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# Technical Note

Jelson Homes

Lower Grange Farm, Markfield

4<sup>th</sup> March 2022

Ref: PJSG21-15-RT-02

## Document Issue Record

| Document Number |          |               |                                                                                   |                                                                                    |                                                                                     |
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|                 |          |               |  |  |  |

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PJSG21-15-004 – Exploratory Hole Location Plan  
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# 1. Introduction

## 1.1 Instruction

In January 2022, PJS Geotechnical Engineers Limited (PJSG) were instructed by Jelson Homes (the Client) to undertake supplementary intrusive investigation works at land off Lower Grange Farm, Markfield, Leicestershire (the site).

This Technical Note report outlines the investigation works and laboratory testing that have been undertaken as part of the supplementary investigation.

## 1.2 Proposed Development

It is understood that the site will be developed for a residential end use with associated areas of hardstanding used for access and parking along with areas of soft landscaping within gardens and Public Open Space (POS).

A Development Layout Plan (Drawing Ref: 6675-A-05 Rev Q) has been provided by the client and is presented within the Drawings Section.

## 1.3 Previous Reports

The following table details the previous reports that have been produced for the site:

**Table 1-1 Previous Reports**

| Details                                         | Date          |
|-------------------------------------------------|---------------|
| Avison Young – Desktop Study                    | November 2020 |
| PJS Geotechnical – Geo-environmental Assessment | December 2021 |

This Technical Note should be read in conjunction with the documents referenced above.

## 1.4 Objectives

The Geo-environmental Assessment report referenced above recommended that the following additional site investigation works be undertaken:

- Further localised investigation carried out to delineate the extents of very loose / loose granular deposits, very soft to soft cohesive deposits and areas of deep Made Ground encountered.
- Further targeted plasticity testing to delineate the areas of non-cohesive granular strata to potentially allow for a reduction in minimum dig depths / discount the need for deepening foundations due to trees, should non-shrinkable granular strata be proven.
- Assessment of the underlying soils in the vicinity of electricity transformers to determine if Polychlorinated Biphenyls (PCB) contamination is present in near surface soils, associated with potential leaks from the transformer.

The objectives of the supplementary investigation works were to further determine ground conditions on site taking into consideration the recommendations identified and listed above. The ground investigation information will be used subsequently assessed to inform detailed foundation design and to determine the contaminative status of the site.

## 2. Background Information

### 2.1 Site Description

The site comprises agricultural land and public open space, a former residential property is located within the southwest of the site.

Further details of the site are presented in the previous ground investigation reports referenced in Section 1.3.

### 2.2 Geological Setting

A summary of the sites geological setting is presented in Table 2-1 below:

**Table 2-1 Summary of Geological Setting**

| <b>Geological Summary</b>  |                                                                                                                                                                          |
|----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <i>Made Ground</i>         | No artificial and / or Made Ground deposits are recorded beneath the site.                                                                                               |
| <i>Superficial Geology</i> | Oadby Member – Underlying the majority of the site.                                                                                                                      |
| <i>Bedrock Geology</i>     | Edwalton Member (mudstone) underlying the majority of the site.<br><br>A small portion of the eastern section of site is underlain by South Charnwood Diorite (Diorite). |
| <i>Faults</i>              | None present.                                                                                                                                                            |

### 2.3 Ground Conditions – Previous Investigation

Previous site investigation works were undertaken by Exploration & Testing Associates under the supervision of PJSG in June 2021. The investigation works comprised 18 No. window sample boreholes, 50 No. machine excavated trial pits and 6 No. cable percussive boreholes.

The ground conditions encountered were generally in-line with the mapped geology summarised as follows:

**Table 2-2 Summary of Ground Conditions**

|                              |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|----------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Made Ground / Topsoil</b> | Made Ground                      | Encountered within 11 No. exploratory hole locations (WS15, WS16, TP17, TP19, TP20, TP21, TP23 to TP27) proven to depths of between 0.5m and >3.4m (TP20). Recovered as firm to stiff sandy gravelly clays with gravel of coal, quartzite and brick mostly encountered in the central site area. At TP20 and TP21, the full depth of Made Ground was not proven. At TP27, Made Ground was proven to a depth of 2.4mbgl. Elsewhere, Made Ground was generally <1m deep. |
|                              | Topsoil                          | Encountered in the majority of the locations across the site recovered as sandy gravelly clays or gravelly clayey sands proven to depths of between 0.3m and 0.8m (average thickness of 0.3m).                                                                                                                                                                                                                                                                         |
| <b>Superficial Geology</b>   | Oadby Member - Cohesive Deposits | Recovered as firm to stiff and very stiff sandy gravelly clays with occasional sand pockets / horizons encountered proven to a maximum depth of 10.0mbgl in CP02 and CP06 (full depth not proven)                                                                                                                                                                                                                                                                      |



|                            |                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|----------------------------|----------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Superficial Geology</b> | Oadby Member – Granular Deposits | <p>Encountered as layers in-between the cohesive deposits within CP05, WS11 to WS13, WS14, WS18, WS20, TP37, TP38, TP40, TP41 and TP45 in the western half of the site recovered as occasionally very loose to medium dense sands encountered between depths of 0.35m (WS13) and 5.7m (CP05).</p> <p>At exploratory hole locations TP02, TP07, TP09 (in the far east of the site), and TP31, TP32 (on the southwest boundary) granular deposits were encountered below the cohesive proven to a maximum depth of 3.5m (TP07, TP09 and TP31).</p> |
| <b>Bedrock Geology</b>     | Edwalton Member Deposits         | <p>Recovered in 2 No. locations on the far west boundary of the site at TP49 and TP50 as clayey sandy gravel of siltstone and mudstone encountered from depths of between 2.6m (TP50 and 2.8m (TP49) proven to a maximum depth of 3.6m (TP49).</p>                                                                                                                                                                                                                                                                                               |



### 3. Site Investigation

#### 3.1 Summary of Ground Investigation Works

The supplementary ground investigation works were undertaken on the 12<sup>th</sup>, 18<sup>th</sup> and 19<sup>th</sup> January 2022 by PJSG to establish ground conditions in accordance with the objectives detailed in Section 1.4.

The locations of the exploratory holes were positioned taking into consideration the proposed development and the areas of very loose / loose granular deposits, very soft to soft cohesive deposits and areas of deep Made Ground previously encountered. It should however, be noted that intrusive locations were targeted based on a sketch layout of the proposed development not the final development layout.

The ground investigation works were designed in general accordance with BS10175:2011+A2:2017 'Investigation of Potentially Contaminated Sites'. Further details of the ground investigation work undertaken are detailed below in Table 3-1.

An Exploratory Hole Location Plan (PJSG21-15-DR-004) is provided within the Drawings Section of this report and details the exploratory holes advanced during the current and the previous investigation.

**Table 3-1 Summary of Site Investigation Works**

| Method / Activity                  | No. | Hole Reference        | Depth Range (m) | Testing                | Rationale                                                                                                                                                     |
|------------------------------------|-----|-----------------------|-----------------|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Window Sample Borehole (WS)        | 15  | WS201 to WS215        | 3.0 – 5.0       | *SPTs at 1m intervals. | Targeted in areas where very loose / loose granular deposits and / or very soft to soft cohesive deposits were encountered during the previous investigation. |
| Machine Excavated Trial Pits (TPs) | 16  | TP201, TP208 to TP216 | 2.3 - 3.10      | **HSVs                 | Targeted in areas where very loose / loose granular deposits and / or very soft to soft cohesive deposits were encountered during the previous investigation. |
|                                    |     | TP202 – TP207         |                 |                        | Targeted in areas where deep Made Ground was encountered during the previous investigation.                                                                   |
| Hand Pits                          | 5   | HP01 to HP05          | 0.3             | -                      | To recover soil samples in the vicinity of the above ground electricity transformer for PCB testing.                                                          |

\*SPTs – Standard penetration testing undertaken in accordance with the guidance set out within BS EN 22476-3 2005 +A1:2011;

\*\*HSVs – Hand Shear Vanes taken in selected trial pits.

It should be noted that only 1 No. above ground electricity transformer was located on site, positioned adjacent to the northeast boundary. Hand pit locations HP01 to HP05 were recovered on both the site and adjacent to the access road, which has been created by the client and gives access to the wider site.

The location of the electricity transformer is presented on the exploratory hole location plan. The TP and WS exploratory logs are presented within Appendix A and the results of the SPT tests and HSVs are indicated on the individual exploratory hole logs. The SPT hammer calibration certificate for the drilling rig is included in Appendix B.

### 3.2 Laboratory Testing and Sampling

To further verify the geotechnical properties of the cohesive and granular soils identified below the site, representative soil samples of the various strata types were collected during the site investigation works by a suitably qualified Engineer. Samples were recovered using a stainless-steel trowel and disposable gloves.

The guidelines contained in BS5930:2015 Code of Practice' were followed during recovery of the soil samples.

Samples were stored in cooler boxes prior to being transported to an MCERTS accredited laboratory. A selection of these samples was tested for the presence of contaminants and for classification purposes. Chemical testing was undertaken by i2 Analytical Ltd and geotechnical testing was undertaken by Exploration & Testing Associates Ltd.

A summary of the laboratory testing carried out is presented below in Table 3-2.

**Table 3-2 Summary of Laboratory Testing**

| Quantity                        | Analysis                                      |
|---------------------------------|-----------------------------------------------|
| <b>Chemical Testing – Soils</b> |                                               |
| 5                               | Polychlorinated Biphenyls (PCB – 7 Congeners) |
| <b>Geotechnical Testing</b>     |                                               |
| 1                               | Particle Size Distribution                    |
| 8                               | Moisture Content                              |
| 8                               | Liquid and Plastic Limits                     |

Geotechnical laboratory testing was generally carried out in accordance with the relevant part of BS1377: 1990, *Methods of Test for Soils for Civil Engineering Purposes*, or, where superseded, by the relevant part of BS EN ISO 17892:2014+ *Geotechnical investigation and testing – Laboratory Testing of Soil*.

The chemical test results are included in Appendix C and the geotechnical laboratory results are included within Appendix D.

### 3.3 Ground Conditions

The ground conditions encountered during the current investigation works have essentially confirmed the findings of the previous investigation works and comprised:

**Table 3-3 Summary of Ground Conditions**

|                              |                       |                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Made Ground / Topsoil</b> | Made Ground           | Not encountered.                                                                                                                                                                                                                                                                                                                                                       |
|                              | Topsoil               | Encountered in all of the exploratory holes comprising clayey gravelly TOPSOIL encountered up to a depth of 0.4m.                                                                                                                                                                                                                                                      |
| <b>Superficial Geology</b>   | Oadby Member Deposits | Encountered in all exploratory hole locations as firm to stiff and very stiff sandy gravelly clays with occasional sand pockets / horizons, proven to maximum depth of 2.2m and 4.8m.                                                                                                                                                                                  |
|                              |                       | Granular deposits were encountered as discrete layers located in-between the cohesive deposits within exploratory hole locations TP210, WS203, WS205, WS206, WS209, WS211, and WS215 with occasionally very loose to medium dense sands encountered between minimum depths of 1.1m (WS203) and 3.0m (WS205 and WS215) proven up to a maximum depth of 5.0mbgl (WS205). |
|                              |                       | At exploratory hole locations TP07, TP210, TP212 to TP214, WS202, WS204, WS210 and WS214, granular deposits were encountered below the cohesive                                                                                                                                                                                                                        |

|                        |                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|------------------------|--------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                        |                          | <p>strata, generally recovered as sands or sand and gravel deposits proven from depths of between 0.9m (TP214) and 3.8m (WS202, WS210 and WS214).</p> <p>At exploratory hole location TP215, clayey sand was encountered from depths of between of between 0.4m and 2.6mbgl; cohesive deposits were not encountered.</p> <p>At exploratory hole locations WS201, WS203, WS205, WS208, WS209, WS210, WS212 and WS213, soft / loose deposits were encountered at various depths of between 1-4.0mbgl in the Oadby Member deposits.</p> <p>During excavation of the trial pits, unstable excavations were noted in TP207, and TP213 to TP215 between 0.8m and 2.7mbgl.</p> |
| <b>Bedrock Geology</b> | Edwalton Member Deposits | Not encountered.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |



### 3.4 Summary of SPT Testing within Boreholes.

A summary of the uncorrected SPT N Values recorded in the boreholes advanced across the site in relation to the geology encountered is summarised below in Table 3-4.

**Table 3-4 SPT Summary in relation to Ground Conditions**

| Borehole Ref:                          | SPT 'N' Value |    |                                                     |    |      |    |
|----------------------------------------|---------------|----|-----------------------------------------------------|----|------|----|
|                                        | 1m            | 2m | 3m                                                  | 4m | 4.7m | 5m |
| WS201                                  | 10            | 5  | 16                                                  | 50 | -    | -  |
| WS202                                  | 9             | 10 | 20                                                  | 50 | -    | -  |
| WS203                                  | 21            | 6  | 17                                                  | 50 | -    | -  |
| WS204                                  | 11            | 9  | 50                                                  |    | -    | -  |
| WS205                                  | 9             | 9  | 10                                                  | 12 | -    | 50 |
| WS206                                  | 19            | 11 | 17                                                  | 50 | -    | -  |
| WS207                                  | 12            | 15 | 43                                                  | 44 | -    | -  |
| WS208                                  | 6             | 11 | 50                                                  |    | -    | -  |
| WS209                                  | -             | 4  | 6                                                   | 4  | -    | 24 |
| WS210                                  | 4             | 0  | 18                                                  | 50 | -    | -  |
| WS211                                  | 10            | 11 | 33                                                  | 29 | -    | -  |
| WS212                                  | 4             | 8  | 6                                                   | 44 | -    | -  |
| WS213                                  | 9             | 4  | 4                                                   | 12 | 50   | -  |
| WS214                                  | 19            | 23 | 10                                                  | 50 | -    | -  |
| WS215                                  | 8             | 23 | 12                                                  | 41 | -    | -  |
| Very soft / soft Oadby Member Deposits |               |    | Very loose / Loose Oadby Member – Granular Deposits |    |      |    |
| >Firm Oadby Member Deposits            |               |    | >Medium Dense Oadby Member – Granular Deposits      |    |      |    |

Very loose to loose granular deposits (SPT N value <10) have been encountered in exploratory hole location WS203 in the north of the site and at exploratory hole location WS209 in the west. The ground conditions identified at WS209 generally confirms the findings of the previous investigation which identified very loose / loose (SPT N value <10) granular deposits in exploratory hole location CP05, located in the west of the site.

Additionally, low SPT N Values (<8 blows) were recorded in the cohesive deposits at WS201 in the northwest of the site and generally confirms the findings of the previous investigation which identified soft clays in WS10 between 1.0m to 2.0m and WS11 at 2.0m.

Very soft to soft clays were also identified in WS208, WS210, WS212 and WS213 advanced in the west of the site. These boreholes were targeted in the vicinity of the site where some marginally low SPT N Values (<8 blows) were previously recorded in the cohesive deposits at WS14, WS15 and WS16 within the previous investigation.

The approximate extent of loose / soft ground in relation to the proposed plot layout identified during both the current and previous investigation phases is presented on the Approximate Extents of Unsuitable Strata Plan (PJSG21-15-DR-005) provided within the Drawings Section of this report.

## 4. Laboratory Results Assessment

The geotechnical and chemical laboratory testing analysis and results are summarised below.

### 4.1 Geotechnical Testing

#### *Particle Size Distribution (PSD) Analysis*

1 No. PSD analysis test was undertaken on a sample recovered from site to aid in the classification of soils. Classification was undertaken in accordance with BS1377: 1990 Part 2: Clause 9.2 and the result of the test is summarised below:

**Table 4-1 Summary of PSD Analysis**

| Sample Location | Depth (m) | Field Soil Description | Percentage Passing (%)    |                     |                      |                  |
|-----------------|-----------|------------------------|---------------------------|---------------------|----------------------|------------------|
|                 |           |                        | Very Coarse Soils (>63mm) | Gravel (63mm – 2mm) | Sand (2mm - 0.063mm) | Fines (<0.063mm) |
| TP207           | 1.20      | Silty sandy CLAY       | 0                         | 0                   | 43                   | 57               |

The results of the PSD tests generally indicate that the deposits predominantly comprise cohesive strata consisting of a sandy silt / clay, as described on the exploratory hole log.

#### *Plasticity Index & Volume Change Potential*

Further targeted plasticity testing was undertaken on materials recovered from the site to assist in delineation of the areas of non-cohesive granular strata and cohesive strata, to potentially allow a reduction in minimum dig depths and discount the need for deepening foundations due to trees, where non-shrinkable granular strata be proven.

A total of 8 No. Plasticity Index (PI) tests were undertaken on soil samples in accordance with BS1377-2: 1990 Clause 3.2, to determine the Modified Volume Change Potential (VCP) in accordance with NHBC Standards (Chapter 4.2). Testing was carried out

Results of the PI tests and the related VCP of the samples is summarised below.

**Table 4-2 Summary of Plasticity Testing**

| Sample Location | Depth (m) | Strata      | Plasticity Index (%) | Percentage Passing 425µm Sieve (%) | Modified Plasticity Index (%) | VCP            |
|-----------------|-----------|-------------|----------------------|------------------------------------|-------------------------------|----------------|
| TP215           | 0.70      | OM Deposits | 7                    | 100                                | 7                             | Non-shrinkable |
| TP216           | 0.70      | OM Deposits | 18                   | 97                                 | 17.46                         | Low            |
| TP207           | 1.20      | OM Deposits | 20                   | 100                                | 20                            | Medium         |
| TP214           | 1.20      | OM Deposits | -                    | -                                  | -                             | Non-plastic    |
| TP215           | 1.20      | OM Deposits | 10                   | 100                                | 10                            | Low            |
| TP213           | 1.70      | OM Deposits | 11                   | 100                                | 11                            | Low            |
| TP212           | 2.00      | OM Deposits | 15                   | 100                                | 15                            | Low            |
| TP216           | 2.30      | OM Deposits | 20                   | 99                                 | 19.80                         | Low            |

OM = Oadby Member Deposits

Geotechnical testing has determined the superficial Oadby Member deposits to be predominantly cohesive ranging from low to medium VCP as indicated in the above table. This confirms the findings of the previous investigation

works. Based on the laboratory test results, it is considered that medium VCP should be assumed for foundation design purpose.

Where founding in medium VCP deposits detailed foundation design will be required to determine the required founding level in accordance with NHBC Guidelines Chapter 4.2 – Building Near Trees.

Granular soils have been encountered on-site predominantly in the west during both investigations. Targeted plasticity testing was undertaken in the west of the site where the granular materials were identified, the results of the testing indicate that materials in this area of the site range from non-plastic to low VCP. This corresponds with the ground log descriptions at these locations, which describe the materials as clayey sands / sands.

Based on the above, it may be feasible to reduce foundation dig depths and remove the requirement for heave precautions in the form of a void former on the inside face of external wall foundations, proposed plots which coincide with proven granular deposits in the west of the site (vicinity of TP212 to TP216). However, it should be noted that potentially unsuitable bearing strata (loose sand) was encountered within this area and the suitability of traditional foundations should be assessed at detailed foundation design stage taking account of exact plot locations in relation to proposed ground levels.

### 4.3 Chemical Testing

A total of 5 No soil samples (HP01 -HP05) were recovered from the shallow soils underlying a former above-ground electricity transformer located adjacent to the north-east boundary of the site. Samples were tested in order to assess the potential presence of PCBs in the underlying soils in the vicinity of the electricity transformers, identified as a potential contamination source within the CSM.

A screen of the laboratory results was undertaken and a summary is presented below.

**Table 4-3 Summary of Chemical Test Results**

| Location | Depth (m) | Total PCB Concentration (mg/kg) | Further Assessment Required? |
|----------|-----------|---------------------------------|------------------------------|
| HP1      | 0.1       | <0.007                          | No                           |
| HP2      | 0.1       | <0.007                          | No                           |
| HP3      | 0.1       | <0.007                          | No                           |
| HP4      | 0.1       | <0.007                          | No                           |
| HP5      | 0.1       | <0.007                          | No                           |

As shown in the above table, none of the samples tested contained any trace of PCBs; as such no further assessment is required and no remedial works are deemed necessary.

## 5. Conclusions & Recommendations

### 5.1 Conclusions

#### Delineation of Loose / Soft Ground

Additional localised investigation works have been carried out to delineate the extent of very loose / loose granular deposits and very soft to soft cohesive deposits encountered during the previous investigation works.

The additional intrusive investigation works were targeted based on the sketch layout of the site. Subsequently, PJSG have been provided with a final proposed site development layout. Taking into consideration the proposed site layout, the following preliminary foundations are recommended for plots located within areas where unsuitable strata has been encountered. The below preliminary recommendations should be confirmed at detailed design stage.

The approximate extent of loose / soft ground compared to the proposed site layout is presented on the Approximate Extents of Unsuitable Strata Plan (PJSG21-15-DR-005) provided within the Drawings Section of this report.

A summary of the plots affected by unsuitable strata is summarised below.

**Table 5-1 Plots Affected by Loose / Soft Ground**

| Plots                                       | Preliminary Foundation Recommendations                                                                                                                                                                                                                                                                                                                                                   | Reasoning                                                                                                                                                                                                                   |
|---------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>44, 45, 48 to 52</b>                     | Deepening of foundations / alternative foundations should be considered such as piles or vibro stone columns subject to an assessment of proposed levels at detailed foundation design.                                                                                                                                                                                                  | Loose sands encountered at WS203 at 2.0m (N=6) and soft clay encountered in WS11 at 2.0m (N=6) in the vicinity of these plots                                                                                               |
| <b>63 to 66</b>                             |                                                                                                                                                                                                                                                                                                                                                                                          | Soft clay encountered at WS201 at 2.0m (N=5) and in WS10 at 1.0m & 2.0m in the vicinity of these plots.                                                                                                                     |
| <b>105 to 118</b>                           | Deepening of foundations / alternative foundations should be considered such as piles or vibro stone columns subject to an assessment of proposed levels at detailed foundation design.                                                                                                                                                                                                  | Soft clay encountered at potential founding depth at 1.0m within WS18 (N=3) and WS208 (N=6) and in WS212 at depths of 1.0m (N=4) and 3.0m (N=6) in the vicinity of these plots.                                             |
| <b>38 to 39, 97 to 101, 119, 129 to 130</b> | Not considered possible to utilise traditional foundations due to low SPT N values encountered.<br><br>Alternative foundations should be considered such as piles or vibro stone columns subject to detailed foundation design.<br><br>It may be possible to remove the requirement for heave precautions / compressible void former for plots coinciding with proven granular deposits. | Very soft to soft clays identified in WS14, WS15, WS16, WS208, WS210, WS212 and WS213 to depths ranging between 1 – 3m from EGL.<br><br>Very loose / loose granular deposits encountered in CP05 (to 5m) and WS209 (to 4m). |

It should be noted that final recommendations for foundation solutions across the site will be made at detailed foundation design stage once proposed levels have been assessed. The use of vibro stone column ground

improvement may be feasible however should plots be located within the influencing distance of by trees or hedges then the use of this foundation solution may not be a suitable or cost-effective solution.

### *Delineation of Deep Made Ground*

Deep Made Ground was previously encountered in the central site area at locations TP20, TP21 and TP27. At TP20 and TP21. The full depth of Made Ground was not proven and at TP27 within a termination depth of 2.4mbgl. Across the remainder of the site, Made Ground was generally encountered to depths <1m.

Where the depth of Made Ground exceeds 2.5m (vicinity of TP20 and TP21), it was concluded that alternative foundations would likely be deemed necessary. It was recommended that further investigation was carried out in this area of the site to delineate the materials extents.

A total of 7 No. of trial pits (TP202 to TP207) were advanced in the area of deep Made Ground to delineate the extents for foundation design purposes. However, no evidence of Made Ground was encountered within TP202 to TP207. The geology beneath the site generally comprises superficial Oadby Member deposits and inclusions of red sandstone are not uncommon. No evidence of any significant Made Ground was identified within the Phase 1 Desk Study.

With this in mind, it is therefore concluded that the material previously described was mistaken for Made Ground due to containing inclusions of red sandstone, which is similar in appearance to brick.

It is therefore considered that traditional strip / trenchfill foundations can be used in this area of the site, subject to a full assessment of development proposals and ground levels at detailed foundation design stage. As a precaution, it is however recommended that an Engineer be present when excavating foundations in this area of the site to confirm that the bearing strata comprises natural ground.

### *PCB Contamination*

A total of 5 No soil samples (HP01 -HP05) were recovered from the shallow soils underlying the former above-ground electricity transformer, located adjacent to the north-east boundary of the site. Samples were obtained to assess for the presence of PCBs in underlying soils associated with potential leaks from the transformer, identified as a potential contamination source within the CSM.

Chemical testing of soils samples obtained found no traces of PCBs and as such no evidence of contamination arising from the transformer is evident within the near surface soils directly beneath it. It is therefore concluded that further assessment and remedial works are not considered necessary.

## **5.2 Recommendations**

Based on the site investigation works undertaken to date, areas of unsuitable bearing strata have been identified and alternative foundations are likely to be deemed necessary in specific areas of the site. In order to confirm the most cost effective foundation solution further plot specific targeted investigation may also be necessary once an assessment of foundation types in relation to proposed ground levels has been undertaken.



# Drawings

6675-A-05 Rev Q, dated March 2021 - Development Layout Plan  
PJSG21-15-004 – Exploratory Hole Location Plan  
PJSG21-15-005 – Approximate Extents of Unsuitable Strata

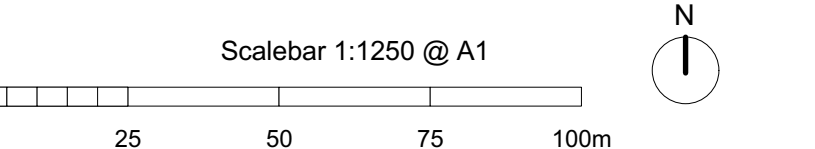




NOTES

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- KEY
- Application site boundary 18.30 ha
  - Proposed residential development
  - Affordable Rented
  - Shared Ownership
  - Proposed roads and pavements
  - Proposed squares/traffic calming features
  - Proposed private drives
  - Proposed footpaths
  - Proposed trees and hedgerows
  - Existing trees and hedgerows
  - Existing sewer easement
  - Existing public right of way
  - Proposed play area
  - Proposed SuDS attenuation pond
  - Existing watercourses/ditches
  - Proposed Swales
  - Proposed Woodland
  - Proposed Hedge
  - Proposed Boundary Wall
  - Proposed Estate Railing
  - Proposed Closeboard Fence
  - Proposed Permissive Un-made Route
  - Reinforced grass system with no-dig construction
  - Bollards

| Housing Schedule |       |               |               |        |                            |
|------------------|-------|---------------|---------------|--------|----------------------------|
| Affordable       |       |               |               |        |                            |
| Name             | Beds  | Type          | Floor area FT | Number | Total Area                 |
| JH_1A_01         | 1 Bed | Terrace       | 640           | 12     | 7680                       |
| JH_2S_03X        | 2 Bed | Semi-detached | 749           | 59     | 44191                      |
| JS397            | 3 Bed | Semi-detached | 889           | 22     | 19558                      |
| JS394            | 3 Bed | Semi-detached | 1012          | 18     | 18218                      |
| JD422            | 4 Bed | Detached      | 1322          | 2      | 2644                       |
|                  |       | Total         |               | 113    | Affordable Percentage: 40% |
| Market           |       |               |               |        |                            |
| Name             | Beds  | Type          | Floor area FT | Number | Total Area                 |
| JH_2S_03Y        | 2 Bed | Semi-Detached | 654           | 22     | 14388                      |
| JH_2S_03X        | 2 Bed | Semi-detached | 749           | 18     | 13482                      |
| JH_3D_04         | 3 Bed | Detached      | 949           | 20     | 18980                      |
| JH_3S_02X        | 3 Bed | Semi Detached | 1061          | 18     | 19098                      |
| JH_3S_02Y        | 3 Bed | Semi Detached | 1061          | 10     | 10610                      |
| JH_3D_10         | 3 Bed | Detached      | 1012          | 7      | 7084                       |
| JH_3D_07         | 3 Bed | Detached      | 916           | 20     | 18320                      |
| JH_3D_11         | 3 Bed | Detached      | 990           | 26     | 25740                      |
| JH_4D_06Y        | 4 Bed | Detached      | 1668          | 5      | 8340                       |
| JH_4D_05         | 4 Bed | Detached      | 1500          | 9      | 13500                      |
| JH_4D_01         | 4 Bed | Detached      | 1759          | 7      | 12313                      |
| JH_4D_06X        | 4 Bed | Detached      | 1668          | 7      | 11676                      |
|                  |       | Total         |               | 169    | Market Percentage: 60%     |
|                  |       | TOTAL         |               | 282    | 265820                     |

|     |            |                                                    |           |
|-----|------------|----------------------------------------------------|-----------|
| Q   | 17/03/2021 | Minor amendment to highway adjacent to plot 55/56. | HJL / KMN |
| P   | 12/03/2021 | Amendment to private drive serving plots 109-114.  | HJL / KMN |
| O   | 11/03/2021 | Amendments to parking and garages.                 | HJL / KMN |
| N   | 11/02/2021 | Sewer Easement Amendments                          | HJL / KMN |
| M   | 08/02/2021 | Minor Road Amendments                              | HJL / KMN |
| rev | date       | description                                        | dm / chkd |



masterplanning  
environmental assessment  
landscape design  
urban design  
ecology  
architecture  
arboriculture

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client  
**Jelson Ltd.**

project  
**Land South of Markfield**

drawing title  
**Planning Layout - Overall**

scale  
1:1250 @ A1

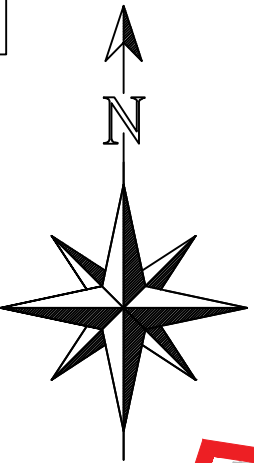
drawing number  
**6675-A-05**

File: J:\6600\6675\LANDS\HYBRID APPLICATION\PLANS\6675 Detailed Layout Q.vwx

drawn / checked  
HJL / KMN

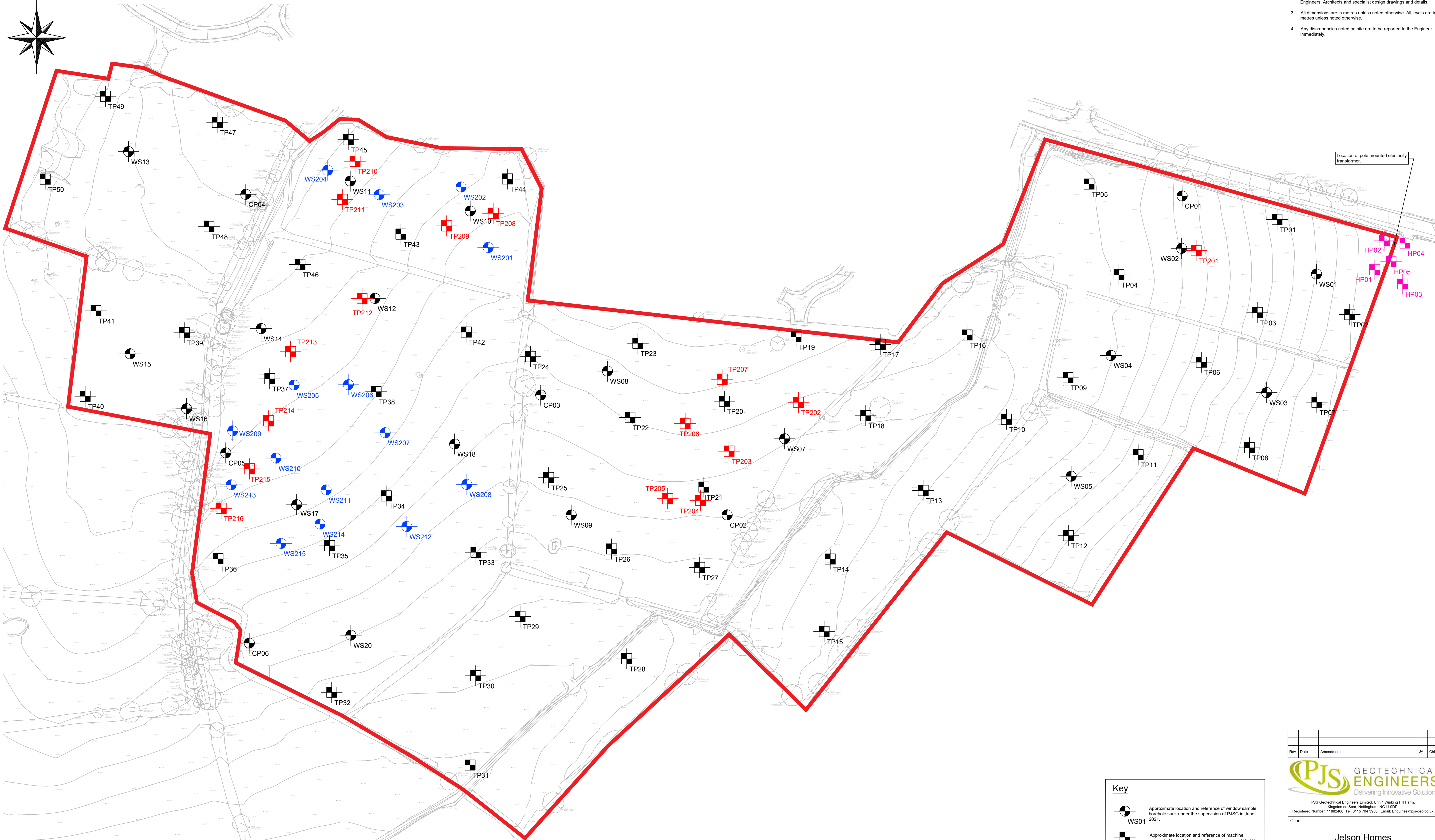
revision date  
17 March 2021

rev  
**Q**



General Notes

1. Do not scale this drawing. If in doubt, ask.
2. This drawing is to be read in conjunction with all other relevant Engineers, Architects and specialist design drawings and details.
3. All dimensions are in metres unless noted otherwise. All levels are in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the Engineer immediately.



**Key**

- WS01: Approximate location and reference of window sample borehole sunk under the supervision of PJSG in June 2021.
- TP01: Approximate location and reference of machine excavated trial pit dug under the supervision of PJSG in June 2021.
- CP01: Approximate location and reference of cable percussive borehole sunk under the supervision of PJSG in June 2021.
- TP201: Approximate location and reference of machine excavated trial pit dug by PJSG in January 2022.
- WS201: Approximate location and reference of window sample borehole sunk by PJSG in January 2022.
- HP01: Approximate location and reference of hand pit dug by PJSG in January 2022.

| Rev | Date | Amendments | By | Chk |
|-----|------|------------|----|-----|
|     |      |            |    |     |

**PJS** GEOTECHNICAL ENGINEERS  
Delivering Innovative Solutions

PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,  
Kington on Soar, Nottingham, NG11 0DP.  
Registered Number: 11802468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk

Client

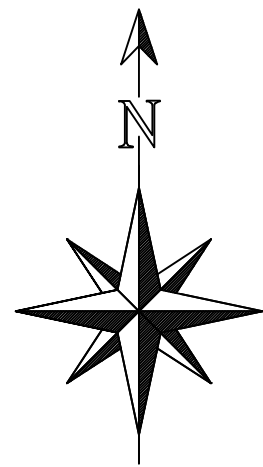
Project

**Jelson Homes**

Drawing Title

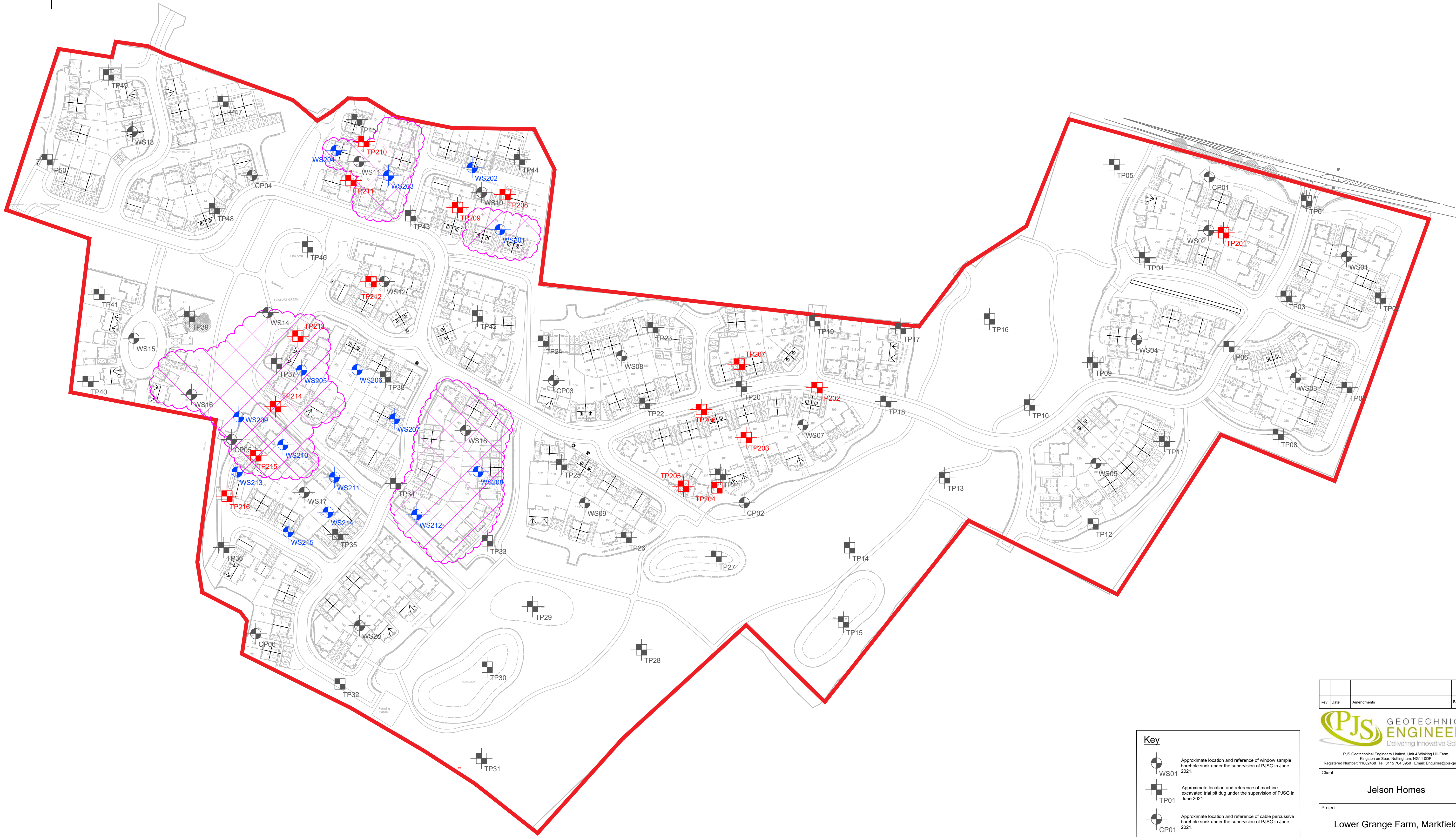
**Additional Works Exploratory Hole Location Plan**

| Initial        | Drawn    | Checked  | Status | Scale  |
|----------------|----------|----------|--------|--------|
| NB             | OS       |          |        | 1:1000 |
| Date           | 17.01.22 | 17.01.22 |        |        |
| Project Number |          |          |        |        |
| PJSG21-15      |          |          |        |        |
| Drawing Number |          |          |        |        |
| DR-004         |          |          |        |        |
| Revision       |          |          |        |        |
| -              |          |          |        |        |



General Notes

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3. All dimensions are in metres unless noted otherwise. All levels are in metres unless noted otherwise.
4. Any discrepancies noted on site are to be reported to the Engineer immediately.



Key

- WS01: Approximate location and reference of window sample borehole sunk under the supervision of PJSG in June 2021.
- TP01: Approximate location and reference of machine excavated trial pit dug under the supervision of PJSG in June 2021.
- CP01: Approximate location and reference of cable percussive borehole sunk under the supervision of PJSG in June 2021.
- TP201: Approximate location and reference of machine excavated trial pit dug by PJSG in January 2022.
- WS201: Approximate location and reference of window sample borehole sunk by PJSG in January 2022.
- Approximate extents where unsuitable bearing stratum has been encountered.

| Rev | Date | Amendments | By | CHK |
|-----|------|------------|----|-----|
|     |      |            |    |     |



PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm, Kingston on Soar, Nottingham, NG11 0DP.  
Registered Number: 11802468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk

Client

Jelson Homes

Project

Lower Grange Farm, Markfield

Drawing Title

Approximate Extents of Unsuitable Bearing Strata

| Initial  | Drawn    | Checked | Status | Scale |
|----------|----------|---------|--------|-------|
| NB       | OS       |         |        |       |
| 26.01.22 | 26.01.22 |         |        |       |
|          |          |         |        |       |
|          |          |         |        |       |
|          |          |         |        |       |

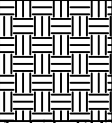
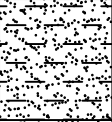
PJSG21-15 DR-005 -

# Appendix A: Exploratory Hole Logs



|             |                                                       |
|-------------|-------------------------------------------------------|
| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |              |            |             |                         |               |        |                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------|------------|-------------|-------------------------|---------------|--------|----------------------------------------------------------------------|
| <div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div> <div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div> | Site Name:<br>Lower Grange Farm, Markfield |              |            |             | Client:<br>Jelson Homes |               |        | Trial Pit ID:<br><br><b>TP202</b><br><br><small>Sheet 1 of 1</small> |
|                                                                                                                                                                                                                                                                                                                                                                                                        | Job Number:                                | Date Logged: | Logged By: | Checked By: | Coordinates:            | Ground Level: | Scale: |                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                        | PJSG21-15                                  | 12/01/2022   | NB         | AM          | 449006, 309418          | -             | 1:25   |                                                                      |

| Samples & In-Situ Testing |      |              | Strata Details |                   |                                                                                    |                                                                                                                                                                                                                                                                               |       |                                                                                      |
|---------------------------|------|--------------|----------------|-------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                                                                                                                                                            | Water | Backfill                                                                             |
| 1.00                      | HSV  | 100,110,100  |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                                                                                                                                         |       |  |
|                           |      |              |                | (0.40)            |   | Firm brown sandy CLAY. Pockets of orangeish brown sand.                                                                                                                                                                                                                       |       |                                                                                      |
|                           |      |              |                | (1.80)            |  | Stiff brown and grey sandy gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk.<br><br>Lenses of clayey grey and orange sand between 0.80m - 1.40m.<br><br>Becoming very gravelly and friable from 1.60m. |       |                                                                                      |
|                           |      |              |                | 2.60              |                                                                                    | Trial Pit Terminated @ 2.60m                                                                                                                                                                                                                                                  |       |                                                                                      |

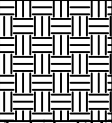
General Remarks:

- 1) Excavation stable.
- 2) No groundwater encountered.
- 3) No evidence of contamination identified.
- 4) Trial pit terminated at 2.60m.
- 5) Excavation backfilled with arisings on completion.

|             |                                                       |
|-------------|-------------------------------------------------------|
| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

|                                                                                                                                                                                                                          |                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| General Remarks:<br>1) Excavation stable.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Trial pit terminated at 2.60m.<br>5) Excavation backfilled with arisings on completion. |                                                       |
| Dimensions:                                                                                                                                                                                                              | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |

|                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |              |            |             |                         |               |        |                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------|------------|-------------|-------------------------|---------------|--------|----------------------------------------------------------------------|
| <div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div> <div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div> | Site Name:<br>Lower Grange Farm, Markfield |              |            |             | Client:<br>Jelson Homes |               |        | Trial Pit ID:<br><br><b>TP204</b><br><br><small>Sheet 1 of 1</small> |
|                                                                                                                                                                                                                                                                                                                                                                                                        | Job Number:                                | Date Logged: | Logged By: | Checked By: | Coordinates:            | Ground Level: | Scale: |                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                        | PJSG21-15                                  | 12/01/2022   | NB         | AM          | 448951, 309363          | -             | 1:25   |                                                                      |

| Samples & In-Situ Testing |      |              | Strata Details |                   |                                                                                     |                                                                                                                                                              |       |                                                                                      |
|---------------------------|------|--------------|----------------|-------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                                           | Water | Backfill                                                                             |
| 1.30                      | HSV  | 110,105,105  |                | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                        |       |  |
|                           |      |              |                | 0.40              |   | Stiff brown and grey slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. |       |                                                                                      |
| 2.00                      | HSV  | 100,105,105  |                | (2.40)            |  | Angular, cobbles of tabular siltstone and sandstone present from 1.20m.                                                                                      |       |                                                                                      |
|                           |      |              |                | 2.80              |  | Becoming light grey from 2.50m.                                                                                                                              |       |                                                                                      |
|                           |      |              |                |                   |                                                                                     | Trial Pit Terminated @ 2.80m                                                                                                                                 |       |                                                                                      |

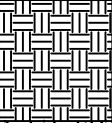
General Remarks:

- 1) Excavation stable.
- 2) No groundwater encountered.
- 3) No evidence of contamination identified.
- 4) Trial pit terminated at 2.80m.
- 5) Excavation backfilled with arisings on completion.

|             |                                                       |
|-------------|-------------------------------------------------------|
| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                          |              |            |             |                                                                                                       |               |        |                                                                                                                                           |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------|------------|-------------|-------------------------------------------------------------------------------------------------------|---------------|--------|-------------------------------------------------------------------------------------------------------------------------------------------|--|
| <div style="display: inline-block; vertical-align: middle;"> <b>GEOTECHNICAL ENGINEERS</b><br/> <small>Delivering Innovative Solutions</small><br/> <small>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>         Kingston on Soar, Nottingham, NG11 0DP.<br/>         Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</small> </div> | Site Name:<br><div style="text-align: center; border: 1px solid black; padding: 2px;">Lower Grange Farm, Markfield</div> |              |            |             | Client:<br><div style="text-align: center; border: 1px solid black; padding: 2px;">Jelson Homes</div> |               |        | Trial Pit ID:<br><div style="text-align: center; border: 1px solid black; padding: 2px; font-weight: bold; font-size: 1.2em;">TP205</div> |  |
|                                                                                                                                                                                                                                                                                                                                                                                         | Job Number:                                                                                                              | Date Logged: | Logged By: | Checked By: | Coordinates:                                                                                          | Ground Level: | Scale: |                                                                                                                                           |  |
|                                                                                                                                                                                                                                                                                                                                                                                         | PJSG21-15                                                                                                                | 12/01/2022   | NB         | AM          | 448932, 309364                                                                                        | -             | 1:25   |                                                                                                                                           |  |

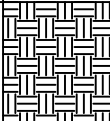
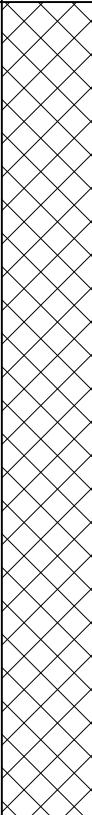
Sheet 1 of 1

| Samples & In-Situ Testing |      |              | Strata Details |                   |                                                                                    |                                                                                                                                                                                               |       |                                                                                      |
|---------------------------|------|--------------|----------------|-------------------|------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                                                                            | Water | Backfill                                                                             |
| 1.10                      | HSV  | 90,90,95     |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                                                         |       |  |
|                           |      |              |                | 0.40              |                                                                                    |                                                                                                                                                                                               |       |                                                                                      |
| 1.80                      | HSV  | 100,100,90   |                | (2.50)            |  | Stiff brown and grey slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. Land drain encountered at 0.50m. |       |                                                                                      |
|                           |      |              |                | 2.90              |                                                                                    | Becoming sandy and friable at 2.40m.                                                                                                                                                          |       |                                                                                      |
|                           |      |              |                |                   |                                                                                    | 3.0 Trial Pit Terminated @ 2.90m                                                                                                                                                              |       |                                                                                      |
|                           |      |              |                |                   |                                                                                    | 4.0                                                                                                                                                                                           |       |                                                                                      |

General Remarks:
 

1) Excavation stable.  
 2) Land drain encountered at 0.50m.  
 3) No evidence of contamination identified.  
 4) Trial pit terminated at 2.90m.  
 5) Excavation backfilled with arisings on completion.

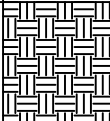
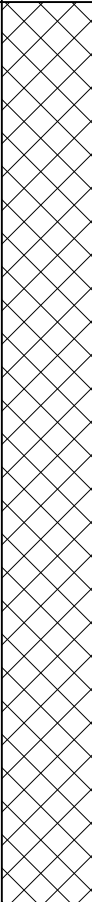
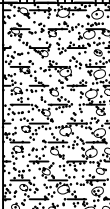
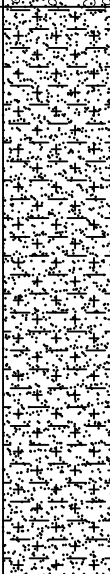
|             |                                                       |
|-------------|-------------------------------------------------------|
| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

| Samples & In-Situ Testing |      |              | Strata Details |                   |                                                                                    |                                                                                                                                                                                                                                                                                                                        |       |                                                                                      |
|---------------------------|------|--------------|----------------|-------------------|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                                                                                                                                                                                                     | Water | Backfill                                                                             |
| 0.90                      | HSV  | 80,80,75     |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                                                                                                                                                                                  |       |  |
|                           |      |              | 0.40           |                   |                                                                                    |                                                                                                                                                                                                                                                                                                                        |       |                                                                                      |
|                           |      |              |                |                   |                                                                                    |                                                                                                                                                                                                                                                                                                                        |       |                                                                                      |
|                           |      |              |                | (2.30)            |  | Firm to stiff brown and grey slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk.<br><br>Large obstruction (boulder D > 0.60m) encountered within southern face of trial pit encountered.<br><br>Becoming very gravelly from 1.70m. |       |                                                                                      |
|                           |      |              |                | 2.70              |                                                                                    | Trial Pit Terminated @ 2.70m                                                                                                                                                                                                                                                                                           |       |                                                                                      |

General Remarks:

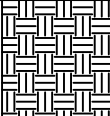
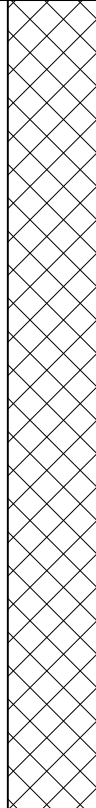
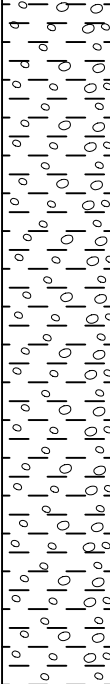
- 1) Excavation stable.
- 2) No groundwater encountered.
- 3) No evidence of contamination identified.
- 4) Trial pit terminated at 2.70m.
- 5) Excavation backfilled with arisings on completion.

|             |                                                       |
|-------------|-------------------------------------------------------|
| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

| Samples & In-Situ Testing |      |              | Strata Details |                   |                                                                                    |                                                                                                                                                    |                                                                                       |                                                                                      |
|---------------------------|------|--------------|----------------|-------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                                 | Water                                                                                 | Backfill                                                                             |
| 0.90                      | HSV  | 80,80,80     |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.              |                                                                                       |  |
|                           |      |              |                | 0.40              |                                                                                    |                                                                                                                                                    |                                                                                       |                                                                                      |
| 1.30                      | B1   |              |                | (0.70)            |   | Firm brown sandy slightly gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. |                                                                                       |                                                                                      |
|                           |      |              |                | 1.10              |                                                                                    |                                                                                                                                                    |                                                                                       |                                                                                      |
|                           |      |              |                | (1.90)            |  | Orangeish brown mottled grey wet silty sandy CLAY.                                                                                                 |                                                                                       |                                                                                      |
|                           |      |              |                | 3.00              |                                                                                    | 3.0                                                                                                                                                |  |                                                                                      |
|                           |      |              |                |                   |                                                                                    | Trial Pit Terminated @ 3.00m                                                                                                                       |                                                                                       |                                                                                      |
|                           |      |              |                |                   |                                                                                    | 4.0                                                                                                                                                |                                                                                       |                                                                                      |

|                                                       |
|-------------------------------------------------------|
| General Remarks:                                      |
| 1) Excavation unstable below 2.70m.                   |
| 2) Groundwater encountered at base.                   |
| 3) No evidence of contamination identified.           |
| 4) Trial pit terminated at 3.00m.                     |
| 5) Excavation backfilled with arisings on completion. |

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| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
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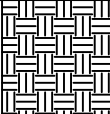
| Samples & In-Situ Testing |      |              | Strata Details |                                                                                    |                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                       |       |                                                                                      |
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| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness)                                                                  | Legend                                                                                                                                                                                                                                                                                                                          | Strata Description                                                                                                                    | Water | Backfill                                                                             |
| 0.90                      | HSV  | 50,55,50     |                | (0.40)                                                                             |                                                                                                                                                                                                                                                | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |       |  |
|                           |      |              | 0.40           |                                                                                    |                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                       |       |                                                                                      |
|                           |      |              | (2.30)         |  | Firm brown gravelly CLAY. Gravel is sub-angular to rounded, fine to coarse of quartz. Land drain encountered at 0.60m.<br><br>Becoming mottled grey and very gravelly from 1.40m. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk.<br><br>Becoming friable from 2.60m. |                                                                                                                                       |       |                                                                                      |
|                           |      |              |                | 2.70                                                                               |                                                                                                                                                                                                                                                                                                                                 | Trial Pit Terminated @ 2.70m                                                                                                          |       |                                                                                      |

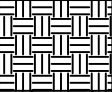
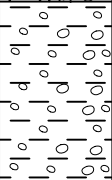
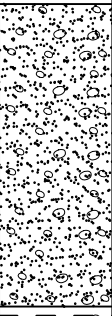
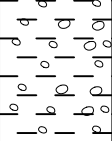
General Remarks:

- 1) Excavation stable.
- 2) Slight water ingress at 0.60m from land drain.
- 3) No evidence of contamination identified.
- 4) Trial pit terminated at 2.70m.
- 5) Excavation backfilled with arisings on completion.

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| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
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|  <b>GEOTECHNICAL ENGINEERS</b><br>Delivering Innovative Solutions<br><small>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>         Kingston on Soar, Nottingham, NG11 0DP.<br/>         Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</small> | Site Name:<br><b>Lower Grange Farm, Markfield</b> |              |            |             | Client:<br><b>Jelson Homes</b> |               |        | Trial Pit ID:<br><b>TP209</b><br><small>Sheet 1 of 1</small> |
|                                                                                                                                                                                                                                                                                                                                                                                  | Job Number:                                       | Date Logged: | Logged By: | Checked By: | Coordinates:                   | Ground Level: | Scale: |                                                              |
|                                                                                                                                                                                                                                                                                                                                                                                  | PJSG21-15                                         | 12/01/2022   | NB         | AM          | 448808, 309517                 | -             | 1:25   |                                                              |

| Samples & In-Situ Testing |      |              | Strata Details |                   |                                                                                    |                                                                                                                                                                                                                                                   |  |       |                                                                                      |
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| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                                                                                                                                |  | Water | Backfill                                                                             |
| 1.00                      | HSV  | 70,65,70     |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                                                                                                             |  |       |  |
|                           |      |              | 0.40           |                   |                                                                                    |                                                                                                                                                                                                                                                   |  |       |                                                                                      |
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| 1.50                      | HSV  | 55,60,55     |                | (2.50)            |  | Firm brownish red occasionally mottled grey sandy gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. Occasional lenses of firm grey clay. Becoming more friable with depth. |  |       |                                                                                      |
| 2.00                      | HSV  | 70,70,65     |                |                   |                                                                                    | Becoming brownish red mottled dark grey from 1.90m.                                                                                                                                                                                               |  |       |                                                                                      |
|                           |      |              |                |                   |                                                                                    |                                                                                                                                                                                                                                                   |  |       |                                                                                      |
|                           |      |              |                | 2.90              |                                                                                    | Trial Pit Terminated @ 2.90m                                                                                                                                                                                                                      |  |       |                                                                                      |
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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|----------------------------|--------------------------------------------|-------------------|------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|--|-------------------------------|-------|--------------------------------------------------------------------------------------|--|
| <div><div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div><div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div></div> |      |                            | Site Name:<br>Lower Grange Farm, Markfield |                   |                                                                                    |                                                                                                                                                          | Client:<br>Jelson Homes |                                |  | Trial Pit ID:<br><b>TP210</b> |       |                                                                                      |  |
| Job Number:<br>PJSG21-15                                                                                                                                                                                                                                                                                                                                                                                         |      | Date Logged:<br>12/01/2022 |                                            | Logged By:<br>NB  |                                                                                    | Checked By:<br>AM                                                                                                                                        |                         | Coordinates:<br>448756, 309553 |  | Ground Level:<br>-            |       | Scale:<br>1:25                                                                       |  |
| Sheet 1 of 1                                                                                                                                                                                                                                                                                                                                                                                                     |      |                            |                                            |                   |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
| Samples & In-Situ Testing                                                                                                                                                                                                                                                                                                                                                                                        |      |                            | Strata Details                             |                   |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
| Depths                                                                                                                                                                                                                                                                                                                                                                                                           | Type | Test Results               | Reduced Level                              | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                                       |                         |                                |  |                               | Water | Backfill                                                                             |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | HSV  | 70,70,70                   |                                            | (0.30)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                    |                         |                                |  |                               |       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            | 0.30              |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            | (0.30)            |   | Firm brown sandy gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk.                |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            | 0.60              |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | HSV  | 70,70,70                   |                                            | (0.60)            |   | Firm reddish brown mottled grey gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            | 1.20              |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            | (1.00)            |   | Grey and white gravelly SAND. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk.                  |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            | 2.20              |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | HSV  | 70,65,70                   |                                            | (0.50)            |  | Firm reddish brown mottled grey gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            | 2.70              |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                            |                                            |                   |                                                                                    | Trial Pit Terminated @ 2.70m                                                                                                                             |                         |                                |  |                               |       |                                                                                      |  |
| <div><div>General Remarks:</div><div><div>1) Excavation stable.</div><div>2) No groundwater encountered.</div><div>3) No evidence of contamination identified.</div><div>4) Trial pit terminated at 2.70m.</div><div>5) Excavation backfilled with arisings on completion.</div></div></div>                                                                                                                     |      |                            |                                            |                   |                                                                                    |                                                                                                                                                          |                         |                                |  |                               |       |                                                                                      |  |
| Dimensions:                                                                                                                                                                                                                                                                                                                                                                                                      |      |                            |                                            |                   |                                                                                    | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire)                                                                                                    |                         |                                |  |                               |       |                                                                                      |  |

|                                                                                                                                                                                                                                                                                                                                                                         |                                                   |                   |            |             |                                |               |             |                                                                                           |
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| <div style="display: inline-block;"> <b>GEOTECHNICAL ENGINEERS</b><br/> <small>Delivering Innovative Solutions</small><br/> <small>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>             Kingston on Soar, Nottingham, NG11 0DP.<br/>             Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</small> </div> | Site Name:<br><b>Lower Grange Farm, Markfield</b> |                   |            |             | Client:<br><b>Jelson Homes</b> |               |             | <b>Trial Pit ID:</b><br><br><div style="font-size: 1.5em; font-weight: bold;">TP211</div> |
|                                                                                                                                                                                                                                                                                                                                                                         | Job Number:                                       | Date Logged:      | Logged By: | Checked By: | Coordinates:                   | Ground Level: | Scale:      |                                                                                           |
|                                                                                                                                                                                                                                                                                                                                                                         | <b>PJSG21-15</b>                                  | <b>12/01/2022</b> | <b>NB</b>  | <b>AM</b>   | <b>448749, 309532</b>          | <b>-</b>      | <b>1:25</b> |                                                                                           |

Sheet 1 of 1

| Samples & In-Situ Testing |      |              | Strata Details |                   |        |                                                                                                                                             |       |          |
|---------------------------|------|--------------|----------------|-------------------|--------|---------------------------------------------------------------------------------------------------------------------------------------------|-------|----------|
| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend | Strata Description                                                                                                                          | Water | Backfill |
| 1.00                      | HSV  | 70,70,70     |                | (0.30)            |        | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.       |       |          |
|                           |      |              |                | 0.30              |        |                                                                                                                                             |       |          |
|                           |      |              |                | (1.60)            |        | Firm reddish brown gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. |       |          |
| 1.50                      | HSV  | 70,65,65     |                | 1.90              |        | Becoming mottled grey from 1.30m.<br><br>Becoming friable with depth from 1.60m.                                                            |       |          |
|                           |      |              |                | (0.80)            |        | Firm reddish brown weathered friable CLAY.                                                                                                  |       |          |
|                           |      |              |                | 2.70              |        | Trial Pit Terminated @ 2.70m                                                                                                                |       |          |

General Remarks:
 

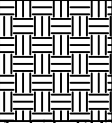
1) Excavation stable.  
 2) No groundwater encountered.  
 3) No evidence of contamination identified.  
 4) Trial pit terminated at 2.70m.  
 5) Excavation backfilled with arisings on completion.

|             |                                                       |
|-------------|-------------------------------------------------------|
| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

|                                                                                                                                                                                                                          |                                                       |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| General Remarks:<br>1) Excavation stable.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Trial pit terminated at 1.00m.<br>5) Excavation backfilled with arisings on completion. |                                                       |
| Dimensions:                                                                                                                                                                                                              | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |

|                                                                                                                                                                                                                                                                      |                                                       |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
| General Remarks:                                                                                                                                                                                                                                                     |                                                       |
| 1) Excavation unstable within sands when excavation left open for a prolonged period.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Trial pit terminated at 3.10m.<br>5) Excavation backfilled with arisings on completion. |                                                       |
| Dimensions:                                                                                                                                                                                                                                                          | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |

|                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |              |            |             |                         |               |        |                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------|------------|-------------|-------------------------|---------------|--------|----------------------------------------------------------------------|
| <div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div> <div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div> | Site Name:<br>Lower Grange Farm, Markfield |              |            |             | Client:<br>Jelson Homes |               |        | Trial Pit ID:<br><br><b>TP214</b><br><br><small>Sheet 1 of 1</small> |
|                                                                                                                                                                                                                                                                                                                                                                                                        | Job Number:                                | Date Logged: | Logged By: | Checked By: | Coordinates:            | Ground Level: | Scale: |                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                        | PJSG21-15                                  | 12/01/2022   | NB         | AM          | 448708, 309407          | -             | 1:25   |                                                                      |

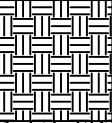
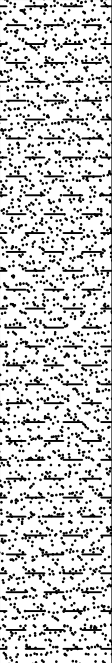
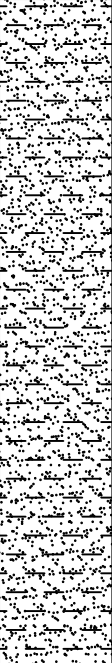
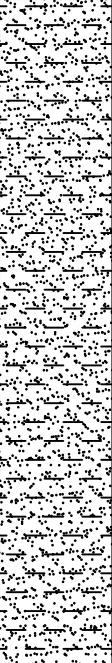
| Samples & In-Situ Testing    |      |              | Strata Details |                   |                                                                                    |                                                                                                                                                             |       |                                                                                      |
|------------------------------|------|--------------|----------------|-------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                       | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                                          | Water | Backfill                                                                             |
| 0.50<br><br>0.80<br><br>1.20 | HSV  | 70,70,65     |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                       |       |  |
|                              | D1   |              |                | (0.50)            |   | Firm brown and grey slightly sandy gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. |       |                                                                                      |
|                              | D2   |              |                | (1.40)            |  | 1.0 Reddish brown wet SAND.<br><br>Western excavation face unstable below 1.10m.<br><br>2.0<br><br>2.30                                                     |       |                                                                                      |
|                              |      |              |                |                   |                                                                                    | Trial Pit Terminated @ 2.30m<br><br>3.0<br><br>4.0                                                                                                          |       |                                                                                      |

General Remarks:

- 1) Excavation unstable below 1.10m.
- 2) No groundwater encountered.
- 3) No evidence of contamination identified.
- 4) Trial pit terminated at 2.30m due to collapse within sands.
- 5) Excavation backfilled with arisings on completion.

|             |                                                       |
|-------------|-------------------------------------------------------|
| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

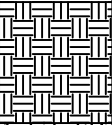
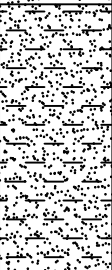
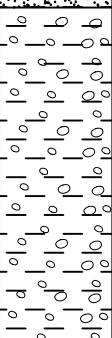
|                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |              |            |             |                         |               |        |                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------|------------|-------------|-------------------------|---------------|--------|----------------------------------------------------------------------|
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|                                                                                                                                                                                                                                                                                                                                                                                                        | Job Number:                                | Date Logged: | Logged By: | Checked By: | Coordinates:            | Ground Level: | Scale: |                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                        | PJSG21-15                                  | 12/01/2022   | NB         | AM          | 448697, 309380          | -             | 1:25   |                                                                      |

| Samples & In-Situ Testing |      |              | Strata Details |                   |                                                                                    |                                                                                                                                       |       |                                                                                      |
|---------------------------|------|--------------|----------------|-------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                    | Water | Backfill                                                                             |
| 0.70                      | D1   |              |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |       |  |
|                           |      |              |                | 0.40              |  | Reddish brown wet clayey SAND.<br><br>Unstable below 0.80m.                                                                           |       |                                                                                      |
| 1.20                      | D2   |              |                | (2.20)            |  |                                                                                                                                       |       |                                                                                      |
|                           |      |              |                | 2.60              |  | Trial Pit Terminated @ 2.60m                                                                                                          |       |                                                                                      |

General Remarks:

- 1) Excavation unstable within sands below 0.80m.
- 2) No groundwater encountered.
- 3) No evidence of contamination identified.
- 4) Trial pit terminated at 2.60m due to collapse in east and west faces of excavation.
- 5) Excavation backfilled with arisings on completion.

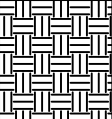
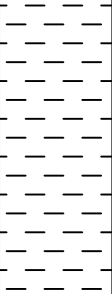
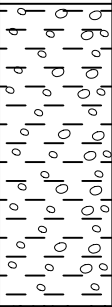
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| Dimensions: | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire) |
|-------------|-------------------------------------------------------|

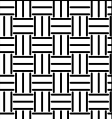
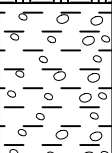
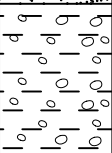
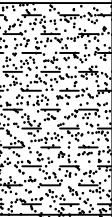
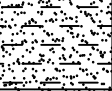
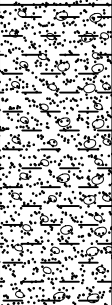
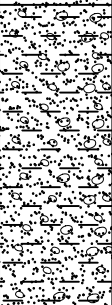
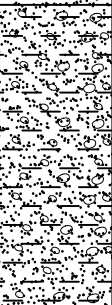
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |              |                                            |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|--------------|--------------------------------------------|-------------------|-------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|----------------|--|-------------------------------|-------|--------------------------------------------------------------------------------------|--|
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| Job Number:                                                                                                                                                                                                                                                                                                                                                                                                      |      | Date Logged: |                                            | Logged By:        |                                                                                     | Checked By:                                                                                                                                                                                          |                              | Coordinates:   |  | Ground Level:                 |       | Scale:                                                                               |  |
| PJSG21-15                                                                                                                                                                                                                                                                                                                                                                                                        |      | 12/01/2022   |                                            | NB                |                                                                                     | AM                                                                                                                                                                                                   |                              | 448681, 309358 |  | -                             |       | 1:25                                                                                 |  |
| Sheet 1 of 1                                                                                                                                                                                                                                                                                                                                                                                                     |      |              |                                            |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
| Samples & In-Situ Testing                                                                                                                                                                                                                                                                                                                                                                                        |      |              | Strata Details                             |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
| Depths                                                                                                                                                                                                                                                                                                                                                                                                           | Type | Test Results | Reduced Level                              | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                                                                                   |                              |                |  |                               | Water | Backfill                                                                             |  |
| 0.70                                                                                                                                                                                                                                                                                                                                                                                                             | D1   | 60,65,50     |                                            | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                                                                |                              |                |  |                               |       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |              |                                            | (0.50)            |    | Firm brown very sandy friable CLAY.                                                                                                                                                                  |                              |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |              |                                            | (0.90)            |    | Firm brown sandy CLAY.                                                                                                                                                                               |                              |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |              |                                            | (0.90)            |   | Becoming very sandy and softer from 1.40m.                                                                                                                                                           |                              |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |              |                                            | (1.10)            |  | Stiff brown and grey gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of mudstone, sandstone, siltstone, quartz and chalk. Occasionally soft and sandy in pockets through strata. |                              |                |  |                               |       |                                                                                      |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | HSV  | 60,65,50     |                                            |                   |                                                                                     | 1.0                                                                                                                                                                                                  |                              |                |  |                               |       |                                                                                      |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | D1   |              |                                            |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
| 1.20                                                                                                                                                                                                                                                                                                                                                                                                             | HSV  | 75,75,70     |                                            |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
| 1.50                                                                                                                                                                                                                                                                                                                                                                                                             | HSV  | 50,55,50     |                                            |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
| 2.00                                                                                                                                                                                                                                                                                                                                                                                                             | HSV  | 80,80,95     |                                            |                   |                                                                                     | 2.0                                                                                                                                                                                                  |                              |                |  |                               |       |                                                                                      |  |
| 2.30                                                                                                                                                                                                                                                                                                                                                                                                             | D2   |              |                                            |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |              |                                            |                   |                                                                                     | 3.0                                                                                                                                                                                                  | Trial Pit Terminated @ 2.90m |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |              |                                            |                   |                                                                                     | 4.0                                                                                                                                                                                                  |                              |                |  |                               |       |                                                                                      |  |
| General Remarks:<br>1) Excavation stable.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Trial pit terminated at 2.90m.<br>5) Excavation backfilled with arisings on completion.                                                                                                                                                                                         |      |              |                                            |                   |                                                                                     |                                                                                                                                                                                                      |                              |                |  |                               |       |                                                                                      |  |
| Dimensions:                                                                                                                                                                                                                                                                                                                                                                                                      |      |              |                                            |                   |                                                                                     | Plant Used:<br>JCB Excavator 360 (Meynell Plant Hire)                                                                                                                                                |                              |                |  |                               |       |                                                                                      |  |

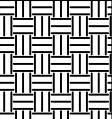
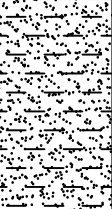
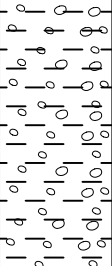
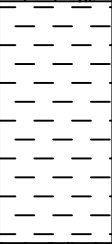
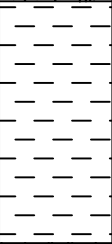
|                                                                                                                                                                                                                                          |                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| General Remarks:<br>1) Borehole stable.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Borehole terminated at 4.00m due to rig refusal.<br>5) Borehole backfilled with arisings upon completion. |                                                           |
| Dimensions:                                                                                                                                                                                                                              | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd) |

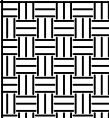
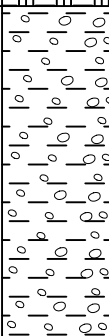
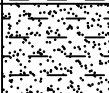
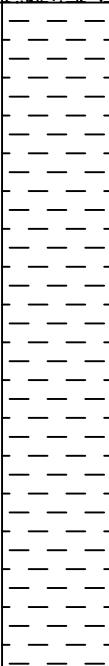
|                                                                                                                                                                                                                                          |                                                           |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| General Remarks:<br>1) Borehole stable.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Borehole terminated at 4.00m due to rig refusal.<br>5) Borehole backfilled with arisings upon completion. |                                                           |
| Dimensions:                                                                                                                                                                                                                              | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd) |

|             |                                                           |
|-------------|-----------------------------------------------------------|
| Dimensions: | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd) |
|-------------|-----------------------------------------------------------|

|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                              |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |
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| Job Number:<br>PJSG21-15                                                                                                                                                                                                                                                                                                                                                                                         |      | Date Logged:<br>18/01/2022   |                                            | Logged By:<br>NB  |                                                                                     | Checked By:<br>AM                                                                                                                     |                         | Coordinates:<br>448741, 309548 |  | Ground Level:<br>-            |       | Scale:<br>1:25                                                                       |  |
| Sheet 1 of 1                                                                                                                                                                                                                                                                                                                                                                                                     |      |                              |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |
| Samples & In-Situ Testing                                                                                                                                                                                                                                                                                                                                                                                        |      |                              | Strata Details                             |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |
| Depths                                                                                                                                                                                                                                                                                                                                                                                                           | Type | Test Results                 | Reduced Level                              | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                    |                         |                                |  |                               | Water | Backfill                                                                             |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 11 (1,2/2,3,3,3)         |                                            | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |                         |                                |  |                               |       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                              |                                            | (0.50)            |    | Firm brown sandy CLAY. Occasional gravel of angular, fine lignite.                                                                    |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                              |                                            | (1.00)            |    | Stiff reddish brown mottled grey CLAY.                                                                                                |                         |                                |  |                               |       |                                                                                      |  |
| 2.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 9 (1,1/2,2,2,3)          |                                            | (1.90)            |   | Stiff reddish brown slightly gravelly CLAY. Gravel is angular, fine to medium of grey sandstone.                                      |                         |                                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                              |                                            | (1.00)            |  | Dense grey SAND.                                                                                                                      |                         |                                |  |                               |       |                                                                                      |  |
| 3.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 50 (5,9/12,13,16,9/20mm) |                                            | (0.10) / 3.00     |  | Borehole Terminated @ 3.00m                                                                                                           |                         |                                |  |                               |       |                                                                                      |  |
| <div>General Remarks:<br/>1) Borehole stable.<br/>2) No groundwater encountered.<br/>3) No evidence of contamination identified.<br/>4) Borehole terminated at 3.00m due to rig refusal.<br/>5) Borehole backfilled with arisings upon completion.</div>                                                                                                                                                         |      |                              |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |
| Dimensions:                                                                                                                                                                                                                                                                                                                                                                                                      |      |                              |                                            |                   |                                                                                     | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd)                                                                             |                         |                                |  |                               |       |                                                                                      |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            |                   |                                                                                     |                                                                                                                                                                    |                         |                |  |                               |       |                                                                                      |  |
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| <div><div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div><div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div></div> |      |                               | Site Name:<br>Lower Grange Farm, Markfield |                   |                                                                                     |                                                                                                                                                                    | Client:<br>Jelson Homes |                |  | Trial Pit ID:<br><b>WS205</b> |       |                                                                                      |  |
| Job Number:                                                                                                                                                                                                                                                                                                                                                                                                      |      | Date Logged:                  |                                            | Logged By:        |                                                                                     | Checked By:                                                                                                                                                        |                         | Coordinates:   |  | Ground Level:                 |       | Scale:                                                                               |  |
| PJSG21-15                                                                                                                                                                                                                                                                                                                                                                                                        |      | 18/01/2022                    |                                            | NB                |                                                                                     | AM                                                                                                                                                                 |                         | 448722, 309428 |  | -                             |       | 1:25                                                                                 |  |
| Sheet 1 of 1                                                                                                                                                                                                                                                                                                                                                                                                     |      |                               |                                            |                   |                                                                                     |                                                                                                                                                                    |                         |                |  |                               |       |                                                                                      |  |
| Samples & In-Situ Testing                                                                                                                                                                                                                                                                                                                                                                                        |      |                               | Strata Details                             |                   |                                                                                     |                                                                                                                                                                    |                         |                |  |                               |       |                                                                                      |  |
| Depths                                                                                                                                                                                                                                                                                                                                                                                                           | Type | Test Results                  | Reduced Level                              | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                                                 |                         |                |  |                               | Water | Backfill                                                                             |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 9 (1,1/2,2,2,3)           |                                            | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.                              |                         |                |  |                               |       |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.50)            |    | Firm brown mottled grey and orange gravelly CLAY. Gravel is angular to rounded, fine to medium of lignite and quartz.                                              |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.20)            |    | Loose brown gravelly SAND. Gravel is angular to rounded, fine to medium of lignite and quartz.                                                                     |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.40)            |    | Firm brown sandy CLAY.                                                                                                                                             |                         |                |  |                               |       |                                                                                      |  |
| 2.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 9 (1,1/3,2,2,2)           |                                            | (0.50)            |    | Stiff reddish brown gravelly CLAY. Gravel is angular to sub-rounded, fine to medium of lignite, quartz, sandstone and mudstone.                                    |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.70)            |   | Firm reddish brown sandy CLAY.                                                                                                                                     |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.30)            |  | Firm reddish brown mottled grey sandy CLAY. Occasional lenses of grey sand.                                                                                        |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.60)            |  | Loose brown occasionally grey clayey gravelly SAND. Gravel is angular to sub-angular, fine to medium of sandstone.                                                 |                         |                |  |                               |       |                                                                                      |  |
| 3.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 10 (4,3/3,2,2,3)          |                                            | (0.40)            |  | Stiff reddish brown very sandy CLAY.                                                                                                                               |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (1.00)            |  | Poor recovery between 4.00m - 5.00m. Medium dense brown wet occasionally grey clayey gravelly SAND. Gravel is angular to sub-angular, fine to medium of sandstone. |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.40)            |  | Stiff reddish brown very sandy CLAY.                                                                                                                               |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (0.60)            |  | Loose brown occasionally grey clayey gravelly SAND. Gravel is angular to sub-angular, fine to medium of sandstone.                                                 |                         |                |  |                               |       |                                                                                      |  |
| 4.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 12 (1,1/2,2,4,4)          |                                            | (0.40)            |  | Stiff reddish brown very sandy CLAY.                                                                                                                               |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (1.00)            |  | Poor recovery between 4.00m - 5.00m. Medium dense brown wet occasionally grey clayey gravelly SAND. Gravel is angular to sub-angular, fine to medium of sandstone. |                         |                |  |                               |       |                                                                                      |  |
| 5.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 50 (5,9/10,11,14,15/70mm) |                                            | (0.40)            |  | Stiff reddish brown very sandy CLAY.                                                                                                                               |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            | (1.00)            |  | Poor recovery between 4.00m - 5.00m. Medium dense brown wet occasionally grey clayey gravelly SAND. Gravel is angular to sub-angular, fine to medium of sandstone. |                         |                |  |                               |       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                               |                                            |                   |                                                                                     | Borehole Terminated @ 5.00m                                                                                                                                        |                         |                |  |                               |       |                                                                                      |  |
| General Remarks:<br>1) Borehole stable.<br>2) Groundwater encountered at 4.00m.<br>3) No evidence of contamination identified.<br>4) Borehole terminated at 5.00m due to refusal.<br>5) Borehole backfilled with arisings upon completion.                                                                                                                                                                       |      |                               |                                            |                   |                                                                                     |                                                                                                                                                                    |                         |                |  |                               |       |                                                                                      |  |
| Dimensions:                                                                                                                                                                                                                                                                                                                                                                                                      |      |                               |                                            |                   |                                                                                     | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd)                                                                                                          |                         |                |  |                               |       |                                                                                      |  |

|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            |                   |                                                                                     |                                                                                                                                        |                         |                                |  |                               |                                                                                       |                                                                                      |  |
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| <div><div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div><div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div></div> |      |                             | Site Name:<br>Lower Grange Farm, Markfield |                   |                                                                                     |                                                                                                                                        | Client:<br>Jelson Homes |                                |  | Trial Pit ID:<br><b>WS206</b> |                                                                                       |                                                                                      |  |
| Job Number:<br>PJSG21-15                                                                                                                                                                                                                                                                                                                                                                                         |      | Date Logged:<br>18/01/2022  |                                            | Logged By:<br>NB  |                                                                                     | Checked By:<br>AM                                                                                                                      |                         | Coordinates:<br>448752, 309428 |  | Ground Level:<br>-            |                                                                                       | Scale:<br>1:25                                                                       |  |
| Sheet 1 of 1                                                                                                                                                                                                                                                                                                                                                                                                     |      |                             |                                            |                   |                                                                                     |                                                                                                                                        |                         |                                |  |                               |                                                                                       |                                                                                      |  |
| Samples & In-Situ Testing                                                                                                                                                                                                                                                                                                                                                                                        |      |                             | Strata Details                             |                   |                                                                                     |                                                                                                                                        |                         |                                |  |                               |                                                                                       |                                                                                      |  |
| Depths                                                                                                                                                                                                                                                                                                                                                                                                           | Type | Test Results                | Reduced Level                              | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                     |                         |                                |  |                               | Water                                                                                 | Backfill                                                                             |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 19 (3,2/4,4,5,6)        |                                            | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets.  |                         |                                |  |                               |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.70)            |    | Stiff brown sandy CLAY. Occasional gravel of angular, fine lignite and quartz.                                                         |                         |                                |  |                               |                                                                                       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.90)            |    | Stiff reddish brown mottled grey gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of sandstone, lignite and quartz. |                         |                                |  |                               |                                                                                       |                                                                                      |  |
| 2.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 11 (6,5/3,3,2,3)        |                                            | (0.50)            |   | Grey SAND.                                                                                                                             |                         |                                |  |                               |                                                                                       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.80)            |  | Stiff reddish brown CLAY. Frequent lesnes of grey sand.                                                                                |                         |                                |  |                               |                                                                                       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.70)            |  | Poor recovery. Brown very wet SAND.                                                                                                    |                         |                                |  |                               |                                                                                       |                                                                                      |  |
| 3.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 17 (1,2/2,3,5,7)        |                                            | (0.80)            |  | Stiff reddish brown CLAY. Frequent lesnes of grey sand.                                                                                |                         |                                |  |                               |                                                                                       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.70)            |  | Poor recovery. Brown very wet SAND.                                                                                                    |                         |                                |  |                               |                                                                                       |                                                                                      |  |
| 4.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 50 (6,10/15,18,17/70mm) |                                            | (0.70)            |  | Poor recovery. Brown very wet SAND.                                                                                                    |                         |                                |  |                               |                                                                                       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.70)            |  | Poor recovery. Brown very wet SAND.                                                                                                    |                         |                                |  |                               |                                                                                       |                                                                                      |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            |                   |                                                                                     | Borehole Terminated @ 4.00m                                                                                                            |                         |                                |  |                               |                                                                                       |                                                                                      |  |
| General Remarks:<br>1) Borehole stable.<br>2) Groundwater encountered at 3.30m.<br>3) No evidence of contamination identified.<br>4) Borehole terminated at 4.00m due to refusal.<br>5) Borehole backfilled with arisings upon completion.                                                                                                                                                                       |      |                             |                                            |                   |                                                                                     |                                                                                                                                        |                         |                                |  |                               |                                                                                       |                                                                                      |  |
| Dimensions:                                                                                                                                                                                                                                                                                                                                                                                                      |      |                             |                                            |                   |                                                                                     | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd)                                                                              |                         |                                |  |                               |                                                                                       |                                                                                      |  |

| Samples & In-Situ Testing |      |                        | Strata Details |                   |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
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| Depths                    | Type | Test Results           | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                    |  | Water | Backfill                                                                             |
| 1.00                      | SPT  | N = 12 (2,2/3,3,3,3)   |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |  |       |  |
|                           |      |                        |                | 0.40              |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
|                           |      |                        |                | (1.10)            |   | Stiff brown gravelly CLAY. Gravel is angular to rounded, fine to medium of lignite and quartz.                                        |  |       |                                                                                      |
|                           | 1.50 |                        |                |                   |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
| 2.00                      | SPT  | N = 15 (2,3/3,3,4,5)   |                | (0.30)            |   | Firm reddish brown very sandy CLAY.                                                                                                   |  |       |                                                                                      |
|                           |      |                        |                | 1.80              |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
| 3.00                      | SPT  | N = 43 (6,7/8,9,11,15) |                | (2.20)            |  | Stiff reddish brown CLAY. Frequent lenses of grey sand throughout.                                                                    |  |       |                                                                                      |
|                           |      |                        |                |                   |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
|                           |      |                        |                |                   |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
| 4.00                      | SPT  | N = 44 (5,7/8,9,12,16) |                | 4.00              |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
|                           |      |                        |                |                   |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
|                           |      |                        |                |                   |                                                                                    | Borehole Terminated @ 4.00m                                                                                                           |  |       |                                                                                      |
|                           |      |                        |                |                   |                                                                                    |                                                                                                                                       |  |       |                                                                                      |
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|                           |      |                        |                |                   |                                                                                    |                                                                                                                                       |  |       |                                                                                      |

## General Remarks:

- 1) Borehole stable.
- 2) No groundwater encountered.
- 3) No evidence of contamination identified.
- 4) Borehole terminated at 4.00m due to refusal.
- 5) Borehole backfilled with arisings upon completion.

Dimensions:

Plant Used:

Premier Compact 110 (Dynamic Sampling Ltd)

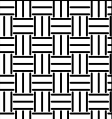
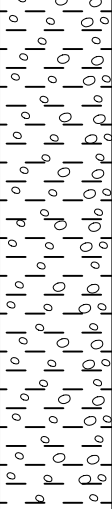
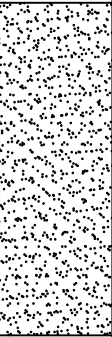
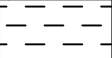


|                                            |              |            |             |                         |               |        |                                                                                                                                   |
|--------------------------------------------|--------------|------------|-------------|-------------------------|---------------|--------|-----------------------------------------------------------------------------------------------------------------------------------|
| Site Name:<br>Lower Grange Farm, Markfield |              |            |             | Client:<br>Jelson Homes |               |        | Trial Pit ID:<br><br><div style="font-size: 24pt; font-weight: bold;">WS208</div> <div style="font-size: 8pt;">Sheet 1 of 1</div> |
| Job Number:                                | Date Logged: | Logged By: | Checked By: | Coordinates:            | Ground Level: | Scale: |                                                                                                                                   |
| PJSG21-15                                  | 19/01/2022   | NB         | AM          | 448819, 309372          | -             | 1:25   |                                                                                                                                   |

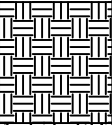
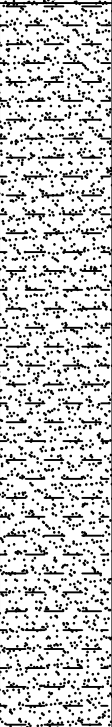
|                                                                                                                                                                                                                                                                                                                        |                                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| <p>General Remarks:</p> <ol style="list-style-type: none"> <li>1) Borehole stable.</li> <li>2) No groundwater encountered.</li> <li>3) No evidence of contamination identified.</li> <li>4) Borehole terminated at 3.00m due to rig refusal.</li> <li>5) Borehole backfilled with arisings upon completion.</li> </ol> |                                                                   |
| <p>Dimensions:</p>                                                                                                                                                                                                                                                                                                     | <p>Plant Used:<br/>Premier Compact 110 (Dynamic Sampling Ltd)</p> |

|             |                                                           |
|-------------|-----------------------------------------------------------|
| Dimensions: | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd) |
|-------------|-----------------------------------------------------------|

|                                                                                                                                                                                                                                      |                                                           |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| General Remarks:<br>1) Borehole stable.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Borehole terminated at 4.00m due to refusal.<br>5) Borehole backfilled with arisings upon completion. |                                                           |
| Dimensions:                                                                                                                                                                                                                          | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd) |

| Samples & In-Situ Testing |      |                       | Strata Details |                   |                                                                                     |                                                                                                                                       |       |                                                                                      |
|---------------------------|------|-----------------------|----------------|-------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results          | Reduced Level  | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                    | Water | Backfill                                                                             |
| 1.00                      | SPT  | N = 10 (1,2/2,2,3,3)  |                | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |       |  |
|                           |      |                       |                | 0.40              |    | Firm brown gravelly CLAY. Gravel is angular to rounded, fine to medium of lignite and quartz.                                         |       |                                                                                      |
|                           |      |                       |                | (0.30)            |    | Stiff reddish brown gravelly CLAY. Gravel is sub-angular to sub-rounded, fine to coarse of sandstone, lignite and quartz.             |       |                                                                                      |
| 2.00                      | SPT  | N = 11 (1,2/2,3,3,3)  |                | (2.00)            |   | Lenses of reddish brown sand between 2.00m - 2.70m.                                                                                   |       |                                                                                      |
|                           |      |                       |                | 2.70              |  | Dense grey SAND.                                                                                                                      |       |                                                                                      |
|                           |      |                       |                | (1.10)            |  | Stiff reddish brown CLAY.                                                                                                             |       |                                                                                      |
| 3.00                      | SPT  | N = 33 (6,8/10,8,8,7) |                | 3.80              |  | Borehole Terminated @ 4.00m                                                                                                           |       |                                                                                      |
| 4.00                      | SPT  | N = 29 (5,5/6,6,8,9)  |                | (0.20)            |  |                                                                                                                                       |       |                                                                                      |
|                           |      |                       |                | 4.00              |  |                                                                                                                                       |       |                                                                                      |

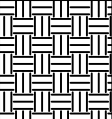
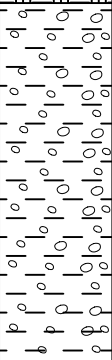
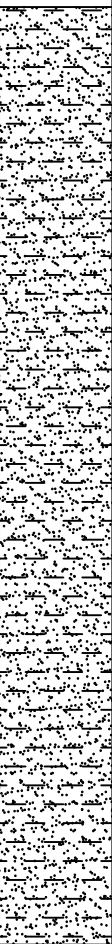
|                                                                                                                                                                                                                                                                                                                                                                                                        |                                            |              |            |             |                         |               |        |                                                                      |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------|--------------|------------|-------------|-------------------------|---------------|--------|----------------------------------------------------------------------|
| <div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div> <div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div> | Site Name:<br>Lower Grange Farm, Markfield |              |            |             | Client:<br>Jelson Homes |               |        | Trial Pit ID:<br><br><b>WS212</b><br><br><small>Sheet 1 of 1</small> |
|                                                                                                                                                                                                                                                                                                                                                                                                        | Job Number:                                | Date Logged: | Logged By: | Checked By: | Coordinates:            | Ground Level: | Scale: |                                                                      |
|                                                                                                                                                                                                                                                                                                                                                                                                        | PJSG21-15                                  | 19/01/2022   | NB         | AM          | 448785, 309348          | -             | 1:25   |                                                                      |

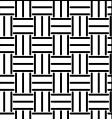
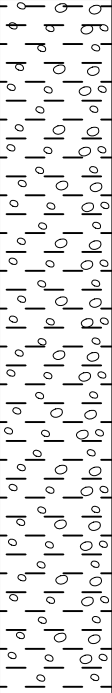
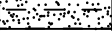
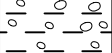
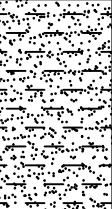
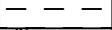
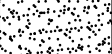
| Samples & In-Situ Testing |      |                         | Strata Details |                   |                                                                                     |                                                                                                                                       |       |                                                                                      |
|---------------------------|------|-------------------------|----------------|-------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results            | Reduced Level  | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                    | Water | Backfill                                                                             |
| 1.00                      | SPT  | N = 4 (1,1/1,1,1,1)     |                | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |       |  |
|                           |      |                         |                | 0.40              |                                                                                     |                                                                                                                                       |       |                                                                                      |
| 2.00                      | SPT  | N = 8 (2,2/2,2,2,2)     |                | (1.20)            |    | Soft to firm brown sandy CLAY. Rare gravel of angular, fine lignite.                                                                  |       |                                                                                      |
|                           |      |                         |                | 1.60              |                                                                                     |                                                                                                                                       |       |                                                                                      |
| 3.00                      | SPT  | N = 6 (1,2/1,2,1,2)     |                | (2.40)            |   | Firm reddish brown very sandy CLAY. Frequent pockets of reddish brown very clayey sand between 1.60m - 2.80m.                         |       |                                                                                      |
|                           |      |                         |                |                   |                                                                                     | Frequent lenses of grey sand between 2.80m - 4.00m.                                                                                   |       |                                                                                      |
| 4.00                      | SPT  | N = 44 (4,7/8,10,12,14) |                | 4.00              |  | Borehole Terminated @ 4.00m                                                                                                           |       |                                                                                      |

General Remarks:

- 1) Borehole stable.
- 2) No groundwater encountered.
- 3) No evidence of contamination identified.
- 4) Borehole terminated at 4.00m due to reaching target depth.
- 5) Borehole backfilled with arisings upon completion.

|             |                                                           |
|-------------|-----------------------------------------------------------|
| Dimensions: | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd) |
|-------------|-----------------------------------------------------------|

| Samples & In-Situ Testing |      |                                    | Strata Details |                   |                                                                                    |                                                                                                                                       |                                                                                       |                                                                                      |
|---------------------------|------|------------------------------------|----------------|-------------------|------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
| Depths                    | Type | Test Results                       | Reduced Level  | Depth (Thickness) | Legend                                                                             | Strata Description                                                                                                                    | Water                                                                                 | Backfill                                                                             |
| 1.00                      | SPT  | N = 9 (1,2/2,2,3,2)                |                | (0.40)            |   | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |                                                                                       |  |
|                           |      |                                    |                | 0.40              |                                                                                    |                                                                                                                                       |                                                                                       |                                                                                      |
|                           |      |                                    |                | (1.20)            |   | Firm brown gravelly CLAY. Gravel is angular, fine of lignite and sandstone.<br><br>Becoming reddish brown between 1.00m - 1.70m.      |                                                                                       |                                                                                      |
| 2.00                      | SPT  | N = 4 (1,1/1,1,1,1)                |                | 1.60              |                                                                                    |                                                                                                                                       |                                                                                       |                                                                                      |
| 3.00                      | SPT  | N = 4 (1,1/1,1,1,1)                |                | (3.10)            |  | Soft to firm reddish brown wet very sandy CLAY. Frequent pockets of loose very clayey sand.<br><br>Becoming very wet from 3.20m.      |                                                                                       |                                                                                      |
| 4.00                      | SPT  | N = 12 (1,1/2,2,4,4)               |                |                   |                                                                                    | Poor recovery between 3.90m - 4.70m.<br>Becoming stiff at 4.00m.                                                                      |  |                                                                                      |
| 4.70                      | SPT  | N = 50 (20,5/15mm/12,15,15,8/35mm) |                | 4.70              |                                                                                    | Borehole Terminated @ 4.70m                                                                                                           |                                                                                       |                                                                                      |
|                           |      |                                    |                |                   |                                                                                    |                                                                                                                                       |                                                                                       |                                                                                      |

|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------------------|--------------------------------------------|-------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------|--|-------------------------------|-------|--------------------------------------------------------------------------------------|--|--|
| <div><div><div><div>GEOTECHNICAL<br/>ENGINEERS</div><div>Delivering Innovative Solutions</div></div></div><div><div>PJS Geotechnical Engineers Limited, Unit 4 Winking Hill Farm,<br/>Kingston on Soar, Nottingham, NG11 0DP.<br/>Registered Number: 11882468 Tel: 0115 704 3950 Email: Enquiries@pjs-geo.co.uk</div></div></div> |      |                             | Site Name:<br>Lower Grange Farm, Markfield |                   |                                                                                     |                                                                                                                                       | Client:<br>Jelson Homes |                                |  | Trial Pit ID:<br><b>WS214</b> |       |                                                                                      |  |  |
| Job Number:<br>PJSG21-15                                                                                                                                                                                                                                                                                                                                                                                         |      | Date Logged:<br>19/01/2022  |                                            | Logged By:<br>NB  |                                                                                     | Checked By:<br>AM                                                                                                                     |                         | Coordinates:<br>448736, 309349 |  | Ground Level:<br>-            |       | Scale:<br>1:25                                                                       |  |  |
| Sheet 1 of 1                                                                                                                                                                                                                                                                                                                                                                                                     |      |                             |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
| Samples & In-Situ Testing                                                                                                                                                                                                                                                                                                                                                                                        |      |                             | Strata Details                             |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
| Depths                                                                                                                                                                                                                                                                                                                                                                                                           | Type | Test Results                | Reduced Level                              | Depth (Thickness) | Legend                                                                              | Strata Description                                                                                                                    |                         |                                |  |                               | Water | Backfill                                                                             |  |  |
| 1.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 19 (2,3/4,4,5,6)        |                                            | (0.40)            |    | Vegetation and scrub over clayey gravelly TOPSOIL. Gravel is sub-angular to sub-rounded, fine to coarse of quartz. Frequent rootlets. |                         |                                |  |                               |       |  |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             | 0.40                                       |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
| 2.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 23 (4,4/4,5,7,7)        |                                            | (2.30)            |   | Stiff brown gravelly CLAY. Gravel is angular, fine of lignite and quartz.                                                             |                         |                                |  |                               |       |                                                                                      |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             | Becoming reddish brown.                    |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
| 3.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 10 (1,2/3,2,3,2)        |                                            | (0.10) / 2.80     |  | Soft reddish brown very sandy CLAY.                                                                                                   |                         |                                |  |                               |       |                                                                                      |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.30)            |  | Stiff reddish brown gravelly CLAY. Gravel is angular, fine of lignite.                                                                |                         |                                |  |                               |       |                                                                                      |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.70)            |  | Stiff reddish brown very sandy CLAY.                                                                                                  |                         |                                |  |                               |       |                                                                                      |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             |                                            | (0.10) / 3.80     |  | Stiff reddish brown CLAY.                                                                                                             |                         |                                |  |                               |       |                                                                                      |  |  |
| 4.00                                                                                                                                                                                                                                                                                                                                                                                                             | SPT  | N = 50 (7,12/17,22,11/25mm) |                                            | (0.20)            |  | Dense grey SAND.                                                                                                                      |                         |                                |  |                               |       |                                                                                      |  |  |
|                                                                                                                                                                                                                                                                                                                                                                                                                  |      |                             | 4.00                                       |                   |                                                                                     | Borehole Terminated @ 0.00m                                                                                                           |                         |                                |  |                               |       |                                                                                      |  |  |
| General Remarks:<br>1) Borehole stable.<br>2) No groundwater encountered.<br>3) No evidence of contamination identified.<br>4) Borehole terminated at 4.00m due to reaching target depth.<br>5) Borehole backfilled with arisings upon completion.                                                                                                                                                               |      |                             |                                            |                   |                                                                                     |                                                                                                                                       |                         |                                |  |                               |       |                                                                                      |  |  |
| Dimensions:                                                                                                                                                                                                                                                                                                                                                                                                      |      |                             |                                            |                   |                                                                                     | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd)                                                                             |                         |                                |  |                               |       |                                                                                      |  |  |

|             |                                                           |
|-------------|-----------------------------------------------------------|
| Dimensions: | Plant Used:<br>Premier Compact 110 (Dynamic Sampling Ltd) |
|-------------|-----------------------------------------------------------|

# Appendix B: SPT Hammer Calibration Certificate





# Hammer Energy Test Report

in accordance with BSEN ISO 22476-3:2005

**Dynamic sampling**  
**Unit 8**  
**Victory parkway**  
**Victory rd**  
**Derby**  
**DE24 8ZF**

Hammer Ref: 110.71  
Test Date: 17/07/2021  
Report Date: 20/07/2021  
File Name: 110.71.spt  
Test Operator: AP

## Instrumented Rod Data

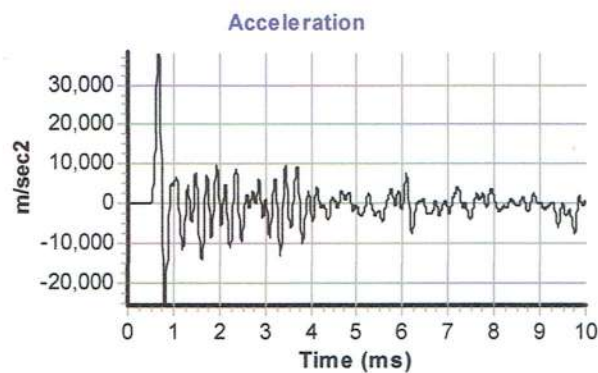
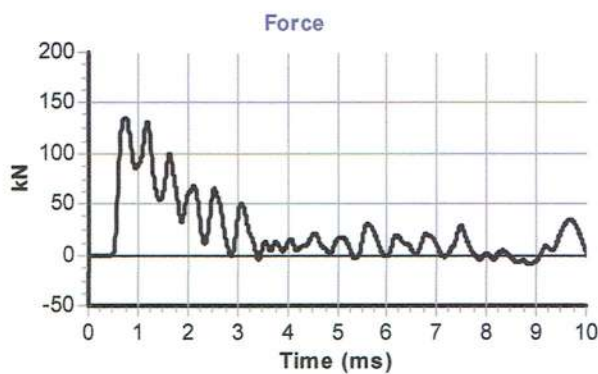
Diameter  $d_r$  (mm): 54  
Wall Thickness  $t_r$  (mm): 6.0  
Assumed Modulus  $E_a$  (GPa): 208  
Accelerometer No.1: 62901  
Accelerometer No.2: 62902

## Hammer Information

Hammer Mass  $m$  (kg): 63.5  
Falling Height  $h$  (mm): 760  
String Length  $L$  (m): 15.0

## Comments / Location

Hammer tested at Dynamic samplings yard.



## Calculations

Area of Rod  $A$  (mm<sup>2</sup>): 905  
Theoretical Energy  $E_{\text{theor}}$  (J): 473  
Measured Energy  $E_{\text{meas}}$  (J): 375

**Energy Ratio  $E_r$  (%):** **79**

Signed: A.parker

Title: Associate Director

The recommended calibration interval is 12 months

# Appendix C: Chemical Test Results



**Anthony Owen**

Exploration & Testing Associates Limited  
3 Siskin Drive  
Middlemarch Business Park  
Coventry  
CV3 4FJ

i2 Analytical Ltd.  
7 Woodshots Meadow,  
Croxley Green  
Business Park,  
Watford,  
Herts,  
WD18 8YS

t: 01923 225404

f: 01923 237404

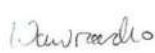
e: reception@i2analytical.com

e: results@explorationtesting.uk

## **Analytical Report Number : 22-34792**

Replaces Analytical Report Number: 22-34792, issue no. 1  
Client references/information amended.

|                             |                                              |                                                        |            |
|-----------------------------|----------------------------------------------|--------------------------------------------------------|------------|
| <b>Project / Site name:</b> | Lower Grange Farm, Markfield - Further Works | <b>Samples received on:</b>                            | 21/01/2022 |
| <b>Your job number:</b>     | C10230                                       | <b>Samples instructed on/<br/>Analysis started on:</b> | 21/01/2022 |
| <b>Your order number:</b>   | PO-1946                                      | <b>Analysis completed by:</b>                          | 28/01/2022 |
| <b>Report Issue Number:</b> | 2                                            | <b>Report issued on:</b>                               | 15/02/2022 |
| <b>Samples Analysed:</b>    | 5 soil samples                               |                                                        |            |

  
**Signed:**

Joanna Wawrzeczko  
#REF!

**For & on behalf of i2 Analytical Ltd.**

Standard Geotechnical, Asbestos and Chemical Testing Laboratory located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland.

Accredited tests are defined within the report, opinions and interpretations expressed herein are outside the scope of accreditation.

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils - 4 weeks from reporting  
leachates - 2 weeks from reporting  
waters - 2 weeks from reporting  
asbestos - 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Any assessments of compliance with specifications are based on actual analytical results with no contribution from uncertainty of measurement.  
Application of uncertainty of measurement would provide a range within which the true result lies.  
An estimate of measurement uncertainty can be provided on request.

Analytical Report Number: 22-34792

Project / Site name: Lower Grange Farm, Markfield - Further Works

Your Order No: PO-1946

| Lab Sample Number                       |       |                    |                         | 2146244       | 2146245       | 2146246       | 2146247       | 2146248       |
|-----------------------------------------|-------|--------------------|-------------------------|---------------|---------------|---------------|---------------|---------------|
| Sample Reference                        |       |                    |                         | HP1           | HP2           | HP3           | HP4           | HP5           |
| Sample Number                           |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Depth (m)                               |       |                    |                         | 0.1           | 0.1           | 0.1           | 0.1           | 0.1           |
| Date Sampled                            |       |                    |                         | 20/01/2022    | 20/01/2022    | 20/01/2022    | 20/01/2022    | 20/01/2022    |
| Time Taken                              |       |                    |                         | None Supplied | None Supplied | None Supplied | None Supplied | None Supplied |
| Analytical Parameter<br>(Soil Analysis) | Units | Limit of detection | Accreditation<br>Status |               |               |               |               |               |
| Stone Content                           | %     | 0.1                | NONE                    | < 0.1         | < 0.1         | < 0.1         | < 0.1         | < 0.1         |
| Moisture Content                        | %     | 0.01               | NONE                    | 19            | 19            | 20            | 15            | 18            |
| Total mass of sample received           | kg    | 0.001              | NONE                    | 0.40          | 0.40          | 0.40          | 0.40          | 0.40          |

#### PCBs by GC-MS

|                  |       |       |        |         |         |         |         |         |
|------------------|-------|-------|--------|---------|---------|---------|---------|---------|
| PCB Congener 28  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| PCB Congener 52  | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| PCB Congener 101 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| PCB Congener 118 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| PCB Congener 138 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| PCB Congener 153 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |
| PCB Congener 180 | mg/kg | 0.001 | MCERTS | < 0.001 | < 0.001 | < 0.001 | < 0.001 | < 0.001 |

#### Total PCBs by GC-MS

|            |       |       |        |         |         |         |         |         |
|------------|-------|-------|--------|---------|---------|---------|---------|---------|
| Total PCBs | mg/kg | 0.007 | MCERTS | < 0.007 | < 0.007 | < 0.007 | < 0.007 | < 0.007 |
|------------|-------|-------|--------|---------|---------|---------|---------|---------|

U/S = Unsuitable Sample I/S = Insufficient Sample

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\* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

| Lab Sample Number | Sample Reference | Sample Number | Depth (m) | Sample Description *                            |
|-------------------|------------------|---------------|-----------|-------------------------------------------------|
| 2146244           | HP1              | None Supplied | 0.1       | Brown loam and clay with gravel and vegetation. |
| 2146245           | HP2              | None Supplied | 0.1       | Brown loam and clay with gravel and vegetation. |
| 2146246           | HP3              | None Supplied | 0.1       | Brown loam and clay with gravel and vegetation. |
| 2146247           | HP4              | None Supplied | 0.1       | Brown loam and clay with gravel and vegetation. |
| 2146248           | HP5              | None Supplied | 0.1       | Brown loam and clay with gravel and vegetation. |

**Analytical Report Number : 22-34792**

**Project / Site name: Lower Grange Farm, Markfield - Further Works**

**Water matrix abbreviations:**

**Surface Water (SW) Potable Water (PW) Ground Water (GW) Process Waters (PrW) Final Sewage Effluent (FSE) Landfill Leachate (LL)**

| Analytical Test Name   | Analytical Method Description                                                                                               | Analytical Method Reference                                                | Method number | Wet / Dry Analysis | Accreditation Status |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------|---------------|--------------------|----------------------|
| Moisture Content       | Moisture content, determined gravimetrically. (30 oC)                                                                       | In house method.                                                           | L019-UK/PL    | W                  | NONE                 |
| PCB's By GC-MS in soil | Determination of PCB by extraction with acetone and hexane followed by GC-MS.                                               | In-house method based on USEPA 8082                                        | L027-PL       | D                  | MCERTS               |
| Stones content of soil | Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight. | In-house method based on British Standard Methods and MCERTS requirements. | L019-UK/PL    | D                  | NONE                 |

**For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.**

**For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.**

**Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.**

**Unless otherwise indicated, site information, order number, project number, sampling date, time, sample reference and depth are provided by the client. The instructed on date indicates the date on which this information was provided to the laboratory.**

# Appendix D: Geotechnical Test Results



## Laboratory Test Report

|                 |                                                                              |
|-----------------|------------------------------------------------------------------------------|
| Client:         | Exploration and Testing Associates Limited                                   |
| Job Number:     | C10230                                                                       |
| Project:        | Markfield                                                                    |
| Report Number:  | L22-049                                                                      |
| Date Received:  | 27.01.2022                                                                   |
| Client Contact: | Anthony Owen                                                                 |
| Address:        | 'number three' Siskin Drive, Middlemarch<br>Business Park, Coventry, CV3 4FJ |

|                        |                                                                                                                                                                                                   |
|------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Testing Required:      | Water Content – BS EN ISO 17892-1:2014<br>Determination of Liquid and Plastic Limits and<br>Plasticity Index – BS EN ISO 17892-12:2018<br>Particle Size Distribution – BS EN ISO 17892-<br>4:2016 |
| Date Testing Started:  | 27.01.2022                                                                                                                                                                                        |
| Date Testing Finished: | 31.01.2022                                                                                                                                                                                        |

|                     |                                                                                                                        |
|---------------------|------------------------------------------------------------------------------------------------------------------------|
| Date Report Issued: | 31.01.2022                                                                                                             |
| Reviewed By:        | <br>N. O'Brien – Laboratory Manager |
| Authorised By:      | <br>N. Hodson – Materials Director  |
| Remarks:            | (*) Denotes testing is outside of UKAS<br>Accreditation Scope.                                                         |

Samples will be stored for one month after the report has been issued before being disposed of.

The published results are appertaining only to the specimens tested.

Exploration & Testing Associates Limited, registered in England and Wales # 11803869 at 8B Bowburn South Ind Est, Bowburn, Durham, DH6 5AD



# PARTICLE SIZE DISTRIBUTION

Job Ref

C10230

Borehole/Pit No.

TP207

Site Name

Lower Grange Farm, Markfield

Sample No.

1

Soil Description

Brown slightly clayey SAND

Depth, m

1.20

Specimen Reference

Specimen Depth

m

Sample Type

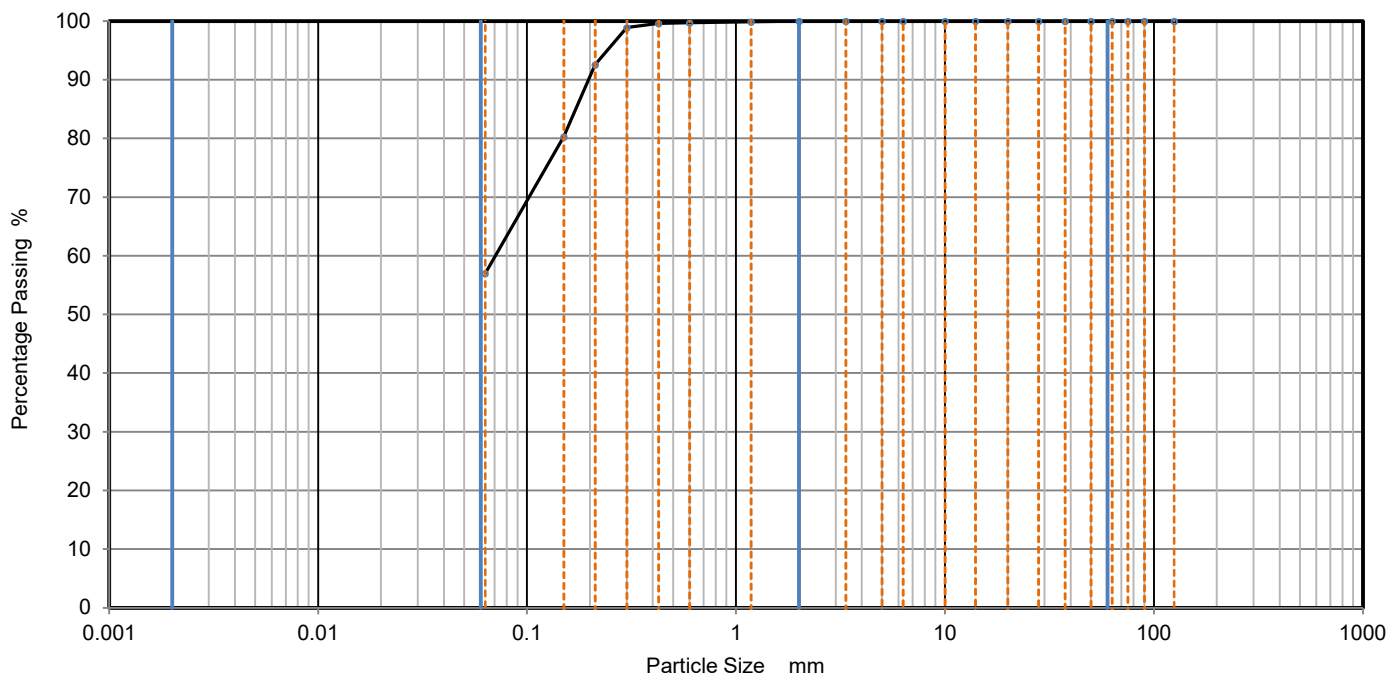
B

Test Method

BS EN ISO 17892-4:2016 - Wet & Dry Sieving

KeyLAB ID

EAT\_2022012811



| Sieving          |           | Sedimentation    |           |
|------------------|-----------|------------------|-----------|
| Particle Size mm | % Passing | Particle Size mm | % Passing |
| 125              | 100       |                  |           |
| 90               | 100       |                  |           |
| 75               | 100       |                  |           |
| 63               | 100       |                  |           |
| 50               | 100       |                  |           |
| 37.5             | 100       |                  |           |
| 28               | 100       |                  |           |
| 20               | 100       |                  |           |
| 14               | 100       |                  |           |
| 10               | 100       |                  |           |
| 6.3              | 100       |                  |           |
| 5                | 100       |                  |           |
| 3.35             | 100       |                  |           |
| 2                | 100       |                  |           |
| 1.18             | 100       |                  |           |
| 0.6              | 100       |                  |           |
| 0.425            | 100       |                  |           |
| 0.3              | 99        |                  |           |
| 0.212            | 93        |                  |           |
| 0.15             | 80        |                  |           |
| 0.063            | 57.0      |                  |           |

| Sample Proportions | % dry mass |
|--------------------|------------|
| Very coarse        | 0          |
| Gravel             | 0          |
| Sand               | 43         |
| Fines <0.063mm     | 57         |

| Grading Analysis       |    |
|------------------------|----|
| D <sub>100</sub>       | mm |
| D <sub>60</sub>        | mm |
| D <sub>30</sub>        | mm |
| D <sub>10</sub>        | mm |
| Uniformity Coefficient |    |
| Curvature Coefficient  |    |

Remarks

Preparation and testing in accordance with BS EN ISO 17892-4:2016 unless noted below

| Date             | Approved By | UKAS Accredited Laboratory No. 20632 |
|------------------|-------------|--------------------------------------|
| 31/01/2022 15:01 | N Hodson    |                                      |

*N Hodson*



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