in Scotland

This annual journal is an accessible, up-to-date and invaluable guide to archaeological work being undertaken across Scotland. Both volunteers and professionals are encouraged to submit information about their current work so that the publication is as comprehensive as possible. You can currently do so via a downloadable form available from the 'promoting our heritage: publications' section of the Archaeology Scotland website (see below). However, the method for submitting data to DES is under review and is likely to change.

#### **Archaeology Scotland**

This small organisation works to promote the conservation, management, understanding and enjoyment of Scotland's heritage. It co-ordinates a number of initiatives aimed at increasing active public participation, including Scottish Archaeology Month, and the Adopt-a-Monument scheme.

#### www.scottisharchaeology.org.uk

#### **Forestry Commission**

The Forestry Commission has information about archaeological sites and monuments on its estate in Scotland.

#### www.forestry.gov.uk/histenvpolicy

# **Historic Rural Settlement Group**

The HRSG provides a forum for discussion on the understanding, conservation and management of historic rural settlement in Scotland. Its website acts as an information point on historic rural settlement research and recording that is happening across Scotland, and has useful links to relevant local groups, organisations and events. It also includes a useful bibliography of rural settlement publications.

#### www.molrs.org.uk

#### **Scottish Outdoor Access Code**

This website, maintained by Scottish Natural Heritage, explains your access rights and responsibilities in Scotland.

#### www.outdooraccess-scotland.com

#### **Videos**

Four short fieldwork training videos were created by the Scotland's Rural Past team in 2011 as part of the legacy of the project. These last between 5 and 15 minutes each and cover the following techniques:

- Site sketching
- Using hand-held GPS
- Tape-and-offset
- Plane tabling

The videos can be viewed on the SRP website Videos page, or on YouTube by searching for Scotland's Rural Past.

#### **Publications**

#### Barclay, G (ed) 2002

The Making of Scotland, a series in 12 volumes covering Scottish prehistory and history, published by Birlinn and Historic Scotland, Edinburgh. The series includes the publications by Dixon and Dodgshon.

#### **Dixon, P 2002**

Puir Labourers and Busy Husbandmen: The Countryside of Lowland Scotland in the Middle Ages

#### Dodgshon, R 2002

The Age of the Clans: The Highlands from Somerled to the Clearances

#### English Heritage 2002 \*

With Alidade and Tape: Graphical and Plane Table Survey of Archaeological Earthworks, London

#### English Heritage 2003 \*

Guide to Good Practice in Use of GPS Satellite System for Survey of the Historic Environment, London

# Glendinning, M & Wade Martins, S 2008

Buildings of the Land, RCAHMS

#### Ritchie, G & A 1991

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A Practical Guide to Recording Archaeological Sites	78

People are fascinated by the remains of the past and the way our environment has been shaped by many thousands of years of human activity. Archaeological recording brings us into closer contact with this past, encouraging us to explore, observe and interpret the landscape around us. The more accurate and detailed the record of an archaeological site, the more information about that site is available for research, conservation and management.

Field recording is a crucial part of the work of professional archaeologists, and is an area of growing interest among non-professionals. This guide has developed out of training courses, run by Scotland's Rural Past and the Royal Commission on the Ancient and Historical Monuments of Scotland, for volunteers of all ages and experience. Containing practical, hands-on advice on the techniques used for recording archaeological sites, it is an invaluable tool for anyone who would like to discover more about the rich history and heritage of this country.











**Scotland's Rural Past** is a five year project hosted by the Royal Commission on the Ancient and Historical Monuments of Scotland, with partnership funding.

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