



**DESIGN PACKAGE C138
LIVERPOOL STREET STATION**

**ADDENDUM TO WSI: GENERAL & TARGETED
WATCHING BRIEF – FINSBURY CIRCUS (XRZ10)**

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1 Introduction

This document provides details of the programme of archaeological investigation required to mitigate the impact of construction works on archaeological deposits at Finsbury Circus during the main works phases. The construction works comprise a Temporary Access Shaft extending down to the level of the platform tunnels. Lateral grouting adits will extend from the shaft. These will be at a shallower depth than the tunnels but will remain several metres below the interface between the London Clay and overlying Terrace Gravel deposits. There remains a possibility of an alternative arrangement based on two satellite grout shafts. Since this configuration would require additional mitigation, it is described in this document.

This document is an addendum to the Written Scheme of Investigation (C138-MMD-T1-RST-C101-00001) and should be read in conjunction with that document.

This document outlines the requirements of the *Principal Contractor (C510)* and the requirements of the *Archaeological Contractor (C257)* as shown on Drawing C138-MMD-T1-DDA-C101_Z-10070 (Appendix A).

2 Scope of Works

2.1 Informing the design

A trial trench evaluation in the footprint of the Temporary Access Shaft and a general watching brief at exploratory investigations at the locations of the Finsbury Circus grout shafts were carried out by the *Archaeological Contractor (C257)* between February and April 2011. C257 have produced an interim statement for these works (C257-MLA-X-RGN-CRG02-50012), which has been used to inform the mitigation strategy set out in this Addendum.

2.2 Aims of the proposed investigation

The aim is to identify and record surviving archaeological deposits at the locations of the temporary access shaft in Finsbury Circus Gardens and the two grout shafts in the southern half of Finsbury Circus. The trial trench evaluation identified surviving archaeological features cut into the Moorfields Marsh deposits and possible Roman quarrying (?) features cut into the natural gravel. This addendum sets out the programme of archaeological works required to mitigate the impact of the construction of the temporary access shaft and two grout shafts.

Table 1 Summary of archaeological events at the Finsbury Circus worksite

Event Type	Event Code	Principal Contractor	Addendum Specific Requirements Section
Power auger survey (2 locations)	XRZ10	JB Riney	Deleted
Trial trench evaluation (1 trench)		JB Riney	Works complete
General watching brief (during grout shaft exploration investigations)		JB Riney	Works complete
General and targeted watching brief (temporary access shaft)		C510	4.1
General and targeted watching brief (Finsbury Circus grout shafts)		C510	4.2

A conceptual archaeological model (Table 2) has been developed from the results of the trial trench evaluation:

Table 2 Conceptual archaeological model

Layer	Surface elevation (m ATD)	Base elevation (m ATD)	Archaeological potential
Ground level	113.70		n/a
Basement level (partially within former wine bar)	109.5		n/a
Modern truncation	113.70	113.20	none
Post-medieval deposits	113.20	110.52	Yes
Moorfield Marsh deposits	110.52	108.48	Yes – feature identified at 110.48m ATD
Terrace gravel	108.48	105.00 (estimated)	Yes – Roman features cut into the gravel at 108.48 to 107.92m ATD
London clay	105.00	75.00	None

The above table is specific to the temporary access shaft. While the depths of deposits are considered to be similar at the two grout shafts, the thickness of modern truncation is greater.

2.3 Site Specific Aims and Objectives

The objective of the archaeological investigation is set out below.

1. Mitigation in the form of general and targeted archaeological watching brief to excavate and record archaeological deposits for analysis and dissemination.

3 Requirements for all Principal Contractors

In addition to the Specific Requirements for the *Principal Contractor* set out in section 4, the *Principal Contractor* must also provide the following services to facilitate archaeological investigations:

- Ensure no live underground services exist in area of excavation;
- Use of excavators or other plant within the area shall only be undertaken with the agreement and under the observation of C257 Archaeologist;
- Allow safe access for archaeological operatives into the site and provide any required temp works;
- Allow suitable access from ground level to bottom of excavated area for archaeologists to work;
- Provide drainage in excavation where required;
- If *in situ* human remains are encountered, provide covering for the exposed area to prevent public views of the works, these should be:
 - large enough to allow safe working;
 - waterproof;
 - translucent (to provide sufficient light); and



- be of a type that can be quickly erected and removed to facilitate machine access when required.
- Provide the following services and facilities to C257:
 - Power;
 - Lighting;
 - Water (for welfare);
 - Welfare;
 - Small plant and tools.
- Provide all plant and operatives required to complete the works;
- Provide further technical advice to C257 as maybe required to safely complete the works.
- Unless otherwise arranged, the *Principal Contractor* shall provide the following site accommodation facilities for the use of archaeological operatives, inclusive of any hardstanding and services required:
 - Toilets, with drying and washing facilities;
 - First Aid;
 - Temporary office for the use of archaeologists, including 2 desks and,
 - Secure storage.

4 Specific Requirements for C510 Contractor

Archaeological mitigation (see Table 3) will take place alongside the C510 Contractor's works during the excavation of the temporary access shaft (Section 4.1) and two compensation grout shafts (Section 4.2) in Finsbury Circus.

4.1 Temporary Access Shaft – General and Targeted Watching Brief

Refer to the Generic WSI (CR-PN-LWS-EN-SY-00001) for the definition of general and targeted watching briefs.

Table 3 Watching brief depths (from trial trench evaluation in the access shaft footprint)

Archaeological methodology	Surface elevation (mATD)	Base elevation (mATD)
General watching brief	113.20	110.52
Targeted watching brief	110.52	107.92 (estimated base of archaeology)

4.1.1 General and targeted watching brief procedure

In addition to the requirements set out in section 3, the method of working for the *Principal Contractor (C510)* during the excavation of the temporary access shaft shall allow for:

General watching brief

- Modern material and post-medieval deposits, from ground level to a depth of c.110.52m ATD will be removed by the *Principal Contractor (C510)* by machine under archaeological observation by the *Archaeological Contractor (C257)* to expose the surface of marsh deposits. Marsh deposits are expected at 110.52m ATD.

Targeted watching brief



- The *Principal Contractor (C510)* will remove Moorfield Marsh deposits by machine/hand digging in spits of 200mm to 500mm, or as directed by the *Archaeological Contractor (C257)* allowing for the recording of archaeological features to be carried out. The reduction process should continue until the deposits cut into the terrace gravels are exposed at approximately 108.48m ATD. When machining a toothless ditching bucket is to be used;
- Following the removal of the overburden and the marsh deposits the *Principal Contractor (C510)* will allow for archaeological deposits cut into the terrace gravels (likely to be of Roman date) to be recorded by the *Archaeological Contractor (C257)* with provision for more detailed sample investigation and recording of any features of particular interest identified during this stage. Archaeological deposits are estimated to survive up to approximately 107.92m ATD; and
- Allow for up to 2 archaeologists to be on site.

4.2 Compensation Grout Shafts x2 – General and Targeted Watching Brief

The depths of deposits are based on those depths identified during the trial trench evaluation at the location of the temporary access shaft (see Table 3). It is assumed that the sequence of deposits at the two grout shafts will be similar to the sequence at the access shaft due to their geographic proximity, however, it is expected that there will be a greater thickness of made ground and modern disturbance at the site of the grout shafts.

4.2.1 General and targeted watching brief procedure

In addition to the requirements set out in section 3, the method of working for the *Principal Contractor (C510)* during the excavation of the two grout shafts shall allow for:

General watching brief

- Modern material and post-medieval deposits, from ground level to a depth of approximately 110.52m ATD will be removed by the *Principal Contractor (C510)* by machine under archaeological observation by the *Archaeological Contractor (C257)* to expose the surface of marsh deposits. Marsh deposits are expected at approximately 110.52m ATD.

Targeted watching brief

- The *Principal Contractor (C510)* will remove Moorfield Marsh deposits by machine/hand digging in spits of 200mm to 500mm, or as directed by the *Archaeological Contractor (C257)* allowing for the recording of archaeological features to be carried out. The reduction process should continue until the deposits cut into the terrace gravels are exposed at approximately 108.48m ATD. The *Principal Contractor (C510)* will allow for the sequence of marsh deposits to be environmentally sampled by the *Archaeological Contractor (C257)* during the removal process.
- When machining a toothless ditching bucket is to be used;
- Following the removal of the modern overburden and the marsh deposits the *Principal Contractor (C510)* will allow for archaeological deposits cut into the terrace gravels (likely to be of Roman date) to be recorded and sampled by the *Archaeological Contractor (C257)* with provision for more detailed sample investigation and recording of any features of particular interest identified during this stage. Archaeological deposits are estimated to survive up to approximately 107.92m ATD; and
- Allow for up to 2 archaeologists to be on site per grout shaft.



5 Instructions to Archaeological Contractor and Specification

5.1 Archaeological Evaluation; Watching Brief and Excavation

It is proposed that a programme of archaeological investigation comprising general and targeted watching brief be carried out at the temporary access shaft and two compensation grout shafts in Finsbury Circus. Further details on the requirements of the Archaeological contractor are to be found in the Site Specific Written Scheme of Investigation, document reference number: C138-MMD-T1-RST-C101-00001.

The Archaeological Contractor shall:

- Provide a team of suitably qualified archaeologists, experienced in archaeological site evaluation and the nature of archaeological deposits which are expected on this site;
- Provide a Method Statement inclusive of risk assessment and safe method of working to be completed in consultation with the *Principal Contractor (C510)*;
- During targeted watching brief, individual features are to be hand cleaned and defined: sufficient to determine type, plan form and relationships (e.g. for structures and rebuilds); and recorded. Sufficient archaeological features/structures are to be excavated by the *Archaeological Contractor (C257)*;

Access Shaft

- During the excavation of marsh deposits at the temporary access shaft the *Archaeological Contractor (C257)* will inspect the surface of the marsh deposits as each spit is removed to determine whether any features are present. Archaeological features identified during this process will be cleaned, planned and sampled, enabling the *Principal Contractor (C510)* to continue to reduce the deposits in spits or as directed by the *Archaeological Contractor (C257)*.
- During the removal of marsh deposits only features cut into the marsh will be sampled. No sampling of the homogenous marsh is required as environmental sampling at this location was carried out during the evaluation phase.

Compensation grout shafts x2

- During excavation of the two compensation grout shafts in Finsbury Circus marsh deposits are to be environmentally sampled by the *Archaeological Contractor (C257)* – refer to section 7.10 of the Site-Specific WSI (C138-MMD-T1-RST-C101-00001).

5.2 Deliverables

Table 4 summarises the main Deliverables required per fieldwork event:

Table 4 Main Deliverables for each fieldwork event

Fieldwork Event	Weekly Progress Report	Interim Report	Deposit Model	Fieldwork Report
XRZ10 (Trial Trench Evaluation)	Complete	Complete	✓	✓
XRZ10 (GWB grout shaft exploratory trenches)	Complete	Complete	n/a	✓
XRZ10 (GWB & TWB at grout shaft excavations)	✓	✓		
XRZ10 (GWB & TWB at temporary access shaft excavations)	✓	✓		

Refer to the following sections of the Written Scheme of Investigation (C138-MMD-T1-RST-C101-00001) for further information regarding the following report types:

- Weekly progress reports – WSI section 10;
- Interim report – 7 days after completion of fieldwork – WSI section 9.4; and
- Trial Trench Evaluation; Watching Brief and Excavation reports – WSI section 9.6.

5.3 Site Archives

The site archive shall be organised to be compatible with other archaeological archives in London. Refer to section 8.2 in the Site Specific Written Scheme of Investigation, document reference number: C138-MMD-T1-RST-C101-00001.

5.4 Post-excavation

Refer to the detail set out within the Crossrail Archaeological Contract and the Written Scheme of Investigation for Liverpool Street Station (C138-MMD-T1-RST-C101-00001).

6 Provisional Timetable

Table 5 Provisional Timetable

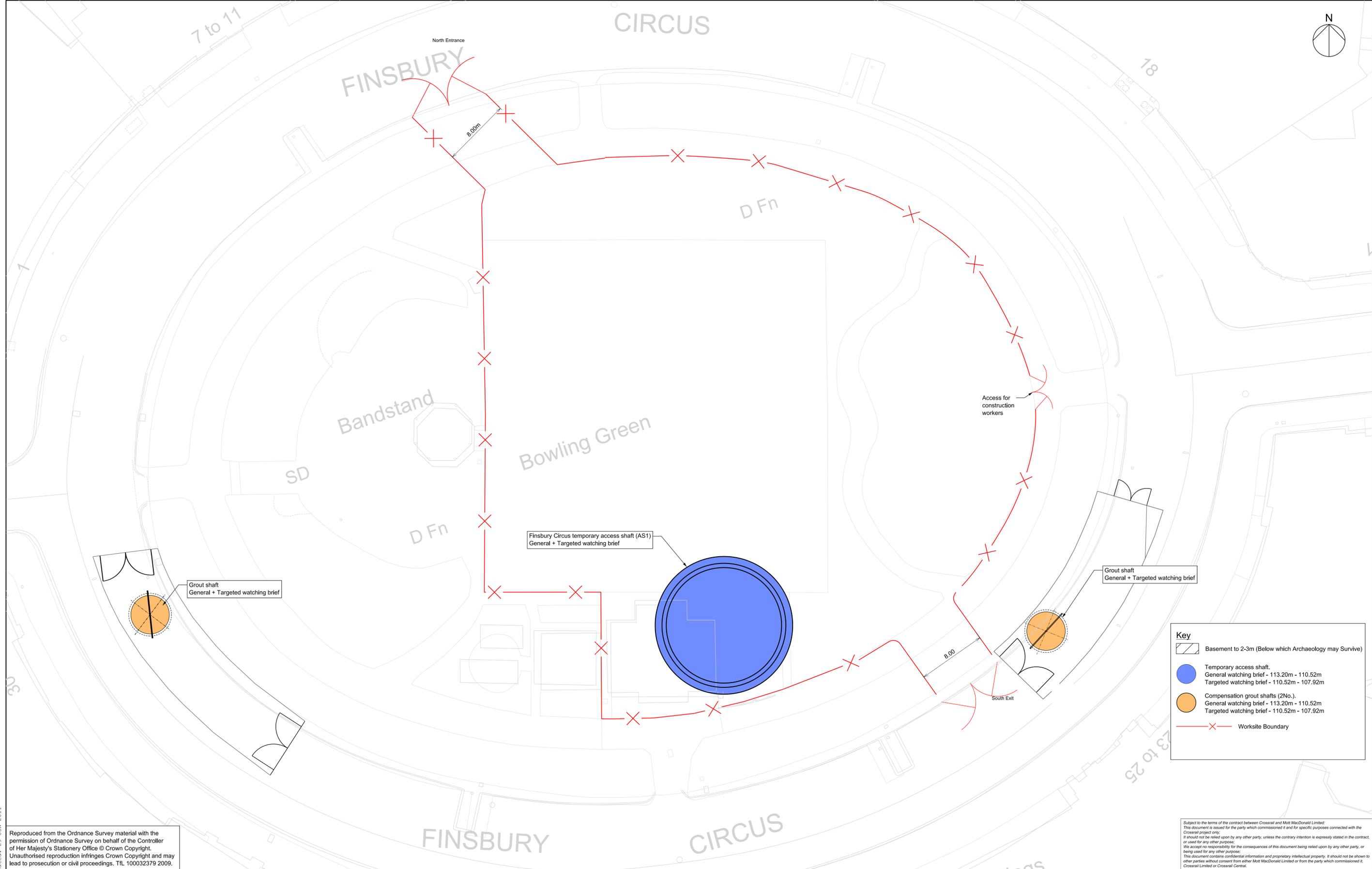
Activity	Principal Contractor	Construction Phase
Excavation of 1 trial trench in the footprint of the Temporary Access Shaft (estimate 1 week for archaeology only)	JB Riney	Works complete
General watching brief on exploratory investigation trenches at grout shaft locations	JB Riney	Works complete.
General and targeted watching brief during the excavation of the two Grout Shafts (if required; estimate 2 weeks per grout shaft – <u>ARCHAEOLOGY ONLY</u>)	C510	July 2011



Activity	Principal Contractor	Construction Phase
General and targeted watching brief during the excavation of the temporary access shaft (estimate 2 weeks - <u>ARCHAEOLOGY ONLY</u>)	C510	November 2011



Appendix A – Archaeological Mapping Information



Key

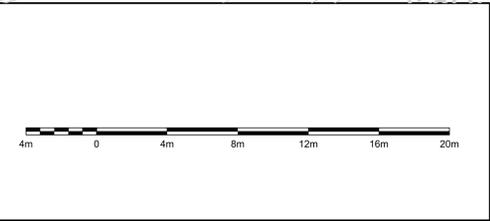
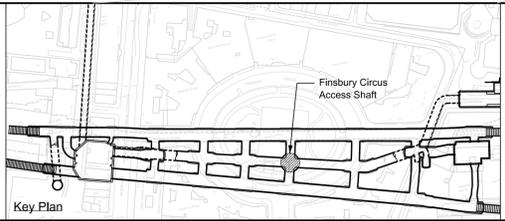
- Basement to 2-3m (Below which Archaeology may Survive)
- Temporary access shaft.
General watching brief - 113.20m - 110.52m
Targeted watching brief - 110.52m - 107.92m
- Compensation grout shafts (2No.).
General watching brief - 113.20m - 110.52m
Targeted watching brief - 110.52m - 107.92m
- Worksite Boundary

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Notes



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