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DESK STUDY REPORT

Site: Phoenix House, Forstal Road, Aylesford, Maidstone, Kent ME20 7AD

Prepared for: Haselden Properties

Date: 4th March 2014

Registered in England. Company Registration No: 3014370
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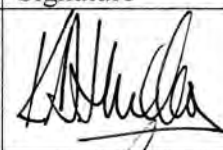
CLIENT: Haselden Properties

SITE: Phoenix House, Forstal Road, Aylesford, Maidstone, Kent ME20 7AD

JOB NUMBER: 06087/20

DATE: 4th March 2014

	Name	Position	Signature	Date
Prepared by	Keith Huxley	Head of Environmental Division		04/03/14
Checked by	Martin King	Managing Director		04/03/14
On behalf of Soiltec Laboratories Limited				

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APPENDICES

Executive Summary

Soiltec Laboratories Limited was instructed by Mr B Kendall on behalf of Haselden Properties to carry out a Phase 1 Environmental Assessment (Desk Study) of the site at

Phoenix House, Forstal Road, Aylesford, Maidstone, Kent ME20 7AD

A planning application has been submitted to Tonbridge and Malling Borough Council (reference TM/13/02374), which has been refused subject to a desk study report being carried out to accompany the planning application to address paragraph 121 of the National Planning Policy Framework (NPPF) that came into force in March 2012.

The site is on the south side of Forstal Road and is currently occupied by an open area of hard cover of a former office/warehouse building and car park. It is proposed to construct a terrace of three light industrial units with off road parking.

From the investigations carried out for this desk study the site has been developed since at least the late 1860's. At this date a building, possibly residential or possibly part of the nearby water pumping station, was at the east boundary of the site until at least 2002. Also from the late 1860's until at least that late 1940's tramways were on parts of the site that served the quay from the nearby tile and brick works. A pair of semi detached houses was also on part of the site from at least the early 1930's until the mid 1970's. The building, Phoenix House that was demolished approximately six months ago was constructed by 1987. It is known that Phoenix House was used as offices, a warehouse and used by a mechanical engineering company.

The immediate surrounding areas have been predominantly industrial/commercial uses since at least the late 1860's that have included a quay, a garage and fuel station to the west and water pumping station to the east. A tile and brick works to the north as well as ballast pits and a refuse tip has also been in the area. There have been a few residential houses in the area since the late 1860's and the water pumping station to the east has existed since the late 1800's. The residential houses that are currently adjacent to the east of the site were constructed after 2002.

The predominant underlying bedrock geology is The Folkestone Formation (sandstone) high permeability with drift deposits of River Terrace Gravels (sand and gravel) and thus the site is overlying a major aquifer and is within a groundwater source protection zone.

There are no surface water features on the site, although the River Medway is approximately 10m to the south at its nearest point and is tidal at this point and there are surface water abstractions in the area although the nearest, which is for fish pass/canoe pass at Allington Lock is just over 1.1km from the site.

There are groundwater abstractions for potable water or other uses in the area (within 2km) with the nearest located just to the east of the site for potable water supplies at Forstal Pumping Station.

The findings of this report indicate that the site represents a **very low to low environmental risk** and that a detailed phase II intrusive investigation at the site is not required. However, verification analysis should be carried out to confirm that there is no likely impact to the groundwater and adjacent river.

Soiltec Laboratories Limited

1. Introduction

Soiltec Laboratories were instructed by Mr B Kendall on behalf of Haselden Properties to carry out a Desk Study of the site at Phoenix House, Forstal Road, Aylesford, Maidstone, Kent ME20 7AD (grid reference 573830 158760). The site is approximately 6 metres above ordnance datum on the outskirts of the village of Aylesford, Kent.

The desk study would mainly comprise of a walkover survey of the site, review historical land use, review historical maps, assess the environmental sensitivity of the site and surrounding areas, review geological maps, investigate pollution incident registers, abstraction and discharge consents and liaise with the relevant personnel at the local authority if necessary.

The main sources of the information are, but not limited to; The Environment Agency (EA), Ordnance Survey, The Coal Authority, British Geological Survey, English Nature and The Health Protection Agency.

The site is on the south side of Forstal Road and is currently occupied by an open area of hard cover of a former office/warehouse building and car park. It is proposed to construct a terrace of three light industrial units with off road parking.

Site plans showing the site location, former layout, the proposed layout and proposed elevations are shown in appendix 1, site plans (p1 to p3).

2. The Site and Surrounding Areas

2.1 Location and Setting

The site covers an area of approximately 2890m^2 and is on the south side of Forstal Road on the outskirts of the village of Aylesford to the east of the village centre and approximately three miles to the northwest of Maidstone town centre.

It is located in an area of predominantly commercial use although there are residential houses in the area.

An aerial photograph of the site is shown in appendix 2.

Immediately to the north of the site on the opposite side of Forstal Road are light industrial and commercial units in Forstal Road and Beddow Way. The light industrial units extend to at least 500m from the site to Pratling Street. Beyond Pratling Street are a few residential houses and farmland and Rochester Road approximately 800m from the site.

Immediately to the west of the site are a fuel station and light industrial units in Forstal Road. The light industrial units extend to at least 350m from the site. Beyond the light industrial units are small areas of farmland, an allotment garden with the village centre beyond, which is approximately 750m from the site.

Immediately to the south of the site are a public footpath and the River Medway. On the opposite side of the river approximately 50m from the site is farmland with a main railway line approximately 300m from the site. Beyond the railway are farmland and the M20 motorway, which is more than 500m from the site.

Immediately to the east of the site are a terrace of six residential houses with a water pumping house beyond the houses. The main water works site is beyond the pump house. Beyond the water works are light industrial units that extend to at least 300m from the site to the north of

Forstal Road and at least 500m from the site to the south of Forstal Road. Parts of the large public open space Cob Tree Manor Park are further to the east to the north of Forstal Road beyond the light industrial units.

2.1.1 Walkover Survey

The walkover survey was carried out on the 28th February 2014. At the time of the walkover survey the building had been demolished approximately six months previously and most of the demolition debris had been removed from the site.

The site was completely hard cover of tarmac former parking areas around the former building (Phoenix House). The concrete floor slab of the former building was also remaining on the site.

The site was split level with the former parking area at the south of the site adjacent to the river being approximately one metre lower that of the rest of the site. A small amount of demolition debris (fine brick rubble) remained on the site forming a slope from the north to south area in the southwest corner. Also in the southwest corner of the site were four old oil drums that were concrete filled that were used previously to prevent access to the site.

Very little vegetation was on the site although there were established trees along the site boundary adjacent to the river. A few weeds and brambles were also in this area of the site.

All the vegetation on and adjacent to the site appeared to be in a healthy condition.

There were no heating oil tanks on the site or evidence of any former fuel tanks.

No visible or olfactory contamination was noted anywhere on the site.

The river adjacent to the site was at a very high level following many weeks of prolonged heavy rain and was free flowing with no visible contamination present.

A site plan showing the existing and proposed layout and the immediate surrounding areas is shown in appendix 1 (p4). Also shown on this site plan are the locations and view direction of the photographs of the site that were taken during the walkover survey. The site photographs are shown in appendix 3.

There is one current or former fuel station registered within 500m of the site.

This is a current fuel station located adjacent to the west of the site and could impact the site.

There are no high pressure oil/fuel pipelines within 500m of the site.

This is shown in appendix 5 (current land use map).

2.2 Hydrology

There are no surface water features on the site, although there are near to the site. The River Medway is approximately 10m to the south at its nearest point immediately beyond the public footpath. The Medway is classed as a primary river.

This is shown in appendix 5 (hydrology – detailed river network and river quality map).

3. Historical Site use

3.1 1865 to 1908

The study of the historical maps of the site, some of which can be found in appendix 4, Historical Maps, shows that the site was developed in 1865 with a building at the east boundary. A tramway also ran from the northeast to southwest corners of the site and along the west boundary to a quay just beyond the site to the southwest. A tramway and towpath also ran along the south boundary adjacent to the river. Further to the northeast was a brick and tile works and the tramways ran from these works to the quay. An elongated pond, possibly man made was also between the tramways to the northeast that was most likely part of the brick and tile works.

Most of the roads in the area were not constructed although Forstal Road was constructed although had a slightly different route to that at present and ran across the site to the quay. The route of the River Medway was as it is to date. Further to the northwest Aylesford village centre was developed. Beyond the river further to the south the main railway line was also constructed at this date. A few residential houses were to the east of the site that also remains to date that are marked as Forstal. Just to the west of the site were a few buildings that do not appear to be residential.

By 1895 the water pumping station had been built to the east of the site that is marked as Aylesford Pumping Station (Maidstone Water Works). The site and other surrounding areas remained unchanged. Allotments are marked further to the west on the 1897 map.

By 1907 the route of Forstal Road had changed to that as it is to date and the site remained unchanged until at least 1908.

3.2 1931 to 1956

By 1931 another building, possibly a pair of houses had been built on the northwest corner of the site and a ballast pit is marked to the northwest just beyond Forstal Road. The elongated pond to the northeast is marked as marshland by this date. The tramway at the west boundary is also no longer marked.

The site and immediate surrounding area generally remained unchanged until at least 1956 although by 1938 the ballast pit excavations had expanded further to the north and northwest and by 1948 light industrial units had been built further to the east beyond the pumping station. The tramway crossing the site from the northeast to southwest corner is no longer marked on the 1956 map.

3.3 1960 to Date

By 1960 industrial units had been built to the north beyond Forstal Road adjacent to the west of the former elongated pond/marshland area (a smaller pond is also marked in the area further to the northeast) and the area of the ballast pits is mainly marked as scrub with a pond further to the north. A garage is marked immediately to the west with a pit beyond the garage on the site of the former allotments. The site remained unchanged although the building at the east boundary is marked as Wharf House and the buildings at the northwest corner are marked as Riverside View. The route of the tramway from the northeast to southwest corner is marked as a small embankment.

By 1964 the area to the west of the garage site is marked as a refuse tip with two ponds.

The site remained unchanged until at least 1974. By 1974 more industrial units had been built in the area to the east, north and northeast. Those to the north beyond Forstal Road are marked as a builder's yard on the 1972 map. The building beyond the garage to the west is marked as an engineering works at this date and the refuse tip and ponds are no longer marked. The area of the former ballast pits to the northwest is no longer marked as scrub.

By 1987 the site had been redeveloped with the building that was recently demolished, which is marked as Phoenix House on the 1990 map. More industrial units had also been built in the area to the north, northwest and west that all remain to date.

The building at the east boundary and the adjacent area was developed with the existing terrace of houses after 2002.

3.4 Planning & Uses

Following an assessment of the Tonbridge and Malling Borough Council and Maidstone Borough Council planning websites there has been ten historical planning applications for the site apart from the current proposal outlined above. Council online records for the area date from at least 1955.

Date	Planning Details
1973	Single storey warehouse for Mossure Investments Ltd – refused
1975	Outline application two storey office development (not exceeding 10,000sq.ft.) and car parking facilities. – refused
1976	Outline application two storey office development and car parking facilities. – granted
1978	Erection of single storey warehouse with car and lorry parking facilities – granted
1980	Erection of office and warehouse with vehicle parking – granted
1988	Use of upper part of warehouse as office space – granted
1997	Revision of existing approval TM/80/1046 to vary condition (ii) to form an external storage area, and to form alternative (and additional) car parking elsewhere on the site – withdrawn
1997	Revision to existing approval (TM/80/1046) – refused
1997	Article 10 consultation by Tonbridge and Malling Borough Council on application TM/97/01310/FL being conversion of existing south wing from industrial/storage to two floors of offices – granted
2002	A consultation with Maidstone Borough Council by Tonbridge & Malling Borough Council for a single storey extension to rear and side section of industrial building and internal alterations – granted

The current land use data indicates that there are many current 'industrial sites' within 500m of the site.

The nearest is located on the site, which was the occupiers of the former building that was a mechanical engineering company and it is possible that this activity could have impacted the site.

The next nearest are adjacent to the west at the fuel station site, which also has vehicle repair facilities (including body repairs) and car wash services. These activities could also impact the site.

The other 'industrial sites' and activities registered in the area are unlikely to impact the site.

This is all shown in appendix 5, Environmental Maps (current land use map).

4. Environmental Sensitivity

4.1 Site Sensitivity

The site is not within a site of special scientific interest, special protection area, a special area of conservation, RAMSAR (wetlands) site, a nature reserve, environmentally sensitive area, a world heritage site, an area of outstanding natural beauty, an ancient woodland or a national park.

The site is not within a designated nitrate vulnerable zone.

This is all shown in appendix 5 (designated environmentally sensitive sites map).

The site is within an area that is at risk of flooding from rivers or sea without defences.

The site is within a zone 3 fluvial flood plain. A zone 3 floodplain is designated as an area that has an annual probability of flooding equal to or greater than 1% for rivers and 0.5% for sea – High Probability. However, there are flood defences along the River Medway immediately to the south, southwest and southeast.

This is shown in appendix 5 (Environment Agency flood map).

A detailed flood risk assessment was also carried out in 2013 by a third party as part of this planning application.

4.2 Potentially Contaminative Use

The site is within an area of potentially contaminative use from industrial/commercial uses past and present.

There are historic surface ground workings, historic underground workings and or current ground workings marked within 250m on the ground workings map in appendix 5.

There are several areas of historic surface ground workings that are a quay (area A just to the south/southwest) and many areas to the north, northwest and northeast beyond Forstal Road that are former ponds, ballast pits and a brick and tile works. The area to the west (area 12) is a former pond.

Some of these ground workings could affect the site particularly if they have been infilled with biodegradable materials.

There are no historic underground workings within 250m.

There are 'current' ground workings within 250m (point 19 on the map) that is a sand and gravel pit 240m to the northwest, which ceased many years ago.

There are no areas of reclaimed ground, made ground, infilled ground, disturbed ground, worked ground and/or landscaped ground within 500m of the site as shown on the artificial ground map in appendix 5.

4.3 Landfill and Waste Transfer Sites

There are three current or former EA registered historical licensed landfill sites or local authority registered licensed landfill sites within 500m.

They are both EA historical landfill sites that were located 100m northwest and 115m west of the site at their nearest points that are recorded as having received inert waste. The licenses were issued in 1976 but it is not known when the licenses were surrendered (areas 2 and 3 on

the map). The area to the west was also recorded as an historic refuse tip (area 30 on the map). There is a potential for these former sites to impact the site although the other buildings and structures in the area and the industrial units now constructed on these sites do not appear to have been impacted. Additionally, no incidents or impacts to the buildings in the surrounding area have been recorded by the local authority or EA.

There is one current or former registered waste treatment or other waste sites within 500m.

This is physical waste treatment facility located 400m northeast (point 12 on the map) of the site and is unlikely to impact the site.

This is shown in appendix 5 (landfill and other waste sites map).

4.4 Hydrogeology

The site is classified by the Environment Agency (EA) as overlying a secondary aquifer within the superficial geology.

These include a wide range of rock layers or drift deposits with an equally wide range of water permeability and storage. Secondary aquifers are subdivided into two types:

Secondary A - permeable layers capable of supporting water supplies at a local rather than strategic scale, and in some cases forming an important source of base flow to rivers. These are generally aquifers formerly classified as minor aquifers.

Secondary B - predominantly lower permeability layers which may store and yield limited amounts of groundwater due to localised features such as fissures, thin permeable horizons and weathering. These are generally the water-bearing parts of the former non-aquifers.

The site is classified as overlying a secondary 'A' aquifer within the superficial geology.

The site is classified by the Environment Agency (EA) as overlying a principal aquifer within the bedrock geology.

These are layers of rock or drift deposits that have high intergranular and/or fracture permeability usually providing a high level of water storage. They may support water supply and/or river base flow on a strategic scale. In most cases, principal aquifers are aquifers previously designated as major aquifer.

The site therefore could be classed as overlying a major aquifer.

The site is also within a groundwater source protection zone (SPZ). The site is within a SPZ1 (inner catchment).

This is all shown in appendix 5 (hydrogeology maps).

4.5 Geology

According to geological information, Institute of Geological Sciences sheet 288, Maidstone, the site is underlain by Hythe/Folkestone Beds with drift deposits of River Terrace Gravels.

This is also shown on the superficial deposits and landslips map in appendix 5 which shows that there are superficial deposits on the site. Area 1 on the map (on site) is River Terrace Deposits (sand and gravel). Area 2 on the map to the south beyond the river is Alluvium (silty peaty sandy clay). Areas 3 (to the northwest) and 4 (further to the west) are Head Deposits (clay silt sand and gravel) and Alluvium (silty peaty sandy clay) respectively.

There are no landslips within 500m.

The bedrock and faults map in appendix 5 shows that The Folkestone Formation (sandstone) is the bedrock geology on the site of high permeability (area 1on the map). Area 2 (west) is The Sandgate Formation (sandstone siltstone and mudstone). Area 3 (south) is The Hythe Formation (interbedded sandstone and limestone) and area 4 (north) is The Gault Formation (mudstone).

There are three fault lines marked within 1000m (lines 10 to 12) to the south and southwest. The nearest is approximately 90m from the site and all are recorded as 'normal faults'.

There are several previously drilled boreholes marked within 250m of the site.

The nearest are located approximately 30m north of the site (two boreholes) and are recorded as being drilled to depths of 8m and 10m. The next nearest are to the east at Forstal Pumping Station.

This is shown in appendix 5 (borehole records map).

Records indicate that ballast/sand and gravel was encountered below any made ground and water was struck at approximately 5m below ground level.

5. Discharge Consents, Water Abstractions and Pollution Incidents

5.1 Discharge Consents

There are four current or former licensed discharge consent points within 500m of the site.

The nearest is a current consent located 140m east of the site for the discharge of final treated effluent (not water company) into a freshwater stream/river. The other discharge consents (that are for site surface water drainage or cooling water), two of which are former consents are or were all discharged into a freshwater river or saline estuary. All these consents are all unlikely to impact the site.

This is shown in appendix 5 (environmental permits, incidents and registers map points 13 to 16).

5.2 Abstraction Consents

There are nine current groundwater abstraction consents within 2000m of the site.

The nearest is located adjacent to the east of the site for potable water supplies at Forstal Pumping Station. The others are located between 500m and 1600m from the site for potable water supplies (nearest is 520m), mineral washing and process water.

There are two current surface water abstraction consents within 2000m of the site. The nearest is located 1140m southeast of the site for fish pass/canoe pass at Allington Lock. The other is located 1800m southeast of the site for general washing and process washing at Allington Sewage Treatment Works.

There are five current abstraction consents for potable water supplies within 2000m. The nearest are those mentioned above to the east of the site at Forstal Pumping Station.

This is shown in appendix 5 (hydrogeology – abstraction licence, SPZ and potable water abstraction maps), which shows up to 500m only.

5.3 Pollution Incidents and Permits

There are eleven recorded pollution incidents within 500m of the site (points 1 to 10 and B on the map).

The nearest is located adjacent to the east of the site that occurred more than eleven years ago caused by an oil spill. It is recorded as having minor water impact and no air or land impact. It is unlikely to have impacted the site.

The other incidents all occurred more than ten years ago at distances between 10m and 240m from the site. With the exception of one, all were caused by oil, diesel or petrol spillages. All the incidents within 175m are recorded as having no land or air impact and the maximum recorded water impact was 'minor'. They are all unlikely to have impacted the site.

A diesel spill occurred just over nine and twelve years ago approximately 190m and 240m north of the site respectively and are recorded as having significant water impact, significant/minor land impact and no air impact. They are unlikely to have impacted the site.

The National Incidents Recording System (NIRS) data records an incident (point B on the map) 205m to the southwest almost fourteen years ago that is recorded as having significant water impact, minor land impact and no air impact. It is also unlikely to have impacted the site.

There are eight current or former authorised activity enforcements within 500m of the site (points C and 19 to 24 on the map). All are Part B enforcements the nearest of which is adjacent to the west of the site for vapour recovery processes at the fuel station. The next nearest is 130m to the north for vehicle respraying processes. These processes and the others listed are unlikely to impact the site.

There are no sites determined as 'contaminated land' under Part 2A of the Environmental Protection Act 1990 within 500m of the site.

This is all shown in appendix 5 (environmental permits, incidents and registers map).

6. Mining Hazards, Subsidence and Radon

6.1 Mining

The site is not within an area that may be affected by historic mining or coal mining hazards and the shallow mining hazard is classed as 'low hazard'.

There are no natural cavities within 500m of the site.

There are no non-coal mining cavities within 500m and the site is within an area where the non-coal mining activity is classified as 'rare'.

This is all shown in the mining, extraction and natural cavities map in appendix 5.

6.2 Subsidence

The clay swelling/shrinking subsidence hazard is classed as 'negligible hazard' (soils that are predominantly non plastic) although this will depend on the localised clay content.

The landslides ground stability hazard is classed as 'very low hazard'.

The ground dissolution subsidence hazard is classed as 'negligible hazard'.

The compressible subsidence hazard is classed as 'negligible hazard'.

The collapsible ground stability hazard is classed as 'very low hazard'.

The running sand stability hazard is classed as 'very low hazard'.

All the above are shown on the ground stability maps in appendix 5.

6.3 Radon

There are less than 1% of properties in the area that are above the action level for radon and therefore no radon protection measures are necessary in new buildings or extensions.

7. Recommendations

7.1 General

From the investigations carried out for this desk study the site has been developed since at least the late 1860's. At this date a building, possibly residential or possibly part of the nearby water pumping station, was at the east boundary of the site until at least 2002. Also from the late 1860's until at least that late 1940's tramways were on parts of the site that served the quay from the nearby tile and brick works. A pair of semi detached houses was also on part of the site from at least the early 1930's until the mid 1970's. The building, Phoenix House that was demolished approximately six months ago was constructed by 1987. It is known that Phoenix House was used as offices, a warehouse and used by a mechanical engineering company.

The immediate surrounding areas have been predominantly industrial/commercial uses since at least the late 1860's that have included a quay, a garage and fuel station to the west and water pumping station to the east. A tile and brick works to the north as well as ballast pits and a refuse tip has also been in the area. There have been a few residential houses in the area since the late 1860's and the water pumping station to the east has existed since the late 1800's. The residential houses that are currently adjacent to the east of the site were constructed after 2002.

There are no surface water features on the site, although the River Medway is approximately 10m to the south at its nearest point and is tidal at this point.

The site overlies a major aquifer and is within a groundwater source protection zone (SPZ).

The bedrock geology on the site is The Folkestone Formation (sandstone) of high permeability with drift deposits of River Terrace Deposits (sand and gravel).

There are groundwater abstractions for potable water or other uses in the area (within 2km) with the nearest located just to the east of the site for potable water supplies at Forstal Pumping Station.

There are two surface water abstractions in the area (within 2km). The nearest, which is for fish pass/canoe pass at Allington Lock is just over 1.1km from the site.

It is proposed that the surface water drainage (roofs only) for the new light industrial units will be discharged via the existing local mains system. Yard drainage will be via an interceptor followed by the local foul system.

It is proposed that the foul drainage for the new buildings will be via the existing local foul mains drainage system.

The site is within a zone 3 fluvial flood plain although there are flood defences along the River Medway immediately to the south, southwest and southeast.

7.2 On-Site Contamination Impact

From the investigations carried out for this desk study it is unlikely that the site has been significantly impacted from its former uses although verification analysis should be carried out.

There are no recorded pollution incidents on the site that could have impacted the site.

It is unlikely that landfill gases are impacting the site from on site sources.

7.3 Off-Site Contamination Impact

The findings of this desk study indicate that contamination impact to the site from the immediate surrounding areas is possible from the adjacent fuel station.

There are no recorded pollution incidents near the site that could have impacted the site.

It is unlikely that landfill gases are impacting the site from off site sources.

7.4 Conceptual Model

Using the Contaminated Land Exposure Assessment (CLEA) model and associated Contaminated Land Reports (CLR) framework to assess sites, a Source – Pathway – Receptor approach is used.

Source – contamination
Pathway – e.g. via air, soil or water
Receptor – e.g. humans, buildings, groundwater or surface waters

If any of the above elements are missing i.e. there is no pollution linkage, then it is considered that there is no significant risk associated with contamination and the site cannot be determined as being contaminated. If there is a pollution linkage the potential risks to the identified receptors need to be assessed.

7.4.1 Source(s)

The possible sources of contamination on this site from on site or off site former or current uses are:
There are no expected significant sources of contamination on the site from the previous uses although verification testing should be carried out for the following:
Heavy Metals
Polyaromatic Hydrocarbons
Total Petroleum Hydrocarbons
BTEX compounds

7.4.2 Pathway(s)

It is intended to construct three light industrial units with off road parking. The site will be completely hard cover.

Using the CLEA model the potential pathways for a commercial site are:
Ingestion of soils/groundwater/surface water
Ingestion of dusts, gases and vapours (indoors and outdoors)
Dermal contact with soils/groundwater/surface water
Leachate via soakaways (if applicable)

The potential pathways for this site are:
Ingestion of soils (during construction only)
Ingestion of dusts indoors (during construction only)
Ingestion of dusts outdoors (during construction only)
Dermal contact with soils (during construction only)
Leaching contaminants via shallow groundwater from adjacent site – no historical impact to former building although verification required
Leaching contaminants via shallow groundwater from potential piled foundations

7.4.3 Receptor(s)

The potential receptors and associated risks for this site are:
Construction staff – very low risk with the correct PPE
Staff and visitors on site – very low risk (no reported impact to previous occupants)
Staff and Residents off site – very low risk (currently not impacted)
Buildings off site (residential houses and commercial buildings currently not impacted) – very low risk
New building and below ground services – very low risk (no reported impact to former building and all below ground services reported to be live and fully operational)
Groundwater (major aquifer and SPZ) – very low to low risk (verification required)
Surface Water (River Medway) – very low to low risk from leachable contaminants via shallow groundwater (verification required) – no current visible impact

7.4.4 Assessment of Risk

The assessment of the associated risk is based on the CIRIA (Construction Industry Research and Information Association) C552 methodology, contaminated land risk assessment, a guide to good practice (2001), tabulated below and overleaf.
(SH = Significant Harm, SPOSH = Significant Possibility of Significant Harm).

Classification of Consequence

Classification	Definition
Severe	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. **Highly elevated** concentrations **likely** to result in 'significant harm' to human health as defined by the EPA 1990 Part 2A, if exposure occurs i.e. SH/SPOSH concentrations are high enough to cause acute (short term) effects. Equivalent to an EA category 1 pollution incident including **persistent and/or extensive** effects on water quality (controlled waters); leading to a closure of a potable abstraction point; major impact on amenity value or major damage to agriculture or commerce. **Major damage** to aquatic or other ecosystems, which is **likely** to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long term maintenance of the population. **Catastrophic** damage to buildings or property.
Medium	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of unacceptable intake or contact. **Elevated** concentrations which could result in 'significant harm' to human health as defined by the EPA 1990 Part 2A, if exposure occurs i.e. greater than SH/SPOSH Equivalent to an EA category 2 pollution incident including **a significant** effect on water quality (controlled waters); notification required to abstractors; reduction on amenity value or significant damage to agriculture or commerce. **Significant damage** to aquatic or other ecosystems, which **may** result in a substantial adverse change in its functioning or harm to a species of special interest that **may** endanger the long term maintenance of the population. **Significant** damage to buildings or property.

Classification of Consequence (cont)

Classification	Definition
Mild	Concentration of contaminants is likely to (or is known from previous data to) exceed that indicative of no harm but not unacceptable intake or contact. Exposure to human health **unlikely** to lead to 'significant harm' i.e. concentrations are greater than SGV/GAC but less than SH/SPOSH. Equivalent to an EA category 3 pollution incident including **minimal or short term** effects on water quality (controlled waters); minor impact on amenity value, agriculture or commerce. **Minor damage or short term damage** to aquatic or other ecosystems, which is **unlikely** to result in a substantial adverse change in its functioning or harm to a species of special interest that endangers the long term maintenance of the population. **Minor** damage to buildings or property.
Minor	Concentration of contaminants is likely to (or is known from previous data to) be less than that indicative of no harm. No measurable effect on humans i.e. less than SGV/GAC. Equivalent to an unsubstantial pollution incident with **no observed** effect on water quality (controlled waters); no reduction on amenity value or damage to agriculture or commerce. **No observed effect** to aquatic or other ecosystems. **Repairable effects of damage** to buildings or property.

Classification of Probability

Classification	Definition
High Likelihood	There is a pollution linkage and an event that appears **very likely** in the short term and **almost inevitable** in the long term, or there is evidence at the receptor of harm or pollution.
Likely	There is a pollution linkage and all the elements are present and in the right place, which means that it is **probable** that an event will occur. Circumstances are such that an event is **not inevitable** but possible in the short term and likely over the long term.
Low Likelihood	There is a pollution linkage and circumstances are possible under which an event **could occur**. However, it is **no means certain** that even over a longer period such event could take place, and it is less likely in the shorter term.
Unlikely	There is a pollution linkage but the circumstances are such that it is **improbable** that an event would occur even in the very long term.

Matrix of Consequence against Probability to determine Risk Classification

	Consequence			
Probability	Severe	Medium	Mild	Minor
High Likelihood	Very High Risk	High Risk	Moderate Risk	Low Risk
Likely	High Risk	Moderate Risk	Low Risk	Very Low Risk
Low Likelihood	Moderate Risk	Low Risk	Low Risk	Very Low Risk
Unlikely	Low Risk	Very Low Risk	Very Low Risk	Very Low Risk

A schematic diagram of the conceptual model for the site dated 04/03/14 is shown in appendix 6, conceptual model.

7.5 Investigation Work Recommended

7.5.1 General

As outlined above it is unlikely that there are any significant sources of contamination on this site that could have impacted the site soils from the on site past activities although verification is required.

It is possible that the site has been impacted by the uses and or/activities from the immediate surrounding areas (verification from adjacent fuel station).

The risk to human health could be classed as very low.

The risk to the new buildings and below ground services could also be classed as very low.

The site overlies a major aquifer and is within a source protection zone (SPZ). It is proposed that the surface water drainage for the new buildings will be discharged via the existing local mains system. Yard drainage will be via an interceptor followed by the local foul system.

Foul drainage for the new buildings will be via the existing local mains system.

The risk to controlled waters on completion of the development could be classed as very low to low although verification of this is required.

It is therefore not necessary to carry out a detailed phase II intrusive investigation of the site although verification analysis should be carried out to confirm that there is no likely impact to the groundwater and adjacent river.

7.5.2 Sampling Locations and Analysis

Soils should be taken from site within the footprint of proposed buildings and analysed for a general suite of determinands that must include heavy metals, polyaromatic hydrocarbons, BTEX compounds and total petroleum hydrocarbons. The soils should also be analysed for leachable contaminants (same suite as above).

The samples for leachable contaminants should be taken just above the saturated zone (groundwater), which is expected to be very shallow (four to five metres below ground level).

7.5.3 Timescale

The verification analysis can be carried out immediately as part of the geotechnical site investigation works that are scheduled to be carried out for foundation design.

7.6 Excavated Soils

Any excavated soils that are produced as part of the construction work that are to be removed from the site to landfill, chemical analysis will be required to classify the 'waste' in conjunction with the EU Landfill Directive that came into effect in 2005, which defines the criteria for the chemical analysis and classification of materials that are to be disposed to landfill.

Should soils need to be removed from the site to landfill, a European Landfill Directive Waste Acceptance Criteria analysis will be required on the material to be disposed to be submitted to the proposed receiving tip before the soil is removed from the site.

The different strata excavated (if applicable) should be segregated and analysed separately prior to disposal off site.

7.7 Additional Notes

Should any contaminants be encountered during the geotechnical investigation or development works that were not expected analysis must be carried out to identify the type and extent of the contamination.

During the construction work, exposed soils should be protected from any accidental leakage or spillages from stored oils/fuels or chemicals used in the construction work, if any, to prevent any potential impact to the site or controlled waters.

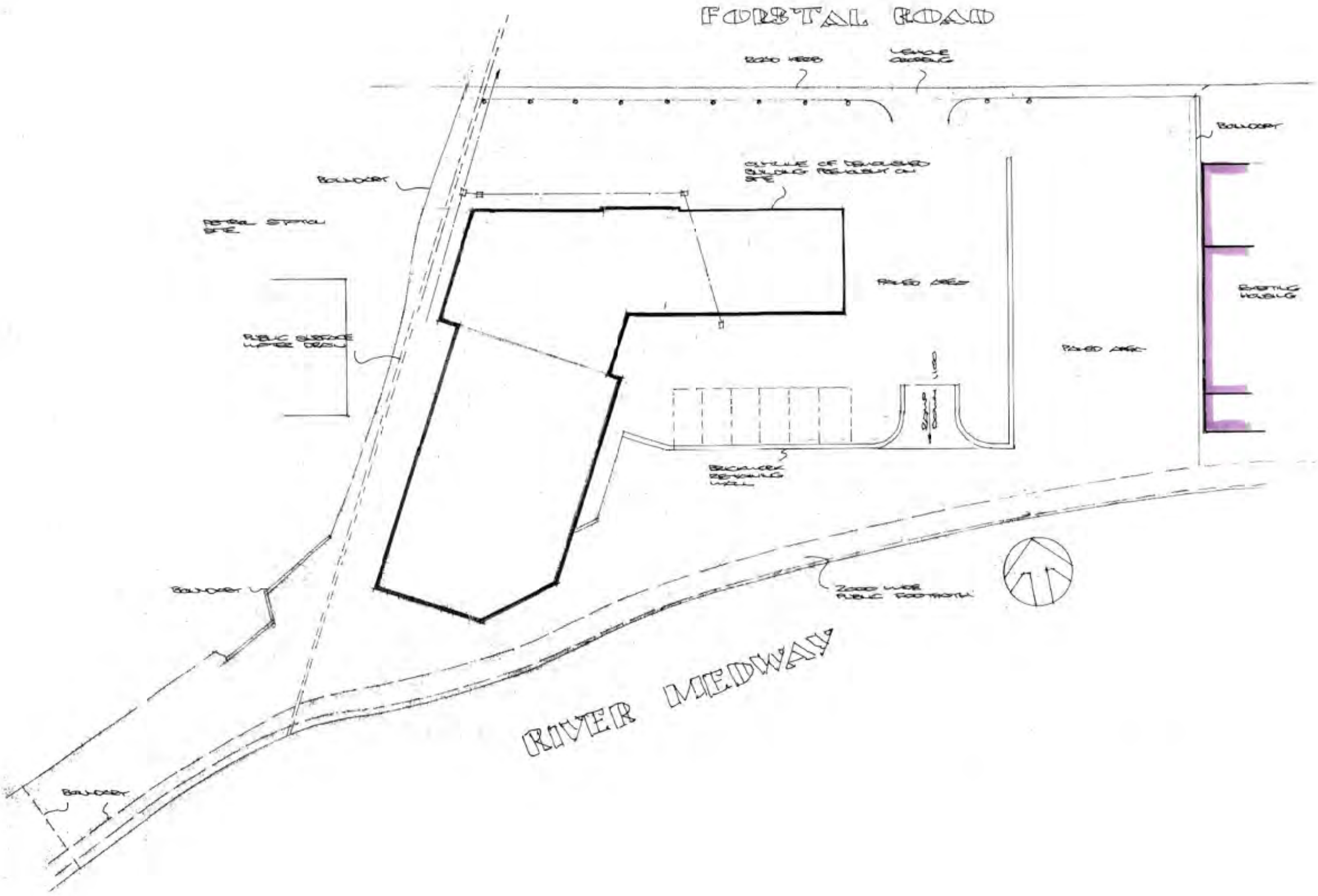
It must also be noted that any imported soil to be used in the development works chemical analysis must be carried out to confirm that it is suitable for use on this site although this is unlikely.

A copy of this report should be forwarded to Tonbridge and Malling Borough Council or other regulators/insurers if applicable for their consideration and approval prior to the commencement of any further works on the site.

K.D.Huxley CSci CChem MRSC MIEnvSc
Date: 04/03/14

APPENDIX 1

SITE PLANS



project
PROPOSED RE DEVELOPMENT
OF PHOENIX HOUSE SITE
FORSTAL ROAD
AYLESFORD
MAIDSTONE
INTO 3No LIGHT
INDUSTRIAL UNITS

drawing
EXISTING SITE PLAN

scale
1:200

date

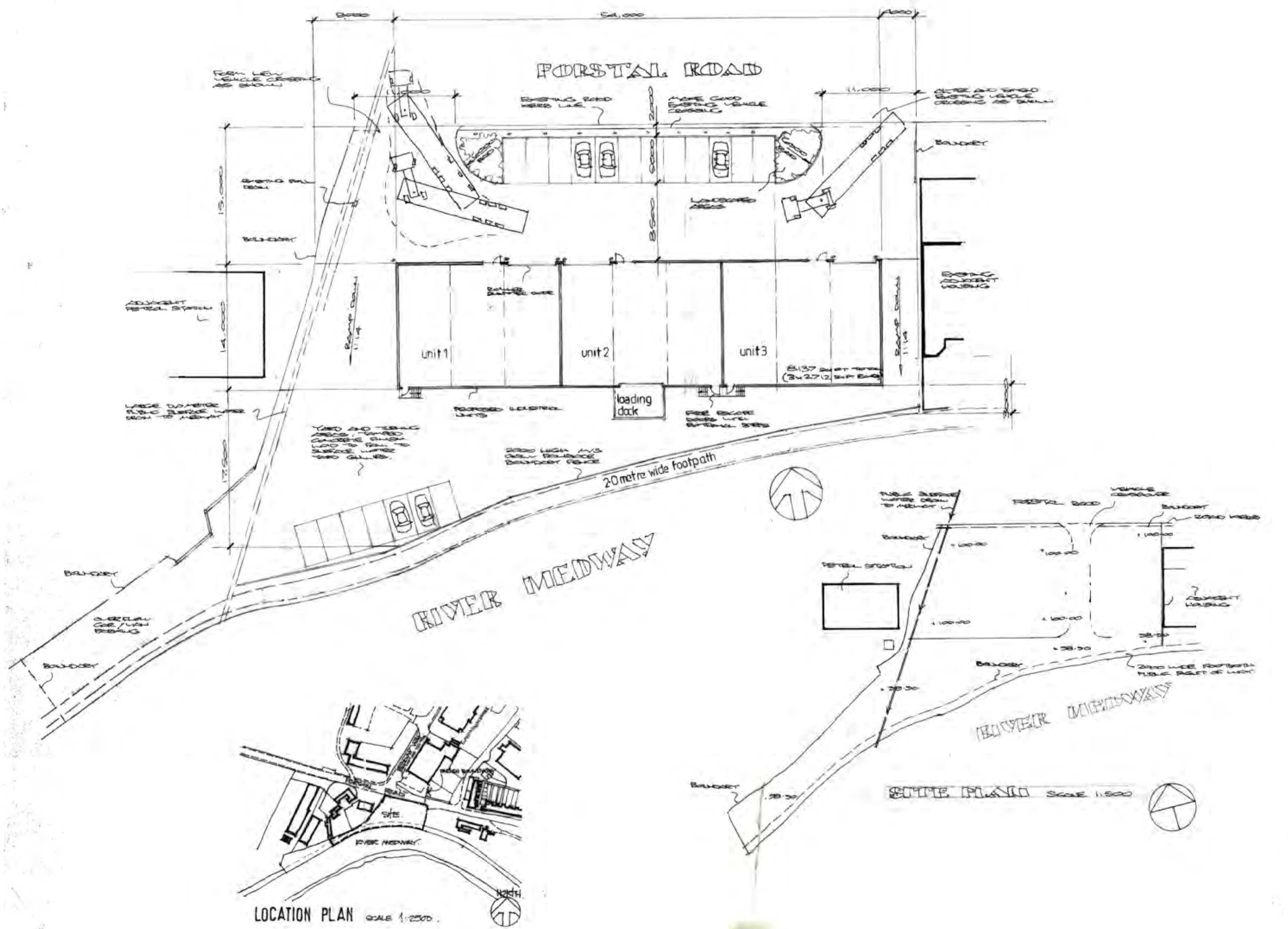
drawn

drg no
B417/03/1

B. J. KENDALL & ASSOCIATES
Architectural Design Planning Consultants
and Project Management

7 Noke Farm Cottage
Noke Street Wainscott
Rochester Kent
ME3 8BJ

Tel: 01634 724800
Mob: 07860256l8
Fax: 01634 724809



project
PROPOSED RE DEVELOPMENT
FORSTAL ROAD
AYLESFORD
MAIDSTONE
INTO 3No LIGHT INDUSTRIAL UNITS

drawing
PLAN AS PROPOSED

scale
1:200

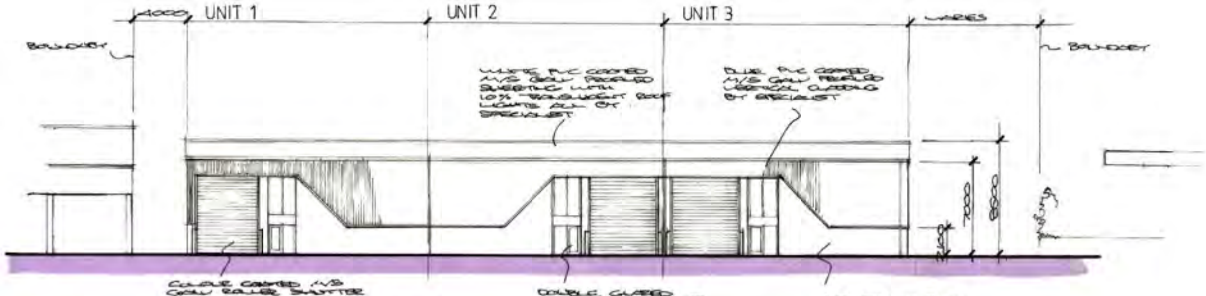
date

dwg no
B 47/03/2

B. J. KENDALL & ASSOCIATES
Architectural Design Planning Consultants and Project Management

7 Noke Farm Cottage
Noke Street Wainscott
Rochester Kent
ME3 8BJ

Tel: 01634 724800
Mob: 07860256183
Fax: 01634 724800
E mail: barry-kendall@btconnect.com



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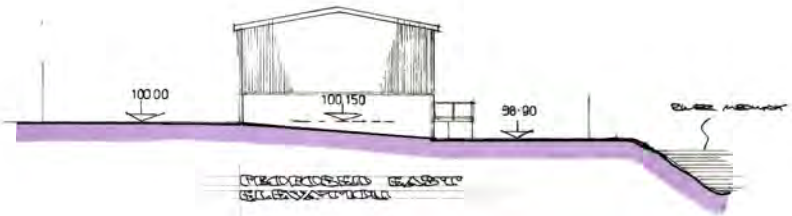
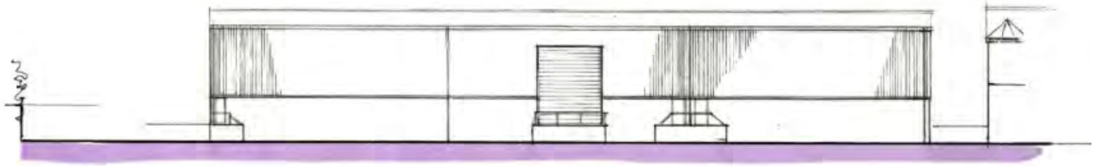
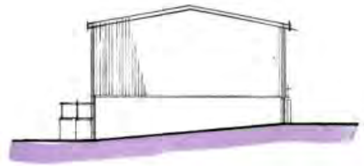


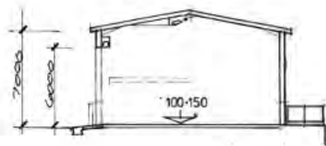
PROPOSED EAST ELEVATION



PROPOSED REAR ELEVA



PROPOSED WEST ELEVATION



TYPICAL SECTION

project

drawing

PROPOSED ELEVATIONS AND SECTION

scale

1:200

date

drawn

dwg no

B417/13/3

B. J. KENDALL & ASSOCIATES
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and Project Management

7 Noke Farm Cottage
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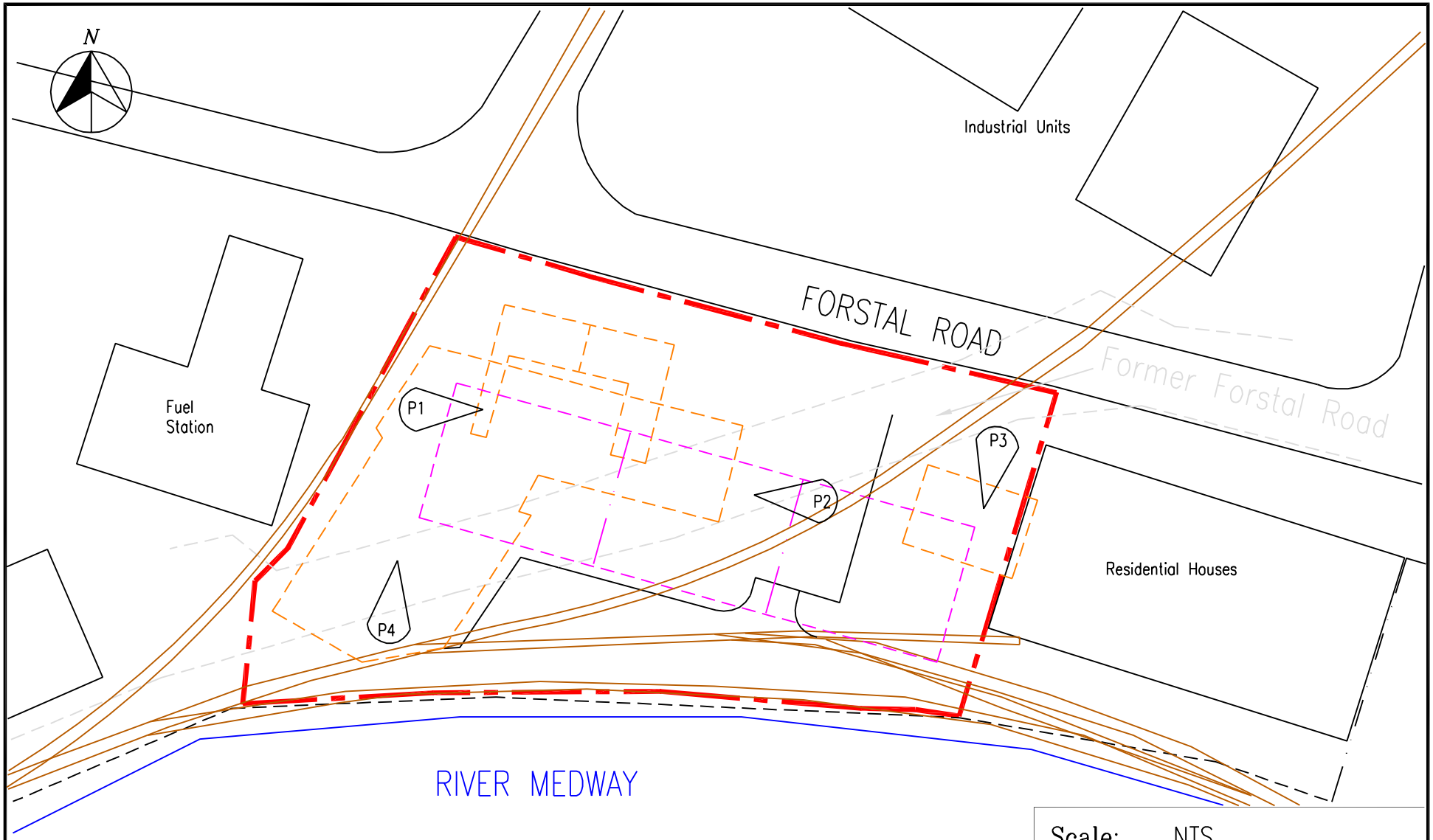
Mob: 07860256183
Fax: 01634 724800
E.mail: barry-kendall@btconnect.com



Existing Buildings
Former Buildings
Proposed Buildings
Former Tramways

		Scale:	NTS
		Drawn :	KDH
Location :	Phoenix House, Forstal Rd, ME20 7AD	Report:	06087/20
Title :	Former and Proposed Plan	Fig. No.:	1

APPENDIX 2

AERIAL PHOTOGRAPH

GroundSure GeoInsight

Address:	PHOENIX HOUSE,COTTAGE INDUSTRIAL ESTATE,FORSTAL ROAD,AYLESFORD,AYLESFORD, ME20 7AD
Date:	25 Feb 2014
Reference:	CMAPS-CM-300259-5500-250214GEO
Client:	CENTREMAPS

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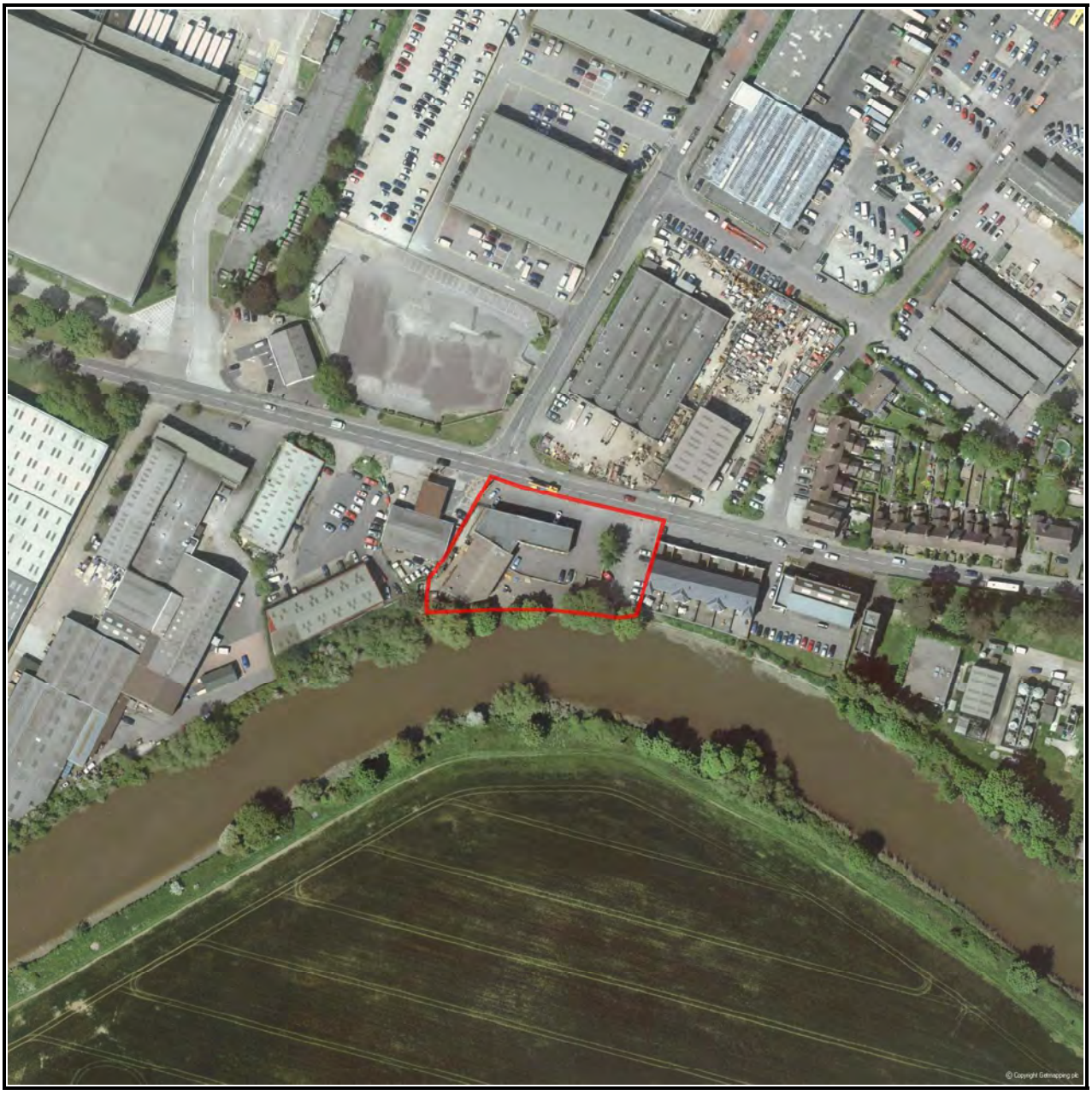


SW S SE

Aerial Photograph Capture date:	25-May-2012
Grid Reference:	573828,158758
Site Size:	0.30ha

APPENDIX 3

SITE PHOTOGRAPHS

PHOTOGRAPH 1

Looking east across the site showing the former building floor slab. The new light industrial units will be in the centre of the site. The adjacent residential houses are in the background.

PHOTOGRAPH 2

Looking west across the site showing the former building floor slab. The new light industrial units will be in the centre of the site. The adjacent fuel station is in the background.

PHOTOGRAPH 3

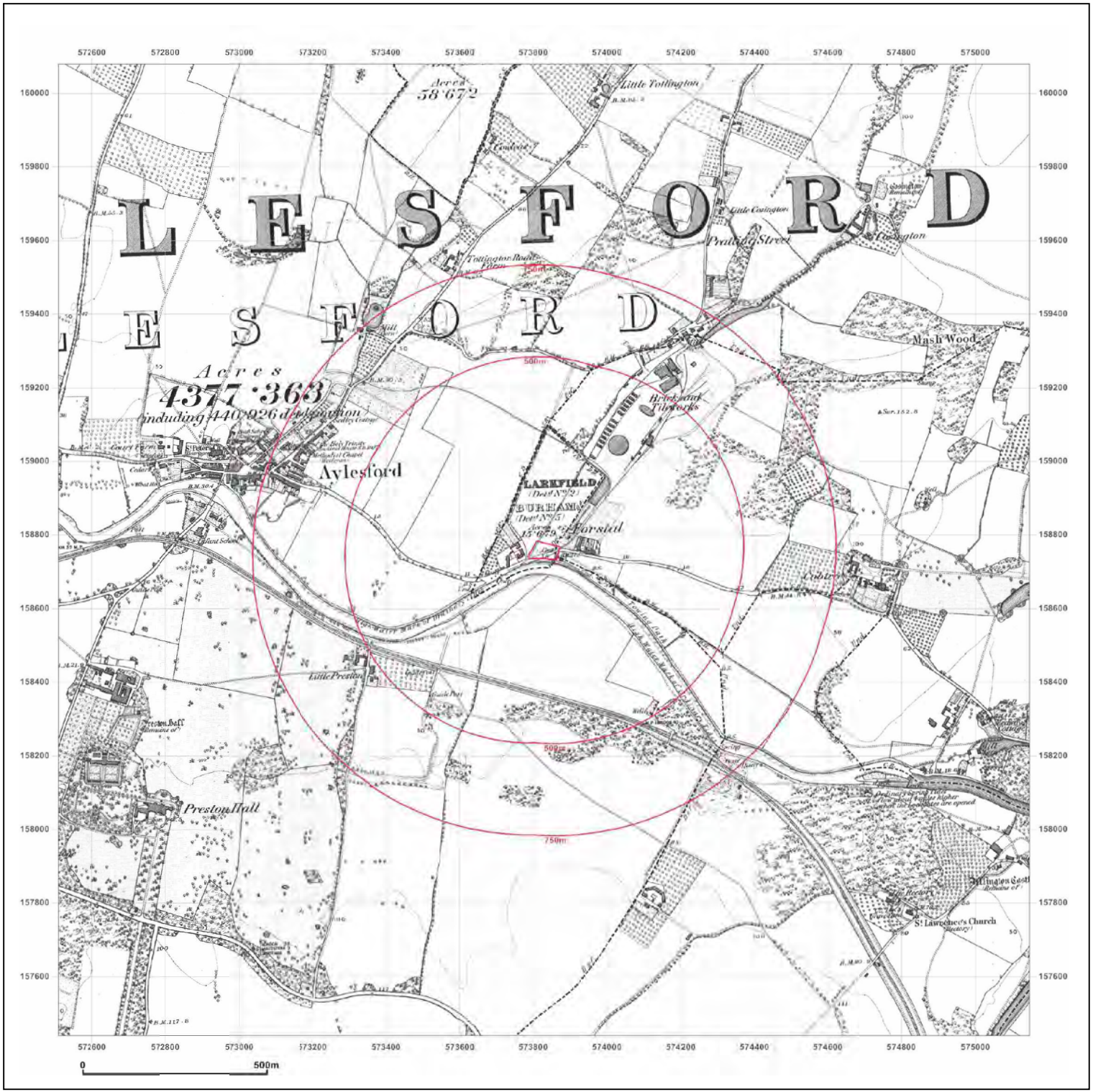
Looking south across the east area of the site. This area will be the access to parking areas. The River Medway is in the background.

PHOTOGRAPH 4

Looking north across the west area of the site showing some of the demolition debris forming a slope from the north to south area. The industrial units on the opposite side of Forstal Road are in the background.

APPENDIX 4

HISTORICAL MAPS



Ordnance Survey®
Historical Mapping Extract

www.centremapslive.com

Site Details:

PHOENIX HOUSE,COTTAGE INDUSTRIAL ESTATE,FORSTAL ROAD,AYLESFORD,AYLESFORD, ME20 7AD

Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1865**
Scale: 1:10,560
Printed at: 1:10,560

N
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Surveyed 1865
Revised 1865
Edition N/A
Copyright N/A
Levelled N/A

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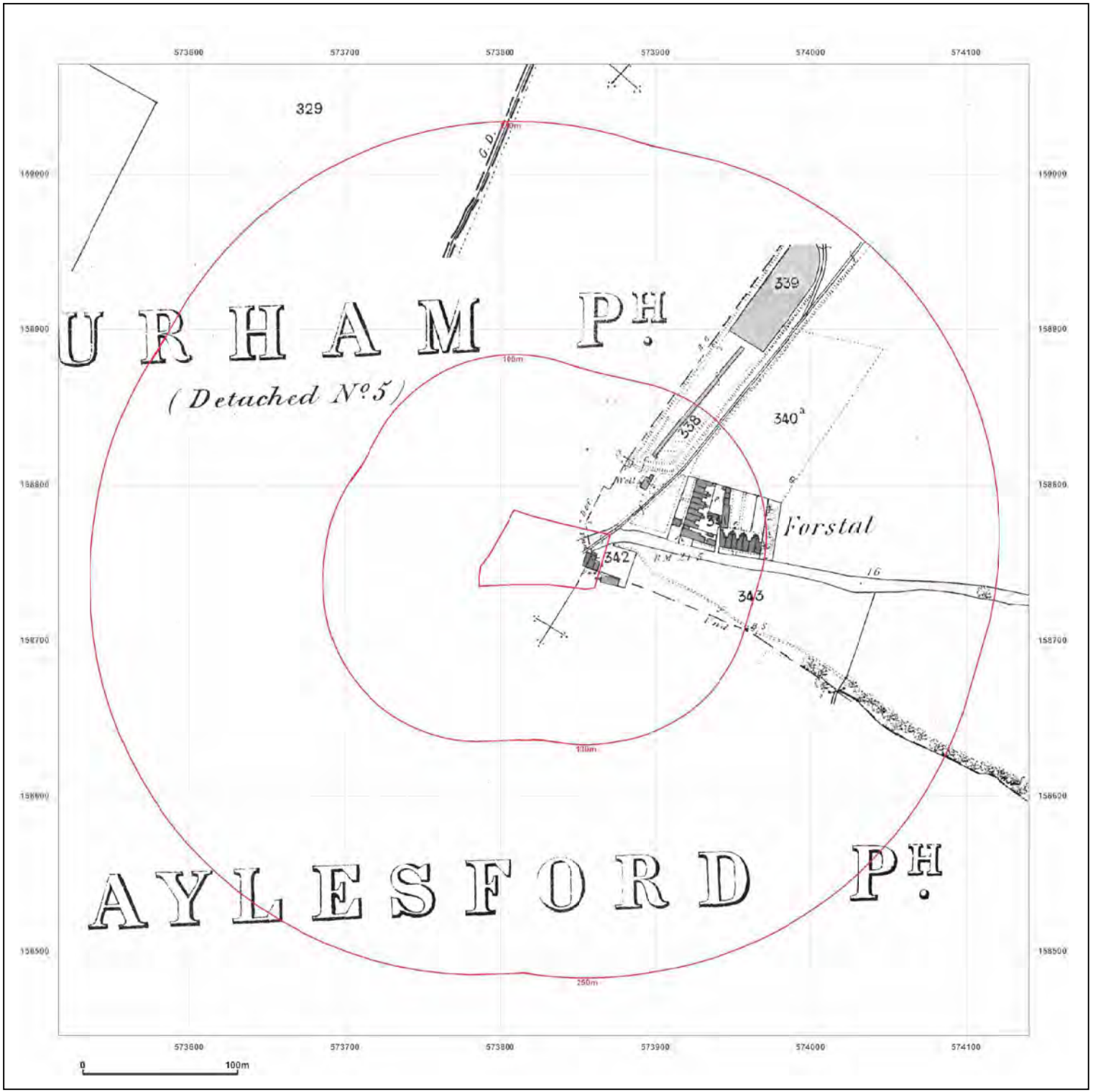
www.centremapslive.com
groundsure@centremaps.com

Production date: 25 February 2014

To view map legend click here *Legend*



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Historical Mapping Extract

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Site Details:

PHOENIX HOUSE,COTTAGE INDUSTRIAL ESTATE,FORSTAL ROAD,AYLESFORD,AYLESFORD, ME20 7AD

Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1867-1868**
Scale: 1:2,500
Printed at: 1:2,500

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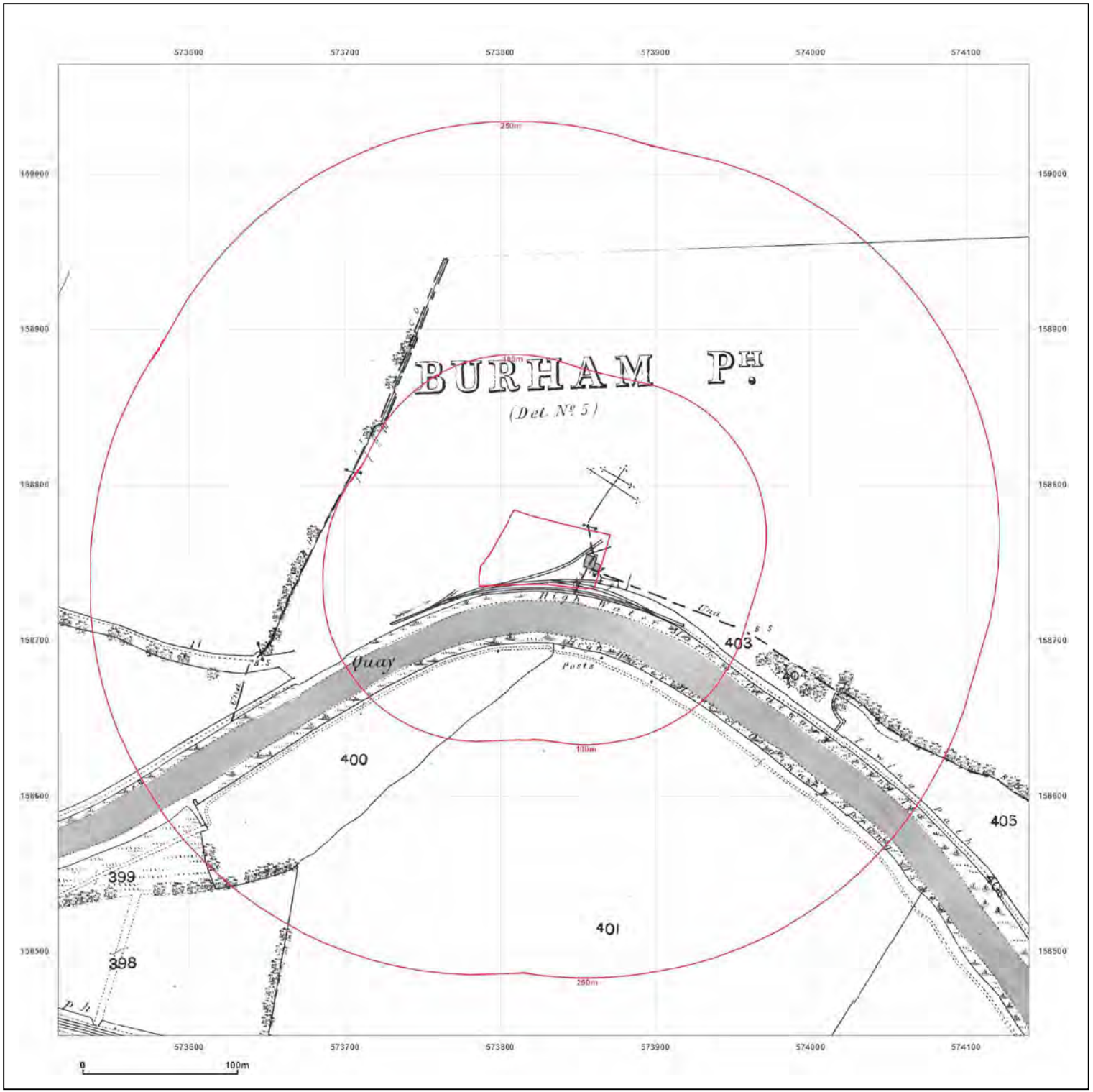

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PHOENIX HOUSE,COTTAGE INDUSTRIAL ESTATE,FORSTAL ROAD,AYLESFORD,AYLESFORD, ME20 7AD

Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1868**
Scale: 1:2,500
Printed at: 1:2,500

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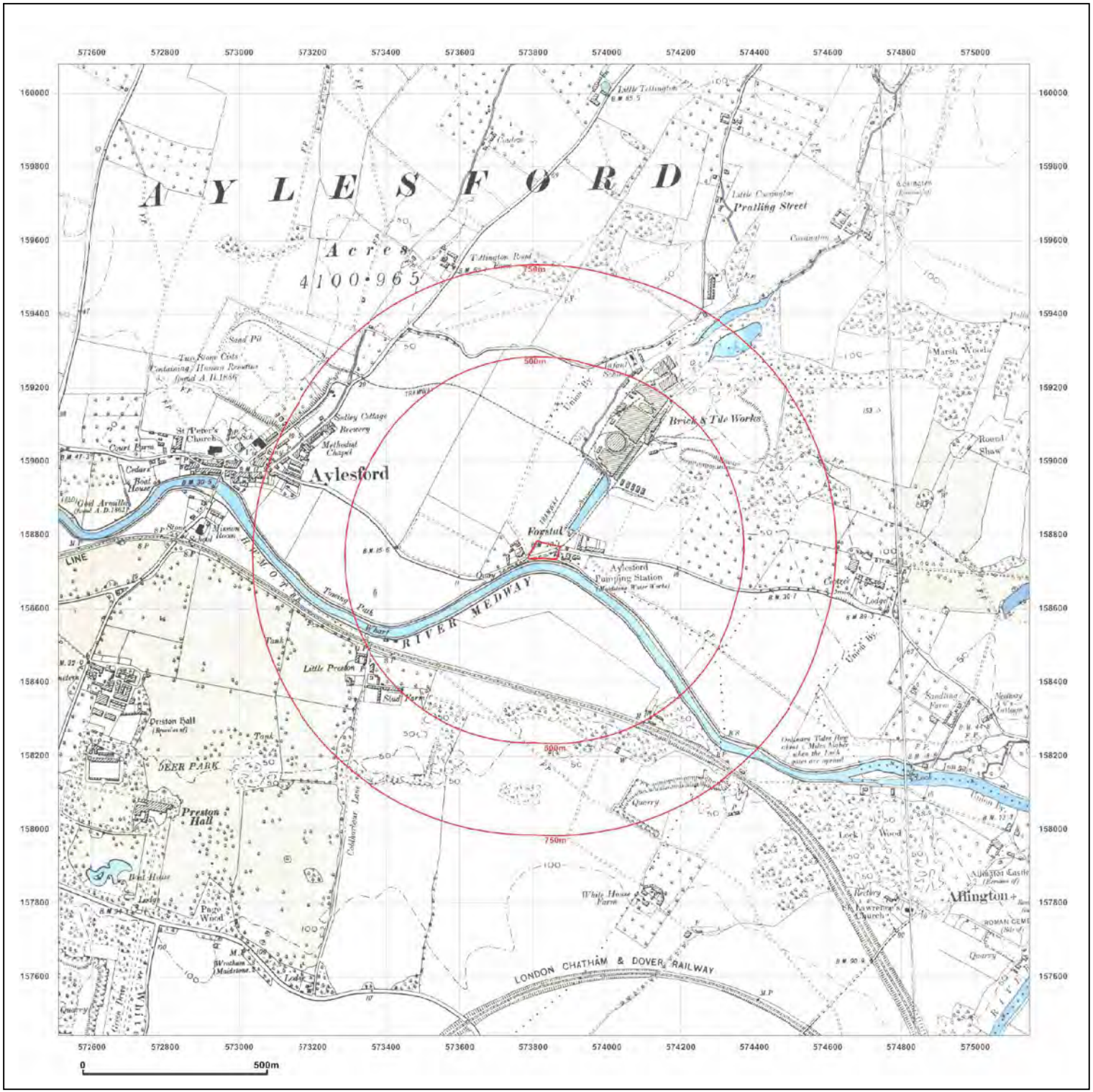

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Site Details:

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1895**
Scale: 1:10,560
Printed at: 1:10,560

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Production date: 25 February 2014

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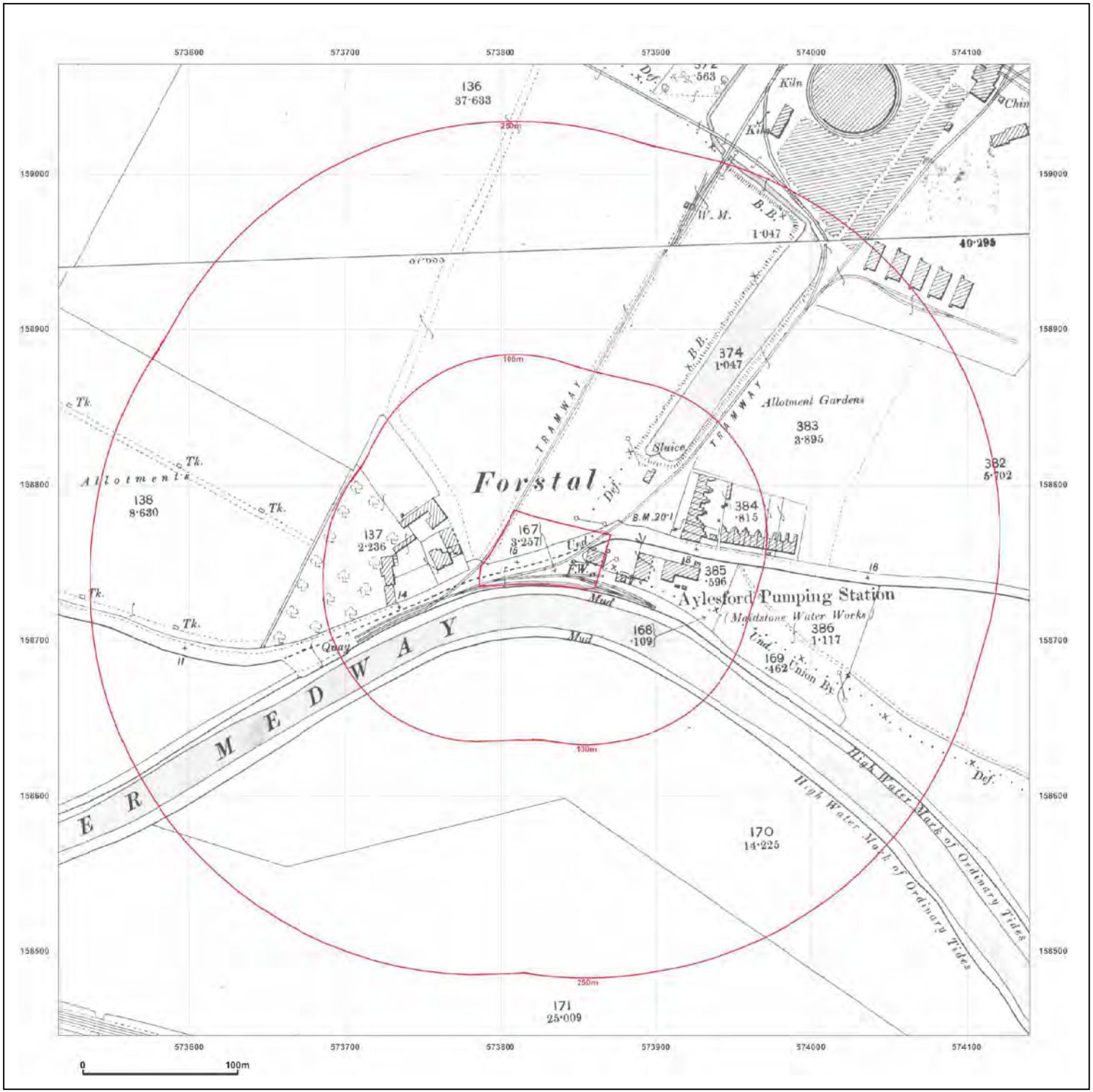

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1897**
Scale: 1:2,500
Printed at: 1:2,500

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1907**
Scale: 1:10,560
Printed at: 1:10,560

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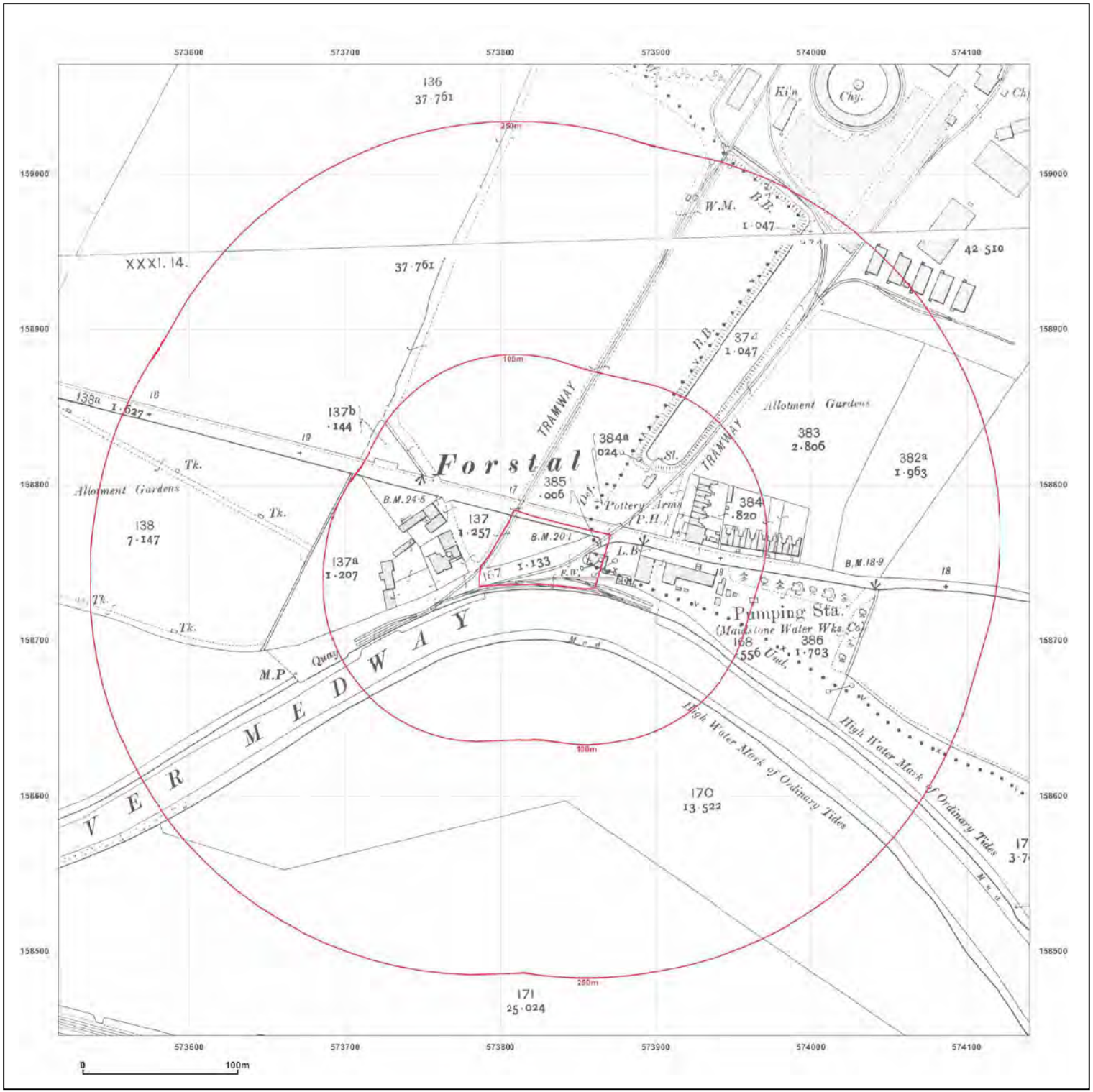

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1908**
Scale: 1:2,500
Printed at: 1:2,500

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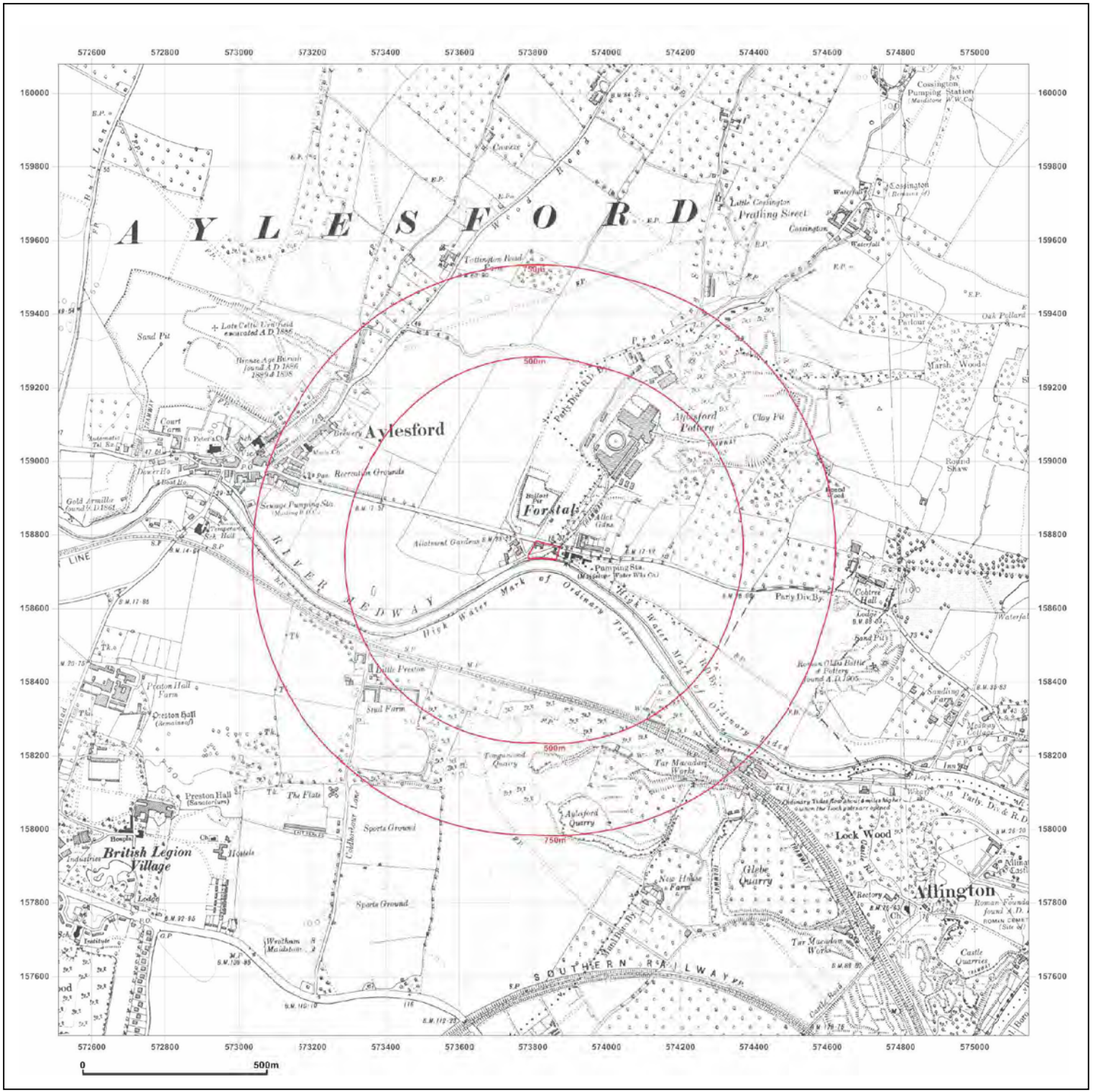

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: 1931
Scale: 1:10,560
Printed at: 1:10,560

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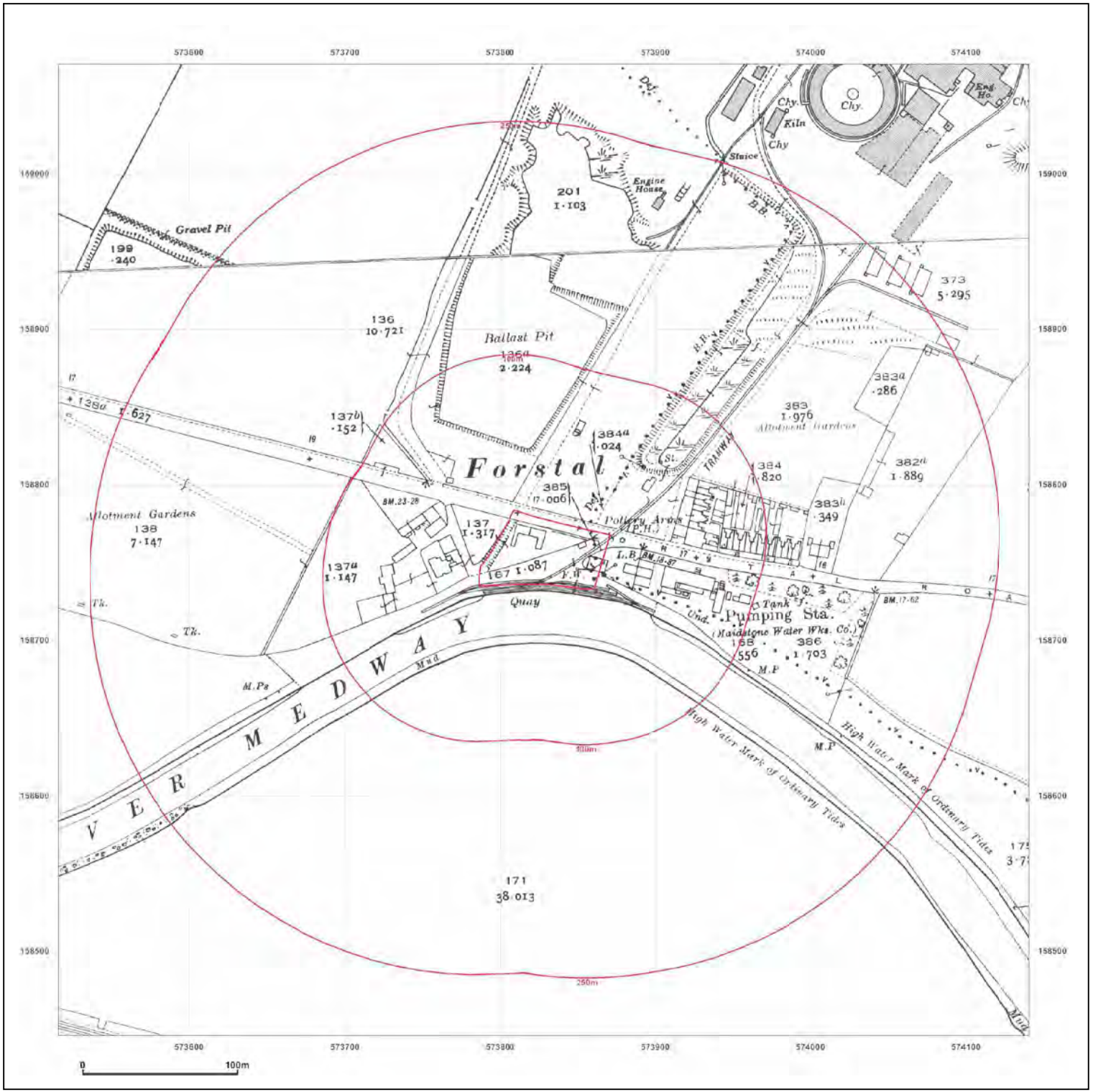

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: 1933-1938
Scale: 1:2,500
Printed at: 1:2,500

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Production date: 25 February 2014

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: County Series
Map date: **1947-1948**
Scale: 1:10,560
Printed at: 1:10,560

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Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: Provisional

Map date: **1955-1956**

Scale: 1:10,560

Printed at: 1:10,560

Surveyed 1955
Revised 1955
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1955
Revised 1955
Edition N/A
Copyright N/A
Levelled N/A

Surveyed 1956
Revised 1956
Edition N/A
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Levelled N/A

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Production date: 25 February 2014

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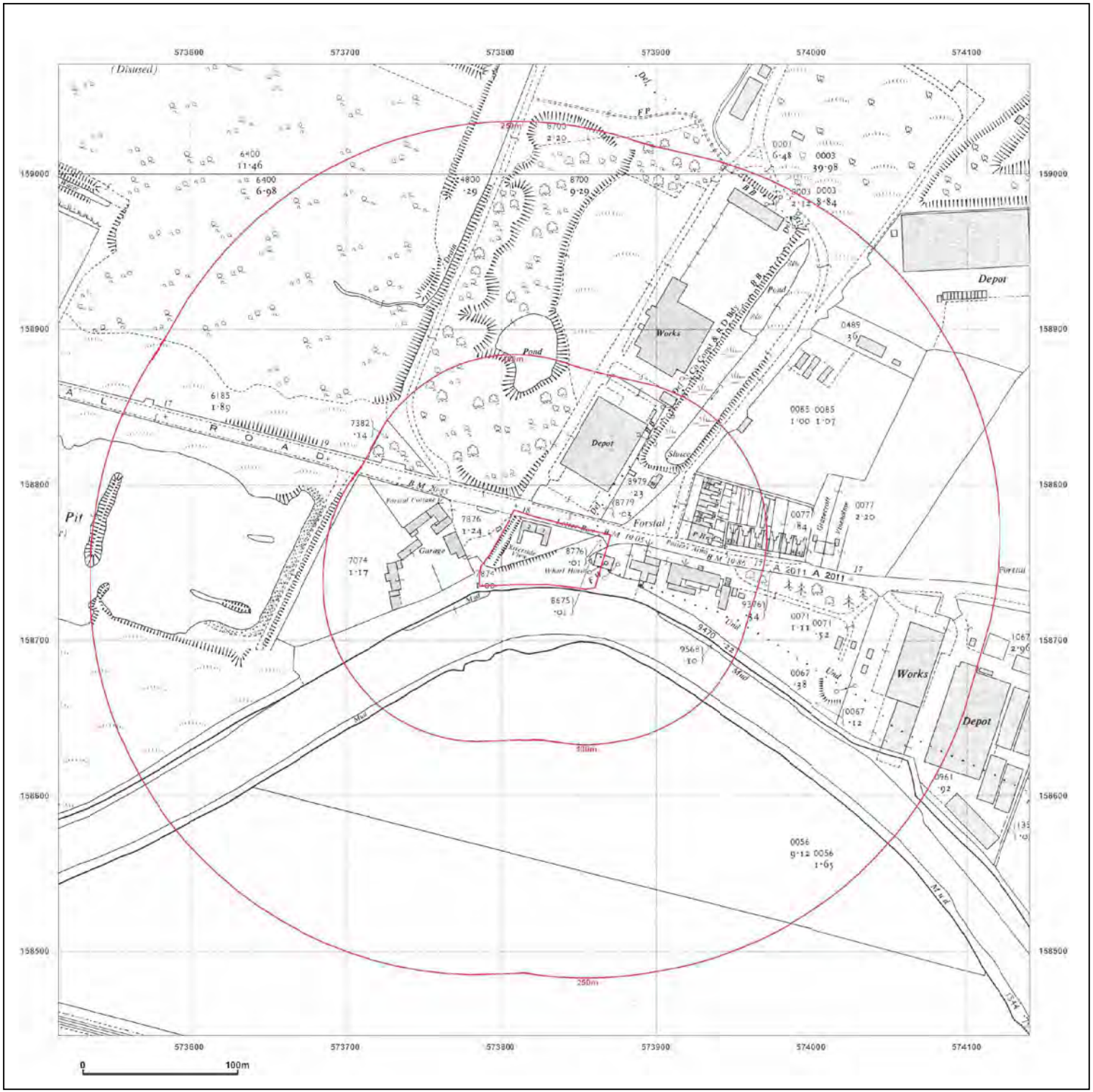

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PHOENIX HOUSE,COTTAGE INDUSTRIAL ESTATE,FORSTAL ROAD,AYLESFORD,AYLESFORD, ME20 7AD

Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: National Grid
Map date: **1960-1961**
Scale: 1:2,500
Printed at: 1:2,500

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Surveyed 1961
Revised 1961
Edition N/A
Copyright 1962
Levelled 1951

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
Levelled 1951

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1963
Levelled 1951

Surveyed 1960
Revised 1960
Edition N/A
Copyright 1961
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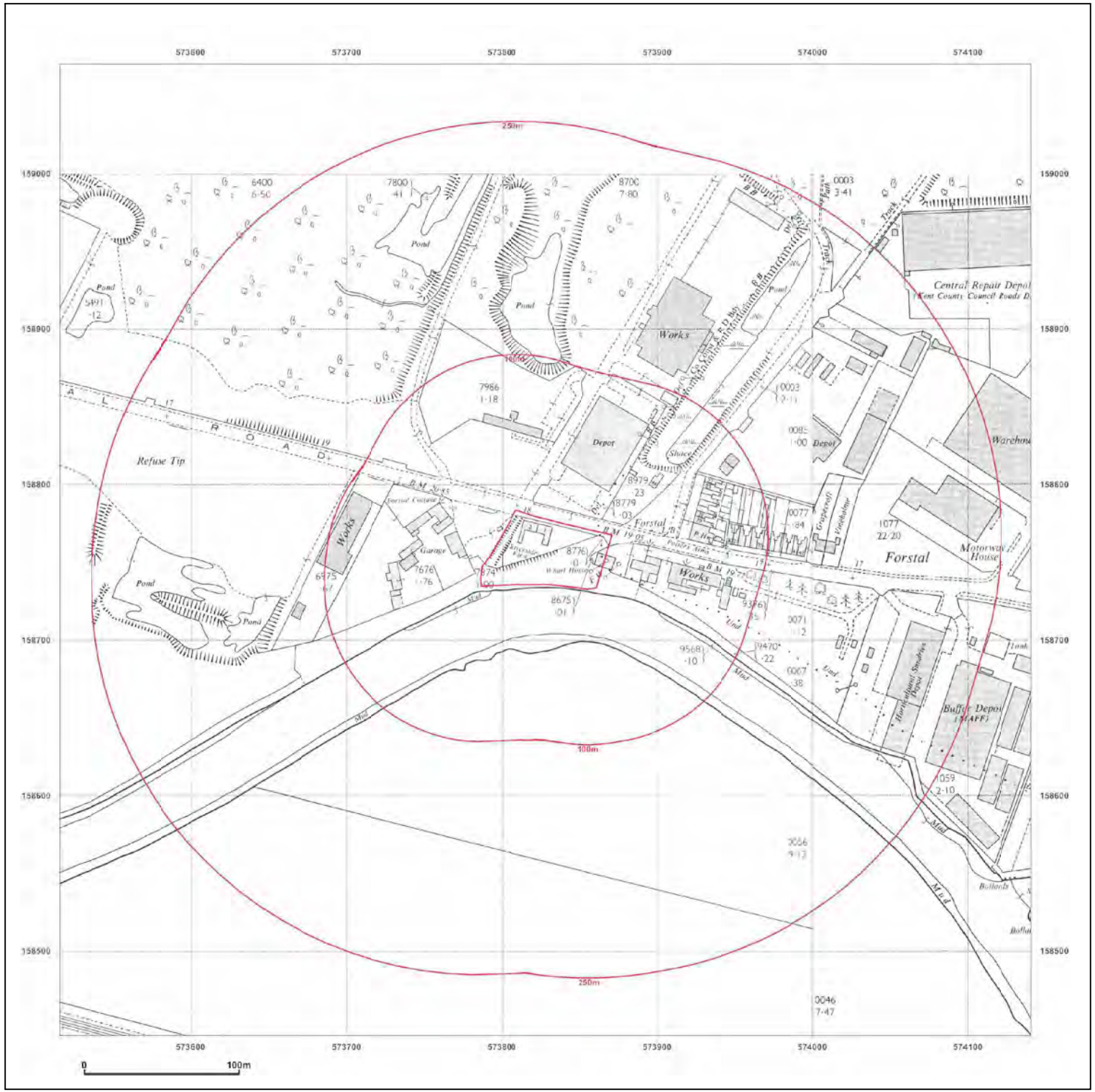
Production date: 25 February 2014

To view map legend click here *Legend*



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Historical Mapping Extract

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Site Details:

PHOENIX HOUSE,COTTAGE INDUSTRIAL ESTATE,FORSTAL ROAD,AYLESFORD,AYLESFORD, ME20 7AD

Client Ref: 5500
Report Ref: CMAPS-CM-300259-5500-250214HIS
Grid Ref: 573828, 158758

Map Name: National Grid

Map date: **1964-1968**

Scale: 1:2,500

Printed at: 1:2,500

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Surveyed 1964
Revised 1964
Edition N/A
Copyright 1965
Levelled 1956

Surveyed 1968
Revised 1968
Edition N/A
Copyright 1969
Levelled 1956

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groundsure@centremaps.com

Production date: 25 February 2014

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