

The Former Steel Designs
Construction Ltd
Lorne Road
Dover
Kent



Archaeological Evaluation Report



May 2006

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Former Steel Designs Construction Ltd Lorne Road, Dover, Kent

ARCHAEOLOGICAL EVALUATION REPORT

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SUMMARY

Oxford Archaeology (OA) carried out a field evaluation at the former Steel Designs Construction Ltd, Lorne Road Dover, Kent on behalf of BSC Group . The evaluation revealed the foundations and flagstone floor of the pit wheel housing of a 19th century mill and associated yard surfaces .

1 INTRODUCTION

1.1 Location and scope of work

- 1.1.1 In April 2006 OA carried out a field evaluation at the former Steel Designs Construction Ltd, Lorne Road, Dover on behalf of BSC Group in respect of a planning application for development (Planning Application No. DO/03/0572). The work was carried out in accordance with a brief set by the Heritage Conservation Group at Kent County Council for Dover District Council. The development site is situated at E630920 N142540 and is approximately 2400sq m in area.

1.2 Geology and topography

- 1.2.1 The site lies on alluvial drift deposits overlying natural chalk (British Geological Survey 1:50000 Map Sheet 290) at a height of 13.3m above OD.

1.3 Archaeological and historical background

- 1.3.1 The site of the present factory and its environs are of industrial archaeological interest. A report prepared by Frost (Assistant Curator, Dover Museum) on the Lower Buckland Flour Mills situated on the southern side of the river suggests that the early Buckland Flour Mill, as mentioned in a charter of 762 and later in the Domesday Book, is situated within or at least close to the development site. In addition to this, the brewery shown on early Ordnance Survey Maps appears to be a conversion of the earlier paper and flour mills on the site rather than a redevelopment. In fact by overlying the present site layout with the earlier layout it appears that the majority of the early buildings on the site would lie in the area between the present building and the mill stream/mill race. This suggests a likelihood of substantial and important buried remains beneath this area of the application site that may not have been affected by the present building.
- 1.3.2 The Roman road to Canterbury runs close to the development site and the River Dour runs through it. It is possible that remains of waterside activities for example earlier mills may be present and remains of geo-archaeological interest associated with the silts of the Dour. In addition remains associated with the previous industrial use may be buried within the development site.

Acknowledgements

- 1.3.3 OA are grateful to Anthony Beer, local resident and historian, for additional information on the background to the site.

2 EVALUATION AIMS

- 2.1.1 The objective of the evaluation was to establish whether there were any archaeological deposits at the site that may be affected by the proposed development. The evaluation sought to ascertain the extent, depth below current ground surface, depth of deposit, character, significance and condition of any archaeological remains on site.
- 2.1.2 The evaluation also sought to assess the extent to which previous development on the site may have affected any archaeological deposits.

3 EVALUATION METHODOLOGY

3.1 Scope of fieldwork

- 3.1.1 The evaluation comprised six trenches. Three 10m x 2m trenches were located within the former Steel Designs Construction Ltd building, a 15m x 2m trench was excavated south of the building along the river frontage and 2 trenches of 5m and 8m x 2m were excavated either side of a large culvert at the western end of the site (Fig 2). The Overburden was removed under close archaeological supervision by a 5 ton mechanical excavator fitted with a toothless bucket.

3.2 Fieldwork methods and recording

- 3.2.1 The trenches were cleaned by hand and the revealed features were sampled to determine their extent and nature, and to retrieve finds and environmental samples. All archaeological features were planned and where excavated their sections drawn at the scale of 1:20. All features were photographed using colour slide and black and white print film. Recording followed procedures laid down in the brief and *OAU Fieldwork Manual* (ed D Wilkinson, 1992).

3.3 Finds

- 3.3.1 Finds were recovered by hand during the course of the excavation and bagged by context.

3.4 Palaeo-environmental evidence

- 3.4.1 No deposits which would require palaeo-environmental sampling were revealed during the investigation.

3.5 Presentation of results

- 3.5.1 Section 5 of the report is a technical account detailing the geological and archaeological deposits encountered in each trench. Ordnance Datum heights are provided throughout this section in brackets. Section 6 summarises the evidence for archaeological preservation across the site at an interpretative level. Section 7 assesses the potential impact of the evaluation findings on the proposed development.

4 RESULTS: GENERAL

4.1 Soils and ground conditions

- 4.1.1 The site is located on alluvial drift deposits overlying natural chalk. Problems were encountered with ground water at the northern extents of Trenches 1, 3 and 4. There are a number of culverts crossing the site.

4.2 Distribution of archaeological deposits

- 4.2.1 The deposits uncovered during the evaluation can be characterised in four groups:

- Natural river bed gravels and overlying re-deposited cretaceous chalk silts.
- Re-deposited riverine material from the reclamation of the river frontage.
- Structures and deposits pertaining to the 19th century mill which stood on the site till the early 1960's.
- Demolition deposits relating to the 19th century mill and made ground and concrete surfaces relating to the former Steel Designs Construction Ltd building.

5 RESULTS: DESCRIPTIONS

5.1 Description of deposits

Trench 1 (Fig 3 and 6)

- 5.1.1 Trench 1 measured 8m x 2m and was aligned north east-south west at the western end of the site. The original intention to excavate a 25m long trench had to be reconsidered due to a large east to west aligned culvert which crosses the site. The 25m length was staggered across the culvert as Trenches 1 and 6. In Trench 1 river gravels (1010) were uncovered at 11.93m OD. Two layers of re-deposited riverine clay silt (1009 and 1008) overlay the gravels (12.63m OD). The upper clay silt was cut by culvert 1004 which was filled by brick rubble 1003 (12.63m OD). To the north clay silt 1008 was cut by drain 1006 which was filled by brick rubble in a silt matrix (1005) (12.55m OD). A layer of crushed brick rubble (1002) overlay fills 1003 and 1005 (12.85m OD). This was overlain by tarmac surface 1001 (12.93m OD), which was in turn overlain by the current concrete surface 1000 (13.23m OD).

Trench 2 (Fig.4 and 6)

- 5.1.2 Trench 2 measured 16m x 2m and was located east to west to the south of the site in order to assess preservation along the river frontage. River bed gravels (2014) were uncovered at 9.59m OD. These were cut by red brick and lime mortar walls 2010 (1600mm wide) and 2009 (only partly exposed along the north side of the trench). Two smaller cross walls 2011 (350mm wide) and 2012 (250mm wide) spanned the trench abutting wall 2009. Re-deposited gravel 2013 had been used to level up around the walls (10.89m OD). Gravel 2013 and these walls, with the exception of 2009, were sealed by flagstone floor 2007 (11m OD). The flagstone floor was made of lime mortar bonded limestone slabs with variable dimensions of c.400mm x 300mm and butted wall 2009 along the northern edge of the trench. The flagstone floor was covered by a thin alluvial silt layer 2005. This was overlain at the western end of the trench by a thick sandy silt deposit (2004) containing brick fragments and pebbles which also sealed a culvert (2015). A substantial dump deposit of silt loam (2002) containing brick fragments, pottery and iron work made up the ground and was overlain by levelling deposit 2001 and concrete 2000 (13.29m OD).

Trench 3 (Fig. 5 and 6)

- 5.1.3 Trenches 3, 4 and 5 were excavated within the existing building to assess preservation away from the river frontage. They were orientated north east-south west and were originally located in the middle of the building. However, to avoid the culvert that also affected Trench 1 they had to be moved slightly northwards.
- 5.1.4 Trench 3 was located at the western end of the building and measured 10m x 2m. River gravels (3004) were revealed at 11.86m OD. A layer of re-deposited riverine silt (3003) containing pottery, CBM and gravel overlaid the river bed gravels (12.26m OD). This was sealed by a layer of red and yellow brick and lime mortar fragments in a sandy silt matrix (3002) (12.36m OD). A second layer of brick fragments and rubble (3001) (13.26m OD) raised the level up to the current concrete surfacing 3000 (13.36m OD).

Trench 4 (Fig. 5 and 6)

- 5.1.5 Trench 4 was located in the centre of the existing building and measured 10m x 2m. River gravels (4004) were revealed at 11.51m OD. The gravels were overlain by re-deposited riverine silt (4003) containing pottery, CBM and gravel (12.07m OD). This was overlain by a layer of brick fragments and rubble in a silt matrix (4002) (12.57m OD). A modern service pipe and cut were observed cutting 4002 at the southern end of the trench. 4002 was sealed by a further thick deposit of brick rubble in a sand silt matrix (4001) (13.01m OD). The current concrete surfacing (4000) lay at 13.27m OD.

Trench 5 (Fig. 5 and 6)

- 5.1.6 Trench 5 was located at the eastern end of the existing building and measured 10m x 2m. River gravels (5005) were revealed at 11.69m OD. The gravels were overlain by a thin layer of re-deposited cretaceous chalk silts 5004 containing gravel (11.75m

OD). A layer of re-deposited riverine clay silt (5002) containing pot, CBM and gravels sealed the chalk silts (12.03m OD). Overlying this was a red brick former surface (5001) with brick rubble and mortar make-up (12.65m OD) which was sealed by a thick band of brick rubble and mortar in a silt matrix (5003) (12.99m OD). This was overlain by a layer of crushed brick (5000) forming a foundation for the current concrete surface (5006) which lay at 13.39m OD.

Trench 6 (Fig 3 and 6)

- 5.1.7 Trench 6 was located to the south of the culvert at the western end of the site and measured 5m x 2m. River gravels (6004) were uncovered at 12.2m OD. These were overlain by two consecutive layers of re-deposited riverine clay silts containing pottery, CBM and gravel, 6003 (12.46m OD) and 6002 (12.56m OD). These were overlain by a thick layer of CBM, gravel and mortar in a sandy clay matrix (6001). A culvert was cut through layers 6001 at the southern extent of the trench. A layer of brick fragments and rubble supported the current concrete surfacing (6000) at 13.38m OD.

5.2 Finds

Pottery

- 5.2.1 Sherds of 19th century pottery were recovered from contexts 1003, 1008, 3003, 4003, 5002, 6002 and 6003 during the evaluation. Most of these contexts are redeposited riverine material at the base of the stratigraphic sequence confirming that over much of the site earlier deposits do not survive.

6 DISCUSSION AND INTERPRETATION

The river bed gravels and chalk silts

- 6.1.1 The natural river gravels were encountered at levels of 9.59 to 12.2m OD. The chalk silts seen overlying the gravels in Trenches 5 and 6 are probably re-deposited cretaceous material brought into the valley basin by streams.

The reclamation of the river frontage

- 6.1.2 The re-deposited riverine clay silts overlying the gravels in Trenches 1, 3 and 4 result from the reclamation of the foreshore for construction. The pottery and CBM recovered from the re-deposited riverine material suggest an early 19th century date for the reclamation.

The Mill: Yard Surfaces

- 6.1.3 The earliest phase of construction overlies the re-deposited riverine deposits and can be divided into two groups; the structures seen in Trench 2 and surfaces seen in Trenches 1, 3 and 5. Historic maps suggest that the structures in Trench 2 and surfaces seen in the other trenches belong to a 19th century paper and flour mill which stood on the riverbank until it was demolished in the early 1960s. The best preserved of these surfaces was the disturbed red-brick floor (5001) recorded in

Trench 5. This was not bonded and was poorly preserved. Maps show this area to be outside the mill building suggesting that it was a yard surface (see inset Fig. 2). A similar brick yard surface (3002) was uncovered in a poorer state of preservation in Trench 3. It seems likely that the surface was also present in the area of Trench 4 but was removed by the construction of the existing building.

- 6.1.4 A crushed brick and mortar yard surface (1002) was also uncovered in Trench 1. At a later date it had been overlain by tarmac and then a concrete slab. It may be that the yard behind the mill was surfaced with brick and to the west of the mill a rougher crushed brick surface was laid. The metalling of the surface may indicate a preferred route through the site and may have been to contend with traffic from loading and unloading at the river. No surfacing was uncovered in Trench 6, this is probably due to truncation by later works.

The Mill: Pit Wheel

- 6.1.5 The flagstone floor and walls uncovered at around 11m OD in Trench 2 appear to belong to the 19th century mill. The main mill building is shown on the historic map to be 10m wide by 34m long corresponding to the distance between the east to west aligned wall 2009 along Trench 2's northern edge and a 1.4m thick east west wall which stands on the riverbank as part of the mill stream/mill race structure (Fig. 2). Although only part of wall 2009 was seen in the trench the north south dividing wall 2010 crossing the trench is the same thickness as the mill stream/mill race wall. While 2009 and the mill stream/mill race wall seem to have formed the north and south walls of the mill, wall 2010 appears to have divided the building in two. The two cross walls 2011 and 2012 are supporting walls for the flagstone floor but the floor was also laid over wall 2010 which may indicate a wall designed to support and dissipate the weight of the mill wheel structure above.
- 6.1.6 Comparisons with other mills such as Lurgashall mill (Wade and Read 2002) (Fig. 2) or De Montalt mill at Combe Down, Bath (OA in preparation) show a pit wheel being used for the transmission of power from the water wheel. The pit wheel was housed in a recessed room or pit. The stones in Trench 2 were not water worn and this would indicate that the evidence revealed in the evaluation trench may relate to such a structure.

The Former Steel Designs Construction Ltd

- 6.1.7 The layers overlying the mill structures relate to the demolition of the mill, raising the ground level and consolidation for the existing building. There is a considerable depth of demolition material overlying the mill structures and the aerial photograph from 1949 shows the mill casting a shadow which indicates the building could have been several storeys in height.

6.2 Reliability of field investigation

- 6.2.1 Although the intended trench plan was modified to contend with on site conditions the trenches as excavated have covered all available areas of the site. Trench 2 covered the accessible section of the river frontage and in reaching the river gravels determined that any structures predating the 19th century mill, if once present, are likely to have been heavily truncated by the later building. The remaining trenches provided full and consistent sequences down to natural deposits.

6.3 Overall interpretation

- 6.3.1 The walls and flagstone floor uncovered in Trench 2 and extant wall of the mill stream/mill race belong to the 19th century paper and flour mill that stood on the site. The surfaces uncovered in Trenches 1, 3 and 5 are part of the yard associated with this mill. No evidence for significantly earlier activity was recorded and the deposits immediately overlying the natural deposits in most of the trenches produced 19th century pottery.

7 IMPACT OF THE DEVELOPMENT

- 7.1.1 Plans of the proposed development were not available to us at the time of writing so their direct impact cannot be assessed. However, the river bed gravels were encountered at a depth of 9.59-12.2m OD. The mill structures lay at around 12.5m OD except in Trench 2 where the base of the pit was deeper at 11m OD. Most other deposits were 19th century reclamation or 20th century made-ground for the current industrial building. A number of culverts and drains were encountered, the most major being the large culvert which flows through the southern half of the existing building. This doglegs midway across the building crossing Lorne road to an open sluice on the adjacent property (Fig. 2). A small culvert was uncovered at the western end of Trench 2 which was heavily truncated. A drain crossed the southern end of Trench 6 and ground water was encountered at the northern extents of Trenches 1, 3 and 4.

APPENDICES

APPENDIX 1 ARCHAEOLOGICAL CONTEXT INVENTORY

<i>Trench</i>	<i>Ctxt No</i>	<i>Type</i>	<i>Width (m)</i>	<i>Thick. (m)</i>	<i>Comment</i>	<i>Finds</i>	<i>No./wt</i>	<i>Date</i>
001								
	1000	Layer		0.3	Concrete and aggregate			C20th
	1001	Layer		0.04	Metalling			C19/20th
	1002	Layer		0.28	Yard surface			C19th
	1003	Fill		0.5	Culvert fill	Pot, CBM		C19th
	1004	Cut	2	0.6	Culvert			C19th
	1005	Fill	2	0.5	Drain fill			C19th
	1006	Cut	2	0.5	Drainage channel			C19th
	1007	Layer		0.4	Re-dep river gravel			C19th
	1008	Layer		0.4	Re-dep river gravel	Pot, CBM		C19th
	1009	Layer		0.2	Re-dep river silts			C19th
	1010	Layer			Natural river bed gravel			
002								
	2000	Layer		0.1	Concrete			C20th
	2001	Layer		0.2	Made Ground			C20th
	2002	Fill		2	Made Ground			C20th
	2003	Cut			Make-up cut			C20th
	2004	Layer		1.45	Made Ground			C20th
	2005	Lens		0.1	Alluvial silting			C19th
	2006	Lens			Silting			C19th
	2007	Struct			Flagstone floor			C19th
	2008	Group			Walls			C19th
	2009	Struct		0.5+	Wall			C19th
	2010	Struct	1.6	0.5+	Wall			C19th
	2011	Struct	0.35	0.2+	Wall			C19th
	2012	Struct	0.25	0.2+	Wall			C19th
	2013	Layer		0.6	Pebble in-fill			C19th
	2014	Layer			River gravels			C19th
	2015	Struct		0.8	Culvert			C19th

003								
	3000	Layer		0.2	Concrete and crush			C20th
	3001	Layer		0.6	Made Ground			C20th
	3002	Layer		0.2	Brick Floor			C19th
	3003	Layer		0.45	Re-dep riverine mat	Pot, CBM		C19th
	3004	Layer			River gravels			
004								
	4000	Layer		0.33	Concrete and crush			C20th
	4001	Layer		0.45	Made Ground			C20th
	4002	Layer		0.5	Brick rubble			C20th
	4003	Layer		0.55	Re-dep riverine mat	Pot, CBM		C19th
	4004	Layer			River gravels			
005								
	5000	Layer		0.36	Made Ground			C20th
	5001	Layer		0.2	Brick Floor			C19th
	5002	Layer		0.22	Re-dep riverine mat	Pot, CBM		C19th
	5003	Layer		0.25	Brick rubble			C20th
	5004	Layer		0.1	Chalk silts			
	5005	Layer			River bed gravels			
	5006	Layer		0.30	Concrete surface			C20th
006								
	6000	Layer		0.5	Concrete and aggregate			C20th
	6001	Layer		0.7	Re-dep riverine mat			C19th
	6002	Layer		0.1	Re-dep soil	Pot, CBM		C19th
	6003	Layer		0.22	Re-dep riverine mat	Pot, CBM		C19th
	6004	Layer			River gravels			

APPENDIX 2 BIBLIOGRAPHY AND REFERENCES

7.1.2 Weald and Downland Open Air Museum Guide Book. Robin Wade and Pat Read Partnership. 2002

7.1.3 De Montalt Mill, Bath. OA (in-prep)

APPENDIX 3 SUMMARY OF SITE DETAILS

Site name: The former Steel Designs Limited, Lorne Road, Dover, Kent

Site code: DOLO06

Grid reference: E630920 N142540

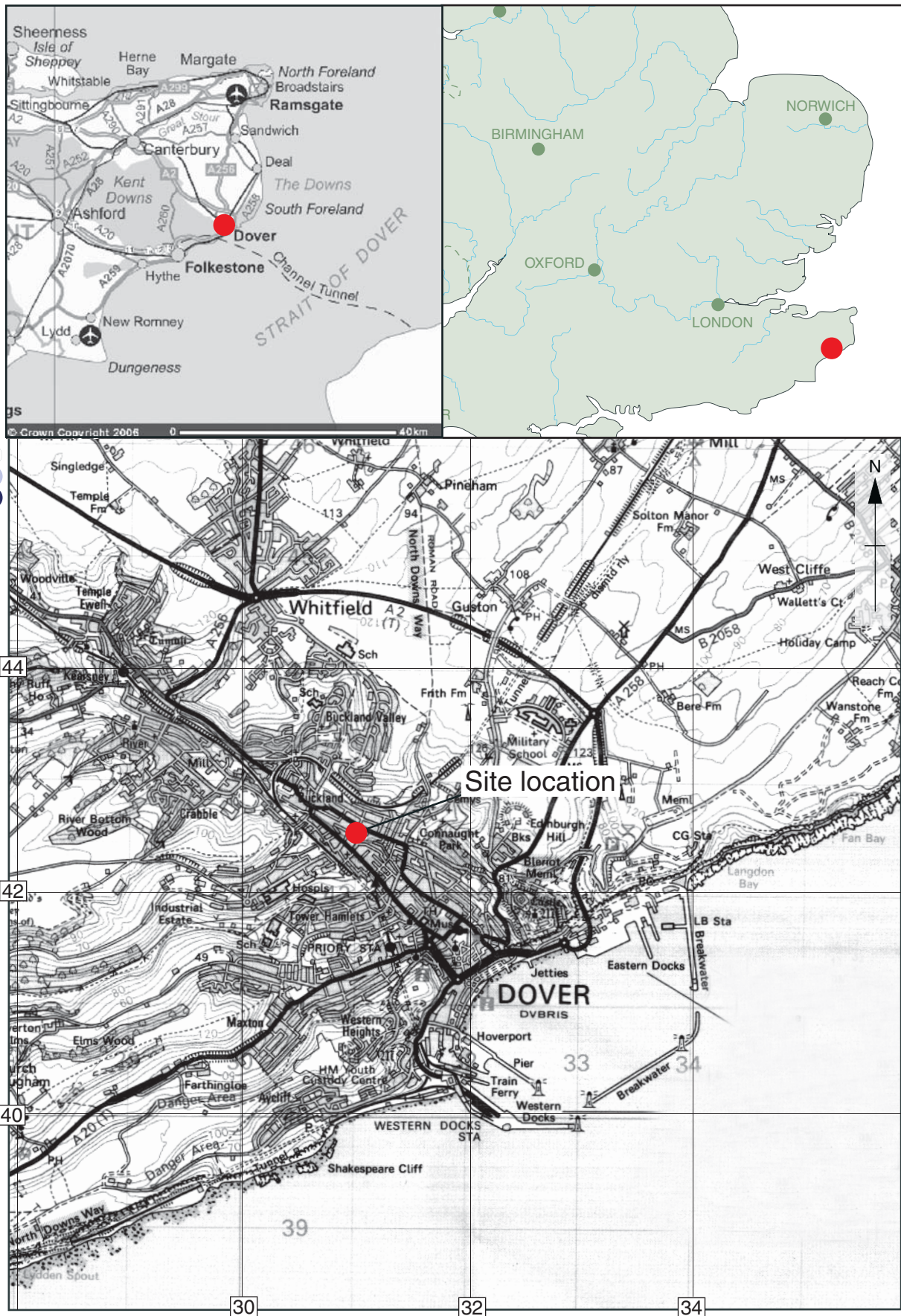
Type of evaluation: 6 trenches.

Date and duration of project: 10/4/06-21/04/06

Area of site: 2400 sq m

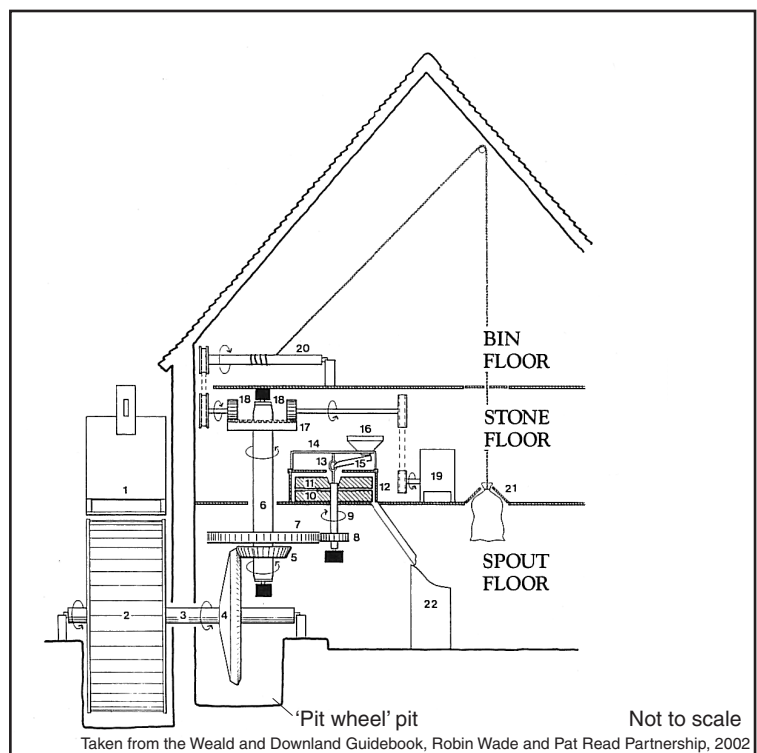
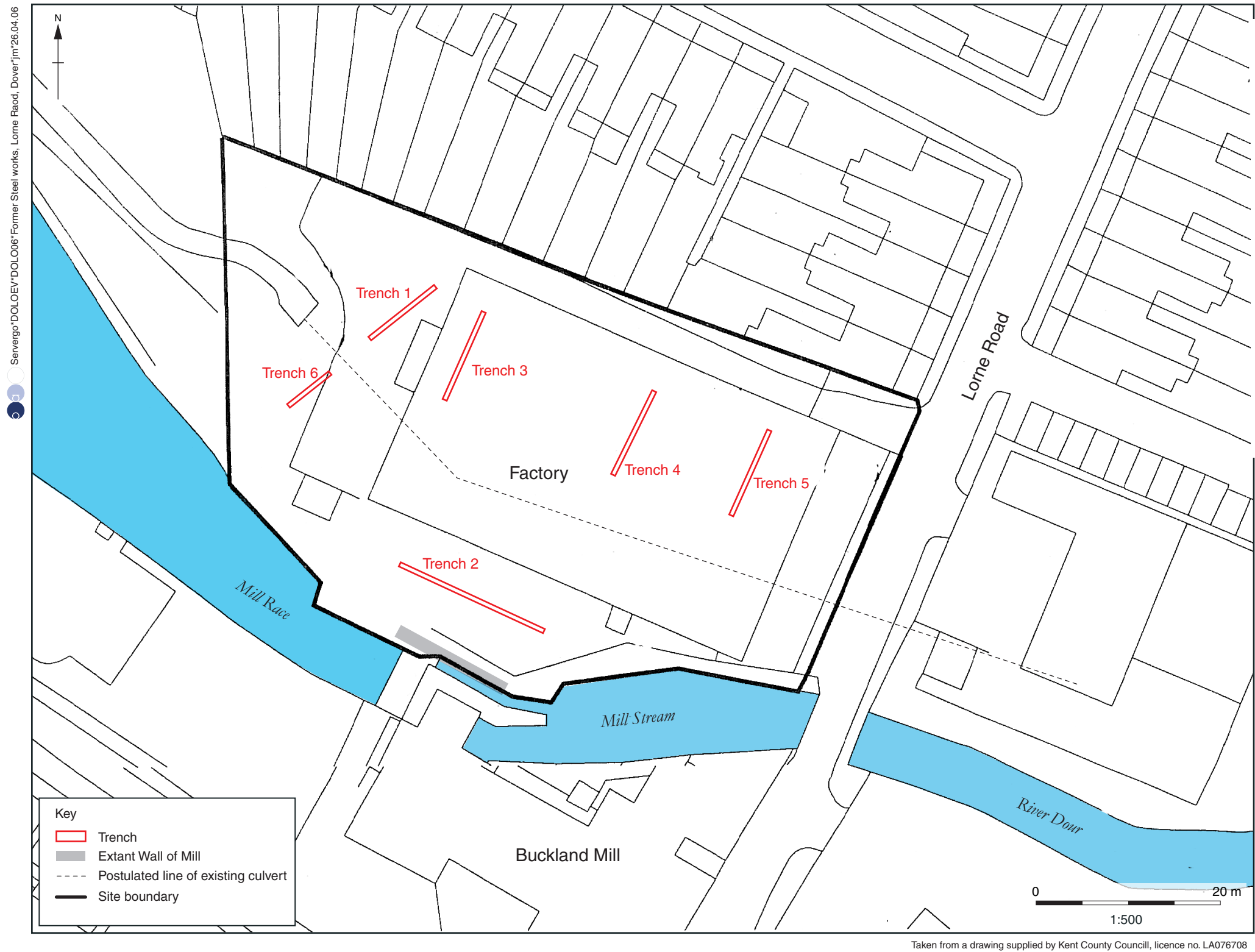
Summary of results: 19th century mill, pit wheel housing and associated yard surfaces.

Location of archive: The archive is currently held at OA, Janus House, Osney Mead, Oxford, OX2 0ES, and will be deposited with Dover Heritage Centre in due course.



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Figure 1: Site location



Schematic diagram of Lurgashall Mill



Location of former mill

Figure 2: Trench plan and insets

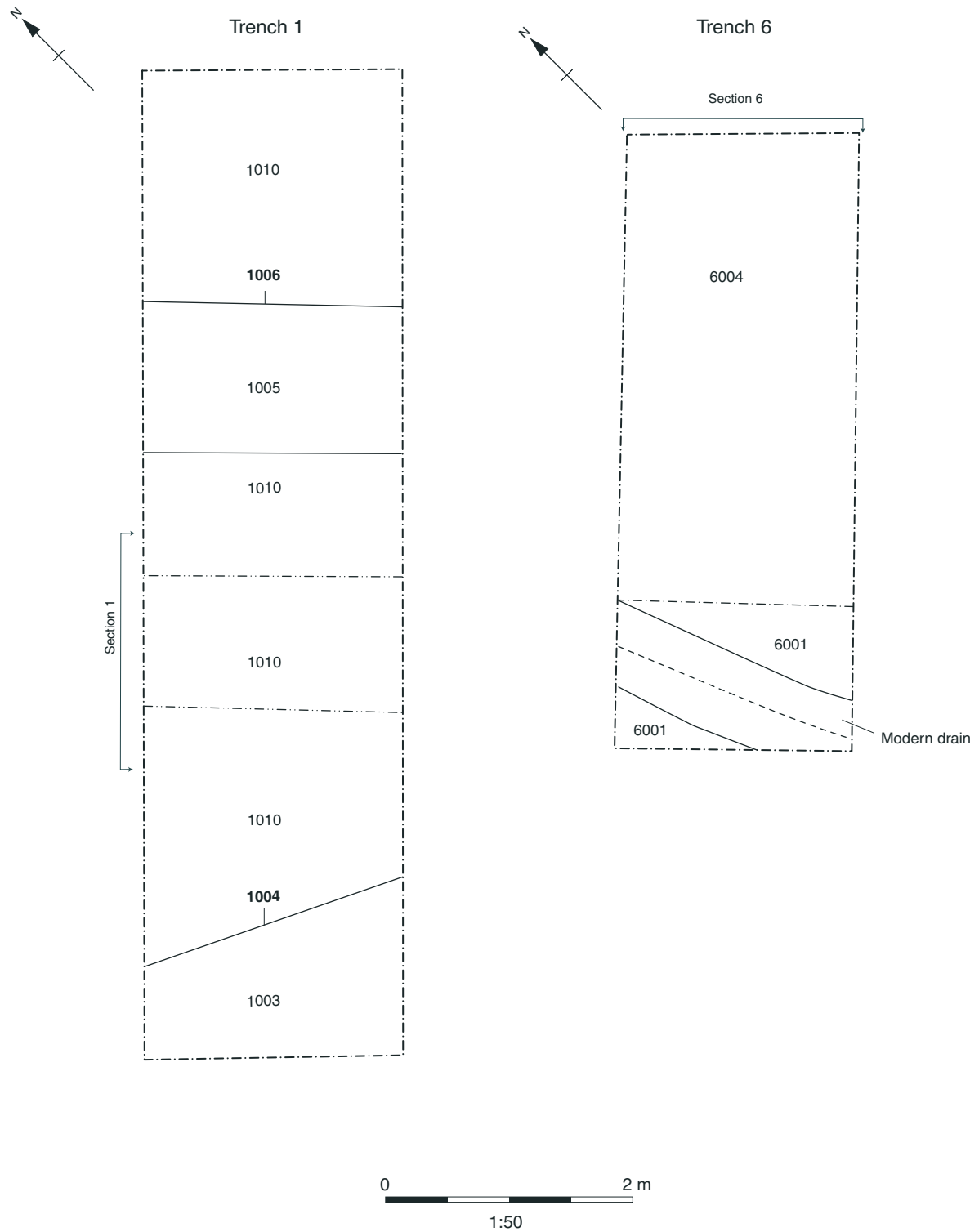


Figure 3: Trenches 1 and 6



Flagstone floor of pit wheel pit
within C19th mill

Trench 2

Foundations of mill
wall below flagstone
floor after its removal

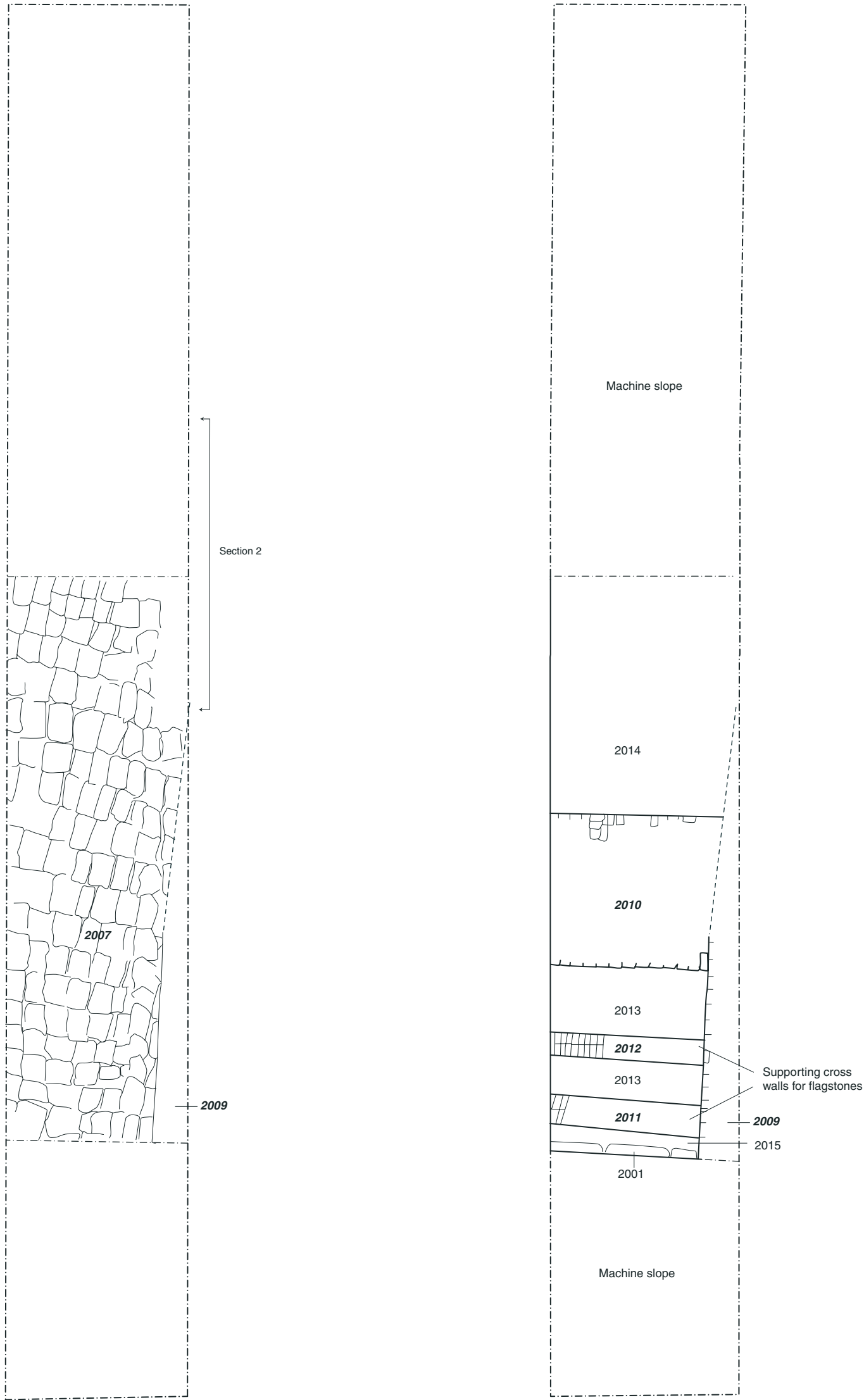


Figure 4: Trench 2, plan before and after removal of flagstone floor

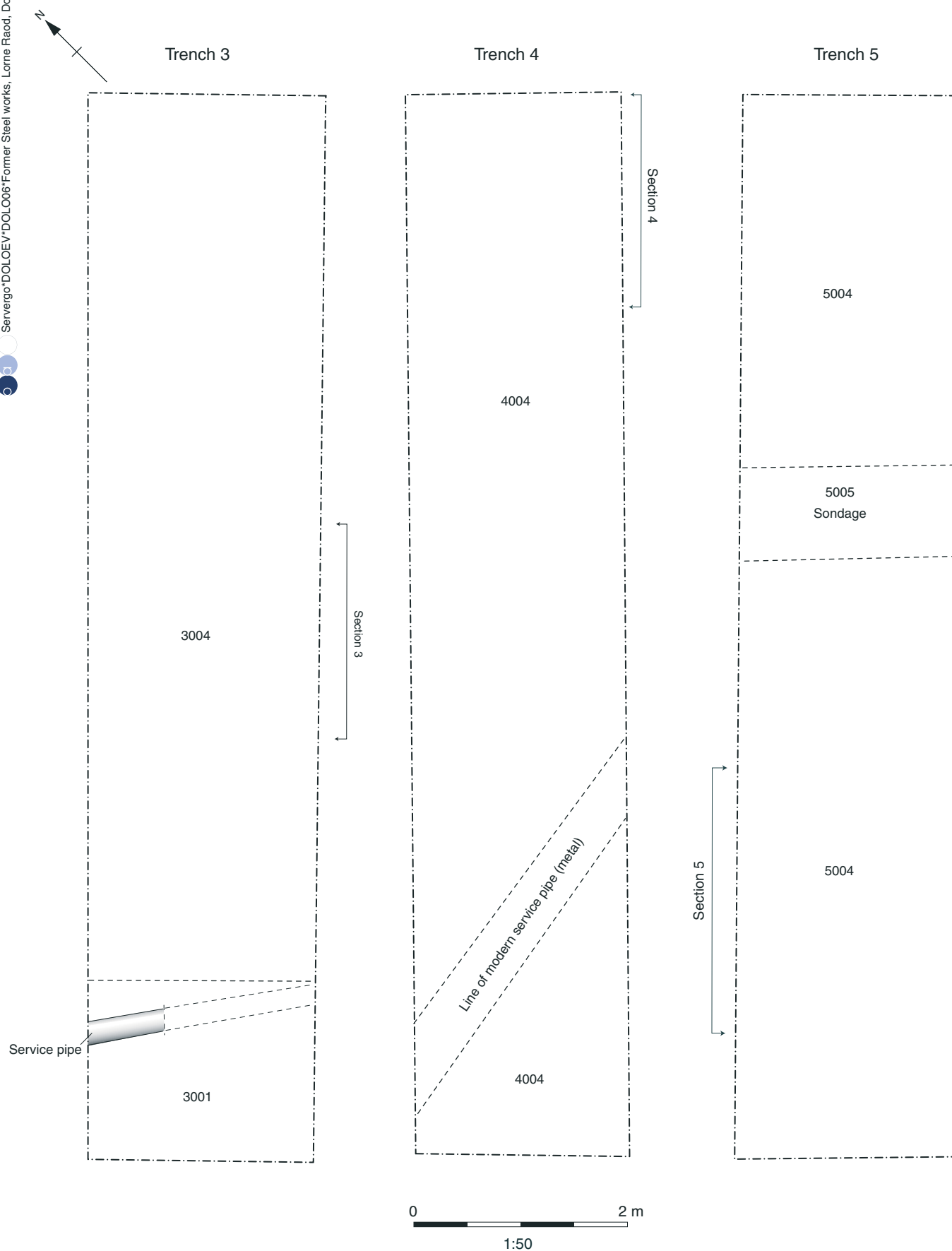


Figure 5: Trenches 3, 4 and 5

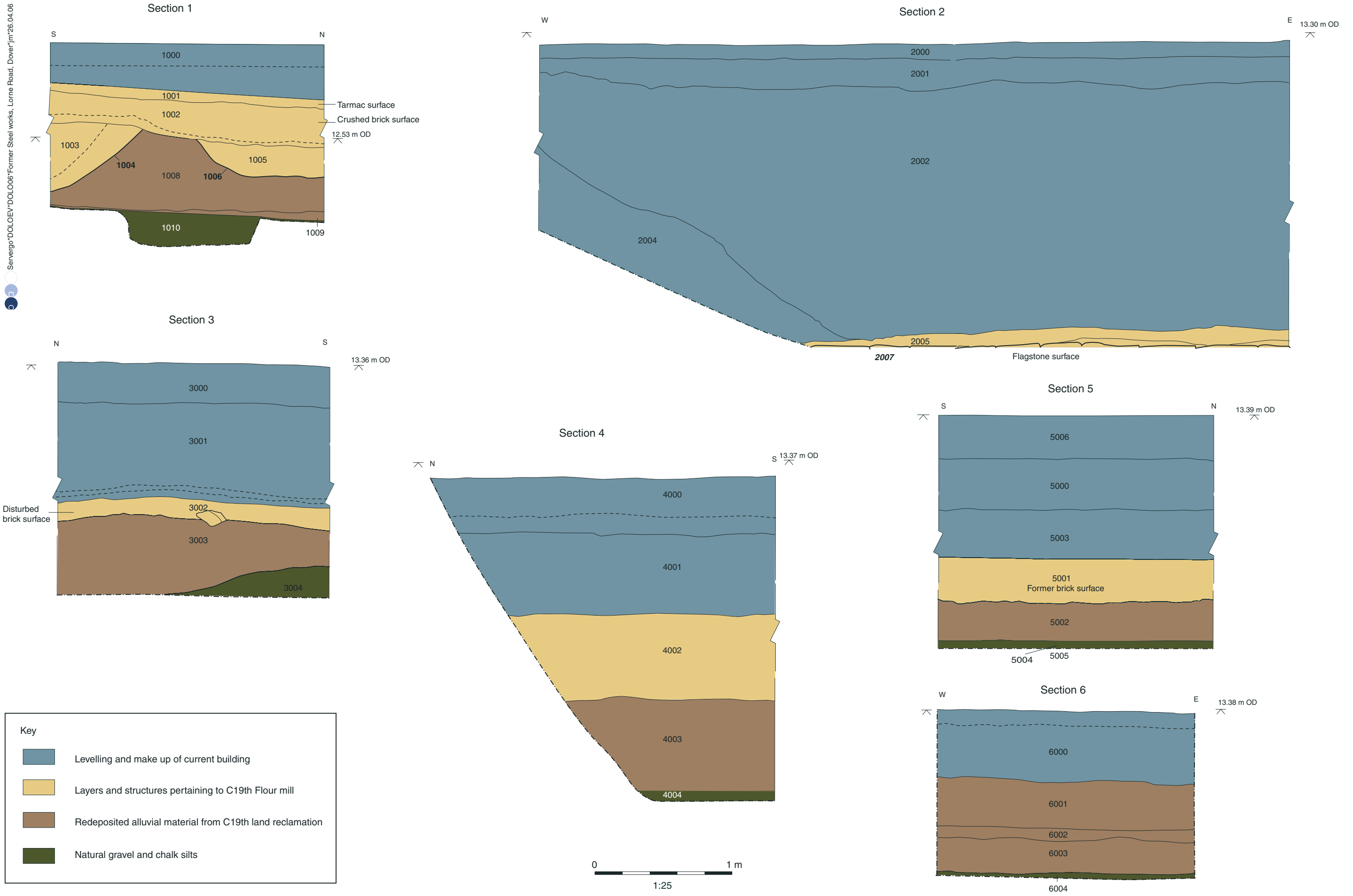


Figure 6: Sections 1-6



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