Greatford Sewer Scheme

Archaeological Monitoring and Recording

Prepared by T. Linington for Anglian Water

2014

Project Code – GFA TPA Report No. 62/2014

Accession No LCNCC:2013.199, Museum Code: GPS13

The parish church of St. Thomas looking N

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Report Number	62/2014
Status	Version 1.2

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SUMMARY

- Trent & Peak Archaeology was commissioned by Anglian Water to carry out a scheme of archaeological monitoring and recording of the works taking place to install the new vacuum sewer system in Greatford, Lincolnshire.

- The work was carried out between the 7th January and 11th June 2014 with archaeological monitoring by staff from Trent & Peak Archaeology in accordance with the approved Written Scheme of Investigation (Davies 2013).

- The Greatford Sewer Scheme is located throughout the village of Greatford, running along Carlby Road, Belmesthorpe Road, Main Street and Stowe Road, from the northern (Carlby Road) and western boundary (Belmesthorpe Road) of the village, through the village centre (Main Street) to the south eastern extent of the village (Stowe Road).

- As the scheme was located within the historic core of the village there was a high chance of encountering significant stratified archaeological deposits. Within the vicinity of the village these deposits include early prehistoric archaeology evidenced by cropmarks, as well as the potential medieval and post medieval deposits within the village itself (Davies 2013).

- A total of 15 trial pits were monitored archaeologically up to a depth of 1.2 m below ground level (BGL). These were located at the northern limit of the village, around Carlby Road and Greatford Gardens, as well as on Stowe Road between Greatford and Langtoft. No archaeological features were identified.

- A total of 26 pits for vacuum pots were monitored archaeologically up to a depth of 1.4m BGL throughout the study area. Buried soil horizons and one north-south aligned ditch were observed. No features contained any dateable finds.

- In total, 3 stretches of vacuum sewer trench were monitored, along Carlby Road, Greatford Gardens and on Main Street. Along these five features were identified:

  - A 3m wide, east-west aligned ditch ([1064]) north of The West Glen River (undated but potentially late prehistoric given its size)
  - A series of four smaller ditches ([1066], [1068], [1070], [1072]) aligned east-west, just north of the village hall on Carlby Road
  - Natural gravel terracing and alluvial deposits were also observed towards the north of the village, as well as around the West Glen River.

While no finds were recovered from any of the features around the village hall, they are most likely medieval in date, due to their proximity to the medieval core of the village including the church.

- A further five small interventions were monitored along the length of the riser main, but no archaeological finds or features were observed within these.

GREATFORD SEWER SCHEME, ARCHAEOLOGICAL MONITORING AND RECORDING

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1. INTRODUCTION

1.1 Trent & Peak Archaeology was commissioned by Anglian Water to carry out a scheme of archaeological monitoring and recording of ground works (comprising a number of hand dug trial pits and machine excavated sewer runs) during the construction of the Greatford Sewer Scheme.

1.2 The development, hereafter 'the Site', is located throughout the village of Greatford, running along the main route ways of the village as well as some streets leading off to private residences.

1.3 The archaeological monitoring was conducted as part of construction works in order to record the surviving archaeological deposits along the route of the development.

2. PROJECT BACKGROUND

2.1 Anglian Water is constructing a new vacuum sewer main within the village of Greatford, Lincolnshire. Groundworks will comprise the excavation of trial holes, the sewer mains itself and a discharge main.

2.2 As part of the Greatford Sewer scheme, it is proposed to construct sewers along the following roads within the village itself:

- Carlby Road
- Greatford Gardens
- Main Street

A Riser Main leading south out of the village along Stowe Road to Langtoft was also constructed.

2.3 Anglian Water appointed Trent & Peak Archaeology to undertake the Scheme of Monitoring and Recording to the requirements set-out in a brief issued by Lincolnshire County Council and dated 28/10/2013.

2.4 Prior to the commencement of the works, a Written Scheme of Investigation (WSI) relating to the archaeological monitoring of the ground works was prepared by Trent & Peak Archaeology (Davies 2013), commented upon by AW's archaeological advisors and approved by the Senior Archaeological Officer at Lincolnshire County Council (LCC).

3. ARCHAEOLOGICAL AND HISTORICAL BACKGROUND

3.1 *Topography:* As noted above, the site is located in Greatford, mostly within an entirely built-up area presently used as roadways. The majority of the site is covered in tarmac, with some areas within the grass verges of the roadways. The topography across the study area is generally flat or gently sloping from east (high) to northwest (low).

3.2 *Geology:* The solid geology underlying much of the site is Kellaways Clay Member – Mudstone extending across the western half of the site and Oxford Clay Formation – Mudstone covering the east of the site. A band of Kellaways Sand Member runs North-South through the site, separating the two Mudstone formations. The Kellways Clay and Sand Members were formed between 161-165 million years ago, whereas the Oxford Clay Foundation was formed 156 - 165 million years. (http://mapapps.bgs.ac.uk/geologyofbritain/home.html).

3.3 The solid geology of most of the site is overlain by sand and gravel river terrace deposits, which were formed up to 3 million years ago. Only around the river West Glen, is the solid geology overlain by alluvial deposits of sand, gravel and clay. (http://mapapps.bgs.ac.uk/geologyofbritain/home.html)

3.4 Greatford is listed in the Domesday Book of 1086, and the Church of St Thomas a Becket at the western extent of the historic core is a C12-C13th structure (Grade 1 listed). The church lies immediately east of Greatford Hall, a C17th hall with associated stable and barn complex (the barn is late C16th). This 'west end' of Greatford may represent the location of a medieval hamlet comprising church and manor, but is presently unexplored archaeologically. Further to the east, a very late medieval/early post medieval building at The Old House may represent a further historic focus. In total 13 Listed Buildings are located within the historic core.

3.5 In addition, Greatford village is close-bye to several Scheduled Romano-British/prehistoric sites. Indeed, excavations by Oxford Archaeological Associates to the rear of the Manor House identified an Iron Age ditch, aligned north-south, within the central part of Greatford itself (NMR 1388908). This suggests that the medieval village of Greatford may overly a later Prehistoric/Romano-British site/s of as yet uncertain form or character.

3.6 As the archaeology of villages such as Greatford remains largely unexplored, any buried archaeological remains identified beneath the proposed redevelopment area would offer an opportunity to address research priorities highlighted in the recent East Midlands Updated Research Agenda and Strategy (Knight, Vyner and Allen 2012). For example, 6.7, 7.2.1' How can we elucidate further the development of nucleated villages...' (ibid.).

4. METHODOLOGY

4.1.1 The objective of the archaeological attendance can be stated as:

- To identify the presence of any archaeological remains to be affected by any intrusive aspects of the development and to achieve an appropriate level of *preservation by record*. Where practical (within the constraints of the watching brief and development), this will include an assessment of the overall extent, date and state of preservation of archaeological remains. Any features of geoarchaeological significance will also be recorded and where there is the potential for palaeoenvironmental data, an appropriate level of sampling will be undertaken.

4.2 Overall Methodology: The site specific methodology is listed below. All archaeological monitoring was carried out in accordance with the Written Schemes of Investigation (Davies 2013) and current industry best practice and guidance (IFA 2008a and 2008b).

4.3 *Staffing*: The work was undertaken by suitably qualified members of TPA according to accepted archaeological practice and the 'Standard & Guidance' produced by the Institute for Archaeologists.

4.4 *Notice*: The client gave at least one week notice of the commencement of works to both TPA and the Planning Archaeologist for LCC. The project start date was January the 7th 2014.

4.5 *Service*: The client was responsible for carrying out service checks prior to groundworks, and provided plans of all services within the development area.

4.6 *Base maps*: The client supplied digital copies of base maps for TPA to use in the report.

4.8 *Report*: A record of the results, whether positive or not, was made and presented in an appropriate report format to the client and Planning Archaeologist for LCC within 8 weeks of the completion of the fieldwork.

4.9 *Fieldwork, Trial Holes:* TPA monitored the hand excavation of all trial holes at appropriate intervals, unless it was possible to demonstrate that a specific trial hole/s had reduced/no significant archaeological potential, with the prior agreement of the Planning Archaeologist for Lincolnshire County Council.

4.10 *Fieldwork, Main Sewer Mains:* Initial excavation of all topsoil/overburden in all other areas was carried out under archaeological supervision, and the client ensured that the contractor had been made aware of the archaeological constraint on their operations.

4.11 Wherever possible the contractor ensured the use of a toothless ditching bucket on any excavator/machine so that a clean surface could be exposed and the archaeologist was able to inspect the deposits revealed. Foundation/service trenches were also excavated with a toothless bucket where possible. Any exceptions only occurred following agreement with the archaeologist on site. There was no trafficking by vehicles on exposed surfaces until the archaeologist had agreed that there were no archaeological deposits of significance or until any deposits were appropriately recorded.

4.12 Within Health & Safety constraints, the contractor ensured access to service trenches to permit examination/cleaning and where necessary recording of sections. Where excavation could be quickly demonstrated not to have revealed significant archaeological deposits, delay was minimal.

4.13 *Spoil-heaps*: Where practical and safe to do so, all spoil heaps were regularly examined for archaeological material.

5. RESULTS

5.1 Introduction

5.1.1 An outline narrative of the results of the archaeological monitoring during the ground works is presented below.

5.2 Trialholes (For the location of trialholes1-10 see Fig. 3)

5.2.1 **Trialhole TP1** was located on the southern verge of the drive way leading up to "The Old Rectory" outside "The Brimbles". The aim of this pit was to locate the modern services leading to "The Old Rectory". All of these were located successfully. Following the removal of the topsoil (1001) and subsoil (1002), to a depth of 0.25m BGL, a buried soil (1003) was identified. The services were located within the road make-up (1005), the subsoil (1002) and within a cut, cutting into the buried soil (1003).

5.2.2 **Trialhole TP2** was located outside No 1 Greatford Gardens. The aim of this pit was to make sure no service were located in the area of pot #2. No services were located within the area of the pit. After the removal of the topsoil (1001) and the 20th century made-ground (1007), a dark brown-yellow sandy-clay with inclusions of gravel and brick fragments, to a depth of 0.40m BGL, a probable alluvial deposit (1008), a mid grey-brown silty-clay, was identified. This material extended to a depth of 0.55m BGL and sealed the natural geology, which consisted of two bands of sands and gravels, (1009) a light brown-yellow sandy-clay and (1010) a light yellow-white sandy-gravel.

5.2.3 **Trialhole TP3** was located just to the south of No11 Greatford Gardens. The aim of this pit was to locate the electric service, this was achieved. After the removal of the topsoil (1011), the service was located within the upper subsoil (1012) at a depth of 0.52m BGL. Excavation ended at this depth.

5.2.4 **Trialhole TP4** was located on the corner of the t-junction outside No 4 Greatford Gardens. The aim was to identify the water main, this was not achieved. After the removal of the tarmac (1013), angular stone fragments up to 25mm across (from now referred to as Type One) (1014) and the make up (1015) consisting of crushed brick rubble, a charcoal rich layer (1016) was identified at a depth of 0.40m BGL. This material sealed two clay deposits, (1017) a grey silty-clay and (1018) a light blue clay. These two deposits could either have been associated with the cultivation of water cress in this area or be alluvial clay deposits. At a depth of 0.80m BGL, a yellow clay deposit (1019) was identified, this was most likely an alluvial deposit.

5.2.5 **Trialhole TP5** was located on Carlby Road outside "Meadow Brook". The test pit extended from the western verge into the road itself. In the verge, after the removal of the topsoil (1020) and a mixed deposit of the topsoil and type 1 (1021), to a depth of 0.22m BGL, the upper subsoil (1022) was identified. Three services were identified within this deposit. In the road, the tarmac (1023), and a series of make up deposits (1024, 1025, 1026, 1027) for the road were identified. These extended to a depth of 0.45m BGL, at which point a modern service was identified, and the excavation was stopped.

5.2.6 **Trialhole TP6** was located on Carlby Road, on the northern route out of the village. The test pit extended from the western verge of the road into the road itself. In the verge, after the removal of the topsoil (1028) to a depth of 0.65m BGL, three services were identified and the excavation was stopped. In the road after the removal of the tarmac (1030) and the underlying Type 1 make up (1031) to a depth of 0.30m BGL, an undisturbed possible subsoil (1032), a mid brown silty loam, was identified. This extended to a depth of up to 1.1m BGL, at which point the excavation ended.

5.2.7 **Trialhole TP7** was located on Carlby Road, outside Meadow Court. After the removal of the tarmac (1023), the sub base (1033) and the underlying type one (1027), to a depth of 0.35m BGL, a probable alluvial deposit (1034) was identified. This material was firm mid-yellow-brown silty clay and sealed the natural gravels (1035), a dark yellow sandy-gravel and (1010), a light yellow-white sand and gravel, at a depth of 0.70m BGL.

5.2.8 **Trialhole TP8** was located in the eastern verge of Carlby Road, just before the turn of to "The Rectory". The aim was to identify the location and depth of the street light cable. After the removal of the topsoil (1001), to a depth of 0.25m BGL, the cut for the service (1039) was identified cutting into possible alluvium (1034). The actual service was identified at a depth of 1.2m BGL and the excavation was stopped.

5.3. Vacuum Pot Pits (The location of all the pots are recorded on Figures 4-6)

5.3.1 **Pot#1** was located on Carlby Road, outside Brooke Lodge. The excavated pit measured 1.6m x 1.6m and was 1.2m deep. After the removal of the tarmac (1023), sub base (1033) and hardcore make-up (1027) to a depth of 0.35m BGL, a probable alluvial deposit (1036), consisting of mid yellow-brown silty-clay, was observed. This material sealed a pit [1038] and fill (1037), at a depth of 0.90m BGL, consisting of mid yellow-brown clayey-silt. The date and use of the pit was unknown, due to no finds being recovered from its fill. The pit cut the natural gravel (1035 and 1010) at 0.90m BGL and continued both beneath as well as to the south outside the limit of our excavations and could not be further investigated due to the high water table. See Plate 1

5.3.2 **Pot#2** was located outside No 1 Greatford Gardens, in the same location as TP#2, measured 2.0 x 2.0 m and was 1.1m deep. After the removal of the topsoil (1001) and the 20th century made-ground (1007), a dark brown-yellow sandy-clay with inclusions of gravel and brick fragments, to a depth of 0.40m BGL, a probably alluvial deposit (1008), a mid grey-brown silty-clay, was identified. This material extended to a depth of 0.55m BGL and sealed the natural geology, which consisted of two bands of sands and gravels, (1009) a light brown-yellow clayey-sand and (1010) a light yellow-white sandy-gravel.

5.3.3 **Pot#3** was located outside Nos. 6, 7 and 8 Greatford Gardens. It measured 1.8 x 1.8m and was 1.2m deep. After the removal of the tarmac (1013), type one (1014) and demolition rubble/make up (1015) to a depth of 0.42m BGL, a firm mid blue-grey silty-clay (1041) was observed to a depth of 0.84m BGL. This layer either related to the use of this area for the cultivation of water cress prior to the 1970s or was an alluvial deposit from the nearby West Glen River. This material extended to a depth of 0.84m BGL, at which point it sealed the natural gravel deposits (1035). See Plate 2

5.3.4 **Pot#4** was located on Carlby Road, north of the West Glen River and measured 2m x 2m and was 1.2m deep. After the removal of the tarmac (1023), the sub base (1033) and the underlying type one (1027), to a depth of 0.35m BGL, an alluvial deposit (1034) was identified. This deposit was firm mid-yellow-brown silty clay and sealed the natural gravels (1035), a dark yellow sandy-gravel and (1010), a light yellow-white sand and gravel, at a depth of 0.70m BGL. These gravels extended to, and beyond our limits of excavation.

5.3.5 **Pot #5** was located on the east-west run of Greatford Gardens. It measured 2m x 2m and was 1.2m deep. After the removal of the tarmac (1013) and demolition rubble/make up (1015) to a depth of 0.40m BGL, a firm mid blue/gray layer of clay (1041) was observed. This layer either related to the use of this area for the cultivation of water cress prior to the 1970s or was an alluvial deposit from the nearby West Glen River and extended to a depth of 0.70m BGL. At this depth the first layer of natural gravels was observed, mid-brown gravel (1019), followed by

yellow gravel (1010) at a depth of 0.85m BGL. The two gravel deposits formed the natural, superficial geology of the area and extended to and beyond our limits of excavations.

5.3.6 **Pot #6** was located on the east west run of Greatford Gardens, just west of the junction for the north-south run of Greatford Gardens. It measured 2.0m x 2.0m and was 1.2m deep. After the removal of the tarmac (1013) and demolition rubble/make up (1015) to a depth of 0.44m BGL, the first layer of natural gravels was observed, a mid-brown gravel (1019), followed by a yellow gravel (1010) at a depth of 0.76m BGL. The two gravel deposits formed the natural superficial geology of the area and extended to and beyond our limits of excavations.

5.3.7 **Pot#7** was located outside Meadow Court on Carlby Road, just north of the West Glen River, in the same location as TP# 7, measured 2.0m x 2.0m and was 1.2m deep. After the removal of the tarmac (1023), sub base (1033) and underlying type one (1027), to a depth of 0.35m BGL, an alluvial deposit (1034) was identified. This deposit was a firm mid-yellow-brown silty clay and sealed the natural gravels (1035), a dark yellow sandy-gravel and (1010), a light yellow-white sand and gravel, at a depth of 0.70m BGL, which extended to and beyond out limits of excavation.

5.3.8 **Pot#8** was located outside The Hall Cottage on Carlby Road, ca. 20m south of the West Glen River. It measured 2.0m x 2.0m and was 1.2m deep. After the removal of the Tarmac (1059) and underlying Type One (1060) to a depth of 0.35m BGL, a layer of dark-brown clay-silt (1061) was observed to a depth of up to 0.90m BGL. However the material stepped up at the southern end of the pit, to a depth of 0.70m BGL. This step was also observed at a later date, when the trench for main sewer was excavated. It was interpreted as a natural terrace formed in the underlying natural gravel (1062), associated with a former course of the West Glen River. At 0.90m and 0.70m BGL respectively, the natural gravel (1062) was observed, and extended to at least the limit of our excavations. See Plate 3.

5.3.9 **Pot #9** was located in the gravel driveway of Swift Cottage, offMain Street. It measured 2.0m x 2.0m and was 1.2m deep. After the removal of the gravel driveway (1051) to a depth of 0.30m BGL, modern topsoil (1052) was identified, extending to a depth of 0.50m BGL. This material was indentified as modern topsoil of the surrounding garden. At the depth of 0.50m BGL, a yellow-brown buried soil horizon (1053) was observed extending to a depth of 0.90m BGL, this material was interpreted as made ground, associated with the construction of the surrounding houses or possibly older activity within the village. No finds were recovered from this horizon, so no more conclusions could be drawn from this material. This material sealed the natural gravel horizon (1062), at a depth of 0.90m BGL, which extended to at least the limit of our excavations.

5.3.10 **Pot#10** was located in the pavement outside Carlingford House, on Main Street. It measured 2.0m x 2.0m and was 1.2m deep. After the removal of the tarmac (1059) and underlying compacted angular sandstone fragments, up to 150mm across, (1073), to a depth of 0.30m BGL, two things were observed. One being the backfill (1055), cut [1058] and infill (1057) of a 19th century (and still in use) culvert or drain, that was aligned east-west, (1056). This feature extended the full depth of the pit, and up to 0.6m from the southern extent of the pit. It cut a yellow-brown buried soil horizon (1053), which extended across the rest of the pit, to a depth of 0.90m BGL. Similarly to the observations made in Pot#9, it was unclear what this horizon related to. Whether it was associated with the construction of the surrounding buildings in the 18th/19th century or earlier was unclear. It was observed to be sealing the natural gravels (1062) at 0.90m BGL, which extended to at least the limit of our excavations. See Plate 4.

5.3.11 **Pot#11** was located in the gravel drive of Greatford Barn, on Main Street. It measured 2.0m x 2.0m and was 1.2m deep. After the removal of the gravel drive (1051) to a depth of 0.5m BGL, a cobble surface (1079) was observed. This was interpreted as a possible cobble drive up to the Greatford Barn, probably 18th/19th century in date associated with the construction of the late 18th century Greatford Barn. This material sealed the natural gravel (1062), at a depth of

0.50m BGL. While a colour difference was observed within this gravel, this was due the lower material being wetter than the upper gravels, thus this material was not subdivided. The gravel extended to at least the limit of our excavations.

5.3.12 **Pot#12** was located outside the council houses at the eastern limit of the village, in the pavement. It measured 2.0m x 2.0m and was 1.2m deep. After the removal of the tarmac (1080) and underlying type one (1081), to a depth of 0.30m BGL, a firm yellow-brown clay-silt (1082) was observed. This material was interpreted as possible old subsoil relating to the use of this area prior to the construction of the aforementioned houses. No finds were recovered from this material so no more conclusions could be drawn. It extended to a depth of 0.90m BGL, and sealed the natural gravel (1083) at this depth, which extended to at least the limit of our excavations.

5.3.13 **Pot#13** was located just to the north-east of pot #12, also outside the council houses at the eastern limit of Greatford. It measured 2.0m x 2.0m and was 1.2m deep. After the removal of the tarmac (1080) and underlying type one (1081), to a depth of 0.30m BGL, a firm yellow-brown clay-silt (1082), a possible former subsoil, was observed. It extended to a depth of 0.90m BGL, and sealed the natural gravel (1083) at this depth, which extended to at least the limit of our excavations.

5.3.14 **Pot#14** was located in the drive way of house opposite the Stowe Road/Main Street junction. It measured 2.0m x 2.0m and was 1.10m deep. After the removal of the tarmac (1080) and underlying type one (1081), to a depth of 0.30m BGL, a mixed deposit of former topsoil and subsoil was observed (1084), this material was related to construction of the abovementioned house. This material extended to a depth of 0.80m BGL, at which point the natural gravel (1083) was observed, which extended to at least the limit of our excavations.

5.3.15 **Pot#15** was located in the driveway of Meadow View, just west of the Stowe Road junction on Main Street. It measured 2.0m x 2.0m and was monitored to a depth of 0.70m BGL. After the removal of the gravel drive (1051) and underlying type one (1081), a mixed deposit of dark brown to gray clay-silt was observed. This material extended to a depth of at least 0.70m BGL, at which point it became apparent that this pit was located within the limits of the existing cesspit of the house and was abandoned.

5.3.16 **Pot#16** was located just outside the Pub at the western limit of the village. It measured 2.0m x 2.0m and was 1.4m deep. After the removal of the tarmac (1059) and underlying compacted angular sandstone stone fragments (1073), to a depth of 0.50m BGL, a layer of compacted angular stone fragments (1085) was observed to a depth of 1.10m BGL. This material was interpreted additional ballast used during the construction of this part of the road; it sealed the natural gravel (1062) at a depth of 1.10m BGL, which extended to at least the limit of our excavations.

5.3.17 **Pot#17** was located outside the houses just to the east of the Pub. It measured 2.0m x 2.0m and was 1.0m deep. After the removal of the tarmac (1059) and underlying compacted angular sandstone stone fragments (1073), to a depth of 0.50m BGL, a further near black compacted cobble and stone deposit (1074) was observed to a depth of 0.70m BGL. This material was interpreted as further road makeup, and contained occasional strips of plastic, dating it to later 20th century. This material sealed the natural gravel (1062), at a depth of 0.70m BGL, which extended to at least the limit of our excavations.

5.3.18 **Pot#18** was located outside the house, opposite the Carlby Road/Main Street junction. It measured 2.0m x 2.0m and was 1.0m deep. After the removal of the tarmac (1059), the underlying type one (1060) and near black compacted cobble and stone deposit (1074), to a depth of 0.60m BGL, the natural gravel (1062) was observed. The natural extended to at least the limit of our excavations.

5.3.19 **Pot#19** was located just outside Bumble Bee Barn on Main Street. It measured 2.0m x 2.0m and was 1.0m deep. After the removal of the tarmac (1059), the compacted sandstone fragments (1073) and compacted black cobbles and stone fragments (1074), to a depth of 0.7m BGL, the natural gravel (1062) was observed, which extended to the limit of our excavations.

5.3.20 **Pot#20** was located just to the east of the Manor House, on Main Street. It measured 2.0m x 2.0m and was 1.0m deep. After the removal of the tarmac (1059), the compacted angular sandstone fragments (1073) and compacted black cobbles and stone fragments (1074), to a depth of 0.7m BGL, the natural gravel (1062) was observed, which extended to the limit of our excavations.

5.3.21 **Pot#21** was located outside The Gardeners Cottage on Main Street. It measured 2.0m x 2.0m and was 0.8m deep. After the removal of the tarmac (1059), the type one (1060) and compacted black cobbles and stone fragments (1074), to a depth of 0.7m BGL, the natural gravel (1062) was observed, which extended to, at least, the limit of our excavations.

5.3.22 **Pot #22** was located just to the east of The Gardeners Cottage on Main Street. It measured 2.0m x 2.0m and was 0.5m deep. After the removal of the tarmac (1059) and underlying compacted black cobbles and stone fragments (1074), to a depth of 0.4m BGL, the natural gravel (1062) was observed, which extended, at least, to the limit of our excavations.

5.3.23 **Pot #23** was located outside Rowenbank on Main Street. It measured 2.0m x 2.0m and was 0.8m deep. After the removal of the tarmac (1059) and underlying type one (1060) to a depth of 0.30m BGL, a layer of mid-grey-brown sandy-silt (1086) was observed. This was interpreted as a possible buried topsoil horizon and extended to a depth of 0.6m BGL, at which point the natural gravel horizon (1062) was observed, which extended to, at least, the limit of our excavations.

5.3.24 **Pot #24** was located opposite Glen Farm Cottage on Main Street. It measured 2.0m x 2.0m and was 1.0m deep. After the removal of the tarmac (1059) and underlying type one (1060) to a depth of 0.30m BGL, a layer of mid-grey-brow sandy-silt (1086) was observed. This material extended to a depth of 0.70m BGL and sealed a possible ditch [1078]. This ditch was 0.25m deep and at least 1m wide and was aligned north-south. The fill was a dark-grey clayey-silt with occasional cobbles (1077). The ditch cut the natural gravel (1062) at a depth of 0.6m BGL and the gravel and extended to at least the limit of our excavations. The plate shows the ditch cutting the natural gravel both in section and plan. See Plate5.

5.3.25 **Pot #25** was located outside Old Court on Main Street. It measured 2.0m x 2.0m and was 1.0m deep. After the removal of the tarmac (1059), underlying type one (1060) and compacted black cobbles and stone fragments (1074) to a depth of 0.70m BGL, the natural gravel (1062) was observed. This material extended to at least, the limit of our excavations.

5.3.26 **Pot#26** was located outside Willow Croft (the eastern most house of the village) in the pavement on Main Street. It measured 2.0m x 2.0m and was 1m deep. After the removal of the tarmac (1059) and underlying type one (1060) to a depth of 0.2m BGL, a light-brown silty-clay (1087) was observed, which extended to 0.90m BGL. This material was interpreted as a probable 20th century made-ground, associated with the construction the nearby houses. At a depth of 0.90m BGL, the natural gravel (1062) was observed and extended to, at least, the limit of our excavations.

5.4. Vacuum Sewer Trench

5.4.1 For ease of discussion of the findings along the route of the vacuum sewer trench, it was divided into four areas (see Fig. 7), as follows:

- Carlby Road North of West Glen River
- Greatford Gardens
- Carlby Road South of West Glen River
- Main Street

Furthermore the lateral feeds from the pots are discussed separately.

The monitoring was concluded on July 11th, outside "The Doghouse" on Main Street, due to the negative findings up to this point of the project. No further deposits to the east were observed.

5.4.2 ***Carlby Road North of West Glen River*:** The area north of the river, along Carlby Road, revealed a uniform stratigraphic sequence throughout. After the removal of the tarmac (1023), the sub base (1033) and the underlying type 1 (1027), to a depth of 0.35m BGL, a buried alluvial deposit (1036), consisting of mid yellow-brown silty-clay, was observed. This same sequence was repeated throughout the area, with only the numbering of the buried alluvium changing in some places being numbered as (1034), so as to correspond to the numbering of the adjoining Vacuum Pot Pits. This material extended to a depth of between 0.70m and 0.90m BGL, at which point the natural gravel horizon (1035 and 1010) was observed. See Plate 6.

5.4.3 The only feature along this stretch of the vacuum sewer trench was a probable east-west aligned ditch [1064]. It cut into the natural gravel and was sealed by the overlying alluvium (1034). The fill (1063) was a firm dark-grey to black clayey-silt, with possible organic content. The feature was 3.2m wide, and at least 0.3m deep, had a sharp break of slot at the top and gradual sloping sides and was aligned east-west. Due to health and safety concerns of excavating the trench any deeper, the base of the feature was not reached. No dateable material was recovered from this feature. While this feature has been interpreted as a probable ditch, it could also be a palaeochannel. See Plate 7.

5.4.4 The pit observed in Pot#1 was not visible in the vacuum sewer trench.

5.4.6 **Greatford Gardens:** The area within Greatford Gardens also had a relatively uniform stratigraphic sequence. After the removal of the tarmac (1013) and demolition rubble/make up (1015) to a depth of 0.40m BGL, a firm mid blue/gray layer of clay (1041) was observed. In some places there was a 0.05m thick band of Type One between the tarmac and construction/demolition rubble. The rubble was interpreted as ballast for the road.

5.4.7 The blue-gray clay which extended across the entire area, was interpreted as most likely being alluvial material, though it is possible it related to the use of the area for watercress cultivation in the middle of the 20th century. This material extended to a depth of between 0.70m and 0.84m BGL, and rather than there being a distinct change between it (1041) and the alluvium observed along Carlby Road (1034), a gradual change in colour was observed between these two deposits, supporting the suggestion that it was an alluvial deposit rather than being related to the watercress cultivation.

5.4.8 The deposit discussed above, (1041) sealed the natural gravel deposits (1010, 1019) at a depth between 0.70m and 0.84m BGL, which extended to at least the limit of our excavations. See Plate 8.

5.4.9 **Carlby Road South of West Glen River:**

The area along Carlby Road, south of the river, saw two very distinct stratigraphic sequences. The first being from the river, to 20m south of the river. In this area, after the removal of the Tarmac (1059) and underlying Type 1 (1060) to a depth of 0.35m BGL, a layer of dark-brown clay-silt (1061) was observed up to a depth of up to 0.90m BGL. As observed in Pit#8 above, at this point (ca. 20m south of the West Glen River) the natural gravel horizon (1062) steps up from a depth of 0.9m BGL to eventually a depth of 0.35m BGL (see Plate9). By this point none of the dark-brown clay-silt (1061) was observed within the trench. This material (1061) sealing the natural gravel (1062), was interpreted as alluvial material in the old flood plain of the West Glen River.

The second stratigraphic sequence extended from Pit #8, south, all way to the junction of Carlby Road and Main Street. Throughout this stretch, The Tarmac (1059) and type one (1060), still extending to 0.35m BGL, lay directly on the natural gravel (1062). There were however four features observed cutting into the natural gravels along a 19m stretch, 7m north of the Carlby Road, Main Street junction. Along this stretch four east-west aligned ditches were observed, they were from north to south, [1065] (see Plate 10), [1067] (see Plate 11), [1069] (see Plate 12) and [1071] (see Plate 13). Their depth varied from 0.75m, in the case of [1065] and 0.30m, in the case of [1071]. Their fills (1066, 1068, 1069, 1070) were all of the same colour and composition, a soft mid-grey-brown sandy-silt with no obvious inclusions. No finds were recovered from any of the features, making it impossible to date them, though they could be a series of boundary/drainage ditches of Iron Age date, similar to the one recorded ca. 50m to the south, on the other side of Main Street, during previous works carried out in this area. Or they could be medieval in date relating to activity centred around the 12th century church.

5.4.4 **Main Street:** Part of the Main Street area, was a short stretch of Trench just to the south of the church, running north-south. Along this stretch, work revealed that, the modern road makeup and general build up (1088), containing 20th century cabling and plastic fragments, extended to a depth of 0.80m BGL at which point the natural gravel (1062) was encountered. No features were observed along this stretch of trenching. See Plate 13.

The stratigraphic sequence of the Main Street stretch of the vacuum sewer trench was pretty consistent along the majority of excavated area. Work revealed that the tarmac (1059) overlay a series of bedding deposits for the road; these were either compacted sandstone fragments (1073) or compacted black cobbles and stone fragments (1074), or a combination thereof, with the sandstone fragments (1073) overlying the cobbles (1074). These deposits extended up to a depth of 0.70m BGL, at which point the natural gravel horizon (1062) was encountered. See Plate 15. The lack of any archaeological features along this stretch of the works could be explained by the depth of truncation by the road construction.

The works extending all the way from just west of the Pub at the western limit of the village, to “The Dog House” did not reveal any archaeological features at all. This could be due the deeper truncation by the road construction in this area.

5.4.5 **Laterals from the Vacuum Sewer Pots**: Lateral trenches were also excavated from all the vacuum sewer pots, to the edge of the respective properties, however did not provide further insight into the stratigraphy already observed during the works for the excavation of the pots or the vacuum sewer main, so are not discussed.

5.5 Riser Main Interventions

While the main trenching that took place on the riser main was not part of the archaeological monitoring program, a number of trial holes, drill reception pit and other small interventions were monitored. These are discussed below. For their locations see Figure 8

5.5.1 **Trialhole TP9** was located just outside Stowe Farm on Stowe Road. The aim of digging this pit was to identify where the electrical service crossed the road. The pit was located right above the service and excavation revealed modern topsoil (1042) overlying service backfill (1043) to a depth of 0.8m BGL, at which point the service was reached and excavation ended.

5.5.2 **Trialhole TP10** was located on Stowe Road, just north of where it crossed the drainage cut. The aim of digging this pit was to locate the crossing point of an electrical service. The pit was dug directly over the service and excavation revealed modern topsoil (1042) overlying service backfill (1043) to a depth of 0.9m BGL, at which point the service was identified and excavation ended.

5.5.3 **Trialhole TP11** was located on Stowe Road, just south of Greatford Village, within Stowe Road. It measured 3.0m x 0.3m, was 1.2m deep and was aligned north-south. After the removal of the tarmac (1044) and underlying type one (1045) to a depth of 0.70m BGL, a firm yellow-brown sandy-silt (1046) was observed and interpreted as a possible buried soil or as build up for the bank the road sat upon. This material extended to a depth of 0.90m BGL, at which point the natural gravel (1047) was observed, which extended to, at least, the limits of our excavation.

5.5.4. **Trialhole TP12** was located on Stowe Road, just east of the crossroads with King Street. It measured 3.0mx 0.3m, was 1.2m deep and was aligned east-west. After the removal of the tarmac (1044) and underlying type one (1045) to a depth of 0.35m BGL, a firm yellow-brown sandy-silt (1046) was observed. This extended to a depth of 0.50m BGL, at which point the natural gravel horizon (1047) was encountered, which extended to, at least, the limit of our excavations.

5.5.5 **Trialhole TP13** was located on Stowe Road, opposite Back Gate House. The aim of digging this pit was to establish that the services were located in the verge. As the pit was located directly on top of the services, it was only possible to observe that the modern topsoil (1042) overlay service backfill (1043) to a depth of 0.5mm BGL, at which point the services were indentified and excavation ended.

5.5.6 **Trialhole TP14** was located on Stowe Road, just west of the crossroad with King Street. The aim of digging this pit was to establish that the services were located in the verge. As the pit was located directly on top of the services, it was only possible to observe that the modern topsoil (1042) overlay service backfill (1043) to a depth of 0.65mm BGL, at which point the services were indentified and excavation ended.

5.5.7 **Trialhole TP15** was located on Stowe Road, on the northwest-southeast run, north of where it crosses the drainage cut. It measured 3.0m x 0.3m, was 1.4m deep and was aligned northwest-southeast. After the removal of the tarmac (1044) and underlying type one (1045) to a depth of 0.4m BGL, a firm tallow-brown sandy-silt (1046) was observed. This extended to a depth of 0.8m BGL, at which point the natural gravel horizon (1047) was encountered, which extended to, at least, the limit of our excavations.

5.5.8 **Drill Reception Pit #1** was located on the east-west run of Stowe Road, to the west of Stowe Farm. It measured 1.4m x 2.5m and was 1.2m deep. After the removal of the tarmac (1044)

and underlying type one (1045) to a depth of 0.60m BGL, a firm yellow-brown sandy-silt (1046) was observed. This extended to a depth of 0.80m BGL, at which point the natural gravel horizon (1047) was encountered, which extended to, at least, the limit of our excavations. The cut and backfill of the existing riser main was also observed to extend to 1.0m BGL, at the southern edge of the pit.

5.5.9 **Opencut Trench** was located just south of the Stowe Road Bridge over the draining ditch, it measured 5.0m x up to 1.0m and was 1.2m deep. After the removal of the tarmac (1044) and underlying type one (1045) to a depth of 0.40m BGL, a firm yellow-brown sandy-silt (1046) was observed. This extended to a depth of 0.90m BGL, at which point the natural gravel horizon (1047) was encountered, which extended to, at least, the limit of our excavations.

5.5.10 **Drill Reception Pit #2** was located just north of the Stowe Road Bridge over the draining ditch, it measured 3.0m x 0.8m, was 1.4m deep and was aligned north-south. After the removal of the tarmac (1044) and underlying type one (1045) to a depth of 0.30m BGL, a firm yellow-brown sandy-silt (1046) was observed. This extended to a depth of 0.80m BGL, at which point the natural gravel horizon (1047) was encountered, which extended to, at least, the limit of our excavations See Plate 16.

5.6.11 **Airvalve Pit #1** was located on Stowe Road, just east of King Street crossroad. After the removal of the topsoil (1042) and subsoil (1089) to a depth of 0.70m BGL, a firm yellow-brown sandy-silt (1046) was observed. This extended to a depth of 1.10m BGL, at which point the natural gravel horizon (1047) was encountered, which extended to, at least, the limit of our excavations.

5.6.12 **Airvalve Pit #2** was located on Stowe Road, just west of the King Street crossroad. It was partly in the road, partly in the verge. After the removal of the tarmac (1044) and underlying type one (1045), to a depth of 0.3m BGL, a firm yellow-brown sandy-silt (1046) was observed. This extended to a depth of 1.30m BGL, at which point the natural gravel horizon (1047) was encountered, which extended to, at least, the limit of our excavations. The modern topsoil (1042) and subsoil (1089) in the verge, extended to a maximum depth of 0.4m BGL, sealing the above mentioned firm yellow-brown sandy-silt (1046). See Plate 17.

6. Discussion

6.1 Following the discussion of the individual interventions, the following table was created to allow the interpretation of proposed groups of contexts observed throughout the study area.

Group Number (G)	Context Numbers	Description
G0001	1004, 1013, 1023, 1030, 1033, 1044, 1048, 1051, 1059, 1079, 1080	Tarmac/Road Surface
G0002	1005, 1014, 1021, 1024, 1025, 1026, 1027, 1029, 1031, 1045, 1054, 1060, 1073, 1077, 1081, 1085	Road make up/bedding/ballast
G0003	1001, 1011, 1020, 1028, 1042	Modern Topsoil
G0004	1002, 1012, 1022, 1032, 1050, 1089	Modern Subsoil
G0005	1046, 1082, 1086	Buried Soils
G0006	1007, 1015, 1016, 1053, 1076, 1084, 1087, 1088	Made Ground/Demolition Deposits
G0007	1003, 1008, 1017, 1018, 1019, 1034, 1036, 1040, 1041, 1061,	Alluvium
G0008	1009, 1010, 1035, 1047, 1062, 1083,	Natural Gravels
G0009	1006, 1039, 1043	Modern Services
G0010	1038, 1058, 1064, 1066, 1068, 1070, 1072, 1078	Features (Cut Numbers shown)

6.2 **Modern Deposits** : The entire study was either covered in Tarmac (G0001) with underlying make up of varying types (G0002), in some cases gravel driveways (also included in G0001), or by a modern topsoil (G0003) overlying a modern subsoil (G0004). The depth of these deposits varied from 150mm (in the verges by the side of the road) up to 700mm BGL (on Greatford Main Street). The depth of the road construction on Main Street itself, could very well have truncated all surviving archaeology, explaining the lack of findings within this area.

Furthermore, a number of interventions also contained 20th century made-ground/demolition deposits (G0006), relating to modern construction in the area. The function of these deposits was divided into two categories, the first lay in the eastern area of the village and most likely related to raising the ground level to combat the wet ground around the West Glen River (1007, 1015, 1016 and 1088). The other was along Greatford Main Street, and was most likely related to the construction and maintaining of the buildings and road in this area (1053, 1076, 1084, and 1087).

6.3 **Buried Soils**: Buried soils (G0006) were identified in three interventions within the village, Pots #14, #23 and Trialhole #11, as well as in the interventions along the riser main. These deposits were identified as possible buried top/subsoils that survived the truncation by the road/house construction on the eastern fringes of Greatford and along Stowe Road, or as a deliberate build up to raise the ground level compared to the surrounding fields. If the former is the case this indicates the opportunity for surviving archaeological horizons sealed beneath these deposits, even though none were observed during these works.

6.4 **Alluvial Deposits**: Alluvial deposits (G0007) were indentified in a number of interventions across the study area. These interventions were located in what could have been the floodplain to the around the West Glen River in the northern part of our study area. The alluvial deposits were observed in all inventions north of the West Glen River (up to a depth of 1.2m BGL), except for the northern most trial hole dug (TP#1).This correlates with the observations made by the British Geological Society (BGS) and displayed in their map of the area http://mapapps.bgs.ac.uk/geologyofbritain/home.html. To the south of the river the alluvial

deposits were only observed to extend ca. 20m, at which point a natural terrace in the underlying gravel was observed and the alluvium petered out (see Plates 3 and 9), again this correlates with the finding of the BGS. These observations indicated that the floodplain was probably located to the north of the river and that occupation therefore would have been centred south of the river (probably around the area of the church). Due to the depth of the alluvium north of the river, it is quite possible that early features have survived later truncation, beneath the alluvium, however only one such feature was observed during these works and it is discussed below.

6.5 **Features (G0010)** across the entire study area, eight features were identified; the sections containing these were digitised and can be seen in Figure 9.

- A pit [1038], located on Carlby Road north of West Glen River. No finds were recovered from this feature, though due to it being sealed by the alluvium and its size, it is possibly pre-historic or roman in date.
- A large ditch, aligned east-west [1064] was also located north of the West Glen River. Again no finds were recovered from this feature and it was also sealed by the alluvium and again this could indicate a pre-roman date for this feature. The fill of this feature (1063) was a very organic in nature and could indicate that this feature was a geological feature or palaeochannel, rather than a ditch, though it was not possible to determine this, due to the depth of the trench not allowing us to fully excavate this feature.
- A 19th/20th century culvert or drain [1058]. This feature was observed within Pot#10. It ran east-west on the northern edge of Greatford Main Street. While the construction of this feature indicated a 19th century construction, service plans showed that the drain was still being used as a storm drain and that in some places it had been replaced by a ceramic pipe.
- Four small ditches [1066], [1068], [1070], [1072] aligned east-west outside the Village Hall, just north of the junction of the Main Street/Carlby Road junction, on Carlby Road. No finds were recovered from any of these four features and they were sealed by the 20th road makeup. It was not possible to determine the function of these features, but due to the proximity to the church, they were most likely medieval in date and related to the use of this area during this period. They could also be Iron Age ditches similar to the one identified by previous work, south of Main Street.
- One ditch [1078] was identified within Pot #24 and was aligned north-south.

6.6 Natural Gravels (G0008) were observed across the entire study. The depth of these deposits was never established, due to the depth of the interventions. The deposits were indentified as river terrace deposits, formed up to 3 million years ago in the Quaternary Period and indicate that this area had been dominated by rivers. (http://www.bgs.ac.uk/discoveringGeology)

7. Conclusion and Recommendations

7.1 Although no securley dated features were identified, the depositional enviroment, in certain areas of the study are, namely north of the West Glen River (deep alluvial deposits sealing the natural gravel horizon) and the eastern limit of the village and along Stowe Road (a buried topsoil possibly surviving intact), suggests that roman and earlier features might well be preserved in these areas.

7.2 The four ditches observed on Carlby Road outside the Village Hall may, as discussed above, represent possible medieval activity in this area, and where truncation has not been as deep, in the gardens along Main Street, more features might yet survive intact.

7.3 Full archive photographs have been made of all interventions and can be made available for consultation if necessary.

8. Bibliography

Davies 2013, *Written Scheme of Investigation; Anglian Water Greatford S101a Scheme, Greatford, Lincolnshire*. Trent and Peak Archaeology

BGS. British Geological survey 2012, Geology of Britain Viewer, http://www.bgs.ac.uk/discoveringGeology

Knight, Vyner and Allen 2012 East Midlands Heritage An Updated Research Agenda for the Historic. Environment in the East Midlands, Buxton Press.

Appendix 1 Index of Archive and Arrangements for Deposition

Field Records	***Description***	***Number***
Watching brief record sheets	Record of visit and work carried out	69
Photographs:-		
Digital	All views	522
Context Sheets	Record of each individual context	89
A3 Drawing Sheets	Scale Drawings	10
Registers	Context, Photo and Drawings Registers	3
Documents	*Description*	*Number*
Written scheme of investigation	Statement of the aims, objectives and methodology for the project.	1
Health & Safety	Safe working statement & risk assessment	1
Report to client	Report of findings of the watching brief.	1

The archive is currently held in the offices of Trent & Peak Archaeology, Unit 1, Holly Lane, Chilwell, Nottingham, NG9 4AB. It will be deposited at The Collection, Lincoln upon approval of this submitted report.

Appendix 2 Plates

Plate 1: Pot #1 looking east, showing pit [1038]

Plate 2: Pot #3 looking north, showing blue-gray alluvial clay [1041]

Plate 3: Pot #8, looking west showing natural terrace in natural gravel (1062)

Plate 4: Pot #10, looking west, showing 19th/20th culvert/drain (1056)

Plate 5: Pot #24 looking north-west, showing north-south aligned ditch [1078]

Plate 6: Representative section of vacuum sewer trench north of the West Glen River

Plate 7: Vacuum Sewer Trench, north of West Glen River looking south, showing ditch [1064]

Plate 8: Representative section of vacuum sewer trench in Greatford Gardens, looking south-east

Plate 9: Representative section of vacuum sewer, south of the West-Glen River

Plate 10: Ditch [0065] looking west

Plate 11: Ditch [0067] looking west

Plate 12: Ditch [0069], looking west

Plate 13: Ditch [0071], looking west

Plate 14: Area just south of the church, showing modern build up

Plate 15: Representative section of vacuum sewer trench on Main Street, looking east

Plate 16: Drill Reception Pit #2 looking north-west

Plate 18: Airvalve Pit #2, looking north-west

Appendix 3 Written Scheme of Investigation

1. BACKGROUND

Site Name: Greatford S101a Scheme.
NGR: TF0908 1192
Client: Anglian Water
Proposed Development: Pumping Station for new Vacuum Sewer
Geology: Oxford Clay Formation - Mudstone. Sedimentary Bedrock.
Superficial: Freely draining lime-rich loamy soils
Land Use: Built-up historic village core, mostly proposed sewerage routes are aligned to existing metalled routeways.
Previous Archaeological Work: N/A

Anglian Water has proposed a new vacuum sewer mains within the village of Greatford, Lincolnshire. Groundworks will comprise the excavation of trial holes, the sewer mains itself and a discharge main. The scheme is in an area of archaeological interest. Greatford is listed in the Domesday Book of 1086, and the Church of St Thomas a Becket at the western extent of the historic core is a C12-C13th structure (Grade 1 listed). The church lies immediately east of Greatford Hall, a C17th hall with associated stable and barn complex (the barn is late C16th). This 'west end' of Greatford may represent the location of a medieval hamlet comprising church and manor, but is presently unexplored archaeologically. Further to the east, a very late medieval/early post medieval building at The Old House may represent a further historic focus. In total 13 Listed Buildings are located within the historic core.

In addition, Greatford village is close-bye to several Scheduled Romano-British/prehistoric sites. Indeed, excavations by Oxford Archaeological Associates to the rear of the Manor House identified an Iron Age ditch within the central part of Greatford itself (NMR 1388908). This suggests that the medieval village of Greatford may overly a later Prehistoric/Romano-British site/s of as yet uncertain form or character.

As the archaeology of villages such as Greatford remains largely unexplored, any buried archaeological remains identified beneath the proposed redevelopment area would offer an opportunity to address research priorities highlighted in the recent East Midlands Updated Research Agenda and Strategy (Knight, Vyner and Allen 2012). For example, 6.7, 7.2.1' How can we elucidate further the development of nucleated villages...'

Anglian Water has appointed Trent & Peak Archaeology to undertake the Scheme of Monitoring and Recording to the requirements set-out in a brief issued by Lincolnshire County Council and dated 28/10/2013. This document is the required detailed specification (Written Scheme of Investigation) addressing that brief and is prepared in accordance with the Lincolnshire Archaeological Handbook's section 'Standard Briefs for Archaeological Projects in Lincolnshire (2012)'.

All excavations potentially can provide an opportunity to recover palaeoenvironmental samples which contribute to an understanding of the nature of the landscape and the uses to which it was put. If appropriate archaeology is identified then a representative proportion of excavated features will be sampled in line with the methodology set out in Appendix 1. The results of processing and analysis will be assessed in the light of the research objectives set out above.

2. OBJECTIVES

2.1. The objective of the archaeological watching brief can be stated as:

To identify the presence of any archaeological remains to be affected by any intrusive aspects of the development (Figure 1/2) and to achieve an appropriate level of preservation by record. Where practical (within the constraints of the watching brief and development), this will include an assessment of the overall extent, date and state of preservation of archaeological remains. Any features of geoarchaeological significance will also be recorded and where there is the potential for palaeoenvironmental data, an appropriate level of sampling will be undertaken.

2.2. The proposed archaeological work comprises:

Continuous archaeological monitoring of intrusive ground works with the potential to impact on features and layers of archaeological significance. Monitoring may be intermittent in areas where it can be demonstrated that a specific element of the ground works has reduced/no significant archaeological potential, with the prior agreement of the Planning Archaeologist for Lincolnshire County Council (Louise Jennings).

All recording will result in 'the preparation of a report and ordered archive', in line with the guidelines of the IfA Institute for Archaeologists (Standard and Guidance: for an archaeological watching brief, 2008).

To ensure the required standards are met, the work will be undertaken in close consultation with the requirement of the local planning authority (Lincolnshire County Council) and to standards set out within the Lincolnshire Archaeological Handbook's section 'Standard Briefs for Archaeological Projects in Lincolnshire (2012)'.

3. METHODOLOGY

3.1 General conditions

Staffing. The work will be undertaken by suitably qualified members of TPA according to accepted archaeological practice and the 'Standard & Guidance' produced by the Institute for Archaeologists.

Notice. Clients are requested to give at least one week notice of the commencement of works to both TPA and the Planning Archaeologist for LCC. For this project the intended start date is **December the 9th 2013.**

Services. The client will be responsible for carrying out service checks prior to groundworks, and will provide plans of all services within the development area.

Base maps. The client is requested to supply copies (preferably digital) of base maps for TPA to use in the report.

Contingency. If an unusually high volume of artefacts, or deposits worthy of palaeoenvironmental investigation are recovered, these may be subject to a request for contingency funding covering additional staffing and/or specialist attendance and post-excavation analysis. No requests for contingency funding would be made without the approval of the client and the recommendation of the Planning Archaeologist for LCC. Should archaeological remains be encountered that cannot be treated to a satisfactory and proper standard within the resources allocated to the watching brief the Planning Archaeologist will immediately be informed. This may entail ceasing site work until recourses are in place to either ensure preservation *in situ* or adequate treatment of the archaeological remains.

Report. A record of the results, whether positive or not, will be made and presented in an appropriate report format to the client and Planning Archaeologist for LCC within 8 weeks of the completion of the fieldwork. For further details of the report structure see below (Detailed Specification of Archaeological Recording).

Fencing. **The client will be responsible for securing the site from unauthorised public access.**

3.2 Fieldwork

Where appropriate, the archaeological contractor will implement the following requirements:

Trial Holes

TPA will monitor the hand excavation of all trial holes at appropriate intervals, unless it can be demonstrated that a specific trial hole/s has reduced/no significant archaeological potential, with the prior agreement of the Planning Archaeologist for Lincolnshire County Council (Louise Jennings).

Main Sewer Mains

Initial excavation of all topsoil/overburden in all other areas will be carried out under archaeological supervision, **and the client must ensure that the contractor has been made aware of the archaeological constraint on their operations.**

Wherever possible the contractor must ensure the use of a toothless ditching bucket on any excavator/machine so that a clean surface can be exposed and the archaeologist can inspect the deposits revealed. Foundation/service trenches should also be excavated with a toothless bucket where possible. Any exceptions to this must only occur following agreement with the archaeologist on site. There should be no trafficking by vehicles on exposed surfaces until the archaeologist has agreed that there are no archaeological deposits of significance or until any deposits are appropriately recorded.

Within Health & Safety constraints, the contractor will ensure access to service trenches to permit examination/cleaning and where necessary recording of sections. **It is important that time is allowed for such work, before any form of backfilling occurs.** Where excavation can be quickly demonstrated not to have revealed significant archaeological deposits, delay will be minimal.

Spoil-heaps

Where practical and safe to do so, all spoil heaps will be regularly examined for archaeological material, this will include the use of a metal-detector.

3.3 Recording – general

Recording will as a minimum include the location and extent of the monitored areas of excavation, their depth, and the deposits exposed, both by scale drawing (section and/or plan where applicable) and photograph (monochrome prints/digital). For further details of the recording methodology see Section 4 below.

Project staff
The watching brief will be managed by Gareth Davies, the attending archaeologist will be:

Tom Linington (Project Supervisor, 07771388776).

Reporting and Liaison
A report on the results, whether positive or not, will be prepared in the appropriate format and presented to the client and the curator within 6 weeks of the completion of the fieldwork. A summary of the findings will also be submitted for inclusion in the next edition of Lincolnshire History and Archaeology Journal. Should the results of the watching brief warrant it then a detailed report will also be submitted for publication in the Lincolnshire History and Archaeology Journal. and an appropriate specialist publication covering the period from which the remains have been dated. For further details of the contents of the report see below (Detailed Specification of Archaeological Recording by Watching Brief).

The Planning Archaeologist for Lincolnshire Co. Council will be given a minimum of one weeks notice of the commencement of the watching brief, and TPA will continue to liase closely throughout the period of the works. The curator will be free to visit the site to monitor fieldwork subject to access conditions imposed by the client and/or landowner, and adherence to relevant health and safety guidance.

3.4 Welfare, Access and Insurance

The client will ensure safe access to the ground-works and if possible make toilet and hand-washing facilities available to archaeological staff.

Services Checks
The client will make available all information relating to buried services prior to the commencement of intrusive groundworks.

Insurance/compensation
As part of York Archaeological Trust, TPA carries the appropriate public, third party and employee insurances, copies of which are available for inspection if required.

Any compensation claims for disruption to the land should be directly between the client and landowner.

3.5 Health and Safety

TPA will adhere to all relevant health and safety regulations. No archaeological staff will be allowed to enter the site until they have undergone a health and safety induction organised by TPA and/or the principal contractor. TPA will complete a task specific risk assessment safe working method statement before the commencement of the watching-brief, and copies of this will be made available to the client. This will be in compliance with the industry guidelines laid out in FAME Manual, *Health & Safety in Field Archaeology*. TPA staff will wear appropriate personal protective equipment at all times.

4 DETAILED SPECIFICATION OF ARCHAEOLOGICAL RECORDING

The investigation will be carried out in accordance with the code of conduct of The Institute for Archaeologists.

Within the confines of site safety, contexts (the smallest usefully-definable unit of stratification) will be cleaned by hand and recorded.

All finds will be assigned an individual finds code. *In-situ* finds will be recorded three dimensionally, while finds from spoil will be noted in relation to their location within the trench/stripped area.

Excavation will be sufficient to securely establish the character and where possible date, and stratigraphic relationship of features.

In the event that important archaeological remains are uncovered, the client's site representative will be informed immediately, with a proposal for the most effective measures for dealing with the remains. If they cannot be preserved *in situ,* their excavation may require contingency resources and additional time: the Planning Archaeologist for LCC will be informed of such events and their input requested.

Human Remains
Should human remains be uncovered they will initially be left in situ and provided with appropriate protection. The Planning Archaeologist for LCC and the Coroner will be informed immediately and a Ministry of Justice burial license obtained to permit removal where necessary.

Recording
Plans of all contexts including features will be drawn on drafting film in pencil at a scale of 1:20 or 1:50, and will show at least:
context numbers,
all colour and textural changes,
principal slopes represented as hachures,
levels expressed as O.D. values, or levelled to permanent features if benchmark absent,
sufficient details to locate the subject on a 1:500 plot of the area of ground-works and o.s 1:2500 map (i.e the national grid).

Sections will show the same information, but levelling information will be given in the form of a datum line with O.D/arbitrary value; the locations of all sections will be shown on the plan.

Photographs of each context will be taken as monochrome prints and digital images (as per Brown 2007), together with general views illustrating the principal features of the excavations.

Written records will be maintained as laid down in TPA recording manual (as accepted by all regional county archaeologists).

Sampling (Palaeoenviromental)

Where appropriate features are identified, soil samples will be retrieved in order to undertake palaeo-environmental sampling. The sampling of features will follow procedures set out within the English Heritage Centre of Archaeology Guidelines, *Environmental Archaeology* 2011. Samples will generally be 30litres if possible will be processed within the TPA Environmental Lab, under the supervision of TPA Environmental Officer Alison Wilson.

Depending on the type of deposits identified, soil samples may also be retained for the purposes of retrieving industrial residues or for the provision of scientific dating (e.g. C14 dating). The range of techniques applicable to differing preservation and depositional environments is set out in Table 1.

Where it is deemed necessary to take samples for palaeo-environmental analysis, scientific dating, or to identify and interpret industrial processes, the LCC archaeologist will be consulted and a contingency cost may need to be enacted with the client.

Samples will be processed within the TPA Environmental Lab, under the supervision of TPA Environmental Officer Alison Wilson.

Table 1 – Preliminary Site Sampling Strategy*

feature type	Sediment condition	Overall scope of sampling	MM	C14	Po/Dm	Ch	BP/BS	Bo	Wd
Sampling method:				A4x1cm (seal)	Film caps or column in gutter + Clingfilm	Min.30L+ Tubs (specialists to advise as to appropriate level of sub sampling of deposit)			wrap each bit sep.
Man-made feature		each occurrence series of samples if thick (>150mm)			*	*	*	*	*
buried soil	Waterlogged organic (looks 'peaty')								
	Dry visible charred material	each occurrence (C14 selected: best is twigs then layer then flecks)		*		*		*	
	Waterlogged organic	each occurrence, at thickest point	*	*	*	*	*	*	*
	Dry visible charred material	each occurrence, at thickest point, series of samples if thick (>150mm)	*	*	*	*		*	
Any	Wood structure	retain all, keep damp, bag each timber		*					*
Industrial residues / debris etc.		All process stages to be represented					*		

Abbreviations MM Micromorphology **C14** Radiocarbon **Po/Dm** Pollen/diatoms **Ch** Charred material **BP** Waterlogged Beetles/Plant remains **Bo** small bone **Wd** wood. BS – Bulk Sample (industrial waste/residues/processing debris)

*Adjustments to be made following specialist advice and liaison with LCC DCA where appropriate.

4.1 Post–excavation Processing

All finds will be stored as recommended in "First aid for finds" (by the Archaeology section of the United Kingdom Institute for Conservation), and marked with the site and find codes, and relevant accession numbers. These will be deposited with the appropriate Museum on completion of the report, subject to the provisions of the brief and the agreement of the client.

Depending on availability any Prehistoric pottery will be submitted for assessment to Dr.D.Knight (TPA), Romano-British pottery to (I.M.Rowlandson), Anglo-Saxon/Medieval pottery/tile to (L. Elliot (TPA) or appointed specialist), Industrial Residues (Gerry McDonnell). Other specialists to be decided in liaison with Louise Jennings if required.

4.2 Archive

The archive will be fully indexed and contain where relevant:

copies of correspondence relating to fieldwork
site notebooks/diaries
original photographic records
site drawings (plans,sections,elevations)
original context records, matrix diagrams showing stratigraphic sequence of all contexts.
artefacts
original finds records
original sample records
original skeleton records
computer discs and printout

4.3 Archive and Finds Deposition

Initial contact with The Collection Museum, Lincoln has been made before the commencement of fieldwork, using the appropriate notification form. Final deposition will be made using the appropriate notification form and adhering to all relevant Conditions for the Acceptance of Project Archives (Chapter 17 in the Lincolnshire Archaeological Handbook).

The paper and digital archive generated by TPA will remain the property of TPA until deposited within the appropriate public archive/museum:

Accession no LCNCC:2013.199 The Collection, Lincoln

The Planning Archaeologist and museum curator will be notified in writing on completion of fieldwork, with a proposed timetable for deposition of the archive. This should be confirmed in the project report.

The Planning Archaeologist must be informed in writing on final deposition of archive.

Where necessary the documentary archive will be sent to the NMR for copying.

Finds will remain the property of the client with deposition to the relevant regional museum subject to their approval. The paper and digital archive generated by TPA will remain the property of the Unit until deposited within the appropriate public archive

4.4 Report

A verbal report and where appropriate textual summary will be provided to the client on completion of fieldwork. Within 8 weeks of the end of the fieldwork, a final report on results will be completed and copies provided to:

The client
Lincolnshire County Council Planning Archaeologist for accession to the HER. This will include a copy of the report in PDF format on CD along with indexed copies of all digital on site photography.

As specified in the Lincolnshire Archaeological Handbook's section 15.6.1, the final report will include:

a) cover page;
b) list of contents, figures, tables, etc;
c) non-technical summary;
d) introduction;
e) planning background;
f) archaeological and historical background;
g) methodology;
h) results;
i) discussion;
j) conclusion;
k) OASIS cover sheet.

The cover page of the final report will contain the following information:

a) the full site address (name if applicable);
b) the site code and the museum accession number;
c) an OS National Grid Reference for the site;
d) the name of the author of the report and/or its originating body;
e) date of the report (month and year);
f) planning application number(s) if relevant.

Dissemination
If appropriate, the results will be submitted for publication within an appropriate local archaeological journal. If significant results are discovered then an individual report of an appropriate level of detail, will also be submitted for publication to a suitable academic journal.

Copyright
Trent & Peak Archaeology shall retain full copyright of any commissioned reports, tender documents or other project documents, under the Copyright, Designs and Patents Act 1988 with all rights reserved excepting that it hereby provides exclusive licence to the client for the use of such documents by the client in all matters directly relating to the project, with no limitation on the number of times that the client may reproduce any report. The client's contribution will be acknowledged in any future use of the work by TPA.

4.5 OASIS

Prior to commencement of the fieldwork an OASIS online record will be initiated (http://ads.ahds.ac.uk/project/oasis/). A copy of this document will be included in the report.

4.6 Monitoring

A minimum of 1 week prior notice of the commencement of the development is to be given to the archaeological contractor and Lincolnshire County Council Development Control Archaeologist.

All phases of the investigation will be undertaken in line with the relevant *'Standard and Guidance'* documents prepared by the IfA (Institute for Archaeologists).

TPA will keep the client and Planning Archaeologist for LCC informed of all material facts of the archaeological investigations. This will include agreeing any changes to the approved methodology or programme of works, and invitations to inspect any uncovered remains at appropriate stages in the fieldwork programme. The Planning Archaeologist will be free to visit the site at any stage of the fieldwork

6 PROVISIONAL TIMETABLE

A start-date of the 9th of December2013 has been confirmed for the commencement of the main ground works, and this document now informs the Planning Archaeologist for LCC of that date.

Appendix 4 Figures

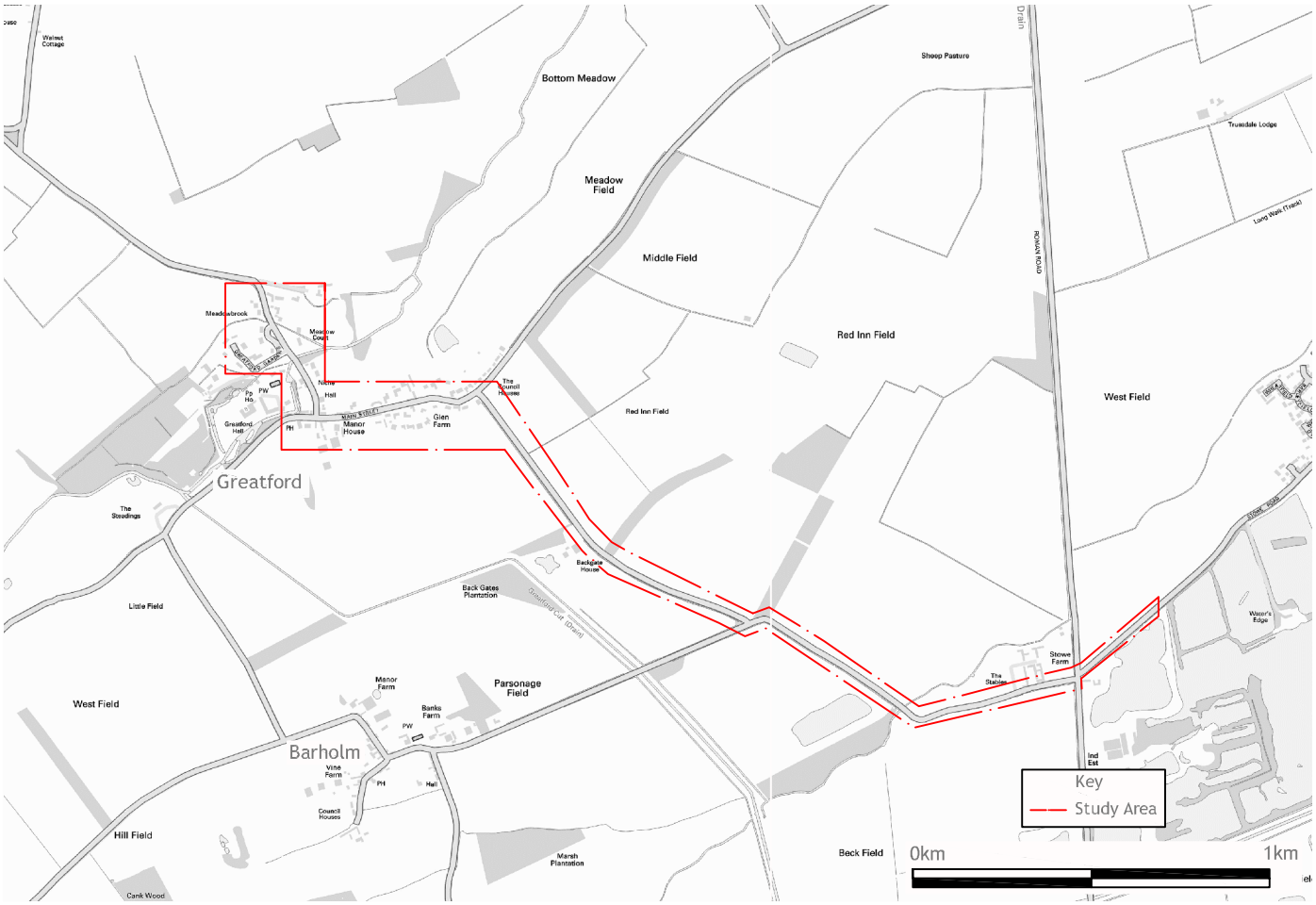


Figure 1: Location map

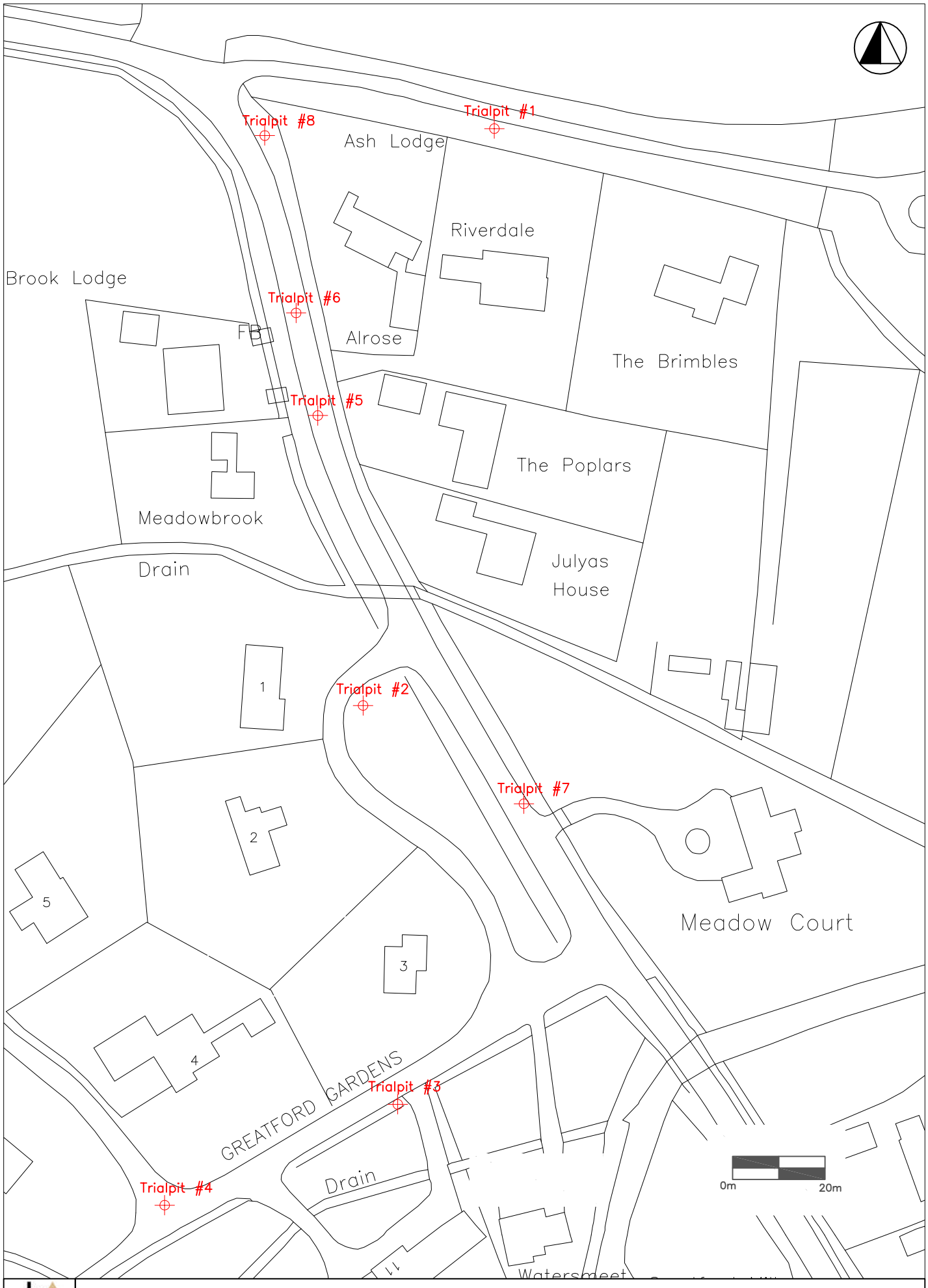


Fig. 3 Location of Trialholes #1-8

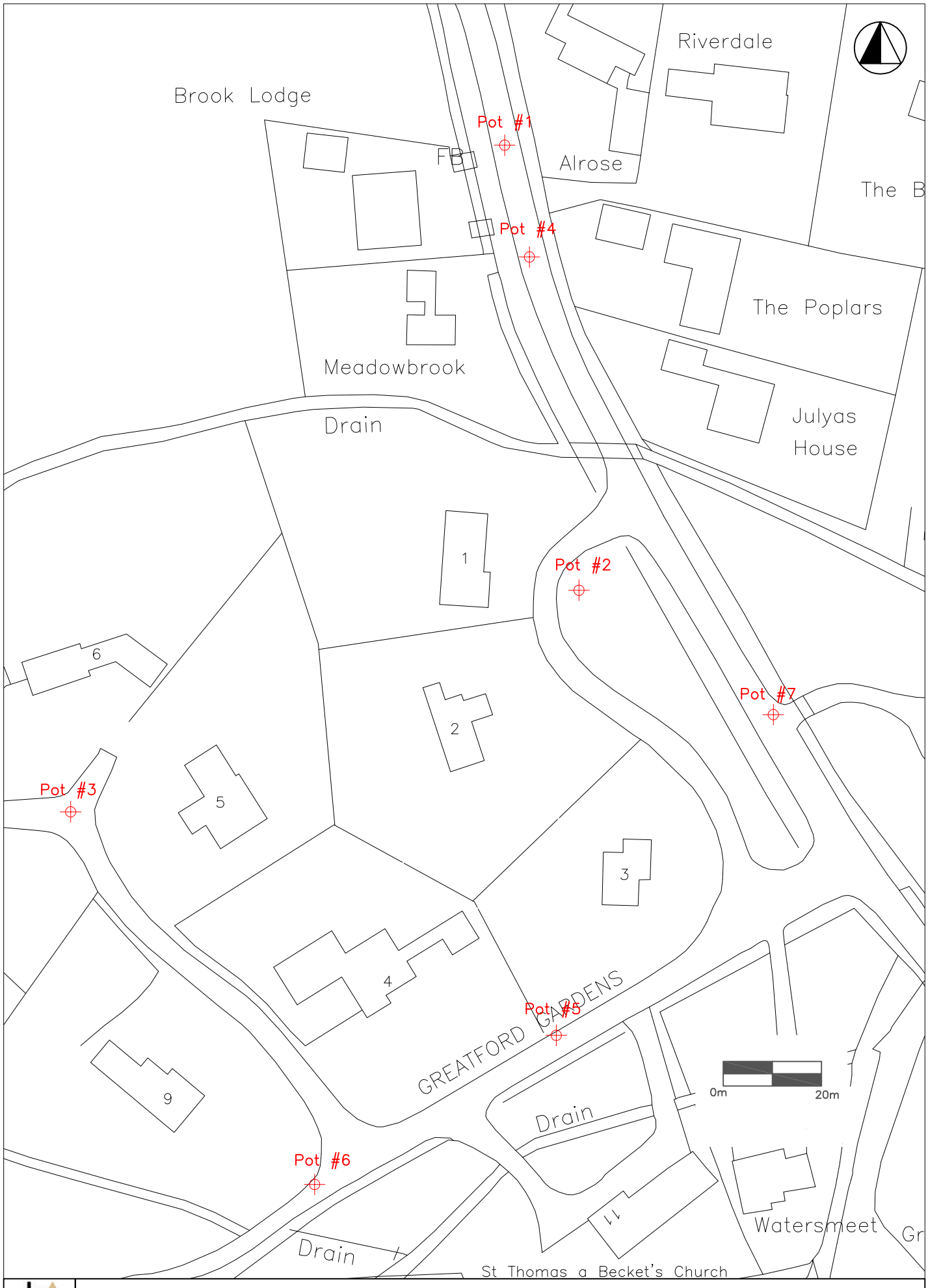


Fig. 4: Location of Vaccum Sewer Pots

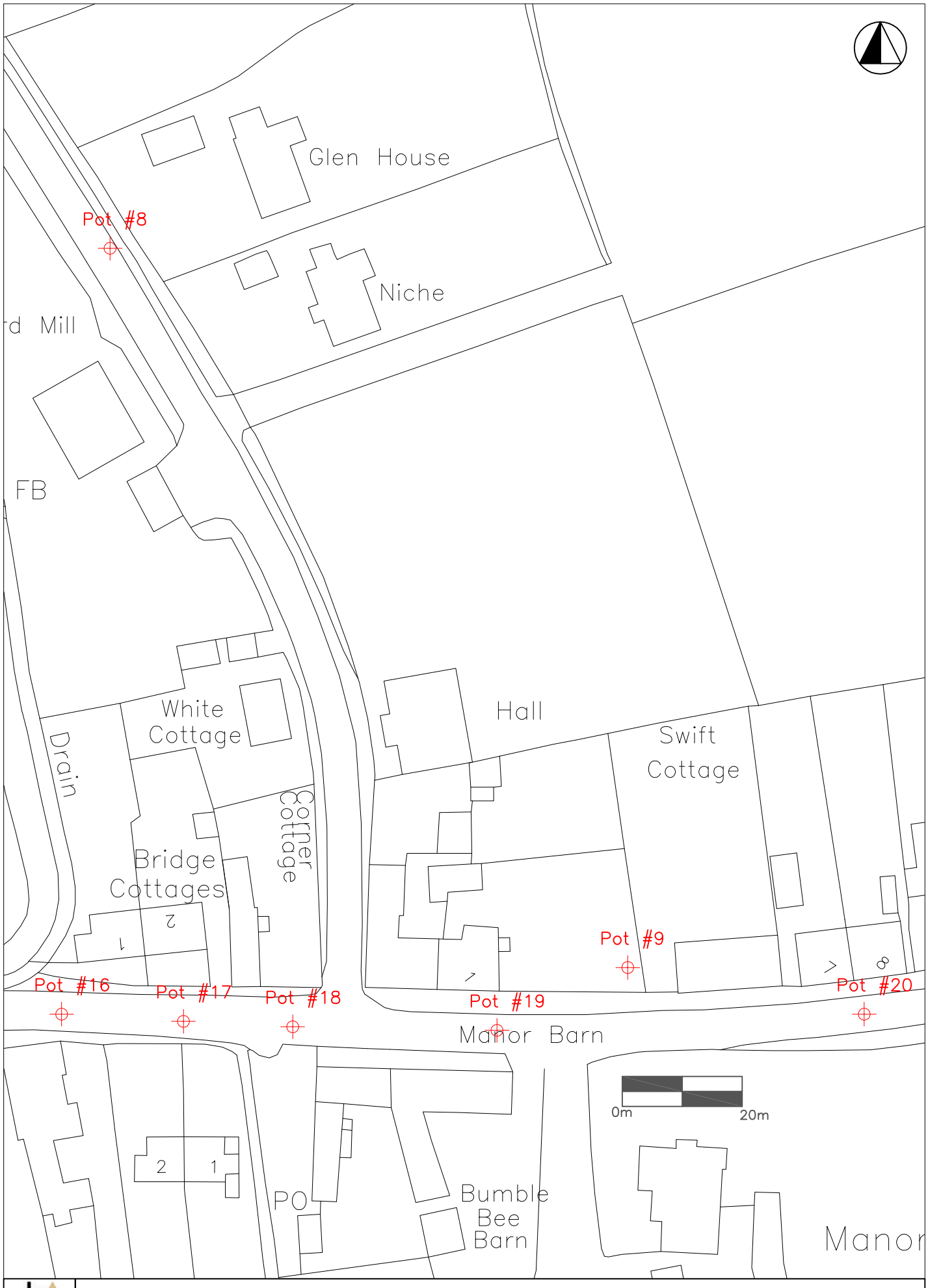


Fig. 5: Location of Vaccum Sewer Pots

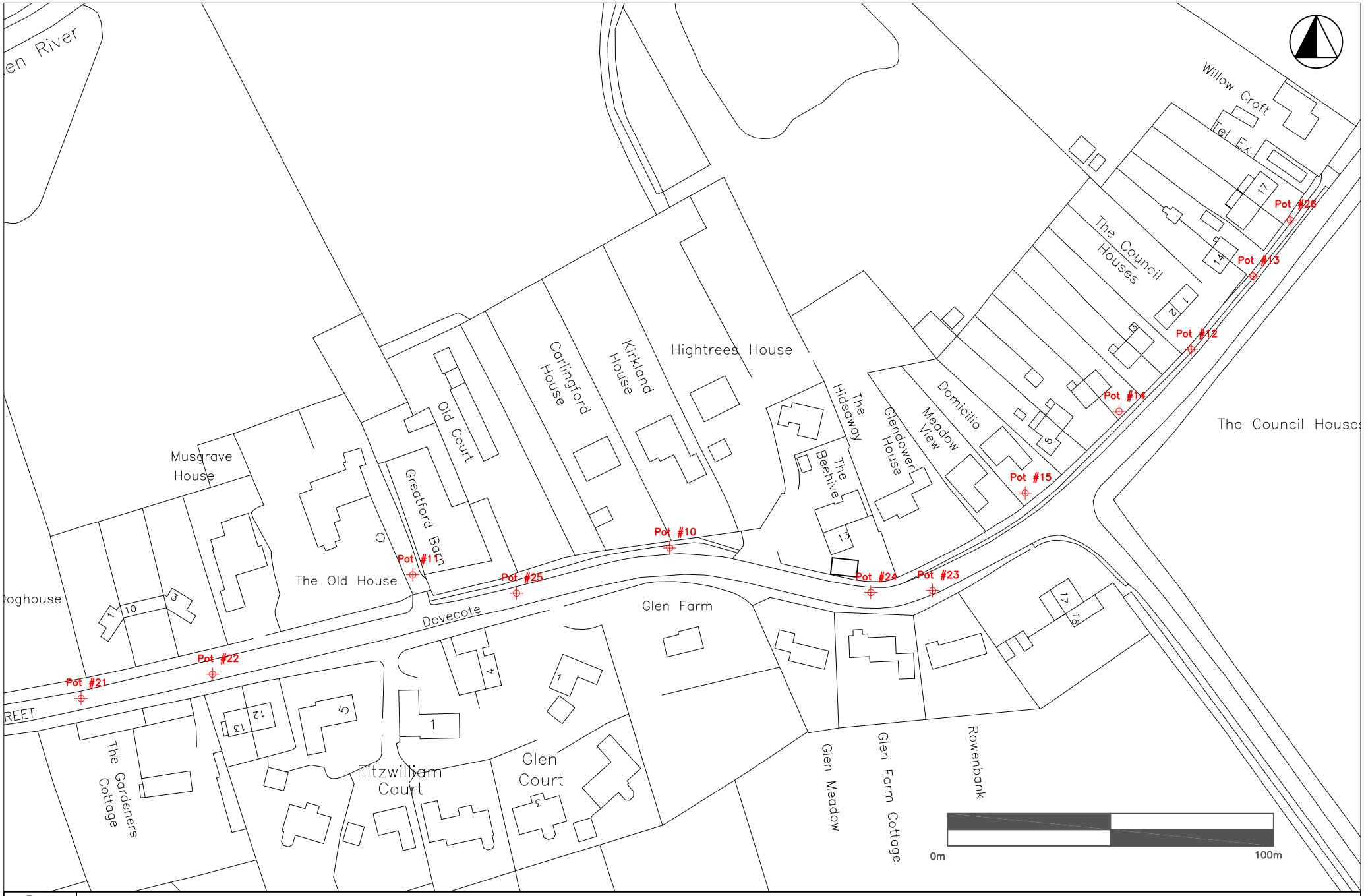


Fig. 6: Location of Vaccum Sewer Pots

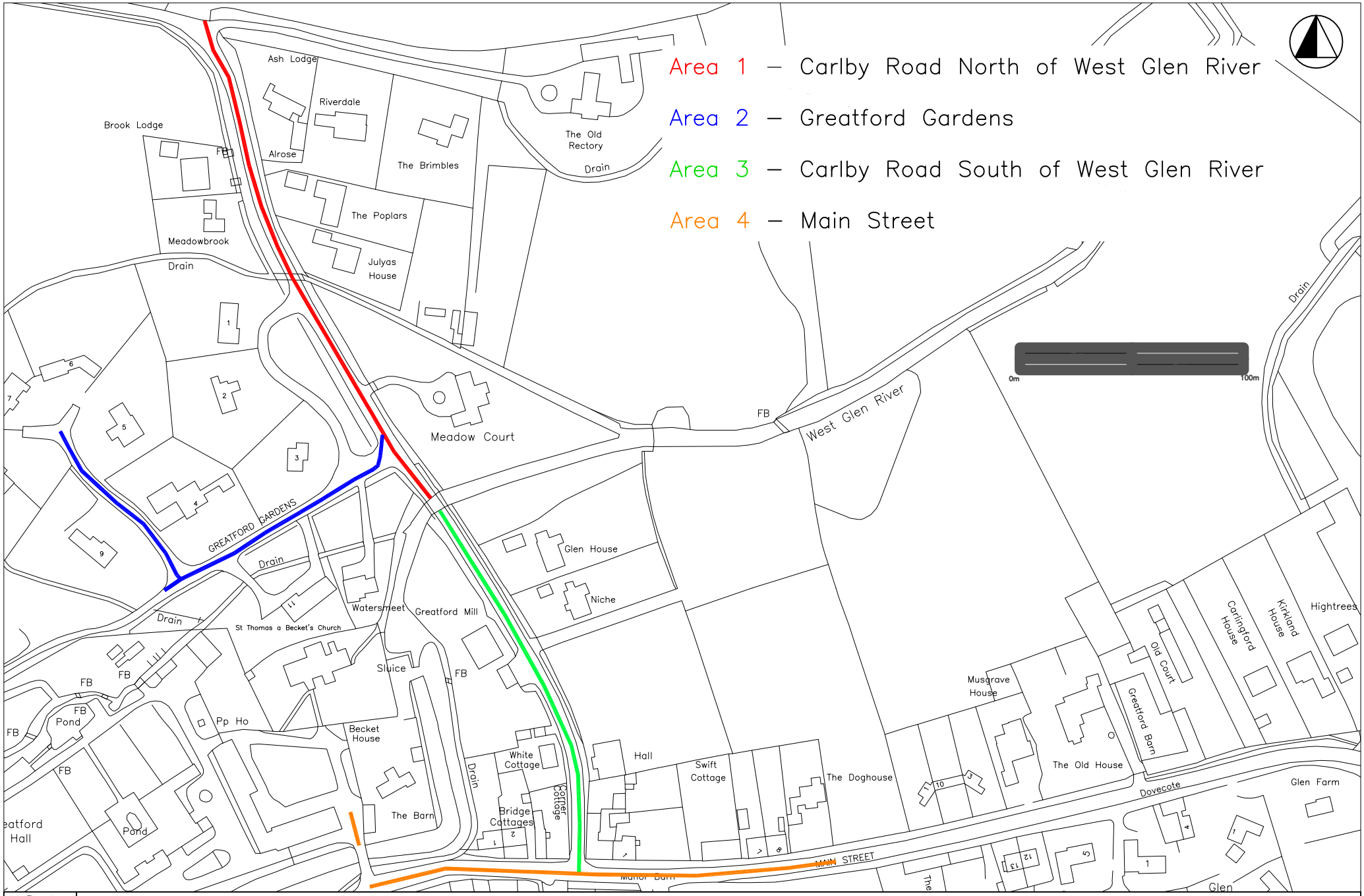


Fig. 7: Vaccum Sewer Trench Area

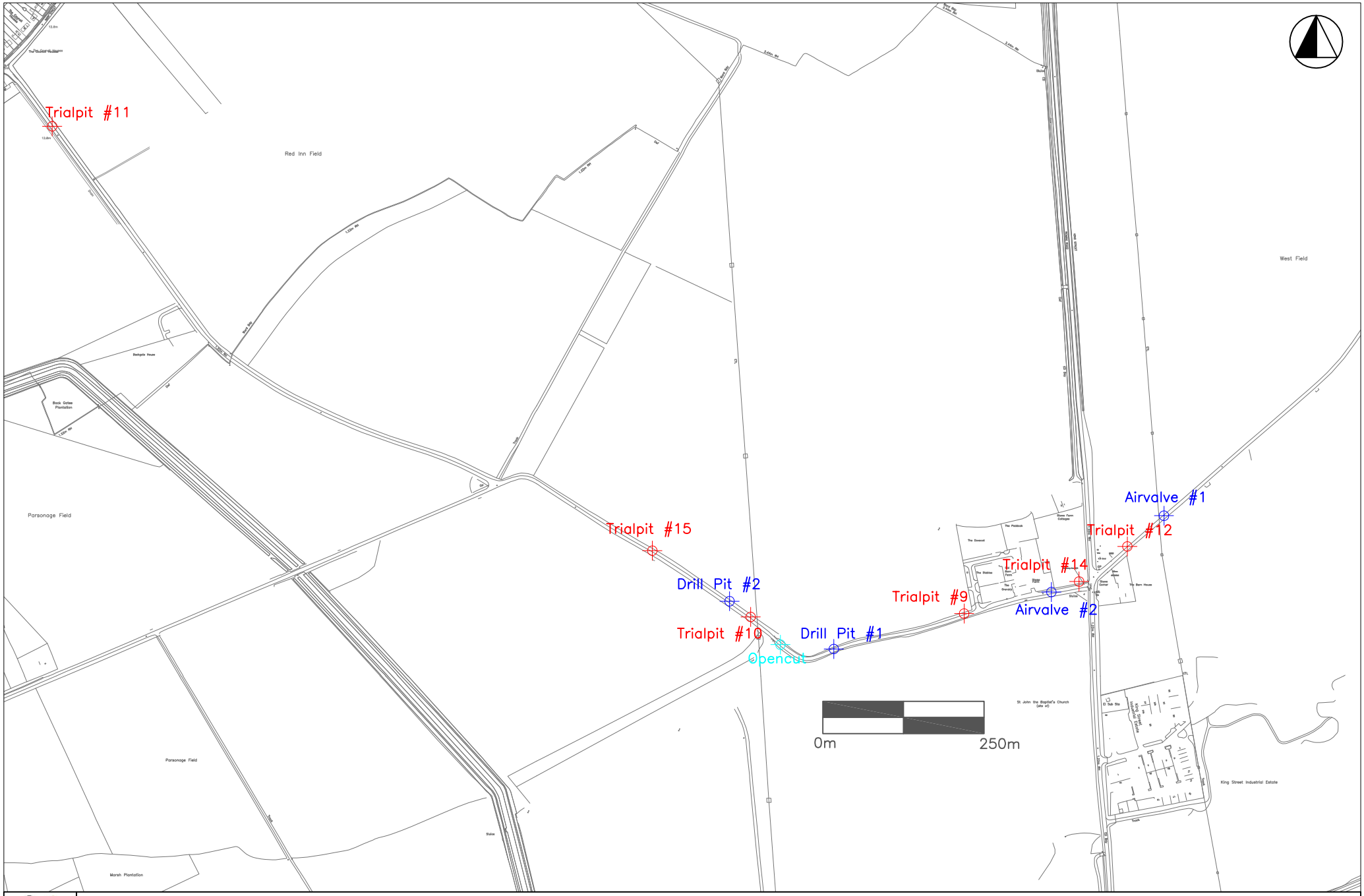
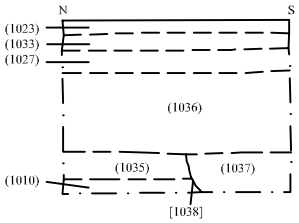
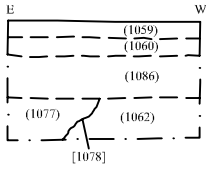


Fig. 8 Location of Trialholes #9-15 and other intervevntions along the Riser Main

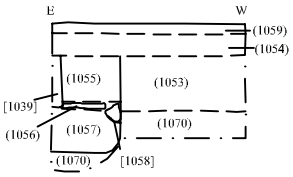
West facing section of Pit #1 showing pit [1038]



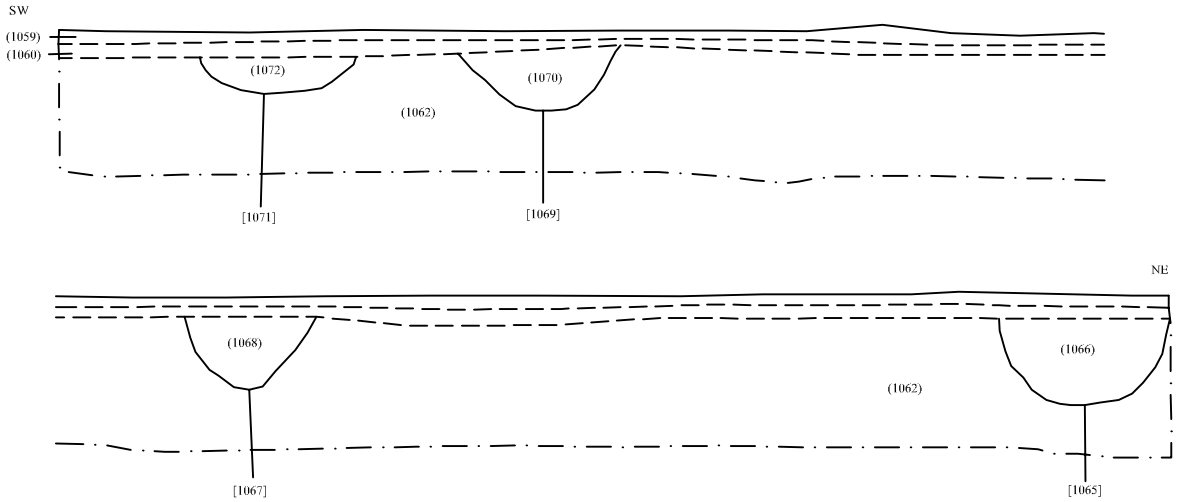
North facing section of Pit #24 showing ditch [1078]



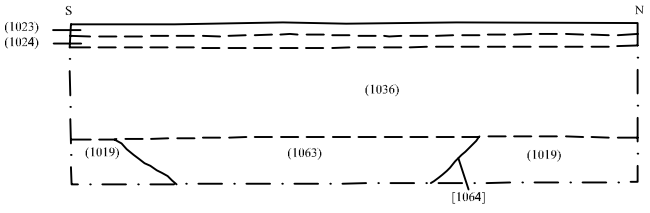
North facing section of Pit #10 showing culvert [1058]



Sout-east facing section trench run showing ditches [1065], [1067], [1069] and [1071], just north of Main StreetCarlby Road junction



East facing section trench run showing ditch [1064], north of West-Glen River



Scale:

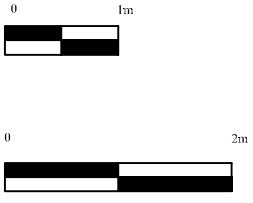


Fig. 9: Digitised sections showing features