

New Mini Plant BMW Factory Cowley Oxford



Archaeological Watching Brief Report



March 2013

Client: BMW (UK) Manufacturing Ltd

Issue No:1

OA Job No: 4919

NGR: Centred at SP 5570 0426



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1	Mike Sims Project Supervisor	Steve Lawrence Senior Project Manager	

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Janus House

Osney Mead

Oxford OX2 0ES

t: +44 (0) 1865 263800

e: oasouth@thehumanjourney.net

f: +44 (0) 1865 793496

w: oasouth.thehumanjourney.net

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New Mini Plant, BMW Factory, Cowley, Oxford

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Summary

Between March and August 2011 Oxford Archaeology undertook an archaeological watching brief on the site of new facilities at the BMW Mini factory, Cowley Works, Oxford. The watching brief demonstrated that the larger part of the area within the development boundary had been subject to prior truncation associated with the earlier factory buildings on the site removing any potential archaeological horizons. A less disturbed pre-industrial soil horizon was present within Zone E preserved under the former buildings that is most likely to have been a 19th century or earlier ploughsoil. This did not produce any archaeological features, deposits or finds.



1 INTRODUCTION

1.1 Project details and background

- 1.1.1 In 2011 Oxford Archaeology (OA) was commissioned by BMW (UK) to undertake a watching brief on redevelopment works at the BMW Mini plant at Cowley in Oxford. Prior to the fieldwork OA undertook a Desk-based Archaeological Impact Assessment (OA 2010) that outlined the archaeological and historical potential of the site. This also reviewed geotechnical and existing construction impact data and identified differing zones (Zones A-F) of archaeological potential within the development boundary.
- 1.1.2 The archaeological fieldwork was undertaken as a condition to Planning Permission (ref: 10/01564/FUL) and all work was undertaken in accordance with local and national planning policies. Prior to the commencement of fieldwork a Written Scheme of Investigation (WSI) was produced by OA outlining how it would complete the works to the satisfaction of a brief issued by the Oxford City Archaeologist (OCA). The WSI was issued to, and approved by, the OCA.

1.2 Location, topography and geology

- 1.2.1 The site lies at the outskirts of Oxford, at Cowley on the east side of the eastern By-Pass Road, and is centred on SP 5570 0426 (Fig. 1). The site slopes from c 82m aOD in the north to c 69m aOD in the south, although variations in levels within the site are more complex reflecting significant modern landscaping.
- 1.2.2 The area of the development prior to demolition comprised buildings belonging to the BMW MINI plant. Zones A, B and C, identified as those with higher potential for the preservation of archaeological, are located between existing and former buildings where less truncation is thought to have occurred (Fig. 2).
- 1.2.3 The geology of the area is a combination of Beckley Sand (sand and calcareous limestone) and Wheatley Limestone, including Coral Rag (Geological Survey of Great Britain, 1982).

1.3 Archaeological and historical background

- 1.3.1 Aerial photographs taken in 1944, 1975 and 1995 showed a number of cropmarks within c 200m of Zone A to the north-east of the BMW plant, including a trackway and rectangular enclosures. It is not possible to closely date these features although they may originate from the prehistoric or Roman periods based upon the known archaeology of this area.
- 1.3.2 The earliest dated feature identified within the greater BMW site is a late Bronze Age or early Iron Age ditch found with prehistoric pottery in 1995 when Oxford Archaeological Unit (now OA) undertook an evaluation for the Rover Vehicle Quality Building, c 120m to the south-east of Zone A. More prehistoric pottery was found at the nearby site of the Rover Paint Shop in 1995, c 100m east of Zone B and at the Transco site in 2000, c 350m to its south.
- 1.3.3 The most significant and varied remains associated with this location derive from the Roman period. The focus for these is the north to south aligned Roman Road, a major route from Dorchester to Alchester, now called Roman Way, which forms the eastern boundary of the development. Metalled surfaces associated with have been discovered within the motor works in the 1960s and in Waynfilete Road, Headington in 2009.



- 1.3.4 Several Roman burials have been encountered within and around the works throughout the 20th century and reported as early as the late 19th century. These indicate that a cemetery or groups of burials were laid out alongside the main road, a not uncommon practice in the Roman period.
- 1.3.5 In addition, the north-east of Oxford has a strong association with the important Roman pottery industry. Several kiln sites have been identified within this locality, two to the north-east, c 600m from the BMW site. Another was found at the former Slade Hospital in 1999, c 700m to the north. One site to the west, c 1 km from the BMW site, was excavated in 1934, 1972 and 1983 and another was found nearby in 1995. Another site was identified at Blackbird Leys, c 1 km to the south. The pottery industry was generally arranged on the Oxford Clay, a geological formation not present within the BMW site.
- 1.3.6 Other Roman finds, particularly of pottery and coins, are common across this part of Oxford. While activity has been dated to the 1st - 4th centuries, much of the material has come from the later part of the period.
- 1.3.7 Subsequent activity within the surrounds of the BMW works is limited and it appears to have largely remained as farmland until the industrial constructions of the late 19th century and development throughout the 20th century.

2 PROJECT AIMS AND METHODOLOGY

2.1 Aims

2.1.1 The aims of the investigation as outlined in the WSI were;

- (i) To determine the presence or absence of any archaeological remains which may survive. Should remains be found to ensure their preservation by record to the highest possible standard.
- (ii) To determine or confirm the approximate extent of any surviving remains
- (iii) To determine the date range of any surviving remains by artefactual or other means.
- (iv) To determine the condition and state of preservation of any remains.
- (v) To determine the degree of complexity of any surviving horizontal or vertical stratigraphy.
- (vi) To assess the associations and implications of any remains encountered with reference to the historic landscape.
- (vii) To determine the potential of the site to provide palaeoenvironmental and/or economic evidence, and the forms in which such evidence may survive.
- (viii) To determine the implications of any remains with reference to economy, status, utility and social activity.
- (ix) To determine or confirm the likely range, quality and quantity of the artefactual evidence present.

2.2 Methodology

2.2.1 Archaeological monitoring was undertaken during all groundworks that had the potential to impact upon deposits or features that predate the existing works. Particular emphasis was placed upon Zones A-C as identified in the AIA (Fig. 2). The intrusive



works included the demolition and removal of existing structures, topsoil stripping, ground reduction, and the excavation of new service trenches.

- 2.2.2 Any encountered features and deposits were issued with unique context numbers, and context recording was in accordance with the method outlined in the WSI. A colour digital and black-and-white negative photograph record was maintained of deposits encountered and the general development as this progressed across each area.
- 2.2.3 Site plans were drawn at an appropriate scale with larger scale plans of features undertaken as necessary. Section drawings of features and sample sections of deposit sequences were drawn at a scale of 1:20.
- 2.2.4 The watching brief was monitored by David Radford, the Oxford City Archaeologist.

3 RESULTS

3.1 Description of deposits

- 3.1.1 For ease of description the observations from the watching brief are detailed for each individual zone. No archaeological deposits or features were encountered and the following sections describe the deposit sequence that was present. Figure 2 identifies the Zone arrangements for the site and the location of the illustrated sections. Figures 3a to 3i presents the recorded sequence of deposits across the site as section drawings (see Fig. 2 and Figs 3a to 3i).

Zone A (Sections 1 and 7)

- 3.1.2 Zone A was located along the south-western boundary of the development area and measured approximately 165m by 15m. At the start of work it was covered by a concrete and tarmac road surface.
- 3.1.3 Within the area of Section 1 (Fig. 3a), a reddish-brown silt clay (3) was encountered at a level of 0.4m below the road level. Directly overlaying this was a 0.22m deep layer of crushed sandstone (2) forming the base for the road, a concrete slab 0.18m thick (1).
- 3.1.4 At Section 7 (Fig. 3c) a sterile orange-brown sand (35) was encountered at a depth of 0.5m below the road surface. The sand was overlain by a made ground sequence of modern deposits variably comprising slag, sand and silt (34, 33 and 32) in turn overlain by a layer of crushed sandstone (31), a continuation of layer 2. The concrete road surface (30) was built directly upon this layer.

Zone B (Sections 2, 4, 14 and 21)

- 3.1.5 This area formed a terrace approximately 3m higher than Zone A and measured approximately 170m by 35m. Prior to the start of work it was used as a car parking area with a tarmac surface. The sections were exposed when the perimeter concrete retaining wall was demolished.
- 3.1.6 The natural sand and ragstone deposits (8 and 22) were observed at a depth of 1.2-1.4m below the parking area (Fig. 3a Section 2 and Fig. 3b Section 4). Overlying the sand was a layer of reddish brown sandy silt clay (7 and 21) up to 0.4m in depth, a layer (64) also recorded in the base of Section 14 (Fig. 3f). This deposit probably represents a surviving soil horizon that had suffered relatively little truncation prior to the current development. However, no archaeological features or deposits were identified at this level.



- 3.1.7 The buried soil horizon was overlain by a 1m thick sequence of made ground deposits comprising variably silt, sand and mixed stone/rubble (6, 20, 19), crushed stone sub base material (17) and parking surfaces comprising concrete and tarmac (18, 16, 5, 4, 63, 62). Towards the north-western limits of this area the parking surfaces had been overlain by a 1m thick layer of made ground comprising sand mixed with brick, concrete and tarmac fragments (61). A landscaping layer topsoil 0.2m deep (60) had been laid over this (Figs 3f Section 14 and 3i Section 21).

Zone C (Sections 9 and 20)

- 3.1.8 This zone consisted of a roughly triangular area 170m long and 50m wide at its widest point. The zone sloped down from north-west to south-east and was mostly grass with paths and areas of hard standing.
- 3.1.9 Two sections (Figs 3d Section 9 and 3h Section 20) were exposed and recorded. Both demonstrated that a sequence of modern made ground sand, silt and rubble deposits and surfaces were laid directly over sand (77) and ragstone (76) natural geological deposits. No evidence of comparatively undisturbed pre industrial soil sequences were observed in this area.

Zone D (Sections 8, 10, 11 and 13)

- 3.1.10 This zone comprised an approximate triangular area measuring 100m by 70m within the southern corner of the development. Immediately prior to the development ground works the southern extent of the zone was occupied by a tarmac loading bay and partially covered by a steel canopy. The northern extent had been landscaped forming a grassed area rising slightly to the north.
- 3.1.11 Sterile orange natural sand (39, 49, 52 and 59) was recorded across this area at a depth of 1m below the current ground level overlain by mixed made ground deposits comprising clay, silt, sand, rubble and topsoil an turf. Only at one location, Section 13 (Fig. 3f), was there a variation to this sequence with the relatively undisturbed reddish brown silty clay soil horizon (57) present above the sand geology and buried by the made ground. This represents an isolated survival of the pre industrial soil horizon within this zone although no archaeological finds were encountered in association with this.

Zone E (Sections 3, 5, 6, 12, 15, 16 and 17)

- 3.1.12 Zone E comprised an open area of roughly level ground measuring 160m by 65m. The area had been grassed over with a access road aligned across its width. Prior to ground reduction for the current development the landscaping layer of topsoil and turf had been removed.
- 3.1.13 Natural sand and ragstone geologies (15, 14, 8, 25, 29, 28, 68, 74) were encountered across the whole area during the reduction of the ground to the current construction level. Directly overlying this within Sections 5, 6, 12 and 16 (Figs 3c, 3e and 3g) was the pre industrial soil horizon comprising a reddish brown silty clay (24, 27, 55 and 71). This deposit survived to a thickness of 0.25-0.5m. A sequence of modern made ground deposits (11, 12, 13, 26, 32, 66, 70, 73) and hard surfaces (9, 10, 67) sealed the geology and soil horizon with later topsoil and turf (65, 69, 72) laid over some areas of surfacing associated with more recent landscaping.



Zone F (Sections 18 and 19)

- 3.1.14 This zone comprised open factory buildings built on a concrete platform at the same level as Zone B. Immediately prior to the fieldwork the buildings had been demolished and the concrete platform and associated below ground structures were removed.
- 3.1.15 Natural sand and ragstone (81 and 80) was revealed across the zone during the ground reduction and this was directly overlain by a relatively shallow (c 0.5m thick) sequence of made ground and demolition debris deriving from the recent removal of the concrete surface. The area had clearly been subject to disturbance and removal of any pre industrial soil sequences as part of the former constructions.

3.2 Finds

- 3.2.1 Modern debris comprising brick, tile, iron piping, salt glazed pipe and window glass was present within many of the made ground contexts. These were all dated to the 20th century and their presence was noted but they were not retained. No artefacts pre-dating the 20th century were encountered during the course of the watching brief.

3.3 Environmental remains

- 3.3.1 No archaeological features or deposits were encountered during the course of the fieldwork. Therefore no deposits suitable for environmental sampling were identified or recovered.

4 DISCUSSION AND CONCLUSIONS

- 4.1.1 The depth of excavations throughout all the zones was sufficient to expose and remove the upper levels of the underlying geological deposits throughout the site. The removal of the overlying structures and deposits revealed significant previous landscaping in the form of ground reduction and terracing. Areas of made ground containing 20th century debris were encountered within the areas of raised ground levels although these were often above already truncated ground levels rather than preserving *in situ* soil horizons. No archaeological features or finds were encountered within the areas of truncation.
- 4.1.2 Only within one area (Zone E) was it evident that pre-industrial soil horizons had been preserved. Here a soil horizon comprising a reddish silt sand was consistently encountered overlying the natural geology. This is most likely to be a former ploughsoil derived from the agricultural use of the area prior to the late 19th century. No archaeological features or finds were encountered within this zone. This zone was also the most distant from the course of the Roman road where remains would be most expected.



APPENDIX A. ARCHAEOLOGICAL CONTEXT INVENTORY

Context	Type	Depth	Width	Comments	Finds	Date
1	Layer	0.17 m	-	Concrete road	-	C20 th
2	Layer	0.2 m	-	Crushed stone base	-	C20 th
3	Layer	> 0.3 m	-	Natural clay silt	-	-
4	Layer	0.22 m	-	Tarmac roadway	-	C20 th
5	Layer	0.55 m	-	Concrete base	-	C20 th
6	Layer	0.15 m	-	Levelling layer	-	C20 th
7	Layer	0.4 m	-	Natural clay silt	-	-
8	Layer	> 1 m	-	Natural sand	-	-
9	Layer	0.18 m	-	Tarmac	-	C20 th
10	Layer	0.08 m	-	Concrete	-	C20 th
11	Layer	0.15 m	-	Tarmac	-	C20 th
12	Layer	0.08 m	-	Concrete	-	C20 th
13	Layer	0.45 m	-	Demolition debris	Brick, concrete	C20 th
14	Layer	0.14 m	-	Ragstone	-	-
15	Layer	> 1.1 m	-	Natural sand	-	-
16	Layer	0.15 m	-	Tarmac	-	C20 th
17	Layer	0.28 m	-	Crushed Stone	-	C20 th
18	Layer	0.06 m	-	Concrete	-	C20 th
19	Layer	0.18 m	-	Redeposited sand	-	C20 th
20	Layer	0.08 m	-	Buried soil horizon	Brick	-
21	Layer	0.42 m	-	Clay silt	-	-
22	Layer	> 0.6 m	-	Natural sand	-	-
23	Layer	0.25 m	-	Made ground	Brick	C20 th
24	Layer	0.6 m	-	Clay silt	-	--
25	Layer	> 0.65 m	-	Natural sand	-	-
26	Layer	0.25 m	-	Made/disturbed ground	Brick	C20 th
27	Layer	0.25 m	-	Clay silt	-	-
28	Layer	0.3 m	-	Ragstone	-	-
29	Layer	> 0.3 m	-	Natural sand	-	-
30	Layer	0.13 m	4 m	Concrete roadway	-	C20 th
31	Layer	0.15 m	4 m	Crushed stone base	-	C20 th
32	Layer	0.05 m	-	Made ground	-	C20 th
33	Layer	0.1 m	-	Made ground	-	C20 th
34	Layer	0.1 m	-	Made ground	-	C20 th
35	Layer	> 0.1 m	-	Natural sand	-	-
36	Layer	0.2 m	-	Topsoil and turf	-	-



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37	Layer	0.5 m	-	Made ground	Brick	C20 th
38	Layer	0.3 m	-	Made ground	Brick, stone	C20 th
39	Layer	> 1 m	-	Natural sand	-	--
40	Layer	0.15 m	-	Topsoil and turf	-	C20 th
41	Layer	0.45 m	-	Made ground	Brick	C20 th
42	Layer	0.25 m	-	Made ground	Brick	C20 th
43	Layer	0.25 m	-	Concrete surface	-	C20 th
44	Layer	0.25 m	-	Topsoil and turf	-	C20 th
45	Layer	0.2 m	-	Made ground	-	C20 th
46	Layer	0.1 m	-	Made ground	-	C20 th
47	Layer	0.07 m	-	Tarmac surface	-	C20 th
48	Layer	0.25 m	-	Hard core base	Brick	C20 th
49	Layer	> 0.4 m	-	Natural sand	-	-
50	Layer	0.25 m	-	Topsoil and turf	-	-
51	Layer	0.75 m	-	Made ground	Brick	C20 th
52	Layer	> 1 m	-	Natural sand	-	-
53	Layer	0.25 m	-	Topsoil and turf	-	C20 th
54	Layer	0.35 m	-	Made ground	Brick, stone	C20 th
55	Layer	0.25 m	-	Natural clay silt	-	-
56	Layer	> 1 m	-	Natural sand	-	-
57	Layer	0.35 m	-	Natural clay silt	-	-
58	Layer	0.25 m	-	Natural sand	-	-
59	Layer	> 0.4 m	-	Natural sand	-	-
60	Layer	0.2 m	-	Topsoil and turf	Brick	C20 th
61	Layer	1.15 m	-	Made ground	Brick, tarmac	C20 th
62	Layer	0.12 m	-	Tarmac	-	C20 th
63	Layer	0.12 m	-	Concrete skim	-	C20 th
64	Layer	> 0.3 m	-	Natural clay silt	-	-
65	Layer	0.15 m	-	Topsoil and turf	-	C20 th
66	Layer	0.15 m	-	Made ground	-	C20 th
67	Layer	0.2 m	-	Tarmac surface	-	C20 th
68	Layer	> 0.3 m	-	Natural sand	-	-
69	Layer	0.18 m	-	Topsoil and turf	Brick	C20 th
70	Layer	0.18 m	-	Made ground	Brick, concrete	C20 th
71	Layer	> 0.3 m	-	Natural clay silt	-	-
72	Layer	0.2 m	-	Topsoil and turf	Brick	C20 th
73	Layer	0.25 m	-	Made ground	Brick	-
74	Layer	> 0.3 m	-	Natural sand	-	-
75	Layer	0.15 m	-	Crushed stone	-	C20 th



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76	Layer	0.9 m	-	Ragstone	-	-
77	Layer	> 0.6 m	-	Natural sand	-	-
78	Layer	0.25 m	-	Made ground	Brick	C20 th
79	Layer	0.25 m	-	Made ground	Brick	C20 th
80	Layer	1.2 m	-	Natural sand	-	-
81	Layer	> 1.2 m	-	Natural sand	-	-



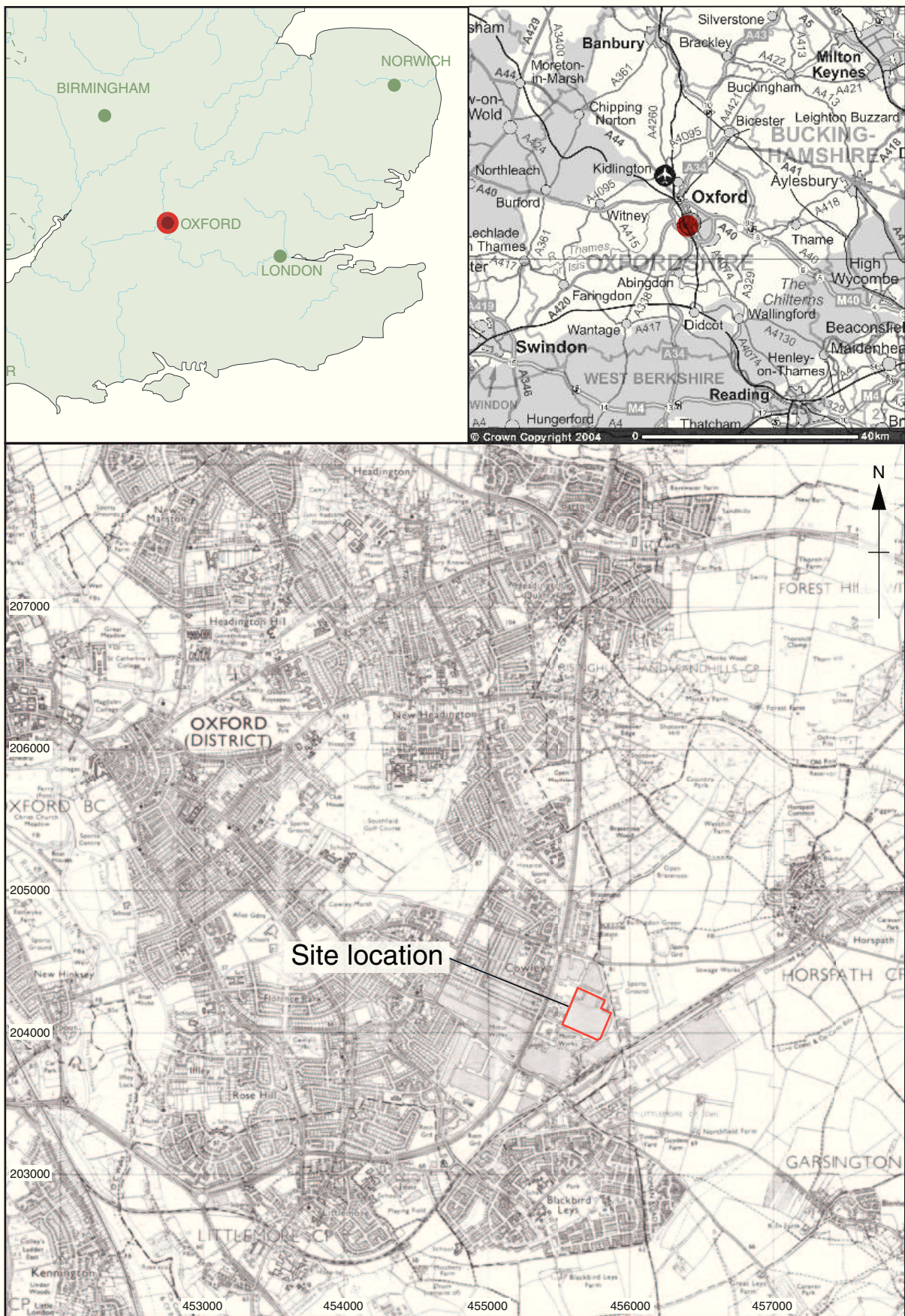
APPENDIX B. BIBLIOGRAPHY AND REFERENCES

BGS 1982	Geological Survey of Great Britain, Sheet no. 236
OA 2010	Mini Plant Oxford. Archaeological Impact Assessment. Oxford Archaeology.
OA 2010	BMW Mini Plant Cowley Oxford: Written Scheme of Investigation for an Archaeological Watching Brief
OCAS 2010	Brief for an Archaeological Watching Brief: BMW Plant Cowley Oxford.



APPENDIX C. SUMMARY OF SITE DETAILS

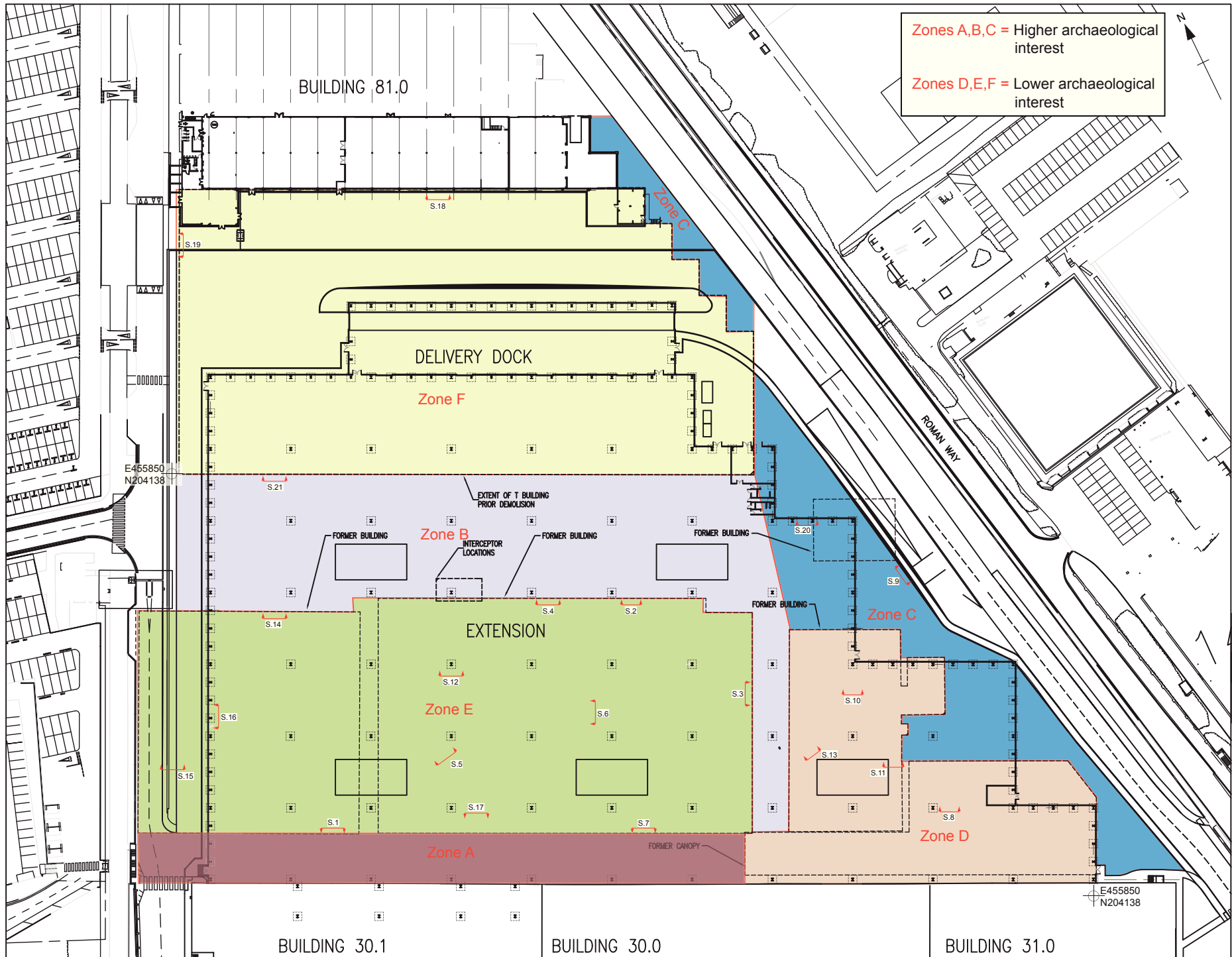
Site name:	New Mini Plant, BMW Factory, Cowley, Oxford
Site code:	OXMINI 11
Grid reference:	Centred at SP 5570 0426
Type of watching brief:	Construction of new factory complex. Works included topsoil stripping, ground reduction, service trenching and associated groundworks.
Duration of project:	March to August 2011
Area of site:	2.5 hectares
Summary of results:	Between March and August 2011 Oxford Archaeology undertook an archaeological watching brief on the site of new facilities at the BMW Mini factory, Cowley Works, Oxford. The watching brief demonstrated that the larger part of the area within the development boundary had been subject to prior truncation associated with the earlier factory buildings on the site removing any potential archaeological horizons. A less disturbed pre-industrial soil horizon was present within Zone E preserved under the former buildings that is most likely to have been a 19th century or earlier ploughsoil. This did not produce any archaeological features, deposits or finds.
Location of archive:	Oxfordshire County Museum Service under Accession number OXCMS:2010.104



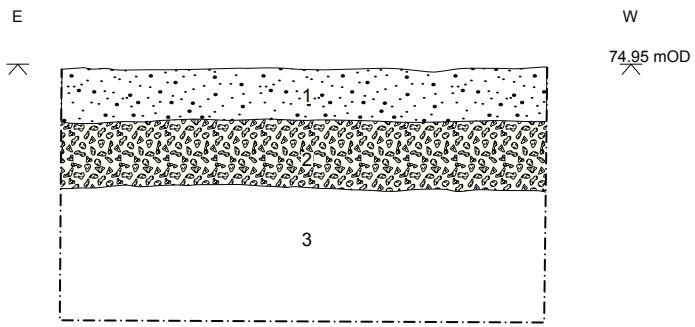
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Figure 1: Site location



Section 1



-  Tarmac
-  Concrete
-  Pebbles

Section 2

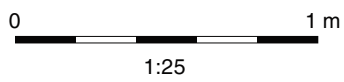
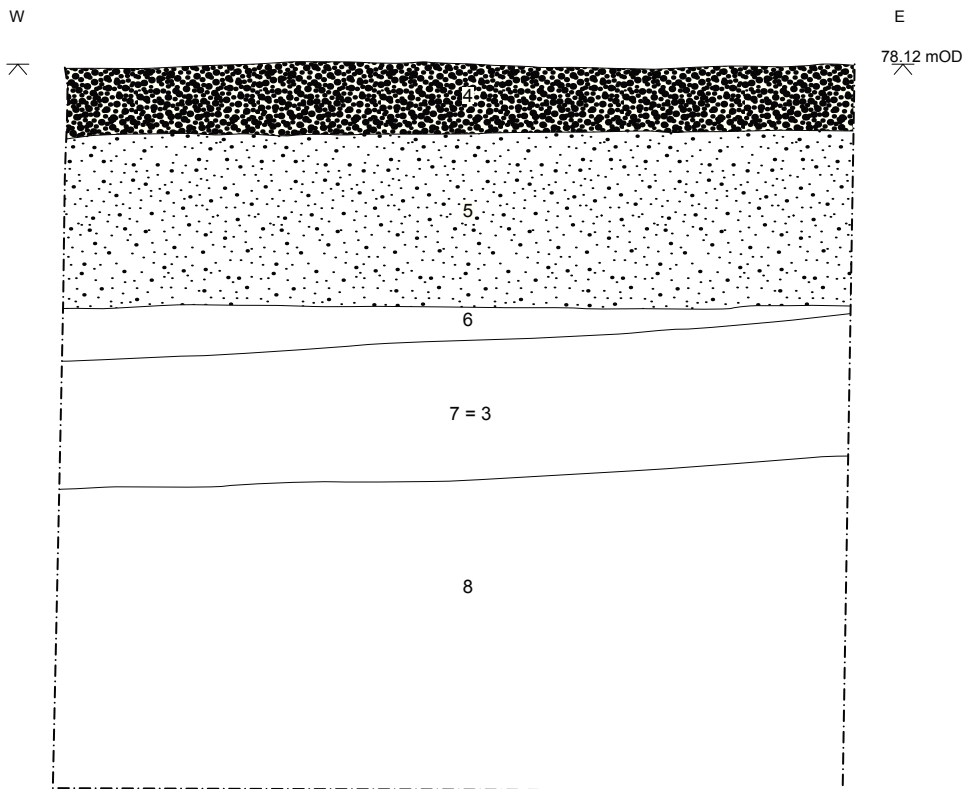
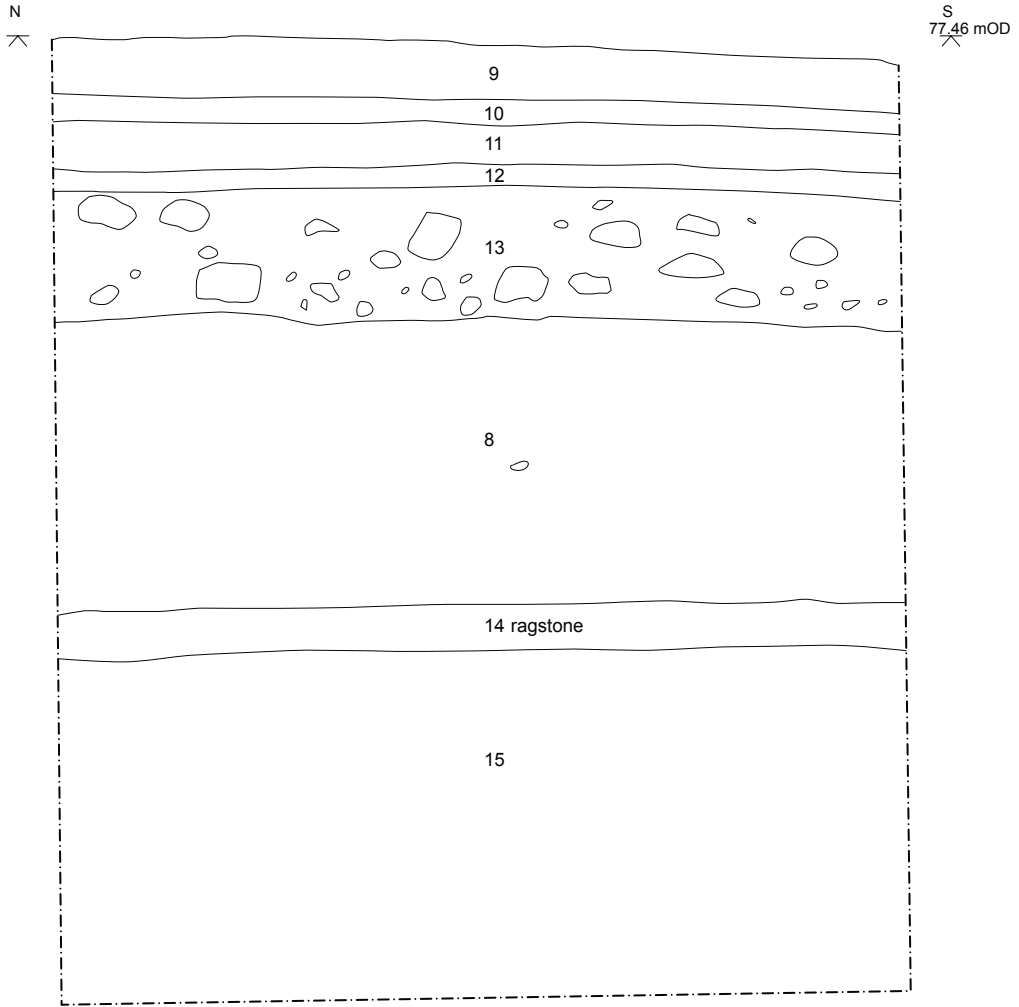
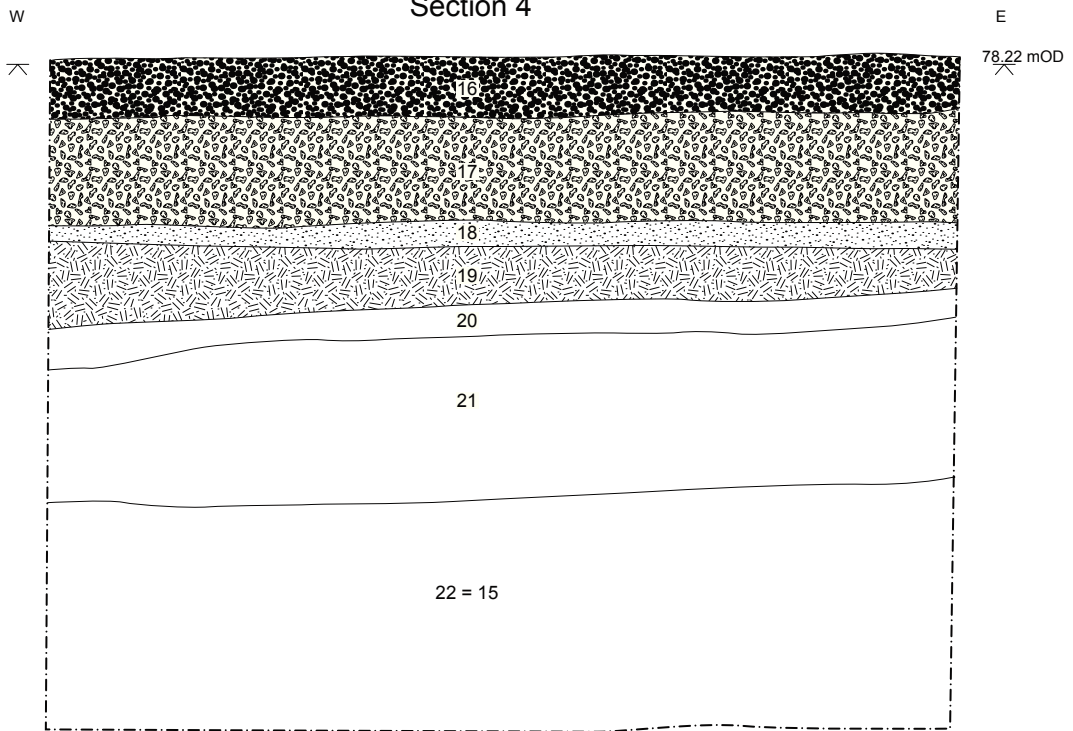


Figure 3a: Sections 1 and 2

Section 3



Section 4



- Tarmac
- Concrete
- Crushed stone
- Redeposited sand

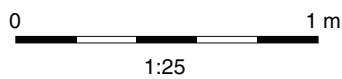
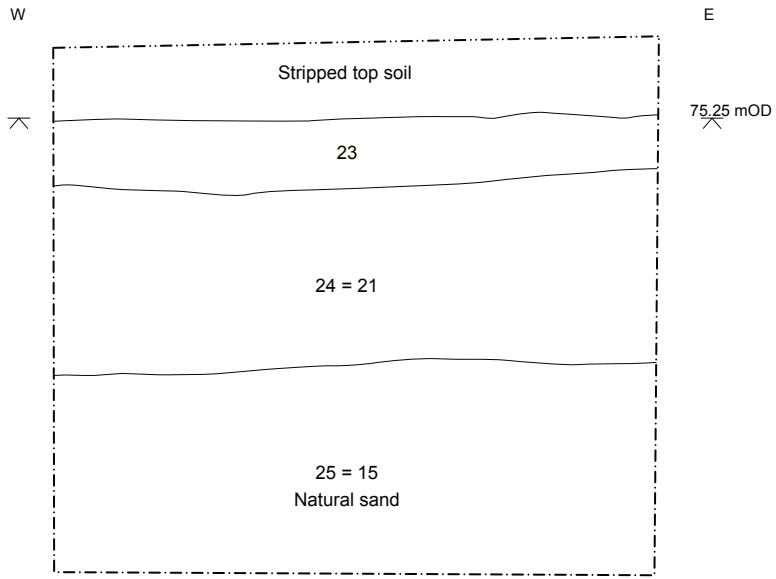
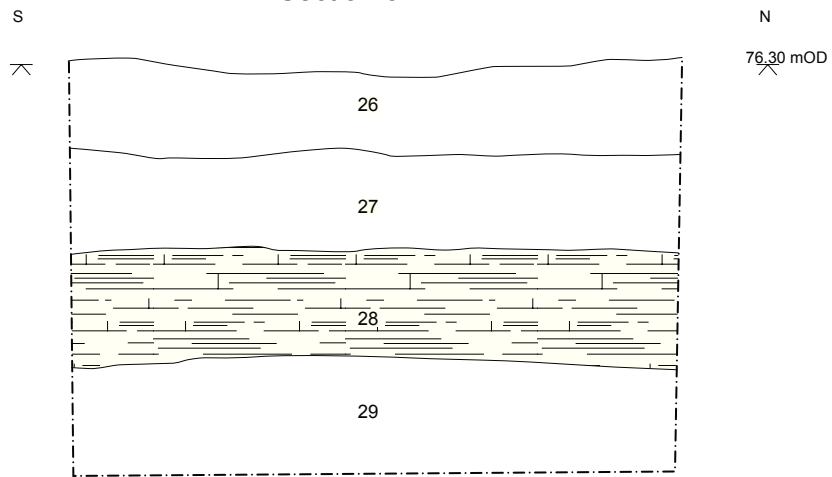


Figure 3b: Sections 3 and 4

Section 5



Section 6



 Ragstone

Section 7

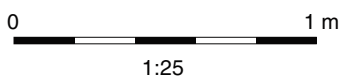
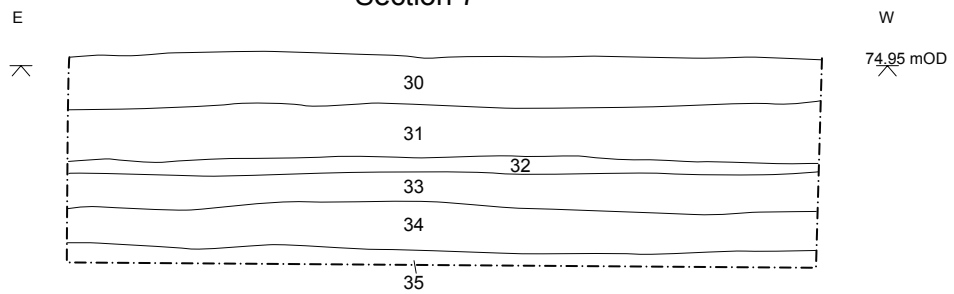
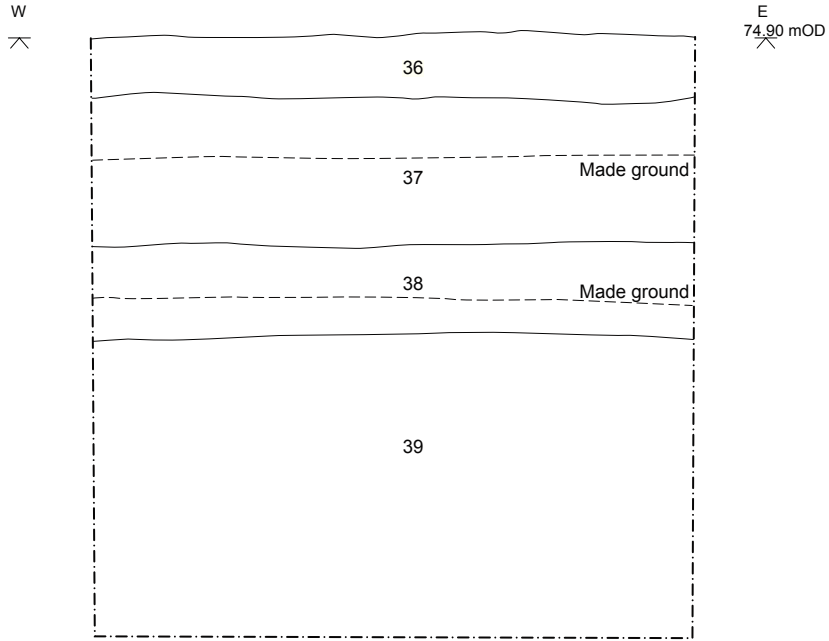
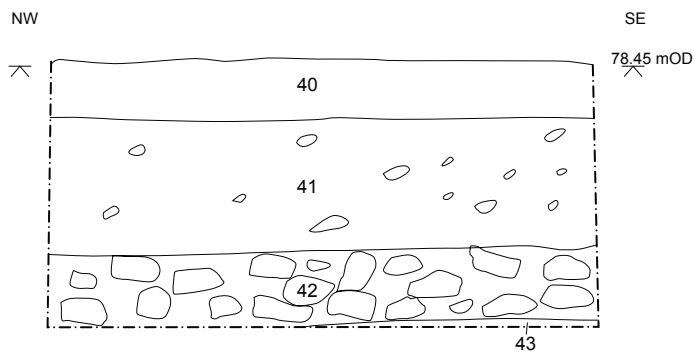


Figure 3c: Sections 5 - 7

Section 8



Section 9



Section 10

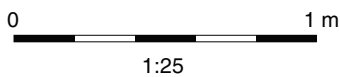
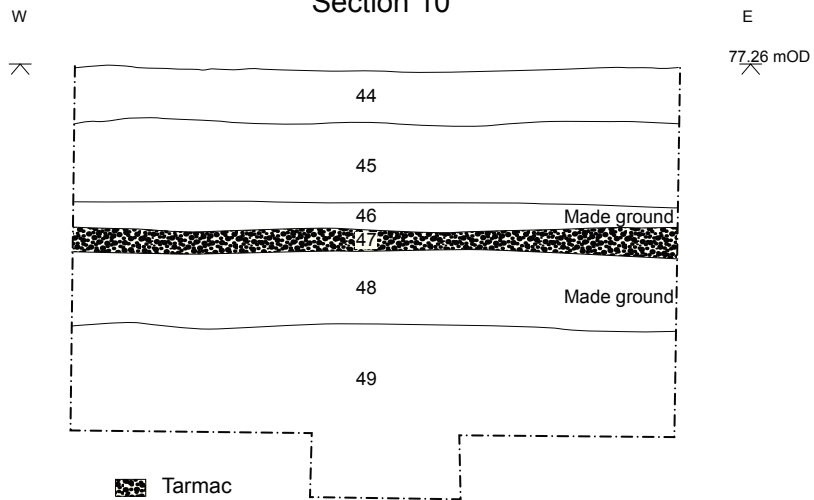
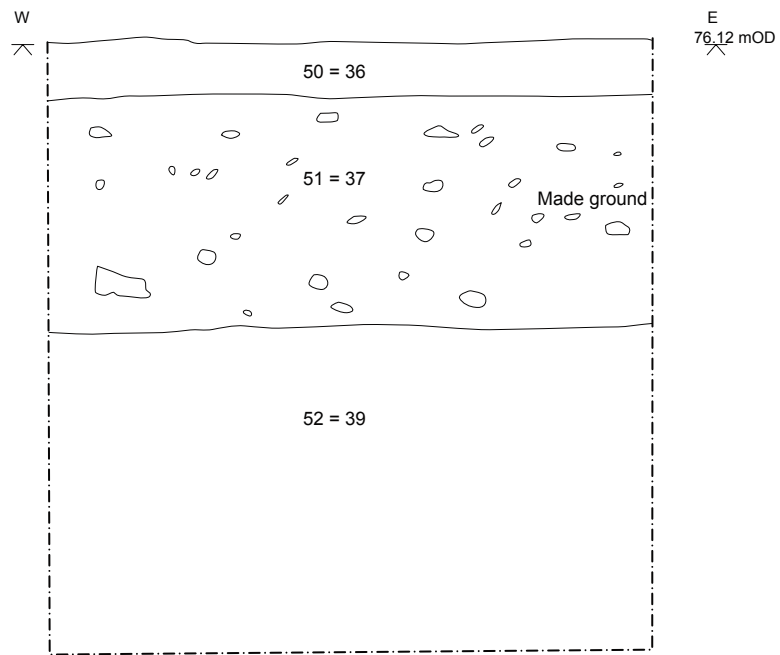


Figure 3d: Sections 8 - 10

Section 11



Section 12

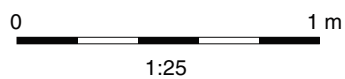
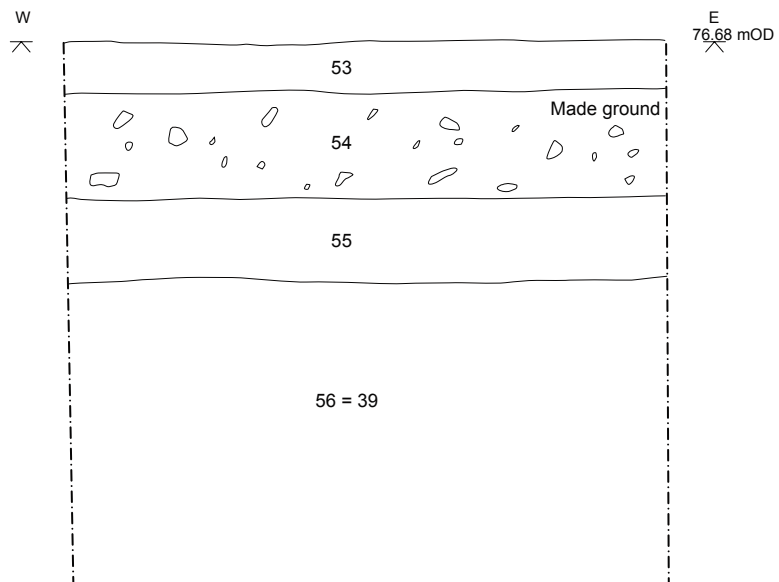
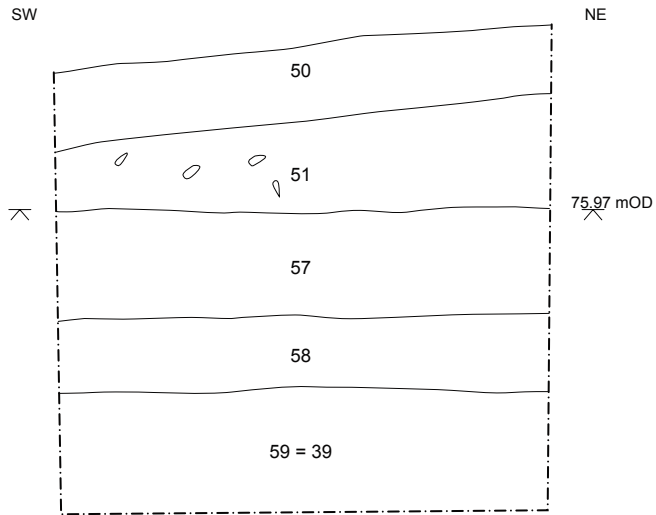
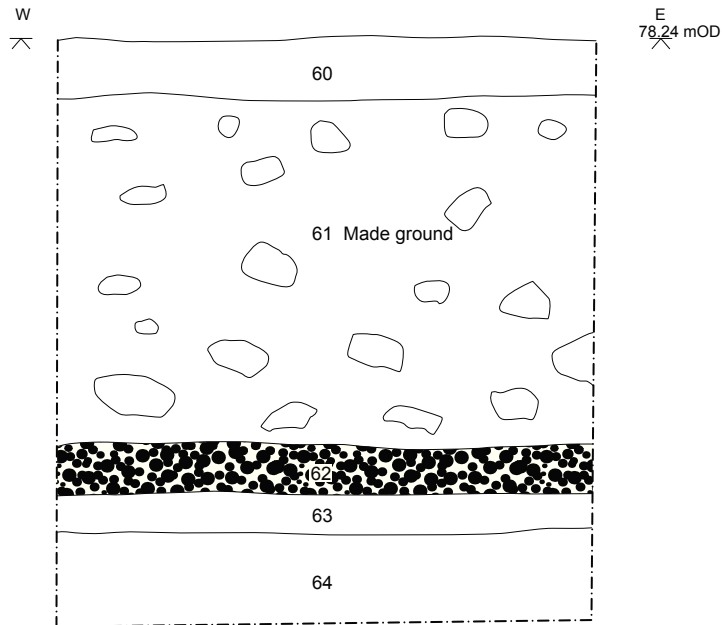



Figure 3e: Sections 11 and 12

Section 13



Section 14



 Tarmac

Section 15

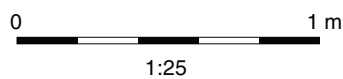
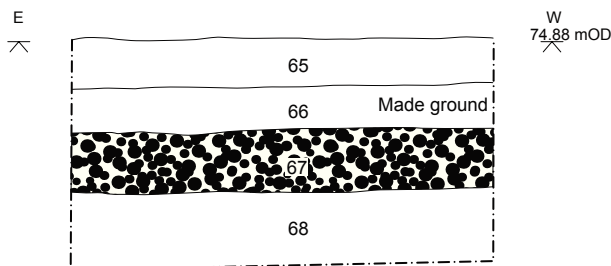
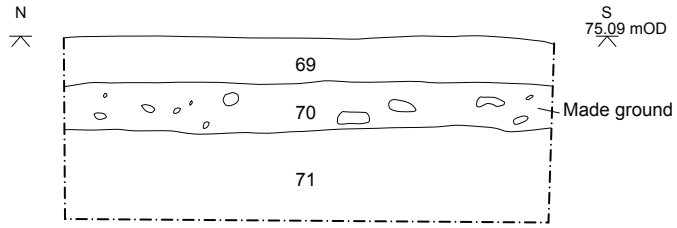
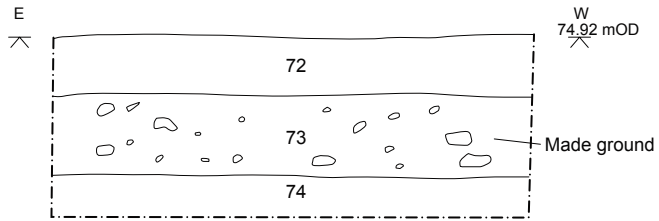


Figure 3f: Sections 13 - 15

Section 16



Section 17



Section 18

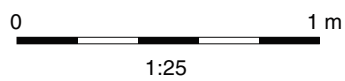
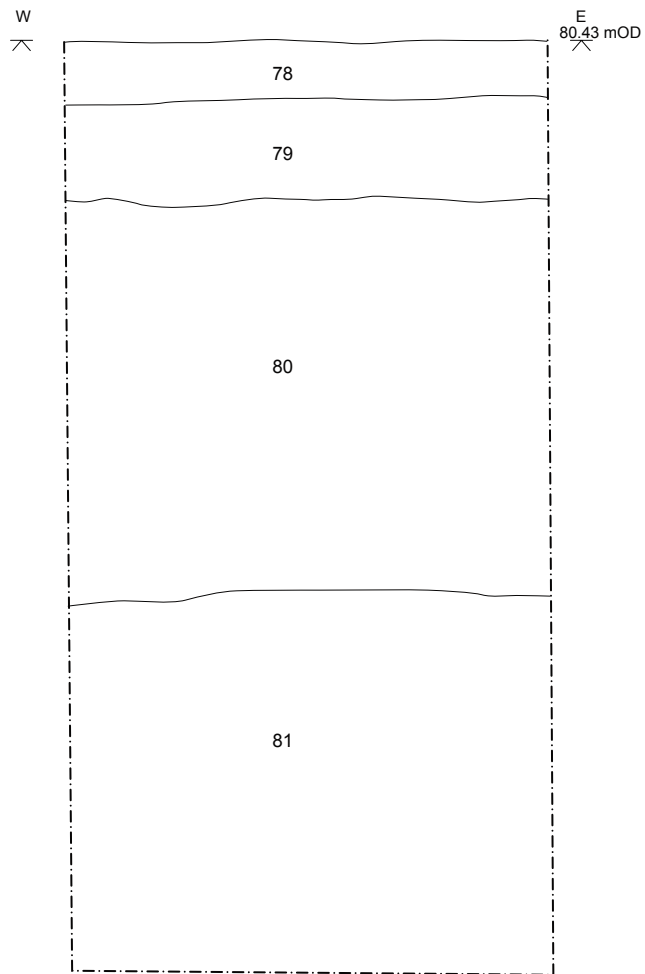
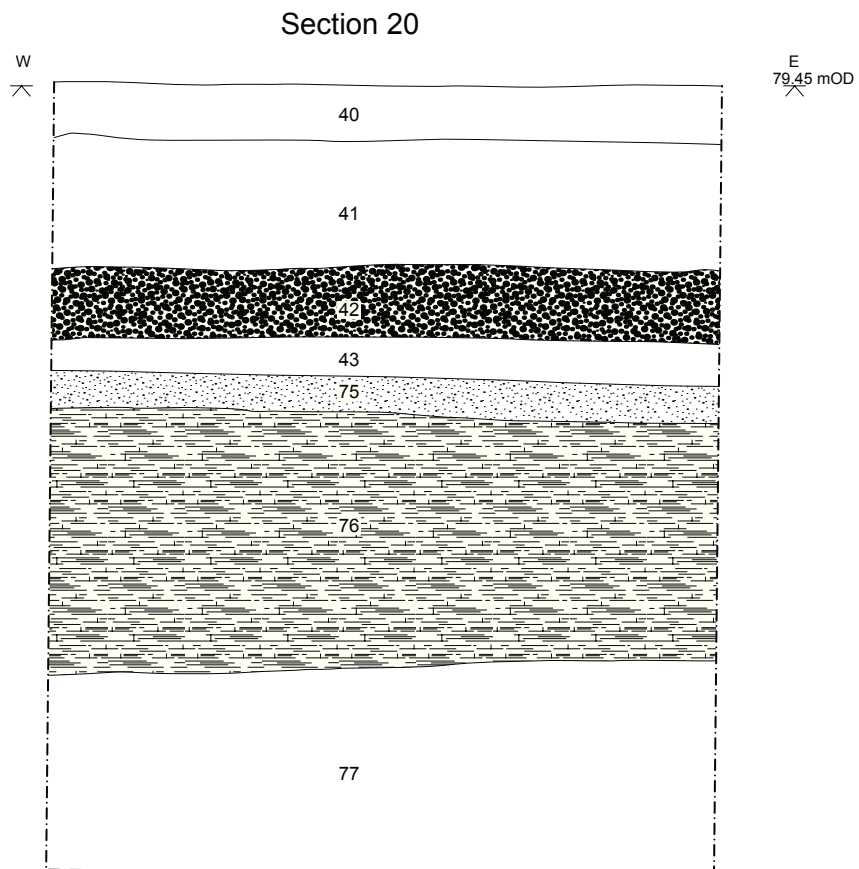
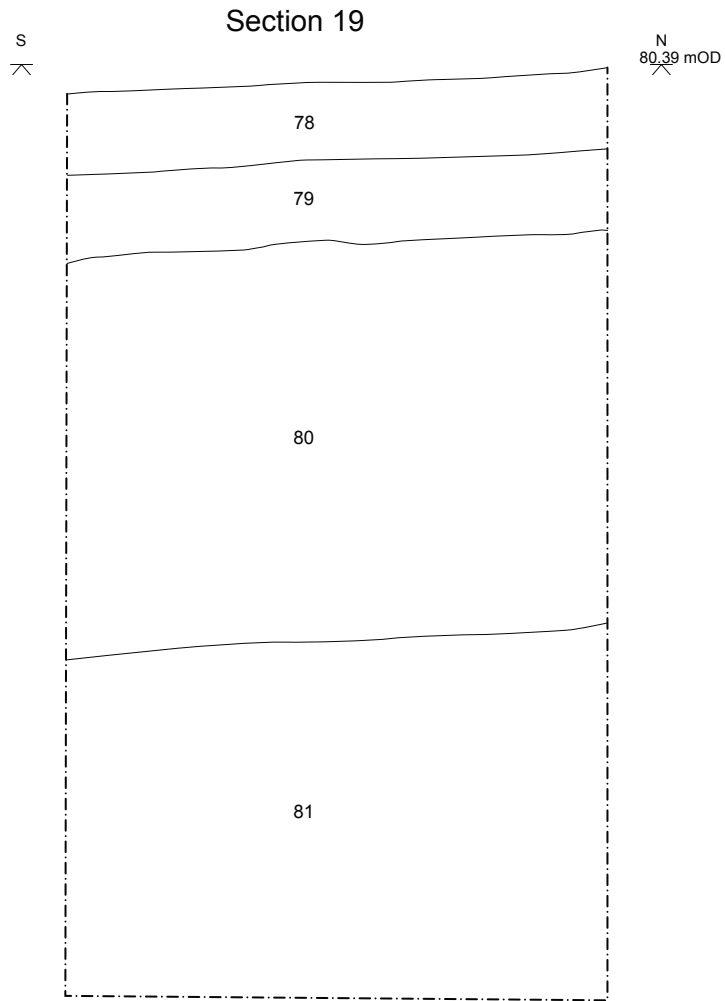


Figure 3g: Sections 16 - 18



- Tarmac
- Concrete
- Ragstone



Figure 3h: Sections 19 - 20

Section 21

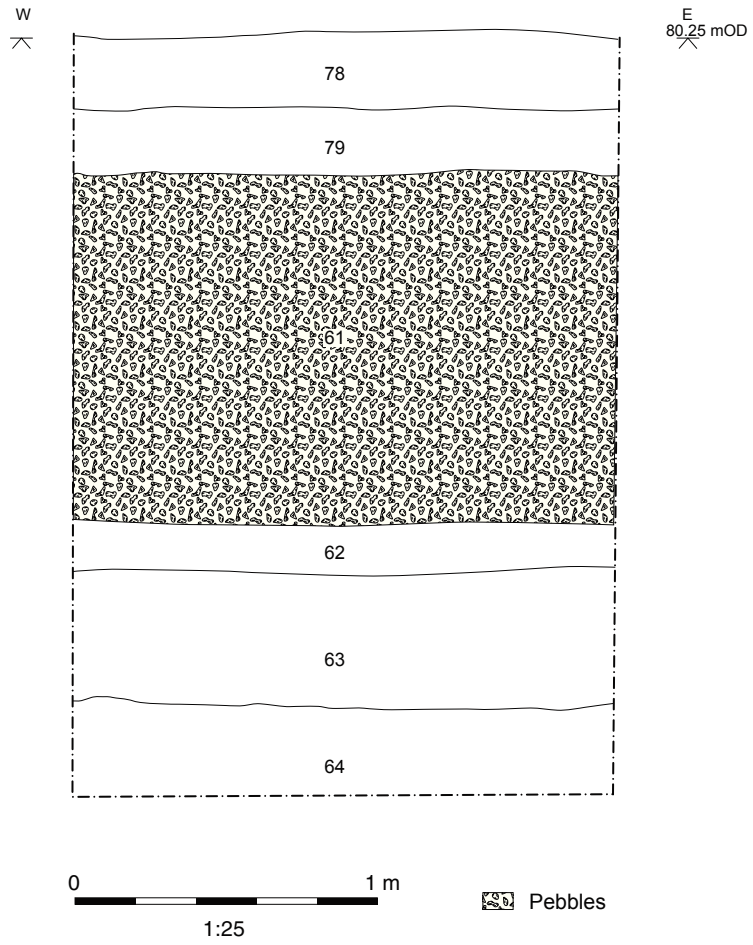


Figure 3i: Sections 21



**Head Office/Registered Office/
OA South**

Janus House
Osney Mead
Oxford OX2 0ES

t: +44 (0) 1865 263 800
f: +44 (0) 1865 793 496
e: info@oxfordarch.co.uk
w: <http://thehumanjourney.net>

OA North

Mill 3
Moor Lane
Lancaster LA1 1GF

t: +44 (0) 1524 541 000
f: +44 (0) 1524 848 606
e: oanorth@thehumanjourney.net
w: <http://thehumanjourney.net>

OA East

15 Trafalgar Way
Bar Hill
Cambridgeshire
CB23 8SQ

t: +44 (0) 1223 850 500
f: +44 (0) 1223 850 599
e: oaeast@thehumanjourney.net
w: <http://thehumanjourney.net>



Director: David Jennings, BA MIFA FSA

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