Report No: 2011R126

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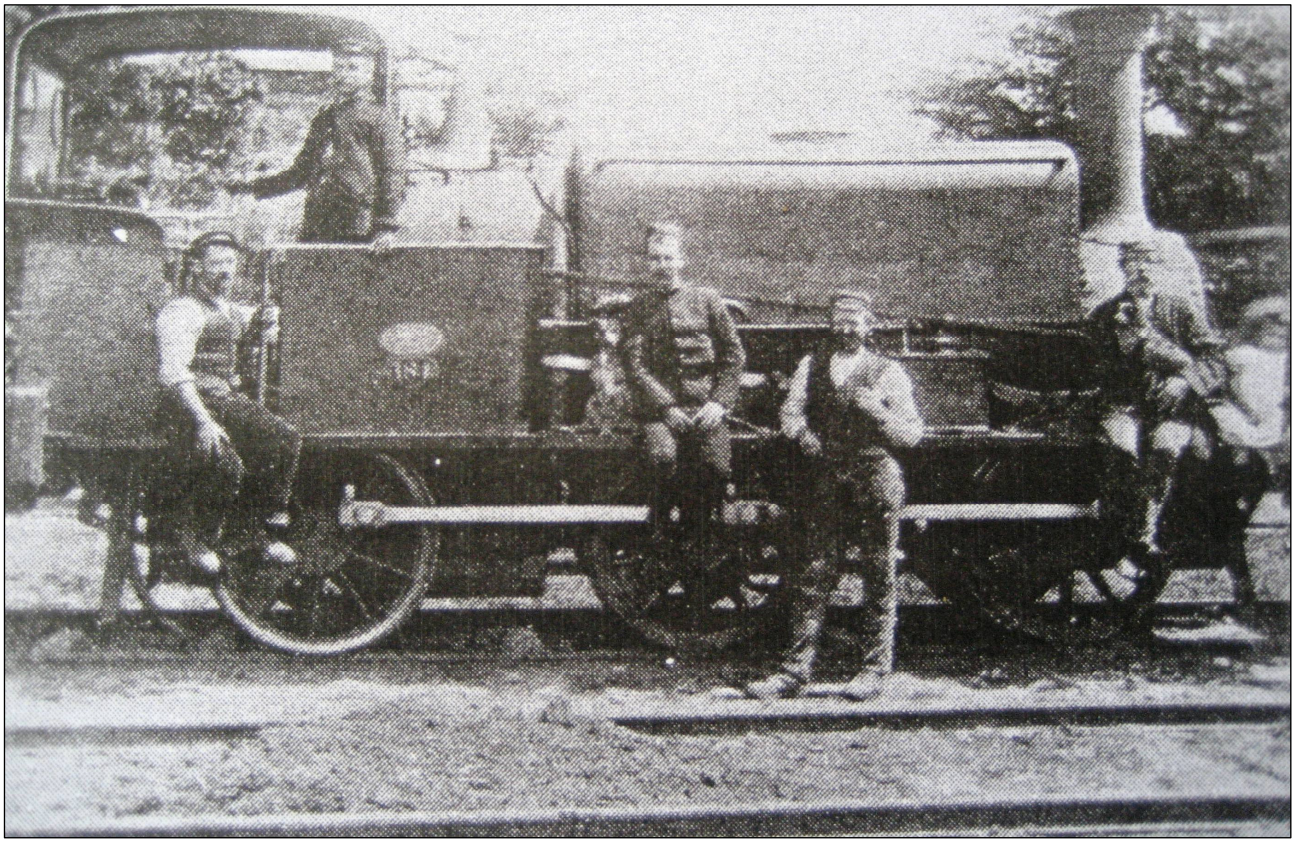
CORNWALL COUNCIL

Wacker Quay Trail, Antony

Archaeological assessment report



Historic Environment Projects

Report No	Report Name	Report Author
2011R126	Wacker Quay Trail, Antony	Colin Buck

Event Type

Archaeological assessment	Site Consultancy		

Client Organisation	Client Contact
Tamar Community Trust	John Page, Rosemary Teverson

Monuments (Mon UID)

MCO	23276 (Wacker to Tregantle Railway line)	23277 (Scraesdon Fort)	13246 (Abbotsfield PM settlement)		

Fieldwork dates (From)	(To)	(Created By)	(Create Date)
17/11/2011	25/11/2011	Colin Buck	24/11/2011

Location (postal address; or general location and parish)

Wacker Quay to Tregantle Fort military railway (via Scraesdon) in Antony Parish

(Town – for urban sites)

(Postcode)

	(Easting) X co-ord	(Northing) Y co-ord	
From: SX	39325	59364	
To: SX	39584	55094	

List of Figures (Front cover – Locomotive 0-6-OST No. 967, WD No. 384)

Historic Environment, Cornwall Council is a Registered Organisation with the Institute for Archaeologists

Project background

The study area (see Fig 1) includes a small section of a military railway from Wacker Quay (on the River Lynher), to Tregantle Down Battery (not shown) via Scraesdon Fort, a line length of 2.5 miles. The line extends from the Quay, eastwards around the coast and at a point north of Scraesdon Fort, turns to go uphill via an incline railway to Scraesdon Fort and beyond to Tregantle Fort. The line was built from 1886 and went out of use by 1905. It has become overgrown, derelict and infilled in places since then.

The current proposal as defined by the Tamar Valley Area of Outstanding Natural Beauty (TVAONB) is to utilise the track bed of the lower section of the former railway line from Wacker Quay for a new footpath, which would give public access to Antony via a scenic and interesting route. Rosemary Teverson (Tamar Valley Area of Outstanding Natural Beauty Projects Officer) obtained project funding from Natural England for this assessment survey, which required an assessment of the site history, the location of archaeological features, to advise on the route, and a certain amount of vegetation and tree clearance from the route with the potential for the construction of a boardwalk from the east side of the project area to connect to another new footpath to Antony (near the former site of Abbotscourt).

Historic Environment, Cornwall Council was commissioned to carry out the rapid assessment which was undertaken by Colin Buck on 17/11/2011 (with advice from Keith Rawlings - a local military historian).

Aims and objectives

The aims and objectives of this study were:

- To undertake an archaeological assessment of significant sites within the defined project area (Fig 1).
- To undertake the site assessment with historical advice from local military historian (Keith Rawlings).
- To advise on a safe practical footpath route around or close to archaeological features.
- To produce a short report for the proposed new footpath which includes a site inventory accompanied by location plans. Only significant features were to be identified and general management recommendations made.
- To undertake sufficient historical research in order to provide information for use in interpretation boards.
- To co-ordinate the project with Rosemary Teverson (TVAONB Projects Officer) and John Page (Tamar Community Trust vice chairman).

Historical background

In Cornwall, Neolithic hilltop enclosures are found throughout the county as are later Iron Age hillforts and contemporary cliff castles. Defended farming hamlets, or rounds are found throughout Anciently Enclosed Land (Historic Landscape Characterisation landscape zone), and date from the later prehistoric period into the Romano-British period. Occupation at some continued into the early Medieval period (eg Trethurgy, Quinnell 2004). In the study area the 1842 Tithe map shows field name 'Berry Hill' on the later site of Scraesdon Fort. This place name evidence suggests the site of a later prehistoric /Romano British Round (MCO 8472).

The settlement of Abbotscourt is first recorded in a hearth tax of 1662-64 (ICS 1987). The settlement is now lost; but Martyn's (1748) and Gascoyne's (1699) maps indicate that it may have been at this location (SX 3913 5518). However, no extant remains are noted. An alternative location may be suggested at the end of a track east of the study area, the site named 'Abbotscourt ' (see Fig 3), which terminates at SX 3963 5518 (MCO 53508). Gover (1948) suggests that the name of the settlement refers to the fact that the Abbey of Tavistock owned the manor of Antony in the 11th century AD.

The main historical land use in the study area and its immediate surroundings relates to military history from the mid 19th century. At that time the government was deeply concerned with possible attacks by the French on the country's naval dockyards: at Portsmouth and Plymouth. Accordingly, the sea approach to Devonport Dockyard in Plymouth was strengthened on all possible sides by the construction of batteries and

defended forts. The western defences of Plymouth comprised two large forts; Scraesdon (northern end) and Tregantle (southern end). These were intended to protect the Maker peninsula, Whitsand Bay and the Lynher estuary from military occupation and bombardment of the dockyard.

Scraesdon Fort (MCO 23277), built on top of Berry Hill was constructed from the late 1850s and was completed in 1868 (Figure 4). It was a detached work constructed on two levels and was enclosed by a deep ditch and a revetted scarp (10m high), and was flanked by caponiers and galleries within which sited the barrack accommodation for up to 300 men. It was built to site 27 cannons on the ramparts, each magazine served 4-5 guns (installed 1875). A long traverse of earth protects the casemates from the north-east, within which are loop-holed tunnels overlooking the fort's lower level on which three north-east facing brick Haxo casemates were built in 1873 In 1885 five 7-inch rifled breech-loading guns were mounted: one 64-pounder rifled muzzle-loader, two 5-inch breech-loaders and two 32-pounder smooth bore breech-loading guns. Three more were added in 1893.

The need for efficient provision of armaments, shells and victuals for both forts and their occupants was met by the construction of the Wacker Quay to Tregantle Railway (MCO 23276) between 1886 and 1893 by the Royal Engineers. The trucks and possibly the track were originally designed for the Sudanese Campaign but were shipped home after the fall of Khartoum in 1885. Wacker Quay (MCO 4940), was developed from its mid 19th century origins as a single pier and lime kiln (used also by the nearby Wacker Tidal corn mill), and became the unloading point to receive the fort supplies (including water), and ammunition via barges. Inspection of historic maps and a rapid site visit confirmed the piers, the railway lines with sidings, and the site of a railway engine shed (with an ash pit and adjacent extant water tank), which served the railway engine that travelled from the quay to the bottom of the incline. The latter engine house retained the original steam engine (one of a pair: both 0-6-0 saddle tanks (186/390550)) until the 1930s.

The 2.5 mile long railway line (Site 1) was standard guage (4 ft 8.5 inches) and went around the headland until it met two turntables (Site 5), at the base of the incline. The eastern turntable connected to the 1 in 7 gradient cable incline (Site 1.1), which went under the (re-aligned) A374 road and new bridge (Site 1.2). The western turntable provided access to a shunting siding (Site 8) which also provided access to the incline winder engine house (Site 6), mainly for coal supplies. Water for the stationary winding steam engine was provided by a large covered water tank (Site 7). Passing loops were located near Wacker Quay, the incline itself (pictured in an article by Bruce Hunt 2011 from an earlier article by Keith Rawlings), and near Scraesdon Farm (for the second engine that worked above the incline from Scraesdon to Tregantle fort).

Changing military priorities together with and the high cost of operating and maintaining these two western forts, dredging the barge routes and operating the railway, resulted in its closure by the War Department at the turn of the twentieth century. The guns were dismantled and removed using the railway: some were perhaps buried. The railway finally closed in 1905. Some sections of line were removed at that time, as well as the turntables and winding engine, although some remained (Figure 5 – 1908 OS Map) until 1916, during the munitions drive.

Since then, Scraesdon Fort has been in use for a variety of purposes: as a First World War training camp (for shooting and trench digging exercises), as a Field Hospital and for Second World War training. Over the past fifty years Scraesdon Fort has been used on an intermittent basis for dry assault training.

Working methods

All archaeological recording work was undertaken according to the Institute for Archaeologists (IfA) *Standards and Guidance for Archaeological Investigation and Recording. Staff follow the IfA Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology*.

Desk–based assessment

During the desktop assessment historical databases and archives were consulted in order to obtain information about the history and mapping of the sites, structures and features

located in the study area. The main sources located and consulted include primary historical documents, maps, plans and other published material held by statutory and non statutory agencies (refer to references section):

- Historical documents, maps, plans and other published material held by Cornwall Records Office, Truro
- Published histories of local industrial archaeology (references section)
- Local special interest groups (Keith Rawlings – local military historian)
- Statutory and other planning designations for the site

Documentary research and fieldwork have been slanted towards summarising the military history of the area, with the majority of site management recommendations relating to the use of the site as a new footpath route from Wacker Quay to Antony.

Fieldwork

Detailed maps for use in the field were produced from the Ordnance Survey Landline Digital Mapping and amalgamated with information derived from historic maps (including the 1st , 2nd and 3rd edition 1:2500 Ordnance Survey maps), and other documentary sources. These maps/images were also used as part of the fieldwork map base during the field survey. Field recording was based on a mixture of photography (digital), annotated sketch and measured recording.

Sites Inventory

The field survey assessment was carried out on 17/11/2011, accompanied by Keith Rawlings. All sites are shown on Figure 7.

Site 1 Railway line track bed

SX 38929 55089 (Wacker) to SX 39508 55152 (incline bottom)

Description

The railway track bed is still extant throughout its length (from Wacker Quay to the incline bottom), as evidenced by the undulation impressions left in the base ballast material, after the timber sleepers were removed. *'The rails were laid to standard guage and spiked to closely spaced wooden sleepers, which in turn rested on comparatively light ballast. The sleepers themselves were cut from 12in. diameter tree trunks sawn into 8ft lengths and sliced longitudinally to produce two apiece. They were embedded round side downwards and the even surfaces provided accommodation for light weight flat bottomed rails'* (excerpt from web article by Bruce Hunt 2011). A section of track is already used by local walkers, but this is now blocked by a fallen tree – restricting public access.

Recommendation

Parking at Wacker Quay and walking along the railway track bed is an excellent means of relaxation. The fallen tree should be removed and overhanging branches and overgrown vegetation should be removed along the last section of track to the incline bottom. Tree stumps should be removed or treated from the track bed. There should be no impact into the remaining track bed.

Site 1.1 Incline railway track bed

SX 39508 55152 (Bottom) to SX 39465 54998 (by-pass loop)

Description

The incline railway track bed is still extant and visible as it goes up the hill towards the road bridge (Site 1.2). However the site is quite overgrown within its woodland setting.

Recommendation

The bottom of the incline (near the two turntables - Site 5), is a good viewpoint to look up the incline. It is recommended that periodic vegetation management of the incline bed (for a realistic distance) is undertaken to provide an unbroken sight line up the hill which marks the former incline railway.

Site 1.2 Incline railway A374 road bridge (Just outside study area) SX 39487 55075

Description

The incline railway road bridge is still extant and visible. It is a large tall structure of granite with long and high side parapet wall arms. The track bed has been infilled from its upper (south) side – presumably to strengthen the bridge. The site is quite overgrown within its woodland setting.

Recommendation

None applicable.

Site 2 Unknown mechanism SX 39410 55267

Description

Figure 8 shows a geared mechanism which appears to have fallen (or was perhaps dismantled) from the railway track above. The feature, lying on the upper foreshore, was discovered by Keith Rawlings. It may have been part of the railway system but its function is unknown although it may not be related to the railway turntable as this probably was turned manually.

Recommendation

If, with further research, this feature can be positively identified and its function revealed to be related to the operation of the railway, it perhaps could be removed (by volunteers), cleaned and placed on site for public display.

Site 3 Trench SX 39408 55253

Description

A trench cut into the ground close to the north side of the track bed. There are a number of similar small features (averaging 3.0m long and 0.7m deep) within the study area. These longer sites may in fact be drainage trenches (see Site 8 and 8.1). However, Scraesdon Fort was occupied during the First World War to train soldiers for warfare and this included learning the techniques of trench warfare.

Recommendation

The trench is visible at surface and should be left undisturbed.

Site 4 Scraesdon Fort sewage pipe SX 39452 55192 to SX 39492 55231

Description

Scraesdon Fort sewage pipe is constructed of cast iron and is 18” in diameter. It is set on a timber framework with piled supports set into the deep muddy silt. The pipe is broken and partially collapsed, but still issues water. It is probable that it was originally housed in a tunnel (excavated from the fort) as there is no clear evidence of the pipe line at surface.

Recommendation

This feature is quite visible and should be left undisturbed.

Site 5 Railway turntables SX 39509 55162 (western), SX 39492 55231 (eastern)

Description

Figure 9 shows the outline of the extant sides of two turntables (scaled by Keith Rawlings), and Figure 4 maps the site in 1896. The western turntable would have joined the Wacker Quay line to the bottom of the incline (Site 1.1). Whilst the eastern turntable would have joined the Wacker Quay line to the shunting line (Site 8). It is possible that the turntable was turned by hand (if there was enough people) – rather than mechanical operation. The features are 3.3m diameter, and approximately 0.4m deep (possibly lined with stone/concrete), although both are full and obscured by vegetation. At the north end of each turntable is a rectangular excavation (1.0m wide and 1.5m long connected to the turntable by a lintel support), this could have provided some mechanical means of turning the turntable (perhaps if there was insufficient man-power).

Recommendation

It is recommended that these features are not only retained, but cleared of vegetation, and loose earth/stone removed (by volunteers). A bi-annual inspection for maintenance is recommended. The site should be cleared for public display and on-site interpretation.

Site 6 Incline winder engine house SX 39520 55142

Description

The footprint of this building (8.0m long x 4.0m wide) is visible as an overgrown low outer dwarf wall (seemingly of concrete) upon which a timber building was probably originally erected. As expected there are other walls within the building. The building would have housed a stationary steam engine, which would have included a flywheel, winder drum and crank pit. Beneath the overgrowth mounting bolts may have survived in situ, and a boiler house would also have been sited close to the engine (probably within the same overall footprint, on the east side). In addition – there may be an underground channel system from the engine house which led to an underground (or surface) winder drum which connected to the cable in the centre of the track. Figure 4 labels the site in 1896 (but not any possible surface/underground features relating to the operating mechanism).

'The incline worked on the orthodox counter-balance principle powered from a stationary steam winding-house. In exchanging ends trucks were attached to a long spiral wired cable, and when set in motion trucks drawn upwards met the downgrade ones on the passing loop. Its speed is believed never to have been over 15 miles per hour. Changeover points from two to three rails were automatically switched by the trucks themselves' (excerpt from web article by Bruce Hunt 2011).

Recommendation

It is recommended that this building is not only retained, but cleared of vegetation, and loose earth/stone from the pits removed (by volunteers), and then partially infilled with gravel as a safety measure. Bi-annual inspection and maintenance is recommended. The site should be cleared for public display and on-site interpretation.

Site 7 Reservoir tank SX 39539 55148

Description

Clean water would have been necessary for the stationary steam engine. The covered reservoir tank measures 10.0m x 5.0m. There would have been a pump to get water from the lower tank to the steam boiler of the engine house. Three cast iron pipes enter into the western side of the reservoir tank (which is set below the level of the shunting track bed (Site 8)), but 0.4m above surrounding ground level. Long excavation trenches adjacent (and upslope) of Sites 8 and 8.1 are either WW1 military training trenches, or alternatively drainage channels which fed water into the pipes and thence to the reservoir tank. There are two pairs of round vents on top of the tank. One of the access points into the top of the tank has been replaced by a modern galvanised cover plate. Figure 4 labels the site in 1896.

Recommendation

It is recommended that vegetation from the surface of this feature is cleared (by volunteers). Bi-annual inspection and maintenance is recommended and the site should be cleared for public display and on-site interpretation.

Site 8 Shunting track bed SX 39513 55161 to SX 39592 55075

Description

The railway shunting track bed is still extant throughout its length (from the eastern turntable to the track end), as evidenced by its flat raised profile. Given its woodland setting it is likely that undulation impressions remain in the base ballast material, after the timber sleepers were removed, but these are obscured by vegetation. Slightly upslope and south of the track bed is a long trench (0.5m to 0.7m deep) which may be contemporary with the track creation (in order to provide a water source for the reservoir winder engine tank), or alternatively it is a later WWI training trench.

Recommendation

Extending the track from the main railway to this extension section (past the turntables and engine house) should provide an interesting and informative walk. Overhanging branches and vegetation should be removed along its course. Tree stumps should be removed or treated from the track bed. There should be no impact into the remaining track bed.

Site 8.1 Engine House track bed SX 39592 55175 to SX 39519 55138

Description

The Engine House track bed is still extant throughout its length (from the eastern end of the shunting track bed), as evidenced by its flat raised profile. Given its woodland setting it is likely that undulation impressions remain in the base ballast material, after the timber sleepers were removed, but this is obscured by vegetation. Upslope and south of the track bed is a 1.0m high escarpment, in front of which is a long trench (0.7m deep, 1.0m wide) which may be contemporary with the track creation (in order to provide a water source for the reservoir winder engine tank), or alternatively it is a later WWI training trench.

Recommendation

Overhanging branches and vegetation should be removed along its course. Tree stumps should be removed or treated from the track bed. There should be no impact into the remaining track bed.

Site 9 Pit/Sump Shaft SX 39581 55110

Description

A small pit or sump shaft which is 2.0m x 3.0m in diameter and full of water. Its surface is 0.8m below ground level, the water trickles from its interior northwards-downhill). The small remnant of timber across its south side appears to be an old timber shuttering cap. It is possible that this is a spring which has been adapted to form a sump shaft to provide water for the nearby water reservoir tank.

Recommendation

This feature is quite visible and so, for safety reasons should be adequately fenced to restrict animal and public access. The feature should be left undisturbed.

Site 10 Waste dump/Soldier's gardens (out of study area) SX 3942 5515 (centered)

Description

This feature is shown in detail on many historic maps and plans. It appears to be an area where excess subsoil and rock excavated to form the large ditch around Scraesdon Fort was deposited. The long raised causeway leading to this from the fort may well have been the bed of an incline tramway, built to take the massive amounts of material away. Figure 6, a copy of a survey plan of the site (surveyed in the mid 1990s by Pye & Woodward 1996), shows the area had been used for a number of activities: from WWI foxhole training, to soldier's gardens (Figure 4), and possibly burial of unwanted armament (Keith Rawlings 1967).

Recommendation

None applicable.

Summary site recommendations

A project to create a footpath link from Wacker Quay, along the former military railway line, past surviving railway features to link to another footpath to Antony would create an enjoyable and informative experience for users. This report recommends tree and vegetation clearance along the former rail tracks (Sites 1, 1.1, 8 and 8.1 (part), with additional vegetation clearance works to reveal extant archaeological railway features (Sites 5–7). It is recognised that volunteers may well be involved in vegetation clearance, although the character and extent of any site clearance should be guided with

archaeological supervision. Provision of summary information on the historical significance of the sites for interpretation boards is also recommended.

Acknowledgements

Keith Rawlings, retired from the military, and a keen local military historian, has provided useful specific and general site information which has been used in this report, for which thanks are given, and also provided the front cover image of a saddle tank engine (which worked the upper section of the incline to Tregantle Fort from Scraesdon Fort).

References

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Quinnell, H, 2004. Trethurgy. Excavations at Trethurgy Round, St Austell: community and status in Roman and post-Roman Cornwall, Truro

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Project archive

The HE project number is **2011110**. The project's documentary, photographic and drawn archive is housed at the offices of Historic Environment, Cornwall Council, Kennall Building, Old County Hall, Station Road, Truro, TR1 3AY. The contents of this archive are listed below:

1. Project file containing site records and notes, project correspondence and administration (2011110).
2. Digital photographs stored in the directory: R:\HE Images\Sites\W\Wacker Quay Railway 2011110
3. English Heritage/ADS OASIS online reference: cornwall2-115361

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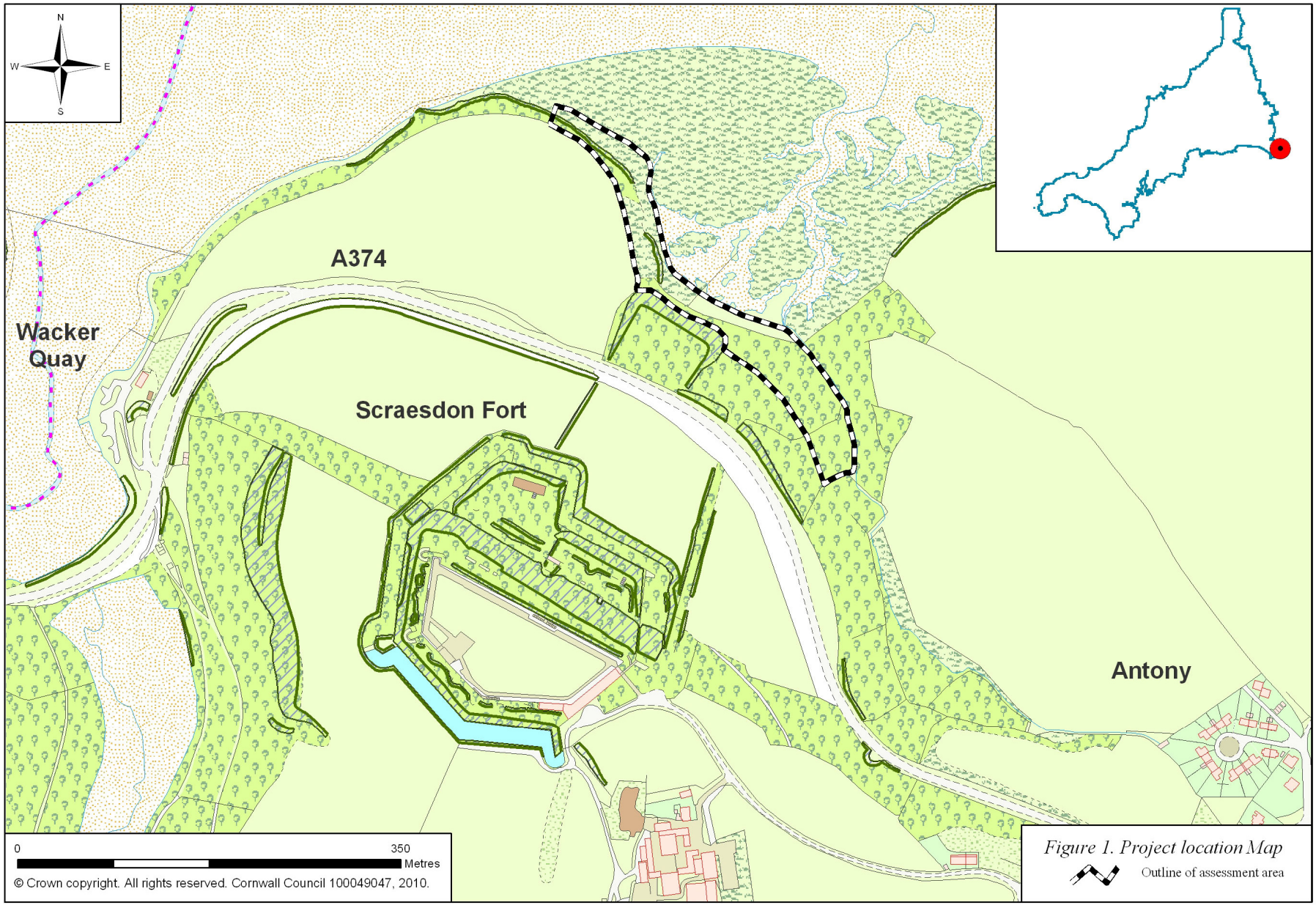

Figure 1 Project location plan

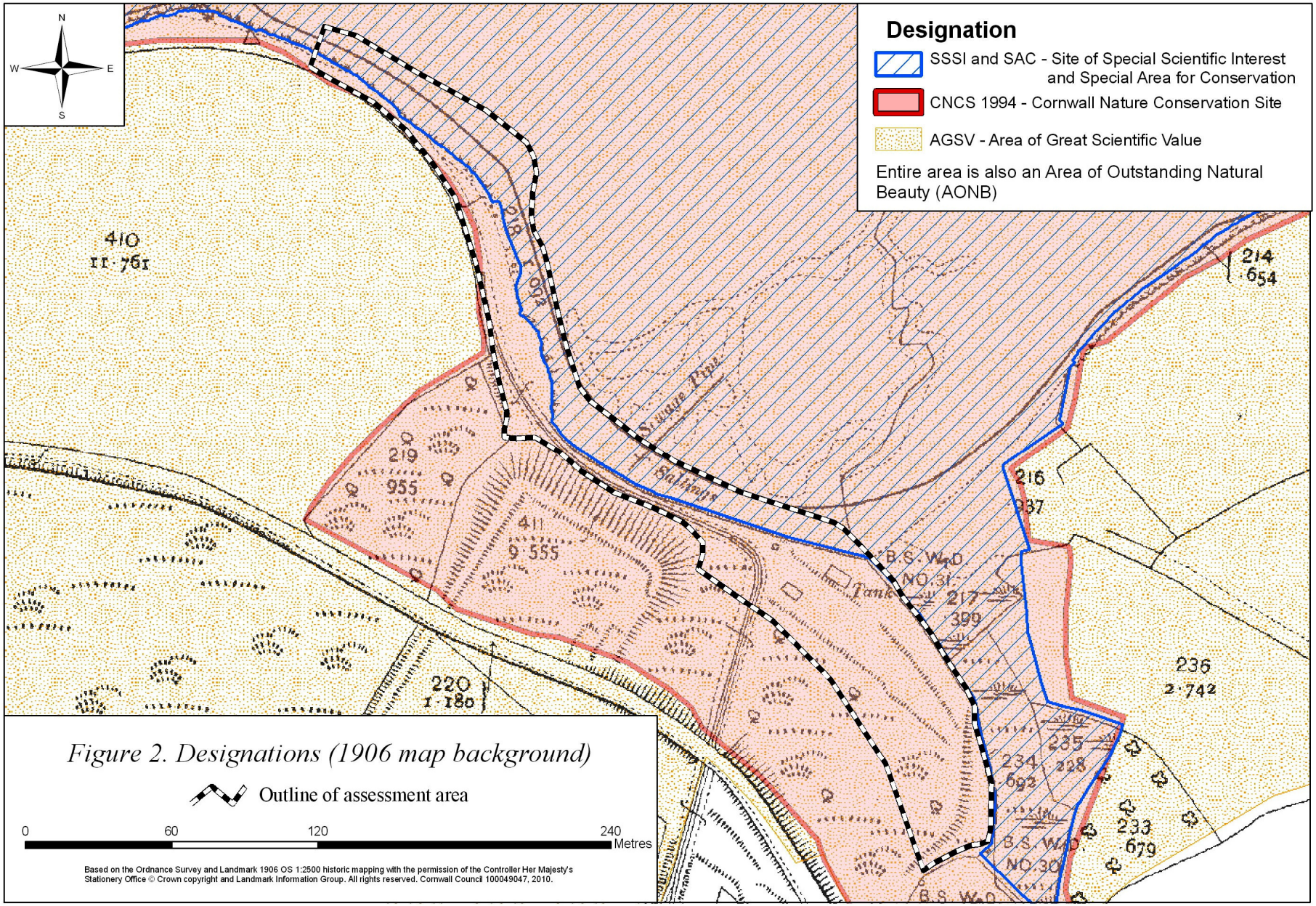

Figure 2 Project area designation plan

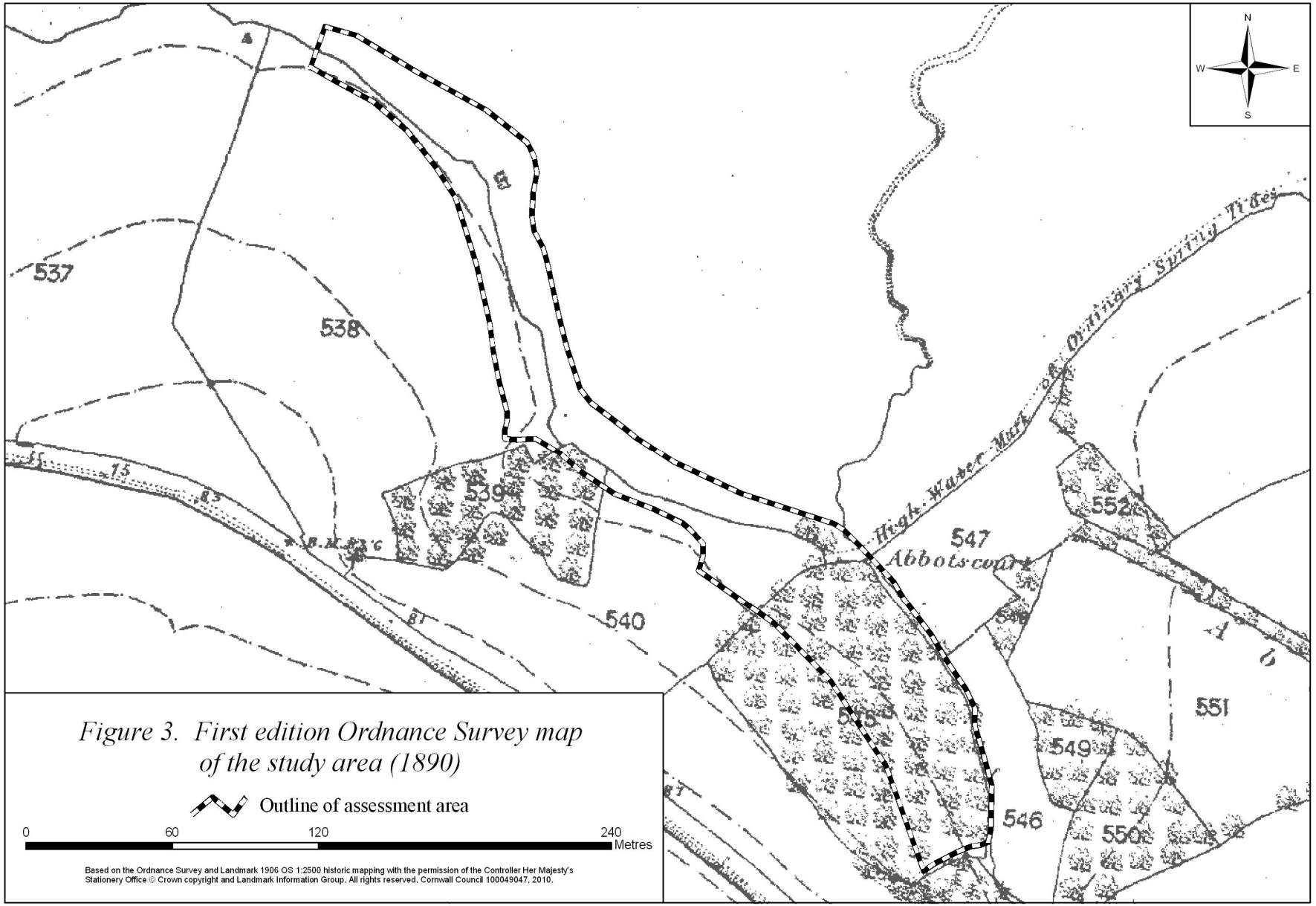

Figure 3 1890 Ordnance survey map (First Edition)

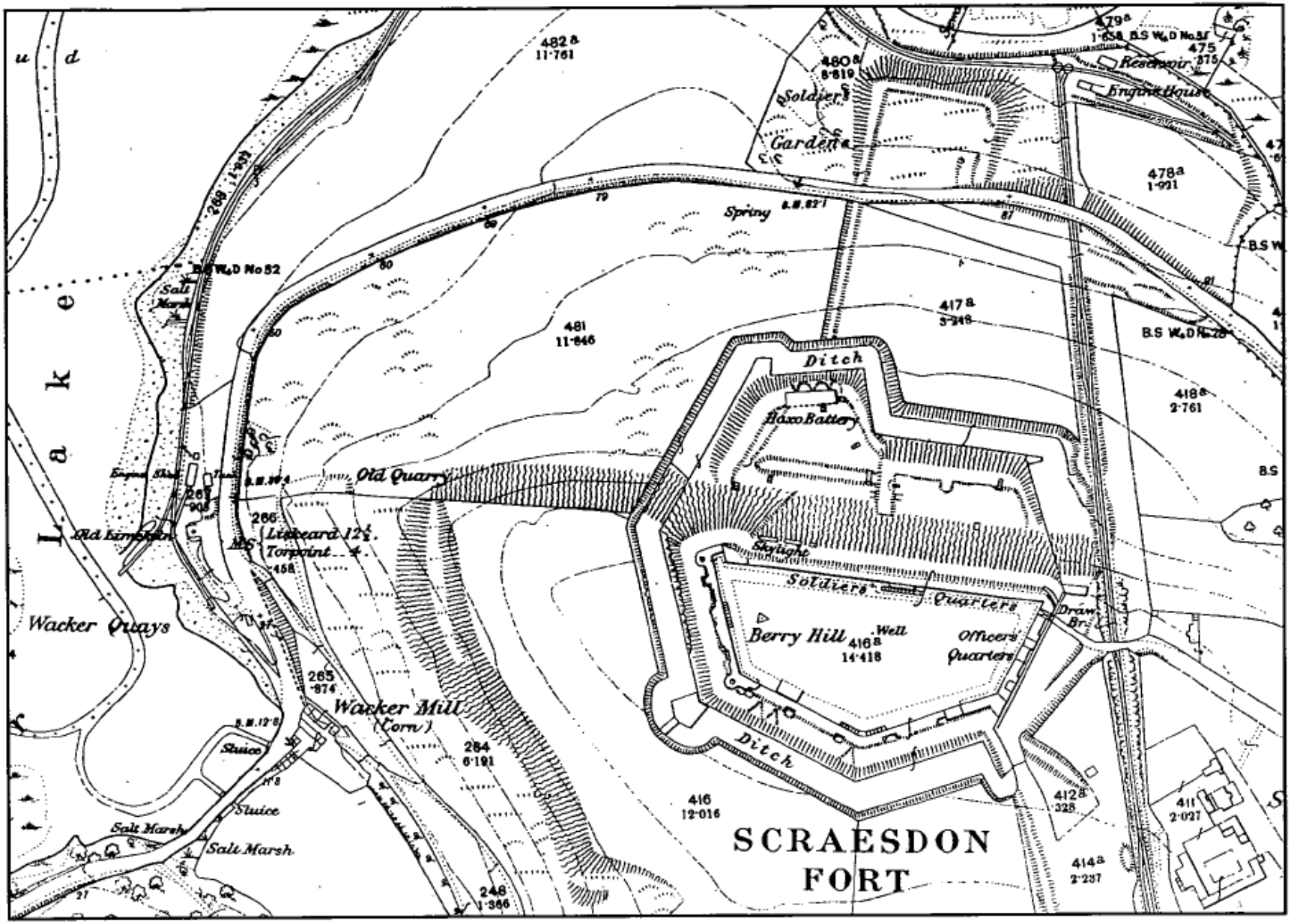

Figure 4 1896 map (PRO: WO 78/2314) Reproduced from Pye & Woodward (1996, Fig 39)

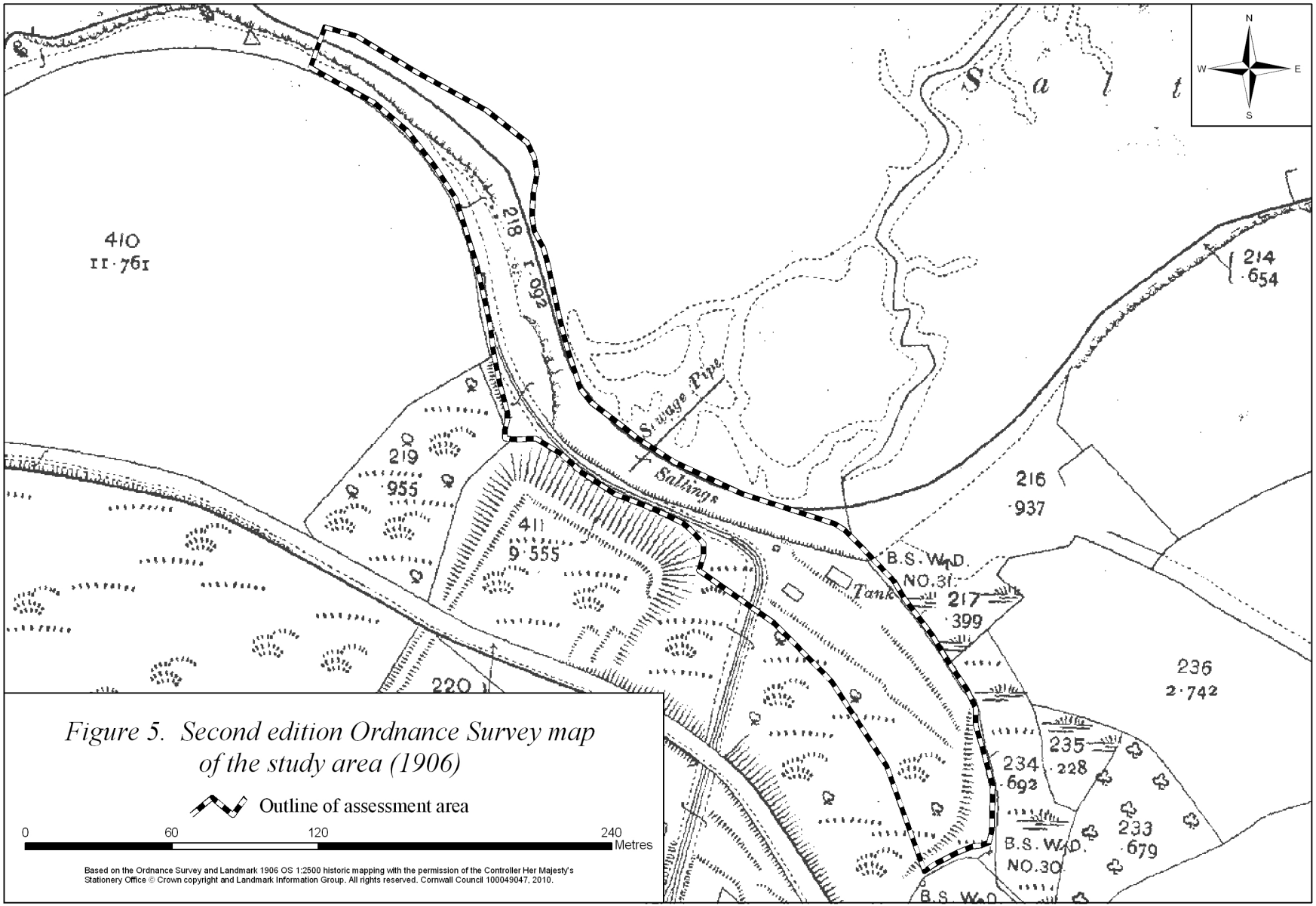

Figure 5 1906 Ordnance survey map (Second Edition)

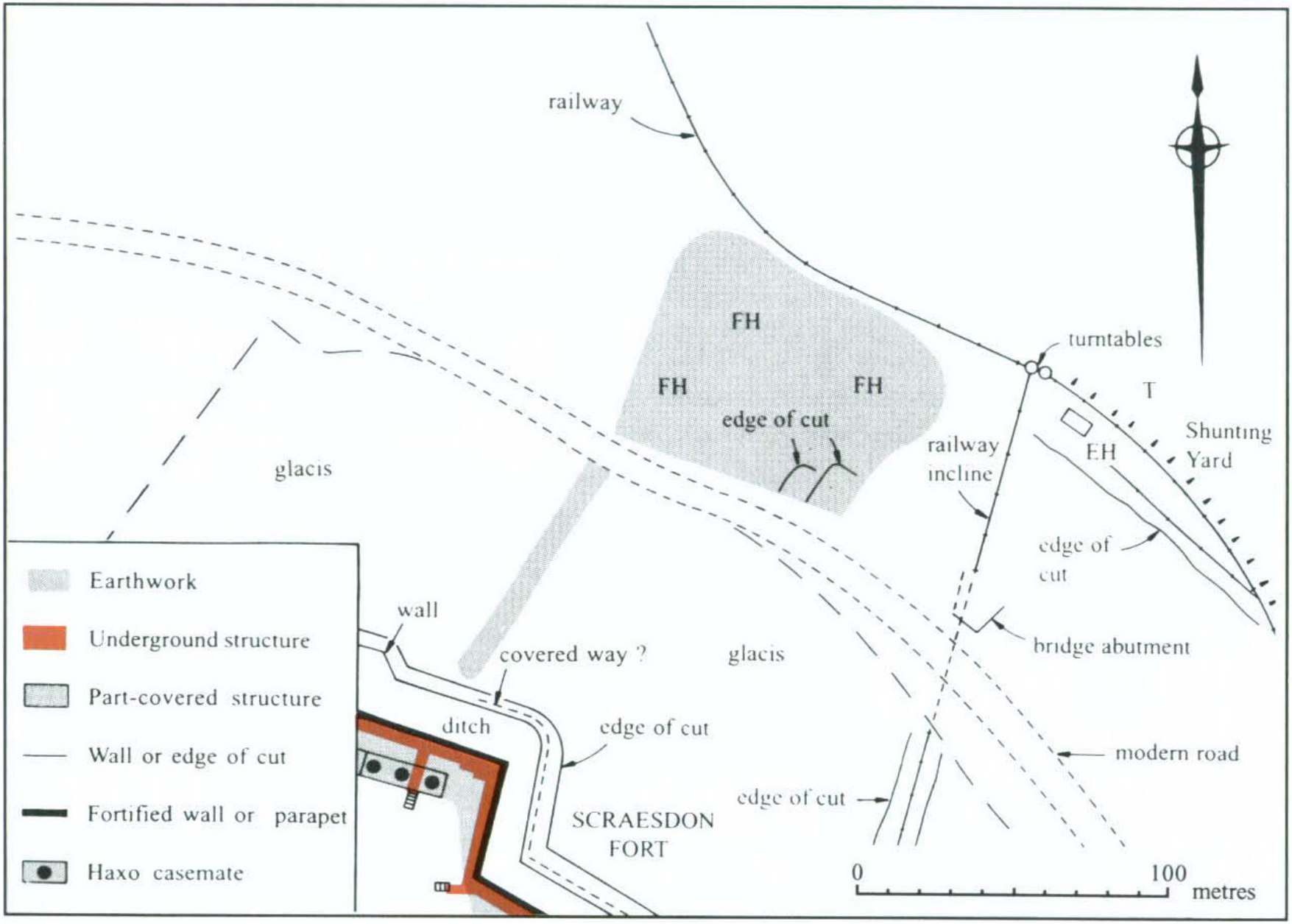

Figure 6 1990s Survey plan of the study area and surroundings. Reproduced from Pye & Woodward (1996, Fig 40)

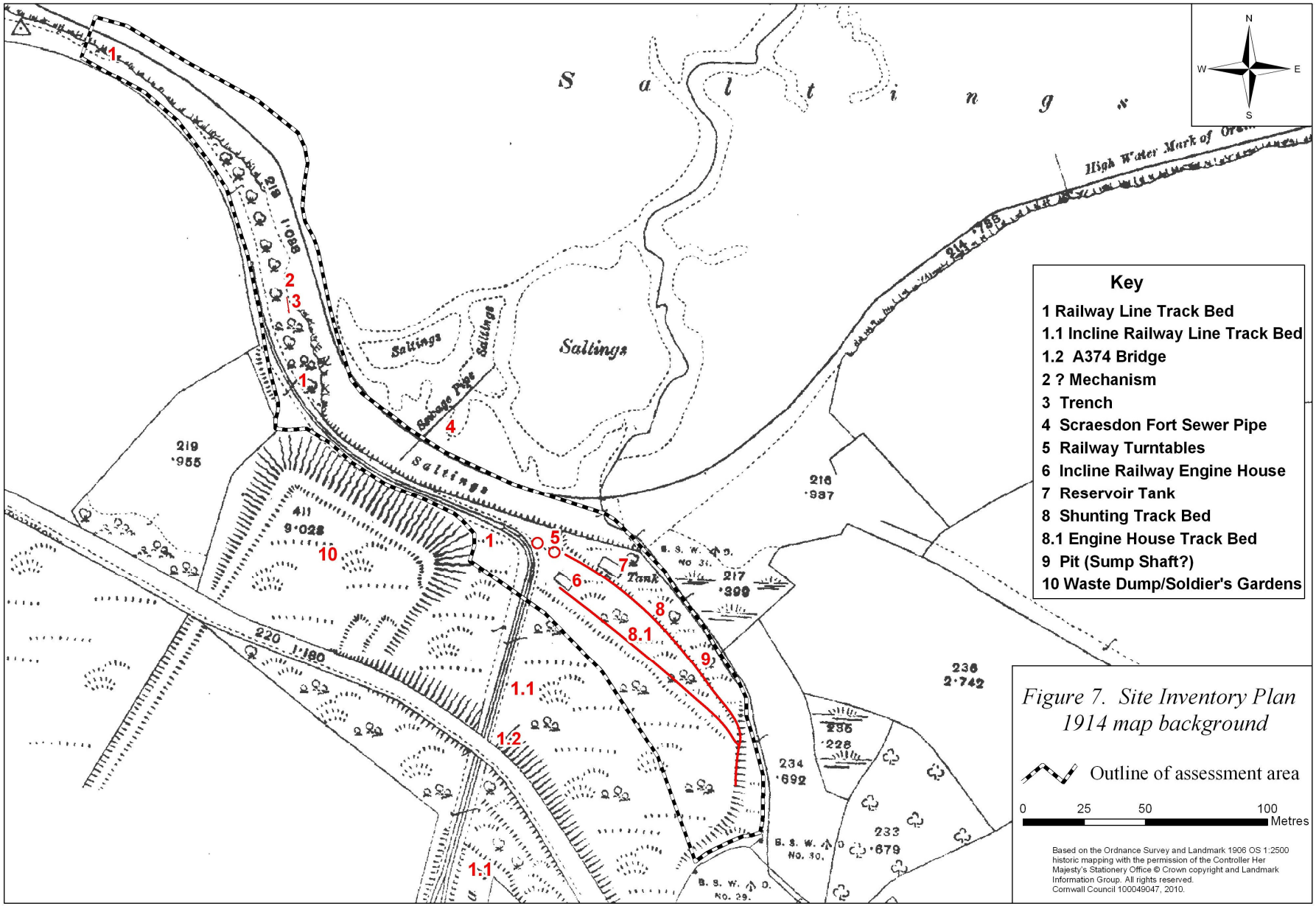

Figure 7 2011 Site inventory plan of the study area and surroundings

Figure 8 View of Site 2 (Railway mechanism) © CC HE 2011

Figure 9 View of Site 5 (Railway turntables – Keith Rawlings) © CC HE 2011