University of New England

GIRT

Gathering Information via Recreational and Technical

Scientific Divers

'Our land is girt by sea', so dive into an ocean full of history!

Sketching a mud map

The content of this presentation is drawn from Peter Holt's - 3H Consulting webpage

http://www.3hconsulting.com/techniques/TechSketching.html

Equipment List

- Drawing slate - An A4 or A5 size PVC slate, pencil and waterproof paper for making notes
- Pencils - For drawing
- Water proof paper - For sketching on underwater or in the rain
- Compass - A divers hand bearing compass
- Flagging tape - Bright yellow flagging tape is used to mark objects that have been found
- Depth gauge
- 30 m Tape

http://www.3hconsulting.com/techniques/TechSketching.html

Anyone Can Sketch Underwater

Though few people believe that they are good at sketch

A good sketch often provides a large amount of information about a site in the early stages and it is better for explaining what has been found as a sketch is easier to interpret than a set of bare measurements.

Some form of sketch is essential before work can be planned on a new site as the size and shape of the site need to be known, as well as some idea of what can be found there.

Aim to give an overview rather than concentrating on one part in detail. It is important to establish the size and orientation of the site as a minimum, the position of any large features should be recorded as these can give a clue to the type and size of the ship or to help work out which end is the bow and which is the stern. The pattern of structure and features gives clues to how ship sank and can show if ship has been salvaged or disturbed by trawlers.

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The sketch should show:

- Important features on the site in relation to each other
- Approximate dimensions of the site, length and width
- The orientation of the site, which way is north
- Note if the site is submerged, intertidal or above water
- Water depth at points across the site, or heights if on the foreshore
- Note if the site is intact, broken up or scattered, upright, on it side or upside-down
- Notes on any features or objects on the site
- Notes on potential for buried objects
- Notes on seabed types
- Potential hazards such as trawl nets
- The 'metadata' that tells us about the sketch; who drew it, the name of the site, when it was drawn, the depth, visibility and current on the site at the time

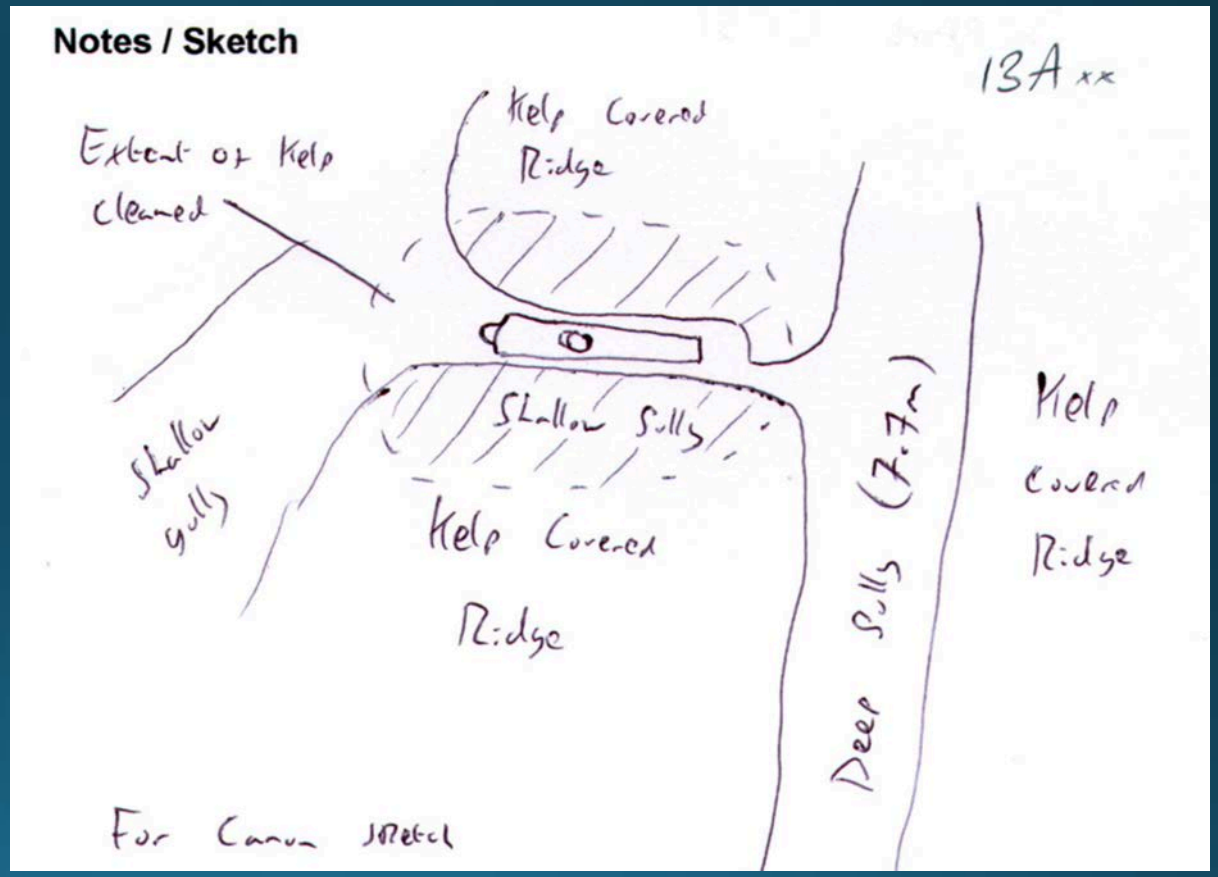
GIRT – mud map requirements

- Select a number of prominent features on the site that will enable you to see sediment movement and/or the effects of scouring on those individual features.
    - Remember that the site can be impacted from any direction thought each site will be more often subject to weather from certain directions
- Number each feature from one to ten
- Ideally you should be able to swim around all your chosen sites in one or two dives and do all photo documentation and metadata recording requirements

Simple location sketch

This sketch was attached to a dive log and was included to show the location of a cannon so it could be more easily located later on. The cannon was found in amongst a very thick bed of kelp (tall seaweed) on rocky ground that was crossed by deep gullies so initially was very hard to find.

The sketch shows the main feature, a cannon, in the middle along with lines used to represent the edges of the gullys and kelp around it. The depths recorded at the time are shown as these can be useful for identifying the general area when relocating the cannon.
This quick and simple sketch took minutes to do but does a good job of recording the location of the cannon.



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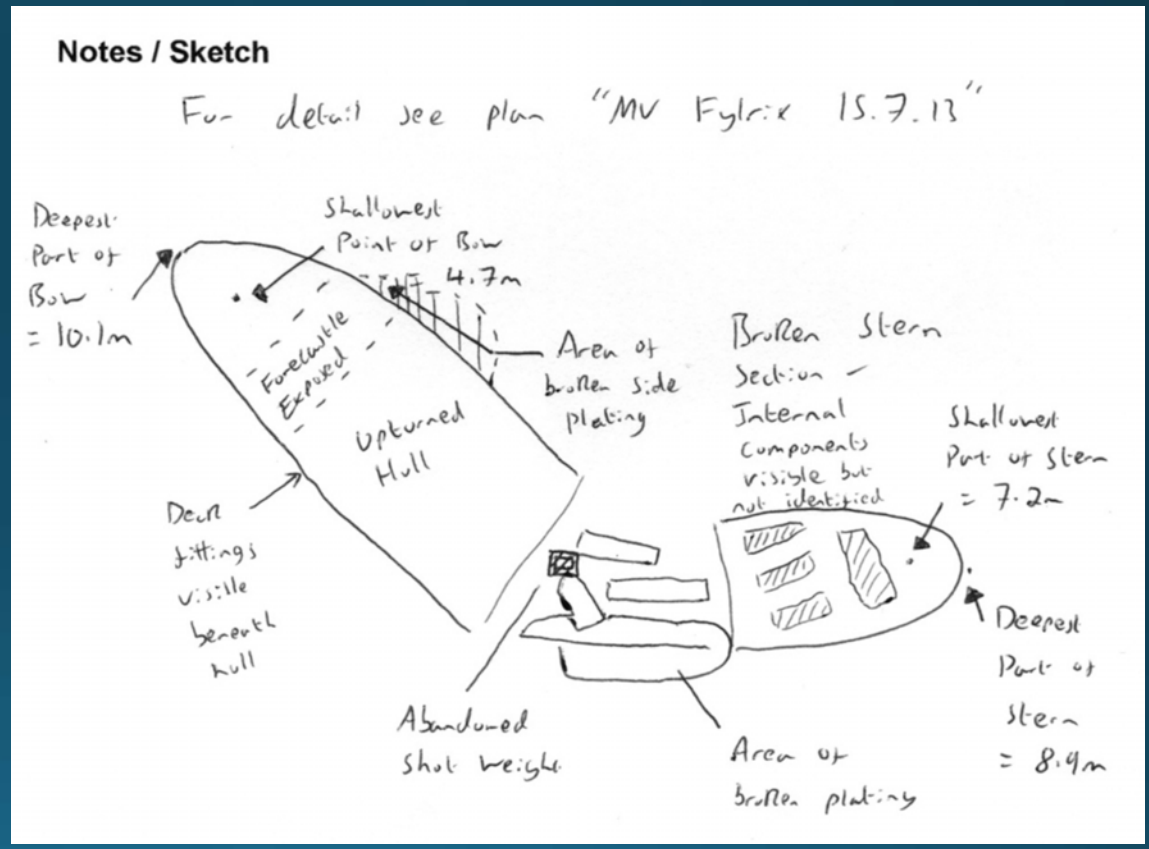
Simple Sketch Plan

This is a simple sketch of the wreck of the MV *Fylrix* wrecked in Jennycliff Bay in Plymouth, the sketch was made by a diver who had not visited the site before.

The sketch shows outlines of the main features of the wreck, the upturned bow, the stern and the debris in between. Alongside the drawing are notes on what was seen and the depths recorded at the time. Little was recorded about the seabed in the area as it is flat and featureless mud.



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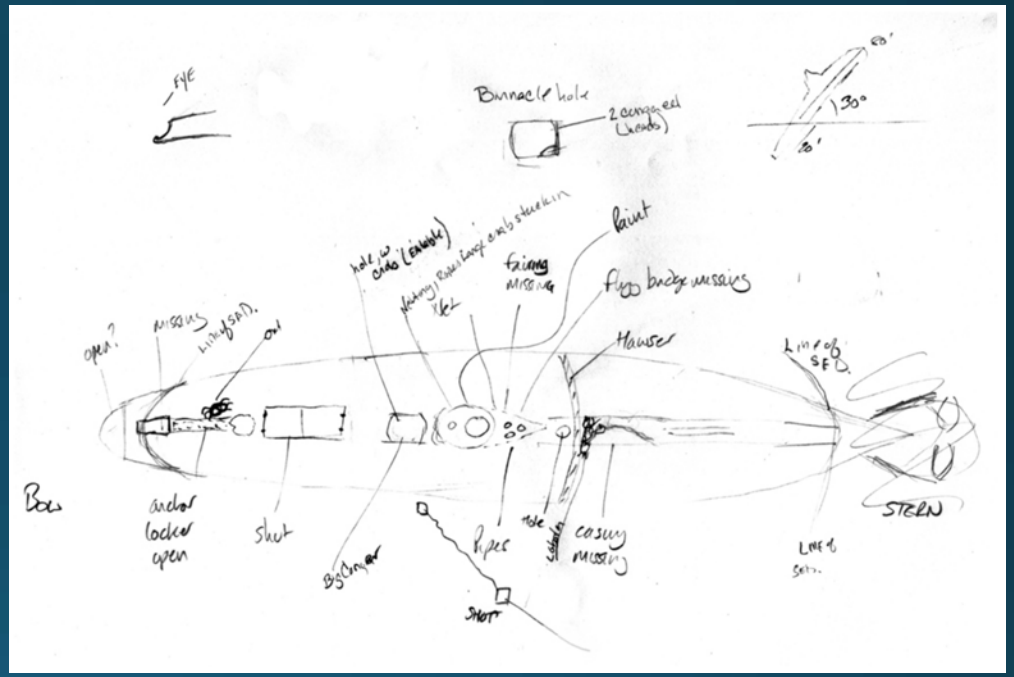
Initial sketch plan

This is the first sketch plan of the *A7* submarine sunk in Whitsand Bay off Plymouth. The site is in 40m depth, the visibility was less than 4m and there was minimal natural light.

Features on the hull of the small submarine have been marked on the plan surrounded by a basic outline of the hull.

Working at depth provides only a short time to draw a sketch so very little can be achieved in one dive. Photography and video can provide more information but may be harder to interpret if the visibility is poor. When planning work in these conditions it is important to keep expectations to a minimum!



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Initial site sketch plan

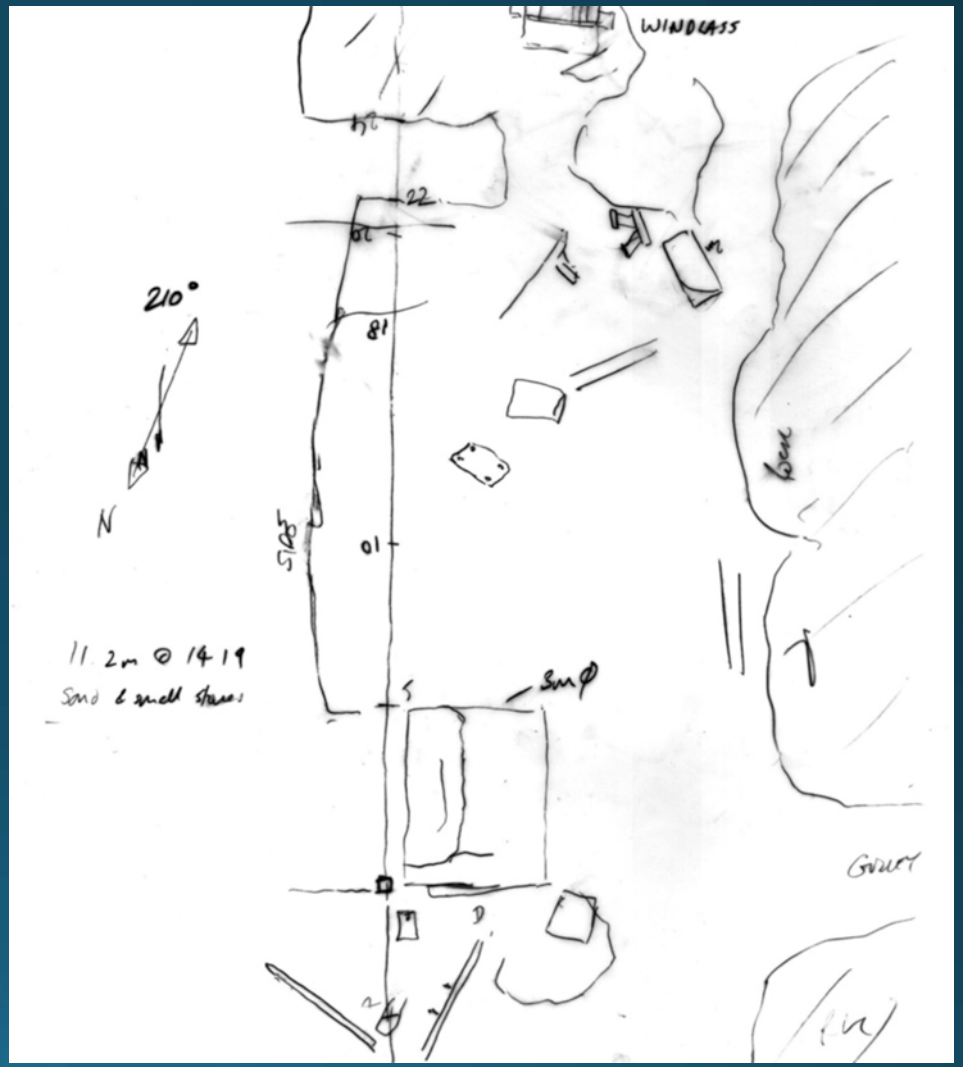
When making an initial sketch of a wreck it is often easier to lay a tape measure across the site to use as a reference. This example is an initial sketch of the wreck of the WWI armed trawler *Abelard*.

A tape measure laid straight across a site helps to ensure that the drawing is also straight, this can be essential for the more difficult sites where the visibility is poor, it is deep or dark.

The distance marks on the tape can be used to roughly mark out where each feature is on the plan without spending time being too precise. The baseline can be drawn to scale on the plan as a straight line and the features on the wreck along the tape drawn on the plan in the right place.

It was possible to lay a tape measure through the middle of this wreck as it was relatively flat after being heavily salvaged. For taller wrecks it may not be possible to lay the tape through the wreck but sometimes it can be laid alongside.

This sketch also includes a north arrow to show the orientation of the site as well as notes on the seabed type.



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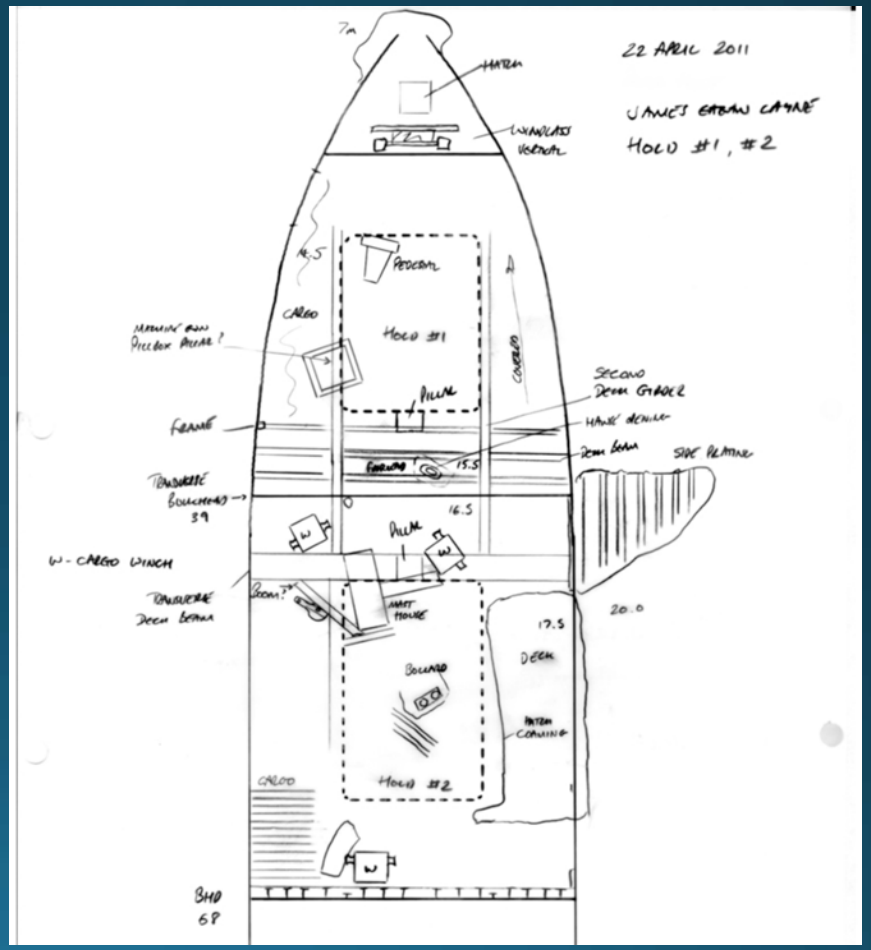
Sketched details over an engineering drawing

For shipwrecks where the plans exist you can take copies of the plans underwater then mark them up with features seen on the site. This was one of the methods used for recording details within the holds of the Liberty ship S.S. James Eagan Layne.

Copies of the plans for the ship were printed on to laser printer safe drawing film and attached to a drawing slate. The slate was taken on to the site and the features drawn on to the drawing film over the plan using a pencil. The positions of bulkheads and hatches were used to position and align the other features sketched over the plan, with notes added where the objects could be identified.



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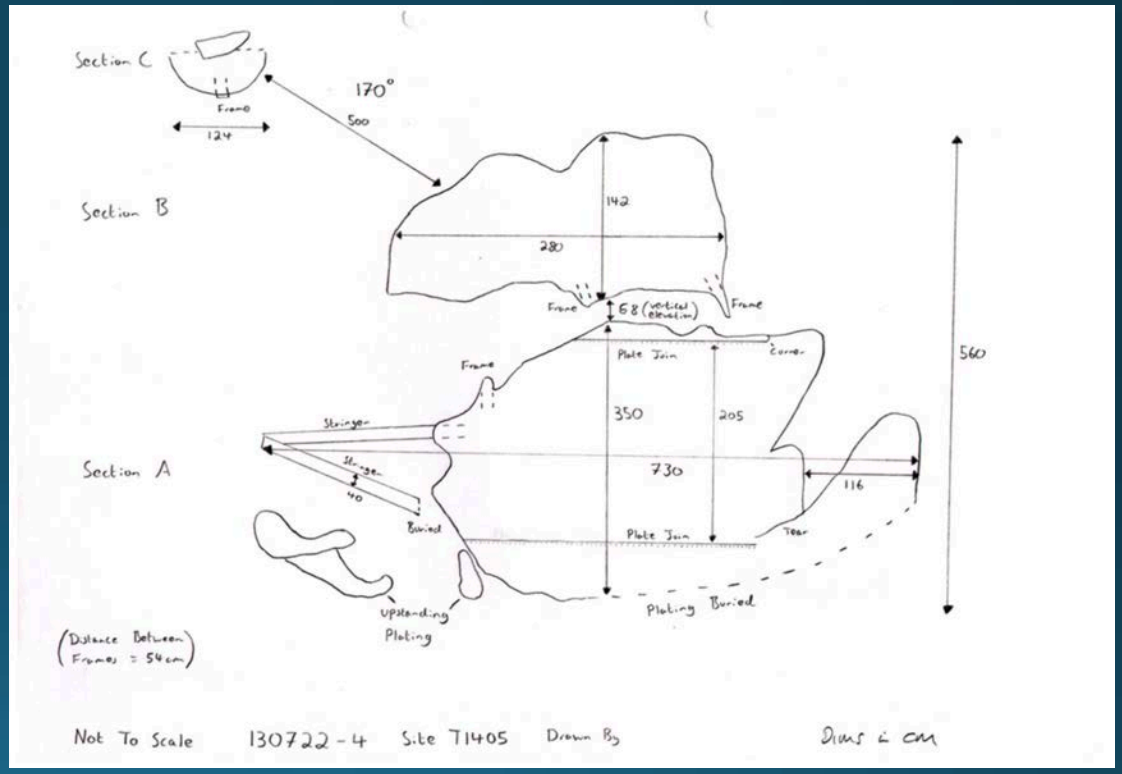
Sketch with dimensions

The next stage up from a basic sketch is one where the main dimensions have been added. This sketch is of a section of iron steamship and has been redrawn on paper from the original that was drawn underwater. The drawing is not to scale but gives a useful impression of the plan view of this structure.



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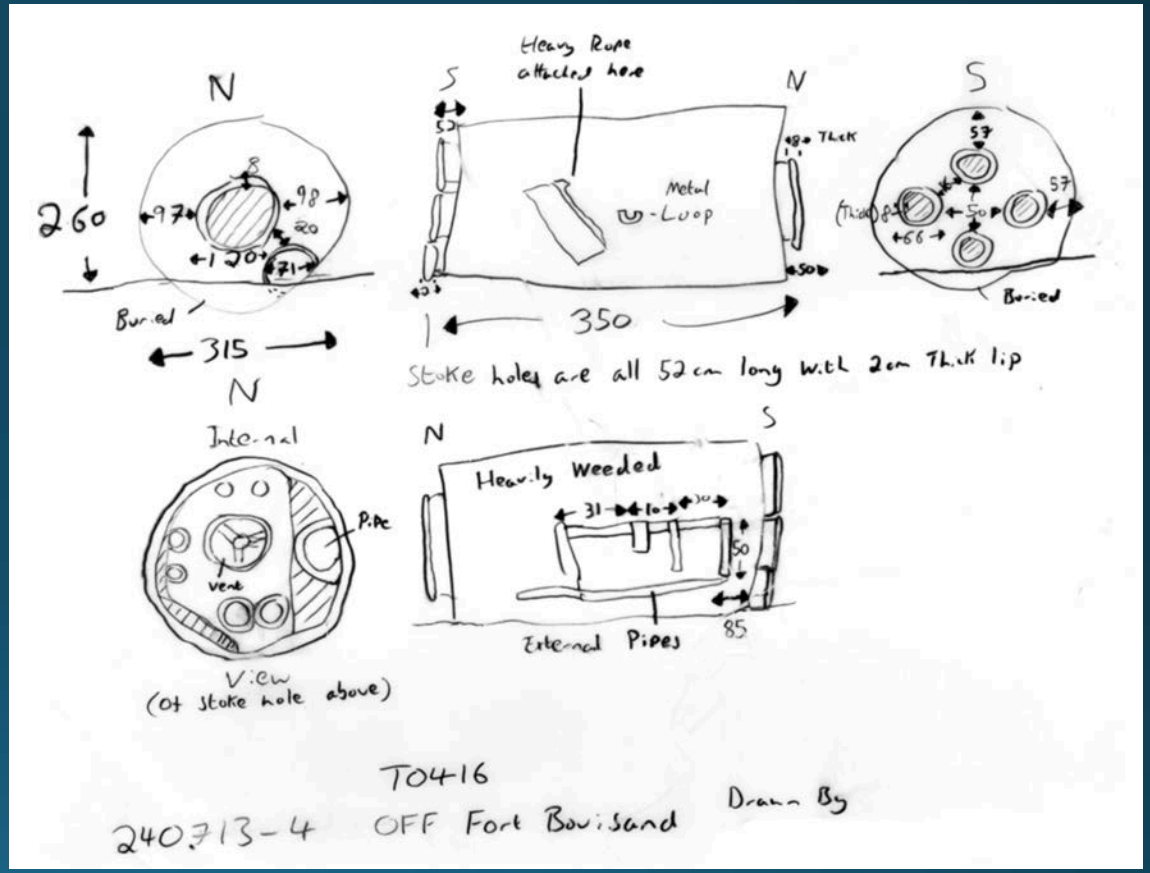
Detailed sketch with dimensions

If the sketch has enough detail then it is possible to produce an engineering drawing of the object that was recorded. This is a detailed sketch of a ship's boiler found on its own on a flat sand seabed, the drawing was done in 30 minutes by two divers in very poor visibility where no useful photographs could be taken.

Four elevation sketches show the boiler from all sides and details of part of the structure have been drawn separately. Enough measurements have been included on the sketch to be able to create a representative drawing.



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Great resources to further your knowledge

- **3H Consulting** - Peter Holt http://www.3hconsulting.com/techniques/TechSketching.html
- **Training Manual** for the UNESCO Foundation Course on the Protection and Management of Underwater Cultural Heritage in Asia and the Pacific
- **Manual for Activities directed at Underwater Cultural Heritage**
- **Australasian Institute for Maritime Archaeology (AIMA)/Nautical Archaeological Society** training course
- Nautical Archaeology Society (NAS) **Underwater Archaeology: The NAS Guide to Principles and Practice**
- Publications supplied

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Scientific Divers

DIVE INTO AN OCEAN FULL OF HISTORY

Supported by:

Wreck Check Inc.

Australasian Institute for Maritime Archaeology

Nautical Archaeology Society

une University of New England

This project has been approved by the Human Research Ethics Committee of the University of New England