



A30 Longrock to Innis Downs CHAMP



Cornwall Archaeological Unit

A30 Longrock to Innis Downs CHAMP

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The fieldwork was undertaken by Adam Sharpe and Richard Mikulski.

Data management was undertaken by Francis Shepherd and Peter Dudley.

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The Project Manager was Dr. Andy Jones.

The views and recommendations expressed in this report are those of Cornwall Archaeological Unit and are presented in good faith on the basis of professional judgement and on information currently available.

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Cover illustration

Richard Mikulski recording an historic milestone on Newlyn Downs during the CHAMP fieldwork.

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Abbreviations

CAU	Cornwall Archaeological Unit
CC	Cornwall Council
CHAMP	Cultural Heritage Action Management Plan
CHF	Cultural Heritage Feature
EH	English Heritage
EM	EM Highway Services Ltd
Gdb	Geodatabase
HA	Highways Agency
HER	Cornwall and the Isles of Scilly Historic Environment Record
HLC	Historic Landscape Character
LB	Listed Building
MCO	Monument number in Cornwall HER
NMR	National Monuments Record
OASIS	The web portal accessing the online Archaeology Data Service.
OS	Ordnance Survey
SM	Scheduled Monument
ZTV	Zone of Theoretical Visibility

1 Summary

Cornwall Archaeological Unit (CAU), Cornwall Council was commissioned by EM Highway Services Ltd (EM) in 2014 to produce a Cultural Heritage Asset Management Plan (CHAMP) for the section of the A30 trunk road through Cornwall from Longrock near Penzance to Innis Downs near Bodmin.

The project involved researching the background history of the road, the collation of GIS data for the roadline and buffer zones within its viewshed at 100m 500m and 1000m distances from the road centreline, field visits to all sites located in the road corridor that are within the HA estate, and selected sites within the buffer zones to check detail relating to them within the Cornwall and Scilly Historic Environment Record (HER), taking record photographs of them and preparing condition and management reports for sites or features within the road corridor. The Historic Landscape Character (HLC) of the landscape through which the road passes was also taken into account, in particular the relationships between the HLC of the landscape out to 1.5km from the A30 and the roadline itself. The fieldwork was undertaken in early November 2014.

The road now designated as the A30 follows a long-distance route through Cornwall which is likely to have medieval, if not earlier, origins. Between 1769 and 1836, much of it was improved through the formation of turnpike trusts, though long-distance travellers from Launceston to Penzance tended to divert from Carland Cross to Truro before heading westward to Redruth, and the section from Carland Cross to Chiverton Cross was not upgraded until the mid-19th century, allowing its incorporation into what became, during the early 20th century, the A30.

Much of the western section of the A30 was dualled and re-aligned during the late 20th century, and consequentially these upgraded sections contain few surviving archaeological features. However, two sections of the route have been only partially improved. In the west, the roadline from Longrock to St. Erth Station has been widened to accommodate 20th century traffic levels, but still passes through a number of small settlements, and retains its turnpike era milestones, as well as a pair of medieval wayside crosses and one early bridge. The section of the A30 from Chiverton Roundabout to Carland Cross still largely follows the route of an ancient road along Cornwall's upland spine, has only been widened to a limited degree, and incorporates only one bypass, at Zelah. Though milestones survive along this length of the A30, only a small number of other extant sites were identified.

The original roadline linked major population centres, but also influenced the growth of linear hamlets along its length, most of these developing around inns serving travellers using the route; during the 20th century some of these settlements also sited roadside petrol stations. By-passing has relieved formerly substantial traffic pressure on the larger towns, but has removed the original *raison d'être*s of these smaller settlements. The modernised sections of the A30 are largely terrain oblivious, designed to minimise traffic pressure on the landscape and reduce journey times. Nevertheless, the A30 continues to influence the landscape through which it passes, and is a constant audible presence along most of its route, even at sites which are some distance from it.

Only a small number of cultural heritage features were found to survive within the hard estate (the road itself) and the soft estate (land flanking the highway under the management of the Highways Agency), these consisting of one bridge, a pair of Scheduled medieval wayside crosses, one guide stone and a group of turnpike trust milestones.

This written report has been produced detailing the results of the desk-based survey and field visits, together with summary condition reports and management recommendations for each of the zones considered during the study. Updated data was produced for incorporation into the Highways Agency EnvIS GIS-based management database, and an entry to the English Heritage OASIS database was also created.

2 Introduction

2.1 Project background

Cornwall Archaeological Unit (CAU), Cornwall Council was requested by Peter Williams, Environmental Manager (Area 1) of EM Highway Services Ltd (EM) in May 2014 to produce a method statement for a Cultural Heritage Asset Management Plan (CHAMP) covering the section of the A30 trunk road through Cornwall from Longrock near Penzance to Innis Downs near Bodmin (Appendix 1). Following the acceptance of a method statement and risk assessment for the work, and approval of the proposed project budget, CAU was commissioned to undertake the work on 11 June 2014.

2.2 Aims and objectives

The principal aims of the A30 CHAMP were:

- To research the background history of the development of the road.
- To identify Cultural Heritage Features (CHFs) within the areas occupied by the hard and soft estates (the road corridor).
- To identify CHFs (including designated landscapes) within the viewshed of the road within buffer zones at 100m, 500m and 1000m from the road centreline.
- To investigate the condition and management requirements of CHFs within the hard and soft estates, together with selected CHFs within the flanking buffer zones.
- To produce a photographic record of CHFs within the hard and soft estates, together with selected features flanking the roadline, views of the road within the landscape and landmark historic sites within the landscape traversed by the road.
- To produce GIS shapefiles and underlying tables summarising the extent of CHFs within the various zones and their conditions and management requirements (where relevant) for incorporation into the Highways Agency's GIS-based EnvIS database.

The objectives of the A30 CHAMP were:

- To produce a report summarising the findings of the desk-based assessment, fieldwork and subsequent analysis.
- To produce a database summarising the results of the various elements of the survey.
- To complete an OASIS record for the project.
- To recommend management actions for sites along and adjacent to the roadline.

2.3 Desk-based Assessment methodology

The methodological approach set out below is based on that set out in the Highways Agency document *Design Manual for Roads and Bridges* (DMRB) Volume 10, Section 6, Part 2 and *Interim Advice Note* (IAN) 84/10, Part 4, Amendment 2. The methodology also takes into account the advice contained within DMRB Volume 11 and IAN 15/08 Revision 1.

In accordance with the guidelines, a range of historical databases and archives were consulted in order to produce a background history for the western Cornish section of the A30 and its precedents, together with a desk top inventory of Cultural Heritage Features (CHFs) within the study area, including available information about their history, current condition and survival. The sources consulted were as follows:

2.3.1 Baseline information

- Cornwall Historic Environment Record (HER).
- English Heritage on-line listed buildings database.
- Maps and photographs incorporated into the CC HER.
- Stereo vertical aerial photographs held by CC including those taken by the RAF in 1946 and for Cornwall County Council in 2005.

- Cornwall Council Historic Landscape Characterisation projects and method statements (1994, 1998, 2002, 2011).
- Third party data derived from sources including the Defence of Britain Project.

2.3.2 GIS sources

The following information was sourced from existing GIS databases accessible to Cornwall Archaeological Unit:

World Heritage Site	Polygons	ESRI Shapefile
Scheduled Monuments	Polygons	ESRI Shapefile
Registered Parks and Gardens	Polygons	ESRI Shapefile
Historic Battlefields	Polygons	ESRI Shapefile
Listed Buildings	Polygons	ESRI Shapefile
Conservation Areas	Polygons	ESRI Shapefile
Historic Landscape Characterisation	Polygons	ESRI Shapefile
Local area designations	Polygons	ESRI Shapefile
Sites and Monuments Record	Points, lines and polygons	ESRI Shapefile
1807 OS 1" mapping	Georeferenced rasters	ESRI image catalogue
1880 and 1907 OS 25" mapping	Georeferenced rasters	ESRI image catalogue
Circa 1840 Tithe Maps	Georeferenced rasters	ESRI image catalogue
National Mapping Programme data	Vector and raster data	ESRI Shapefile and ESRI image catalogue

2.3.3 Other information

See References, Section 16.

Other sources consulted in developing the background history for the road included:

- Facsimiles of historic maps produced by Martyn, Norden, and Gascoyne during the 17th and 18th centuries. On-line images of other early historic maps.
- Published histories and descriptions of sites and localities, travel accounts.
- Relevant internet pages, in particular those relating to the A30 and its antecedents, and those depicting early historic maps of Cornwall.

2.3.4 Historic Landscape Characterisation

A key resource for the desk-top survey in the pilot study was the ready availability of the digitised Cornwall Historic Landscape Character mapping. The County-wide characterisation undertaken in 1994 and parts of a more detailed study of West Penwith undertaken in 2011 were used to provide information relating to land-use character; HLC can also assist in documenting landscape change along the road corridor during the relatively recent past.

2.3.5 GIS methodology

The CHAMP GIS database records key attribute fields for each CHF included in the desk study and the fieldwork survey inventory. Attribute data for each CHF was uploaded or entered manually into an ArcView project shapefile. This allowed the generation of a spatial database with attribute values.

The CHAMP database is a stand-alone database that has been designed to be compatible with the HA's Environmental Database (EnvIS) as outlined in DMRB, Vol. 10.

2.3.6 Definition of selection criteria and zones

In defining the criteria for data collection EM specifically required two particular categories of CHF information - whether a CHF location or designation exists either:

- Within the core network estate (includes the hard and soft estate zones);
- Adjacent to the core network estate boundary within the wider landscape context of the road.

These coarse zones were then subdivided further to allow varying criteria for data inclusion (according to the perceived significance of each zone for management purposes) to be applied to govern what data was collected for each zone, to form a baseline dataset.

An assessment of the impacts of the proposals was made from the surrounding area using the guidelines and methodological approaches set out in English Heritage's recent (2011) guidance on the setting of heritage assets. The methodology employs ArcGIS software and a Digital Terrain Model (DTM), which ignores potentially temporary surface features such as buildings, woodland, vegetation, etc. to provide a surface model of potential intervisibility between the line of the A30 and key heritage assets within the surrounding landscape. This 'bare earth' modelling provides a clear baseline from which to assess impacts that could result from the presence of the road within the landscape. A viewshed or ZTV (Zone of Theoretical Visibility) was generated from a regular sequence of observer locations along the length of the roadline between Longrock and Innis Downs. These observer points were extrapolated from a line drawn along the central reservations and centre lines of the A30 as recorded on the Ordnance Survey Mastermap (2014).

When performing viewshed analyses, several variables are used to limit or adjust the calculation including offset values, limitations on horizontal and vertical viewing angles (azimuth) and distance parameters (radius) for each observer point. For the western section of the A30, the composite viewshed was based on an 'overall observer elevation value' made up of the 'elevation value' or height above sea level of the ground at the observer viewpoint, with added to this an additional offset of 2m to represent the viewing height from an average vehicle. The radius selected was 1500m; this allowed the selection of an oversized data set. This data set was subsequently buffered to aid in the identification of sites at prescribed distances (see below).

This viewshed was checked on the ground where practicable, given that vegetation and other factors may substantially block views of and from key sites. A small number of significant heritage assets within the theoretical viewsheds were visited (where access was possible) and the landscape within which they sit considered to determine likely intervisibility with the roadline, inclusion within key views, and the natures of their settings, both locally and at a distance to inform the likely scales and types of any visual impacts which might affect their settings, as required by English Heritage (2011). A viewshed radius of 1.5km from the road centreline was utilised for this assessment.

Sites identified through intersection of the ZTV modelling with GIS layers containing designated and undesignated heritage assets produced data sub-sets which were further filtered according to their intersection with zones representing 100m, 500m and 1000m from the road centreline.

The site types within these data sets were then analysed to determine their likely sensitivity to impacts on settings. Site types which have no setting (documented, destroyed or cropmark sites) were excluded from further analysis.

- All extant sites were captured out to 100m from the road centreline.
- Designated sites and structures, together with designated landscapes, were captured out to 500m and 1000m from the roadline.
- HLC polygons were captured out to 1.5km from the roadline.

2.3.7 Determination of core network estate boundary and buffer zones

The extent of the soft estate was determined from GIS based digital mapping (polygons) supplied by the Managing Agent for Area 1 (EM). Zone boundaries are measured as shown below.

CHAMP Zone	Measured from	Data capture level
Soft Estate	N/A	All CHF's (desktop and field survey)
100m rural areas	Road centreline	All CHF's (desktop survey), selected CHF's (field survey)
100m to 500m rural areas	Road centreline	All SMs, LBs and other designations (desktop survey)
100m urban areas	Road centreline	All CHF's (desktop survey), selected CHF's (field survey)
100m to 500m rural areas	Road centreline	All SMs, LBs and other designations (desktop survey)
500m to 1000m zone	Road centreline	HLC plus selected designated sites and areas (desktop survey), selected CHF's (field survey)

2.3.8 Data structure

The initial desktop assessment generated various feature classes hosted in a geodatabase (gdb). These feature classes formed the basis of the survey and were developed through the project's GIS. Subsets of the key data sets were loaded onto handheld devices using the ESRI Collector Application. Following the completion of the assessment this gdb was used to populate the Highway Agency's EnvIS GIS-based database.

2.3.9 Database information standards

The archaeological data was collated and collected to current heritage information standards and best practice by complying with the [MIDAS](#) inventory and [National Monuments Record](#) (NMR) thesauri as set out in Sections 9.2.2 and 9.2.3 in *Highways Agency Guidance for the Development of Cultural Heritage Management Plans*.

2.3.10 Metadata

The Archaeology Data Service's (ADS) '[GIS Guide to Good Practice](#)' defines metadata as '*... the means by which your data are transformed into information, interpretable to and re-usable by those other than yourself. In other words, metadata is a label for the extra details associated with any data set which enable someone else to place them into some form of context.*' Metadata is, effectively, 'data about data'. In the study of geo-spatial information or that with a geographic information component this usually refers to the What, Who, Where, When and How of the data with particular emphasis on the Where element.

Metadata is an essential part of this project if its results and conclusions are to be widely disseminated and made readily accessible not only to project partners and specialist consultants but also to the wider community.

The GIS archive generated by this project conforms to NGDF, Dublin Core and ISO 19155 metadata standards.

2.4 Fieldwork Methodology

The walk over survey was conducted in early November 2014 in accordance with a method statement and safety plan agreed with EM prior to fieldwork being undertaken (Appendix 2).

2.4.1 Recording methods

The survey was achieved through a combination of a drive-through of the whole road route and a walk-over within relevant sections of the soft estate and in adjacent locations containing potentially sensitive CHF. CHF identified during the desk-based survey as being potentially extant were visited, whilst accessible sections of both the hard and soft estate were inspected for previously unrecorded sites, including historic fabric associated with the road itself (e.g., bridges, revetment walling). Where sites had been plotted by the Ordnance Survey (or by previous CAU surveys) existing grid references have been used. New sites (or those with dubious grid references) were located utilising a GPS unit built into the ruggedized tablet (this having a general accuracy of +/- 5m).

Information collected during the fieldwork was entered onto a pro forma recording sheet on a tablet computer, this being based on the GIS database table created during the desk-based survey phase of the project. Each site was given a unique reference number (CHAMP_ID). Each record includes a written description and a condition summary, together with short notes on current impacts and management recommendations. Representative high resolution (>10Mp) digital photographs were taken of each CHF using a DSLR. Photographs were also taken of the settlements and landscapes traversed by the road route, of sections of the road in its landscape setting, of key monuments within the landscape traversed by the road and views illustrating the Historic Character of the landscape through which the route runs.

Although all accessible sites were visited on foot, certain parts of the road and its environs were only viewed from the vehicle due to Health and Safety considerations. A drive through assessment of the whole of the route was undertaken to assess the ways in which the viewshed were perceived by travellers, the visibility (or lack of it) of CHF within the hard/soft estate and of selected CHF within the buffer zones and the ways in which the road itself contributed to its wider landscape setting.

All fieldwork was undertaken following the approaches set out in an approved risk assessment (Appendix 2). Fluorescent yellow jackets and over-trousers with reflective stripes were worn at all times during the site visits, whilst the survey vehicle was fitted with approved reflective stripes and signage to its rear and sides. EM were requested to set out survey signs at required intervals for those sections of the road on which the survey team undertook field visits exceeding 15 minutes at any one time, or on which it was felt that advance warning of the team's presence was required.

2.4.2 The Wider Context

The wider landscape context was considered during the fieldwork. Survey of these elements of the landscape was conducted with the following in mind:

- The nature of the adjacent historic landscape character, as this might influence future landscaping activities within the soft estate.
- Key sites in the viewshed within the buffer zones whose settings might be affected by operational or development activities.
- Any needs or opportunities for management, for example, screening, mitigating setting impacts or enhancing access to sites.

2.4.3 Fieldwork risk assessment

Prior to carrying out on-site work Cornwall Archaeological Unit carried out a Risk Assessment in line with HA IAN 115/08, Revision 1. This was approved by EM.

3 Location and setting

3.1 Overview

The A30 is one of the three arterial roads serving Cornwall, leading from Launceston to Land's End. The other two principal roads through Cornwall are the A38 linking Plymouth to the A30 at Bodmin and the A39 linking Bude to the A30 at Fraddon.

3.2 Geological and topographical background

See Figures 1 and 2.

3.2.1 Geology

The route of the A30 follows the high ground underlain by the granite batholith which gives Cornwall its characteristic shape, this being exposed at surface (from east to west) on Dartmoor, Bodmin Moor, the Hensbarrow moors, Carnmenellis, in West Penwith and on the Scillies. The bedrock within countryside between the exposed granite uplands is formed of Upper, Middle and Lower Devonian mudstones and siltstones together with some small areas of sandstones and limestones formed as seabed deposits during the Palaeozoic Period.

The bedrock underlying the route of the A30 between Innis Downs and Newlyn Downs skirts the northern exposure of the Hensbarrow granite (a small outlier of this outcrop forming Belowda Beacon), and consists of Lower Devonian mudstones and siltstones with some thin beds of sandstone, these being parts of the Meadfoot Group and the Trendean Mudstones, these deposits having been laid down between 417 million years ago and 391 million years ago. At the western end of Goss Moor, the roadline traverses a small area where the bedrock consists of Devonian limestones, mudstones and calcareous mudstones laid down between 417 million and 354 million years ago. On the Newlyn Downs, where the bedrock is of the Grampound Formation, lode structures carry formerly economically-important deposits of argentiferous lead.

Between Newlyn Downs and Redruth, the bedrock consists of Middle Devonian mudstones, siltstones and sandstones of the Grampound Formation and those of the Porthtowan Formation dating to between 391 million and 370 million years ago. These are metamorphosed close to the granite contact at the western end of this section of the route, the downland at Scorrier formerly siting important copper mines.

From Redruth to Longrock, the bedrock is almost wholly made up of Upper Devonian mudstones, siltstones and some sandstones of the Mylor Slates formation laid down between 370 million and 354 million years ago, though Connor Downs is underlain by a linear igneous intrusion of Devonian age, created between 417 million and 354 million years ago.

To the north of the Carnmenellis granite and to the east of the West Penwith granite exposures, intruded during the Carboniferous to Permian periods between 354 million and 248 million years ago, metamorphic processes resulted in the emplacement of mineral-rich lodes. These broadly north-east to south-west aligned structures were of particular economic significance in the area between Scorrier and Camborne, where they were exploited by some of Cornwall's most important tin and copper mines. Igneous dykes intruded during the Carboniferous period parallel these lodes, whilst a series of north-west to south-east aligned major faults traverse the landscape between St. Ives Bay and the country to the north of Helston.

The British Geological Survey (BGS) records significant drift deposits along the courses of most of Cornwall's rivers as well as in a number of shallow but often extensive areas of upland wetlands. The historic route of the western section of the A30 traversed the source of the River Fal on Goss Moor, where a substantial basin (geomorphologically a former lake) was eventually silted up with alluvial deposits including substantial amounts of tin eroded from lodes outcropping within the surrounding landscape. These

are likely to have represented an important economic and political resource during late prehistory, and were documented as having been worked from the medieval period until the mid-20th century.

Occupying as it does Cornwall's high central spine, the A30 does not intersect many of these drift deposits along its course, though crosses the valley of the stream flowing to the sea at Portreath between Redruth and Camborne, and those of the Red River and its tributaries at Tolvaddon and Roseworthy.

Between Connor Downs and the mid-point of the Hayle Bypass, the BGS record an area of sand and gravel of Quaternary date flanking the southern side of the Hayle Estuary, whilst at the western end of this bypass, the roadline crosses the alluviums of the Hayle River valley. Further deposits of quaternary sands and gravels are recorded between St. Erth Station and Canonstown and between Crowlas and Longrock. These deposits, laid down within sections of the route which are not far above current sea levels, reflect areas of former marshland whose presence dictated the course of land routes heading eastwards out of West Penwith until the construction of the 1825 turnpike road from Penzance to Hayle.

3.2.2 Topography

The topography of the landscape followed by the A30 westwards from Innis Downs is predominantly influenced by the presence of the granite uplands which it skirts. The eastern section is nearly level from Innis Downs to Victoria. To the west, the former route of the A30 then descended a little way into the northern part of the hollowed area occupied by Goss Moor, but now contours along a route to its north below the detached granite boss of Belowda Beacon before rising up onto the lower slopes of the Hensbarrow Moors as it bypasses Indian Queens.

From Penhale westwards, the roadline links areas of high ground, running between the headwaters of streams feeding into Cornwall's river system, including tributaries of the River Fal to the south and the Gannel to the north. To the west of Mitchell, the road climbs up the eastern slopes of Newlyn Downs, a notably elevated area within this part of Cornwall, from which the topography slopes away to the coastal plain to the north and through the plateau dissected by the headwaters of the River Fal and its tributaries to the south.

Between Chiverton Cross and Redruth, the roadline again followed the high ground through an area of former downland, though the modern Blackwater bypass now traverses the upper part of the valley occupied by the Carnon Stream on an embankment. Granite again outcrops immediately to the south of the section of the A30 from Redruth to Camborne, most visibly at Carn Brea. The roadline runs close to the foot of this rising ground, the landscape to the north being dissected by the stream which reaches the sea at Portreath and by the Red River and its tributary stream flowing through Roseworthy.

Westwards of Camborne, the A30 formerly crossed the Roseworthy Valley and then climbed up onto Connor Downs, but the modern bypass crosses this valley to the north via cuttings and an embankment, cutting through Connor Downs before running along the southern edge of a now-infilled eastern arm of the Hayle Estuary. This section of the route is only partially influenced by the local topography, most particularly by the Roseworthy valley; over two thirds of it runs within often deep cuttings.

The 1825 course of the A30 followed the southern shoreline of the Hayle Estuary along the edges of Copperhouse Pool, and, by means of an artificial causeway, crossed Carnsew Pool and the Hayle River, but the modern Hayle bypass skirts the town on its southern side, cutting through an area of former downland before re-joining the turnpike route near Grigg's Quay. This part of the modern roadline is topographically oblivious, running wholly within cuttings or on embankments.

The route of the A30 from St. Erth Station to Longrock cuts across Cornwall from the north-east to the south-west at its narrowest point. Topographically, this section is

notable for the presence of two watercourses – the Hayle River to the north and the shorter stream flowing into Mounts Bay at Marazion Marsh to the south. Only a kilometre separates the source of the southern watercourse near Rosevidney and the nearest point on the Hayle River at Tremelling. The evidence suggests that originally the highest crossing point on the Hayle River lay between Trewinnard and Tremelling, a point where the river valley is relatively narrow and where byways still converge at a small bridge, but during the medieval period a new bridge was constructed at St. Erth, and until the construction of the Hayle Causeway in 1825, this became the favoured crossing point for travellers heading into or out of West Penwith. After crossing the Hayle River at Grigg's Quay, the modern route of the A30 in this section runs along the foot of the West Penwith uplands to Crowlas, from where the old road to Penzance skirted the edge of the formerly marshy ground backing Mounts Bay. Since the construction of the 1836 additions to the turnpike and the draining of these marshes, the modern road has followed the shoreline of Mounts Bay westwards to Penzance on a causeway.

4 The context for the road

4.1 Settings

See Figures 31 to 41.

In the CHAMP guidance (section 8, methodologies for locating and mapping cultural heritage features) the 'setting' of the road is required to be considered. English Heritage (2013) has, fairly recently, issued guidance on the means by which the setting of a site or monument should be assessed, together with any potential impacts on it.

The setting of a site is effectively the area of landscape surrounding it which it influences by virtue of its existence, with which it interacts and within which it is experienced; this is primarily visual, though great houses (for instance) can also have had considerable influence on the historic land-use of their surrounding countryside. Sites can also have audible settings, so that, for example, the experience of a site can be modified by noise-producing activities within their settings. Some settings were deliberately created, as for instance in the case of hilltop monuments such as barrows or hillforts where extensive visibility was part of their essential character. Church towers and spires also had deliberately extensive settings which were not only visual but also in the case of the bells they contained, audible. Great houses, particularly those set within parks, almost always had impressive approaches, as well as designed rides and vistas, the last often being embellished with additional structures or aligned on impressive landscape features. The peripheries of such sites may also have been deliberately closed off with tree screens to limit visibility in some areas, and control was also often exercised over some aspects of the surrounding countryside. The principal streets of towns have, in some cases, been deliberately aligned, or have had significant structures constructed at locations along them.

More vernacular houses or sites tend to have relatively limited settings, though some were clearly designed to be ornaments to the local landscape. Some classes of monument such as barrows and hillforts are also likely to be intended to have been elements within very extensive landscapes of other similar contemporary sites.

Features like roadside milestones or guideposts/fingerposts were originally intended to have limited, but important settings – their visibility and legibility was integral to their original functions. When originally set up, they would have been approached on foot or by horse, allowing time for the important information they contained to be read and understood. The development of alternative methods through which travellers can now establish their locations and predict journey times (for instance Satnavs), means that the original functions of these roadside features have been lost. The much higher speeds at which they are approached have also greatly eroded their settings, so that appreciation of them is fleeting, if at all. In 2000, milestones were declared to no longer be functional 'highway furniture', and were reclassified as 'historic roadside features' (Thomson 2013). As a result, whilst the recognition of their historical importance has increased, their function importance has been almost wholly lost; in most cases this has increased their vulnerability. The Milestone Society, a national charity dedicated to their celebration and preservation, was formed as a result, but their maintenance remains in the hands of the agencies responsible for the roads beside which they stand. A partnership between the Cornwall Council and the Milestone Society has been suggested as one means by which some milestones could be appropriately cared for. Most Cornish milestones are now designated as Grade II Listed Buildings.

The road itself also has a setting. In places where it is long-established, it will have influenced landscape development – for instance in the establishment and growth of roadside settlements, and it may have influenced the planting of trees on its flanking hedgerows which will have become mature, established landscape features. It is also likely to be the principal communications route within a landscape, providing a sense of alignment within it – in the case of the primary roads such as the A30, travelling along them is generally associated with more important activities than using roads which lead away from them. Within the landscape, the road also influences activity and

perceptions of place – road crossings are at a limited number of locations and the areas between them have a different and less defined character to those near them. Within settlements which have not been by-passed, the road itself is often a dividing feature and may be difficult to cross on foot safely. The road's frontage is also likely to site a settlement's most important and architecturally significant structures, as well as most of its public buildings; historically, settlements which were not on the principal routes tended to far less developed than those which were on it, highlighting the significance of communications in the growth of places, particularly during the post-medieval period.

In contrast, modern roads tend to avoid settlements and to bypass them, and are deliberately designed to run through the 'emptier' sections of the landscape. Cuttings, intended to as far as possible remove hills from the route, also visually isolate the road from the surrounding landscape, making the road virtually invisible from it, and (with tree screens and other plantings) greatly reduce its audibility within the surrounding landscape, whilst the road traveller also loses almost all views of the surrounding countryside. As a result, sections of the road incorporating significant stretches of cuttings such as the Hayle bypass have very limited settings, and thus little influence on or interaction with the landscapes through which they pass. In contrast, embanked sections of road or stretches which run on elevated viaducts (for instance those crossing valleys on the Camborne-Redruth bypass), give the road enhanced visibility, audible presence and extensive views, significantly extending its setting at these points (for example see Figs 47 and 48).

In the case of modern roads, efforts are made to reduce their audible impacts on the surrounding landscape through the use of cuttings (which contain or deflect much road noise upwards) and tree screens or other sound-dampening vegetation, though the road may still be audibly evident at some distance from it from higher ground. The potential to limit audible impacts of sections of the road running on viaducts is very limited, however, and these may be significant along the valleys or other open areas the road traverses. Low noise road surfacings can also help to reduce audible impacts.

Roads which still follow their traditional routes have considerably greater audible impacts, as was evident when surveying the sections from Longrock to St. Erth Station and (given the lack of settlements in this section), to a lesser extent from Chiverton Cross to Carland Cross. These impacts are most significantly experienced within settlements, though tend to be partially mitigated by speed restrictions, and have also been reduced to some degree by improvements in car exhausts and tyre materials. Nevertheless, audible impacts can affect the settings of sites some distance from the road corridor, as was experienced at Castle-an-Dinas and St. Dennis church, 1km and 2.25km respectively from the roadline crossing Goss Moor.

One further potential impact of the road on the settings of sites within the countryside through which it passes relates to its use during the hours of darkness. Car headlights can significantly affect the settings of flanking sites and settlements, particularly during times of heavy use – for instance during peak travel periods in the early morning and evening during winter months. Blocking fences or tree screens to limit light pollution impacts have been put in place along the sides of some sections of upgraded road where they are close to built-up areas and are not in cuttings, but the older sections of the road have not been so treated. From elevated ground flanking the road, much of it is visible during the hours of darkness as a potentially distracting ribbon of white and red light. A few sections of the road are lit at night, these being the settlements of Crowlas and Canonstown, Loggan's Mill roundabout and sections of dual carriageway surrounding major interchanges. Inevitably, there is the potential for setting impacts to result to classes of site whose characters are vulnerable to such factors.

4.2 Historic Landscape Character

See Figures 77 to 86.

A basic premise of this method of analysing landscape development and the influence it has had on its character is that the whole of Britain is one continuous but multifarious historic landscape. All natural habitats in Britain are 'semi-natural', being the products of various land use systems (whether deliberate, like woodland management, grazing of heathlands, and creation of pastures, or incidental to other processes, like the silting of estuaries as a result of tinning, or the creation of marginal habitats alongside roads). Semi-natural habitats are thus part of the historic environment and therefore there are no parts of Britain that do not have a definable historic character.

It is for this reason, amongst others, that HLC has been identified as a robust model by which to contextualise the road. This model was favoured over Viewshed and Line-of-Sight Analyses which tend to focus on individual monuments in the landscape.

The baseline data on which this analysis is undertaken was the 1994 Historic Landscape Characterisation undertaken by Cornwall Archaeological Unit as part of a general Landscape Assessment for the Countryside Commission (now the Countryside Agency), English Heritage, Cornwall County Council, and the District Councils (published as Cornwall County Council 1996). Some areas of Cornwall have been subjected to more detailed analysis as parts of subsequent projects, including West Penwith (Dudley 2013).

4.2.1 Methodology

For the 1994 assessment various systematic sources were studied in order to establish the predominant historic landscape character of each parcel of land in the county. The mapping demonstrated that the historic landscape of Cornwall comprises a mosaic of blocks of land whose predominant historical landscape character is both various but also repeating. This quality allows parcels to be assigned to one of around twenty clearly distinguishable types (some of which can be further subdivided). Most types can be found scattered across the whole of Cornwall.

For the A30 (west) CHAMP, the road was buffered to 1000m as this was felt to give a reasonable indication of the character of the landscape through which the road passes. The HLC for the study area was captured as a number of adjoining polygons (parcels of area) in the GIS.

4.2.2 Summary description of the HLC of the road route

The landscape through which the western section of the A30 from Longrock to Innis Downs passes is predominantly rural in character, and although it runs through long established farmland in its western and parts of its central sections, the majority of the route runs through former downland. The characters of some sections have been significantly modified by post-medieval (and in some cases modern) industrial and agricultural activities, particularly through the creation of often very extensive areas of 19th century farmland and miners' smallholdings.

In its western section, the small-scale settlements through which the road passes are predominantly 19th century in character, their locations determined by (and in some cases influencing) the line taken by the road and the nature of the agricultural landscape it traverses. In contrast, the closely by-passed Camborne-Redruth conurbation (like Hayle) largely came into being to exploit locally-available natural assets – in the case of the former this being the presence of rich deposits of tin and copper, in the latter, its ready access to the sea. In all three cases, urbanisation during the 19th century was rapid and extensive, and, despite economic downturns at the end of the 19th century, created sufficient momentum for continuing expansion to occur during the 20th and 21st centuries. Camborne and Redruth also considerably influenced the form of the landscape surrounding them to considerable distances from their urban cores, this taking the form of satellite hamlets and industrial sites, infrastructure

developments and the establishment of new farms and smallholdings to help to feed their burgeoning urban populations (see Fig 29). The enclosure of Loggan's Moor near Hayle also helped to increase the amount of available farmland during the 19th century, though parts of this area are being allowed to revert to wetland as its nature conservation value is currently felt to outweigh its agricultural importance. In a similar fashion, Goss Moor, which was a long-standing and important industrial landscape characterised by extensive alluvial tin workings, is also now predominantly valued as a wildlife reserve, and is managed as such.

Chyverton Park is the only area of Ornamental landscape adjacent to the roadline, though the Zelah by-pass has moved the current roadline further away from the original route, which closely followed the southern boundary of the wooded parkland. This park is relatively small in extent, and does not appear to have had a significant influence on the landscape surrounding it with the exception of its woodland planting, which appears to extend beyond the original park boundary into the surrounding countryside, particularly to the east of the area of the Registered Park and Garden.

The A30 has influenced the HLC of the landscape it traverses by virtue of its long existence as a primary communications route. The existence of settlements such as Redruth determined its original route whilst others like Crowlas and the small hamlets to its east, those from Zelah to Summercourt, and particularly Fraddon, Higher Fraddon, Blue Anchor, Indian Queens and Victoria developed in response to its presence, the last group servicing the needs of its travellers through the establishment of coaching inns during the 18th and 19th centuries and fuel stations during the 20th century. The modern, largely dualled highway, takes a line which is predominantly dictated by a requirement to avoid settlements and to ease the flow of traffic. As a result, its relationship with the HLC of the landscape it traverses is far more limited, indeed it is predominantly HLC-oblivious. It is not, however, without influence on the surrounding landscape, as it tends to cut across former boundaries, routes and landscape blocks and imposes a sometimes commanding linear presence across very extensive swathes of countryside.

5 Landscape Area Designations

5.1 Overview

The section of the A30 between Longrock and Innis Downs passes through a landscape of considerable variety and time depth. Areas forming part of the Cornish Mining World Heritage Site are considered to be of international importance, whilst landscapes of national importance may be designated as Areas of Outstanding Natural Beauty (AONB), Registered Parks and Gardens (RPG) or Registered Battlefields (RB). Scheduled Monuments (SMs) can, in some cases be extensive (as for instance in the case of Carn Brea). Ecologically or geologically important landscapes are designated as Sites of Special Scientific Interest at the national level and Special Areas of Conservation at the European level. Area designations such as Areas of Great Scientific Value (AGSV), Areas of Great Landscape Value (AGLV) and Areas of Great Historic Value (AGHV) were designated at County level, as well as County Wildlife Sites (CWS) and Regionally Important Geological and Geomorphological Sites (RIGS).

5.1.1 Areas of Outstanding Natural Beauty (AONB)

AONBs are landscapes designated by the Countryside Agency as being '*of such special national and regional importance that it is the general will to see them protected from inappropriate forms of development that could permanently harm their distinctive character*'. This section of the A30 does not pass directly through any AONBs, although the northern part of West Penwith is so designated, as are Gwithian Towans. Both form parts of the setting of the A30.

5.1.2 Registered Parks and Gardens

The English Heritage Register of Parks and Gardens includes and protects through designation Historic Parks and Gardens of special historic interest in England. The registration of a park or garden depends primarily upon the age of its main layout and features, its rarity as an example of historic landscape design and the quality of the surviving landscape. The Register was established in recognition that historic parks and gardens are a finite and fragile resource.

Although the inclusion of an historic park or garden on the Register in itself brings no additional statutory controls, local authorities are required by central government to make provision for the protection of the historic environment in their policies and their allocation of resources. Local planning authorities are also specifically guided towards protecting registered parks and gardens when preparing development plans. As a result, most Local Development Frameworks now contain policies to help safeguard such landscapes

- Grade I sites are of exceptional interest.
- Grade II* sites are particularly important, of more than special interest.
- Grade II sites are of special interest, warranting every effort to preserve them.

The majority of the sites identified on the Register are awarded a Grade II status. Around 27% of the 1,600 sites are awarded a Grade II* status, and a further 9% are classified as Grade I.

The western section of the A30 passes close to the southern boundary of the Grade II Chyverton Park (National ref: 1000512) near Zelah.

5.1.3 Registered Battlefields

The English Heritage Register of Battlefields was established to offer them protection and to promote a better understanding of their significance, given their historical significance and archaeological potential, and because they are the final resting places of the thousands of fighting men who died on them.

The western section of the A30 does not traverse or pass close to any of Cornwall's Registered Battlefields.

5.1.4 Scheduled Monuments

A schedule has been kept since 1882 of monuments considered to be of national importance by the government. The current legislation, the Ancient Monuments and Archaeological Areas Act 1979, supports a formal system of Scheduled Monument Consent for any work to a designated monument. Scheduling is the only legal protection specifically relating to archaeological sites and areas.

Cornwall contains more Scheduled Monuments (1,912) than any other county in England. There are 61 SMs within 1km of the road centreline, 33 of these being within 500m of it, and 15 within 100m. Almost all of these are made up of Bronze Age barrows flanking the section of the road from Four Burrows to Innis Downs, though the medieval wayside crosses at Crowlas and Whitecross are also Scheduled Monuments. No Scheduled Areas are traversed by or lie within 100m of the roadline, though nearby sites such as Castle-an-Dinas and Carn Brea are so designated.

5.1.5 Areas of Great Historic Value

AGLVs represent those parts of Cornwall which were designated at local level to identify those areas of the landscape which were deemed to be of particular historic importance and worthy of protection via the planning system. Although they were incorporated into the 1997 Structure Plan, the subsequent 2004 Structure Plan stated: *'The coverage, role and objectives of the former Areas of Great Historic Value ... will be more effectively achieved through the proposed character approach (Historic Landscape Character) complemented by the protection of key sites and areas of County importance'*. AGLVs and AGSVs are similarly now of diminished importance within the planning system, given the move to the character-based approaches which underpin strategic planning policy making.

The A30 traverses a large area designated as an AGHV encompassing Castle-an-Dinas, Belowda Beacon and Goss Moor. The St. Day to Gwennap Mining District to the south of Scorrier is also an AGHV, as are Carn Bea and the Great Flat Lode to the south of Camborne-Redruth, Upton Towns and Godrevy just to the north of the roadline at Loggan's Mill and the Penwith Moors and Coast not far to the west of the section from St. Erth Station to Longrock.

5.1.6 Areas of Great Landscape Value (AGLV)

AGLVs represent those parts of Cornwall *'which are of sufficient quality to merit special protection in a County context because of their landscape beauty'*, and former Local Plans noted that *'the conservation of natural beauty and amenity is to be given particular emphasis in considering proposals for development and the management of change'*.

Whilst the western section of the A30 does not traverse any areas designated as AGLVs, they lie close to it and form part of its setting at Arrallas to the south of Mitchell, St. Clement to the south of Zelah, Carn Marth to the south of Scorrier, Carnmenellis to the south of Redruth and Camborne, Upton Towns to the north of Hayle and an area encompassing Lelant, Carbis Bay and St. Ives and a section of the moors to their west to the north-west of Hayle.

5.1.7 Special Areas of Conservation (SAC) and Sites of Special Scientific Interest (SSSI)

Various sections of the landscape traversed by the A30 are also covered by a number of designations relating to their scientific and nature conservation importance.

A Special Area of Conservation is a specially-protected site designated under the EC Habitats Directive, intended to make a significant contribution to conserving the 189

habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The following areas adjacent to the route of the A30 are designated Special Areas of Conservation (SAC):

- Breney Common and Goss and Tregoss Moors.
- Newlyn Downs.

The statutory nature conservation agencies have a duty under the Wildlife and Countryside Act 1981 (as amended) to notify any area of land which in their opinion is 'of special interest by reason of any of its flora, fauna, or geological or physiographical features'. Such areas are known as Sites of Special Scientific Interest (SSSIs).

At its eastern end, the A30 passes immediately to the south of two SSSIs defined as Retire Common and the River Camel Valley and Tributaries before passing through Goss Moor (most of which is a SSSI). Newlyn Downs and Carrick Heaths to the west of Mitchell are also SSSIs. Small areas to the north and south of the road to the south-west of Zelah are also part of the Carrick Heaths SSSI.

At the western end of the route, areas of Gwithian to Mexico Towans, the Hayle Estuary/Carrick Gladden and Marazion Marsh are also designated as SSSIs.

5.1.8 Areas of Great Scientific Value (AGSV)

AGSV's have been designated at County level *'to act as buffers around the most important and sensitive nature conservation sites, provide links between sites, and to emphasise the most important areas of the County for nature conservation where resources for management will be concentrated'*.

The section of the landscape including Goss Moor, Castle-an-Dinas and the downs near Roche are designated as an AGSV; the A30 traverses this block of landscape. Near its western end, the A30 runs along the southern boundary of the Hayle to Godrevy AGSV.

5.1.9 Regionally Important Geological and Geomorphological Sites (RIGS)

Sites identified as being of County earth science importance have been designated at a local level as RIGS, and can be a material consideration within the planning process. No RIGS lie within the buffer zone for the A30.

6 Historical background

6.1 Early roads

According to one source quoted (but not named) in an article in the West Briton in 2010, the spine route westwards through Cornwall was, in 1239, known as the "Great Road of the Wagons," and in 1260 as the "Royal Cornish Way".

If these claims are correct (no other reference to these names could be found), they suggest that the route leading westwards from the River Tamar across Bodmin Moor and down to west Cornwall had long been an important communications route linking Cornwall with the rest of Britain. It might indeed have been a long-distance route during prehistory, its course along the spine of the peninsula passing through some of the few areas of the landscape which were not then densely wooded and along which natural features such as distinctive carns (tors) would have provided waymarks whose locations and sequence would have been communicated down the generations in songs, stories and myths.

Such routes would have allowed travellers to avoid the many wooded valleys found further out towards the coast, and the often difficult river crossings to be encountered within them, as well as the increasingly settled and farmed areas on the more fertile lower ground where local people might have been wary of outsiders, often with good reason. Similar long-distance routes following ridge-tops are have been suggested elsewhere in Britain, although secure dating is problematic. During the Bronze Age, many ridge-tops became populated with barrow cemeteries, as at Carland Cross, perhaps marking their control by local kin groups, whilst during the following Iron Age, the hillforts of local rulers controlled access to and along many of these routes.

During the early part of the medieval period, taxes were levied for the creation and maintenance of strategic bridges, whilst the maintenance of the road system became the responsibility of the Hundred Courts. The Church, in particular, was involved in keeping roads in a fit state of repair, and during the 15th Century many of Cornwall's bridges were constructed (Thompson 2013), some as the result of Indulgences. The first Highways Act was enacted in 1555 during the reign of Queen Mary requiring each parish to appoint two surveyors to supervise the repair of highways leading to market towns. This Act was renewed in 1562 to include compulsory powers to obtain materials for road repairs and an increase in the requirement for statute labour to undertake these (*Ibid*). Those parishes through which a long distance road passed often found these requirements onerous. The amount of long-distance land traffic in Cornwall during this period is unclear, most accounts suggesting that many travellers and goods would have been conveyed by sea, suggesting that such roads as existed were established for and used by essentially local traffic.

6.2 The post-medieval period

Even during the early post-medieval period, Cornwall's roads remained essentially local, linking farms to churchtowns and these parish centres to their local market towns or to ports. From the 16th century, certain bridges were deemed to be so important that their maintenance was the responsibility of the County Court – such bridges were designated County Bridges. In 1697, an Act of Parliament established a requirement for the erection of direction signs or posts *'for the better convenience of travelling in such Parts of the Kingdome which are remote from Towns and where several Highways meet.'* This suggests that by this date, the need had arisen for the establishment of roads fit for longer-distance travellers.

Most commercial traffic from England to Cornwall during this period still utilised coastwise shipping, whilst the long distant land routes were still relatively undeveloped, their condition being notoriously awful. In 1602, Carew said of the County's roads *'those laid out of later times [during the post-Roman period] are in the eastern part of Cornwall uneasy, by reason either of the mire or stones, besides many uphill and*

downhills. The western are better travelable, as less subject to these discommodities.' The doughty Celia Fiennes, describing a tour through Cornwall circa 1695 on horseback, also mentioned the poor state of the local roads on more than one occasion:

'Here Indeed I met wth more jnclosed Ground and soe had more Lanes and a Deeper Clay Road w^{ch} by by the raine y^e night before had made it very Dirty and full of water in many places, in the Road there are many holes and sloughs where Ever there is Clay Ground, and when by raines they are filled with water its difficult to shun Danger; here my horse was quite down in one of these holes full of water'

'I went over some Little heath Ground but mostly Lanes, and those stony and Dirty...'

She also described the route from Redruth to Penzance, which (dependant on the state of the tides), could include fording the estuary at Hayle: *'The next day finding it faire weather on y^e Change of y^e moone, I alter'd my Resolution and soe went for y^e Lands End by Redruth 18 miles, mostly over heath and Downs w^{ch} was very bleake and full of mines.'* ... *'From Redruth I went to Pensands 15 mile and passed by y^e ruines of Great ffortification or Castle on a high hill about 3 mile from Redruth [Carn Brea] and passed to Hailes [Hayle] and soe went by y^e sea side a great way, it being spring tide it was a full sea.'* On her return journey she noted: *'I continued my returne from Pensands to Hailing [Hayle] and now y^e tyde was down and so much Land appeared w^{ch} lay under water before, and I might have forded quite a crosse, many y^t know y^e country do, but I tooke y^e safer way.'*

Even by 1755, when William Wynne and his family visited Land's End by coach following the 'coach way' or 'carriageway' the roads were very poor in places. In some areas they noted that the route incorporated large rocks, Wynne noting *'Some of the way the Coach came, we were forced to get out and be Lifted over stones which Lay across the road and bigger than any at Stonehenge ... impossible to be removed but by Gunpowder'*, whilst at Sennen Churchtown, he wrote *'The coach would go no further and 'tis two miles to walk to the point of land called Land's End, a great part of it is a narrow stony way so that a coach could not pass without pulling down their stony hedges, which has and may be done if required.'* (quoted in Thompson 2013).

A large number of topographical maps of Cornwall were produced between the early 17th century and the beginning of the 19th century, some of these showing the major roads running through the county (for example, Figs 5 and 6). John Ogilby's strip map of 1675 showed the post road between Penzance and Redruth at this date as running through Marazion, Relubbus, Praze an Beeble and Four Lanes.

Until perhaps the early 18th century, it seems from most early maps (for instance as clearly shown on the example produced by Badeslade in 1742, Fig 5) that the route now followed by the A30 was not regarded as one of the principal roads from Devon westwards through Cornwall, these being (to the north) via Launceston, Camelford and St. Columb to Truro and (to the south) through Callington, Liskeard, Lostwithiel, Grampound and again to Truro (more or less the route followed by Celia Fiennes). Westwards of Truro, although one route ran through Redruth to Penzance, incorporating some limited sections of the route of the current A30, the principal road seems to have been that via Penryn, Helston and Marazion.

One of the first of the county maps to depict most of the major elements of Cornwall's road network in detail was that produced by Joel Gascoyne in 1699. From west to east, the route from Penzance to Bodmin can be seen to have been made up of a series of sections of road linking local settlements, there being nothing in the way of a trunk route anywhere within the county. From Penzance, the road ran slightly inland from its current route through Gulval and Crowlas then across to Rosevidney, crossing the Hayle River at St. Erth – an ancient bridging point whose original bridge may date to the mid-1300s, and where there was also a small ferry. The bridge was widened in 1816. There seems to have been no direct route northwards from St. Erth to Ventonleague to the east of Hayle, from which a route led across Connor Downs through Roseworthy to Camborne and Redruth and then on across further downland to Three Burrows (Chiverton). This route can be traced further eastwards through Mitchell

and St. Enoder, traversing the northern side of Goss Moor to Colbiggan, from where the road to Bodmin ran north-eastwards through Lanivet. Beyond Bodmin, the road to Launceston evidently followed a longstanding route over the moors. At this time, however, the route was not easy to follow, and accounts suggest that travellers generally employed guides.

In 1720, Owen and Bowen's map showed a road following the western section of this route, though from Bodmin eastwards the maps suggests that the principal route out of Cornwall was via Liskeard and Callington.

In 1742, Badeslade's map (Fig 5) showed two principal routes eastwards through Cornwall. The first ran from Penzance to Launceston via Crowlas, Redruth, Three Burrows, St. Columb, Padstow and Camelford, whilst a southern route ran from Penzance via Marazion, Truro, Grampound, Lostwithiel, Bodmin, Liskeard and Callington. In this year it is recorded that posts were set up along the route across Bodmin Moor – an indication of the rudimentary nature of the highway and, presumably the ease with which travellers like John Wesley in 1743, would otherwise get lost. Despite the erection of these guideposts, in the following year it is recorded that John Wesley employed Degory Ishel to guide him across the moor.

Martyn's map of around the same date showed a route from Penzance to St. Erth via Gulval, Crowlas and Rosevidney, but again he did not show a direct link to the road leading eastwards from Penpoll (Hayle) via Connor Downs, Rosewarne, Camborne and Redruth. From Redruth he showed this route continuing via Blackwater, Three Burrows, Marhas in Voas (Marazanvose), St. Michael (Mitchell), Summercourt, St. Enoder and Penhale. Beyond Penhale, the road eastwards continued to the north of Goss Moor via Belowda, Redtye, Lanivet and Bodmin to Launceston.

Thomas Osborne's map of 1748 depicted the principal route eastwards as that being from Penzance through Marazion, Camborne, Redruth and Truro, then northwards through St. Erme to St. Michael, St. Columb, Bodmin and Launceston.

Bowen's map of 1756, like Kitchen's maps dating to 1764, 1769, 1784 and 1786 (extract shown in Fig 6) showed a route running from Penzance to Crowlas and St. Erth, north to Penpoll and then east via Redruth, Three Burrows, St. Michael, Penhale, Bodmin and Launceston. This suggests that the section between Three Burrows and Mitchell had finally been formalised as a road, potentially avoiding the detour to Truro, should travellers wish to head directly to Redruth, St. Ives or Penzance. William Maton, writing in 1796 declared that *'The roads, their unlevelness apart, are amongst the best in the kingdom.'* (Gibson 1918).

In 1814, Lysons described the 'great mail coach road' westwards from Launceston as passing over the 'moors of Alton and Temple' to Bodmin and then through 'Higher Fraddon, Lower Fraddon, Penhale and Summercourt', then to Mitchell, and thence to Truro, having passed the 'posting houses' at 'the Indian Queen' and Blue Anchor. To the west of Truro, the main road west continued to run through Perranwell, Stithians, Helston, Marazion and Penzance. In contrast to what had been implied by Bowen's map, however, Lysons specifically stated that *'the old road from the north of Cornwall to the Land's-end branched off at Mitchell: this road, which has been long disused for carriages, though its milestones remain, and it still keeps its place in the road books, passed through Zealla, Redruth and Crowlas to Penzance.'* (Lysons 1814).

The following year, Worgan noted that in Cornwall *'the roads, with some exceptions, are tolerably good throughout this county; much better than in many parts of Devonshire.'* He also noted that *'The parochial roads are numerous, narrow, and intricate, some of them mere gullies, worn by torrents; their high banks, and tall overhanging hedgewood, render many of them dark labyrinths. I have heard many travellers express a wish that there were more guideposts in the county; indeed I have, myself, had frequent occasion to wish for such friendly monitors.'* (Worgan 1815). A requirement for the erection of guidestones had been established by Act of Parliament in 1697, over a century before *'for the better convenience of travelling in such Parts of the Kingdom which are remote from Towns and where several Highways meet'*

(Thompson 2013), but it appears that their absence was still resulting in travellers getting lost.

6.3 The Turnpike Trusts

See Figure 7.

Turnpike Trusts came relatively late to Cornwall, possibly because it already had a number of well-established long-distance routes communicating with Devon and had long relied on the sea for much of its commercial traffic. Nevertheless, many local roads were of poor quality, inhibiting communications around the county and between its population centres.

The first Turnpike Trust covered the 'Truro Roads' in 1754. Sections of the main Post Road from Launceston to Truro via Camelford and Wadebridge were turnpiked in 1760. However, the Bodmin Turnpike trust, created in 1769 allowed for the improvement of the route through the centre of Cornwall across Bodmin Moor. By 1770, the road from Launceston to Truro via Bodmin had become one of the four principal routes from Devon which travellers might use to reach Truro – the others being via Launceston, Camelford and Wadebridge, via Callington and Liskeard, and utilising ferries across the Tamar and then passing through Liskeard. The profits of the Turnpike Trusts were substantially affected by the arrival of main line railways during the 1850s and they were progressively wound up from the late 1870s, the roads being transferred to local boards and then to the County Council following its formation in 1888. Those sections of former turnpikes subsequently incorporated into the route designated as the A30 were:

- The road between Penzance and Redruth - the 1825 Hayle Bridge Causeway turnpike - this being further upgraded in 1837 and 1839.
- A section of a 1754 Truro turnpike linking Truro to Redruth and Camborne via Chacewater.
- The section of the current A30 between Mitchell and Marazanvose was not turnpiked.
- The section of the A30 from Penhale to Mitchell was part of a 1760 Camelford, Wadebridge and St. Columb turnpike.
- The road from Higher Fraddon to Bodmin was turnpiked in 1829, this being the Truro Road following the A389 from Bodmin through Lanivet and the A30 to Indian Queens. This route was specifically mentioned as to be improved in an Act of 1769, though its roadline appears to have run from Redtye in the east via Colbiggan Belowda, Castle-an-Dinas and Higher Fraddon, passing to the north of Goss Moor. The exceptionally straight section from Town End to Lanivet was constructed following an Act of 1833.
- The major element of the 1769 Bodmin to Launceston turnpike followed the line of the current A30 from Bodmin across Bodmin Moor to Kennard's House, work having begun on improving this route in 1756.
- The principal 1760 Launceston turnpike covered a section of the London Post Road from a little west of Okehampton to junctions with the Wadebridge and Bodmin roads just to the west of Launceston.

Improvements to the old south coast post road from Truro to Penzance were also mentioned within the first Act of 1754, this route running from Truro to Perranwell, Perran Downs and Helston, then along the coast of Mount's Bay. This scheme seems never to have been pursued.

The accurate survey of a road and the erection of milestones at one Statute Mile intervals (1,760 yards, rather than the Long Miles and local miles previously used) was a specific requirement on the Trustees of a Turnpike Trust (see Figs 57, 59, 60 and 62 to 76).

The early 19th century 1st Edition of the 1" to a mile OS map showed that a causeway had been constructed by this date along the edge of the shoreline between Penzance and Longrock, by-passing the old road through Gulval and Ludgvan. From Longrock, the route ran to Crowlas, as previously, but had then been re-routed north-eastwards along the old Lelant road via Cockwells, Whitecross, Canon's Town, Rose-an-Grouse and Canonstown to Grigg's Quay where a new causeway led across the southern side of the estuary to Hayle (this feature, 1,040 feet in length, having been constructed in 1826 at a cost of £7,200, according to Murray, 1851 (and see Fig 11). From Copperhouse the road climbed the hill to Connor Downs and continued via Roseworthy (Fig 10) to Camborne, Tuckingmill, Blowinghouse and Redruth (Fig 43), then via a route across the downs near Scorrier to Three Burrows, Four Burrows, Newlyn Downs, Mitchell and Summercourt, across Goss Moor (Fig 14) and via Lanivet to Bodmin (Fig 15), from where it crossed Bodmin Moor to reach Launceston.

In 1817, C.S. Gilbert again mentioned that direction posts were '*much wanting*' in Cornwall, as were milestones, both of which were generally the responsibility of the turnpike trusts. He noted that the road westwards from St. Columb was re-established '*in the middle of the last century*' as part of a route running from Launceston through Camelford, Wadebridge, St. Columb, Mitchell, Truro Penryn and Falmouth and since extended through Helston and Marazion to Penzance, and eventually to Land's End. He mentioned that in 1770 '*a good road was made over the downs that intervene between Launceston and Bodmin, which taking a direction westward of the latter town, connects itself, at the distance of thirteen miles, with the old road leading from St. Columb to Truro*'. He also reported that a new road had been constructed between Truro and Tehidy Park and was '*very good*' but the country through which it passed was '*extremely open and unsheltered*'. The road from Truro to Redruth, he reported, '*was likewise good, but dangerous at night from the great quantity of shafts close to its sides*'. From Redruth to Penzance he noted that '*the road is badly made, very hilly and free from toll*'. The turnpiking of this last section did not begin until 1825, and was not completed until 1839.

The 1877 OS 25" to a mile mapping marks a large number of guide stones or guide posts at crossroads along the route of the A30 from Longrock to Innis Downs, together with 40 milestones, so it appears that the turnpike trusts eventually addressed Gilbert's concerns. Many of these formerly essential features have now been lost. For examples of surviving milestones see Figures 57, 59, 60 and 62 to 76.

A.K. Hamilton-Jenkin, in his 'The Story of Cornwall' described the coach route from Falmouth to Launceston as follows: '*In 1859, the "Quicksilver" left Falmouth each day at 11:00 a.m. The principal stopping places on the route were the Norway Inn, Perran Wharf; the Royal Hotel, Truro; the Falmouth Arms, Ladock; the Indian Queens, Goss Moor; the Royal Hotel, Bodmin; and the Jamaica Inn, Bolventor. Launceston was reached at a comfortable hour the same evening*'. The Tally Ho coach had been established between Truro and Plymouth in 1848, taking five and a half hours for the journey. It is perhaps indicative of the state of the Cornish roads at the time that the journey from Plymouth on to London took only seven and a half hours.

Inns and hotels had been established along the route to provide food, lodgings and changes of horses for travellers, particularly those using the coaches which carried the post and those set up by local entrepreneurs. Those identified along the route of the A30 in Cornwall included (those in major population centres not being detailed), see Figure 42 for examples:

- PENZANCE
- The Commercial Inn, Longrock
- The Star Inn, Crowlas
- The Lamb and Flag, Treloweth
- The White Hart, Hayle
- The Royal Standard, Penpoll
- The Cornubia Hotel, Copperhouse
- The Turnpike Inn, Connor Downs

- The Cornish Daws Inn, Treswithian
- CAMBORNE
- The Pendarves Hotel, Tuckingmill
- The Plume of Feathers Hotel, Pool
- The Basset Arms Hotel, Pool
- REDRUTH
- The Spread Eagle, Blackwater
- The Red Lion Inn, Blackwater
- The Chiverton Arms, Three Burrows
- The Half Moon, Zelah
- The Hawkin's Arms, Zelah
- The Plume of Feathers, Mitchell
- The London Inn, Summercourt
- The Blue Anchor, Blue Anchor
- The Indian Queen Hotel, Indian Queens
- The Victoria Inn, Victoria
- BODMIN
- The London Inn, Pound's Cawnse (Temple, now demolished)
- The Jamaica Inn, Bolventor
- The King's Head, Five Lanes
- LAUNCESTON

This new road was not universally utilised, however, as even by 1812, Cary's road map of Cornwall showed that travellers entering the county at Launceston would have continued to leave the route of the current A30 at Mitchell and take the road to Truro, (the road to the west of Carland Cross never being turnpiked). If they were continuing westwards from Truro they would have probably taken the road through Chacewater to Redruth; although a minor road across the downs was shown linking Camborne to Hayle, fording the estuary at the western end of this section of the route was not straightforward, and many travellers would still have taken the south coast road through Perranwell to Helston and then followed the road to Penzance.

In 1835, the Highways Act finally removed the requirement for statute labour, replacing it with a highway rate to pay for the maintenance of roads within parishes (excluding those maintained by the Turnpike Trusts). In 1862, Cornwall's parishes were grouped together into seventeen Highways Districts, the major roads being administered by a District Highways Board. In 1878, as many of the turnpike trusts were being wound up, the Highways and Locomotives Act created 'Main Roads' – principally former turnpikes, and in 1899, with the creation of Cornwall County Council, a Highways Committee was formed to take on the maintenance of these principal highways, Cornwall being subdivided into East and West Divisions.

6.4 The route of the western section of the A30 at the end of the 19th century

Circa 1877, the OS mapped the route from Penzance to Launceston in considerable detail. To the west of Penzance, the road leading to Land's End was no more than a collection of narrow agricultural roads, typical of the relatively undeveloped communication networks characteristic of rural Cornwall. Penzance had grown considerably in importance as a commercial and maritime centre however, and by the mid-19th century was not only a thriving port and town but also an important railhead. It was inevitable, therefore, that roads leading eastwards from it would need to be of a quality capable of carrying substantial amounts of traffic.

Within Penzance, the road formed the principal commercial axis of the town – Market Jew Street, though the road route was dictated by the location of Alverton to its west, the manor within which much of Penzance had developed. From the foot of the main street, the road paralleled the railway along the relatively new causeway from Chyandour through Eastern Green to Longrock (following a traditional route along the edge of the shoreline), where the route east diverged from the Marazion road and

turned north-eastwards across a reclaimed arm of Marazion Marsh to meet the ancient earthwork known as the '*Giant's Grave*'. Between Ludgvan Lease and Crowlas, the road traversed a stretch of abandoned mine workings at the eastern end of which it met the old road from Penzance which had linked it to the churchtowns of Gulval and Ludgvan. The main street of Crowlas village can be seen to have developed along the turnpike road established in 1837, which ran eastwards through a series of roadside hamlets, one of which was the site of one of West Penwith's important tin smelting houses – the Lamb and Flag at Trelowthas.

Just to the east of Grigg's Quay where the route to St. Ives diverged to the north, the road met the Hayle Estuary, which it crossed on the 1825 causeway (Fig 11) to enter the busy industrial settlements of Foundry and Copperhouse (now both parts of Hayle). At Ventonleague (Loggan's Mill) to their east, the route had evidently been relatively recently re-aligned, cutting across established fields to the at the time un-named settlement on Connerton Downs and its Turnpike Inn, then running eastwards along the old road from Angarrack down to Rose-in-Valley and Roseworthy, and on uphill to Treswithian and Camborne, the latter which had grown very rapidly during the preceding century to become a major industrial town. From Camborne the road led north-eastward through Tuckingmill, Pool, Illogan Highway and Blowinghouse through some of the most industrialised landscapes to be found anywhere in Cornwall, and the site of many of its most important mines, before reaching Redruth, again passing through the centre of the town.

The route from Redruth led through the ribbon development of the town's East End and Mount Ambrose, where it diverged from the old St. Day road through Highway, instead passing immediately to the north of the parkland surrounding Scorrier House along part of the improved road through Chacewater to Truro (Fig 9), though shortly thereafter diverting off this to head north-east across East Downs, where the shafts and spoil dumps of Wheal Rose, Great North Downs, Eastdowns and Hallenbeagle utterly dominated the landscape (Figs 28 and 29). Passing through Blackwater – a developing industrial hamlet and the site of a roadside inn – the road reached the hilltop at Three Burrows, where it crossed the former Truro to St. Agnes turnpike.

The road beyond traversed recently-enclosed downland, and many sections were arrow-straight, unlike the older lanes and tracks in the surrounding landscape, a reflection of the fact that this was effectively a new road (Fig 20). At Chybucca near Callestock it crossed the route of the Truro – Perranporth road, though not far to the east near Tresawson, the mapping suggests that road improvements had yet to be undertaken, and its route became narrower and far more sinuous as it headed on to Marazanvose, around the edge of the Chiverton Estate parkland (Fig 25) and through Zelah onto the upper parts of Newlyn Downs, where lanes and tracks radiated out from the road in virtually every direction. At the top of Zelah Hill there stood a probably very necessary guide post (Fig 70).

Here on the crest of the downs, the road turned to the east, much of its route being through unenclosed or very recently enclosed land. At Carland Cross it was joined by the Truro road, then headed downhill through long-established farmland and the ancient Borough of Mitchell (formerly St. Michael's) and Summercourt to its east, where it crossed the road from St. Austell to Newquay, then by-passed the churchtown at St. Enoder, through which an earlier route had run. At Penhale it met the Truro turnpike which had been created through the Ladock valley in 1754.

Blue Anchor between Penhale and Fraddon, like Indian Queen [sic] to its north-east was a long-established inn on the Great Post Road through Cornwall where horses could be changed and travellers fed and watered. At Fraddon, the route east intersected that running north to St. Columb, Wadebridge and Camelford, making this an important junction in Cornwall's transport network (Fig 13).

To the east of Indian Queen, the Ordnance Survey showed that the road passed through a landscape of smallholdings and networks of small fields reclaimed from the lower slopes of Hensbarrow Moor (Fig 30), and from the edges of the great area of

marshland and tin streamworks making up Goss Moor (Figs 14 and 26). The road builders could choose more or less any route they wanted across this large swathe of boggy moorland. The earlier route had been to its north through Ruthvoes, Castle-an-Dinas and Belowda, but the new route ran almost dead straight across the northern edges of the marsh, subsequently being closely paralleled to its south by the line of the Great Western Railway. Both routes would have required a considerable amount of civil engineering given the heavily disturbed and often waterlogged nature of the ground they crossed, and the road runs along an often substantial embankment. At the eastern end of Goss Moor, the Newquay branch of the GWR crossed over the roadline on what was to become the notorious 'iron bridge' (Fig 43), whilst the road continued on to Victoria (the site of another long-established coaching inn) and then across another section of former downland where there were no constraints on its route, passing Mount Pleasant and Colbiggan and, passing over West Downs, to the point near Lanivet where it met the old St. Austell to Bodmin road.

The route now more or less followed by the A30 to Innis Downs roundabout diverts from this well-engineered road near Mount Pleasant (Fig 15). From this point eastwards the current route of the A30 follows that of a relatively minor agricultural track across the downs, picking up the line of a parish and parliamentary boundary near East Griglands and following this east-north-east to the south of Redtye and then onto Innis Downs, meeting the old road from St. Austell to Bodmin via Lanivet at Clann Wood at its eastern end.

6.5 The 20th century

The classification of the national road system was begun in 1913 by the Government's Road Board, but this work was interrupted by the outbreak of the Great War. The Ministry of Transport, formed in 1919, took up the work and created a classification system – Class I for major routes and Class II for minor routes – a definitive list being published in 1923. The numbering system for England and Wales was based on a radial pattern focussed on London – Zone 3 included the south-west of England, hence the '3' prefix to major roads in Cornwall, including the A30. The road numbers began to be included on maps produced by the Ordnance Survey and other cartographers such as Bartholomew shortly after the mid-1920s (Fig 8).

6.5.1 Bypasses

See Figure 1.

Whilst the Turnpike roads established during the 18th century had replaced many early, narrow lanes, greatly improving the speed at which travellers could make their way through Cornwall, their principal purpose was to link up major centres of population. Given that the A30 effectively became the principal trunk route through Cornwall during the 20th century, the rapid rise in road traffic following World War 2 necessitated the construction of first by-passes and then new dual-carriageways. By the mid-20th century, as a result of rising volumes of traffic, the towns and villages along the route of the A30 had become bottlenecks for long distance travellers, whilst life in those settlements was rendered increasingly intolerable by virtue of the constant traffic passing through them.

Redruth was the first town to be by-passed (in 1939) when a new relief road was constructed around the northern side of the town from Shallow Adit Farm through Treleigh to Blowinghouse. Camborne remained without a relief road, however, the route to and through it continuing to be via Tolskithy, Illogan Highway, Pool and Tuckingmill, though traffic within Camborne being directed away from its narrow main street via Trevenson Street and South Terrace to the junction with Basset Road, then via College Street out to Treswithian. Camborne, Pool and Redruth were finally bypassed in 1975, the large number of mine sites being traversed necessitating extensive shaft capping works.

The Connor Downs bypass was opened in 1985 as the result of the construction of an entirely new and extensive section of road from Loggan's Mill at the east end of Hayle to the western end of the Camborne bypass. This section was (and remains) largely a two lane road, though a third lane was included in the section through the Roseworthy Valley and at its western end.

The Hayle bypass was constructed in 1985, removing traffic congestion from the narrow streets of Hayle and Copperhouse, as well as diverting increasingly heavy vehicle loads from the Hayle Causeway which had been constructed in 1825, and which was incapable of being widened without destroying its historical integrity. This road, too, was not constructed as a dual carriageway and has only three lanes.

Zelah was bypassed in 1992 to remove the bottleneck through the hamlet. Dualling and realignment of the road between Carland Cross and Penhale took place between 1990 and 1992, this long section of mostly new road by-passing the villages of Mitchell and Summercourt.

Scorrier and Blackwater were bypassed in 1995 by the construction of a section of dual carriageway across North Downs and East Downs – another extensively-mined section of the local landscape.

The notorious bottleneck through Penhale, Fraddon and Indian Queens was finally resolved through the construction of the Indian Queens and Fraddon bypass in 1995, whilst the problems experienced by large and high-sided vehicles at the iron bridge at the eastern end of Goss Moor and speed restrictions through Victoria and Roche were alleviated through the construction of the dual carriageway from Indian Queens to Innis Downs (Fig 18), this being opened in 2007.

Elsewhere on the A30 in Cornwall, Bodmin was bypassed in 1976, as were Bolventor and Launceston, whilst Penzance was bypassed in 1989.

Only limited sections of the A30 in Cornwall are not fully-modernised roads – these being the section from Longrock through Crowlas, Cockwells, Whitecross, Canon's Town, Rose-an-Grouse and Canonstow to St. Erth Station, and that from running from Three Burrows (Chiverton Roundabout) through the Four Burrows barrow cemetery and Marazanvose, past Chiverton Park, along the Zelah bypass and onto Newlyn Downs, terminating at Carland Cross. (Source <http://www.sabre-roads.org.uk/wiki/>).

7 Archaeological results

For the purposes of the survey, the A30 from Longrock to Innis Downs has been divided into ten sections (Figs 3, 4) which reflect the differing characters of each part of the route, as follows (from west to east):

1. Longrock to St. Erth Station (5.88 km)

This section of the A30 is a partially improved, mostly two lane road following that of the 1825/1836 turnpike, and passing through a number of hamlets, these being (from west to east): Crowlas, Cockwells, White Cross, Canon's Town, Rose an Grou and St. Erth Station (Trelowthas). At its western end the route follows that of a probably early medieval territorial boundary – The Giant's Grave – which might have demarcated the western edge of the West Penwith Peninsula. The section of the road from Ludgvan Lease to Penzance dates to 1837, however, as the 1825 turnpike had continued to utilise the earlier route from Ludgvan to Penzance via Gulval.

2. St. Erth Station to Loggan's Mill roundabout - the Hayle Bypass (4.77 km)

This section of dual carriageway constructed in 1985 skirts the southern edge of Hayle and the southern and eastern outskirts of Copperhouse. To its east was the 19th century copper mining area around Wheal Alfred.

3. Loggan's Mill roundabout to Treswithian roundabout (6.26 km)

A modern, predominantly two lane road constructed in 1985 as the Connor Downs bypass, this runs across reclaimed marshland which was formerly part of the eastern arm of the Hayle Estuary at its western end, and through predominantly recently enclosed downland in its central part and at its eastern end.

4. Treswithian roundabout to Scorrier roundabout (10 km)

A dual carriageway constructed in 1975 to bypass the large industrial conurbation of Camborne, Pool and Redruth. The route passes across the sites of a number of formerly important mines.

5. Scorrier roundabout to Chiverton roundabout (3.55 km)

A section of dual carriageway built in 1995 as the Blackwater bypass which cuts across a now-rural landscape previously siting several important early copper mines and large numbers of early 19th century miners' smallholdings.

6. Chiverton roundabout to Carland Cross roundabout (12.62 km)

The longest un-dualled section of the A30 in Cornwall, running along the spine of Cornwall, largely through areas of former downland, though closely passing Chiverton House and Park and the settlement of Zelah, the section adjacent to the park and village being Anciently Enclosed Land. The route passes close to several Bronze Age barrows, including a prominent group beside the Carland Cross roundabout.

7. Carland Cross roundabout to Penhale roundabout (6.91 km)

A section of dual carriageway running through parts of Cornwall's ancient agricultural heartland and passing close to the medieval borough of Mitchell and Summercourt hamlet, and over the site of Penhale round, an enclosed settlement of the Late Iron Age / Romano-British period.

8. Penhale roundabout to Ruthvoes (4.2 km)

The Fraddon, Blue Anchor and Indian Queens by-pass, running over the north-western shoulder of the Hensbarrow china clay district.

9. Ruthvoes to Victoria (5.23 km)

The recently-dualled section of the A30 running across and just to the north of Goss Moor through a landscape of early tin streamworks and medieval farms at its western end and downland studded with barrow cemeteries at its eastern end. Its western section is overlooked from the north by the Iron Age hillfort of Castle-an-Dinas and the prominent hilltop of Belowda Beacon, and from the south by the church and hillfort of St. Dennis and the Hensbarrow moors.

10. Victoria to Innis Downs roundabout (5.37 km)

A section of new dual carriageway running through an area of former downland characterised by post-medieval smallholdings. At Innis Downs, the road is overlooked by one of Cornwall's rare Neolithic henge monuments.

The present route of the western section of the A30 traverses a large number of ecclesiastical parishes. After the first section through Ludgvan, the roadline forms the boundary between the parishes of Lelant and St. Erth; it then passes through St. Erth, Phillack, Gwithian, Gwinear, Camborne, Illogan, Redruth and Kenwyn (formerly following the boundary between the parishes of Kenwyn (detached) and St. Agnes), then follows the boundary between Kea and St. Agnes, the boundary between Kenwyn and Perranzabuloe and then that between St. Allen and Perranzabuloe. To the east it runs through St. Allen, St. Erme, St. Newlyn East, St. Enoder, St. Columb Major, Roche, Withiel and Roche (again), its easternmost section following the boundary between Lanivet and Luxulyan.

As noted above, the route of the A30 formerly followed the boundary between two parishes in several places, these being:

- Ludgvan and St. Erth – a short section through Canonstown.
- Lelant and St. Erth - the section from Canonstown through Rose an Grouse to Grigg's Quay.

The section of road from Crowlas to the Hayle Estuary is notable for the two surviving medieval roadside crosses which survive adjacent to it; the name Rose an Grouse strongly suggests the former existence of a third near its north-eastern end, probably indicating that this was a significant route during the medieval period. There was also a chapel of St. Thomas close to the road at Collurian. The road was subsequently improved by the Hayle Turnpike Trust between 1825 and 1836.

- Kenwyn (detached) and St. Agnes – the section between Shallow Adit and Scorrier.
- Kea and St. Agnes – the section between Scorrier and Blackwater.
- Kenwyn and St. Agnes – a very short section to the west of Three Burrows.
- Kenwyn and Perranzabuloe – the section between Three Burrows and Tresawson.
- St. Allen and Perranzabuloe – the section between Tresawson and Chiverton Park.

This largely pre-turnpike route runs from the eastern end of Redruth across former downland to the important crossroads at the adjacent barrow cemetery at Three Burrows (Chiverton Cross) and then eastwards to Four Burrows and Chiverton Park. Its central section follows that of the Turnpike road though Scorrier and Blackwater.

This pre-dualling section of the A30 appears to have been a long-established route eastwards from the churchtown at Redruth. Given that six parishes utilise this line as part of their boundary, it seems likely that the route is at least medieval in date. The alignment of the eastern sections of this part of the former route of the A30 was

determined by the existence of the formerly prominent Three Barrows and Four Burrows barrow cemeteries in these otherwise featureless downs.

The barrow cemetery at Carland Cross is at the junction of three parishes – St. Erme, Newlyn East and Ladock – and the large Warren's or Killigrew Barrow at its eastern end had almost certainly been an important waymark on the route across the downs.

- Withiel and Roche – the earlier line of the A30 from Beacon View to the west of Victoria to just north of the new Cornwall Services to the east of Victoria.
- Lanivet and Luxulyan – the section between Redtye and Lower Woon (just to the east of Innis Downs), passing just to the north of Black Barrow.

The eastern section is again likely to have been a traditional route, in part utilising prominent barrows as waymarks.

7.1 The hard estate

The hard estate is the modern road surface that is regularly maintained, including the hard shoulder, slip-roads, flanking drains, lay-bys and similarly directly-associated features. Road improvements along most of the route have resulted in earlier road routes being straightened in most places; redundant sections of road are sometimes reused as lay-bys to serve road users and, where present have been treated as part of the hard estate in this study. The hard estate includes a small number of features such as bridges, most notably that at Crowlas, which, though considerably extended on both sides, incorporates the original early twin-arched stone bridge over the Red River at its core (Fig 56). A small stream in the minor valley just to the east of Trelowthas is likely to have been culverted beneath the road, though this could not be confirmed. The road here has been substantially widened and upgraded, and it is felt unlikely that any remains of an early bridge are likely to survive.

The present road varies in terms of its width. In some areas where the road has not been substantially improved, particularly between Chiverton Cross and Carland Cross, it still to some degree resembles the 19th century turnpike road, though it has often been widened to allow for two (and occasionally three) lanes of modern traffic (Figs 17, 44, 45). Elsewhere, the road is generally a full dual carriageway with a central reservation and dividing barrier (Figs 45, 46), though between Treswithian and Loggan's Mill some sections of the road have three lanes, like the Hayle by-pass. An additional crawler lane was included on the Indian Queens Bypass eastwards from Penhale to the top of the hill (Fig 46).

7.2 The soft estate

The soft estate is essentially the verge and associated land owned by the Highways Agency which adjoins the hard estate. Where the road has not been significantly upgraded (e.g. between Longrock and St. Erth Station and between Chiverton Roundabout and Carland Cross) there is no soft estate of significance. Where road improvements have been carried out, new land has been brought within the ownership and management of the Agency.

The character of the road itself has been greatly changed through these road improvements. Along most of its route, historic field boundaries have been removed and replaced with either new Cornish hedges, wood fences with thorn hedges or metal barriers. Additionally, various improved sections of the modern road sit within large cuttings, these almost completely restricting views of the wider landscape (Fig 44 to 46). Elsewhere, some parts of the modern road runs on raised embankments or traverses viaducts (Fig 47), from which views of the surrounding landscape can be extensive. Only in the unimproved sections from Longrock to Grigg's Quay and Chiverton Cross to Carland Cross does the road predominantly run on the level at which it was originally laid out.

Only limited sections of the road retain any semblance of their pre-20th century character and appearance, as even the section from Longrock to St. Erth Station has

been significantly widened to produce carriageways suitable for modern traffic; straightening and smoothing of the route and the removal of original road hedges has also taken place within this section (Fig 16). Visibility splays have been created at formerly blind junctions, and the road improvements have resulted in the truncation of cottage strip gardens, particularly at New Town (Longrock roundabout), in Whitecross and Canonstown, and the demolition of a small number of buildings, as at Treloweth and again in Canonstown. The section from Chiverton Cross to Carland Cross also retains a proportion of its earlier character, particularly in its sections through former downland where the turnpike and subsequent engineers were unconstrained by settlements (Figs 14, 15, 20). Nevertheless, verges have been created through the re-siting of flanking hedges and visibility splays have been produced at road junctions on the level. The Zelah bypass is entirely of modern design.

7.3 Potential for palaeoenvironmental remains

There is limited potential for palaeoenvironmental remains along the road route and no positive sites were identified during the fieldwork. Any potential sites are likely to be confined to areas where the road crosses river valleys, or in other areas where drift geology has developed. Goss Moor may have significant potential within those (probably limited) areas which have not been disturbed by tin streaming. Hayle Estuary and Loggan's Moor represent additional large-scale localities where siltation processes are likely to have buried early deposits, providing potential sampling points.

8 Inventory

The total number of extant CHFs (Figures 53, 54) within the hard and soft estates and significant (designated) CHFs within the 100m zone from the road which fall within its viewshed is indicated in the table below. These are part of a larger total which includes sites for which the only known evidence consists of documentation or placenames, sites recorded as cropmarks or soil marks showing on aerial photographs, and sites which are known to have been wholly destroyed. These are not included within the totals in the tables below. Priority CHFs are those of particular significance which require management action. Important CHFs are those which would require consideration should any significant changes to the soft estate be planned. Monuments recorded as cropmarks are not included in the total of extant CHFs to avoid double counting.

CHAMP Zone	Total extant CHFs	Priority CHF	Important CHF
Hard estate	1	0	1
Soft estate	16	0	16
100m zone LB (individual or groups)	18	0	18
100m SM (individual or groups)	7	0	7
100m undesignated extant CHF/group	46	0	7
100m significant cropmarks	19	0	19
Totals	123	0	68

Statutory Designations

Of the CHFs identified within the core network estate (the hard and soft estates) or falling within the viewshed of the A30, twenty-one within or immediately bordering the Soft Estate are covered by statutory protection, this comprising either Scheduled Monument or Listed Building status.

Numbers of Scheduled Monuments and Listed Buildings within the soft estate by area

Area:	1	2	3	4	5	6	7	8	9	10
SM	2	0	0	0	0	3	0	0	1	0
LB	4	0	0	0	0	9	1	0	0	1

The totals for sites within the viewshed buffer zones are shown in the table below.

Total CHFs within the viewshed buffer zones

	0 to 100m	to 500m	to 1000m
Extant CHF (all types)	215	883	1617
Scheduled Monument	15	33	61
Listed Building	41	165	356

Types and numbers of Scheduled Monument within the viewshed

Note: sites containing more than one element may have multiple designation entries.

	Out to 100m	Out to 500m	Out to 1000m
Barrow	4	6	8
Barrow group	7	12	17
Wayside or churchyard cross	2	5	17
Hillfort/Camp		2	6
Henge		1	1
Holy well		1	1
Round			1
Arsenic works		1	1
Mine complex		2	3
Railway bridge			1
Totals	13	30	56

Types and numbers of Listed Building within the viewshed

Note: sites containing more than one element may have multiple designation entries.

	Out to 100m	Out to 500m	Out to 1000m
Arsenic calciner		1	1
Barn, granary, stables, cart shed, covered yard		13	15
Boiler house			1
Boundary stone	2	2	2
Bridge			2
Causeway		1	1
Chapel	1	4	6
Chimney(s)		5	5
Church		3	7
Churchyard			2
Coffin rest			1
Convent			2
Dock			2
Engine house		6	9
Explosives store			1
Factory			1
Farmhouse	3	12	18
Fountain			1
Gates/walls	2	5	21

A30 Longrock to Innis Downs CHAMP

Guidestone	1	2	6
House	5	28	53
Institute, hall		1	6
Lodge		1	2
Manor house		4	4
Memorial, monument			2
Milestone/milepost	17	31	45
Mill		1	1
Mine complex			1
Miners' dry			1
Gravestone, tomb chest		1	19
Post office			1
Public house, inn, hotel		4	11
Railway bridge			2
Railway station	1	1	1
Rectory		1	1
School		4	6
Shop			1
Statue			1
Summerhouse			2
Telephone box		1	1
Tin smelting works	1	1	1
Vestry			2
Viaduct			1
Vicarage		1	1
War memorial		1	1
Wayside or churchyard cross		3	11
Totals	33	138	282

Extant monument types within the viewshed

	Out to 100m	Out to 500m	Out to 1000m
Accommodation bridge			1
Airfield			1
Altar			2
Anti-aircraft battery		1	1
Architectural fragment		1	1
Bank, earthwork	2	14	17
Barrow	18	44	65

A30 Longrock to Innis Downs CHAMP

Battery		1	1
Beacon site		1	1
Bee boles			1
Blacksmith's shop	1	3	3
Boiler house			1
Boundary	1	8	3
Boundary stone		1	14
Bowling green			1
Bridge		4	7
Building		5	9
Candle factory		1	1
Carpenters' workshop			1
Causeway		1	1
Cemetery			1
Chapel	5	20	34
China clay dry	1	1	2
China clay works			2
Church		4	8
Church hall			1
Cider mill			1
Cist		1	1
Clearance cairn	1	2	2
Coffin rest			1
Compressor house			1
Corn mill		2	2
Cottage pair		1	1
Country house			2
Cross	2	7	27
Cultivation marks			1
Cup-marked stone	1	1	1
Dock			1
Drain, ditch	1	11	13
Drill hall			1
Electricity sub-station			1
Enclosure	5	8	13
Engine house		9	17
Extractive pit	2	8	27
Farmstead	3	7	7

A30 Longrock to Innis Downs CHAMP

Field boundary			16
Field system	2	17	26
Footbridge		1	1
Forge/change house		1	1
Garden, recreation ground			1
Gate piers		1	2
Gazebo			1
Gravel pit			1
Henge			1
Hillfort			1
Holloway	1	3	3
Holy well		1	1
Hospital			3
House	10	38	67
Hull			1
Icehouse		1	1
Inclined plane			1
Inscribed stone			3
Institute		1	2
Leat		1	2
Linear earthwork		1	1
Lockup			1
Magazine, powder store			3
Market house			1
Milestone	15	31	43
Mine	3	22	42
Mine building			6
Mine change house			2
Mooring bollard			1
Mound			5
Office building			2
Outbuilding			2
Peat cutting			1
Pillbox	2	3	7
Plen an Gwary		2	2
Police station		1	1
Pound		1	2
Prospecting pits	1	2	3

A30 Longrock to Innis Downs CHAMP

Public house		3	7
Pump house			1
Quarry	2	8	13
Quay			1
Radio station	1	1	1
Railings			1
Railway	1	1	1
Railway bridge	3	15	20
Railway station	1	3	4
Railway tunnel			1
Railway viaduct	1	1	2
Reservoir			1
Ridge and furrow cultivation	3	5	11
Road	1	1	1
Round	2	6	10
Row	1	4	15
School	2	10	18
Settlement	5	9	10
Shaft	4	19	30
Shop			3
Signpost		5	9
Smelting house	1	1	9
Spoil heap	2	3	4
Stamping mill		1	1
Statue			1
Streamworks	6	39	54
Structure	1	1	1
Summerhouse			1
Sunday school		3	5
Technical school		2	2
Terrace		4	7
Threshing floor			1
Tide mill			1
Toll house			1
Tombstone			6
Trackway			3
Vestry			1
Villa			1

Wall		6	18
Walled garden			1
Warehouse			1
Watercourse	1	1	1
Well	2	3	4
Winter bee house			1
Workhouse			1
Workshop		1	1
Yard			1
Totals	117	345	851

8.1 Longrock to St. Erth Station

The majority of this part of the route has only been part of one of Cornwall's primary roads since 1825, when the Hayle Causeway was constructed at its north-eastern end, allowing travellers to cross the estuary of the River Hayle without having to divert via St. Erth Bridge or to risk the ford across the estuary at low tide. Between Crowlas and Croft Hooper it incorporates a short section of the original route from Penzance to St. Erth via Gulval, Lower Quarter, Crowlas, Trevorrow, Rosevidney, Tredrea Lane, and Little Mill, crossing the Hayle River at St. Erth Bridge.

The section from Longrock roundabout to Varfell was constructed as part of the turnpike from Penzance to Hayle in 1836 (Fig 7). The section between Varfell and Crowlas was originally part of a route linking Crowlas to Mount's Bay which was shown on the OS *circa* 1807 1st edition 1" mapping. From Crowlas north-eastwards to the Hayle estuary, the OS 1807 mapping showed a small-scale road linking a series of hamlets including the now lost Pedn-an-Pons at St. Erth Station. That at Treloweth sited the important Lamb and Flag tin smelting works (Fig 49), some of whose buildings still survive next to the pub which bears the same name. The presence of medieval crosses along this route (Figs 58, 61) suggests that an early track might have followed part of the same alignment, possibly one connecting St. Michael's Mount to Lelant.

The landscape through which this section of the A30 runs is long-established farmland, much of it being likely to have been enclosed during prehistory, though substantially reorganised during the medieval period. The road is considerably wider than it would originally have been, this having been achieved through the creation of verges and visibility splays, the replacement of hedges, the truncation of some front gardens, mostly in Whitecross and Canonstown, and the truncation or demolition of a small number of former roadside buildings, particularly in Treloweth, but also at Crowlas crossroads. Longrock roundabout was constructed over the sites of strip gardens attached to a demolished row of cottages shown on the *circa* 1840 Ludgvan Tithe Map, these being part of the completely demolished hamlet of New Town immediately to its south-east, whilst the road through Crowlas was widened between 1840 and 1877, resulting in the demolition of some cottages at the village's narrowest point near its former east end (Fig 16). The road has also been levelled out to some degree, the carriageway at Treloweth now being at least a metre higher than it would have been a century ago, whilst a dip between Crowlas crossroads and Ludgvan Lease has been similarly infilled. Although all of the original milestones survive in the soft estate along this route (Figs 57, 59-60, 62), none appears to be in their original locations. At least one (in Canonstown) has become partly buried through the creation of an adjacent pavement (Fig 60), and most show signs of former rough handling or impacts from the mechanical flails now used to trim roadside vegetation.

Crowlas itself includes a large number of cottage pairs, those to the south of the road being earlier in construction than those to the north, where there is evidence for planned development. One of the cottages to the south of the road is largely unaltered, retaining its scantled slate roof, 16 pane vertical sliding sash windows and original front 'token garden' wall and gateposts. Most of the other buildings of equivalent date within the settlement have been re-glazed (often inappropriately) and have replacement slate roofs and doors, and gaps within the settlement have been infilled with mid-20th century housing. The Star Inn is unusual, and apparently architect-designed, probably dating to the early decades of the 20th century (Fig 49). It incorporates terra-cotta detailing rarely found in Cornwall and appears to be of a single build. This inn may have originally been constructed to attract passing trade during the period when motorised traffic was developing along the route to Penzance.

Canonstown, Whitecross, Cockwells and Trelowthas are small, loose aggregations of artisans' cottages strung out along the Penzance to Hayle road, though unusually, each had its own small Non-Conformist chapel, now all disused and converted to dwellings (for example, see Fig 50).

8.1.1 CHFs within the hard estate

- Crowlas A30 bridge (Fig 56). The original two-arched bridge over the Red River at Crowlas survives beneath the centre of the highway, but making the bridge fit for modern traffic needs and the provision of modern footpaths to both its northern and western sides has been achieved by the widening of the bridge in mass concrete to both north and south. The eastern span of the bridge is currently somewhat silted up with gravel and stones, which might impede future storm water flows through it.

8.1.2 CHFs within the soft estate

See Figures 57, 59-62.

- Milestone on the eastern side of the highway at Ludgvan Lease. SW 51146 32586. LB Grade II [1327658]. West side inscribed 'PENZANCE 3 MILES, LANDS END 13', east side inscribed 'HAYLE 5 MILES, CAMBORNE 11, REDRUTH 14, TRURO 23'. This milestone has suffered some historic damage.
- Milestone on the eastern side of the highway between Crowlas and Cockwells. SW 52172 33791. Listed Building [1136368]. West side inscribed 'PENZANCE 4 MILES, LANDS END 14', east side inscribed 'HAYLE 4 MILES, CAMBORNE 10, REDRUTH 13, TRURO 22'.
- Tregender Cross. SW 52126 33747. Scheduled Monument [1006667]. Somewhat overgrown and set into the boundary hedge.
- Whitecross Cross. SW 52484 34393. Scheduled Monument [1007964].
- Milestone on the eastern side of the highway at Canonstown. SW 53140 35031. Listed Building Grade II [1327679]. West side inscribed 'PENZANCE 5 MILES, LANDS END 15', east side inscribed 'HAYLE 3 MILES, CAMBORNE 9, REDRUTH 12 TRURO 21'. This milestone has become partly buried through repeated pavement re-surfacing.
- Milestone on the eastern side of the highway at St. Erth Station. SW 54347 36071. Listed Building Grade II [1265074]. West side inscribed 'PENZANCE 6 MILES, LANDS END 16', east side inscribed 'HAYLE 2 MILES, CAMBORNE 8, REDRUTH 11, TRURO 20'.

8.1.3 Documented extant CHFs within the 100m buffer

- Giant's Grave. SW 50536 32066 to SW 50858 32316.
- Pillbox near Varfell Farm. SW 50800 32250. MCO42268. Not found and probably demolished.
- Crowlas settlement, first mentioned as 'Crouaras' in 1327. SW 51590 33176. MCO14190.

- Crowlas old bridge, SW 51510 33178. Paralleling the road bridge to the north is a two-span granite clapper bridge with iron handrails which currently carries a footpath which has been diverted at its eastern end. This may represent a pre-turnpike route across the stream at Crowlas, though would only have been suitable for foot and animal traffic, being far too narrow for a cart or other types of wheeled vehicle.
- Crowlas Wesleyan chapel. SW 51590 33270. MCO32767. Converted to domestic use. The Sunday School immediately to the west is still in use as a place of worship.
- Early C19 house in Crowlas, formerly Listed. SW 51665 33198. MCO56679.
- Lower Tregender, Crowlas. SW 51986 33567. Listed Grade II [1143626].
- Cockwells non-conformist chapel (Fig 50). SW 52217 34020. MCO52160. Ruinous, but fairly recently cleared of trees and covering vegetation; there are proposals to conserve this structure.
- Whitecross non-conformist chapel. SW 52458 34305. MCO52161. Converted to domestic use.
- Collurian non-conformist chapel. SW 53090 35020. MCO9906. Converted to domestic use.
- Canonstown smithy (Fig 49). SW 53080 35002. MCO8999. A blacksmith's shop is marked here on the *circa* 1877 OS mapping. The building is still in use as a smithy.
- Canonstown non-conformist chapel. SW 53310 35190. MCO32766. With associated and rather later Sunday School. Both now converted for domestic use.
- Canonstown, Heather Lane non-conformist chapel. SW 53465 35342. MCO52162. A very modest and small roadside chapel. Probably replaced by the later and larger chapel just to the west. Now used as a dwelling.
- Moorgrove with its former coach house and stable, also the enclosing wall and gate. SW 53574 35273. Listed Building Grade II [1160764].
- The Lamb and Flag tin smelting works (Fig 49). SW 53729 35337. Listed Building Grade II [1310506]. This is a very rare site type in Britain, there being only a handful of examples remaining in Cornwall. The western range on this site has been converted to dwellings, though these are currently unoccupied. Trelowthas house is in use as a dwelling, but the main smelting house building is in very poor condition, its roof being on the verge of collapse, and the rest of its structure is at risk of structural failure.
- Mine shaft at Rose an Grouse. SW 53822 52758. MCO50943. Not accessible.
- Prehistoric cup-marked stone at Rose an Grouse. SW 54030 35690. MCO1279. In a private garden and not accessible.
- Railway overbridge near St. Erth Station. SW 54085 35672. MCO55341. A relatively modern steel construction on granite supports.
- St. Erth Station (Fig 49). SW 54167 35739. Listed Grade II [1143618]. A very well-preserved Great Western Railway main line and branch line station, with its principal building, men's and women's lavatories, upside and downside platform shelters, platform furniture, iron footbridge, downside waiting room building, signal box and all associated GWR pattern semaphore home signals. Only the footbridge is in less than ideal condition, this showing indications of rusting in many places. Some recent repairs have been undertaken to keep the feature useable.

8.1.4 Designated sites and landscapes within the 100m to 500m buffer.

- Bowgyheere Farmhouse, Listed Building Grade II [1143622].
- Woodreeve including front garden walls. Listed Grade II [1143597].
- The Old Inn, Ludgvan Leaze. Listed Grade II [1136482]. Now a private dwelling. Recent building works have removed the render on its principal elevation, showing that it was extended to the north-west during its life.
- Trevorrow Farmhouse, front garden walls and gate piers. Listed Grade II [1143592].

- Tregender Manor farmhouse including front garden wall. Listed Grade II [1143591].
- Polgrean farmhouse. Listed Grade II [1143630].
- Treloweth farmhouse. Listed Grade II [1143644].
- Lodge at Trevethoe House. Listed Grade II [1143321].
- Langweath. Listed Grade II [1327815].
- Chy-an-Wheel. Listed Grade II [1143320].
- Stone cross near 'Woodlands'. Listed Grade II [1327814], Scheduled Monument [1018574].

8.1.5 Designated sites and landscapes within the 500m to 1km buffer.

- Ludgvan Conservation Area.
- Gate piers at Hogus House. Listed Building Grade II [1136601].
- Hogus House. Listed Building Grade II* [1143604]. No access.
- Wayside cross in Ludgvan churchyard. Scheduled Monument [1015070].
- Wayside cross in Ludgvan churchyard. Scheduled Monument [1015069].
- Wayside cross in Ludgvan churchyard. Scheduled Monument [1015068].
- Church of St. Ludowanus and St. Paul, Ludgvan. Listed Building Grade II* [1143598]. Ludgvan was mentioned (as LVDVHA) in the Domesday Book, being held by Richard, son of Thorolf from the Count of Mortain. The manor devolved to the Ferrers family and thence to the Champernowns, the Willoughbys de Broke, the Paulets and the Duke of Bolton. The church was re-dedicated in 1336, and the original Norman cruciform plan building was rebuilt during the 15th century. A new south aisle was added in 1840. The church appears to have been considerably conserved during the 1840s, resulting in the replacement of all of its fenestration, and the replacement of the pinnacles on its tower (which had been struck by lightning), the original carved stones now being used to flank the main entrance to the churchyard.
- Cottages west of Ludgvan church. Listed Building Grade II [1312728].
- Churchyard walls at Ludgvan. Listed Building Grade II [1143603].
- Gate piers and gates at churchyard. Listed Building Grade II [1136582].
- The White Hart public house. Listed Building Grade II [1136495].
- Stephens and Graham chest tombs. Listed Building Grade II [1312721].
- Two headstones in Ludgvan churchyard. Listed Building Grade II [1143602].
- Thomas chest tomb. Listed Building Grade II [1136541].
- Rows chest tomb. Listed Building Grade II [1143599].
- Two headstones in Ludgvan churchyard. Listed Building Grade II [1312718].
- Chellam headstone. Listed Building Grade II [1327644].
- Seven headstones to the east of Ludgvan Church. Listed Building Grade II [1136527].
- Merbury chest tombs. Listed Building Grade II [1143600].
- Bluett headstone. Listed Building Grade II [1136524].
- Flowers chest tomb. Listed Building Grade II [1327645].
- Rogers chest tomb. Listed Building Grade II [1136552].
- Oats headstone. Listed Building Grade II [1143601].
- Rosevidney Manor. Listed Building Grade II [1327659].
- Rosevidney farmhouse. Listed Building Grade II [1312803].
- Barn at Rosevidney farm. Listed Building Grade II [1143631].
- Guide post. Listed Building Grade II [1327626].
- Treloweth House. Listed Building Grade II [1327654].
- St. Erth Conservation Area.

8.1.6 The Historic Landscape Character within 1.5km of the roadline.

See Figure 77.

Anciently Enclosed land predominates within this section, particularly to the south-west around Ludgvan churchtown. This is interspersed with small pockets of farmland enclosed during the post-medieval period, most particularly on the former downland

backing St. Ives Bay at the north-eastern end of this section. Small areas of scrub woodland occupy the stream valleys feeding into Mounts Bay, and in parts of the valley of the Hayle River.

8.2 St. Erth Station to Loggan's Mill roundabout

This section of the A30 was created in 1985 to bypass Hayle and Copperhouse and does not follow or incorporate any earlier roads. It cuts through former mining land to the south of Hayle, traversing the mine setts of Mellanear, Wheal Ann and Wheal Alfred, crossing the route of the old road from Foundry to Angarrack and Camborne, at which point it turns northwards to meet the former eastern arm of the Hayle Estuary at Ventonleague.

Whilst some parts of this landscape incorporate farms laid out during the medieval period, including the impressive Trelissick Manor, it also includes a substantial area of downland which was not enclosed until the post-medieval period.

There are no archaeological features or sites within the road corridor.

8.2.1 CHFs within the soft estate

- None.

8.2.2 Documented extant CHFs within the 100m buffer

- Railway bridge carrying the West Cornwall Railway over the River Hayle. SW 54907 36089. MCO55343.
- Covered yard at Trelissick Farmhouse. SW 55571 35997. Listed Building Grade II [1327630].
- Mellanear Mine. SW 55800 36100. MCO12254.
- Post-medieval house in Hayle. SW 55890 36180. MCO33803.
- Late C18 house in Guildford. SW 57450 37780. MCO35232.
- Late C18 house and post box in Guildford. SW 57475 37800. MCO35229.
- Post medieval house in Guildford. SW 57500 37800. MCO35230.
- Guildford railway viaduct. SW 57519 37820. MCO27900.
- Post and rail boundary fencing in Guildford. SW 57480 37830. MCO35233.
- C19 houses in Guildford. SW 57465 37862. MCO35231.
- House in Guildford. SW 57495 37855. MCO35236.
- Early C20 house and shop in Ventonleague. SW 57434 38332. MCO35056.
- Early C19 house in Ventonleague. SW 57452 38375. MCO35203.
- Early C19 half-houses in Ventonleague. SW 57460 38390. MCO35201.
- Early C19 house in Ventonleague. SW 57460 38410. MCO35200.

8.2.3 Designated sites and landscapes within the 100m to 500m buffer.

- Hayle Causeway. Listed Grade II [1159753].
- Meadowside Cottage. Listed Grade II [1143633].
- Meadowside House. Listed Grade II [1327623].
- Glanmor House. Listed Grade II* [1327660].
- Roddfield House. Listed Grade II [1160480].
- Gate piers, walls and railings near Glanmor House. Listed Grade II [1143632].
- Trelissick Manor House and cottage. Listed Grade II* [1327629].
- Milestone. Listed Grade II [1143639].
- Milestone. Listed Grade II [1408993].
- Loggan's Mill. Listed Grade II [1143659].

8.2.4 Designated sites and landscapes within the 500m to 1km buffer.

- Lelant Conservation Area.
- Hayle Conservation Area.
- Phillack Conservation Area.
- The Hayle Area of the Cornish Mining World Heritage Site.

- Landfall. Listed Building Grade II [[1143319]
- The Abbey. Listed Building Grade II [1312587].
- Elm Farmhouse. Listed Building Grade II [1327791].
- Idahill and St. Anthony. Listed Building Grade II [1143357].
- Watersmeet. Listed Building Grade II [1136874].
- Rosedale. Listed Building Grade II [1327790].
- The Retreat. Listed Building Grade II [1312583].
- Gable Cottage. Listed Building Grade II [1143341].
- Auckland and Avalon. Listed Building Grade II [1327784].
- East View. Listed Building Grade II [1327783].
- Rose Cottage. Listed Building Grade II [1143339].
- Lelant Village Hall. Listed Building Grade II [1136823].
- Treloweth House. Listed Building Grade II [1327654].
- St. Erth Churchtown Cross. Scheduled Monument [1010845].
- Rock Close Terrace. Listed Building Grade II [1143650].
- Anvil House. Listed Building Grade II [1160785].
- The Bird in Hand. Listed Building Grade II [1143673].
- Downs Roman Catholic Convent. Listed Building Grade II* [1160452].
- Terrace walls at the Downs. Listed Building Grade II* [1143671].
- Terrace walls at the Downs. Listed Building Grade II* [1160465].
- Summerhouse at the Downs. Listed Building Grade II* [1327604].
- The Downes. Registered Park and Garden Grade II [1001305].
- Statue of St. Michael. Listed Building Grade II [1160472].
- Carnsew hillfort and memorial stone. Scheduled Monument [1006720].
- Netherleigh. Listed Building Grade II [1160441].
- Trepenpol. Listed Building Grade II [1143670].
- Penmeneth House. Listed Building Grade II [1160363].
- Penpol House. Listed Building Grade II [1143662].
- Ansley Villa. Listed Building Grade II [1143669].
- Bodriggy House. Listed Building Grade II* [1160426].
- 65 and 67 Fore Street. Listed Building Grade II [1143679].
- The Copperhouse Gift Shop. Listed Building Grade II [1327608].
- The Cornubia Tavern. Listed Building Grade II [1143678].
- The Copperhouse Inn. Listed Building Grade II [1143677].
- 1 Market Square, Copperhouse. Listed Building Grade II [1160274].
- Market Place, Copperhouse. Listed Building Grade II [1160282].
- J and F Pool Ltd. Listed Building Grade II [1143666].
- Copperhouse Dock. Listed Building Grade II [1327613].
- Angarrack Viaduct. Listed Building Grade II [1143709].
- The Angarrack Inn. Listed Building Grade II [1159790].
- House in Angarrack. Listed Building Grade II [1143710].
- Millbrook House, Angarrack. Listed Building Grade II [1143711].
- Railway Bridge. Listed Building Grade II [1143706].
- Bridge and boundary stone. Listed Building Grade II [1160132].
- Sandhill Cottage. Listed Building Grade II [1327614].
- Gate piers and flanking walls. Listed Building Grade II [1310662].
- Terrace walls near Vicarage. Listed Building Grade II [1327636].
- The Vicarage. Listed Building Grade II [1143658].
- The Old Vestry. Listed Building Grade II [1365625].
- Church of St. Phillack. Listed Building Grade II* [1160143].
- Lych gate and churchyard wall. Listed Building Grade II [1327635].
- Churchyard Cross. Listed Building Grade II [1143693].
- Millet tomb. Listed Building Grade II [1143657].
- Carne Tomb, etc. Listed Building Grade II [1327634].
- Pascoe Tomb. Listed Building Grade II [1327615].
- Rogers Tomb. Listed Building Grade II [1143656].
- Chawner Tomb. Listed Building Grade II [1143694].
- Le Sage and Thomas Tombs. Listed Building Grade II [1143653].

- Polglaze Tomb. Listed Building Grade II [1143654].
- Early Christian memorial stone and wayside cross at Phillack. Scheduled Monument [1016163].
- Churchyard Cross at Phillack. Scheduled Monument [1016162].
- Wayside crosshead at Phillack. Scheduled Monument [1016154].

8.2.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 78.

The area to the south of the road is predominantly downland which was brought into agriculture during the post-medieval period, the process having been retarded in some areas by copper mining during the 18th and 19th centuries. To the north of the bypass, Hayle and Copperhouse have expanded from small beginnings to make this area almost entirely urban, the likelihood being that most of the remaining open land out to the bypass will eventually be developed. The well-preserved early post-medieval manor house and associated buildings at Trelissick are immediately to the east of the bypass and influenced the development of the land surrounding them.

8.3 Loggan's Mill roundabout to Treswithian roundabout

This section of the A30 was created in 1985 to bypass the 1839 turnpike though Connor Downs and Roseworthy, this in itself having replaced the old route from Hayle to Camborne via Angarrack and Connor Downs. The western section of the modern road follows a silted up and reclaimed section of a former eastern arm of the Hayle Estuary (Loggan's Moor), then rises onto the northern flanks of Connor Downs through an area which sited smallholdings and small farms established during the 19th century, crosses the Roseworthy Valley near the site of the Roseworthy arsenic refinery and then climbs onto Treswithian Downs close to the site of West Roskear mine. The A30 in this section does not utilise the routes of any previous roads.

The western section of the route passes across the former Connor downs, an area only enclosed to agriculture during the later post-medieval period. In contrast, the eastern section of the route passes just to the north of an area of long-established farmland containing the sites of a number of Romano-British enclosed farming settlements (Rounds).

There are no archaeological features or sites within the road corridor.

8.3.1 CHF's within the soft estate.

- None.

8.3.2 Documented extant CHF's within the 100m buffer.

- Pillbox on Loggan's Moor. SW 57870 38990. MCO34051. Not found, and probably demolished.
- Cropmark field boundaries near Roseworthy. SW 61095 39699. MCO36542. Not accessible for recording.
- West Roskear Mine. SW 62400 40200. MCO12783. Small areas of disturbed mine dumps survive.

8.3.3 Designated sites and landscapes within the 100m to 500m buffer.

- Milestone. Listed Grade II [1159756].
- Camp SW of Trevarnon Round. Scheduled Monument [1004468].
- Milestone at Connor Downs. Listed Grade II [1409024].
- Roseworthy arsenic works. Scheduled Monument [1021418].

8.3.4 Designated sites and landscapes within the 500m to 1km buffer.

- Trevarnon Round. Scheduled Monument [1006696].

8.3.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 79.

The HLC of about half of the area flanking the road corridor out to 1.5km reflects the enclosure of former downlands during the period from the 18th to the early 20th centuries. Away from the higher ground, the HLC captures the areas of Anciently Enclosed Land which occupy the slopes of the Red River valley and the land to the south of Connor Downs. Further areas of Anciently Enclosed Land flank Gwinear and Angarrack, whilst to the north of the road at its western end the HLC is strongly influenced by the presence of the extensive towans backing St. Ives and Hayle Bay.

8.4 Treswithian roundabout to Scorrier roundabout

This dual carriageway was constructed in 1975 as a bypass for Camborne, Tuckingmill, Pool, Illogan Highway and Redruth (Fig 9). Passing to their north, and to the north of the post-war Redruth by-pass in its eastern section, it runs through a mixture of farmland, downland and mine sites past Rosewarne and Trevenson to the east, the Basset (or de Dunstanville) seat of Tehidy House and Park lying a short distance to the north. Its central section crosses the former Illogan Downs, whilst its eastern section was named as Treleigh Wood and North Downs by the OS in 1807. Copper and tin mines along this section of the route include Weeth, Gustavus, West Wheal Seton, North Roskear, New South Pool, North Pool, Wheal Raven, West Wheal Tolgus, South Wheal Tolgus, Wheal Montague, Wheal Harmony, Treleighwood, Wheal Prussia, Wheal Boys, Great Northdowns and Wheal Chance. This section of the A30 does not follow the routes of any earlier roads.

Much of this landscape was, until the later post-medieval period, unenclosed downland, though from the 18th century on it was increasingly the site of extensive tin and copper mines, whilst to the south its character was almost wholly changed by the 19th century growth of urban development associated with Camborne and Redruth and the industrial settlements linking them. Whilst Redruth had been a long-established small town, Camborne was, until the late 18th century, little more than a churchtown, though subsequently grew rapidly to rival its neighbour in size and importance. Both became world famous centres of engineering and technological excellence during the 19th century.

There are no archaeological features or sites within the road corridor.

8.4.1 CHFs within the soft estate.

- None.

8.4.2 Documented extant CHFs within the 100m buffer.

- Boundary stone at Higher Rosewarne, incised 'NS over 7'. SW 64829 41089. MCO57948. Survives, but within an area currently being developed for housing and at risk of loss.
- Great Wheal Seton – chimney and dressing floors. SW 65670 41590. MCO37518. Visible from the highway, but not accessible.
- Great Wheal Seton spoil heap. SW 65920 41620. MCO37551.
- Tolgus Mount shaft. SW 68920 42770. MCO37299. Not accessible, but just visible from the highway; immediately abuts the soft estate.

8.4.3 Designated sites and landscapes within the 100m to 500m buffer.

- The Cornish Choughs public house. Listed Grade II [1142657].
- Milepost. Listed Building Grade II [1142643].
- Rosewarne Wollas including No's 1 and 2 and rear screen wall. Listed Building Grade II [1160021].
- Trevenson House. Listed Building Grade II [1392498].
- Former stables and school. Listed Grade II [1392486].

- Pool School. Listed Grade II [1390610].
- 20 and 22 Church Road, Pool. Listed Grade II [1142624].
- Trevenson Conservative Club and school. Listed Grade II [160488].
- Stable block at Treloweth Farm. Listed Grade II [1142596].
- Pumping engine house at Taylor's Shaft, EPAL. Listed Building Grade II* [1142600].
- Chimney stack at Taylor's Shaft, EPAL. Listed Building Grade II* [1328183].
- East Pool Mine. Scheduled Monument [1021323].
- Group of three chimneys. Listed Buildings Grade II [1160890].
- Chimney near Wheal Tehidy. Listed Building Grade II [1245328].
- Church of St. Stephen. Listed Building Grade II [1142539].
- Stamps engine house at Wheal Peevor. Listed Building Grade II [1142566].
- Pumping engine house at Wheal Peevor. Listed Building Grade II [1309286].
- Whim engine house at Wheal Peevor. Listed Building Grade II [1328167].
- Count house at Wheal Peevor. Listed Building Grade II [1309833].
- Wheal Peevor. Scheduled Monument [1004247].
- Chimney stack. Listed Building Grade II [1161923].
- Calcining plant at Treskerby Mine. Listed Building Grade II [1253199].

8.4.4 Designated sites and landscapes within the 500m to 1km buffer.

- Camborne Conservation Area.
- South Roskear Conservation Area.
- Tuckingmill Conservation Area.
- The Camborne-Redruth Area of the Cornish Mining World Heritage Site.
- Cross in recreation ground. Listed Building Grade II [1159677], Scheduled Monument [1003049].
- The Grange. Listed Building Grade II [1142634].
- Vivian Monument. Listed Building Grade II [1159563].
- Tredennick Monument. Listed Building Grade II [1142660].
- Cornish churchyard Cross. Listed Building 1310972].
- Cornish Churchyard Cross. Listed Building Grade II [1328138].
- Coffin rest. Listed Building Grade II [1159528].
- Church of St. Martin and St. Meriadoc. Listed Building Grade I [1142659].
- Parish vestry/ Listed Building Grade II [1142654].
- The Berkley Centre. Listed Building Grade II [1311028].
- Tyack's Coach Bar. Listed Building Grade II [1142658].
- Tyack's Hotel. Listed Building Grade II [1142661].
- Post Office. Listed Building Grade II [1328136].
- The Donald Thomas Centre. Listed Building Grade II* [1142652].
- Cornish cross head. Listed Building Grade II [1328137].
- Holman Fountain. Listed Building Grade II [1142653].
- Josiah Thomas Memorial Hall. Listed Building Grade II [1410423].
- Trevithick Memorial. Listed Building Grade II [1328166].
- Rosewarne House. Listed Building Grade II* [1142639].
- Milepost. Listed Building Grade I [1310753].
- 25, Roskear. Listed Building Grade II [1328165].
- Church of All Saints. Listed Building Grade II [1310848].
- Parochial School. Listed Building Grade II [1328139].
- Milepost. Listed Building Grade II [1142599].
- Gunpowder magazine, Robinson's Shaft. Listed Building Grade II [1392484].
- Robinson's Shaft carpenter's Shop. Listed Building Grade II* [1379233].
- Compressor house, chimney, whim engine house and electricity substation at Robinson's Shaft. Listed Building Grade II* [1379231].
- Boiler house at Robinson's Shaft. Listed Building Grade II* [1160761].
- Engine house at Robinson's Shaft. Listed Building Grade II* [1142628].
- Former miners' dry, Bickford's Shaft. Listed Building Grade II [1379216].
- Trevithick Monument. Listed Building Grade II [1392497].
- Pool Basset Institute. Listed Building Grade II [1160715].

- Pool Methodist Church. Listed Building Grade II [1328159].
- Milestone on Agar Road. Listed Building Grade II [1396217].
- East Pool whim engine house. Listed Building Grade II* [1160518].
- Coach house at Parkhenver. Listed Building Grade II [1162189].
- Parkhenver and St. Joseph's Convent. Listed Building Grade II [1142543].
- The Gwennap Area of the Cornish Mining World Heritage Site.
- Great Wheal Busy. Scheduled Monument [1000512].

8.4.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 80.

Much of the character of the landscape out to 1.5km from the roadline reflects its downland origin and relatively recent enclosure to agriculture. Areas of Anciently Enclosed Land are rare, being limited to areas around Rosewarne, Park Bottom and Scorrier House and Park (the seat of the Williams family who controlled and grew rich from the operation of many local mines). All of the valleys crossing this landscape from south to north were centres of industrial activity, whilst the sites of some of Cornwall's large copper and tin mines have also left their mark on and under this landscape. To the south of the road, urban development is continuous from Camborne in the west to Redruth in the east. The principal communications networks – the railway and the major roads – are aligned west-east and are a maximum of 1km apart.

8.5 Scorrier roundabout to Chiverton roundabout

Constructed as the Blackwater Bypass in 1995, this part of the A30 runs through the formerly very productive copper mining setts of Wheal Hawke, Wheal Rose, North Downs, Eastdowns, Hallenbeagle, Wheal Gump, Boscawen and North Wheal Busy. This area also formerly sited a very large number of late 18th century/early 19th century miners' smallholdings. This section of the A30 does not incorporate any elements of earlier roads.

The character of this area is influenced by its history as former downland occupied by mines and miners' smallholdings. It also contains the failed 19th century village of Treleigh – although its pub, school and church were built, a planned accompanying settlement of terraced miner's cottages was never constructed owing to the late 19th century downturn in the Cornish mining economy, and the emigration of large numbers of many local miners and their families.

The Blackwater by-pass retains some of its Turnpike era milestones, though the cast iron information panels on one of these have been removed (Fig 64).

8.5.1 CHF's within the soft estate.

- None.

8.5.2 Documented extant CHF's within the 100m buffer zone.

- Briar Farm, Scorrier milestone. SW 72850 45210. MCO55089.
- Railway bridge. SW 73070 45280. MCO55400. Extant and still in use.
- Blackwater railway junction. SW 73238 45523. MCO53840. Created when the St. Agnes branchline was opened between 1877 and 1907. Truncated by the Blackwater bypass, but some earthworks survive. The signal boxes at either end of the junction have been demolished.
- Well at Chiverton Cross. SW 74763 46864. MCO56103. On private land and not accessible.

8.5.3 Designated sites and landscapes within the 100m to 500m buffer.

- Engine house at Read's Shaft, Hallenbeagle. Listed Building Grade II [1140975].
- Engine house chimney at Hallenbeagle. Listed Building Grade II [1140976].
- North Treskerby engine house. Listed Building Grade II [1328710].

- Sunbeams. Listed Building Grade II [1328671].
- Wheal Busy Chapel. Listed Grade II* [1386521].
- Blackwater country primary school. Listed Grade II [1312413].
- Blackwater war memorial. Listed Grade II [1391926].
- Blackwater Wesley chapel. Listed Building Grade II [1141533].
- Simla and Trecoose, Blackwater. Listed Grade II [1312414].
- Highlands. Listed Grade II [1328688].
- Milestone. Listed Building Grade II [1328972].
- Primrose farmhouse. Listed Grade II [1140954].

8.5.4 Designated sites and landscapes within the 500m to 1km buffer.

- Wheal Rose engine house. Listed Building Grade II [1146321].
- Gate piers, gates and flanking walls near Rose House and garden walls. Listed Building Grade II [1141463].
- Stables near Whitehall. Listed Building Grade II [1140978].
- Great Wheal Busy. Scheduled Monument [1021392].
- Two barrows at Two Burrows. Scheduled Monument [1016355].
- Barrow at Pendown. Scheduled Monument [1016106].
- Barrow at Higher Callestick. Scheduled Monument [1016105].
- Chiverton Park Grade II Registered Park and Garden [1000512].

8.5.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 81.

The HLC for this section clearly indicates its former downland nature, though this was modified during a short and both intense and extensive period of enclosure by miners' smallholdings during the late 18th and early 19th centuries, and the former presence of extensive and important tin mines such as Great North Downs.

8.6 Chiverton roundabout to Carland Cross roundabout

Much of this route follows the central Cornwall ridgeline, and until the late 18th century it was a largely open area of high and exposed downland notable for the many Bronze Age barrow cemeteries which were sited along its crest. Many of these survived into the post-medieval period and have given their names to sections of the downs – for instance Two Burrows and Three Burrows near Chiverton roundabout and Four Burrows not far to their east (Figs 20, 50). These landmark earthworks, like Warren's or Killigrew Barrow near Carland Cross, were almost certainly used as waymarks by travellers crossing the otherwise featureless downs, and are likely to have determined the line of this section of the road at an early date.

The majority of this section of the A30 has been used as a long distance route since at least the early 18th century, probably long before, as it ran largely through unenclosed land, allowing a more or less direct route through the centre of Cornwall. Some sections of the route have been widened and visibility splays and widened verges have been added at sites like Chybucca Junction, where the road has also been provided with an additional lane to ease congestion at the point where the Truro to Perranporth road crosses the A30. To the west and east of Marazanvose, the road corridor width is now double that which it was in 1877, and within the settlement at least two buildings were demolished to achieve this.

The 1st Edition OS mapping (dating to *circa* 1807) shows that much of the roadline was originally not hedged on either side, and was notable for the straightness of many long sections. The road from Truro to Perranporth crosses the A30 at Chybucca near the site of another group of barrows, again probably formerly waymark points on the route.

Settlements and farms are entirely absent in western section of this part of the A30, the first of these encountered when travelling from the west being 'Marasan Voaz' (Marazanvose), the earliest reference to which dates to 1327, when it was named

Margesevos, this deriving from the Cornish *Marghas an Fos* – the marketplace at the site of a now-lost ditch or entrenchment.

Immediately to its north is Chyverton (or Chiverton) Park and House, first recorded in 1219 as *Tywarton*, the medieval seat of the Arundell family, which the old road skirts closely (Fig 25). Chyverton was subsequently inherited by John Thomas, a lawyer, during the mid-18th century. He remodelled the house in the 1760s and later added a park and folly. During the 19th century the Peter family inherited the estate through marriage and remained there until 1924 when the estate was sold to Treve Holman, the owner of Camborne's largest iron foundry. Holman planted rhododendrons and magnolias and after World War II concentrated on extending his magnolia collection further.

In this section, which runs through the upper heads of valleys running away to the south whose streams feed into the River Kenwyn and ultimately the River Fal, the early 19th century mapping shows that the road was distinctly less straight and the land had long been enclosed to agriculture, though beyond '*Zealla*' (Zelah - the site of a coaching inn, now bypassed) the road rises up onto the western end of Newlyn Downs where the roads from Redruth, St. Allen, Cubert, Perran Sands, St. Newlyn East, Crantock and Mitchell converged at Boxheater Junction. At this formerly important junction (Fig 12), the road turned eastwards, following the high ground towards the extensive Carland Cross barrow group, early travellers probably using the large Warren's or Killigrew Barrow at their eastern end as their aiming point. Outlier shafts of the lead deposits worked by East Wheal Rose flank the road across Newlyn Downs. The road passes the sites of several solar farms (Fig 52) on its southern side as well as the prominent Four Burrows and Carland Cross wind farms (Fig 53).

The western section of the A30 runs entirely through former downland. In contrast, from Tresawsen eastwards through Marazanvose and Zelah, the landscape has been long-settled; rounds are scattered through this landscape, suggesting that it has been farmed since at least late prehistory. In its eastern section where the road climbs on to the high, open ground of Innis Downs, the farms were predominantly laid out during the 20th century. East Wheal Rose, the largest and most important of Cornwall's lead mines occupied the northern slopes of the downs, though smaller mines were scattered along its ridge and on its southern slopes.

This section of the road retains the majority of its milestones, though these have all been modified, much of the original lettering having been removed by chiselling a incised rectangle into the faces of the stones, lightly incised lettering replacing the original large-lettered inscriptions (for example, Fig 68). An original guidepost survives at the junction of the A30 and the B3285 at Boxheater Junction, though very little of its original lettering can now be made out as it has not been repainted for many years.

8.6.1 CHF's within the soft estate.

- Milestone on the north side of the highway near Trevisson Park. SW 75692 47938. Grade II Listed [1136763].
- Milestone on the north side of the highway near Callestock Veor. SW 77052 48680. Inscribed 'BODMIN 23M, PENZANCE 24M'. Listed Building Grade II [1140923].
- Milestone on north side of highway near Little Tresawsen. SW 78572 49251. Inscribed 'BODMIN 22M, PENZANCE 25M'. Listed Grade II [1136631].
- Milestone to the south-west of Marazanvose. SW 79773 50208. Inscribed 'BODMIN 21M, PENZANCE 26M'. Listed Grade II [172743].
- Milestone at Mount Pleasant. SW 81717 52551. Inscribed 'BODMIN 19M, PENZANCE 28M'. Listed Building Grade II [1141473].
- Early C18 milestone on the north side of the highway on Newlyn Downs. SW 83113 53250. Inscribed 'BODMIN 18M, PENZANCE 29M'. Listed Building Grade II [1394842].
- Milestone on the north side of the highway at Carland Cross. SW 84571 53909. Inscribed 'BODMIN 17M, PENZANCE 30M'. Listed Building Grade II [1394843].

8.6.2 Documented extant CHF's within the 100m buffer.

- Cropmark round at Chiverton Cross. SW 74800 47160. MCO34825. Not accessible.
- Cropmark round at Chiverton Cross. SW 74820 47230. MCO34826. Not accessible.
- Four Burrows barrow cemetery. SW 76123 48271, SW 76140 48235, SW 76182 48226, SW 76205 48231. Scheduled Monument [101654]. The road passes through the centre of this prominent barrow cemetery, which formerly included at least two additional barrows on the southern side of the road. Three more barrows were recorded not far to the west of this site on the southern side of the road; these are no longer extant.
- Cropmark barrow near Four Burrows. SW 76290 48230. MCO31940.
- Barrow 100m SW of Callestock. SW 77173 48743. Scheduled Monument [1016103].
- Cropmark barrow at Carvinack. SW 77604 48735. MCO2400. One of a group of three documented at this location. Not accessible.
- Marazanvose, first recorded as 'Margasevos' in 1327. SW 79874 50301. MCO15622.
- Penglaze Barrow. SW 82590 53136. Scheduled Monument [1016887].
- Five cropmark pits on Newlyn Downs. SW 82650 53180. MCO32371.
- Wheal Ennis. SW 83510 53340. MCO32374.
- Bowl barrow on Newlyn Downs. SW 83901 53721. Scheduled Monument [1017049].
- Five cropmark pits on Newlyn Downs. SW 84180 53730. MCO32376.
- Two bowl barrows on Newlyn Downs. SW 84244 53767 and SW 84242 53702. Scheduled Monument [1017050].
- Round barrow cemetery at Carland Cross. SW 84418 53738, SW 84484 53801 and SW 84570 53820. Scheduled Monument [1020758].
- Cropmark barrow at Carland Cross. SW 84500 53900. MCO2332.
- Warren's or Killigrew Barrow. SW 84598 53956. Scheduled Monument [1016888].

8.6.3 Designated sites and landscapes within the 500m buffer.

- Bowl barrow at Chiverton Cross. Scheduled Monument [1016057].
- The Three Burrows. Scheduled Monument [1016056].
- Mithian vicarage. Listed Building Grade II [1328719].
- Church of St. Peter. Listed Building Grade II [1141481].
- Schoolroom near Mithian church. Listed Grade II [1141482].
- Milestone. Listed Building Grade II [1328674].
- Hillfort near Tresawson. Scheduled Monument [1016445].
- Ventongimps Villa. Listed Building Grade II [1141555].
- Nancarrow farmhouse. Listed Building Grade II [1136610].
- Milestone. Listed Building Grade II [1328716].
- Zelah Chapel and forecourt. Listed Building Grade II [1141472].
- Shirley farmhouse. Listed Grade II [1136641].
- Trevalsa wayside cross. Listed Building Grade II [1136597], Scheduled Monument [1016290].
- Round barrow cemetery at Carland Cross. Scheduled Monument [1020758].

8.6.4 Designated sites and landscapes within the 500m to 1km buffer.

- Two barrows at Hendra Farm. Scheduled Monument [1019020].
- Barrow south of Hendra Farm. Scheduled Monument [1017349].
- Five barrows north of Hendra Farm. Scheduled Monument [1019021].
- Two barrows north-west of Hendra Farm. Scheduled Monument [1019020].
- Barrow west of Pendown. Scheduled Monument [1016106].
- Barrow south-west of Higher Callestick. Scheduled Monument [1016105].
- Cartshed south-west of Lower Ventongimps. Listed Building Grade II [1312450].

- Lower Ventongimps farmhouse. Listed Building Grade II [1328682].
- Batter's engine house. Listed Building Grade II [1141578].
- Mine buildings near Batter's engine house. Listed Building Grade I [1136747].
- Stables near Chiverton House. Listed Building Grade II [1312561].
- Chyverton House. Listed Building Grade II* [1141551].
- Milestone. Listed Building Grade II [1136696].

8.6.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 82.

HLC mapping shows this area as reflecting several different landscape development histories. To the west, the whole of the first section of the roadline runs through downland which had remained unenclosed until the 19th century, some areas not being broken in to agriculture until the mid-20th century. The character of this section is currently being modified by the construction of extensive solar farms and the erection of large numbers of wind turbines. The central section, from Tresawson to Zelah Hill, is predominantly Anciently Enclosed Land, and incorporates the mid-18th century Chyverton Park. As the road rises up to the summit of Zelah Hill, however, characteristics of landscapes recently enclosed from downland predominate and some of the large fields here were only enclosed during the 20th century. Off the high ground to the north, the landscape is dominated by sprawling un-vegetated dumps of the 19th century East Wheal Rose lead mine and the wind turbines of the recently re-powered Carland Cross wind farm, whilst to the south, a gently sloping stream-dissected landscape forming the headwaters of the River Fal and its tributaries has long been settled and farmed.

8.7 Carland Cross roundabout to Penhale roundabout

Roads run up to the ridge at Carland Cross from Ladock, Truro and Trispen to the south, this being the point at which most travellers heading westwards through Cornwall from Bodmin and Launceston turned south to Truro. With the exceptions of the bypasses around Mitchell and Summercourt, the current route of the A30 follows the old road route down off Newlyn Downs eastwards towards the edge of the Hensbarrow Moors at Penhale. Until 1992, the road ran through the ancient Borough of Mitchell (or St. Michael, Fig 23), and the market settlement and coaching inn site at Summercourt (or Lower Penhale), but these have now been bypassed, like the churchtown at St. Enoder (Fig 50) well over a century before. In 1807, all of this section of road ran between hedges, passing as it did through long-established farmland which contains the sites of a substantial number of Romano-British rounds (Fig 22). Only two turnpike era milestones survive along the roadline, both having been relocated, one being on the verge at the western end of Mitchell (Figure 74), the second being in an inaccessible location on the southern side of the road at the eastern end of Summercourt. Two original milestones survive on the former A30 in Mitchell (though this example is so overgrown it is now difficult to find, Figure 73), and in Zelah (adjacent to a former chapel, Figure 69).

8.7.1 CHF's within the soft estate.

- Milestone on the north side of the highway at the east end of Mitchell. SW 86563 54830. Inscribed 'VII MILE to Saint Columb'. Listed Building Grade II [1144052].
- Milestone on the south side of the highway at the western end of Summercourt. SW 87889 55579. Inscribed 'VI MILE to Saint Columb'. Listed Grade II [71303].

8.7.2 Documented extant CHF's within the 100m buffer.

- Medieval road through Mitchell. SW 85464 54400 to SW 86533 54800. MCO26061. Central section still in use for local traffic within the settlement.
- Milestone on the north side of the highway in Mitchell. SW 85805 54474. Inscription 'From Truro 7 Miles'. Grade II Listed Building [1312510].

- Wesleyan chapel in Mitchell. SW 85902 54517. Listed Building Grade II [1328705]. Converted to domestic use.
- Lower Penscawn and attached walls, railings and gate. SW 87145 54942. Listed Building Grade II [1327416].
- Milestone to the west of Summercourt. SW 87886 55577. Inscribed 'VI MILE to Saint Columb'. Listed Grade II [1146368].
- Cropmark round to the north of Summercourt. SW 88384 56326. MCO33727. Not accessible.
- Cropmark round to the south of St. Enoder. SW 89750 56760. MCO33739. Not accessible.
- Cropmark round to the east of St. Enoder. SW 89944 57042. MCO33740. Not accessible.
- Trewheela Farmhouse. SW 91022 57184. Listed Building Grade II [1311829].

8.7.3 Designated sites and landscapes within the 500m buffer.

- Prehistoric long barrow and four round barrows east of Carland Cross. Scheduled Monument [1017350].
- Mitchell Farmhouse. Listed Building Grade II [1141449].
- Mitchell Wesleyan Chapel. Listed Building Grade II [1328705].
- Plume of Feathers public house. Listed Building Grade II [1141450].
- Wellesley House and attached stable block. Listed Building Grade II [1137022].
- Raleigh House. Listed Building Grade II [1141451].
- Barn 100m west of St. Enoder Church. Listed Building Grade II [1327420].
- St. Enoder Rectory. Listed Building Grade II [1146392].
- Church of St. Enoder. Listed Building Grade I [1311865].
- Merifield Monument. Listed Building Grade II [1327453].
- Churchyard cross at St. Enoder. Listed Building Grade II [1144047], Scheduled Monument [1014221].
- Gateway and flanking walls at St. Enoder Church. Listed Building Grade II [1144048].
- Glebe farmhouse, St. Enoder. Listed Building Grade II [1327415].

8.7.4 Designated sites and landscapes within the 500m to 1km buffer.

- Two barrows at Hendra Farm. Scheduled Monument [1019020].
- Barrow south of Hendra Farm. Scheduled Monument [1017349].
- Five barrows north of Hendra Farm. Scheduled Monument [1019021].
- Two barrows north-west of Hendra Farm. Scheduled Monument [1019020].
- Farm building opposite Trevea. Listed Building Grade II [1141448].

8.7.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 83.

The HLC of this area of Cornwall's agricultural heartlands is, not unsurprisingly, predominantly mapped as Anciently Enclosed Land, though even this landscape of medieval fields and settlements contains pockets of former commons and downs which were not enclosed to agriculture until the 19th century. Mitchell's main street retains a pair of 17th century pillar-porched buildings as well as other buildings of high architectural quality, reflecting the former importance of this small settlement.

8.8 Penhale roundabout to Ruthvoes

An entirely new road opened in 1995 to bypass the bottleneck section through the settlement of Fraddon and the former coaching halts of Blue Anchor and Indian Queens (Fig 13), this section of dual carriageway rises up past Trewheela Manor onto the western flanks of Hensbarrow Downs, crossing an area called Fraddon Downs which, in 1807, was open moorland, but which soon thereafter began to be worked by the china clay pits whose excavations and spoil heaps now dominate the adjacent landscape to the east. One small example lay immediately to the west of the Indian Queens bypass,

but the dumps of the greatly-expanded and still operational Wheal Remfry now reach all the way to the eastern edge of the road. Beyond Highgate roundabout where the Newquay road branches off, the A30 runs down the north-western edge of the moors past Gaverigan to the edge of Goss Moor at Ruthvoes, where it meets the eastern end of the old road through Fraddon and Indian Queens.

This section of the road follows the boundary between anciently enclosed land to the west and moorland on which china clay extraction has taken place to its east. A large-scale excavation project carried out prior to the construction of this by-pass was able to record several significant archaeological sites along its route, notably the multi-phase Romano-British round at Penhale, a prehistoric ritual complex at Highgate and a well-preserved barrow at Gaverigan (Nowakowski and Johns, forthcoming).

8.8.1 CHFs within the soft estate.

- None.

8.8.2 Documented extant CHFs within the 100m buffer.

- China clay pan kiln at Higher Fraddon. SW 91820 57920. MCO26743. Apparently demolished.
- Cropmark barrow at Toldish. SW 92500 59300. MCO3582. Not accessible.

8.8.3 Designated sites and landscapes within the 500m buffer.

- Trewheela farmhouse. Listed Building Grade II [1311829].
- Milestone adjacent to Serena. Listed Building Grade II [1393904].

8.8.4 Designated sites and landscapes within the 500m to 1km buffer.

- Fraddon Methodist Church. Listed Building Grade II [1146406].

8.8.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 84.

Somewhat surprisingly, despite its elevation, much of this area is characterised as AEL, though containing pockets of post-medieval and modern enclosed land, some of this being in areas modified by industrial activity. China-clay working has significantly affected the recent evolution of the landscape to the east of the bypass, particularly near its summit which adjoins the tips of Wheal Remfry Pit.

8.9 Ruthvoes to Victoria

The former route of the A30 across Goss Moor, Tregoss Moor and the heathy moorland to the north of Roche had been constructed by the early 19th century (OS 1st Edition 1" mapping). This must have been a major civil engineering achievement, given that its nearly straight route traverses one of the largest areas of marshland in Cornwall. This basin at the head of the River Fal had been the site of an arm of the sea during the Tertiary, Pliocene and late Miocene periods, and tin eroded from lodes outcropping on the surrounding hills had accumulated here as the shallow sea bed silted up. Further deposits of eroded tinstone accumulated during the last period of glaciation between 130,000 and 100,000 years ago as a result of the freeze-thaw processes affecting the permafrost covering the bedrock. As a result, this became the site of one of the largest areas of tin streamworks in Cornwall from at least 1197 until the 20th century (this resource possibly having also been exploited in prehistory), leaving the landscape hummocked, and full of deep, water-filled pits and channels (Fig 26). Following the abandonment of a phase of early 20th century tin dredging, many of the wetter areas Goss Moor have become colonised by dense willow carr, making access to the former tinworks now almost impossible.

When the Par to Newquay branch line was built across Goss Moor by the Cornwall Minerals Railway in 1876, this followed the road closely on its southern side across

Goss Moor, probably taking advantage of the engineering works undertaken by the earlier road builders. At the eastern end of the moor, the railway crossed the road on an iron bridge (Fig 43) which proved occasionally problematic for some of the later 20th century high-sided commercial traffic using the A30, and it was repeatedly the site of accidents which closed the road. Goss Moor is now an important nature reserve, and when the decision was taken to dual this section of road, the decision was taken to close off the Goss Moor section as a through road. The new route was to its north, passing across the lower flanks of Castle-an-Dinas (Fig 21), through the medieval strip fields of Belowda (or Belovely) Farm (Fig 24) and past the site of Belowda Mine on the summit of Belowda Beacon and Wheal Tregoss or Royalton Mine on its lower slopes, crossing the original route of the A30 on the downs to the north of Roche, this area siting another small but prominently-sited barrow cemetery now set between the routes of the old and new A30. Brynn Mine lies just to the north at this point.

This section of the road does not follow any earlier routes. The former roadline through Fraddon, Higher Fraddon, Blue Anchor and Indian Queens is now a relatively quiet section of local highway. The far western section of the former A30 across Goss Moor has been grubbed up, but the western and central section of the road is now part of the Goss Moor Trail; this has been narrowed and closed to traffic. The eastern end of the road is still open for traffic from Roche heading towards the road to Newquay.

To its north, the landscape is a mixture of former downland interspersed with farms of medieval origin; to its south, the landscape is that of marshland and extensive tin streamworks, within which Tregoss represents an islanded medieval farming settlement. At the eastern end of this section the road rises gently upwards onto another area of former downland near Victoria.

No archaeological sites or features survive along this improved roadline, though one milestone has been relocated (together with a commemorative plaque) at the western end of the Goss Moor Trail, adjacent to the former roadline.

Excavations undertaken along this stretch of the route by Oxford Archaeology in advance of its construction allowed the recording of a number of prehistoric sites, including those dating from the Neolithic, Bronze Age and Romano-British periods (Oxford Archaeology, forthcoming).

8.9.1 CHFs within the soft estate.

- None.

8.9.2 Documented extant CHFs within the 100m buffer.

- Tin streamworks on Goss Moor. SW 93885 60199. MCO50582. Not accessible.
- Trewin settlement. SW 93776 60284. MCO50343. Not accessible.
- Area of ridge and furrow cultivation at Deep Tye Farm. SW 94148 60550. MCO43723. Not accessible.
- Tin streamworks at Deep Tye Farm. SW 94156 60634. MCO43722. Not accessible.
- Spoil tips. SW 94846 61184. MCO43748. Not accessible.
- Shaft associated with Castle-an-Dinas mine. SW 95013 61471. MCO12352. Not accessible.
- Rosewin settlement. SW 95293 61578. MCO50324. Not accessible.
- Lower Trenoweth settlement. SW 96055 61554. MCO50321. Not accessible.
- Belowda medieval field system. Centred SW 96100 61500. MCO20561. Not accessible.
- Trial mine shaft. SW 96580 61530. MCO42696. Not accessible.
- Three round barrows at Saffron Park. Centred SW 98102 61429. Scheduled Monument [1004231].
- Prospecting pit. SW 98160 61430. MCO50523.
- Cropmark round. SW 98190 61589. MCO42469. Not accessible.
- Farmstead at Saffron Park. SW 98265 61447. MCO50319.

- Well at Saffron Park. SW 98256 61434. MCO50318. Not accessible.
- Holywell farmstead. SW 98468 61537. MCO50339. Not accessible.
- Shalimaar farmstead. SW 98711 61633. MCO50345. Not accessible.

8.9.3 Designated sites and landscapes within the 500m buffer.

- Milestone. Listed Building Grade II [1327412].
- Wynberg. Listed Building Grade II [1158795].
- Royalton Mine engine house. Listed Building Grade II [1158758].
- Three round barrows at the east end of Tregoss Moor. Scheduled Monument [1004231].
- Holy Well near Roche Station. Scheduled Monument [1004342].

8.9.4 Designated sites and landscapes within the 500m to 1km buffer.

- Castle-an-Dinas. Scheduled Monument [1006713].
- Three barrows at the east end of Tregoss Moor. Scheduled Monument [1004231].
- Pendine farmhouse. Listed Building Grade II [1327341].

8.9.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 85.

This section of the road runs through Goss Moor, for centuries one of the most extensive sources of alluvial tin to be found anywhere in Cornwall, and most of the area to the south of the roadline is recorded as having been formed by industrial processes (tin streaming), with the exception of the medieval farm of Tregoss. To the north of the roadline, industry gives way to downland and recently-enclosed farmland on the rising ground of Castle-an-Dinas and Belowda Beacon, amidst which is the area occupied by a farm of medieval origin: Belowda Farm, with its exceptionally well-preserved fossilised strip field boundaries. A tin and wolfram mine running under Castle-an-Dinas has only slightly modified the landscape, but the extensive mining activity on around Belowda Beacon has left the summit of the hill pocked with pits, shafts and openworks, and its flanks site a pair of extant engine houses.

8.10 Victoria to Innis Downs roundabout

This eastern section of the A30 runs from Victoria, the site of another former coaching inn on the Great Post Road from London (Fig 42), across another area of former downland. Extensive tin streamworks as well as small mines were sited in the valleys to its north, areas of pioneer farms like those at Mount Pleasant and Hunters' Downs established on the formerly uncultivated land during the 19th century flanking the road on both sides. Bronze Age barrows dotted along the crest of the downs occupy sites intended to be prominent when viewed from the lower ground to the north and south, and the more prominent of these (such as Black Barrow near the Innis Downs roundabout) were very likely used as waymarks by early travellers, determining the routes followed by sections of the road.

Most of the current route of the A30 follows an ancient route along the crest of Innis Downs, and the eastern half of this section also follows a Parliamentary Boundary and the boundary between two parishes, suggesting that this part of the route may be of considerable antiquity. One of Cornwall's rare henge monuments overlooks the eastern end of this section of the A30 (Fig 51), indicating that this was an important location as far back as the Late Neolithic period (3000 BC to 2500 BC) when such sites were constructed as ceremonial monuments serving local communities. At Innis Downs, the current route of the A30 is crossed by the road from St. Austell to Bodmin. The turnpike to Bodmin through Lanivet diverged from the current route of the A30 not far to the east of Victoria and Roche, running in a more or less straight line to Lanivet across Westdowns.

Former downland characterises this section of the route, though small farms of medieval origin occupy the slopes running off the ridge top; later farms were developed on the higher ground.

There are no archaeological features or sites along the A30 roadline. The private road to the former Bodmin Radio Station (Fig 51) survives to the south of the A30, paralleling it westwards from the Innis Downs roundabout. This now-unprepossessing site opened in 1926 as one of Marconi's first Short Wave Beam stations, becoming the first of the GPO's Dominion Beam Wireless Stations transmitting to Canada, South Africa and Australia. From 1947, Bodmin Radio became one of the Admiralty's key transmission stations, and in the 1980s it provided the hot line between the Cabinet Office and Moscow. The site closed in 2002 and is currently mothballed; its formerly imposing aerials have been dismantled.

Oxford Archaeology's excavations in advance of the construction of this new stretch of road revealed a Romano-British site and a previously unrecorded medieval deerpark (Oxford Archaeology, forthcoming).

8.10.1 CHFs within the soft estate.

- None.

8.10.2 Documented extant CHFs within the 100m buffer.

- Hill House. SW 99556 62260. MCO50338.
- Quarry. SX 00712 62630. MCO30994.
- Griglands. SX 01052 62557. MCO50332.
- Milestone on north side of former highway route. SX 01376 62590. Incised 'B8 and T16'. Listed Building Grade II [1158174].
- Tinner's pits and spoil heaps. SX 01770 62670. MCO40979. Not accessible.
- Bodmin Radio Station. SX 01825 62755. MCO40969.
- Structure at Redtye. SX 01985 62920. MCO40955. Not accessible.
- Tinner's pit at Redtye. SX 02064 62948. MCO40954. Not accessible.
- Early medieval leat at Redtye. SX 02470 62850. MCO40959. Not accessible.
- Area of ridge and furrow on Innis Downs. Centred SX 02800 62830. MCO40960. Not accessible.
- Beam Villas. SX 02760 63000. MCO39008.
- Cropmark barrow at Beam Villas. SX 02834 63000. MCO40962. Not accessible.

8.10.3 Designated sites and landscapes within the 500m buffer.

- Round barrow on Innis Downs. Scheduled Monument [1005451].
- Innis Downs earthwork. Scheduled Monument [1006684].

8.10.4 Designated sites and landscapes within the 500m to 1km buffer.

- Higher Rosewarrick farmhouse. Listed Building Grade II [1143100].

8.10.5 The Historic Landscape Character within 1.5km of the roadline.

See Figure 86.

Here, the road runs across recently-enclosed downland, and this is reflected in its HLC, but whilst the downs extend for a considerable length, they occupy a relatively narrow ridge top, and to both north and south their lower slopes are occupied by farms of medieval origin. Notably, almost all of the valleys to the north and south of the landscape traversed by the A30 have been extensively worked for alluvial tin.

9 The viewshed for the A30 from Longrock to Innis Downs

See Figures 31 to 41.

A viewshed was created for the section of the A30 from Longrock to Innis Downs out to 1.5km on both sides of its centreline. This was not only used to capture intervisible sites and designated landscapes out to 1.5km from the roadline, but also the historic landscape character of the landscape it traverses.

A Digital Terrain Model (DTM or bare-earth) was utilised when modelling the viewshed; this excludes the blocking effects on intervisibility of potentially temporary features such as buildings or trees. In the absence of any detailed 3D modelling of the roadline, this viewshed is theoretical rather than actual and does not fully take account of the loss of views of the landscape and sites surrounding the road when the observer is within cuttings. As a result, the viewshed was field-checked to determine those sites falling within it.

As a linear feature, the traveller's experience of the viewshed is partial, dynamic and cumulative (unlike the mapping in this report, which plots the totality of the viewshed out to 1.5km as a single feature from multiple locations). In many places the viewshed extends well beyond 1.5km, but this distance was chosen as it was felt likely to represent the maximum area within which the road and the landscape would interact with one another.

Areas of the landscape and the sites they contain come into view and are then lost to sight as a driver progresses along the road, and the views experienced during an east-west journey are different from those available on a west-east journey. In some areas containing extensive sections of cuttings (such as the Hayle bypass), the only views available to the driver are those of the road ahead, this sometimes including distant landscapes framed by the sides of the cuttings, as for instance westwards on much of the Connor Downs bypass, from which the Hayle Towans form such a background. From some of the western sections of the road prominent hills such as Trencrom, Trink, Mulfra and Castle-an-Dinas on the Penwith Moors are distant landmarks. In the section from Highgate Roundabout to Victoria, the large hillfort on Castle-an-Dinas and the adjacent Belowda Beacon (Fig 27) to the north of the roadline are major landscape features; the Church of St. Dennis to the south of Goss Moor and the hillfort within which it is sited were also formerly prominent features of this landscape, though the Hensbarrow moors which form their background have, during the 20th century, been utterly transformed by china-clay working, diminishing the landscape visibility of the church. Hensbarrow Beacon and the large barrow upon it was also formerly a major landmark, but is now dwarfed by china-clay spoil dumps. Helman Tor is glimpsed as a distant hilltop from Innis Downs, whilst in the distance to the east, Brown Willy and Roughtor clearly indicate the presence of Bodmin Moor. From Newlyn Downs heading west, St. Agnes Beacon comes into view on the far horizon, whilst further west, Carn Brea is an important landmark not far to the south of the roadline, first coming into view at Chiverton Cross. In the final western section of the route beyond Crowlas, Mounts Bay can be seen above the roadline, though St. Michael's Mount is almost wholly hidden behind the high ground above Marazion.

New elements of the landscape through which the road passes include extensive solar farms, for instance that currently being constructed beside the A30 at Four Burrows and the others not far to its east near Chybucca and Zelah, large numbers of individual wind turbines and some wind farms (as at Four Burrows and Carland Cross), the latter being very prominent roadside features. Given their heights, even distant wind turbines can be prominent elements in the landscape visible from the road – the Bear's Downs, St. Breock Downs and Delabole wind farms are readily visible from the A30 despite their distance from it.

Given its scale, the modern road itself has become a significant and sometimes very visible element of the landscape through which it passes, particularly looking eastwards towards its recently-constructed section to the north of Goss Moor, which carves across the lower slopes of Castle-an-Dinas and Belowda Beacon (Fig 24). The eastern section of the Indian Queens by-pass is also visible within views from Castle-an-Dinas and St. Dennis (Fig 40). The road heading west from Penhale is also a significant component of the view from the crest and western section of the Indian Queens bypass. In other places, particularly where the road is within cuttings, it is sometimes invisible, though not inaudible within the surrounding landscape, and can still impact on the settings of surrounding sites.

10 Impact assessment

An assessment of the potential impacts which might result from road operation, maintenance and upgrading has been undertaken to determine those which might affect the historic environment and sites of historic and archaeological importance within the hard and soft estates. These are addressed under two separate headings: operational impacts and development impacts.

10.1 Operational Impacts

The likely extent and nature of operational impacts are almost wholly physical in character, and have been identified as those deriving from:

- road users, particularly as a result of collisions;
- natural conditions (e.g., deterioration through weather);
- winter works including tree and scrub management, grassland management, swathe cutting and verge flailing;
- enhancement planting and aftercare;
- ad hoc maintenance to drainage and boundaries;
- ad hoc maintenance to the hard estate (surfacing and repairs), etc., together with utility and bridge maintenance;
- bridge upgrading;
- traffic control measures;

The management of individual CHF's is considered in Section 13 of this report, in particular the potential for traffic impacts with traffic on milestones positioned close to the road corridor.

Maintenance activities may impact on specific CHF's. These may result in positive, neutral or negative effects. The CHAMP should be consulted and local assessments made when planning operational works to identify opportunities for protection, conservation or enhancement of CHF's, and identify constraints that may exist through local area designations and statutory protections.

The following activities are of particular importance in assessing potential effects on the historic environment within the hard and soft estates.

10.1.1 Verge maintenance

Given that all of the CHF's within the soft estate consist of milestones and wayside crosses on road verges and set between a couple of metres and less than one metre from the highway, it is evident that verge maintenance activities have a particular potential to impact on these features. Although road verges were historically trimmed by mobile gangs of men equipped with hand tools, these days, whilst soft vegetation on verges is cut back using ride-on mowers, trimmers and brush cutters, and trees and shrubbery are maintained by periodic flailing using tractor-mounted machinery. This machinery is powerful and utilises rapidly rotating hardened steel cutters housed in an extendable boom arm to chop through vegetation on a progressive basis. The position of the boom is controlled visually by the tractor driver, who must also pay attention to the progress of the vehicle and to other traffic. Such operations are usually undertaken in coned off sections of the road, and traffic is always alerted to such activities by fixed or mobile signage. Where features like milestones are set close to sections of vegetation which need to be maintained, they are clearly at risk of accidental damage, and impact damage was noted on several of the recorded examples.

It is recommended that sections of vegetation adjacent to such historically-important features are maintained by hand, so that mechanical vegetation maintenance is not required in their vicinity in the future.

10.1.2 Milestones, crosses and guideposts

Original turnpike era milestones survive along the section of the A30 from Longrock to St. Erth Station and between Chiverton roundabout to Carland Cross. Most were relocated as a result of the widening of the A30 during the 20th century, though not all. All are within a few metres of the carriageway, a few being less than a metre from the edge of the carriageway. Many show signs of former rough handling (possibly during their relocation), and at least one (just to the west of Marazanvose) has quite clearly recently narrowly escaped a major collision with a vehicle (a modern pole-mounted metal road sign next to it having taken the impact). None have been repainted recently, and a number are now close to being illegible, in particular the early 19th century guidepost at the former major crossroads at the western end of Newlyn Downs (Boxheater Junction). More than one appears to bear the scars of impact damage which might have occurred during verge or hedge cutting activities undertaken using tractor-mounted flails.

The repainting of these milestones should be undertaken on a periodic basis (within a maximum of four years) to maintain their visibility, and to reflect their importance as elements of the historic road infrastructure. Scrub vegetation should be cleared from the areas surrounding these features to increase their visibility and enhance their settings.

In a small number of cases, the proximity of some milestones to the highway places them at a high risk of accidental impact damage. Consideration should be given to the relocation of these milestones to lower-risk sites adjacent to the highway.

It was noted that some milestones have been removed in the past during road improvements and not re-set.

10.1.3 Boundary feature maintenance

Field boundaries were not assessed individually as CHFs as there are a very large number of them along the route, and they have been considered collectively. Boundaries flanking modern sections of the road are all 20th century features and of low archaeological significance. Those flanking unimproved sections of the road include some 19th century hedges, though most of these sections of road have been widened and new (20th century) hedgelines have been created on at least one side of the road corridor.

The importance of boundaries as archaeological features is twofold, namely for their archaeological potential (i.e., the information they contain about their history, development and changing character), and for their amenity value (as attractive features, as visible components of the historic landscape and a link to past/historic land-use in the area and sometimes showing visible evidence of time-depth through signs of their development over a period of time).

It is recommended that the nature and style utilised in any boundary repair should be consistent with the existing walling or with the type of boundary where these are not of modern construction. The materials used in any repairs should reflect those used in the existing boundary, reusing as much stone from the original boundary, wherever possible.

10.1.4 Hard estate surfacing and repairs

Resurfacing or repairs to the hard estate will be restricted to the modern roadway and are therefore unlikely to affect CHFs except where a reasonable potential exists for remains to survive below the hard estate, or where the hard estate contains extant CHFs, a significant example being the historic bridge over the Red River at Crowlas.

The positioning of work compounds or other temporary land-take should take account of any CHFs identified in this CHAMP.

10.1.5 Structural maintenance

Bridges along the route of the A30 are almost entirely modern structures, a very small number of which overlie earlier physical remains. Where the fabric of historic bridges or other structure may be adversely affected, an impact assessment should be carried out using the CHAMP data to establish any consents or mitigation actions required. These may include use of sensitive materials or design, or survey, recording or observation works.

10.2 Development impacts

Development impacts are defined as '*specific improvements and realignments, bridge replacements, traffic control measures or safety measures.*'

Where non-regular improvements or developments are planned the CHAMP should be consulted as a first step in assessing the need for detailed impact assessment, consultation, consents and/or mitigation actions. During this study no information was available to assess specific improvements or alterations that might be planned.

Taking the view that considerable road improvements are likely to take place where the road is currently largely unimproved, the features most likely to be affected are those under the hard estate, within the soft estate or adjacent to the soft estate, unless entirely new routes are chosen where, for instance, two lane roads are proposed for replacement with highways on partly or wholly different alignments. This may also be accompanied by road narrowing or other landscape improvements within the by-passed sections of the route, leading to the potential for the creation of significant positive impacts as a result.

Two sections of the western part of the A30 have not yet been dualled – that from Longrock to St. Erth Station and that from Chiverton Roundabout to Carland Cross.

For the former, two routes have been proposed. From St. Erth, a new route has been proposed passing to the north of Rose an Grouse, bridging the existing road at Canonstown and subsequently paralleling the railway to Gitchell Lane. From this point south-westwards, the northerly of the two alternative proposed western sections would run to the north of Rospeath, the southern route running to its south, both meeting the existing A30 at Newtown (Longrock roundabout). Potential negative impacts on the archaeology of the existing road would be largely restricted to those resulting from the bridge works at Canonstown and on sub-surface archaeology relating to the former settlement of Newtown; these impacts would be greatly outweighed by a very significant reduction in traffic along the existing route, in particular benefitting the residents of the to be by-passed hamlets. Impacts on sites within the new road corridor would occur, but have not been assessed here.

Dualling of the 8.7 miles of road between Three Burrows and Carland Cross was recommended in 1989 and reconsidered in 2002-4. In both 2005 and 2008 the proposals were assigned to a second tier of priorities and the scheme was withdrawn in 2009. The upgrading of this section of road has not been considered within the 2012 to 2019 Spending Review (Highways Agency website). Cornwall Council is currently working with the Highways Agency to progress the scheme in the period 2017-22, the proposed construction period currently being 2019-21. Mapping created for the Exeter and Far South West Gateway DASTS Study indicates a route which would run a short distance to the north of the present A30 eastwards from Chiverton Cross, re-joining the existing roadline at Chybucca Junction (where the Truro to Perranporth road crosses the A30). The new road would then parallel the existing A30 to its south, cross it to the west of Marazanvose (which it would bypass on its northern side) and then join the south-western end of the Zelah bypass. From the north-eastern end of this bypass, the new road would initially parallel the existing A30 on its southern side, crossing it to its north on the high ground of Newlyn Downs, and re-joining it at a new junction at Carland Cross. Only short sections of the existing course of the A30 would be re-utilised if this proposal were to be carried through to construction. Impacts on CHFs which would result from this scheme would be largely limited within the hard/soft estates and

would be confined to major junctions, though the by-passing of the Four Burrows barrow group would greatly enhance its setting. Impacts on CHF's within the remainder of the surrounding landscape have not been considered in this study and should be subject to a separate assessment.

11 Management Action Plan

The aim of the CHAMP is to identify practical and realistic actions and targets for the beneficial management of the hard and soft estates. Implementation of the CHAMP guidance and review of the content of the EnvIS database will allow identification of actions that can be considered within the period for which the CHAMP will apply.

The CHAMP is designed to allow identification of CHF, identification of local area designation and statutory planning conditions, an assessment of the overall landscape character adjacent to the route, identification of priority and important sites and an assessment of the condition and urgency for conservation and enhancement measures.

Given the natures of the very small number of CHFs within the hard and soft estates and their current conditions, no urgent priorities for works were identified. All recorded CHFs require periodic maintenance, and a small number were considered to be vulnerable from operational impacts, given their particular proximity to the highway.

Specific management recommendations are included within Section 12 of this report.

A priority matrix has been used to determine the management needs of individual CHF, taking into account their significance, vulnerability and current condition, as follows:

		VULNERABILITY		
		ROBUST	ADEQUATE	FRAGILE
VALUE	HIGH	Medium	High	High
	MEDIUM	Low	Medium	High
	LOW	Low	Low	Medium
PRIORITY				

The timetable for actions recommended for each of the Priority ratings is as follows, in accordance with HA guidance:

High Priority : action needed within 12 months

Medium Priority : action needed within 24 months

Low Priority : review condition in 4 years

11.1 Proposals for sites within the hard estate, soft estate and buffer zones

See Figures 54 and 55 for locations.

11.1.1 Structural components making up the hard estate

The majority of the modern western section of the A30 utilises very little early structural fabric. At its western end (Longrock to St. Erth Station) there is an under-bridge at Crowlas and a probable culvert at the eastern end of Canonstown carrying a small stream, whilst the St. Ives branch line is carried under the roundabout near St. Erth Station by means of two modern bridges. The under-bridge at Crowlas incorporates the original, narrow, twin-arched stone bridge over the Red River, though this has been extended to both the north and south to carry the modern widened carriageway, as well as the footways on either side of this, these extensions being of poured concrete.

The Hayle by-pass passes over an historic iron railway bridge carrying the Paddington to Penzance main line over the River Hayle.

From Loggan's Mill to Chiverton Cross the road is entirely new, and all of its under- and over-bridges are of modern construction.

From Chiverton Cross to Carland Cross the A30 runs along the watershed for most of its length, and, as a result there are no underbridges for watercourses. Almost all road crossings are on the level, and thus over-bridges are rare and, where present, of modern construction.

The A30 eastwards from Carland Cross is of recent construction and much of it follows watersheds. Over-bridges, culverts and under-bridges such as that for the Newquay branch line at St. Dennis Junction at the western end of Goss Moor are all modern features.

11.1.1.1 Management proposals

The conditions of historic features within the hard estate should be monitored on a regular basis in order to ensure that their fabric is not damaged by the pressures of road traffic, vibration, etc.

Site No	Site Name	Priority
2	Crowlas bridge	Low

11.1.2 CHFs within the soft estate

There are only a limited number of archaeological features within the soft estate, these principally consisting of historic milestones and a pair of medieval wayside crosses sited adjacent to un-dualled sections of the route. Only a few of these are likely to be in their original locations, most having been relocated onto new verge sites following road widening operations during the 20th century.

Milestones and wayside crosses are important historic features, illustrating the historical development of the road route. All are Grade II Listed Buildings, whilst the crosses are both Listed Buildings and Scheduled Monuments. Such designations confer on them a high degree of statutory protection as nationally important monuments. Works to such features, unless covered by class agreements, must not be undertaken unless specific Scheduled Monument or Listed Building Consents (as appropriate) have been obtained for such operations from the relevant authority, this being English Heritage in the case of Scheduled Monuments and Cornwall Council in the case of most classes of work to Listed Buildings.

The painting of milestones (and at least one wayside cross) in white with lettering picked out in black and, in the case of those on the western section of the route, black-painted bases, is a long-standing and traditional form of maintenance, though appears to have been abeyance for many of these features for some time. As a result, the milestones are now rather less obvious roadside features than used to be the case, potentially placing them at a higher risk of impact damage, particularly those at the interface of the hard and soft estates, or those close to the carriageway in areas without any soft estate. The lack of repainting also diminishes their visibility as historic features, and potentially reduces public awareness of their historic importance.

Milestones are also potentially at risk of accidental damage during hedge-trimming activities, as this is now almost universally carried out using powerful tractor-mounted flails. Those milestones adjacent to scrubby hedges are most at risk, as they are the least visible and the most prone to growing in.

11.1.2.1 Management proposals

- A programme of cyclic milestone and guidestone maintenance should be set in place. This will predominantly consist of their painting on a regular (maximum

four-yearly) basis to maintain their visibility as important historic roadside features. Where wayside crosses have traditionally been painted, this should also be undertaken on a similar basis. Members of the Milestone Society may be interested in assisting in undertaking this work, subject to health and safety constraints.

- Milestones or guidestones within the soft estate should not be repositioned or their immediate settings modified unless this can be justified on an individual basis as a means to reduce their vulnerability to vehicle impact and/or enhance their accessibility. Statutory consent would be required for any such operations.
- Verge maintenance adjacent to milestones and wayside crosses should be undertaken using hand tools only. Drivers of vehicles equipped with mechanical flails undertaking verge maintenance should be made aware of the locations of these milestones, made aware of their designated statuses and the importance of avoiding damage to them.

No	Site name	Priority
1	Ludgvan Leaze milestone	Medium
3	Tregender medieval cross	Medium
4	Cockwells milestone	Medium
5	Whitecross medieval cross	Low
6	Canonstown milestone	Medium
7	St. Erth Station milestone	Medium
8	Trevisson milestone	Medium
10	Milestone at Chybucca Cross	Medium
11	Little Tresawson milestone	Low
12	Marazanvose milestone	Medium
13	Zelah Hill MS	Low
14	Boxheater Junction guide post	Medium
15	Newlyn Downs milestone	Medium
16	Carland Cross milestone	Medium
17	Mitchell milestone (west)	Medium
18	Mitchell Milestone (east)	Low
19	Summercourt milestone	Low
20	Goss Moor milestone	Low
21	Griglands milestone	Low

11.1.3 CHF's adjacent to the soft estate

Whilst the management of archaeological sites or features within the buffer zone immediately adjoining the A30 is under the control of their site owners, management works being subject to the approval of statutory agencies where the features or sites are designated, activities along the roadline can have impacts on them, most particularly on their settings. Such works could include plantings, landscaping operations, new hedging or fencing, the felling or clearance of trees and scrub or road lighting proposals. Such activities would have the potential for the greatest impacts where the A30 passes through or close to settlements or larger urban areas where there are likely to be designated historic buildings or where they might also impact on

HLC. The rural landscapes traversed by the road, particularly those which were formerly downland, have a particular open, undeveloped character, and are also susceptible to negative impacts from some classes of work, particularly schemes including potentially intrusive tree planting, which would introduce highly visible features of types alien to such landscapes, or the lighting of junctions.

Some significant, and generally (but not always) nationally designated CHF's lie close to the soft estate and could potentially be affected by works to the soft estate such as tree felling, scrub management, drainage works or boundary management. These comprise the following:

Name	Location	Form	Designation
The Giant's Grave, Ludgvan Leaze	SW 50533 32071 to SW 50835 32038	Earthwork and Cropmark	None
Louraine House, Crowlas	SW 51686 33211	Extant building	LB Grade II
Lower Tregender, Crowlas	SW 51986 33570	Extant building	LB Grade II
Lamb and Flag smelting works, Trelowthas	SW 53723 35374	Extant building complex	LB Grade II
Chiverton Round (W)	SW 74797 47163	Cropmark	None
Chiverton Round (E)	SW 74823 47239	Cropmark	None
Four Burrows barrow cemetery	centred SW 76161 48230	Extant and cropmarks	SM and none
Barrow at Callestick Vean	SW 77169 48738	Extant	SM
Barrow group at Chybucca Cross	centred SW 77539 48687	Cropmark	None
Barrow 130m SE of Penglaze	SW 82587 53139	Extant	SM
Barrow group SE of Penglaze	centred SW 82719 53201	Cropmarks	None
Barrow 500m NW of Hr Ennis Farm	SW 83897 53712	Extant	SM
Carland Cross barrow group	centred SW 84455 53773	Extant	SM
Warren's Barrow	SW 53956 53954	Extant	SM
Lower Penscawn	SW 87146 54944	Extant building	LB Grade II
Barrow near Lower Penscawn	SW 87488 55111	Cropmark	None
Possible barrow N of Summercourt	SW 88712 56401	Cropmark	None
Round S of St. Enoder (W)	SW 89624 56658	Extant and cropmark	None
Round S of St. Enoder (E)	SW 89762 56762	Cropmark	None
Possible round E of St. Enoder	SW 89945 57043	Cropmark	None
Trewheela	SW 91021 57187	Extant building	LB Grade II

Round near Little Gaverigan	SW 92490 59102	Cropmark	None
Possible barrow N of Little Gaverigan	SW 92512 59258	Cropmark	None
Tin streamworks at Falhead Farm	centred SW 94001 60432	Cropmark	None
Tin streamworks N of Falhead Farm	centred SW 94034 60657	Cropmark	None
Tin streamworks W of Lower Trenoweth	centred SW 95698 61487	Cropmark	None
Three barrows at Saffron Park, E of Victoria	centred SW 98104 61434	Extant	SM
Bodmin Radio Station	SX 01826 62726	Extant	None
Tin streamwork on Innis Downs	SX 02302 62851	Cropmark	None
Barrow at Innis Downs	SX 02834 63001	Cropmark	None
Innis Downs henge	SX 03109 62746	Extant	SM

Two CHFs lie very close to the A30, and have been included in the site inventory and prioritised for management.

Site No	Site Name	Priority
9	Four Burrows barrow cemetery	Low
17	Mitchell milestone (W)	Medium

11.1.3.1 Management proposals

- Proposals for operations within and flanking the soft estate should take account of potential impacts on the settings of CHFs within the adjoining buffer zone.
- Care should be taken when drawing up roadside planting schemes to ensure that CHFs and HLC within the flanking zone are not negatively impacted upon, particularly through the introduction of groups of trees in areas where these traditionally do not form significant components of the character of the area through which the road passes. The planting of trees in locations where this activity would close off views of landmark CHFs should be avoided.
- In areas where accessible CHFs in rural areas and close to the highway currently experience significant audible impacts on their settings, noise dampening scrub plantings within the soft estate may be considered as a means of partially mitigating such effects. Native species consistent with the HLC of the local landscape should be used to achieve this.
- The adoption of 'intelligent' LED-based road lighting schemes would be one means of reducing light pollution within the landscape surrounding the A30 where it is currently lit. Such approaches have already been adopted in some other areas of Britain.

11.1.4 Significant CHFs within the wider viewshed of the roadline

Whilst the majority of the archaeological or historical sites within the landscape flanking the roadline are passed by unnoticed by most travellers on the A30, a small number form sometimes highly visible landmarks (see Fig 19).

At the eastern end of this section of the route, the prehistoric landscape of Bodmin Moor is distantly visible in the form of Brown Willy and Roughtor near its northern edge, whilst closer by, and fleetingly glimpsed, Helman Tor – an important Neolithic site can just be seen to the south. Heading west and passing Victoria, the Hensbarrow Moors come into view to the south, though the formerly prominent barrow which once formed their summit is now lost amongst the massive china-clay spoil heaps which surround it. The former hillfort now occupied by St. Dennis Church is similarly overshadowed and now much less readily discernible in the landscape. However, to the north of the road, both Castle-an-Dinas and Belowda Beacon retain a commanding presence, though both are best appreciated looking north-eastwards from the summit and eastern section of the Indian Queens bypass or from just to the west of Victoria.

Continuing westwards, the distant barrow-topped crest of St. Agnes Beacon on the Cornish coast comes into view to the north-west, whilst rising up onto the crest of Newlyn Downs, the traveller passes through a landscape of Bronze Age barrows, many of these being set very close to the road, though these are now considerably overshadowed by the massive turbines of the Carland Cross wind farm. Beyond, the driver passes through the centre of the Four Burrows barrow cemetery, its components adjoining the road on both sides, but to their immediate west, a newly-constructed solar farm (one of at least four either in operation or under construction immediately adjacent to the road) is a very prominent feature of the landscape, and certainly intrudes into the settings of the nearby barrow group. From these downs, Carn Brea, crowned with its Neolithic and Iron Age ramparts, is first seen as a distant landmark.

In the section from Scorrier to Camborne, this hill, topped by its folly castle, becomes an increasingly dominant presence ahead and then to the south of the A30, whilst sporadic mine chimneys and engine houses can be glimpsed on both sides, particularly the fine group of engine houses at Wheal Peever to the north of the route near Scorrier, these now more clearly visible following the thinning of mature trees adjoining the A30.



Beyond Camborne, the extensive sand dunes at Gwithian, Godrevy, Upton and Hayle Towans – the locations of important Bronze Age sites - come into view above the line of the road, whilst on the final approach to Loggan's Mill roundabout, the eastern parts of the West Penwith Moors come into view, particularly Trink and Tregonning Hills and the western Castle-an-Dinas, topped with its Rogers' Tower folly. From just to the west of the summit of the Hayle bypass, the views open up to the north-west, providing vistas out over Hayle Bay to St. Ives and Knill's Monument on the hills above it.

The landscape flanking the final western stretch of the road contains few landmarks, though Godolphin and Tregonning Hills are occasionally visible to its south. As the traveller approaches Longrock, Mount's Bay comes into view above the road, whilst St. Michael's Mount can be glimpsed above the hills backing Marazion at its western end.




Only a few classes of highway management activities have the potential to impact on the appreciation of these distant monuments. These primarily comprise tree planting, hedging, the erection of signage or the creation of other forms of screening which might obscure or detract from current views of roadside or more distant monuments.

12 Condition and summary management of CHF's within the HA estate




See Figures 54 and 55 for the locations of these features.

Site	Site name	Status	Location	Priority / Condition	Recommendations	Photograph
1	Ludgvan Leaze milestone	LB II	SW 51144 32587	<u>Priority:</u> Medium <u>Condition:</u> Fair, though requires repainting.	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	
2	Crowlas bridge	None	SW 51547 33144	<u>Priority:</u> Low <u>Condition:</u> Good, though partly silted up with gravel and stones. Historic sections of the bridge are not currently readily visible.	No actions required unless a load-bearing upgrade is required, in which case a survey record of the original bridge should be undertaken prior to any works. If the road surface is removed as part of any such works, a record of the upper surface of the bridge should be produced.	



A30 Longrock to Innis Downs CHAMP

3	Tregender medieval cross	SM	SW 52127 33747	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint cross on a regular basis.	
				<u>Condition:</u> Fair, though requires vegetation management to retain visibility.		
4	Cockwells milestone	LBII	SW 52171 33791	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	
				<u>Condition:</u> Fair, though requires cleaning and repainting.		
5	Whitecross medieval cross	SM	SW 52941 34394	<u>Priority:</u> Low	No maintenance required except for periodic repainting. No mechanical flails to be used within 5m of monument.	
				<u>Condition:</u> Good, though partly encroached upon by surrounding vegetation.		



A30 Longrock to Innis Downs CHAMP

6	Canonstown milestone	LBII	SW 53138 35032	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis. Consider lifting milestone and re-setting to reveal full extent of lettering.	
				<u>Condition:</u> Fair, though base is part-obscured by tarmac layers. Painting quality is currently rather poor.		
7	St. Erth Station milestone	LBII	SW 54347 36072	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Clean and paint milestone and lettering on a regular basis.	
				<u>Condition:</u> Good. Set back from highway on wide verge.		
8	Trevisson milestone	LBII	SW 75690 47941	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis. This milestone is set on a very narrow verge and is at particular risk of vehicle impact. Consider re-location further away from the edge of the highway.	
				<u>Condition:</u> Fair, though at risk from vehicle impacts given close proximity to highway. No lettering currently present on milestone.		




A30 Longrock to Innis Downs CHAMP

9	The Four Burrows barrow cemetery	SM	Centred SW 76160 48248	<u>Priority:</u> Low	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument, as the closest of the barrows abuts the road hedge.	
				<u>Condition:</u> Good, though setting impacted upon by new solar farm and noise from heavy volumes of traffic passing close by.		
10	Milestone at Chybucca Cross	LBII	SW 77053 48667	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	
				<u>Condition:</u> Fair, though some risk from vehicle impacts given location on verge adjacent to highway.		
11	Little Tresawson milestone	LBII	SW 78571 49249	<u>Priority:</u> Low	No longer in documented location, and assumed to have been removed. Identify current location if possible, and re-site in original position.	No image available
				<u>Condition:</u> Removed to unknown location.		



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12	Marazanvose milestone	LBII	SW 79775 50218	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	
				<u>Condition:</u> Fair, though at risk from traffic impacts. Somewhat hidden by hedge vegetation		
13	Zelah Hill milestone	LBII	SW 81717 52553	<u>Priority:</u> Low	No longer in documented location and assumed to have been removed. Identify current location and re-site on edge of modern route of A30.	No image available.
				<u>Condition:</u> Removed to unknown location, possibly during the construction of the Zelah Bypass.		
14	Boxheater Junction guide stone	LBII	SW 82049 52957	<u>Priority:</u> Medium	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and repaint lettering on a regular basis. Consult the Milestone Society for details of original lettering.	
				<u>Condition:</u> Fair to poor. Unpainted for many years and lettering now lost.		

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15	Newlyn Downs milestone	LBII	SW 83111 53249	<p><u>Priority:</u> Medium</p> <p><u>Condition:</u> Fair, though at significant risk from vehicle impacts given the absence of a verge at this location.</p>	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis. This milestone is set on a very narrow verge and is at particular risk of vehicle impact. Consider re-location further away from the edge of the highway.	
16	Carland Cross milestone	LBII	SW 84570 53912	<p><u>Priority:</u> Medium</p> <p><u>Condition:</u> Fair, though can be rocked and needs more firmly re-setting to prevent collapse.</p>	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	
17	Mitchell milestone (W)	LBII	SW 85804 54471	<p><u>Priority:</u> Medium</p> <p><u>Condition:</u> Fair, though obscured by shrubby vegetation. On former section of the A30.</p>	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	

A30 Longrock to Innis Downs CHAMP

18	Mitchell milestone (E)	LBII	SW 86562 54830	<p><u>Priority:</u> Low</p> <p><u>Condition:</u> Good, though relocated site on open road verge places it at some risk from vehicle collision.</p>	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	
19	Summercourt milestone	LBII	SW 87887 55581	<p><u>Priority:</u> Low</p> <p><u>Condition:</u> Good. Set high up on verge away from traffic. No access.</p>	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	No image available
20	Goss Moor milestone	None	SW 94041 60320	<p><u>Priority:</u> Low</p> <p><u>Condition:</u> Good. Re-sited from original location on modern plaque base. On former section of the A30.</p>	Keep surrounding vegetation from encroaching. Hand tools rather than flails to be used within 5m of monument. Clean and paint milestone and lettering on a regular basis.	
21	Griglands milestone	LBII	SX 01383 62589	<p><u>Priority:</u> Low.</p>	No longer at documented location and assumed to have been removed. Locate current	No image available

A30 Longrock to Innis Downs CHAMP

				<u>Condition:</u> Removed to unknown location.	site of milestone and relocate on verge of modern A30 close to its original position if possible.	
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13 Conclusions/discussion

Research has revealed the long history of the road now designated as the A30. The route taken by the road along the spine of Cornwall from Launceston to Penzance suggests that it may well have long been part of a significant long distance communications network, though this was not formalised until the 18th century, and even into the early 19th century alternative routes existed for long distance road users in Cornwall, as these tended to make journeys between its population centres. A number of hamlets developed along the roadline to serve the needs of travellers.

During the 20th century, the advent of motorised vehicles and increasing levels of traffic on the A30 necessitated increasing improvements to the highway, these culminating in the construction of a series of bypasses to remove bottlenecks, increase traffic flow and reduce impacts on towns and villages, and the road now tends to avoid, rather than link, settlements.

Much of the course of the A30 from Longrock to Innis Downs has been upgraded to a dual carriageway, in many sections this being on road lines which deviate considerably from those of the earlier turnpike routes. These dualled sections of the A30 now contain almost no archaeological features or sites, and there are therefore effectively no cultural heritage constraints on the future operation of these parts of the road. Few requirements for management recommendations to specific CHF's have emerged during this study as a result.

Two sections of the route - from Longrock to St. Erth Station and from Chiverton Roundabout to Carland Cross - remain un-dualled at present, though have experienced episodes of widening during the 20th century which have both altered their character to some degree, and also resulted in the removal of some archaeological features.

The sites of twenty-one CHF's within or immediately adjoining the HA estate were recorded, these consisting of sixteen turnpike era milestones of which three no longer survive, two medieval wayside crosses, a bronze age barrow cemetery and an early road bridge, the last being the only CHF within the hard estate. The milestones which had been removed were graded green, whilst most of the remainder were graded amber. Four, set back from the highway which have received relatively recent management attention were also graded green. All surviving milestones should be kept clear of vegetation and repainted in order to restore their original prominence next to the road.

Until very recently, most of the milestones erected by the turnpike trusts remained active elements of the road infrastructure, and were thus both retained and maintained. These have now been declared officially redundant and most show signs of neglect. Modern hedge-cutting methods using powerful tractor-mounted flails have also put these features at considerable risk of accidental damage. Significantly, three, all Grade II Listed Buildings, are no longer at their documented locations, and are assumed to have been removed. The current locations of these roadside features should be investigated, and, if these milestones still survive, they should be reinstated. The remaining extant milestones and crosses are also nationally designated, but most require a higher level of maintenance attention than they are currently receiving. A small number are considered to be at elevated risk of vehicle collision, and their relocation further back from their current sites on the edge of the highway might be an appropriate means of reducing the potential for damage to occur to them.

Where significant road improvements have been carried out in recent decades, such as the construction of the Indian Queens bypass and the new section of dual carriageway between Ruthvoes and Innis Downs, the losses of important sites such as Penhale Round near Fraddon, Highgate Ritual Enclosure or Gaverigan Barrow near Higher Fraddon were archaeologically mitigated in advance of their removal, and a number of other archaeologically-significant sites were fully recorded in advance of their loss to construction activities. This was not the case during earlier road improvement schemes,

however, and the degree of loss of archaeological information during the construction of bypasses around Camborne-Redruth, Connor Downs, Blackwater and Hayle cannot be quantified, though may have been substantial. Full archaeological assessments should be undertaken in advance of any proposed new road schemes, including road widenings, to determine the potential for impacts on archaeological features, sites and landscapes, including below-ground archaeology. Appropriate mitigation measures should be undertaken where such assessments identify potential negative impacts on significant sites, or areas with elevated archaeological potential.

The road exerts its presence on much of the landscape through which it passes, though this impact varies in its nature and significance. Where the road has been dualled and largely runs through cuttings, this interaction is generally reduced to audible impacts within fairly restricted zones on either side of the highway. From some locations, the substantial width of the modern road cuts a visual swathe through the surrounding landscape, and within lengths such as those between Ruthvoes and Victoria, the road has physically and visually bisected formerly intact, well-preserved medieval field systems at Belowda and Tregoss. Open, high-speed sections of the route, particularly those with rougher surfacings, can exert an audible presence on sites within the surrounding landscape to distances in excess of 1km, dependant on weather conditions.

Whilst the relatively unimproved sections of the A30 between Longrock and Grigg's Quay to the west and Chiverton Roundabout and Carland Cross in the central part of the route still by and large follow routes which date to at least the late 18th century, increasing traffic levels and road enhancements made during the 20th century to smooth traffic flows have, to a degree, degraded the historic character of the landscapes through which they pass, in particular the settlements in the western section, which have become physically and functionally bisected by the road. Audible impacts on sites and settlements flanking these sections of the road can be high and constant, particularly at times of peak traffic flows, resulting in negative impacts on their settings. The mitigation of these impacts could only be achieved through the construction of new by-passes for these route sections.

14 Appendix 1: Agreed project methodology

Extent of the CHAMP

The CHAMP will cover the section of the A30 from Longrock roundabout to the east of Penzance to Innis Downs roundabout just to the west of Bodmin.

Methodology

The methodological approach set out below is based on that set out in the Highways Agency document *Design Manual for Roads and Bridges* (DMRB) Volume 10, Section 6, Part 2 and *Interim Advice Note* (IAN) 84/10, Part 4, Amendment 2. The methodology also takes into account the advice contained within DMRB Volume 11 and IAN 15/08. Revision 1.

Review of existing Database

The EM Environment team have supplied an inventory of existing cultural heritage assets on the section of the A30 from Longrock to Innis Downs and a copy of the relevant entries in the EnviS database of asset locations. The completeness of this database will be reviewed through comparison with data sources held by or accessible to Cornwall Archaeological Unit Cornwall Council, including information relating to sites and landscapes which are designated at either national or local levels, sites which are recorded in the Cornwall and Scilly Historic Environment Record (HER) and sites which have been recorded from the analysis of aerial photographs.

Data Collection

Data collection will cover

- The soft estate
- Its wider context

The following data capture protocols based on the A38 pilot CHAMP for the A38 (East Cornwall) will be utilised:

CHAMP Zone	Measured from	Data capture level
Hard/soft estate (rural areas)	N/A	All CHF's (desktop and field survey)
100m buffer (rural area)	Road centreline	All CHF's (desktop only)
500m buffer (rural area)	Road centreline	Scheduled Monuments, Listed Buildings and non-statutory designations (desktop study only)
Hard/soft estate (urban zone)	N/A	All CHF's (desktop and field survey)
100m buffer (urban area)	Road centreline	All CHF's (desktop only)
1000m buffer	Road centreline	HLC and significant sites within the viewshed

In the first instance a search corridor will be established by buffering the road centreline to distances of 50m, 100m, 500m and 1000m on each side using ArcGis tools to allow the capture of historic environment assets (including Historic Landscape Character) within each of the buffer zones. A DTM-based viewshed will be created, again based on the road centreline (but in this instance out to 1.5km from it), to identify individual historic environment assets and landscape areas which are theoretically intervisible with the road corridor within each of the buffer zones. This

approach will also provide a tool for the identification of significant sites or landscapes whose setting may be affected by the road or which form key elements of the landscape flanking the road.

The project will also research the history and development of the road itself, including the identification and significance of any surviving historic elements.

Desk Study

GIS Layers

GIS digital mapping linked to a database will form the basis of the survey and will be developed utilising data sources accessed by Cornwall Council's Historic Environment Record's GIS. This includes many of the data sources outlined in the CHAMP Guidance, notably those relating to:

- The Cornish Mining World Heritage Site
- Scheduled Monuments
- Registered Parks and Gardens
- Historic Battlefields
- Listed Buildings
- Areas of Outstanding Natural Beauty
- Conservation Areas
- County designations, including Areas of Great Historic Value
- Historic Landscape Character
- The Cornwall and Scilly Sites and Monuments Record
- Historic mapping, including the *circa* 1807 1st Edition 1" to a mile mapping, *circa* 1840 parish tithe maps and *circa* 1880 and 1907 Ordnance Survey 25" to a mile mapping.
- The National Mapping Programme data which has plotted all archaeological sites visible on aerial photographs.

Historic Landscape Character

A Cornwall-wide historic landscape characterisation was undertaken in 1994. More detailed studies of some areas of Cornwall have subsequently been undertaken, including West Penwith at the western end of the road corridor. The results of both the original characterisation and subsequent studies are accessible via GIS layers which will be interrogated during the desk-study.

The database

The information generated during the data collection stage will be utilised to create data tables which will sit behind the GIS layers; this information will be stored in a DBF format which will adhere to the MIDAS standard. The data will be capable of display in the form of polygons, points and lines (dependant on the nature of the individual assets). The GIS archive will conform to the Dublin Core Metadata Standards. Terms used in the database terms will conform to the English Heritage approved thesaurus.

The outputs from the database will generate maps utilised during the fieldwork stage and for the report displaying:

- identified sites
- extant sites
- historic landscape characterisation mapping

- designations (WHS areas, Registered Parks and Gardens, Conservation Areas, Scheduled Monuments and Listed Buildings)
- viewshed mapping showing the extents of visual links between the road and both individual sites and landscapes in the areas flanking it.

Fieldwork

The fieldwork strategy will conform to the requirements of the Highways Agency in relation to working adjacent to a highway and will be submitted to EM for approval in advance of the fieldwork being undertaken. Appropriate pre-fieldwork training for the field staff will be in the form of an induction to be arranged with Alan Wood at the CORMAC Scorrier depot. A risk assessment has also been completed and submitted for approval. Arrangements will be made with Alan Wood for survey signs to be set out in both directions along the highway at 5km intervals (or shorter distances where appropriate) on days when survey will be undertaken.

The fieldwork stage of the project will involve the assessment of already-recorded sites and landscapes, as well as the identification of previously unrecorded sites, should these be found to exist. Historic components of the road itself will also be recorded, as will the landscape which flanks its corridor.

The following will be visited during the fieldwork phase of the project:

- All sites identified during the desk-study which lie within the soft estate and the 100m buffer zone (unless no public access is available to these).
- Locations identified either during the desk study or during the preliminary drive through survey where it is considered that there may be the potential for the presence of unrecorded archaeological or historical sites.

Within the flanking zone out to 1km from the road centreline the following will be considered:

- The Historic Landscape Character of the landscape which the road traverses, as this may influence management decisions within the soft estate.
- Key sites whose setting may be affected by highway management actions, or which are particularly significant elements of the landscape through which the highway runs.
- Opportunities for management to enhance the settings of sites within and flanking the highway corridor.

Visits will also be made to selected sites and locations within the landscape flanking the soft estate to assess both the influence of the highway on their settings and to take photographs illustrating the character of the landscape through which the road passes and its contribution to that landscape.

Information for each archaeological site or area within the soft estate and the 100m buffer zone will be recorded to a standard format, which will include descriptions and assessments of significance, condition and vulnerability, allowing a priority rating to be identified for each component. Data collection will be undertaken utilising a tablet computer running software which will allow the transfer of the fieldwork results into the GIS database.

The fieldwork will be undertaken as a preliminary drive through assessment followed by walkover surveys to selected sites, and will include:

- Visits to sites and areas identified from the desk based assessment.
- High definition (minimum 10 Mp) digital photography of features within the soft estate, together with selected sites and landscapes within the buffer zones, particularly those which display particularly good examples of Historic Landscape Character. A device attached to the camera will

allow for incorporation of GPS positional information within the image EXIF data.

- A review of the Historic Landscape Characterisation areas captured during the desk based survey
- An assessment of the issues affecting and management needs of sites and landscapes within the Soft Estate.
- A consideration of opportunities for the potential enhancement of relevant sites and landscapes within the landscape flanking the road corridor.

Updating of database

The GIS mapping and underlying database will be updated following the completion of the fieldwork.

Production of CHAMP report

The proposed report structure is outlined below. A distinction will be made throughout between the Soft Estate and the corridor or environs, and for descriptive purposes the road will be divided into manageable sections, according to general historic landscape zones and/or topography. The A30 between Longrock and Innis Downs will be described in separate sections, as follows:

- Longrock to St. Erth.
- St. Erth to Loggan's Moor (Hayle by-pass).
- Loggan's Moor to Camborne.
- Camborne to Scorrier.
- Scorrier to Chiverton Cross.
- Chiverton Cross to Carland Cross.
- Carland Cross to Fraddon.
- Fraddon to Roche (Goss Moor).
- Roche to Innis Downs.

Report structure

- Summary
- Introduction
 - Background
 - Objectives
 - Methods
- Historical and archaeological summary
 - Overview
 - For each section of the road line:
 - Soft estate - the road, history, features, etc.
 - Buffer zone - historic character, key sites
- Significance
 - Overview
 - For each section of the road line:
 - Designations

- Statement on key sites, heritage values etc.
 - Impacts and issues
 - Individual features within the soft estate
 - Impacts of the road on the significance and setting of sites and landscapes within the buffer zone
 - Management recommendations
 - The report will identify practical and realistic actions and targets for beneficial management of the soft estate and buffer zone for the period 2014 – 2018
- Soft estate: proposals on a site by site basis
- Buffer zone: proposals for specific selected sites

Outputs

The project outputs will consist of the following:

- A30 Longrock to Innis Downs CHAMP report with associated figures and appendices.
- Updated EnviS data.

A draft version of the CHAMP report and the associated EnviS data will be supplied to EM on DVD for review by the HA.

The final version of the CHAMP report, maps, associated documentation and the EnviS data will be provided to EM on a DVD. Two hard copies of the CHAMP report will also be supplied.

Project timetable

The initial data collection stage of the project will be undertaken in July 2014, subject to approval of the draft method statement, agreement of a cost breakdown, the signing off of Part 2 of briefing statement ref: HA1-4433828. Approval of a finalised method statement and risk assessment will be required before the commencement of the fieldwork stage.

Key dates

- Mid November 2014: Project progress meeting, Cornwall Archaeological Unit office, Truro.
- 5th December 2014: Draft CHAMP and EnviS data to be provided to EM Project Manager for review and check on data compatibility.
- 16th January 2015: Comments of report draft and data to be returned to HEP.
- 6th February 2015: Final CHAMP and EnviS data to be supplied to EM. Project signoff by EM.

Archiving

An ordered and integrated site archive will be prepared in accordance with Management of Research Projects in the Historic Environment (MoRPHE) English Heritage 2006 upon completion of the project. As the project is likely to produce solely a documentary archive this will be deposited with the Cornwall Record Office as well as the Courtenay Library of the Royal Institution of Cornwall.

The archiving will comprise the following:

1. All correspondence relating to the project, the WSI, a single paper copy of the report together with an electronic copy of the report and database on DVD, stored in an archive standard (acid-free) documentation box.

2. The project archive will be deposited initially at ReStore PLC, Liskeard and in due course (when space permits) at Cornwall Record Office.

Systems and standards

All recording work will be undertaken according to the Institute for Archaeologists *Standards and Guidance for Archaeological Investigation and Recording*. Staff will follow the CIfA *Code of Conduct* and *Code of Approved Practice for the Regulation of Contractual Arrangements in Archaeology*. The Institute for Archaeologists is the professional body for archaeologists working in the UK.

Cornwall Archaeological Unit is a Registered Organisation with the Chartered Institute for Archaeologists and follows their Standards and Code of Conduct.

As part of Cornwall Council, Cornwall Archaeological Unit has certification in BS9001 (Quality Management), BS14001 (Environmental Management), OHSAS18001 (Health, Safety and Welfare), Investors in People and Charter Mark.

Contract

Cornwall Archaeological Unit is part of Cornwall Council. If accepted, the contract for this work will be between the client and Cornwall Council.

The views and recommendations expressed will be those of the Cornwall Archaeological Unit team and will be presented in good faith on the basis of professional judgement and on information currently available.

Project staff

The project will be managed by a nominated Senior Archaeologist (Adam Sharpe BA MCIfA) who will:

- Discuss and agree the detailed objectives and programme of each stage of the project with the client and the project staff, including arrangements for health and safety.
- Monitor progress and results for each stage.
- Edit the project report.
- Liaise with the client regarding the budget and related issues.

All work will be carried out by suitably qualified and experienced Cornwall Archaeological Unit staff. The survey team will comprise:

- Adam Sharpe BA MCIfA, Senior Archaeologist, asharpe@cornwall.gov.uk, tel: 07968 892146
- Richard Mikulski, Archaeological Consultant, rmikulski@cornwall.gov.uk, tel: 01872 323509

Copyright

Copyright of all material gathered as a result of the project will be reserved to Cornwall Archaeological Unit, Cornwall Council. Existing copyrights of external sources will be acknowledged where required. Use of the material will be granted to the client.

Freedom of Information Act

As Cornwall Council is a public authority it is subject to the terms of the Freedom of Information Act 2000, which came into effect from 1st January 2005. Cornwall Archaeological Unit will ensure that all information arising from the project shall be held in strict confidence to the extent permitted under the Act. However, the Act permits information to be released under a public right of access (a "Request"). If such a Request is received Cornwall Archaeological Unit may need to disclose any information it holds, unless it is excluded from disclosure under the Act.

Health and safety statement

As part of Cornwall Council, Cornwall Archaeological Unit follows the Council's *Statement of Safety Policy*.

Prior to carrying out on-site work Cornwall Archaeological Unit will carry out a Risk Assessment in line with HA IAN 115/08, Revision 1.

Insurance

As part of Cornwall Council, Cornwall Archaeological Unit is covered by Public and Employers Liability Insurance.

Revision 4 of this WSI prepared by:

Adam Sharpe BA MCIfA

Senior Archaeologist

15 October 2014

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15 Appendix 2: Fieldwork risk assessment

Background

Cornwall Archaeological Unit has been commissioned to undertake an assessment of cultural heritage assets on and bordering the route of the section of the A30 from Longrock to Innis Downs. The nature, condition and management requirements of extant assets will be assessed both within the soft zone flanking the highway and within a zone extending to 100m out from the road centreline. Selected assets and locations within a wider zone out to 1.5km from the road centreline will also be visited during the fieldwork for the project.

The nature of the A30 between these points varies considerably.

- Between Longrock and St. Erth, the A30 is a single carriageway road, vehicles being restricted to 60mph; sections through the small settlements through which it passes have speed limits of 40mph. Pavements are in place along both sides of the carriageway for much of this stretch of the road.
- Between St. Erth and Loggan's Mill the road is a dual carriageway and subject to the National speed limit.
- Between Hayle and Treswithian (Camborne) the highway is a single carriageway though with a third lane through Roseworthy. The maximum speed limit is 60mph.
- Between Camborne and Chiverton Cross roundabout, the road is a dual carriageway and subject to the National speed limit.
- Between Chiverton Cross and Carland Cross the road is predominantly a single carriageway, though with a section of third lane at Zelah. The whole section is subject to a speed limit of 60 mph.
- Between Carland Cross and Innis Downs, the A30 is now a dual carriageway, though with a section of additional crawler lane between Penhale and Highgate Roundabout heading eastwards and uphill from the Fraddon interchange. The National speed limit applies to the whole of this section.

The recording process for those sites within the soft zone will require the survey team to park, walk and work adjacent to the highway. The Highways Agency document *Interim Advice Note (IAN)115/08 (Revision 1): requirements and guidance for works on the hard shoulder and road side verges on high speed dual carriageways* will form the basis for the risk assessment and the identification of the safest methods of working for this element of the survey.

Risk management relating to working within the soft zone

Whilst in the western section of the A30, the carriageway is accompanied by pedestrian paving for most of its length, no such provision will be available within the remainder of the route. The majority of the carriageway (where dualled) is likely to be accompanied by a hard shoulder, but both pavement and hard shoulder are absent along the majority of the single carriageway road from Chiverton Roundabout to Carland Cross. Traffic on the majority of the carriageway is likely to be travelling at speeds of up to 60 or 70mph.

Whilst engineering applied to the course of the road tends to provide for reasonably extensive forward visibility, drivers' view ahead (particularly on single carriageway roads) may be obscured by large commercial vehicles, and drivers may be distracted by features or activities adjacent to the highway, activities within their vehicles or by other road users. Most stops for recording are likely to be less than 15 minutes, but there may be a series of features to be recorded along a section of highway, requiring repeated frequent stops.

The following risks relating to working within the soft zone have been identified:

- Being struck by a vehicle moving along the adjacent carriageway.
- Involvement in a road traffic accident.
- Being insufficiently visible to the travelling public while working within this zone.
- Parking in an inherently unsafe location.
- Breakdown of the survey vehicle.
- Insufficient advance warning of the survey activity taking place.
- Extremes of weather and related poor visibility.
- Personal issues relating to members of the survey team (alcohol, drugs, physical incapacity, illness).
- Distractions leading to an appropriate level of care being taken whilst engaged in survey activity within this zone.

The following safe working practices will be followed to minimise the above risks:

- Any vehicle to be used during the survey will be roadworthy, carry an appropriate amount of fuel, be covered by a current MOT test certificate and Road Tax and will be insured for business use.
- Vehicles will be equipped with the required number of amber flashing lights (to be used in accordance with the requirements of IAN 115/08 section TMI(2)). They will also carry a 'Highway Maintenance' sign.
- Vehicles will only be operated by suitably licenced drivers, who will abide by the requirements of the Highway Code. Vehicle drivers incapacitated by reason of drugs, alcohol, illness or other factors will not be allowed to undertake survey work and will in addition be deemed to be in serious breach of Cornwall Council staff rules. Should either of the survey staff members feel unwell, survey will be abandoned immediately.
- Unless wholly unavoidable, vehicles will be parked in public laybys, over-bridges, side roads or other safe places and not on the hard shoulder or verge. Should the latter be required, any necessary personnel protection arrangements and working methods will be discussed with the client before such places are utilised. Where parking locations adjacent to active carriageways are less than 1m away from them, staff will exit and enter the vehicle through the passenger door.
- Survey signs will be in place at 5km intervals to warn road users of the activity on the stretch of road ahead.
- In the event of a vehicle breakdown, staff should alert the rescue services and remove themselves to a safe location (not in the vehicle unless in a layby or other safe location).
- IAN115/08 sections 5 PI (1 to 8) require persons working adjacent to the highway to wear Hi-Vis clothing (at a minimum a Hi-Vis jacket) to BS EN 471 Table 1 Class 3. Cornwall Archaeological Unit will recommend the wearing of Hi-Vis trousers. Safety boots and a hard hat may also be required.
- Staff will work in pairs at all times.
- Survey staff will, at all possible times, face the oncoming traffic in the adjacent highway lane.
- Staff will maintain a minimum distance of 1.2m clearance between themselves and active traffic lanes when working on dual carriageways. This may not be possible on single carriageway roads, but staff will maintain the largest possible safe distance between the carriageway and themselves at all times.

- The surveyors must not carry any survey pole or survey staff given the potential for this to accidentally project into an adjacent active carriageway.
- Staff will not make or answer mobile telephone calls when walking along or working beside the highway.
- Staff will pay attention to weather conditions. If these are such that visibility is likely to be significantly decreased, survey work will be abandoned until conditions improve. No work will be allowed during periods of darkness or near darkness.
- On each fieldwork day, the survey team will adhere by Cornwall Archaeological Unit's Lone Working procedures in order that administrative staff are aware of their intended times and places of work.

Working within the buffer zones is likely to be in many ways inherently safer than on high speed routes. However, archaeological features sited in this area may well be on or adjacent to much narrower, more winding minor roads, where drivers' forward visibility is likely to be more constrained than on major highways. Particular care will have to be taken when driving, parking and working in this zone, given that some of the risks associated with them are likely to be less readily manageable. As well as the requirements set out for working within the soft zone, the following safe working methods will be adhered to:

- Only safe parking locations will be utilised.
- Appropriate PPE will be worn at all times.
- Staff will at all possible times face the oncoming traffic and will walk in single file.
- When walking along roads to sites, staff will maintain a space between themselves in order to give drivers the best possible advance warning of their presence on the edge of the highway.

All accidents and incidents, including near-misses will be reported to the project manager at the earliest possible opportunity. Where it appears possible that adherence to a recommended working method has contributed to the incident all fieldwork will cease until a thorough review has been undertaken.

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Date of risk assessment: 07 October 2014

16 References

16.1 Primary sources

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16.2 Publications

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16.3 Websites

<http://www.heritagegateway.org.uk/gateway/> English Heritage's online database of Sites and Monuments Records, and Listed Buildings

<http://www.sabre-roads.org.uk/wiki/> A comprehensive description of the A30, together with other national roads.

<http://www.devon.gov.uk/efswg-dasts-phase-1-report.pdf> - The Exeter and far south west gateway study DaSTS Phase 1 report, June 2010 produced by Devon County Council and partners

<http://www.westbriton.co.uk/A30-8211-moorland-journey-sense-history/story-11503054-detail/story.html> - the only reference to the terms 'Great Road of the Wagons' and the 'Royal Cornish Way' being applied to the route which became the A30.

<http://www.visionofbritain.org.uk/travellers/Fiennes> - a digital version of Celia Fiennes accounts of her travels through Britain in the 17th century, popularly known as 'Through England on a Side Saddle in the time of William and Mary.

<http://www.genuki.org.uk/big/eng/Cornwall/#Description> - links to some accounts of journeys through and within Cornwall in historic times.

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Johannes Janssonius' maps of Cornwall, 1649, 1659

Blaeu's maps of Cornwall, 1650, 1664

Ogilby's strip map, 1675

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Owen and Bowen's map of Cornwall, 1720

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Badeslade's map of Cornwall, 1742

Thomas Osborne's map of Cornwall, 1748

Strip maps of the route from London to Land's End published in the Gentleman's Magazine, 1760, 1775

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John Cary's maps of Cornwall, 1790, 1812, 1814

Neele's map of Cornwall. 1814

Fullarton's map of Cornwall, 1833

Thomas Moule's maps of Cornwall, 1836, 1845

Pigot and Co's map of Cornwall. 1840

16.4 CAU/CC digital sources

Cornwall and Scilly Historic Environment Record

GIS mapping:

- Designated sites
- Designated areas
- Sites and Monuments
- The National Mapping Programme
- Cornwall Council stereo aerial photographs sets dating to 1999 and 2005
- RAF 1946 aerial photographs
- Physical geography
- Ordnance Survey MasterMap and raster mapping at larger scales

17 Project archive

The CAU project number is **146382**

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.

English Heritage/ADS OASIS online reference: cornwall2-200095

A30 Longrock to Innis Downs CHAMP

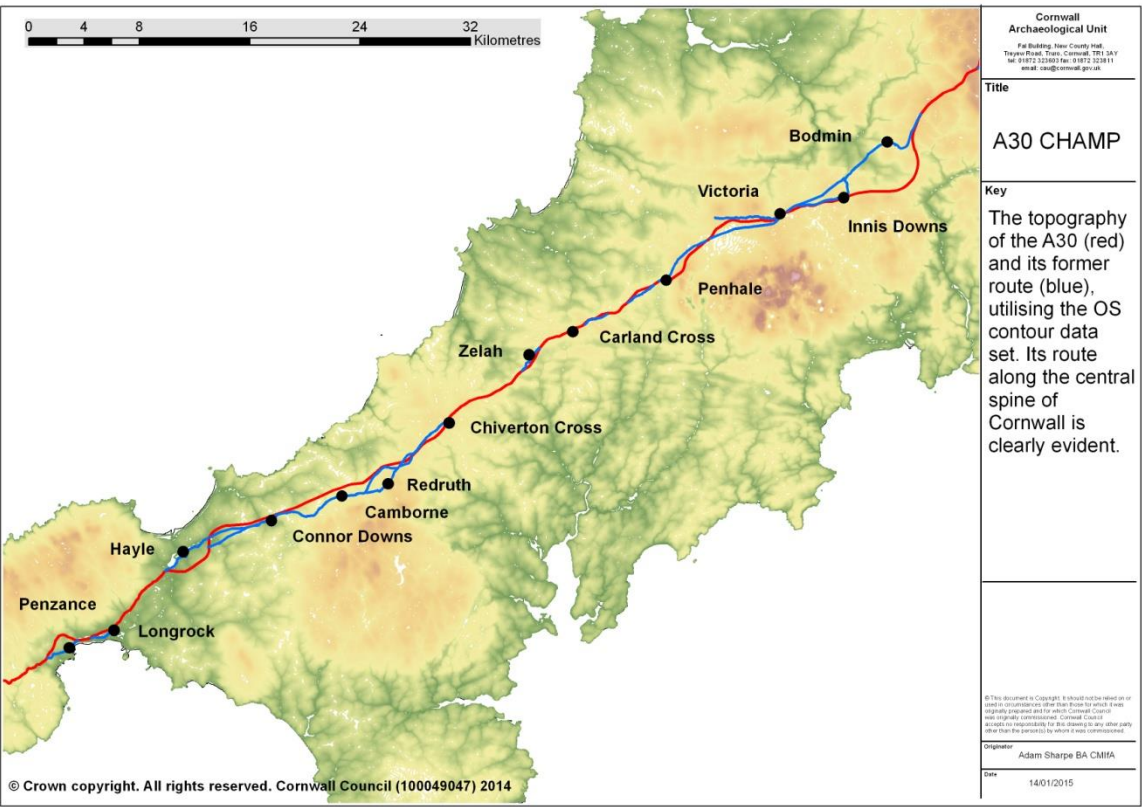


Fig 1. The topography of the route followed by the A30, together with its pre-dualling route.

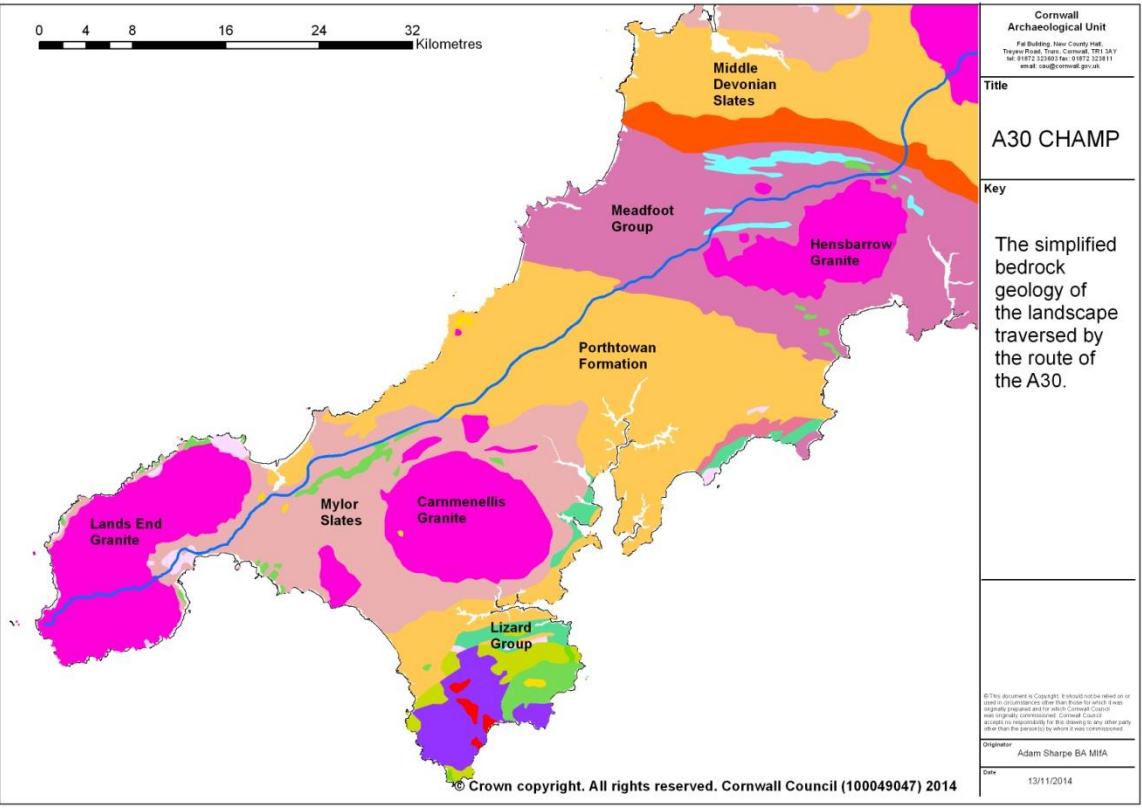


Fig 2. The geology of the route followed by the modern A30.

A30 Longrock to Innis Downs CHAMP

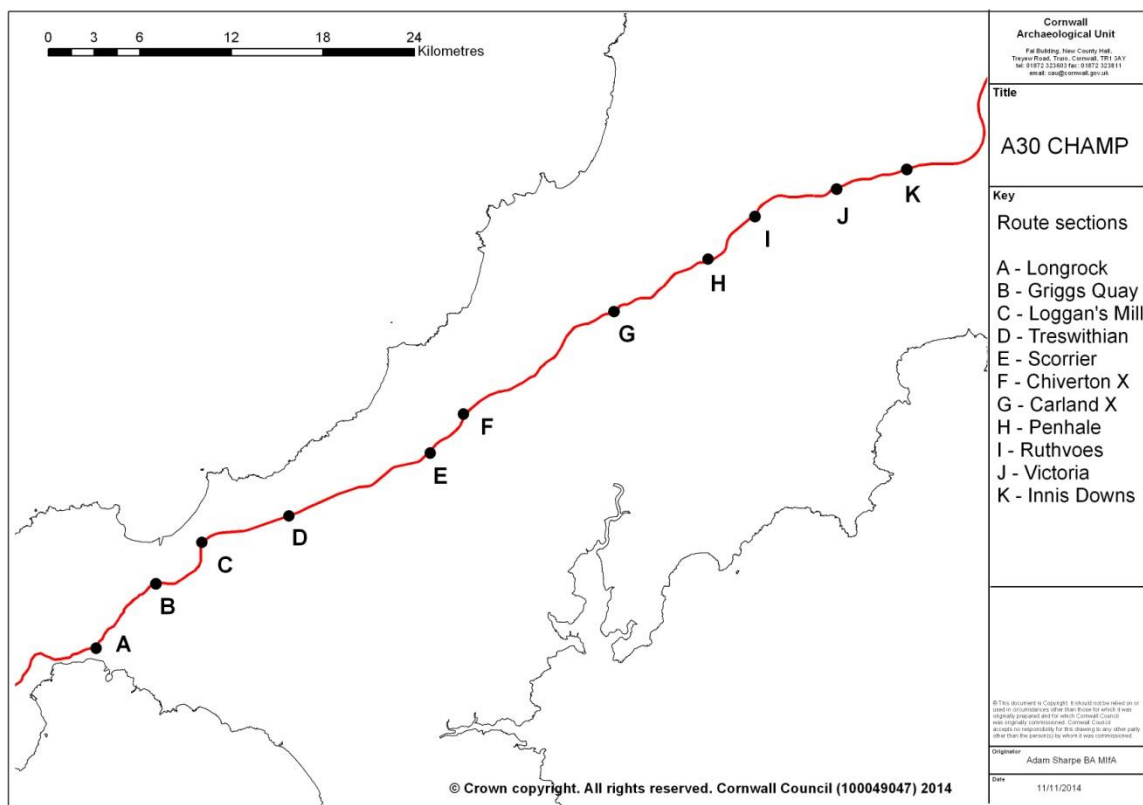


Fig 3. The ten sections into which the A30 has been divided for the purposes of this CHAMP report.

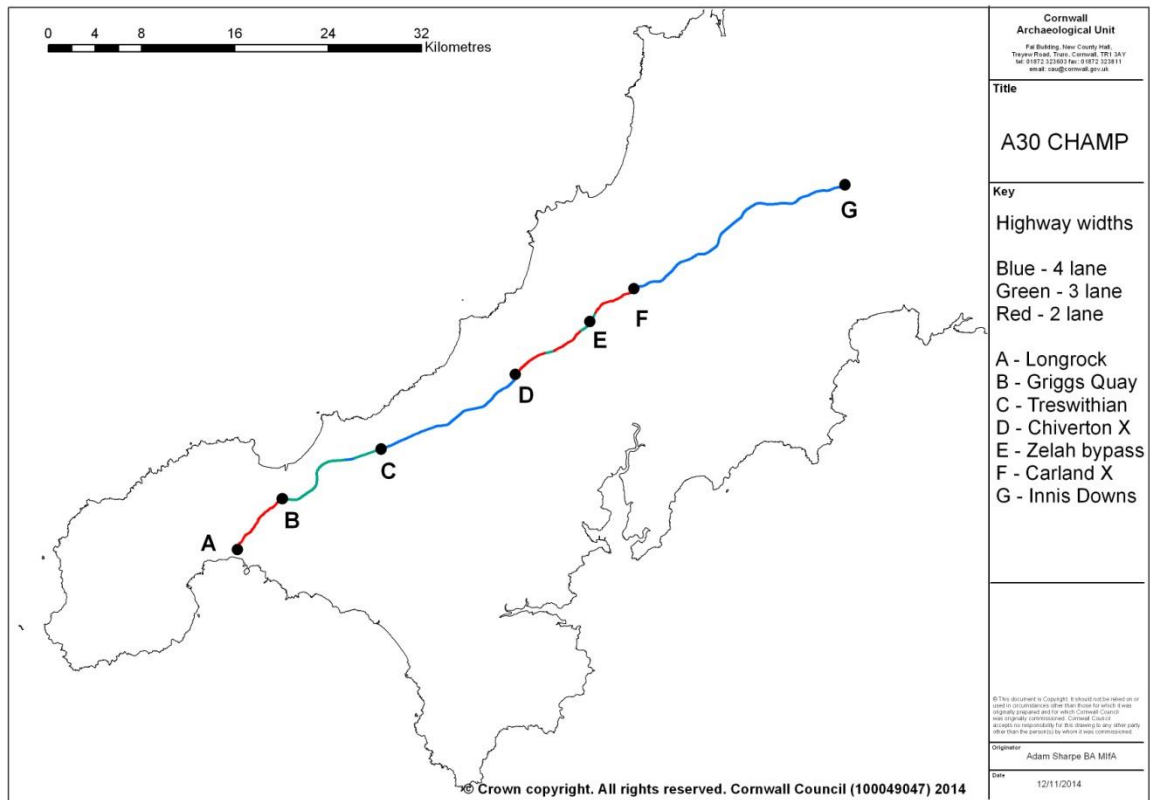


Fig 4. The widths of the A30 between Longrock and Innis Downs. The sections between Longrock and Griggs Quay and between Chiverton Cross and Carland Cross remain un-dualed.



Fig 5. An extract from Badeslade's 1742 map of Cornwall, showing the two principal routes through Cornwall at the time, the northernmost running through Launceston, Padstow, Mitchell and Redruth to Penzance, the southernmost running through Callington, Liskeard, Truro and Helston.



Fig 6. An extract from Kitchin's 1769 map of Cornwall, showing the route from Redruth to Penzance via St. Erth and Ludgvan.

A30 Longrock to Innis Downs CHAMP

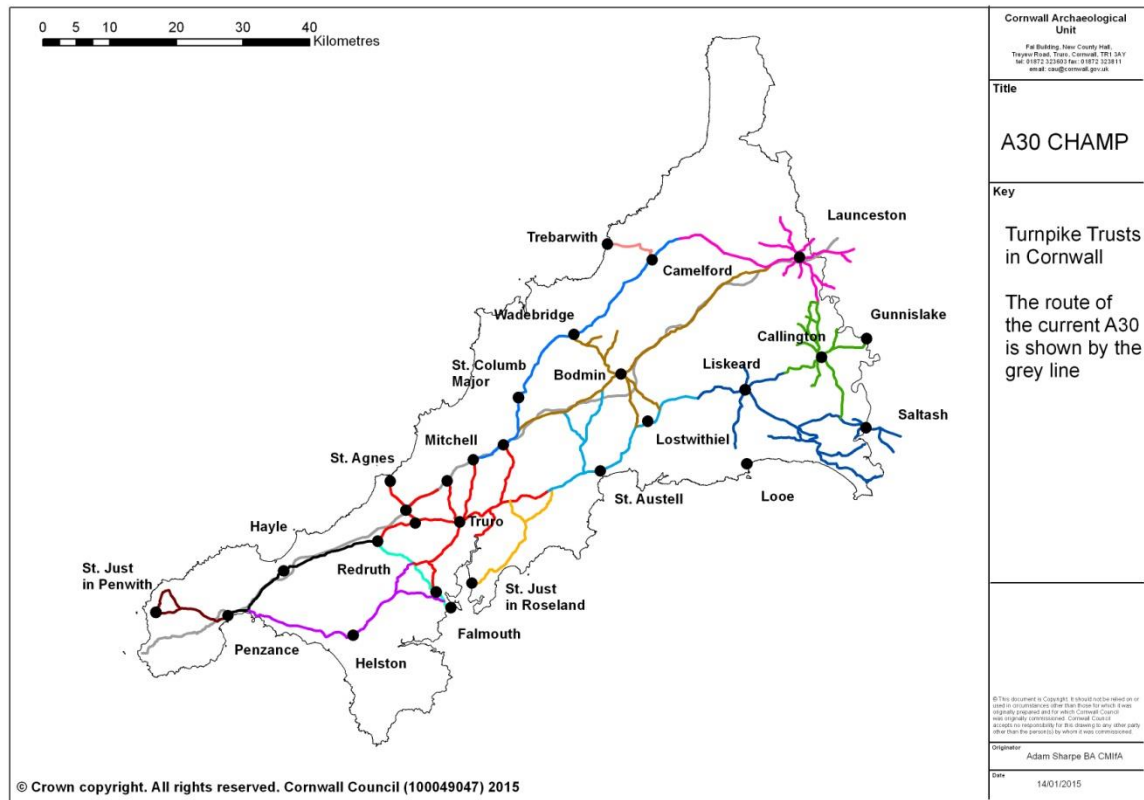


Fig 7. The network of improved roads established by the Cornish Turnpike Trusts. Each turnpike is separately colour coded, the relevant turnpike trusts for the A30 being Black – Hayle, Red – Truro, Brown – Bodmin and Purple – Launceston.



Fig 8. An extract from Bartholomew's early 1930s map of Cornwall – one of the earliest to depict road names – 'A30' is shown just to the left of Redruth.

A30 Longrock to Innis Downs CHAMP



Fig 9. A Cornwall County Council 2005 aerial photograph, showing the Blackwater bypass (top), the Cornish main line railway (centre) and the section of the Truro turnpike utilised by the A30 before its bypassing (bottom).



Fig 10. The Connor Downs bypass (top) and the former turnpike road through Roseworthy (below) as shown on a CCC 2005 aerial photograph.

A30 Longrock to Innis Downs CHAMP

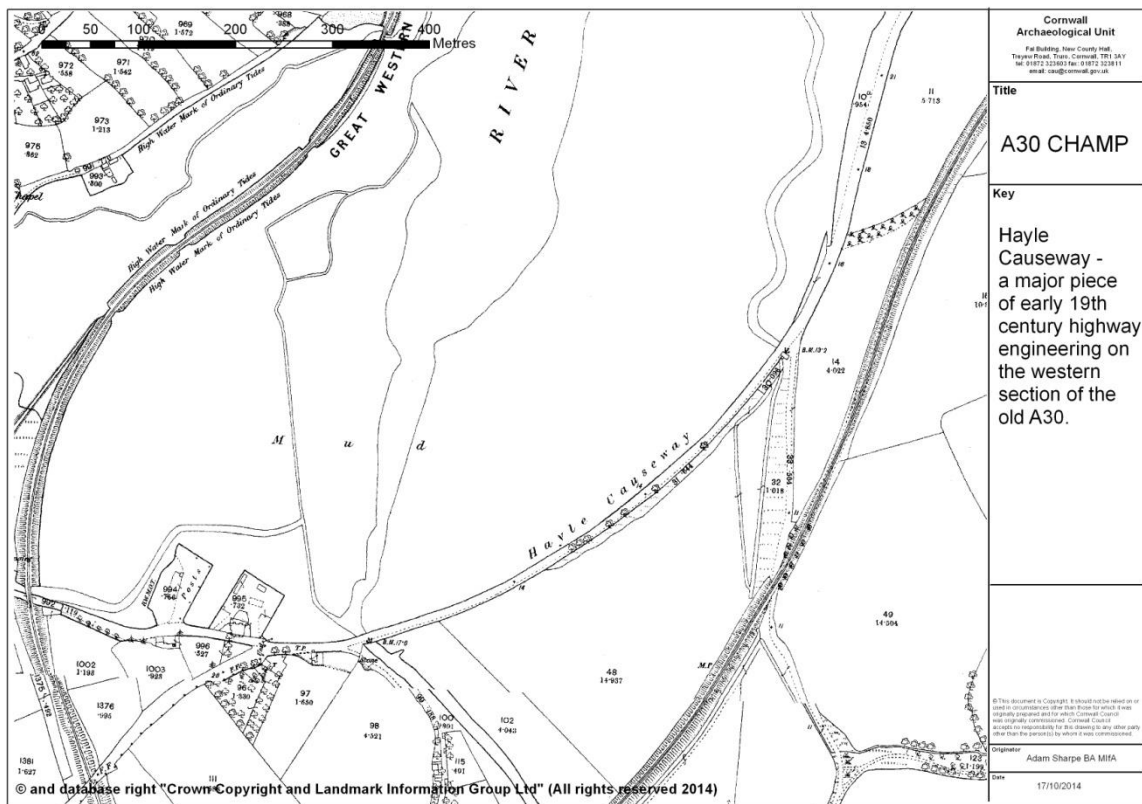


Fig 11. The OS 1877 mapping showing Hayle Causeway, constructed in 1825, and greatly improving the road through western Cornwall.

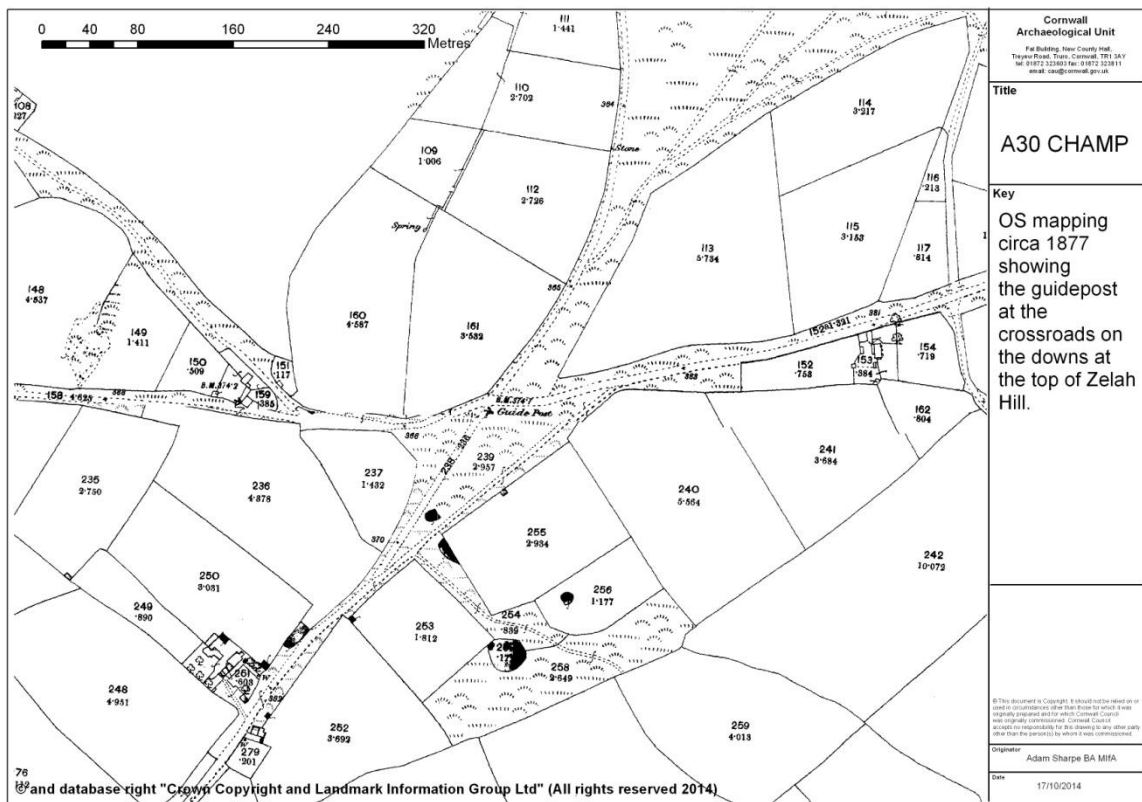


Fig 12. 1877 OS mapping for Boxheater Junction at the top of Zelah Hill, showing the network of roads which converged here, and the guidepost erected for the benefit of travellers.

A30 Longrock to Innis Downs CHAMP

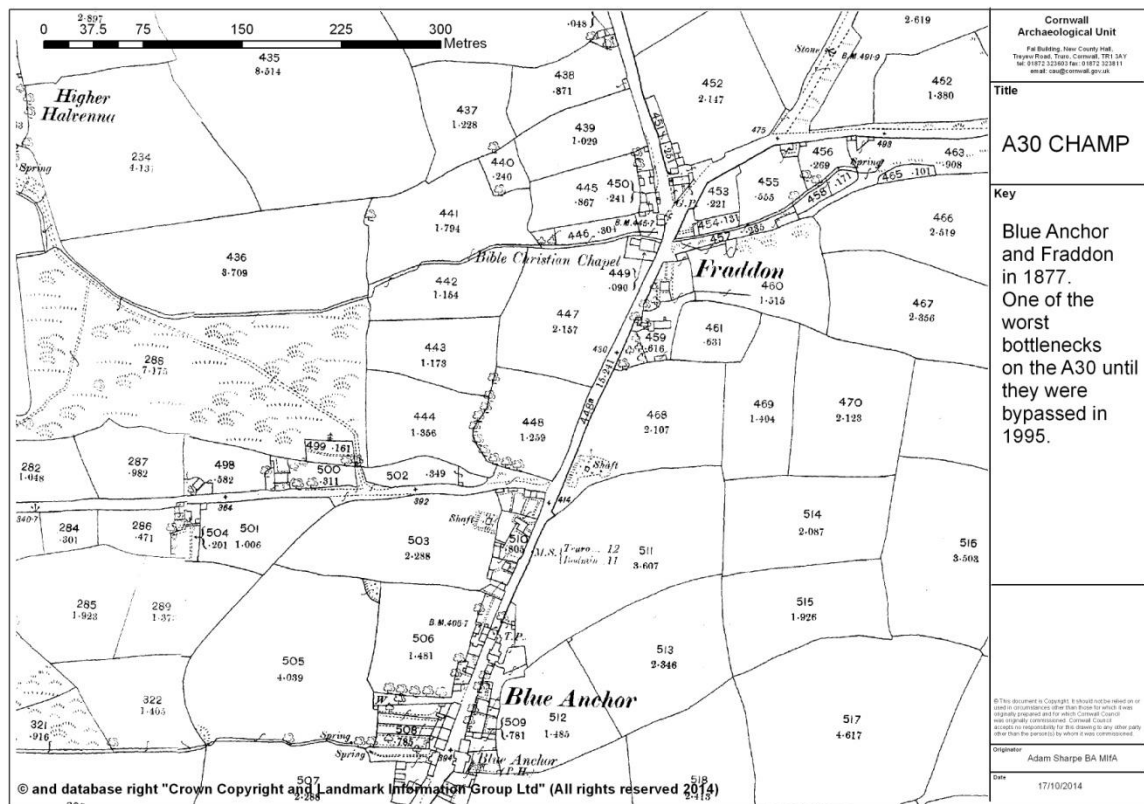


Fig 13. Blue Anchor, site of a coaching inn, and Fraddon at the junction of the roads which were to become the A39 from Bude and the A30 from Launceston. Like Indian Queens to their north, these bottleneck villages are now bypassed.

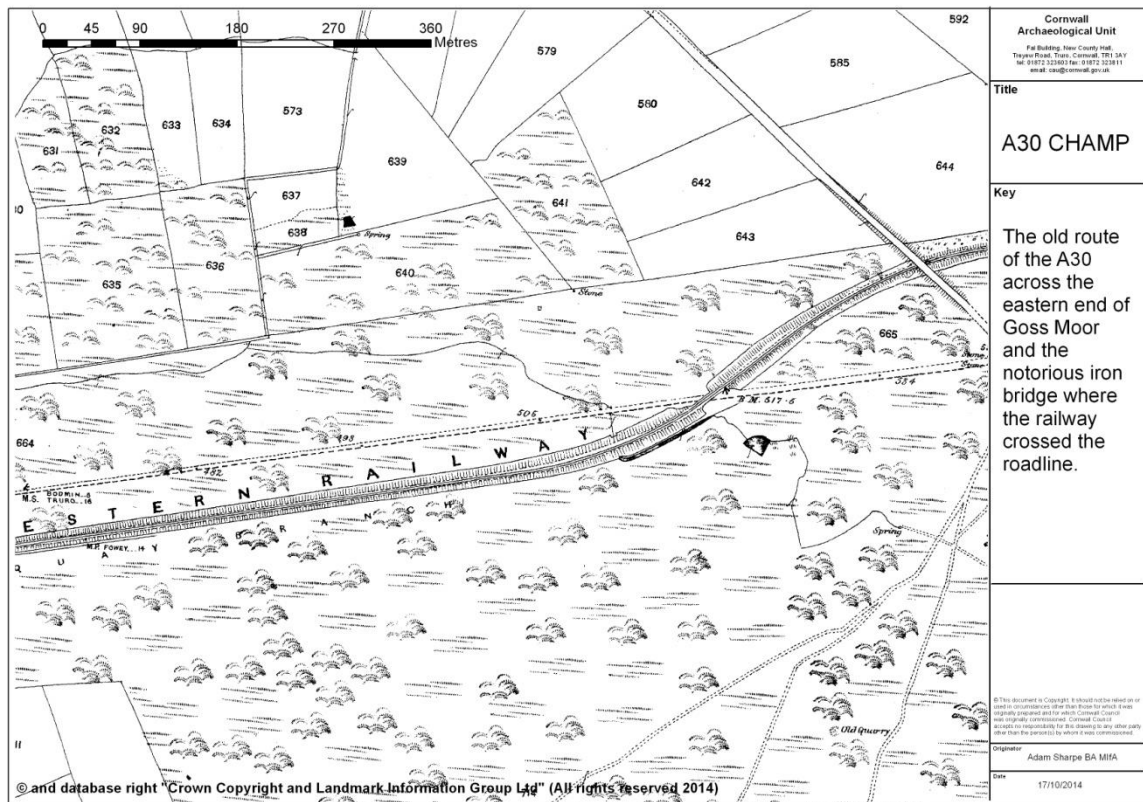


Fig 14. The construction of the road across Goss Moor, like that of the later Newquay branch line, involved considerable civil engineering works.

A30 Longrock to Innis Downs CHAMP

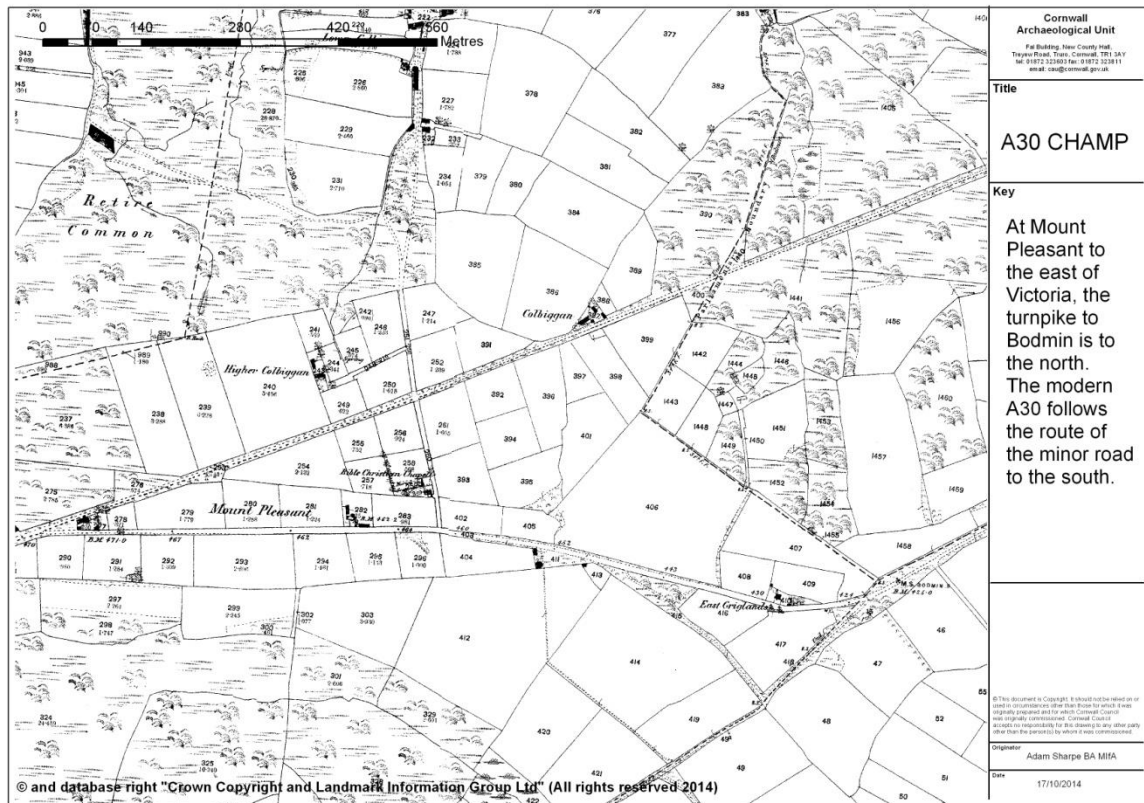


Fig 15. OS 25" to a mile 1877 mapping showing the turnpike from Victoria to Bodmin (top) and the minor road (below) which was followed by the pre-dualling A30 from Victoria to Innis Downs.



Fig 16. As this 1840 Ludgvan Tithe Map extract shows, Newtown roundabout at Longrock overlies part of a now destroyed hamlet.

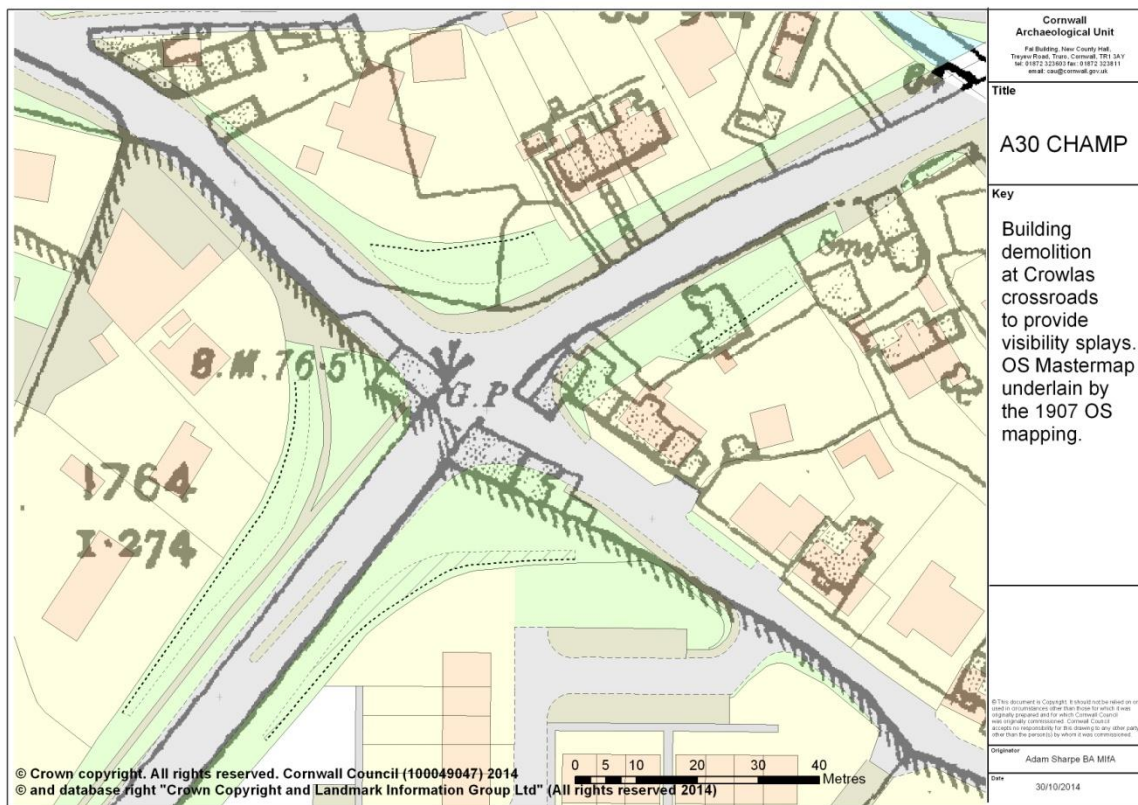


Fig 17. As at a number of other locations along the A30, road widening and the creation of visibility splays during the 20th century has resulted in the demolition of former cottages. The guidepost at this crossroads at Crowlas no longer



Fig 18. The construction of the modern dual carriageway A30 to the north of the western end of Goss Moor, as shown on a 2005 CC aerial photograph.

A30 Longrock to Innis Downs CHAMP

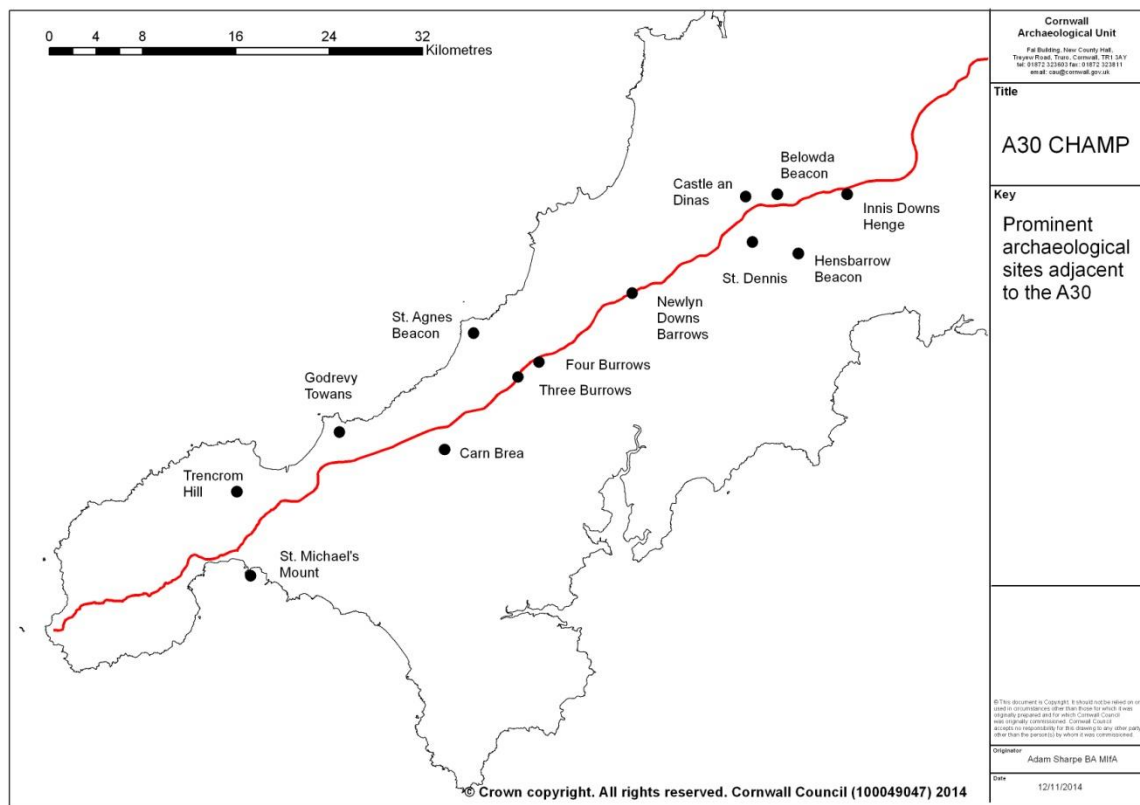


Fig 19. Prominent archaeological sites close to and flanking the route of the modern A30, some of which would have served as waymarks to early travellers through Cornwall.

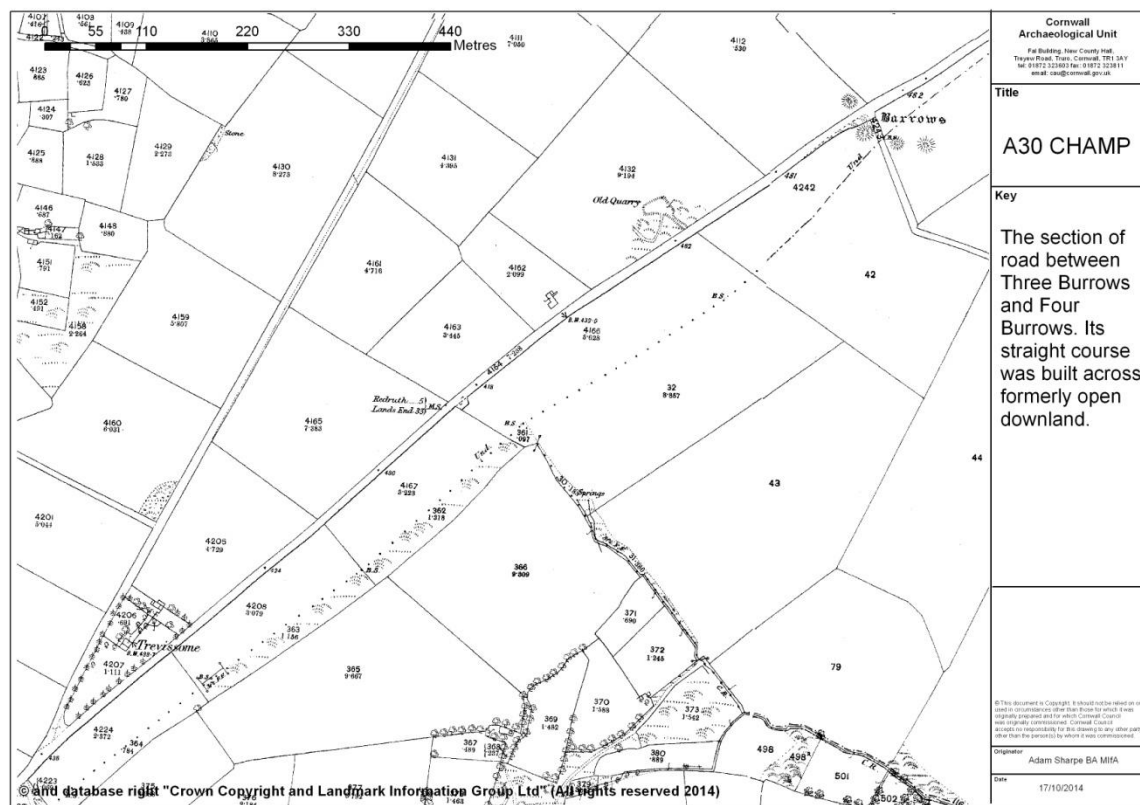


Fig 20. The section of the A30 between Three Burrows (Chiverton Cross) and Four Burrows, showing the barrow group which would have served as a waymark, and which determined the course of this section of the road.



Fig 21. A CAU aerial image of the Iron Age hillfort of Castle-an-Dinas to the north of Goss Moor. This substantial site is a prominent skyline feature from the nearby A30.

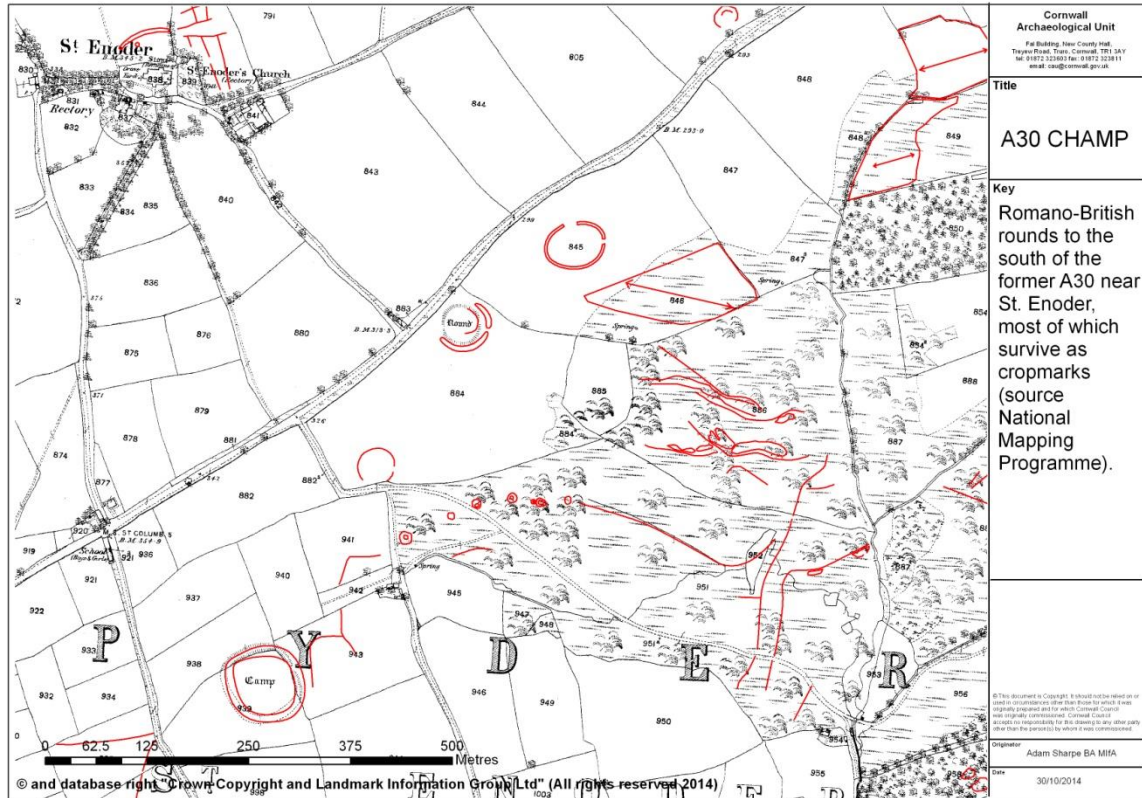


Fig 22. Extant and cropmark Romano-British enclosed farmsteads (rounds) to the south of the A30 near St. Enoder indicating the long-settled nature of this section of the roadline.

A30 Longrock to Innis Downs CHAMP

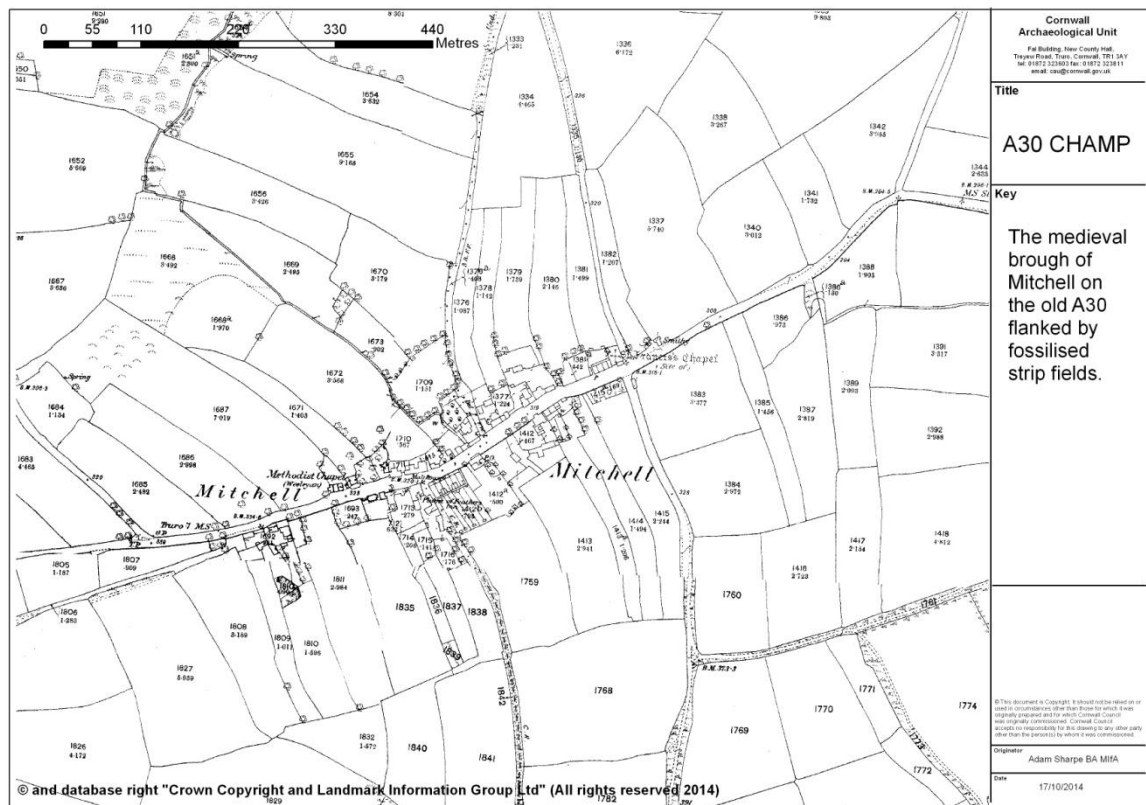


Fig 23. The medieval borough of Mitchell (or St. Michael's) at which, at times, just seven voters sent two MPs to Parliament between 1547 and 1832. Medieval burgage plots and strip fields surround the settlement on both sides.



Fig 24. The fossilised medieval strip fields associated with Tregoss (left) and Belowda (right) to the north of Goss Moor. Note also the routes of the old and new A30 in this CAU aerial view.



Fig 25. The wooded landscape of the late 18th Century Chiverton Park near Zelah. The former route of the A30 can be seen closely following the eastern edge of the park, whilst the modern Zelah bypass runs a short distance away.

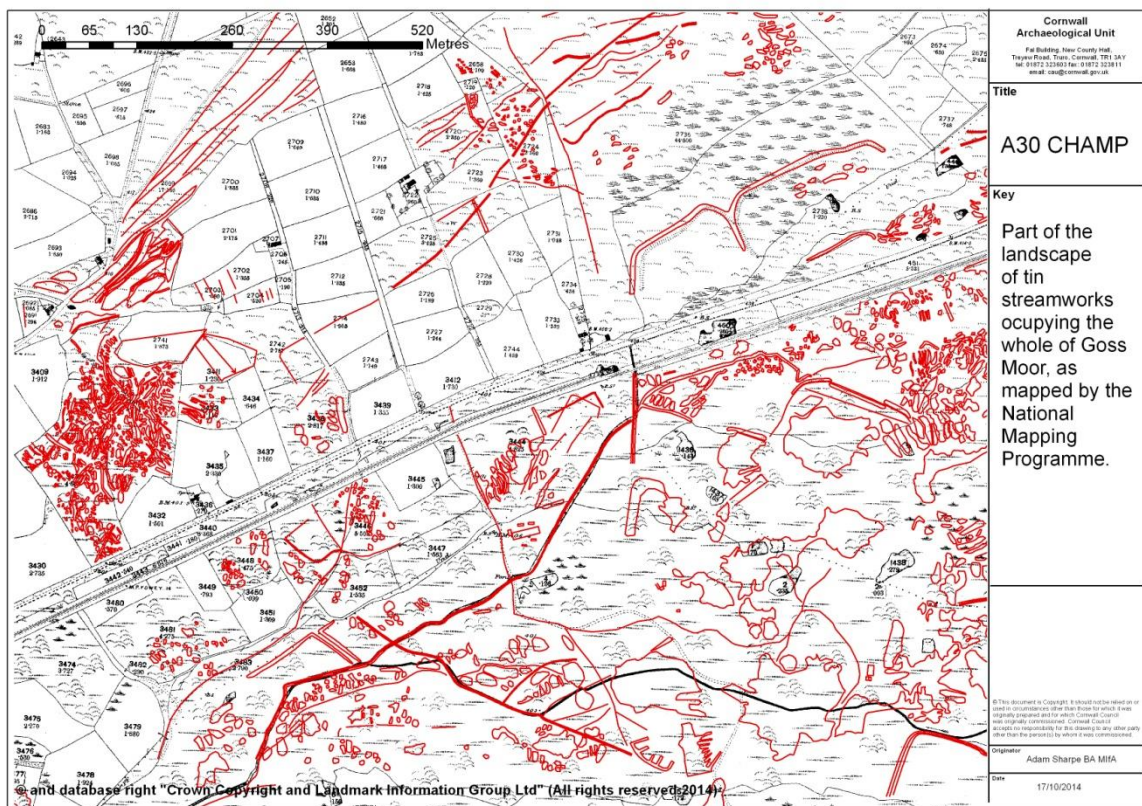


Fig 26. An indication of the complexity of the archaeological features produced by centuries of tin streaming on Goss Moor, the NMP plot being underlain by the 1877 OS 25" mapping for clarity.

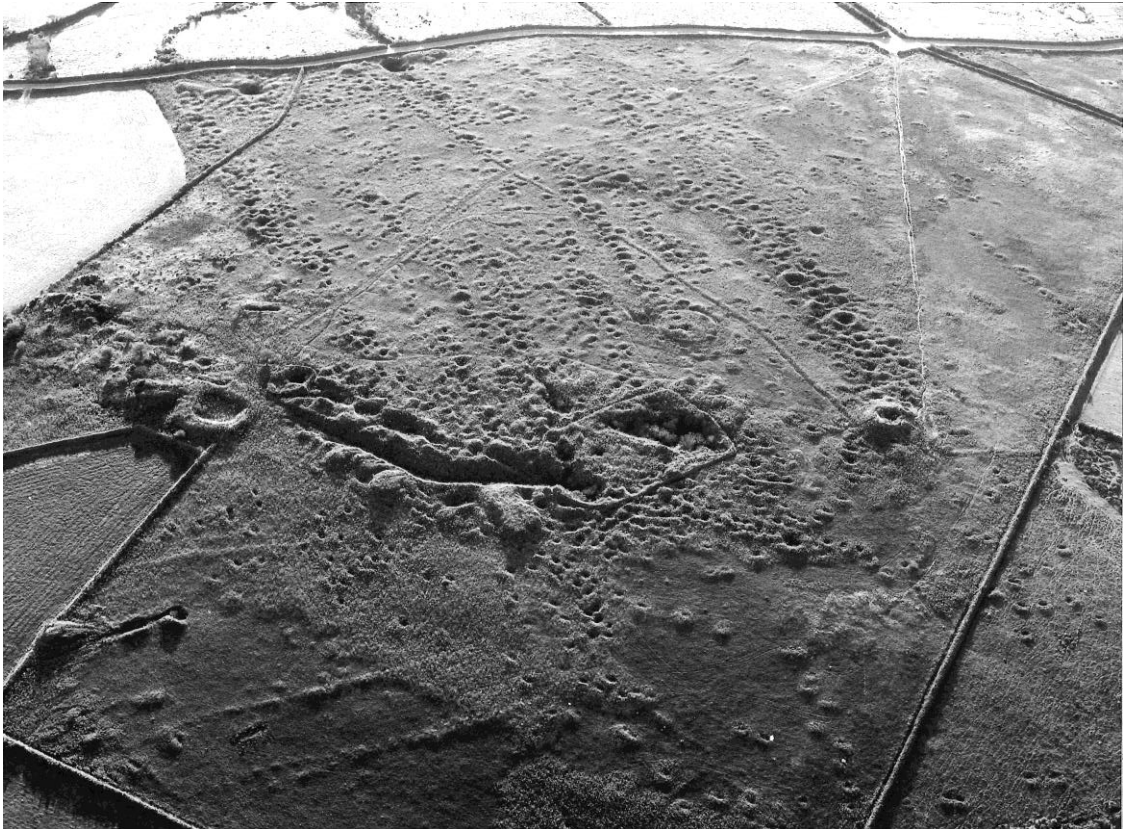


Fig 27. This 1908s CAU aerial image shows the complex archaeology of Belowda Beacon, including two prehistoric barrows, medieval outfields and the thousands of pits and the openworks excavated by early tinnners.



Fig 28. A 1946 RAF aerial image of the landscape between Scorrier and Blackwater, showing runs of 18th and 19th century mineshafts on lodes passing under the A30.



Fig 29. Blackwater Junction, as shown on a 1946 RAF aerial image. As well as the now disused railway junction, this image also shows the patchwork of former miners' smallholdings which characterise this area of the Cornish landscape.

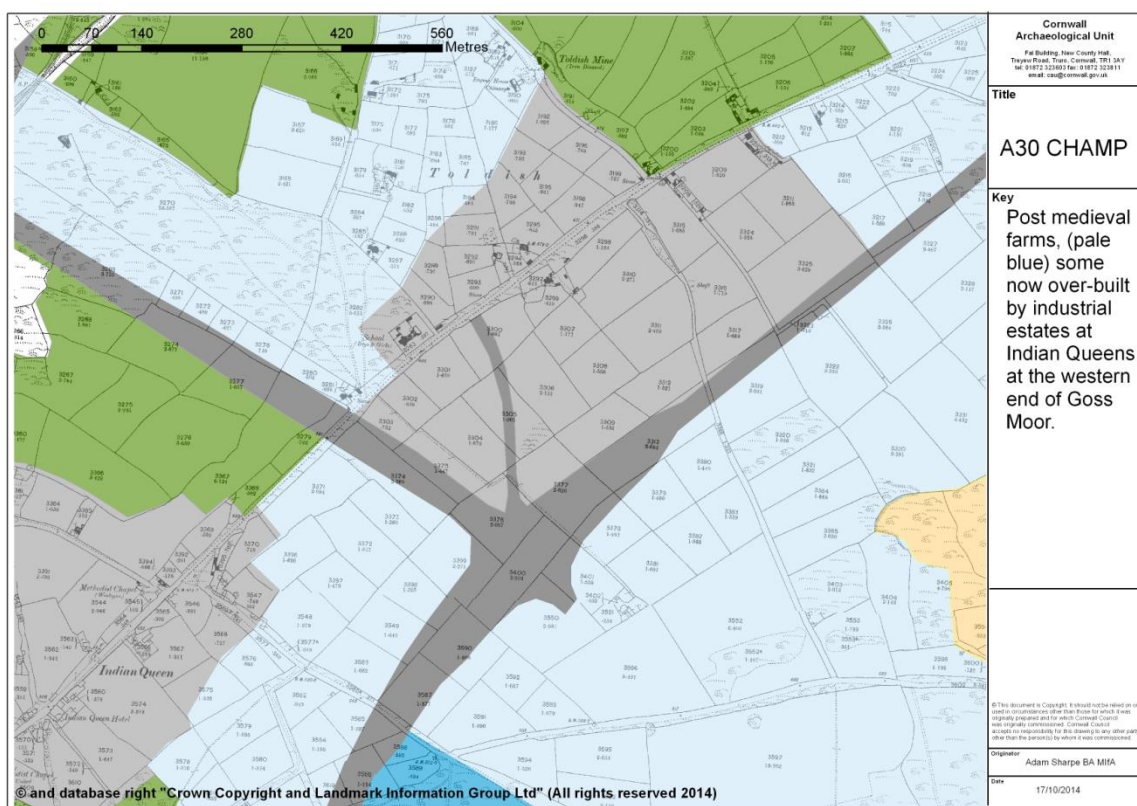


Fig 30. HLC mapping for the area around Highgate Interchange near Indian Queens. This area is characterised by small-scale post-medieval farm intakes from the flanks of the Hensbarrow Moors.

A30 Longrock to Innis Downs CHAMP

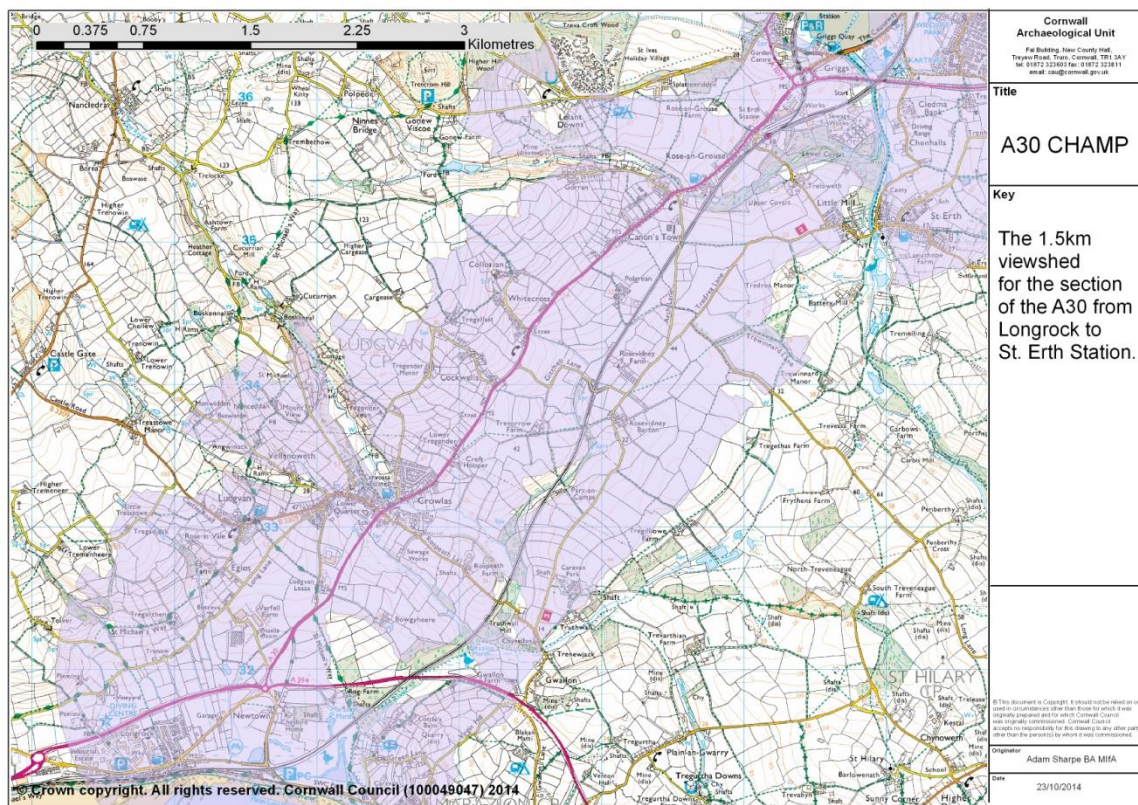


Fig 31. The viewshed for Section 1 of the A30 extends north-west to the West Penwith moors, though to the east is rather more constrained by topography.

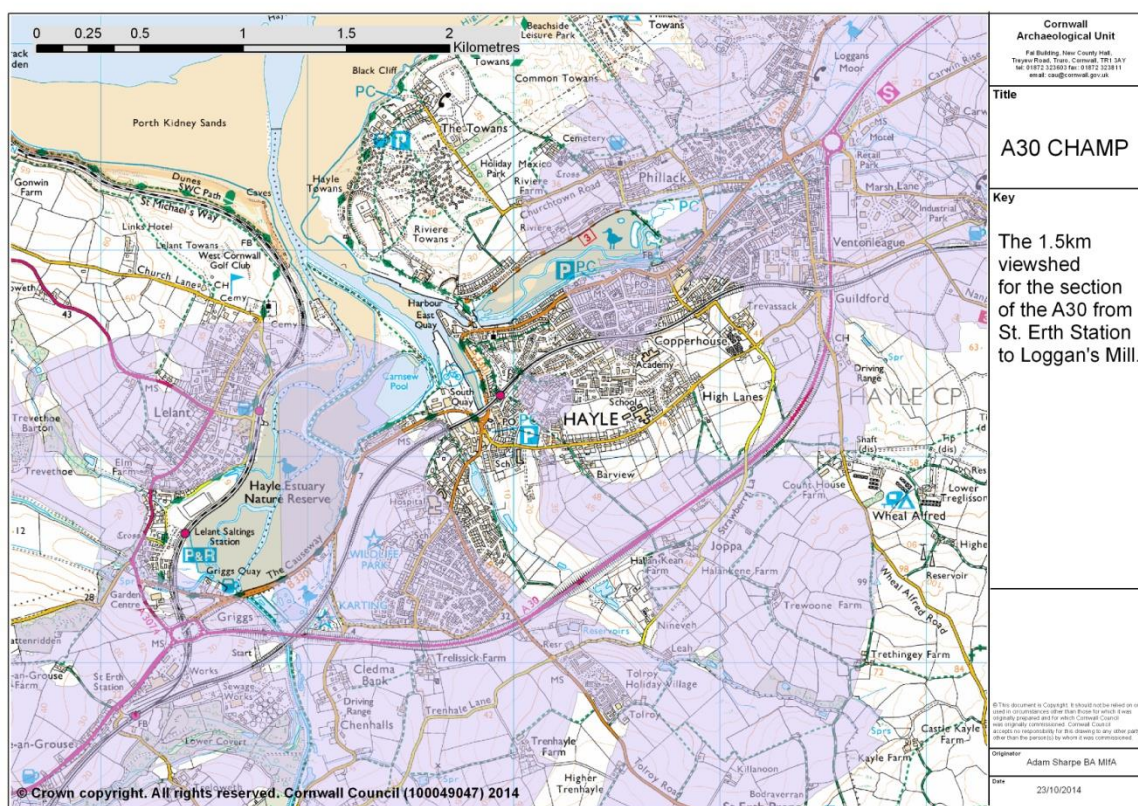


Fig 32. For Section 2 of the A30, the theoretical viewshed extends onto the Towans to the north of Hayle and near Lelant. In practice, as most of this section of the road is in cuttings, landscape visibility from the road is quite constrained.

A30 Longrock to Innis Downs CHAMP

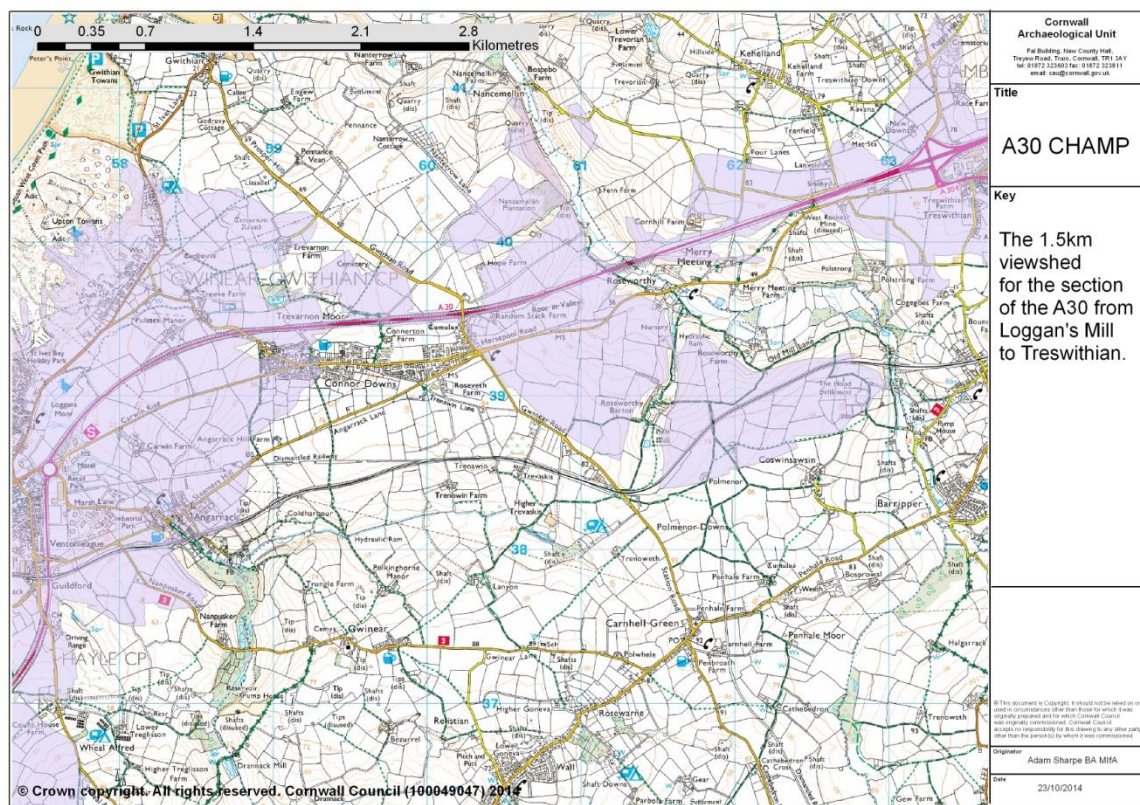


Fig 33. Within the central section of Section 3 of the A30, the viewshed is substantially constrained by the flanking high ground of Connor Downs and the cuttings through which the road runs.

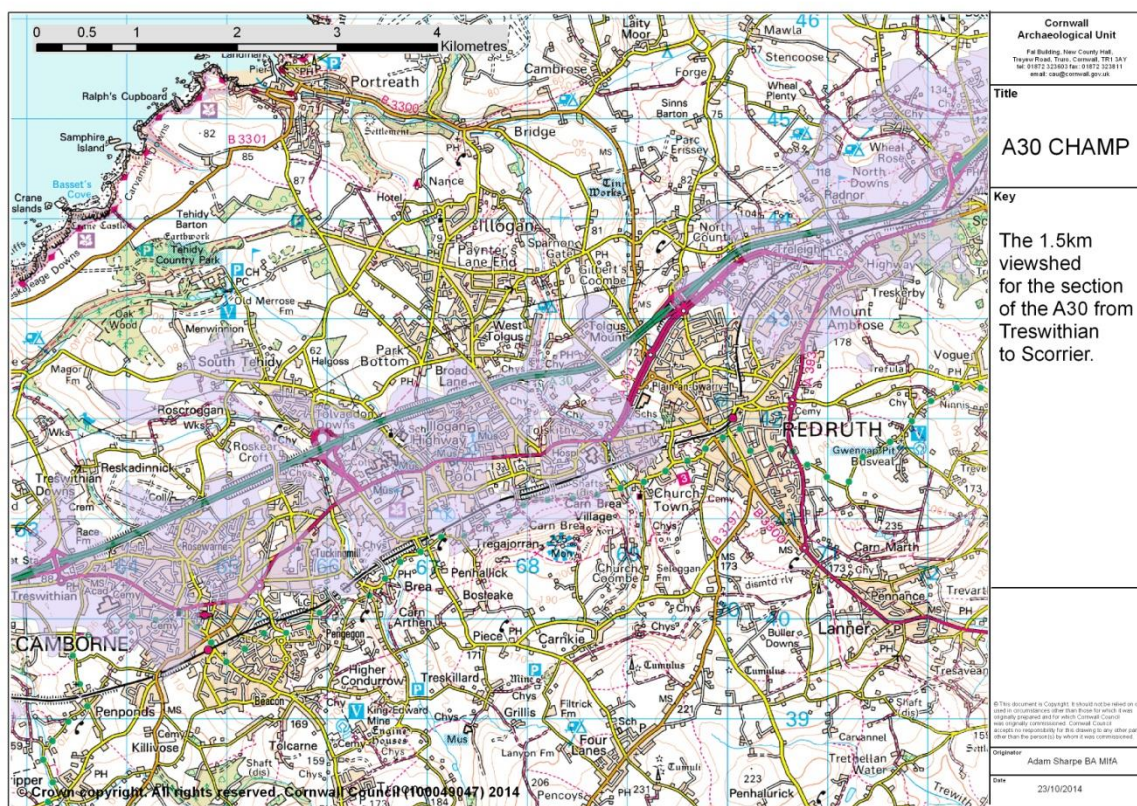


Fig 34. The viewshed of Section 4 of the A30 is constrained by the urban conurbation of Camborne Pool Redruth, the level landscape through which the road runs, and the extensive cuttings on this section of the route.

A30 Looe to Innis Downs CHAMP

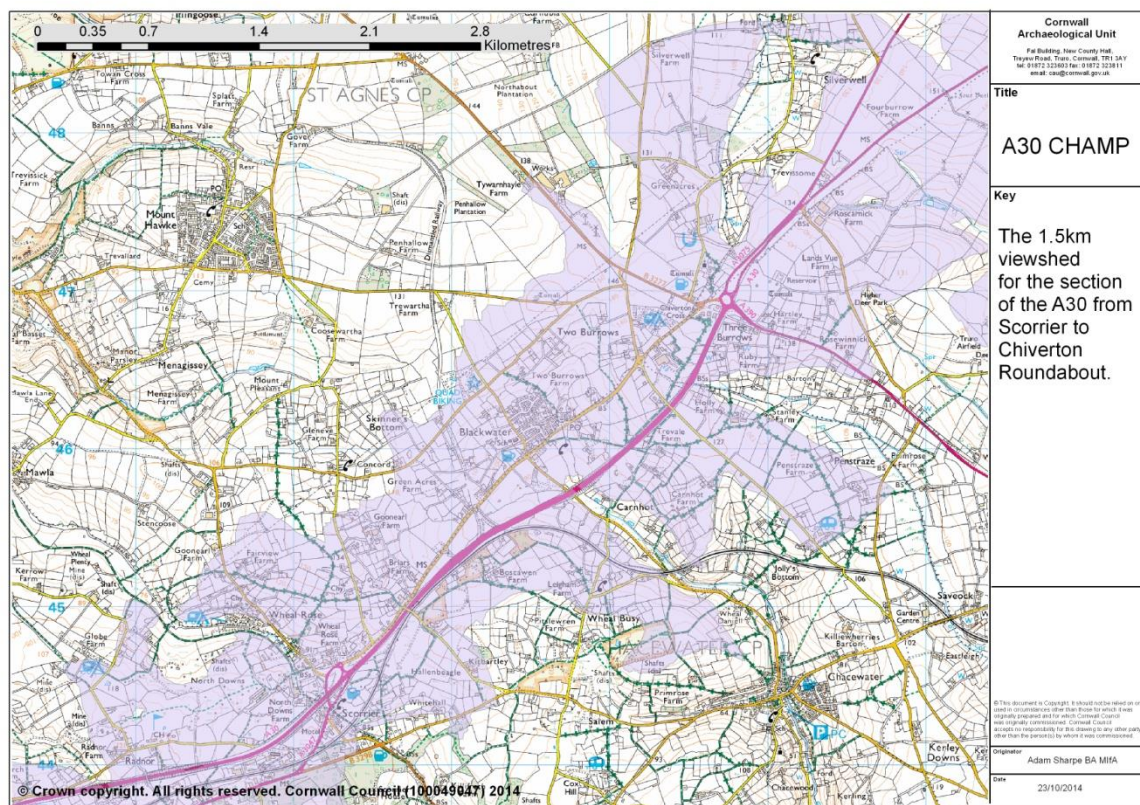


Fig 35. The viewshed of Section 5 of the A30 is quite extensive at its eastern end as the road rises up onto the higher ground at Chiverton roundabout.

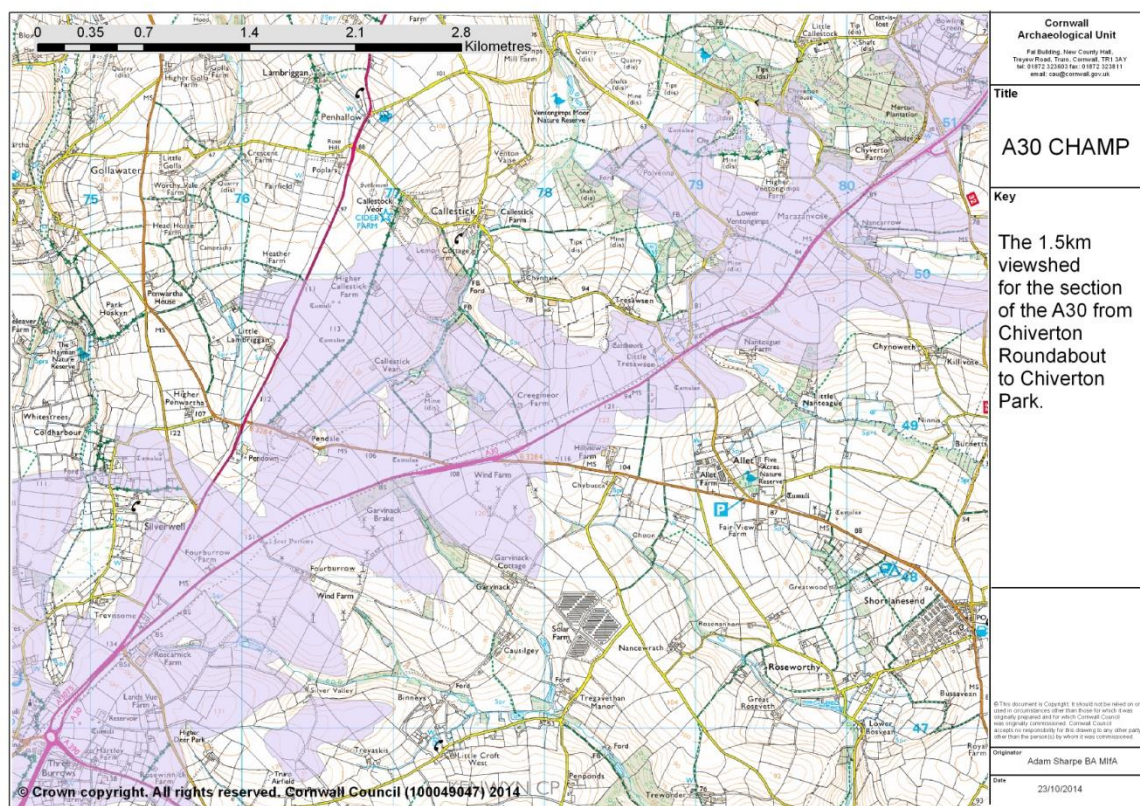


Fig 36. The viewshed for the western part of Section 6 of the A30 is considerably more extensive than the 1.5km extent shown here by virtue of the elevated landscape through which the road runs.

A30 Longrock to Innis Downs CHAMP

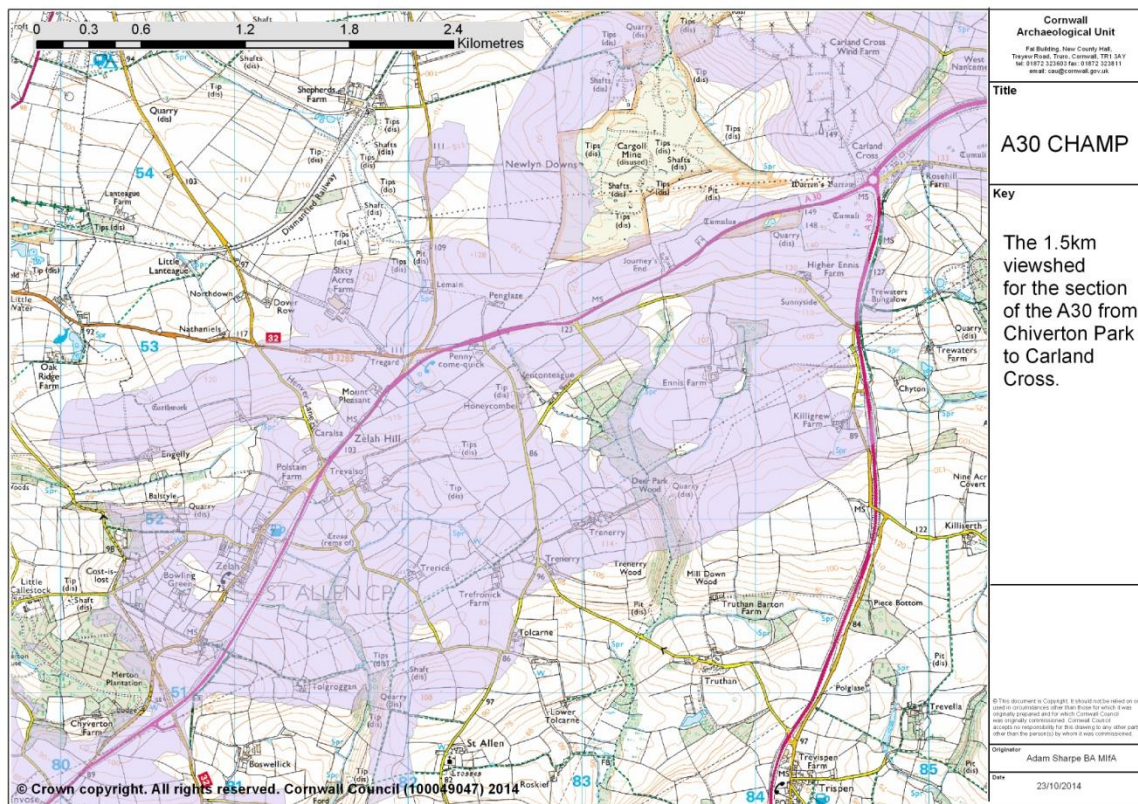


Fig 37. In the eastern part of Section 6 of the A30, views are often extensive, particularly to the north, where some include the north coast at Newquay and the Hensbarrow Moors to the east.

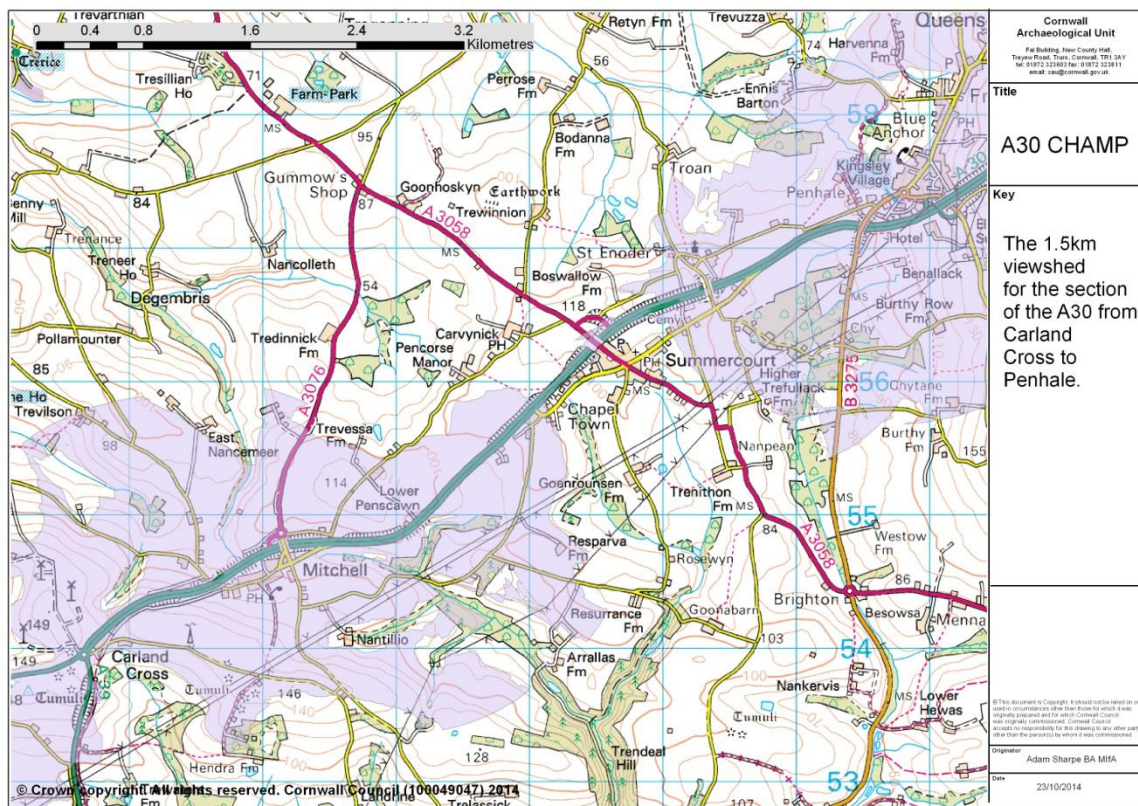


Fig 38. Within Section 7 of the A30, the views from the road can be relatively constrained by the adjacent undulating landscape, though open out to the east of Summercourt.

A30 Looe to Innis Downs CHAMP

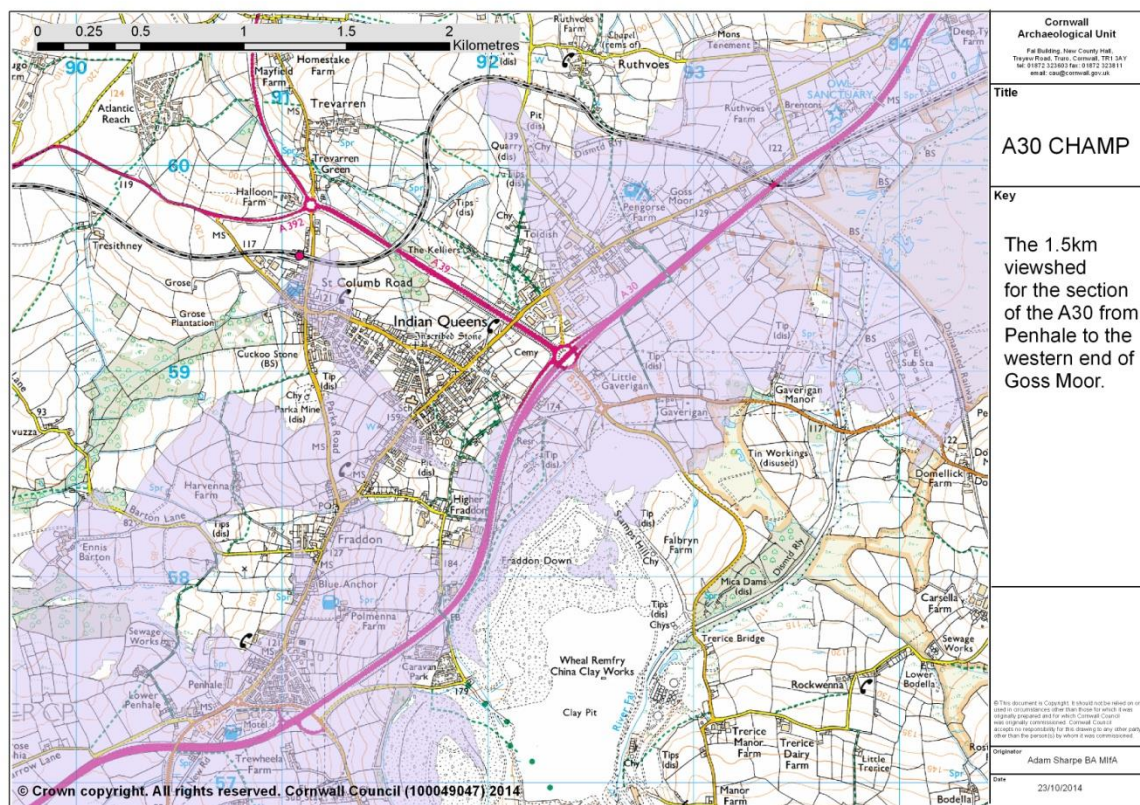


Fig 39. Within Section 8 of the A30, views to the east of the road are closed off by the Hensbarrow Moors, though from the north-east of Highgate Interchange the views open out substantially.

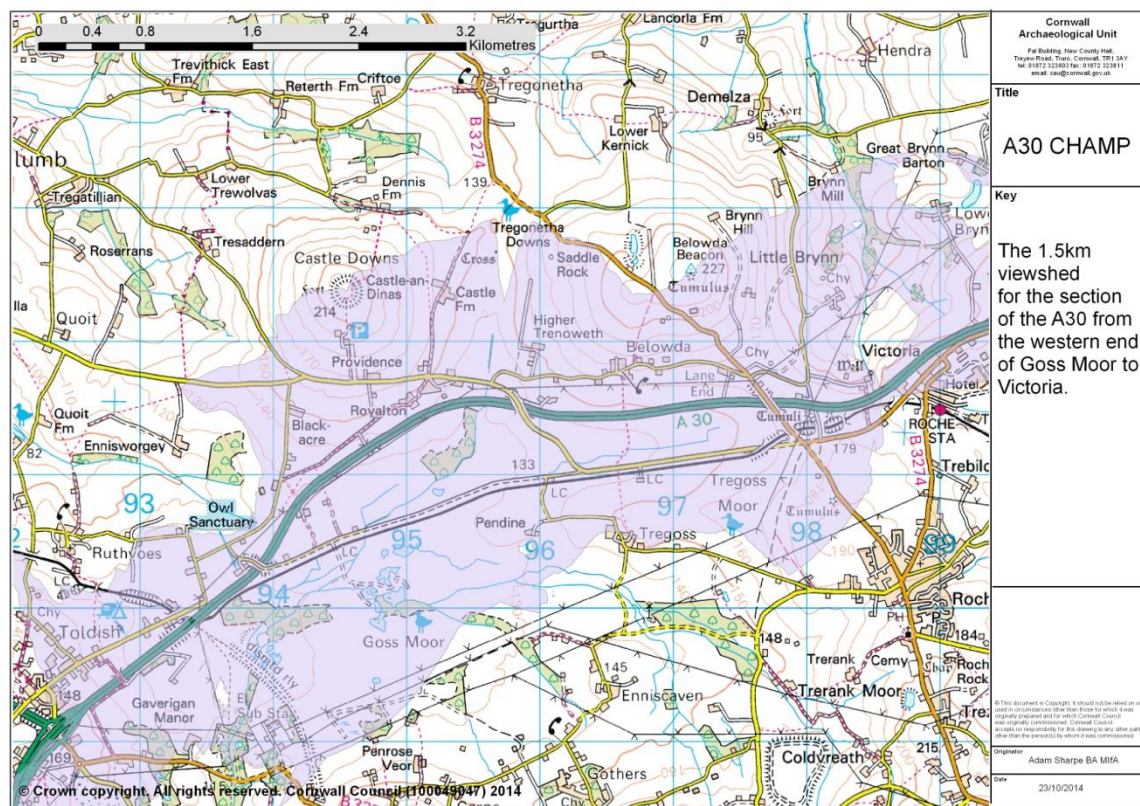


Fig 40. Section 9 of the A30 runs across Goss Moor, providing a viewshed which extends to the Hensbarrow Moors over 1.5km to the south; to the north of the road, the viewshed extends up to Castle-an-Dinas and Belowda Beacon.

A30 Longrock to Innis Downs CHAMP

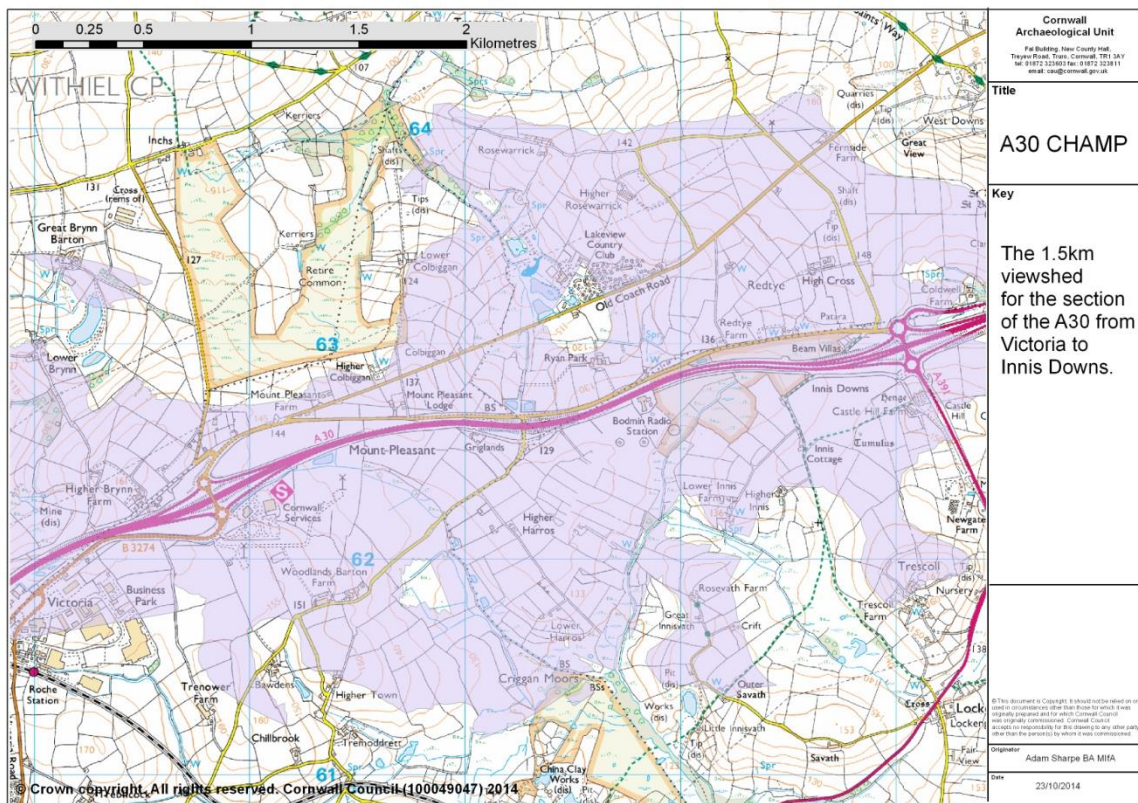


Fig 41. The viewshed for Section 10 of the A30 is far more extensive than is indicated in this mapping, extending northwards to the high ridge of St. Breock Downs 8km away.



Fig 42. Four coaching inns on former turnpikes. From top left: The Turnpike Inn at Connor Downs, The Hawkin's Arms at Zelah, The Blue Anchor and The Victoria Inn.

A30 Longrock to Innis Downs CHAMP



Fig 43. Bypassed sections of the former A30. From top left: Hayle Causeway, Penpoll (Hayle), Camborne, Redruth (West End), Fraddon, Indian Queens, the A30 across Goss Moor, the Black Bridge at Tregoss. The former constraints imposed on traffic within the now by-passed settlements are clearly apparent.

A30 Longrock to Innis Downs CHAMP



Fig 44. Views of sections of the A30. From top left: the western entrance to Crowlas, Guildford Viaduct on the Hayle bypass, Loggan's Mill roundabout, Roseworthy dip looking east, looking from Connor Downs towards Carn Brea, the view from Carn Brea over Pool, 'Three Stacks' viaduct near Pool.

A30 Longrock to Innis Downs CHAMP



Fig 45. Views of sections of the A30. From top left: Scorrier woods and Carn Brea viewed over the A30 at Scorrier, the Blackwater bypass, commercial traffic at Four Burrows, a former filling station near Zelah, Newlyn Downs from near Four Burrows, looking west at Boxheater Junction, approaching Carland Cross with the Hensbarrow Moors in the distance, traffic at Carland Cross.

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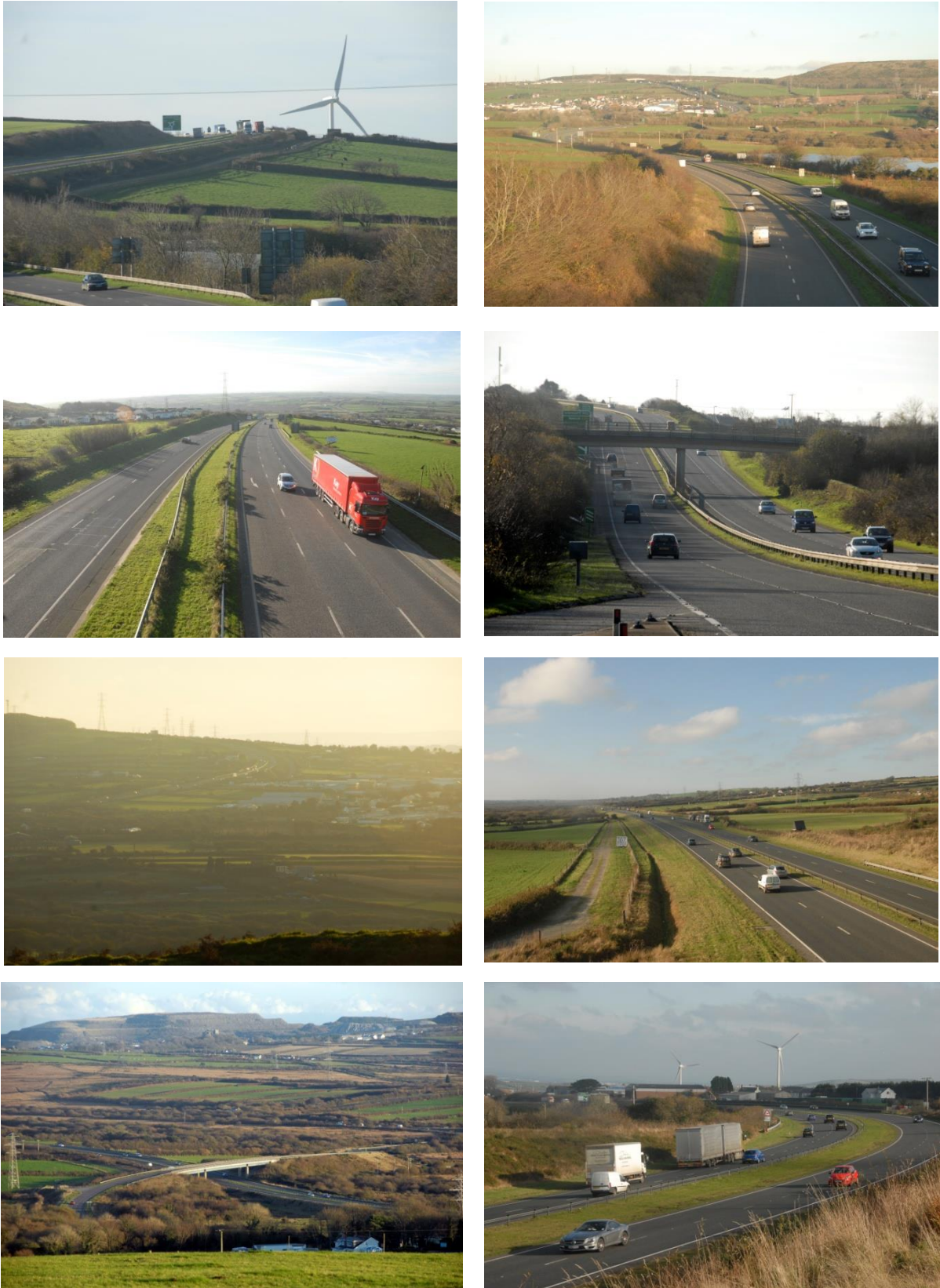


Fig 46. Views of sections of the A30. From top left: Looking west to the summit of Mitchell Hill (Carland Cross), the view east from Summercourt towards Penhale, Looking west on the Indian Queens bypass, the eastern end of the Indian Queens bypass, the Indian Queens bypass from Castle-an-Dinas, the dual carriageway through the medieval Belowda fieldscape, the Newquay road flyover on Goss Moor, approaching the Victoria business park and service station.



Fig 47. Road viaducts. Left – at Blowinghouse near Redruth; Right – at the western end of the Hayle Bypass over the River Hayle and the main line railway.



Fig 48. The road in the landscape. The Blowinghouse viaduct near Redruth with St. Agnes Beacon in the background.

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Fig 49. Archaeological sites beside the A30. From top left: St. Michael's Mount, the old clapper bridge at Crowlas, the Star Inn at Crowlas, Canonstown Smithy, The Lamb and Flag tin smelting works at Rose an Grouse, a K6 telephone box at Cockwells, St. Erth Station.



Fig 50. Archaeological sites near the A30. From top left: Cockwells Methodist chapel, the folly castle on Chapel Carn Brea, Wheal Peevor, Reade's pumping engine house at Hallenbeagle near Scorrier, the Four Burrows barrow group, the Four Burrow barrows skylining from the east, St. Enoder Church, St. Dennis hillfort and church to the south of Goss Moor.

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Fig 51. Archaeological sites near the A30. From top left: Castle-an-Dinas from Belowda Beacon, the Goss Moor tin streamworks from St. Dennis, a flooded tinwork on Goss Moor, the Goss Moor level crossing, the now-closed Bodmin Radio Station, Beam Villas at Innis Downs, a converted railway carriage at Innis Downs, the Innis Downs henge monument.



Fig 52. The recently constructed Four Burrows solar farm, one of six which currently exist within a short distance of the A30. The Four Burrows barrow group can be seen on the skyline.



Fig 53. Part of the recently-repowered Carland Cross wind farm, a short distance to the north of the A30, and very prominent in views from it.

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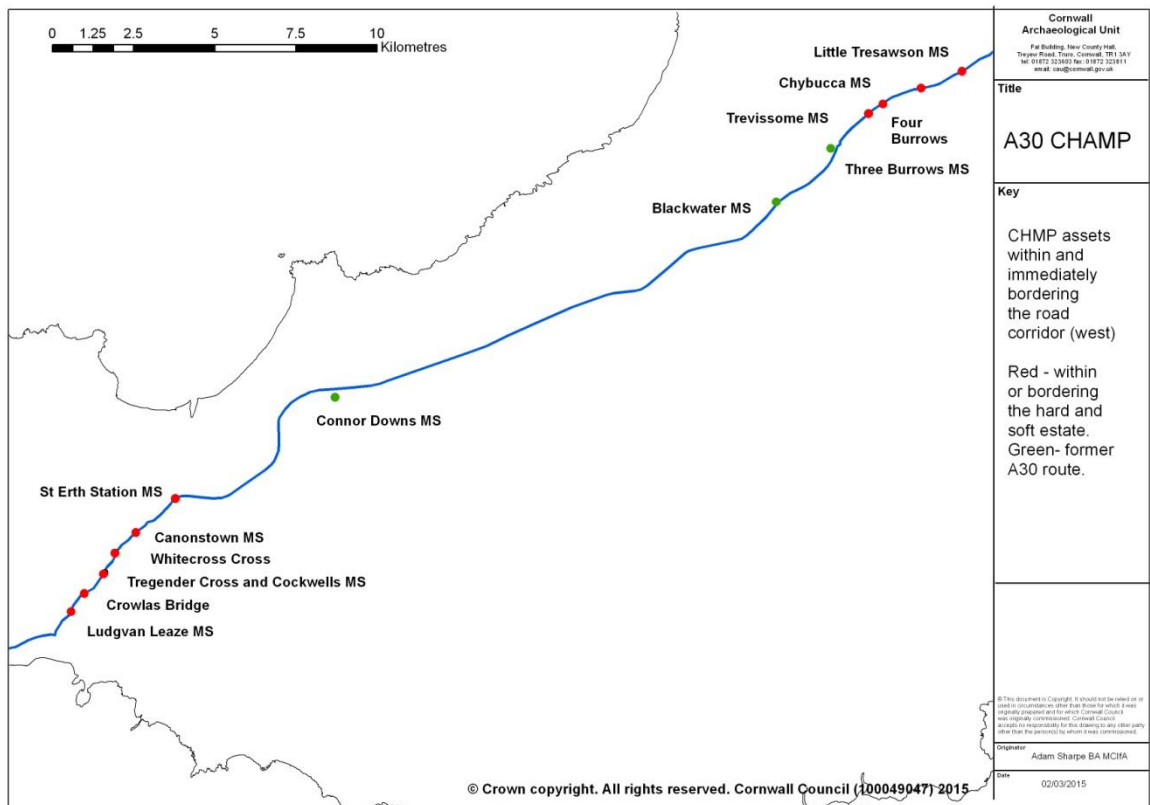


Fig 54. CHAMP assets within the hard and soft estates and immediately bordering the roadline in the section of the A30 from Longrock to Little Tresawson – see Chapter 12.

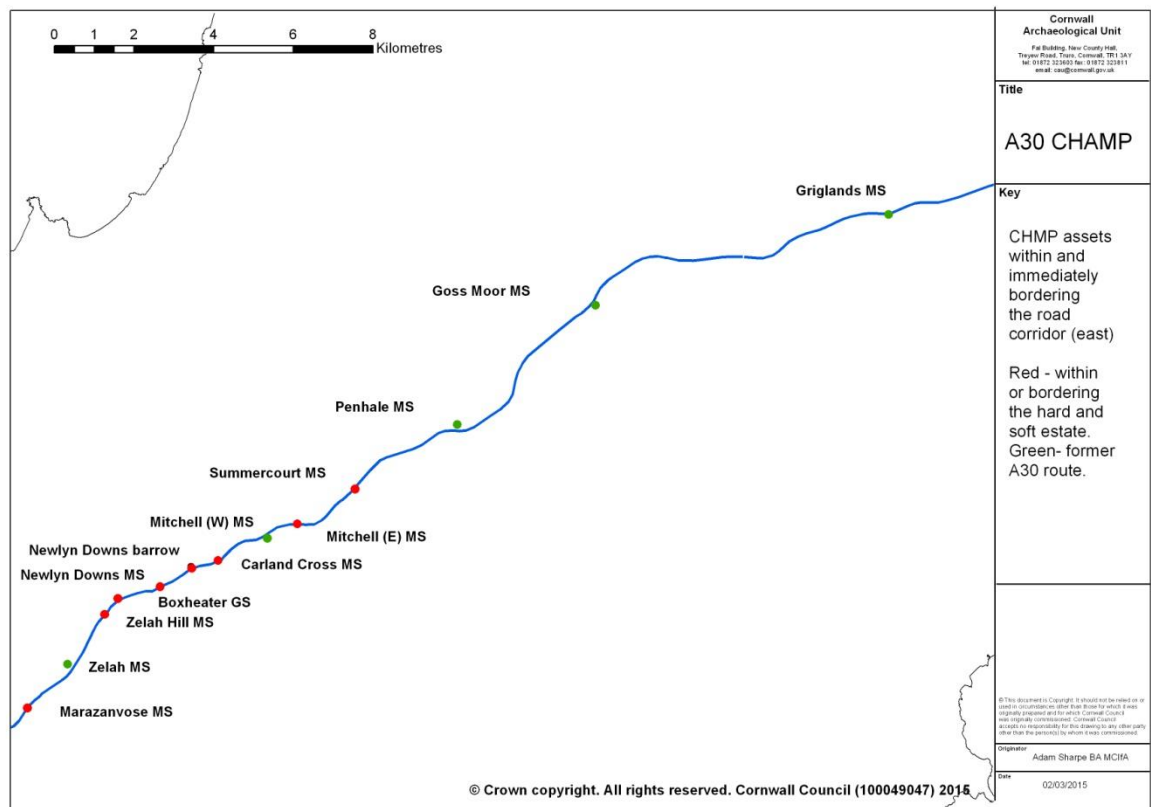


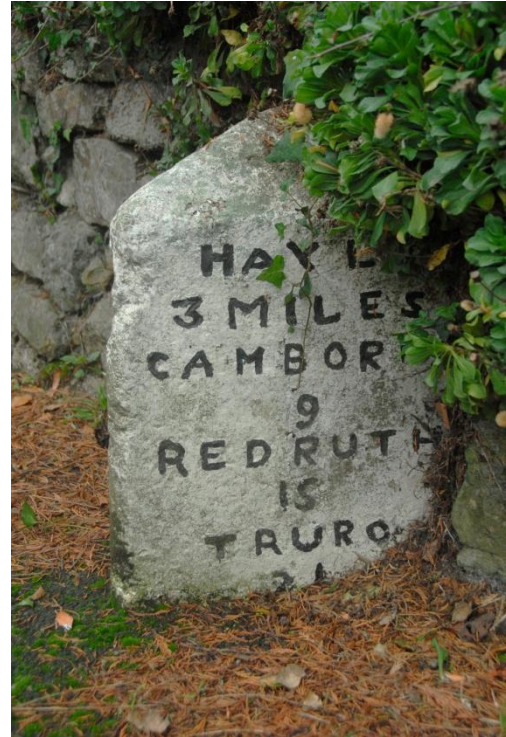
Fig 55. CHAMP assets within the hard and soft estates and immediately bordering the roadline in the section of the A30 from Marazanvose to Innis Downs – see Chapter 12.



Fig 56. Site 2. The central section of the under-bridge at Crowlas retains its original twin arched stone structure, though the flanking modern sections are of concrete.



Figs 57 and 58. Sites 1 and 3. Ludgvan Leaze turnpike milestone, showing signs of impact damage. Tregender medieval wayside cross, somewhat engulfed in vegetation.



Figs 59 and 60. Sites 4 and 6. Cockwells and Canonstown turnpike milestones. Both show signs of impact damage, whilst the example at Canonstown has become part-buried in the tarmac pavement.



Fig 61. Site 5. Whitecross Scheduled medieval wayside cross, somewhat overshadowed by the surrounding mature vegetation.



Figs 62 and 63. The turnpike milestones at St. Erth Station (Site 7) and that on the now-bypassed section of the road at Connor Downs. The repainting of the lettering on the second example is clearly evident.



Fig 64. The turnpike milestone on the now-bypassed road through Blackwater. The cast iron information plates on this milestone are missing, and appear to have been stolen.



Figs 65 and 66. The turnpike milestones on the Blackwater road at Three Burrows and the example at Trevisson to the west of Four Burrows (Site 8), which seems to have been re-cut but not recently re-painted, and is therefore blank.



Figs 67 and 68. Sites 10 and 12. The turnpike milestones at Chybucca and Marazanvose. The latter milestone shows clear signs of re-cutting and turning from its original orientation – the near face originally showed the distance to Redruth.



Figs 69 and 70. The turnpike milestones on the bypassed section of the A30 at Zelah and the guide stone at Boxheater Junction (Site 14). The former has been extensively remodelled, whilst the lettering on the four sides of the guide stone has not been painted in many years, and is now completely illegible.



Figs 71 and 72. Sites 15 and 16. The turnpike milestones on Newlyn Downs and at Carland Cross, both of which have evidently been remodelled. The Carland Cross milestone was re-set when the junction was recently improved and is currently unstable.



Figs 73 and 74. Sites 17 and 18. Turnpike milestones on the old road through Mitchell (left) and repositioned on the verge of the A30 at its eastern end.



Fig 75. A partly-buried turnpike milestone next to the bypassed section of the A39 through Higher Fraddon.



Fig 76. Site 20. The 'Bodmin 10' turnpike milestone, re-erected just off the A30 on Goss Moor together with a commemorative granite plaque to celebrate the completion of the construction of the Goss Moor to Innis Downs section of the A30.

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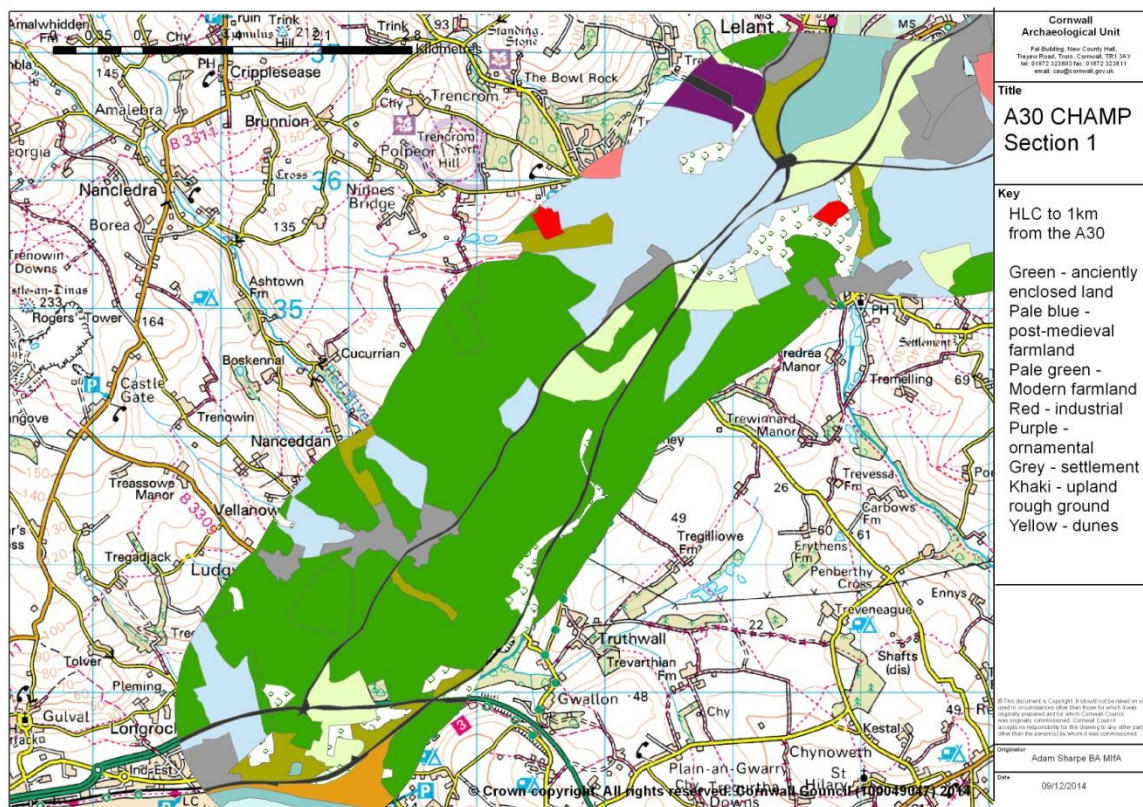


Fig 77. HLC Section 1 from Longrock to Grigg's Quay. The preponderance of dark green indicates the long-settled nature of this section of landscape.

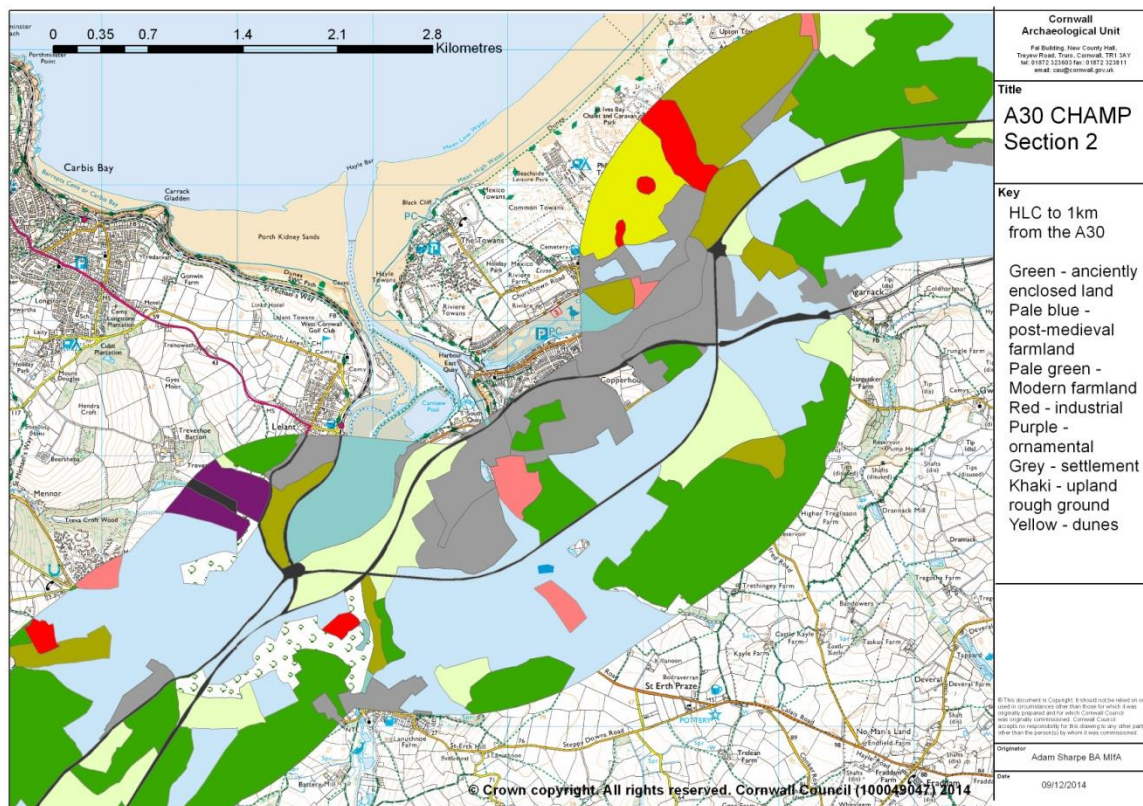


Fig 78. HLC Section 2 from Grigg's Quay to Loggan's Mill. The road passes through an area of former downland enclosed during the post-medieval period.

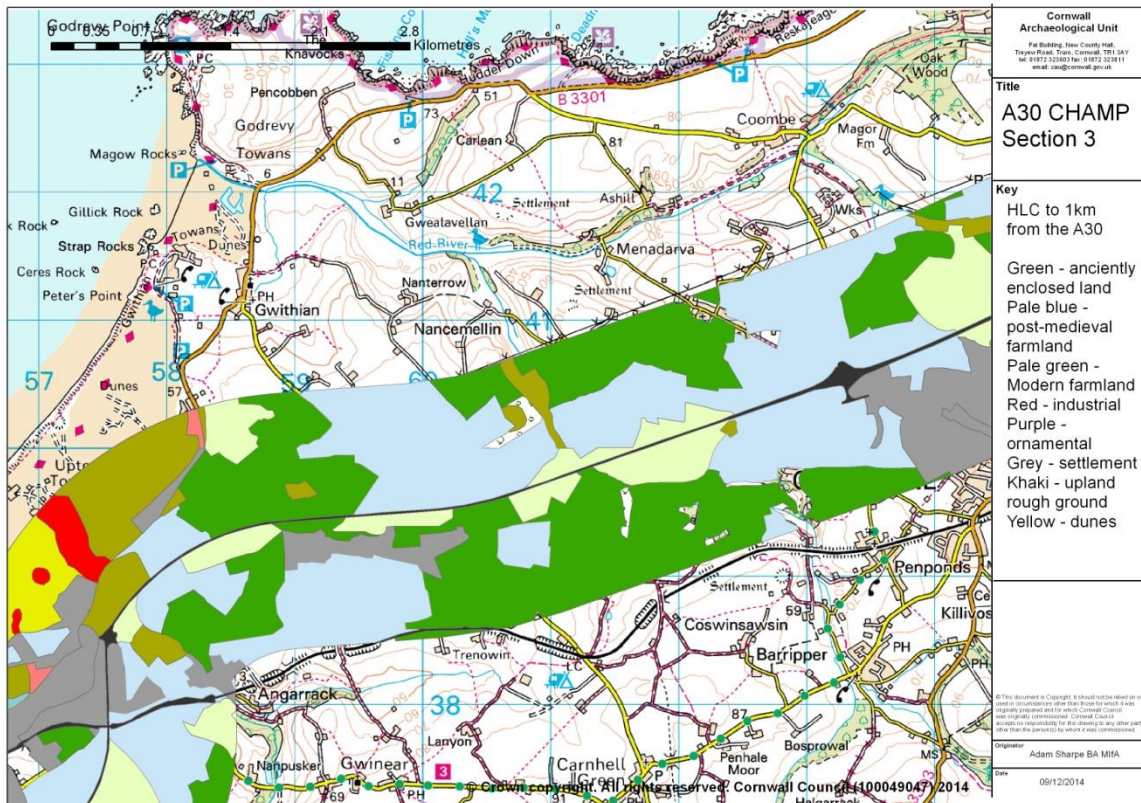


Fig 79. HLC Section 3 – the Connor Downs bypass. The roadline runs through a mixture of Anciently Enclosed Land and post-medieval farmland enclosed from former downs.

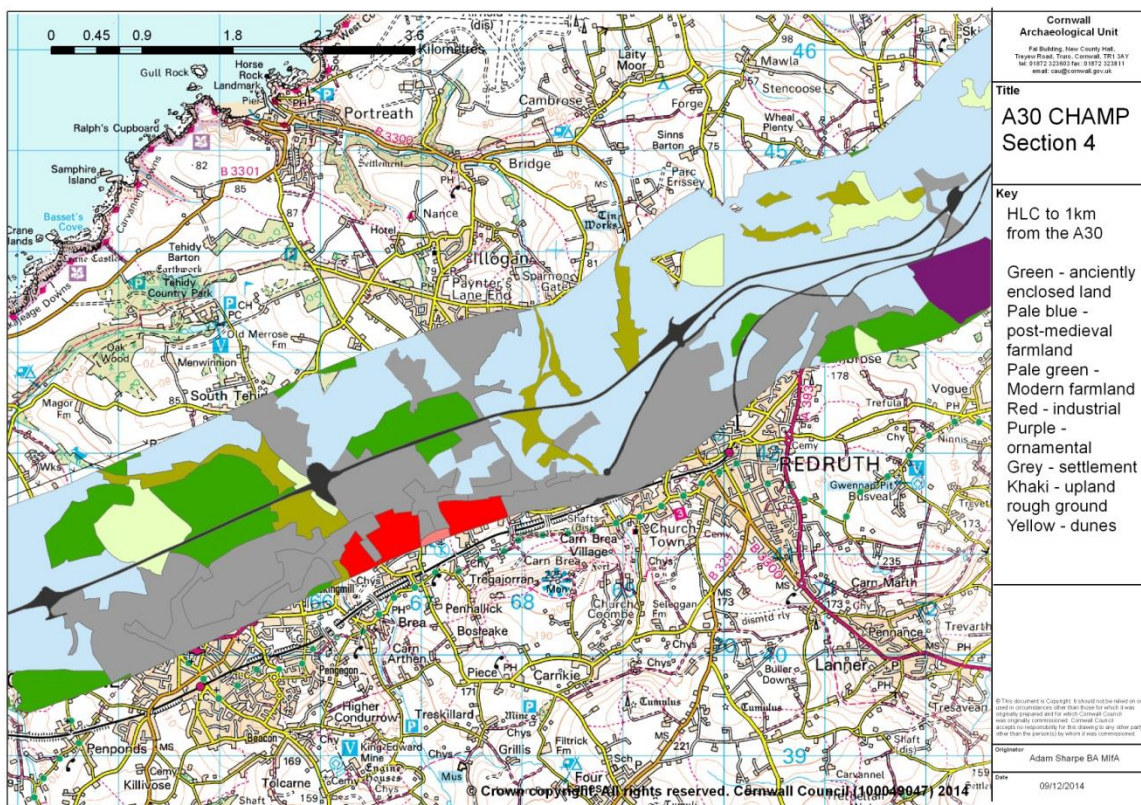


Fig 80. HLC Section 4 from Tolcroggan to Scorrier. As the HLC shows, the roadline traverses an area of post-medieval enclosures and urban conurbation, though does not fully indicate the importance of former industrial activity here.

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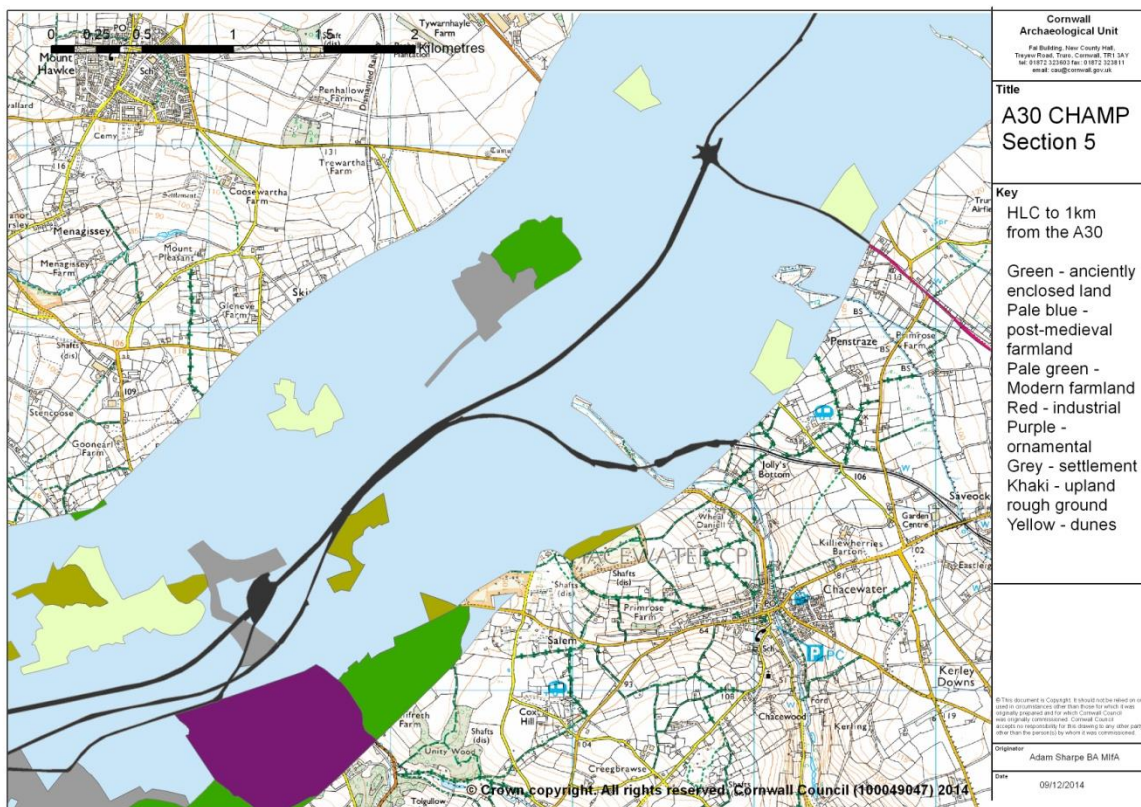


Fig 81. HLC Section 5. The A30 from Scorrier to Chiverton Cross passes through a landscape of former mines and miners' smallholdings, though Scorrier Park lies nearby to the south.

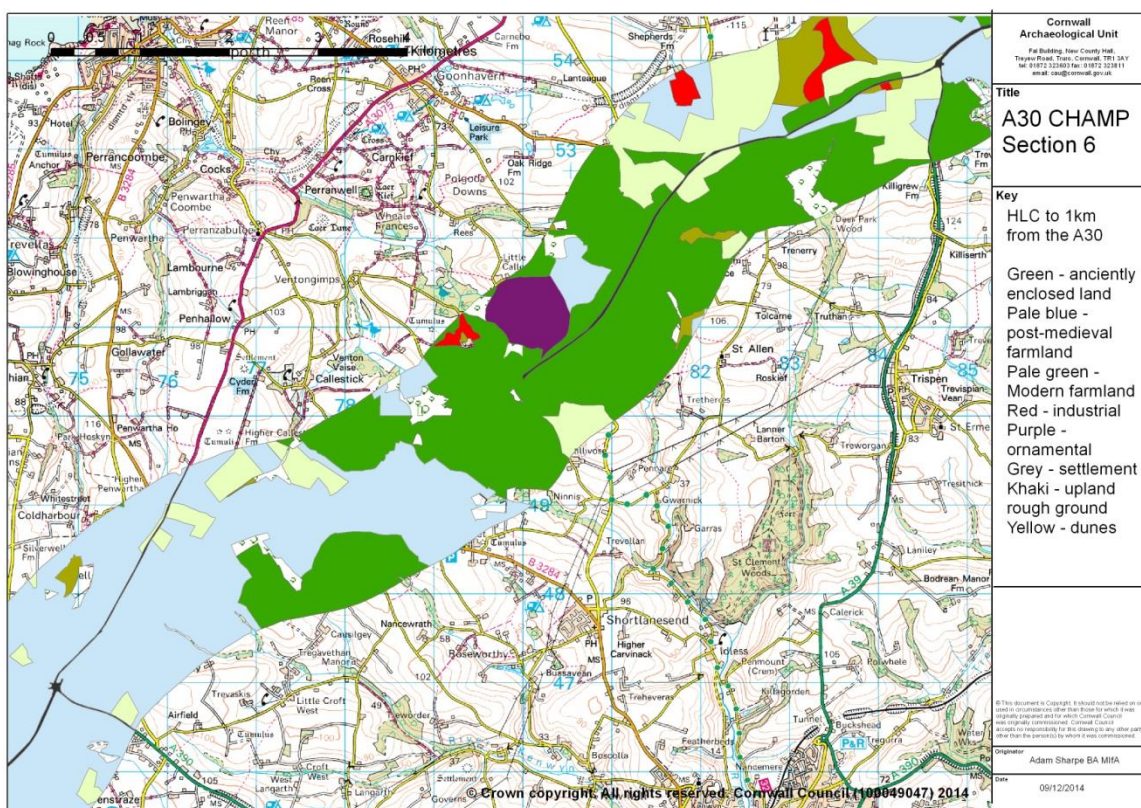


Fig 82. HLC Section 6. The western half of this part of the route is predominantly through former downland. To the east, the area surrounding Chyverton Park and running on Newlyn Downs is Anciently Enclosed Land.

A30 Longrock to Innis Downs CHAMP

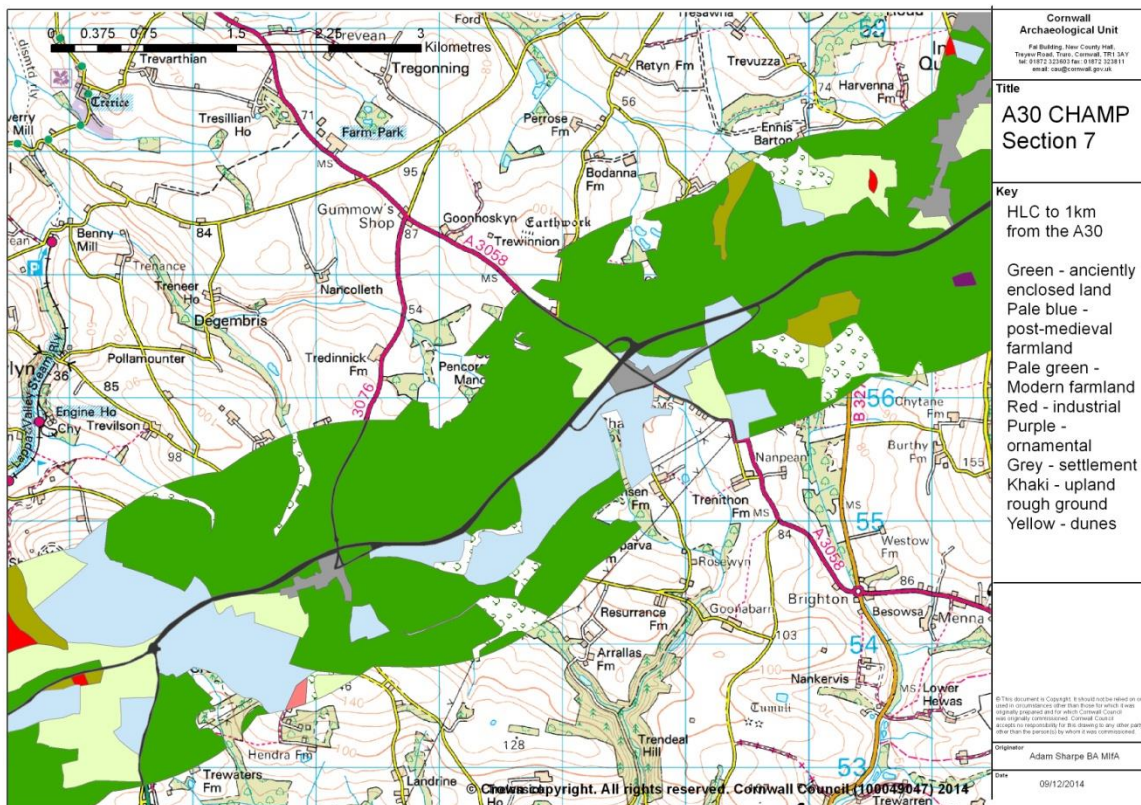


Fig 83. HLC Section 7. From Carland Cross to Penhale, the A30 runs through a landscape which is predominantly Anciently Enclosed Land.

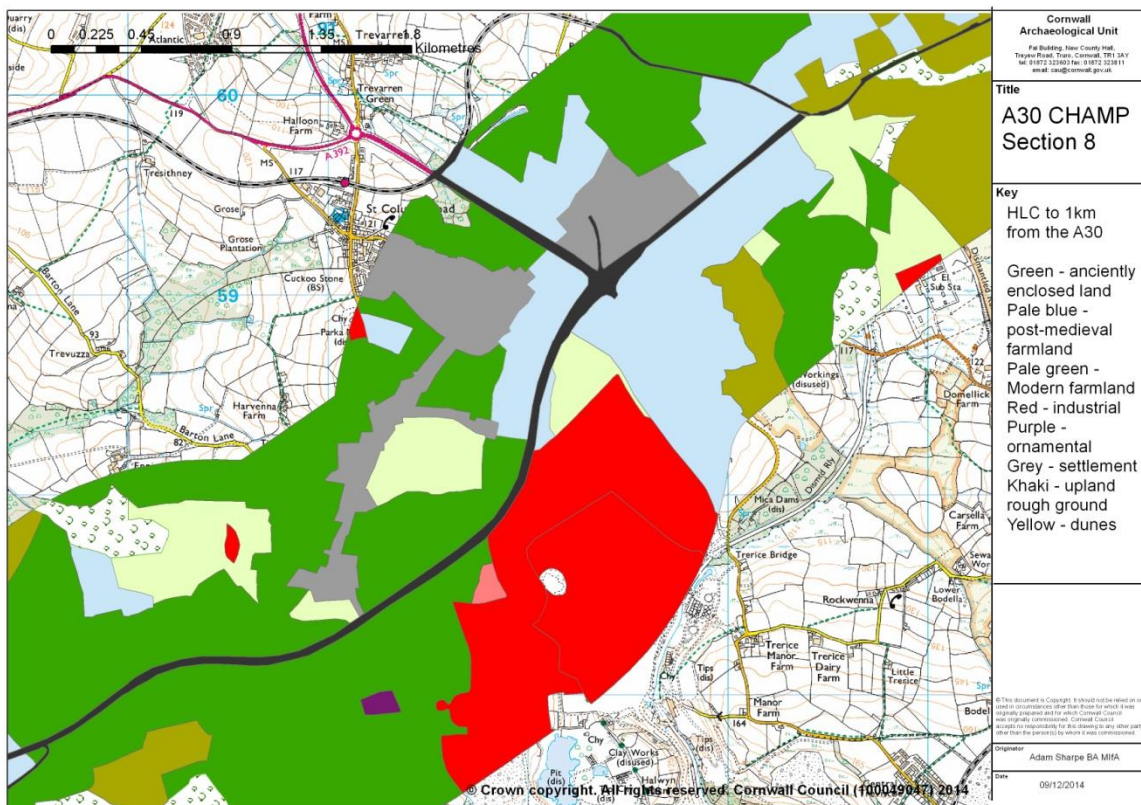


Fig 84. HLC Section 8. The Indian Queens Bypass runs through a landscape characterised by a mix of Anciently Enclosed Land, moorland modified by china clay working and former downland enclosed during the post-medieval period.

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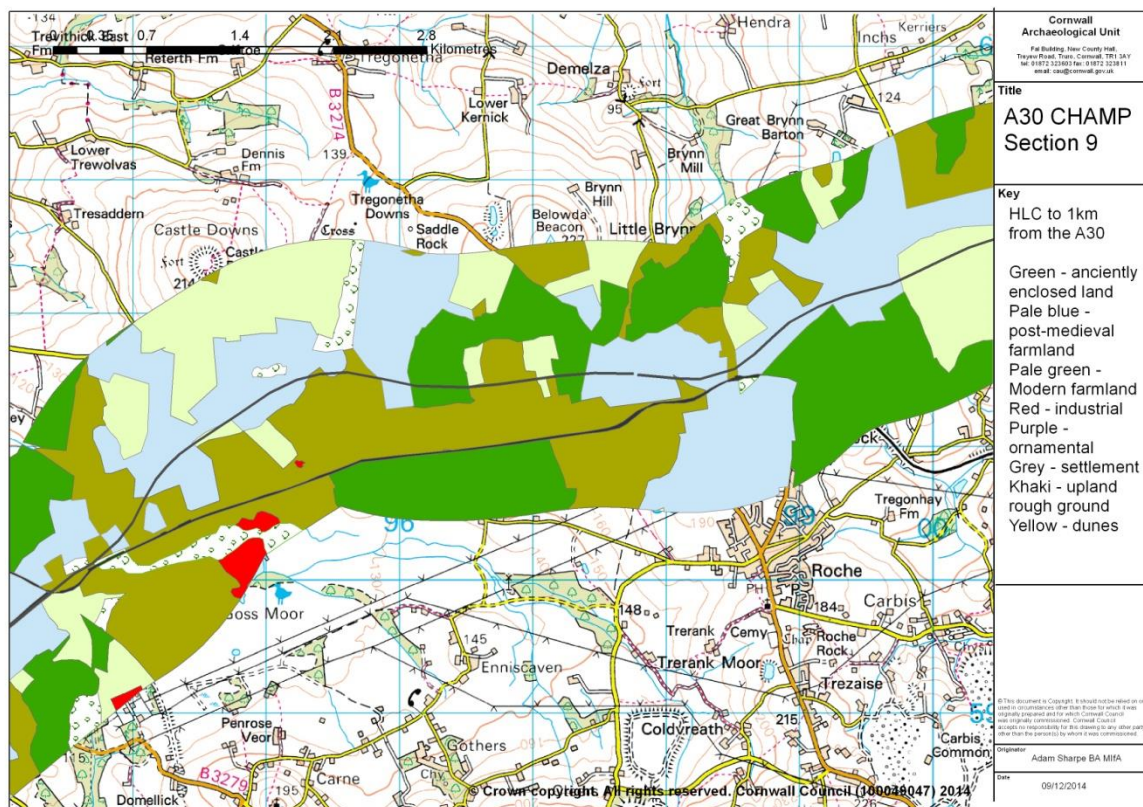


Fig 85. HLC Section 9. The landscape from Indian Queens to Victoria is a mix of medieval farmland, post-medieval and modern farmland and rough ground created through centuries of tin streaming activity.

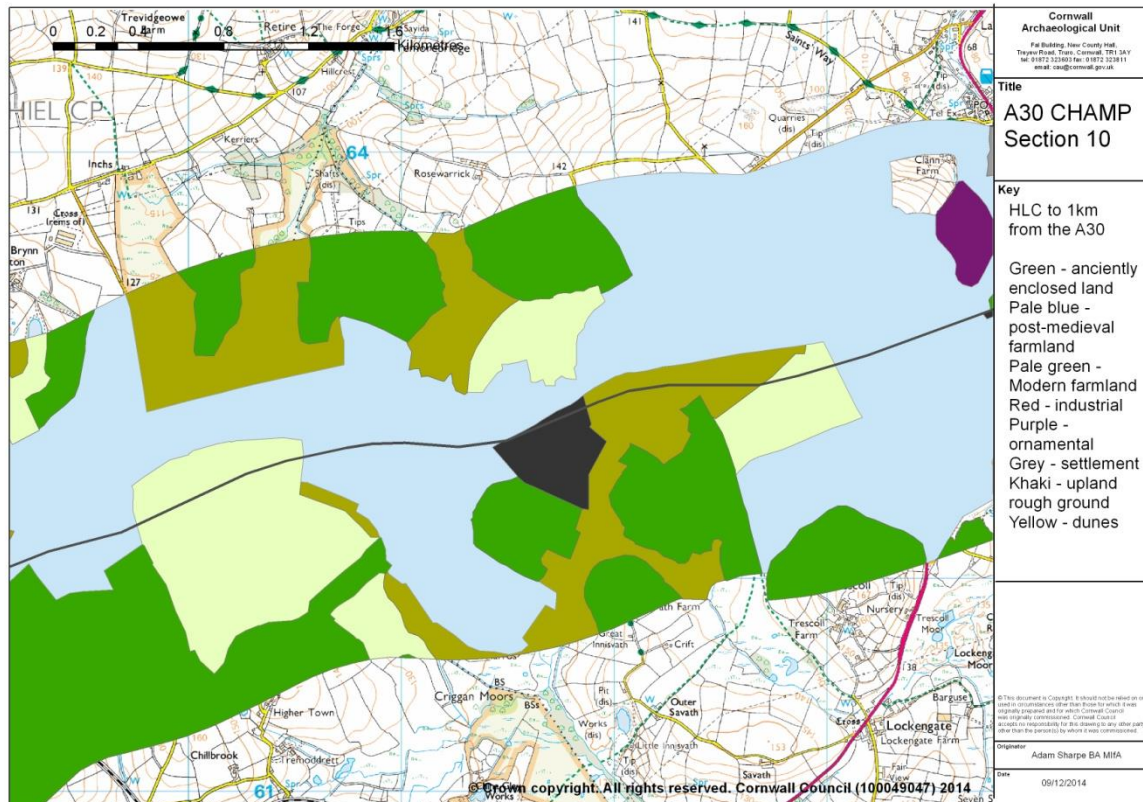


Fig 86. HLC Section 10. From Victoria to Innis Downs the road runs along a former downland ridge flanked on its lower by earlier farmland.