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28 July 2020

Emilian Ursu
Hurley Palmer Flatt
17 Addiscombe Road
Croydon
Surrey
CR0 6SR

building & project consultants



The Harlequin Building
65 Southwark Street
London SE1 0HR
T: +44 (0)207 125 0112
F: +44 (0)207 125 0113
info@paragonbc.co.uk
www.paragonbc.co.uk

BY EMAIL

Dear Emilian

LONGCROSS FILM STUDIOS, CHOBHAM LANE, LONCROSS, CHERTSEY, KT16 0EE FOUNDATION INSPECTION PIT FINDINGS

1.0 INTRODUCTION

Paragon Building Consultancy Limited were instructed by Ark Data Centres Limited C/O Hurley Palmer Flatt (HPF) to complete four foundation inspection pits along the eastern wall of Building 124 at Longcross Film Studios, to provide information on the existing foundations to the building. This was to be achieved by means of excavation using hand tools, and completion of a visual inspection. This data was to be used to enable the design of a retaining wall as part of the wider development of a data centre, HV energy centre and substation.

Building 124 is located outside of the development area and it situated at the top of a slope which forms the western boundary of the site in land operated by Longcross Film Studios. The current development proposal includes a retaining wall along the western boundary to secure the slope and building. The primary aim of the investigation was to provide factual data on the nature of foundations / structural elements exposed along the eastern edge of Building 124.

2.0 FIELDWORK

The hand pits (HDP1 – HDP4) were situated along the eastern wall of the building in the location of a column. The location of each pit is presented in Figure 1, Appendix 1. The hand pits were excavated between 15th and 16th July 2020 and the weather during the works was dry and sunny.

Utility drawings were checked and the ground was scanned for services using a Cable Avoidance Tool (CAT) prior to breaking ground. Where services were identified, spray paint was used to mark the service and safe working area where excavation could take place. The pits were excavated using split spoons and a spit to a maximum achievable depth of 2.05m below ground level (bgl). Once excavated, the pits were visually inspected, measured and photographed. The photographs for each hand pit have been presented in Appendix 2 and the cross sections for each hand pit have been presented in Appendix 3.

The pits remained dry and stable for the duration of the works and a summary of the ground conditions is presented in Table 1. In summary, the ground conditions comprised gravel over Made Ground, over natural strata comprising sand.

Table 1. Summary of Ground Conditions.

Depth From (min/max) (mbgl)	Depth To (min/max) (mbgl)	Soil Type	Description
Ground level	0.05 / 0.3	MADE GROUND	Coarse sub-angular to rounded flint gravel.
0.05 / 0.3	0.8 / 1.8	MADE GROUND	MADE GROUND. Brown, black orange and grey, slightly clayey, sandy gravel comprising fine to coarse, sub-angular to rounded flint, coarse angular concrete, fine to coarse angular brick, cobbles of concrete whole brick and fragments of wire, metal and plastic.
0.8	1.85	MADE GROUND	Brown, sandy clay with occasional gravel of fine to coarse sub-angular to rounded flint and fine angular brick. HDP3 only.
1.80	2.05	SAND	Brown and orange clayey, fine to coarse sand.

The location and extent that each pit was excavated was constrained by a number of below ground services which were situated within the gravel bed around the perimeter of the building. Pipework and cables were identified within the pits and has been shown on the cross sections. In addition, extractor fans and guttering were fixed to the wall of the building and excavations with exposed services were present where Lawsons (on behalf of Crest Nicholson) had been working.

3.0 OBSERVATIONS

HDP1 identified two large concrete blocks, both 200mm and dipping slightly northwards. It was not possible to find the lateral extent of the slabs due to the presence of services. These slabs filled the majority of the safe working area, and it was not possible to dig deeper without breaking the slab. The decision was made not to break the slabs, in case they were articulation slabs and serve a purpose.

Columns were identified in HDP2 and HDP4, which extending to a depth of 1.8mbgl and 2.05m respectively where a flat concrete bed was encountered. It was assumed that this was a pad footing. It was not possible to find the extent of the pad due to the presence of services.

HDP3 was excavated within a corner against the site of the stairwell and wall, and was slightly different to the remaining pits as it had brickwork on the side of the stairwell to a depth of 0.75m bgl, before extending onto a concrete column to 1.85mbgl. The photographs of this position show that a column was also present on the perpendicular wall and a suspended floor slab was present beneath the ground floor level.

It was possible to see a suspended floor slab was present either side of the columns. In some areas, breeze blocks had been used locally to prevent the Made Ground collapsing beneath the building.



4.0 CONCLUSIONS

We would recommend that building control are contacted regarding details or records they may hold to corroborate the visual observations in relation to the nature of the building's foundations.

If further inspection or information is required, it is recommended that a vacuum excavator is used to safely excavate the soils around the services. If possible, the services should be disconnected prior to further work. In addition, the footpath running along the top of the slope adjacent to the building may need to be broken out to allow sufficient space for the excavation.

This information will be incorporated within the Phase 2 Ground Investigation Report, which is to be issued by Paragon separately.

Please do not hesitate to contact the undersigned if you require any further information.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Charlie Bruinvels".

Charlie Bruinvels BSc MSc C.WEM CEnv – Senior Environmental Consultant
Paragon Building Consultancy Limited
charliebruinvels@paragonbc.co.uk

Enc.

Appendix 1 – Figures

Appendix 2 – Photographs

Appendix 3 – Hand Pit Cross Sections

Appendix 4 – Extent of Survey Limitations and Definitions

CC CHARLIE KNOX

APPENDIX 1: FIGURES



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Paragon Building Consultancy
 The Harlequin Building
 65 Southwark Street
 London
 SE1 0HR
 020 7125 0112
 www.paragonbc.co.uk

Key

◆ Hand Pit

Notes

Basemap based on Topographical Survey produced by Paragon in 2019.

Rev	Description	Date

Project	Scale
Longcross Studios	1:2000
Drawn by	Approved By
CB	CK
Drawing Title	Drawing Number
Hand Pit Location Plan	1
Date	17/07/2020

APPENDIX 2: PHOTOGRAPHS



01: East wall of Building 124 facing north



02: East wall of Building 124 facing south



03: Northern part of Building 124 facing north



04: Northern part of Building 124 facing south



05: HDP1



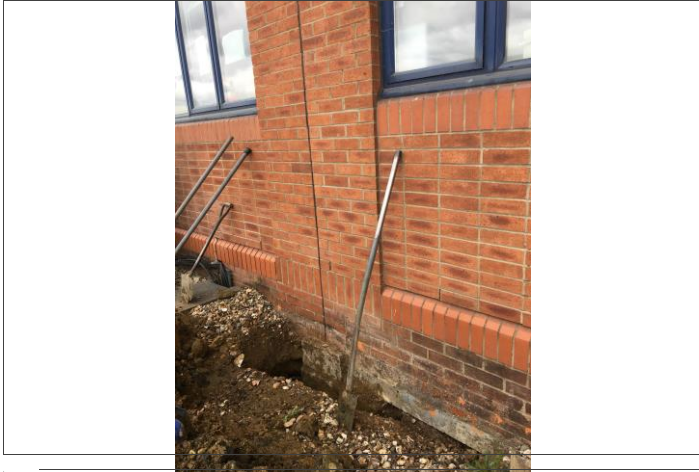
06: HDP1



07: HDP1



08: HDP1



09: HDP2



10: HDP2



11: HDP2



12: HDP2



13: HDP3



14: HDP3



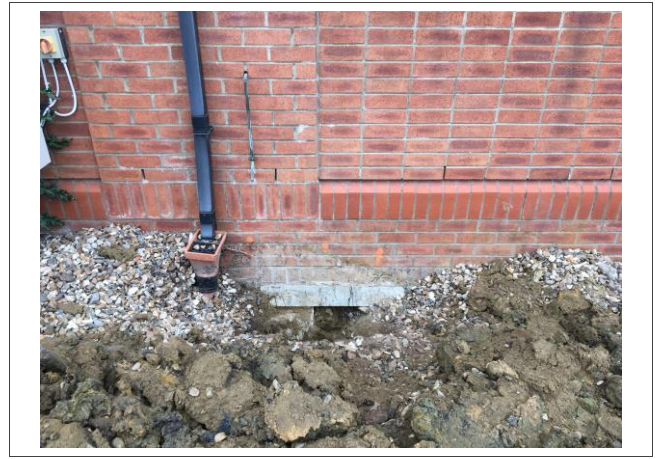
15: HDP3



16: HDP3



17: HDP4



18: HDP4 right of drain



19: HDP4 right of drain



20: HDP4 right of drain



21: HDP4 left of drain



22: HDP4 left of drain

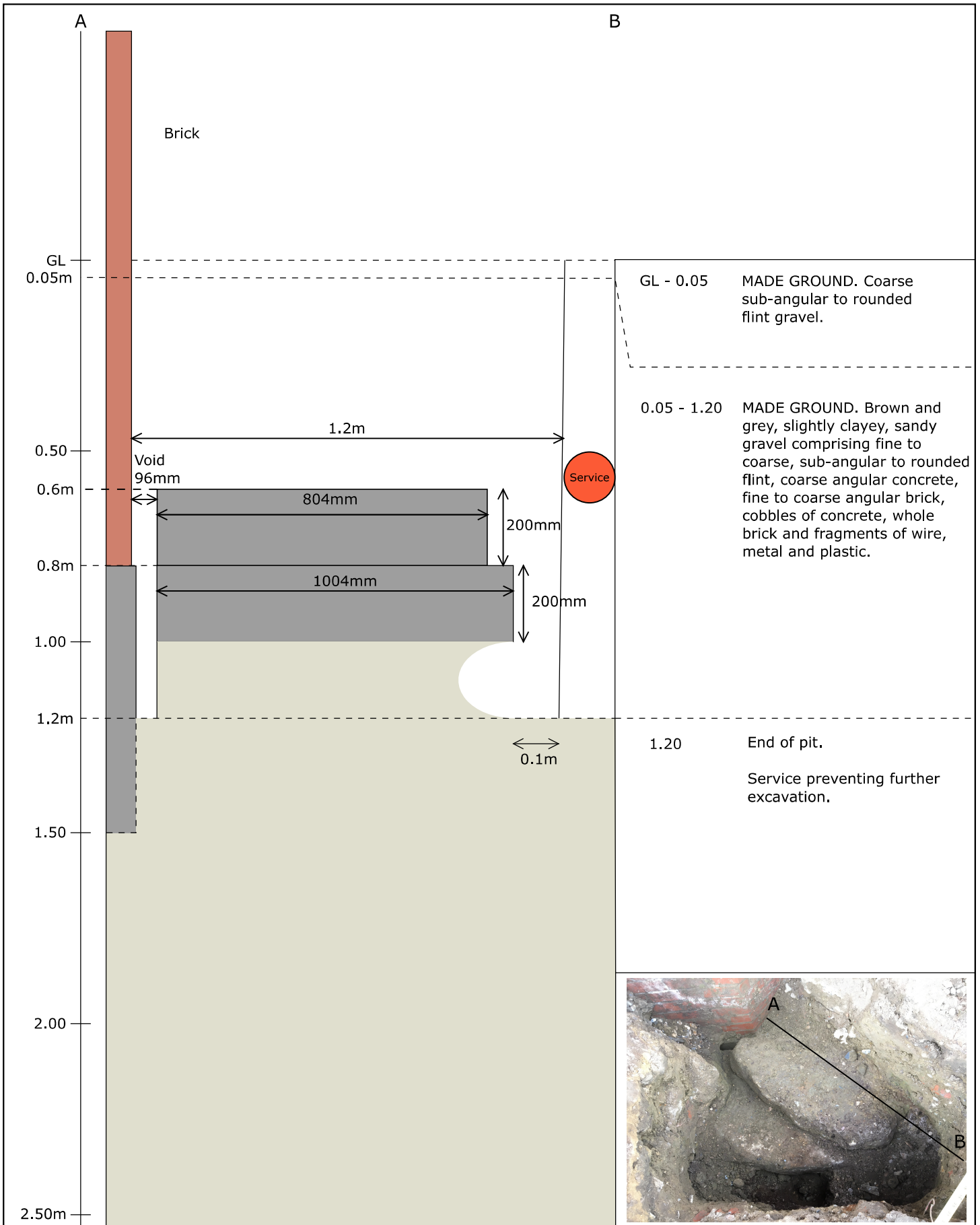


23: HDP4 left of drain



24: HDP4 left of drain

APPENDIX 3: HAND PIT CROSS SECTIONS




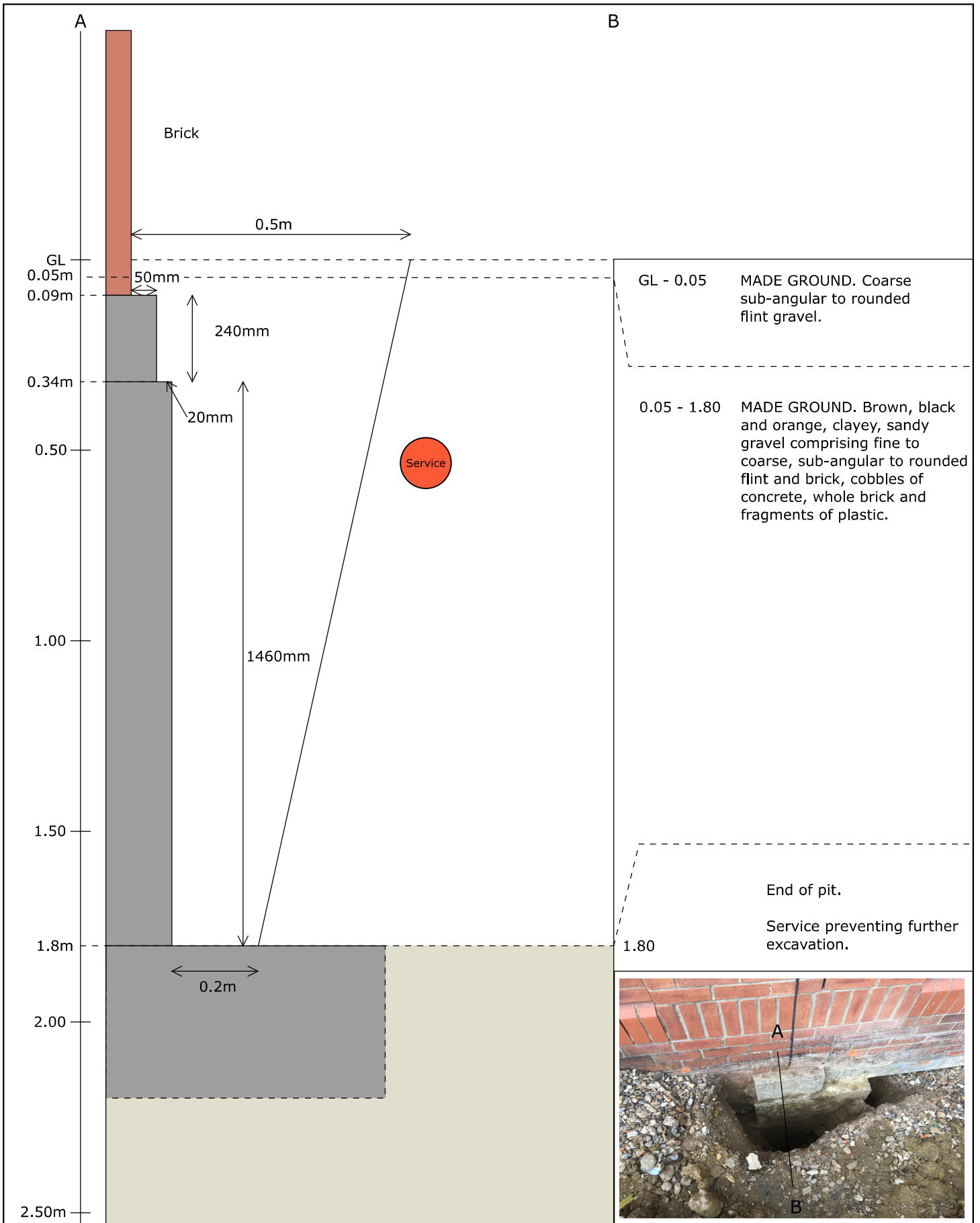
GL - 0.05 MADE GROUND. Coarse sub-angular to rounded flint gravel.

0.05 - 1.20 MADE GROUND. Brown and grey, slightly clayey, sandy gravel comprising fine to coarse, sub-angular to rounded flint, coarse angular concrete, fine to coarse angular brick, cobbles of concrete, whole brick and fragments of wire, metal and plastic.

1.20 End of pit.
Service preventing further excavation.



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		Drawing Title HDP 1	Date 17/07/2020



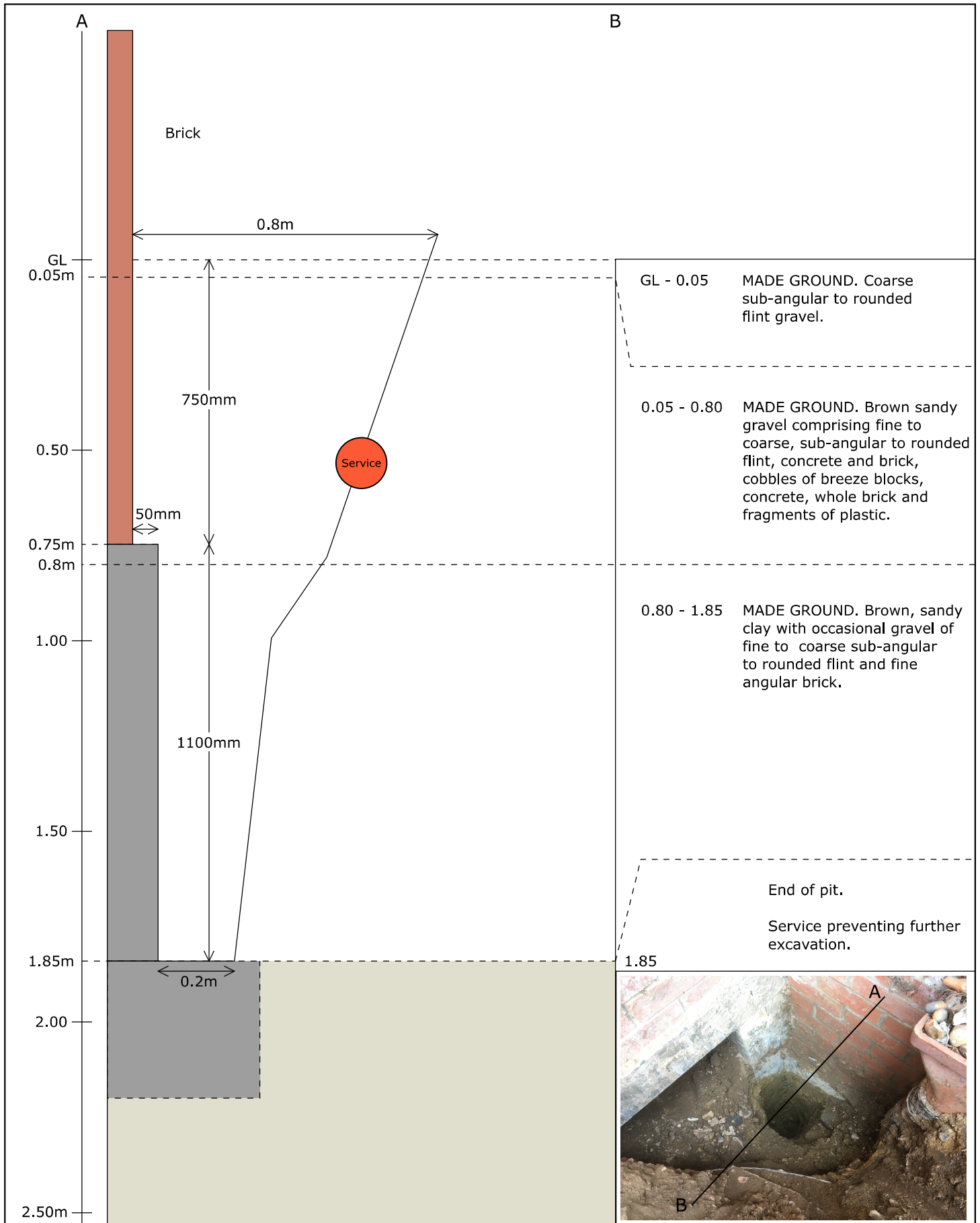
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 65 Southwark Street
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 SE1 0HR
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 www.paragonbc.co.uk


Project
Longcross Studios

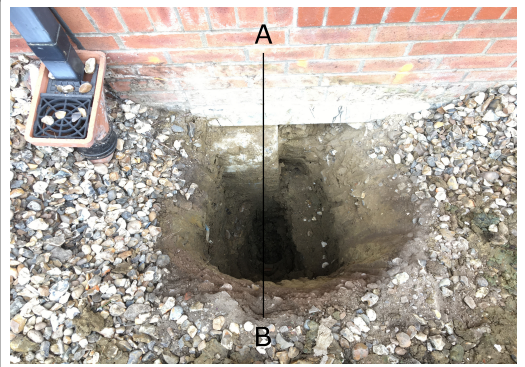
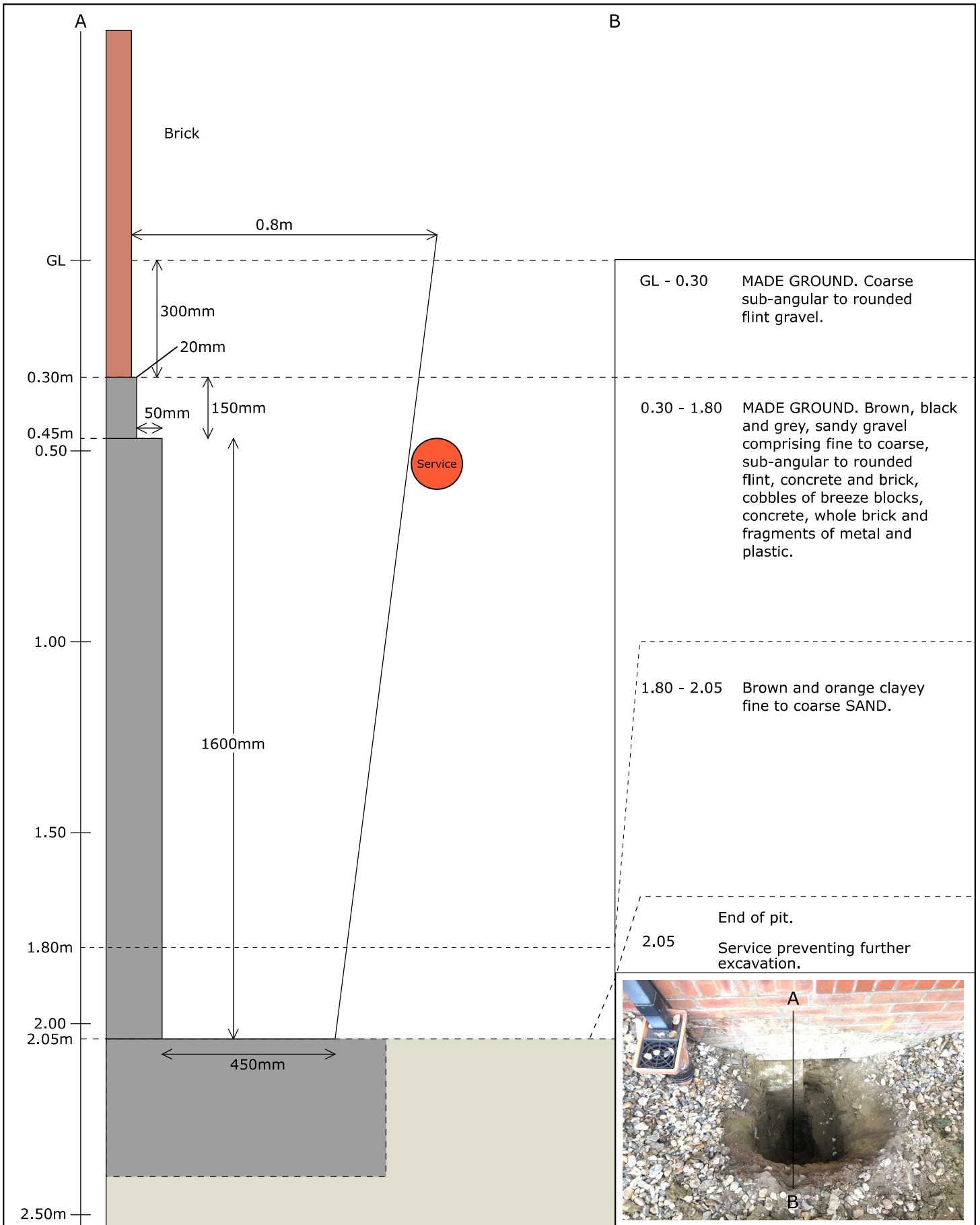
Drawing Title
HDP 2

Drawing Number
2

Date
17/07/2020



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		Drawing Title HDP 3	Date 17/07/2020



APPENDIX 4: EXTENT OF SURVEY LIMITATIONS AND DEFINITIONS

EXTENT OF SURVEY AND LIMITATIONS

This report is for your sole use, and consequently no responsibility whatsoever is undertaken or accepted to any third party for the whole or any part of its contents. Paragon accept no responsibility or liability for the consequences of this document being used for any purpose or project other than for which it was commissioned or a third party with whom an agreement has not been executed. Should any third party wish to use or rely upon the contents of the report, written approval must be sought from Paragon, a charge may be levied against such approval.

The report has been designed to address potential source, pathway and receptor pollutant linkages associated with the proposed development, by means of intrusive investigation. The content and findings of the report are based on data obtained by employing site assessment methods and techniques, considered appropriate to the site as far as can be interpreted from desk-based materials and a visual walkover of the site. Such techniques and methods are subject to limitations and constraints set out in the report. The findings and opinions are relevant at the time of writing, and should not be relied upon at a substantially later date as site conditions can change. For example, seasonal groundwater levels, natural degradation of contaminants etc.

No liability can be accepted for the conditions that have not been revealed by the exploratory hole locations, or those which occur between each location. Whilst every effort will be made to interpolate the conditions between exploratory locations, such information is only indicative and liability cannot be accepted for its accuracy. By their nature, exploratory holes provide a relatively small and localised snapshot of the ground conditions relative to the size of the site.

Specific comment is made regarding the site's status under Part 2A of the Environmental Protection Act (EPA) 1990, which provides a statutory definition of Contaminated Land and as revised under The Contaminated Land (England) (Amendment) Regulations 2012. Unless specifically stated as relating to this definition, references to 'contamination' and 'contaminants' relate in general terms to the presence of potentially hazardous substances in, on or under the site.

The opinions given within this report have been dictated by the finite data on which they are based and are relevant only to the purpose for which the report was commissioned. If additional information or data becomes available which may affect the opinions expressed in this report, Paragon reserves the right to review such information and, if warranted, to modify the opinions accordingly. Paragon reserves the right to charge additional fees for; un-anticipated second opinion reviewing of previous reports.

Paragon has prepared this report with reasonable skill, care and diligence. The recommendations contained in this report represent our professional opinions. These opinions were arrived at in accordance with currently accepted industry practices at this time. The work undertaken to provide the basis of this report comprised a study of available documented information from a variety of sources. We cannot provide guarantees or warranties for the accuracy of third-party data, which is reviewed in good faith and assumed to be representative and accurate.

It should be noted that any risks identified in this report are perceived risks based on the information reviewed. No liability can be accepted for the effects of any future changes to such guidelines and legislation. In the event that guidance / legislation changes it may be necessary for Paragon to update or modify reports. The risk assessment is completed in line with the relevant land use agreed for the site and the time of completing the works. Changes to site conditions or land use may require a reassessment.