A391 Carluddon Bypass, Cornwall

Archaeological Watching Brief

Cornwall Archaeological Unit

Report No	Report Name	Report Author
2014R088	A391 Carluddon Bypass, Cornwall. Archaeological Watching Brief	CM Thorpe

Event Type			
Watching Brief			

Client Organisation	Client Contact
Cormac	Richard Keast

Monuments (MonUID)					

Fieldwork dates (From)	(To)	(Created By)	(Create Date)
21/05/14	01/07/14	Carl Thorpe	04/07/14

Location (postal address; or general location and parish)
Carluddon, St Austell Parish

(Town – for urban sites)	(Postcode)
St Austell	PL26 8TY

(Easting) X co-ord	(Northing) Y co-ord		
SX 02460	55464		

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Project background

Cornwall Archaeological Unit, Cornwall Council (CAU) was commissioned by Richard Keast, Cormac Contracting, Cornwall Council to undertake a programme of archaeological recording during the ground works involved with the construction of a new stretch of the A 391 road to bypass the village of Carluddon (Figs 1, 2, and 3). The new road corridor ran from the present A391 to the north of the village and cut through fields and areas of china clay working on the western side of the settlement.

The watching brief was undertaken as a result of a planning condition (PA12/11546), which required that archaeological recording took place ahead of construction.

Prior to the watching brief taking place, an archaeological assessment and a geophysical survey had been undertaken to identify the potential of the area of the road scheme and this had led to the identification of several potential sites (AECOM 2012; Dean 2010).

The archaeological watching brief was guided by a written scheme of investigation (WSI) that had been produced by AECOM (2013). The whole 980m length of the road corridor was monitored (apart from the two areas shown on Figure 4) by an archaeologist during the topsoil stripping phase of the site works. The southern, smaller area, west of Area 5, was not monitored as this had been stripped and levelled as part of the site compound works prior to the watching brief commencing. The larger area, to the south-west of Area 6 was the main access route. The potential for archaeological deposits to survive in this area was considered to be low as haul ways crossing this area indicated that they were running over substantial deposits of china clay waste, and several china clay pipelines were also revealed.

On average the road corridor measured between 25m and 30m wide, although this varied especially in the area of the proposed new roundabout between Areas 6 and 8 (Fig 6). The total area covered by the fieldwork was approximately 5 Ha (Fig 4).

This report presents the results of the archaeological watching brief carried out in May to August 2014.

Location and setting

Situated to the west of Carluddon within the parish of St Austell, the landscape cut by the road corridor (running from SX 02204 55029 to SX 01996 55906) comprises open farmland and extensive industrial areas of former china clay working and dumping (Figs 1, 2, 3 and 4).

The corridor runs on a roughly north to south orientation. From the present line of the A391 at the northern end, it crosses a major ridge line upon which the Carluddon sky tip sits (SX 02106 55429). This forms a prominent landmark which can be seen across much of the china clay country. To the north the land slopes gently downhill west to east from approximately 220m to 200m OD while to the south the land slopes gently downhill north to south from approximately 240m to 220m OD (Figs 2 and 3).

The greatest length of the corridor, especially the southern part, Areas 1, 2, 5, 10, and 11 (Fig 4) was covered by thick deposits of china clay waste which was thought to have obscured or destroyed any archaeological sites.

Identified sites
Few documented archaeological sites were known within the project area (Fig 2). Previous archaeological assessment of the road corridor (Stanier and Weddell 2010) identified a possible Bronze Age barrow which was suggested through place name evidence (centred at SX 02124 55767) and several field boundaries and pits that may have been of medieval or post-medieval origin centred around areas 6 and 8 (centred at SX 02119 55770) and at the northwestern corner of the road corridor Area 3 (centred at SX 02008 55881) were identified by the geophysical survey (Dean 2010).

Potential sites
In addition the results from the previous assessment and the Historic Environment Record (HER) (AECOM 2012; Fig 2) indicated that there was potential for prehistoric and medieval sites to survive within the project area, and there was also scope for the survival of previously unrecorded archaeological sites, organic remains, and artefacts of all periods to be impacted upon by the road scheme.

The project area is located on a solid geology of an unnamed Permian to Carboniferous felsic igneous granite intrusion that has been subjected to heavy kaolinisation (BGS sheet 347. 1982).

Aims and objectives

The aims of the project were:

- To establish the absence/presence of buried archaeological remains.
- To record archaeological features, layers and finds affected by the works.
- To establish the extent, condition, significance and character of the archaeological resource.
- To identify any artefacts relating to the occupation along the road corridor.
- To gain further information about the archaeological potential of the area, through the recording of buried archaeological remains.
- The dissemination and publication of the results.
- The long-term conservation of the project archive in appropriate conditions.

Working methods

The road corridor was stripped of topsoil using machines fitted with toothless grading buckets. The soil was stripped under archaeological supervision to a level required by the site engineers - in this case the top of the natural granitic subsoil for the road, carefully removing and retaining the topsoil for later reuse. In the areas deemed archaeologically sensitive, such as the potential barrow and the possible medieval fields, the archaeologist was in attendance during the course of the soil stripping. Other areas were examined on an intermittent basis.

The identified archaeological features were plotted onto a site plan at a scale of 1:1000 based on an Ordnance Survey map of the same scale, being measured in from fixed locatable points on the ground marked on the map and compass bearings. Features identified were planned at a scale of 1:200. Sample sections (nature of soil depth, layers present, etc) were also noted across the site.

Results

The road corridor was divided into 11 blocks reflecting the order in which the road corridor was stripped (Fig 4). Sample soil profile sections were recorded in each area, along with any archaeological features that were uncovered.

Area 1

This area lay at the southern end of the road corridor adjacent to the site compound (Fig 4) centred at SX 02197 55324.

The soil profile recorded within this field consisted of 0.05m of grass, roots and topsoil overlying 0.10m of sandy grey-brown clay loam, 0.35m of yellow grey sand china clay waste and 0.2m of black-brown sticky loam, which was possibly a buried soil. Orange-brown rab, the decayed natural bedrock, lay at the base of the stripped area of the road corridor. The soil profile proved to be consistent throughout this section of the road corridor, though the thickness of the china clay deposits varied, reaching a maximum of 0.5m (close to the northern end) and sometimes containing larger stone blocks.

A removed hedge boundary [14] consisting of parallel double ditches (Fig 3), each about 0.8m wide and filled with dark black-brown clay loams and separated by 1m of natural bedrock, was recorded running north-north-west to south-south-east down the centre of the stripped area (from SX 02196 55351 to SX 02208 55300. The boundary appears on the 1842 St Austell Tithe Map. It is probably of earlier post-medieval date, related to South Carluddon Farm. No other features of archaeological interest were recorded, and no artefacts recovered.

Area 2

This area lay at the southern end of the road corridor immediately to the south of Area 1 centred at SX 02216 55239 (Fig 4).

A similar soil profile to Area 1 was recorded. This consisted of 0.05m of grass, roots and topsoil overlying 0.12m of sandy grey-brown clay loam, 0.4m of yellow grey sand china clay waste and 0.2m of black-brown sticky loam a possible buried soil. Orange-brown rab, the decayed natural bedrock lay at the base of the stripped area. The soil profile proved to be consistent throughout this section of the road corridor, though the china clay deposits varied becoming up to nearly 0.8m thick and much stonier.

The only recorded feature was a removed field boundary [15] consisting of parallel double ditches (Fig 3) each about 0.7m wide infilled with dark black-brown clay loam and separated by about 1m of natural bedrock running north-west to south-east across the north-eastern end of the stripped area (SX 02206 55286 to SX 02217 55273). The boundary appears on the 1842 St Austell Tithe Map. It is probably of earlier post-medieval date, related to the farm at South Carluddon. No features of archaeological interest were recorded, and no artefacts were recovered.

Area 3

This area lay at the north western end of the road corridor (Fig 4) within fields that had been identified as being of possibly medieval origin, and unaffected by the china clay working (centred at SX 02010 55883).

The soil profile recorded within this field consisted of 0.05m of grass, roots and topsoil overlying 0.10m of grey-brown clay loam, 0.35m of black-brown peaty clay loam, and

0.01m of red-brown clay. Orange-brown rab, the decayed natural bedrock, lay at the base of the stripped area. The soil profile proved to be consistent throughout this section of the road corridor, though the overall thickness varied becoming greater *circa* 0.8m downslope towards the east end close to the hedge boundary. This was probably due to ploughing moving soil downhill.

At the eastern end of this area (centred at SX 02024 55877) were 13 prospecting pits which formed a group (Figs 5, 6 and 7). None were excavated as they all lay below the level required for the road and it was thought best to leave them and the ground undisturbed on the advice of the site engineer. A summary of each of the features is given here but for detailed descriptions see the Site Inventory at the back of this report.

Pit 1
Sub-rectangular pit measuring 2m x 1m, filled by a yellow brown clay.

Pit 2
Sub-rectangular pit measuring 2m x 1m, filled by a yellow brown clay.

Pit 3
Sub-rectangular pit measuring 1.5m x 0.8m, filled by a yellow brown clay.

Pit 4
Sub-rectangular pit measuring 1.5m x 0.8m, filled by a yellow brown clay.

Pit 5
Sub-rectangular pit measuring 1.8m x 1m, filled by a yellow brown clay.

Pit 6
Sub-rectangular pit measuring 1.7m x 1m, filled by a yellow brown clay.

Pit 7
Sub-rectangular pit measuring 2m x 1m, filled by a yellow brown clay.

Pit 8
Sub-rectangular pit measuring 1.5m x 0.6m, filled by a yellow brown clay.

Pit 9
A sub-rectangular pit with uncertain dimensions (see site inventory).

Pit 10
Sub-rectangular pit measuring 2m x 1m, filled by a yellow brown clay.

Pit 11
Sub-rectangular pit measuring 1.8m x 1m, filled by a yellow brown clay.

Pit 12
Sub-rectangular pit measuring 1.8m x 0.7m, Filled by a yellow brown clay.

Pit 13
Sub-rectangular pit measuring 2m x 0.9m, filled by a yellow brown clay.

No dating evidence was obtained for these pits, although it is likely that they are of post-medieval date. It is also uncertain whether they were the result of prospecting for kaolin or metalliferous deposits.

Apart from traces of the earlier archaeological evaluation trenches dug in the area and described within the assessment (Stanier and Weddell 2010) and a china clay pipeline running along the northern (roadside) boundary of the fields no further features of archaeological interest were recorded and no artefacts recovered.

Areas 4 to 11

All the remaining areas of the road corridor (Fig 4) were found to have been heavily disturbed by the china clay industry. This had removed, or completely blanketed any evidence for earlier activity. These areas were covered by thick deposits of china clay waste measuring up to 2.5m. This material had been spread by the levelling of old spoil heaps across the landscape. The clay waste was found to overly thin remnant moorland soils in the few places where it could be seen.

A typical example of the soil profiles recorded within these areas is that from within Area 6, which consisted of 0.05m grass roots and topsoil, overlying 0.10m of sandy grey-brown clay loam, 0.5m of yellow grey sand and china clay waste material, 0.45m of grey-brown sand and stony rubble china clay waste material, and 0.15m of black-brown sticky loam, a possible buried soil. This was underlain by 0.10m of grey-brown clay and 0.02m of orange-brown clay. Orange-brown rab, the decayed natural bedrock, lay at the base of the stripped area.

The buried soil profile across these areas (where present) varied between 0.10m to 0.3m thick, with the thinner range prevailing. There was also some indication of iron-panning, and gleying indicating the possibility that these areas may have at times been waterlogged. The profiles are typical of moorland soils. No artefacts were recovered.

Many of the areas were also criss-crossed by numerous clay pipelines (both cast iron and plastic varieties), many of which were associated with the Great Treverbyn pan-kiln (centred at SX 01999 55618). The clay pipelines proved difficult to detect, having been initially laid on top of the existing ground surface, and then covered over with china clay material and buried. Some of them were less than 0.10m below the current ground surface while others were deeply buried.

Active pipelines supplying the dockyards at Par crossed the corridor through Areas 4, 6, 7, and 8, while further disused pipelines were also recorded running southwards alongside the haul road marking the western edge of Areas 1, 2 and 5.

Tin stamps stone

Although no archaeological features were uncovered a large granite stamps anvil stone was recovered (Fig 8) from a trench for drainage pipes within Area 11 which ran alongside the A391. Unfortunately it was unstratified and was found within china clay waste and it is therefore not possible to say where it was used.

The stone is a flat slab shape measuring 1.1m x 0.7m and 0.3m thick. On each of the major flat surfaces are three sub-circular depressions averaging 0.3m diameter. On one face these reached a depth of 0.15m and on the other about 0.10m. It is possible that the misalignment of the holes suggests that it might have been used three times for a single head of stamps, though that would be very unusual, and it is more likely that it was for three heads of stamps, one of which was way out of alignment. It is probably of medieval date though an early post-medieval date is also possible (Adam Sharpe pers comm).

Discussion

Apart from the prospecting pits recorded within Area 3 and the early stamps anvil recovered from a pipeline trench dug within Area 11, little of archaeological interest was found and the road corridor had little impact upon significant archaeological remains.

Bronze Age Barrows, medieval fields, and a settlement are recorded in the area (Fig 2) so this lack of surviving archeological evidence may largely be due to the china clay industry which has greatly affected the landscape with numerous major landscaping events, including the spreading of thick deposits of china clay waste over large areas. This activity has either removed or totally obscured much of the landscape that existed previously. Any below ground archaeology will also have been impacted upon by the china clay pipelines which cut across much of the road corridor.

References

1.1Primary sources

Ordnance Survey, *c* 1809. *1 Inch Map*. First Edition (licensed digital copy at CAU)

Ordnance Survey, *c*1880. *25 Inch Map* First Edition (licensed digital copy at CAU)

Ordnance Survey, *c*1907. *25 Inch Map* Second Edition (licensed digital copy at CAU)

Ordnance Survey, 2007. *Mastermap Digital Mapping*

Tithe Map and Apportionment, *c*1842. *Parish of St Austell* (licensed digital copy at CAU)

British Geological Survey, 1982. 1:50000 Map. Bodmin Sheet 347

1.2 Publications

AECOM, 2012. *Carluddon A391 Road Scheme and Technology Park Environmental Statement*.

AECOM, 2013. *Carluddon A391 Road Scheme and Technology Park. Cultural Heritage Written Scheme of Investigation*.

Dean, R, 2010. *An Archaeological Gradiometer Survey Land at West Carclaze and Baal Cornwall*. Substrata Report: 101210.

Parkes, C, 2005. *A391 to A30 Link Road, Cornwall: Archaeological Assessment* CAU Archive report No: 2005R105.

Stanier, P. and Weddell, P. 2010. *A china clay regeneration site at West Carclaze, Mid Cornwall, NGR SX019558, Archaeology and cultural assessment*, AC Archaeology Ltd report ACD150/1/0.

Project archive

The CAU project number is **146378**

The project's documentary, digital, photographic and drawn archive is maintained by Cornwall Archaeological Unit, Cornwall Council, Fal Building, County Hall, Treyew Road, Truro, TR1 3AY. The contents of this archive are as listed below:

1. Projects file containing site records and notes, project correspondence and administration (**146378**).
2. Field plans and copies of historic maps stored in an A2-size plastic envelope (GRE 823/1).
3. Digital photographs stored in the directory: R:\Historic Environment (Images)\SITES.A-D\A 391Carludden WB 2014 WB 146378
4. English Heritage/ADS OASIS online reference: cornwall2 - 197050
5. This report text is held in digital form as: G:\TWE\Waste & Env\Strat Waste & Land\Historic Environment\Projects\Sites\Sites A\A391 watching brief\Draft Report December 2014

No artefacts were recovered in the course of this project. It was proposed to either deposit the medieval tin stamp anvil stone in Wheal Martyn Museum, or to make a roadside feature of it. No final decision had been made at the conclusion of the watching brief.

Site inventory

Site No.	Site type	Area	Location	Description
1	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 2m x 1m. Orientated north-north-west, to south-south-east. Filled with friable yellow brown clay.
2	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 2m x 1m. Orientated north-north-west, to south-south-east. Infilled with friable yellow brown clay.
3	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 1.5m x 0.8m. Orientated north-east to south-west. Infilled with friable yellow brown clay.
4	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 1.5m x 0.8m. Orientated north-west, to south-east. Infilled with friable yellow brown clay.
5	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 1.8m x 1m. Orientated west-north-west, to east-south-east. Infilled with friable yellow brown clay.
6	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 1.7m x 1m. Orientated west-south-west, to east-north-east. Infilled with friable yellow brown clay.
7	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 2m x 1m. Orientated north-west, to south-east. Infilled with friable yellow brown clay.
8	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 1.5m x 0.6m. Orientated west-south-west to east-north-east. Infilled with friable yellow brown clay.
9	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with. Disrupted by electricity pole so dimensions could not be determined. Appears to orientated north-east to south-west. Infilled with friable yellow brown clay.
10	Prospecting pit	3	Part of a group centred at SX 02024 55877	Elongated oval shape with straight roughly parallel sides about 2m x 1m. Orientated north-west, to south-east. Infilled with friable yellow brown clay.
11	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 1.8m x 1m. Orientated north-east to south-west. Infilled with friable yellow brown clay.
12	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 1.8m x 0.7m. Orientated north-west, to south-east. Infilled with friable yellow brown clay.
13	Prospecting pit	3	Part of a group centred at SX 02024 55877	Sub-rectangular pit with straight roughly parallel sides about 2m x 0.9m. Orientated east-north-east, to west-south-west. Infilled with friable yellow brown clay.
14	Field boundary	1	SX 02196 55351 to SX 02208 55300.	Two parallel ditches each about 0.8m wide infilled with dark black-brown clay loam and separated by 1m of natural bedrock running north-north-west to south-south-east down the centre of the stripped area. These mark the line of a documented field boundary shown on the 1842 Tithe map.
15	Field boundary	2	SX 02206 55286 to SX 02217 55273	Parallel double ditches each about 0.7m wide infilled with dark black-brown clay loam and separated by about 1m of natural bedrock. Recorded running from north-west to south-east These mark the line of a documented field boundary shown on the 1842 Tithe map.

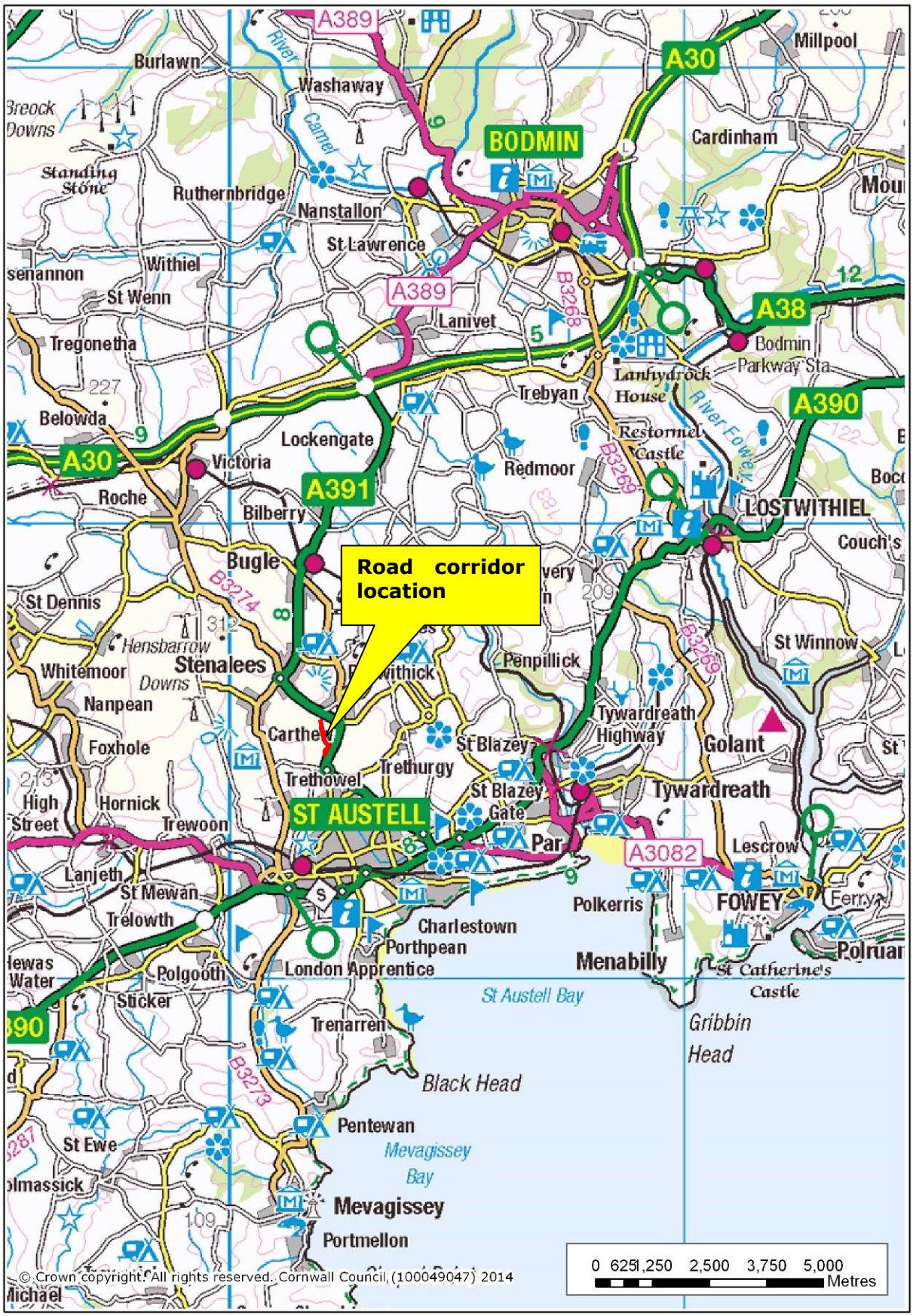

Figure 1. Location of the A391 Carluddon Bypass.

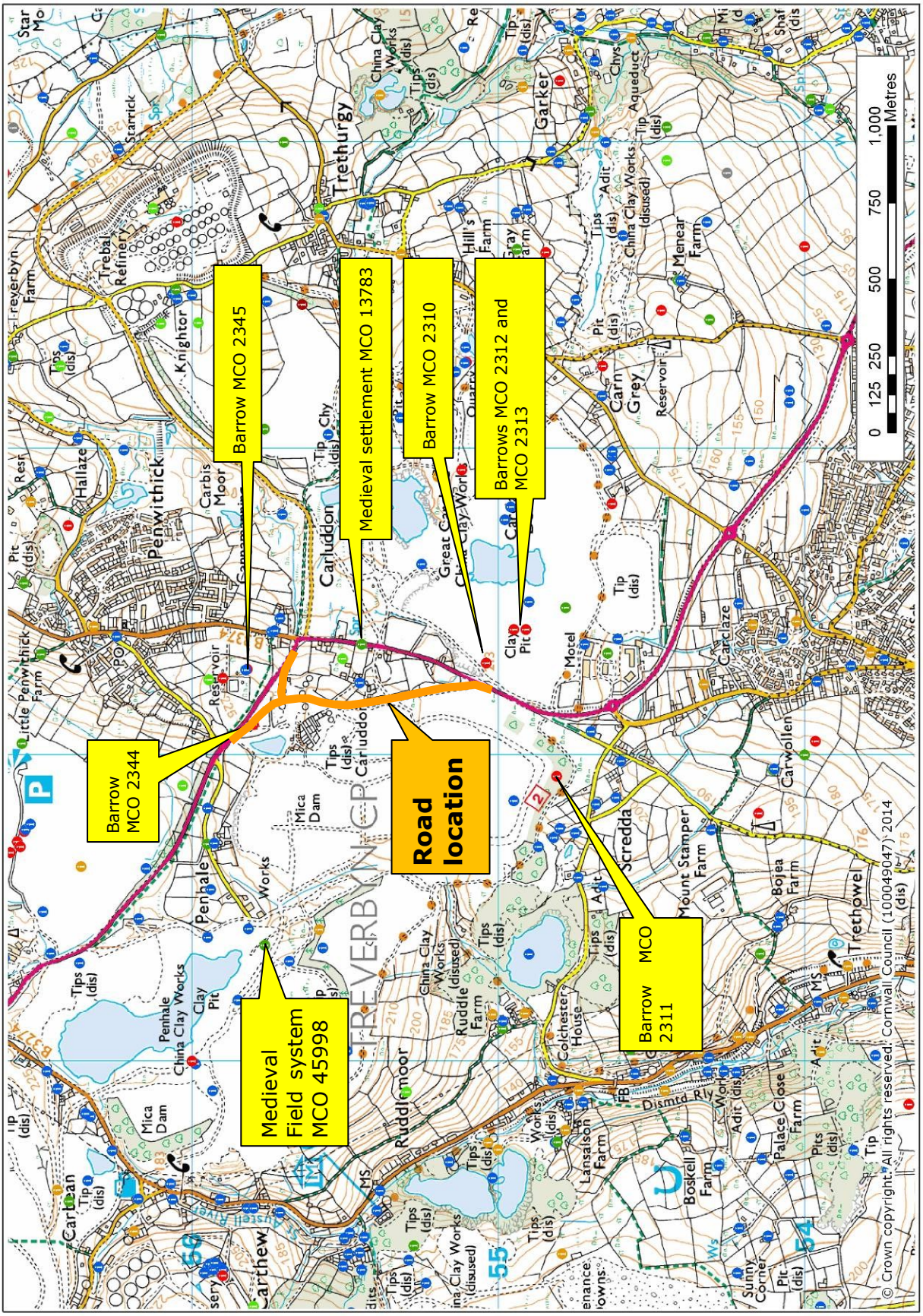

Figure 2. Site showing the relationship between the A391 road corridor and features recorded in the Cornwall and Scilly HBSMR.

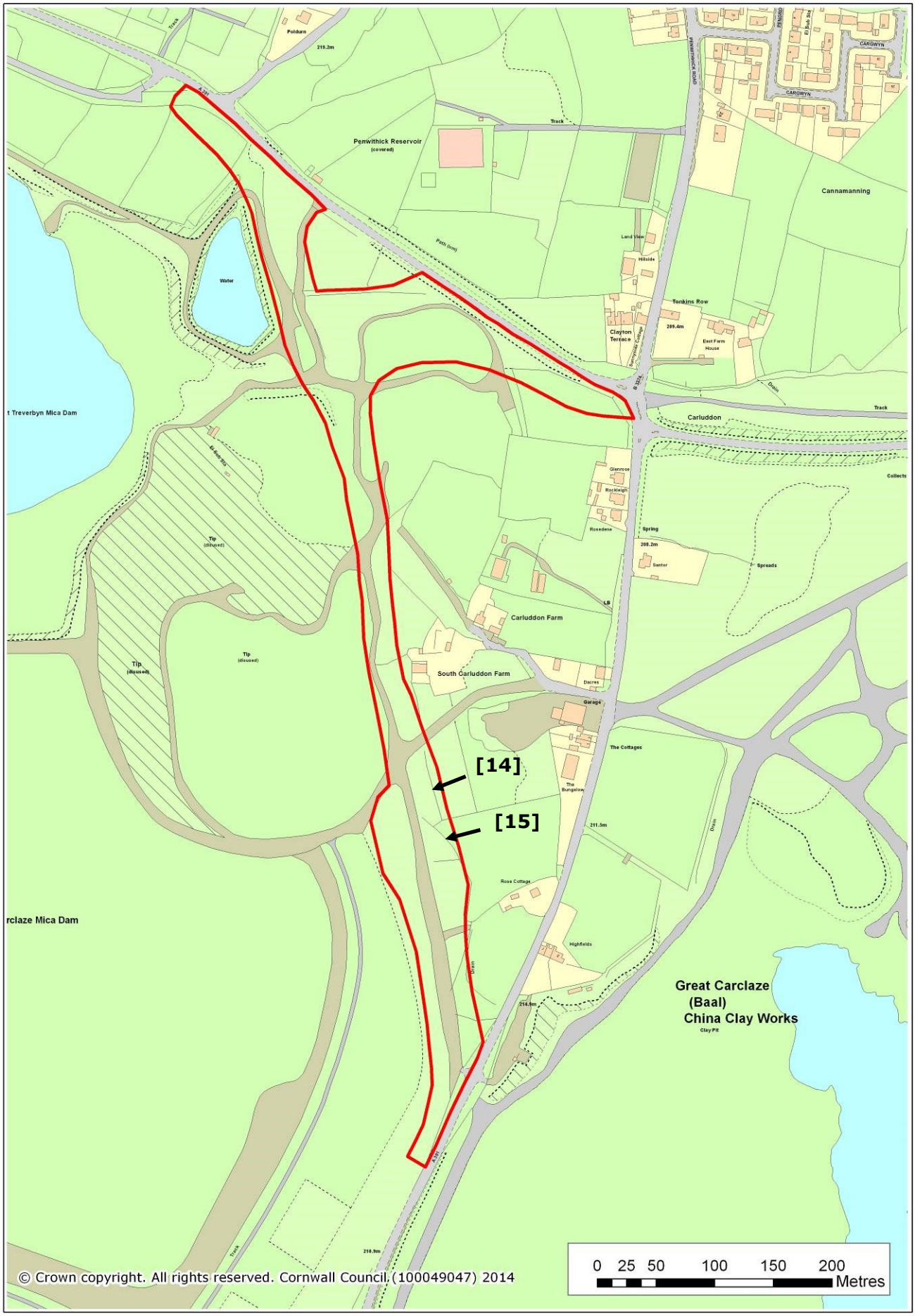

Figure 3. Map showing the detailed location of the A391 road corridor and field boundaries [14] and [15].

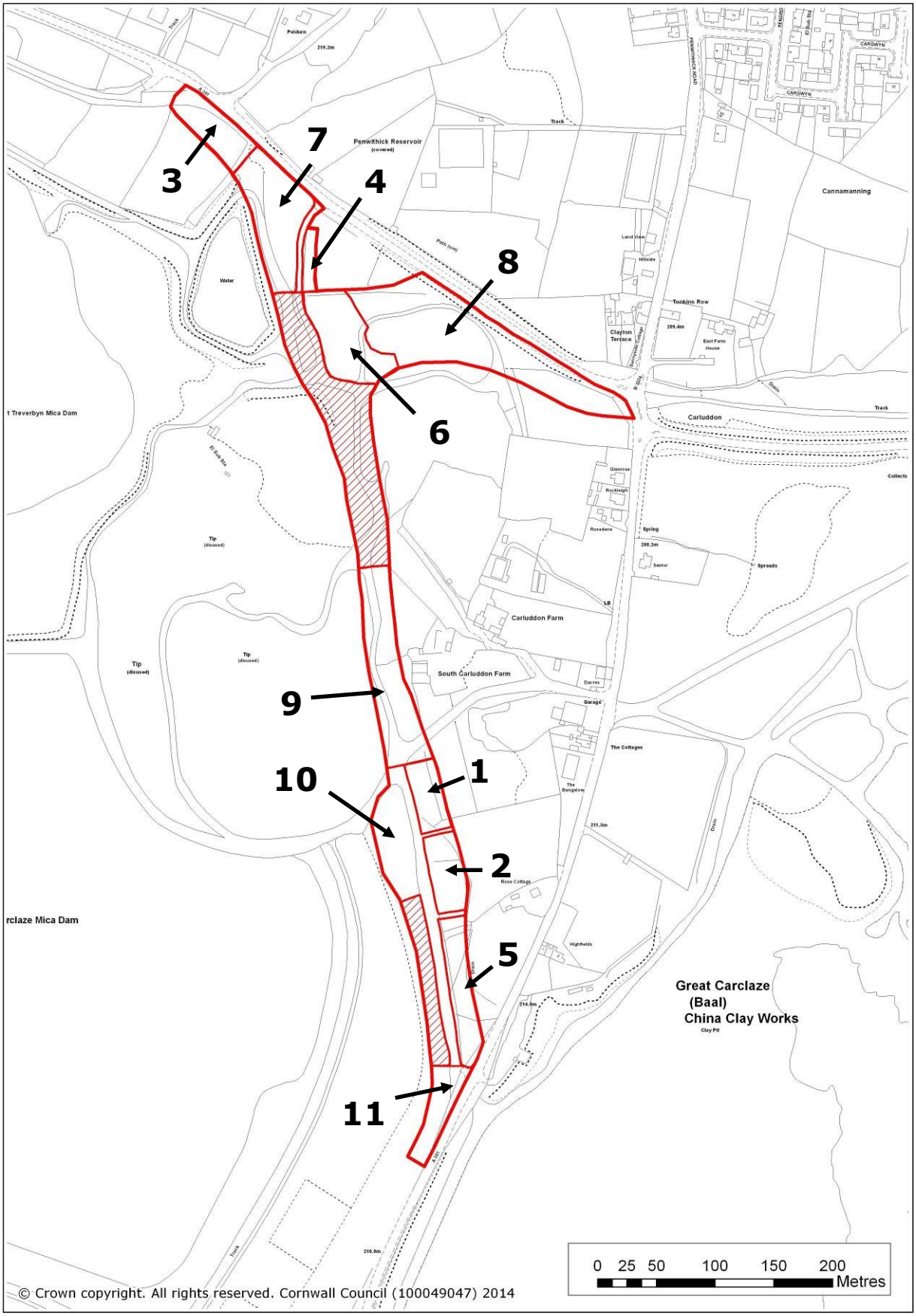

Figure 4. Road corridor showing site subdivisions (Areas 1-11) and areas not examined (shaded red).

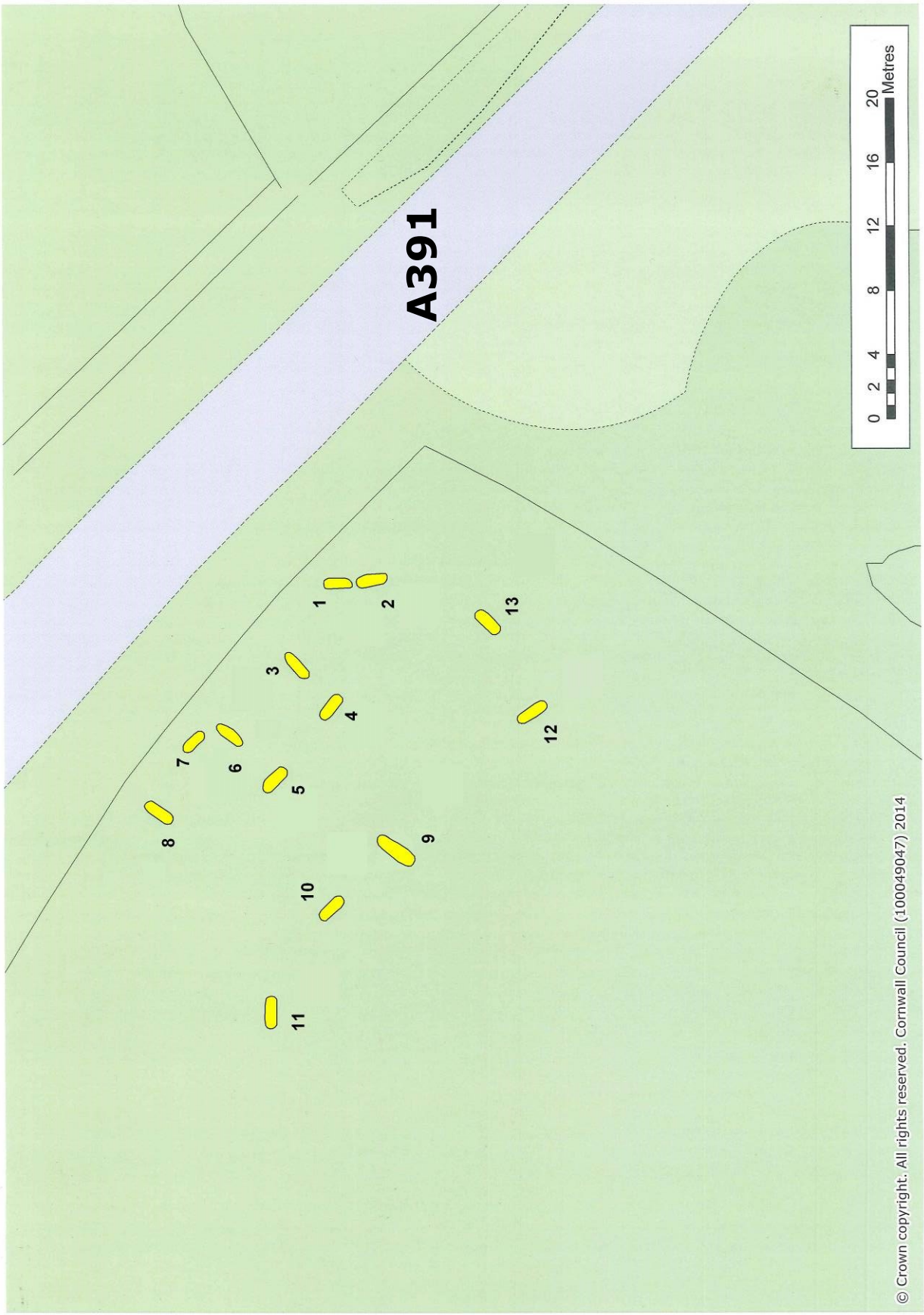

Figure 5. Plan of prospecting pits located within Area 3.

Figure 6. Area 3. Photograph of prospecting pit pit [1].

Figure 7. Area 3. Photograph of prospecting pit [8].

Figure 8. A large granite stamps anvil stone, of probable medieval date recovered from Area 11. It had been utilised on both the major faces of the stone. The stone had been turned over when the depressions became too deep for successful use.