



APPENDIX 4-9

ENGINEERING SERVICES

REPORT

Engineering Services Report

Moygaddy Castle SHD

For Sky Castle Ltd

PROJECT NO. S665

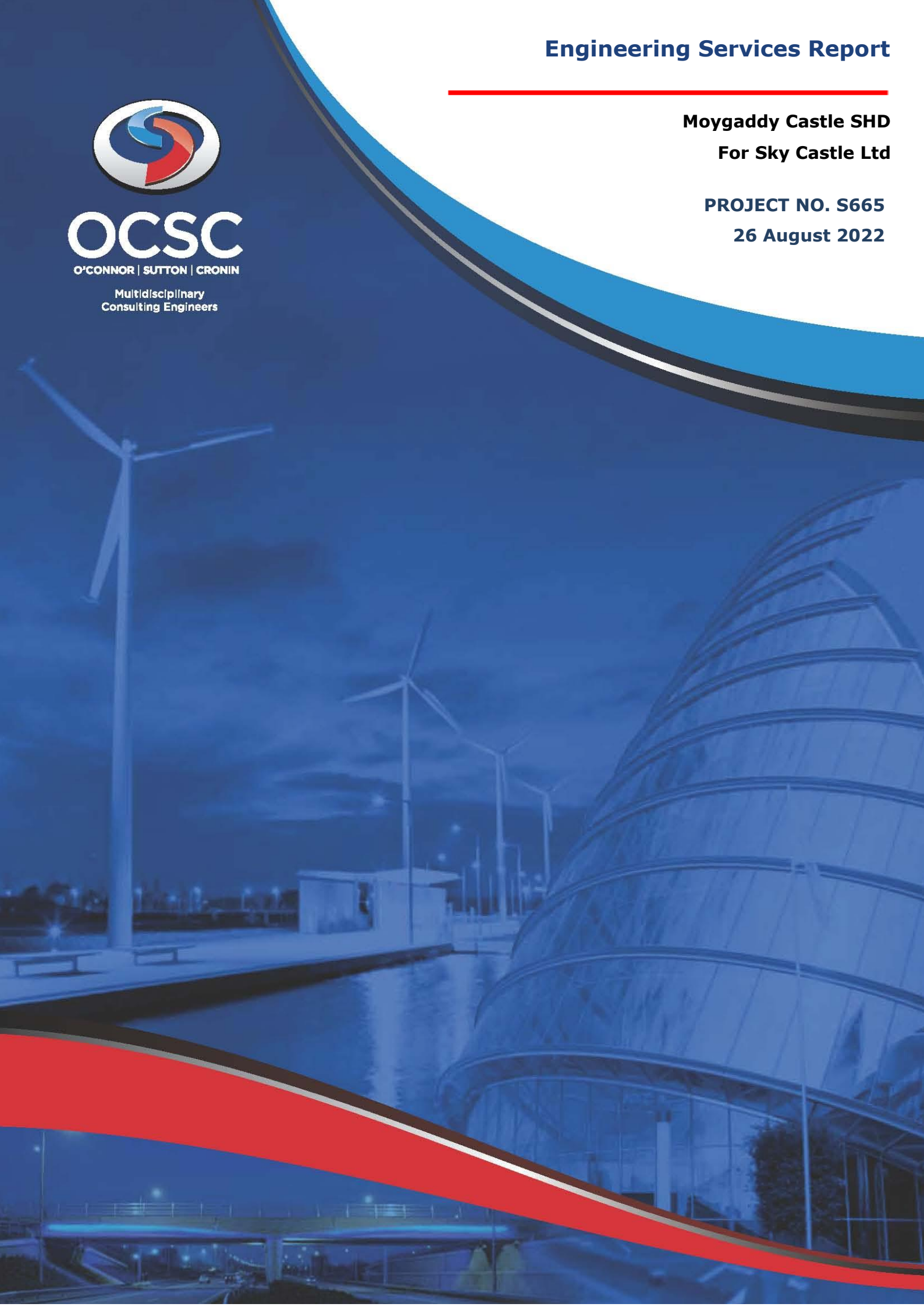
26 August 2022



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers



Engineering Services Report

**Moygaddy Castle SHD
for Sky Castle Ltd**

**PROJECT NO. S665
26 August 2022**

Engineering Services Report

for

**Moygaddy Castle SHD,
at Moygaddy, Co. Meath.**



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers

NOTICE

This document has been produced by O'Connor Sutton Cronin & Associates for its client, *Sky Castle Ltd.* It may not be used for any purpose other than that specified by any other person without the written permission of the authors.



DOCUMENT CONTROL & HISTORY

| | | | | | | | | | |
|---------------------------------------|-------------------------|-------------------|------------------------|-------------------|-------------------|------------------|---------------|--|-----------------|
| OCSC Job No.: S665 | Project Code | Originator | Zone Volume | Level | File Type | Role Type | Number | Status / Suitability Code | Revision |
| | S665 | OCSC | 1C | XX | RP | C | 0002 | S4 | P08 |
| Rev. | Status | Authors | Checked | Authorised | Issue Date | | | | |
| P08 | S4 | MK | AH | AH | 26.08.2022 | | | | |
| P07 | S4 | MK | AH | AH | 25.08.2022 | | | | |
| P06 | S4 | MK | AH | AH | 19.08.2022 | | | | |
| P05 | S2 | MK | AH | AH | 10.08.2022 | | | | |
| P04 | S4 | MK | AH | AH | 07.12.2021 | | | | |
| P03 | S2 | MK | AH | AH | 01.12.2021 | | | | |
| P02 | S2 | MK | AH | AH | 18.10.2021 | | | | |
| P01 | S2 | MK | AH | AH | 08.10.2021 | | | | |

Engineering Services Report

| <u>TABLE OF CONTENTS</u> | <u>PAGE</u> |
|--|--------------------|
| 1 INTRODUCTION | 1 |
| 1.1 Appointment..... | 1 |
| 1.2 Administrative Jurisdiction | 1 |
| 1.3 Site Location | 1 |
| 1.4 Existing Site Overview | 2 |
| 1.5 Proposed Development Context | 3 |
| 1.6 Further Development Context | 6 |
| 2 SCOPE OF WATER SERVICES REPORT | 7 |
| 3 SURFACE WATER DRAINAGE..... | 8 |
| 3.1 Surface Water Design Overview..... | 8 |
| 3.1.1 Design Guidelines Overview | 8 |
| 3.2 Surface Water Management Strategy Overview | 9 |
| 3.3 Consultation | 9 |
| 3.4 Existing Site Drainage | 9 |
| 3.4.1 Existing Surface Water Drainage Infrastructure | 9 |
| 3.4.2 Existing Site Catchment Areas | 10 |
| 3.4.3 Existing Site Rainfall Runoff | 11 |
| 3.5 Proposed Surface Water Drainage Design Strategy..... | 13 |
| 3.5.1 Proposed Surface Water Strategy Overview | 13 |
| 3.5.2 Climate Change Allowance | 13 |
| 3.5.3 Proposed Surface Water Network Strategy | 13 |
| 3.5.3.1 Rainwater Harvesting | 14 |
| 3.5.3.2 Pervious Paving | 15 |
| 3.5.3.3 Trapped Road Gullies | 16 |
| 3.5.3.4 Underground Pipe Network | 16 |
| 3.5.3.5 Silt Traps | 17 |

| | | |
|-------------|---|-----------|
| 3.5.3.6 | Attenuation Storage Systems | 17 |
| 3.5.3.7 | Swales | 18 |
| 3.5.3.8 | Flow Control Device..... | 18 |
| 3.5.3.9 | Oil Separator..... | 19 |
| 3.5.3.10 | Filter Drain | 20 |
| 3.5.3.11 | Non-Return Valve | 20 |
| 3.6 | Proposed Surface Water Network Detailed Design | 20 |
| 3.6.1 | Software Design Criteria..... | 20 |
| 3.6.2 | Proposed Surface Water Catchment Areas | 21 |
| 3.6.3 | Proposed Development Rainfall Runoff | 22 |
| 3.6.4 | Proposed Surface Water Pipe Network Design | 23 |
| 3.7 | Proposed Surface Water Attenuation Storage | 24 |
| 3.8 | Surface Water Outfall Locations..... | 25 |
| 3.9 | Water Quality | 26 |
| 3.10 | Maintenance..... | 26 |
| 3.11 | Surface Water Impact Assessment | 27 |
| 3.11.1 | Criterion 1 – River Water Quality Protection | 27 |
| 3.11.2 | Criterion 2 – River Regime Protection | 28 |
| 3.11.3 | Criterion 3 – Level of Service (Flooding) Site | 28 |
| 3.11.3.1 | Sub-Criterion 3.1 | 28 |
| 3.11.3.2 | Sub-Criterion 3.2 | 29 |
| 3.11.3.3 | Sub-Criterion 3.3 | 29 |
| 3.11.3.4 | Sub-Criterion 3.4 | 29 |
| 3.11.4 | Criterion 4 – River Flood Protection | 30 |
| 3.12 | Taking in Charge..... | 30 |
| 4 | WASTEWATER DRAINAGE | 31 |
| 4.1 | Overview | 31 |
| 4.2 | Consultation | 31 |
| 4.3 | Existing Wastewater Drainage | 32 |

| | | |
|--------|---|----|
| 4.4 | New Irish Water Infrastructure | 33 |
| 4.5 | Proposed Wastewater Drainage Strategy | 34 |
| 4.6 | Wastewater Pumping Station | 36 |
| 4.7 | Taking In Charge..... | 36 |
| 5 | POTABLE WATER SUPPLY | 37 |
| 5.1 | Overview | 37 |
| 5.2 | Consultation | 37 |
| 5.3 | Connection to the Existing Network..... | 37 |
| 5.4 | Water Saving Devices | 38 |
| 5.5 | Water Meters..... | 38 |
| 5.6 | Taking In Charge..... | 39 |
| 6 | ROADS AND TRAFFIC | 40 |
| 6.7 | Design Standards | 40 |
| 6.8 | Proposed Road Network..... | 40 |
| 6.9 | Road Classification | 42 |
| 6.10 | Road Design Speeds | 45 |
| 6.11 | Horizontal and Vertical Geometry..... | 46 |
| 6.12 | Road Cross Section | 46 |
| 6.12.5 | Carriageway..... | 46 |
| 6.12.6 | Footpaths..... | 47 |
| 6.12.7 | Cycle Facilities..... | 47 |
| 6.13 | Road Junctions | 48 |
| 6.14 | Consultation | 48 |
| 6.15 | Traffic Impact..... | 49 |
| 6.16 | Site Accessibility..... | 50 |

APPENDICES

| | |
|-------------|--|
| APPENDIX A. | Q _{BAR} Calculation and Rainfall Data |
| APPENDIX B. | Surface Water Design Criteria and Simulation Results |
| APPENDIX C. | Wastewater Design Calculation and Network Details |
| APPENDIX D. | Irish Water Correspondence |
| APPENDIX E. | Site Investigation Report |
| APPENDIX F. | Response to MCC Transportation Dept. Comments |

1 INTRODUCTION

1.1 Appointment

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by *Sky Castle Ltd* to carry out the design of the civil engineering services and infrastructure associated with the proposed 360nr. unit residential and crèche development at Moygaddy, Co. Meath, which is located north east from the town of Maynooth, Co. Kildare.

1.2 Administrative Jurisdiction

The proposed residential development is located in the jurisdiction of Meath County Council (MCC). It is noted that a section of a new bridge over the adjacent River Ryewater, and section of the proposed Maynooth Outer Orbital Road (MOOR) are located in lands within Kildare County Council's jurisdiction, as is the route required to provide connections to both wastewater and water connections. Therefore, the engineering services design was carried out with reference to the following:

- Meath County Development Plan (2021 – 2028);
- Kildare County Council Development Plan (2017 – 2023);
- Maynooth Environs Local Area Plan (MCC Dev Plan);
- Regional Spatial and Economic Strategy;
- Greater Dublin Strategic Drainage Study (GDSDS);
- The Planning System and Flood Risk Management Guidelines for Planning Authorities (Department of Environment, Heritage and Local Government and the Office of Public Works).

It is noted that this planning permission is being sought through An Bord Pleanála's (ABP) Strategic Housing Development (SHD) application process.

1.3 Site Location

The subject site is located on the southernmost extent of County Meath, aligning with the county boundary to Co. Kildare, and is approximately 1.5km

north from the town of Maynooth, Co. Kildare, as shown in **Figure 1.1 - Site Location**, and is immediately bound by:

- The Blackhall Little stream (as referenced by the EPA), to the east;
- Local Road, L6219, to the north;
- Agricultural lands to the west; and
- River Ryewater to the south.



Figure 1.1 - Site Location (www.myplan.ie)

1.4 Existing Site Overview

The overall gross site area that comprises this planning application (including offsite infrastructural works) is **c.19.52-hectares**, with c.7.89 ha of this zoned by Meath County Council for **A2 - New Residential**. Other areas within the development boundary are zoned for High Amenity, or include public road and new infrastructure.

The site is currently greenfield and used for agricultural purposes, and can be accessed from the L6219 Road which aligns the northern boundary of the subject site. Ground levels across the site typically fall gently from north to

south, with a sharp decline at the southern and eastern boundaries, which align to the river Ryewater and the Blackhall Little stream respectively. Refer to *Section 3.4.2* for context of existing site levels.

1.5 Proposed Development Context

Planning Permission is sought by Sky Castle Ltd. for the development of a site which extends to 19.52 hectares gross site area in the townland of Moygaddy, Maynooth Environs, Co. Meath. The net developable area equates to 7.89 hectares which equates to a residential density of 45.6 units per hectare.

The proposed development will consist of the following:

1. Construction of 360 no. residential units comprising:
 - i. 196 no houses (including 19 no. 2 beds, 156 no. 3 beds and 21 no. 4 beds).
 - ii. 102 no. duplexes (including 51 no. 1 beds and 51 no. 2 beds) set out in 6 no. blocks.
 - iii. 62 no. apartments (including 26 no. 1 beds and 36 no. 2 beds) set out in 2 no. blocks.
2. Provision of a public park and playground with associated 42 no. car parking spaces adjacent to Moygaddy Castle and pedestrian and cyclist links along the River Rye. The overall public open space (including the High Amenity Lands) equates to 7.98 hectares.
3. Provision of private open spaces in the form of balconies and terraces is provided to all individual apartments and duplexes to all elevations.
4. Development of a two-storey creche facility (514 sqm), outdoor play area and associated parking of 29 no. spaces.
5. Provision of a single storey Scout Den facility, including a hall, kitchen, meeting room and ancillary facilities (220sqm) and associated parking of 6 no. spaces.
6. Provision of 4 no. bridge structures comprising:
 - i. an integral single span bridge at Moyglare Hall over the River Rye Water to connect with existing road infrastructure in County Kildare and associated floodplain works and embankments.

- ii. a new pedestrian and cyclist bridge at Kildare Bridge which will link the proposed site with the existing road network in County Kildare.
 - iii. a new pedestrian and cycle bridge across Moyglare Stream on the L22148 adjacent to the existing unnamed bridge.
 - iv. a new pedestrian and cycle bridge over the Moyglare Stream linking the proposed residential site with the proposed Childcare Facility, Scout Den and Moygaddy Castle Public Park.
7. Provision of 500m of distributor road comprising of 7.0m carriageway with turning lane where required, footpaths, cycle tracks and grass verges. All associated utilities and public lighting including storm water drainage with SuDS treatment and attenuation.
8. Proposed road improvement and realignment works including:
 - i. realignment of a section of the existing L6219 local road, which will entail the demolition of an existing section of the road which extends to circa 2,500 sqm.
 - ii. Provision of pedestrian and cycle improvement measures along the L6219 and L22148 which abuts the boundary of Moygaddy House which is a Protected Structure (RPS ref 91558).
 - iii. Provision of pedestrian and cycle improvement measures along the R157 which abuts the Carton Demense Wall which is a Protected Structure (RPS Ref 91556).
9. Provision of 2 no. vehicular and pedestrian accesses from the L6219 local road, and 1no. vehicular and pedestrian entrance from the L22148 and an additional vehicular and pedestrian access from the R157 to the Childcare and Scout Den facilities.
10. The proposed development will provide 283 no. of bicycle parking spaces, of which 200 no. are long term spaces in secure bicycle stores and 83 no. are short term visitor bicycle parking spaces. 12 no. bicycle spaces are provided for the creche and 12 no. bicycle spaces are provided for the Scout Den.

11. A total of 667 no. car parking spaces are provided on site located at surface level. The car parking provision includes 10 no. Electric Vehicle charging and Universally Accessible spaces allocated for the Apartment & Duplex units. All Houses will be constructed with provision for EV Charging.

12. Provision of site landscaping, public lighting, bin stores, 3 no. ESB unit substations, site services and all associated site development works.

13. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

The proposed site layout is shown in **Figure 1.2**, with context to the wider Maynooth Environs area that is in the Applicant's ownership.

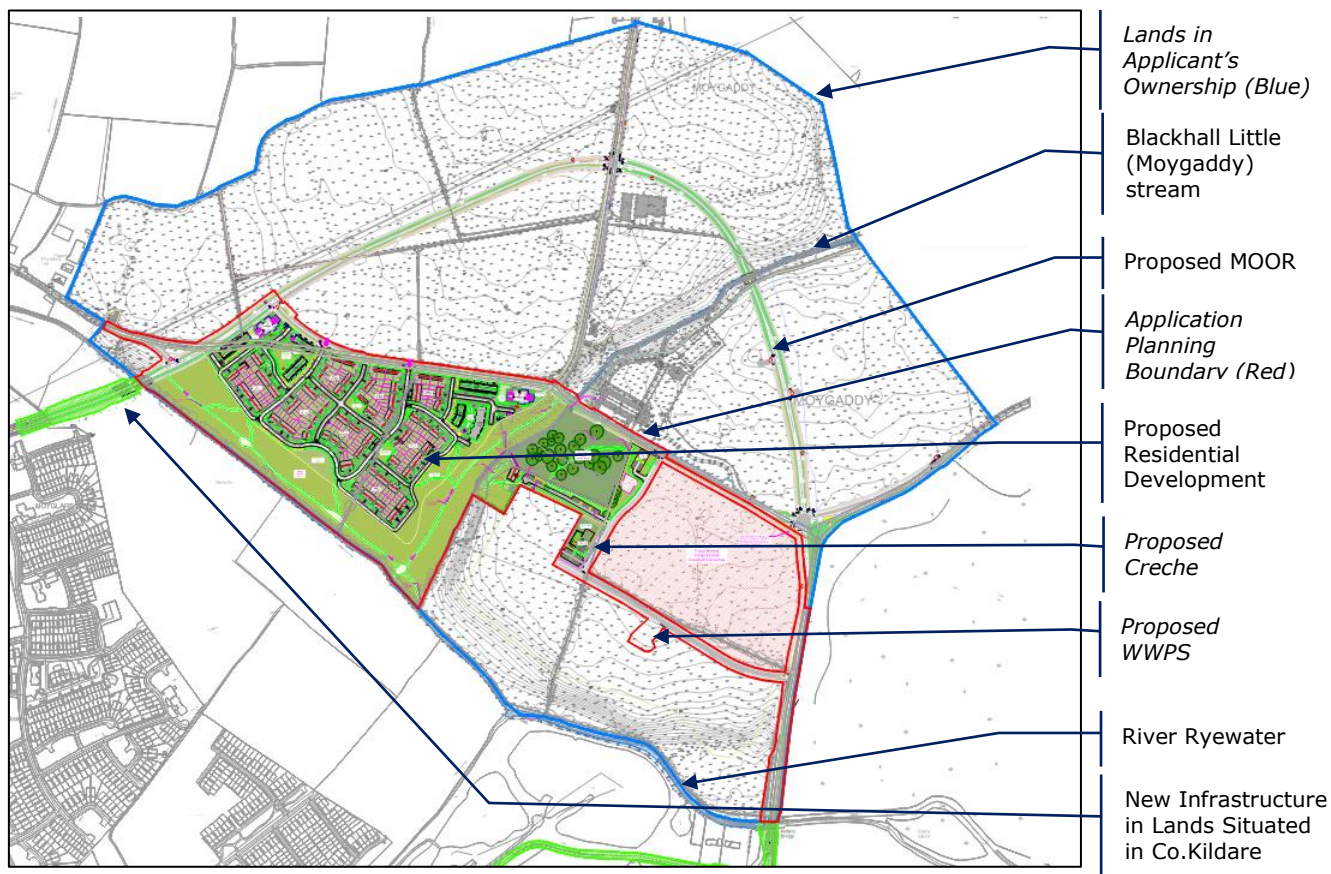


Figure 1.2 - Proposed Development Layout

1.6 Further Development Context

The developer has also committed to submitting a separate planning application to Meath County Council for the development of the Maynooth Outer Orbital Road (MOOR), which is routed from the northern corner of this proposed development, through the Moygaddy Environ's lands and around to meet the R157 road, north from the Kildare Bridge.

Additional planning applications will be simultaneously submitted to Kildare County Council for the following two infrastructural works, which complement both the proposed development and the delivery of the MOOR:

1. Moyglare Bridge i.e., new bridge structure at southwestern extent of MOOR, including associated water services for extension and connection to public infrastructure;
2. Kildare Bridge upgrade, and associated infrastructure connections i.e., addition of pedestrian and cycle link structure, adjacent to the Kildare Bridge.

The subject site is part of a larger land-holding, held by Sky Castle Ltd, which is zoned for Strategic Employment, Tourism, and Community Infrastructure. The applicant – Sky Castle Ltd – intends to submit separate planning applications for a Nursing Home, Primary Care Centre, and a Biomedical Office Campus. These projects are subject to separate, independent planning applications, which will be accompanied by site-specific Engineering Services reports, and associated design drawings.

2 SCOPE OF WATER SERVICES REPORT

The Outline Engineering Services Report was prepared by reviewing the available data from the Local Authority sources and national bodies *i.e.*, Meath County Council, Kildare County Council, Irish Water, The OPW, and the wider Design Team. The following services are addressed within this report, with respect to the proposed development:

- Surface Water Drainage;
- Wastewater Drainage;
- Potable Water Supply;
- Roads Infrastructure.

The proposed design for the above engineering services have been carried out in accordance with the following technical guidelines and information:

- Meath County Council Development Plan (2021 – 2027);
- Kildare County Development Plan (2017 – 2023);
- Maynooth Environs Local Area Plan (MCC);
- Greater Dublin Strategic Drainage Study (GDSDS);
- Greater Dublin Regional Code of Practice for Drainage Works (GDR COP);
- Irish Water Code of Practice for Wastewater, IW-CDS-5030-03;
- Irish Water Code of Practice for Water Supply, IW-CDS-5020-03;
- The Building Regulations – Technical Guidance Document Part H;
- BE EN 752 – Drainage Outside Buildings;
- BS 7533-13 – Guide for Design of Permeable Pavements;
- CIRIA C753 – The SuDS Manual;
- The Office of Public Works, the Planning System and Flood Risk Management;
- Irish Water Drainage & Watermain Records.

3 SURFACE WATER DRAINAGE

3.1 Surface Water Design Overview

3.1.1 Design Guidelines Overview

Any planning permission sought on the subject lands are required to adhere to the Local Authority requirements *i.e.*, the Meath County Council Development Plan, the Maynooth Environs Local Area Plan, and as such, the Greater Dublin Strategic Drainage Study (2005).

New development must ensure that a comprehensive Sustainable Drainage System (SuDS), is incorporated into the development. SuDS requires that post development run-off rates be maintained at equivalent, or lower, levels than pre-development levels. Thus, the development must be able to retain, within its boundaries, surface water volumes from extreme rainfall events up to a 1 in 100-year rainfall event, more commonly expressed as a 1.0% AEP (Annual Exceedance Probability), *while also allowing for an additional climate change factor of 20% increase in rainfall intensity*. Any new development must also have the physical capacity to retain surface water volumes as directed under the Greater Dublin Strategic Drainage Strategy (GDSDS) and, if necessary, release these attenuated surface water volumes to an outfall at a controlled flow rate, not greater than the greenfield runoff equivalent.

A further component of the SuDS protocol is to increase the overall water quality of surface water runoff before it enters a natural watercourse or a public sewer, which ultimately discharges to a water body. This is to ensure the highest possible standard of surface water quality.

The surface water strategy for the proposed development is to include a number of Sustainable Drainage Systems, prior to discharging an attenuated and treated flow to the existing watercourses that align to the southern and eastern boundaries of the main development site. Development discharge rates are to be restricted to less than the calculated greenfield runoff equivalent.

SuDS are designed in accordance with best practice and the CIRIA C753 (The SuDS Manual) guidance material.

3.2 Surface Water Management Strategy Overview

The proposed development is to be served by a gravity surface water drainage network that is to be divided into two main catchments as a result of the natural topography and other site constraints. The attenuated and treated surface water runoff that will be generated within the new development site is to discharge to the adjacent watercourses.

Sustainable Drainage Systems are to be provided across the site, wherever practicable, and these are discussed in more detail in *Section 3.4.3*, with discharge rates from site being restricted to less than the calculated greenfield equivalent runoff rate, for design rainfall events up to, and including, the 1% AEP, in accordance with the Meath County Development Plan and the GDSDS.

3.3 Consultation

The proposed strategy has been discussed in detail with Meath County Council's (MCC) Drainage Department prior to submission, including at the tripartite meeting with An Bord Pleanála (ABP), MCC, and the Applicant.

Further, MCC's drainage department issued an opinion report, as part of a response to the Stage 2 submission to ABP, with all comments discussed with MCC and addressed accordingly, as part of the design completion.

3.4 Existing Site Drainage

3.4.1 Existing Surface Water Drainage Infrastructure

There is currently no existing public surface water drainage infrastructure in the vicinity of the site that can serve the proposed development.

There are significant natural drainage routes along the southern and eastern boundaries of the site, namely the River Ryewater and the Blackhall Little stream (also known as the Moygaddy Stream), respectively. The site currently

drains naturally to these watercourses; refer to **Figure 3.1** for overview of existing natural watercourses in the vicinity of the proposed development.

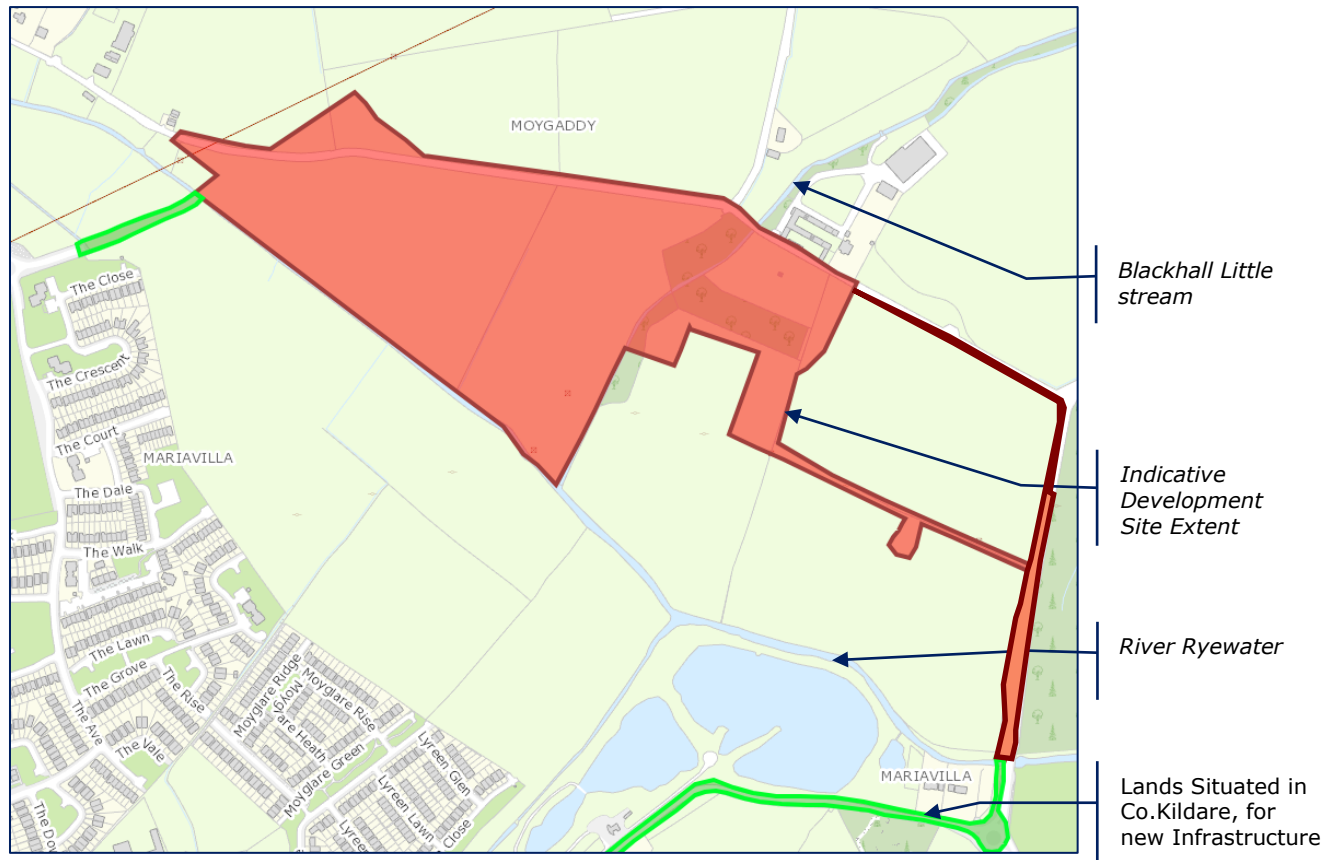


Figure 3.1 - Local Watercourses

3.4.2 Existing Site Catchment Areas

The main part of the overall development application, which is to contain the residential development site, has the existing L6219 road along its northern boundary that acts as a surface water catchment boundary. The entire site is then graded towards the river Ryewater, which aligns to its southern boundary, and the Blackhall Little stream, which aligns to the eastern boundary. There is also a shallow valley near the centre of the site, however, this is also graded towards the southern boundary. Refer to Figure 3.2 for overview of site contours, indicated at 0.25m interval.

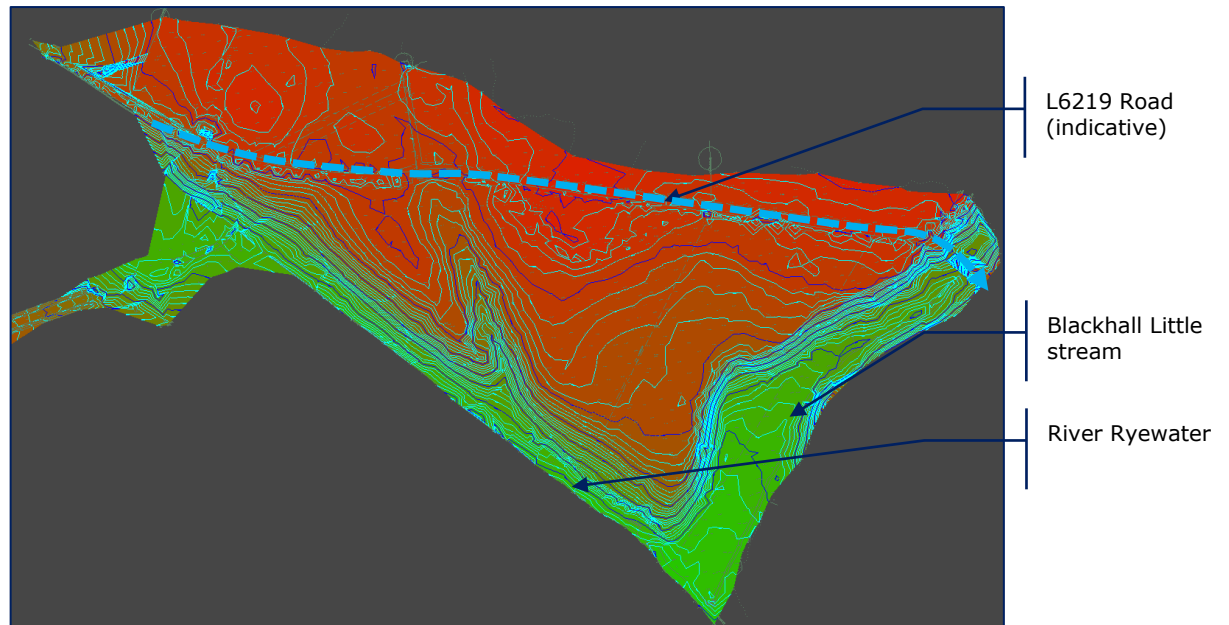


Figure 3.2 – Site Levels and Contour Overview of Residential Lands

Similarly, the area of land to the east of the Blackhall Little stream, which is to provide new creche facilities, Scout Den and public park, is graded gently towards the Blackhall Little stream, to its west.

3.4.3 Existing Site Rainfall Runoff

All surface water runoff, on the existing site, currently infiltrates to the ground or discharges excess runoff to the Blackhall Little stream or River Ryewater, which align the eastern and southern boundaries respectively. Refer to *Section 3.4.2* for further details of existing site catchment area context.

A Site investigation was carried out on site in July 2021, with 3nr. soakaway tests performed to BRE Digest 365 requirements, at locations in the vicinity of open space in the new development. All 3nr. tests failed, with little to no infiltration observed. The existing subsoil was determined to be of stiff clayey substance, consistently across the site. In addition, groundwater was struck at a depth of approximately 1.6m below ground level near the northern extent of the site but not observed elsewhere, notably not at location of SuDS structures, including attenuation systems.

A copy of the Site Investigation Report is provided in **Appendix E** of this ESR.

Therefore, as a result of the above, **Soil Type 4** has been assigned for rainfall runoff calculations, as discussed and agreed with Meath County Council.

The Standard Average Annual Rainfall (SAAR) value for the development site, as sourced from Met Éireann, is **799mm**.

Using the ICPSuDS Input, (Flood Studies Report, FSR) Method, the rainfall runoff discharging from the total greenfield site area that is to be developed has been estimated at $QBAR_{RURAL}$ **5.6 l/s/ha**, in its existing condition.

Refer to Figure 3.3 for an excerpt of the results from the MicroDrainage Runoff Calculator, which provides the calculated QBAR (*per hectare*) runoff rate, along with the discharge rate (*per hectare*) for varying Annual Recurrence Intervals (ARI).

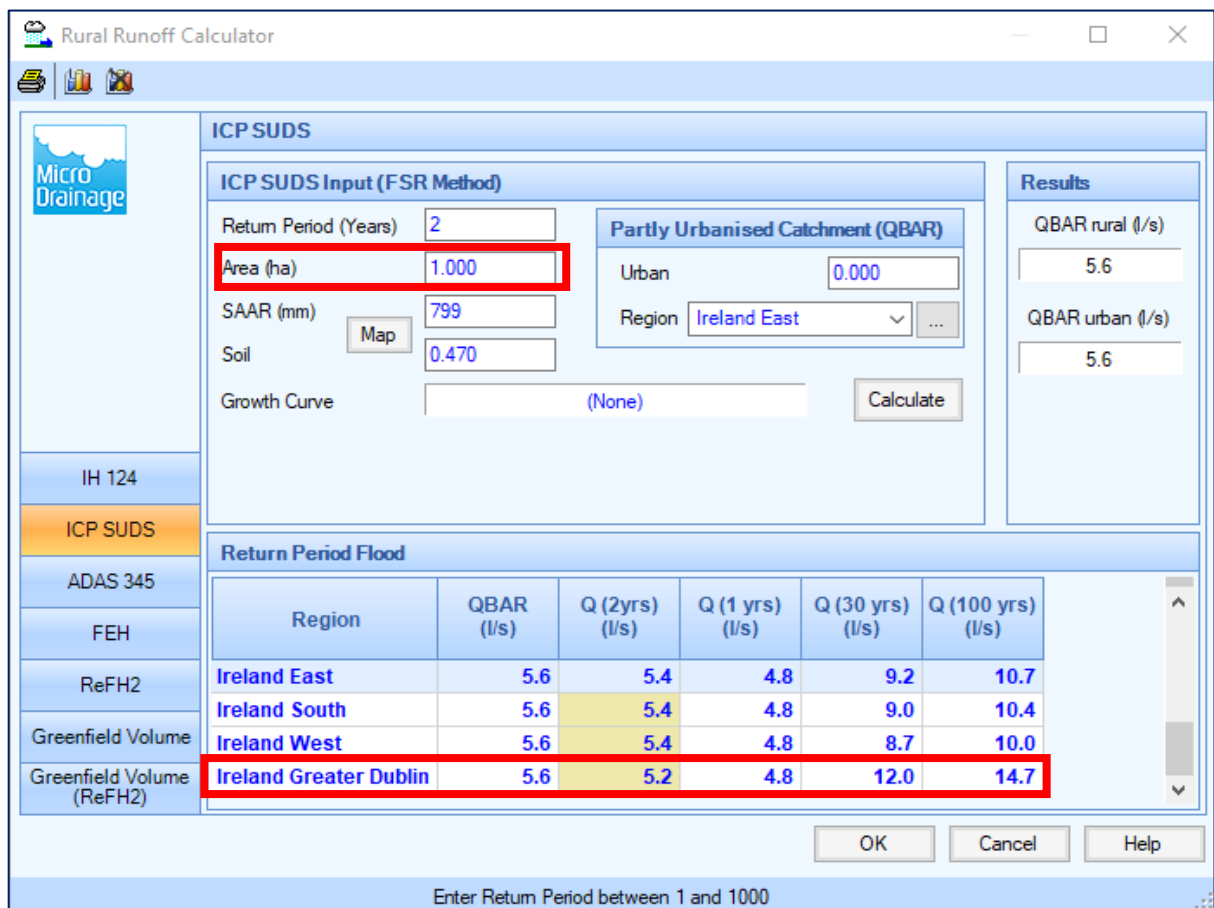


Figure 3.3 - Existing Site Runoff Calculator Results (MicroDrainage Excerpt)

3.5 Proposed Surface Water Drainage Design Strategy

3.5.1 Proposed Surface Water Strategy Overview

It is proposed to separate the surface water and wastewater drainage networks, which will serve the proposed development, and provide independent connections to the adjacent watercourse (for surface water only) and local wastewater sewer network respectively. Refer to *Section 4* for details of the proposed wastewater drainage design.

3.5.2 Climate Change Allowance

The proposed surface water network is yet to be designed to allow for an additional 20% increase in rainfall intensity, to allow for Climate Change projections, in accordance with the Meath County Development Plan and the GDSDS.

All discussion within this report, with regards to surface water network design calculation and results, include for the allowance of an increase of 20% in rainfall intensity, as required.

3.5.3 Proposed Surface Water Network Strategy

The proposed surface water network is to be split into two main catchment areas, in order to best integrate Sustainable Drainage Systems across the site and manage the surface water runoff. Each catchment area will look to provide treatment to the rainfall runoff, either at source or through site design. Infiltration systems are provided as part of the integrated SuDS network, however, as a results of the failed soakaway tests during site investigation, no infiltration is considered as part of the design. This will still allow for interception to be provided for the first rainfall events, and slow recharge of groundwater. Therefore, the main functions of the SuDS provided will be for interception and treatment of the rainfall runoff, in order to reduce the runoff volume and increase the runoff quality, prior to discharge from the new development.

The proposed crèche, being an isolated catchment area, is also to have its own independent surface water drainage network from above, with the local landscaping being utilised for sustainable drainage systems, in order to improve the quality and reduce the runoff to less than greenfield equivalent, prior to discharging to the adjacent Blackhall Little stream.

The proposed surface water networks are to typically comprise a gravity pipe network, with significant Sustainable Drainage Systems implemented, where practicable.

Attenuation systems are to be strategically located within public open space areas, and the design intent is to reduce the rainfall runoff from the proposed development to **less than** the greenfield runoff equivalent; thus, resulting in no adverse impact on the receiving watercourse.

The typical traditional and Sustainable Drainage Systems (SuDS) to be provided, all of which will be designed in accordance with CIRIA C753, the SuDS Manual, and the design guidance material listed in *Section 2* of this report, are listed and detailed in order of general sequence within the drainage network, as follows:

3.5.3.1 Rainwater Harvesting

Rainwater harvesting are to be considered at individual residential units in the form of 'Water Butts', which can re-use the collected rainwater for gardening and other domestic watering purposes. Rainwater Butts help to reduce the overall volume of rainfall runoff entering the surface water network.



Figure 3.4 - Example of Domestic Rainwater Harvesting Butt

3.5.3.2 Pervious Paving

Pervious pavements provide a pavement finish suitable for both pedestrian and vehicular traffic, while also allowing rainwater to infiltrate the surface layer and into the underlying pervious structural layers. Here, the rainwater is temporarily stored beneath the overlying finished surface before either infiltration to the ground or / and controlled discharge to the main surface water drainage network.

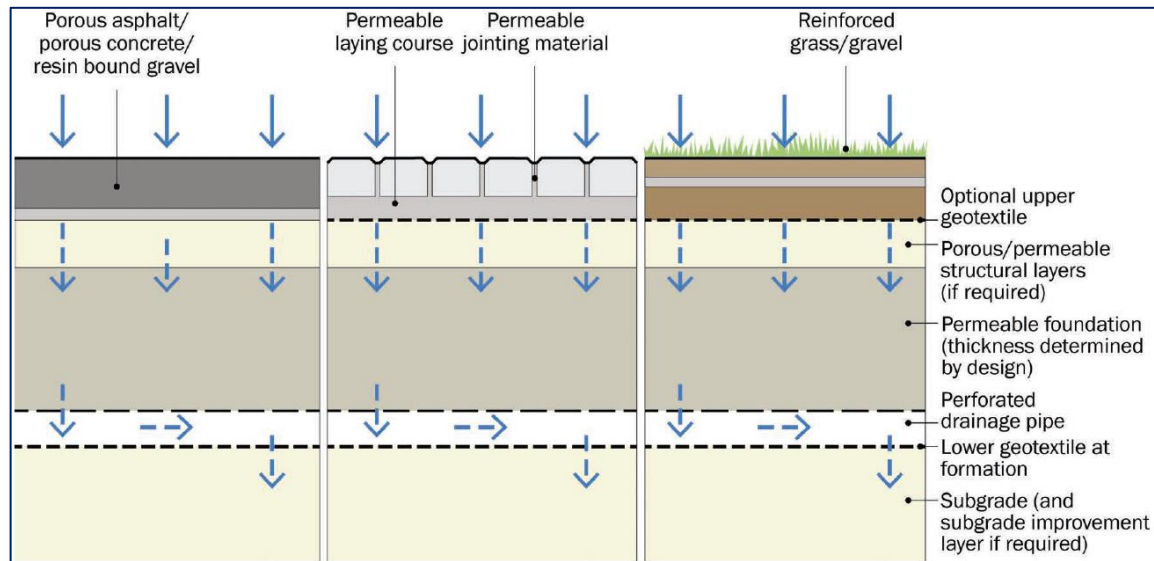


Figure 3.5 - Detail of Type B Pervious Paving (CIRIA C753)

Pervious paving systems are an efficient means of treating the rainwater at source by providing initial interception of the rainwater, reducing the volume and frequency of the runoff and improving the surface water quality by providing at source treatment of the rainfall runoff leaving the site. This is achieved by helping remove and retain pollutants prior to discharge to the drainage system and / or groundwater system.

Rainfall runoff from roof level of the proposed housing units can also discharge to the permeable base course of the pervious paving, via a diffuser unit. This will allow for initial interception of rainfall, along with attenuation for each individual house unit.

A **Type B** pervious paving, with a 300mm depth of open graded crushed rock as base course, is to be provided in all in-curtilage car parking spaces, within

the proposed development. An overflow pipe, from the base-course, will be provided to the drainage network, which will allow for interception of initial rainfall, groundwater discharge, with an attenuated outflow to the main network in extreme rainfall events.

Other on-street parking areas, such as those associated with the proposed duplexes, apartments, and crèche facilities are to comprise a porous asphalt type finish, or similar approved. However, pervious paving is not to be provided in any spaces or areas that are to be taken in charge by Meath County Council.

3.5.3.3 Trapped Road Gullies

All road gullies serving the proposed development are to be trapped, to help prevent sediment and gross pollutants from entering the surface water network, and thus improving the water quality discharging from site.

The grated covers are to have a minimum load classification of D400, for frequent vehicular traffic, and shall be lockable, as required by MCC, with 150mm outlet pipes.

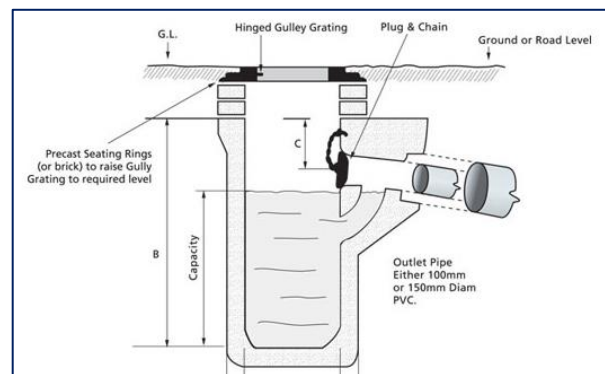


Figure 3.6 - Trapped Road Gully (Typical Detail)

3.5.3.4 Underground Pipe Network

A traditional gravity pipe and manhole network will be provided, to convey the collected rainfall runoff as far as the development's outfall. Manholes are provided for maintenance access at branched connections, change in pipe size and gradient, and at intervals no greater than 90m distance.

3.5.3.5 Silt Traps

All manholes upstream of attenuation systems are to contain a 600mm sump, below invert level of outlet pipe, in order to trap sediment and other gross pollutants, and prevent from entering the downstream watercourse; thus, improving the water quality discharging from site.

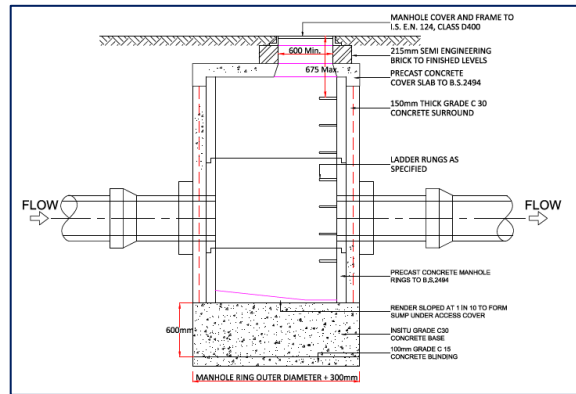


Figure 3.7 - Typical Detail of Silt Trap Manhole

3.5.3.6 Attenuation Storage Systems

Unlined proprietary poly-tunnel storage units (or similar approved) are to be provided, underground in proposed green-spaces, for the attenuation of rainfall runoff prior to discharge to the existing natural watercourses.

These systems are to provide sufficient temporary storage volume for rainfall events up to, and including, the design 1% AEP rainfall event (including climate change). Typical poly-tunnel storage systems comprise plastic arch-units with open-graded crushed rock bedding and surround. These units are arranged in rows, with an isolator row for efficient operation and maintenance.

These systems also allow for interception of initial rainfall to be provided at the base of the system, by elevating the outlet relative to the systems base.



Figure 3.8 – Typical Poly-Tunnel Installation Arrangement

3.5.3.7 Swales

Swales will be provided along the southern development road. These will typically be Type 2 Dry Swales in accordance with CIRIA C753 SuDS Manual. Swales will collect runoff from roads and will facilitate treatment and infiltration.



Figure 3.9 – Example Roadside Swale

3.5.3.8 Flow Control Device

Flow Control devices are to be provided immediately downstream of attenuation systems, in order to restrict the surface water discharge from site to a flow rate equivalent, or below, the natural greenfield runoff rate.

It is proposed to provide the Hydro-brake optimum vortex flow control unit (or similar approved by MCC), downstream of the attenuation systems.

Further, it is noted that the required aperture of the proposed flow control outlets have been designed to be greater than 150mm diameter, to mitigate the risk of blockage.

Each flow control chamber is to be fitted with a penstock valve at the inlet and a bypass lever at the outlet (if required), to allow for easy access and maintenance.



Figure 3.10 - Vortex Hydro-Brake Flow Control Unit (Hydro International)

3.5.3.9 Oil Separator

Oil separators are designed to separate gross amounts of oil and large (>250µm) suspended solids from the surface water, mainly through sedimentation process.

The proposed surface water network already provides sufficient mitigation measures, through the provisions listed previously (principally the pervious paving, filter drains, trapped road gullies and silt traps, and the attenuation interception layer). However, a Class 1 bypass fuel separator is to be provided as an additional and final mitigation measure, upstream of attenuation system, prior to surface water discharge to both the network and watercourse.

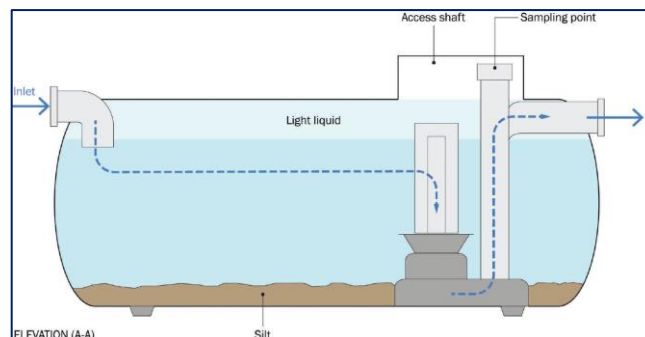


Figure 3.11 - Typical Section Detail of Fuel Separator (CIRIA C753)

The fuel separator is to be provided at a location upstream of attenuation system, as per Meath County Council requirements.

3.5.3.10 Filter Drain

A filter drain is an open graded stone filled trench, which can also include a perforated pipe to assist distribution and conveyance of rainfall runoff along its length. Rainfall runoff can be stored within the void content of the stone trench, which should be wrapped in a fine geotextile to prevent fine sediment from entering the structure.

It is proposed to provide a filter drain from the flow control device to the development's network outfall, in order to further reduce the volume of rainfall runoff discharging from site, subject to agreement with Meath County Council.

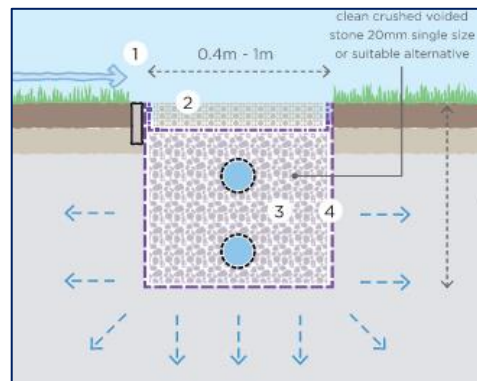


Figure 3.12 - Filter Drain Illustration

3.5.3.11 Non-Return Valve

The development levels, and as such the typical levels of the surface water drainage network are significantly above the water level of the receiving watercourse. Notwithstanding, a non-return valve is to be provided, fitted to the headwall, at each outlet to the receiving watercourse.

3.6 Proposed Surface Water Network Detailed Design

3.6.1 Software Design Criteria

The proposed surface water network is to be designed in accordance with the regulations and guidelines outlined in *Section 2*, using MicroDrainage Network Design package, by Innovyze Inc., which simulates the performance of the

integrated drainage network for varying rainfall return periods and storm durations.

The MicroDrainage Network Design software applies the Flood Studies Report (FSR) methodology for analysis of the rainfall profiles. However, the input design parameters that were used, as part of this design, were based on the available Flood Studies Update (FSU) data, *i.e.*, the return period rainfall depths for sliding durations, which determine the **M₅₋₆₀** and **R** values, and the standard annual average rainfall (SAAR); as sourced from Met Éireann.

Figure 3.13 - Surface Water Network Design Criteria (MicroDrainage Excerpt)

3.6.2 Proposed Surface Water Catchment Areas

The proposed surface water network is to be split into a number of catchments, each with their own sub-catchments, in order to best integrate Sustainable Drainage Systems. Each sub-catchment area will look to provide treatment to the rainfall runoff, either at source or through site design, with all treated rainfall runoff being directed towards the river Ryewater, as is its natural course.

The discharge rate from each catchment area, have been designed to be restructured to 5.5 l/s/ha, which is less than the calculated greenfield equivalent.

Catchments B and C are both served by the same surface water drainage network, with the network discharging to the Blackhall Little stream. The rainfall runoff for sub-catchment B is treated and attenuated, prior to discharging to the network that serves sub-catchment C, in order to keep design flow rates low and consequently reduce required pipe sizes, and attenuation volume in sub-catchment C, prior to discharge to the Blackhall Little stream.

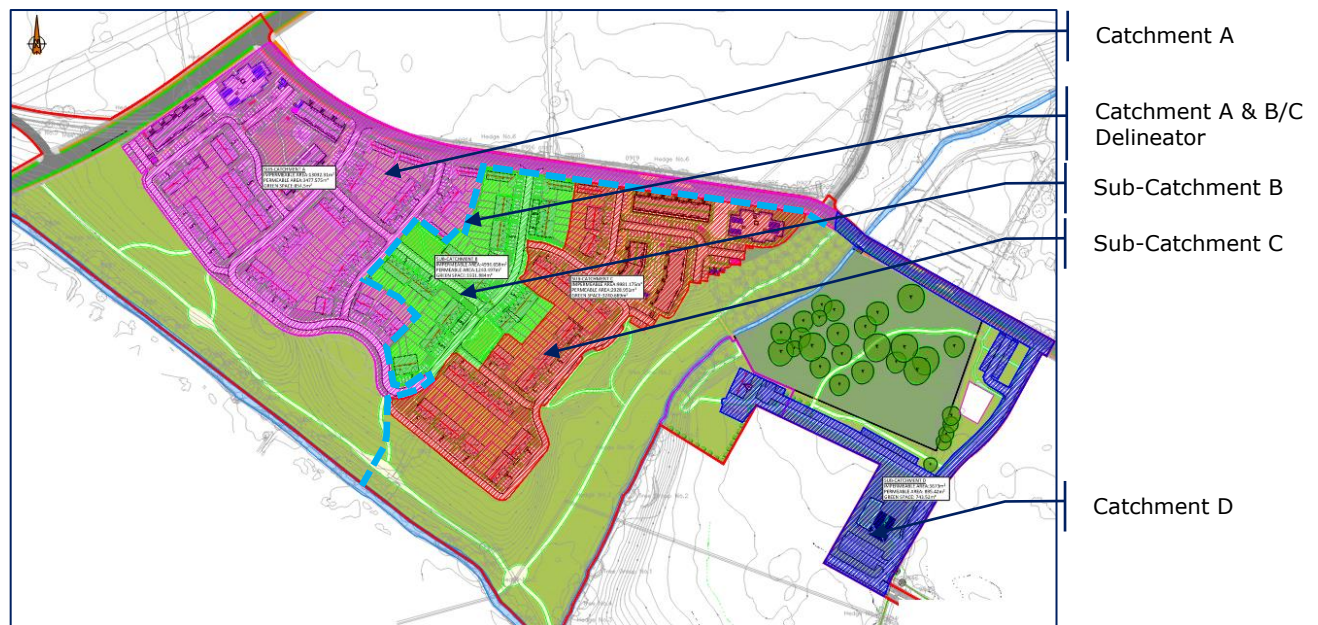


Figure 3.14 - Development Catchment Areas

Refer to OCSC drawing S665-OCSC-1C-XX-DR-C-0580 for breakdown of catchment areas, as per **Figure 3.14**.

3.6.3 Proposed Development Rainfall Runoff

It is proposed to reduce and restrict the rainfall runoff, discharging from the proposed development, to the greenfield equivalent, $Q_{BAR_{RURAL}}$, runoff rate, as per the FSR ICP SuDS method, which is based on the IH124 method for catchments smaller than 25km² in area.

This is to be achieved with the provision of a flow restrictor (Hydro-Brake Optimum by Hydro-International, or similar approved) prior to discharging to the existing watercourse at the south western corner of the site, with the appropriate measures of attenuation provided. Sub-catchment flow-control devices and associated attenuation are also to be strategically provided, in order to maximise SuDS benefits and avail of the central open space for preliminary attenuation.

Refer to Figure 3.3, in *Section 3.4.3*, for an excerpt from the results MicroDrainage Runoff Calculator for the development catchment area, which indicates the greenfield equivalent, $QBAR_{RURAL}$, value 5.6 l/s/ha, along with the calculated runoff for varying Average Recurrence Intervals (ARI).

The design intent is to reduce the rainfall runoff from the proposed development to a maximum of **5.5 l/s/ha**, which is **less than** the greenfield runoff equivalent; thus, resulting in no adverse impact on the receiving watercourse.

For the purpose of the surface water network design simulation, we have considered all external (roads, pavement, and roofs) areas as being 100% impermeable; giving a *winter* global runoff coefficient, C_v , of 0.84, in accordance with the HR Wallingford and Modified Rational Method for runoff. The proposed in-curtilage driveways, for each house-type, is to comprise pervious paving above a drainage layer base course. A reduced percentage impermeable factor of 80% has been applied for these locations, which conservatively accounts for initial interception from the pervious paving build-up.

3.6.4 Proposed Surface Water Pipe Network Design

The overall surface water drainage system, serving both catchments in the proposed development, is to consist of a gravity sewer network that will convey runoff from the roofs and paved areas to the outfall manhole.

The proposed piped-network has been designed in accordance with BS EN 752 and all new infrastructure is to be compliant with the requirements of the

GSDSDS and the GDR COP for Drainage Works, with minimum full-bore velocities of 1.0 m/s achieved throughout.

All main surface water carrier pipes have been sized to ensure no surcharging of the proposed drainage network for rainfall events up to, and including, the 1 in 5-year ARI event, with a projected climate change allowance of 20% increase in rainfall intensity, under normal flow conditions.

3.7 Proposed Surface Water Attenuation Storage

Attenuation systems are to be provided at strategic locations within the development in order to temporarily store excessive rainfall runoff, during significant rainfall events, due to the restricted discharge rates (to less than greenfield equivalent runoff rates) from the development outfalls.

This will be provided initially at individual residential units by provision of pervious paving for car parking areas, which is to comprise a pervious paving type surface, with a minimum 300mm depth drainage layer (open graded crushed rock).

The main development attenuation systems will be provided, typically comprising underground polytunnel systems (or similar approved), located at public open space areas. The main residential catchment's attenuation system will provide a polytunnel type system for the design rainfall events up to, and including, the 1-in-30-year ARI events; with additional volumes being temporarily attenuated above ground in the profiled landscaped areas, for more significant rainfall events up to, and including the 1-in-100-year ARI. This is to ensure that the public open space area can remain functional during less severe rainfall events. Refer to **Figure 3.15** for example of above ground detention basin.



Figure 3.15 - Example Detention Basin

Adequate drainage to the finished landscaping will be provided, in order to maintain functionality.

All other attenuation systems will be located completely underground, and shall comprise polytunnel systems, as previously described.

A layer of interception will also be provided under attenuation systems, in order to promote groundwater recharge during the initial 5 – 10mm rainfall periods, pending results of Site Investigation to confirm groundwater levels.

All polytunnel systems have been designed as on-line systems, and shall be provided with an isolator row, with a high level 225mm overflow / distributor pipe.

3.8 Surface Water Outfall Locations

The development is to discharge the treated and attenuated rainfall runoff to the existing watercourse along its southern and eastern boundaries, namely the river Ryewater and the Blackhall Little stream.

The discharge rates are to be restricted to a maximum flow rate of **5.5 l/s/ha**, which is **less than** the current greenfield equivalent runoff rate, as discussed in *Section 3.6.3*.

The above is to ensure that there is no increase in flow rates and volumes, from the development site, being discharged to the receiving infrastructure and waterbodies; thus, causing no adverse impact on adjoining and other downstream properties.

All outfalls are to be fitted with non-return valves.

3.9 Water Quality

The quality of the surface water discharging from site is to be improved through the following provisions, which are being considered as part of an integrated drainage network, and each of which is discussed in greater detail in 3.5.3:

- Rainwater Harvesting Butts at individual residential units;
- Pervious Paving in all private driveways and car parking spaces;
- Intensive landscaping, where practical;
- Swales and Filter Trenches, where allowable;
- Trapped road gullies on all road carriageways, to trap silt and gross pollutants;
- Silt traps to be provided on manholes immediately upstream of attenuation systems, as a further preventative measure to trap silt and other gross pollutants;
- Interception provisions at attenuation systems;
- Class 1 bypass fuel separator to be provided prior to discharging from site;
- Outlet pipe to comprise filter drain, for further interception of attenuated discharge.

3.10 Maintenance

The proposed surface water drainage network is to be carefully designed to minimise risk of blockage throughout the network, mainly through the following provisions that limit and restrict the size of pollutants entering the network:

- Pervious paving;
- Trapped road gullies;
- Silt trap manholes;

- Interception at attenuation systems;
- Flow controls greater than 150mm diameter.

Road gullies, silt traps, flow control devices and attenuation systems, should be inspected regularly and maintained, as appropriate and in accordance with manufacturer's recommendations and guidelines.

Items such as the flow controls and fuel separators shall be located so as to provide easy vehicular access for inspection and maintenance.

3.11 Surface Water Impact Assessment

The design criteria for the drainage system are established in *GSDSDS-RDP Volume 2, Section 6.3.4* and explained further in *GSDSDS-RDP Volume 2, Appendix E*. There are four design criteria, each of which has been considered for the subject site:

- River Water Quality Protection;
- River Regime Protection;
- Level of Service (flooding) for the site and;
- River Flood Protection.

3.11.1 Criterion 1 – River Water Quality Protection

It is proposed that the overall drainage system, serving this development, will contain a range of surface water treatment methods, as outlined previously in *Section 3.5.33.5*, which will improve the quality of surface water being discharged from the proposed development.

Gross pollutants, sediments, hydrocarbons, and other impurities, will be removed at source with the following provisions:

- a) Bioretention systems in open spaces;
- b) Intensive landscaping, where practicable;
- c) Interception storage at attenuation systems;
- d) All road gullies and linear channel drains are to be trapped;
- e) Silt-trap prior to attenuation storage area.

3.11.2 Criterion 2 – River Regime Protection

Surface water discharge from the overall development will be restricted to a maximum flow rate of **5.5 l/s/ha**, which is less than the greenfield runoff equivalent. Refer to *Section 3.6.3* for further details of the proposed development rainfall runoff calculations.

This will be achieved with the provision of a flow control devices (Hydro-Brake Optimum, by Hydro-International, or similar approved) upstream of the outfall manhole.

3.11.3 Criterion 3 – Level of Service (Flooding) Site

There are four sub-criteria for the required level of service, for a new development; as set out in the *GSDSDS Volume 2, Section 6.3.4 (Table 6.3)*.

- No flooding on site except where planned (30-year high intensity rainfall event);
- No internal property flooding (100-year high intensity rainfall event);
- No internal property flooding (100-year river event and critical duration for site) and;
- No flood routing off site except where specifically planned. (100-year high intensity rainfall event).

3.11.3.1 Sub-Criterion 3.1

The surface water drainage systems, serving the proposed development, are yet to be designed to accommodate the 100-year return period rainfall event (including an allowance of 20% increase in rainfall intensity for climate change) without flooding. Therefore, the system has capacity for the 30-year return period rainfall event without flooding.

The performance of the proposed drainage system is yet to be analysed for design rainfall events up to, and including, the 1% AEP event (including 20% climate change allowance) using the *MicroDrainage Network Design Software*, by Innovyze Inc. Refer to **Appendix C** of this ESR for details of design criteria, calculations and results. The analyses indicate that no

flooding will occur for design rainfall events up to, and including, the 1% AEP.

3.11.3.2 Sub-Criterion 3.2

The surface water drainage systems, serving the proposed development, are yet to be designed to accommodate the 100-year return period rainfall event (including an allowance of 20% increase in rainfall intensity for climate change) without flooding.

The performance of the proposed drainage system in 100-year return period storm events (including 20% climate change allowance) is yet to be analysed – Refer **Appendix C** of this ESR for calculations. The analyses show that no flooding will occur in 100-year return period storm events.

3.11.3.3 Sub-Criterion 3.3

Details of the flood risk assessment associated with the proposed development is outlined in the Site-Specific Flood Risk Assessment (Document Nr. **S665-OCSC-1C-XX-RP-C-0009**), which is to be submitted under separate cover, as part of this application. Furthermore, a detailed flood study of the river Ryewater has been prepared by JBA Consulting, and submitted under separate cover, which assesses potential impact from development across the Applicant's wider land-holding, which makes up the masterplan area.

These documents confirm that there is no adverse flood risk impact on the subject development, and no adverse flood risk as a result of the subject development.

3.11.3.4 Sub-Criterion 3.4

The surface water drainage systems, serving the proposed development, are designed to accommodate the 100-year return period rainfall event (including an allowance of 20% increase in rainfall intensity for climate change) without flooding, so no flood routing off site will be experienced for such a rainfall event.

The performance of the proposed drainage system in 100-year return period storm events (including 20% climate change allowance) is analysed – Refer **Appendix C** of this ESR for calculations. The analyses show that no flooding will occur in 100-year return period storm events.

Details of the flood risk assessment associated with the proposed development is outlined in the Site-Specific Flood Risk Assessment (Document Nr. **S665-OCSC-1C-XX-RP-C-0009**), which is submitted under separate cover, as part of this application.

3.11.4 Criterion 4 – River Flood Protection

As outlined in *Section 3.11.2* (Criterion 2), the surface water runoff from the development's catchment will be limited to a maximum of **5.5 l/s/ha**, which is less than the calculated greenfield equivalent.

Refer to *Section 3.6.3* of this report for further details on the limiting discharge rates. The *GDSDS Volume 2, Appendix E* states that this practice ensures "*that sufficient stormwater runoff retention is achieved to protect the river during extreme events*".

Attenuation storage is to be provided for the 100-year return period rainfall event (including an increased 20% rainfall intensity; to allow for climate change). Discharge from site is to be achieved through the use of a vortex flow control device (e.g., Hydro-Brake Optimum, by Hydro-International, or similar approved), which will reduce the risk of blockage present with other flow devices.

Refer to **Appendix C** of this ESR for details of hydraulic modelling calculations of attenuation and flow control facilities, as carried out using MicroDrainage software by Innovyze Inc.

3.12 Taking in Charge

It is proposed that all new surface water infrastructure, **is** to be offered to be taken in charge by Meath County Council.

4 WASTEWATER DRAINAGE

4.1 Overview

All proposed wastewater sewer design is to be carried out in accordance with Irish Water's Code of Practice for Wastewater Infrastructure. The existing site is currently greenfield, with no existing wastewater infrastructure in the immediate vicinity.

4.2 Consultation

A Pre-Connection Enquiry Form has been submitted to Irish Water for review, for both the proposed development, as well as for the Applicant's wider land holding, which forms part of the masterplan development for the Maynooth Environs lands. Irish Water (IW) issued a Confirmation of Feasibility Letter (Refer Appendix D) for the proposed development, subject to upgrade works being carried out.

OCSC and the applicant have had continued correspondence and meetings with Irish Water with respect to required upgrade works, and have committed to working with Irish Water in order to provide a strategic Wastewater Pumping Station (WWPS) within the applicant owned lands, at Moygaddy. The provision of strategic WWPS, centralised on the Maynooth Environs lands, will allow for new development in this area to be served by wastewater infrastructure, and subsequently allow expansion in order to serve the entire Maynooth Environs lands, as future phasing of development is brought on board.

The strategy of providing a WWPS, as noted, includes provision of rising main infrastructure to specifically serve the subject development, and the pipe will be routed along the Dunboyne Road, and routed across the river Ryewater, adjacent to the Kildare Bridge, so that a connection to the gravity infrastructure upstream of the Maynooth municipal WWPS can be achieved.

Further consultation between the Applicant and Irish Water has been had in relation to Irish Water's Capital Project, which is for the provision of new high pressure rising main infrastructure to serve Maynooth Town from the Maynooth municipal WWPS, as far as Leixlip wastewater treatment plant. These ongoing

works are to greatly improve the performance and capacity of the municipal WWPS, with a section of the new pipeline infrastructure to be provided in Applicant-owned lands. This is discussed further in *Section 4.4*.

In addition to all of the above, the detailed network design was issued to Irish Water for review, with a Statement of Design Acceptance issued on 19th August 2022, which is included in **Appendix D** of this ESR.

4.3 Existing Wastewater Drainage

There is currently no existing wastewater infrastructure in the immediate vicinity of the site. Following detailed consultation with Irish Water, and returned Confirmation of Feasibility letter, it was confirmed that sections of the Maynooth Town's main wastewater infrastructure has capacity issues, most likely caused by surplus surface water connections to the network.

The Applicant and Irish Water have committed to extensively identify the proposed route to the south east, as shown in Figure 4.1, as an alternative connection route.

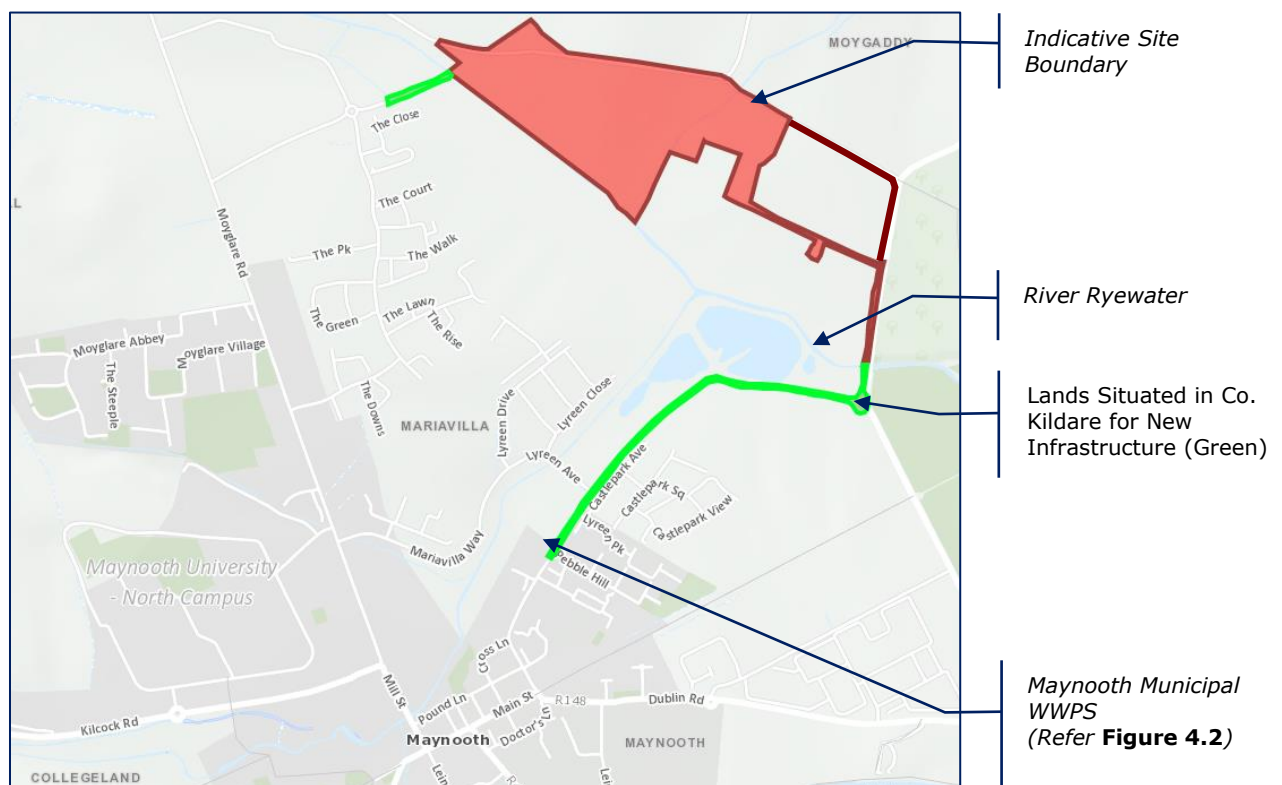


Figure 4.1 – Site Location Relative to Maynooth WWPS

Maynooth Town is served by a municipal WWPS, at its eastern extent, which discharges wastewater effluent to Leixlip Wastewater Treatment Plant. There is a gravity wastewater network on the Dunboyne Road, adjacent to the Maynooth WWPS.

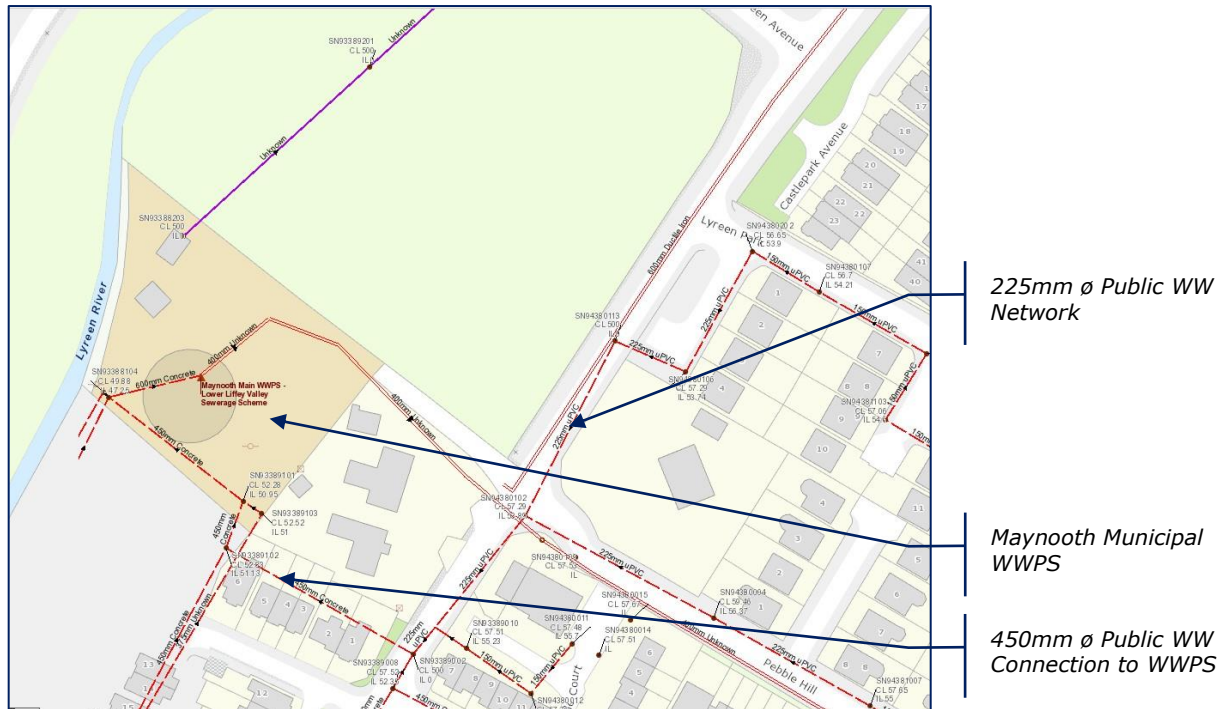


Figure 4.2 – Existing Wastewater Network and Pumping Station

4.4 New Irish Water Infrastructure

As part of Irish Water’s Strategic Capital Investment Programme, Irish Water are currently undergoing design and construction of a new wastewater rising main that will improve the capacity and performance of the nearby Maynooth public Wastewater Pumping Station, and the associated capacity improvements will also serve the proposed development.

The proposed rising main is to be routed north and east, towards the public Wastewater Treatment Plant at Leixlip, with a section of the route located within the eastern part of the Moygaddy Environ’s LAP lands that are owned by the Applicants as part of their wider land-holding.

The Developer has been in detailed consultation with Irish Water, for design development of the section of new rising main, in order to help accommodate the new strategic infrastructure within their lands.

The Section of infrastructure from the Maynooth WWPS as far as the river Ryewater has already been installed. From discussions with Irish Water, it is expected that the new infrastructure will be commissioned in 2025.

4.5 Proposed Wastewater Drainage Strategy

It is proposed to separate the wastewater and surface water drainage networks, which will serve the proposed development independently.

Refer to *Section 3* for details of the proposed surface water drainage design strategy.

The wastewater discharge from each dwelling is to connect, via a private outfall chamber, to the new development's gravity wastewater network, which has been designed in accordance with the Irish Water Code of Practice for Wastewater Infrastructure.

The overall strategy for the new residential (incl. crèche and scout's den) is to provide a gravity wastewater connection to a new underground strategic wastewater pumping station (WWPS), located in Applicant owned lands, east from the subject development site. From here, the new WWPS will discharge the new development's effluent, via pumped rising main, to the Maynooth Town municipal WWPS, located on the eastern extent of Maynooth. Refer *Section 4.3* for details of existing infrastructure.

In order to accommodate the above design solution, a gravity crossing is to be provided from the residential development, eastward across the Blackhall Little stream. This is to be achieved by utilising a new pedestrian bridge structure to secure the wastewater pipe, to its soffit, as it crosses the stream.

A gravity connection will be provided to the new Strategic WWPS, which shall be designed to accommodate for the new development, while also allowing for future expansion to serve the wider Maynooth Environs area, as future phases are brought on board. Refer to *Section 4.6* for further details.

The new WWPS shall discharge pumped effluent via rising main – with additional rising laid alongside to accommodate for greater loadings in future phases – as far as the gravity public infrastructure upstream of the Maynooth municipal WWPS. In order to achieve this, the rising main will need to cross the river Ryewater, adjacent to the new pedestrian / cycle bridge structure that is to be constructed adjacent to the Kildare Bridge. It is proposed that this rising main is to be routed under the river Ryewater, alongside the aforementioned new strategic high pressure rising mains that are to be installed by Irish Water to upgrade the Maynooth WWPS.

Refer to **Figure 4.3** for typical detail of a rising main crossing to the west of the Kildare Bridge structure, as per Irish Water Standard Detail Drawing Nr. STD-WW-24, details of which are to be agreed with Irish Water at connection offer stage. The construction methodology proposed is aligned with Irish Water’s proposals for the separate Strategic Capital Programme rising main.

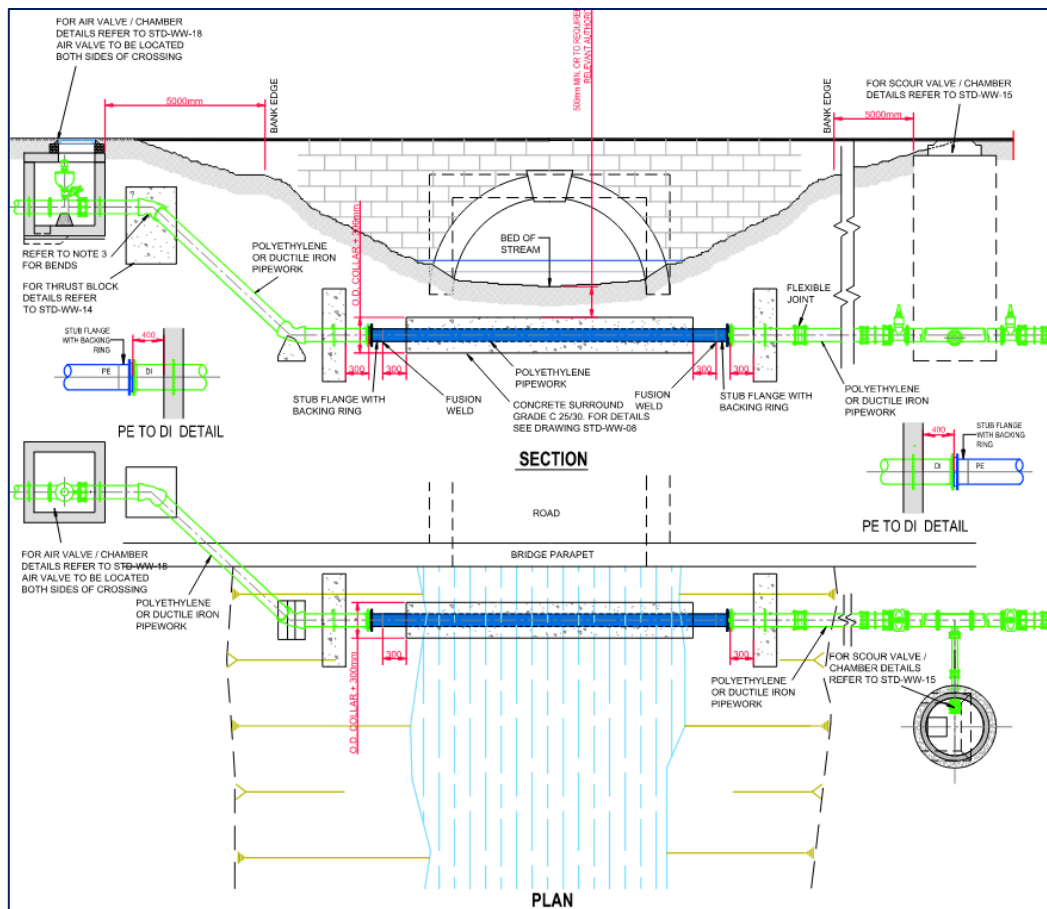


Figure 4.3 - Typical Detail of Rising Main Crossing at Bridge

Refer to OCSC Bridge Options Report, S665-OCSC-XX-XX-RP-C-0010, submitted separately to this ESR, for detailed discussion on the proposed bridges.

4.6 Wastewater Pumping Station

A new underground strategic wastewater pumping station (WWPS) is to be constructed on Applicant-owned lands, to the east of the proposed development site. Following discussions with Irish Water, the new WWPS has been sited at a location that is optimised for serving the wider Maynooth Environs lands, and is to be designed to allow for future expansion as additional development phases are brought through for planning and construction.

Design details of the new underground wastewater pumping station shall be agreed with Irish Water at new connection application stage, as required.

4.7 Taking In Charge

All new wastewater drainage infrastructure, installed to serve the proposed development is to be offered to Irish Water for to be taken-in-charge.

5 POTABLE WATER SUPPLY

5.1 Overview

All proposed potable water design has been carried out in accordance with Irish Water's Code of Practice for Water Infrastructure, IW-CDS-5020-03.

5.2 Consultation

A Pre-Connection Enquiry Form has been submitted to Irish Water for review, for both the proposed development, as well as the wider land holding, which forms part of the Maynooth Environs. Irish Water (IW) issued a Confirmation of Feasibility Letter (Refer Appendix D of this ESR) for the proposed development, subject to upgrade works being carried out.

OCSC and the applicant have continued correspondence with Irish Water with respect to proposed upgrade works, and have committed to working with Irish Water to resolve all infrastructure works in order to facilitate the proposed development.

In addition to all of the above, the detailed network design was issued to Irish Water for review, with a Statement of Design Acceptance issued on 19th August 2022, which is included in **Appendix D** of this ESR.

5.3 Connection to the Existing Network

It is proposed to provide an extension to the existing 200mm ductile iron watermain at Moyglare Close, with a metered 200mm high density polyethylene connection provided to serve the proposed development. This will require the new watermain to cross the river Ryewater by utilising the new bridge structure at Moyglare that is to be constructed as part of the new Maynooth Outer Orbital Road, a section of which is included within this application.

Internal distribution networks of 100mm and 150mm HDPE watermain will be provided to serve the proposed residential units. An extension from the proposed development's watermain will be provided to serve the proposed

crèche facility and scout's den, which are located to the east of the Blackhall Little stream, adjacent to the proposed public park.

Additional capped spurs are to be provided, in order to facilitate for future phasing of development within the wider Maynooth Environs lands.



Figure 5.1 - Existing Public Water Infrastructure

5.4 Water Saving Devices

Water saving devices are to be considered for use within the proposed development units, in order to conserve the use of water, as part of the internal fit-out.

5.5 Water Meters

A bulk water meter is to be provided at the connection to the public watermain, at the development entrance, with individual boundary boxes and meters provided at the connection to each individual property and block of duplexes and apartments. All metering is to be provided in accordance with Irish Water's requirements.

5.6 Taking In Charge

All new watermain infrastructure, installed to serve the proposed development **is** to be offered to Irish Water for to be taken-in-charge.

6 ROADS AND TRAFFIC

6.7 Design Standards

The proposed development will incorporate a series of design measures, which will be detailed hereinafter, to promote more sustainable modes of transport and support vulnerable road users in line with the core principles of the Design Manual for Urban Roads and Streets (DMURS).

While DMURS is the principle design guideline for the road's elements of this project, the extended list of the main standard documents relied on is:

- National Cycle Manual;
- Traffic Signs Manual 2019;
- DN-PAV-03021: Pavement & Foundation Design;
- GE-STY-01024: Road Safety Audit;
- DN-GEO-03060: Geometric Design of Junctions;
- Traffic Management Guidelines
- NRA IAN 02/11 Interim Requirements for the Use of Eurocodes for the Design of Road Structures Amendment No. 1.
- Standards for Cycle Parking and associated Cycling Facilities for New Developments.

6.8 Proposed Road Network

The proposed development includes the creation of a new internal development road network and upgrading of the L6219 and L22143 and the provision of a section (c.500m) of the Maynooth Outer Orbital Route (MOOR) from the River Rye to the proposed residential lands. The proposed works also include a small section of realignment works to the L6219 to tie into the new section of the MOOR and the upgrade of the existing L6219 and L22143 from the residential lands to the creche and public park lands to the east. The upgrade of the L6219 and L22143 will include pedestrian and cycle infrastructure links. The portion of the MOOR as noted previously as part of this application also includes a section of new bridge over the adjacent River Rye that crosses into the jurisdiction of Kildare County Council.

A separate application will be made to Kildare County Council for the provision of the section of MOOR, south of the River Rye that ties into the already constructed section of the MOOR adjacent to Moyglare Hall that is within the Kildare County Council jurisdiction. This separate application will also include for the bridge crossing of the River Rye in Kildare County Council jurisdiction. This overlap of applications will ensure unimpeded access to the proposed development lands for all modes of transport including vehicular and dedicated pedestrian and cyclists' facilities.

The design of the MOOR will take cognisance of the already constructed section adjacent to Moyglare Hall and also ensure consistency with the recently granted Maynooth Eastern Ring Road planning reference P82019-08. The design will implement latest design standards in agreement with Meath County Council Transportation Section.

The development consists of a 5.00-5.50 m wide internal access roads and 6.00m wide roads where perpendicular parking is present in line with Section 4.4.9 of DMURS. The development will access off a new priority type junction on to the L6219. The proposed development entrance will take the form of a simple priority T-Junction. The design of the MOOR and the realignment of the L6219 local road will consist of a carriageway width of 7.0m. Segregated Pedestrian & cyclist infrastructure will be provided along the MOOR, L6219 and L22143.

The segregated pedestrian & cyclist infrastructure proposed along the frontage of the SHD development along the L6219 will provide access from the proposed SHD across the Blackhall Little Stream and provides access to the proposed crèche and public park to the east of the Blackhall Little Stream, tying into to further infrastructure at the junction with the R157. A new standalone pedestrian/cyclist bridge is proposed to be installed across the Blackhall Little Stream providing dedicated access for vulnerable road users. Due to the existing condition of the bridge over the Moygaddy stream this bridge is proposed to be a 3.0m wide standalone structure.

Refer to OCSC Bridge Options Report, S665-OCSC-XX-XX-RP-C-0010, submitted separately to this ESR, for detailed discussion on the proposed bridges.

All junctions will be assessed in detail within the final Traffic Impact Assessment submitted.

6.9 Road Classification

The proposed modifications to the L6219, L22143 and the sections of the MOOR are designed in accordance with the DMURS, with specific consideration given to the sections including:

- Section 4.3.1 Footways, Verges and Strips
- Section 4.3.2 Pedestrian Crossings
- Section 4.3.3 Corner Radii
- Section 4.3.5 Cycle Facilities
- Section 4.4.1 Carriageway Widths
- Section 4.4.2 Carriageway Surfaces
- Section 4.4.3 Junction Design
- Section 4.4.4 Forward Visibility
- Section 4.4.9 On-Street Parking and Loading

Table 3.1 of DMURS illustrates how this road hierarchy relates to other relevant documents. An extract of DMURS can be seen in Figure 6-1, following.

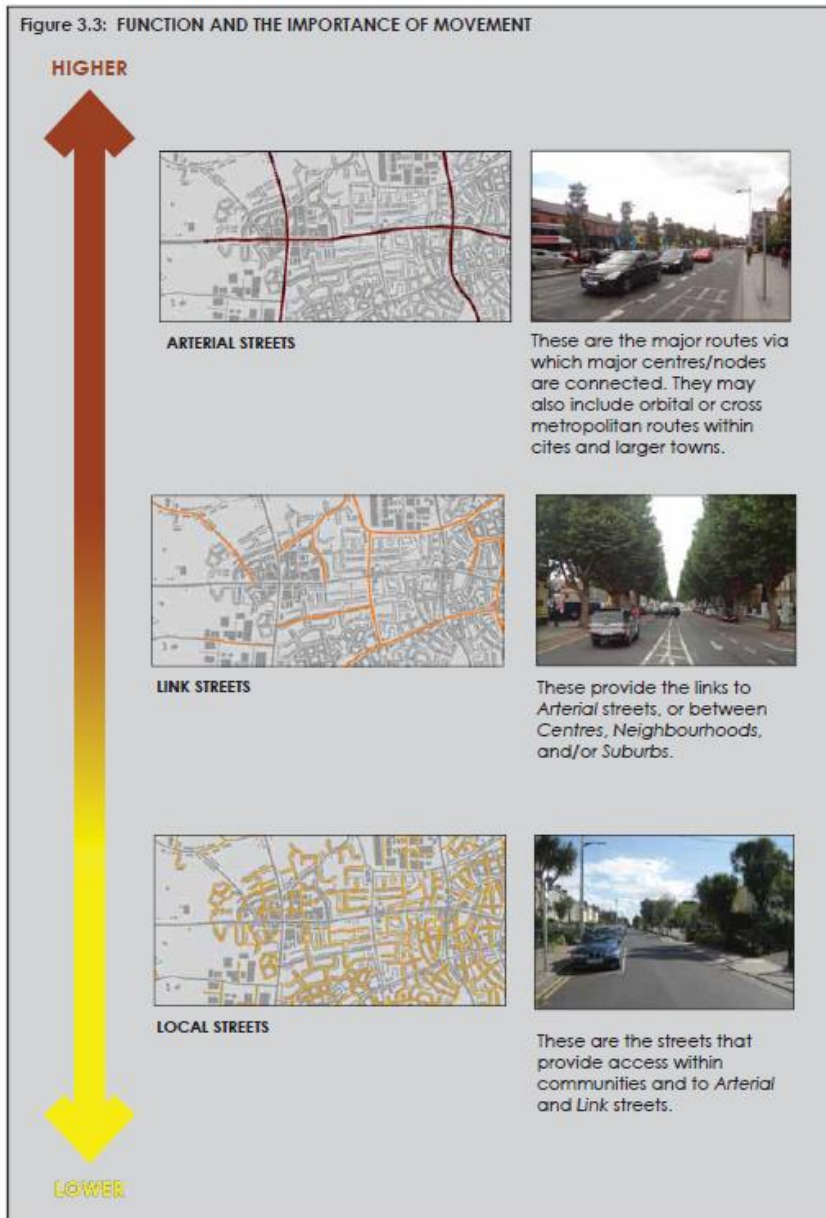


Figure 6-1: DMURS Street Classification

The MOOR has been designed as per the below Figure 6-2.

| DMURS Description | Roads Act/NRA DMRB | Traffic Management Guidelines | National Cycle Manual |
|-------------------|-----------------------|---|-----------------------|
| Arterial | National | Primary Distributor Roads | Distributor |
| Link | Regional (see note 1) | District Distributor Local Collector (see Notes 1 and 2) | Local Collector |
| Local | Local | Access | Access |

Notes

Note 1: Larger Regional/District Distributors may fall into the category of *Arterial* where they are the main links between major centres (i.e. towns) or have an orbital function.

Note 2: Local Distributors may fall into the category of *Local* street where they are relatively short in length and simply link a neighbourhood to the broader street network.

Table 3.1: Terminology used within this Manual compared with other key publications.

Figure 6-2: DMURS Street Hierarchy

The internal road layout and L6219/L22143 modifications have been designed as per the below Figure 6-3.

| DMURS Description | Roads Act/NRA DMRB | Traffic Management Guidelines | National Cycle Manual |
|-------------------|-----------------------|---|-----------------------|
| Arterial | National | Primary Distributor Roads | Distributor |
| Link | Regional (see note 1) | District Distributor Local Collector (see Notes 1 and 2) | Local Collector |
| Local | Local | Access | Access |

Notes

Note 1: Larger Regional/District Distributors may fall into the category of *Arterial* where they are the main links between major centres (i.e. towns) or have an orbital function.

Note 2: Local Distributors may fall into the category of *Local* street where they are relatively short in length and simply link a neighbourhood to the broader street network.

Table 3.1: Terminology used within this Manual compared with other key publications.

Figure 6-3: DMURS Street Hierarchy

6.10 Road Design Speeds

The MOOR (red) is envisaged to have a Design Speed of 60 kph. This design speed will tie into the recently approved wider strategic road network including the Maynooth Eastern Ring Road planning reference P82019-08 and will also have to be co-ordinated with the existing section of the MOOR already constructed west of the development site adjacent to Moyglare Hall.

It is noted that an additional section of the MOOR that will provide a connection from the works proposed as part of this application, to the section already constructed adjacent to Moyglare Hall will be submitted to Kildare County Council as this is within their jurisdiction.

The L6219/L22143 (green) has been designed to a Design Speed of 50 kph with geometric parameters chosen under DMURS. The internal road network (blue) has been designed to a Design Speed of 10-30 kph with geometric parameters chosen under DMURS. This is reflected in Figure 6-4 below extracted from DMURS, with the MOOR shown in red and the L6219/L22143 shown in green.

| | | PEDESTRIAN PRIORITY | | VEHICLE PRIORITY | | |
|----------|------------|---------------------|------------|------------------|-------------------------|-----------------|
| FUNCTION | ARTERIAL | 30-40 KM/H | 40-50 KM/H | 40-50 KM/H | 50-60 KM/H | 60-80 KM/H |
| | LINK | 30 KM/H | 30-50 KM/H | 30-50 KM/H | 50-60 KM/H | 60-80 KM/H |
| LOCAL | 10-30 KM/H | 10-30 KM/H | 10-30 KM/H | 10-30 KM/H | 30-50 KM/H | 60 KM/H |
| | | CENTRE | N'HOOD | SUBURBAN | BUSINESS/ INDUSTRIAL | RURAL FRINGE |
| | | CONTEXT | | | | |

Table 4.1: Design speed selection matrix indicating the links between place, movement and speed that need to be taken into account in order to achieve effective and balanced design solutions.

Figure 6-4: DMURS Design Speeds

This proposed design speed ties into the existing speed limits of the surrounding road network.

6.11 Horizontal and Vertical Geometry

The road alignments will be designed so that the geometric elements, including horizontal and vertical curvature, superelevation and sight distance will be in line with DMURS, having values consistent with the design speeds.

The relevant horizontal and vertical geometric design values are shown in DMURS *Table 4.3* below shown below in Table 6-1. A standard carriageway cross fall of 2.5% will be adopted throughout, noting that adverse camber is allowable under DMURS designs in accordance with *Table 4.3*. A cross fall of 2.5% will also be used for footpaths and cycle facilities.

Table 6-1: DMURS Geometric Parameters

| HORIZONTAL CURVATURE | | | | | | |
|--|-----|-----|-----|-----|-----|-----|
| Design Speed (km/h) | 10 | 20 | 30 | 40 | 50 | 60 |
| Minimum Radius with adverse camber of 2.5% | - | 11 | 26 | 56 | 104 | 178 |
| Minimum Radius with superelevation of 2.5% | - | - | - | 46 | 82 | 136 |
| VERTICAL CURVATURE | | | | | | |
| Design Speed (km/h) | 10 | 20 | 30 | 40 | 50 | 60 |
| Crest Curve K Value | N/A | N/A | N/A | 2.6 | 4.7 | 8.2 |
| Sag Curve K Value | N/A | N/A | 2.3 | 4.1 | 6.4 | 9.2 |

Table 4.3: Carriageway geometry parameters for horizontal and vertical curvature.

6.12 Road Cross Section

6.12.5 Carriageway

As mentioned previously, the internal road layout will consist of a 5.00-5.50m wide internal access roads and 6.00m wide roads where perpendicular parking is present within the proposed development in line with section 4.4.9 of DMURS. The proposed MOOR cross section will consist of a 7m carriageway, a 1.5m verge, a 1.75m cycle track and a 2m footpath on both sides of the road. The L6219/L22143 cross section will be similar to the MOOR, with the same dimensions. The only exception is that this footpath and cycle track will only be located on the southern part of the road, with the northern side to be

included in future developments. This has been designed in line with section 4.4.1 of DMURS.

6.12.6 Footpaths

The width of the footpaths has been determined with reference to DMURS *Section 4.3.1* with a minimum required width of 1.8 m based on the space needed for two wheelchairs to pass each other.

6.12.7 Cycle Facilities

The cycle lanes along the MOOR will be designed in accordance with the National Cycle Manual (NCM). Based on the Cycle Width Calculator in the NCM. The appropriate cycle path width will be a minimum of 1.75m giving room for a single file lane with overtaking room. The cycle paths will be separated from traffic by a kerb and verge and there will be a vertical separation on the inside, between the cycle path and footpath.

Within the development, cyclists are accommodated in shared spaces as well as on the roadway, as the speeds and the vehicular volumes are low, in line with the national cycle manual as shown below in figure below.

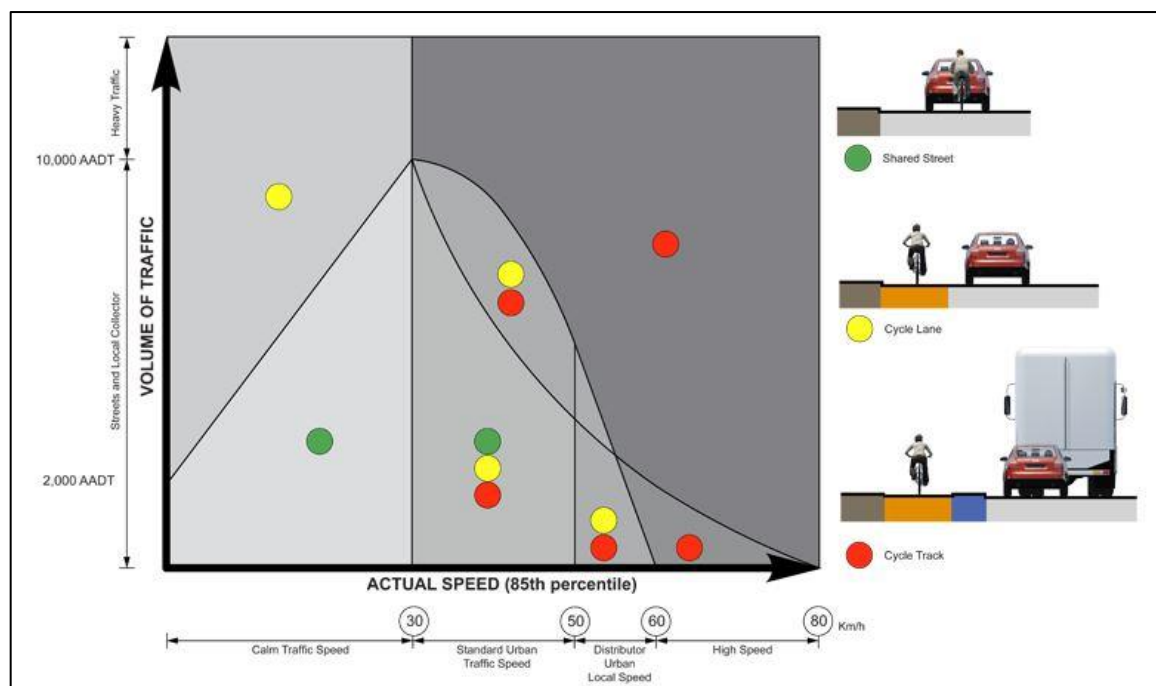


Figure 6-5: National Cycle Manual - Mixed or Separate

As discussed previously, the sections of the MOOR as well as the full L6219/L22143 will include segregated cycle tracks and footpaths, which will tie into infrastructure in Kildare County Council on both sides of the MOOR.

6.13 Road Junctions

New junctions where the MOOR and L6219 intersect have been designed as priority-controlled junctions with right-turn lanes for traffic management purposes. Access junctions to the development have also been designed as simple priority junctions with cycle track and footpath infrastructure in line with DMURS. These have been designed with the primary principle of providing safe and consistent layouts to present a uniformity of approach to drivers and other road users. In addition, the junctions have sufficient capacity to accommodate design year peak traffic flows thus optimising network capacity. The primary junction strategy objectives have been:

- To optimise road safety by ensuring adequate visibility and consistency;
- To ensure capacity for the design year;
- To function as traffic calming measures;
- To provide safe crossing facilities for pedestrians and cyclists;
- To provide busses with minimum delays.

6.14 Consultation

OCSC have had interactions with Kildare County Council and Meath County Council on this scheme in relation to the transportation related elements of the scheme, as detailed below:

- OCSC met with Meath County Council on 19 July 2021 to open preliminary discussions on the design of the MOOR. In attendance was Martin Murry (Director of Services for Infrastructure) and Nicholas Whyatt (Senior Engineer Transportation). Since this meeting, a Traffic Modelling Scoping Report has been issues to MCC.
- As noted previously, although the scheme is planned within the Meath County Council jurisdiction, a separate application will be made to KCC for infrastructure within the County. It is however noted that as the

largest nearby urban centre is within KCC jurisdiction, they have been consulted as a stakeholder. OCSC met with KCC on 9 August 2021, and 23 September 2021. In attendance was Brigette Rea, Daragh Conlan, George Willoughby, Jonathan Hennessy, and Lisa Kirwan, all from KCC. The same Traffic Modelling Scoping Report has also been issues to KCC.

- A submission was made on the Maynooth Transport Strategy as part of public consultation no. 1 on the 12th of November 2021. This submission outlines the proposed plans for the area and noted that it should be considered as part of the future Transport Strategy.
- A submission was made to BusConnects on the 15th of November 2021 noting the upcoming proposals as part of the MOOR that noted the BusConnects project should take cognisance of the upcoming works.

OCSC received a number of comments from Meath County Council's Transportation Department as part of their Opinion Report. Following this, further workshopping was done on the MOOR. A meeting was held on 14/07/2022 with various stakeholders at MCC, after which a number of comments were received. Subsequent to this, these comments have been incorporated into the design.

Appendix F of this ESR details the responses to the comments from the Opinion Report, as well as the comments received and addressed as part of the subsequent MOOR design meeting.

6.15 Traffic Impact

A Traffic Impact Assessment will be carried out which considers the current traffic flows and capacity in accordance with the Traffic and Transport Assessment Guidelines May 2014 from Transport Infrastructure Ireland. The Traffic Impact Assessment will be done by means of Vissim Micro-Simulation software at the request of Kildare County Council. More details of the TIA can be found in the TIA document submitted under separate cover.

6.16 Site Accessibility

The subject site will be linked to Maynooth Town Centra via the proposed section of the MOOR as part of this application and the Moyglare Road. New dedicated pedestrian and cyclist infrastructure will be provided along the proposed section of the Maynooth Outer Relief Road (MOOR) & within the internal development. All footpaths within the development will be a minimum of 1.80m wide and will run parallel to the proposed road infrastructure. The SHD site will be serviced by way of two uncontrolled junctions that will access the L6219.

The provision of infrastructure on the MOOR will include a 7.0m carriageway, 1.5m verge, footpath and also cycle tracks designed per the National Cycle Manual.

Pedestrian and cyclist infrastructure will also be provided along the L6219/L22143 linking the residential lands to the creche and public parklands to the east.



Figure 6-6: Site Layout

INTENTIONALLY BLANK

APPENDIX A. Q_{BAR} Calculation and Rainfall Data

9 Prussia Street
Dublin 7
Ireland

Moygaddy Castle SHD



Date 23/11/2021 09:40
File

Designed by RP
Checked by MK

XP Solutions Source Control 2020.1

ICP SUDS Mean Annual Flood

Input

| | | | |
|-----------------------|-------|---------------|--------------|
| Return Period (years) | 2 | Soil | 0.470 |
| Area (ha) | 1.000 | Urban | 0.000 |
| SAAR (mm) | 799 | Region Number | Ireland East |

Results 1/s

QBAR Rural 5.6
QBAR Urban 5.6

Q2 years 5.4

Q1 year 4.8
Q30 years 9.2
Q100 years 10.7

Met Eireann
Return Period Rainfall Depths for sliding Durations
Irish Grid: Easting: 294126, Northing: 239157,

| DURATION | Interval | Years | | | | | | | | | | | | | |
|----------|----------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | 2, | 3, | 4, | 5, | 10, | 20, | 30, | 50, | 75, | 100, | 150, | 200, | 250, | 500, |
| 5 mins | 2.4, | 4.0, | 4.9, | 5.4, | 5.9, | 7.4, | 9.2, | 10.3, | 12.0, | 13.4, | 14.6, | 16.4, | 17.8, | 18.9, | N/A, |
| 10 mins | 3.3, | 5.6, | 6.8, | 7.6, | 8.2, | 10.3, | 12.8, | 14.4, | 16.7, | 18.7, | 20.3, | 22.8, | 24.8, | 26.4, | N/A, |
| 15 mins | 3.9, | 6.5, | 8.0, | 8.9, | 9.7, | 12.2, | 15.0, | 16.9, | 19.6, | 22.0, | 23.9, | 26.9, | 29.1, | 31.0, | N/A, |
| 30 mins | 5.1, | 8.5, | 10.2, | 11.4, | 12.3, | 15.4, | 18.8, | 21.1, | 24.3, | 27.2, | 29.4, | 32.9, | 35.6, | 37.8, | N/A, |
| 1 hours | 6.8, | 10.9, | 13.1, | 14.6, | 15.7, | 19.4, | 23.6, | 26.3, | 30.2, | 33.6, | 36.2, | 40.3, | 43.4, | 46.1, | N/A, |
| 2 hours | 9.0, | 14.1, | 16.8, | 18.6, | 20.0, | 24.5, | 29.5, | 32.8, | 37.4, | 41.4, | 44.6, | 49.3, | 53.0, | 56.1, | N/A, |
| 3 hours | 10.5, | 16.4, | 19.5, | 21.5, | 23.0, | 28.1, | 33.7, | 37.3, | 42.4, | 46.9, | 50.3, | 55.6, | 59.6, | 63.0, | N/A, |
| 4 hours | 11.8, | 18.3, | 21.6, | 23.8, | 25.5, | 30.9, | 37.0, | 40.9, | 46.4, | 51.1, | 54.8, | 60.5, | 64.8, | 68.3, | N/A, |
| 6 hours | 13.9, | 21.3, | 25.0, | 27.5, | 29.4, | 35.4, | 42.2, | 46.5, | 52.6, | 57.9, | 61.9, | 68.1, | 72.8, | 76.7, | N/A, |
| 9 hours | 16.3, | 24.7, | 28.9, | 31.7, | 33.8, | 40.6, | 48.1, | 52.9, | 59.6, | 65.4, | 69.9, | 76.7, | 81.9, | 86.1, | N/A, |
| 12 hours | 18.3, | 27.5, | 32.1, | 35.1, | 37.4, | 44.8, | 52.8, | 58.0, | 65.2, | 71.4, | 76.2, | 83.4, | 88.9, | 93.5, | N/A, |
| 18 hours | 21.6, | 32.0, | 37.1, | 40.5, | 43.1, | 51.3, | 60.3, | 66.0, | 73.9, | 80.8, | 86.0, | 93.9, | 100.0, | 104.9, | N/A, |
| 24 hours | 24.2, | 35.6, | 41.2, | 44.9, | 47.7, | 56.6, | 66.2, | 72.4, | 80.8, | 88.2, | 93.8, | 102.2, | 108.6, | 113.9, | 131.9, |
| 2 days | 30.0, | 42.7, | 48.8, | 52.8, | 55.8, | 65.2, | 75.3, | 81.7, | 90.3, | 97.8, | 103.4, | 111.9, | 118.3, | 123.5, | 141.2, |
| 3 days | 35.0, | 48.8, | 55.3, | 59.5, | 62.7, | 72.6, | 83.2, | 89.8, | 98.8, | 106.5, | 112.2, | 120.9, | 127.4, | 132.7, | 150.5, |
| 4 days | 39.4, | 54.1, | 61.0, | 65.5, | 68.9, | 79.3, | 90.3, | 97.2, | 106.4, | 114.3, | 120.3, | 129.1, | 135.8, | 141.2, | 159.3, |
| 6 days | 47.2, | 63.7, | 71.3, | 76.1, | 79.8, | 91.1, | 102.9, | 110.2, | 120.0, | 128.4, | 134.6, | 143.9, | 150.8, | 156.4, | 175.2, |
| 8 days | 54.3, | 72.2, | 80.4, | 85.7, | 89.6, | 101.6, | 114.1, | 121.8, | 132.2, | 140.9, | 147.4, | 157.1, | 164.3, | 170.1, | 189.5, |
| 10 days | 61.0, | 80.2, | 88.9, | 94.4, | 98.6, | 111.3, | 124.4, | 132.5, | 143.3, | 152.4, | 159.1, | 169.2, | 176.6, | 182.6, | 202.6, |
| 12 days | 67.3, | 87.6, | 96.8, | 102.7, | 107.0, | 120.3, | 134.1, | 142.5, | 153.7, | 163.1, | 170.1, | 180.5, | 188.2, | 194.4, | 214.9, |
| 16 days | 79.1, | 101.6, | 111.7, | 118.1, | 122.8, | 137.2, | 152.0, | 161.0, | 173.0, | 183.0, | 190.4, | 201.4, | 209.5, | 216.0, | 237.6, |
| 20 days | 90.3, | 114.7, | 125.6, | 132.4, | 137.5, | 152.9, | 168.5, | 178.1, | 190.8, | 201.3, | 209.1, | 220.6, | 229.1, | 235.9, | 258.4, |
| 25 days | 103.6, | 130.2, | 141.9, | 149.3, | 154.7, | 171.2, | 187.9, | 198.1, | 211.5, | 222.7, | 230.9, | 243.0, | 251.9, | 259.1, | 282.6, |

NOTES:

N/A Data not available

These values are derived from a Depth Duration Frequency (DDF) Model

For details refer to:

'Fitzgerald D. L. (2007), Estimates of Point Rainfall Frequencies, Technical Note No. 61, Met Eireann, Dublin',
Available for download at www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf



APPENDIX B. Surface Water Design Criteria and Simulation Results

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

STORM SEWER DESIGN by the Modified Rational Method

Design Criteria for Surface Water1

Pipe Sizes STANDARD Manhole Sizes STANDARD

FSR Rainfall Model - Scotland and Ireland

| | | | |
|--------------------------------------|--------|---------------------------------------|-------|
| Return Period (years) | 5 | PIMP (%) | 100 |
| M5-60 (mm) | 15.700 | Add Flow / Climate Change (%) | 20 |
| Ratio R | 0.281 | Minimum Backdrop Height (m) | 0.200 |
| Maximum Rainfall (mm/hr) | 50 | Maximum Backdrop Height (m) | 1.500 |
| Maximum Time of Concentration (mins) | 30 | Min Design Depth for Optimisation (m) | 1.200 |
| Foul Sewage (l/s/ha) | 0.000 | Min Vel for Auto Design only (m/s) | 1.00 |
| Volumetric Runoff Coeff. | 0.750 | Min Slope for Optimisation (1:X) | 500 |

Designed with Level Soffits

Network Design Table for Surface Water1

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|----------|---------------|-------------|----------------|----------------|----------------|--------------------|-----------|-------------|-------------|--------------|----------------|
| SC-1.000 | 70.155 | 0.286 | 245.0 | 0.103 | 4.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-1.001 | 67.531 | 0.276 | 245.0 | 0.085 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-1.002 | 67.531 | 0.276 | 245.0 | 0.084 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-1.003 | 53.294 | 0.218 | 245.0 | 0.067 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-2.000 | 31.976 | 0.188 | 170.0 | 0.051 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-2.001 | 15.169 | 0.089 | 170.0 | 0.018 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-2.002 | 45.442 | 0.267 | 170.0 | 0.062 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-2.003 | 19.940 | 0.199 | 100.0 | 0.025 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-2.004 | 48.265 | 0.541 | 89.2 | 0.060 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-1.004 | 11.618 | 0.036 | 325.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-1.005 | 20.192 | 0.062 | 325.0 | 0.080 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-1.006 | 48.741 | 0.119 | 410.0 | 0.158 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-3.000 | 29.015 | 0.580 | 50.0 | 0.082 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-3.001 | 33.444 | 0.458 | 73.1 | 0.056 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |

Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|----------|-----------------|----------------|--------------|------------------|----------------------|---------------|-------------------|--------------|--------------|---------------|
| SC-1.000 | 50.00 | 5.17 | 55.461 | 0.103 | 0.0 | 0.0 | 2.8 | 1.00 | 70.7 | 16.7 |
| SC-1.001 | 50.00 | 6.29 | 55.175 | 0.187 | 0.0 | 0.0 | 5.1 | 1.00 | 70.7 | 30.4 |
| SC-1.002 | 50.00 | 7.42 | 54.899 | 0.271 | 0.0 | 0.0 | 7.3 | 1.00 | 70.7 | 44.1 |
| SC-1.003 | 48.30 | 8.31 | 54.623 | 0.338 | 0.0 | 0.0 | 8.8 | 1.00 | 70.7 | 53.0 |
| SC-2.000 | 50.00 | 4.53 | 55.766 | 0.051 | 0.0 | 0.0 | 1.4 | 1.00 | 39.8 | 8.3 |
| SC-2.001 | 50.00 | 4.79 | 55.578 | 0.069 | 0.0 | 0.0 | 1.9 | 1.00 | 39.8 | 11.1 |
| SC-2.002 | 50.00 | 5.54 | 55.489 | 0.131 | 0.0 | 0.0 | 3.5 | 1.00 | 39.8 | 21.2 |
| SC-2.003 | 50.00 | 5.80 | 55.221 | 0.156 | 0.0 | 0.0 | 4.2 | 1.31 | 52.0 | 25.3 |
| SC-2.004 | 50.00 | 6.38 | 55.022 | 0.216 | 0.0 | 0.0 | 5.8 | 1.39 | 55.1 | 35.1 |
| SC-1.004 | 47.80 | 8.50 | 54.331 | 0.554 | 0.0 | 0.0 | 14.3 | 1.00 | 110.4 | 86.0 |
| SC-1.005 | 46.96 | 8.84 | 54.295 | 0.634 | 0.0 | 0.0 | 16.1 | 1.00 | 110.4 | 96.7 |
| SC-1.006 | 45.08 | 9.65 | 54.158 | 0.791 | 0.0 | 0.0 | 19.3 | 1.00 | 158.7 | 115.9 |
| SC-3.000 | 50.00 | 4.26 | 55.302 | 0.082 | 0.0 | 0.0 | 2.2 | 1.85 | 73.7 | 13.4 |
| SC-3.001 | 50.00 | 4.62 | 54.722 | 0.138 | 0.0 | 0.0 | 3.7 | 1.53 | 60.9 | 22.4 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Surface Water1

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|----------|---------------|-------------|----------------|----------------|----------------|--------------------|-----------|-------------|-------------|--------------|----------------|
| SC-1.007 | 14.851 | 0.036 | 410.0 | 0.032 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-1.008 | 20.551 | 0.050 | 410.0 | 0.037 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-1.009 | 22.255 | 0.045 | 495.0 | 0.060 | 0.00 | 0.0 | 0.600 | o | 525 | Pipe/Conduit | |
| SC-1.010 | 16.582 | 0.033 | 495.0 | 0.037 | 0.00 | 0.0 | 0.600 | o | 525 | Pipe/Conduit | |
| SC-4.000 | 67.465 | 0.452 | 149.3 | 0.178 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-5.000 | 14.655 | 0.100 | 146.5 | 0.000 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-5.001 | 35.729 | 0.285 | 125.4 | 0.247 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-5.002 | 10.336 | 0.042 | 245.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-5.003 | 8.703 | 0.100 | 87.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-5.004 | 64.785 | 0.368 | 176.0 | 0.252 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-6.000 | 25.481 | 0.303 | 84.1 | 0.041 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-5.005 | 15.327 | 0.047 | 325.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-5.006 | 62.032 | 0.238 | 260.6 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-5.007 | 15.019 | 0.046 | 325.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-5.008 | 10.800 | 0.327 | 33.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-4.001 | 12.337 | 0.047 | 262.5 | 0.006 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-7.000 | 15.581 | 0.180 | 86.6 | 0.088 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-7.001 | 24.294 | 0.206 | 117.9 | 0.097 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-7.002 | 43.183 | 0.797 | 54.2 | 0.119 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-8.000 | 7.990 | 0.054 | 148.0 | 0.071 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-8.001 | 10.787 | 0.068 | 158.6 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |

Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|----------|-----------------|----------------|--------------|------------------|----------------------|---------------|-------------------|--------------|--------------|---------------|
| SC-1.007 | 44.54 | 9.90 | 54.039 | 0.961 | 0.0 | 0.0 | 23.2 | 1.00 | 158.7 | 139.1 |
| SC-1.008 | 43.82 | 10.24 | 54.003 | 0.998 | 0.0 | 0.0 | 23.7 | 1.00 | 158.7 | 142.1 |
| SC-1.009 | 43.08 | 10.62 | 53.878 | 1.058 | 0.0 | 0.0 | 24.7 | 1.00 | 216.5 | 148.2 |
| SC-1.010 | 42.55 | 10.89 | 53.833 | 1.095 | 0.0 | 0.0 | 25.2 | 1.00 | 216.5 | 151.4 |
| SC-4.000 | 50.00 | 5.05 | 54.549 | 0.178 | 0.0 | 0.0 | 4.8 | 1.07 | 42.5 | 28.9 |
| SC-5.000 | 50.00 | 4.23 | 55.651 | 0.000 | 0.0 | 0.0 | 0.0 | 1.08 | 42.9 | 0.0 |
| SC-5.001 | 50.00 | 4.74 | 55.551 | 0.247 | 0.0 | 0.0 | 6.7 | 1.17 | 46.4 | 40.2 |
| SC-5.002 | 50.00 | 4.91 | 55.191 | 0.247 | 0.0 | 0.0 | 6.7 | 1.00 | 70.7 | 40.2 |
| SC-5.003 | 50.00 | 5.00 | 55.149 | 0.247 | 0.0 | 0.0 | 6.7 | 1.69 | 119.2 | 40.2 |
| SC-5.004 | 50.00 | 5.91 | 55.049 | 0.500 | 0.0 | 0.0 | 13.5 | 1.18 | 83.5 | 81.2 |
| SC-6.000 | 50.00 | 4.30 | 55.059 | 0.041 | 0.0 | 0.0 | 1.1 | 1.43 | 56.7 | 6.7 |
| SC-5.005 | 50.00 | 6.16 | 54.606 | 0.541 | 0.0 | 0.0 | 14.7 | 1.00 | 110.4 | 87.9 |
| SC-5.006 | 50.00 | 7.09 | 54.559 | 0.541 | 0.0 | 0.0 | 14.7 | 1.12 | 123.4 | 87.9 |
| SC-5.007 | 50.00 | 7.34 | 54.321 | 0.541 | 0.0 | 0.0 | 14.7 | 1.00 | 110.4 | 87.9 |
| SC-5.008 | 50.00 | 7.40 | 54.274 | 0.541 | 0.0 | 0.0 | 14.7 | 3.16 | 349.5 | 87.9 |
| SC-4.001 | 50.00 | 7.58 | 53.947 | 0.725 | 0.0 | 0.0 | 19.6 | 1.11 | 123.0 | 117.8 |
| SC-7.000 | 50.00 | 4.18 | 55.775 | 0.088 | 0.0 | 0.0 | 2.4 | 1.41 | 55.9 | 14.2 |
| SC-7.001 | 50.00 | 4.52 | 55.595 | 0.185 | 0.0 | 0.0 | 5.0 | 1.20 | 47.8 | 30.0 |
| SC-7.002 | 50.00 | 4.93 | 55.389 | 0.304 | 0.0 | 0.0 | 8.2 | 1.78 | 70.8 | 49.4 |
| SC-8.000 | 50.00 | 4.12 | 55.175 | 0.071 | 0.0 | 0.0 | 1.9 | 1.07 | 42.6 | 11.5 |
| SC-8.001 | 50.00 | 4.30 | 55.121 | 0.071 | 0.0 | 0.0 | 1.9 | 1.04 | 41.2 | 11.5 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Surface Water1

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|----------|---------------|-------------|----------------|----------------|----------------|--------------------|-----------|-------------|-------------|--------------|----------------|
| SC-8.002 | 10.702 | 0.069 | 155.1 | 0.165 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-8.003 | 27.783 | 0.200 | 138.9 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-8.004 | 11.294 | 0.192 | 59.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-7.003 | 17.586 | 0.054 | 325.0 | 0.081 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-7.004 | 46.359 | 0.489 | 94.8 | 0.039 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-4.002 | 10.027 | 0.058 | 172.9 | 0.147 | 0.00 | 0.0 | 0.600 | o | 525 | Pipe/Conduit | |
| SC-4.003 | 46.290 | 2.007 | 23.1 | 0.000 | 0.00 | 0.0 | 0.600 | o | 525 | Pipe/Conduit | |
| SC-4.004 | 19.403 | 0.033 | 590.0 | 0.018 | 0.00 | 0.0 | 0.600 | o | 600 | Pipe/Conduit | |
| SC-4.005 | 21.657 | 0.037 | 590.0 | 0.023 | 0.00 | 0.0 | 0.600 | o | 600 | Pipe/Conduit | |
| SC-4.006 | 8.450 | 0.014 | 590.0 | 0.016 | 0.00 | 0.0 | 0.600 | o | 600 | Pipe/Conduit | |
| SC-1.011 | 13.585 | 0.023 | 590.0 | 0.033 | 0.00 | 0.0 | 0.600 | o | 675 | Pipe/Conduit | |
| SC-9.000 | 9.262 | 0.232 | 40.0 | 0.106 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-9.001 | 11.038 | 0.276 | 40.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-9.002 | 7.827 | 0.196 | 40.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-9.003 | 7.795 | 0.195 | 40.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-9.004 | 9.559 | 0.239 | 40.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-9.005 | 9.646 | 0.276 | 35.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-9.006 | 14.497 | 0.362 | 40.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-9.007 | 10.280 | 0.272 | 37.8 | 0.082 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-1.012 | 11.288 | 0.057 | 198.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 675 | Pipe/Conduit | |
| SC-1.013 | 20.495 | 0.030 | 675.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 750 | Pipe/Conduit | |
| SC-1.014 | 4.215 | 0.025 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-1.015 | 37.359 | 0.220 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |

Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|----------|-----------------|----------------|--------------|------------------|----------------------|---------------|-------------------|--------------|--------------|---------------|
| SC-8.002 | 50.00 | 4.47 | 55.053 | 0.235 | 0.0 | 0.0 | 6.4 | 1.05 | 41.6 | 38.2 |
| SC-8.003 | 50.00 | 4.89 | 54.984 | 0.235 | 0.0 | 0.0 | 6.4 | 1.11 | 44.0 | 38.2 |
| SC-8.004 | 50.00 | 5.00 | 54.784 | 0.235 | 0.0 | 0.0 | 6.4 | 1.71 | 67.8 | 38.2 |
| SC-7.003 | 50.00 | 5.29 | 54.442 | 0.620 | 0.0 | 0.0 | 16.8 | 1.00 | 110.4 | 100.8 |
| SC-7.004 | 50.00 | 5.70 | 54.388 | 0.659 | 0.0 | 0.0 | 17.8 | 1.86 | 205.6 | 107.1 |
| SC-4.002 | 50.00 | 7.68 | 53.749 | 1.531 | 0.0 | 0.0 | 41.5 | 1.70 | 368.1 | 248.7 |
| SC-4.003 | 49.55 | 7.84 | 53.691 | 1.531 | 0.0 | 0.0 | 41.5 | 4.68 | 1012.7 | 248.7 |
| SC-4.004 | 48.66 | 8.17 | 51.609 | 1.548 | 0.0 | 0.0 | 41.5 | 1.00 | 281.4 | 248.7 |
| SC-4.005 | 47.72 | 8.53 | 51.576 | 1.571 | 0.0 | 0.0 | 41.5 | 1.00 | 281.4 | 248.7 |
| SC-4.006 | 47.37 | 8.67 | 51.540 | 1.586 | 0.0 | 0.0 | 41.5 | 1.00 | 281.4 | 248.7 |
| SC-1.011 | 42.15 | 11.10 | 51.450 | 2.714 | 0.0 | 0.0 | 62.0 | 1.07 | 383.5 | 371.8 |
| SC-9.000 | 50.00 | 4.07 | 53.924 | 0.106 | 0.0 | 0.0 | 2.9 | 2.07 | 82.5 | 17.2 |
| SC-9.001 | 50.00 | 4.16 | 53.692 | 0.106 | 0.0 | 0.0 | 2.9 | 2.07 | 82.5 | 17.2 |
| SC-9.002 | 50.00 | 4.23 | 53.417 | 0.106 | 0.0 | 0.0 | 2.9 | 2.07 | 82.5 | 17.2 |
| SC-9.003 | 50.00 | 4.29 | 53.221 | 0.106 | 0.0 | 0.0 | 2.9 | 2.07 | 82.5 | 17.2 |
| SC-9.004 | 50.00 | 4.37 | 53.026 | 0.106 | 0.0 | 0.0 | 2.9 | 2.07 | 82.5 | 17.2 |
| SC-9.005 | 50.00 | 4.44 | 52.787 | 0.106 | 0.0 | 0.0 | 2.9 | 2.22 | 88.2 | 17.2 |
| SC-9.006 | 50.00 | 4.55 | 52.511 | 0.106 | 0.0 | 0.0 | 2.9 | 2.07 | 82.5 | 17.2 |
| SC-9.007 | 50.00 | 4.63 | 52.149 | 0.188 | 0.0 | 0.0 | 5.1 | 2.13 | 84.9 | 30.6 |
| SC-1.012 | 41.96 | 11.20 | 51.427 | 2.902 | 0.0 | 0.0 | 66.0 | 1.86 | 665.2 | 395.8 |
| SC-1.013 | 41.38 | 11.52 | 51.295 | 2.902 | 0.0 | 0.0 | 66.0 | 1.07 | 472.5 | 395.8 |
| SC-1.014 | 50.00 | 4.07 | 51.265 | 0.000 | 16.0 | 0.0 | 2.7 | 1.00 | 39.8 | 16.0 |
| SC-1.015 | 50.00 | 4.69 | 51.240 | 0.000 | 16.0 | 0.0 | 3.2 | 1.00 | 39.8 | 19.2 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Surface Water1

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|-----------|---------------|-------------|----------------|----------------|----------------|--------------------|-----------|-------------|-------------|--------------|----------------|
| SC-1.016 | 5.914 | 0.035 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-1.017 | 31.965 | 0.188 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-10.000 | 23.507 | 0.138 | 170.0 | 0.068 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-10.001 | 30.266 | 0.416 | 72.8 | 0.080 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-11.000 | 27.005 | 0.399 | 67.7 | 0.204 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-12.000 | 33.621 | 0.198 | 170.0 | 0.163 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-13.000 | 24.266 | 0.233 | 104.1 | 0.114 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-12.001 | 8.025 | 0.047 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-12.002 | 61.170 | 0.250 | 245.0 | 0.089 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-11.001 | 20.547 | 0.063 | 325.0 | 0.071 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-11.002 | 22.078 | 0.188 | 117.2 | 0.117 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-10.002 | 28.229 | 0.494 | 57.1 | 0.060 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-10.003 | 11.091 | 0.167 | 66.4 | 0.000 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-14.000 | 15.831 | 0.093 | 170.0 | 0.099 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-14.001 | 9.322 | 0.055 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-10.004 | 22.717 | 0.076 | 300.0 | 0.033 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-10.005 | 12.876 | 0.043 | 300.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 525 | Pipe/Conduit | |
| SC-15.000 | 25.645 | 0.322 | 79.6 | 0.108 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |

Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|-----------|-----------------|----------------|--------------|------------------|----------------------|---------------|-------------------|--------------|--------------|---------------|
| SC-1.016 | 50.00 | 4.79 | 51.020 | 0.000 | 16.0 | 0.0 | 3.2 | 1.00 | 39.8 | 19.2 |
| SC-1.017 | 50.00 | 5.32 | 50.985 | 0.000 | 16.0 | 0.0 | 3.2 | 1.00 | 39.8 | 19.2 |
| SC-10.000 | 50.00 | 4.39 | 54.862 | 0.068 | 0.0 | 0.0 | 1.8 | 1.00 | 39.8 | 11.0 |
| SC-10.001 | 50.00 | 4.72 | 54.724 | 0.148 | 0.0 | 0.0 | 4.0 | 1.53 | 61.0 | 24.0 |
| SC-11.000 | 50.00 | 4.28 | 55.348 | 0.204 | 0.0 | 0.0 | 5.5 | 1.59 | 63.3 | 33.1 |
| SC-12.000 | 50.00 | 4.56 | 55.054 | 0.163 | 0.0 | 0.0 | 4.4 | 1.00 | 39.8 | 26.4 |
| SC-13.000 | 50.00 | 4.32 | 55.089 | 0.114 | 0.0 | 0.0 | 3.1 | 1.28 | 50.9 | 18.6 |
| SC-12.001 | 50.00 | 4.67 | 54.781 | 0.277 | 0.0 | 0.0 | 7.5 | 1.20 | 85.0 | 45.0 |
| SC-12.002 | 50.00 | 5.69 | 54.734 | 0.366 | 0.0 | 0.0 | 9.9 | 1.00 | 70.7 | 59.4 |
| SC-11.001 | 50.00 | 6.03 | 54.409 | 0.640 | 0.0 | 0.0 | 17.3 | 1.00 | 110.4 | 104.1 |
| SC-11.002 | 50.00 | 6.25 | 54.346 | 0.757 | 0.0 | 0.0 | 20.5 | 1.67 | 184.8 | 123.0 |
| SC-10.002 | 50.00 | 6.45 | 54.157 | 0.965 | 0.0 | 0.0 | 26.1 | 2.40 | 265.2 | 156.8 |
| SC-10.003 | 50.00 | 6.52 | 53.588 | 0.965 | 0.0 | 0.0 | 26.1 | 2.50 | 397.2 | 156.8 |
| SC-14.000 | 50.00 | 4.26 | 51.372 | 0.099 | 0.0 | 0.0 | 2.7 | 1.00 | 39.8 | 16.1 |
| SC-14.001 | 50.00 | 4.42 | 51.279 | 0.099 | 0.0 | 0.0 | 2.7 | 1.00 | 39.8 | 16.1 |
| SC-10.004 | 50.00 | 6.85 | 50.999 | 1.097 | 0.0 | 0.0 | 29.7 | 1.17 | 185.8 | 178.3 |
| SC-10.005 | 50.00 | 7.01 | 50.848 | 1.097 | 0.0 | 0.0 | 29.7 | 1.29 | 278.8 | 178.3 |
| SC-15.000 | 50.00 | 4.29 | 55.307 | 0.108 | 0.0 | 0.0 | 2.9 | 1.47 | 58.3 | 17.6 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Surface Water1

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|-----------|---------------|-------------|----------------|----------------|----------------|--------------------|-----------|-------------|-------------|--------------|----------------|
| SC-15.001 | 34.082 | 0.434 | 78.5 | 0.058 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-15.002 | 23.116 | 0.176 | 131.2 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-16.000 | 66.822 | 0.924 | 72.3 | 0.245 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-16.001 | 12.301 | 0.123 | 100.0 | 0.053 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-16.002 | 8.470 | 0.059 | 143.6 | 0.076 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-16.003 | 22.822 | 0.093 | 245.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-15.003 | 5.386 | 0.022 | 246.5 | 0.036 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-15.004 | 30.715 | 0.368 | 83.6 | 0.080 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-17.000 | 13.131 | 0.089 | 148.3 | 0.061 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-15.005 | 8.299 | 0.020 | 410.0 | 0.053 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-15.006 | 3.254 | 0.008 | 410.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-15.007 | 9.819 | 0.057 | 172.3 | 0.000 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-15.008 | 3.273 | 0.019 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-15.009 | 49.639 | 0.292 | 170.0 | 0.133 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-15.010 | 9.955 | 0.059 | 170.0 | 0.005 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-18.000 | 54.814 | 0.664 | 82.6 | 0.164 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-18.001 | 45.965 | 0.314 | 146.4 | 0.024 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-18.002 | 9.401 | 0.055 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-18.003 | 47.583 | 0.194 | 245.0 | 0.139 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-18.004 | 22.556 | 0.092 | 245.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-18.005 | 8.382 | 0.034 | 245.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-15.011 | 50.333 | 0.123 | 410.0 | 0.194 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |

Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|-----------|-----------------|----------------|--------------|------------------|----------------------|---------------|-------------------|--------------|--------------|---------------|
| SC-15.001 | 50.00 | 4.68 | 54.985 | 0.166 | 0.0 | 0.0 | 4.5 | 1.48 | 58.7 | 27.0 |
| SC-15.002 | 50.00 | 5.01 | 54.551 | 0.166 | 0.0 | 0.0 | 4.5 | 1.14 | 45.3 | 27.0 |
| SC-16.000 | 50.00 | 4.72 | 55.574 | 0.245 | 0.0 | 0.0 | 6.6 | 1.54 | 61.2 | 39.8 |
| SC-16.001 | 50.00 | 4.88 | 54.650 | 0.298 | 0.0 | 0.0 | 8.1 | 1.31 | 52.0 | 48.5 |
| SC-16.002 | 50.00 | 4.99 | 54.452 | 0.374 | 0.0 | 0.0 | 10.1 | 1.31 | 92.6 | 60.8 |
| SC-16.003 | 50.00 | 5.37 | 54.393 | 0.374 | 0.0 | 0.0 | 10.1 | 1.00 | 70.7 | 60.8 |
| SC-15.003 | 50.00 | 5.45 | 54.225 | 0.576 | 0.0 | 0.0 | 15.6 | 1.15 | 127.0 | 93.7 |
| SC-15.004 | 50.00 | 5.70 | 54.203 | 0.656 | 0.0 | 0.0 | 17.8 | 1.98 | 219.0 | 106.6 |
| SC-17.000 | 50.00 | 4.20 | 54.074 | 0.061 | 0.0 | 0.0 | 1.7 | 1.07 | 42.6 | 9.9 |
| SC-15.005 | 50.00 | 5.84 | 53.760 | 0.770 | 0.0 | 0.0 | 20.8 | 1.00 | 158.7 | 125.1 |
| SC-15.006 | 50.00 | 5.90 | 53.740 | 0.770 | 0.0 | 0.0 | 20.8 | 1.00 | 158.7 | 125.1 |
| SC-15.007 | 50.00 | 6.00 | 53.732 | 0.770 | 0.0 | 0.0 | 20.8 | 1.55 | 245.9 | 125.1 |
| SC-15.008 | 50.00 | 4.05 | 53.675 | 0.000 | 4.2 | 0.0 | 0.7 | 1.00 | 39.8 | 4.2 |
| SC-15.009 | 50.00 | 4.88 | 53.656 | 0.133 | 4.2 | 0.0 | 4.4 | 1.00 | 39.8 | 26.7 |
| SC-15.010 | 50.00 | 5.05 | 53.364 | 0.138 | 4.2 | 0.0 | 4.6 | 1.00 | 39.8 | 27.5 |
| SC-18.000 | 50.00 | 4.63 | 53.560 | 0.164 | 0.0 | 0.0 | 4.4 | 1.44 | 57.3 | 26.7 |
| SC-18.001 | 50.00 | 5.34 | 52.896 | 0.188 | 0.0 | 0.0 | 5.1 | 1.08 | 42.9 | 30.5 |
| SC-18.002 | 50.00 | 5.50 | 52.582 | 0.188 | 0.0 | 0.0 | 5.1 | 1.00 | 39.8 | 30.5 |
| SC-18.003 | 50.00 | 6.29 | 52.452 | 0.327 | 0.0 | 0.0 | 8.9 | 1.00 | 70.7 | 53.1 |
| SC-18.004 | 50.00 | 6.67 | 52.257 | 0.327 | 0.0 | 0.0 | 8.9 | 1.00 | 70.7 | 53.1 |
| SC-18.005 | 50.00 | 6.81 | 52.165 | 0.327 | 0.0 | 0.0 | 8.9 | 1.00 | 70.7 | 53.1 |
| SC-15.011 | 50.00 | 7.65 | 51.981 | 0.659 | 4.2 | 0.0 | 18.7 | 1.00 | 158.7 | 112.2 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Surface Water1

| PN | Length (m) | Fall (m) | Slope (1:X) | I.Area (ha) | T.E. (mins) | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|-----------|---------------|-------------|----------------|----------------|----------------|--------------------|-----------|-------------|-------------|--------------|----------------|
| SC-15.012 | 10.038 | 0.024 | 410.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 450 | Pipe/Conduit | |
| SC-10.006 | 13.342 | 1.767 | 7.6 | 0.000 | 0.00 | 0.0 | 0.600 | o | 525 | Pipe/Conduit | |
| SC-10.007 | 7.049 | 0.012 | 590.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 675 | Pipe/Conduit | |
| SC-10.008 | 52.920 | 0.090 | 590.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 675 | Pipe/Conduit | |
| SC-10.009 | 1.387 | 0.002 | 589.8 | 0.000 | 0.00 | 0.0 | 0.600 | o | 675 | Pipe/Conduit | |
| SC-10.010 | 5.144 | 0.030 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-10.011 | 40.116 | 0.236 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-19.000 | 10.392 | 0.432 | 24.1 | 0.109 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-20.000 | 68.361 | 0.402 | 170.0 | 0.082 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-20.001 | 43.222 | 0.254 | 170.0 | 0.156 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-20.002 | 32.004 | 0.131 | 245.0 | 0.028 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-20.003 | 48.350 | 0.197 | 245.0 | 0.049 | 0.00 | 0.0 | 0.600 | o | 300 | Pipe/Conduit | |
| SC-21.000 | 26.231 | 0.154 | 170.0 | 0.063 | 4.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-21.001 | 26.231 | 0.154 | 170.0 | 0.034 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-21.002 | 47.755 | 0.281 | 170.0 | 0.083 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-20.004 | 72.578 | 0.223 | 325.0 | 0.078 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-19.001 | 21.802 | 0.128 | 170.3 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-19.002 | 43.313 | 0.255 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 375 | Pipe/Conduit | |
| SC-19.003 | 33.434 | 0.197 | 169.7 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-19.004 | 18.452 | 0.109 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |
| SC-19.005 | 6.891 | 0.041 | 170.0 | 0.000 | 0.00 | 0.0 | 0.600 | o | 225 | Pipe/Conduit | |

Network Results Table

| PN | Rain (mm/hr) | T.C. (mins) | US/IL (m) | Σ I.Area (ha) | Σ Base Flow (l/s) | Foul (l/s) | Add Flow (l/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|-----------|-----------------|----------------|--------------|------------------|----------------------|---------------|-------------------|--------------|--------------|---------------|
| SC-15.012 | 49.62 | 7.82 | 51.858 | 0.659 | 4.2 | 0.0 | 18.7 | 1.00 | 158.7 | 112.2 |
| SC-10.006 | 49.55 | 7.85 | 50.805 | 1.756 | 4.2 | 0.0 | 48.0 | 8.19 | 1772.1 | 287.9 |
| SC-10.007 | 49.24 | 7.96 | 48.888 | 1.756 | 4.2 | 0.0 | 48.0 | 1.07 | 383.5 | 287.9 |
| SC-10.008 | 47.11 | 8.78 | 48.876 | 1.756 | 4.2 | 0.0 | 48.0 | 1.07 | 383.5 | 287.9 |
| SC-10.009 | 47.06 | 8.80 | 48.787 | 1.756 | 4.2 | 0.0 | 48.0 | 1.07 | 383.6 | 287.9 |
| SC-10.010 | 50.00 | 4.09 | 48.784 | 0.000 | 9.7 | 0.0 | 1.6 | 1.00 | 39.8 | 9.7 |
| SC-10.011 | 50.00 | 4.75 | 48.754 | 0.000 | 9.7 | 0.0 | 1.9 | 1.00 | 39.8 | 11.6 |
| SC-19.000 | 50.00 | 4.06 | 53.886 | 0.109 | 0.0 | 0.0 | 2.9 | 2.68 | 106.5 | 17.7 |
| SC-20.000 | 50.00 | 5.14 | 55.343 | 0.082 | 0.0 | 0.0 | 2.2 | 1.00 | 39.8 | 13.3 |
| SC-20.001 | 50.00 | 5.86 | 54.941 | 0.238 | 0.0 | 0.0 | 6.4 | 1.00 | 39.8 | 38.6 |
| SC-20.002 | 50.00 | 6.39 | 54.612 | 0.265 | 0.0 | 0.0 | 7.2 | 1.00 | 70.7 | 43.1 |
| SC-20.003 | 50.00 | 7.20 | 54.481 | 0.314 | 0.0 | 0.0 | 8.5 | 1.00 | 70.7 | 51.1 |
| SC-21.000 | 50.00 | 4.44 | 54.245 | 0.063 | 0.0 | 0.0 | 1.7 | 1.00 | 39.8 | 10.3 |
| SC-21.001 | 50.00 | 4.87 | 54.091 | 0.097 | 0.0 | 0.0 | 2.6 | 1.00 | 39.8 | 15.7 |
| SC-21.002 | 50.00 | 5.67 | 53.936 | 0.180 | 0.0 | 0.0 | 4.9 | 1.00 | 39.8 | 29.2 |
| SC-20.004 | 48.04 | 8.41 | 53.505 | 0.572 | 0.0 | 0.0 | 14.9 | 1.00 | 110.4 | 89.3 |
| SC-19.001 | 47.37 | 8.67 | 53.282 | 0.681 | 0.0 | 0.0 | 17.5 | 1.39 | 153.0 | 104.8 |
| SC-19.002 | 46.12 | 9.19 | 53.154 | 0.681 | 0.0 | 0.0 | 17.5 | 1.39 | 153.2 | 104.8 |
| SC-19.003 | 50.00 | 4.56 | 52.899 | 0.000 | 3.7 | 0.0 | 0.6 | 1.00 | 39.8 | 3.7 |
| SC-19.004 | 50.00 | 4.86 | 52.702 | 0.000 | 3.7 | 0.0 | 0.7 | 1.00 | 39.8 | 4.4 |
| SC-19.005 | 50.00 | 4.98 | 52.594 | 0.000 | 3.7 | 0.0 | 0.7 | 1.00 | 39.8 | 4.4 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Area Summary for Surface Water1

| Pipe Number | PIMP Type | PIMP Name | PIMP (%) | Gross Area (ha) | Imp. Area (ha) | Pipe Total (ha) |
|-------------|-----------|-----------|----------|-----------------|----------------|-----------------|
| 1.000 | As Zoned | Default | 100 | 0.043 | 0.043 | 0.043 |
| | | Road | 100 | 0.060 | 0.060 | 0.103 |
| 1.001 | As Zoned | Default | 100 | 0.035 | 0.035 | 0.035 |
| | | Road | 100 | 0.049 | 0.049 | 0.085 |
| 1.002 | As Zoned | Default | 100 | 0.031 | 0.031 | 0.031 |
| | | Road | 100 | 0.053 | 0.053 | 0.084 |
| 1.003 | As Zoned | Default | 100 | 0.028 | 0.028 | 0.028 |
| | | Road | 100 | 0.039 | 0.039 | 0.067 |
| 2.000 | As Zoned | Default | 100 | 0.021 | 0.021 | 0.021 |
| | | Road | 100 | 0.030 | 0.030 | 0.051 |
| 2.001 | As Zoned | Default | 100 | 0.008 | 0.008 | 0.008 |
| | | Road | 100 | 0.010 | 0.010 | 0.018 |
| 2.002 | As Zoned | Default | 100 | 0.027 | 0.027 | 0.027 |
| | | Road | 100 | 0.035 | 0.035 | 0.062 |
| 2.003 | As Zoned | Default | 100 | 0.011 | 0.011 | 0.011 |
| | | Road | 100 | 0.015 | 0.015 | 0.025 |
| 2.004 | As Zoned | Default | 100 | 0.026 | 0.026 | 0.026 |
| | | Road | 100 | 0.034 | 0.034 | 0.060 |
| 1.004 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.005 | As Zoned | Default | 100 | 0.023 | 0.023 | 0.023 |
| | | Building | 100 | 0.037 | 0.037 | 0.060 |
| | | Road | 100 | 0.011 | 0.011 | 0.071 |
| | | Parking | 70 | 0.014 | 0.009 | 0.080 |
| 1.006 | As Zoned | Default | 100 | 0.064 | 0.064 | 0.064 |
| | | Building | 100 | 0.050 | 0.050 | 0.114 |
| | | Road | 100 | 0.028 | 0.028 | 0.142 |
| | | Parking | 70 | 0.023 | 0.016 | 0.158 |
| 3.000 | As Zoned | Default | 100 | 0.006 | 0.006 | 0.006 |
| | | Building | 100 | 0.033 | 0.033 | 0.040 |
| | | Road | 100 | 0.033 | 0.033 | 0.073 |
| | | Parking | 70 | 0.013 | 0.009 | 0.082 |
| 3.001 | As Zoned | Default | 100 | 0.018 | 0.018 | 0.018 |
| | | Road | 100 | 0.038 | 0.038 | 0.056 |
| | | Parking | 70 | 0.000 | 0.000 | 0.056 |
| 1.007 | As Zoned | Road | 100 | 0.029 | 0.029 | 0.029 |
| | | Parking | 70 | 0.005 | 0.003 | 0.032 |
| 1.008 | As Zoned | Building | 100 | 0.014 | 0.014 | 0.014 |
| | | Road | 100 | 0.035 | 0.035 | 0.049 |
| | | Parking | 70 | 0.005 | 0.004 | 0.037 |
| 1.009 | As Zoned | Default | 100 | 0.014 | 0.014 | 0.014 |
| | | Building | 100 | 0.027 | 0.027 | 0.041 |
| | | Road | 100 | 0.013 | 0.013 | 0.054 |
| | | Parking | 70 | 0.010 | 0.007 | 0.060 |
| 1.010 | As Zoned | Default | 100 | 0.012 | 0.012 | 0.012 |
| | | Building | 100 | 0.016 | 0.016 | 0.028 |
| | | Road | 100 | 0.009 | 0.009 | 0.037 |
| | | Parking | 70 | 0.000 | 0.000 | 0.037 |
| 4.000 | As Zoned | Default | 100 | 0.033 | 0.033 | 0.033 |
| | | Building | 100 | 0.033 | 0.033 | 0.067 |
| | | Road | 100 | 0.031 | 0.031 | 0.098 |
| | | Parking | 70 | 0.013 | 0.009 | 0.107 |
| | As Zoned | Default | 100 | 0.022 | 0.022 | 0.129 |
| | | Building | 100 | 0.027 | 0.027 | 0.156 |
| | | Road | 100 | 0.014 | 0.014 | 0.170 |
| | | Parking | 70 | 0.011 | 0.008 | 0.178 |
| 5.000 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 5.001 | As Zoned | Building | 100 | 0.078 | 0.078 | 0.078 |
| | As Zoned | Default | 100 | 0.078 | 0.078 | 0.155 |
| | | Road | 100 | 0.028 | 0.028 | 0.184 |
| | | Parking | 70 | 0.029 | 0.020 | 0.126 |
| | As Zoned | Default | 100 | 0.014 | 0.014 | 0.217 |
| | | Building | 100 | 0.030 | 0.030 | 0.247 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Area Summary for Surface Water1

| Pipe Number | PIMP Type | PIMP Name | PIMP (%) | Gross Area (ha) | Imp. Area (ha) | Pipe Total (ha) |
|-------------|-----------|-----------|----------|-----------------|----------------|-----------------|
| 5.002 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 5.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 5.004 | As Zoned | Default | 100 | 0.103 | 0.103 | 0.103 |
| | | Building | 100 | 0.089 | 0.089 | 0.192 |
| | | Road | 100 | 0.035 | 0.035 | 0.226 |
| | | Parking | 70 | 0.036 | 0.025 | 0.252 |
| 6.000 | As Zoned | Default | 100 | 0.041 | 0.041 | 0.041 |
| 5.005 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 5.006 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 5.007 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 5.008 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 4.001 | As Zoned | Default | 100 | 0.001 | 0.001 | 0.001 |
| | | Road | 100 | 0.005 | 0.005 | 0.006 |
| 7.000 | As Zoned | Default | 100 | 0.035 | 0.035 | 0.035 |
| | | Building | 100 | 0.038 | 0.038 | 0.072 |
| | | Road | 100 | 0.010 | 0.010 | 0.082 |
| | | Parking | 70 | 0.007 | 0.005 | 0.088 |
| 7.001 | As Zoned | Default | 100 | 0.022 | 0.022 | 0.022 |
| | | Building | 100 | 0.046 | 0.046 | 0.068 |
| | | Road | 100 | 0.013 | 0.013 | 0.081 |
| | | Parking | 70 | 0.023 | 0.016 | 0.097 |
| 7.002 | As Zoned | Default | 100 | 0.053 | 0.053 | 0.053 |
| | | Building | 100 | 0.040 | 0.040 | 0.093 |
| | | Road | 100 | 0.021 | 0.021 | 0.114 |
| | | Parking | 70 | 0.008 | 0.006 | 0.119 |
| 8.000 | As Zoned | Default | 100 | 0.071 | 0.071 | 0.071 |
| 8.001 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 8.002 | As Zoned | Default | 100 | 0.059 | 0.059 | 0.059 |
| | | Building | 100 | 0.060 | 0.060 | 0.119 |
| | | Road | 100 | 0.027 | 0.027 | 0.146 |
| | | Parking | 70 | 0.026 | 0.018 | 0.165 |
| 8.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 8.004 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 7.003 | As Zoned | Default | 100 | 0.081 | 0.081 | 0.081 |
| 7.004 | As Zoned | Default | 100 | 0.018 | 0.018 | 0.018 |
| | | Road | 100 | 0.021 | 0.021 | 0.039 |
| 4.002 | As Zoned | Default | 100 | 0.036 | 0.036 | 0.036 |
| | | Building | 100 | 0.053 | 0.053 | 0.089 |
| | | Road | 100 | 0.030 | 0.030 | 0.118 |
| | | Parking | 70 | 0.019 | 0.013 | 0.132 |
| | As Zoned | Default | 100 | 0.015 | 0.015 | 0.147 |
| | | Road | 100 | 0.000 | 0.000 | 0.147 |
| 4.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 4.004 | As Zoned | Default | 100 | 0.008 | 0.008 | 0.008 |
| | | Road | 100 | 0.009 | 0.009 | 0.018 |
| 4.005 | As Zoned | Default | 100 | 0.012 | 0.012 | 0.012 |
| | | Road | 100 | 0.010 | 0.010 | 0.023 |
| 4.006 | As Zoned | Default | 100 | 0.007 | 0.007 | 0.007 |
| | | Road | 100 | 0.009 | 0.009 | 0.016 |
| 1.011 | As Zoned | Default | 100 | 0.009 | 0.009 | 0.009 |
| | | Building | 100 | 0.016 | 0.016 | 0.025 |
| | | Road | 100 | 0.004 | 0.004 | 0.029 |
| | | Parking | 70 | 0.005 | 0.003 | 0.033 |
| 9.000 | As Zoned | Default | 100 | 0.045 | 0.045 | 0.045 |
| | | Building | 100 | 0.024 | 0.024 | 0.069 |
| | | Road | 100 | 0.033 | 0.033 | 0.102 |
| | | Parking | 70 | 0.005 | 0.003 | 0.106 |
| 9.001 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 9.002 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 9.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 9.004 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 9.005 | - | - | 100 | 0.000 | 0.000 | 0.000 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Area Summary for Surface Water1

| Pipe Number | PIMP Type | PIMP Name | PIMP (%) | Gross Area (ha) | Imp. Area (ha) | Pipe Total (ha) |
|-------------|-----------|--------------|----------|-----------------|----------------|-----------------|
| 9.006 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 9.007 | As Zoned | Default | 100 | 0.021 | 0.021 | 0.021 |
| | | Building | 100 | 0.033 | 0.033 | 0.054 |
| | | Road | 100 | 0.022 | 0.022 | 0.076 |
| | | Parking | 70 | 0.010 | 0.007 | 0.082 |
| 1.012 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.013 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.014 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.015 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.016 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 1.017 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.000 | As Zoned | Default | 100 | 0.030 | 0.030 | 0.030 |
| | | Building | 100 | 0.020 | 0.020 | 0.050 |
| | | Road | 100 | 0.018 | 0.018 | 0.068 |
| 10.001 | As Zoned | Default | 100 | 0.020 | 0.020 | 0.020 |
| | | Building | 100 | 0.034 | 0.034 | 0.054 |
| | | Road | 100 | 0.017 | 0.017 | 0.071 |
| | | Parking | 70 | 0.013 | 0.009 | 0.080 |
| 11.000 | As Zoned | Default | 100 | 0.063 | 0.063 | 0.063 |
| | | Building | 100 | 0.094 | 0.094 | 0.157 |
| | | Road | 100 | 0.013 | 0.013 | 0.170 |
| | | Hardstanding | 100 | 0.020 | 0.020 | 0.190 |
| | | Parking | 70 | 0.020 | 0.014 | 0.204 |
| 12.000 | As Zoned | Default | 100 | 0.048 | 0.048 | 0.048 |
| | | Building | 100 | 0.078 | 0.078 | 0.126 |
| | | Road | 100 | 0.017 | 0.017 | 0.143 |
| | | Hardstanding | 100 | 0.015 | 0.015 | 0.158 |
| | | Parking | 70 | 0.006 | 0.004 | 0.163 |
| 13.000 | As Zoned | Road | 100 | 0.021 | 0.021 | 0.021 |
| | | Parking | 70 | 0.011 | 0.007 | 0.028 |
| | As Zoned | Default | 100 | 0.026 | 0.026 | 0.054 |
| | | Building | 100 | 0.038 | 0.038 | 0.092 |
| | | Hardstanding | 100 | 0.022 | 0.022 | 0.114 |
| 12.001 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 12.002 | As Zoned | Default | 100 | 0.029 | 0.029 | 0.029 |
| | | Road | 100 | 0.040 | 0.040 | 0.069 |
| | | Hardstanding | 100 | 0.003 | 0.003 | 0.072 |
| | | Parking | 70 | 0.024 | 0.017 | 0.089 |
| 11.001 | As Zoned | Default | 100 | 0.023 | 0.023 | 0.023 |
| | | Building | 100 | 0.008 | 0.008 | 0.031 |
| | | Road | 100 | 0.008 | 0.008 | 0.039 |
| | | Hardstanding | 100 | 0.032 | 0.032 | 0.071 |
| | | Parking | 70 | 0.000 | 0.000 | 0.071 |
| 11.002 | As Zoned | Building | 100 | 0.020 | 0.020 | 0.020 |
| | | Road | 100 | 0.010 | 0.010 | 0.030 |
| | | Hardstanding | 100 | 0.112 | 0.112 | 0.142 |
| | | Parking | 70 | 0.009 | 0.006 | 0.117 |
| 10.002 | As Zoned | Default | 100 | 0.021 | 0.021 | 0.021 |
| | | Building | 100 | 0.013 | 0.013 | 0.034 |
| | | Road | 100 | 0.015 | 0.015 | 0.049 |
| | | Hardstanding | 100 | 0.000 | 0.000 | 0.049 |
| | | Parking | 70 | 0.015 | 0.011 | 0.060 |
| 10.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 14.000 | As Zoned | Default | 100 | 0.019 | 0.019 | 0.019 |
| | | Road | 100 | 0.000 | 0.000 | 0.019 |
| | | Parking | 70 | 0.007 | 0.005 | 0.025 |
| | As Zoned | Default | 100 | 0.034 | 0.034 | 0.058 |
| | | Building | 100 | 0.031 | 0.031 | 0.089 |
| | | Hardstanding | 100 | 0.010 | 0.010 | 0.099 |
| | | Parking | 70 | 0.000 | 0.000 | 0.099 |
| 14.001 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.004 | As Zoned | Default | 100 | 0.010 | 0.010 | 0.010 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Area Summary for Surface Water1

| Pipe Number | PIMP Type | PIMP Name | PIMP (%) | Gross Area (ha) | Imp. Area (ha) | Pipe Total (ha) |
|-------------|-----------|-----------|----------|-----------------|----------------|-----------------|
| | | Road | 100 | 0.019 | 0.019 | 0.029 |
| | | Parking | 70 | 0.007 | 0.005 | 0.033 |
| 10.005 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 15.000 | As Zoned | Default | 100 | 0.021 | 0.021 | 0.021 |
| | | Building | 100 | 0.044 | 0.044 | 0.066 |
| | | Road | 100 | 0.032 | 0.032 | 0.098 |
| | | Parking | 70 | 0.015 | 0.010 | 0.108 |
| 15.001 | As Zoned | Default | 100 | 0.013 | 0.013 | 0.013 |
| | | Building | 100 | 0.027 | 0.027 | 0.040 |
| | | Road | 100 | 0.014 | 0.014 | 0.054 |
| | | Parking | 70 | 0.005 | 0.003 | 0.058 |
| 15.002 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 16.000 | As Zoned | Default | 100 | 0.089 | 0.089 | 0.089 |
| | | Building | 100 | 0.095 | 0.095 | 0.184 |
| | | Road | 100 | 0.033 | 0.033 | 0.217 |
| | | Parking | 70 | 0.038 | 0.027 | 0.245 |
| 16.001 | As Zoned | Default | 100 | 0.014 | 0.014 | 0.014 |
| | | Building | 100 | 0.020 | 0.020 | 0.035 |
| | | Road | 100 | 0.013 | 0.013 | 0.047 |
| | | Parking | 70 | 0.008 | 0.006 | 0.053 |
| 16.002 | As Zoned | Default | 100 | 0.015 | 0.015 | 0.015 |
| | | Building | 100 | 0.041 | 0.041 | 0.056 |
| | | Road | 100 | 0.010 | 0.010 | 0.066 |
| | | Parking | 70 | 0.015 | 0.010 | 0.076 |
| 16.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 15.003 | As Zoned | Default | 100 | 0.013 | 0.013 | 0.013 |
| | | Building | 100 | 0.014 | 0.014 | 0.026 |
| | | Road | 100 | 0.007 | 0.007 | 0.033 |
| | | Parking | 70 | 0.005 | 0.003 | 0.036 |
| 15.004 | As Zoned | Default | 100 | 0.016 | 0.016 | 0.016 |
| | | Building | 100 | 0.027 | 0.027 | 0.043 |
| | | Road | 100 | 0.033 | 0.033 | 0.076 |
| | | Parking | 70 | 0.005 | 0.003 | 0.080 |
| 17.000 | As Zoned | Default | 100 | 0.017 | 0.017 | 0.017 |
| | | Building | 100 | 0.020 | 0.020 | 0.037 |
| | | Road | 100 | 0.017 | 0.017 | 0.054 |
| | | Parking | 70 | 0.010 | 0.007 | 0.061 |
| 15.005 | As Zoned | Default | 100 | 0.012 | 0.012 | 0.012 |
| | | Building | 100 | 0.020 | 0.020 | 0.033 |
| | | Road | 100 | 0.013 | 0.013 | 0.046 |
| | | Parking | 70 | 0.010 | 0.007 | 0.053 |
| 15.006 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 15.007 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 15.008 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 15.009 | As Zoned | Default | 100 | 0.028 | 0.028 | 0.028 |
| | | Building | 100 | 0.065 | 0.065 | 0.093 |
| | | Road | 100 | 0.025 | 0.025 | 0.118 |
| | | Parking | 70 | 0.021 | 0.014 | 0.133 |
| 15.010 | As Zoned | Road | 100 | 0.005 | 0.005 | 0.005 |
| 18.000 | As Zoned | Default | 100 | 0.057 | 0.057 | 0.057 |
| | | Building | 100 | 0.047 | 0.047 | 0.103 |
| | | Road | 100 | 0.041 | 0.041 | 0.145 |
| | | Parking | 70 | 0.028 | 0.020 | 0.164 |
| 18.001 | As Zoned | Default | 100 | 0.007 | 0.007 | 0.007 |
| | | Road | 100 | 0.017 | 0.017 | 0.024 |
| 18.002 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 18.003 | As Zoned | Default | 100 | 0.034 | 0.034 | 0.034 |
| | | Building | 100 | 0.054 | 0.054 | 0.088 |
| | | Road | 100 | 0.036 | 0.036 | 0.123 |
| | | Parking | 70 | 0.021 | 0.015 | 0.139 |
| 18.004 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 18.005 | - | - | 100 | 0.000 | 0.000 | 0.000 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Area Summary for Surface Water1

| Pipe Number | PIMP Type | PIMP Name | PIMP (%) | Gross Area (ha) | Imp. Area (ha) | Pipe Total (ha) |
|-------------|-----------|-----------|----------|-----------------|----------------|-----------------|
| 15.011 | As Zoned | Default | 100 | 0.077 | 0.077 | 0.077 |
| | | Building | 100 | 0.054 | 0.054 | 0.131 |
| | | Road | 100 | 0.038 | 0.038 | 0.169 |
| | | Parking | 70 | 0.035 | 0.025 | 0.194 |
| 15.012 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.006 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.007 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.008 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.009 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.010 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 10.011 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 19.000 | As Zoned | Default | 100 | 0.029 | 0.029 | 0.029 |
| | | Building | 100 | 0.029 | 0.029 | 0.058 |
| | | Road | 100 | 0.051 | 0.051 | 0.109 |
| 20.000 | As Zoned | Road | 100 | 0.163 | 0.163 | 0.082 |
| 20.001 | As Zoned | Default | 100 | 0.012 | 0.012 | 0.012 |
| | | Road | 100 | 0.138 | 0.138 | 0.150 |
| | | Parking | 70 | 0.007 | 0.005 | 0.156 |
| 20.002 | As Zoned | Default | 100 | 0.007 | 0.007 | 0.007 |
| | | Road | 100 | 0.020 | 0.020 | 0.028 |
| 20.003 | As Zoned | Default | 100 | 0.010 | 0.010 | 0.010 |
| | | Road | 100 | 0.039 | 0.039 | 0.049 |
| 21.000 | As Zoned | Default | 100 | 0.018 | 0.018 | 0.018 |
| | | Road | 100 | 0.034 | 0.034 | 0.052 |
| | | Parking | 70 | 0.000 | 0.000 | 0.052 |
| | As Zoned | Road | 100 | 0.000 | 0.000 | 0.052 |
| | | Parking | 70 | 0.015 | 0.011 | 0.063 |
| 21.001 | User | - | 100 | 0.022 | 0.022 | 0.022 |
| | As Zoned | Parking | 70 | 0.016 | 0.011 | 0.034 |
| 21.002 | As Zoned | Default | 100 | 0.008 | 0.008 | 0.008 |
| | | Road | 100 | 0.041 | 0.041 | 0.050 |
| | As Zoned | Building | 100 | 0.167 | 0.167 | 0.083 |
| 20.004 | As Zoned | Default | 100 | 0.023 | 0.023 | 0.023 |
| | | Road | 100 | 0.041 | 0.041 | 0.064 |
| | | Parking | 70 | 0.020 | 0.014 | 0.078 |
| 19.001 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 19.002 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 19.003 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 19.004 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| 19.005 | - | - | 100 | 0.000 | 0.000 | 0.000 |
| | | | | Total | Total | Total |
| | | | | 6.561 | 6.110 | 6.110 |

Free Flowing Outfall Details for Surface Water1

| Outfall Pipe Number | Outfall Name | C. Level (m) | I. Level (m) | Min I. Level (m) | D, L (mm) | W (mm) |
|---------------------|--------------|--------------|--------------|------------------|-----------|--------|
| SC-1.017 | SC- | 53.244 | 50.797 | 47.150 | 0 | 0 |

Free Flowing Outfall Details for Surface Water1

| Outfall Pipe Number | Outfall Name | C. Level (m) | I. Level (m) | Min I. Level (m) | D, L (mm) | W (mm) |
|---------------------|--------------|--------------|--------------|------------------|-----------|--------|
| SC-10.011 | SC-OUTFALL | 51.098 | 48.518 | 47.700 | 0 | 0 |

9 Prussia Street
 Dublin 7
 Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022
 File

Designed by EH
 Checked by MK

XP Solutions

Network 2020.1.3

Free Flowing Outfall Details for Surface Water1

| Outfall Pipe Number | Outfall Name | C. Level (m) | I. Level (m) | Min I. Level (m) | D,L (mm) | W (mm) |
|------------------------|-----------------|-----------------|-----------------|------------------------|-------------|-----------|
| SC-19.005 | SC- | 53.000 | 52.553 | 49.110 | 0 | 0 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Online Controls for Surface Water1

Hydro-Brake® Optimum Manhole: SC-MH-57, DS/PN: SC-1.014, Volume (m³): 16.9

Unit Reference MD-SHE-0174-1600-1400-1600
Design Head (m) 1.400
Design Flow (l/s) 16.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 174
Invert Level (m) 51.265
Minimum Outlet Pipe Diameter (mm) 225
Suggested Manhole Diameter (mm) 1500

| Control Points | Head (m) | Flow (l/s) | Control Points | Head (m) | Flow (l/s) |
|---------------------------|----------|------------|---------------------------|----------|------------|
| Design Point (Calculated) | 1.400 | 16.0 | Kick-Flo® | 0.911 | 13.1 |
| Flush-Flo™ | 0.416 | 16.0 | Mean Flow over Head Range | - | 13.8 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| 0.100 | 6.2 | 0.800 | 14.6 | 2.000 | 19.0 | 4.000 | 26.4 | 7.000 | 34.6 |
| 0.200 | 14.7 | 1.000 | 13.6 | 2.200 | 19.8 | 4.500 | 28.0 | 7.500 | 35.8 |
| 0.300 | 15.7 | 1.200 | 14.9 | 2.400 | 20.7 | 5.000 | 29.4 | 8.000 | 36.9 |
| 0.400 | 16.0 | 1.400 | 16.0 | 2.600 | 21.5 | 5.500 | 30.8 | 8.500 | 38.0 |
| 0.500 | 15.9 | 1.600 | 17.0 | 3.000 | 23.0 | 6.000 | 32.1 | 9.000 | 39.1 |
| 0.600 | 15.7 | 1.800 | 18.0 | 3.500 | 24.8 | 6.500 | 33.4 | 9.500 | 40.1 |

Hydro-Brake® Optimum Manhole: SC-MH-89, DS/PN: SC-15.008, Volume (m³): 3.7

Unit Reference MD-SHE-0194-2000-1350-2000
Design Head (m) 1.350
Design Flow (l/s) 20.0
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 194
Invert Level (m) 53.675
Minimum Outlet Pipe Diameter (mm) 225
Suggested Manhole Diameter (mm) 1500

| Control Points | Head (m) | Flow (l/s) | Control Points | Head (m) | Flow (l/s) |
|---------------------------|----------|------------|---------------------------|----------|------------|
| Design Point (Calculated) | 1.350 | 20.0 | Kick-Flo® | 0.907 | 16.6 |
| Flush-Flo™ | 0.414 | 20.0 | Mean Flow over Head Range | - | 17.2 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| 0.100 | 6.7 | 0.800 | 18.3 | 2.000 | 24.1 | 4.000 | 33.6 | 7.000 | 44.1 |
| 0.200 | 18.0 | 1.000 | 17.3 | 2.200 | 25.2 | 4.500 | 35.6 | 7.500 | 45.6 |
| 0.300 | 19.7 | 1.200 | 18.9 | 2.400 | 26.3 | 5.000 | 37.5 | 8.000 | 47.0 |
| 0.400 | 20.0 | 1.400 | 20.3 | 2.600 | 27.4 | 5.500 | 39.2 | 8.500 | 48.4 |
| 0.500 | 19.9 | 1.600 | 21.7 | 3.000 | 29.3 | 6.000 | 40.9 | 9.000 | 49.8 |
| 0.600 | 19.6 | 1.800 | 22.9 | 3.500 | 31.6 | 6.500 | 42.5 | 9.500 | 51.1 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Hydro-Brake® Optimum Manhole: SC-MH-104, DS/PN: SC-10.010, Volume (m³): 2.7

Unit Reference MD-SHE-0213-2410-1200-2410
Design Head (m) 1.200
Design Flow (l/s) 24.1
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 213
Invert Level (m) 48.784
Minimum Outlet Pipe Diameter (mm) 225
Suggested Manhole Diameter (mm) 1500

| Control Points | Head (m) | Flow (l/s) | Control Points | Head (m) | Flow (l/s) |
|---------------------------|----------|------------|---------------------------|----------|------------|
| Design Point (Calculated) | 1.200 | 24.1 | Kick-Flo® | 0.845 | 20.4 |
| Flush-Flo™ | 0.390 | 24.1 | Mean Flow over Head Range | - | 20.5 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| 0.100 | 7.2 | 0.800 | 21.4 | 2.000 | 30.8 | 4.000 | 43.0 | 7.000 | 56.3 |
| 0.200 | 20.7 | 1.000 | 22.1 | 2.200 | 32.2 | 4.500 | 45.5 | 7.500 | 58.3 |
| 0.300 | 23.8 | 1.200 | 24.1 | 2.400 | 33.6 | 5.000 | 47.9 | 8.000 | 60.1 |
| 0.400 | 24.1 | 1.400 | 25.9 | 2.600 | 34.9 | 5.500 | 50.1 | 8.500 | 61.9 |
| 0.500 | 23.9 | 1.600 | 27.6 | 3.000 | 37.4 | 6.000 | 52.3 | 9.000 | 63.7 |
| 0.600 | 23.4 | 1.800 | 29.3 | 3.500 | 40.3 | 6.500 | 54.3 | 9.500 | 65.4 |

Hydro-Brake® Optimum Manhole: SC-MH-119, DS/PN: SC-19.005, Volume (m³): 4.6

Unit Reference MD-SHE-0078-3700-2000-3700
Design Head (m) 2.000
Design Flow (l/s) 3.7
Flush-Flo™ Calculated
Objective Minimise upstream storage
Application Surface
Sump Available Yes
Diameter (mm) 78
Invert Level (m) 52.594
Minimum Outlet Pipe Diameter (mm) 100
Suggested Manhole Diameter (mm) 1200

| Control Points | Head (m) | Flow (l/s) | Control Points | Head (m) | Flow (l/s) |
|---------------------------|----------|------------|---------------------------|----------|------------|
| Design Point (Calculated) | 2.000 | 3.7 | Kick-Flo® | 0.701 | 2.3 |
| Flush-Flo™ | 0.347 | 2.8 | Mean Flow over Head Range | - | 2.8 |

The hydrological calculations have been based on the Head/Discharge relationship for the Hydro-Brake® Optimum as specified. Should another type of control device other than a Hydro-Brake Optimum® be utilised then these storage routing calculations will be invalidated

| Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) | Depth (m) | Flow (l/s) |
|-----------|------------|-----------|------------|-----------|------------|-----------|------------|-----------|------------|
| 0.100 | 2.2 | 0.800 | 2.4 | 2.000 | 3.7 | 4.000 | 5.1 | 7.000 | 6.6 |
| 0.200 | 2.7 | 1.000 | 2.7 | 2.200 | 3.9 | 4.500 | 5.4 | 7.500 | 6.9 |
| 0.300 | 2.8 | 1.200 | 2.9 | 2.400 | 4.0 | 5.000 | 5.7 | 8.000 | 7.1 |
| 0.400 | 2.8 | 1.400 | 3.1 | 2.600 | 4.2 | 5.500 | 5.9 | 8.500 | 7.3 |
| 0.500 | 2.8 | 1.600 | 3.3 | 3.000 | 4.5 | 6.000 | 6.2 | 9.000 | 7.5 |
| 0.600 | 2.6 | 1.800 | 3.5 | 3.500 | 4.8 | 6.500 | 6.4 | 9.500 | 7.7 |

9 Prussia Street
 Dublin 7
 Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022
 File

Designed by EH
 Checked by MK

XP Solutions

Network 2020.1.3

Storage Structures for Surface Water1

Cellular Storage Manhole: SC-MH-57, DS/PN: SC-1.014

Invert Level (m) 51.265 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.60
 Infiltration Coefficient Side (m/hr) 0.00000

| Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) |
|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|
| 0.000 | 2525.0 | 0.0 | 1.200 | 2525.0 | 0.0 | 1.201 | 0.0 | 0.0 |

Cellular Storage Manhole: SC-MH-89, DS/PN: SC-15.008

Invert Level (m) 53.675 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.60
 Infiltration Coefficient Side (m/hr) 0.00000

| Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) |
|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|
| 0.000 | 250.0 | 0.0 | 1.200 | 250.0 | 0.0 | 1.201 | 0.0 | 0.0 |

Cellular Storage Manhole: SC-MH-104, DS/PN: SC-10.010

Invert Level (m) 48.784 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.60
 Infiltration Coefficient Side (m/hr) 0.00000

| Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) |
|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|
| 0.000 | 1650.0 | 0.0 | 1.200 | 1650.0 | 0.0 | 1.201 | 0.0 | 0.0 |

Cellular Storage Manhole: SC-MH-106, DS/PN: SC-19.000

Invert Level (m) 53.886 Safety Factor 2.0
 Infiltration Coefficient Base (m/hr) 0.00000 Porosity 0.95
 Infiltration Coefficient Side (m/hr) 0.00000

| Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) | Depth (m) | Area (m ²) | Inf. Area (m ²) |
|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|-----------|------------------------|-----------------------------|
| 0.000 | 350.0 | 0.0 | 1.200 | 350.0 | 0.0 | 1.201 | 0.0 | 0.0 |

Infiltration Trench Manhole: SC-MH-119, DS/PN: SC-19.005

Infiltration Coefficient Base (m/hr) 0.00000 Trench Width (m) 0.6
 Infiltration Coefficient Side (m/hr) 0.00000 Trench Length (m) 136.0
 Safety Factor 2.0 Slope (1:X) 200.0
 Porosity 0.30 Cap Volume Depth (m) 0.000
 Invert Level (m) 52.594 Cap Infiltration Depth (m) 0.000

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022
File

Designed by EH
Checked by MK

XP Solutions

Network 2020.1.3

Summary of Critical Results by Maximum Level (Rank 1) for Surface Water1

Simulation Criteria

Areal Reduction Factor 1.000 Additional Flow - % of Total Flow 0.000
Hot Start (mins) 0 MADD Factor * 10m³/ha Storage 2.000
Hot Start Level (mm) 0 Inlet Coefficient 0.800
Manhole Headloss Coeff (Global) 0.500 Flow per Person per Day (l/per/day) 0.000
Foul Sewage per hectare (l/s) 0.000

Number of Input Hydrographs 0 Number of Offline Controls 0 Number of Time/Area Diagrams 0
Number of Online Controls 4 Number of Storage Structures 5 Number of Real Time Controls 0

Synthetic Rainfall Details

Rainfall Model FSR M5-60 (mm) 15.700 Cv (Summer) 0.750
Region Scotland and Ireland Ratio R 0.278 Cv (Winter) 0.840

Margin for Flood Risk Warning (mm) 300.0
Analysis Timestep 2.5 Second Increment (Extended)
DTS Status ON
DVD Status OFF
Inertia Status OFF

Profile(s) Summer and Winter
Duration(s) (mins) 15, 30, 60, 120, 180, 240, 360, 480, 600, 720, 960,
1440, 2160, 2880, 4320, 5760, 7200, 8640, 10080
Return Period(s) (years) 100
Climate Change (%) 20

| PN | US/MH Name | Event | US/CL (m) | Water Level (m) | Surcharged Depth (m) | Pipe Flow / Cap. | Flow (l/s) | Status |
|----------|------------|---------------------------------|-----------|-----------------|----------------------|------------------|------------|------------|
| | | | | | | | | |
| SC-1.000 | SC-MH-1 | 15 minute 100 year Winter I+20% | 56.961 | 55.660 | -0.101 | 0.56 | 37.6 | OK |
| SC-1.001 | SC-MH-2 | 15 minute 100 year Winter I+20% | 57.542 | 55.621 | 0.147 | 0.81 | 54.6 | SURCHARGED |
| SC-1.002 | SC-MH-3 | 15 minute 100 year Winter I+20% | 56.966 | 55.532 | 0.333 | 0.87 | 58.5 | SURCHARGED |
| SC-1.003 | SC-MH-4 | 15 minute 100 year Winter I+20% | 57.156 | 55.344 | 0.421 | 1.02 | 68.3 | SURCHARGED |
| SC-2.000 | SC-MH-5 | 15 minute 100 year Winter I+20% | 57.191 | 55.991 | 0.000 | 0.53 | 19.8 | SURCHARGED |
| SC-2.001 | SC-MH-6 | 15 minute 100 year Winter I+20% | 57.496 | 55.960 | 0.157 | 0.58 | 20.3 | SURCHARGED |
| SC-2.002 | SC-MH-7 | 15 minute 100 year Winter I+20% | 57.624 | 55.931 | 0.218 | 1.01 | 38.3 | SURCHARGED |
| SC-2.003 | SC-MH-8 | 15 minute 100 year Winter I+20% | 57.399 | 55.757 | 0.311 | 0.86 | 40.2 | SURCHARGED |
| SC-2.004 | SC-MH-9 | 15 minute 100 year Winter I+20% | 57.516 | 55.628 | 0.381 | 1.00 | 53.0 | SURCHARGED |
| SC-1.004 | SC-MH-10 | 15 minute 100 year Winter I+20% | 57.611 | 55.100 | 0.394 | 1.52 | 122.4 | SURCHARGED |
| SC-1.005 | SC-MH-11 | 15 minute 100 year Winter I+20% | 57.642 | 55.014 | 0.344 | 1.45 | 134.2 | SURCHARGED |
| SC-1.006 | SC-MH-12 | 15 minute 100 year Winter I+20% | 57.417 | 54.890 | 0.282 | 1.11 | 159.3 | SURCHARGED |
| SC-3.000 | SC-MH-13 | 15 minute 100 year Winter I+20% | 56.727 | 55.411 | -0.116 | 0.47 | 32.5 | OK |
| SC-3.001 | SC-MH-14 | 15 minute 100 year Winter I+20% | 56.999 | 55.012 | 0.066 | 0.89 | 50.8 | SURCHARGED |
| SC-1.007 | SC-MH-15 | 15 minute 100 year Winter I+20% | 56.871 | 54.733 | 0.244 | 2.00 | 207.7 | SURCHARGED |
| SC-1.008 | SC-MH-16 | 15 minute 100 year Winter I+20% | 56.704 | 54.597 | 0.145 | 1.66 | 214.3 | SURCHARGED |
| SC-1.009 | SC-MH-17 | 15 minute 100 year Winter I+20% | 56.476 | 54.450 | 0.047 | 1.39 | 226.9 | SURCHARGED |
| SC-1.010 | SC-MH-18 | 15 minute 100 year Winter I+20% | 56.213 | 54.369 | 0.011 | 1.76 | 234.3 | SURCHARGED |
| SC-4.000 | SC-MH-19 | 15 minute 100 year Winter I+20% | 55.974 | 55.400 | 0.626 | 1.37 | 56.4 | SURCHARGED |
| SC-5.000 | SC-MH-20 | 15 minute 100 year Winter I+20% | 57.076 | 56.917 | 1.041 | 0.15 | 5.5 | FLOOD RISK |
| SC-5.001 | SC-MH-21 | 15 minute 100 year Winter I+20% | 56.976 | 56.927 | 1.151 | 1.50 | 65.6 | FLOOD RISK |
| SC-5.002 | SC-MH-22 | 15 minute 100 year Winter I+20% | 56.691 | 56.266 | 0.775 | 1.21 | 67.3 | SURCHARGED |
| SC-5.003 | SC-MH-23 | 15 minute 100 year Winter I+20% | 56.665 | 56.202 | 0.753 | 0.88 | 69.5 | SURCHARGED |
| SC-5.004 | SC-MH-24 | 15 minute 100 year Winter I+20% | 56.549 | 56.156 | 0.807 | 1.66 | 132.2 | SURCHARGED |
| SC-6.000 | SC-MH-25 | 15 minute 100 year Winter I+20% | 56.484 | 55.172 | -0.112 | 0.31 | 16.3 | OK |
| SC-5.005 | SC-MH-26 | 15 minute 100 year Winter I+20% | 56.181 | 55.158 | 0.177 | 1.52 | 131.1 | SURCHARGED |
| SC-5.006 | SC-MH-27 | 15 minute 100 year Winter I+20% | 56.438 | 55.058 | 0.124 | 1.10 | 127.5 | SURCHARGED |
| SC-5.007 | SC-MH-28 | 15 minute 100 year Winter I+20% | 55.895 | 54.779 | 0.083 | 1.51 | 128.6 | SURCHARGED |
| SC-5.008 | SC-MH-29 | 15 minute 100 year Winter I+20% | 55.971 | 54.676 | 0.027 | 0.59 | 131.4 | SURCHARGED |
| SC-4.001 | SC-MH-30 | 15 minute 100 year Winter I+20% | 55.522 | 54.579 | 0.257 | 1.74 | 164.5 | SURCHARGED |
| SC-7.000 | SC-MH-31 | 15 minute 100 year Winter I+20% | 57.200 | 56.665 | 0.665 | 0.50 | 24.8 | SURCHARGED |
| SC-7.001 | SC-MH-32 | 15 minute 100 year Winter I+20% | 57.020 | 56.620 | 0.800 | 1.18 | 52.1 | SURCHARGED |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022
File

Designed by EH
Checked by MK

XP Solutions

Network 2020.1.3

Summary of Critical Results by Maximum Level (Rank 1) for Surface Water1

| PN | US/MH Name | Event | US/CL (m) | Water Level (m) | Surcharged Depth (m) | Flow / Cap. | Pipe Flow (l/s) | Status |
|-----------|------------|-----------------------------------|-----------|-----------------|----------------------|-------------|-----------------|------------|
| SC-7.002 | SC-MH-33 | 15 minute 100 year Winter I+20% | 56.814 | 56.331 | 0.717 | 1.27 | 85.6 | SURCHARGED |
| SC-8.000 | SC-MH-34 | 15 minute 100 year Winter I+20% | 56.600 | 56.097 | 0.697 | 0.62 | 20.4 | SURCHARGED |
| SC-8.001 | SC-MH-35 | 15 minute 100 year Winter I+20% | 56.546 | 56.075 | 0.729 | 0.61 | 21.3 | SURCHARGED |
| SC-8.002 | SC-MH-36 | 15 minute 100 year Winter I+20% | 56.478 | 56.049 | 0.771 | 1.95 | 68.4 | SURCHARGED |
| SC-8.003 | SC-MH-37 | 15 minute 100 year Winter I+20% | 56.409 | 55.791 | 0.582 | 1.61 | 65.9 | SURCHARGED |
| SC-8.004 | SC-MH-38 | 15 minute 100 year Winter I+20% | 56.209 | 55.278 | 0.269 | 1.14 | 65.6 | SURCHARGED |
| SC-7.003 | SC-MH-39 | 15 minute 100 year Winter I+20% | 56.236 | 55.033 | 0.216 | 1.87 | 170.2 | SURCHARGED |
| SC-7.004 | SC-MH-40 | 15 minute 100 year Winter I+20% | 56.031 | 54.844 | 0.081 | 0.94 | 177.7 | SURCHARGED |
| SC-4.002 | SC-MH-41 | 15 minute 100 year Winter I+20% | 55.475 | 54.409 | 0.135 | 1.46 | 354.6 | SURCHARGED |
| SC-4.003 | SC-MH-42 | 15 minute 100 year Winter I+20% | 55.416 | 53.921 | -0.295 | 0.40 | 355.5 | OK |
| SC-4.004 | SC-MH-43 | 30 minute 100 year Winter I+20% | 53.410 | 52.927 | 0.718 | 2.03 | 347.1 | SURCHARGED |
| SC-4.005 | SC-MH-44 | 30 minute 100 year Winter I+20% | 55.819 | 52.827 | 0.651 | 1.90 | 350.9 | SURCHARGED |
| SC-4.006 | SC-MH-45 | 30 minute 100 year Winter I+20% | 55.859 | 52.705 | 0.565 | 2.11 | 354.1 | SURCHARGED |
| SC-1.011 | SC-MH-46 | 30 minute 100 year Winter I+20% | 56.064 | 52.588 | 0.463 | 3.23 | 582.8 | SURCHARGED |
| SC-9.000 | SC-MH-47 | 15 minute 100 year Winter I+20% | 55.349 | 54.052 | -0.097 | 0.62 | 42.0 | OK |
| SC-9.001 | SC-MH-48 | 15 minute 100 year Summer I+20% | 55.303 | 53.819 | -0.098 | 0.60 | 42.1 | OK |
| SC-9.002 | SC-MH-49 | 15 minute 100 year Summer I+20% | 55.271 | 53.555 | -0.087 | 0.68 | 42.2 | OK |
| SC-9.003 | SC-MH-50 | 15 minute 100 year Winter I+20% | 55.313 | 53.356 | -0.089 | 0.67 | 41.9 | OK |
| SC-9.004 | SC-MH-51 | 15 minute 100 year Winter I+20% | 55.409 | 53.154 | -0.097 | 0.61 | 41.8 | OK |
| SC-9.005 | SC-MH-52 | 15 minute 100 year Summer I+20% | 55.563 | 52.911 | -0.101 | 0.58 | 42.1 | OK |
| SC-9.006 | SC-MH-53 | 15 minute 100 year Summer I+20% | 55.720 | 52.637 | -0.100 | 0.59 | 42.3 | OK |
| SC-9.007 | SC-MH-54 | 30 minute 100 year Winter I+20% | 55.980 | 52.468 | 0.094 | 0.79 | 56.2 | SURCHARGED |
| SC-1.012 | SC-MH-55 | 30 minute 100 year Winter I+20% | 56.082 | 52.375 | 0.273 | 1.50 | 622.1 | SURCHARGED |
| SC-1.013 | SC-MH-56 | 960 minute 100 year Winter I+20% | 53.245 | 52.250 | 0.205 | 0.35 | 91.9 | SURCHARGED |
| SC-1.014 | SC-MH-57 | 960 minute 100 year Winter I+20% | 54.647 | 52.248 | 0.758 | 0.57 | 16.0 | SURCHARGED |
| SC-1.015 | SC-MH-58 | 2160 minute 100 year Summer I+20% | 54.852 | 51.342 | -0.123 | 0.42 | 16.0 | OK |
| SC-1.016 | SC-MH-59 | 7200 minute 100 year Winter I+20% | 54.331 | 51.137 | -0.108 | 0.53 | 16.0 | OK |
| SC-1.017 | SC-MH-60 | 7200 minute 100 year Winter I+20% | 54.561 | 51.088 | -0.122 | 0.43 | 16.0 | OK |
| SC-10.000 | SC-MH-61 | 15 minute 100 year Winter I+20% | 56.287 | 55.049 | -0.038 | 0.73 | 26.6 | OK |
| SC-10.001 | SC-MH-62 | 15 minute 100 year Winter I+20% | 56.286 | 55.002 | 0.053 | 0.95 | 54.1 | SURCHARGED |
| SC-11.000 | SC-MH-63 | 15 minute 100 year Winter I+20% | 56.773 | 55.849 | 0.276 | 1.26 | 74.0 | SURCHARGED |
| SC-12.000 | SC-MH-64 | 15 minute 100 year Winter I+20% | 56.479 | 56.213 | 0.934 | 1.20 | 44.8 | FLOOD RISK |
| SC-13.000 | SC-MH-65 | 15 minute 100 year Winter I+20% | 56.514 | 56.029 | 0.715 | 0.70 | 33.0 | SURCHARGED |
| SC-12.001 | SC-MH-66 | 15 minute 100 year Winter I+20% | 56.727 | 55.929 | 0.848 | 1.22 | 74.9 | SURCHARGED |
| SC-12.002 | SC-MH-67 | 15 minute 100 year Winter I+20% | 56.704 | 55.845 | 0.811 | 1.43 | 96.1 | SURCHARGED |
| SC-11.001 | SC-MH-68 | 15 minute 100 year Winter I+20% | 56.374 | 55.323 | 0.539 | 1.92 | 178.4 | SURCHARGED |
| SC-11.002 | SC-MH-69 | 15 minute 100 year Winter I+20% | 55.952 | 55.092 | 0.371 | 1.33 | 209.0 | SURCHARGED |
| SC-10.002 | SC-MH-70 | 15 minute 100 year Winter I+20% | 55.733 | 54.748 | 0.216 | 1.16 | 269.8 | SURCHARGED |
| SC-10.003 | SC-MH-71 | 15 minute 100 year Winter I+20% | 55.238 | 54.077 | 0.039 | 1.17 | 269.0 | SURCHARGED |
| SC-14.000 | SC-MH-72 | 15 minute 100 year Winter I+20% | 52.797 | 51.875 | 0.278 | 0.95 | 33.4 | SURCHARGED |
| SC-14.001 | SC-MH-73 | 15 minute 100 year Winter I+20% | 54.024 | 51.803 | 0.299 | 1.00 | 32.8 | SURCHARGED |
| SC-10.004 | SC-MH-74 | 15 minute 100 year Winter I+20% | 55.072 | 51.761 | 0.312 | 1.98 | 303.7 | SURCHARGED |
| SC-10.005 | SC-MH-75 | 15 minute 100 year Winter I+20% | 54.715 | 51.463 | 0.090 | 1.54 | 302.9 | SURCHARGED |
| SC-15.000 | SC-MH-76 | 15 minute 100 year Winter I+20% | 56.732 | 55.632 | 0.100 | 0.74 | 39.7 | SURCHARGED |
| SC-15.001 | SC-MH-77 | 15 minute 100 year Winter I+20% | 56.410 | 55.515 | 0.305 | 0.95 | 52.6 | SURCHARGED |
| SC-15.002 | SC-MH-78 | 15 minute 100 year Winter I+20% | 55.976 | 55.164 | 0.388 | 1.17 | 48.4 | SURCHARGED |
| SC-16.000 | SC-MH-79 | 15 minute 100 year Winter I+20% | 56.999 | 56.906 | 1.107 | 1.15 | 68.1 | FLOOD RISK |
| SC-16.001 | SC-MH-80 | 15 minute 100 year Winter I+20% | 56.075 | 55.702 | 0.827 | 1.79 | 79.8 | SURCHARGED |
| SC-16.002 | SC-MH-81 | 15 minute 100 year Winter I+20% | 55.952 | 55.307 | 0.555 | 1.57 | 96.1 | SURCHARGED |
| SC-16.003 | SC-MH-82 | 15 minute 100 year Winter I+20% | 55.893 | 55.153 | 0.460 | 1.55 | 97.0 | SURCHARGED |
| SC-15.003 | SC-MH-83 | 180 minute 100 year Winter I+20% | 55.821 | 54.973 | 0.373 | 0.75 | 59.6 | SURCHARGED |
| SC-15.004 | SC-MH-84 | 180 minute 100 year Winter I+20% | 55.789 | 54.969 | 0.391 | 0.34 | 66.5 | SURCHARGED |
| SC-17.000 | SC-MH-85 | 180 minute 100 year Winter I+20% | 55.499 | 54.960 | 0.661 | 0.15 | 5.6 | SURCHARGED |
| SC-15.005 | SC-MH-86 | 180 minute 100 year Winter I+20% | 55.581 | 54.957 | 0.747 | 0.84 | 75.4 | SURCHARGED |
| SC-15.006 | SC-MH-87 | 180 minute 100 year Winter I+20% | 55.469 | 54.953 | 0.763 | 0.61 | 74.8 | SURCHARGED |
| SC-15.007 | SC-MH-88 | 180 minute 100 year Winter I+20% | 55.518 | 54.951 | 0.769 | 0.44 | 74.2 | SURCHARGED |
| SC-15.008 | SC-MH-89 | 180 minute 100 year Winter I+20% | 55.336 | 54.946 | 1.046 | 0.76 | 20.0 | SURCHARGED |
| SC-15.009 | SC-MH-90 | 60 minute 100 year Summer I+20% | 55.367 | 54.062 | 0.181 | 1.19 | 45.5 | SURCHARGED |
| SC-15.010 | SC-MH-91 | 60 minute 100 year Summer I+20% | 54.847 | 53.635 | 0.046 | 1.40 | 46.4 | SURCHARGED |
| SC-18.000 | SC-MH-92 | 15 minute 100 year Winter I+20% | 54.985 | 54.201 | 0.416 | 0.95 | 52.4 | SURCHARGED |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File

Checked by MK

XP Solutions

Network 2020.1.3

Summary of Critical Results by Maximum Level (Rank 1) for Surface Water1

| PN | US/MH Name | Event | US/CL (m) | Water Level (m) | Surcharged Depth (m) | Flow / Cap. | Pipe Flow (l/s) | Status |
|-----------|---------------|----------------------------------|--------------|-----------------------|----------------------------|----------------|-----------------------|------------|
| | | | | | | | | |
| SC-18.001 | SC-MH-93 | 15 minute 100 year Winter I+20% | 54.321 | 53.730 | 0.609 | 1.26 | 51.8 | SURCHARGED |
| SC-18.002 | SC-MH-94 | 15 minute 100 year Winter I+20% | 54.007 | 53.217 | 0.410 | 1.65 | 54.0 | SURCHARGED |
| SC-18.003 | SC-MH-95 | 15 minute 100 year Winter I+20% | 54.025 | 53.085 | 0.334 | 1.27 | 84.1 | SURCHARGED |
| SC-18.004 | SC-MH-96 | 15 minute 100 year Winter I+20% | 54.500 | 52.776 | 0.218 | 1.34 | 83.9 | SURCHARGED |
| SC-18.005 | SC-MH-97 | 15 minute 100 year Winter I+20% | 54.743 | 52.610 | 0.145 | 1.58 | 84.3 | SURCHARGED |
| SC-15.011 | SC-MH-98 | 15 minute 100 year Winter I+20% | 54.772 | 52.511 | 0.080 | 1.18 | 170.0 | SURCHARGED |
| SC-15.012 | SC-MH-99 | 15 minute 100 year Winter I+20% | 54.345 | 52.323 | 0.015 | 1.79 | 169.1 | SURCHARGED |
| SC-10.006 | SC-MH-100 | 15 minute 100 year Winter I+20% | 54.518 | 51.057 | -0.274 | 0.46 | 473.1 | OK |
| SC-10.007 | SC-MH-101 | 600 minute 100 year Winter I+20% | 50.313 | 49.812 | 0.249 | 0.41 | 99.2 | SURCHARGED |
| SC-10.008 | SC-MH-102 | 600 minute 100 year Winter I+20% | 50.313 | 49.810 | 0.259 | 0.30 | 98.8 | SURCHARGED |
| SC-10.009 | SC-MH-103 | 600 minute 100 year Winter I+20% | 50.313 | 49.806 | 0.344 | 0.32 | 96.4 | SURCHARGED |
| SC-10.010 | SC-MH-104 | 600 minute 100 year Winter I+20% | 50.313 | 49.805 | 0.795 | 0.83 | 24.1 | SURCHARGED |
| SC-10.011 | SC-MH-105 | 480 minute 100 year Winter I+20% | 50.313 | 48.885 | -0.094 | 0.64 | 24.1 | OK |
| SC-19.000 | SC-MH-106 | 720 minute 100 year Winter I+20% | 57.011 | 54.626 | 0.515 | 0.04 | 3.2 | SURCHARGED |
| SC-20.000 | SC-MH-107 | 15 minute 100 year Winter I+20% | 56.768 | 56.147 | 0.579 | 0.65 | 25.1 | SURCHARGED |
| SC-20.001 | SC-MH-108 | 15 minute 100 year Winter I+20% | 57.936 | 55.975 | 0.809 | 1.88 | 71.3 | SURCHARGED |
| SC-20.002 | SC-MH-109 | 15 minute 100 year Winter I+20% | 57.574 | 55.073 | 0.161 | 1.15 | 74.5 | SURCHARGED |
| SC-20.003 | SC-MH-110 | 30 minute 100 year Summer I+20% | 57.271 | 54.899 | 0.118 | 1.15 | 76.6 | SURCHARGED |
| SC-21.000 | SC-MH-111 | 30 minute 100 year Winter I+20% | 55.670 | 54.955 | 0.485 | 0.50 | 18.3 | SURCHARGED |
| SC-21.001 | SC-MH-112 | 30 minute 100 year Winter I+20% | 55.743 | 54.928 | 0.612 | 0.60 | 22.2 | SURCHARGED |
| SC-21.002 | SC-MH-113 | 30 minute 100 year Winter I+20% | 56.115 | 54.885 | 0.723 | 1.07 | 40.8 | SURCHARGED |
| SC-20.004 | SC-MH-114 | 30 minute 100 year Winter I+20% | 56.779 | 54.678 | 0.798 | 1.13 | 117.8 | SURCHARGED |
| SC-19.001 | SC-MH-115 | 720 minute 100 year Winter I+20% | 56.579 | 54.625 | 0.968 | 0.08 | 10.1 | SURCHARGED |
| SC-19.002 | SC-MH-116 | 720 minute 100 year Winter I+20% | 56.688 | 54.623 | 1.094 | 0.07 | 9.7 | SURCHARGED |
| SC-19.003 | SC-MH-117 | 720 minute 100 year Winter I+20% | 56.070 | 54.620 | 1.496 | 0.25 | 9.4 | SURCHARGED |
| SC-19.004 | SC-MH-118 | 720 minute 100 year Winter I+20% | 55.905 | 54.610 | 1.683 | 0.25 | 9.1 | SURCHARGED |
| SC-19.005 | SC-MH-119 | 720 minute 100 year Winter I+20% | 56.054 | 54.603 | 1.784 | 0.12 | 3.7 | SURCHARGED |



APPENDIX C. Wastewater Design Calculation and Network Details

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022
File S665-OCSC-1C-XX-M3-C-0001.02.MDX

Designed by EH
Checked by MK

XP Solutions

Network 2020.1.3

FOUL SEWERAGE DESIGN

Design Criteria for Foul Network 1

Pipe Sizes STANDARD Manhole Sizes STANDARD

| | | | |
|-----------------------------|--------|---------------------------------------|--------|
| Industrial Flow (l/s/ha) | 0.00 | Add Flow / Climate Change (%) | 0 |
| Industrial Peak Flow Factor | 0.00 | Minimum Backdrop Height (m) | 0.000 |
| Flow Per Person (l/per/day) | 222.00 | Maximum Backdrop Height (m) | 20.000 |
| Persons per House | 3.00 | Min Design Depth for Optimisation (m) | 1.200 |
| Domestic (l/s/ha) | 0.00 | Min Vel for Auto Design only (m/s) | 1.00 |
| Domestic Peak Flow Factor | 6.00 | Min Slope for Optimisation (1:X) | 500 |

Designed with Level Soffits

Network Design Table for Foul Network 1

| PN | Length (m) | Fall (m) | Slope (1:X) | Area (ha) | Houses | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|----------|------------|----------|-------------|-----------|--------|-----------------|--------|----------|----------|--------------|-------------|
| WC-1.000 | 38.836 | 0.259 | 149.9 | 0.000 | 31 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-2.000 | 19.565 | 0.326 | 60.0 | 0.000 | 4 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-1.001 | 10.631 | 0.053 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.002 | 76.391 | 0.382 | 200.0 | 0.000 | 27 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.003 | 83.504 | 0.418 | 199.8 | 0.000 | 9 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.004 | 14.929 | 0.075 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-3.000 | 9.275 | 0.155 | 59.8 | 0.000 | 3 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-3.001 | 37.736 | 0.629 | 60.0 | 0.000 | 6 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-3.002 | 13.828 | 0.106 | 130.0 | 0.000 | 5 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-3.003 | 38.894 | 0.299 | 130.0 | 0.000 | 0 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-3.004 | 6.409 | 0.049 | 130.0 | 0.000 | 0 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-1.005 | 5.690 | 0.028 | 200.0 | 0.000 | 8 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.006 | 49.051 | 0.245 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.007 | 19.441 | 0.097 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.008 | 24.791 | 0.124 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |

Network Results Table

| PN | US/IL (m) | Σ Area (ha) | Σ Base Flow (l/s) | Σ Hse | Add Flow (l/s) | P.Dep (mm) | P.Vel (m/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|----------|-----------|-------------|-------------------|-------|----------------|------------|-------------|-----------|-----------|------------|
| WC-1.000 | 55.500 | 0.000 | 0.0 | 31 | 0.0 | 30 | 0.45 | 0.94 | 37.2 | 1.4 |
| WC-2.000 | 55.200 | 0.000 | 0.0 | 4 | 0.0 | 11 | 0.34 | 1.13 | 20.0 | 0.2 |
| WC-1.001 | 54.799 | 0.000 | 0.0 | 35 | 0.0 | 34 | 0.42 | 0.81 | 32.2 | 1.6 |
| WC-1.002 | 54.746 | 0.000 | 0.0 | 62 | 0.0 | 45 | 0.50 | 0.81 | 32.2 | 2.9 |
| WC-1.003 | 54.364 | 0.000 | 0.0 | 71 | 0.0 | 49 | 0.52 | 0.81 | 32.2 | 3.3 |
| WC-1.004 | 53.946 | 0.000 | 0.0 | 71 | 0.0 | 49 | 0.52 | 0.81 | 32.2 | 3.3 |
| WC-3.000 | 55.100 | 0.000 | 0.0 | 3 | 0.0 | 9 | 0.31 | 1.13 | 20.0 | 0.1 |
| WC-3.001 | 54.945 | 0.000 | 0.0 | 9 | 0.0 | 15 | 0.44 | 1.13 | 20.0 | 0.4 |
| WC-3.002 | 54.316 | 0.000 | 0.0 | 14 | 0.0 | 23 | 0.39 | 0.77 | 13.6 | 0.6 |
| WC-3.003 | 54.210 | 0.000 | 0.0 | 14 | 0.0 | 23 | 0.39 | 0.77 | 13.6 | 0.6 |
| WC-3.004 | 53.911 | 0.000 | 0.0 | 14 | 0.0 | 23 | 0.39 | 0.77 | 13.6 | 0.6 |
| WC-1.005 | 53.786 | 0.000 | 0.0 | 93 | 0.0 | 56 | 0.56 | 0.81 | 32.2 | 4.3 |
| WC-1.006 | 53.758 | 0.000 | 0.0 | 93 | 0.0 | 56 | 0.56 | 0.81 | 32.2 | 4.3 |
| WC-1.007 | 53.513 | 0.000 | 0.0 | 93 | 0.0 | 56 | 0.56 | 0.81 | 32.2 | 4.3 |
| WC-1.008 | 53.415 | 0.000 | 0.0 | 93 | 0.0 | 56 | 0.56 | 0.81 | 32.2 | 4.3 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File S665-OCSC-1C-XX-M3-C-0001.02.MDX

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Foul Network 1

| PN | Length (m) | Fall (m) | Slope (1:X) | Area (ha) | Houses | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|----------|---------------|-------------|----------------|--------------|--------|--------------------|-----------|-------------|-------------|--------------|----------------|
| WC-4.000 | 24.542 | 0.409 | 60.0 | 0.000 | 4 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-4.001 | 22.768 | 0.379 | 60.1 | 0.000 | 4 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-4.002 | 9.987 | 0.166 | 60.2 | 0.000 | 2 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-4.003 | 6.593 | 0.110 | 60.0 | 0.000 | 0 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-1.009 | 19.243 | 0.096 | 200.0 | 0.000 | 2 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.010 | 12.518 | 0.063 | 200.0 | 0.000 | 2 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.011 | 13.813 | 0.069 | 200.0 | 0.000 | 2 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.012 | 21.399 | 0.107 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.013 | 7.893 | 0.039 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.014 | 26.300 | 0.132 | 199.2 | 0.000 | 3 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.015 | 34.030 | 0.170 | 200.0 | 0.000 | 4 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.016 | 66.609 | 0.333 | 200.0 | 0.000 | 13 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.017 | 12.077 | 0.060 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-5.000 | 89.000 | 1.483 | 60.0 | 0.000 | 10 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-5.001 | 51.424 | 0.396 | 129.9 | 0.000 | 8 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-5.002 | 23.594 | 0.181 | 130.4 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-5.003 | 6.354 | 0.049 | 129.7 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.018 | 55.328 | 0.277 | 200.0 | 0.000 | 8 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.019 | 19.442 | 0.097 | 200.0 | 0.000 | 3 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.020 | 29.522 | 0.148 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-6.000 | 15.000 | 0.250 | 60.0 | 0.000 | 2 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-6.001 | 15.623 | 0.260 | 60.1 | 0.000 | 10 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |

Network Results Table

| PN | US/IL (m) | Σ Area (ha) | Σ Base Flow (l/s) | Σ Hse | Add Flow (l/s) | P.Dep (mm) | P.Vel (m/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|----------|--------------|----------------|----------------------|-------|-------------------|---------------|----------------|--------------|--------------|---------------|
| WC-4.000 | 55.400 | 0.000 | 0.0 | 4 | 0.0 | 11 | 0.34 | 1.13 | 20.0 | 0.2 |
| WC-4.001 | 54.991 | 0.000 | 0.0 | 8 | 0.0 | 14 | 0.42 | 1.13 | 20.0 | 0.4 |
| WC-4.002 | 54.612 | 0.000 | 0.0 | 10 | 0.0 | 16 | 0.46 | 1.13 | 20.0 | 0.5 |
| WC-4.003 | 54.446 | 0.000 | 0.0 | 10 | 0.0 | 16 | 0.46 | 1.13 | 20.0 | 0.5 |
| WC-1.009 | 53.291 | 0.000 | 0.0 | 105 | 0.0 | 59 | 0.58 | 0.81 | 32.2 | 4.9 |
| WC-1.010 | 53.195 | 0.000 | 0.0 | 107 | 0.0 | 60 | 0.59 | 0.81 | 32.2 | 4.9 |
| WC-1.011 | 53.133 | 0.000 | 0.0 | 109 | 0.0 | 60 | 0.59 | 0.81 | 32.2 | 5.0 |
| WC-1.012 | 53.063 | 0.000 | 0.0 | 109 | 0.0 | 60 | 0.59 | 0.81 | 32.2 | 5.0 |
| WC-1.013 | 52.956 | 0.000 | 0.0 | 109 | 0.0 | 60 | 0.59 | 0.81 | 32.2 | 5.0 |
| WC-1.014 | 52.917 | 0.000 | 0.0 | 112 | 0.0 | 61 | 0.60 | 0.81 | 32.3 | 5.2 |
| WC-1.015 | 52.785 | 0.000 | 0.0 | 116 | 0.0 | 62 | 0.60 | 0.81 | 32.2 | 5.4 |
| WC-1.016 | 52.615 | 0.000 | 0.0 | 129 | 0.0 | 66 | 0.62 | 0.81 | 32.2 | 6.0 |
| WC-1.017 | 52.282 | 0.000 | 0.0 | 129 | 0.0 | 66 | 0.62 | 0.81 | 32.2 | 6.0 |
| WC-5.000 | 53.300 | 0.000 | 0.0 | 10 | 0.0 | 14 | 0.43 | 1.48 | 59.0 | 0.5 |
| WC-5.001 | 51.817 | 0.000 | 0.0 | 18 | 0.0 | 23 | 0.40 | 1.01 | 40.0 | 0.8 |
| WC-5.002 | 51.421 | 0.000 | 0.0 | 18 | 0.0 | 23 | 0.40 | 1.00 | 39.9 | 0.8 |
| WC-5.003 | 51.240 | 0.000 | 0.0 | 18 | 0.0 | 23 | 0.40 | 1.01 | 40.1 | 0.8 |
| WC-1.018 | 51.191 | 0.000 | 0.0 | 155 | 0.0 | 72 | 0.65 | 0.81 | 32.2 | 7.2 |
| WC-1.019 | 50.914 | 0.000 | 0.0 | 158 | 0.0 | 73 | 0.65 | 0.81 | 32.2 | 7.3 |
| WC-1.020 | 50.817 | 0.000 | 0.0 | 158 | 0.0 | 73 | 0.65 | 0.81 | 32.2 | 7.3 |
| WC-6.000 | 55.500 | 0.000 | 0.0 | 2 | 0.0 | 8 | 0.27 | 1.13 | 20.0 | 0.1 |
| WC-6.001 | 55.250 | 0.000 | 0.0 | 12 | 0.0 | 17 | 0.48 | 1.13 | 20.0 | 0.6 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File S665-OCSC-1C-XX-M3-C-0001.02.MDX

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Foul Network 1

| PN | Length (m) | Fall (m) | Slope (1:X) | Area (ha) | Houses | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|-----------|---------------|-------------|----------------|--------------|--------|--------------------|-----------|-------------|-------------|--------------|----------------|
| WC-7.000 | 29.021 | 0.484 | 60.0 | 0.000 | 8 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-6.002 | 67.572 | 0.338 | 200.0 | 0.000 | 5 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-8.000 | 53.545 | 0.892 | 60.0 | 0.000 | 13 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-6.003 | 87.136 | 0.436 | 199.9 | 0.000 | 14 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-9.000 | 27.037 | 0.451 | 59.9 | 0.000 | 12 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-6.004 | 22.144 | 0.111 | 200.0 | 0.000 | 8 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-6.005 | 17.225 | 0.086 | 200.3 | 0.000 | 5 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-6.006 | 19.346 | 0.097 | 200.0 | 0.000 | 3 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-10.000 | 34.582 | 0.576 | 60.0 | 0.000 | 12 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-6.007 | 16.863 | 0.084 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-6.008 | 16.883 | 0.084 | 200.0 | 0.000 | 3 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-6.009 | 29.822 | 0.149 | 200.0 | 0.000 | 3 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-11.000 | 42.273 | 0.141 | 299.8 | 0.000 | 14 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-11.001 | 50.038 | 0.167 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-11.002 | 65.219 | 0.217 | 300.5 | 0.000 | 4 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-11.003 | 67.918 | 0.226 | 300.0 | 0.000 | 4 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-11.004 | 67.833 | 0.226 | 300.0 | 0.000 | 4 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-11.005 | 25.128 | 0.084 | 299.1 | 0.000 | 3 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-11.006 | 29.327 | 0.098 | 299.3 | 0.000 | 7 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-11.007 | 15.915 | 0.053 | 300.0 | 0.000 | 10 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |

Network Results Table

| PN | US/IL (m) | Σ Area (ha) | Σ Base Flow (l/s) | Σ Hse | Add Flow (l/s) | P.Dep (mm) | P.Vel (m/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|-----------|--------------|----------------|----------------------|-------|-------------------|---------------|----------------|--------------|--------------|---------------|
| WC-7.000 | 54.900 | 0.000 | 0.0 | 8 | 0.0 | 14 | 0.42 | 1.13 | 20.0 | 0.4 |
| WC-6.002 | 54.416 | 0.000 | 0.0 | 25 | 0.0 | 33 | 0.40 | 0.62 | 10.9 | 1.2 |
| WC-8.000 | 56.100 | 0.000 | 0.0 | 13 | 0.0 | 18 | 0.50 | 1.13 | 20.0 | 0.6 |
| WC-6.003 | 54.003 | 0.000 | 0.0 | 52 | 0.0 | 42 | 0.47 | 0.81 | 32.2 | 2.4 |
| WC-9.000 | 54.200 | 0.000 | 0.0 | 12 | 0.0 | 17 | 0.48 | 1.13 | 20.0 | 0.6 |
| WC-6.004 | 53.567 | 0.000 | 0.0 | 72 | 0.0 | 49 | 0.52 | 0.81 | 32.2 | 3.3 |
| WC-6.005 | 53.456 | 0.000 | 0.0 | 77 | 0.0 | 51 | 0.53 | 0.81 | 32.2 | 3.6 |
| WC-6.006 | 53.370 | 0.000 | 0.0 | 80 | 0.0 | 52 | 0.54 | 0.81 | 32.2 | 3.7 |
| WC-10.000 | 55.400 | 0.000 | 0.0 | 12 | 0.0 | 17 | 0.48 | 1.13 | 20.0 | 0.6 |
| WC-6.007 | 53.274 | 0.000 | 0.0 | 92 | 0.0 | 55 | 0.56 | 0.81 | 32.2 | 4.3 |
| WC-6.008 | 53.189 | 0.000 | 0.0 | 95 | 0.0 | 56 | 0.57 | 0.81 | 32.2 | 4.4 |
| WC-6.009 | 53.105 | 0.000 | 0.0 | 98 | 0.0 | 57 | 0.57 | 0.81 | 32.2 | 4.5 |
| WC-11.000 | 55.600 | 0.000 | 0.0 | 14 | 0.0 | 23 | 0.26 | 0.80 | 56.5 | 0.6 |
| WC-11.001 | 55.459 | 0.000 | 0.0 | 14 | 0.0 | 23 | 0.26 | 0.80 | 56.4 | 0.6 |
| WC-11.002 | 55.292 | 0.000 | 0.0 | 18 | 0.0 | 26 | 0.28 | 0.80 | 56.4 | 0.8 |
| WC-11.003 | 55.075 | 0.000 | 0.0 | 22 | 0.0 | 28 | 0.30 | 0.80 | 56.4 | 1.0 |
| WC-11.004 | 54.849 | 0.000 | 0.0 | 26 | 0.0 | 31 | 0.32 | 0.80 | 56.4 | 1.2 |
| WC-11.005 | 54.623 | 0.000 | 0.0 | 29 | 0.0 | 32 | 0.33 | 0.80 | 56.5 | 1.3 |
| WC-11.006 | 54.539 | 0.000 | 0.0 | 36 | 0.0 | 35 | 0.35 | 0.80 | 56.5 | 1.7 |
| WC-11.007 | 54.441 | 0.000 | 0.0 | 46 | 0.0 | 40 | 0.38 | 0.80 | 56.4 | 2.1 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File S665-OCSC-1C-XX-M3-C-0001.02.MDX

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Foul Network 1

| PN | Length (m) | Fall (m) | Slope (1:X) | Area (ha) | Houses | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|-----------|---------------|-------------|----------------|--------------|--------|--------------------|-----------|-------------|-------------|--------------|----------------|
| WC-11.008 | 9.755 | 0.033 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-6.010 | 36.776 | 0.184 | 200.0 | 0.000 | 5 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.021 | 33.360 | 0.111 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.022 | 39.596 | 0.132 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-12.000 | 29.875 | 0.199 | 150.1 | 0.000 | 31 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-13.000 | 49.373 | 0.823 | 60.0 | 0.000 | 22 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-13.001 | 6.719 | 0.112 | 60.0 | 0.000 | 0 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-13.002 | 11.719 | 0.195 | 60.0 | 0.000 | 0 | 0.0 | 1.500 | o | 150 | Pipe/Conduit | |
| WC-12.001 | 21.261 | 0.106 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-12.002 | 21.116 | 0.106 | 200.0 | 0.000 | 0 | 0.0 | 1.500 | o | 225 | Pipe/Conduit | |
| WC-1.023 | 41.441 | 0.138 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.024 | 35.967 | 0.120 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.025 | 10.346 | 0.034 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.026 | 63.670 | 0.212 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.027 | 81.329 | 0.271 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.028 | 45.613 | 0.152 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.029 | 45.613 | 0.152 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.030 | 77.721 | 0.259 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.031 | 49.653 | 0.166 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.032 | 21.087 | 0.070 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.033 | 13.893 | 0.046 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |
| WC-1.034 | 9.217 | 0.031 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |

Network Results Table

| PN | US/IL (m) | Σ Area (ha) | Σ Base Flow (l/s) | Σ Hse | Add Flow (l/s) | P.Dep (mm) | P.Vel (m/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|-----------|--------------|----------------|----------------------|-------|-------------------|---------------|----------------|--------------|--------------|---------------|
| WC-11.008 | 54.388 | 0.000 | 0.0 | 46 | 0.0 | 40 | 0.38 | 0.80 | 56.4 | 2.1 |
| WC-6.010 | 52.881 | 0.000 | 0.0 | 149 | 0.0 | 64 | 0.63 | 0.98 | 69.2 | 6.9 |
| WC-1.021 | 50.595 | 0.000 | 0.0 | 307 | 0.0 | 103 | 0.67 | 0.80 | 56.4 | 14.2 |
| WC-1.022 | 50.483 | 0.000 | 0.0 | 307 | 0.0 | 103 | 0.67 | 0.80 | 56.4 | 14.2 |
| WC-12.000 | 55.000 | 0.000 | 0.0 | 31 | 0.0 | 30 | 0.45 | 0.94 | 37.2 | 1.4 |
| WC-13.000 | 55.000 | 0.000 | 0.0 | 22 | 0.0 | 23 | 0.58 | 1.13 | 20.0 | 1.0 |
| WC-13.001 | 54.177 | 0.000 | 0.0 | 22 | 0.0 | 23 | 0.58 | 1.13 | 20.0 | 1.0 |
| WC-13.002 | 54.065 | 0.000 | 0.0 | 22 | 0.0 | 23 | 0.58 | 1.13 | 20.0 | 1.0 |
| WC-12.001 | 53.795 | 0.000 | 0.0 | 53 | 0.0 | 42 | 0.48 | 0.81 | 32.2 | 2.5 |
| WC-12.002 | 53.688 | 0.000 | 0.0 | 53 | 0.0 | 42 | 0.48 | 0.81 | 32.2 | 2.5 |
| WC-1.023 | 50.351 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.024 | 50.213 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.025 | 50.093 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.026 | 50.059 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.027 | 49.847 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.028 | 49.576 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.029 | 49.423 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.030 | 49.271 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.031 | 49.012 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.032 | 48.847 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.033 | 48.777 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |
| WC-1.034 | 48.730 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 | 16.7 |

9 Prussia Street
Dublin 7
Ireland

MOYGADDY CASTLE SHD



Date 19/08/2022

Designed by EH

File S665-OCSC-1C-XX-M3-C-0001.02.MDX

Checked by MK

XP Solutions

Network 2020.1.3

Network Design Table for Foul Network 1

| PN | Length (m) | Fall (m) | Slope (1:X) | Area (ha) | Houses | Base Flow (l/s) | k (mm) | HYD SECT | DIA (mm) | Section Type | Auto Design |
|----------|---------------|-------------|----------------|--------------|--------|--------------------|-----------|-------------|-------------|--------------|----------------|
| WC-1.035 | 10.000 | 0.033 | 300.0 | 0.000 | 0 | 0.0 | 1.500 | o | 300 | Pipe/Conduit | |

Network Results Table

| PN | US/IL (m) | Σ Area (ha) | Σ Base Flow (l/s) | Σ Hse Add Flow (l/s) | P.Dep (mm) | P.Vel (m/s) | Vel (m/s) | Cap (l/s) | Flow (l/s) |
|----------|--------------|----------------|----------------------|-------------------------|---------------|----------------|--------------|--------------|---------------|
| WC-1.035 | 48.700 | 0.000 | 0.0 | 360 | 0.0 | 112 | 0.70 | 0.80 | 56.4 16.7 |



APPENDIX D. Irish Water Correspondence

Mark Killian

9 Prussia Street
Stoneybatter
Dublin 7
D07KT57

20 October 2021

Re: CDS21003384 pre-connection enquiry - Subject to contract | Contract denied

Connection for Housing Development of 390 unit(s) at Phase 1A, Moygaddy, Meath

Dear Sir/Madam,

Irish Water has reviewed your pre-connection enquiry in relation to a Water & Wastewater connection at Phase 1A, Moygaddy, Meath (the **Premises**). Based upon the details you have provided with your pre-connection enquiry and on our desk top analysis of the capacity currently available in the Irish Water network(s) as assessed by Irish Water, we wish to advise you that your proposed connection to the Irish Water network(s) can be facilitated at this moment in time.

| SERVICE | <p style="text-align: center;">OUTCOME OF PRE-CONNECTION ENQUIRY</p> <p style="text-align: center;"><u>THIS IS NOT A CONNECTION OFFER. YOU MUST APPLY FOR A CONNECTION(S) TO THE IRISH WATER NETWORK(S) IF YOU WISH TO PROCEED.</u></p> |
|-------------------------------|--|
| Water Connection | There are water network capacity constraints in this catchment. |
| Wastewater Connection | There are wastewater network capacity constraints in this catchment. |
| SITE SPECIFIC COMMENTS | |
| Water Connection | <p>In order to accommodate the proposed connection at this development, upgrade works are required to increase the capacity of the Irish Water network. Irish Water does not currently have any plans to carry out the works required to provide the necessary upgrade and capacity. Should you wish to have such upgrade works progressed, Irish Water will require you to provide a contribution of a relevant portion of the costs for the required upgrades, please contact Irish Water to discuss this further.</p> <ol style="list-style-type: none"> 1. Connection main – Approx. 50m of new 250mm ID main to be laid to connect the site development (see yellow section below) to the new 300mm ID upgrade main. Connection main shown below (See green line in figure 1). 2. Trunk/Distribution main 1 – Approx. 950m of 300mm ID main to be laid to link connection main and new 350mm ID main (see red |

| | |
|---|---|
| | <p>dashed line in figure 1). To service the lands a total of 3500m of 300mm ID main (seen as black line in figure 1) which links in with Mariavilla.</p> <ol style="list-style-type: none"> 3. Trunk/Distribution main 2 – Approx. 1400m of new 350mm ID main to be laid to link new 300mm ID TM 1 and the existing 400mm AC main together. 4. Onsite storage required for commercial units, 24-hour storage at ADPW demand, storage units must also be able to be refilled from empty within 12-hour period <p>IW currently have a project 'Maynooth East Ring Road' which is currently at design stage and on our current investment plan consisting of approx. 1400m of 350mm ID main (shown below (black dashed line in figure 2) and will be carried out in conjunction with Kildare County Councils 'Maynooth Eastern Ring Road' project.</p> |
| Wastewater Connection | <p>In order to accommodate the proposed connection at the Premises, upgrade works are required to increase the capacity of the Maynooth Wastewater Pump Station and Rising Main. Irish Water currently has a project on our current investment plan which will provide the necessary upgrade and capacity. This upgrade project is currently scheduled to be completed by Q4 2025 (this may be subject to change, as planning has yet to be granted in both Kildare and Meath and the appropriate consents for the project).</p> <p>The addition discharge would cause a back up of flows in the existing gravity network entering the pump station. Upgrade works would be required to increase the capacity of the wastewater network (upgrade of approx. 175m of network directly upstream of the Pump Station). Irish Water are currently reviewing these works which are not currently on the Capital Investment Plan. Please contact Irish Water to discuss this further.</p> <p>Where a connection is proposed in advance of the delivery of strategic solutions in this area, Irish water are willing to review Storm Sewer Separation proposals (from the combined network) in the Maynooth area, in order to provide additional wastewater capacity. This would require co-operation and agreement from Kildare County Council, as the storm drainage authority.</p> <p>Further measures are currently being investigated by Irish Water in this area via the Capital Maintenance Programme, including:</p> <ul style="list-style-type: none"> - identifying and repairing areas of infiltration - control of pumping stations in the catchment - increasing local storage in the area |
| <p>The design and construction of the Water & Wastewater pipes and related infrastructure to be installed in this development shall comply with the Irish Water Connections and Developer Services Standard Details and Codes of Practice that are available on the Irish Water website. Irish Water reserves the right to supplement these requirements with Codes of Practice and these will be issued with the connection agreement.</p> | |

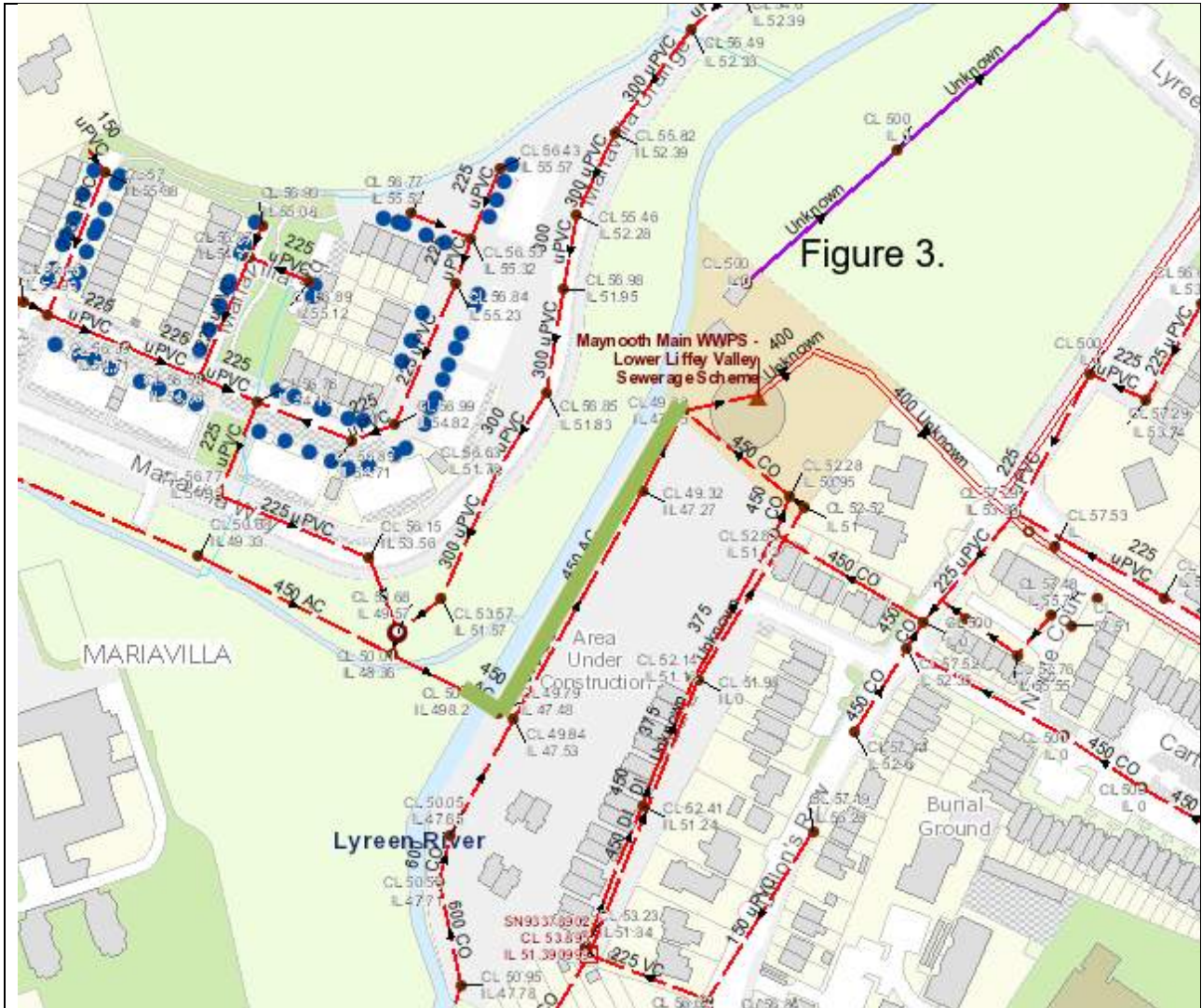


Figure 3.

Reproduced from the Ordnance Survey of Ireland by Permission of the Government. License No. 3-3-34

Whilst every care has been taken in its compilation Irish Water gives this information as to the position of its underground network as a general guide only on the strict understanding that it is based on the best available information provided by each Local Authority in Ireland to Irish Water. Irish Water can assume no responsibility for and give no guarantees, undertakings or warranties concerning the accuracy, completeness or up to date nature of the information provided and does not accept any liability whatsoever arising from any errors or omissions. This information should not be relied upon in the event of excavations or any other works being carried out in the vicinity of the Irish Water underground network. The onus is on the parties carrying out excavations or any other works to ensure the exact location of the Irish Water underground network is identified prior to excavations or any other works being carried out. Service connection pipes are not generally shown but their presence should be anticipated.

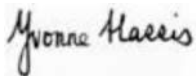
General Notes:

- 1) The initial assessment referred to above is carried out taking into account water demand and wastewater discharge volumes and infrastructure details on the date of the assessment. **The availability of capacity may change at any date after this assessment.**
- 2) This feedback does not constitute a contract in whole or in part to provide a connection to any Irish Water infrastructure. All feasibility assessments are subject to the constraints of the Irish Water Capital Investment Plan.

- 3) The feedback provided is subject to a Connection Agreement/contract being signed at a later date.
- 4) A Connection Agreement will be required to commencing the connection works associated with the enquiry this can be applied for at <https://www.water.ie/connections/get-connected/>
- 5) A Connection Agreement cannot be issued until all statutory approvals are successfully in place.
- 6) Irish Water Connection Policy/ Charges can be found at <https://www.water.ie/connections/information/connection-charges/>
- 7) Please note the Confirmation of Feasibility does not extend to your fire flow requirements.
- 8) Irish Water is not responsible for the management or disposal of storm water or ground waters. You are advised to contact the relevant Local Authority to discuss the management or disposal of proposed storm water or ground water discharges
- 9) To access Irish Water Maps email datarequests@water.ie
- 10) All works to the Irish Water infrastructure, including works in the Public Space, shall have to be carried out by Irish Water.

If you have any further questions, please contact Paul Lowry from the design team on 018230377 or email paulowr@water.ie For further information, visit **www.water.ie/connections**.

Yours sincerely,



Yvonne Harris

Head of Customer Operations



APPENDIX E. Site Investigation Report

S.I. Ltd Contract No: 5863

Client: Sky Castle Ltd
Engineer: OCSC
Contractor: Site Investigations Ltd

Moygaddy,
Maynooth, Co. Meath
Site Investigation Report

Prepared by:

.....
Stephen Letch

| | |
|-------------|------------|
| Issue Date: | 12/08/2021 |
| Status | Final |
| Revision | 2 |

| <u>Contents:</u> | Page No. |
|------------------------------------|----------|
| 1. Introduction | 1 |
| 2. Site Location | 1 |
| 3. Fieldwork | 1 |
| 4. Laboratory Testing | 4 |
| 5. Ground Conditions | 4 |
| 6. Recommendations and Conclusions | 5 |

Appendices:

1. Cable Percussive Borehole Logs
 2. Rotary Corehole Logs and Photographs
 3. Trial Pit Logs and Photographs
 4. Soakaway Test Results
 5. Dynamic Probe Logs
 6. Geotechnical Soil Laboratory Test Results
 7. Geotechnical Rock Laboratory Test Results
 8. Survey Data
-

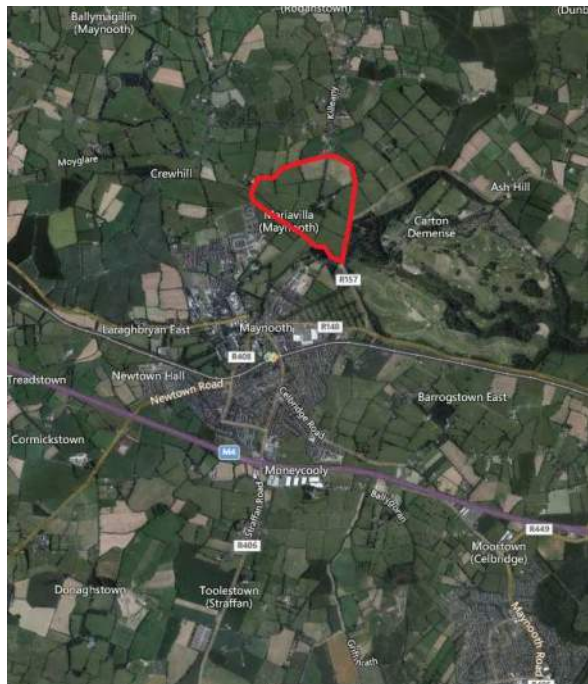
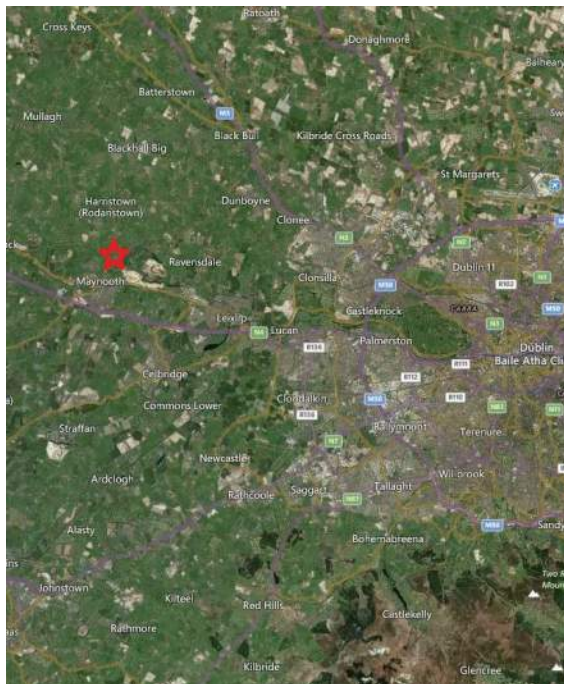
1. Introduction

On the instructions of OCSC, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at Moygaddy, Maynooth, Co. Meath. The investigation was completed for the residential development on the site and was completed on behalf of the Client, Sky Castle Ltd. The fieldworks were started in June and completed in July 2021.

This report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions discussed.

2. Site Location

The site is located to the north of Maynooth with the Kildare-Meath border running to the south of the site with Maynooth in Kildare and the site in Meath. Carton Demense is to the east of site with Dublin city further to the east. The first map below shows the location of the site to the east of Dublin and the second map shows the location of the site to the north of Maynooth town.



3. Fieldwork

The fieldworks comprised a programme of cable percussive boreholes, rotary coreholes, trial pits and dynamic probes. All fieldwork was carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design.

The fieldworks comprised of the following:

- 18 No. cable percussive boreholes
- 16 No. rotary coreholes
- 21 No. trial pits with soakaway tests
- 84 No. dynamic probes

3.1. Cable Percussive Boreholes with Rotary Coreholes

Cable percussion boring was undertaken at 18 No. locations using a Dando 150 rig and constructed 200mm diameter boreholes. The boreholes terminated at depths ranging from 3.00mbgl (BH10) to 6.80mbgl (BH15 and BH16) after 1.5hrs chiselling with no further progress. It was not possible to collect undisturbed samples due to the granular soils encountered so bulk disturbed samples were recovered at regular intervals.

To test the strength of the stratum, Standard Penetration Tests (SPT's) were performed at 1.00m intervals in accordance with BS 1377 (1990). In soils with high gravel and cobble content it is appropriate to use a solid cone (60°) (CPT) instead of the split spoon and this was used throughout the testing. The test is completed over 450mm and the cone is driven 150mm into the stratum to ensure that the test is conducted over an undisturbed zone. The cone is then driven the remaining 300mm and the blows recorded to report the N-Value. The report shows the N-Value with the 75mm incremental blows listed in brackets (e.g., BH01 at 2.00mbgl where N=16-(2,3/3,4,4,5)). Where refusal of 50 blows across the test zone was encountered was achieved during testing, the penetration depth is also reported (e.g., BH01 at 1.00mbgl where N=50-(3,4/50 for 85mm)).

The cable percussive borehole logs are presented in Appendix 1.

3.2. Rotary Coreholes

At 16 No. locations, rotary coreholes were completed to investigate the depth and type of bedrock. After the investigation started, RC01, RC02, RC03 and RC15 were cancelled but the numbering remained as scheduled so these numbers are missing in the sequence of rotary coreholes. The rotary drilling was carried out using a Sondeq SS71 top drive rig. Open hole drilling techniques were used to advance through the overburden where encountered and bedrock was recovered at 10 No. locations and the bedrock was then cored with the corehole terminated when 3m of core was recovered. At 6 No. locations, no bedrock was encountered when the corehole reached 8mbgl and the corehole was terminated and backfilled.

Once the coreholes were completed, the rock cores were returned to SIL, where they were logged and photographed by a SIL geotechnical engineer. Provided on the logs are engineering

geological descriptions of the rock cores with details of the bedding/discontinuities and mechanical indices for each core run, i.e., TCR, SCR, RQD and Fracture Index.

The rotary corehole logs and photographs are presented in Appendix 2.

3.3. Trial Pits with Soakaway Tests

21 No. trial pits were excavated using a wheeled excavator. The pits were logged and photographed by SIL geotechnical engineer and representative disturbed bulk samples were recovered as the pits were excavated, which were returned to the laboratory for geotechnical testing. Groundwater ingresses and pit wall stability were also recorded as the excavations progressed.

At the base of the trial pits, soakaway tests were completed and logged by SIL geotechnical engineer. BRE Special Digest 365 stipulates that the pit should be filled three times and that the final cycle is used to provide the infiltration rate. The time taken for the water level to fall from 75% volume to 25% volume is required to calculate the rate of infiltration. However, if the water level does not fall at a steady rate, then the test is deemed to have failed and the area is unsuitable for storm water drainage.

The trial pit logs and photographs are presented in Appendix 3 and soakaway test results are presented in Appendix 4.

3.4. Dynamic Probes

At 84 No. locations, dynamic probes were completed using a track mounted Competitor 130 machine. The testing complies with the requirements of BS1377: Part 9 (1990) and Eurocode 7: Part 3. The configuration utilised standard DPH (Heavy) probing method comprising a 50kg weight, 500mm drop height and a 50mm diameter (90°) cone. The number of blows required to drive the cone each 100mm increment into the sub soil is recorded in accordance with the standards. The dynamic probe provides no information regarding soil type or groundwater conditions.

The dynamic probe results can be used to analyse the strength of the soil strata encountered by the probe. 'Proceedings of the Trinity College Dublin Symposium of Field and Laboratory Testing of Soils for Foundations and Embankments' presents a paper by Foirbart that is most relevant to Irish soil conditions and within this paper the following equations were included:

Granular Soils: $DPH N_{100} \times 2.5 = SPT N \text{ value}$

Cohesive Soils: $C_u = 15 \times DPH N_{100} + 30 \text{ kN/m}^2$

These equations present a relationship between the probe N_{100} value and the SPT N value for granular soils and the undrained shear strength of cohesive soils.

The dynamic probe logs are presented in Appendix 5.

3.5. Surveying

Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log along with a site plan in Appendix 8.

4. Laboratory Testing

Geotechnical soil laboratory testing was completed on representative soil samples in accordance with BS 1377 (1990). Testing included:

- 10 No. moisture contents
- 10 No. Atterberg limits
- 10 No. particle size gradings
- 21 No. California Bearing Ratio tests
- 8 No. pH, sulphate and chloride content

Geotechnical rock testing was also completed on the core samples and consisted of the following:

- 20 No. point loads

The geotechnical soil laboratory test results are presented in Appendix 6 with the rock laboratory tests provided in Appendix 7.

5. Ground Conditions

5.1. Overburden

The natural ground conditions in the boreholes and trial pits are consistent with brown overlying black slightly sandy gravelly silty CLAY with cobbles and boulders. These natural soils are over-consolidated lodgment till which is encountered across the North Leinster region with several papers discussing the engineering characteristics of the soil. The brown and brown grey soils are the weathered surface of the underlying black clays and the gravel and cobbles are generally angular to subrounded and predominantly limestone in origin.

The SPT N-values range from 7 to 15 at 1.00mbgl and increase to between 12 and 21 at 2.00mbgl although BH14 did record a value of 7 at this depth. The values then continue to increase with depth as the very stiff black CLAY is encountered.

Laboratory tests of the shallow cohesive soils recorded CLAY soils with low and intermediate plasticity indices of 12% to 18% recorded. The particle size distribution curves were poorly sorted straight-line curves with 21 to 53% fines content.

5.2. Bedrock

Bedrock was recovered from depths ranging from 2.80mbgl (RC10) to 7.80mbgl (RC20) and was greater than 8m deep at 5 No. locations to the east of the site. The core recovered shows that bedrock is strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with pyrite crystals, occasional fossils and calcite veins. The core showed a fresh to slightly weathered state. The discontinuities are generally smooth to rough, planar to slightly undulating, tight to open, dip angles ranging from sub-horizontal to sub-vertical and the surfaces are clean with some grey stained, calcite crystals on the surface and some clay infill.

5.3. Groundwater

Groundwater details in the boreholes and trial pits during the fieldworks are noted on the logs in Appendices 1 and 2. Groundwater ingresses were recorded in five boreholes, at 1.90mbgl at BH07 and between 3.20mbgl and 3.60mbgl in BH05, BH14, BH16 and BH17. All ingresses were sealed off by the casing as the drilling advanced and therefore indicates perched water lenses. There were water ingresses into 10 No. trial pits across the site, at depths ranging from 1.50mbgl (TP12) to 2.60mbgl (TP21) with ingresses logged as seepages to medium rates

6. Recommendations and Conclusions

Please note the following caveats:

The recommendations given, and opinions expressed in this report are based on the findings as detailed in the exploratory hole records. Where an opinion is expressed on the material between the exploratory hole locations or below the final level of excavation, this is for guidance only and no liability can be accepted for its accuracy. No responsibility can be accepted for adjacent unexpected conditions that have not been revealed by the exploratory holes. It is further recommended that all bearing surfaces when excavated should be inspected by a suitably qualified Engineer to verify the information given in this report.

Excavated surfaces in clay strata should be kept dry to avoid softening prior to foundation placement. Foundations should always be taken to a minimum depth of 0.50mBGL to avoid the effects of frost action and possible seasonal shrinkage/swelling.

If it is intended that on-site materials are to be used as fill, then the necessary laboratory testing should be specified by the Client to confirm the suitability. Also, relevant lab testing should be specified where stability of side slopes to excavations is a concern, or where contamination may be an issue.

6.1. Shallow Foundations

Due to the unknown depth of foundation and no longer-term groundwater information, this analysis assumes the groundwater will not influence the construction or performance of these foundations.

The borehole encountered firm brown slightly sandy slightly gravelly silty CLAY at 1.00mbgl and the SPT N-value at this depth generally ranges from 9 to 15. Two holes, BH14 and BH17, recorded lower values of 7 and 8 respectively but the value of 9 has been chosen for analysis of the soils.

Using a correlation proposed by Stroud and Butler between SPT N-values and plasticity indices, the SPT N-value can be used to calculate the undrained shear strength. With the low to intermediate plasticity indexes recorded in the laboratory for the soils encountered on site, this correlation is $C_u=6N$. Therefore, using the lower value of 9, this indicates that the undrained shear strength of the CLAY is 54kN/m^2 . This can be used to calculate the ultimate bearing capacity, and this has been calculated to be 295kN/m^2 . Finally, a factor of safety is applied and with a factor of 3, an allowable bearing capacity of 100kN/m^2 would be anticipated using the lower SPT values.

The soils recorded values of 12 to 21 at 2.00mbgl. This SPT N-value of 12 indicates a C_u of 72kN/m^2 , an ultimate bearing capacity of 405kN/m^2 and finally an allowable bearing capacity of 135kN/m^2 .

The dynamic probes confirm that the soils are firm to stiff with values of 2 or greater recorded across the site and would correlate with the SPT N-values.

The following assumptions were made as part of these analyses. If any of these assumptions are not in accordance with detailed design or observations made during construction these recommendations should be re-evaluated.

- Foundations are to be constructed on a level formation of uniform material type (described above).
- The bulk unit weight of the material in this stratum has a minimum density of 19kN/m^3 .
- All bearing capacity calculations allow for a settlement of 25mm.

The trial pits indicate that excavations in the cohesive soils should be stable for a short while at least although TP05 did record pit wall instability. Therefore, all slopes should be evaluated upon excavation and regular inspections should be completed during construction to ensure that all slopes are stable. Temporary support should be used on any excavation that will be left open for an extended period.

6.2. Groundwater

The caveats below relating to interpretation of groundwater levels should be noted:

There is always considerable uncertainty as to the likely rates of water ingress into excavations in clayey soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water.

Furthermore, water levels noted on the borehole and trial pit logs do not generally give an accurate indication of the actual groundwater conditions as the borehole or trial pit is rarely left open for sufficient time for the water level to reach equilibrium.

Also, during boring procedures, a permeable stratum may have been sealed off by the borehole casing, or water may have been added to aid drilling. Therefore, an extended period of groundwater monitoring using any constructed standpipes is required to provide more accurate information regarding groundwater conditions. Finally, groundwater levels vary with time of year, rainfall, nearby construction and tides.

Pumping tests would be required to determine likely seepage rates and persistence into excavations taken below the groundwater level. Deep trial pits also aid estimation of seepage rates.

As discussed previously, groundwater was encountered in five boreholes and ten trial pits at depths ranging from 1.50mbgl to 3.60mbgl.

There is always considerable uncertainty as to the likely rates of water ingress into excavations in cohesive soil sites due to the possibility of localised unforeseen sand and gravel lenses acting as permeable conduits for unknown volumes of water. Based on this information at the exploratory hole locations to date, it is considered likely that any shallow ingress (less than 2.00mbgl) into excavations of the CLAY will be slow to medium. If granular soils are encountered in shallow excavations, then the possibility of water ingressing into an excavation increase.

If groundwater is encountered during excavations then mechanical pumps will be required to remove the groundwater from sumps. Sumps should be carefully located and constructed to ensure that groundwater is efficiently removed from excavations and trenches.

6.3. Soakaway Tests

At 10 No. locations, the soakaway tests failed the specification as water ingressed into the pits. This indicates that the soils are already saturated and therefore, unsuitable for soakaway design.

At the remaining locations, the soakaway tests failed the specification as the water level did not fall sufficiently enough to complete the test. The BRE Digest stipulates that the pit should half empty within 24hrs, and extrapolation indicates this condition would not be satisfied. The tests were terminated at the end of the first (of a possible three) fill/empty cycle since further testing would give even slower fall rates due to increased soil saturation. The unsuitability of the soils for soakaways is further suggested by the soil descriptions of the materials in this area of the site where the soakaway was completed, i.e., well compacted clay soils.

6.4. Pavement Design

The CBR test results in Appendix 4 indicate CBR values ranging from 4.1% to 11.6%.


The CBR samples were recovered from 0.50mbgl and inspection of the formation strata should be completed prior to construction of the pavement. Once the exact formation levels are finalised then additional in-situ testing could be completed to assist with the detailed pavement design.

6.5. Aggressive Ground Conditions

The chemical test results in Appendix 4 indicate a general pH value between 8.59 and 8.80, which is close to neutral and below the level of 9, therefore no special precautions are required.

The maximum value obtained for water soluble sulphate was 127mg/l as SO₃. The BRE Special Digest 1:2005 – '*Concrete in Aggressive Ground*' guidelines require SO₄ values and after conversion (SO₄ = SO₃ x 1.2), the maximum value of 152mg/l shows Class 1 conditions and no special precautions are required.

Appendix 1
Cable Percussive Borehole Logs

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | Borehole No: BH01 | | | | | | | | | | | |
|--|-------|--|------|--------------------|----------------|-------------|---------------|--------------------------|-------------|--------------|---------------|--------------|----------|-----------|------|----------|---|--|--|
| Contract: | | Moygaddy | | Easting: | | 693986.514 | | Date Started: | | 30/06/2021 | | | | | | | | | |
| Location: | | Maynooth, Co. Meath | | Northing: | | 739217.399 | | Date Completed: | | 30/06/2021 | | | | | | | | | |
| Client: | | Sky Castle Ltd | | Elevation: | | 56.45 | | Drilled By: | | G. Macken | | | | | | | | | |
| Engineer: | | OCSC | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | | | | | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | | Water Strike | Backfill | | | | | | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | | | | | | |
| | 0.20 | TOPSOIL. | | | | | 56.25 | | | | | | | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | | 56.0 | | | | | | | | | | | | |
| | 1.0 | | | | | | 55.5 | 1.00 | B | | | | | | | | | | |
| | 1.5 | | | | | | 55.0 | 1.00 | C | | | | | | | | | | |
| | 1.60 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | | 54.85 | | | | | | | | | | | | |
| | 2.0 | | | | | | 54.5 | 2.00 | B | | | | | | | | | | |
| | 2.5 | | | | | | 54.0 | 2.00 | C | | | | | | | | | | |
| | 2.80 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | | 53.65 | | | | | | | | | | | | |
| | 3.0 | | | | | | 53.5 | 3.00 | B | | | | | | | | | | |
| | 3.5 | | | | | | 53.0 | 3.00 | C | | | | | | | | | | |
| | 4.0 | | | | | | 52.5 | 4.00 | B | | | | | | | | | | |
| | 4.5 | | | | | | 52.0 | 4.00 | C | | | | | | | | | | |
| | 5.0 | | | | | | 51.5 | 5.00 | B | | | | | | | | | | |
| | 5.40 | | | | | | 51.05 | 5.00 | C | | | | | | | | | | |
| | 5.50 | Obstruction - possible boulders. End of Borehole at 5.50m | | | | | 50.95 | 5.50 | C | | | | | | | | | | |
| | 6.0 | | | | | | 50.5 | | | | | | | | | | | | |
| | 6.5 | | | | | | 50.0 | | | | | | | | | | | | |
| | 7.0 | | | | | | 49.5 | | | | | | | | | | | | |
| | 7.5 | | | | | | 49.0 | | | | | | | | | | | | |
| | 8.0 | | | | | | 48.5 | | | | | | | | | | | | |
| | 8.5 | | | | | | 48.0 | | | | | | | | | | | | |
| | 9.0 | | | | | | 47.5 | | | | | | | | | | | | |
| | 9.5 | | | | | | 47.0 | | | | | | | | | | | | |
|  | | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | | 1.30 | 1.50 | 01:00 | | | | 20/07 | 5.50 | Dry | | | | 0.00 | 5.50 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH02 | | | | |
|----------------------|-------|--|--|--|--------------------|-------------|------------|--------------------------|------------------------------|--------|------------|--------------|----------|
| Contract: | | Moygaddy | | | Easting: | | 693926.010 | | Date Started: | | 29/06/2021 | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739294.840 | | Date Completed: | | 29/06/2021 | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 56.95 | | Drilled By: | | G. Macken | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | | Water Strike | Backfill |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | |
| 0.20 | 0.20 | TOPSOIL. | | | | 56.75 | | | | | | | |
| 0.5 | | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 56.5 | | | | | | | |
| 1.0 | | | | | | 56.0 | 1.00 | B | GM70 | | | | |
| 1.20 | 1.20 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 55.75 | 1.00 | C | N=9 (2,1/1,2,3,3) | | | | |
| 1.5 | | | | | | 55.5 | | | | | | | |
| 2.0 | | | | | | 55.0 | 2.00 | B | GM71 | | | | |
| 2.5 | | | | | | 54.5 | 2.00 | C | N=21 (5,6/6,4,5,6) | | | | |
| 2.60 | 2.60 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 54.35 | | | | | | | |
| 3.0 | | | | | | 54.0 | 3.00 | B | GM72 | | | | |
| 3.5 | | | | | | 53.5 | 3.00 | C | N=47 (6,9/9,12,12,14) | | | | |
| 4.0 | | | | | | 53.0 | 4.00 | B | GM73 | | | | |
| 4.5 | | | | | | 52.5 | 4.00 | C | N=50 (8,8/12,12,13,13) | | | | |
| 5.0 | | | | | | 52.0 | 5.00 | B | GM74 | | | | |
| 5.20 | 5.20 | Obstruction - possible boulders. | | | | 51.75 | 5.00 | C | 50 (25 for 95mm/50 for 10mm) | | | | |
| 5.5 | | End of Borehole at 5.20m | | | | 51.5 | 5.20 | C | 50 (25 for 5mm/50 for 5mm) | | | | |
| 6.0 | | | | | | 51.0 | | | | | | | |
| 6.5 | | | | | | 50.5 | | | | | | | |
| 7.0 | | | | | | 50.0 | | | | | | | |
| 7.5 | | | | | | 49.5 | | | | | | | |
| 8.0 | | | | | | 49.0 | | | | | | | |
| 8.5 | | | | | | 48.5 | | | | | | | |
| 9.0 | | | | | | 48.0 | | | | | | | |
| 9.5 | | | | | | 47.5 | | | | | | | |



| Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|--|
| From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| 3.70 | 3.80 | 00:45 | | | | 19/07 | 5.20 | Dry | | | | 0.00 | 5.20 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH03 | | | | | |
|----------------------|-------|--|--|--|--------------------|-------------|------------|--------------------------|----------------------|----------------------------|------------|--------------|----------|--|
| Contract: | | Moygaddy | | | Easting: | | 694117.023 | | Date Started: | | 22/07/2021 | | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739155.527 | | Date Completed: | | 22/07/2021 | | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 55.01 | | Drilled By: | | G. Macken | | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | | Water Strike | Backfill | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | |
| | 0.20 | TOPSOIL. | | | | | 54.81 | | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 54.5 | | | | | | | | |
| | 1.0 | | | | | 54.0 | | 1.00 | B | GM66 | | | | |
| | 1.5 | | | | | 53.5 | 53.51 | 1.00 | C | N=10 (2,2/3,2,3,2) | | | | |
| | 1.50 | Firm brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 53.0 | | 2.00 | B | GM67 | | | | |
| | 2.0 | | | | | 52.5 | | 2.00 | C | N=12 (4,5/3,3,3,3) | | | | |
| | 2.5 | | | | | 52.0 | | | | | | | | |
| | 2.80 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 52.0 | 52.21 | 3.00 | B | GM68 | | | | |
| | 3.0 | | | | | 51.5 | | 3.00 | C | N=49 (6,6/11,12,13,13) | | | | |
| | 3.5 | | | | | 51.0 | | | | | | | | |
| | 4.0 | | | | | 50.5 | | 4.00 | B | GM69 | | | | |
| | 4.5 | | | | | 50.0 | | 4.00 | C | N=50 (8,11/50 for 255mm) | | | | |
| | 4.90 | Obstruction - possible boulders. | | | | 50.0 | 50.11 | 5.00 | C | 50 (25 for 5mm/50 for 5mm) | | | | |
| | 5.00 | End of Borehole at 5.00m | | | | 50.0 | 50.01 | | | | | | | |
| | 5.5 | | | | | 49.5 | | | | | | | | |
| | 6.0 | | | | | 49.0 | | | | | | | | |
| | 6.5 | | | | | 48.5 | | | | | | | | |
| | 7.0 | | | | | 48.0 | | | | | | | | |
| | 7.5 | | | | | 47.5 | | | | | | | | |
| | 8.0 | | | | | 47.0 | | | | | | | | |
| | 8.5 | | | | | 46.5 | | | | | | | | |
| | 9.0 | | | | | 46.0 | | | | | | | | |
| | 9.5 | | | | | 45.5 | | | | | | | | |

| | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|--|
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | 4.90 | 4.80 | 01:30 | | | | 16/07 | 5.00 | Dry | | | | 0.00 | 5.00 | Arisings | | | |


| | | |
|----------------------|--------------------------------------|-----------------------------|
| Contract No: 5863 | Cable Percussion Borehole Log | Borehole No: BH04 |
|----------------------|--------------------------------------|-----------------------------|


| | | | | | |
|-----------|---------------------|--------------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 693732.812 | Date Started: | 02/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739457.539 | Date Completed: | 02/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 56.85 | Drilled By: | G. Macken |
| Engineer: | OCSC | Borehole Diameter: | 200mm | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill |
|-----------|-------|--|--------|-------------|-------|--------------------------|----------------------------|--------|--------------|----------|
| Scale | Depth | | | Scale | Depth | Depth | Type | Result | | |
| | 0.20 | TOPSOIL. | | 56.65 | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | 56.5 | | | | | | |
| | 1.0 | | | 56.0 | 1.00 | B | GM86 | | | |
| | 1.5 | | | 55.5 | 1.00 | C | N=15 (3,4/4,5,3,3) | | | |
| | 1.50 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | 55.35 | | | | | | |
| | 2.0 | | | 55.0 | 2.00 | B | GM87 | | | |
| | 2.5 | | | 54.5 | 2.00 | C | N=17 (4,4/3,5,5,4) | | | |
| | 3.0 | | | 54.0 | | | | | | |
| | 3.10 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | 53.75 | 3.00 | B | GM88 | | | |
| | 3.5 | | | 53.5 | 3.00 | C | N=49 (5,8/8,12,14,15) | | | |
| | 4.0 | | | 53.0 | | | | | | |
| | 4.5 | | | 52.5 | 4.00 | B | GM89 | | | |
| | 5.0 | | | 52.0 | 4.00 | C | 50 (9,12/50 for 200mm) | | | |
| | 5.5 | | | 51.5 | | | | | | |
| | 6.0 | | | 51.0 | 5.00 | B | GM90 | | | |
| | 6.20 | | | 50.65 | 5.00 | C | 50 (12,13/50 for 110mm) | | | |
| | 6.30 | Obstruction - possible boulders. End of Borehole at 6.30m | | 50.55 | 6.00 | B | GM91 | | | |
| | 6.5 | | | 50.0 | 6.00 | C | 50 (15,10/50 for 100mm) | | | |
| | 7.0 | | | 49.5 | 6.30 | C | 50 (25 for 5mm/50 for 5mm) | | | |
| | 7.5 | | | 49.0 | | | | | | |
| | 8.0 | | | 48.5 | | | | | | |
| | 8.5 | | | 48.0 | | | | | | |
| | 9.0 | | | 47.5 | | | | | | |
| | 9.5 | | | 47.0 | | | | | | |

| | | | | | | | | | | | | | | | | | | |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|--|
| | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | 6.20 | 6.30 | 01:30 | | | | 22/07 | 6.30 | Dry | | | | 0.00 | 6.30 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH06 | | | |
|----------------------|-------|--|--|--|--------------------|-------------|------------|--------------------------|----------------------------|--------|--------------|----------|
| Contract: | | Moygaddy | | | Easting: | | 693927.326 | | Date Started: | | 20/07/2021 | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739421.930 | | Date Completed: | | 20/07/2021 | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 57.55 | | Drilled By: | | G. Macken | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | |
| | 0.20 | TOPSOIL. | | | | 57.35 | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 57.0 | | | | | | |
| | 1.0 | | | | | 56.5 | 1.00 | B | GM57 | | | |
| | 1.40 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 56.15 | 1.00 | C | N=10 (1,2/2,2,3,3) | | | |
| | 1.5 | | | | | 56.0 | | | | | | |
| | 2.0 | | | | | 55.5 | 2.00 | B | GM58 | | | |
| | 2.5 | | | | | 55.0 | 2.00 | C | N=20 (3,4/4,5,6,5) | | | |
| | 3.0 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 54.65 | | | | | | |
| | 2.90 | | | | | 54.5 | 3.00 | B | GM59 | | | |
| | 3.5 | | | | | 54.0 | 3.00 | C | N=50 (6,8/9,12,14,15) | | | |
| | 4.0 | | | | | 53.5 | 4.00 | B | GM60 | | | |
| | 4.5 | | | | | 53.0 | 4.00 | C | 50 (9,12/50 for 210mm) | | | |
| | 4.70 | Obstruction - possible boulders. | | | | 52.85 | | | | | | |
| | 4.80 | End of Borehole at 4.80m | | | | 52.75 | 4.80 | C | 50 (25 for 5mm/50 for 5mm) | | | |
| | 5.0 | | | | | 52.5 | | | | | | |
| | 5.5 | | | | | 52.0 | | | | | | |
| | 6.0 | | | | | 51.5 | | | | | | |
| | 6.5 | | | | | 51.0 | | | | | | |
| | 7.0 | | | | | 50.5 | | | | | | |
| | 7.5 | | | | | 50.0 | | | | | | |
| | 8.0 | | | | | 49.5 | | | | | | |
| | 8.5 | | | | | 49.0 | | | | | | |
| | 9.0 | | | | | 48.5 | | | | | | |
| | 9.5 | | | | | 48.0 | | | | | | |

|  | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | |
| | 4.70 | 4.80 | 01:30 | | | | 14/07 | 4.80 | Dry | | | | 0.00 | 4.80 | Arisings | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH07 | | | | | | | | | | |
|--|-------|--|------|-------|--------------------|-------------|---------------|--------------------------|----------------------|----------------------------|---------------|--------------|----------|-----------|------|----------|---|--|--|
| Contract: | | Moygaddy | | | Easting: | | 694241.270 | | Date Started: | | 19/07/2021 | | | | | | | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739411.796 | | Date Completed: | | 19/07/2021 | | | | | | | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 58.99 | | Drilled By: | | G. Macken | | | | | | | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | | | | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | | Water Strike | Backfill | | | | | | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | | | | | | |
| | 0.20 | TOPSOIL. | | | | 58.79 | | | | | | | | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 58.5 | | | | | | | | | | | | | |
| | 1.0 | | | | | 58.0 | 1.00 | B | | GM53 | | | | | | | | | |
| | 1.5 | | | | | 57.5 | 1.00 | C | | N=11 (1,2/2,3,3,3) | | | | | | | | | |
| | 1.60 | Firm brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 57.39 | | | | | | | | | | | | | |
| | 2.0 | | | | | 57.0 | 2.00 | B | | GM54 | | | | | | | | | |
| | 2.5 | | | | | 56.5 | 2.00 | C | | N=13 (2,3/3,4,3,3) | | | | | | | | | |
| | 2.60 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 56.39 | | | | | | | | | | | | | |
| | 3.0 | | | | | 56.0 | 3.00 | B | | GM55 | | | | | | | | | |
| | 3.5 | | | | | 55.5 | 3.00 | C | | N=50 (8,8/50 for 255mm) | | | | | | | | | |
| | 4.0 | | | | | 55.0 | 4.00 | B | | GM56 | | | | | | | | | |
| | 4.40 | | | | | 54.59 | 4.00 | C | | 50 (11,11/50 for 200mm) | | | | | | | | | |
| | 4.50 | Obstruction - possible boulders. End of Borehole at 4.50m | | | | 54.5 | 4.50 | C | | 50 (25 for 5mm/50 for 0mm) | | | | | | | | | |
| | 5.0 | | | | | 54.0 | | | | | | | | | | | | | |
| | 5.5 | | | | | 53.5 | | | | | | | | | | | | | |
| | 6.0 | | | | | 53.0 | | | | | | | | | | | | | |
| | 6.5 | | | | | 52.5 | | | | | | | | | | | | | |
| | 7.0 | | | | | 52.0 | | | | | | | | | | | | | |
| | 7.5 | | | | | 51.5 | | | | | | | | | | | | | |
| | 8.0 | | | | | 51.0 | | | | | | | | | | | | | |
| | 8.5 | | | | | 50.5 | | | | | | | | | | | | | |
| | 9.0 | | | | | 50.0 | | | | | | | | | | | | | |
| | 9.5 | | | | | 49.5 | | | | | | | | | | | | | |
|  | | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | | 1.70 | 1.90 | 00:45 | 1.90 | 1.70 | 2.10 | 13/07 | 4.50 | Dry | | | | 0.00 | 4.50 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH08 | | | |
|----------------------|-------|--|--|--|--------------------|-------------|------------|--------------------------|----------------------|----------------------------|--------------|----------|
| Contract: | | Moygaddy | | | Easting: | | 694331.307 | | Date Started: | | 16/07/2021 | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739691.333 | | Date Completed: | | 16/07/2021 | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 61.30 | | Drilled By: | | G. Macken | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | |
| 0.5 | 0.40 | TOPSOIL. | | | | 61.0 | 60.90 | | | | | |
| 1.0 | | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 60.5 | | 1.00 | B | GM48 | | |
| 1.5 | | | | | | 60.0 | | 1.00 | C | N=11 (1,1/2,2,3,4) | | |
| 2.0 | 1.70 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 59.5 | 59.60 | | | | | |
| 2.5 | | | | | | 59.0 | | 2.00 | B | GM49 | | |
| 3.0 | | | | | | 58.5 | | 2.00 | C | N=19 (3,3/4,6,5,4) | | |
| 3.5 | 2.90 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 58.0 | 58.40 | | | | | |
| 4.0 | | | | | | 57.5 | | 3.00 | B | GM50 | | |
| 4.5 | | | | | | 57.0 | | 3.00 | C | N=35 (5,6/8,8,10,9) | | |
| 5.0 | | | | | | 56.5 | | 4.00 | B | GM51 | | |
| 5.5 | | | | | | 56.0 | | 4.00 | C | 50 (10,11/50 for 225mm) | | |
| 6.0 | 5.70 | Obstruction - possible boulders. | | | | 55.5 | 55.60 | | | | | |
| 6.0 | 5.80 | End of Borehole at 5.80m | | | | 55.5 | 55.50 | 5.80 | C | 50 (25 for 5mm/50 for 5mm) | | |
| 6.5 | | | | | | 55.0 | | | | | | |
| 7.0 | | | | | | 54.5 | | | | | | |
| 7.5 | | | | | | 54.0 | | | | | | |
| 8.0 | | | | | | 53.5 | | | | | | |
| 8.5 | | | | | | 53.0 | | | | | | |
| 9.0 | | | | | | 52.5 | | | | | | |
| 9.5 | | | | | | 52.0 | | | | | | |
| | | | | | | 51.5 | | | | | | |


| | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|--|
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | 2.80 | 3.00 | 00:45 | | | | 12/07 | 5.80 | Dry | | | | 0.00 | 5.80 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH09 | | | | | | | | | | |
|----------------------|-------|--|------|-------|--------------------|-------------|---------------|--------------------------|----------------------|----------------------------|---------------|----------|-------|-----------|------|----------|---|--|--|
| Contract: | | Moygaddy | | | Easting: | | 694598.661 | | Date Started: | | 14/07/2021 | | | | | | | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739652.377 | | Date Completed: | | 14/07/2021 | | | | | | | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 61.68 | | Drilled By: | | G. Macken | | | | | | | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | | | | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill | | | | | | | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | | | | | | |
| | 0.20 | TOPSOIL. | | | | 61.5 | 61.48 | | | | | | | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 61.0 | | | | | | | | | | | | | |
| | 1.0 | | | | | | | 1.00 | B | GM41 | | | | | | | | | |
| | 1.5 | | | | | | | 1.00 | C | N=10 (2,2/2,3,2,3) | | | | | | | | | |
| | 1.80 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 60.0 | 59.88 | | | | | | | | | | | | |
| | 2.0 | | | | | | | 2.00 | B | GM42 | | | | | | | | | |
| | 2.5 | | | | | | | 2.00 | C | N=21 (3,3/4,5,5,7) | | | | | | | | | |
| | 2.70 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 59.0 | 58.98 | | | | | | | | | | | | |
| | 3.0 | | | | | | | 3.00 | B | GM43 | | | | | | | | | |
| | 3.5 | | | | | | | 3.00 | C | N=39 (4,7/9,9,11,10) | | | | | | | | | |
| | 4.0 | | | | | | | 4.00 | B | GM44 | | | | | | | | | |
| | 4.5 | | | | | | | 4.00 | C | 50 (6,9/50 for 200mm) | | | | | | | | | |
| | 5.0 | | | | | | | 5.00 | B | GM45 | | | | | | | | | |
| | 5.30 | Obstruction - possible boulders. | | | | 56.5 | 56.38 | 5.00 | C | 50 (9,12/50 for 100mm) | | | | | | | | | |
| | 5.40 | End of Borehole at 5.40m | | | | 56.0 | 56.28 | 5.40 | C | 50 (25 for 5mm/50 for 5mm) | | | | | | | | | |
| | 6.0 | | | | | | | | | | | | | | | | | | |
| | 6.5 | | | | | | | | | | | | | | | | | | |
| | 7.0 | | | | | | | | | | | | | | | | | | |
| | 7.5 | | | | | | | | | | | | | | | | | | |
| | 8.0 | | | | | | | | | | | | | | | | | | |
| | 8.5 | | | | | | | | | | | | | | | | | | |
| | 9.0 | | | | | | | | | | | | | | | | | | |
| | 9.5 | | | | | | | | | | | | | | | | | | |
| | | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | | 5.30 | 5.40 | 01:30 | | | | 08/07 | 5.40 | Dry | | | | 0.00 | 5.40 | Arisings | | | |


| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH10 | | | | | | | | | | |
|----------------------|-------|--|------|-------|--------------------|-------------|---------------|--------------------------|----------------------|----------------------------|---------------|----------|-------|-----------|------|----------|---|--|--|
| Contract: | | Moygaddy | | | Easting: | | 694446.855 | | Date Started: | | 15/07/2021 | | | | | | | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739466.694 | | Date Completed: | | 15/07/2021 | | | | | | | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 59.25 | | Drilled By: | | G. Macken | | | | | | | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | | | | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill | | | | | | | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | | | | | | |
| 0.30 | 0.30 | TOPSOIL. | | | | 59.0 | 58.95 | | | | | | | | | | | | |
| 0.5 | | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 58.5 | | | | | | | | | | | | | |
| 1.0 | | | | | | 58.0 | | 1.00 | B | GM46 | | | | | | | | | |
| 1.5 | 1.50 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 57.5 | | 1.00 | C | N=11 (2,2/3,3,3,2) | | | | | | | | | |
| 2.0 | | | | | | 57.0 | | 2.00 | B | GM47 | | | | | | | | | |
| 2.5 | 2.40 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 56.5 | | 2.00 | C | N=20 (5,4/5,5,4,6) | | | | | | | | | |
| 2.80 | 2.80 | Obstruction - possible boulders. | | | | 56.0 | | | | | | | | | | | | | |
| 3.0 | 3.00 | End of Borehole at 3.00m | | | | 56.25 | | 3.00 | C | 50 (25 for 5mm/50 for 0mm) | | | | | | | | | |
| 3.5 | | | | | | 56.0 | | | | | | | | | | | | | |
| 4.0 | | | | | | 55.5 | | | | | | | | | | | | | |
| 4.5 | | | | | | 55.0 | | | | | | | | | | | | | |
| 5.0 | | | | | | 54.5 | | | | | | | | | | | | | |
| 5.5 | | | | | | 54.0 | | | | | | | | | | | | | |
| 6.0 | | | | | | 53.5 | | | | | | | | | | | | | |
| 6.5 | | | | | | 53.0 | | | | | | | | | | | | | |
| 7.0 | | | | | | 52.5 | | | | | | | | | | | | | |
| 7.5 | | | | | | 52.0 | | | | | | | | | | | | | |
| 8.0 | | | | | | 51.5 | | | | | | | | | | | | | |
| 8.5 | | | | | | 51.0 | | | | | | | | | | | | | |
| 9.0 | | | | | | 50.5 | | | | | | | | | | | | | |
| 9.5 | | | | | | 50.0 | | | | | | | | | | | | | |
| | | | | | | 49.5 | | | | | | | | | | | | | |
| | | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | | 2.80 | 3.00 | 02:00 | | | | 09/07 | 3.00 | Dry | | | | 0.00 | 3.00 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH11 | | | | | |
|----------------------|-------|--|--|--|--------------------|--------|-------------|-------|--------------------------|------|----------------------------|--------------|----------|--|
| Contract: | | Moygaddy | | | Easting: | | 694790.229 | | Date Started: | | 13/07/2021 | | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739307.430 | | Date Completed: | | 13/07/2021 | | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 59.88 | | Drilled By: | | G. Macken | | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | |
| Depth (m) | | Stratum Description | | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill | |
| Scale | Depth | | | | | | Scale | Depth | Depth | Type | Result | | | |
| | 0.20 | TOPSOIL. | | | | | 59.68 | | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | | 59.5 | | | | | | | |
| | 1.0 | | | | | | 59.0 | 1.00 | B | | GM36 | | | |
| | 1.5 | | | | | | 58.5 | 1.00 | C | | N=13 (2,2/3,3,4,3) | | | |
| | 1.70 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | | 58.18 | | | | | | | |
| | 2.0 | | | | | | 58.0 | 2.00 | B | | GM37 | | | |
| | 2.5 | | | | | | 57.5 | 2.00 | C | | N=21 (4,4/5,5,6,5) | | | |
| | 3.0 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | | 57.0 | 3.00 | B | | GM38 | | | |
| | 3.5 | | | | | | 56.5 | 3.00 | C | | N=43 (5,5/9,10,11,13) | | | |
| | 4.0 | | | | | | 56.0 | 4.00 | B | | GM39 | | | |
| | 4.5 | | | | | | 55.5 | 4.00 | C | | N=50 (7,9/50 for 275mm) | | | |
| | 5.0 | | | | | | 55.0 | 5.00 | B | | GM40 | | | |
| | 5.5 | | | | | | 54.5 | 5.00 | C | | 50 (10,12/50 for 175mm) | | | |
| | 5.70 | Obstruction - possible boulders. | | | | | 54.18 | 5.80 | C | | 50 (25 for 5mm/50 for 5mm) | | | |
| | 5.80 | End of Borehole at 5.80m | | | | | 54.0 | 54.08 | | | | | | |
| | 6.0 | | | | | | 53.5 | | | | | | | |
| | 6.5 | | | | | | 53.0 | | | | | | | |
| | 7.0 | | | | | | 52.5 | | | | | | | |
| | 7.5 | | | | | | 52.0 | | | | | | | |
| | 8.0 | | | | | | 51.5 | | | | | | | |
| | 8.5 | | | | | | 51.0 | | | | | | | |
| | 9.0 | | | | | | 50.5 | | | | | | | |
| | 9.5 | | | | | | 50.0 | | | | | | | |

| Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|--|
| From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| 3.60 | 3.80 | 01:00 | | | | 07/07 | 5.80 | Dry | | | | 0.00 | 5.80 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH12 | | | | | | | | | | |
|--|-------|--|------|-------|--------------------|-------------|---------------|--------------------------|----------------------------|--------------|---------------|----------|-------|-----------|------|----------|---|--|--|
| Contract: | | Moygaddy | | | Easting: | | 694615.966 | | Date Started: | | 12/07/2021 | | | | | | | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 739002.198 | | Date Completed: | | 12/07/2021 | | | | | | | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 56.86 | | Drilled By: | | G. Macken | | | | | | | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | | | | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill | | | | | | | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | | | | | | |
| | 0.20 | TOPSOIL. | | | | 56.66 | | | | | | | | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 56.5 | | | | | | | | | | | | | |
| | 1.0 | | | | | 56.0 | 1.00 | B | GM30 | | | | | | | | | | |
| | 1.30 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 55.56 | 1.00 | C | N=10 (1,1/3,3,2,2) | | | | | | | | | | |
| | 1.5 | | | | | 55.5 | | | | | | | | | | | | | |
| | 2.0 | | | | | 55.0 | 2.00 | B | GM31 | | | | | | | | | | |
| | 2.5 | | | | | 54.5 | 2.00 | C | N=21 (3,5/5,6,5,5) | | | | | | | | | | |
| | 3.0 | | | | | 54.0 | | | | | | | | | | | | | |
| | 3.20 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 53.66 | 3.00 | B | GM32 | | | | | | | | | | |
| | 3.5 | | | | | 53.5 | 3.00 | C | N=47 (5,4/9,9,14,15) | | | | | | | | | | |
| | 4.0 | | | | | 53.0 | | | | | | | | | | | | | |
| | 4.5 | | | | | 52.5 | 4.00 | B | GM33 | | | | | | | | | | |
| | 5.0 | | | | | 52.0 | 4.00 | C | 50 (9,13/50 for 175mm) | | | | | | | | | | |
| | 5.5 | | | | | 51.5 | 5.00 | B | GM34 | | | | | | | | | | |
| | 6.0 | | | | | 51.0 | 5.00 | C | N=50 (7,9/50 for 250mm) | | | | | | | | | | |
| | 6.30 | Obstruction - possible boulders. | | | | 50.56 | 6.00 | B | GM35 | | | | | | | | | | |
| | 6.40 | End of Borehole at 6.40m | | | | 50.46 | 6.00 | C | 50 (10,13/50 for 140mm) | | | | | | | | | | |
| | 6.5 | | | | | 50.0 | 6.40 | C | 50 (25 for 5mm/50 for 0mm) | | | | | | | | | | |
| | 7.0 | | | | | 49.5 | | | | | | | | | | | | | |
| | 7.5 | | | | | 49.0 | | | | | | | | | | | | | |
| | 8.0 | | | | | 48.5 | | | | | | | | | | | | | |
| | 8.5 | | | | | 48.0 | | | | | | | | | | | | | |
| | 9.0 | | | | | 47.5 | | | | | | | | | | | | | |
| | 9.5 | | | | | 47.0 | | | | | | | | | | | | | |
|  | | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | | 6.30 | 6.40 | 01:30 | | | | 06/07 | 6.40 | Dry | | | | 0.00 | 6.40 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH13 | | | | |
|----------------------|-------|--|--|--|--------------------|-------------|------------|--------------------------|------------------------------|--------|------------|--------------|----------|
| Contract: | | Moygaddy | | | Easting: | | 694659.374 | | Date Started: | | 08/07/2021 | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 738763.773 | | Date Completed: | | 08/07/2021 | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 52.09 | | Drilled By: | | G. Macken | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | | Water Strike | Backfill |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | |
| | 0.20 | TOPSOIL. | | | | 52.0 | 51.89 | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 51.5 | | | | | | | |
| | 1.0 | | | | | 51.0 | 1.00 | B | GM18 | | | | |
| | 1.5 | | | | | 50.5 | 1.00 | C | N=9 (2,2/2,1,3,3) | | | | |
| | 1.70 | Firm brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 50.39 | | | | | | | |
| | 2.0 | | | | | 50.0 | 2.00 | B | GM19 | | | | |
| | 2.5 | | | | | 50.0 | 2.00 | C | N=14 (4,4/3,3,4,4) | | | | |
| | 2.50 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 49.59 | | | | | | | |
| | 3.0 | | | | | 49.5 | | | | | | | |
| | 3.5 | | | | | 49.0 | 3.00 | B | GM20 | | | | |
| | 4.0 | | | | | 49.0 | 3.00 | C | N=45 (8,8/11,11,10,13) | | | | |
| | 4.5 | | | | | 48.5 | | | | | | | |
| | 5.0 | | | | | 48.0 | 4.00 | B | GM21 | | | | |
| | 5.5 | | | | | 48.0 | 4.00 | C | N=41 (7,9/9,10,11,11) | | | | |
| | 6.0 | | | | | 47.5 | | | | | | | |
| | 6.10 | | | | | 47.0 | 5.00 | B | GM22 | | | | |
| | 6.20 | | | | | 47.0 | 5.00 | C | 50 (8,10/50 for 210mm) | | | | |
| | 6.5 | Obstruction - possible boulders. | | | | 46.5 | | | | | | | |
| | 7.0 | End of Borehole at 6.20m | | | | 46.0 | 45.99 | B | GM23 | | | | |
| | 7.5 | | | | | 46.0 | 6.00 | C | 50 (26 for 85mm/50 for 10mm) | | | | |
| | 8.0 | | | | | 46.0 | 6.00 | C | 50 (25 for 5mm/50 for 0mm) | | | | |
| | 8.5 | | | | | 45.5 | | | | | | | |
| | 9.0 | | | | | 45.0 | | | | | | | |
| | 9.5 | | | | | 44.5 | | | | | | | |
| | | | | | | 44.0 | | | | | | | |
| | | | | | | 43.5 | | | | | | | |
| | | | | | | 43.0 | | | | | | | |
| | | | | | | 42.5 | | | | | | | |

|  | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|---------|---|--|--|
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | 3.70 | 3.80 | 01:00 | | | | 02/07 | 6.20 | Dry | | | | 0.00 | 6.20 | Arising | | | |

| | | | | | |
|----------------------|--------------------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Cable Percussion Borehole Log | | | | Borehole No: BH14 |
|----------------------|--------------------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|--------------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694546.422 | Date Started: | 06/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738784.570 | Date Completed: | 06/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 53.46 | Drilled By: | G. Macken |
| Engineer: | OCSC | Borehole Diameter: | 200mm | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill |
|-----------|-------|--|--------|-------------|-------|--------------------------|----------------------------|--------|--------------|----------|
| Scale | Depth | | | Scale | Depth | Depth | Type | Result | | |
| 0.20 | 0.20 | TOPSOIL. | | 53.26 | | | | | | |
| 0.5 | | Soft brown sandy slightly gravelly silty CLAY with low cobble content. | | 53.0 | | | | | | |
| 1.0 | | | | 52.5 | 1.00 | B | GM07 | | | |
| 1.5 | | | | 52.0 | 1.00 | C | N=7 (1,1/2,1,3,1) | | | |
| 2.0 | 2.10 | Soft brown sandy slightly gravelly silty CLAY with high cobble content. | | 51.5 | 2.00 | B | GM08 | | | |
| 2.5 | | | | 51.0 | 2.00 | C | N=7 (2,1/2,1,1,3) | | | |
| 3.0 | | | | 50.5 | 3.00 | B | GM09 | | | |
| 3.5 | 3.20 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | 50.26 | 3.00 | C | N=48 (2,3/9,11,13,15) | | | |
| 4.0 | | | | 50.0 | 4.00 | B | GM10 | | | |
| 4.5 | | | | 49.5 | 4.00 | C | 50 (9,9/50 for 225mm) | | | |
| 5.0 | | | | 49.0 | 5.00 | B | GM11 | | | |
| 5.5 | | | | 48.5 | 5.00 | C | 50 (7,10/50 for 210mm) | | | |
| 6.0 | | | | 48.0 | 6.00 | B | GM12 | | | |
| 6.5 | 6.20 | Obstruction - possible boulders. | | 47.26 | 6.00 | C | 50 (8,10/50 for 175mm) | | | |
| 6.5 | 6.30 | End of Borehole at 6.30m | | 47.16 | 6.50 | C | 50 (25 for 5mm/50 for 5mm) | | | |
| 7.0 | | | | 47.0 | | | | | | |
| 7.5 | | | | 46.5 | | | | | | |
| 8.0 | | | | 46.0 | | | | | | |
| 8.5 | | | | 45.5 | | | | | | |
| 9.0 | | | | 45.0 | | | | | | |
| 9.5 | | | | 44.5 | | | | | | |
| | | | | 44.0 | | | | | | |

| | | | | | | | | | | | | | | | | | |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|
| | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | |
| | 1.70 | 1.80 | 00:45 | 3.40 | 3.10 | 3.70 | 30/06 | 6.30 | Dry | | | | 0.00 | 6.30 | Arisings | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH15 | | | |
|----------------------|-------|--|--|--|--------------------|-------------|------------|--------------------------|----------------------------|--------|--------------|----------|
| Contract: | | Moygaddy | | | Easting: | | 694458.907 | | Date Started: | | 09/07/2021 | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 738814.666 | | Date Completed: | | 09/07/2021 | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 54.44 | | Drilled By: | | G. Macken | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | |
| 0.20 | 0.20 | TOPSOIL. | | | | 54.24 | | | | | | |
| 0.5 | | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 54.0 | | | | | | |
| 1.0 | | | | | | 53.5 | 1.00 | B | GM24 | | | |
| 1.5 | | | | | | 53.0 | 1.00 | C | N=10 (2,2/3,2,2,3) | | | |
| 1.80 | 1.80 | Firm brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 52.64 | | | | | | |
| 2.0 | | | | | | 52.5 | 2.00 | B | GM25 | | | |
| 2.30 | 2.30 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 52.14 | 2.00 | C | N=14 (3,2/4,3,3,4) | | | |
| 2.5 | | | | | | 52.0 | | | | | | |
| 3.0 | | | | | | 51.5 | 3.00 | B | GM26 | | | |
| 3.5 | | | | | | 51.0 | 3.00 | C | N=50 (8,7/50 for 255mm) | | | |
| 4.0 | | | | | | 50.5 | 4.00 | B | GM27 | | | |
| 4.5 | | | | | | 50.0 | 4.00 | C | 50 (11,13/50 for 210mm) | | | |
| 5.0 | | | | | | 49.5 | 5.00 | B | GM28 | | | |
| 5.5 | | | | | | 49.0 | 5.00 | C | 50 (10,12/50 for 190mm) | | | |
| 6.0 | | | | | | 48.5 | 6.00 | B | GM29 | | | |
| 6.5 | | | | | | 48.0 | 6.00 | C | 50 (11,13/50 for 140mm) | | | |
| 6.70 | 6.70 | Obstruction - possible boulders. | | | | 47.74 | | | | | | |
| 6.80 | 6.80 | End of Borehole at 6.80m | | | | 47.64 | 6.80 | C | 50 (25 for 5mm/50 for 0mm) | | | |
| 7.0 | | | | | | 47.5 | | | | | | |
| 7.5 | | | | | | 47.0 | | | | | | |
| 8.0 | | | | | | 46.5 | | | | | | |
| 8.5 | | | | | | 46.0 | | | | | | |
| 9.0 | | | | | | 45.5 | | | | | | |
| 9.5 | | | | | | 45.0 | | | | | | |

| | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | |
| | 2.80 | 2.90 | 01:00 | | | | 05/07 | 6.80 | Dry | | | | 0.00 | 6.80 | Arisings | | |

| | | | | | |
|----------------------|--------------------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Cable Percussion Borehole Log | | | | Borehole No: BH16 |
|----------------------|--------------------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|--------------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 693655.329 | Date Started: | 01/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739258.288 | Date Completed: | 01/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 49.53 | Drilled By: | G. Macken |
| Engineer: | OCSC | Borehole Diameter: | 200mm | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples and Insitu Tests | | | Water Strike | Backfill |
|-----------|-------|---|--------|--|-------|--------------------------|----------------------------|--------|--------------|----------|
| Scale | Depth | | | Scale | Depth | Depth | Type | Result | | |
| | 0.20 | TOPSOIL. | | 49.33 | | | | | | |
| | 0.5 | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | 49.0 | | | | | | |
| | 1.0 | | | 48.5 | 1.00 | B | GM80 | | | |
| | 1.5 | | | 48.0 | 1.00 | C | N=9 (1,2/2,3,2,2) | | | |
| | 1.80 | Stiff brown sandy slightly gravelly silty CLAY with high cobble content. | | 47.73 | | | | | | |
| | 2.0 | | | 47.5 | 2.00 | B | GM81 | | | |
| | 2.5 | | | 47.0 | 2.00 | C | N=16 (2,3/3,5,4,4) | | | |
| | 2.50 | Stiff becoming very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | 47.03 | | | | | | |
| | 3.0 | | | 46.5 | 3.00 | B | GM82 | | | |
| | 3.5 | | | 46.0 | 3.00 | C | N=24 (4,4/5,6,6,7) | | | |
| | 4.0 | | | 45.5 | 4.00 | B | GM83 | | | |
| | 4.5 | | | 45.0 | 4.00 | C | N=34 (5,6/6,8,9,11) | | | |
| | 5.0 | | | 44.5 | 5.00 | B | GM84 | | | |
| | 5.5 | | | 44.0 | 5.00 | C | N=48 (5,8/11,11,12,14) | | | |
| | 6.0 | | | 43.5 | 6.00 | B | GM85 | | | |
| | 6.5 | | | 43.0 | 6.00 | C | N=50 (7,8/50 for 275mm) | | | |
| | 6.70 | | | Obstruction - possible boulders. End of Borehole at 6.80m | | 42.83 | | | | |
| | 6.80 | 42.73 | 6.80 | | | C | 50 (25 for 5mm/50 for 5mm) | | | |

| | | | | | | | | | | | | | | | | | | |
|--|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|--|
| | Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
| | From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| | 2.80 | 2.90 | 01:00 | 3.60 | 3.40 | 4.00 | 21/07 | 6.80 | Dry | | | | 0.00 | 6.80 | Arisings | | | |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | Borehole No: BH17 | | | | | | |
|----------------------|-------|--|--|--------------------|--------|-------------|-------|--------------------------|------|---|--|--------------|----------|--|
| Contract: | | Moygaddy | | Easting: | | 694518.865 | | Date Started: | | 05/07/2021 | | | | |
| Location: | | Maynooth, Co. Meath | | Northing: | | 738836.591 | | Date Completed: | | 05/07/2021 | | | | |
| Client: | | Sky Castle Ltd | | Elevation: | | 54.89 | | Drilled By: | | G. Macken | | | | |
| Engineer: | | OCSC | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | | Water Strike | Backfill | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | |
| 0.20 | 0.20 | TOPSOIL. | | | | 54.69 | | | | | | | | |
| 0.5 | | Firm brown sandy slightly gravelly silty CLAY. | | | | 54.5 | | | | | | | | |
| 1.0 | | | | | | 54.0 | | 1.00 | B | GM01 | | | | |
| 1.5 | | | | | | 53.5 | | 1.00 | C | N=8 (1,2/2,1,2,3) | | | | |
| 2.0 | | | | | | 53.0 | | 2.00 | B | GM02 | | | | |
| 2.20 | 2.20 | Stiff brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 52.69 | 2.00 | 2.00 | C | N=14 (2,5/3,3,4,4) | | | | |
| 2.5 | | | | | | 52.5 | | | | | | | | |
| 3.0 | | | | | | 52.0 | | 3.00 | B | GM03 | | | | |
| 3.5 | | | | | | 51.5 | | 3.00 | C | N=16 (3,3/3,4,5,4) | | | | |
| 3.80 | 3.80 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 51.09 | | 4.00 | B | GM04 | | | | |
| 4.0 | | | | | | 51.0 | | 4.00 | C | N=47 (8,6/9,10,13,15) | | | | |
| 4.5 | | | | | | 50.5 | | | | | | | | |
| 5.0 | | | | | | 50.0 | | 5.00 | B | GM05 | | | | |
| 5.5 | | | | | | 49.5 | | 5.00 | C | 50 (7,13/18,32,,) | | | | |
| 6.0 | | | | | | 49.0 | | 6.00 | B | GM06 | | | | |
| 6.5 | 6.50 | Obstruction - possible boulders. End of Borehole at 6.50m | | | | 48.39 | 6.50 | 6.50 | C | 50 (25 for 100mm/50 for 20mm) 50 (25 for 5mm/50 for 5mm) | | | | |
| 7.0 | | | | | | 48.0 | | | | | | | | |
| 7.5 | | | | | | 47.5 | | | | | | | | |
| 8.0 | | | | | | 47.0 | | | | | | | | |
| 8.5 | | | | | | 46.5 | | | | | | | | |
| 9.0 | | | | | | 46.0 | | | | | | | | |
| 9.5 | | | | | | 45.5 | | | | | | | | |
| | | | | | | 45.0 | | | | | | | | |

| Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: |
|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|---------|---|--|--------------------|
| From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| 3.60 | 3.80 | 00:45 | 3.60 | 3.40 | 3.90 | 29/06 | 6.50 | Dry | | | | 0.00 | 6.50 | Arising | | | B: Bulk |
| 5.50 | 5.70 | 01:00 | | | | | | | | | | | | | | | D: Disturbed |
| 6.50 | 6.50 | 01:30 | | | | | | | | | | | | | | | U: Undisturbed |
| | | | | | | | | | | | | | | | | | ES: Environmental |
| | | | | | | | | | | | | | | | | | W: Water |
| | | | | | | | | | | | | | | | | | C: Cone SPT |
| | | | | | | | | | | | | | | | | | S: Split spoon SPT |

| Contract No: 5863 | | Cable Percussion Borehole Log | | | | | | | Borehole No: BH18 | | | | | |
|----------------------|-------|--|--|--|--------------------|-------------|------------|--------------------------|----------------------|----------------------------|------------|--------------|----------|--|
| Contract: | | Moygaddy | | | Easting: | | 694562.423 | | Date Started: | | 07/07/2021 | | | |
| Location: | | Maynooth, Co. Meath | | | Northing: | | 738770.148 | | Date Completed: | | 07/07/2021 | | | |
| Client: | | Sky Castle Ltd | | | Elevation: | | 52.93 | | Drilled By: | | G. Macken | | | |
| Engineer: | | OCSC | | | Borehole Diameter: | | 200mm | | Status: | | FINAL | | | |
| Depth (m) | | Stratum Description | | | Legend | Level (mOD) | | Samples and Insitu Tests | | | | Water Strike | Backfill | |
| Scale | Depth | | | | | Scale | Depth | Depth | Type | Result | | | | |
| | 0.20 | TOPSOIL. | | | | 52.73 | | | | | | | | |
| 0.5 | | Firm brown sandy slightly gravelly silty CLAY with low cobble content. | | | | 52.5 | | | | | | | | |
| 1.0 | | | | | | 52.0 | 1.00 | B | | GM13 | | | | |
| 1.5 | | | | | | 51.5 | 1.00 | C | | N=9 (1,1/3,2,2,2) | | | | |
| 2.0 | 1.80 | Firm brown sandy slightly gravelly silty CLAY with high cobble content. | | | | 51.0 | 2.00 | B | | GM14 | | | | |
| 2.5 | | | | | | 51.0 | 2.00 | C | | N=13 (3,3/2,3,4,4) | | | | |
| 3.0 | 2.50 | Very stiff black slightly sandy gravelly silty CLAY with low cobble content. | | | | 50.5 | 3.00 | B | | GM15 | | | | |
| 3.5 | | | | | | 50.5 | 3.00 | C | | N=50 (8,8/50 for 250mm) | | | | |
| 4.0 | | | | | | 50.0 | 4.00 | B | | GM16 | | | | |
| 4.5 | | | | | | 49.5 | 4.00 | C | | N=50 (8,9/50 for 230mm) | | | | |
| 5.0 | | | | | | 49.0 | 5.00 | B | | GM17 | | | | |
| 5.5 | | | | | | 48.5 | 5.00 | C | | 50 (10,13/50 for 135mm) | | | | |
| 6.0 | 5.70 | Obstruction - possible boulders. | | | | 48.0 | 5.80 | B | | 50 (25 for 5mm/50 for 0mm) | | | | |
| 6.0 | 5.80 | End of Borehole at 5.80m | | | | 47.5 | | C | | | | | | |
| 6.5 | | | | | | 47.0 | | | | | | | | |
| 7.0 | | | | | | 47.0 | | | | | | | | |
| 7.5 | | | | | | 47.13 | | | | | | | | |
| 8.0 | | | | | | 46.5 | | | | | | | | |
| 8.5 | | | | | | 46.0 | | | | | | | | |
| 9.0 | | | | | | 45.5 | | | | | | | | |
| 9.5 | | | | | | 45.0 | | | | | | | | |
| | | | | | | 44.5 | | | | | | | | |
| | | | | | | 44.0 | | | | | | | | |
| | | | | | | 43.5 | | | | | | | | |
| | | | | | | 43.0 | | | | | | | | |

| Chiselling: | | | Water Strikes: | | | Water Details: | | | Installation: | | | Backfill: | | | Remarks: | | Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT |
|-------------|------|-------|----------------|-------|---------------|----------------|-------------|--------------|---------------|-----|-------|-----------|------|----------|---|--|--|
| From: | To: | Time: | Strike: | Rose: | Depth Sealed: | Date: | Hole Depth: | Water Depth: | From: | To: | Pipe: | From: | To: | Type: | Borehole terminated due to obstruction. | | |
| 4.70 | 4.80 | 01:00 | | | | 01/07 | 5.80 | Dry | | | | 0.00 | 5.80 | Arisings | | | |

Appendix 2
Rotary Corehole Logs and Photographs

| | | | | | |
|----------------------|------------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | <h1>Rotary Corehole Log</h1> | | | | Corehole No: RC04 |
|----------------------|------------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 693637.963 | Date Started: | 19/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739436.766 | Date Completed: | 19/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 56.84 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|--------|-------------|-------|-------------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | |
| 0.5 | | | | 56.5 | | | | | | | |
| 1.0 | | | | 56.0 | | | | | | | |
| 1.5 | | | | 55.5 | | | | | | | |
| 2.0 | | | | 55.0 | | | | | | | |
| 2.5 | | | | 54.5 | | | | | | | |
| 3.0 | | | | 54.0 | | | | | | | |
| 3.5 | | | | 53.5 | | | | | | | |
| 4.0 | | | | 53.0 | | | | | | | |
| 4.5 | | | | 52.5 | | | | | | | |
| 5.0 | | | | 52.0 | | | | | | | |
| 5.5 | | | | 51.5 | | | | | | | |
| 6.0 | | | | 51.0 | | | | | | | |
| 6.5 | | | | 50.5 | | | | | | | |
| 6.70 | | <p>Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional fossils and calcite veins (2mm thick). Fresh to slightly weathered.</p> <p><i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and 45° dip, clean with occasional grey staining and occasional clay infill.</i></p> | | 50.14 | | | | | | | |
| 7.0 | | | | 50.0 | | 6.70 - 7.70 | 96 | 57 | 12 | | 14 |
| 7.5 | | | | | 49.5 | | | | | | |
| 8.0 | | | | 49.0 | | | | | | | |
| 8.5 | | <p><i>Discontinuities - smooth to rough, planar to undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining and occasional clay infill.</i></p> | | 48.5 | | | | | | | |
| 8.70 | | | | | 48.0 | | | | | | |
| 9.0 | | | | 47.5 | | | | | | | |
| 9.5 | | | | 47.0 | | | | | | | |
| 9.70 | | End of Corehole at 9.70m | | 47.0 | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 9.70 | Bentonite | - |

| | | | | | |
|----------------------|------------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | <h1>Rotary Corehole Log</h1> | | | | Corehole No: RC05 |
|----------------------|------------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 693935.222 | Date Started: | 15/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739548.071 | Date Completed: | 15/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 58.60 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|--|--------|-------------|-------------|---------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | 58.5 | | | | | | | |
| 0.5 | | | | 58.0 | | | | | | | |
| 1.0 | | | | 57.5 | | | | | | | |
| 1.5 | | | | 57.0 | | | | | | | |
| 2.0 | | | | 56.5 | | | | | | | |
| 2.5 | | | | 56.0 | | | | | | | |
| 3.0 | | | | 55.5 | | | | | | | |
| 3.5 | | | | 55.0 | | | | | | | |
| 4.0 | | | | 54.5 | | | | | | | |
| 4.5 | | | | 54.0 | | | | | | | |
| 5.0 | | | | 53.5 | | | | | | | |
| 5.5 | | | | 53.0 | | | | | | | |
| 5.70 | | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional fossils, pyrite crystals and calcite veins (2mm thick). Fresh to slightly weathered. | | 52.90 | | | | | | | |
| 6.0 | | <i>Discontinuities - smooth to rough, planar, tight to open, sub-horizontal dip, clean with occasional grey staining.</i> | | 52.5 | 5.70 - 6.70 | 96 | 83 | 28 | | 11 | |
| 6.5 | | <i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining.</i> | | 52.0 | | | | | | | |
| 7.0 | | | | 51.5 | 6.70 - 7.70 | 96 | 52 | 16 | | 14 | |
| 7.5 | | | | 51.0 | | | | | | | |
| 8.0 | | <i>Discontinuities - smooth to rough, planar, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.</i> | | 50.5 | 7.70 - 8.70 | 92 | 88 | 22 | | 11 | |
| 8.70 | | End of Corehole at 8.70m | | 50.0 | | | | | | | |
| 9.0 | | | | 49.90 | | | | | | | |
| 9.5 | | | | 49.5 | | | | | | | |
| | | | | 49.0 | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 8.70 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC06 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694016.492 | Date Started: | 15/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739390.864 | Date Completed: | 15/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 57.65 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|--------|-------------|-------|-------------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | 57.5 | | | | | | | |
| 0.5 | | | | 57.0 | | | | | | | |
| 1.0 | | | | 56.5 | | | | | | | |
| 1.5 | | | | 56.0 | | | | | | | |
| 2.0 | | | | 55.5 | | | | | | | |
| 2.5 | | | | 55.0 | | | | | | | |
| 3.0 | | | | 54.5 | | | | | | | |
| 3.5 | | | | 54.0 | | | | | | | |
| 4.0 | | | | 53.5 | | | | | | | |
| 4.5 | | | | 53.0 | | | | | | | |
| 5.0 | | | | 52.5 | | | | | | | |
| 5.30 | | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional fossils and calcite veins (3mm thick). Fresh to slightly weathered. <i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, 10-20° and sub-vertical dip, clean with occasional grey staining and occasional clay infill.</i> | | 52.35 | | | | | | | |
| 5.5 | | | | 52.0 | | 5.30 - 6.30 | 93 | 70 | 47 | 10 | |
| 6.0 | | <i>Discontinuities - smooth to rough, planar, tight to open, 10-20° and sub-horizontal dip, clean with occasional grey staining, calcite crystals and occasional clay infill.</i> | | 51.5 | | | | | | | |
| 6.5 | | | | 51.0 | | 6.30 - 7.30 | 98 | 75 | 39 | | |
| 7.0 | | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with frequent pyrite crystals, occasional fossils and calcite veins (3mm thick). Fresh to slightly weathered. | | 50.5 | | | | | | | |
| 7.5 | 7.50 | | | 50.0 | 50.15 | 7.30 - 8.30 | 80 | 76 | 32 | 10 | |
| 8.0 | | End of Corehole at 8.30m | | 49.5 | | | | | | | |
| 8.30 | | | | 49.35 | | | | | | | |
| 8.5 | | | | 49.0 | | | | | | | |
| 9.0 | | | | 48.5 | | | | | | | |
| 9.5 | | | | 48.0 | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 8.30 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC07 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694142.350 | Date Started: | 14/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739365.230 | Date Completed: | 14/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 57.84 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|--------|-------------|-------|-------------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | |
| 0.5 | | | | 57.5 | | | | | | | |
| 1.0 | | | | 57.0 | | | | | | | |
| 1.5 | | | | 56.5 | | | | | | | |
| 2.0 | | | | 56.0 | | | | | | | |
| 2.5 | | | | 55.5 | | | | | | | |
| 3.0 | | | | 55.0 | | | | | | | |
| 3.5 | | | | 54.5 | | | | | | | |
| 4.0 | | | | 54.0 | | | | | | | |
| 4.5 | | | | 53.5 | | | | | | | |
| 5.0 | | | | 53.0 | | | | | | | |
| 5.5 | | | | 52.5 | | | | | | | |
| 5.60 | | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional fossils and calcite veins (1mm thick). Fresh to slightly weathered. | | 52.24 | | | | | | | |
| 6.0 | | <i>Discontinuities - smooth, occasionally rough, planar, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.</i> | | 52.0 | | 5.60 - 6.60 | 97 | 97 | 66 | 12 | |
| 6.5 | | | | 51.5 | | | | | | | |
| 7.0 | | <i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining and occasional clay infill.</i> | | 51.0 | | 6.60 - 7.60 | 99 | 65 | 41 | 11 | |
| 7.5 | | | | 50.5 | | | | | | | |
| 8.0 | | <i>Discontinuities - smooth to rough, planar, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining.</i> | | 50.0 | | 7.60 - 8.60 | 90 | 75 | 53 | 8 | |
| 8.5 | | | | 49.5 | | | | | | | |
| 8.60 | | End of Corehole at 8.60m | | 49.24 | | | | | | | |
| 9.0 | | | | 49.0 | | | | | | | |
| 9.5 | | | | 48.5 | | | | | | | |
| | | | | 48.0 | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|-----------|-------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | 0.00 | 8.60 | Bentonite | - | |

| | | | | | |
|----------------------|------------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | <h1>Rotary Corehole Log</h1> | | | | Corehole No: RC08 |
|----------------------|------------------------------|--|--|--|-----------------------------|


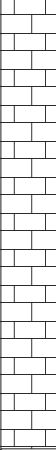
| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694212.597 | Date Started: | 16/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739630.304 | Date Completed: | 16/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 60.48 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |


| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|--------|-------------|-------|---------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | |
| 0.5 | | | | | | | | | | | |
| 1.0 | | | | | | | | | | | |
| 1.5 | | | | | | | | | | | |
| 2.0 | | | | | | | | | | | |
| 2.5 | | | | | | | | | | | |
| 3.0 | | | | | | | | | | | |
| 3.5 | | | | | | | | | | | |
| 4.0 | | | | | | | | | | | |
| 4.5 | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | |
| 5.5 | | | | | | | | | | | |
| 6.0 | | | | | | | | | | | |
| 6.5 | 6.60 | <p>Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with frequent calcite veins (3mm thick). Fresh to slightly weathered.</p> <p><i>Discontinuities - non-intact.</i></p> <p><i>Discontinuities - smooth to rough, planar to undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining, calcite crystals and occasional clay infill.</i></p> <p><i>Discontinuities - non-intact.</i></p> <p><i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining, calcite crystals and occasional clay infill.</i></p> <p><i>Discontinuities - non-intact.</i></p> <p><i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining, calcite crystals and occasional clay infill.</i></p> <p><i>Discontinuities - non-intact.</i></p> | | | | | | | | | |
| 7.0 | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | |
| 8.0 | | | | | | | | | | | |
| 8.5 | | | | | | | | | | | |
| 9.0 | | | | | | | | | | | |
| 9.5 | 9.60 | End of Corehole at 9.60m | | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 9.60 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC09 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694497.168 | Date Started: | 13/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739610.386 | Date Completed: | 13/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 61.10 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|---|-------------|-------|---------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. |  | 61.0 | | | | | | | |
| 0.5 | | | | 60.5 | | | | | | | |
| 1.0 | | | | 60.0 | | | | | | | |
| 1.5 | | | | 59.5 | | | | | | | |
| 2.0 | | | | 59.0 | | | | | | | |
| 2.5 | | | | 58.5 | | | | | | | |
| 3.0 | | | | 58.0 | | | | | | | |
| 3.5 | | | | 57.5 | | | | | | | |
| 4.0 | | | | 57.0 | | | | | | | |
| 4.5 | | | | 56.5 | | | | | | | |
| 5.0 | | | | 56.0 | | | | | | | |
| 5.5 | | | | 55.5 | | | | | | | |
| 6.0 | | | | 55.0 | | | | | | | |
| 6.30 | | <p>Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with some pyrite crystals and calcite veins (2mm thick). Fresh to slightly weathered.</p> <p><i>Discontinuities - smooth, occasionally rough, planar to undulating, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.</i></p> <hr/> <p><i>Discontinuities - non-intact.</i></p> <hr/> <p><i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining and calcite crystals.</i></p> |  | 54.80 | | | | | | | |
| 6.5 | | | | 54.5 | | | | | | | |
| 7.0 | | | | 54.0 | | | | | | | 9 |
| 7.5 | | | | 53.5 | | | | | | | |
| 8.0 | | | | 53.0 | | | | | | | Ni |
| 8.5 | | | | 52.5 | | | | | | | |
| 9.0 | | | | 52.0 | | | | | | | |
| 9.30 | | End of Corehole at 9.30m | | 51.80 | | | | | | | |
| 9.5 | | | | 51.5 | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
|  | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 9.30 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC10 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694428.449 | Date Started: | 13/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739378.834 | Date Completed: | 13/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 57.86 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill | |
|-----------|-------|---|--------|-------------|-------|-------------|--------------|-------|-------|------|----------|--|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | | |
| 0.5 | | | | 57.5 | | | | | | | | |
| 1.0 | | | | 57.0 | | | | | | | | |
| 1.5 | | | | 56.5 | | | | | | | | |
| 2.0 | | | | 56.0 | | | | | | | | |
| 2.5 | | | | 55.5 | | | | | | | | |
| 2.80 | | <p>Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional calcite veins (1mm thick). Fresh to slightly weathered.</p> <p><i>Discontinuities - smooth, planar, occasionally stepped, tight to open, 10-30° dip, clean with occasional grey staining and occasional clay infill.</i></p> <p><i>Discontinuities - non-intact.</i></p> <p><i>Discontinuities - smooth, planar, occasionally stepped, tight to open, 10-20° dip, occasionally sub-vertical, clean with occasional grey staining and occasional clay infill.</i></p> <p><i>Discontinuities - non-intact.</i></p> | | 55.0 | 55.06 | 2.80 - 3.80 | 91 | 85 | 28 | 10 | | |
| 3.0 | | | | 54.5 | | | | | | | | |
| 3.5 | | | | | 54.0 | | 3.80 - 4.80 | 95 | 70 | 55 | Ni | |
| 4.0 | | | | 53.5 | | | | | | | | |
| 4.5 | | | | 53.0 | | 4.80 - 5.80 | 96 | 60 | 31 | 9 | | |
| 5.0 | | | 52.5 | | | | | | | | | |
| 5.5 | | | | 52.0 | 52.06 | | | | | | | |
| 5.80 | | End of Corehole at 5.80m | | 52.0 | | | | | | | | |
| 6.0 | | | | 51.5 | | | | | | | | |
| 6.5 | | | | 51.0 | | | | | | | | |
| 7.0 | | | | 50.5 | | | | | | | | |
| 7.5 | | | | 50.0 | | | | | | | | |
| 8.0 | | | | 49.5 | | | | | | | | |
| 8.5 | | | | 49.0 | | | | | | | | |
| 9.0 | | | | 48.5 | | | | | | | | |
| 9.5 | | | | 48.0 | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 5.80 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC11 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694711.726 | Date Started: | 12/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739248.236 | Date Completed: | 12/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 59.49 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|--------|-------------|-------|---------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | |
| 0.5 | | | | | | | | | | | |
| 1.0 | | | | | | | | | | | |
| 1.5 | | | | | | | | | | | |
| 2.0 | | | | | | | | | | | |
| 2.5 | | | | | | | | | | | |
| 3.0 | | | | | | | | | | | |
| 3.5 | | | | | | | | | | | |
| 4.0 | | | | | | | | | | | |
| 4.5 | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | |
| 5.5 | | | | | | | | | | | |
| 6.0 | | | | | | | | | | | |
| 6.5 | 6.50 | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional calcite veins (2mm thick). Fresh to slightly weathered. <i>Discontinuities - smooth, planar to slightly undulating, tight to open, 40-50° dip, clean surfaces.</i> | | | | | | | | | |
| 7.0 | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | |
| 7.80 | 7.80 | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional calcite veins (1mm thick). Fresh to slightly weathered. <i>Discontinuities - smooth, planar to slightly undulating, tight to open, 30-50° dip, clean surfaces.</i> | | | | | | | | | |
| 8.0 | | | | | | | | | | | |
| 8.5 | | | | | | | | | | | |
| 9.0 | | | | | | | | | | | |
| 9.5 | 9.50 | End of Corehole at 9.40m | | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 9.40 | Bentonite | - |

| | | | | | |
|----------------------|------------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | <h1>Rotary Corehole Log</h1> | | | | Corehole No: RC12 |
|----------------------|------------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694562.423 | Date Started: | 08/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738770.148 | Date Completed: | 08/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 52.93 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill | |
|-----------|-------|---|--------|-------------|-------|----------------------|--------------|-------|-------|------|----------|--|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | | |
| 0.5 | | | | | | | | | | | | |
| 1.0 | | | | | | | | | | | | |
| 1.5 | | | | | | | | | | | | |
| 2.0 | | | | | | | | | | | | |
| 2.5 | | | | | | | | | | | | |
| 3.0 | | | | | | | | | | | | |
| 3.5 | | | | | | | | | | | | |
| 4.0 | | | | | | | | | | | | |
| 4.5 | | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | |
| 5.5 | | | | | | | | | | | | |
| 6.0 | | | | | | | | | | | | |
| 6.5 | | | | | | | | | | | | |
| 7.0 | | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | | |
| 8.0 | 8.00 | End of Corehole at 8.00m | | 44.93 | | N=41 (3,6/8,9,10,14) | | | | | | |
| 8.5 | | | | | | | | | | | | |
| 9.0 | | | | | | | | | | | | |
| 9.5 | | | | | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 8.00 | Bentonite | - |

| | | | | | |
|----------------------|------------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | <h1>Rotary Corehole Log</h1> | | | | Corehole No: RC13 |
|----------------------|------------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694473.806 | Date Started: | 07/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738837.204 | Date Completed: | 07/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 55.00 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill | | | |
|-----------|-------|---|--------|-------------|-------|----------------------|--------------|-------|-------|------|----------|--|--|--|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | | | | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | | | | |
| 0.5 | | | | | | | | | | | | | | |
| 1.0 | | | | | | | | | | | | | | |
| 1.5 | | | | | | | | | | | | | | |
| 2.0 | | | | | | | | | | | | | | |
| 2.5 | | | | | | | | | | | | | | |
| 3.0 | | | | | | | | | | | | | | |
| 3.5 | | | | | | | | | | | | | | |
| 4.0 | | | | | | | | | | | | | | |
| 4.5 | | | | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | | | | |
| 5.5 | | | | | | | | | | | | | | |
| 6.0 | | | | | | | | | | | | | | |
| 6.5 | | | | | | | | | | | | | | |
| 7.0 | | | | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | | | | |
| 8.0 | 8.00 | End of Corehole at 8.00m | | | 47.00 | N=39 (5,5/7,9,10,13) | | | | | | | | |
| 8.5 | | | | | | | | | | | | | | |
| 9.0 | | | | | | | | | | | | | | |
| 9.5 | | | | | | | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|-----------|-------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | 0.00 | 8.00 | Bentonite | - | |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC14 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694269.076 | Date Started: | 07/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739051.513 | Date Completed: | 07/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 55.61 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|--------|-------------|-------|----------------------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | 55.5 | | | | | | | |
| 0.5 | | | | | | | | | | | |
| 1.0 | | | | | | | | | | | |
| 1.5 | | | | | | | | | | | |
| 2.0 | | | | | | | | | | | |
| 2.5 | | | | | | | | | | | |
| 3.0 | | | | | | | | | | | |
| 3.5 | | | | | | | | | | | |
| 4.0 | | | | | | | | | | | |
| 4.5 | | | | | | | | | | | |
| 5.0 | | | | | | | | | | | |
| 5.5 | | | | | | | | | | | |
| 6.0 | | | | | | | | | | | |
| 6.5 | | | | | | | | | | | |
| 7.0 | | | | | | | | | | | |
| 7.5 | | | | | | | | | | | |
| 8.0 | 8.00 | End of Corehole at 8.00m | | 47.61 | | N=39 (3,5/7,9,10,13) | | | | | |
| 8.5 | | | | | | | | | | | |
| 9.0 | | | | | | | | | | | |
| 9.5 | | | | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|-----------|-------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | - |
| | | | 0.00 | 8.00 | Bentonite | | |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC16 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694648.959 | Date Started: | 08/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738608.023 | Date Completed: | 08/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 45.96 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill | | | |
|-----------|-------|---|--------|-------------|-------|----------------------|--------------|----------------------|-------|------|----------|--|--|--|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | | | | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | | | | |
| 0.5 | | | | | | 45.5 | | | | | | | | |
| 1.0 | | | | | | 45.0 | | | | | | | | |
| 1.5 | | | | | | 44.5 | | | | | | | | |
| 2.0 | | | | | | 44.0 | | | | | | | | |
| 2.5 | | | | | | 43.5 | | | | | | | | |
| 3.0 | | | | | | 43.0 | | | | | | | | |
| 3.5 | | | | | | 42.5 | | | | | | | | |
| 4.0 | | | | | | 42.0 | | | | | | | | |
| 4.5 | | | | | | 41.5 | | | | | | | | |
| 5.0 | | | | | | 41.0 | | | | | | | | |
| 5.5 | | | | | | 40.5 | | | | | | | | |
| 6.0 | | | | | | 40.0 | | | | | | | | |
| 6.5 | | | | | | 39.5 | | N=37 (3,3/5,8,11,13) | | | | | | |
| 7.0 | | | | | | 39.0 | | | | | | | | |
| 7.5 | | | | 38.5 | | | | | | | | | | |
| 8.0 | 8.00 | End of Corehole at 8.00m | | 38.0 | 37.96 | N=43 (3,6/8,9,12,14) | | | | | | | | |
| 8.5 | | | | 37.5 | | | | | | | | | | |
| 9.0 | | | | 37.0 | | | | | | | | | | |
| 9.5 | | | | 36.5 | | | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 8.00 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC17 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 693707.911 | Date Started: | 19/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739303.990 | Date Completed: | 19/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 54.78 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|--|--------|-------------|-------|-------------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | |
| 0.5 | | | | 54.5 | | | | | | | |
| 1.0 | | | | 54.0 | | | | | | | |
| 1.5 | | | | 53.5 | | | | | | | |
| 2.0 | | | | 53.0 | | | | | | | |
| 2.5 | | | | 52.5 | | | | | | | |
| 3.0 | | | | 52.0 | | | | | | | |
| 3.5 | | | | 51.5 | | | | | | | |
| 4.0 | | | | 51.0 | | | | | | | |
| 4.5 | | | | 50.5 | | | | | | | |
| 5.0 | | | | 50.0 | | | | | | | |
| 5.5 | | | | 49.5 | | | | | | | |
| 6.0 | | | | 49.0 | | | | | | | |
| 6.5 | | | | 48.5 | | | | | | | |
| 6.80 | | | | 48.0 | 47.98 | | | | | | |
| 7.0 | | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional calcite veins (2mm thick). Fresh to slightly weathered. | | | | | | | | | Ni |
| 7.5 | | <i>Discontinuities - non-intact.</i> <i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, 30-50° dip, occasionally sub-horizontal and sub-vertical, clean with occasional clay infill.</i> | | | | | | | | | |
| 7.80 | | | | 47.5 | | 6.80 - 7.80 | 98 | 57 | 45 | | |
| 8.0 | | | | 47.0 | | | | | | | |
| 8.5 | | | | 46.5 | | 7.80 - 8.80 | 98 | 66 | 43 | | 9 |
| 9.0 | | | | 46.0 | | | | | | | |
| 9.5 | | | | 45.5 | | 8.80 - 9.80 | 97 | 69 | 59 | | |
| 9.80 | | End of Corehole at 9.80m | | 45.0 | 44.98 | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 9.80 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC18 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 693667.400 | Date Started: | 20/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739242.451 | Date Completed: | 20/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 49.86 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill | | |
|-----------|-------|---|--------|--------------------------|-------|---------|--------------|-----------------------|-------|------|----------|--|--|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | | | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | | | |
| | 0.5 | | | | | | | | | | | | |
| | 1.0 | | | | | | | | | | | | |
| | 1.5 | | | | | | | | | | | | |
| | 2.0 | | | | | | | | | | | | |
| | 2.5 | | | | | | | | | | | | |
| | 3.0 | | | | | | | | | | | | |
| | 3.5 | | | | | | | | | | | | |
| | 4.0 | | | | | | | | | | | | |
| | 4.5 | | | | | | | | | | | | |
| | 5.0 | | | | | | | | | | | | |
| | 5.5 | | | | | | | | | | | | |
| | 6.0 | | | | | | | | | | | | |
| | 6.5 | | | | | | | | | | | | |
| | 7.0 | | | | | | | | | | | | |
| | 7.5 | | | | | | | | | | | | |
| | 8.0 | | | 8.00 | | | 41.86 | N=45 (6,6/9,10,12,14) | | | | | |
| | 8.5 | | | End of Corehole at 8.00m | | | | | | | | | |
| | 9.0 | | | | | | | | | | | | |
| | 9.5 | | | | | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|------|-----------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | | 0.00 | 8.00 | Bentonite | - |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC19 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694613.822 | Date Started: | 12/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739485.171 | Date Completed: | 12/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 58.39 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill |
|-----------|-------|---|--------|-------------|-------|-------------|--------------|-------|-------|------|----------|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | |
| 0.5 | | | | 58.0 | | | | | | | |
| 1.0 | | | | 57.5 | | | | | | | |
| 1.5 | | | | 57.0 | | | | | | | |
| 2.0 | | | | 56.5 | | | | | | | |
| 2.5 | | | | 56.0 | | | | | | | |
| 3.0 | | | | 55.5 | | | | | | | |
| 3.5 | | | | 55.0 | | | | | | | |
| 4.0 | | | | 54.5 | | | | | | | |
| 4.5 | | | | 54.0 | | | | | | | |
| 5.0 | | | | 53.5 | | | | | | | |
| 5.10 | | Strong to very strong light grey fine grained argillaceous LIMESTONE interbedded with moderately strong dark grey calcareous MUDSTONE with occasional pyrite crystals and calcite veins (5mm thick). Fresh to slightly weathered. <i>Discontinuities - smooth to rough, planar, occasionally stepped, tight to open, sub-horizontal dip, occasionally 60° dip and sub-vertical, clean.</i> | | 53.29 | | 5.10 - 6.10 | 98 | 97 | 45 | 11 | |
| 5.5 | | | | 53.0 | | | | | | | |
| 6.0 | | | | 52.5 | | | | | | | |
| 6.5 | | <i>Discontinuities - smooth to rough, planar, occasionally stepped, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining.</i> | | 52.0 | | 6.10 - 7.10 | 100 | 98 | 53 | | |
| 7.0 | | | | 51.5 | | | | | | | |
| 7.5 | | | | 51.0 | | 7.10 - 8.10 | 94 | 73 | 0 | 18 | |
| 8.0 | | | | 50.5 | | | | | | | |
| 8.10 | | End of Corehole at 8.10m | | 50.29 | | | | | | | |
| 8.5 | | | | 50.0 | | | | | | | |
| 9.0 | | | | 49.5 | | | | | | | |
| 9.5 | | | | 49.0 | | | | | | | |
| | | | | 48.5 | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|-----------|-------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | 0.00 | 8.10 | Bentonite | - | |

| | | | | | |
|----------------------|----------------------------|--|--|--|-----------------------------|
| Contract No: 5863 | Rotary Corehole Log | | | | Corehole No: RC20 |
|----------------------|----------------------------|--|--|--|-----------------------------|

| | | | | | |
|-----------|---------------------|------------|------------|-----------------|------------|
| Contract: | Moygaddy | Easting: | 694717.266 | Date Started: | 09/07/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739392.581 | Date Completed: | 09/07/2021 |
| Client: | Sky Castle Ltd | Elevation: | 59.02 | Drilled By: | MEDL |
| Engineer: | OCSC | Rig Type: | Sondeq | Status: | FINAL |

| Depth (m) | | Stratum Description | Legend | Level (mOD) | | Samples | Rock Indices | | | | Backfill | |
|-----------|-------|---|--------|-------------|-------|---------|--------------|-------|-------|------|----------|--|
| Scale | Depth | | | Scale | Depth | | TCR/% | SCR/% | RQD/% | FI/m | | |
| | | Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles. | | | | | | | | | | |
| 0.5 | | | | 58.5 | | | | | | | | |
| 1.0 | | | | 58.0 | | | | | | | | |
| 1.5 | | | | 57.5 | | | | | | | | |
| 2.0 | | | | 57.0 | | | | | | | | |
| 2.5 | | | | 56.5 | | | | | | | | |
| 3.0 | | | | 56.0 | | | | | | | | |
| 3.5 | | | | 55.5 | | | | | | | | |
| 4.0 | | | | 55.0 | | | | | | | | |
| 4.5 | | | | 54.5 | | | | | | | | |
| 5.0 | | | | 54.0 | | | | | | | | |
| 5.5 | | | | 53.5 | | | | | | | | |
| 6.0 | | | | 53.0 | | | | | | | | |
| 6.5 | | | | 52.5 | | | | | | | | |
| 7.0 | | | | 52.0 | | | | | | | | |
| 7.5 | | | | 51.5 | | | | | | | | |
| 7.80 | | Open hole drilling - driller reports returns of limestone bedrock. | | | | | | | | | | |
| 8.0 | | | | 51.0 | | | | | | | | |
| 8.5 | | | | 50.5 | | | | | | | | |
| 9.0 | | | | 50.0 | | | | | | | | |
| 9.30 | | End of Corehole at 9.30m | | | | | | | | | | |
| 9.5 | | | | 49.5 | | | | | | | | |
| | | | | 49.72 | | | | | | | | |
| | | | | 51.22 | | | | | | | | |

| | | | | | | | |
|--|---------------|-----|------------|-----------|-----------|-------|----------|
| | Installation: | | | Backfill: | | | Remarks: |
| | From: | To: | Pipe Type: | From: | To: | Type: | |
| | | | 0.00 | 9.30 | Bentonite | - | |

RC04 Box 1 of 1



RC05 Box 1 of 1



RC06 Box 1 of 1



RC07 Box 1 of 1



RC08 Box 1 of 1



RC09 Box 1 of 1



RC10 Box 1 of 1



RC11 Box 1 of 1




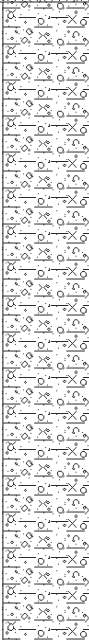
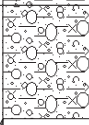

RC17 Box 1 of 1


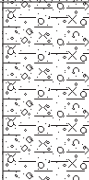
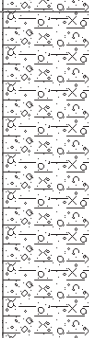
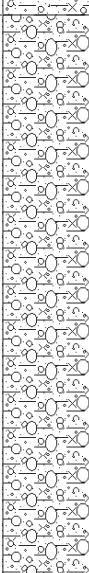




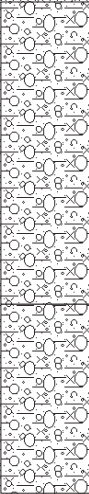
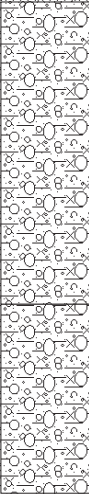
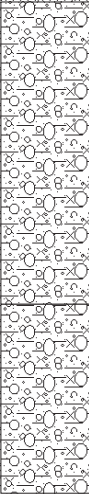

RC19 Box 1 of 1


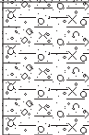
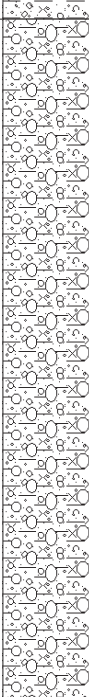




Appendix 3
Trial Pit Logs and Photographs



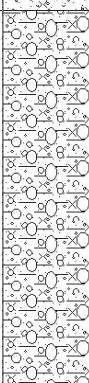
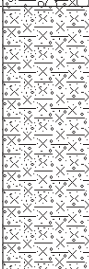
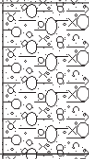


| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP01 | | | |
|--|-------|--|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 693958.608 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739151.571 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 55.32 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.30 x 0.60 x 2.10 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 55.22 | | | | |
| | | Soft becoming firm brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 55.0 | 0.50 | ICBR | MK14 | |
| | 0.5 | | | | 54.5 | | | | |
| | 1.0 | | | | 54.0 | 1.00 | B | MK15 | |
| | 1.5 | | | | 54.0 | | | | |
| | 1.80 | | | | 53.5 | | | | |
| | 2.0 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 53.52 | 2.00 | B | MK16 | |
| | 2.10 | Obstruction - boulders. | | | 53.22 | | | | |
| | | Pit terminated at 2.10m | | | 53.0 | | | | |
| | 2.5 | | | | 52.5 | | | | |
| | 3.0 | | | | 52.0 | | | | |
| | 3.5 | | | | 51.5 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |










| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP02 | | | |
|--|-------|--|--|--------------------|------------|------------------------------|------|--|--------------|
| Contract: | | Moygaddy | Easting: | 693988.420 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739286.118 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 57.37 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.00 x 0.60 x 3.00 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 57.27 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 57.0 | | | | |
| 0.5 | 0.60 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 56.77 | 0.50 | ICBR | MK07 | |
| | | | | | 56.5 | | | | |
| 1.0 | | | | | 56.0 | 1.00 | B | MK08 | |
| | 1.50 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 55.87 | | | | |
| | | | | | 55.5 | | | | |
| 2.0 | | | | | 55.0 | 2.00 | B | MK09 | |
| | | | | | 54.5 | | | | |
| 3.0 | 3.00 | Pit terminated at 3.00m | | | 54.37 | 3.00 | B | MK10 | |
| | | | | | 54.0 | | | | |
| | | | | | 53.5 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | |
| | | Scheduled depth. | Pit walls stable. | Dry | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | |


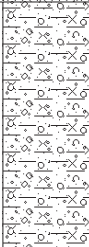
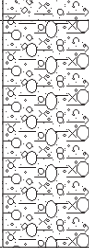

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP03 | | | | | |
|--|---|-------------------------|---------------------|--|--|-----------------------|--|-----------------------|------|--------------|--|
| Contract: | | Moygaddy | | Easting: | 693767.173 | Date: | 16/06/2021 | | | | |
| Location: | | Maynooth, Co. Meath | | Northing: | 739286.781 | Excavator: | JCB 3CX | | | | |
| Client: | | Sky Castle Ltd | | Elevation: | 55.26 | Logged By: | M. Kaliski | | | | |
| Engineer: | | OCSC | | Dimensions (LxWxD) (m): | 4.20 x 0.60 x 1.40 | Status: | FINAL | | | | |
| Level (mbgl) | | Stratum Description | | | Legend | Level (mOD) | | Samples / Field Tests | | Water Strike | |
| Scale: | Depth | | | | | Scale: | Depth: | Depth | Type | Result | |
| 0.10 | TOPSOIL. | | | |  | 55.16 | | | | | |
| 0.5 | Firm brown slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter). | | |  | 55.0 | 0.50 | B | MK01 | | | |
| 0.90 | Firm brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter). | | |  | 54.36 | 0.50 | ICBR | MK02 | | | |
| 1.40 | Obstruction - boulders. | | |  | 53.86 | 1.00 | B | MK03 | | | |
| 1.5 | Pit terminated at 1.40m | | | | | | | | | | |
| 2.0 | | | | | | | | | | | |
| 2.5 | | | | | | | | | | | |
| 3.0 | | | | | | | | | | | |
| 3.5 | | | | | | | | | | | |
| | | | | | | | | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | | | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP04 | | | |
|--|-------------------------|--|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 693682.930 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739502.916 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 56.95 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.20 x 0.60 x 2.40 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 56.85 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 56.5 | | | | |
| 0.5 | 0.50 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). |  | | 56.45 | 0.50 | ICBR | MK43 | |
| 1.0 | | | | | 56.0 | 1.00 | B | MK44 | |
| 1.5 | | | | | 55.5 | | | | |
| 2.0 | | | | | 55.0 | | | | ▼ |
| 2.30 | 2.40 | Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). Obstruction - boulders. |  | | 54.65 | | | | |
| 2.5 | | | | | 54.55 | 2.40 | B | MK45 | |
| | | Pit terminated at 2.40m | | | 54.5 | | | | |
| 3.0 | | | | | 54.0 | | | | |
| 3.5 | | | | | 53.5 | | | | |
| | | | | | 53.0 | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | | |
| | Obstruction - boulders. | Pit walls stable. | 2.00 Seepage | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |


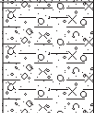
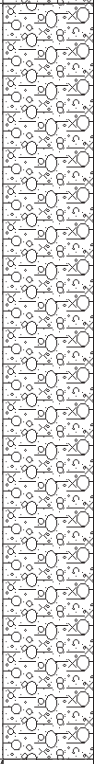

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP05 | | | |
|----------------------|-----------------------|---|-------------------------|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 693971.792 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739656.168 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 58.70 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.90 x 0.60 x 2.60 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. | | | 58.60 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. | | | 58.5 | | | | |
| | 0.60 | Firm brown slightly sandy slightly gravelly clayey SILT. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. | | | 58.10 | | | | |
| | | | | | 58.0 | | | | |
| | | | | | 57.5 | | | | |
| | 1.50 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). | | | 57.20 | | | | |
| | | | | | 57.0 | | | | ▼ |
| | | | | | 56.5 | | | | |
| | 2.40 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). | | | 56.30 | | | | |
| | 2.60 | Obstruction - boulders. | | | 56.10 | | | | |
| | | Pit terminated at 2.60m | | | 56.0 | | | | |
| | | | | | 55.5 | | | | |
| | | | | | 55.0 | | | | |
| | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | | |
| | Pit wall instability. | Walls collapsing between 1.50mbgl and 2.40mbgl. | 1.70 Slow | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP06 | | | |
|--|-------------------------|---|--|-----------------------|--------|--|------|--------|--------------|
| Contract: Moygaddy | | Easting: 693989.839 | | Date: 17/06/2021 | | | | | |
| Location: Maynooth, Co. Meath | | Northing: 739437.563 | | Excavator: JCB 3CX | | | | | |
| Client: Sky Castle Ltd | | Elevation: 57.88 | | Logged By: M. Kaliski | | | | | |
| Engineer: OCSC | | Dimensions (LxWxD) (m): 4.40 x 0.60 x 2.50 | | Status: FINAL | | | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 57.78 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. |  | | 57.58 | | | | |
| | 0.30 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). |  | 57.5 | | 0.50 | ICBR | MK46 | |
| | 0.5 | | | 57.0 | | 1.00 | B | MK47 | |
| | 1.30 | Firm brown slightly sandy slightly gravelly clayey SILT with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | 56.58 | | 1.50 | B | MK48 | |
| | 1.5 | | | 56.5 | | | | | |
| | 2.00 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). |  | 55.88 | | 2.20 | B | MK49 | ▼ |
| | 2.40 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). |  | 55.5 | | | | | |
| | 2.50 | Obstruction - boulders. | | 55.38 | | 2.50 | B | MK50 | |
| | | Pit terminated at 2.50m | | | | | | | |
| | 3.0 | | | 55.0 | | | | | |
| | 3.5 | | | 54.5 | | | | | |
| | | | | 54.0 | | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | | |
| | Obstruction - boulders. | Pit walls stable. | 2.00 Seepage | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP07 | | | |
|--|-------|--|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694176.647 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739446.736 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 58.93 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.20 x 0.60 x 2.50 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 58.83 | | | | |
| | 0.20 | Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. |  | | 58.73 | | | | |
| | 0.5 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. |  | | 58.5 | 0.50 | ICBR | MK51 | |
| | 1.0 | Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 58.0 | 1.00 | B | MK52 | |
| | 1.5 | |  | | 57.5 | | | | |
| | 2.0 | |  | | 57.0 | | | | |
| | 2.40 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter). |  | | 56.53 | | | | |
| | 2.50 | Obstruction - boulders. |  | | 56.43 | 2.50 | B | MK53 | |
| | | Pit terminated at 2.50m | | | 56.0 | | | | |
| | 3.0 | | | | 55.5 | | | | |
| | 3.5 | | | | 55.0 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |










| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP08 | | | |
|--|-------|---|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694199.733 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739712.642 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 61.26 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.80 x 0.60 x 1.40 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 61.16 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 61.0 | 0.50 | ICBR | MK37 | |
| | 0.80 | Firm grey brown slightly sandy gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 60.46 | 1.00 | B | MK38 | |
| | 1.40 | Obstruction - boulders. | | | 59.86 | | | | |
| | | Pit terminated at 1.40m | | | | | | | |
| | 1.5 | | | | 59.5 | | | | |
| | 2.0 | | | | 59.0 | | | | |
| | 2.5 | | | | 58.5 | | | | |
| | 3.0 | | | | 58.0 | | | | |
| | 3.5 | | | | 57.5 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |


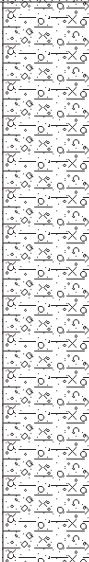
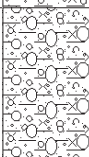

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP09 | | | |
|----------------------|-------|---|-------------------------|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694508.798 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739701.821 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 62.01 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.00 x 0.60 x 1.60 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 61.91 | | | | |
| | 0.5 | | | | 61.5 | 0.50 | ICBR | MK60 | |
| | 1.0 | | | | 61.0 | | | | |
| | 1.5 | | | | 60.5 | | | | |
| | 1.60 | Obstruction - boulders. Pit terminated at 1.60m | | | 60.41 | | | | |
| | 2.0 | | | | 60.0 | | | | |
| | 2.5 | | | | 59.5 | | | | |
| | 3.0 | | | | 59.0 | | | | |
| | 3.5 | | | | 58.5 | | | | |
| | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |


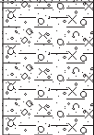
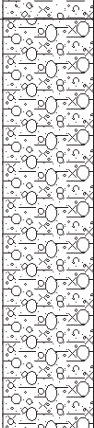

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP10 | | | |
|--|-------|---|---|--------------------|------------|------------------------------|------|--|--------------|
| Contract: | | Moygaddy | Easting: | 694486.386 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739434.493 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 58.96 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.30 x 0.60 x 2.40 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 58.86 | | | | |
| | 0.40 | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 58.56 | | | | |
| 0.5 | | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | 58.5 | 58.56 | 0.50 | ICBR | MK62 | |
| 1.0 | | | | 58.0 | | 1.00 | B | MK63 | |
| 1.5 | | | | 57.5 | | | | | |
| 2.0 | | | | 57.0 | | | | | |
| 2.5 | 2.40 | Obstruction - boulders. | | 56.56 | 56.56 | 2.40 | B | MK64 | ▼ |
| | | Pit terminated at 2.40m | | 56.5 | | | | | |
| | | | | 56.0 | | | | | |
| | | | | 55.5 | | | | | |
| | | | | 55.0 | | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | |
| | | Obstruction - boulders. | Pit walls stable. | 2.10 Seepage | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | |



| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP11 | | | |
|-------------------------------|-------------------------|--|---------------------|-----------------------|----------|------------------------------|--|--------|--------------|
| Contract: Moygaddy | | Easting: 694739.889 | | Date: 17/06/2021 | | | | | |
| Location: Maynooth, Co. Meath | | Northing: 739363.529 | | Excavator: JCB 3CX | | | | | |
| Client: Sky Castle Ltd | | Elevation: 59.42 | | Logged By: M. Kaliski | | | | | |
| Engineer: OCSC | | Dimensions (LxWxD) (m): 4.10 x 0.60 x 2.30 | | Status: FINAL | | | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. | | | 59.32 | | | | |
| | 0.50 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 58.92 | 0.50 | ICBR | MK57 | |
| | 1.50 | | | | 58.00 | 1.50 | B | MK58 | |
| | 2.10 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 57.32 | | | | |
| | 2.30 | Obstruction - boulders. Pit terminated at 2.30m | | | 57.12 | 2.20 | B | MK59 | |
| | 2.50 | | | | 57.00 | | | | |
| | 3.00 | | | | 56.50 | | | | |
| | 3.50 | | | | 56.00 | | | | |
| | | | | | 55.50 | | | | |
| | Termination: | | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | Obstruction - boulders. | | Pit walls stable. | 1.80 Seepage | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP12 | | | |
|----------------------|-------|---|-------------------------|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694471.269 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739060.502 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 56.97 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.70 x 0.60 x 2.30 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. | | | 56.87 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. | | | 56.5 | | | | |
| 0.5 | 0.50 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 56.47 | 0.50 | ICBR | MK34 | |
| 1.0 | | | | | 56.0 | 1.00 | B | MK35 | |
| 1.5 | 1.50 | Grey brown silty sandy fine to coarse, angular to subrounded | | | 55.5 | | | | ▼ |
| 1.60 | | GRAVEL of limestone with high cobble and low boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 55.37 | | | | |
| 2.0 | | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 55.0 | 2.00 | B | MK36 | |
| 2.20 | 2.20 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to | | | 54.77 | | | | |
| 2.30 | 2.30 | coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 54.67 | | | | |
| 2.5 | | Obstruction - boulders. | | | 54.5 | | | | |
| | | Pit terminated at 2.30m | | | | | | | |
| | | | | | 54.0 | | | | |
| | | | | | 53.5 | | | | |
| | | | | | 53.0 | | | | |
| | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Obstruction - boulders. | Pit walls stable. | 1.50 Seepage | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |


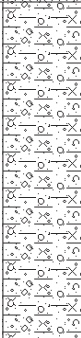
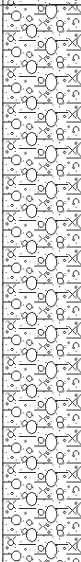


| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP13 | | | |
|--|-------------------------|--|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694562.423 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 738770.148 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 52.93 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.90 x 0.60 x 2.10 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 52.83 | | | | |
| | 0.5 | |  | | 52.5 | 0.50 | ICBR | MK27 | |
| | 1.0 | |  | | 52.0 | 1.00 | B | MK28 | |
| | 1.20 | Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of limestone with high cobble and low boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 51.73 | | | | |
| | 1.5 | |  | | 51.5 | 1.50 | B | MK29 | |
| | 1.60 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 51.33 | | | | |
| | 2.0 | |  | | 51.0 | 2.00 | B | MK30 | ▼ |
| | 2.10 | Obstruction - boulders. <p style="text-align: center;">Pit terminated at 2.10m</p> |  | | 50.83 | | | | |
| | 2.5 | | | | 50.5 | | | | |
| | 3.0 | | | | 50.0 | | | | |
| | 3.5 | | | | 49.5 | | | | |
| | | | | | 49.0 | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | | |
| | Obstruction - boulders. | Pit walls stable. | 1.80 Seepage | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |


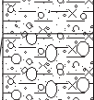
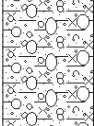
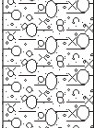
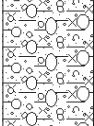
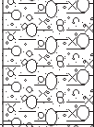

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP14 | | | |
|--|-------|--|--|--------------------|------------|------------------------------|------|--|--------------|
| Contract: | | Moygaddy | Easting: | 694240.465 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739010.894 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 55.01 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.90 x 0.60 x 2.00 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 54.91 | | | | |
| | | Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | | | | | |
| | 0.5 | | | | 54.5 | 0.50 | ICBR | MK24 | |
| | 1.0 | | | | 54.0 | 1.00 | B | MK25 | |
| | 1.5 | | | | 53.5 | | | | |
| | 1.60 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 53.41 | | | | |
| | 2.0 | | | | 53.0 | 1.80 | B | MK26 | |
| | 2.00 | Obstruction - boulders. | | | 53.01 | | | | |
| | | Pit terminated at 2.00m | | | | | | | |
| | 2.5 | | | | 52.5 | | | | |
| | 3.0 | | | | 52.0 | | | | |
| | 3.5 | | | | 51.5 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP15 | | | |
|--|-------|---|---|--------------------|------------|------------------------------|------|--|--------------|
| Contract: | | Moygaddy | Easting: | 694131.238 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739202.931 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 55.37 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.20 x 0.60 x 1.60 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 55.27 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 55.0 | | | | |
| | 0.50 | Firm becoming stiff grey brown slightly sandy gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 54.87 | 0.50 | ICBR | MK22 | |
| | | | | | 54.5 | | | | |
| | 1.00 | | | | 54.0 | 1.00 | B | MK23 | |
| | | | | | 53.77 | | | | |
| | 1.60 | Obstruction - boulders. Pit terminated at 1.60m | | | 53.5 | | | | ▼ |
| | | | | | 53.0 | | | | |
| | | | | | 52.5 | | | | |
| | | | | | 52.0 | | | | |
| | | | | | 51.5 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | |
| | | Obstruction - boulders. | Pit walls stable. | 1.60 Medium | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | |


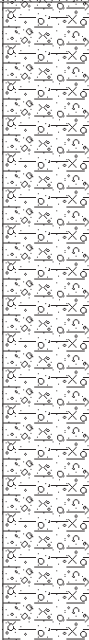
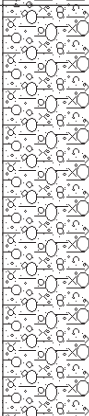

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP16 | | | |
|--|-------------------------|---|---|--------------------|------------|--|------|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694580.524 | Date: | 17/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739205.916 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 58.33 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.10 x 0.60 x 2.20 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | <p>TOPSOIL.</p> <p>Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).</p> |  | 58.23 | | | | | |
| | 0.5 | | | 58.0 | 0.50 | ICBR | MK54 | | |
| | 1.0 | | 57.5 | 1.00 | B | MK55 | | | |
| | 1.5 | | 57.0 | | | | | | |
| | 2.0 | | 56.5 | | | | | | |
| | 2.10 | | 56.23 | | | | | | |
| | 2.20 | <p>Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter).</p> <p>Obstruction - boulders.</p> <p style="text-align: center;">Pit terminated at 2.20m</p> | 56.13 | 2.20 | B | MK56 | | | |
| | 2.5 | | 56.0 | | | | | | |
| | 3.0 | | 55.5 | | | | | | |
| | 3.5 | | 55.0 | | | | | | |
| | | | 54.5 | | | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | | |
| | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP17 | | | |
|----------------------|-------|--|-------------------------|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 693968.747 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739114.742 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 54.52 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.20 x 0.60 x 1.70 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. | | | 54.42 | | | | |
| | 0.5 | | | | 54.0 | 0.50 | ICBR | MK17 | |
| | 1.0 | | | | 53.5 | 1.00 | B | MK18 | |
| | 1.70 | Obstruction - boulders. Pit terminated at 1.70m | | | 52.82 | | | | |
| | 2.0 | | | | 52.5 | | | | |
| | 2.5 | | | | 52.0 | | | | |
| | 3.0 | | | | 51.5 | | | | |
| | 3.5 | | | | 51.0 | | | | |
| | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP18 | | | |
|--|-------|--|--|--------------------|------------|------------------------------|------|--|--------------|
| Contract: | | Moygaddy | Easting: | 693940.121 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739224.755 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 55.98 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.10 x 0.60 x 2.50 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 55.88 | | | | |
| | | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | | | | | |
| 0.5 | | | | | 55.5 | 0.50 | ICBR | MK11 | |
| 1.0 | 1.00 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 55.0 | 54.98 | 1.00 | B | MK12 |
| 1.5 | | | | | 54.5 | | | | |
| 2.0 | | | | | 54.0 | | | | |
| 2.5 | 2.50 | Obstruction - boulders. Pit terminated at 2.50m |  | | 53.5 | 53.48 | 2.50 | B | MK13 |
| 3.0 | | | | | 53.0 | | | | |
| 3.5 | | | | | 52.5 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | |
| | | Strength of soil and boulders. | Pit walls stable. | Dry | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP19 | | | |
|--|-------------------------|--|---|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 693876.942 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739296.996 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 55.71 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.00 x 0.60 x 1.90 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 55.61 | | | | |
| | 0.20 | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | 55.5 | 55.51 | | | | |
| | 0.5 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 55.0 | 0.50 | ICBR | MK04 | |
| | 1.0 | |  | | 54.5 | 1.00 | B | MK05 | |
| | 1.70 | Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 54.0 | 54.01 | | | |
| | 1.90 | Obstruction - boulders. |  | | 53.81 | 1.80 | B | MK06 | ▼ |
| | 2.0 | Pit terminated at 1.90m | | | 53.5 | | | | |
| | 2.5 | | | | 53.0 | | | | |
| | 3.0 | | | | 52.5 | | | | |
| | 3.5 | | | | 52.0 | | | | |
|  | Termination: | | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | Obstruction - boulders. | | Pit walls stable. | 1.70 Seepage | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP20 | | | |
|----------------------|-------|--|-------------------------|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694084.588 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739079.517 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 55.01 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.90 x 0.60 x 1.90 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. | | | 54.91 | | | | |
| | 0.40 | Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. | | | 54.61 | | | | |
| 0.5 | | | | | 54.5 | 0.50 | ICBR | MK19 | |
| 1.0 | | | | | 54.0 | 1.00 | B | MK20 | |
| 1.30 | | | | | 53.71 | | | | |
| 1.5 | | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). | | | 53.5 | 1.50 | B | MK21 | |
| 1.90 | | Obstruction - boulders. | | | 53.11 | | | | |
| 2.0 | | Pit terminated at 1.90m | | | 53.0 | | | | |
| 2.5 | | | | | 52.5 | | | | |
| 3.0 | | | | | 52.0 | | | | |
| 3.5 | | | | | 51.5 | | | | |
| | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Obstruction - boulders. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

| Contract No: 5863 | | Trial Pit Log | | | | Trial Pit No: TP21 | | | |
|--|-------------------------|--|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694518.865 | Date: | 16/06/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 738836.591 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 54.89 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 4.00 x 0.60 x 2.90 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 54.79 | | | | |
| | | Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 54.5 | 0.50 | ICBR | MK31 | |
| | 0.5 | | | | 54.0 | 1.00 | B | MK32 | |
| | 1.0 | | | | 53.5 | | | | |
| | 1.5 | | | | 53.09 | | | | |
| | 1.80 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter). |  | | 53.0 | 2.00 | B | MK33 | |
| | 2.0 | | | | 52.5 | | | | |
| | 2.5 | | | | 52.0 | | | | ▼ |
| | 2.90 | Obstruction - boulders. | | | 52.0 | 51.99 | | | ▼ |
| | 3.0 | Pit terminated at 2.90m | | | | | | | |
| | 3.5 | | | | 51.5 | | | | |
| | | | | | 51.0 | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | | Key: | | |
| | Obstruction - boulders. | Pit walls stable. | 2.90 Medium | - | | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

TP01 Sidewall



TP01 Spoil



TP02 Sidewall



TP02 Spoil



TP03 Sidewall



TP03 Spoil



TP04 Sidewall



TP04 Spoil



TP05 Sidewall



TP05 Spoil



TP06 Sidewall



TP06 Spoil



TP07 Sidewall



TP07 Spoil



TP08 Sidewall



TP08 Spoil



TP09 Sidewall



TP09 Spoil



TP10 Sidewall



TP10 Spoil



TP11 Sidewall



TP11 Spoil



TP12 Sidewall



TP12 Spoil



TP13 Sidewall



TP13 Spoil



TP14 Sidewall



TP14 Spoil



TP15 Sidewall



TP15 Spoil



TP16 Sidewall



TP16 Spoil



TP17 Sidewall



TP17 Spoil



TP18 Sidewall



TP18 Spoil



TP19 Sidewall



TP19 Spoil



TP20 Sidewall



TP20 Spoil



TP21 Sidewall



TP21 Spoil



Appendix 4
Soakaway Test Results

SOAKAWAY TEST



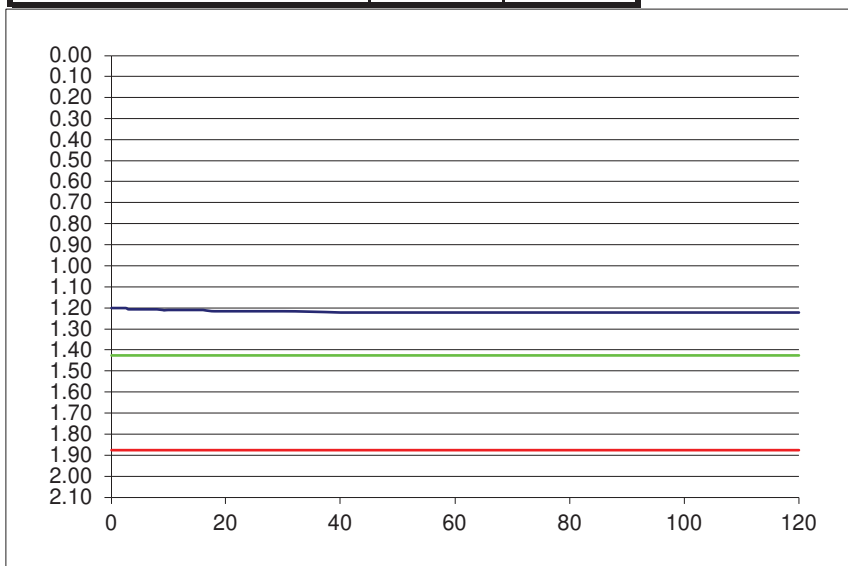
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP01 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | Description |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 1.80 | Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. |
| 1.80 | 2.10 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
Obstruction at 2.10mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 1.20 |
| 0.5 | 1.20 |
| 1 | 1.20 |
| 1.5 | 1.20 |
| 2 | 1.20 |
| 2.5 | 1.20 |
| 3 | 1.21 |
| 3.5 | 1.21 |
| 4 | 1.21 |
| 4.5 | 1.21 |
| 5 | 1.21 |
| 6 | 1.21 |
| 7 | 1.21 |
| 8 | 1.21 |
| 9 | 1.21 |
| 10 | 1.21 |
| 12 | 1.21 |
| 14 | 1.21 |
| 16 | 1.21 |
| 18 | 1.22 |
| 20 | 1.22 |
| 25 | 1.22 |
| 30 | 1.22 |
| 40 | 1.22 |
| 50 | 1.22 |
| 60 | 1.22 |
| 75 | 1.22 |
| 90 | 1.22 |
| 120 | 1.22 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 4.30 m |
| Width (m) | 0.60 m |
| Depth | 2.10 m |
| Water | |
| Start Depth of Water | 1.20 m |
| Depth of Water | 0.90 m |
| 75% Full | 1.43 m |
| 25% Full | 1.88 m |
| 75%-25% | 0.45 m |
| Volume of water (75%-25%) | 1.16 m ³ |
| Area of Drainage | 20.58 m ² |
| Area of Drainage (75%-25%) | 6.99 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail m/min or Fail m/s

SOAKAWAY TEST



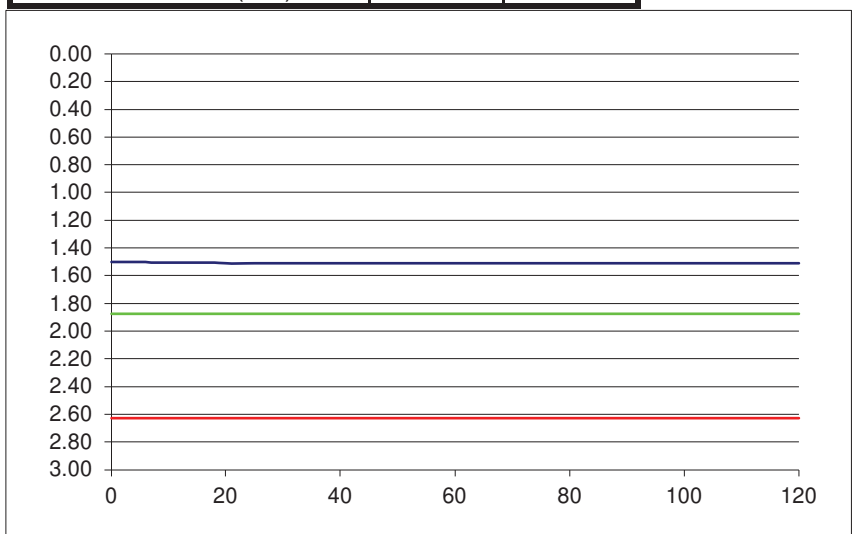
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP02 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.60 | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. |
| 0.60 | 1.50 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content. |
| 1.50 | 3.00 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
Test completed at base of pit.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 1.50 |
| 0.5 | 1.50 |
| 1 | 1.50 |
| 1.5 | 1.50 |
| 2 | 1.50 |
| 2.5 | 1.50 |
| 3 | 1.50 |
| 3.5 | 1.50 |
| 4 | 1.50 |
| 4.5 | 1.50 |
| 5 | 1.50 |
| 6 | 1.50 |
| 7 | 1.51 |
| 8 | 1.51 |
| 9 | 1.51 |
| 10 | 1.51 |
| 12 | 1.51 |
| 14 | 1.51 |
| 16 | 1.51 |
| 18 | 1.51 |
| 20 | 1.51 |
| 25 | 1.51 |
| 30 | 1.51 |
| 40 | 1.51 |
| 50 | 1.51 |
| 60 | 1.51 |
| 75 | 1.51 |
| 90 | 1.51 |
| 120 | 1.51 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 4.00 m |
| Width (m) | 0.60 m |
| Depth | 3.00 m |
| Water | |
| Start Depth of Water | 1.50 m |
| Depth of Water | 1.50 m |
| 75% Full | 1.88 m |
| 25% Full | 2.63 m |
| 75%-25% | 0.75 m |
| Volume of water (75%-25%) | 1.80 m ³ |
| Area of Drainage | 27.60 m ² |
| Area of Drainage (75%-25%) | 9.30 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail or Fail
m/min m/s

SOAKAWAY TEST



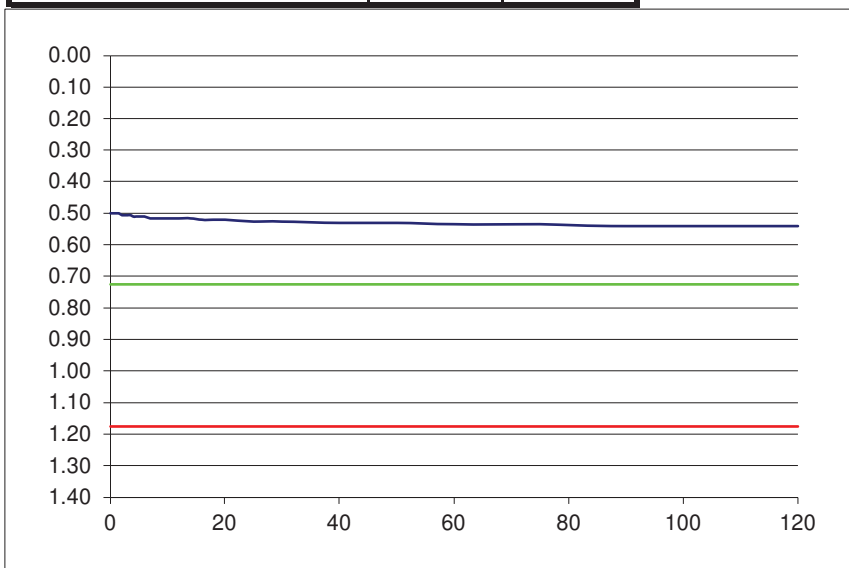
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP03 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|---|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.90 | Firm brown slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. |
| 0.90 | 1.40 | Firm brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
Obstructions at 1.40mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 0.50 |
| 0.5 | 0.50 |
| 1 | 0.50 |
| 1.5 | 0.50 |
| 2 | 0.51 |
| 2.5 | 0.51 |
| 3 | 0.51 |
| 3.5 | 0.51 |
| 4 | 0.51 |
| 4.5 | 0.51 |
| 5 | 0.51 |
| 6 | 0.51 |
| 7 | 0.52 |
| 8 | 0.52 |
| 9 | 0.52 |
| 10 | 0.52 |
| 12 | 0.52 |
| 14 | 0.52 |
| 16 | 0.52 |
| 18 | 0.52 |
| 20 | 0.52 |
| 25 | 0.53 |
| 30 | 0.53 |
| 40 | 0.53 |
| 50 | 0.53 |
| 60 | 0.54 |
| 75 | 0.54 |
| 90 | 0.54 |
| 120 | 0.54 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 4.20 m |
| Width (m) | 0.60 m |
| Depth | 1.40 m |
| Water | |
| Start Depth of Water | 0.50 m |
| Depth of Water | 0.90 m |
| 75% Full | 0.73 m |
| 25% Full | 1.18 m |
| 75%-25% | 0.45 m |
| Volume of water (75%-25%) | 1.13 m ³ |
| Area of Drainage | 13.44 m ² |
| Area of Drainage (75%-25%) | 6.84 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail m/min or Fail m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP04 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|---|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.50 | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. |
| 0.50 | 2.30 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 2.30 | 2.40 | Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
 Obstruction at 2.40mbgl.
 Water ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 4.20 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 2.40 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 75 | - | | |
| 90 | - | | |
| 120 | - | | |

f = **Fail** or **Fail**
 m/min m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP05 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|---|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.60 | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. |
| 0.60 | 1.50 | Firm brown slightly sandy slightly gravelly clayey SILT. |
| 1.50 | 2.40 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 2.40 | 2.60 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
 Obstruction at 2.60mbgl.
 Water ingress at 1.70mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 3.90 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 2.40 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 75 | - | | |
| 90 | - | | |
| 120 | - | | |

f = Fail or Fail
m/min
m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP06 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|-----------|---|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.30 | Soft brown slightly sandy slightly gravelly silty CLAY. |
| 0.30 | 1.30 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 1.30 | 2.00 | Firm brown slightly sandy slightly gravelly clayey SILT with low cobble |
| 2.00 | 2.40 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 2.40 | 2.50 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
 Obstruction at 2.50mbgl.
 Water ingress at 2.00mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 4.40 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 2.50 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = Fail or Fail
 m/min m/s

SOAKAWAY TEST



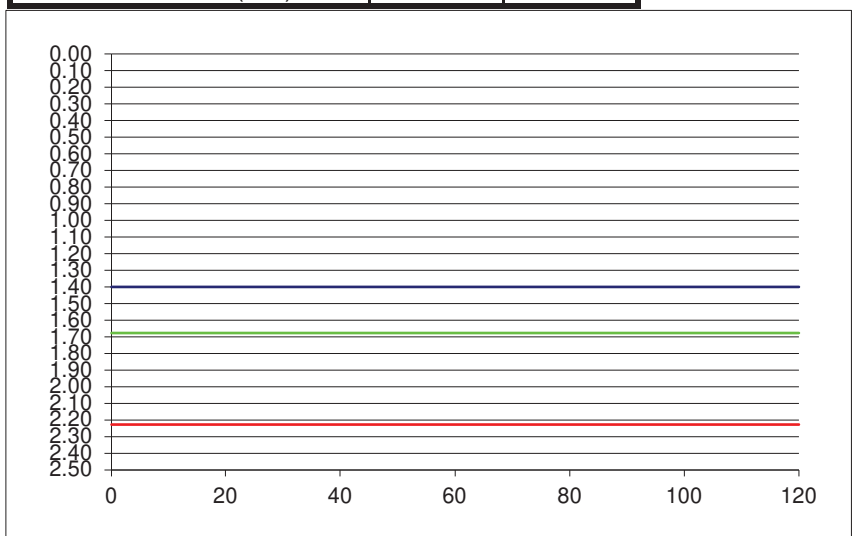
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP07 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.20 | Soft brown slightly sandy slightly gravelly silty CLAY. |
| 0.20 | 2.40 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 2.40 | 2.50 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
Obstructions at 2.50mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 1.40 |
| 0.5 | 1.40 |
| 1 | 1.40 |
| 1.5 | 1.40 |
| 2 | 1.40 |
| 2.5 | 1.40 |
| 3 | 1.40 |
| 3.5 | 1.40 |
| 4 | 1.40 |
| 4.5 | 1.40 |
| 5 | 1.40 |
| 6 | 1.40 |
| 7 | 1.40 |
| 8 | 1.40 |
| 9 | 1.40 |
| 10 | 1.40 |
| 12 | 1.40 |
| 14 | 1.40 |
| 16 | 1.40 |
| 18 | 1.40 |
| 20 | 1.40 |
| 25 | 1.40 |
| 30 | 1.40 |
| 40 | 1.40 |
| 50 | 1.40 |
| 60 | 1.40 |
| 75 | 1.40 |
| 90 | 1.40 |
| 120 | 1.40 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 4.20 m |
| Width (m) | 0.60 m |
| Depth | 2.50 m |
| Water | |
| Start Depth of Water | 1.40 m |
| Depth of Water | 1.10 m |
| 75% Full | 1.68 m |
| 25% Full | 2.23 m |
| 75%-25% | 0.55 m |
| Volume of water (75%-25%) | 1.39 m ³ |
| Area of Drainage | 24.00 m ² |
| Area of Drainage (75%-25%) | 7.80 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail m/min or **Fail m/s**

SOAKAWAY TEST



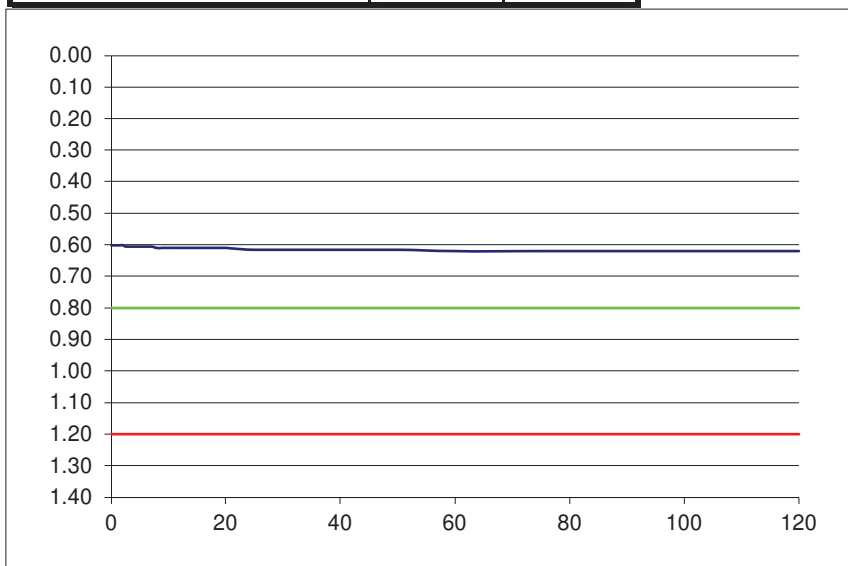
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP08 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.80 | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. |
| 0.80 | 1.40 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
Obstructions at 1.40mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 0.60 |
| 0.5 | 0.60 |
| 1 | 0.60 |
| 1.5 | 0.60 |
| 2 | 0.60 |
| 2.5 | 0.61 |
| 3 | 0.61 |
| 3.5 | 0.61 |
| 4 | 0.61 |
| 4.5 | 0.61 |
| 5 | 0.61 |
| 6 | 0.61 |
| 7 | 0.61 |
| 8 | 0.61 |
| 9 | 0.61 |
| 10 | 0.61 |
| 12 | 0.61 |
| 14 | 0.61 |
| 16 | 0.61 |
| 18 | 0.61 |
| 20 | 0.61 |
| 25 | 0.62 |
| 30 | 0.62 |
| 40 | 0.62 |
| 50 | 0.62 |
| 60 | 0.62 |
| 75 | 0.62 |
| 90 | 0.62 |
| 120 | 0.62 |

| Pit Dimensions (m) | |
|----------------------------|-----------------|
| Length (m) | 3.80 m |
| Width (m) | 0.60 m |
| Depth | 1.40 m |
| Water | |
| Start Depth of Water | 0.60 m |
| Depth of Water | 0.80 m |
| 75% Full | 0.80 m |
| 25% Full | 1.20 m |
| 75%-25% | 0.40 m |
| Volume of water (75%-25%) | 0.91 m3 |
| Area of Drainage | 12.32 m2 |
| Area of Drainage (75%-25%) | 5.80 m2 |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = **Fail** m/min or **Fail** m/s

SOAKAWAY TEST



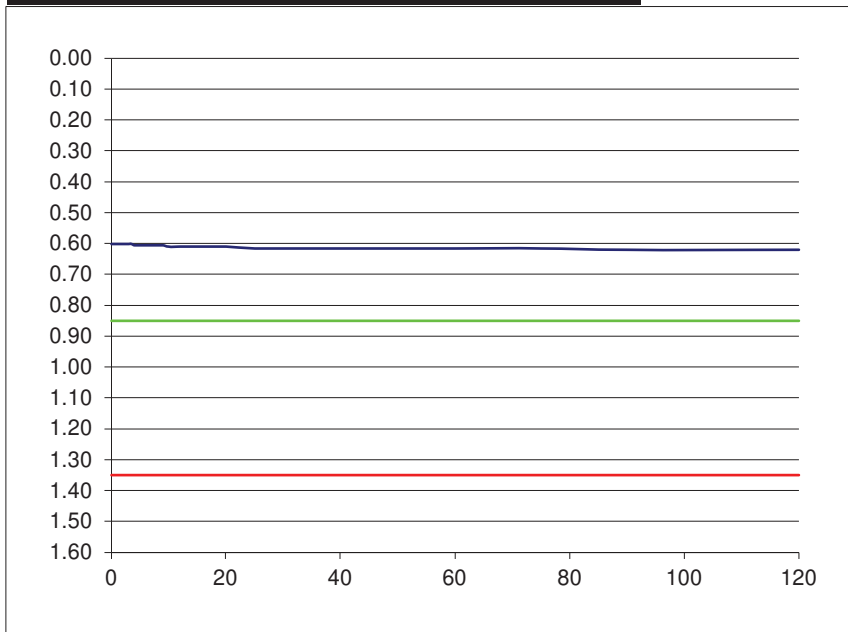
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP09 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 1.60 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
Obstructions at 1.60mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 0.60 |
| 0.5 | 0.60 |
| 1 | 0.60 |
| 1.5 | 0.60 |
| 2 | 0.60 |
| 2.5 | 0.60 |
| 3 | 0.60 |
| 3.5 | 0.60 |
| 4 | 0.61 |
| 4.5 | 0.61 |
| 5 | 0.61 |
| 6 | 0.61 |
| 7 | 0.61 |
| 8 | 0.61 |
| 9 | 0.61 |
| 10 | 0.61 |
| 12 | 0.61 |
| 14 | 0.61 |
| 16 | 0.61 |
| 18 | 0.61 |
| 20 | 0.61 |
| 25 | 0.62 |
| 30 | 0.62 |
| 40 | 0.62 |
| 50 | 0.62 |
| 60 | 0.62 |
| 75 | 0.62 |
| 90 | 0.62 |
| 120 | 0.62 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 4.00 m |
| Width (m) | 0.60 m |
| Depth | 1.60 m |
| Water | |
| Start Depth of Water | 0.60 m |
| Depth of Water | 1.00 m |
| 75% Full | 0.85 m |
| 25% Full | 1.35 m |
| 75%-25% | 0.50 m |
| Volume of water (75%-25%) | 1.20 m ³ |
| Area of Drainage | 14.72 m ² |
| Area of Drainage (75%-25%) | 7.00 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail m/min or Fail m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP10 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|---|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.40 | Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. |
| 0.40 | 2.40 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
 Obstruction at 2.40mbgl.
 Water ingress at 2.10mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 4.30 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 2.40 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = **Fail** or **Fail**
 m/min m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP11 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.50 | Soft brown slightly sandy slightly gravelly silty CLAY. |
| 0.50 | 2.10 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 2.10 | 2.30 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and boulder content. |

Remarks:
 Obstruction at 2.30mbgl.
 Water ingress at 1.80mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | | Pit Dimensions (m) |
|---------------------|-------------------|--|---|
| 0 | - | | Length (m) 4.10 m |
| 0.5 | - | | Width (m) 0.60 m |
| 1 | - | | Depth 2.30 m |
| 1.5 | - | | Water |
| 2 | - | | Start Depth of Water - m |
| 2.5 | - | | Depth of Water - m |
| 3 | - | | 75% Full - m |
| 3.5 | - | | 25% Full - m |
| 4 | - | | 75%-25% - m |
| 4.5 | - | | Volume of water (75%-25%) - m ³ |
| 5 | - | | Area of Drainage - m ² |
| 6 | - | | Area of Drainage (75%-25%) - m ² |
| 7 | - | | Time |
| 8 | - | | 75% Full N/A min |
| 9 | - | | 25% Full N/A min |
| 10 | - | | Time 75% to 25% N/A min |
| 12 | - | | Time 75% to 25% (sec) N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = Fail m/min or Fail m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP12 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|---|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.50 | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. |
| 0.50 | 1.50 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 1.50 | 1.60 | Grey brown silty sandy GRAVELwith high cobble and low boulder content. |
| 1.60 | 2.20 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 2.20 | 2.30 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
 Obstruction at 2.30mbgl.
 Water ingress at 1.50mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 3.70 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 2.30 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = Fail or **Fail**
 m/min m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP13 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 1.20 | Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with high |
| 1.20 | 1.60 | Grey brown silty sandy GRAVEL with high cobble and low boulder content. |
| 1.60 | 2.10 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
 Obstruction at 2.10mbgl.
 Water ingress at 1.80mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 3.90 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 2.10 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = **Fail** or **Fail**
 m/min m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP14 |
| Date: | 17/06/2021 |

Ground Conditions

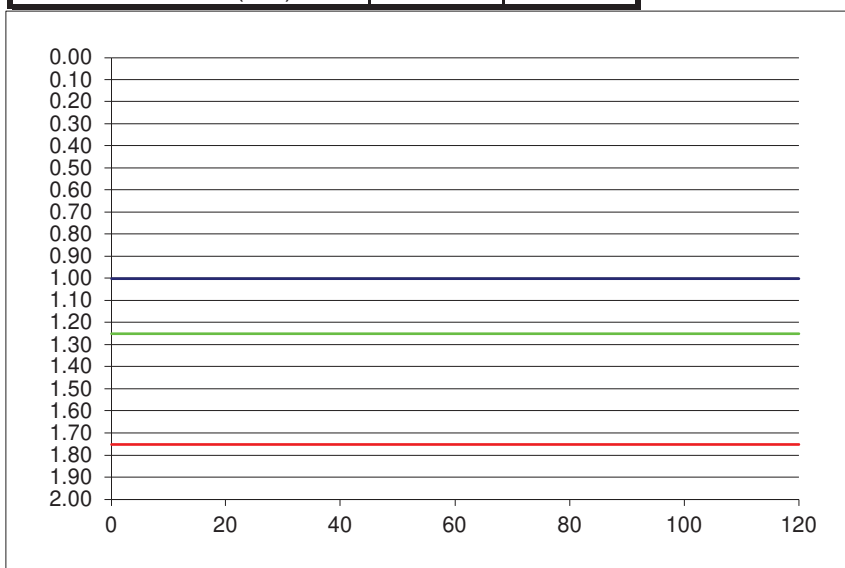
| From | To | |
|------|------|--|
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 1.60 | Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. |
| 1.60 | 2.00 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:

Obstructions at 2.00mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 1.00 |
| 0.5 | 1.00 |
| 1 | 1.00 |
| 1.5 | 1.00 |
| 2 | 1.00 |
| 2.5 | 1.00 |
| 3 | 1.00 |
| 3.5 | 1.00 |
| 4 | 1.00 |
| 4.5 | 1.00 |
| 5 | 1.00 |
| 6 | 1.00 |
| 7 | 1.00 |
| 8 | 1.00 |
| 9 | 1.00 |
| 10 | 1.00 |
| 12 | 1.00 |
| 14 | 1.00 |
| 16 | 1.00 |
| 18 | 1.00 |
| 20 | 1.00 |
| 25 | 1.00 |
| 30 | 1.00 |
| 40 | 1.00 |
| 50 | 1.00 |
| 60 | 1.00 |
| 75 | 1.00 |
| 90 | 1.00 |
| 120 | 1.00 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 3.90 m |
| Width (m) | 0.60 m |
| Depth | 2.00 m |
| Water | |
| Start Depth of Water | 1.00 m |
| Depth of Water | 1.00 m |
| 75% Full | 1.25 m |
| 25% Full | 1.75 m |
| 75%-25% | 0.50 m |
| Volume of water (75%-25%) | 1.17 m ³ |
| Area of Drainage | 18.00 m ² |
| Area of Drainage (75%-25%) | 6.84 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP15 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.50 | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. |
| 0.50 | 1.60 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
 Obstruction at 1.60mbgl.
 Water ingress at 1.60mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 4.20 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 1.60 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = **Fail** or **Fail**
 m/min m/s

SOAKAWAY TEST



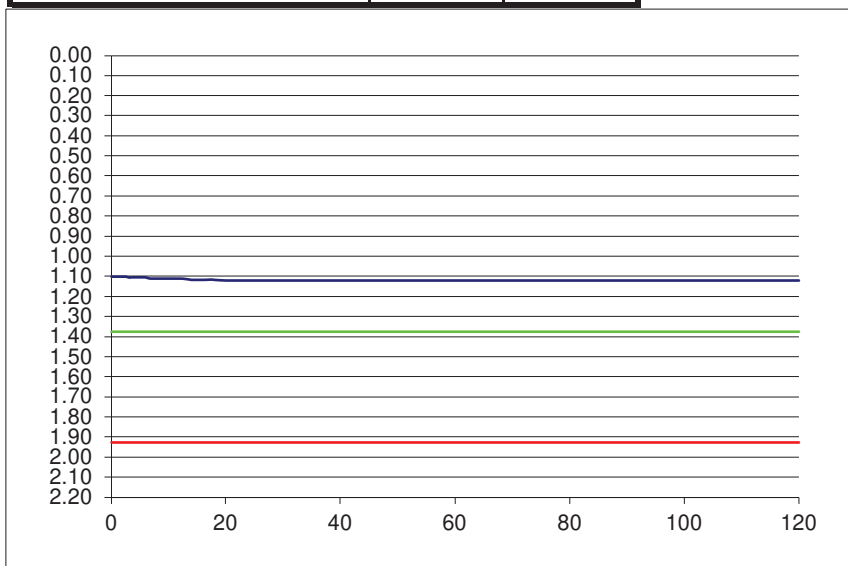
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP16 |
| Date: | 17/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 2.10 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |
| 2.10 | 2.20 | Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |

Remarks:
Obstructions at 2.20mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 1.10 |
| 0.5 | 1.10 |
| 1 | 1.10 |
| 1.5 | 1.10 |
| 2 | 1.10 |
| 2.5 | 1.10 |
| 3 | 1.11 |
| 3.5 | 1.11 |
| 4 | 1.11 |
| 4.5 | 1.11 |
| 5 | 1.11 |
| 6 | 1.11 |
| 7 | 1.11 |
| 8 | 1.11 |
| 9 | 1.11 |
| 10 | 1.11 |
| 12 | 1.11 |
| 14 | 1.12 |
| 16 | 1.12 |
| 18 | 1.12 |
| 20 | 1.12 |
| 25 | 1.12 |
| 30 | 1.12 |
| 40 | 1.12 |
| 50 | 1.12 |
| 60 | 1.12 |
| 75 | 1.12 |
| 90 | 1.12 |
| 120 | 1.12 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 4.10 m |
| Width (m) | 0.60 m |
| Depth | 2.20 m |
| Water | |
| Start Depth of Water | 1.10 m |
| Depth of Water | 1.10 m |
| 75% Full | 1.38 m |
| 25% Full | 1.93 m |
| 75%-25% | 0.55 m |
| Volume of water (75%-25%) | 1.35 m ³ |
| Area of Drainage | 20.68 m ² |
| Area of Drainage (75%-25%) | 7.63 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail m/min or Fail m/s

SOAKAWAY TEST



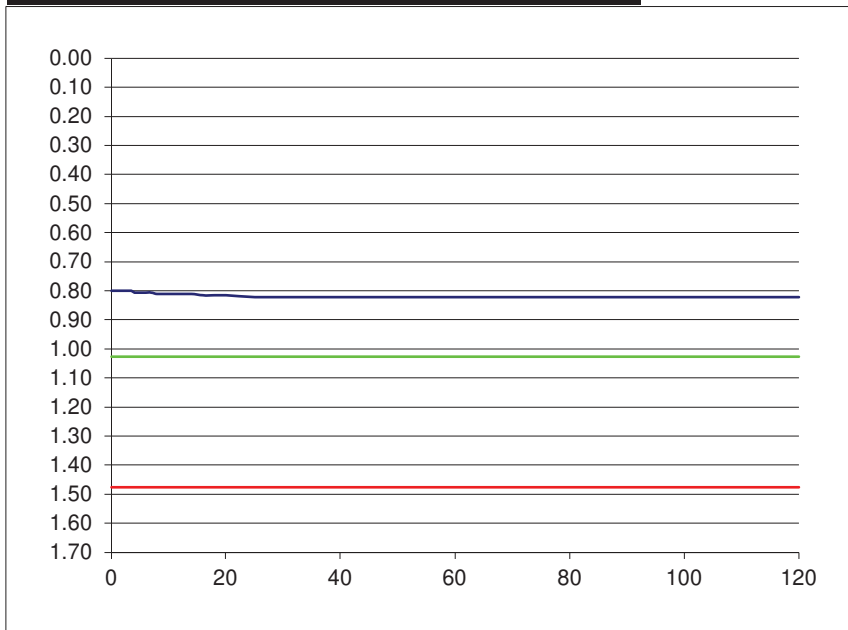
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP17 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | Description |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 1.70 | Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. |

Remarks:
Obstructions at 1.70mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 0.80 |
| 0.5 | 0.80 |
| 1 | 0.80 |
| 1.5 | 0.80 |
| 2 | 0.80 |
| 2.5 | 0.80 |
| 3 | 0.80 |
| 3.5 | 0.80 |
| 4 | 0.81 |
| 4.5 | 0.81 |
| 5 | 0.81 |
| 6 | 0.81 |
| 7 | 0.81 |
| 8 | 0.81 |
| 9 | 0.81 |
| 10 | 0.81 |
| 12 | 0.81 |
| 14 | 0.81 |
| 16 | 0.82 |
| 18 | 0.82 |
| 20 | 0.82 |
| 25 | 0.82 |
| 30 | 0.82 |
| 40 | 0.82 |
| 50 | 0.82 |
| 60 | 0.82 |
| 75 | 0.82 |
| 90 | 0.82 |
| 120 | 0.82 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 4.20 m |
| Width (m) | 0.60 m |
| Depth | 1.70 m |
| Water | |
| Start Depth of Water | 0.80 m |
| Depth of Water | 0.90 m |
| 75% Full | 1.03 m |
| 25% Full | 1.48 m |
| 75%-25% | 0.45 m |
| Volume of water (75%-25%) | 1.13 m ³ |
| Area of Drainage | 16.32 m ² |
| Area of Drainage (75%-25%) | 6.84 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail m/min or Fail m/s

SOAKAWAY TEST



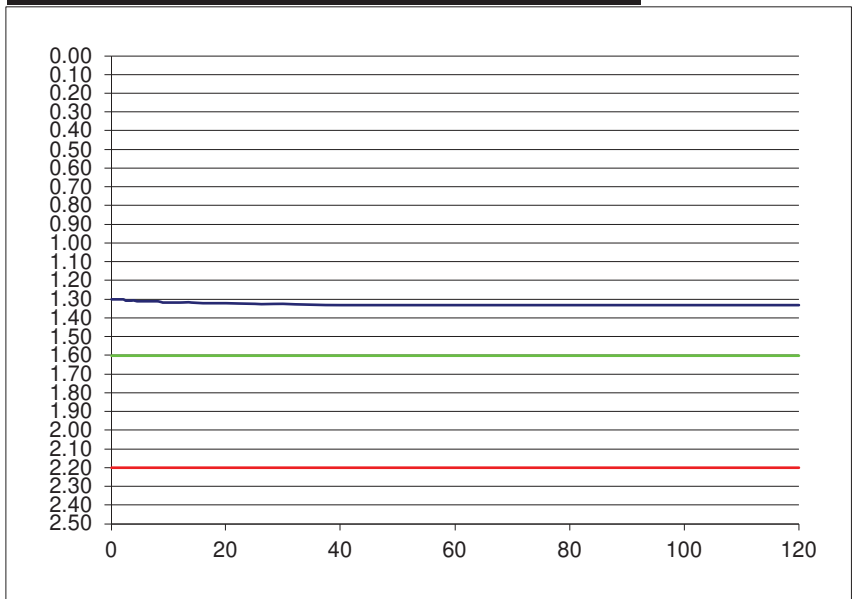
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP18 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 1.00 | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. |
| 1.00 | 2.50 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
Obstructions at 2.50mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 1.30 |
| 0.5 | 1.30 |
| 1 | 1.30 |
| 1.5 | 1.30 |
| 2 | 1.30 |
| 2.5 | 1.31 |
| 3 | 1.31 |
| 3.5 | 1.31 |
| 4 | 1.31 |
| 4.5 | 1.31 |
| 5 | 1.31 |
| 6 | 1.31 |
| 7 | 1.31 |
| 8 | 1.31 |
| 9 | 1.32 |
| 10 | 1.32 |
| 12 | 1.32 |
| 14 | 1.32 |
| 16 | 1.32 |
| 18 | 1.32 |
| 20 | 1.32 |
| 25 | 1.33 |
| 30 | 1.33 |
| 40 | 1.33 |
| 50 | 1.33 |
| 60 | 1.33 |
| 75 | 1.33 |
| 90 | 1.33 |
| 120 | 1.33 |

| Pit Dimensions (m) | |
|----------------------------|-----------------|
| Length (m) | 4.10 m |
| Width (m) | 0.60 m |
| Depth | 2.50 m |
| Water | |
| Start Depth of Water | 1.30 m |
| Depth of Water | 1.20 m |
| 75% Full | 1.60 m |
| 25% Full | 2.20 m |
| 75%-25% | 0.60 m |
| Volume of water (75%-25%) | 1.48 m3 |
| Area of Drainage | 23.50 m2 |
| Area of Drainage (75%-25%) | 8.10 m2 |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail or Fail
m/min m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP19 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|-----------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.20 | Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. |
| 0.20 | 1.70 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. |
| 1.70 | 1.90 | Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
 Obstruction at 1.90mbgl.
 Water ingress at 1.70mbgl - soils saturated and unsuitable for soakaway design.

| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 4.00 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 1.90 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = **Fail** or **Fail**
 m/min m/s

SOAKAWAY TEST



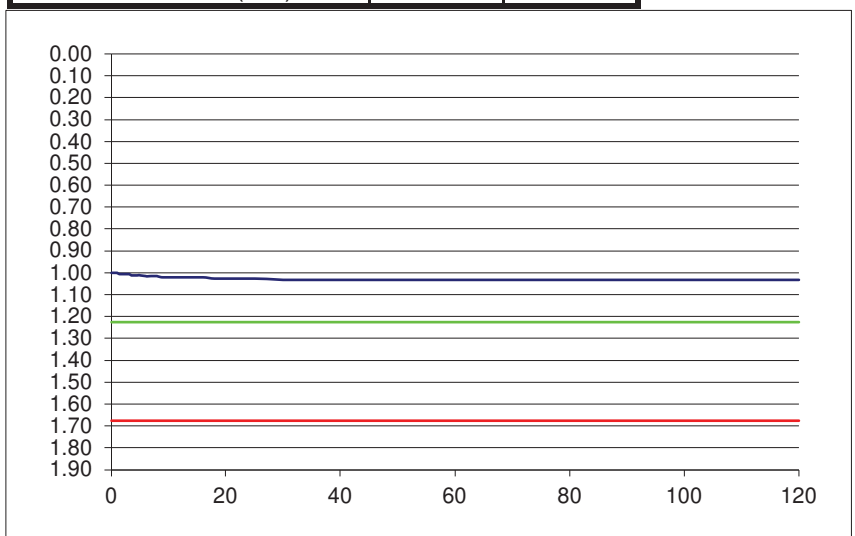
| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP20 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 0.40 | Soft brown slightly sandy slightly gravelly silty CLAY. |
| 0.40 | 1.30 | Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. |
| 1.30 | 1.90 | Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
Obstructions at 1.90mbgl.

| Elapsed Time (mins) | Fall of Water (m) |
|---------------------|-------------------|
| 0 | 1.00 |
| 0.5 | 1.00 |
| 1 | 1.00 |
| 1.5 | 1.01 |
| 2 | 1.01 |
| 2.5 | 1.01 |
| 3 | 1.01 |
| 3.5 | 1.01 |
| 4 | 1.01 |
| 4.5 | 1.01 |
| 5 | 1.01 |
| 6 | 1.02 |
| 7 | 1.02 |
| 8 | 1.02 |
| 9 | 1.02 |
| 10 | 1.02 |
| 12 | 1.02 |
| 14 | 1.02 |
| 16 | 1.02 |
| 18 | 1.03 |
| 20 | 1.03 |
| 25 | 1.03 |
| 30 | 1.03 |
| 40 | 1.03 |
| 50 | 1.03 |
| 60 | 1.03 |
| 75 | 1.03 |
| 90 | 1.03 |
| 120 | 1.03 |

| Pit Dimensions (m) | |
|----------------------------|-----------------------------|
| Length (m) | 3.90 m |
| Width (m) | 0.60 m |
| Depth | 1.90 m |
| Water | |
| Start Depth of Water | 1.00 m |
| Depth of Water | 0.90 m |
| 75% Full | 1.23 m |
| 25% Full | 1.68 m |
| 75%-25% | 0.45 m |
| Volume of water (75%-25%) | 1.05 m ³ |
| Area of Drainage | 17.10 m ² |
| Area of Drainage (75%-25%) | 6.39 m ² |
| Time | |
| 75% Full | N/A min |
| 25% Full | N/A min |
| Time 75% to 25% | N/A min |
| Time 75% to 25% (sec) | N/A sec |



f = Fail or Fail
m/min m/s

SOAKAWAY TEST



| | |
|---------------------------|---------------------|
| Project Reference: | 5863 |
| Contract name: | Moygaddy |
| Location: | Maynooth, Co. Meath |
| Test No: | TP21 |
| Date: | 16/06/2021 |

| Ground Conditions | | |
|--------------------------|------|--|
| From | To | |
| 0.00 | 0.10 | TOPSOIL. |
| 0.10 | 1.80 | Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. |
| 1.80 | 2.90 | Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. |

Remarks:
 Obstruction at 2.90mbgl.
 Water ingresses at 2.60mbgl and 2.90mbgl - soils saturated and unsuitable for soakaway design.

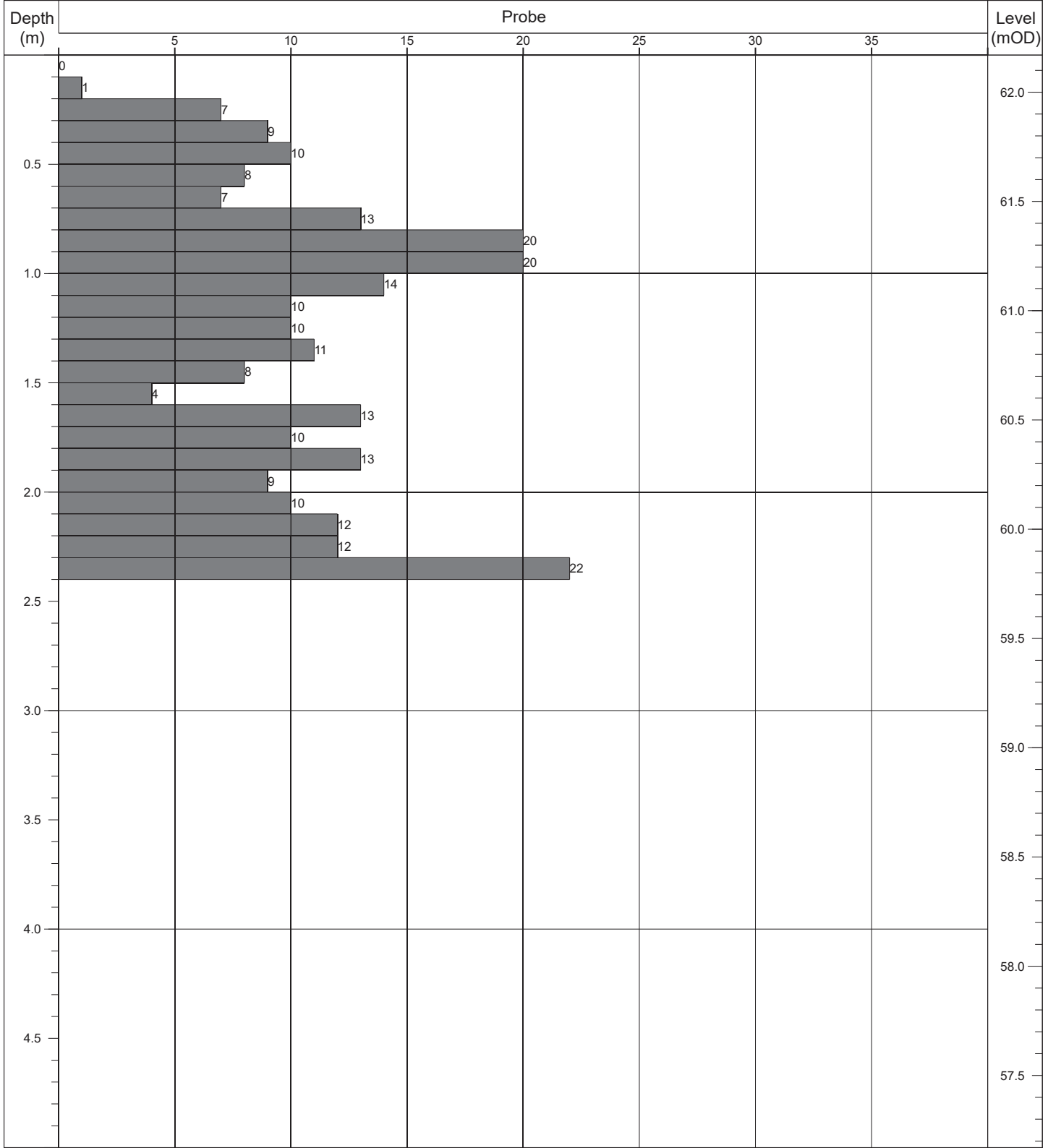
| Elapsed Time (mins) | Fall of Water (m) | Pit Dimensions (m) | |
|---------------------|-------------------|----------------------------|------------------|
| 0 | - | Length (m) | 4.00 m |
| 0.5 | - | Width (m) | 0.60 m |
| 1 | - | Depth | 2.90 m |
| 1.5 | - | Water | |
| 2 | - | Start Depth of Water | - m |
| 2.5 | - | Depth of Water | - m |
| 3 | - | 75% Full | - m |
| 3.5 | - | 25% Full | - m |
| 4 | - | 75%-25% | - m |
| 4.5 | - | Volume of water (75%-25%) | - m ³ |
| 5 | - | Area of Drainage | - m ² |
| 6 | - | Area of Drainage (75%-25%) | - m ² |
| 7 | - | Time | |
| 8 | - | 75% Full | N/A min |
| 9 | - | 25% Full | N/A min |
| 10 | - | Time 75% to 25% | N/A min |
| 12 | - | Time 75% to 25% (sec) | N/A sec |
| 14 | - | | |
| 16 | - | | |
| 18 | - | | |
| 20 | - | | |
| 25 | - | | |
| 30 | - | | |
| 40 | - | | |
| 50 | - | | |
| 60 | - | | |
| 90 | - | | |
| 120 | - | | |

f = **Fail** or **Fail**
 m/min m/s

Appendix 5

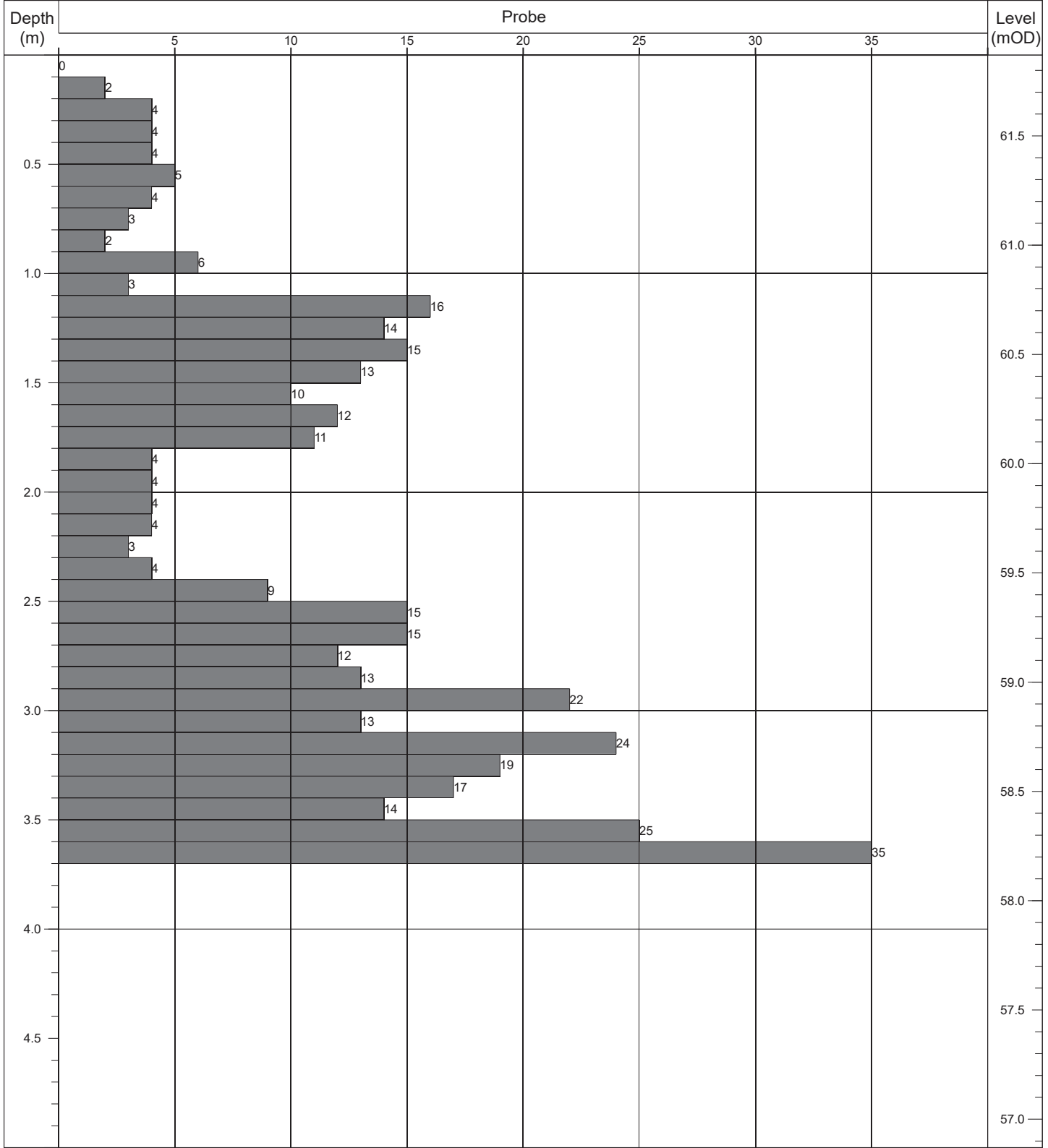
Dynamic Probe Logs

| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP01 |
| Contract: | Moygaddy | Easting: | 694395.693 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739790.416 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 62.17 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

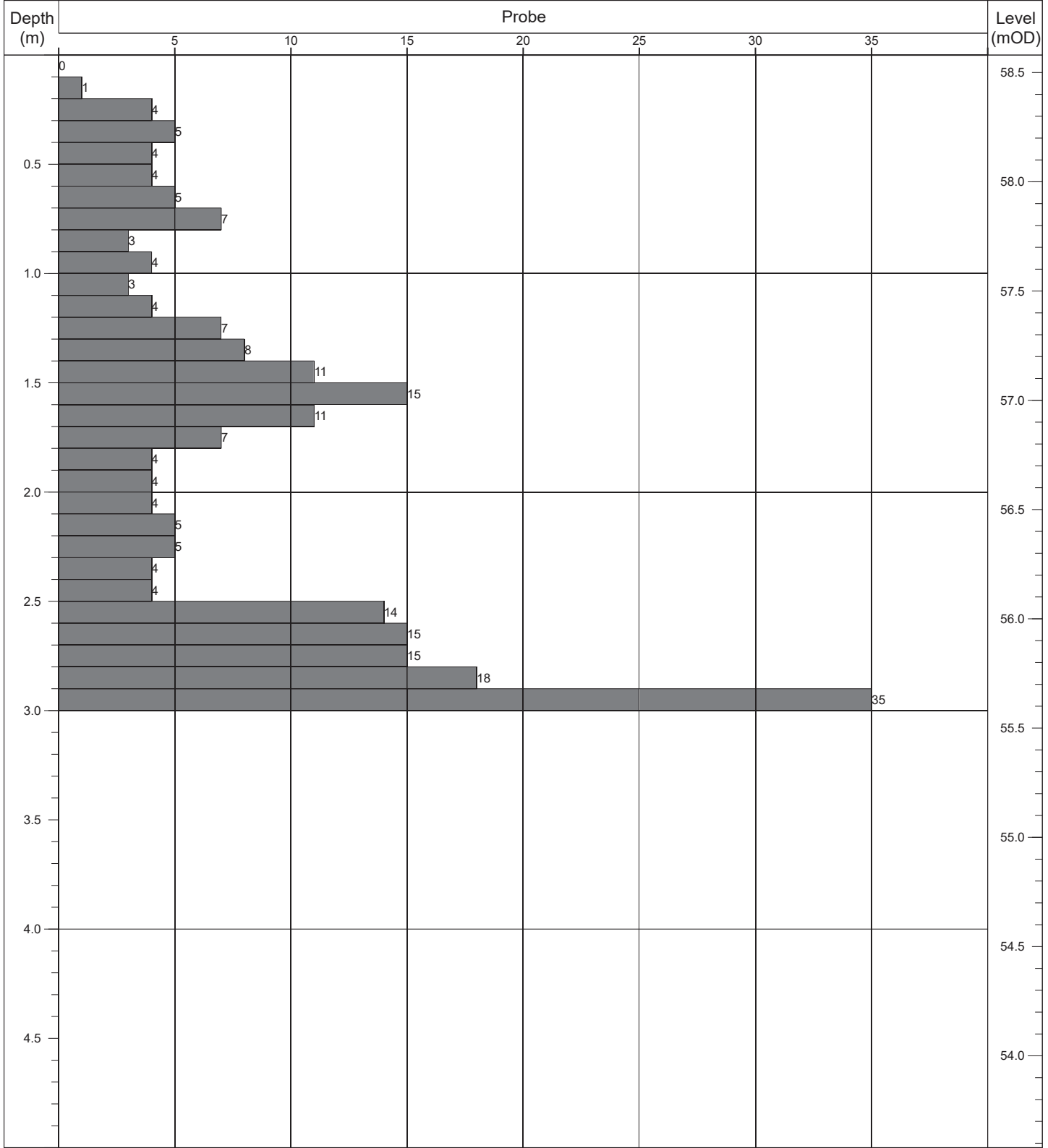
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP02 |
| Contract: | Moygaddy | Easting: | 694488.532 | Date Started: 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739787.664 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 61.87 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP03 |
|----------------------|--------------------------|--|--|--------------------------|

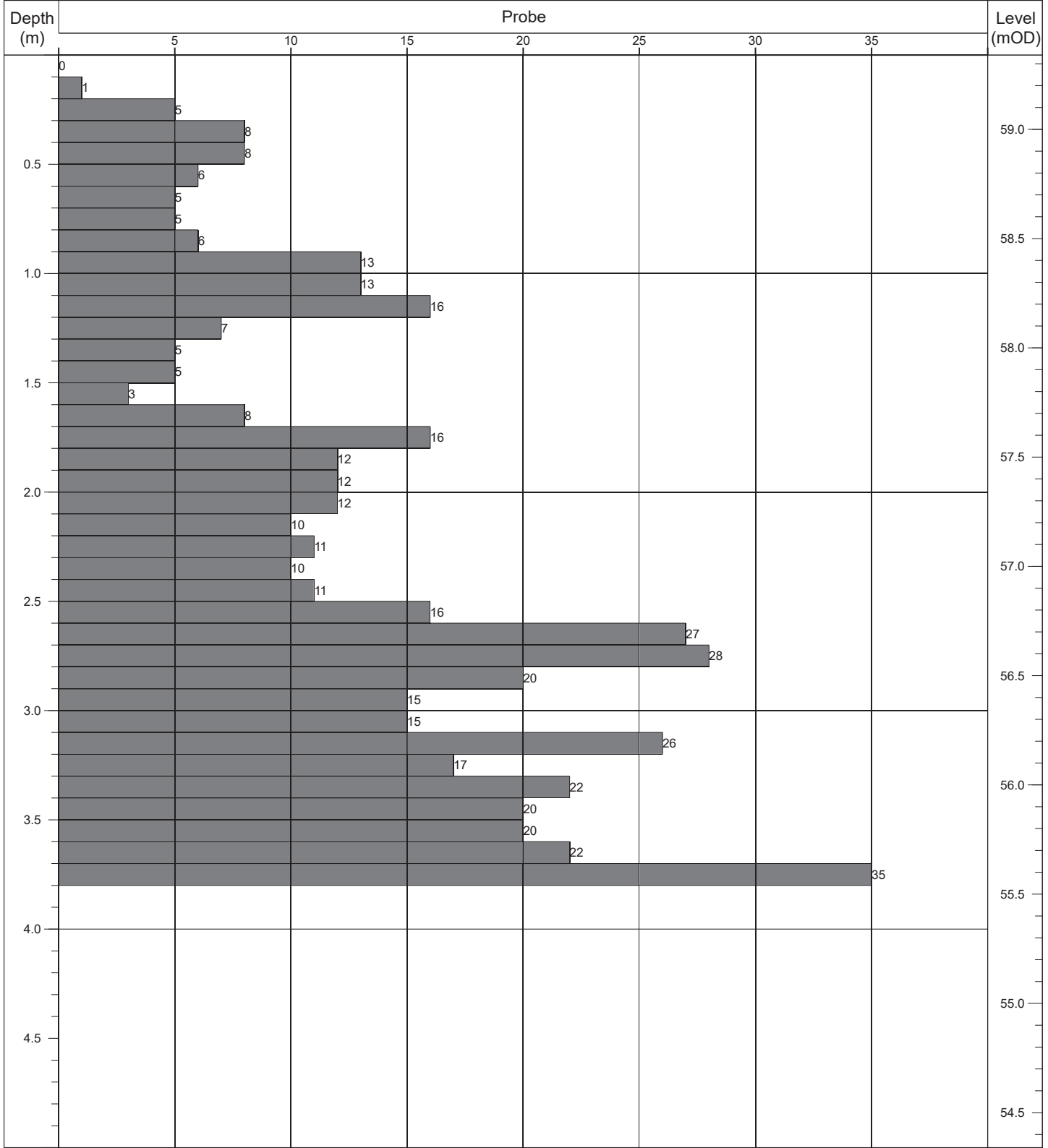
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693987.686 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739685.908 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.58 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.00m | Obstruction - boulders. | DPH | 50kg | 500mm | |

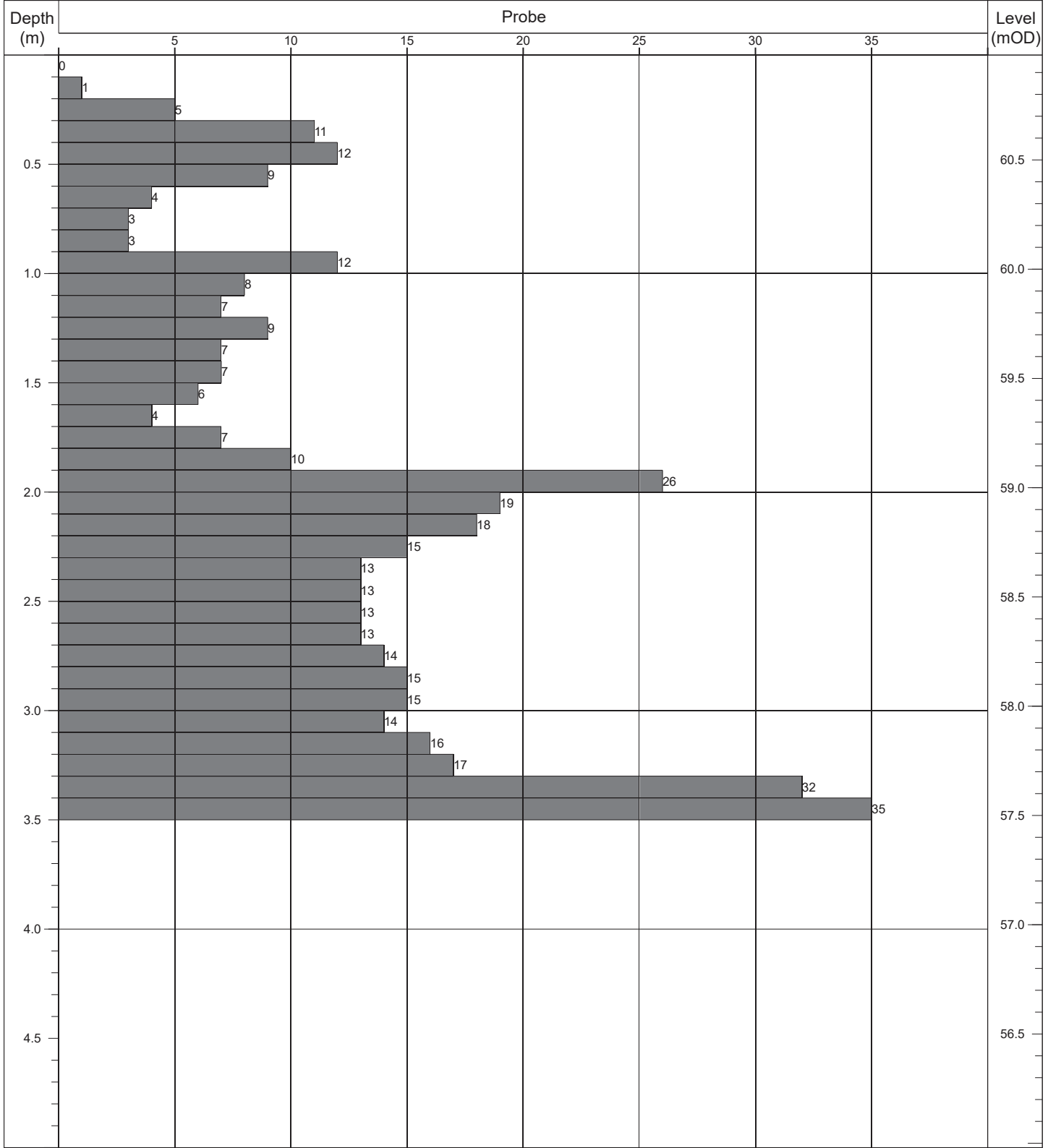
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP04 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694088.248 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739692.829 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.34 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

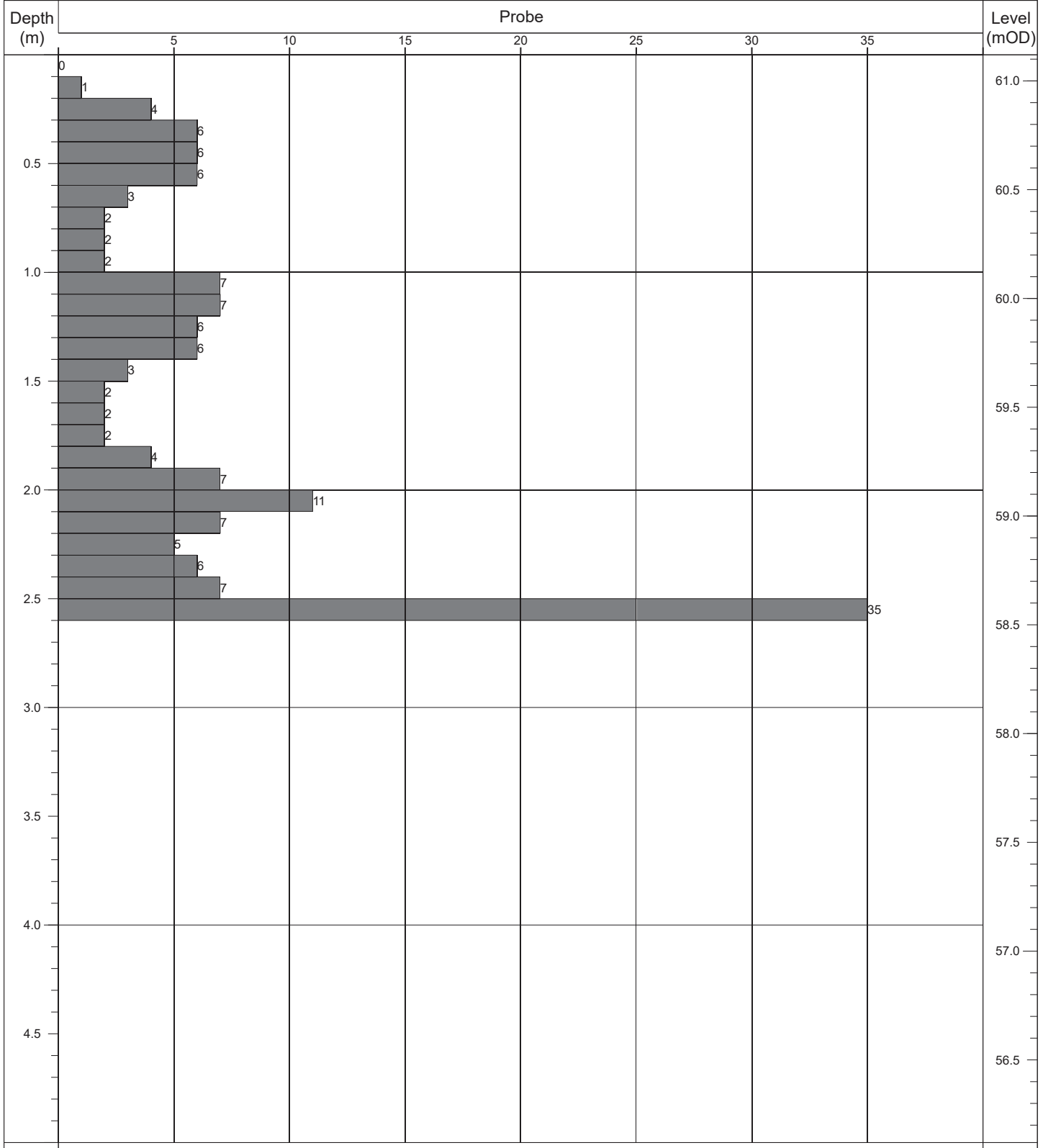
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP05 |
| Contract: | Moygaddy | Easting: | 694187.716 | Date Started: 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739683.631 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 60.98 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

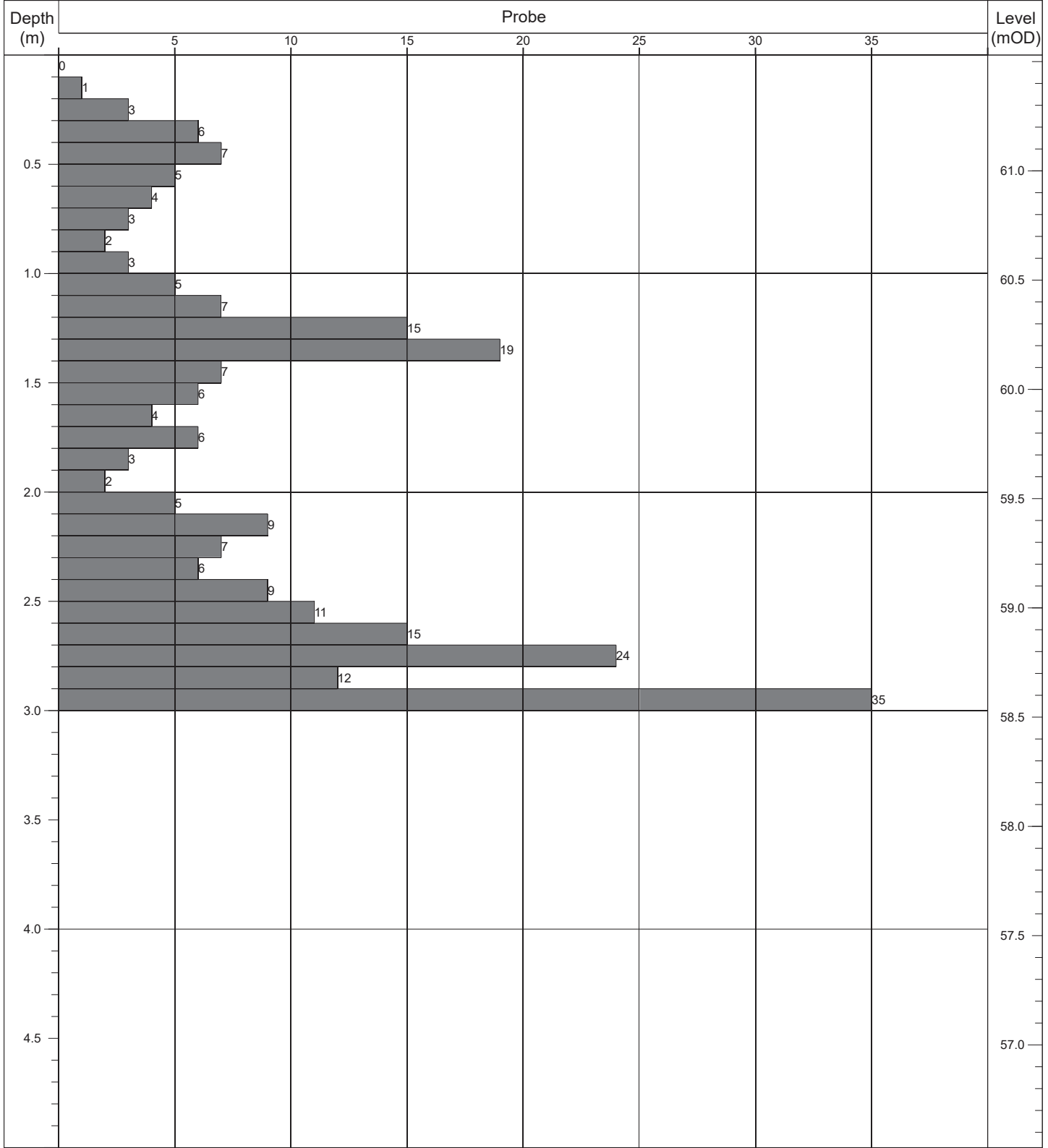
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP06 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694288.959 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739687.709 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 61.12 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



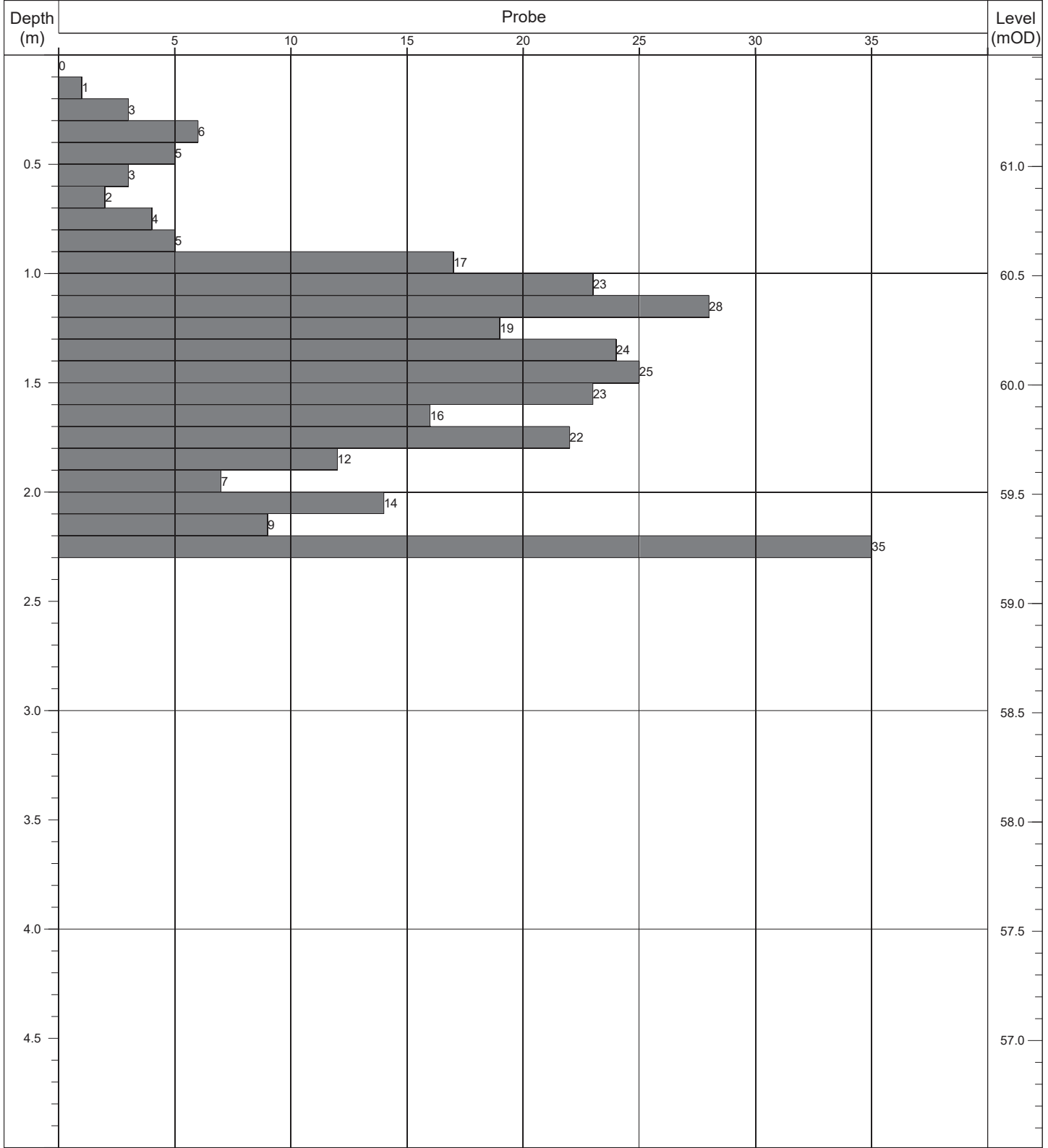
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP07 |
| Contract: | Moygaddy | Easting: | 694385.497 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739682.425 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 61.53 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



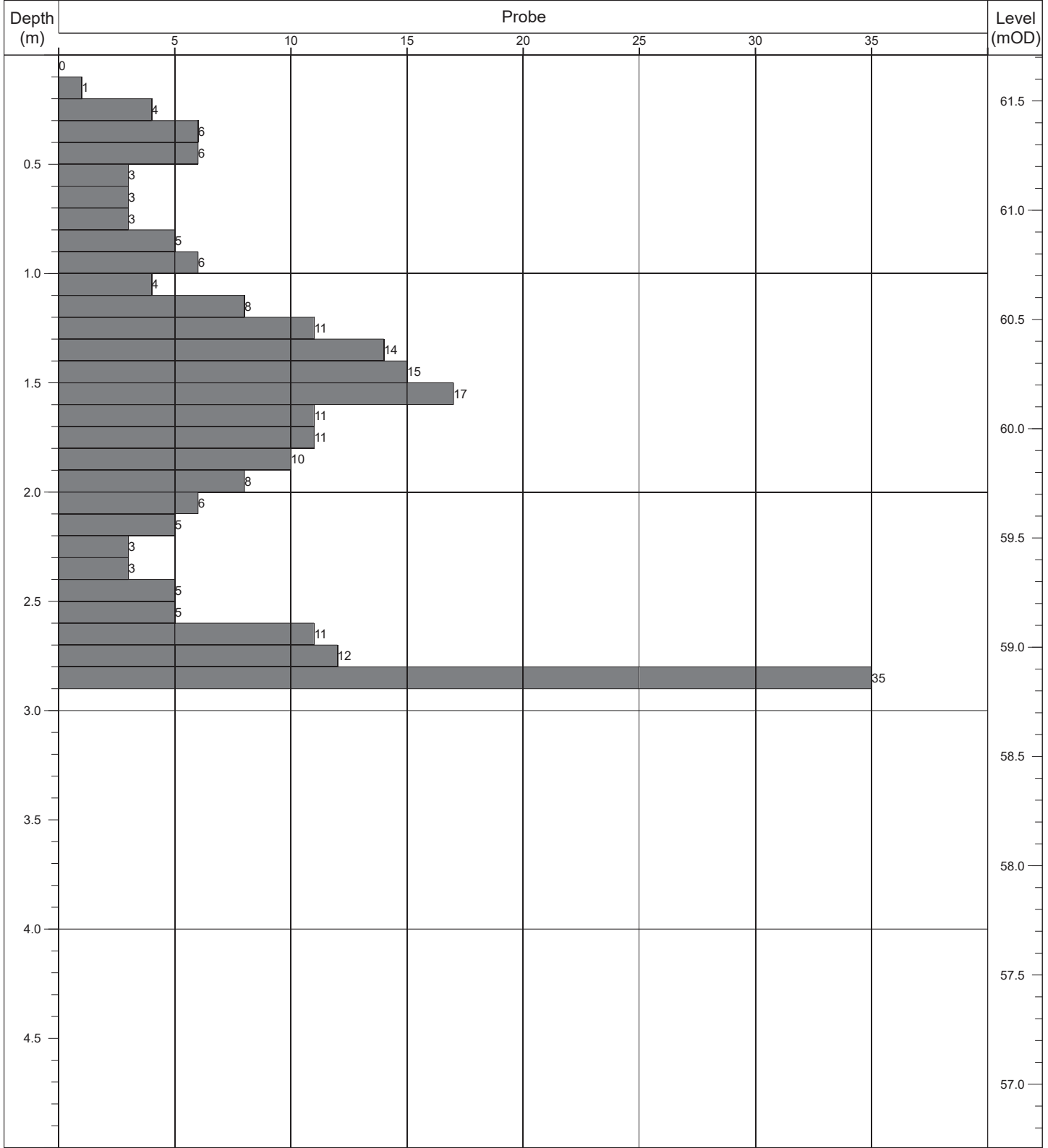
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.00m | Obstruction - boulders. | DPH | 50kg | 500mm | |


| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP08 |
| Contract: | Moygaddy | Easting: | 694489.069 | Date Started: 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739686.527 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 61.51 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

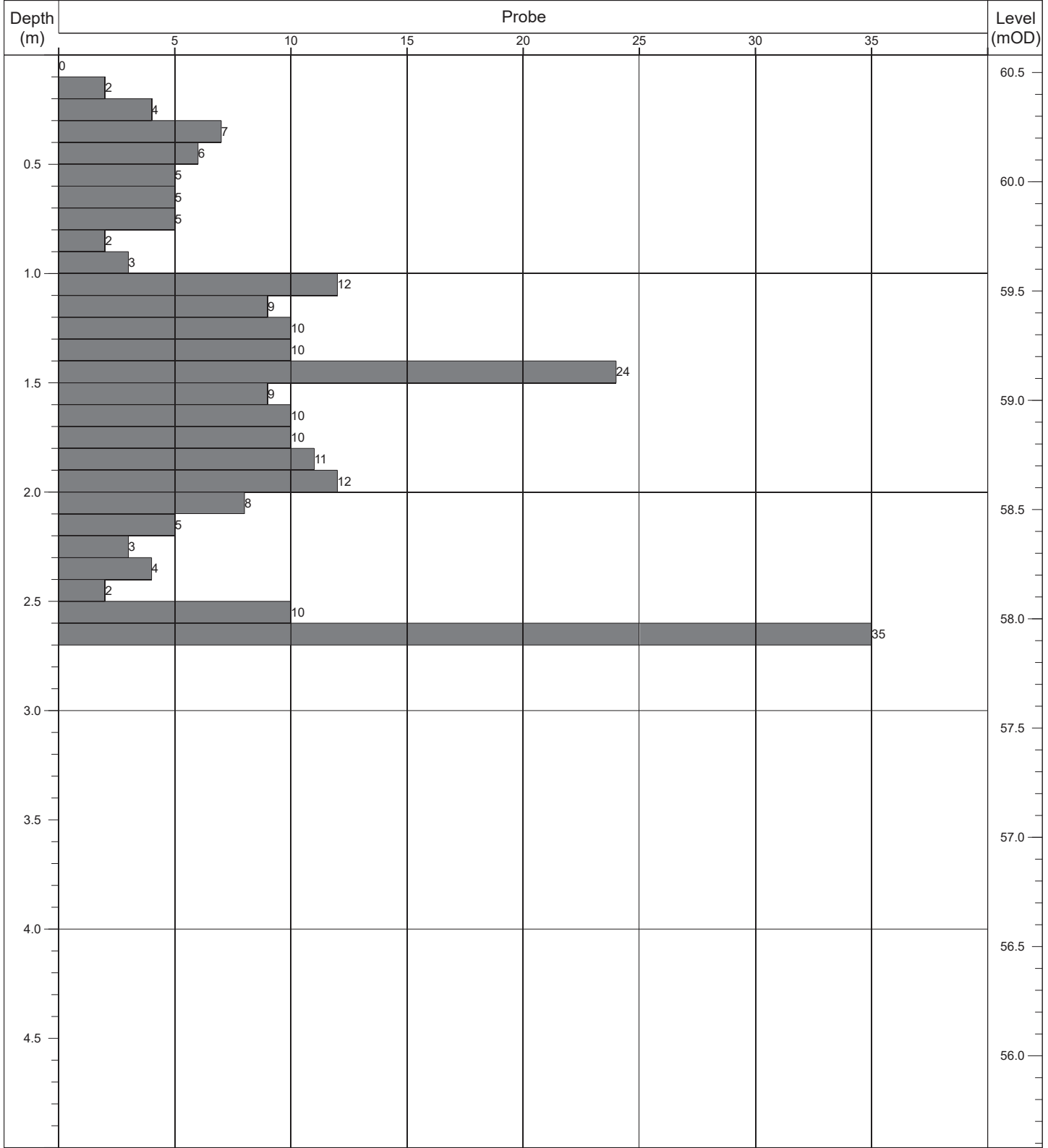
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP09 |
| Contract: | Moygaddy | Easting: | 694590.817 | Date Started: 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739686.475 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 61.71 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP10 |
|----------------------|--------------------------|--|--|--------------------------|

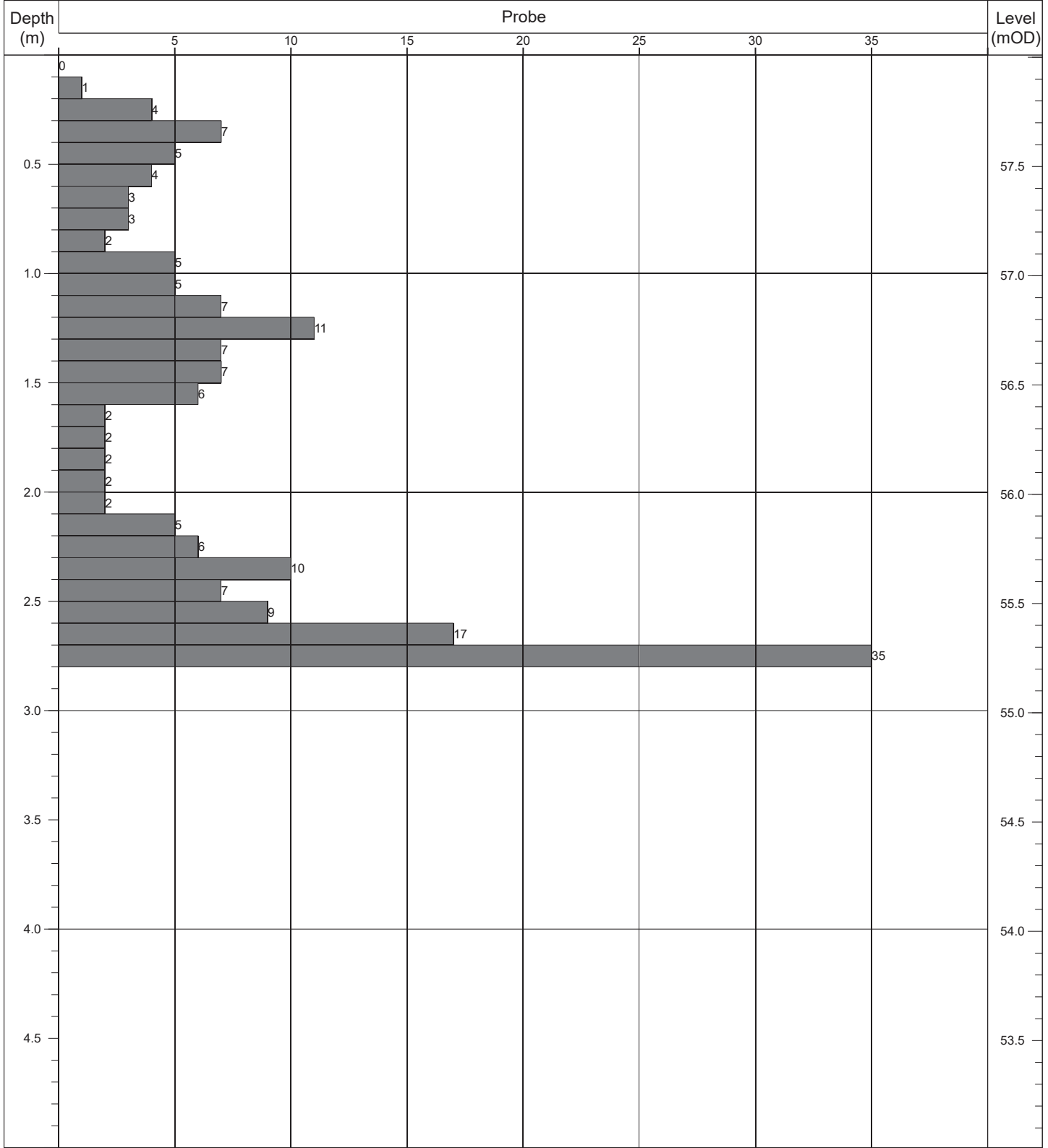
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694693.928 | Date Started: | 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739687.423 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 60.58 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP11 |
|----------------------|--------------------------|--|--|--------------------------|

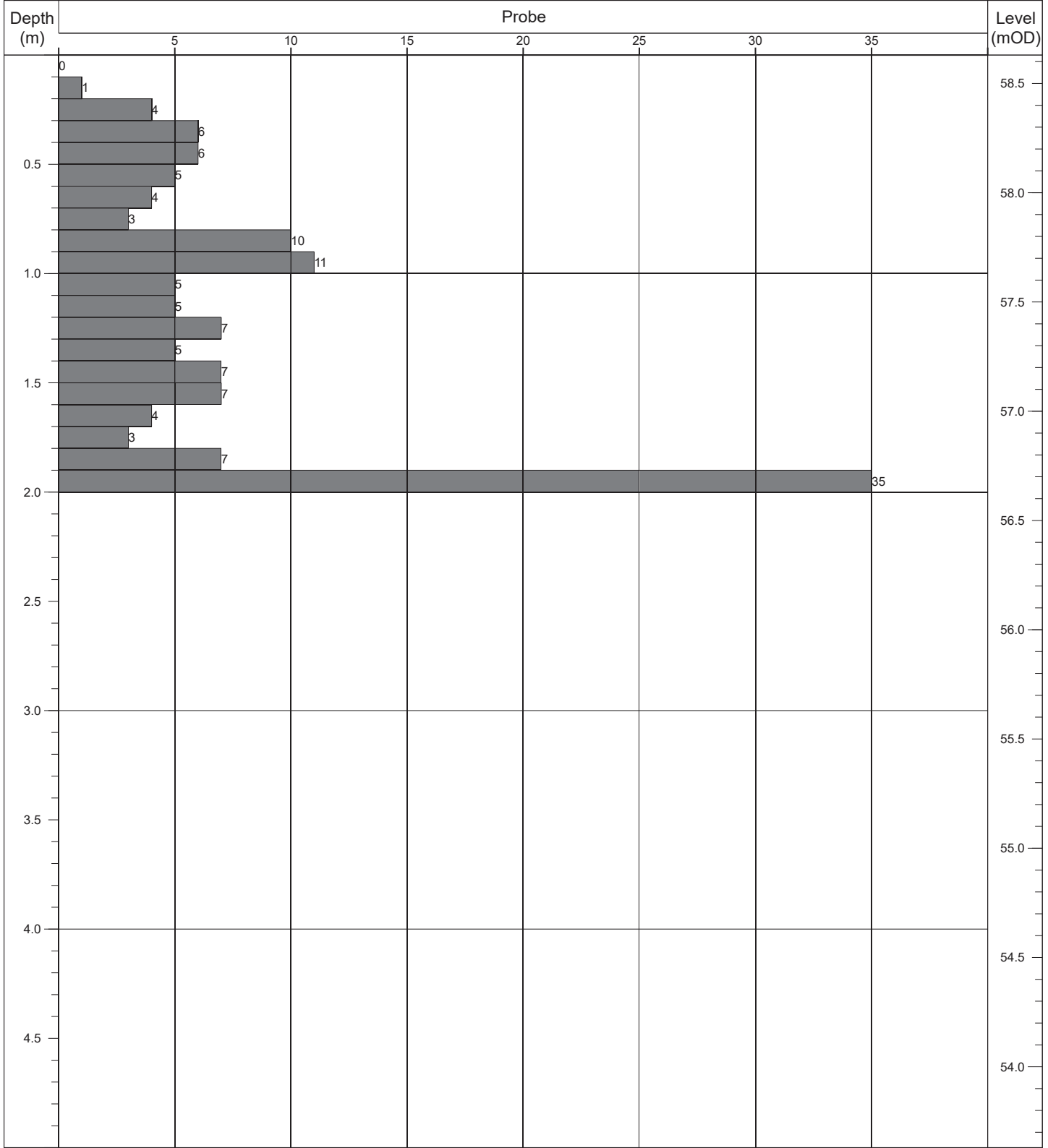
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693887.836 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739587.012 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.01 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

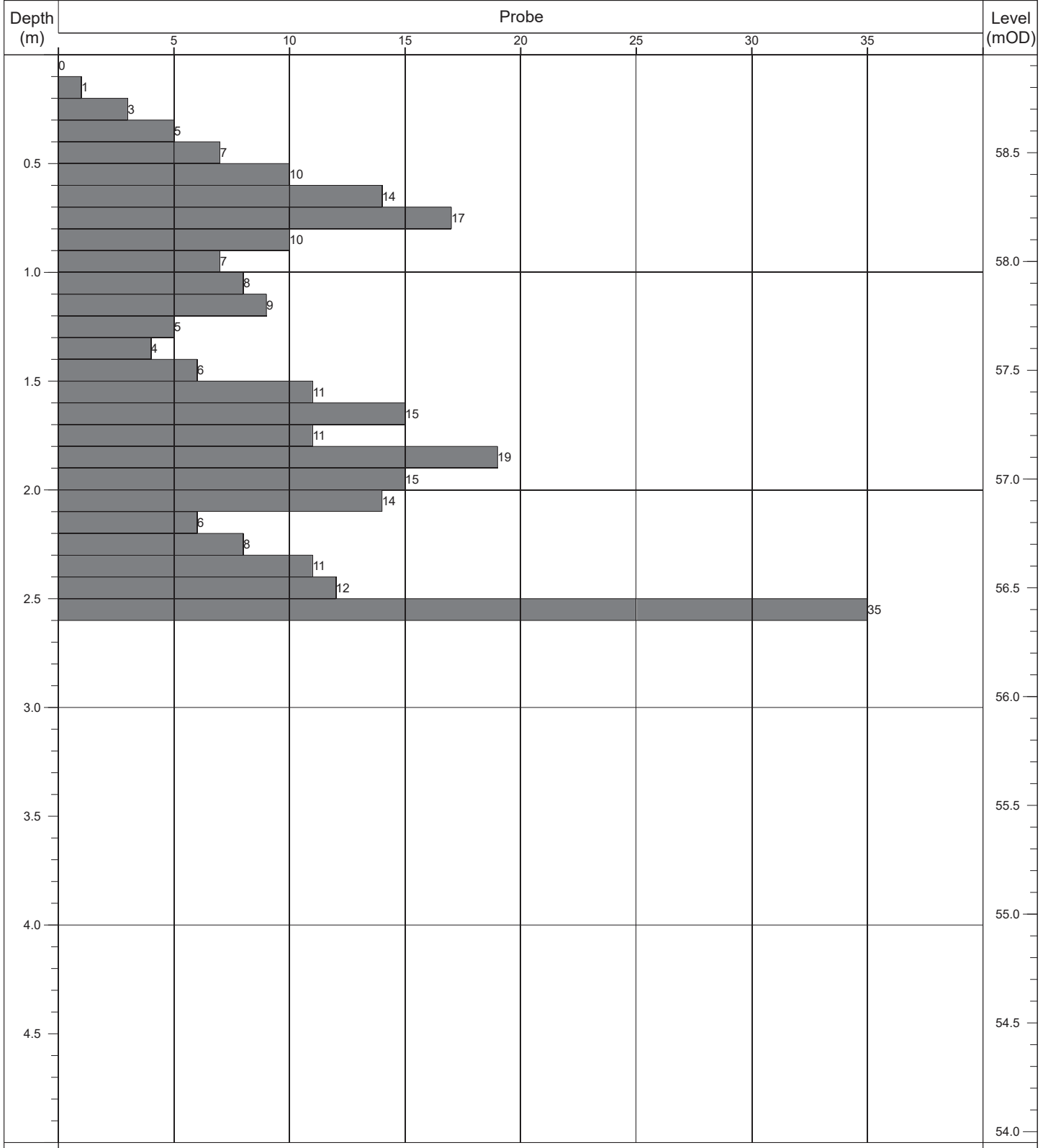
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP12 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693990.198 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739586.789 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.63 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



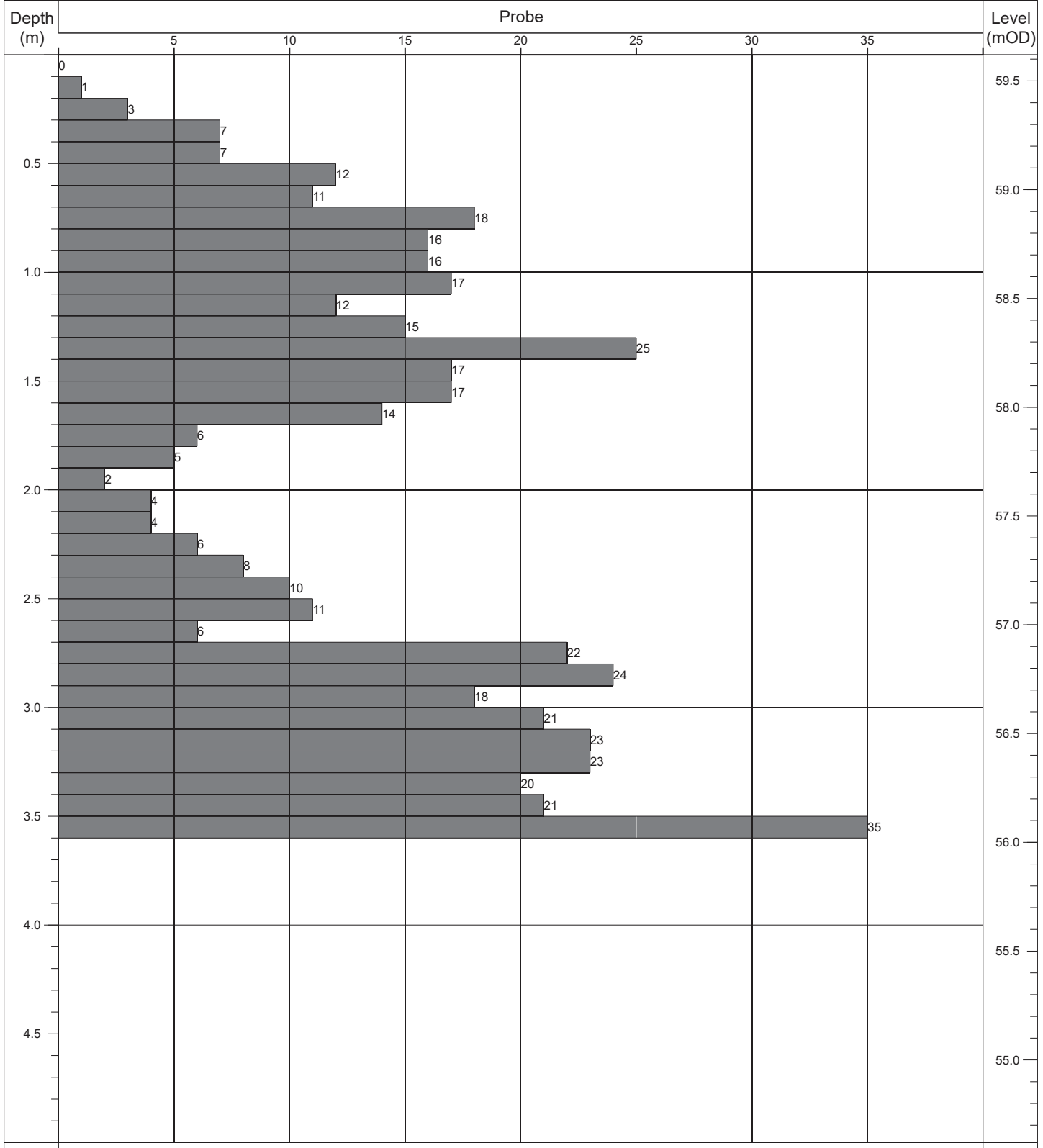
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.00m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP13 |
| Contract: | Moygaddy | Easting: | 694087.587 | Date Started: 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739588.545 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.95 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

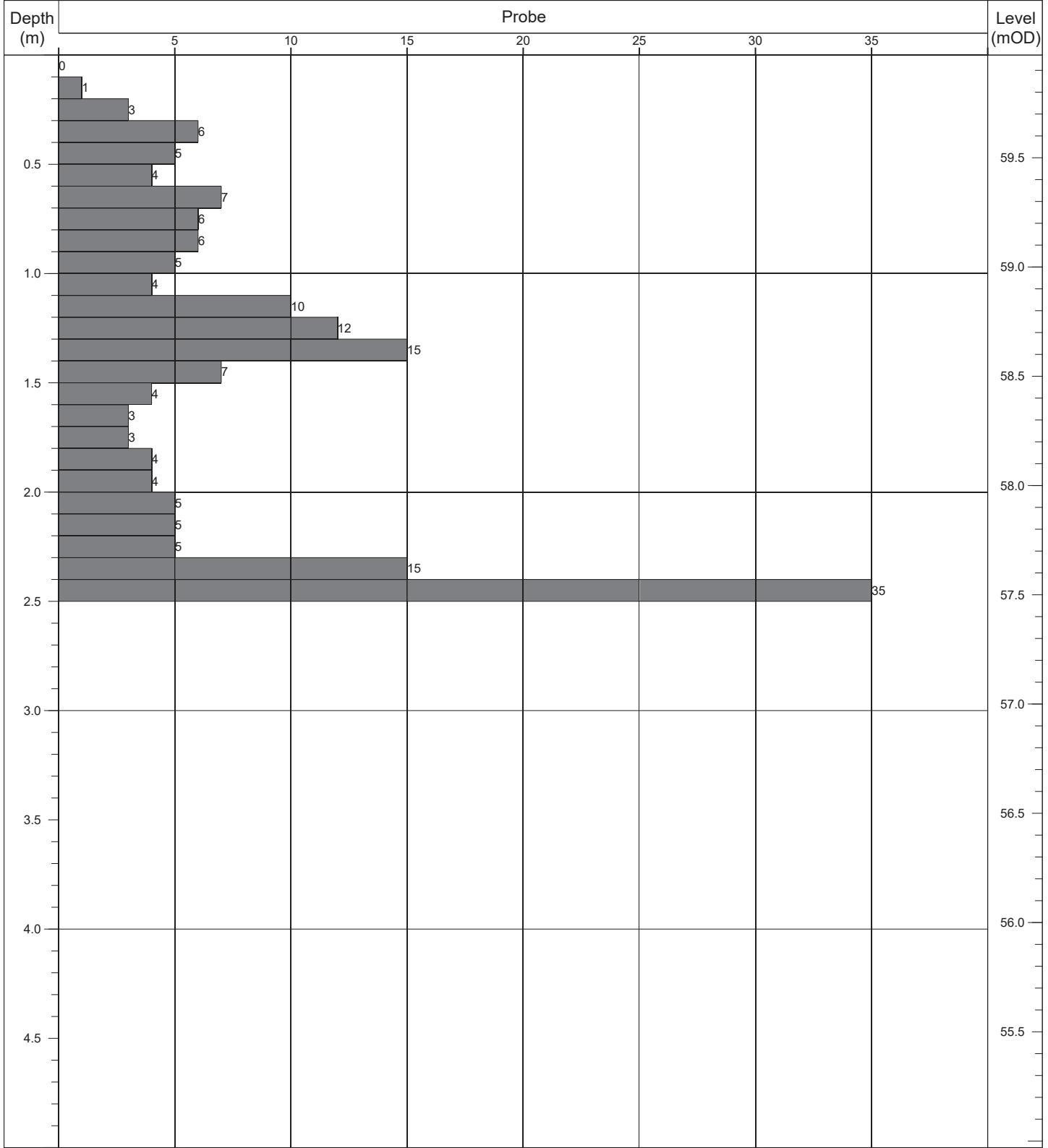
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP14 |
| Contract: | Moygaddy | Easting: | 694188.942 | Date Started: 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739587.683 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.62 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

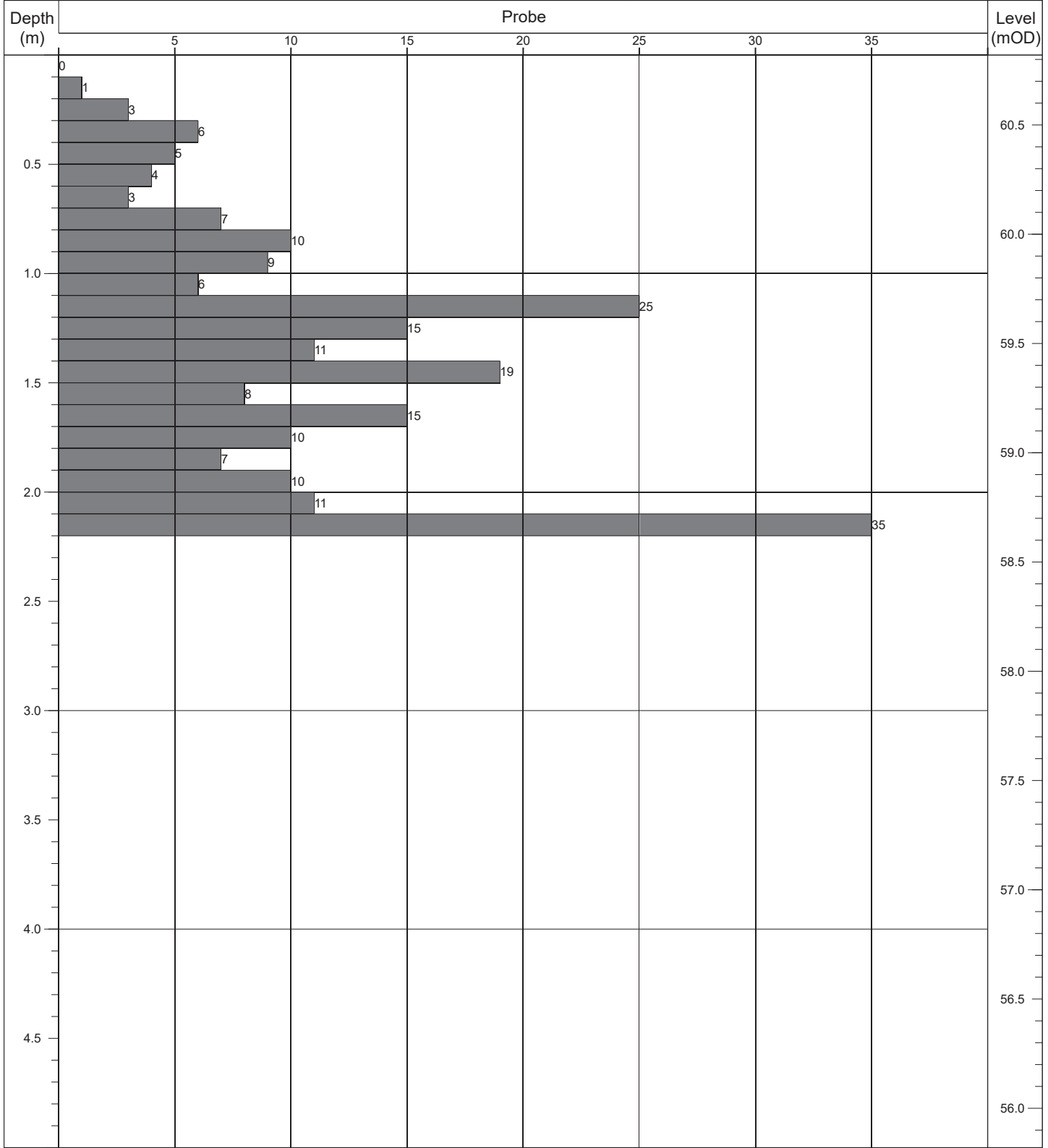
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP15 |
|----------------------|--------------------------|--|--|--------------------------|


| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694289.424 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739586.183 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.97 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



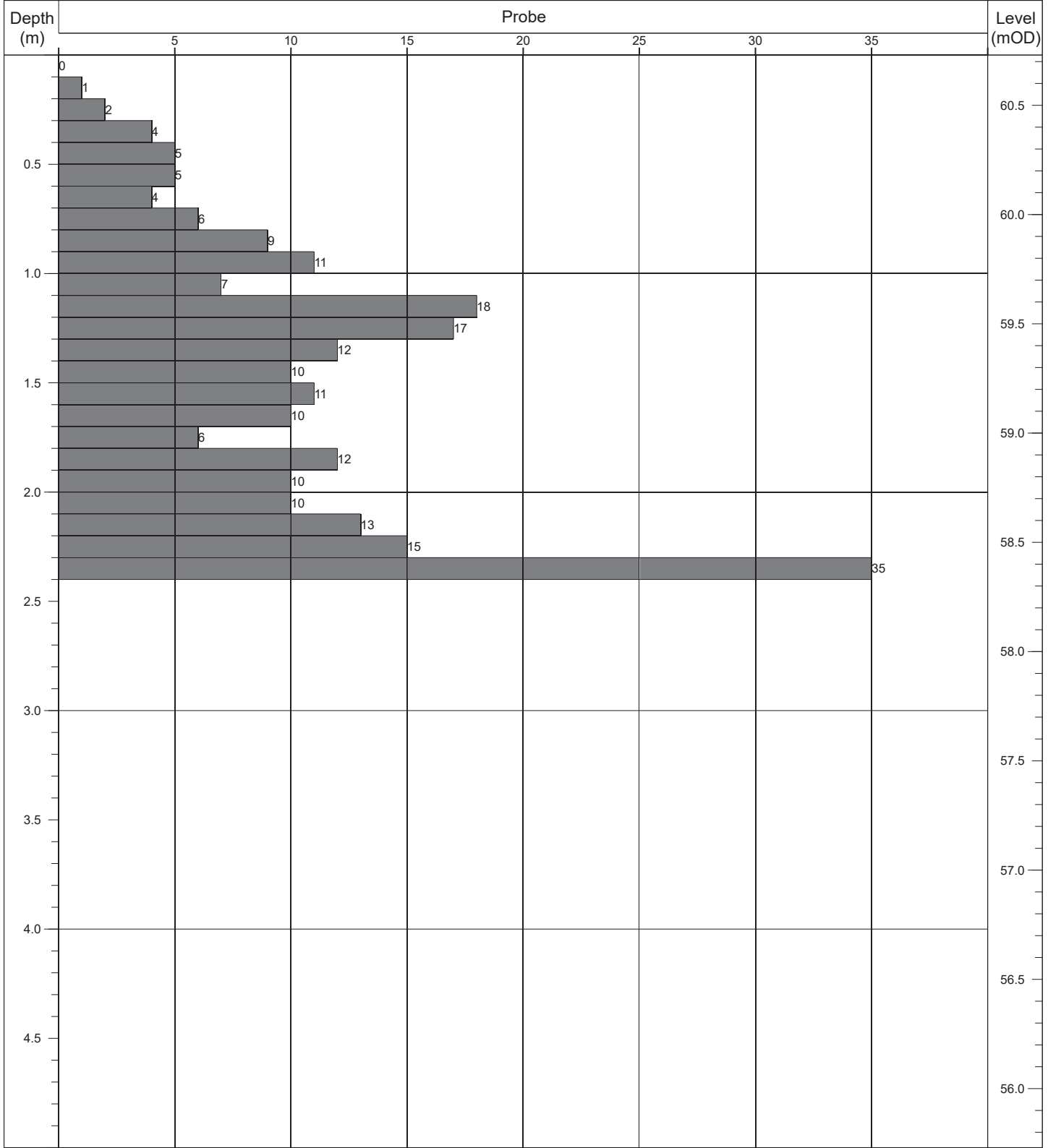
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP16 |
| Contract: | Moygaddy | Easting: | 694488.048 | Date Started: 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739589.540 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 60.82 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

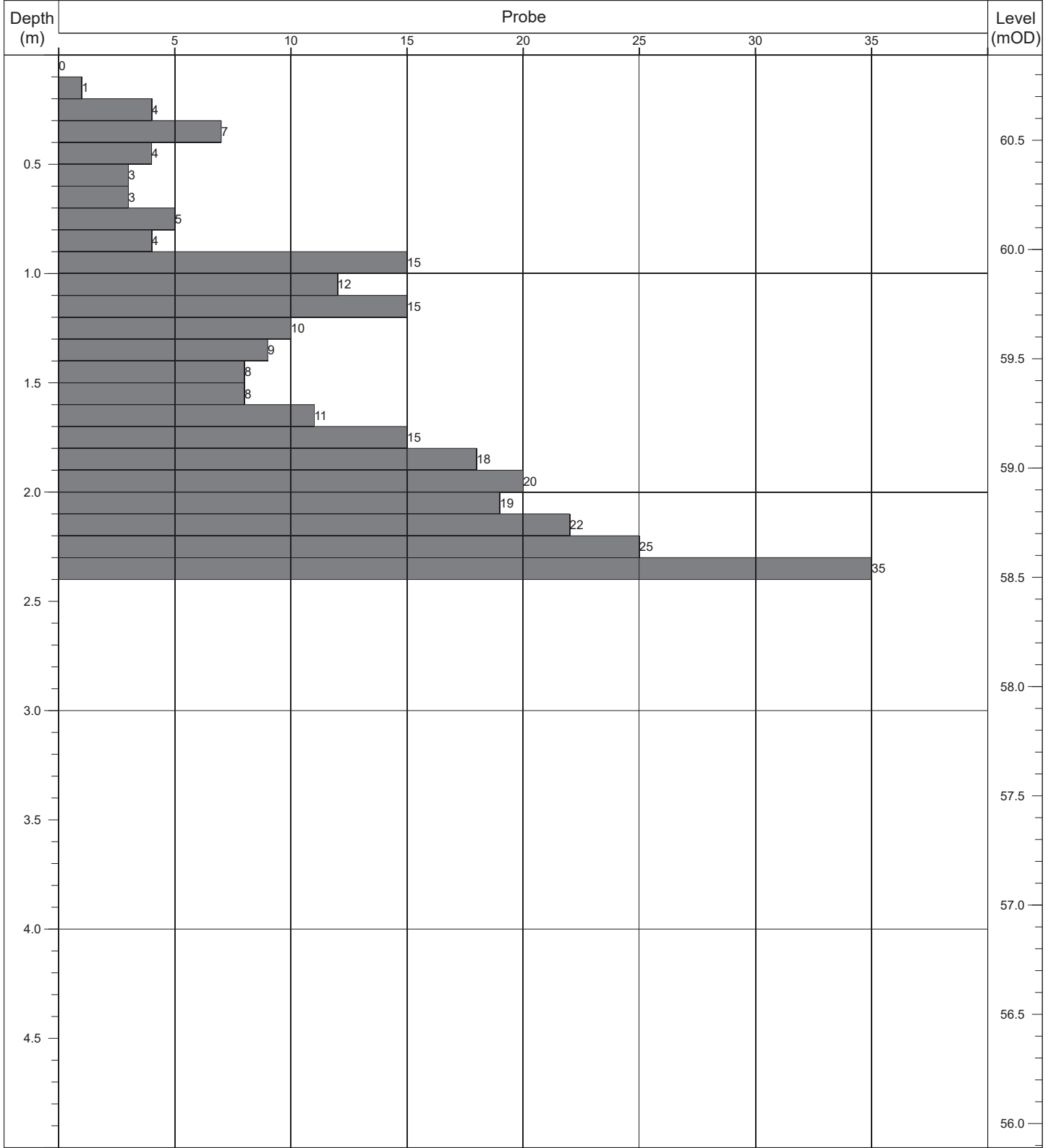
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP17 |
| Contract: | Moygaddy | Easting: | 694589.076 | Date Started: 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739587.354 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 60.73 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP18 |
|----------------------|--------------------------|--|--|--------------------------|

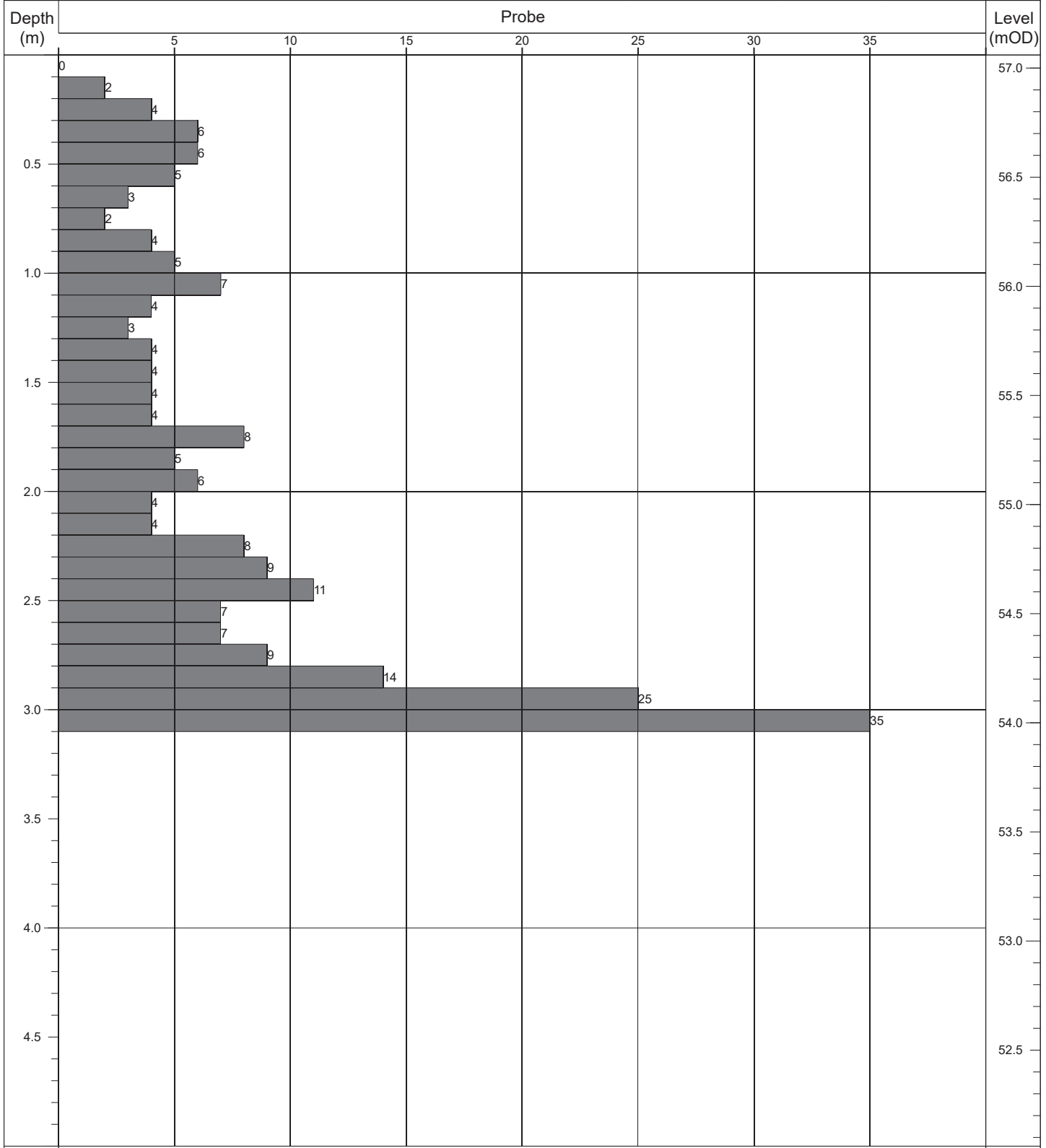
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694688.772 | Date Started: | 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739584.729 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 60.89 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP19 |
|----------------------|--------------------------|--|--|--------------------------|

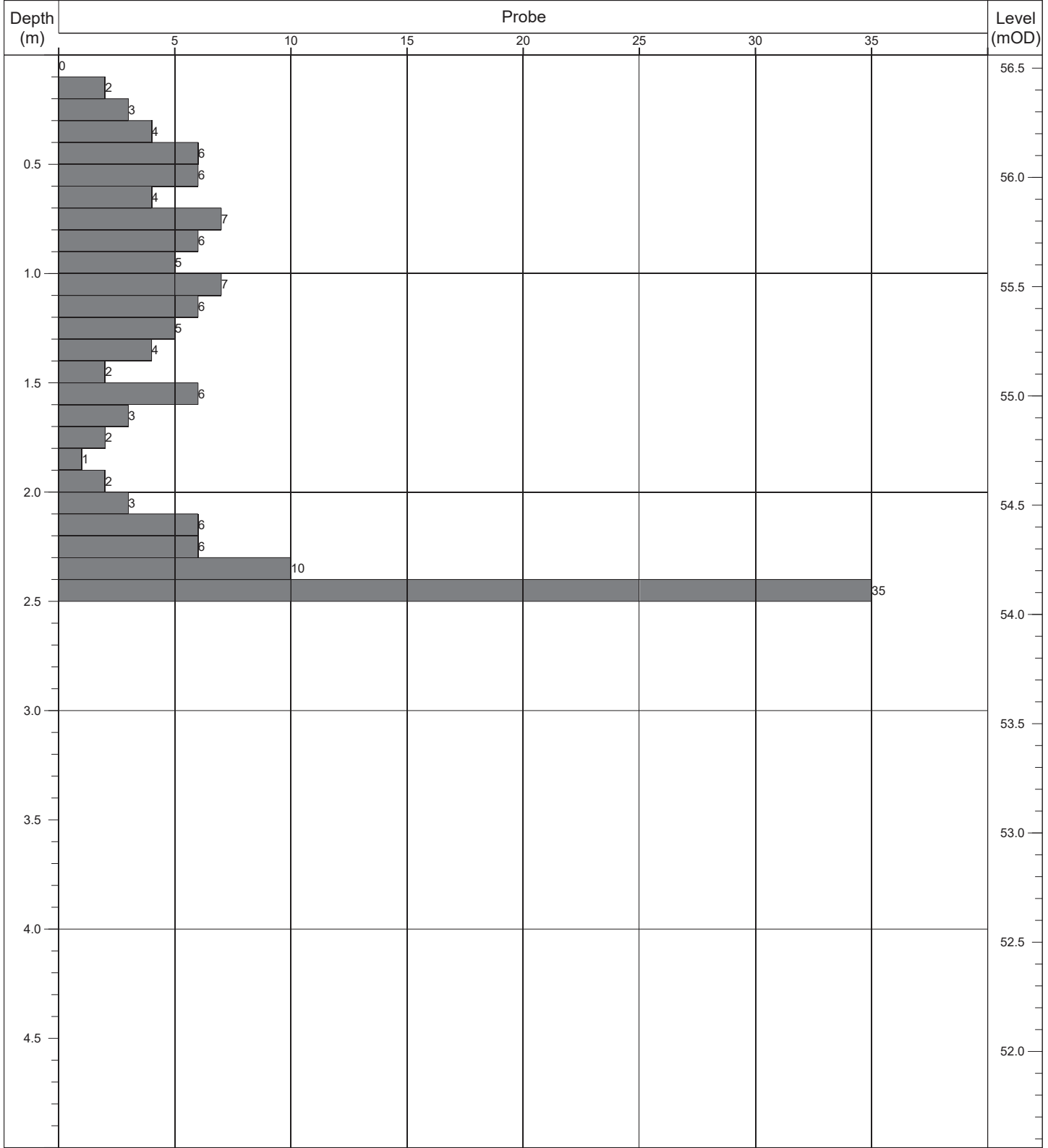
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693691.519 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739485.259 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.06 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.10m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP20 |
|----------------------|--------------------------|--|--|--------------------------|

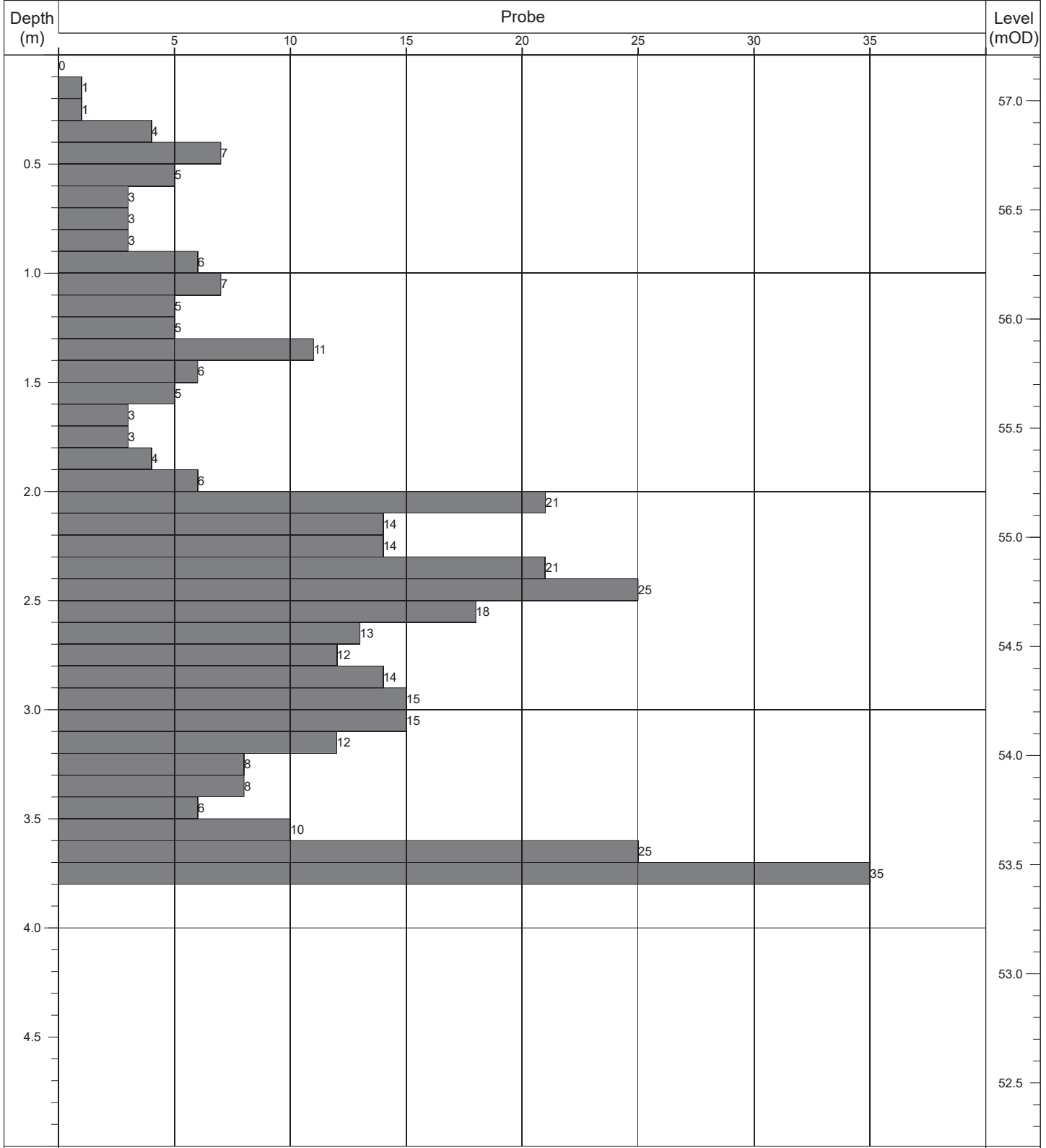
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693789.642 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739485.089 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.56 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP21 |
|----------------------|--------------------------|--|--|--------------------------|

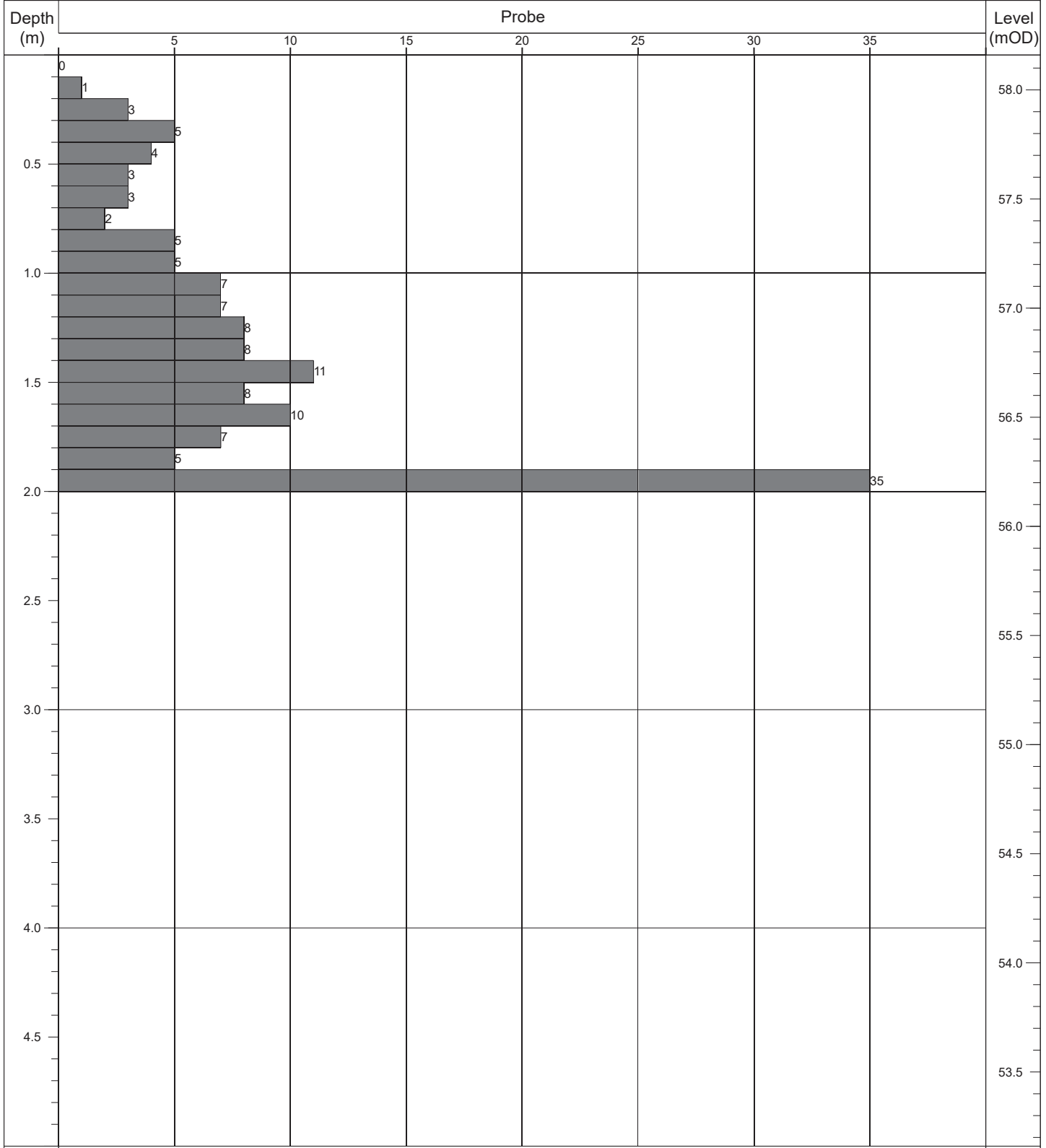
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693889.602 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739486.389 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.21 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP22 |
|----------------------|--------------------------|--|--|--------------------------|

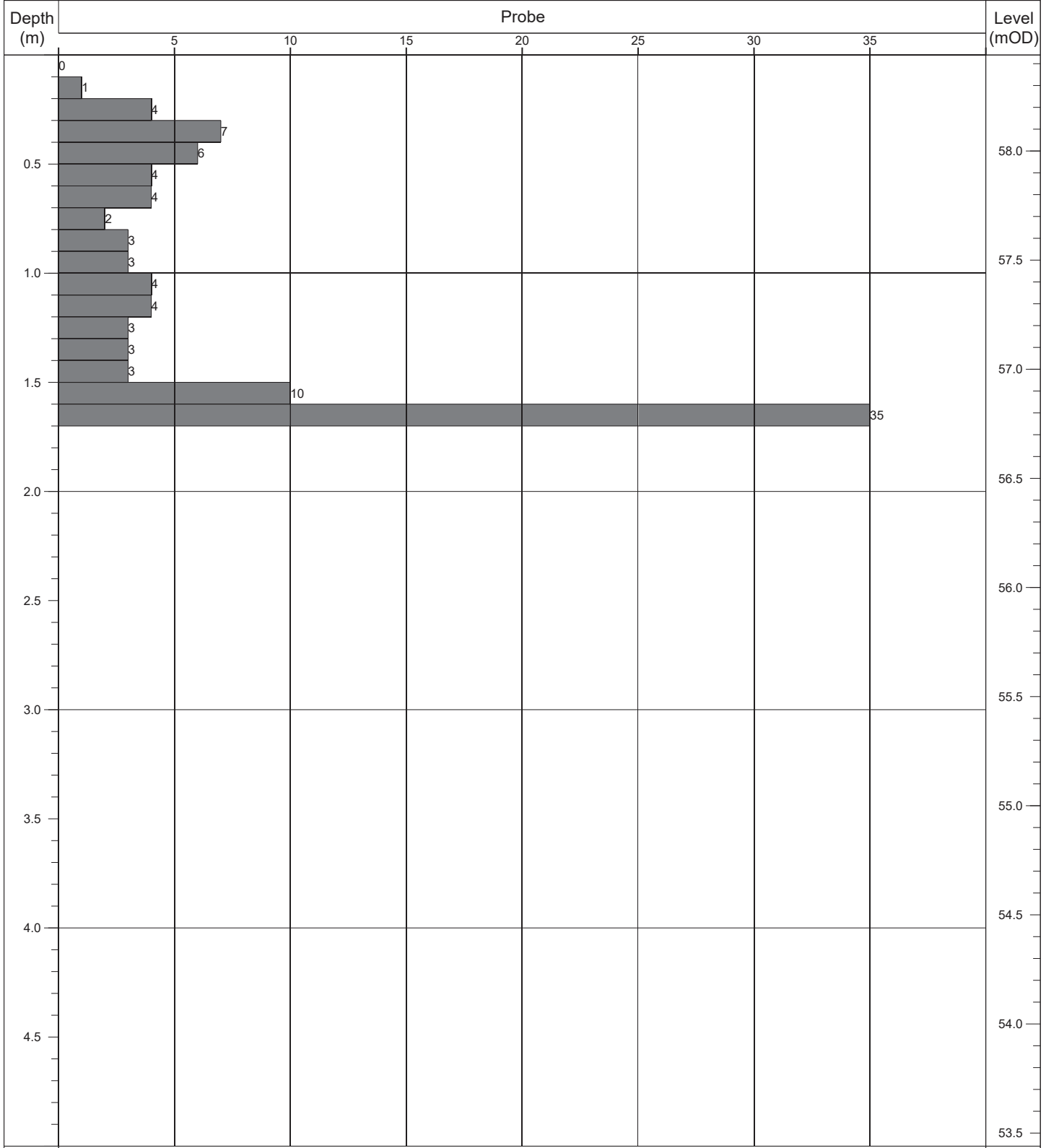
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693990.017 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739487.250 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.16 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.00m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP23 |
|----------------------|--------------------------|--|--|--------------------------|

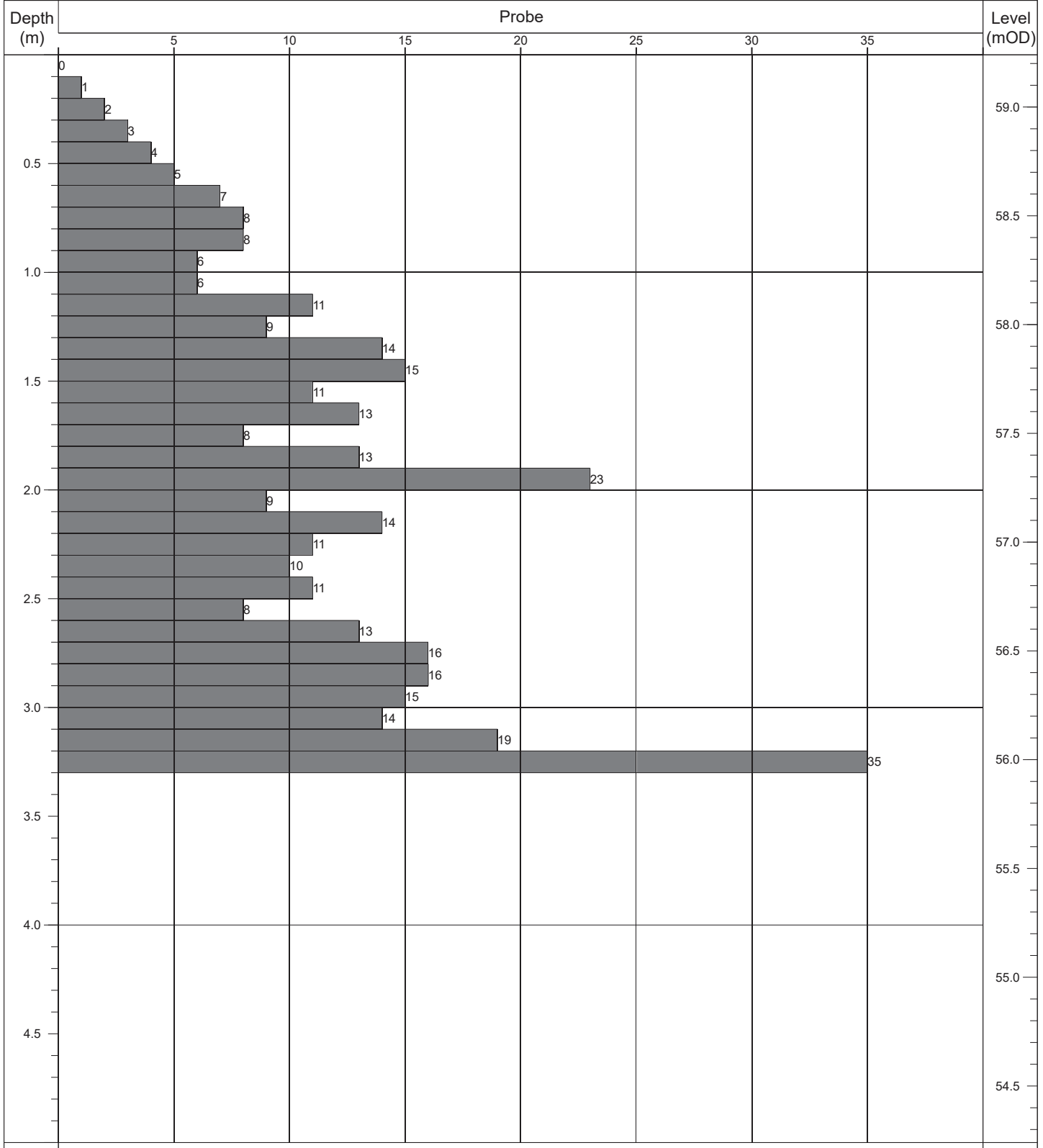
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694089.764 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739487.208 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.44 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

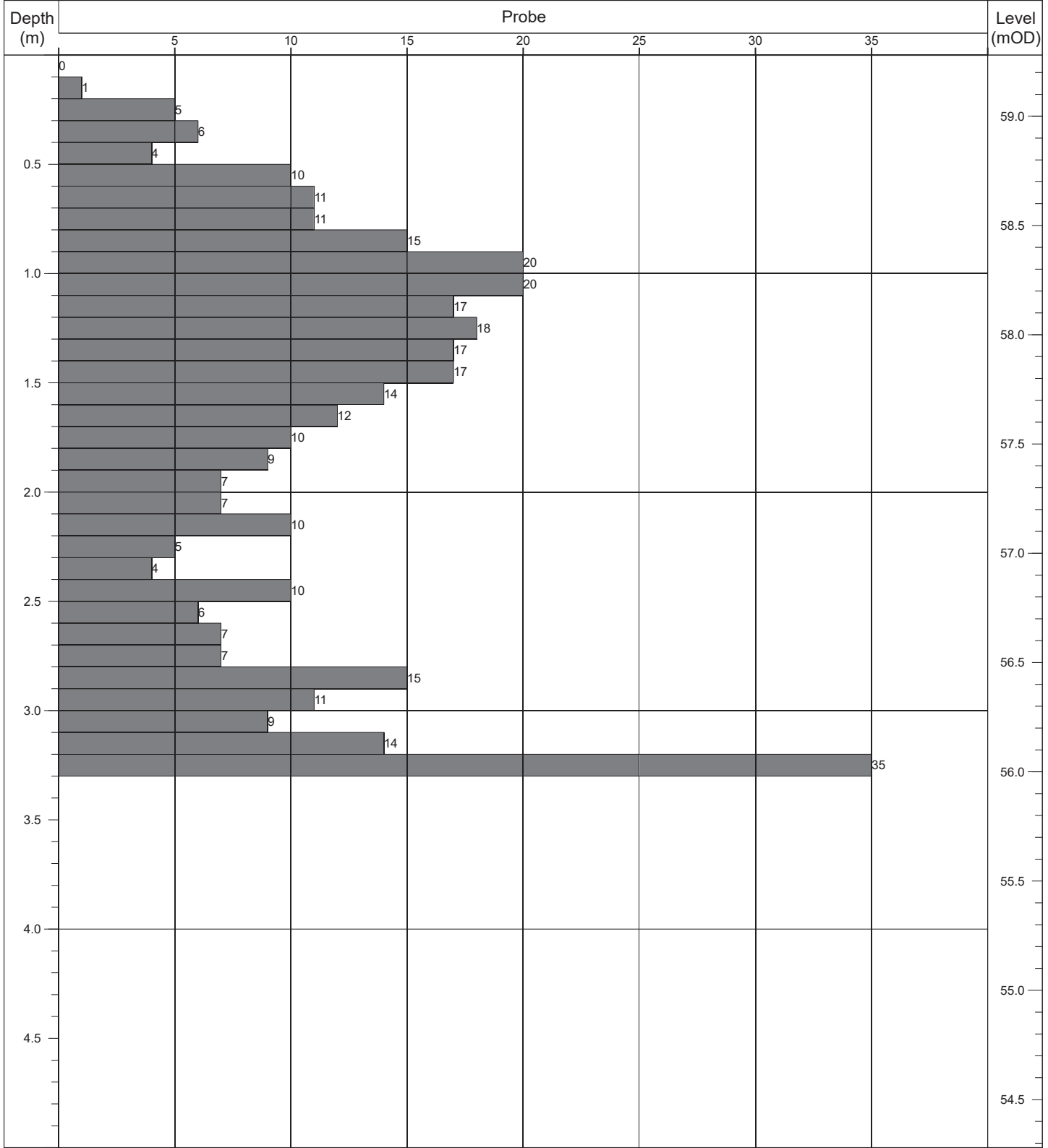
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP24 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694198.133 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739492.619 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.24 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



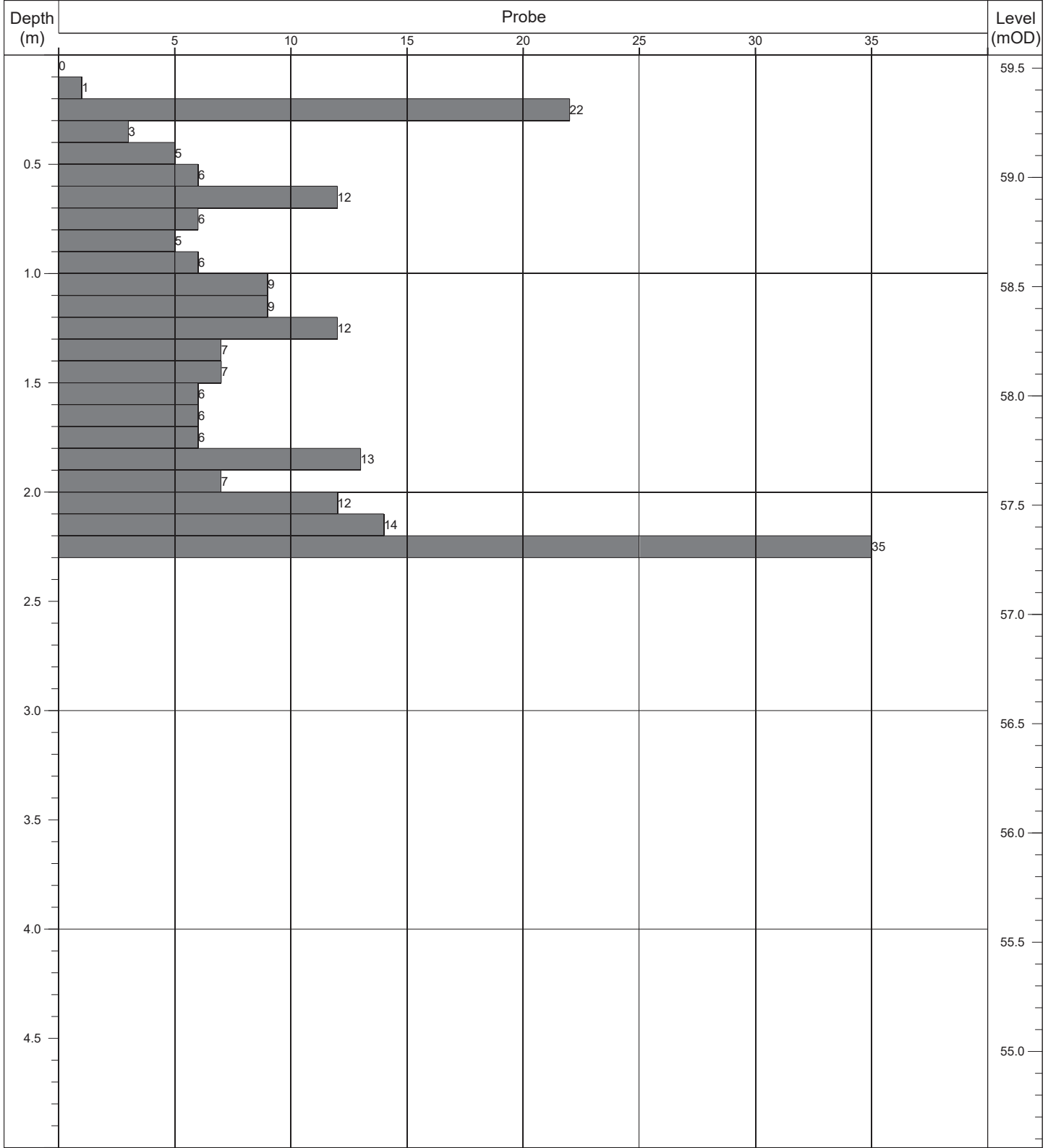
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |


| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP25 |
| Contract: | Moygaddy | Easting: | 694385.716 | Date Started: 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739486.593 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.28 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



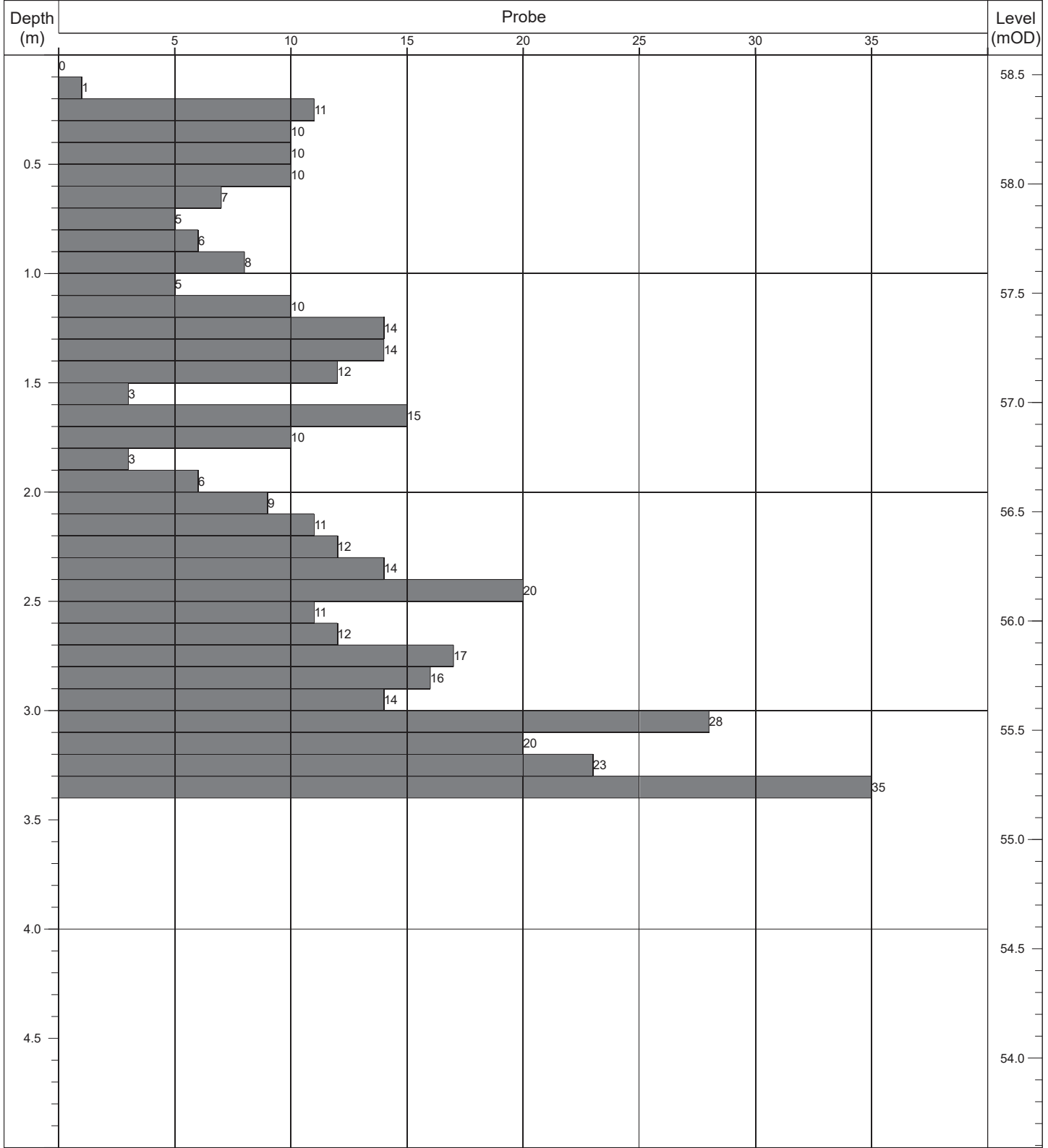
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |


| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP26 |
| Contract: | Moygaddy | Easting: | 694489.024 | Date Started: | 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739485.194 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.56 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



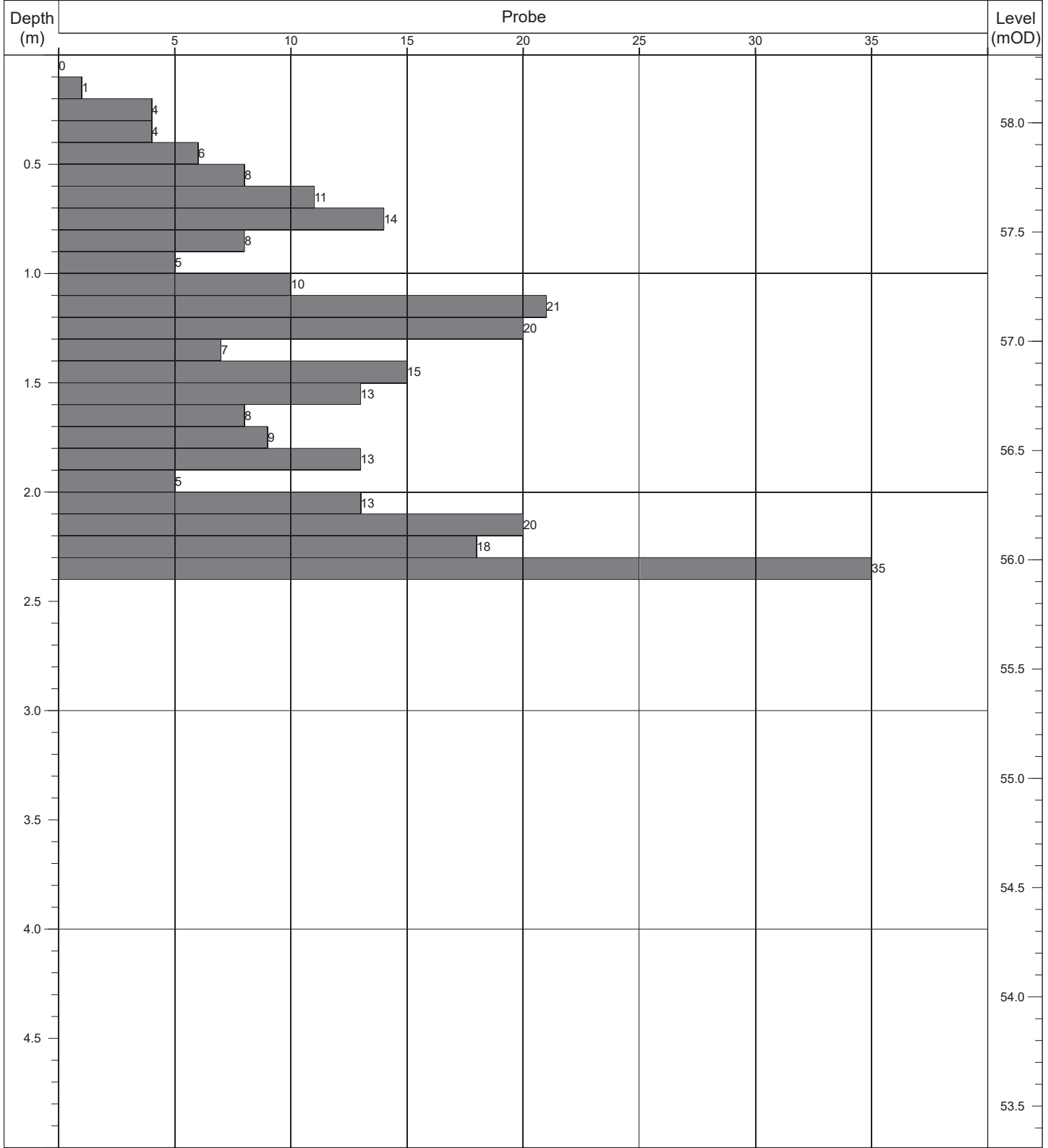
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP27 |
| Contract: | Moygaddy | Easting: | 694586.781 | Date Started: | 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739491.852 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.59 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



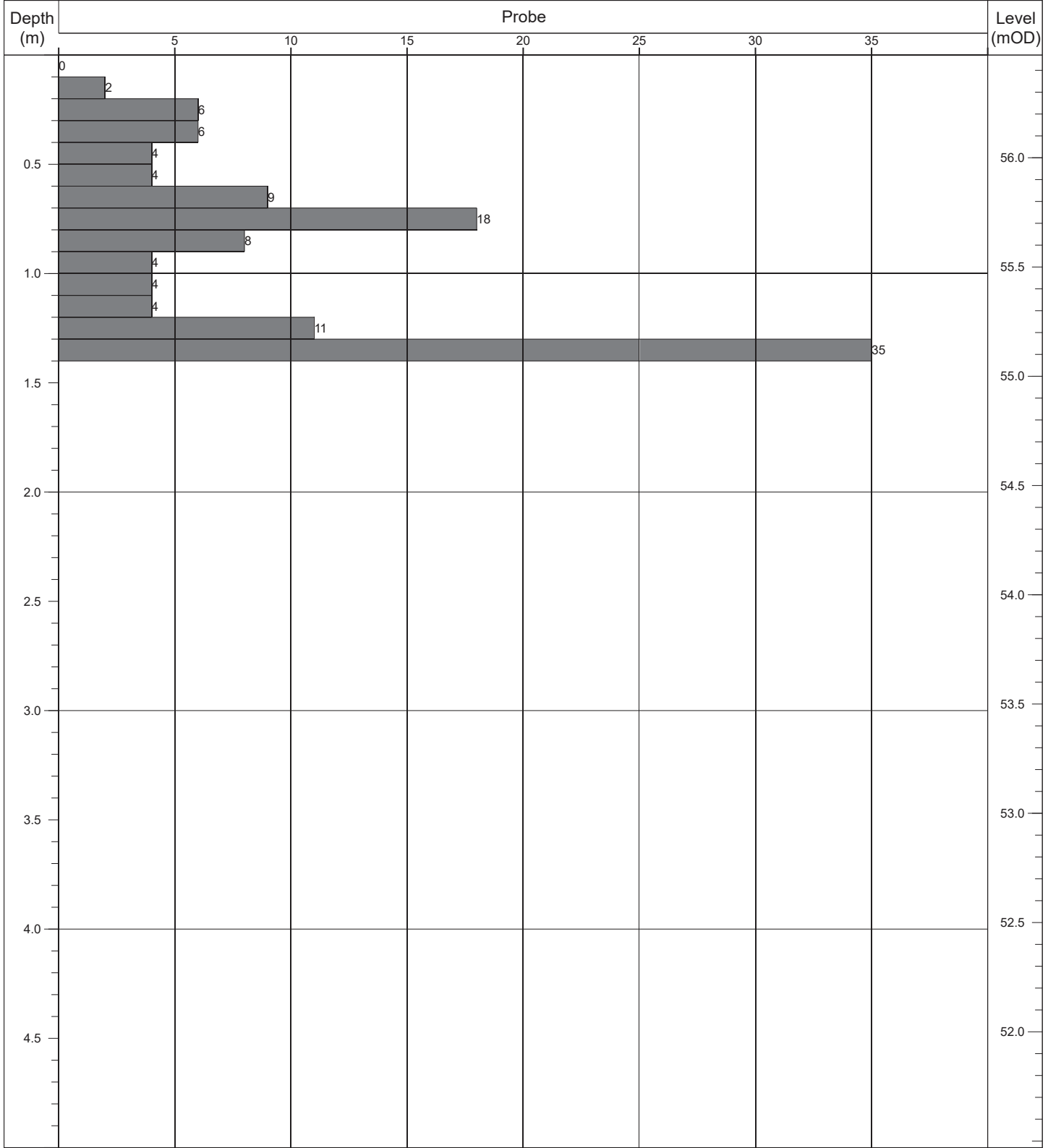
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP28 |
| Contract: | Moygaddy | Easting: | 694688.953 | Date Started: 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739488.632 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.31 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

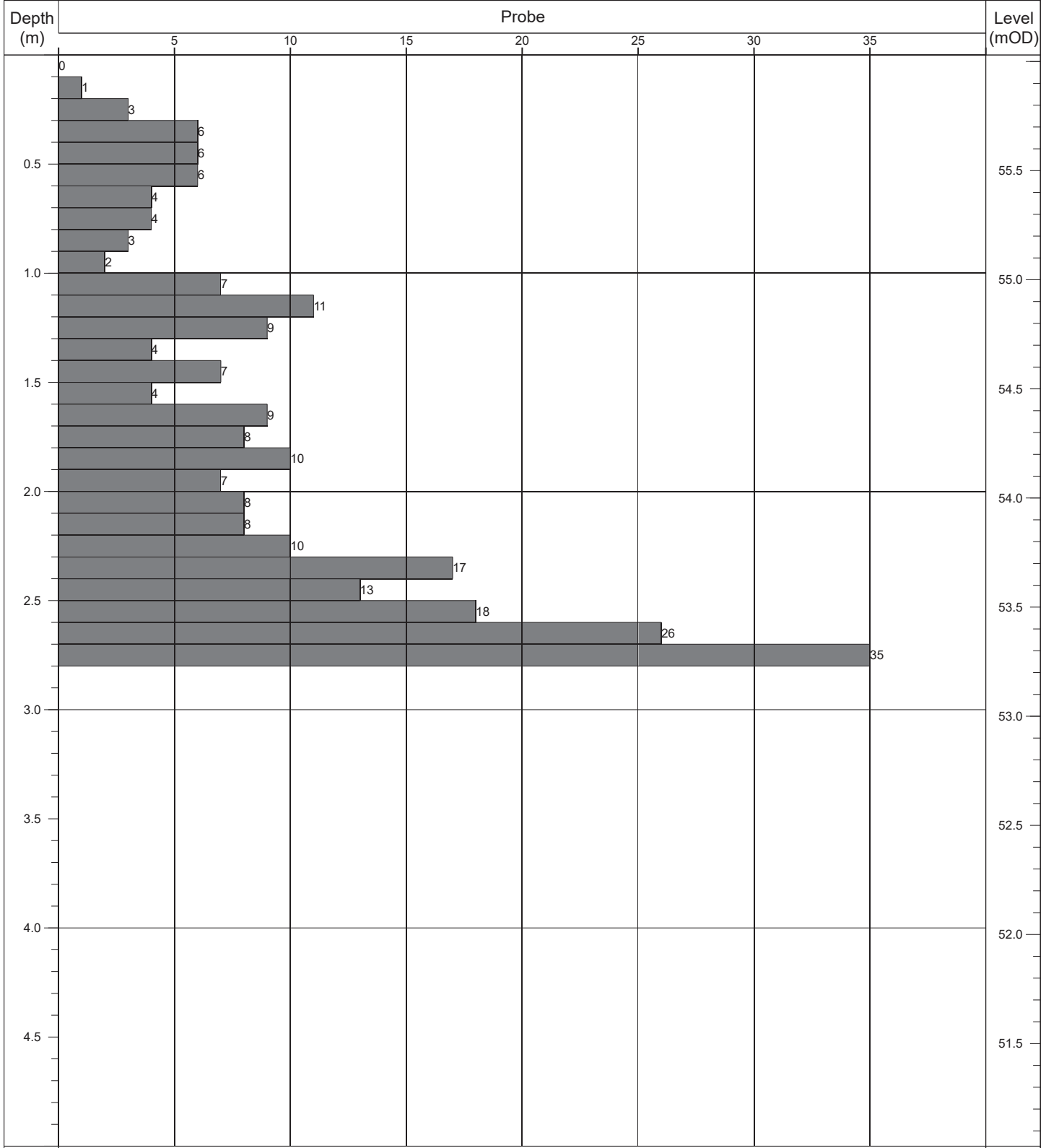
| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP29 |
| Contract: | Moygaddy | Easting: | 694780.802 | Date Started: | 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739491.934 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.47 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

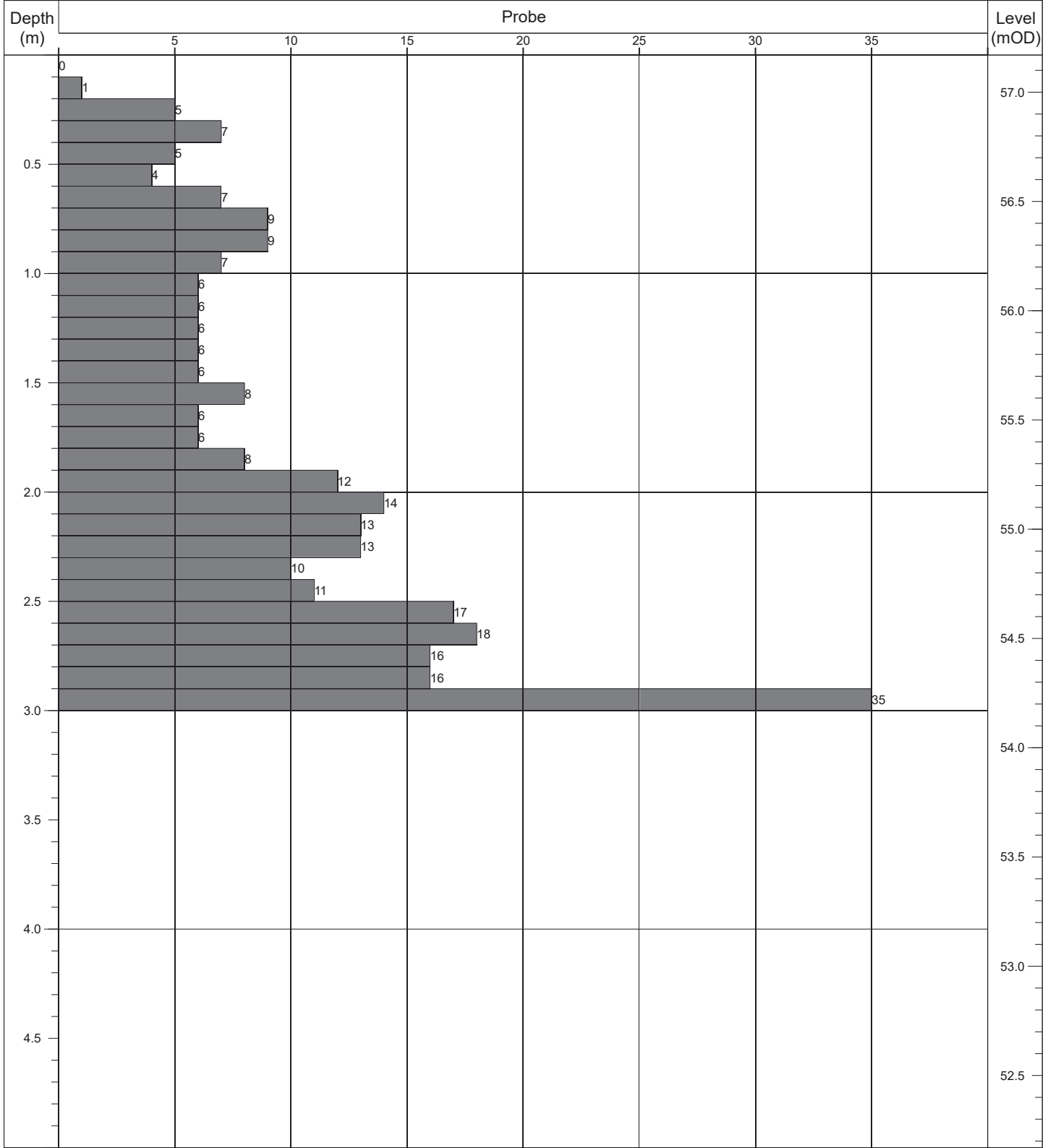
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP30 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693593.273 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739395.730 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.03 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



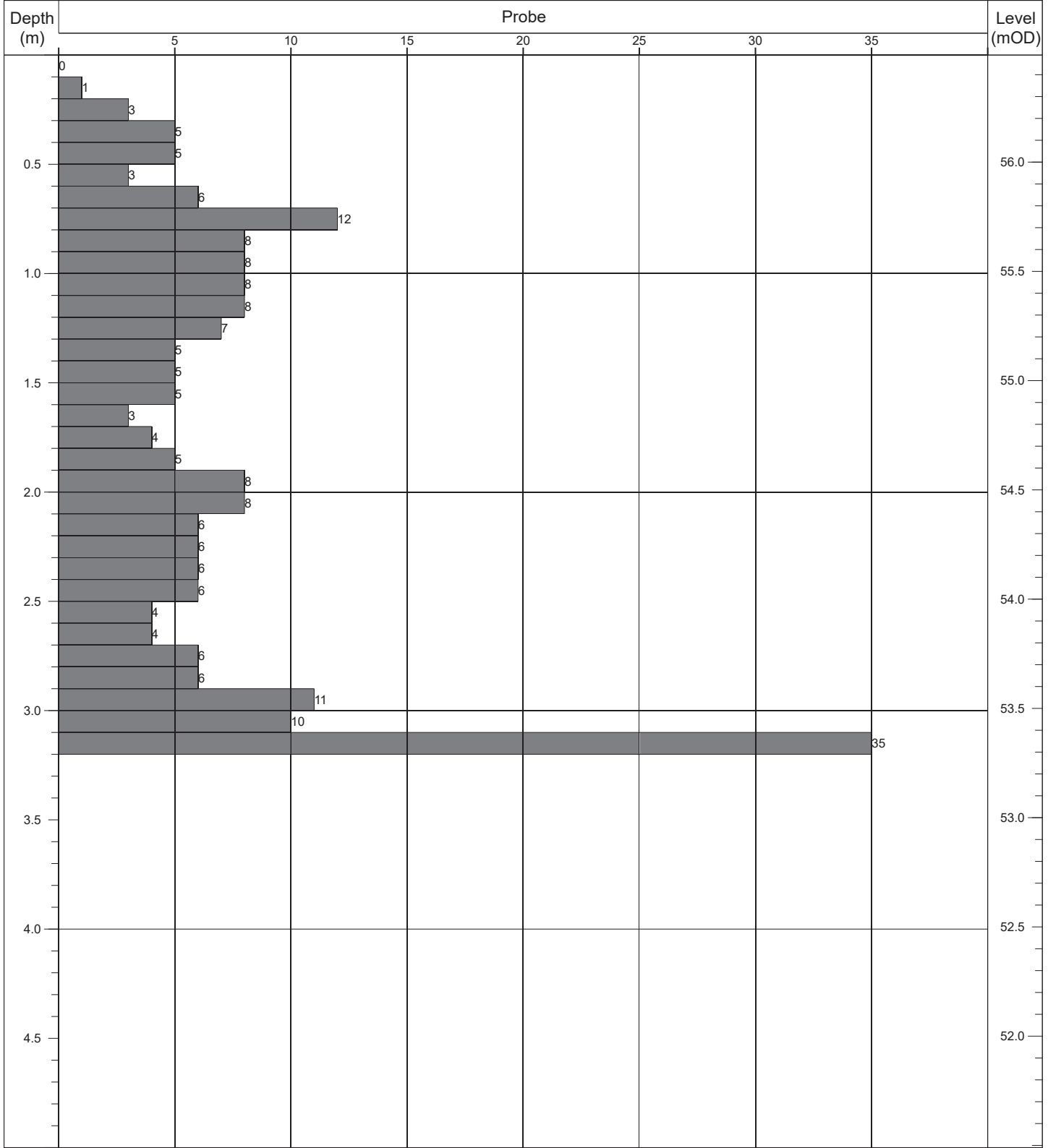
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP31 |
| Contract: | Moygaddy | Easting: | 693688.922 | Date Started: 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739386.795 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.17 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



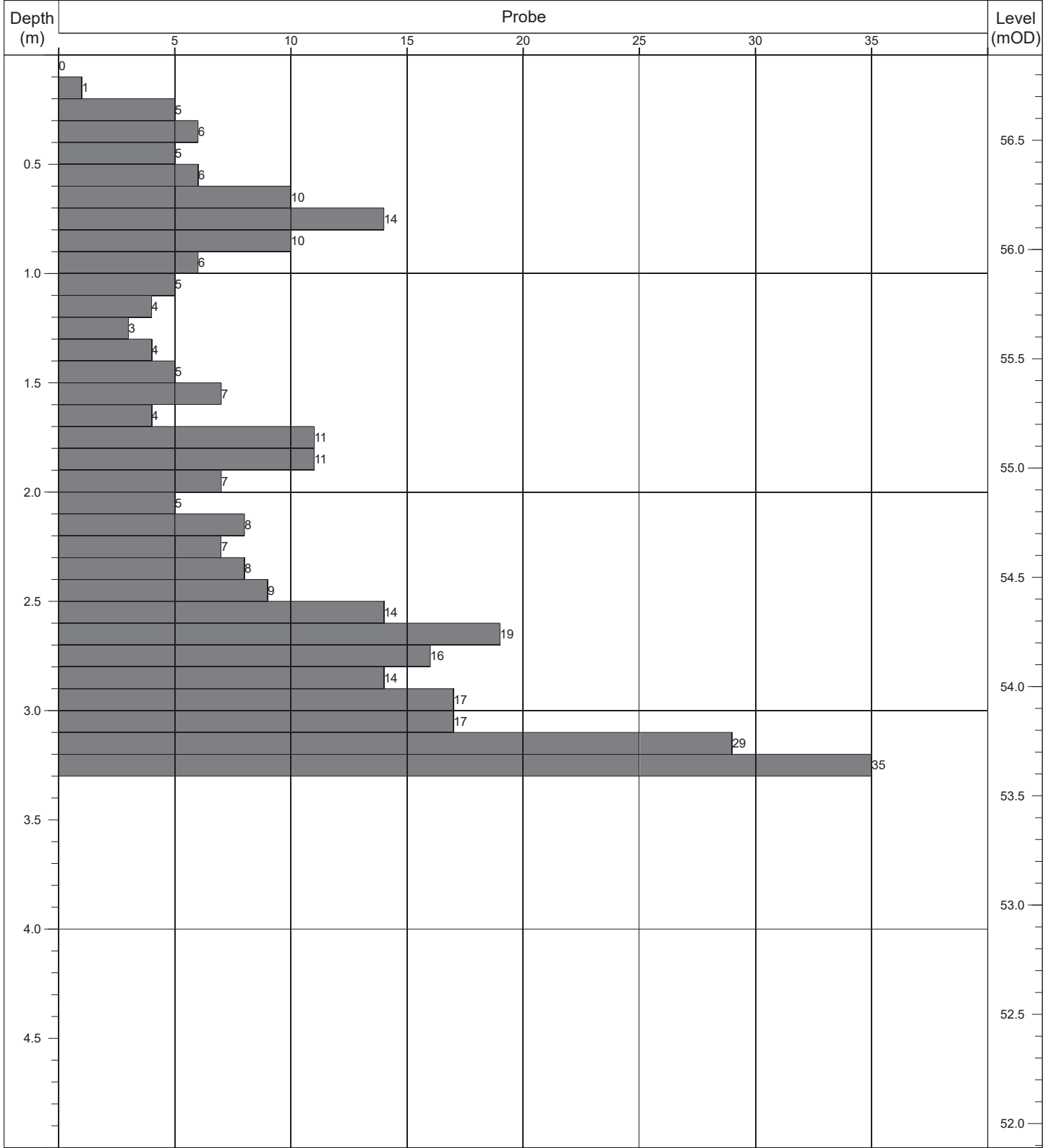
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.00m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP32 |
| Contract: | Moygaddy | Easting: | 693787.843 | Date Started: 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739388.255 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.49 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

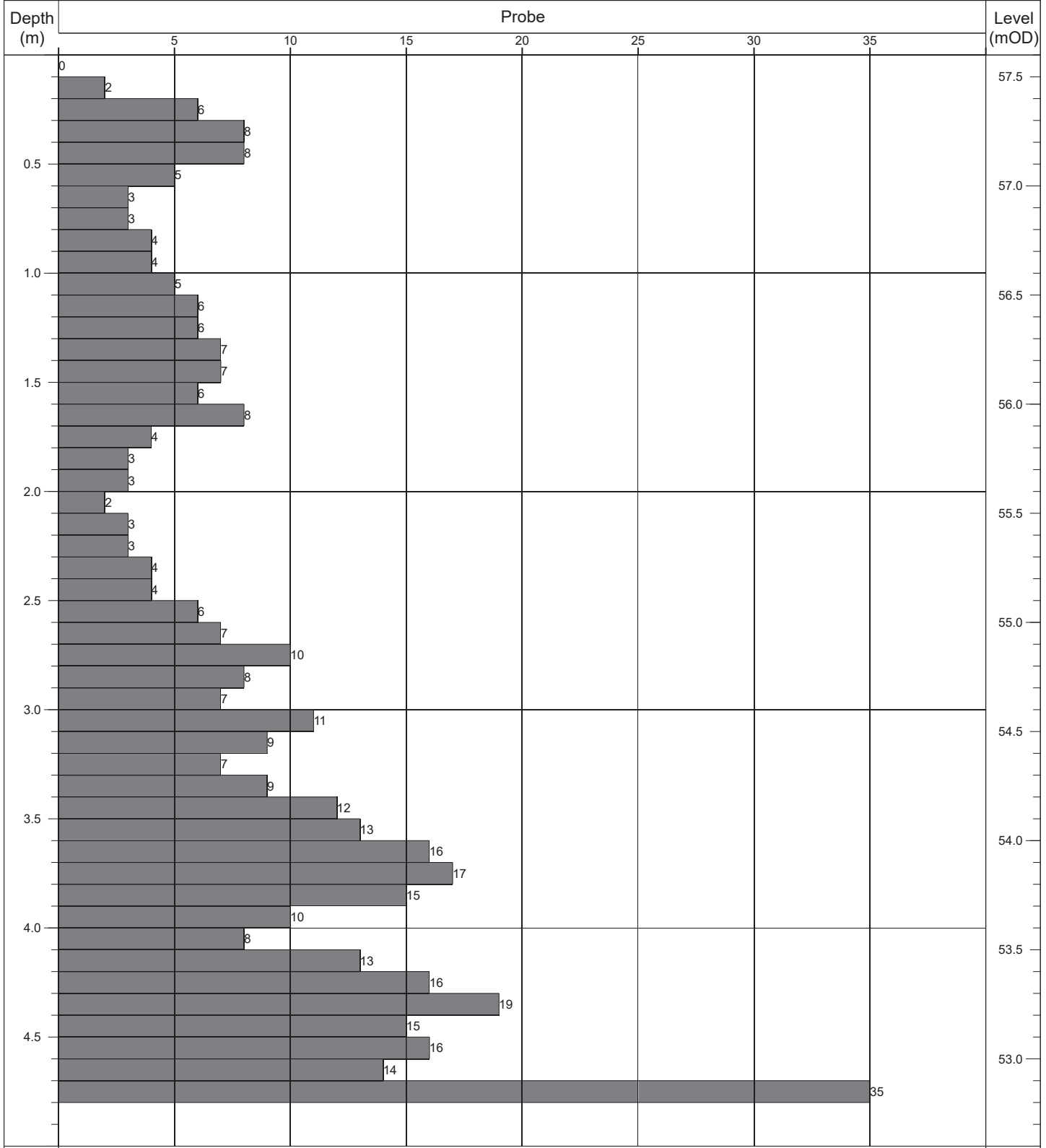
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP33 |
| Contract: | Moygaddy | Easting: | 693889.656 | Date Started: 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739385.777 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.89 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP34 |
|----------------------|--------------------------|--|--|--------------------------|

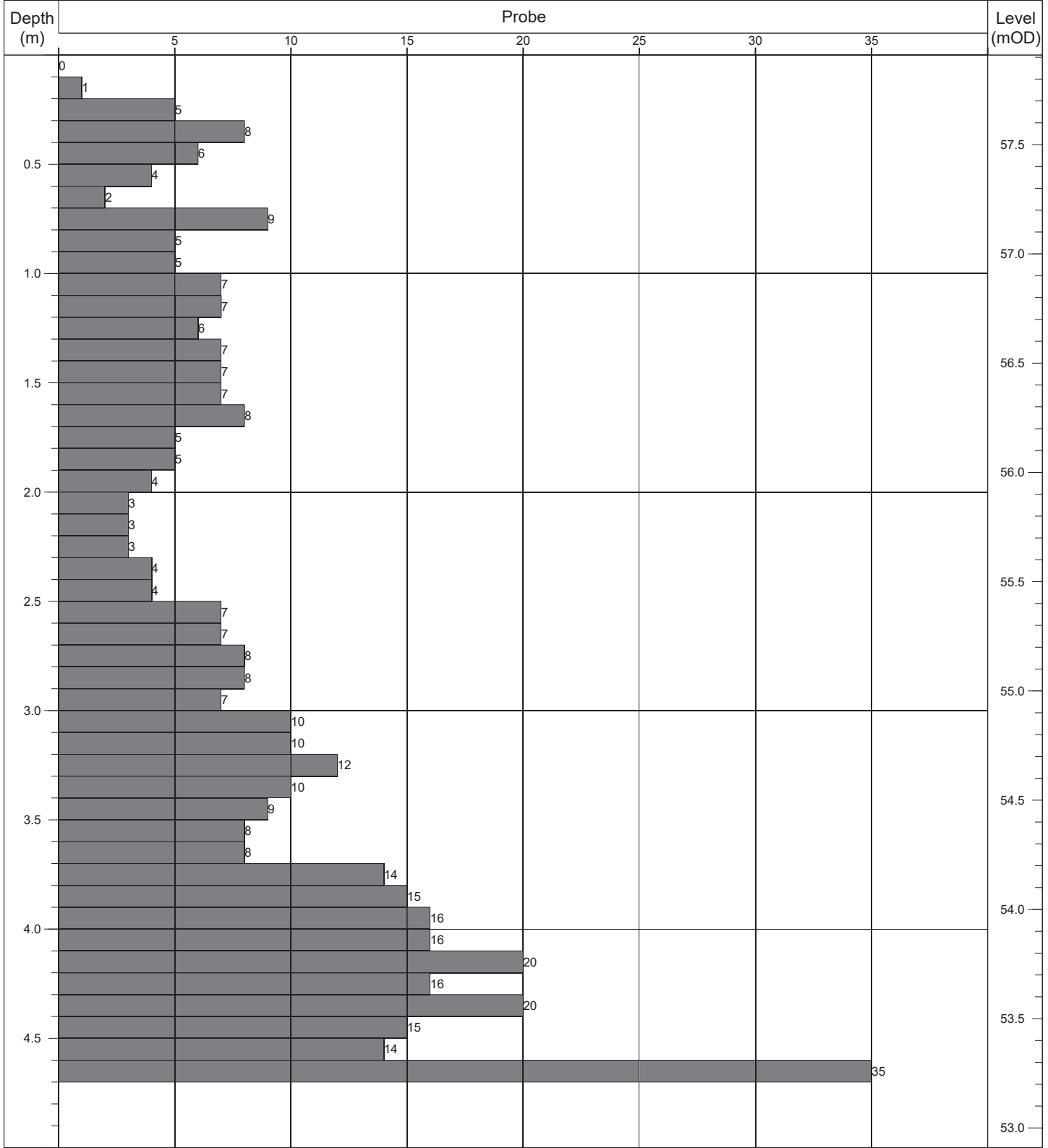
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693987.346 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739387.484 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.60 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 4.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP35 |
|----------------------|--------------------------|--|--|--------------------------|

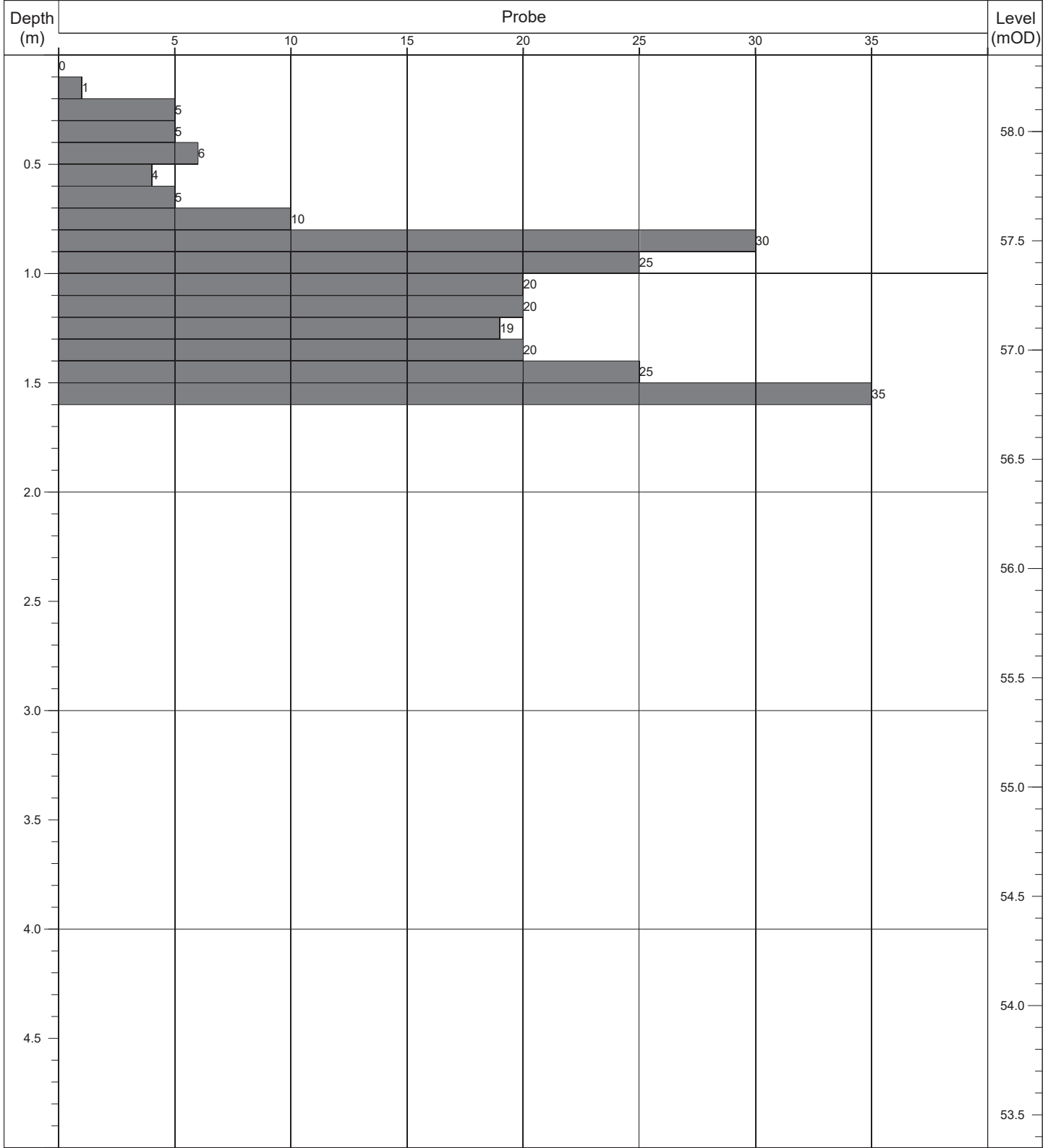
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694086.861 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739385.871 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.91 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 4.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP36 |
|----------------------|--------------------------|--|--|--------------------------|

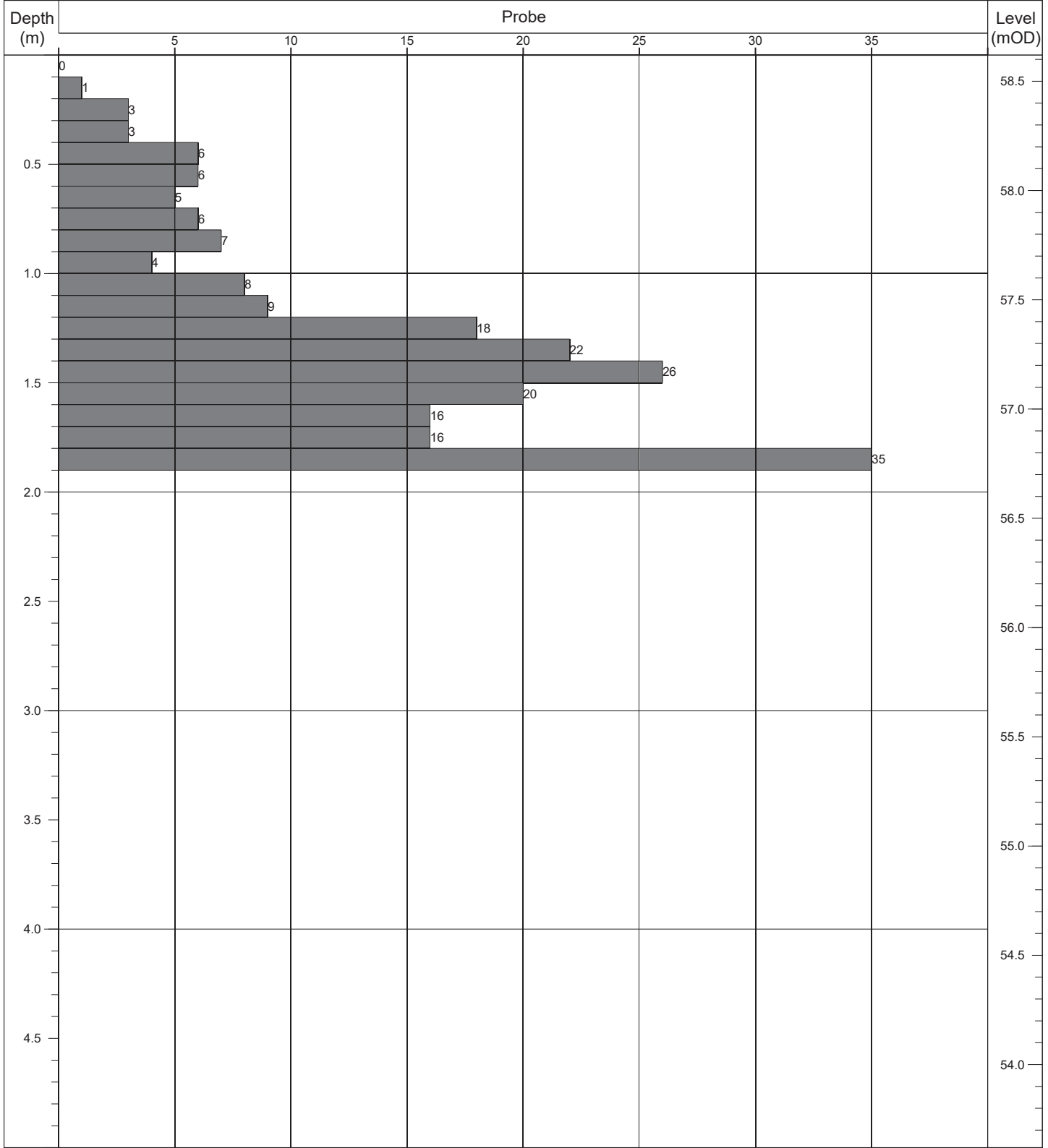
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694190.231 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739385.957 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.35 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

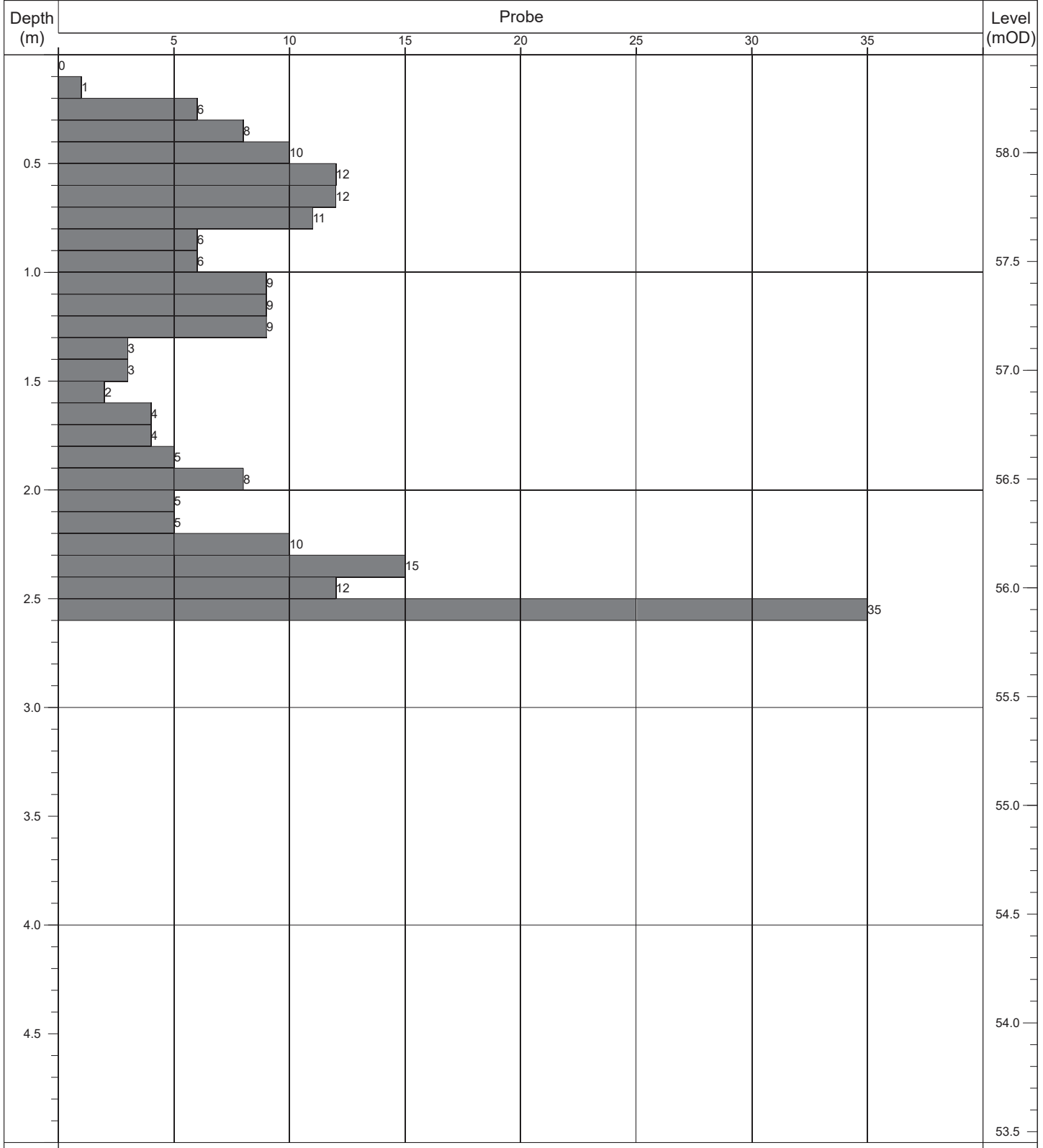
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP37 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694288.456 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739387.753 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.62 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

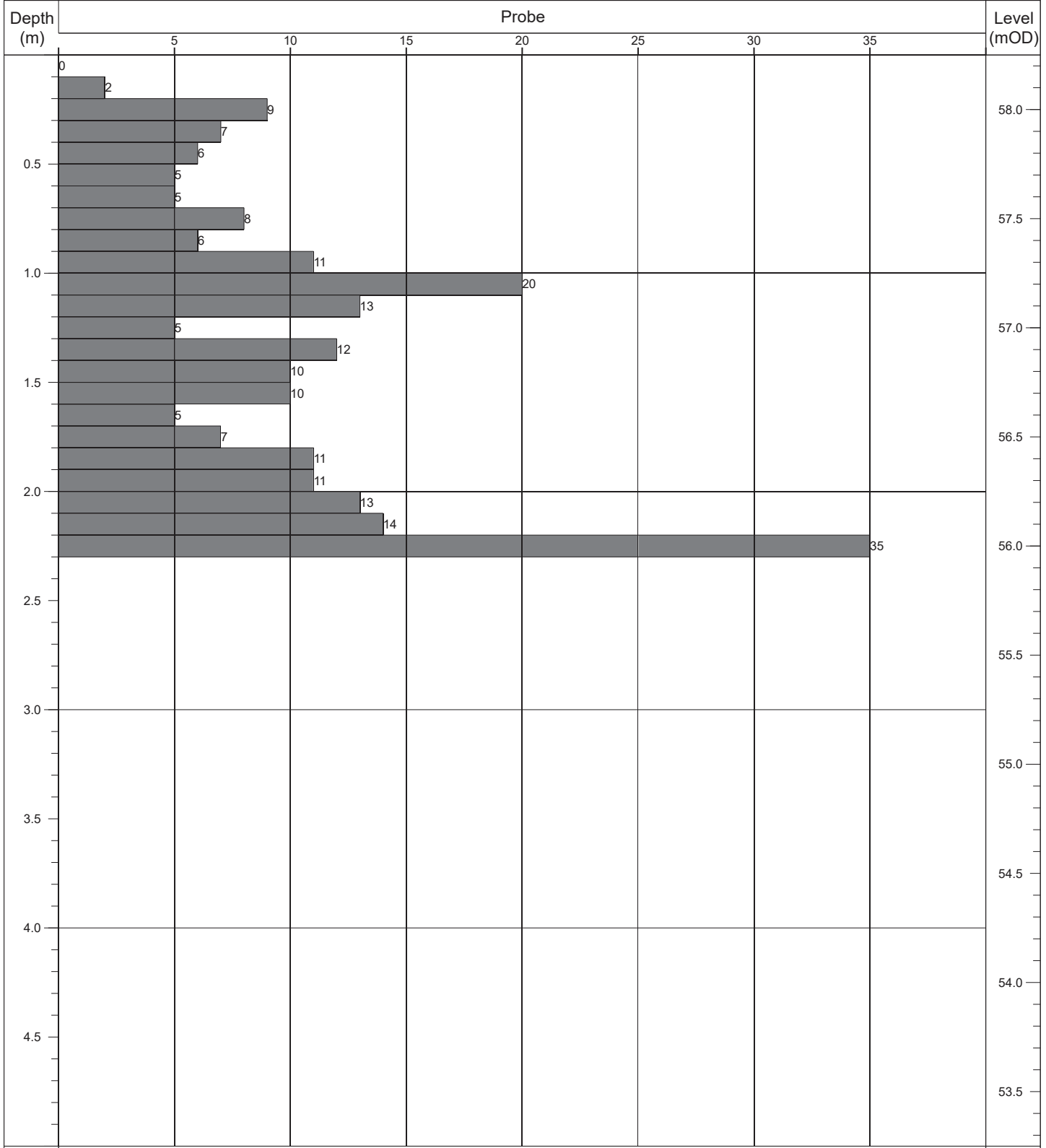
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP38 |
| Contract: | Moygaddy | Easting: | 694370.568 | Date Started: 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739380.643 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.45 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP39 |
|----------------------|--------------------------|--|--|--------------------------|

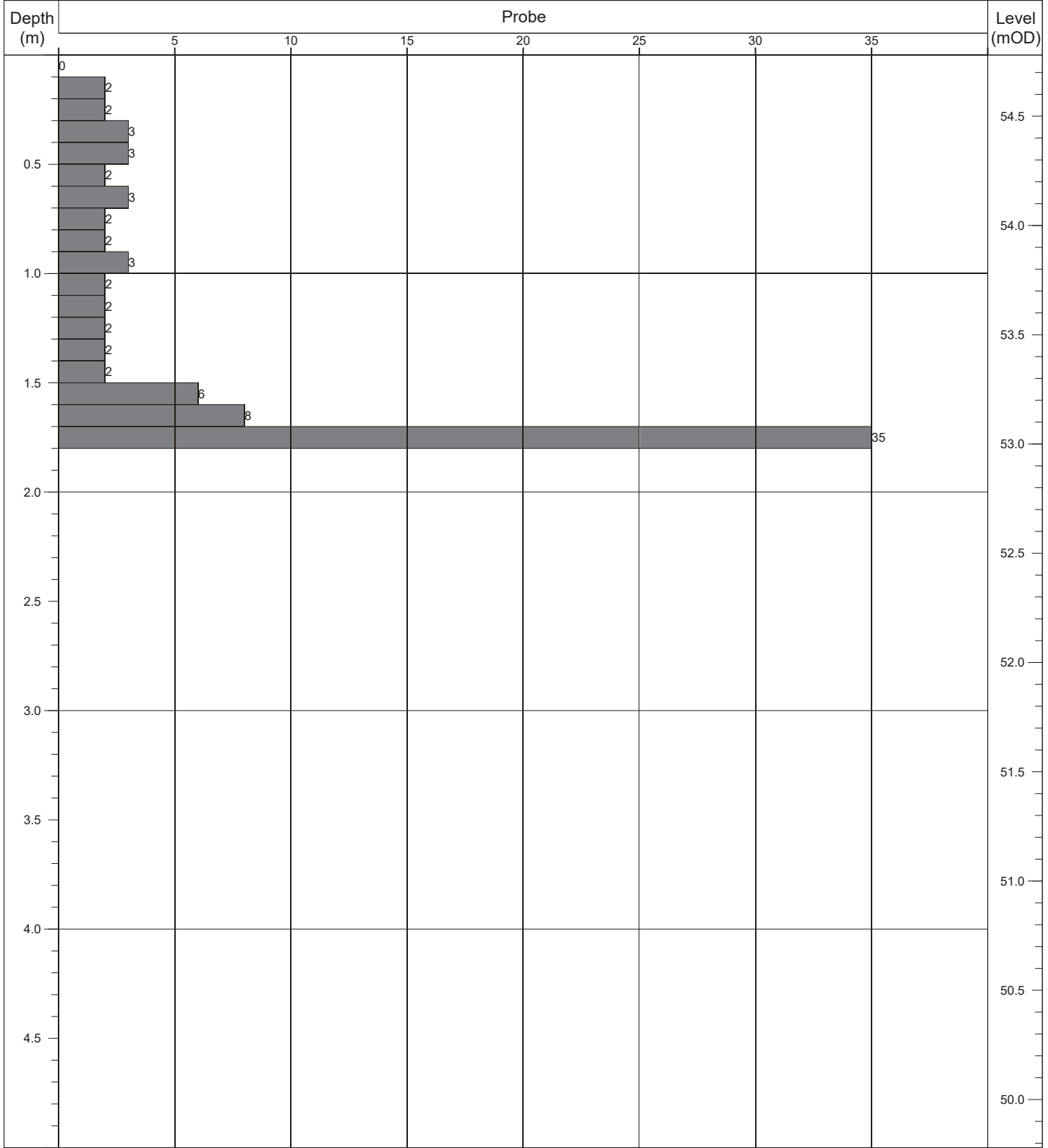
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694486.826 | Date Started: | 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739390.243 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.25 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP40 |
|----------------------|--------------------------|--|--|--------------------------|

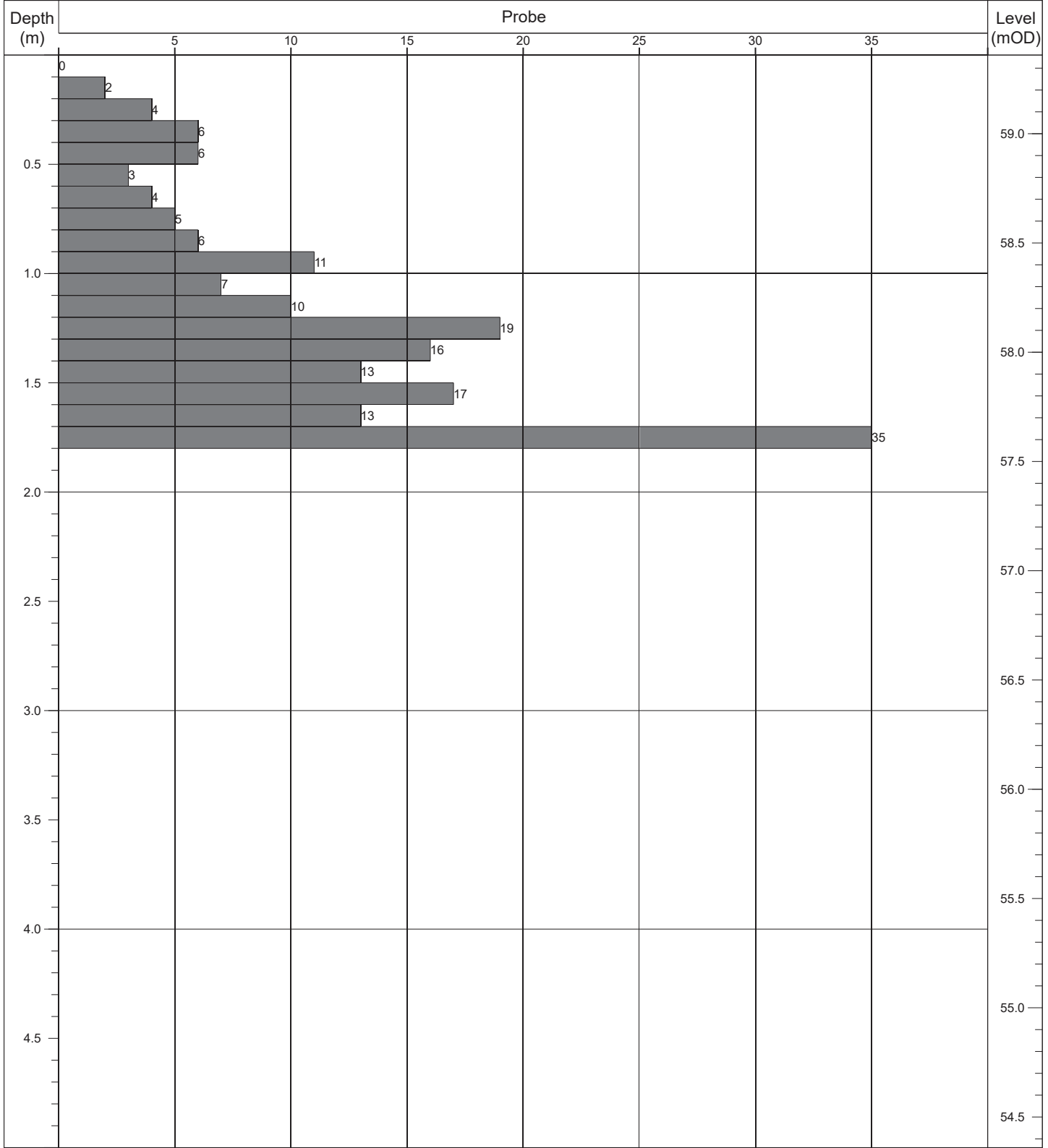
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694569.043 | Date Started: | 24/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739386.611 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 54.78 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP41 |
|----------------------|--------------------------|--|--|--------------------------|

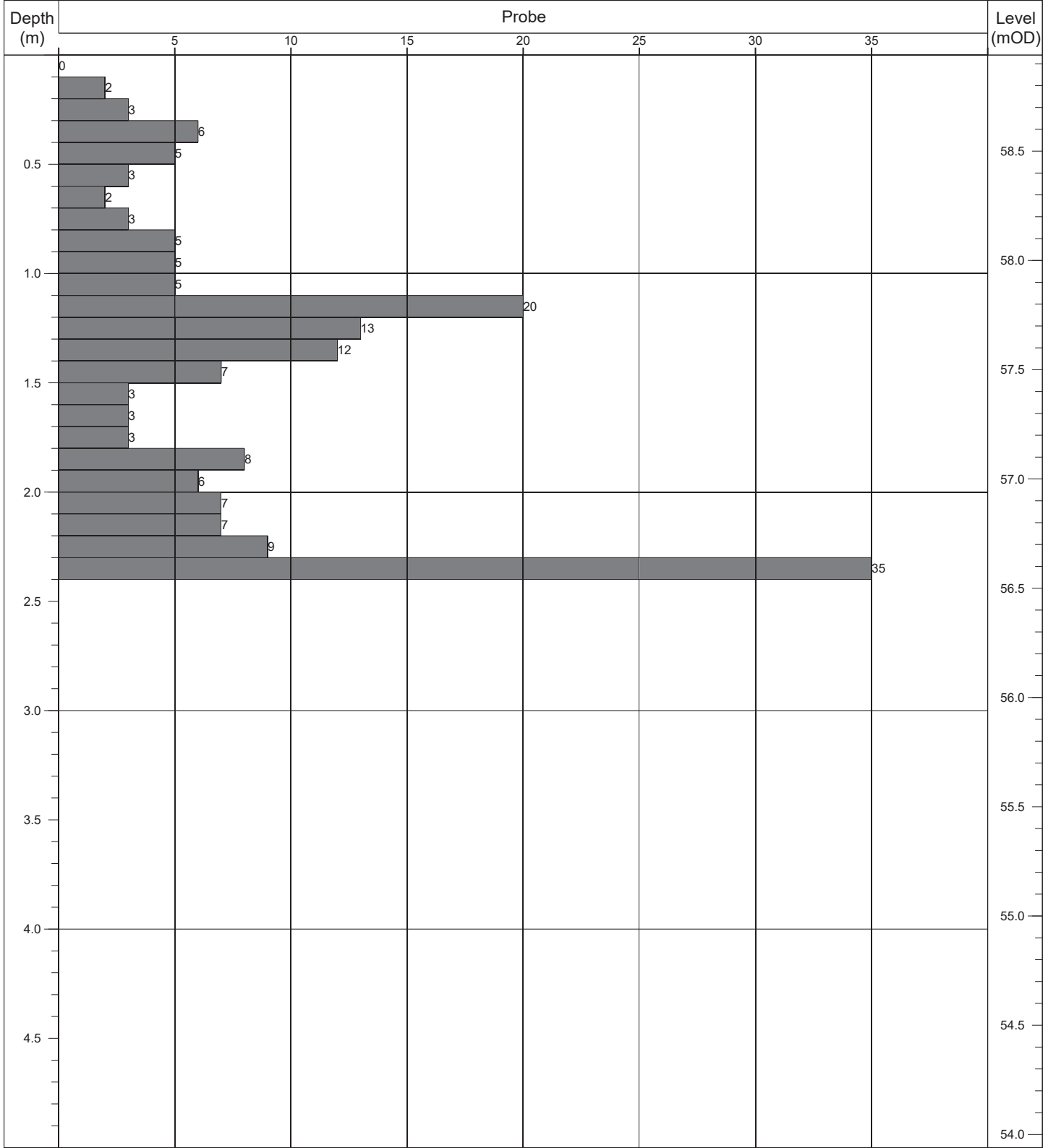
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694691.616 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739389.831 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.36 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP42 |
|----------------------|--------------------------|--|--|--------------------------|

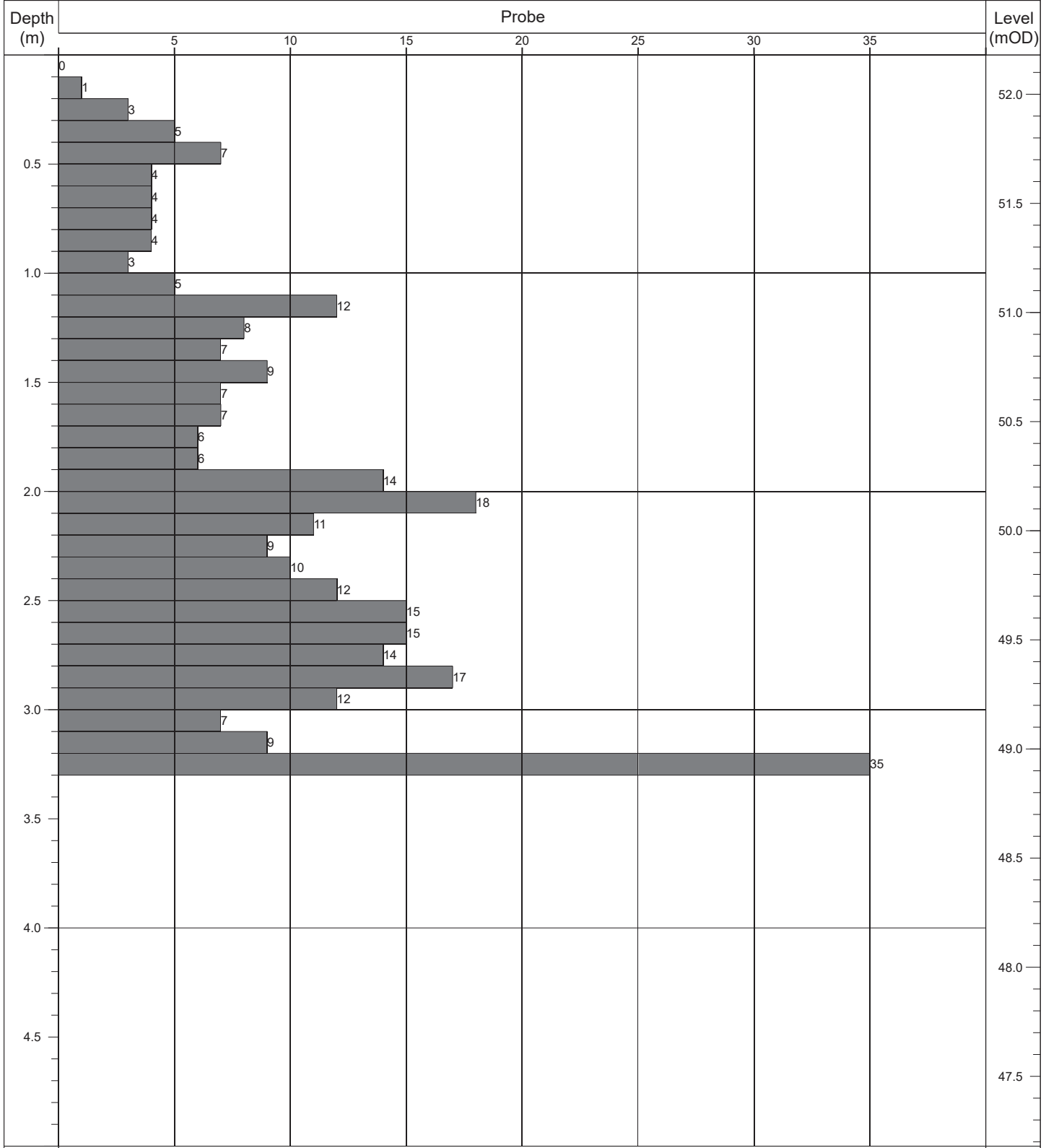
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694791.212 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739385.883 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.94 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP43 |
|----------------------|--------------------------|--|--|--------------------------|

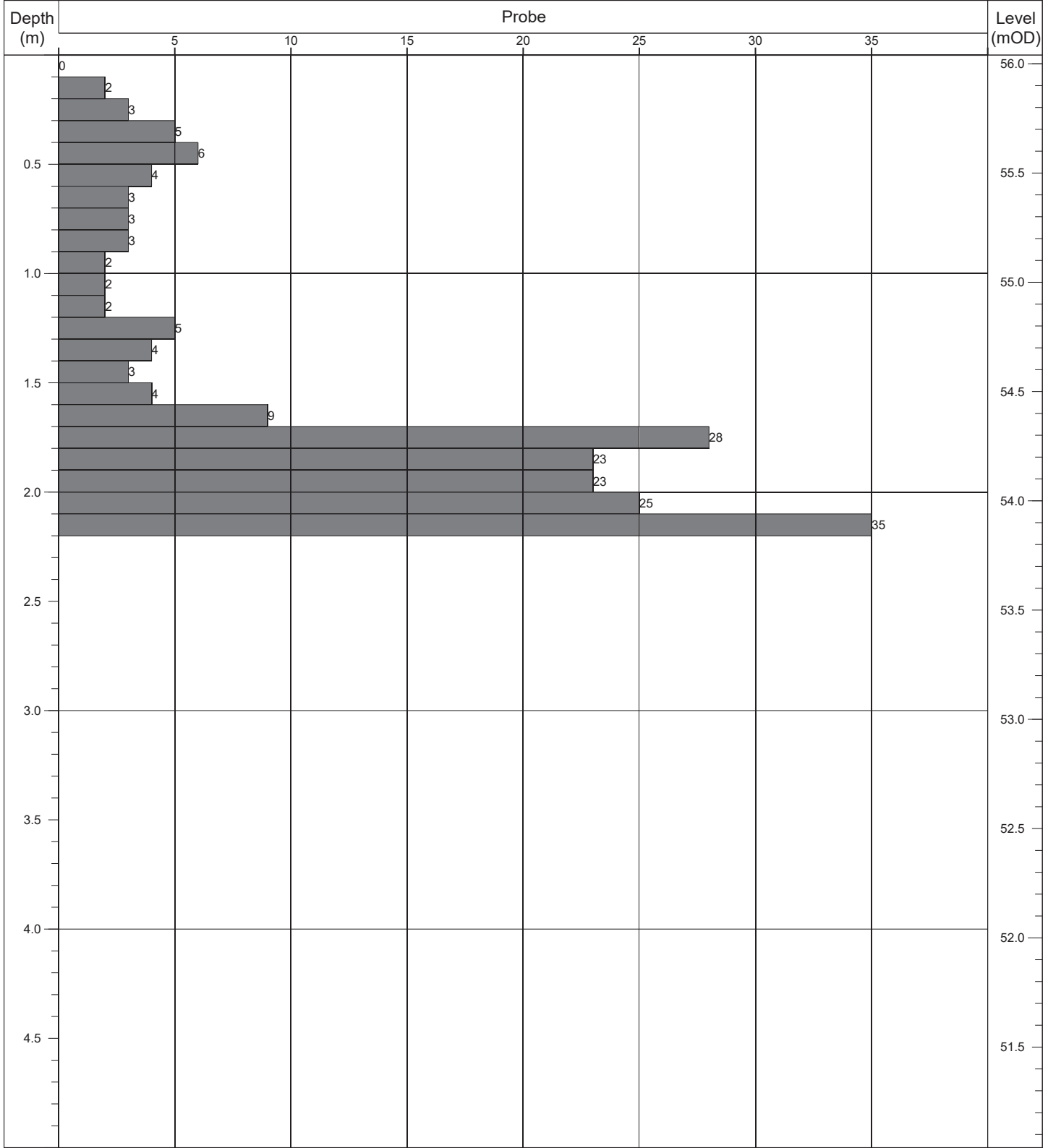
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693688.642 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739290.847 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 52.18 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

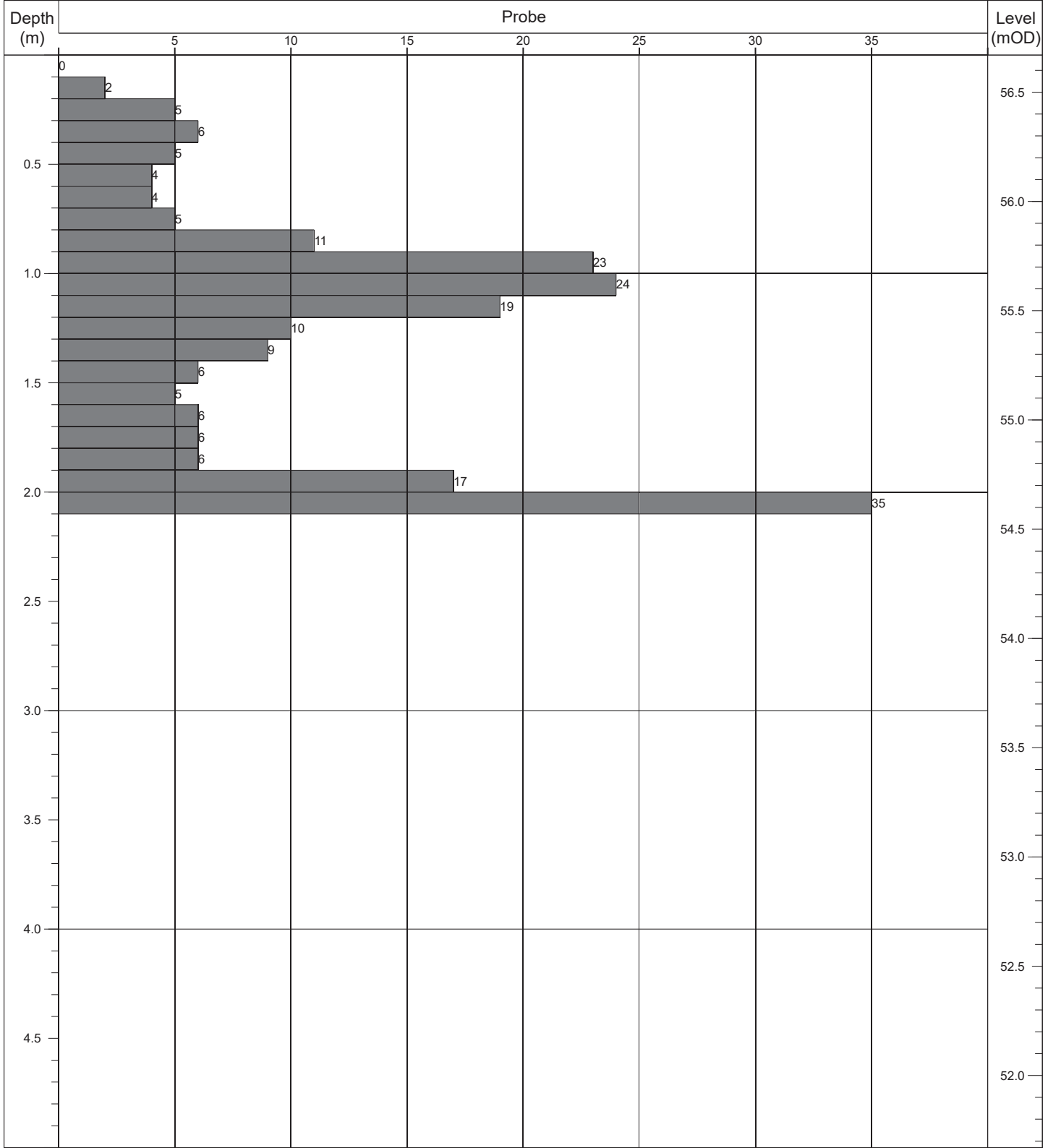
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP44 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693788.258 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739285.161 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.04 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

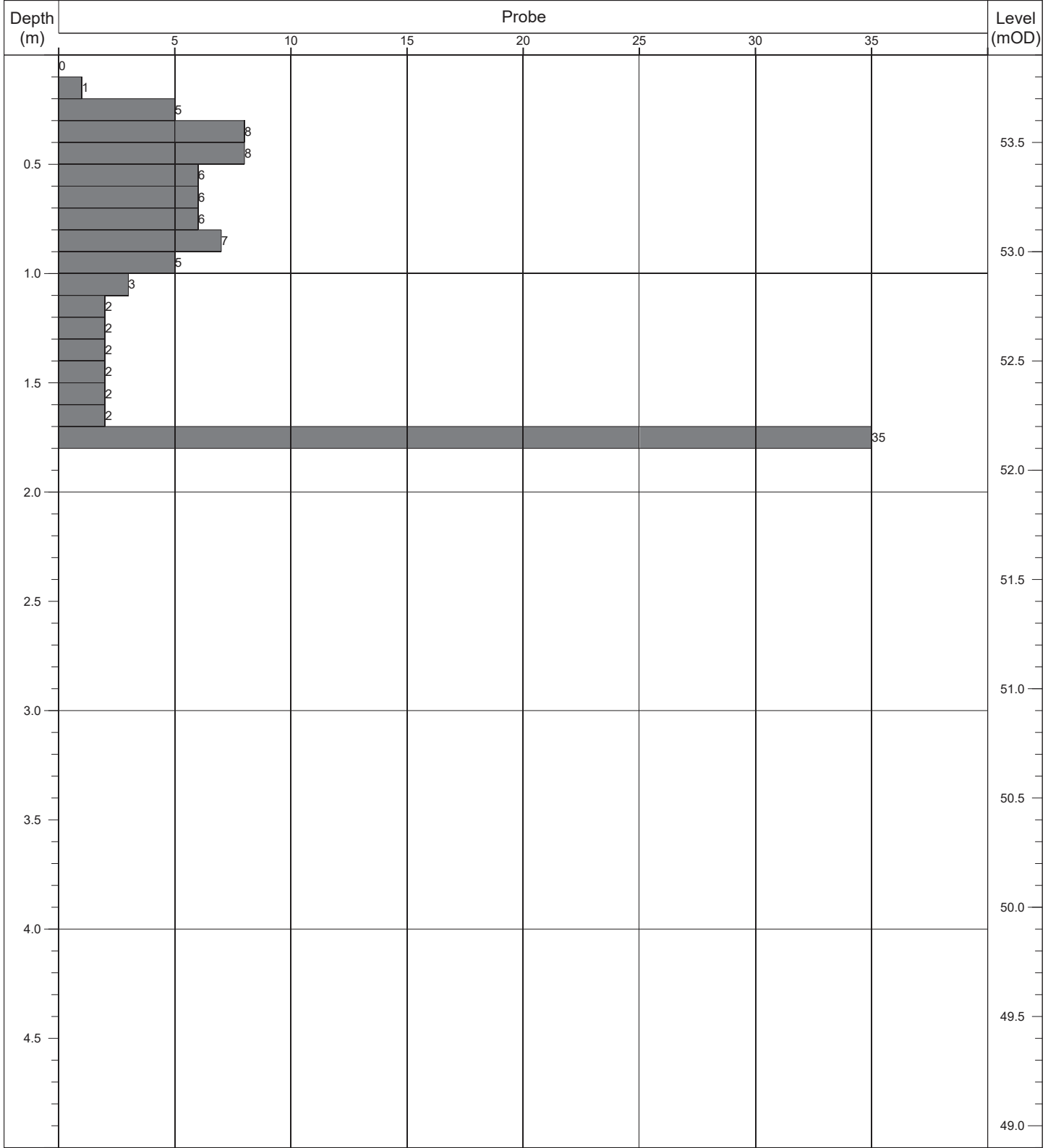
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP45 |
| Contract: | Moygaddy | Easting: | 694091.482 | Date Started: 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739278.290 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.67 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.10m | Obstruction - boulders. | DPH | 50kg | 500mm | |

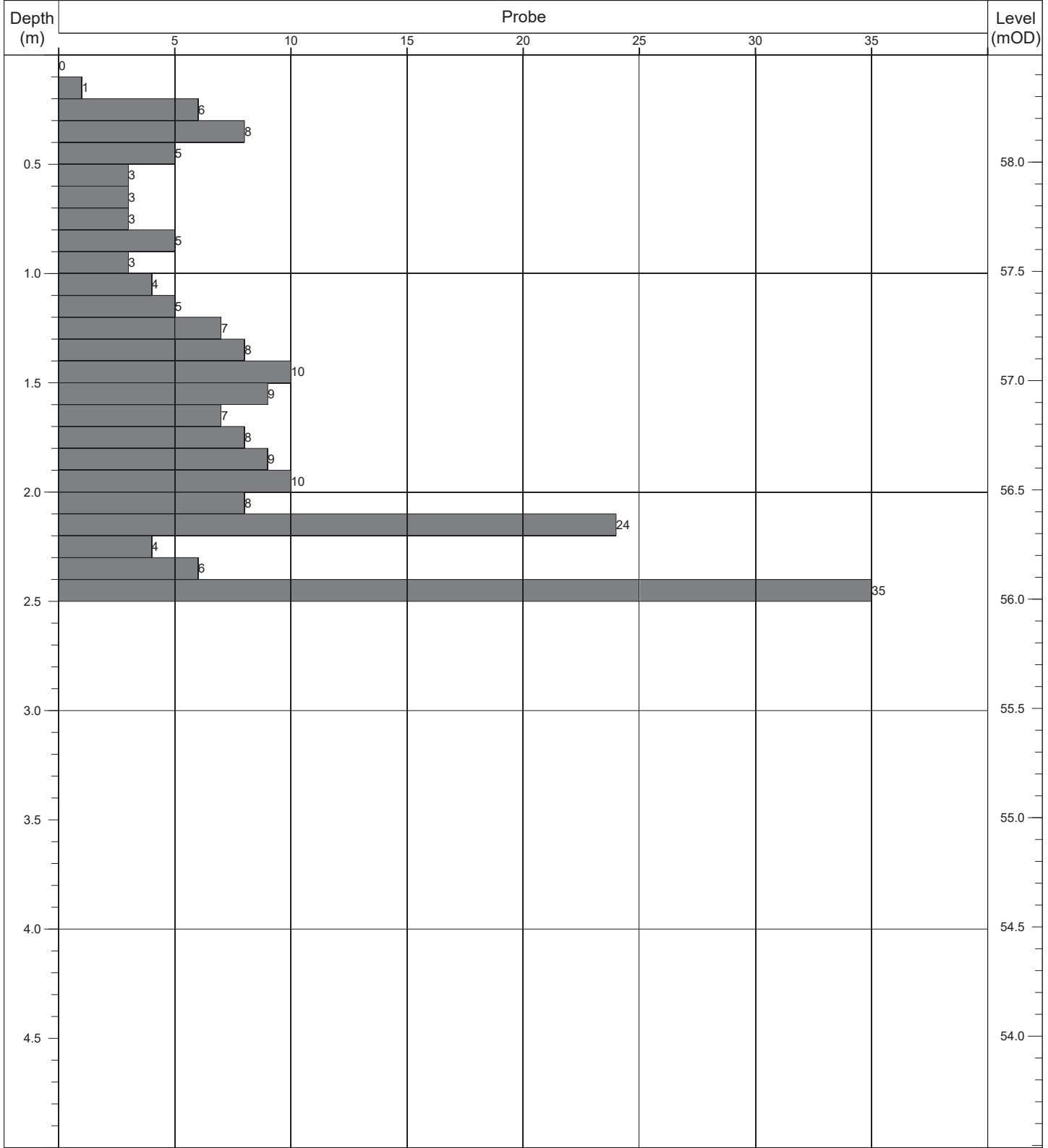
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP46 |
|----------------------|--------------------------|--|--|--------------------------|


| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694430.386 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739324.235 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 53.90 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

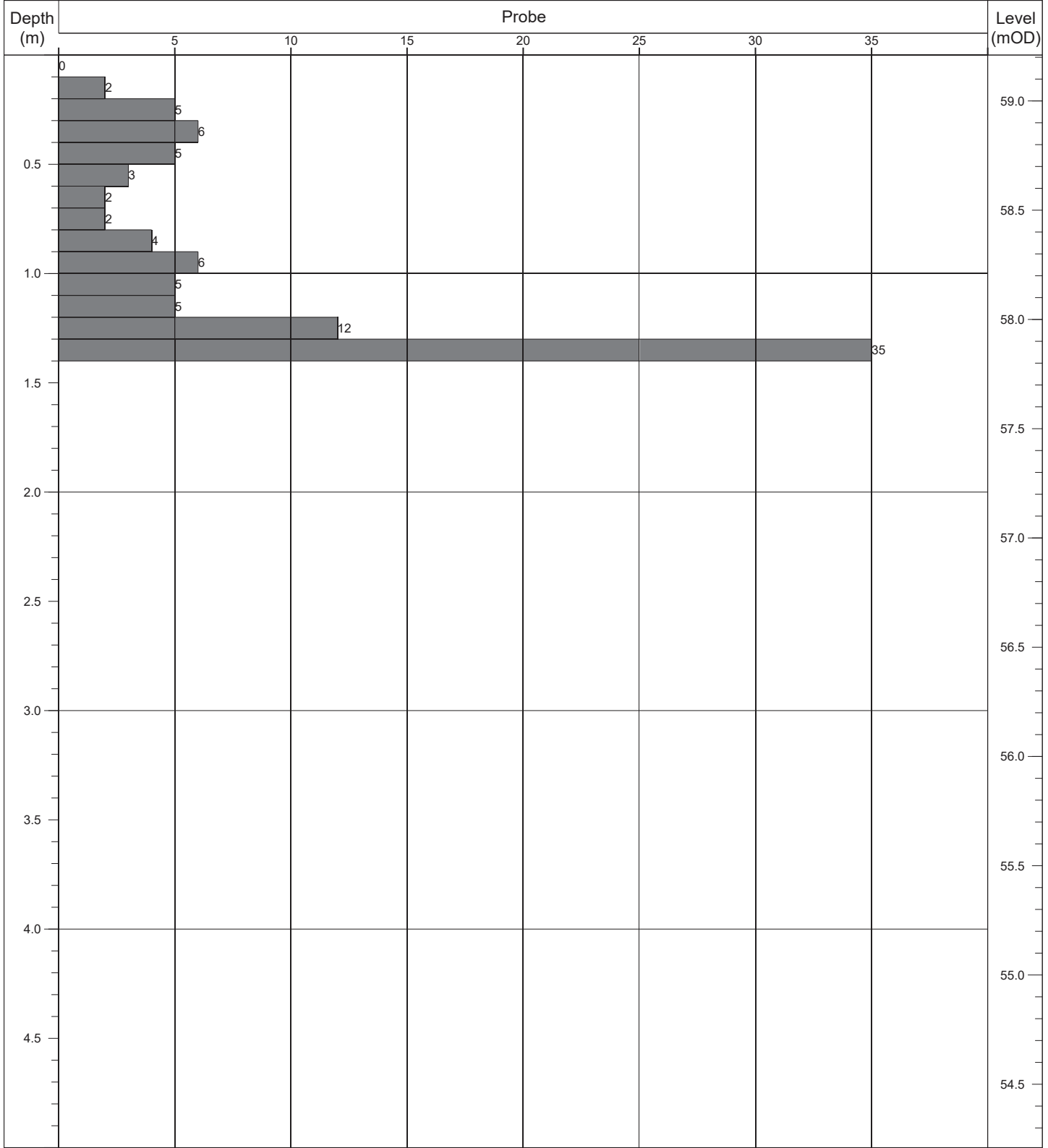
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP47 |
| Contract: | Moygaddy | Easting: | 694493.472 | Date Started: 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739282.726 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.49 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|--|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP48 |
|----------------------|--------------------------|--|--|--|--------------------------|

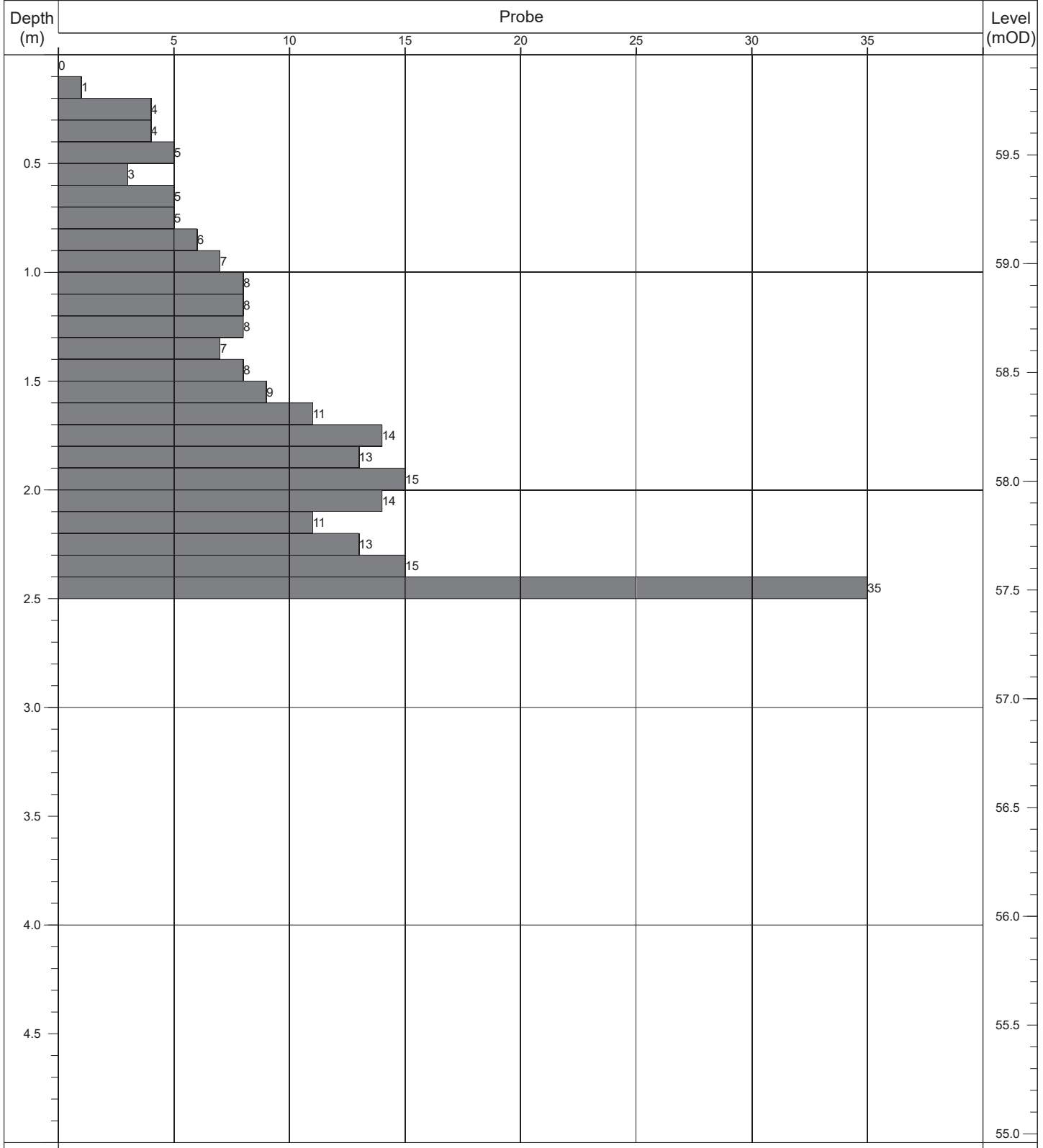
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694590.116 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739288.613 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.21 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

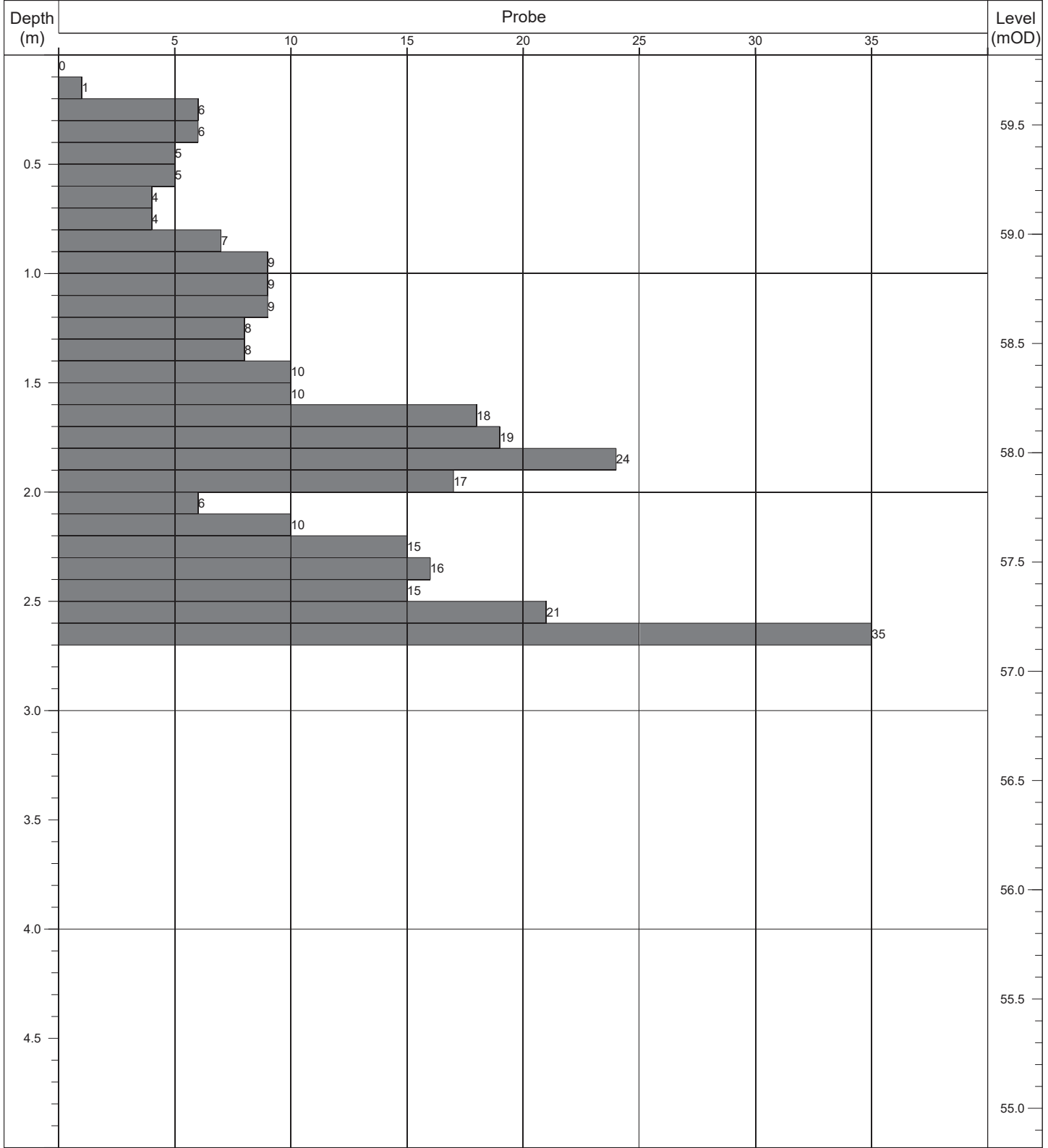
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP49 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694682.452 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739291.233 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.96 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



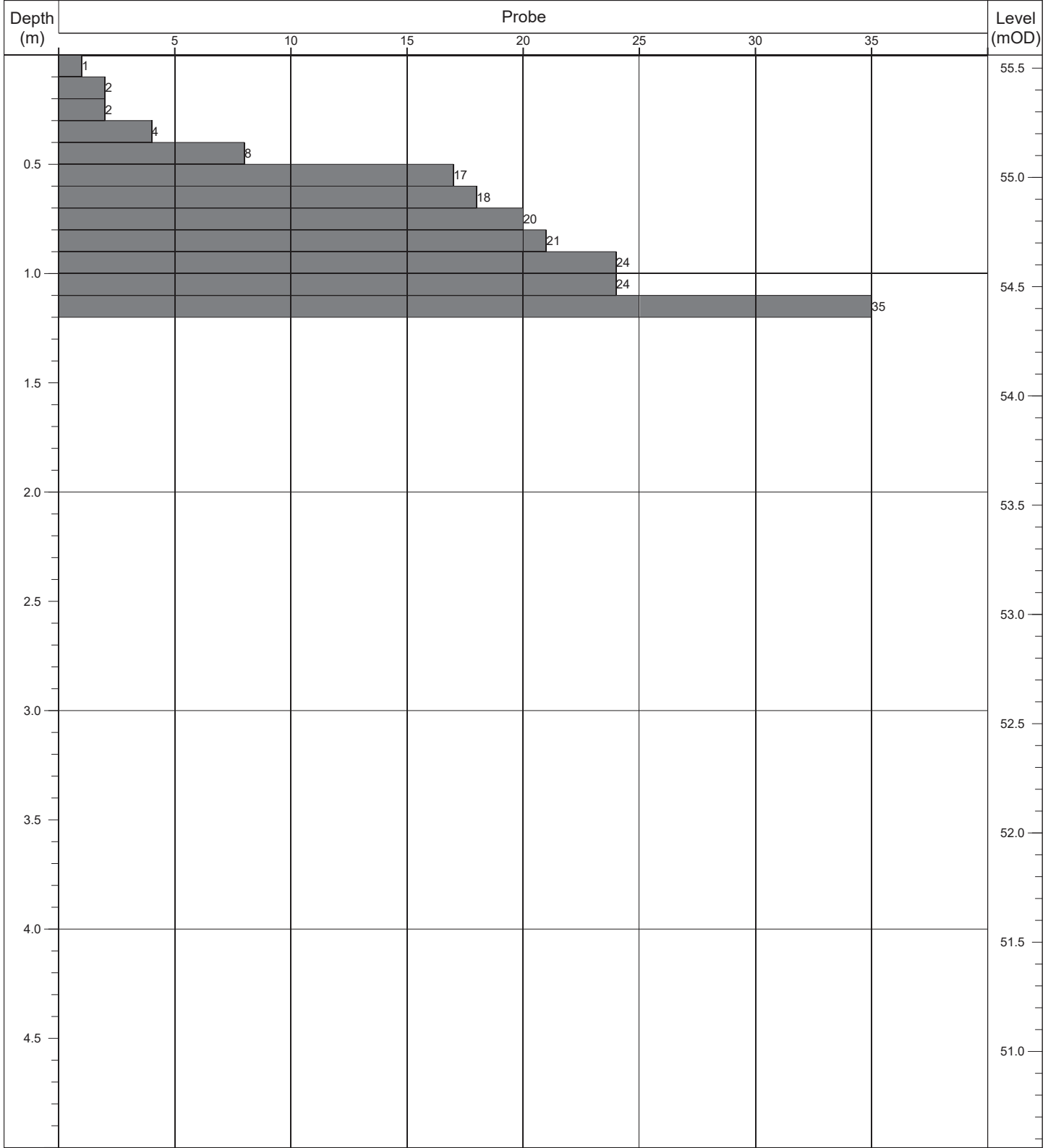
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP50 |
| Contract: | Moygaddy | Easting: | 694788.363 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739288.137 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 59.82 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



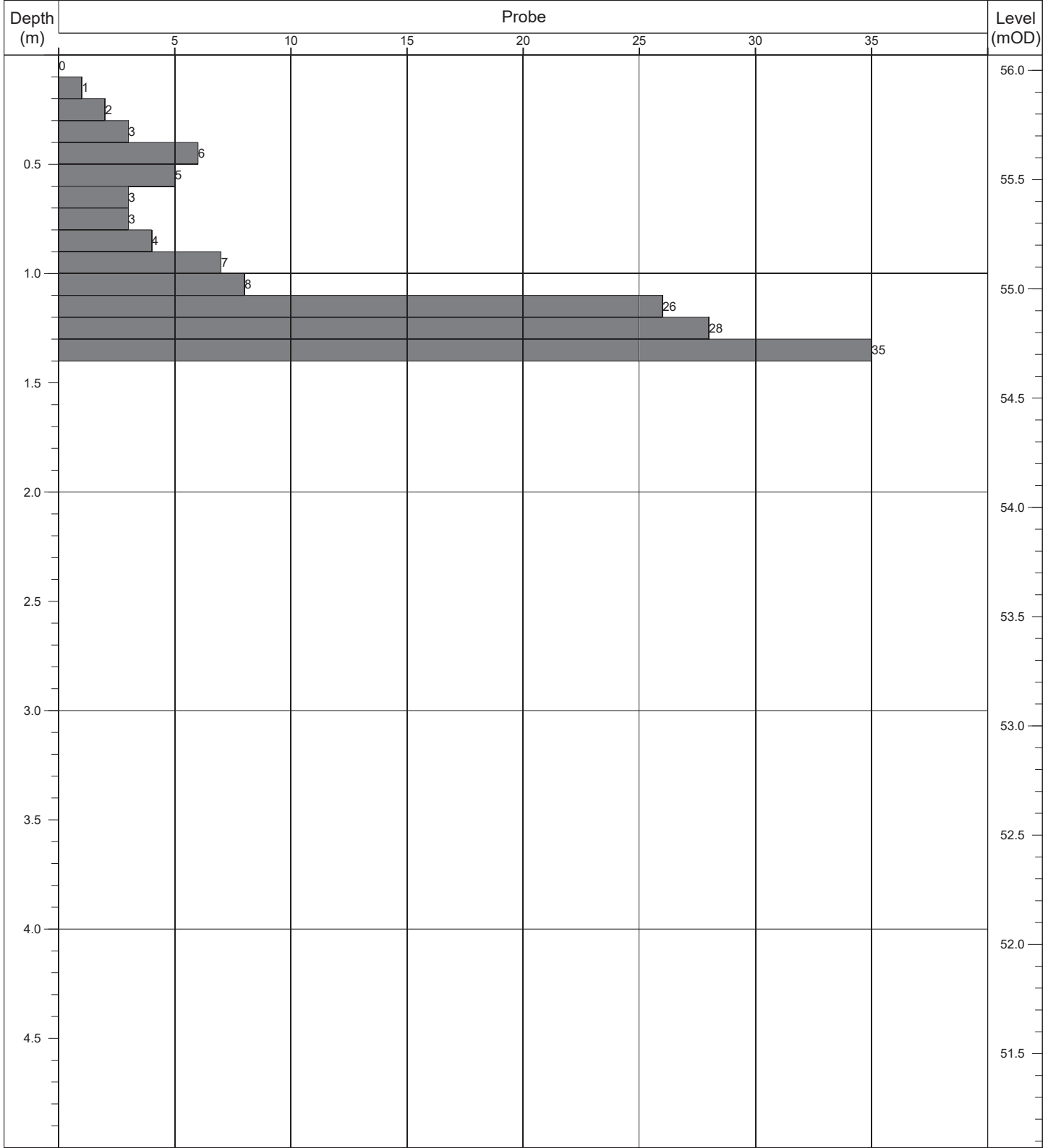
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP51 |
| Contract: | Moygaddy | Easting: | 693890.121 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739187.554 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.56 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

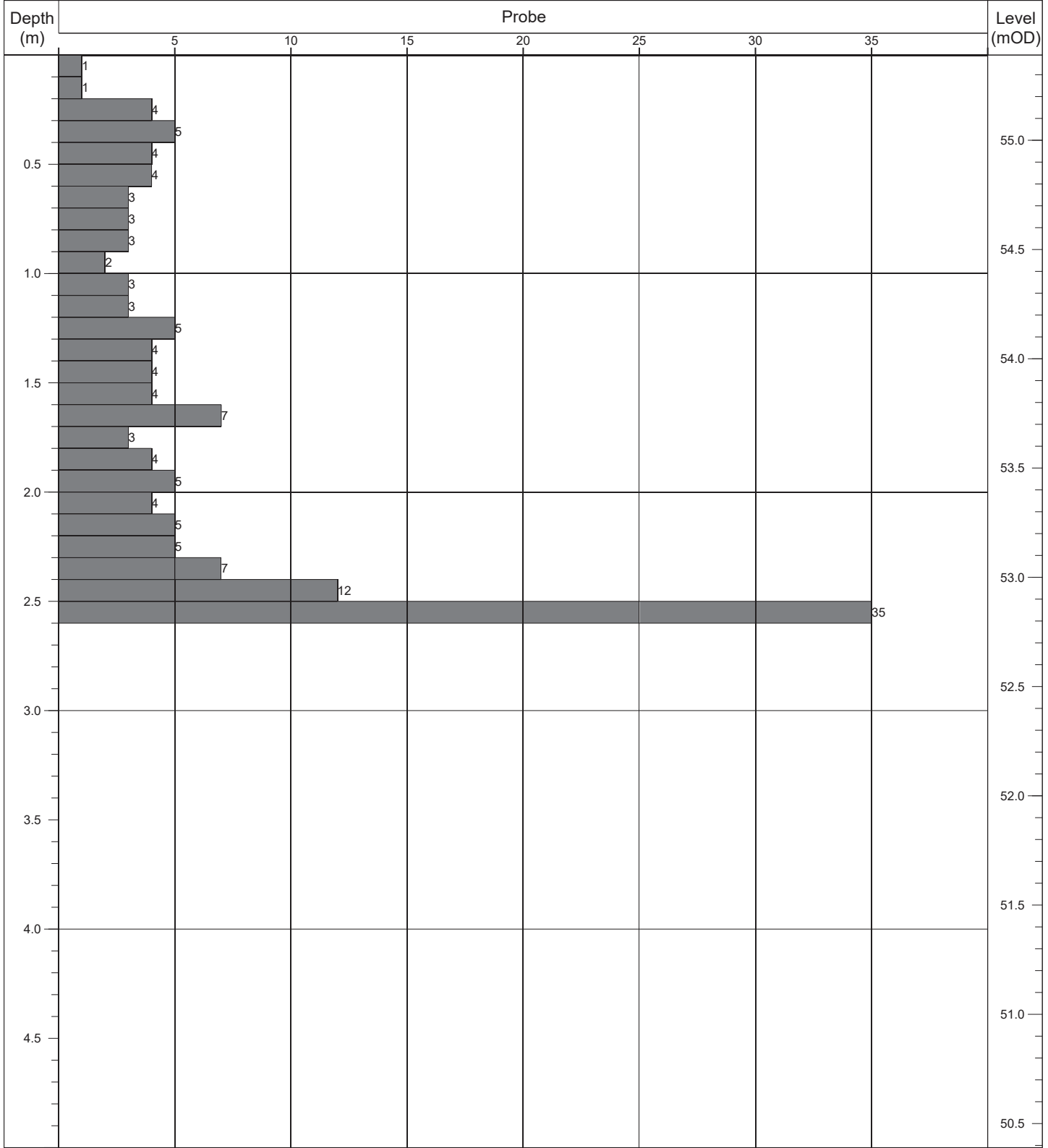
| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP52 |
| Contract: | Moygaddy | Easting: | 693984.693 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739184.950 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.07 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

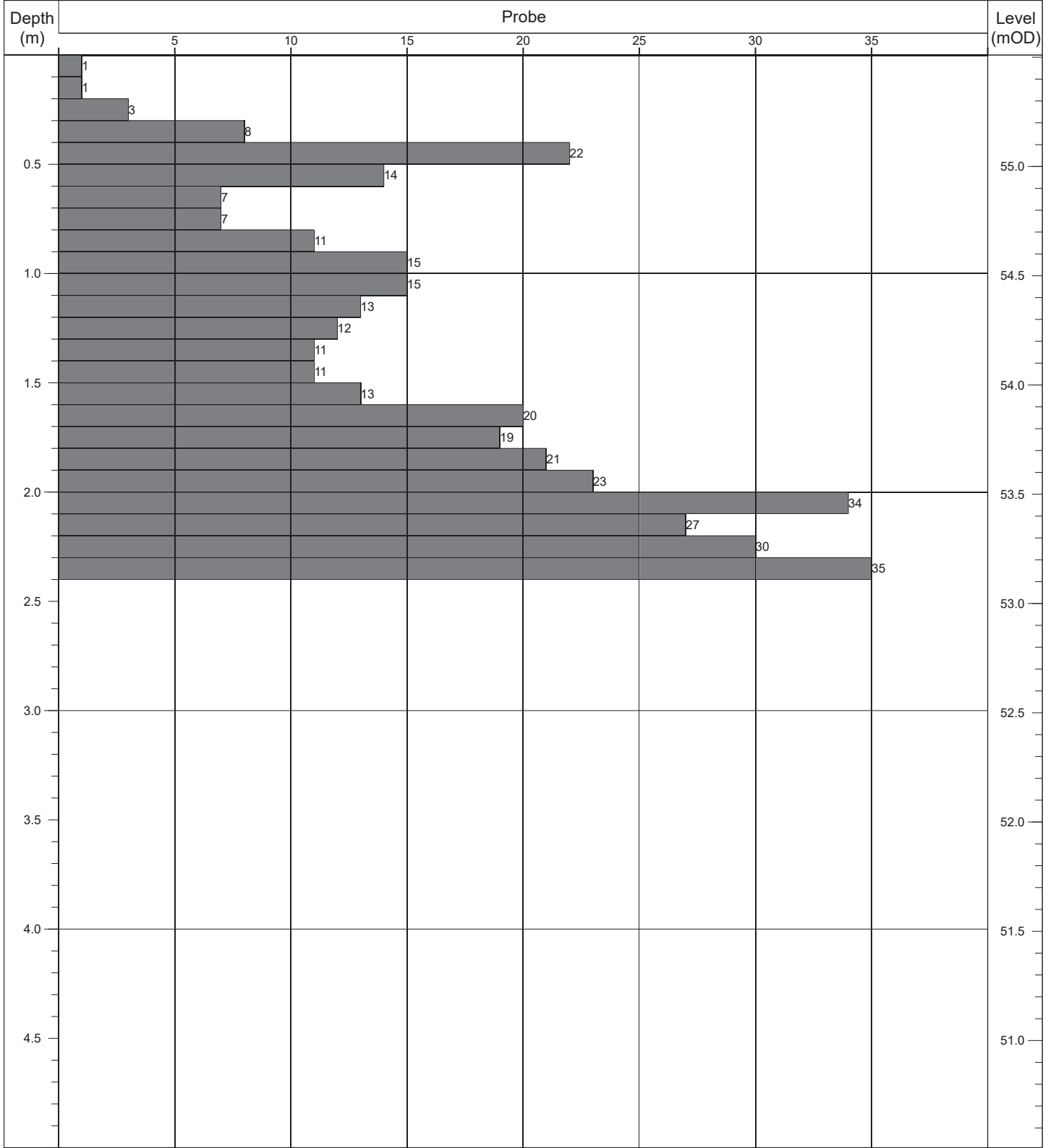
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP53 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694089.481 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739189.955 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.39 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



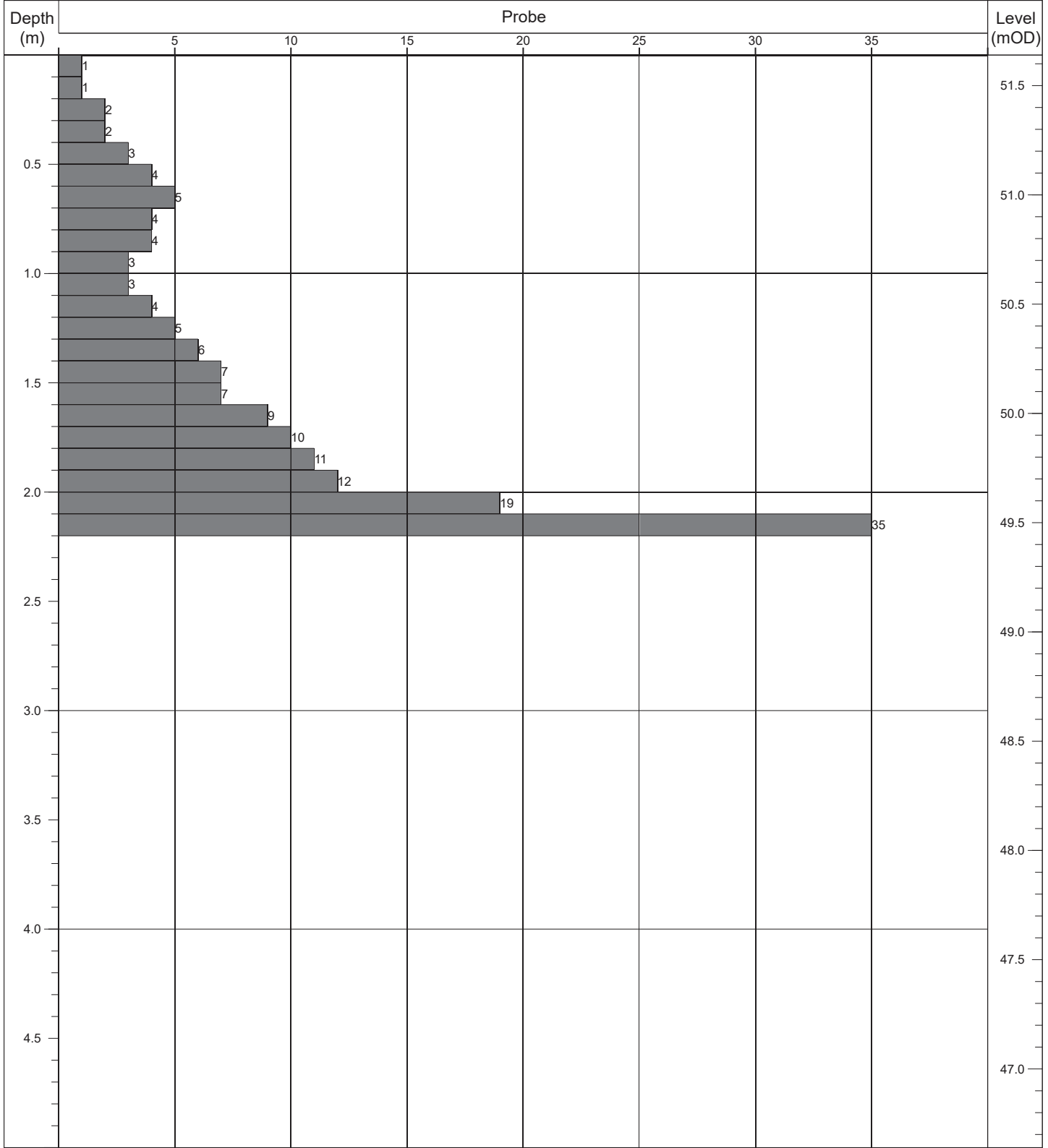
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP54 |
| Contract: | Moygaddy | Easting: | 694189.069 | Date Started: 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739183.974 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.51 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

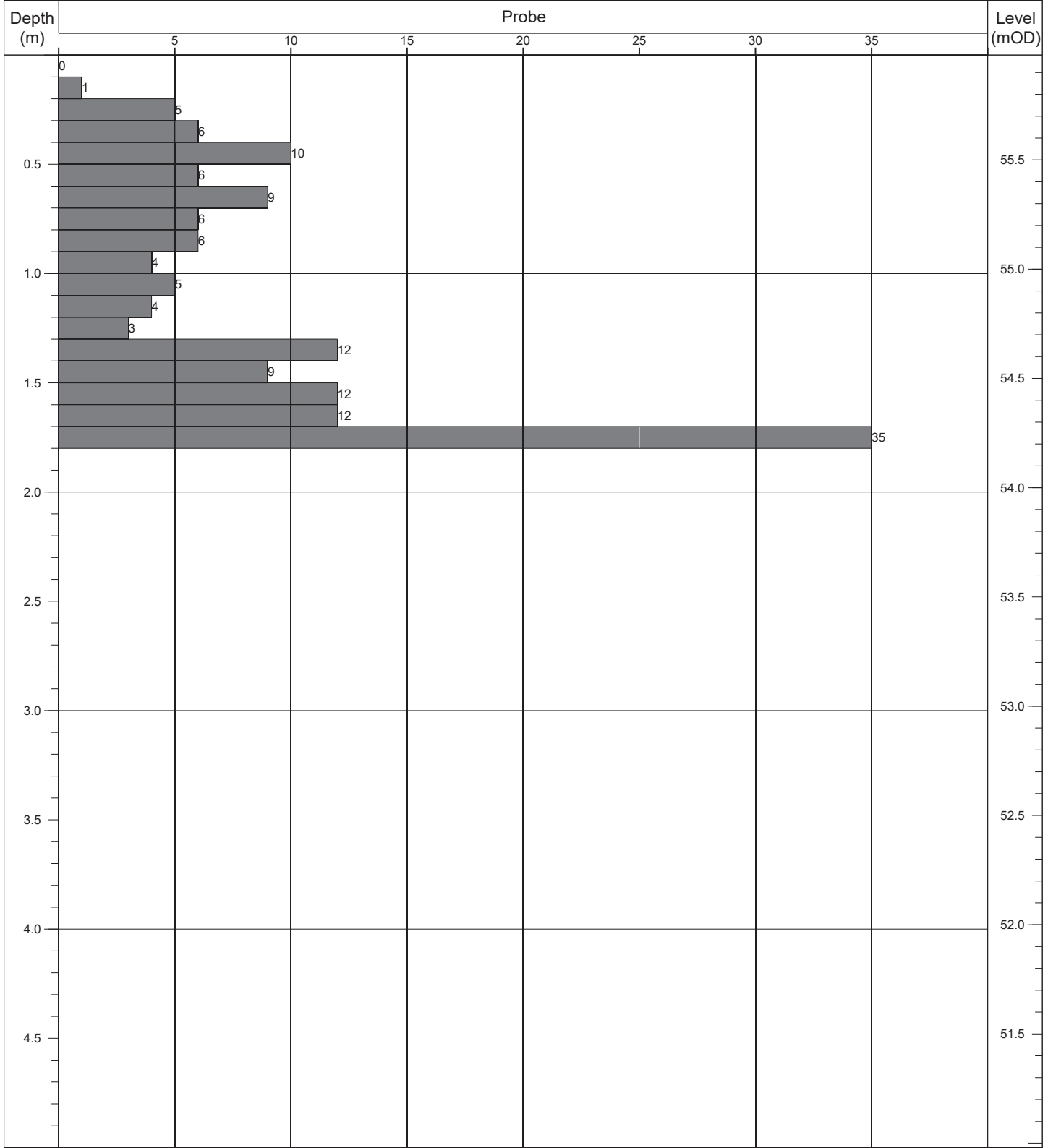
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP55 |
| Contract: | Moygaddy | Easting: | 694250.676 | Date Started: 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739180.873 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 51.64 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP56 |
|----------------------|--------------------------|--|--|--------------------------|

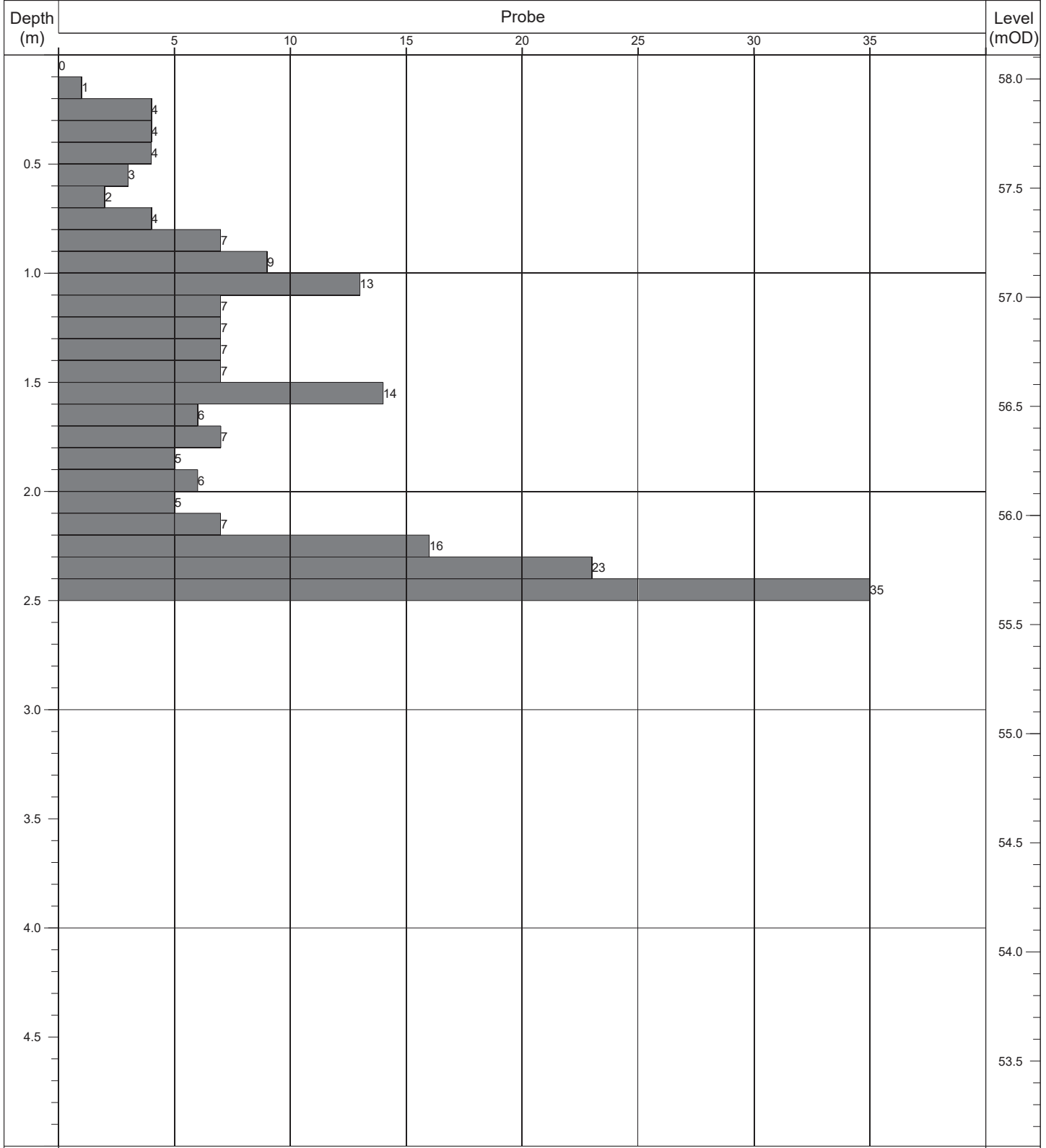
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694409.931 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739184.774 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.98 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

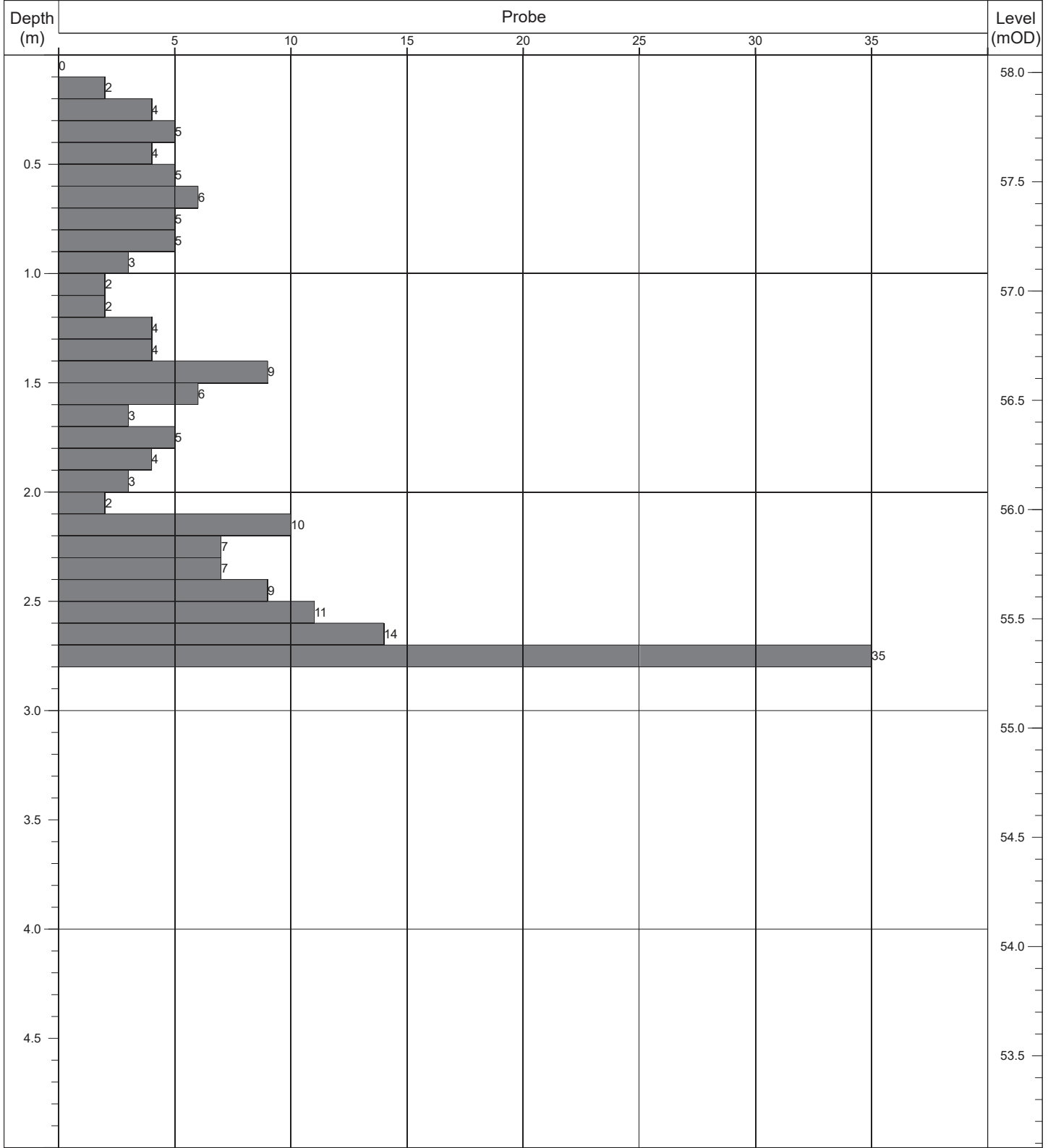
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP57 |
|----------------------|--------------------------|--|--|--------------------------|


| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694513.646 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739200.814 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.11 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

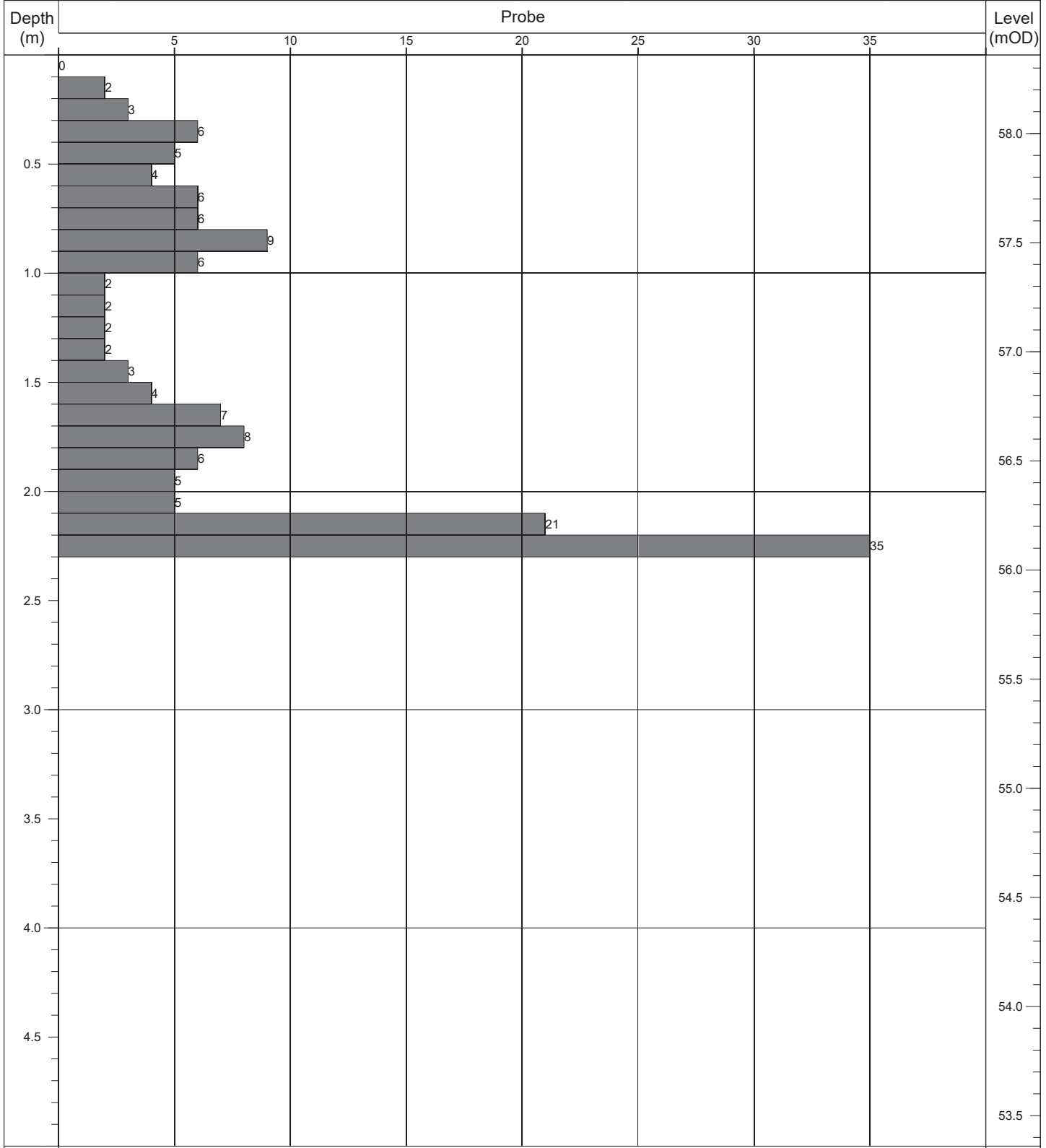
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP58 |
| Contract: | Moygaddy | Easting: | 694584.206 | Date Started: 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739182.489 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.08 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.80m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP59 |
|----------------------|--------------------------|--|--|--------------------------|

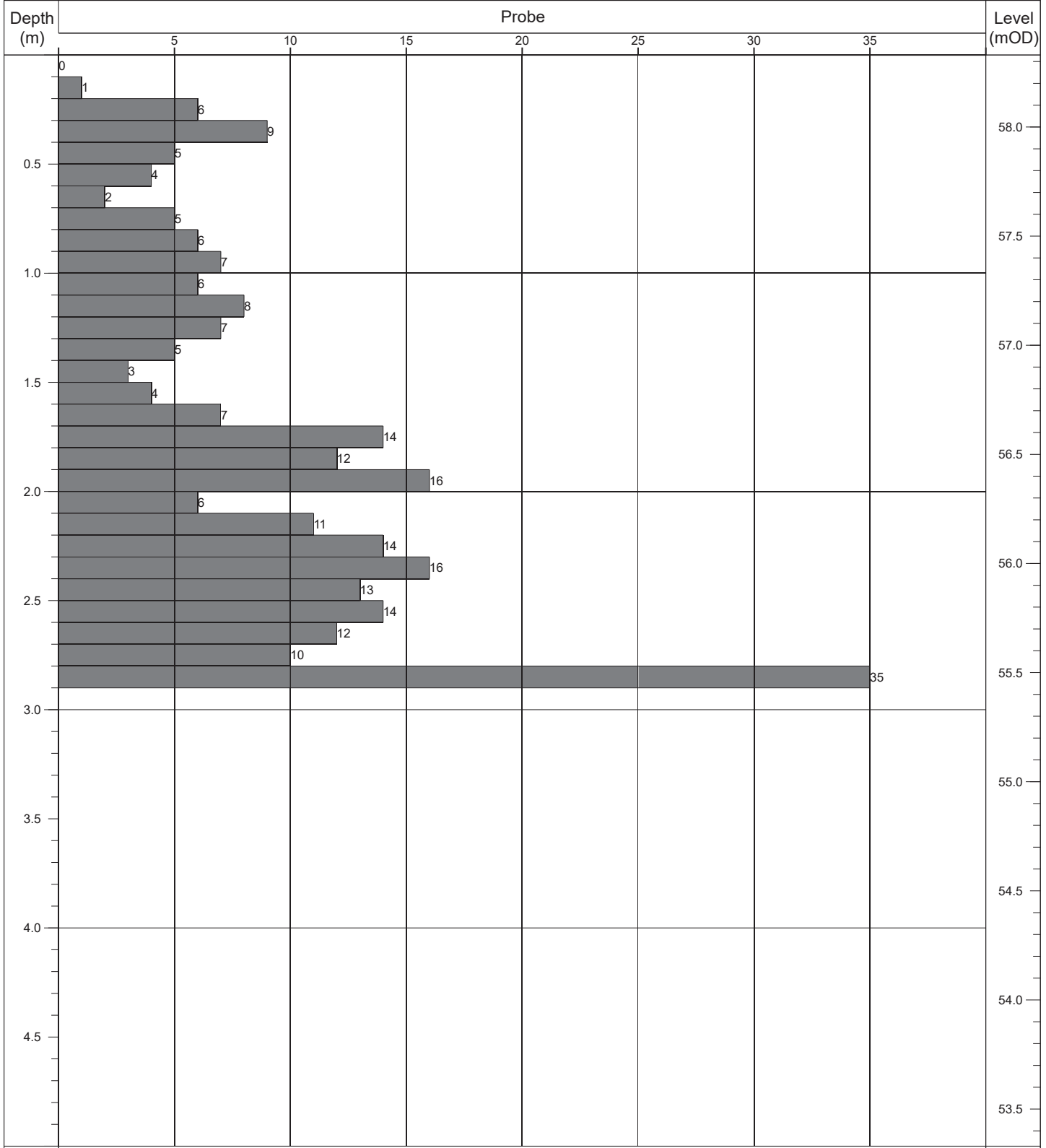
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694690.632 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739192.594 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.36 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP60 |
|----------------------|--------------------------|--|--|--------------------------|

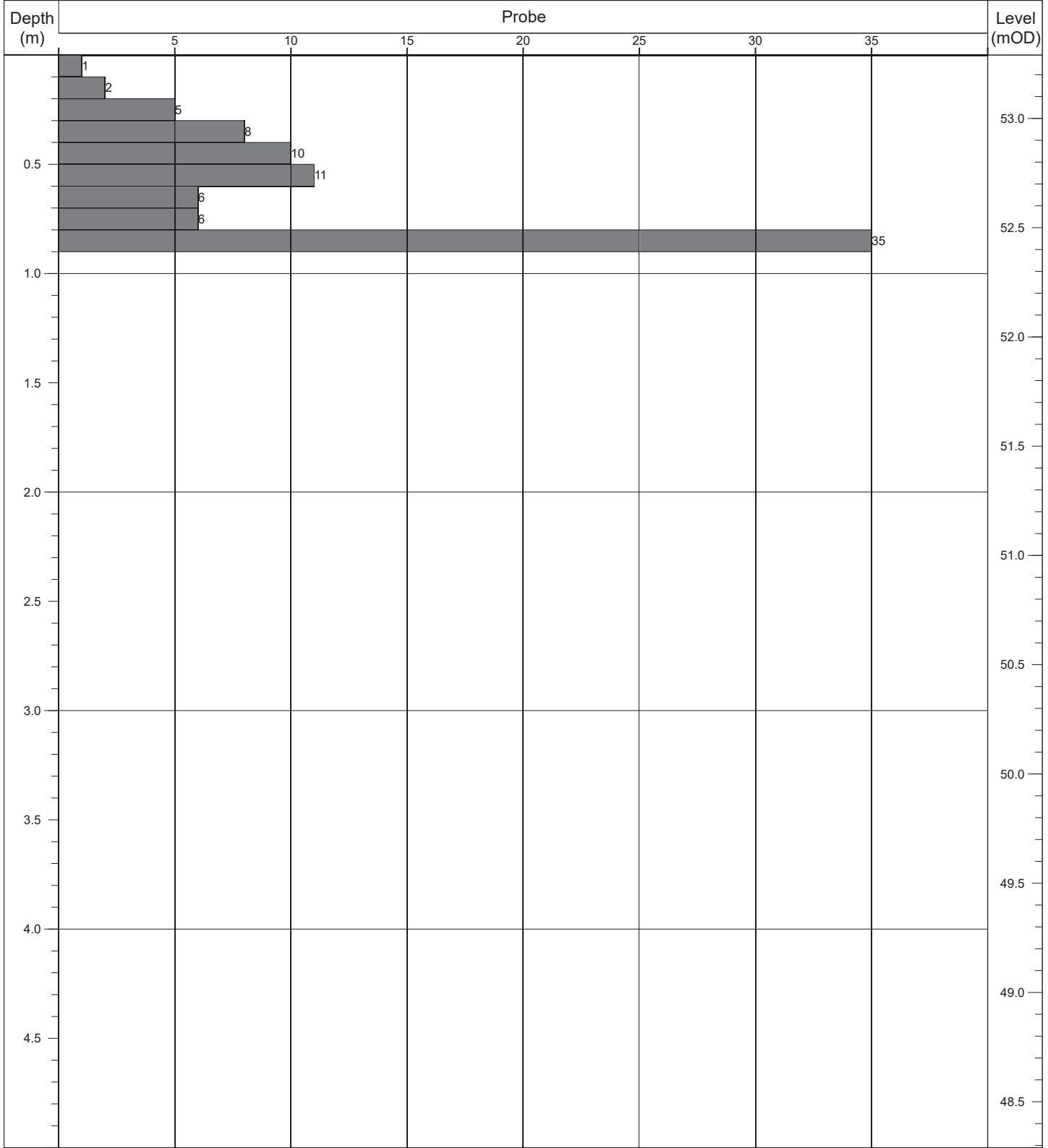
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694784.383 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739187.502 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 58.33 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP61 |
|----------------------|--------------------------|--|--|--------------------------|

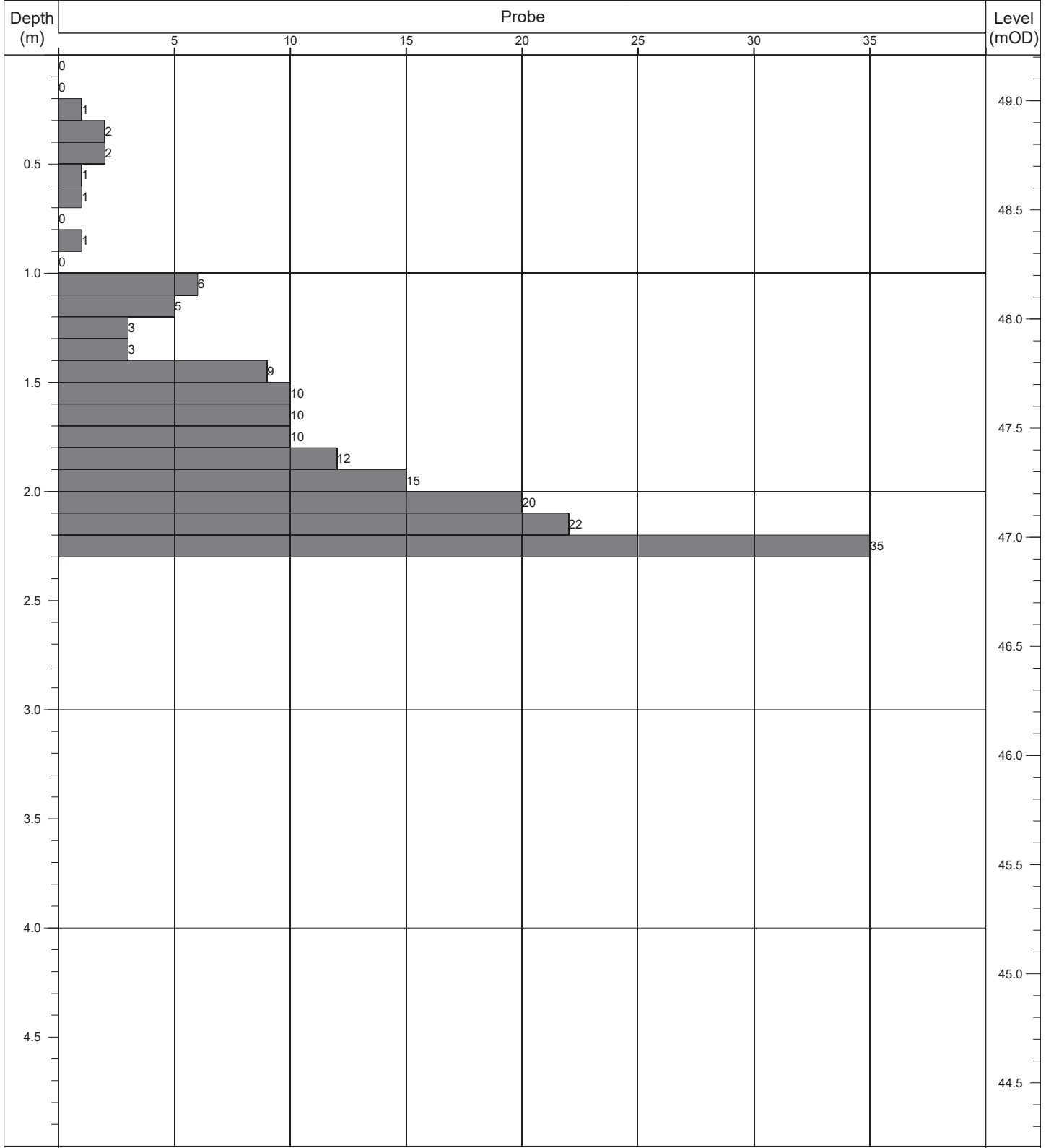
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 693991.061 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739083.755 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 53.29 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 0.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP62 |
|----------------------|--------------------------|--|--|--------------------------|

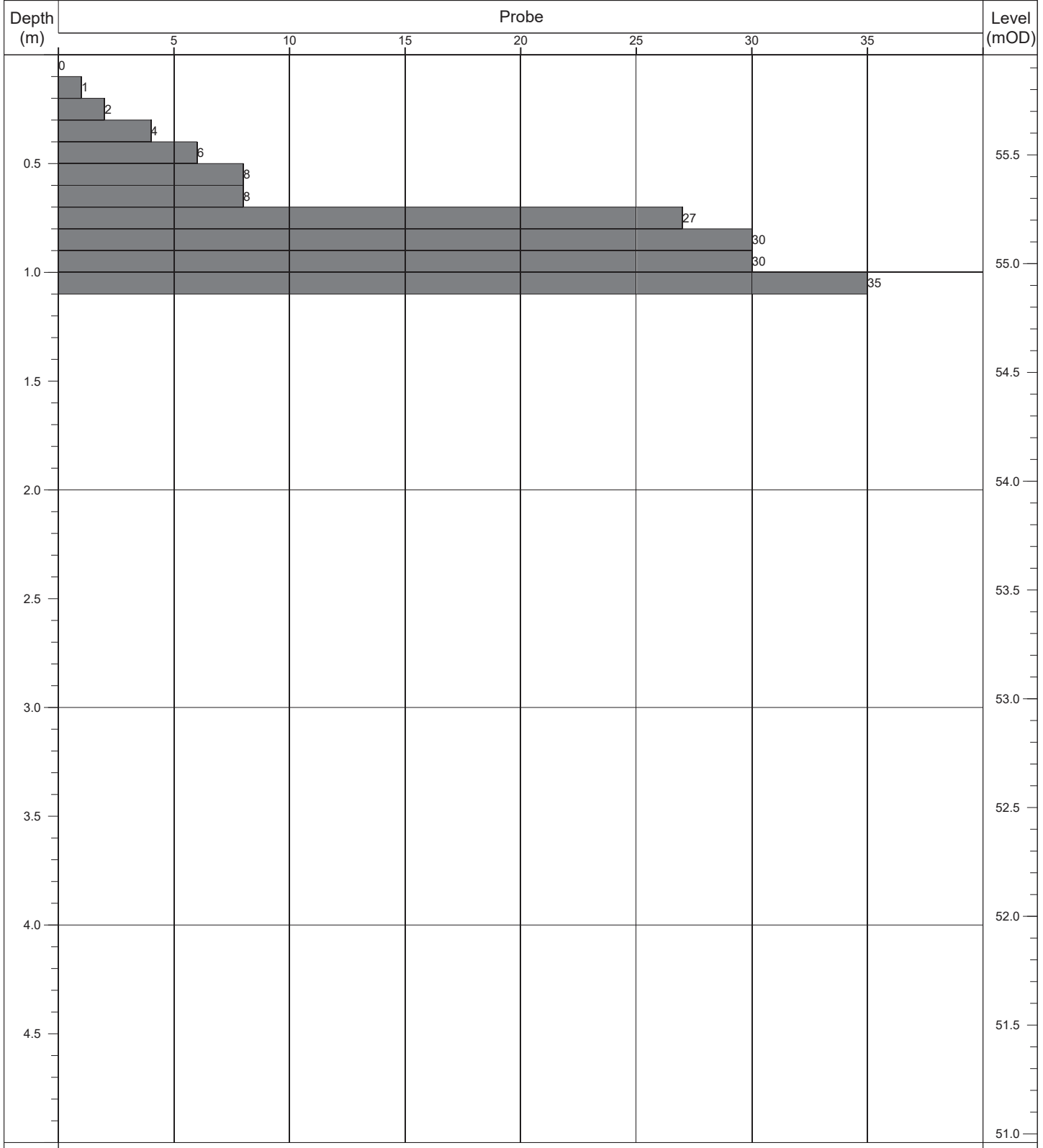
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694185.443 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739087.742 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 49.21 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP63 |
|----------------------|--------------------------|--|--|--------------------------|

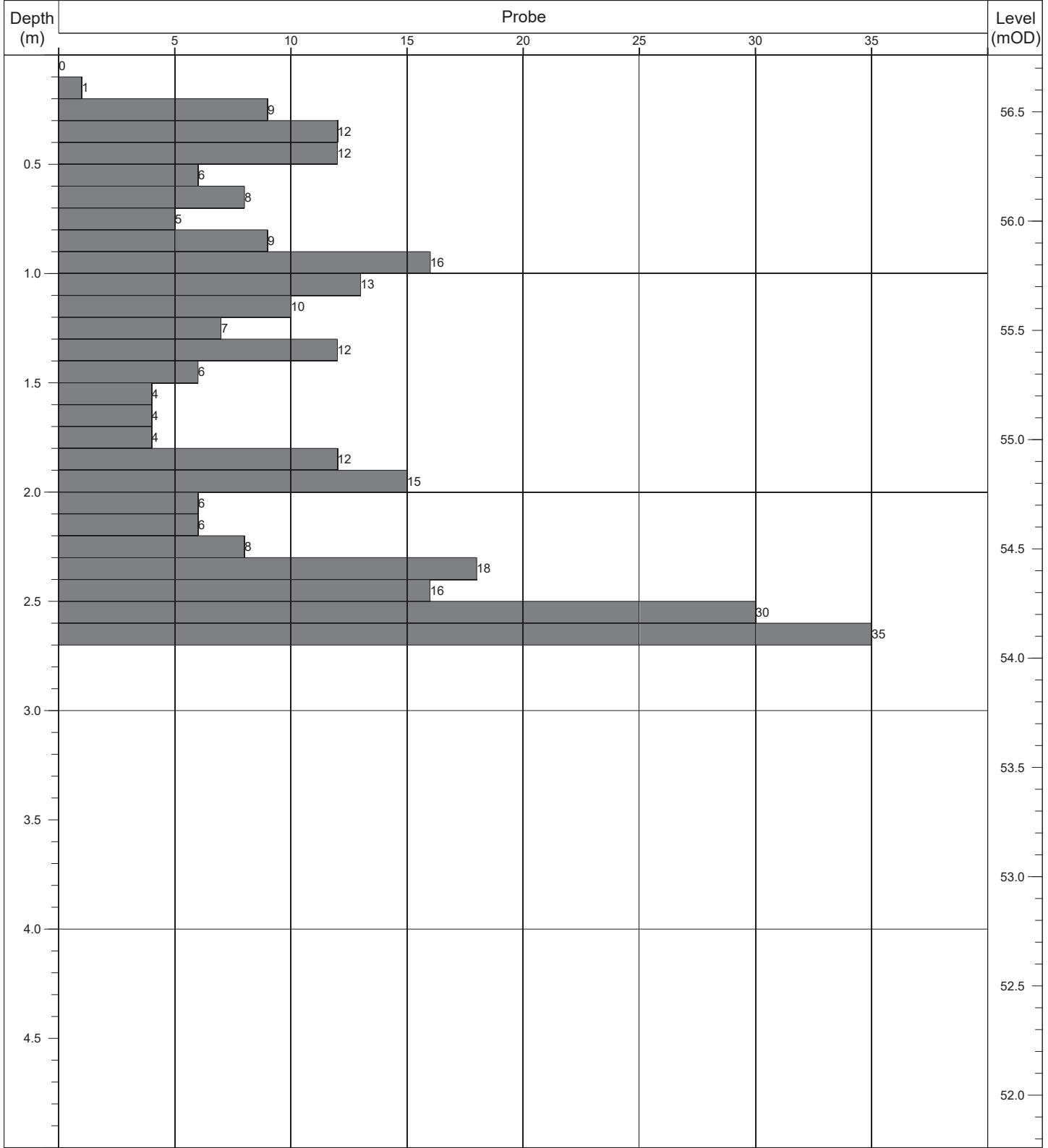
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694290.240 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739085.762 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.96 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.10m | Obstruction - boulders. | DPH | 50kg | 500mm | |

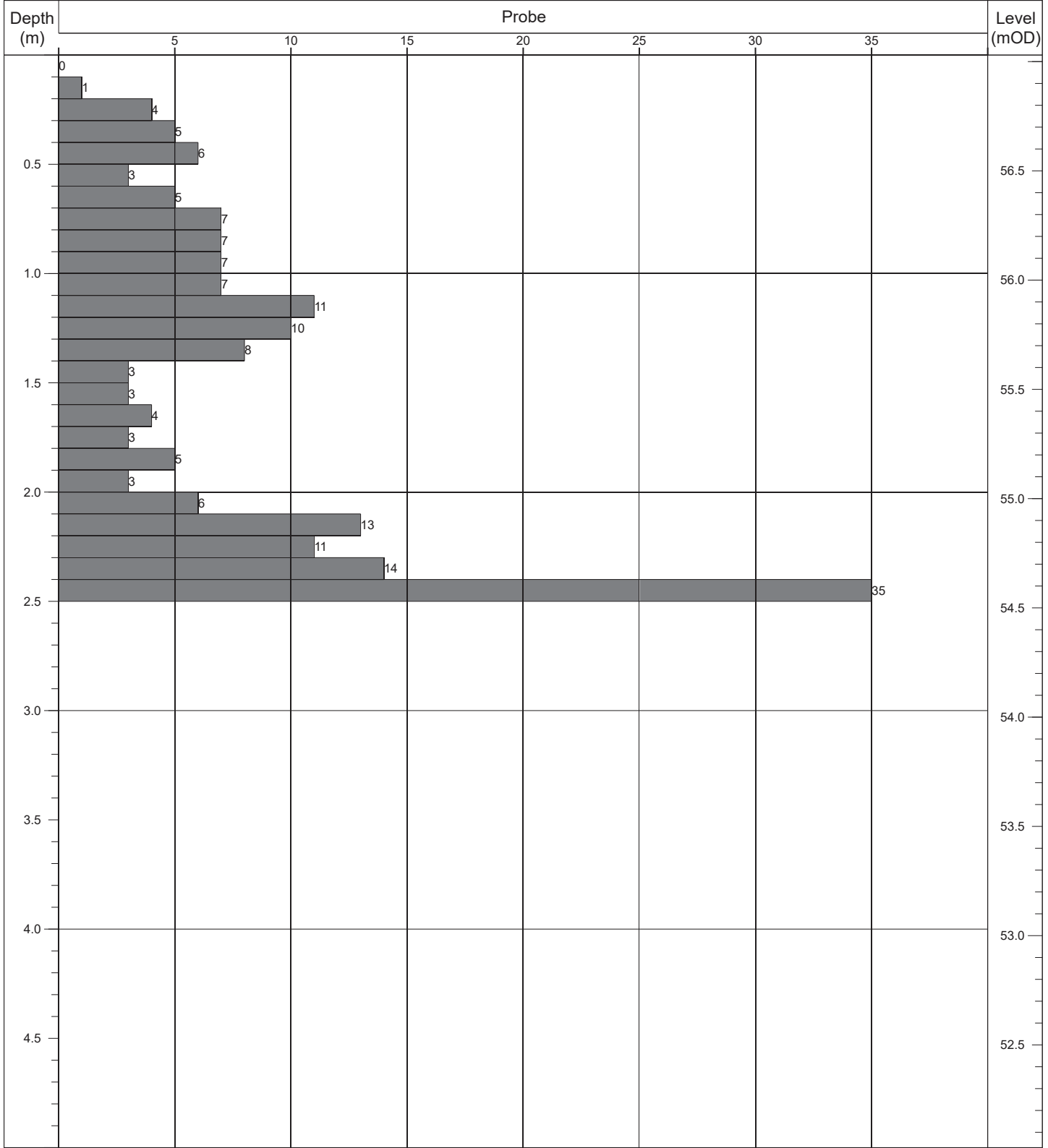
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP64 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694385.154 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739082.180 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.76 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



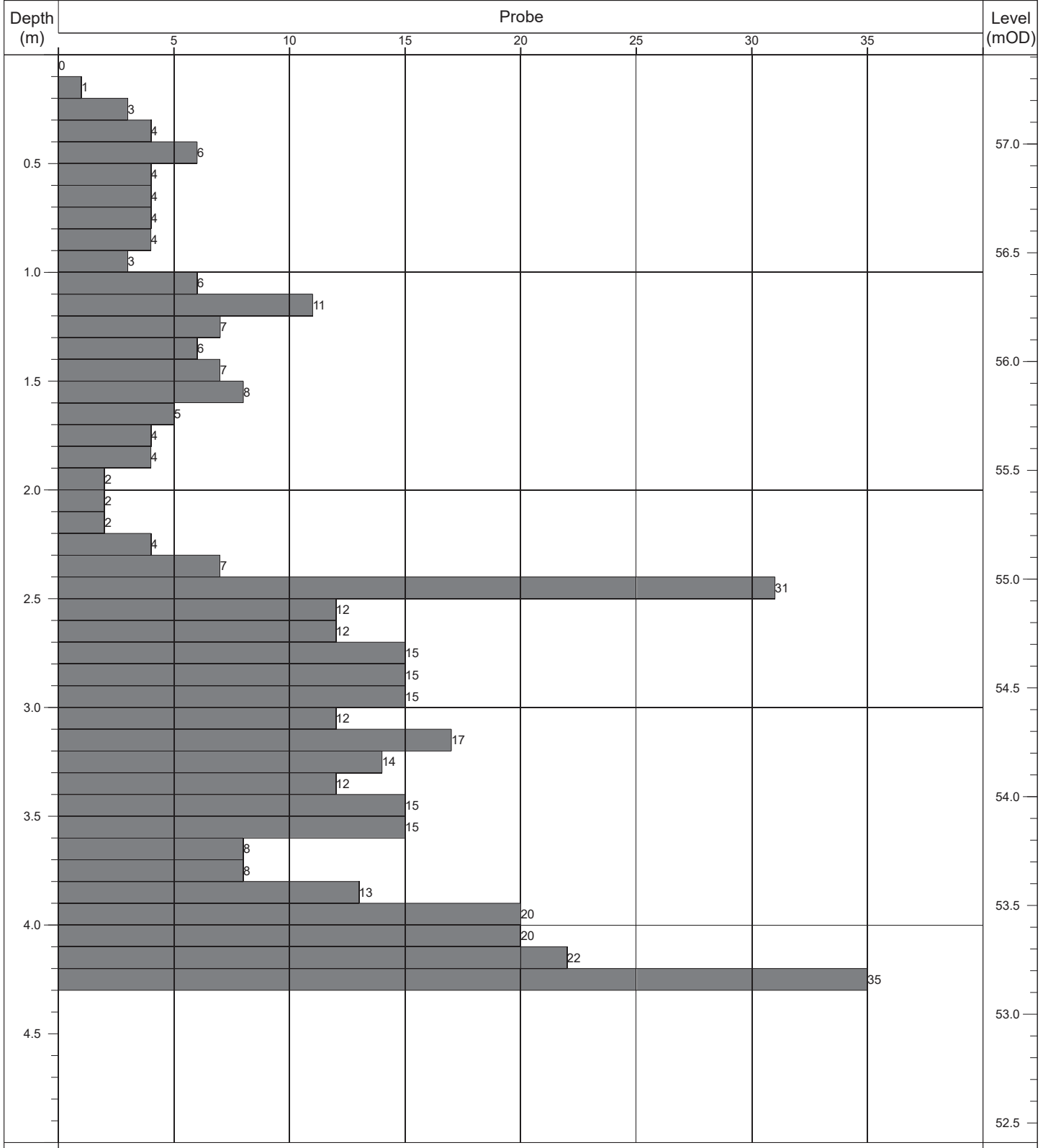
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP65 |
| Contract: | Moygaddy | Easting: | 694488.362 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739086.289 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.03 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.50m | Obstruction - boulders. | DPH | 50kg | 500mm | |

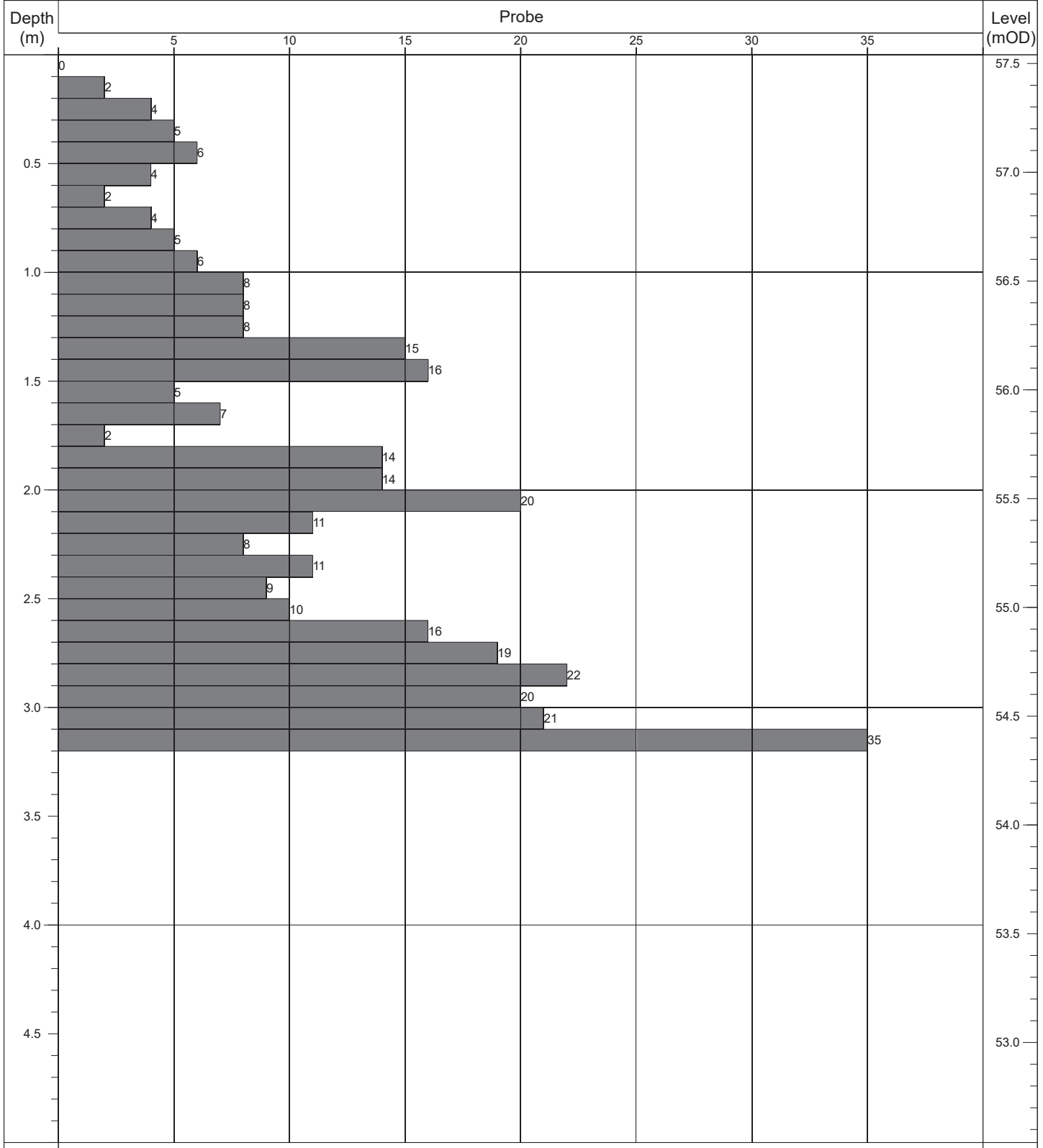
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP66 |
| Contract: | Moygaddy | Easting: | 694588.543 | Date Started: 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739090.206 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.41 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 4.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

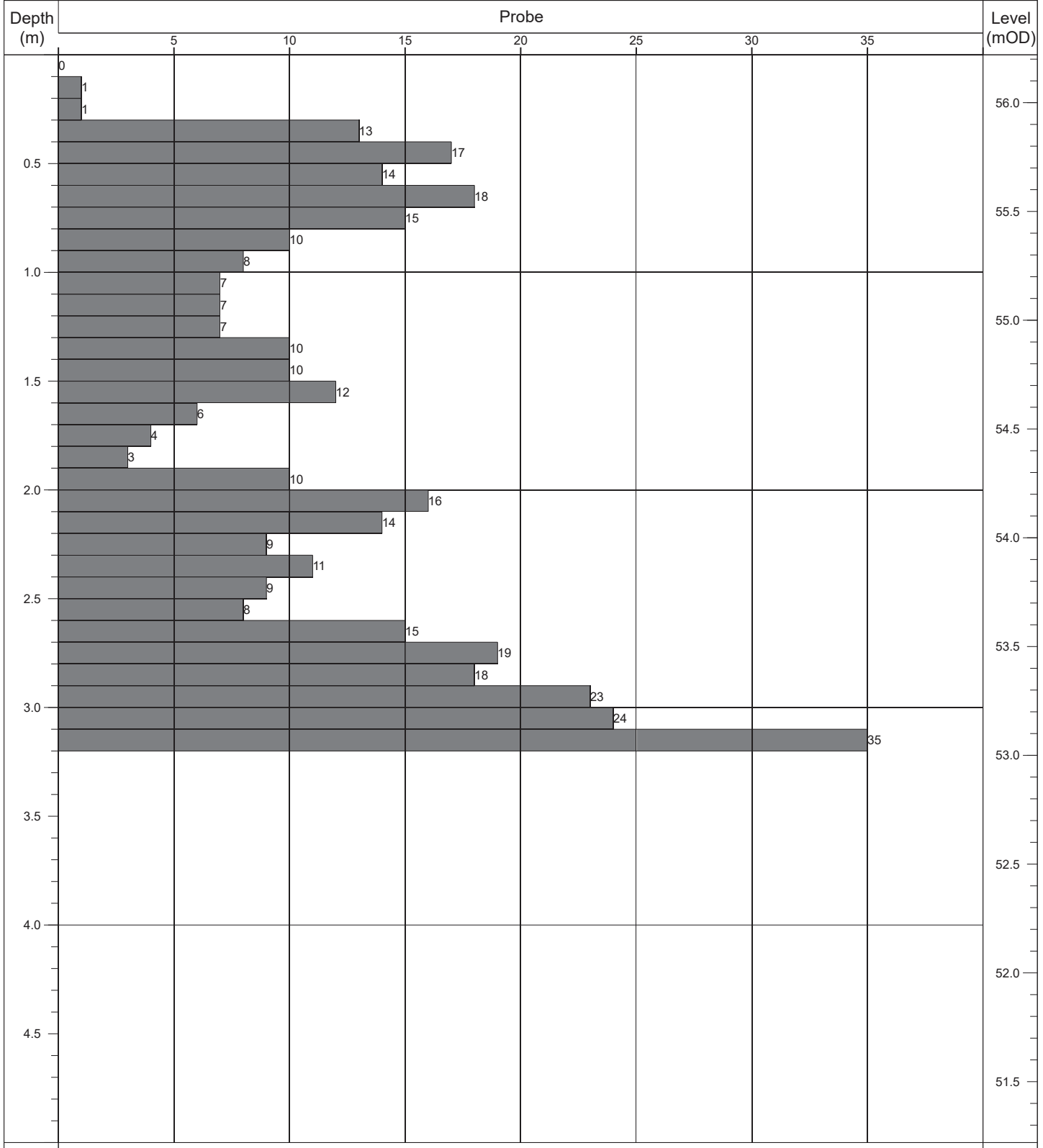
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP67 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694682.814 | Date Started: | 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739084.421 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 57.54 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

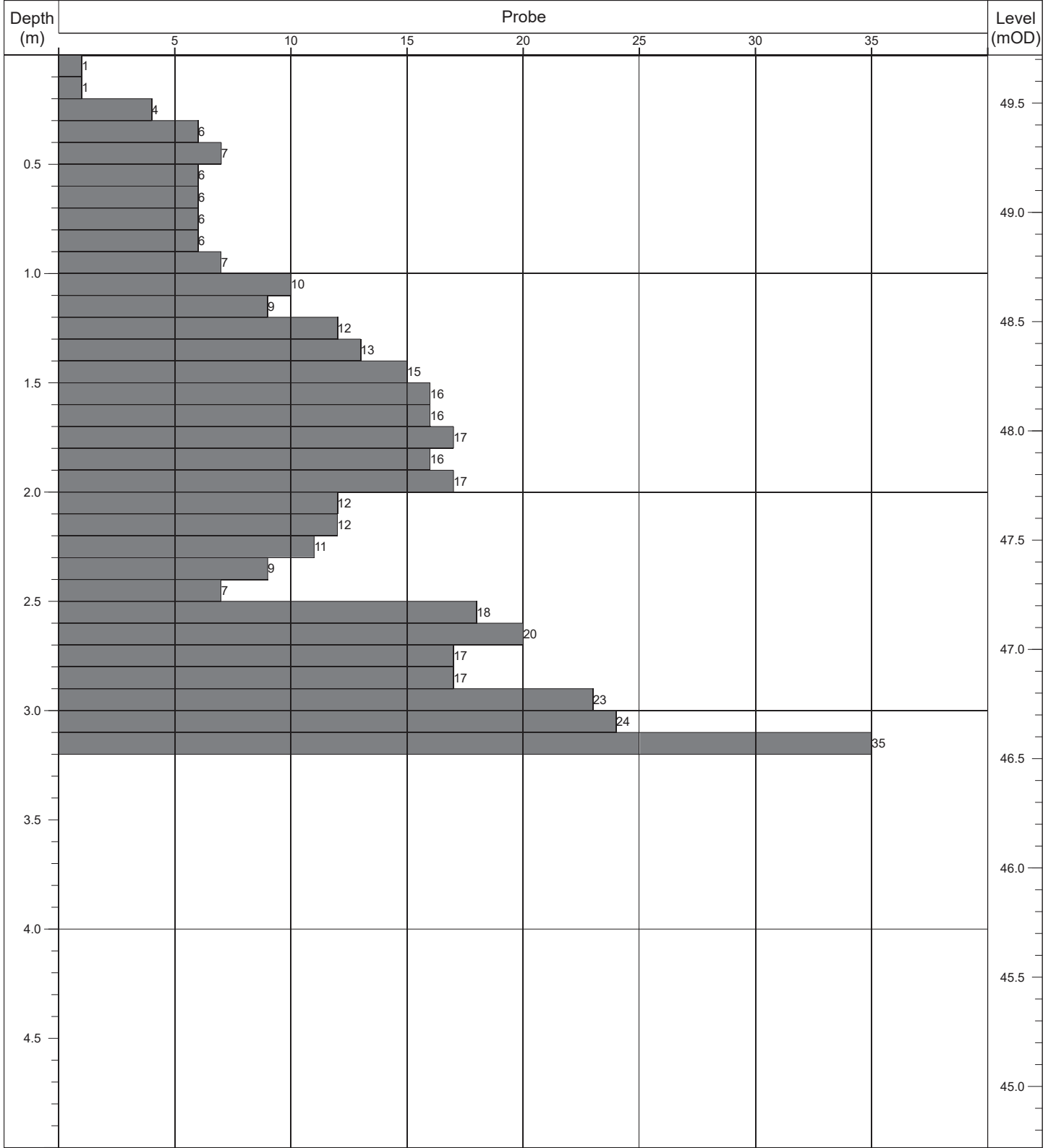
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP68 |
| Contract: | Moygaddy | Easting: | 694787.254 | Date Started: 23/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739083.914 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.22 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP69 |
|----------------------|--------------------------|--|--|--------------------------|

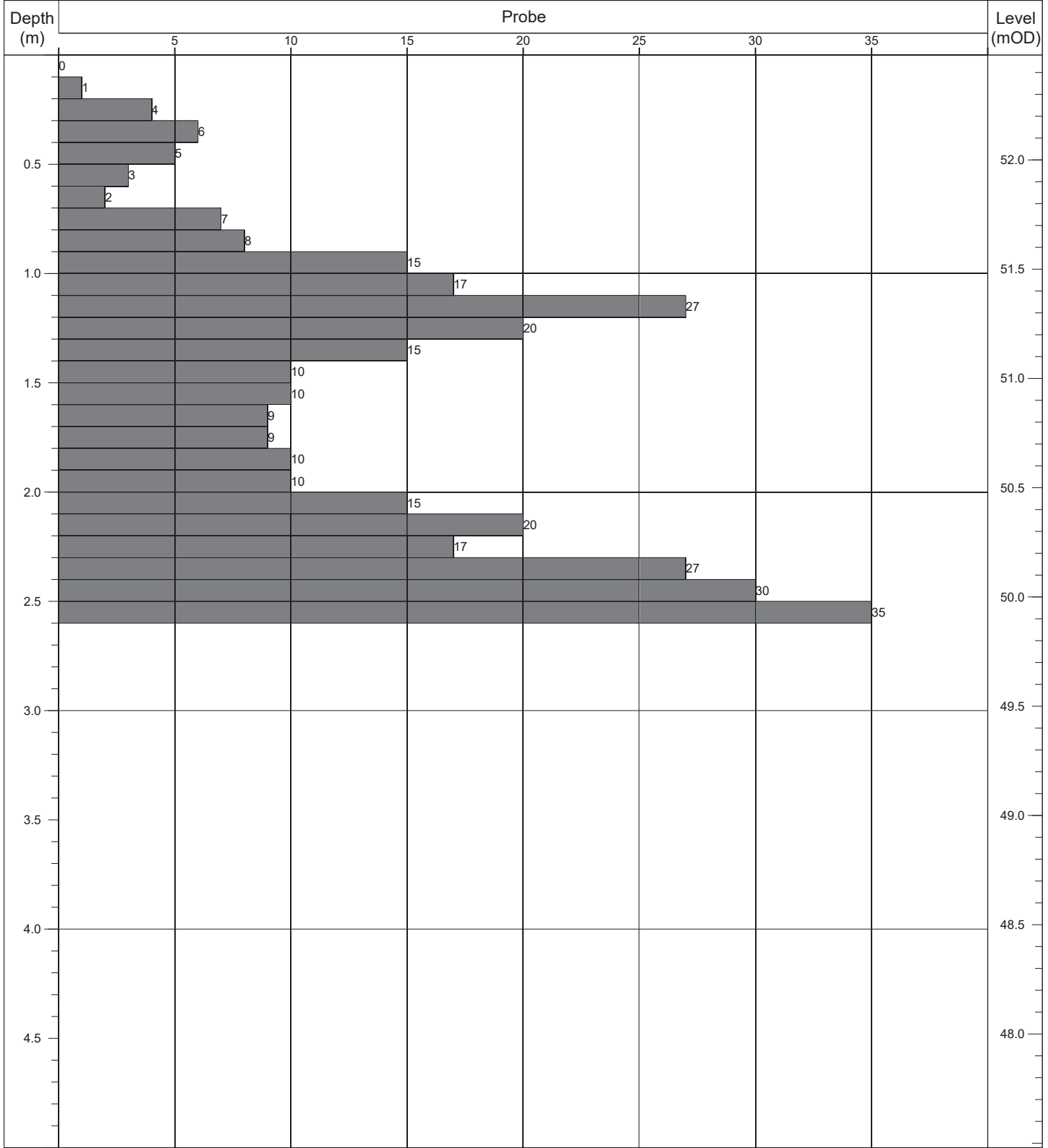
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694090.959 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738991.035 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 49.72 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.20m | Obstruction - boulders. | DPH | 50kg | 500mm | |

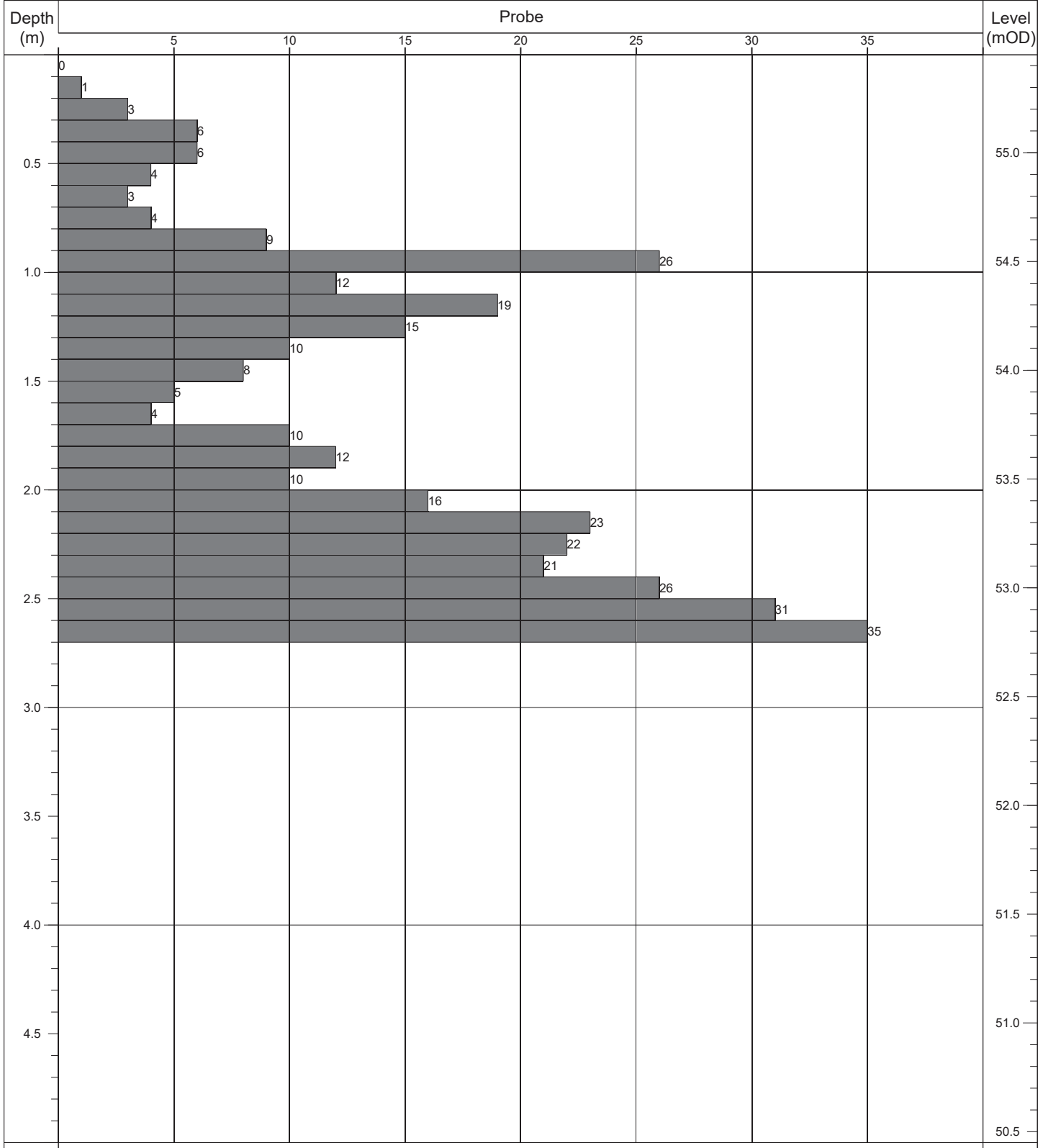
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP70 |
|----------------------|--------------------------|--|--|--------------------------|


| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694187.890 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738981.735 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 52.48 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



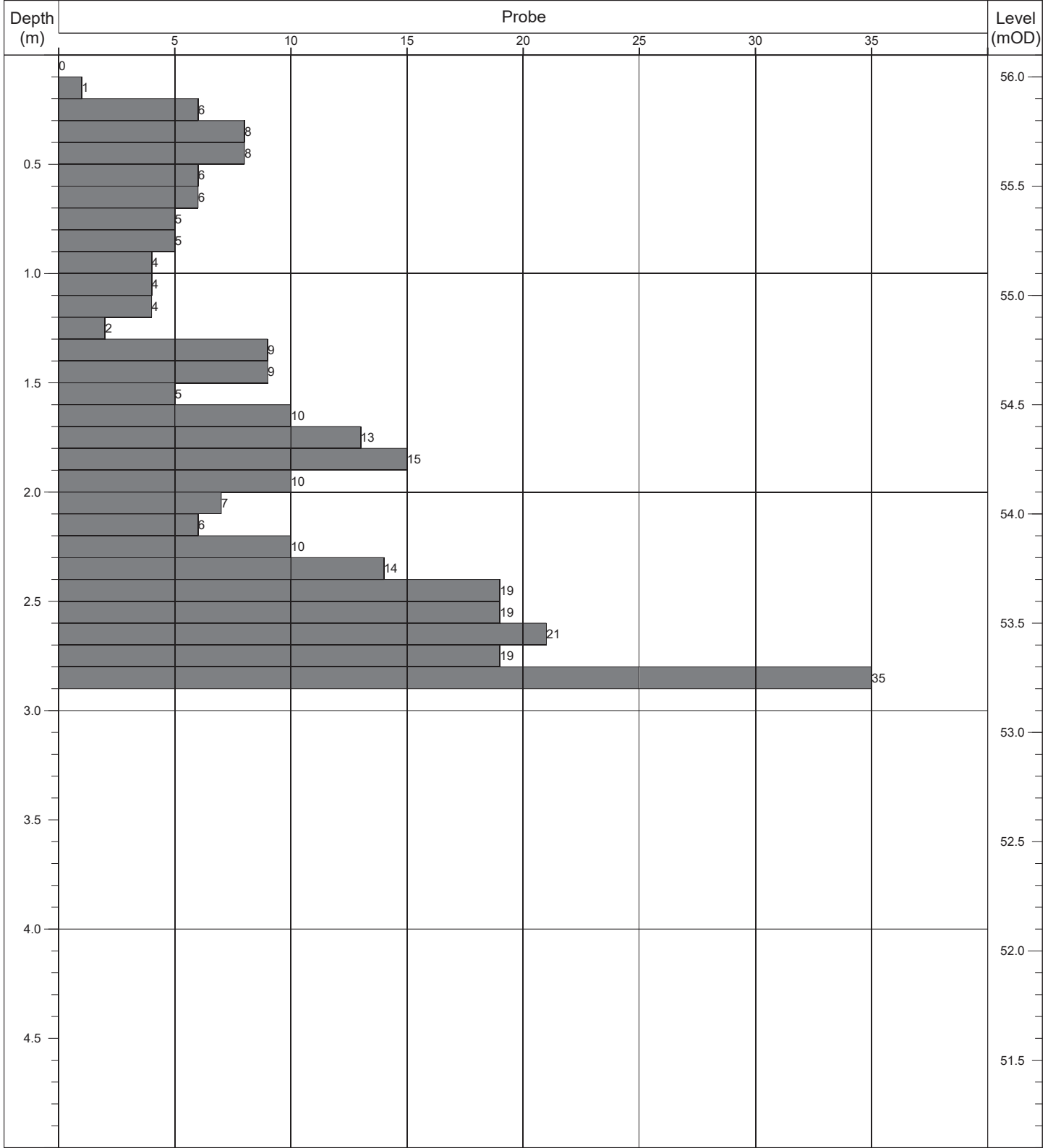
| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP71 |
| Contract: | Moygaddy | Easting: | 694289.189 | Date Started: 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738983.578 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.45 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

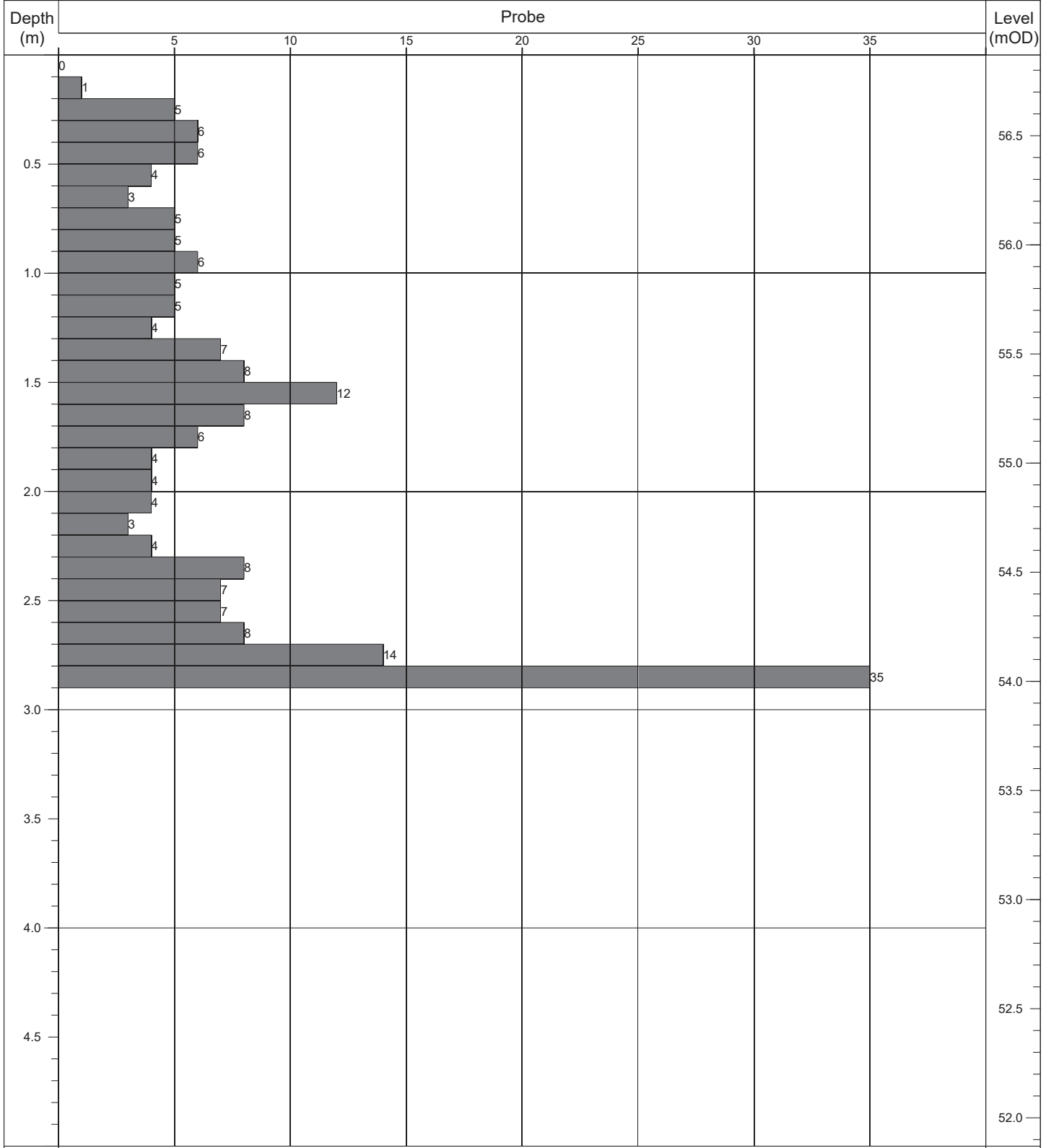
| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP72 |
| Contract: | Moygaddy | Easting: | 694384.733 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738989.607 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.10 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP73 |
|----------------------|--------------------------|--|--|--------------------------|

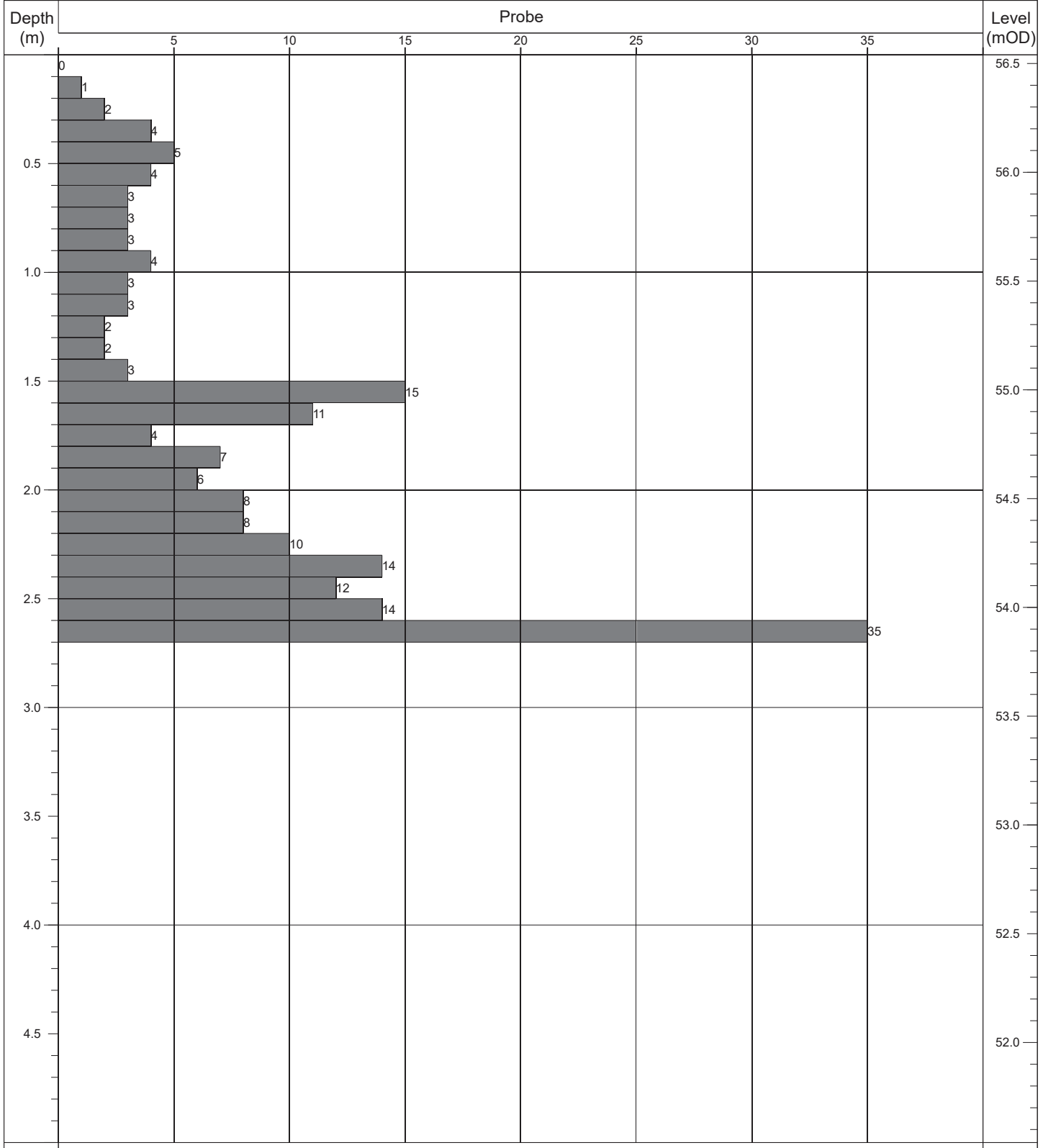
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694486.822 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738986.510 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.87 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP74 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694586.960 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738983.395 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.54 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|--|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP75 |
|----------------------|--------------------------|--|--|--|--------------------------|

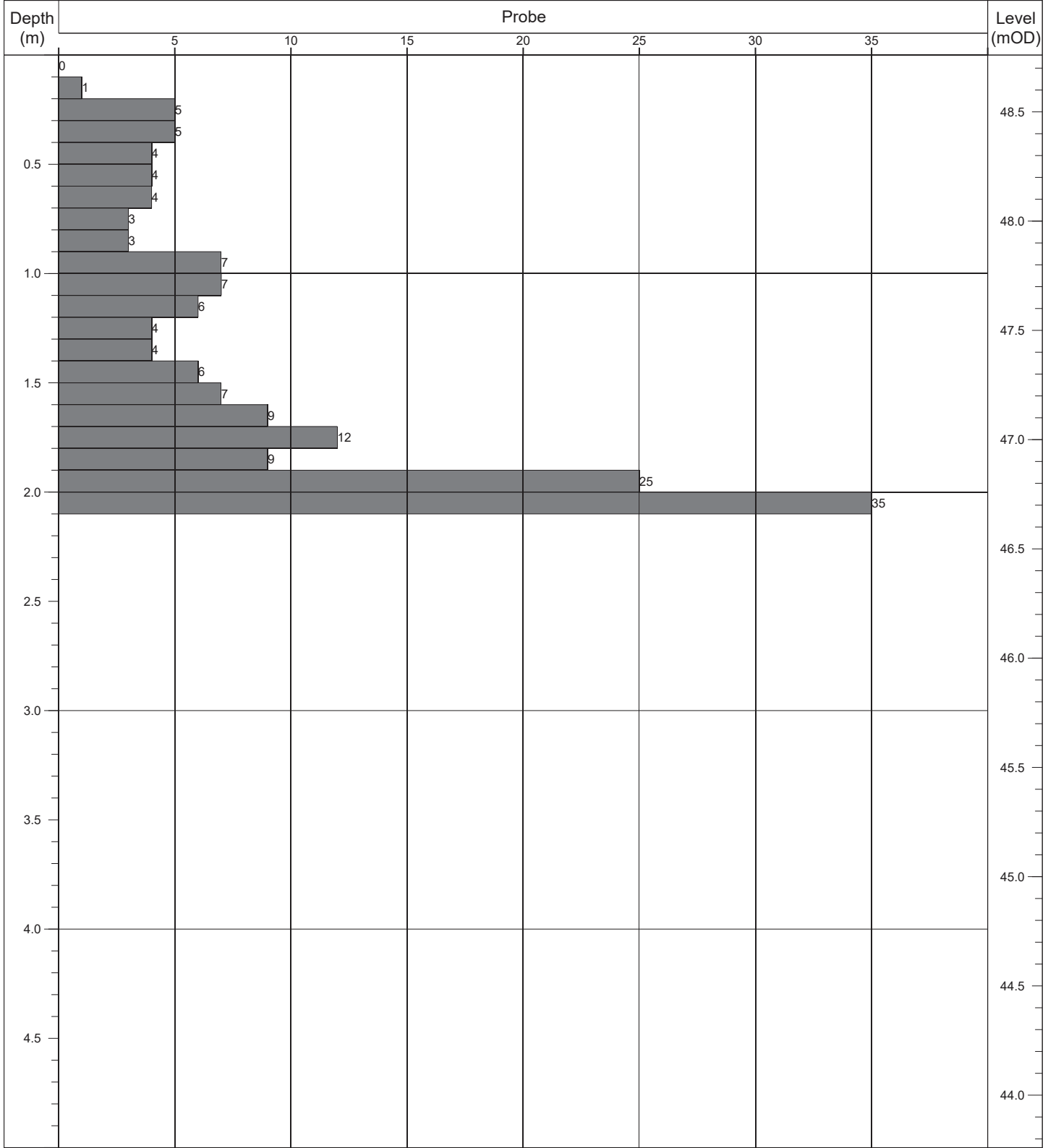
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694691.101 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738989.216 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 56.20 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |

| Depth (m) | Probe | | | | | | | Level (mOD) |
|-----------|-------|----|----|----|----|----|----|-------------|
| | 5 | 10 | 15 | 20 | 25 | 30 | 35 | |
| 0.5 | | | | | | | | 56.0 |
| 1.0 | | | | | | | | 55.5 |
| 1.5 | | | | | | | | 55.0 |
| 2.0 | | | | | | | | 54.5 |
| 2.5 | | | | | | | | 54.0 |
| 3.0 | | | | | | | | 53.5 |
| 3.5 | | | | | | | | 53.0 |
| 4.0 | | | | | | | | 52.5 |
| 4.5 | | | | | | | | 52.0 |
| | | | | | | | | 51.5 |

| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 5.00m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP76 |
|----------------------|--------------------------|--|--|--------------------------|

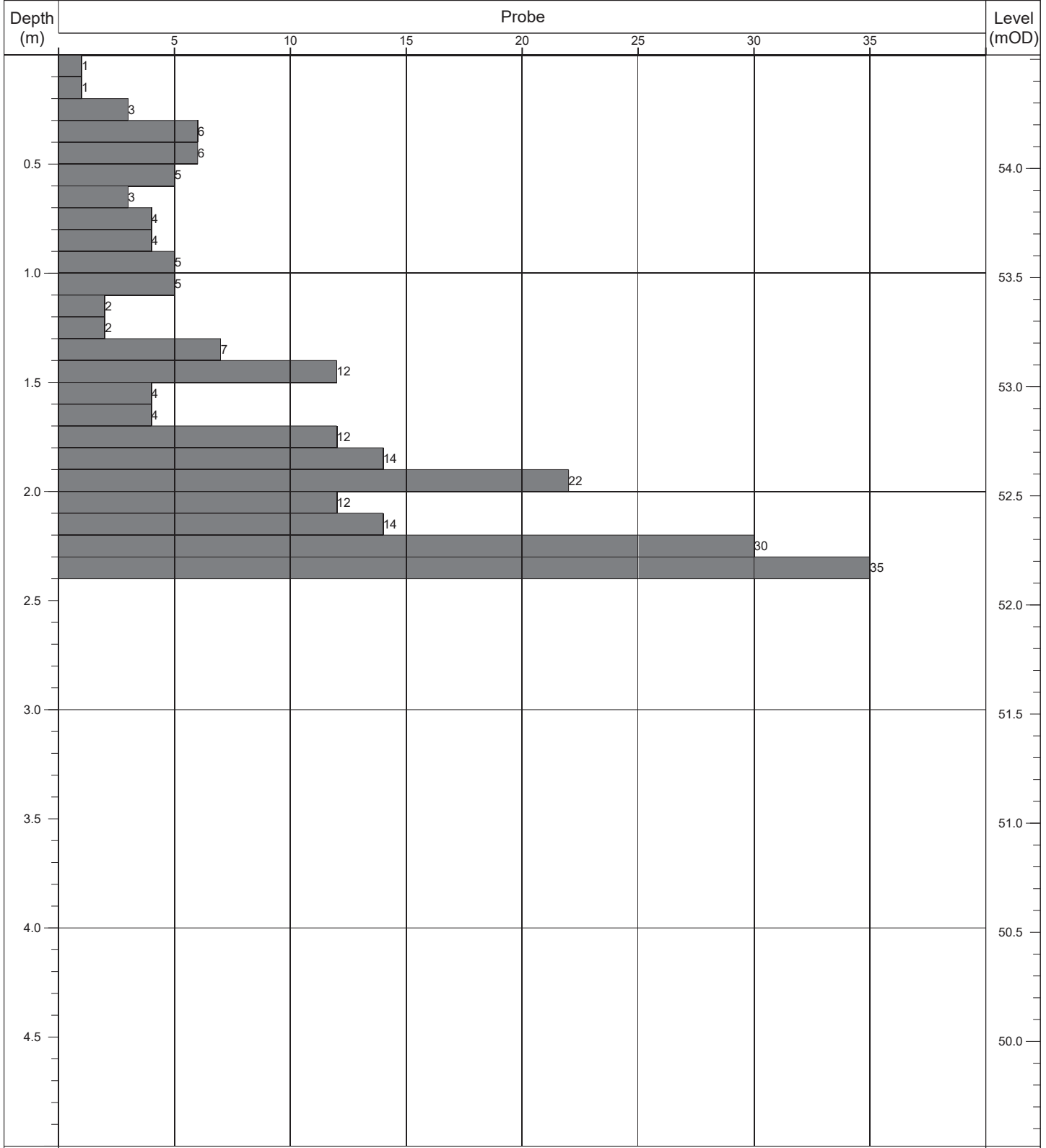
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694188.862 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738882.936 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 48.76 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.10m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | | |
|----------------------|--------------------------|--|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP77 |
|----------------------|--------------------------|--|--|--|--------------------------|

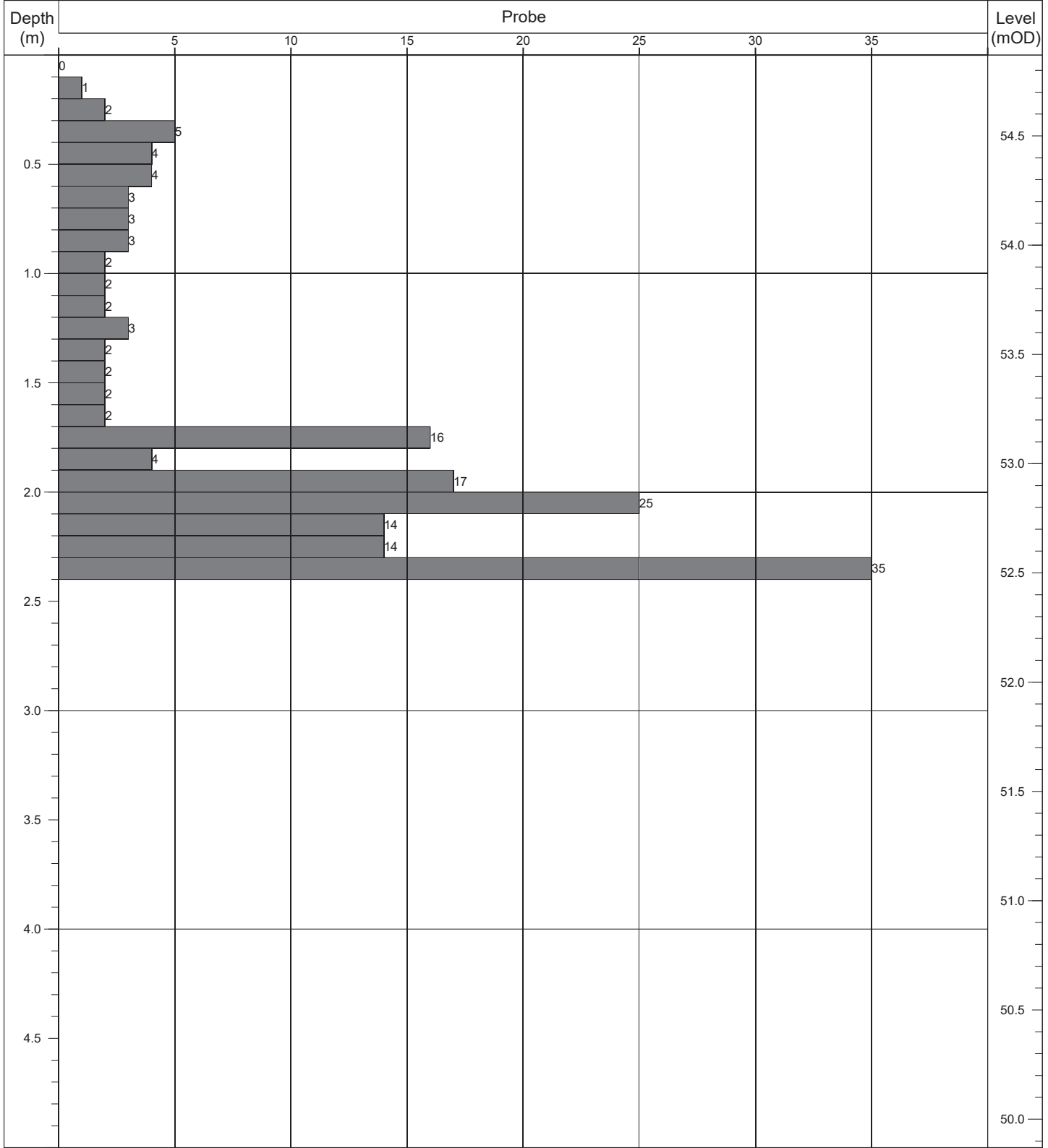
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694291.409 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738890.282 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 54.52 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP78 |
|----------------------|--------------------------|--|--|--------------------------|

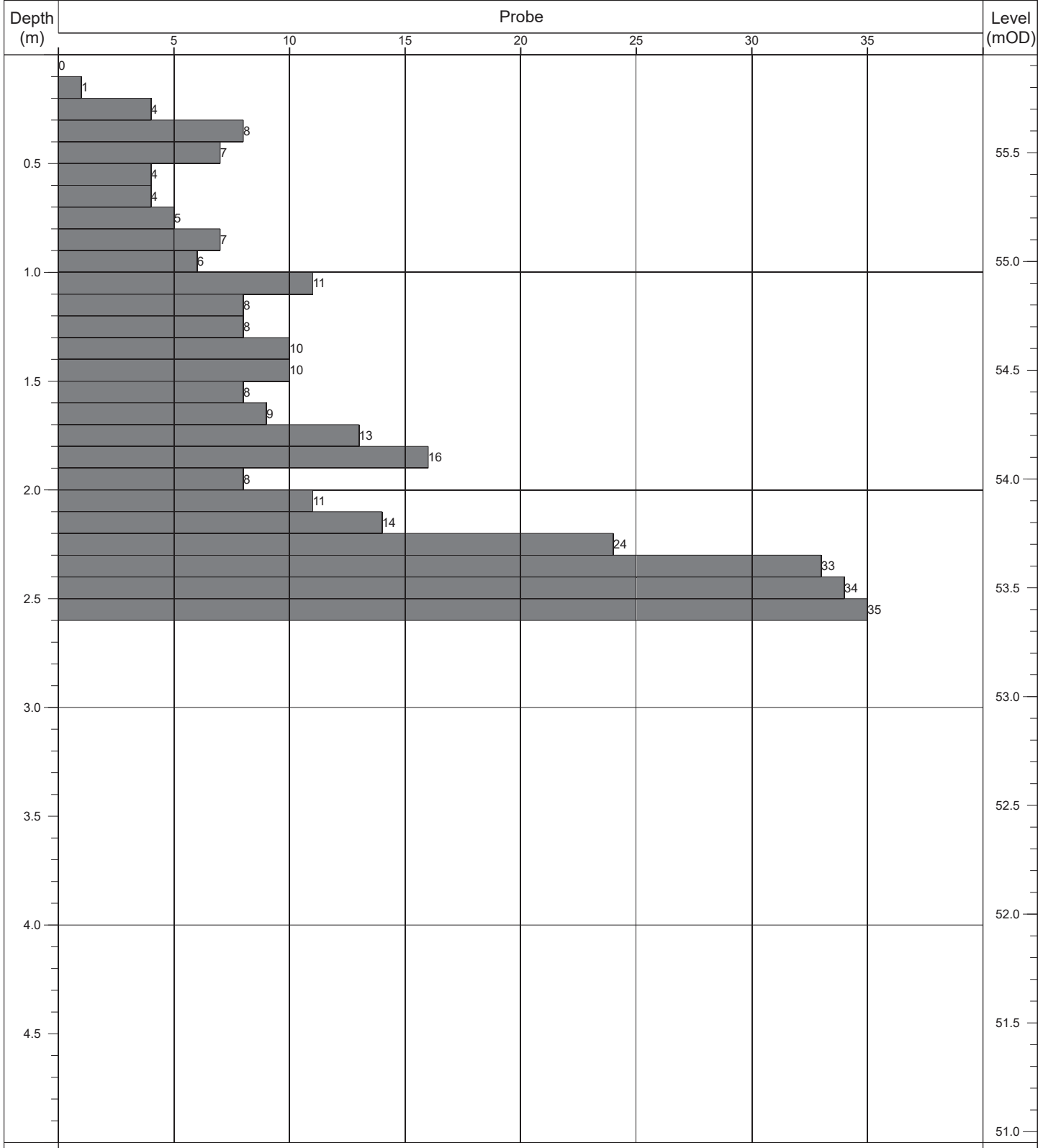
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694392.533 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738890.201 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 54.87 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |




| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.40m | Obstruction - boulders. | DPH | 50kg | 500mm | |

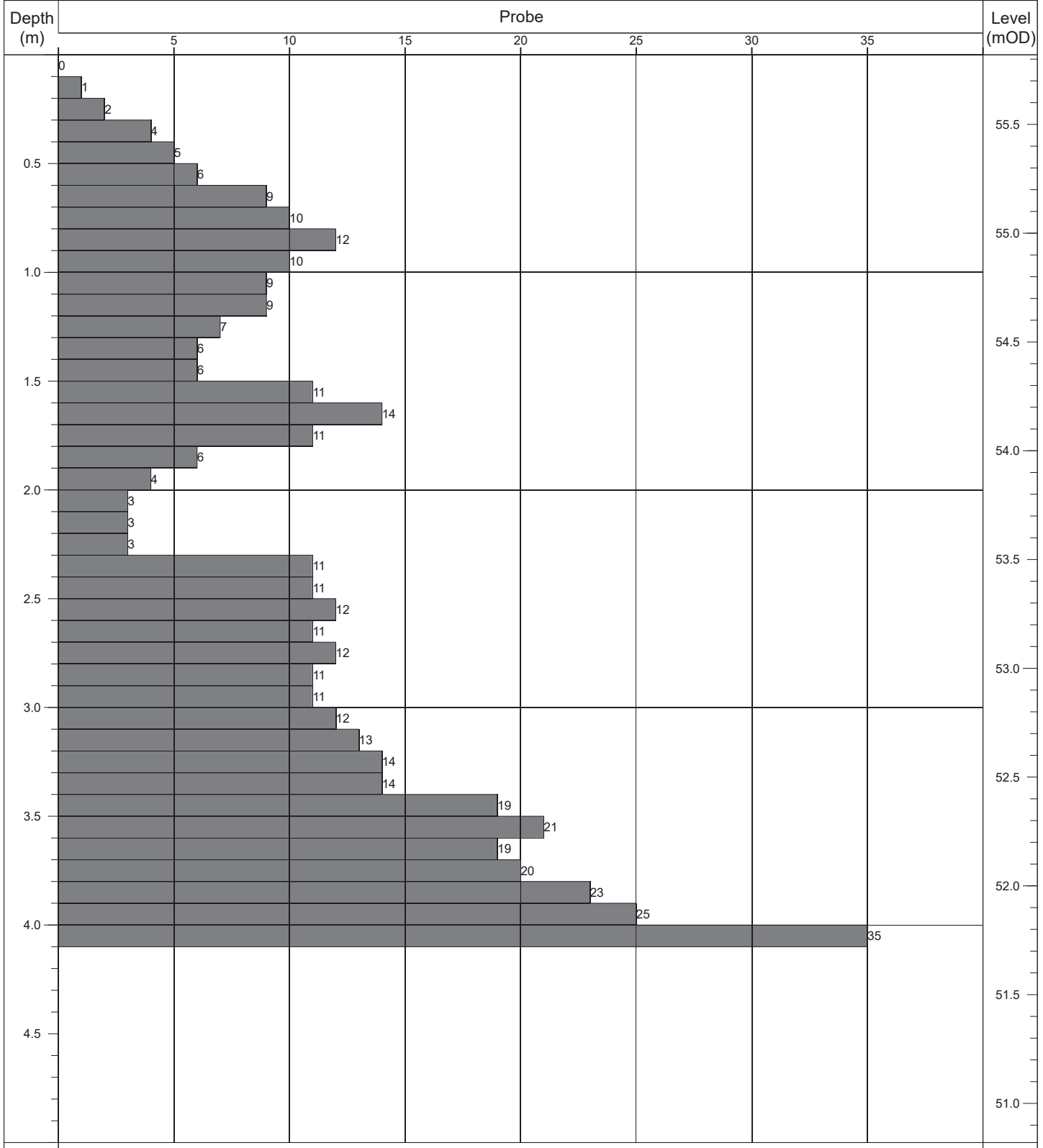
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP79 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694490.609 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738885.308 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.95 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
|  | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.60m | Obstruction - boulders. | DPH | 50kg | 500mm | |

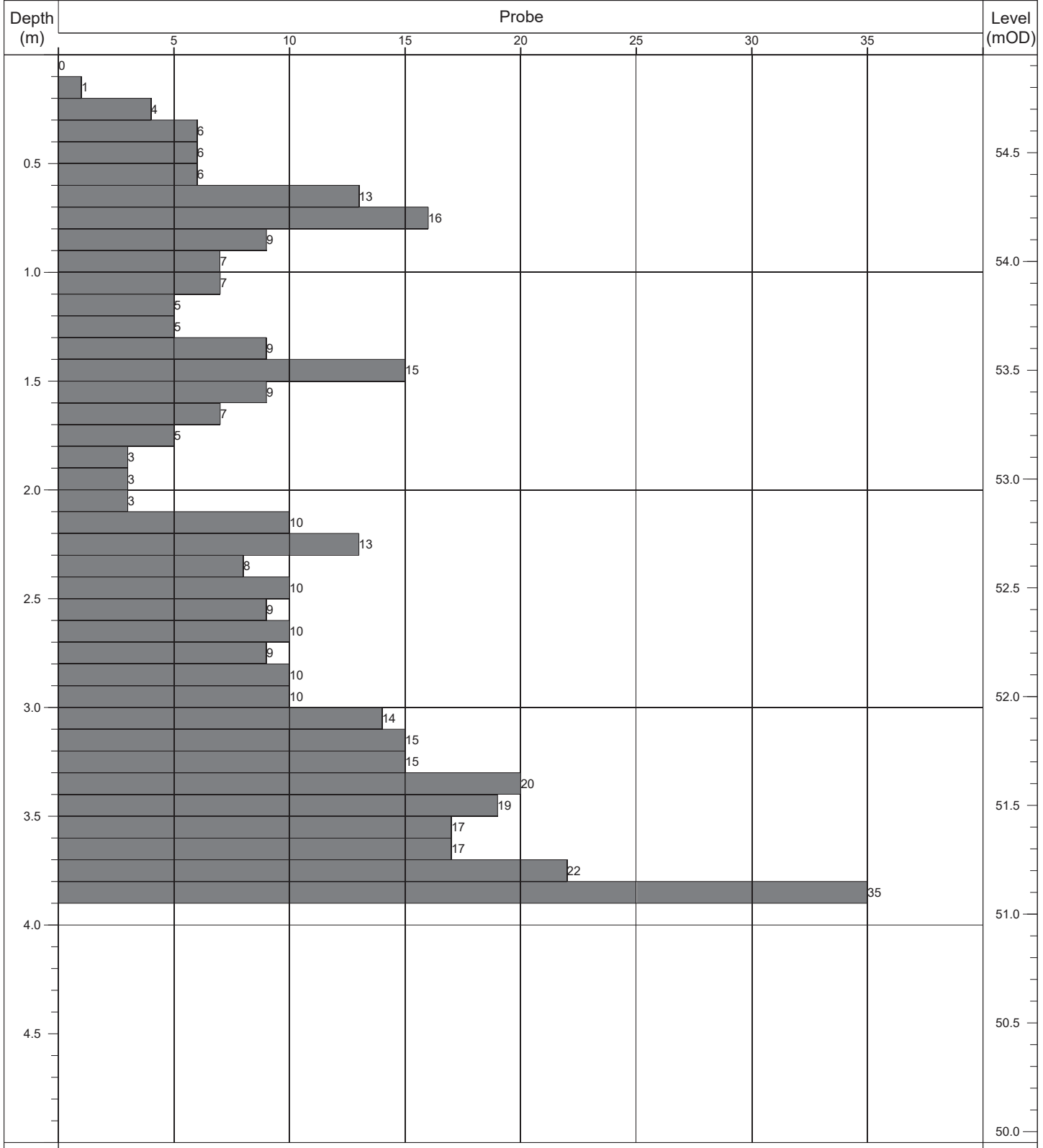
| | | | | |
|----------------------|--------------------------|------------|----------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP80 |
| Contract: | Moygaddy | Easting: | 694587.972 | Date Started: 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738887.143 | Logged By: E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 55.82 | Scale: 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 4.10m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP81 |
|----------------------|--------------------------|--|--|--------------------------|

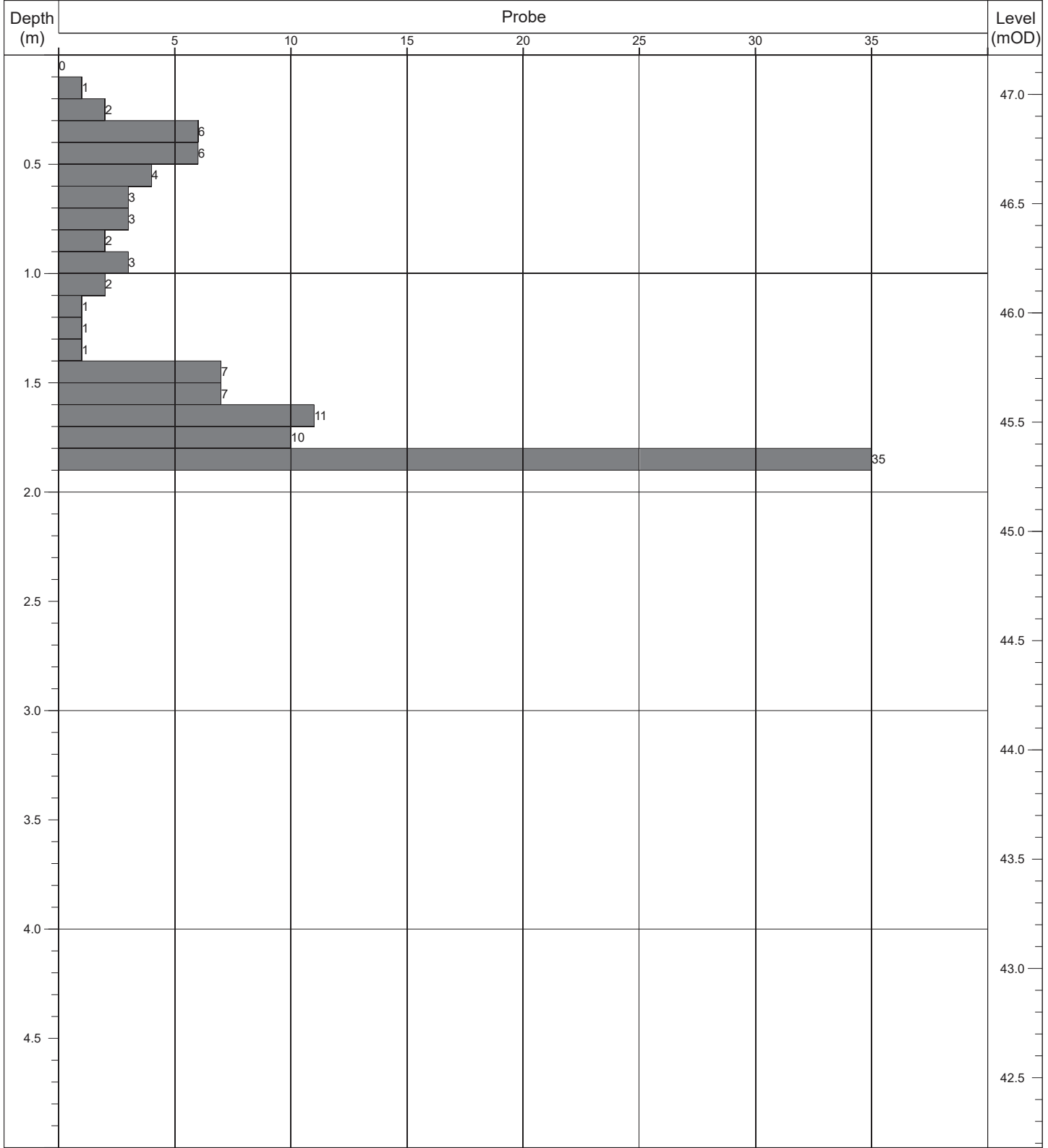
| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694688.909 | Date Started: | 22/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738889.761 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 54.95 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 3.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

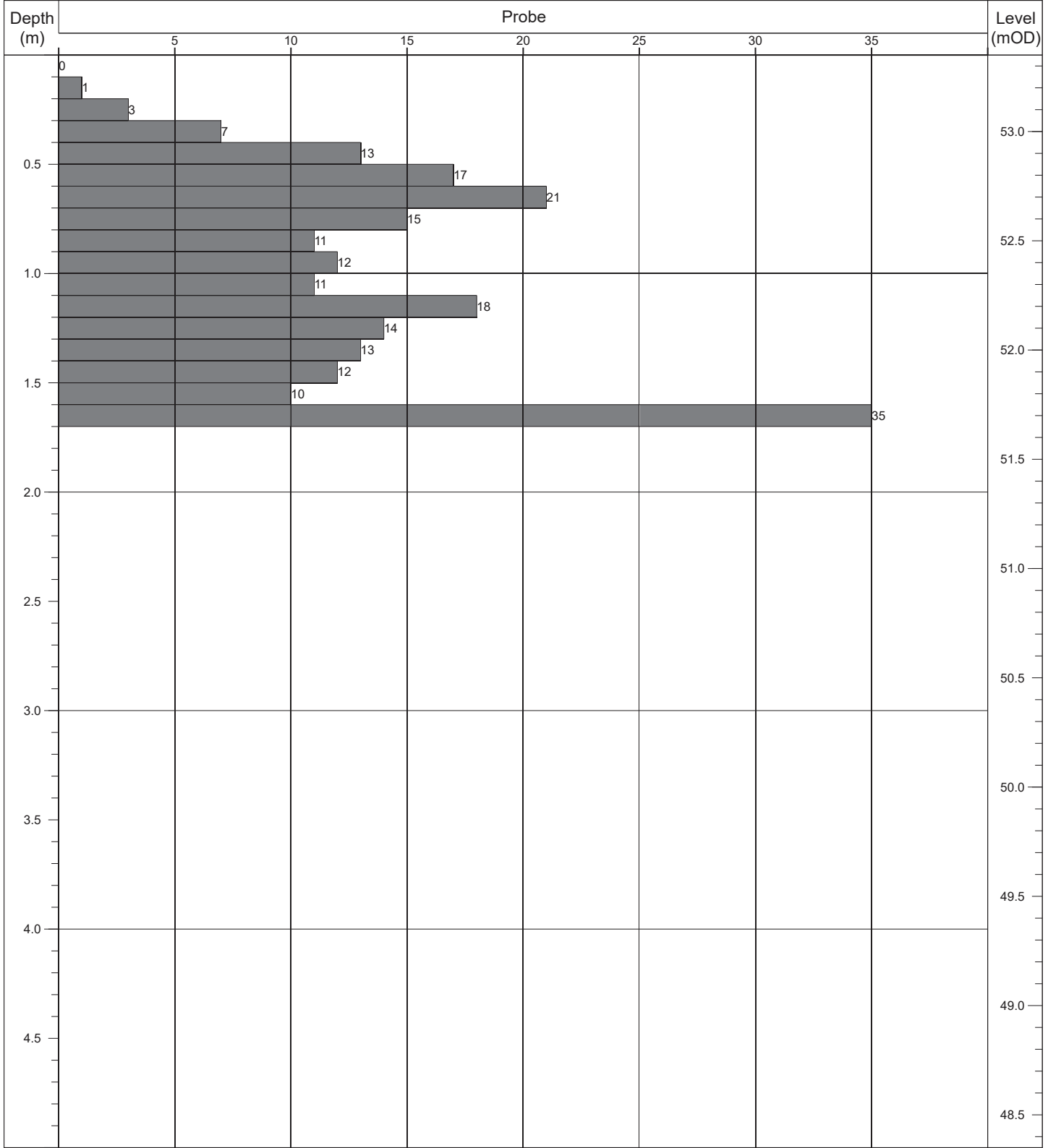
| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP82 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694286.007 | Date Started: | 18/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738783.740 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 47.18 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.90m | Obstruction - boulders. | DPH | 50kg | 500mm | |

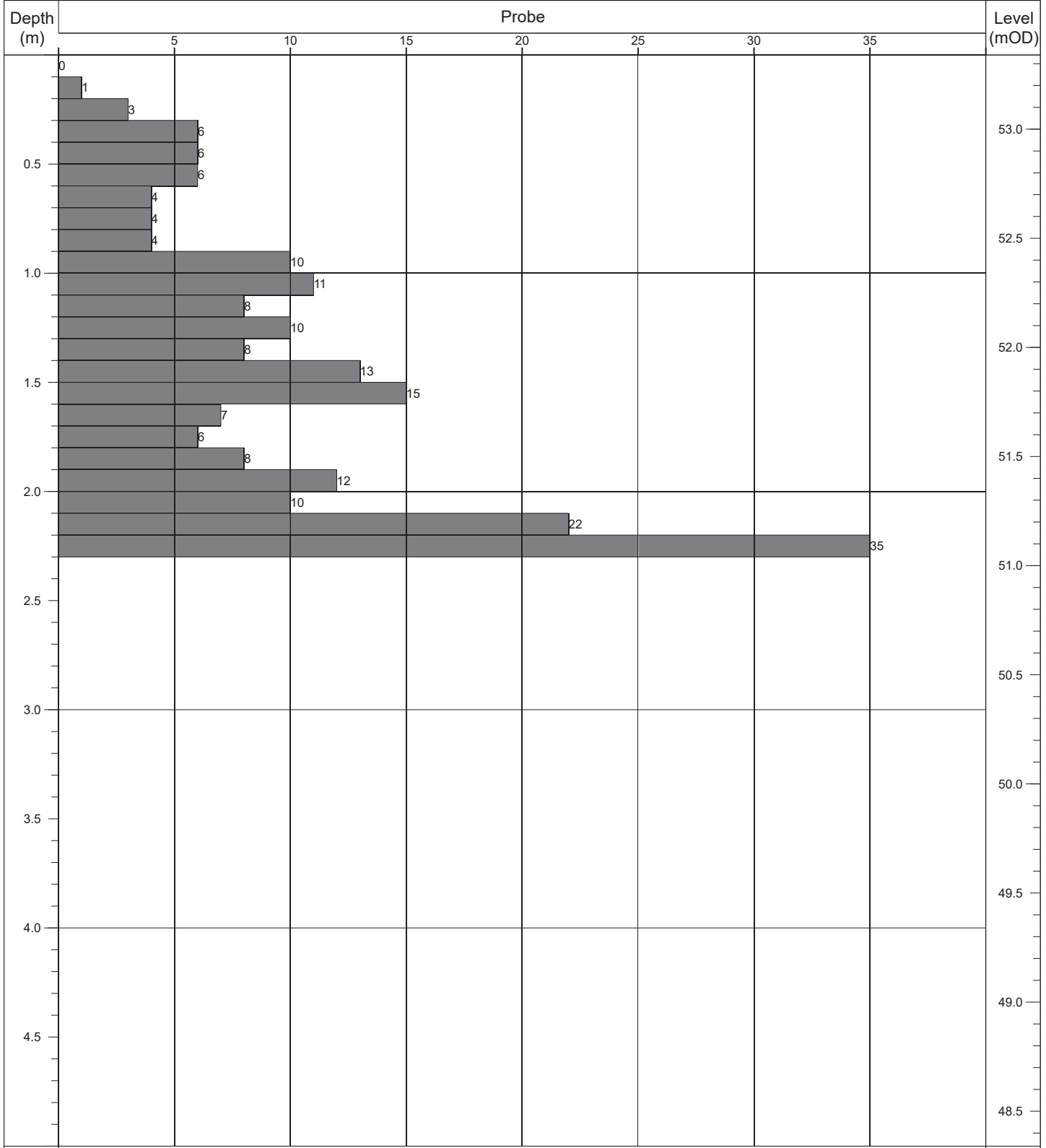
| | | | | | |
|----------------------|--------------------------|------------|----------------|---------------|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | | Probe No: DP83 |
| Contract: | Moygaddy | Easting: | 694396.549 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738786.809 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 53.35 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 1.70m | Obstruction - boulders. | DPH | 50kg | 500mm | |

| | | | | |
|----------------------|--------------------------|--|--|--------------------------|
| Contract No: 5863 | Dynamic Probe Log | | | Probe No: DP84 |
|----------------------|--------------------------|--|--|--------------------------|

| | | | | | |
|-----------|---------------------|------------|----------------|---------------|--------------|
| Contract: | Moygaddy | Easting: | 694589.396 | Date Started: | 21/06/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 738787.697 | Logged By: | E. Magee |
| Client: | Sky Castle Ltd | Elevation: | 53.34 | Scale: | 1:25 |
| Engineer: | OCSC | Rig Type: | Competitor 130 | Sheet No: | Sheet 1 of 1 |



| | | | | | | |
|--|--------------|-------------------------|----------------|------|-------|----------|
| | Termination: | | Probe Details: | | | Remarks: |
| | Depth: | Reason: | Type: | Mass | Drop: | |
| | 2.30m | Obstruction - boulders. | DPH | 50kg | 500mm | |

Appendix 6
Geotechnical Soil Laboratory Test Results

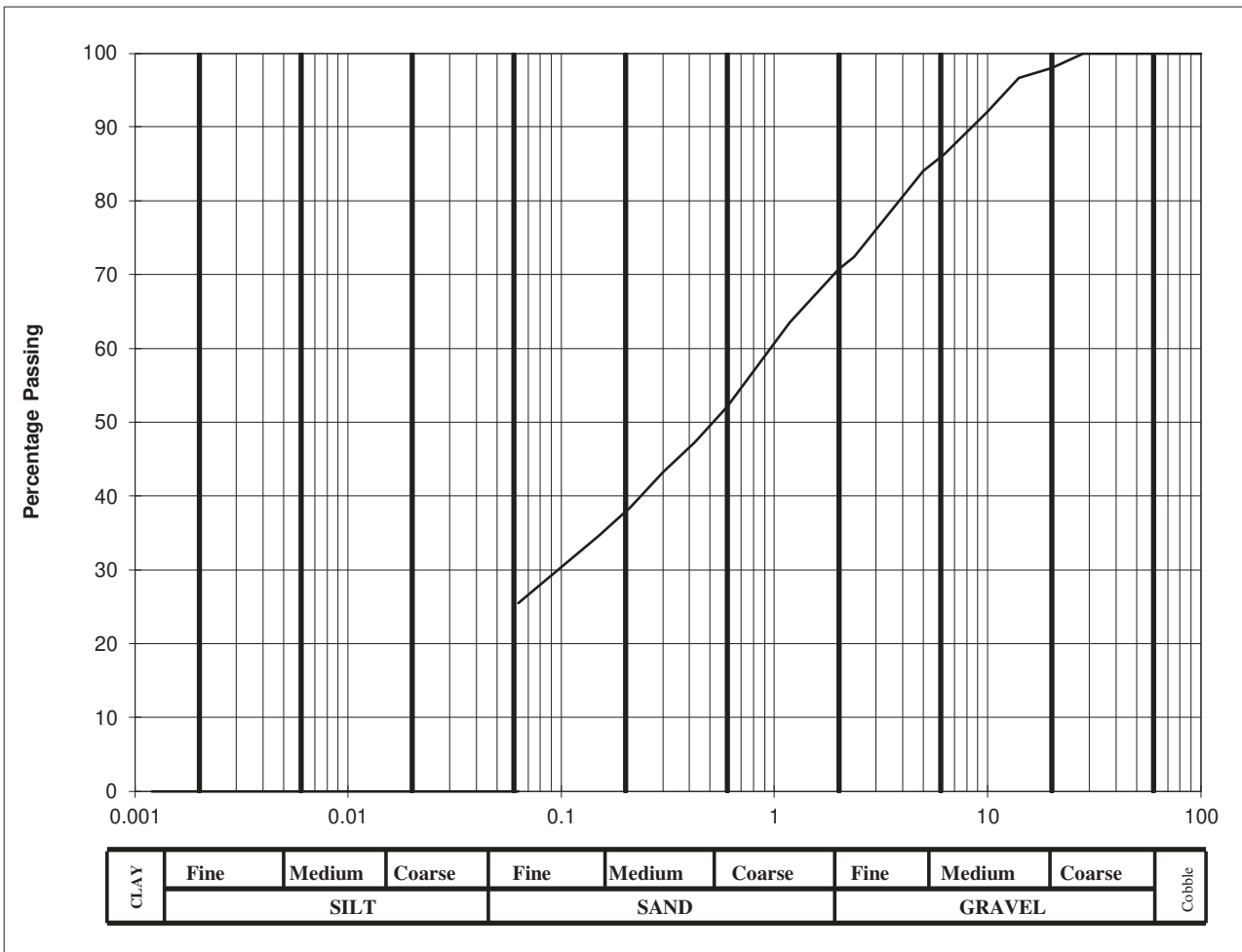
Classification Tests in accordance with BS1377: Part 4

| | |
|--------------|---|
| Client | Sky Castle Ltd. |
| Site | Moygaddy |
| S.I. File No | 5863 / 21 |
| Test Lab | Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie |
| Report Date | 12th July 2021 |

| Hole ID | Depth | Sample No | Lab Ref No. | Sample Type | Natural Moisture Content % | Liquid Limit % | Plastic Limit % | Plastic Index % | Min. Dry Density Mg/m ³ | Particle Density Mg/m ³ | % passing 425um | Comments | Remarks C=Clay; M=Silt Plasticity: L=Low; I=Intermediate; H=High; V=Very High; E=Extremely High |
|---------|-------|-----------|-------------|-------------|----------------------------|----------------|-----------------|-----------------|------------------------------------|------------------------------------|-----------------|----------|---|
| TP01 | 1.00 | MK15 | 21/856 | B | 17.6 | 32 | 18 | 14 | | | 47.3 | | CL |
| TP04 | 1.00 | MK44 | 21/860 | B | 14.3 | 38 | 20 | 18 | | | 60.7 | | CI |
| TP06 | 1.00 | MK47 | 21/863 | B | 15.6 | 37 | 20 | 17 | | | 63.5 | | CI |
| TP08 | 1.00 | MK38 | 21/866 | B | 8.4 | 31 | 19 | 12 | | | 30.0 | | CL |
| TP10 | 1.00 | MK63 | 21/869 | B | 14.6 | 35 | 18 | 17 | | | 55.7 | | CL/CI |
| TP11 | 1.00 | MK58 | 21/871 | B | 18.0 | 34 | 18 | 16 | | | 62.3 | | CL |
| TP12 | 1.00 | MK35 | 21/873 | B | 17.5 | 36 | 20 | 16 | | | 60.3 | | CI |
| TP13 | 1.50 | MK29 | 21/875 | B | 11.5 | 32 | 18 | 14 | | | 37.9 | | CL |
| TP15 | 1.00 | MK23 | 21/878 | B | 12.8 | 34 | 20 | 14 | | | 48.5 | | CL |
| TP19 | 1.00 | MK05 | 21/883 | B | 12.2 | 34 | 19 | 15 | | | 51.9 | | CL |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 98 | | |
| 14 | 96.6 | | |
| 10 | 92.1 | | |
| 6.3 | 86.3 | | |
| 5.0 | 84 | | |
| 2.36 | 72.4 | | |
| 2.00 | 70.7 | | |
| 1.18 | 63.5 | | |
| 0.600 | 52 | | |
| 0.425 | 47.3 | | |
| 0.300 | 43.2 | | |
| 0.212 | 38.5 | | |
| 0.150 | 34.6 | | |
| 0.063 | 26 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 29 |
| Sand, % | 45 |
| Clay / Silt, % | 26 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

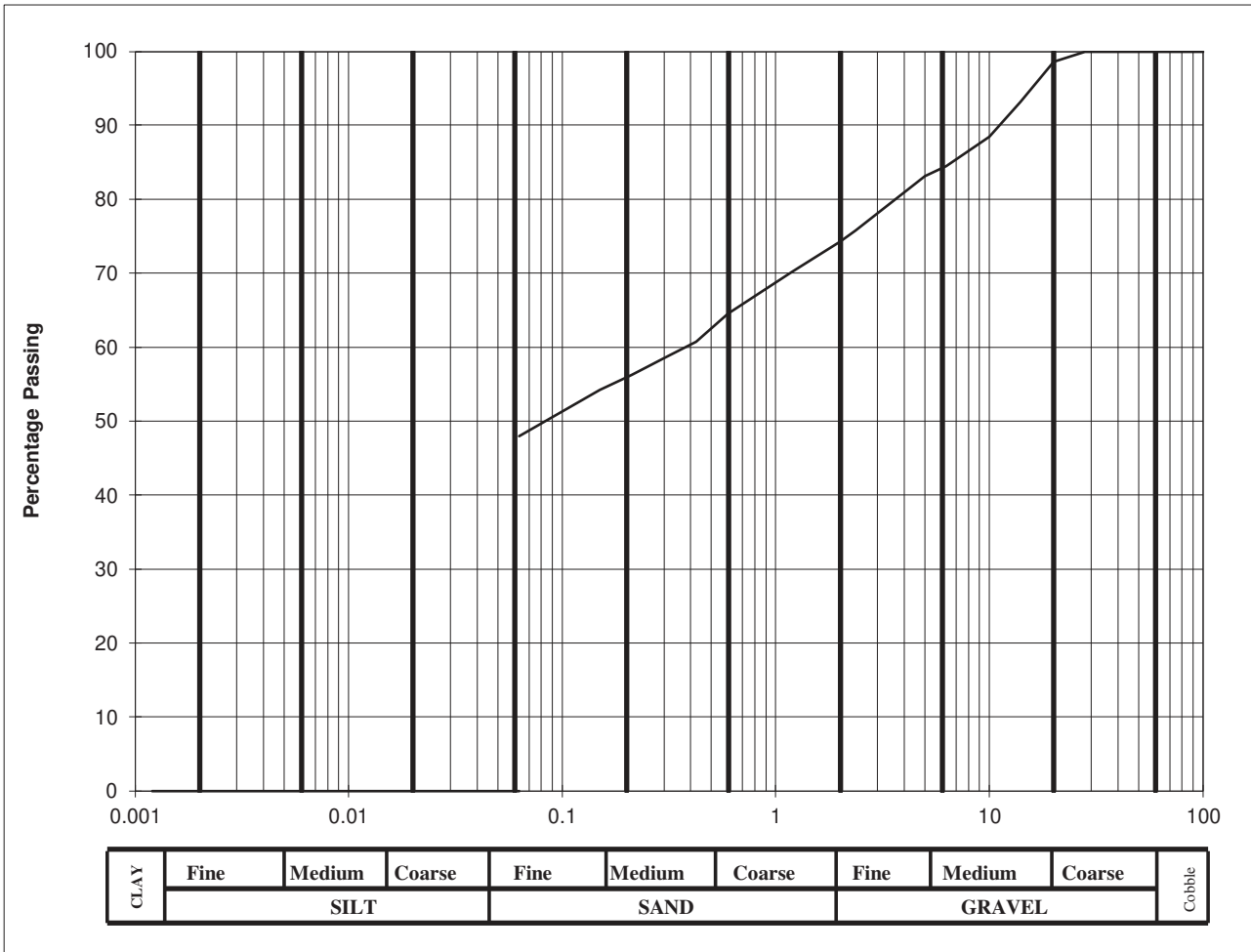
| | |
|-------------|--------|
| Lab. No : | 21/856 |
| Sample No : | MK15 |

| | |
|------------|-------|
| Hole ID : | TP 01 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | sandy slightly gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 98.6 | | |
| 14 | 93.2 | | |
| 10 | 88.4 | | |
| 6.3 | 84.5 | | |
| 5.0 | 83.1 | | |
| 2.36 | 75.8 | | |
| 2.00 | 74.2 | | |
| 1.18 | 70.1 | | |
| 0.600 | 64.5 | | |
| 0.425 | 60.7 | | |
| 0.300 | 58.5 | | |
| 0.212 | 56.2 | | |
| 0.150 | 54.2 | | |
| 0.063 | 48 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 26 |
| Sand, % | 26 |
| Clay / Silt, % | 48 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

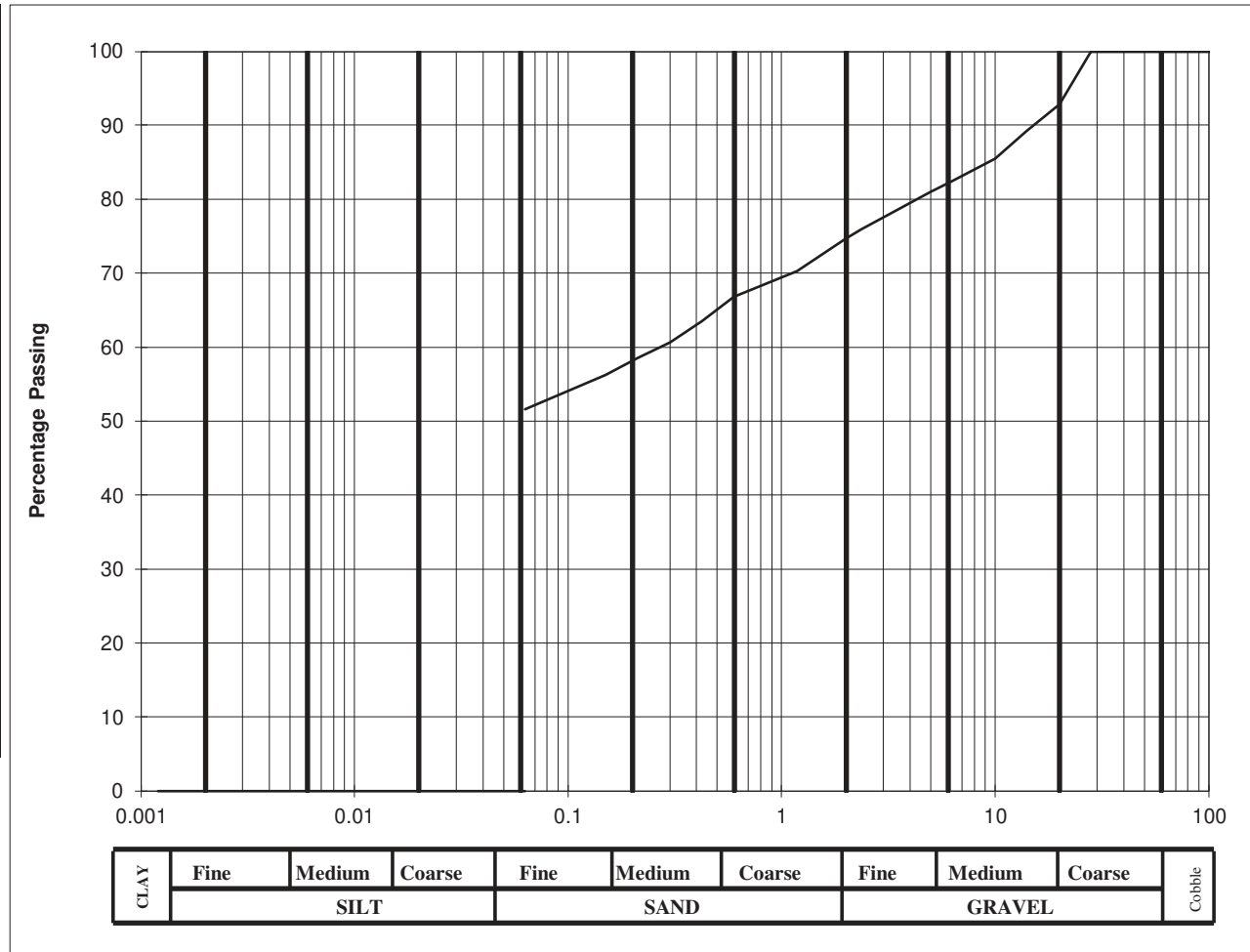
| | |
|-------------|--------|
| Lab. No : | 21/860 |
| Sample No : | MK44 |

| | |
|------------|-------|
| Hole ID : | TP 04 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | slightly sandy slightly gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 92.8 | | |
| 14 | 89.2 | | |
| 10 | 85.5 | | |
| 6.3 | 82.4 | | |
| 5.0 | 81 | | |
| 2.36 | 75.9 | | |
| 2.00 | 74.7 | | |
| 1.18 | 70.3 | | |
| 0.600 | 66.8 | | |
| 0.425 | 63.5 | | |
| 0.300 | 60.6 | | |
| 0.212 | 58.5 | | |
| 0.150 | 56.2 | | |
| 0.063 | 52 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 25 |
| Sand, % | 23 |
| Clay / Silt, % | 52 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

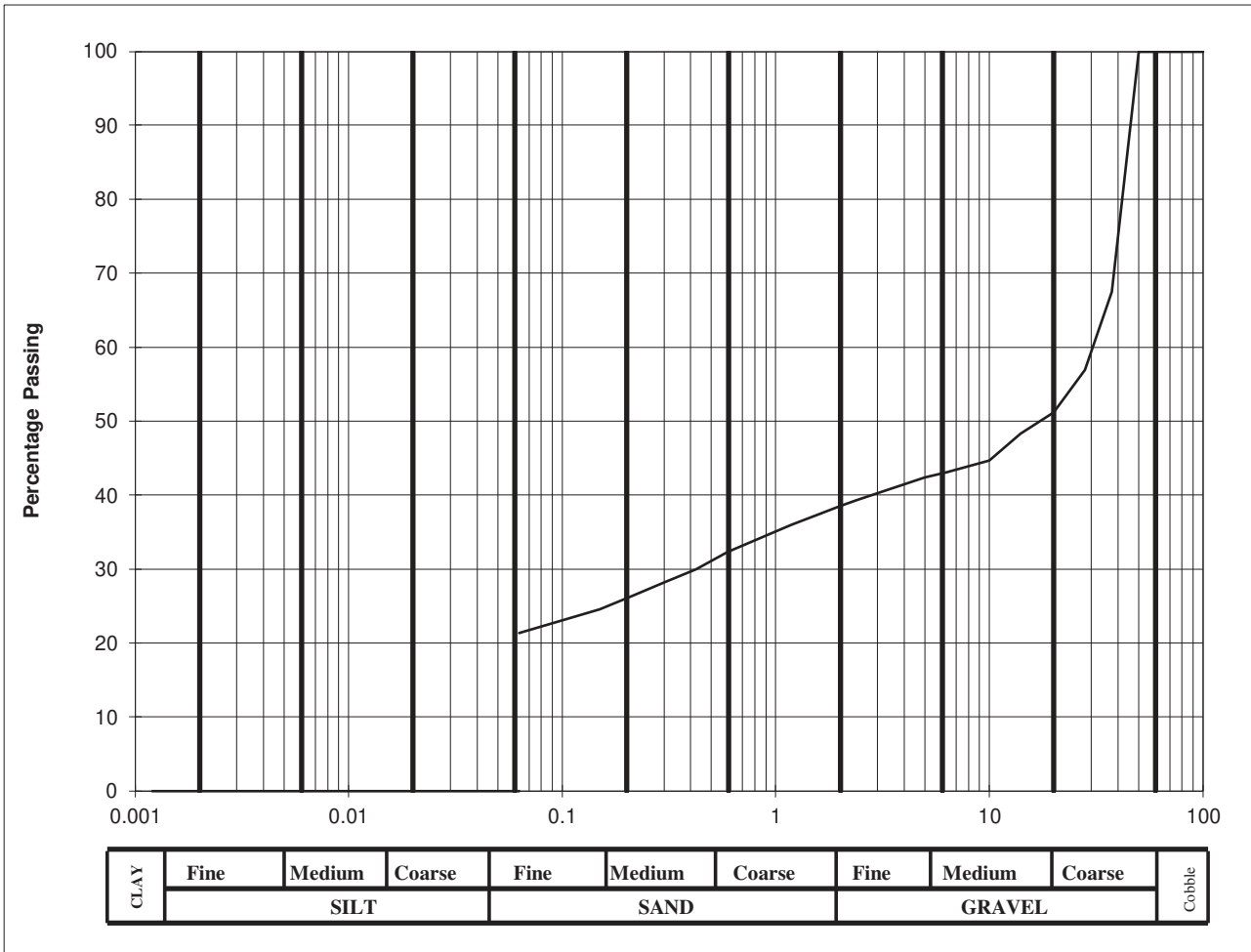
| | |
|-------------|--------|
| Lab. No : | 21/863 |
| Sample No : | MK47 |

| | |
|------------|-------|
| Hole ID : | TP 06 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | slightly sandy slightly gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 67.5 | | |
| 28 | 56.9 | | |
| 20 | 51.2 | | |
| 14 | 48.3 | | |
| 10 | 44.7 | | |
| 6.3 | 43.1 | | |
| 5.0 | 42.4 | | |
| 2.36 | 39.3 | | |
| 2.00 | 38.5 | | |
| 1.18 | 36 | | |
| 0.600 | 32.3 | | |
| 0.425 | 30 | | |
| 0.300 | 28.2 | | |
| 0.212 | 26.3 | | |
| 0.150 | 24.6 | | |
| 0.063 | 21 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 62 |
| Sand, % | 18 |
| Clay / Silt, % | 21 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

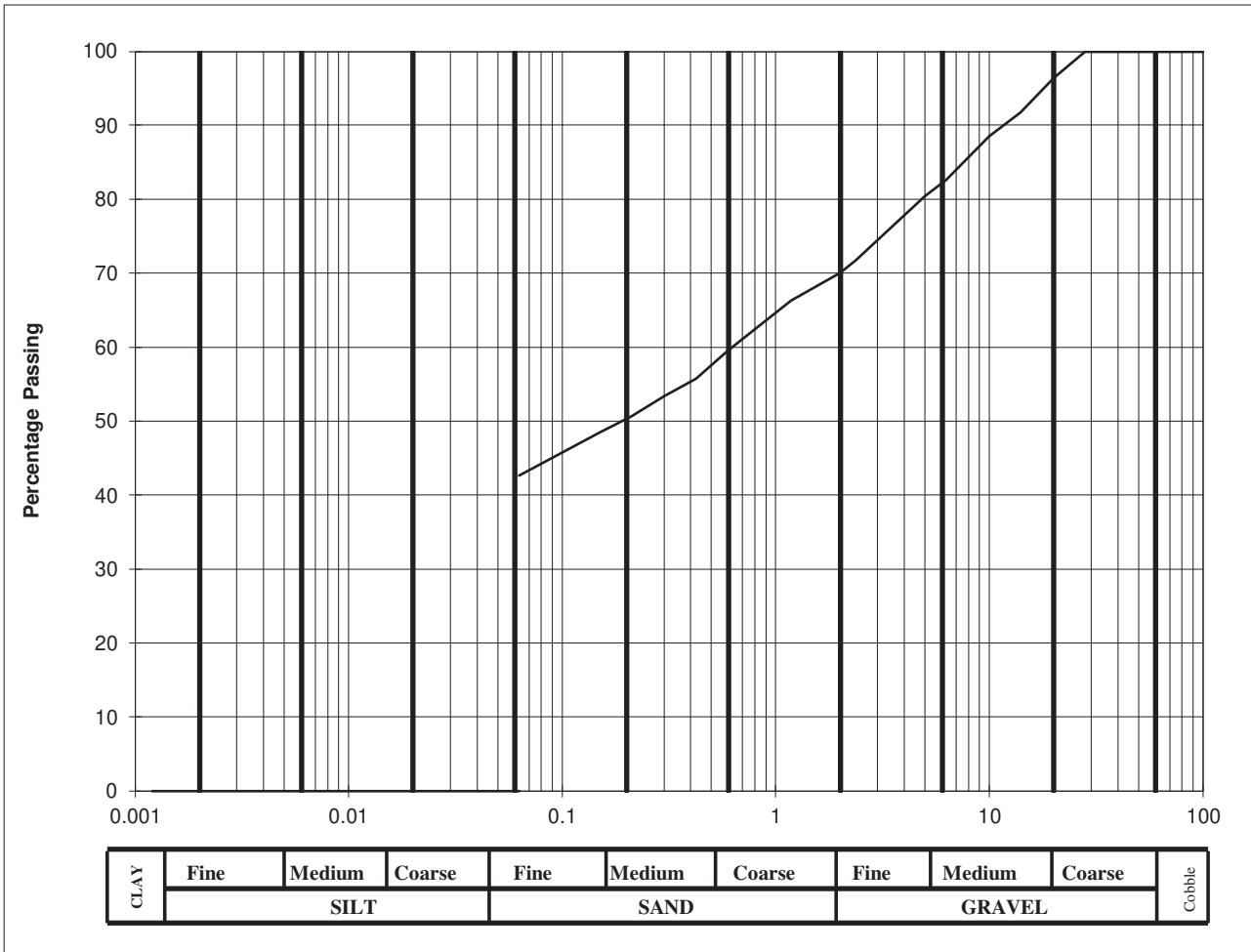
| | |
|-------------|--------|
| Lab. No : | 21/866 |
| Sample No : | MK38 |

| | |
|------------|-------|
| Hole ID : | TP 08 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | slightly sandy gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 96.4 | | |
| 14 | 91.7 | | |
| 10 | 88.5 | | |
| 6.3 | 82.6 | | |
| 5.0 | 80.4 | | |
| 2.36 | 71.7 | | |
| 2.00 | 70 | | |
| 1.18 | 66.3 | | |
| 0.600 | 59.5 | | |
| 0.425 | 55.7 | | |
| 0.300 | 53.4 | | |
| 0.212 | 50.7 | | |
| 0.150 | 48.5 | | |
| 0.063 | 43 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 30 |
| Sand, % | 27 |
| Clay / Silt, % | 43 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

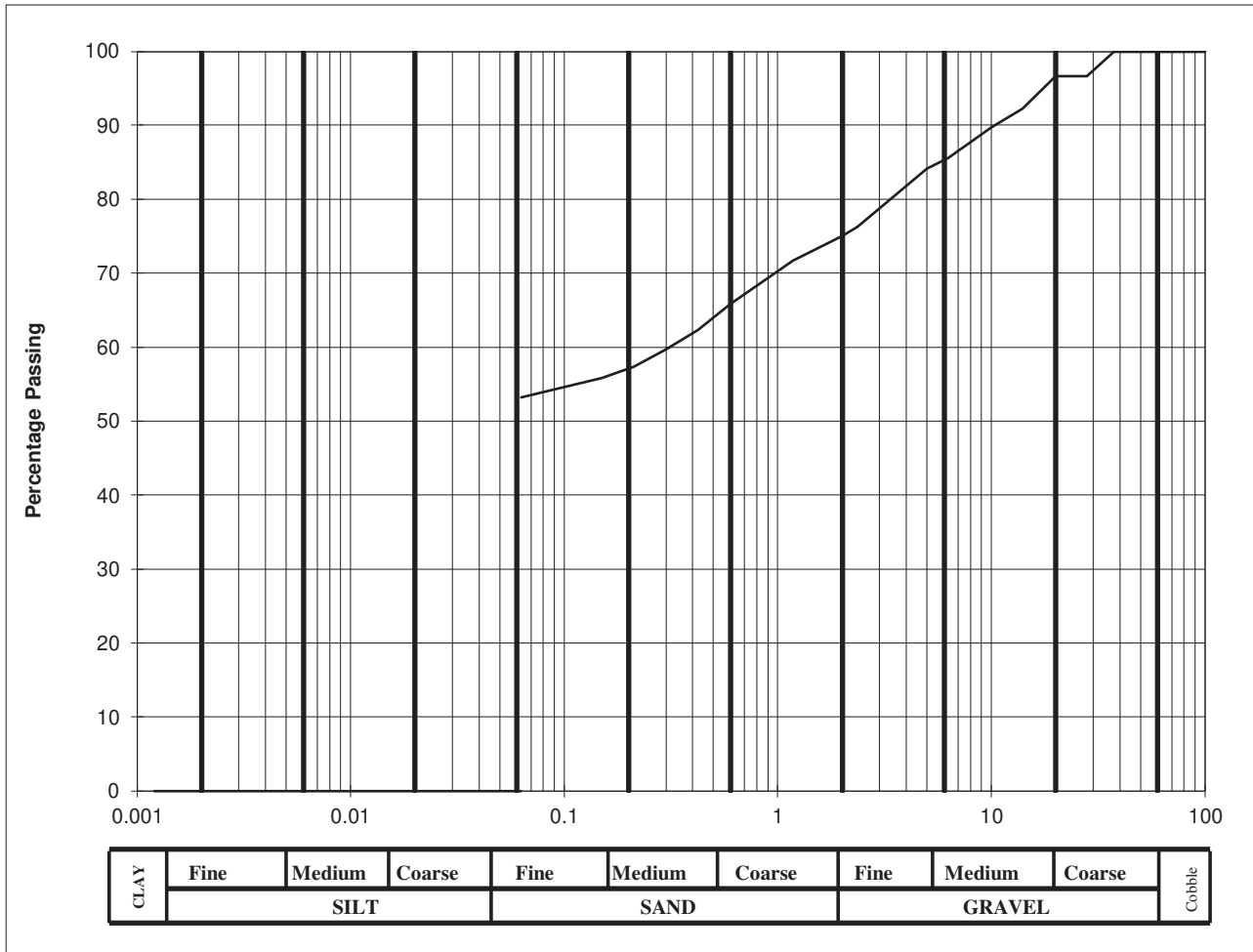
| | |
|-------------|--------|
| Lab. No : | 21/869 |
| Sample No : | MK63 |

| | |
|------------|-------|
| Hole ID : | TP 10 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | slightly sandy slightly gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 96.6 | | |
| 20 | 96.6 | | |
| 14 | 92.2 | | |
| 10 | 89.7 | | |
| 6.3 | 85.6 | | |
| 5.0 | 84.1 | | |
| 2.36 | 76.3 | | |
| 2.00 | 75 | | |
| 1.18 | 71.7 | | |
| 0.600 | 65.8 | | |
| 0.425 | 62.3 | | |
| 0.300 | 59.7 | | |
| 0.212 | 57.3 | | |
| 0.150 | 55.8 | | |
| 0.063 | 53 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 25 |
| Sand, % | 22 |
| Clay / Silt, % | 53 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

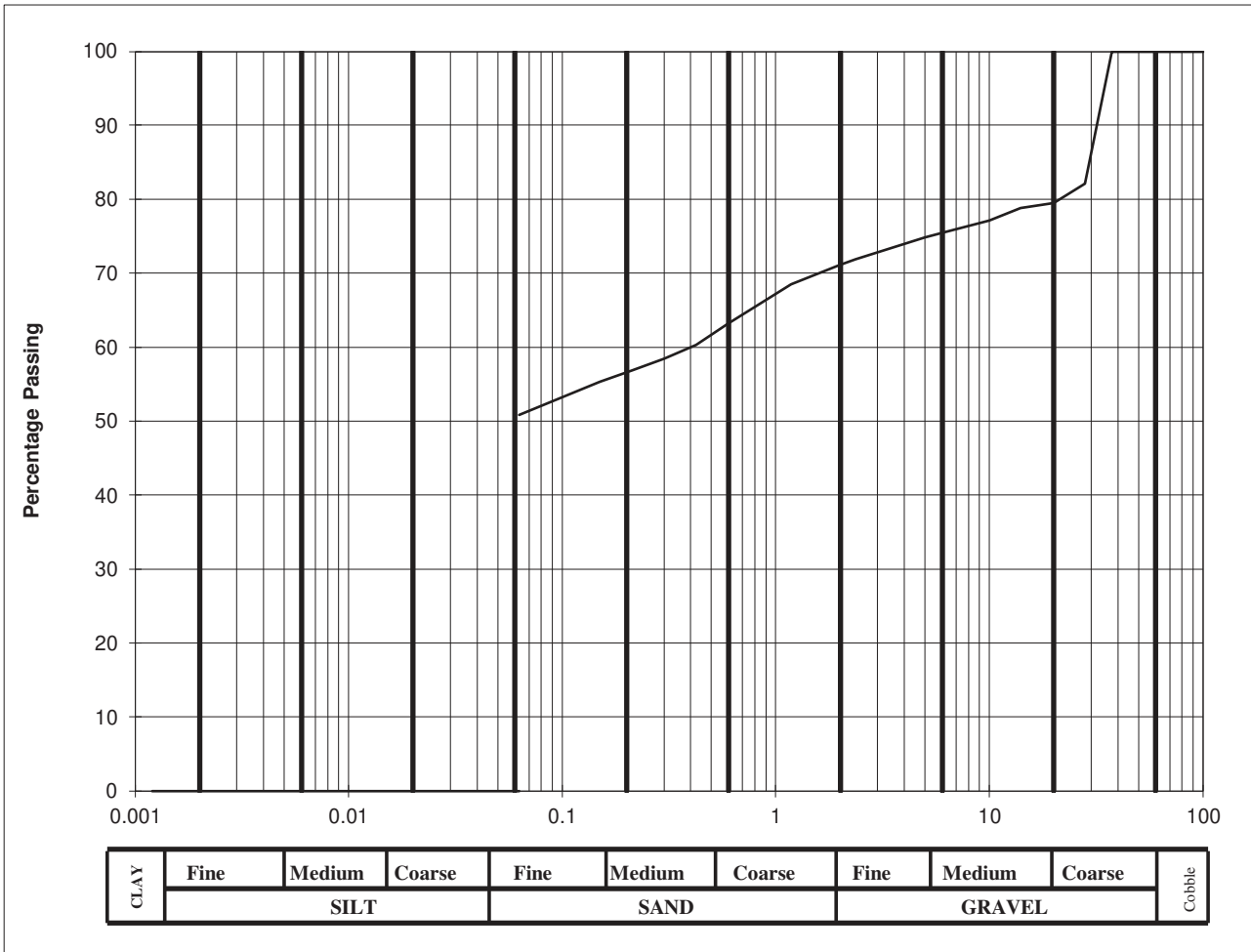
| | |
|-------------|--------|
| Lab. No : | 21/871 |
| Sample No : | MK58 |

| | |
|------------|-------|
| Hole ID : | TP 11 |
| Depth, m : | 1.50 |

| | |
|------------------------|---|
| Material description : | slightly sandy slightly gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 82.1 | | |
| 20 | 79.5 | | |
| 14 | 78.8 | | |
| 10 | 77.1 | | |
| 6.3 | 75.6 | | |
| 5.0 | 74.8 | | |
| 2.36 | 71.9 | | |
| 2.00 | 71.1 | | |
| 1.18 | 68.5 | | |
| 0.600 | 63.2 | | |
| 0.425 | 60.3 | | |
| 0.300 | 58.4 | | |
| 0.212 | 56.8 | | |
| 0.150 | 55.3 | | |
| 0.063 | 51 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 29 |
| Sand, % | 20 |
| Clay / Silt, % | 51 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

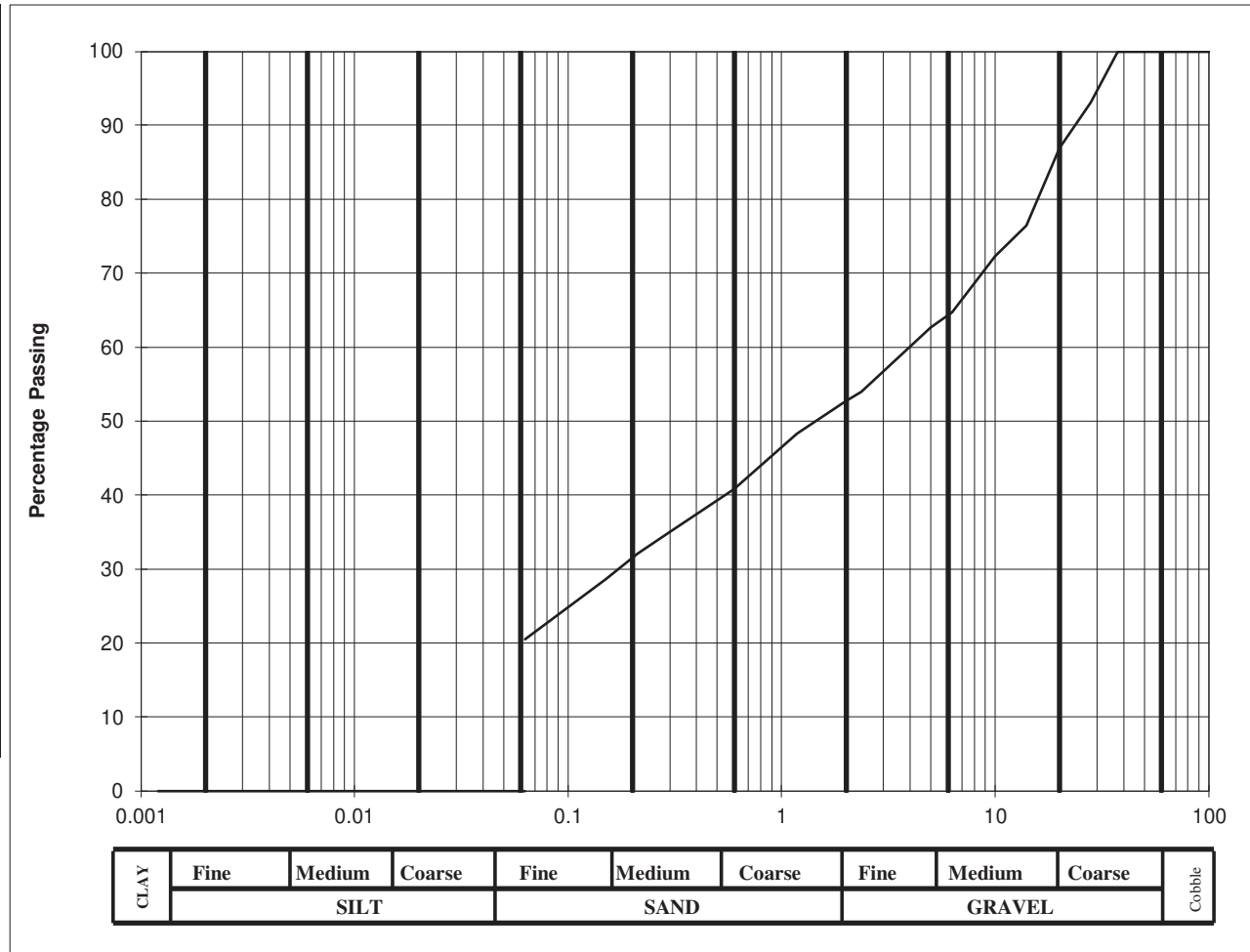
| | |
|-------------|--------|
| Lab. No : | 21/873 |
| Sample No : | MK35 |

| | |
|------------|-------|
| Hole ID : | TP 12 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | slightly sandy slightly gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 93.1 | | |
| 20 | 86.9 | | |
| 14 | 76.4 | | |
| 10 | 72.3 | | |
| 6.3 | 64.7 | | |
| 5.0 | 62.7 | | |
| 2.36 | 54 | | |
| 2.00 | 52.7 | | |
| 1.18 | 48.3 | | |
| 0.600 | 40.8 | | |
| 0.425 | 37.9 | | |
| 0.300 | 35 | | |
| 0.212 | 32.1 | | |
| 0.150 | 28.6 | | |
| 0.063 | 21 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 47 |
| Sand, % | 32 |
| Clay / Silt, % | 21 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

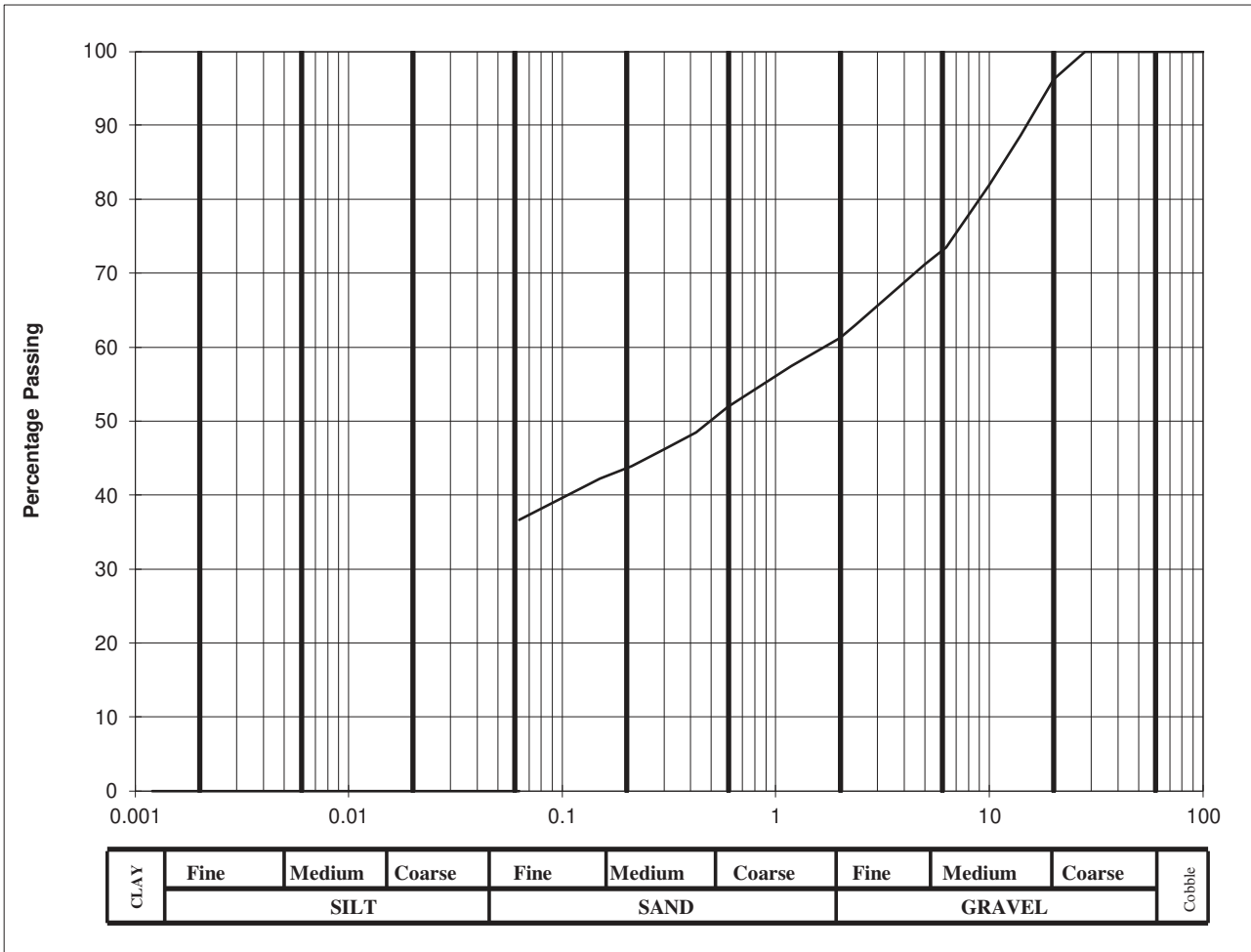
| | |
|-------------|--------|
| Lab. No : | 21/875 |
| Sample No : | MK29 |

| | |
|------------|-------|
| Hole ID : | TP 13 |
| Depth, m : | 1.50 |

| | |
|------------------------|---|
| Material description : | slightly sandy gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 96.2 | | |
| 14 | 88.6 | | |
| 10 | 81.9 | | |
| 6.3 | 73.5 | | |
| 5.0 | 71.2 | | |
| 2.36 | 63 | | |
| 2.00 | 61.2 | | |
| 1.18 | 57.4 | | |
| 0.600 | 51.9 | | |
| 0.425 | 48.5 | | |
| 0.300 | 46.2 | | |
| 0.212 | 43.9 | | |
| 0.150 | 42.2 | | |
| 0.063 | 37 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 39 |
| Sand, % | 24 |
| Clay / Silt, % | 37 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

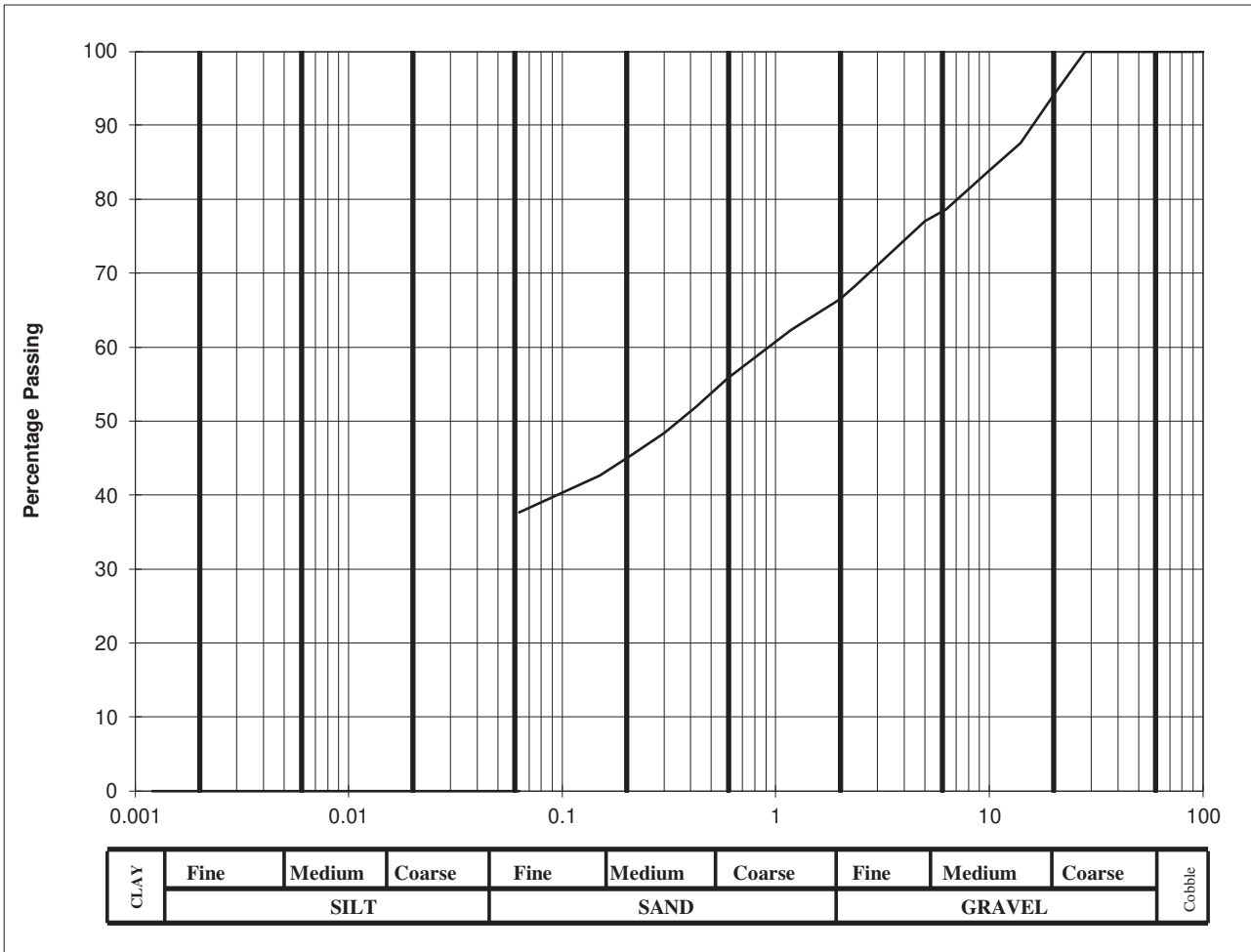
| | |
|-------------|--------|
| Lab. No : | 21/878 |
| Sample No : | MK23 |

| | |
|------------|-------|
| Hole ID : | TP 15 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | slightly sandy gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

| BS Sieve size, mm | Percent passing | Hydrometer analysis | |
|-------------------|-----------------|---------------------|-----------|
| | | Diameter, mm | % passing |
| 100 | 100 | 0.0630 | |
| 90 | 100 | 0.0200 | |
| 75 | 100 | 0.0060 | |
| 63 | 100 | 0.0020 | |
| 50 | 100 | | |
| 37.5 | 100 | | |
| 28 | 100 | | |
| 20 | 94.1 | | |
| 14 | 87.6 | | |
| 10 | 83.9 | | |
| 6.3 | 78.6 | | |
| 5.0 | 77 | | |
| 2.36 | 68.3 | | |
| 2.00 | 66.5 | | |
| 1.18 | 62.3 | | |
| 0.600 | 55.8 | | |
| 0.425 | 51.9 | | |
| 0.300 | 48.4 | | |
| 0.212 | 45.4 | | |
| 0.150 | 42.6 | | |
| 0.063 | 38 | | |

| | |
|----------------|----|
| Cobbles, % | 0 |
| Gravel, % | 34 |
| Sand, % | 29 |
| Clay / Silt, % | 38 |



| | |
|-----------|-----------------|
| Client : | Sky Castle Ltd. |
| Project : | Moygaddy |

| | |
|-------------|--------|
| Lab. No : | 21/883 |
| Sample No : | MK05 |

| | |
|------------|-------|
| Hole ID : | TP 19 |
| Depth, m : | 1.00 |

| | |
|------------------------|---|
| Material description : | slightly sandy slightly gravelly silty CLAY |
| Remarks : | Soils with clay or silt content between 15% - 35% can be classified as clay or silt depending on the field Engineers assessment of in-situ behaviour. Where material is for re-use and therefore disturbed, only soils with clay or silt >35% are classified as clay or silt |

California Bearing Ratio (CBR) In accordance with BS1377: Part 4: Method 7

| | |
|--------------|---|
| Client | Sky Castle Ltd. |
| Site | Moygaddy |
| S.I. File No | 5863 / 21 |
| Test Lab | Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie |
| Report Date | 12th July 2021 |

| CBR No | Depth (mBGL) | Sample No | Sample Type | Lab Ref | Moisture Content (%) | CBR Value (%) | Location / Remarks |
|--------|--------------|-----------|-------------|---------|----------------------|---------------|--------------------|
| TP01 | 0.50 | MK14 | CBR | 21/855 | 10.3 | 7.5 | |
| TP02 | 0.50 | MK07 | CBR | 21/857 | 14.8 | 5.2 | |
| TP03 | 0.50 | MK02 | CBR | 21/858 | 16.5 | 5.2 | |
| TP04 | 0.50 | MK43 | CBR | 21/859 | 8.8 | 9.7 | |
| TP05 | 0.50 | MK39 | CBR | 21/861 | 12.3 | 8.2 | |
| TP06 | 0.50 | MK46 | CBR | 21/862 | 10.4 | 9.5 | |
| TP07 | 0.50 | MK51 | CBR | 21/864 | 12.9 | 8.8 | |
| TP08 | 0.50 | MK37 | CBR | 21/865 | 17.0 | 4.3 | |
| TP09 | 0.50 | MK60 | CBR | 21/867 | 15.3 | 7.4 | |
| TP10 | 0.50 | MK62 | CBR | 21/868 | 10.1 | 10.9 | |
| TP11 | 0.50 | MK57 | CBR | 21/870 | 17.5 | 5.0 | |
| TP12 | 0.50 | MK34 | CBR | 21/872 | 14.8 | 8.9 | |
| TP13 | 0.50 | MK27 | CBR | 21/874 | 12.1 | 11.2 | |
| TP14 | 0.50 | MK24 | CBR | 21/876 | 9.1 | 11.6 | |
| TP15 | 0.50 | MK22 | CBR | 21/877 | 17.9 | 4.1 | |
| TP16 | 0.50 | MK54 | CBR | 21/879 | 17.6 | 5.2 | |
| TP17 | 0.50 | MK17 | CBR | 21/880 | 12.7 | 6.8 | |
| TP18 | 0.50 | MK11 | CBR | 21/881 | 10.8 | 9.3 | |
| TP19 | 0.50 | MK04 | CBR | 21/882 | 15.7 | 5.3 | |
| TP20 | 0.50 | MK19 | CBR | 21/884 | 12.6 | 11.4 | |
| TP21 | 0.50 | MK31 | CBR | 21/885 | 10.8 | 10.3 | |

Chemical Testing
In accordance with BS 1377: Part 3

| | |
|--------------|---|
| Client | Sky Castle Ltd. |
| Site | Moygaddy |
| S.I. File No | 5863 / 21 |
| Test Lab | Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie |
| Report Date | 12th July 2021 |

| Hole Id | Depth (mBGL) | Sample No | Lab Ref | pH Value | Water Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) g/L | Water Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) % | Loss on Ignition (Organic Content) % | Chloride ion Content (water:soil ratio 2:1) % | % passing 2mm | Remarks |
|---------|--------------|-----------|---------|----------|--|--|--------------------------------------|---|---------------|---------|
| TP01 | 1.00 | MK15 | 21/856 | 8.59 | 0.120 | 0.085 | | 0.26 | 70.7 | |
| TP04 | 1.00 | MK44 | 21/860 | 8.75 | 0.126 | 0.093 | | 0.21 | 74.2 | |
| TP06 | 1.00 | MK47 | 21/863 | 8.80 | 0.126 | 0.094 | | 0.23 | 74.7 | |
| TP08 | 1.00 | MK38 | 21/866 | 8.73 | 0.117 | 0.045 | | 0.22 | 38.5 | |
| TP10 | 1.00 | MK63 | 21/869 | 8.66 | 0.122 | 0.085 | | 0.24 | 70.0 | |
| TP12 | 1.00 | MK35 | 21/873 | 8.71 | 0.127 | 0.090 | | 0.24 | 71.1 | |
| TP15 | 1.00 | MK23 | 21/878 | 8.73 | 0.123 | 0.075 | | 0.24 | 61.2 | |
| TP19 | 1.00 | MK05 | 21/883 | 8.67 | 0.120 | 0.080 | | 0.26 | 66.5 | |

Appendix 7
Geotechnical Rock Laboratory Test Results

Point Load Test Broch,E. & Franklin,J.A.,IRSM Point Load Test Method

Uniaxial Compressive Strength in accordance with BS1881

| | |
|--------------|---|
| Client | Sky Castle Ltd. |
| Site | Moygaddy |
| S.I. File No | 5863 / 19 |
| Test Lab | Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie |
| Report Date | 22nd July 2021 |

| Hole ID | Depth (m) | Lab Ref No. | Sample Type | Diameter / Height (mm) | Test Type | Is (MN/m ²) | Compressive Strength (MPa) | Strength Designation | Approx. Equivalent UCS Value (MPa) | Remarks |
|---------|-----------|-------------|-------------|------------------------|-----------|-------------------------|----------------------------|----------------------|------------------------------------|----------------------|
| RC04 | 6.78 | 21/931 | C | 65 | PL | 4.73 | | Very Strong | 119.5 | Tested Diametrically |
| RC04 | 8.47 | 21/932 | C | 65 | PL | 3.79 | | Strong | 96.0 | Tested Diametrically |
| RC05 | 6.20 | 21/933 | C | 65 | PL | 4.50 | | Very Strong | 114.0 | Tested Diametrically |
| RC05 | 8.17 | 21/934 | C | 65 | PL | 2.13 | | Strong | 54.0 | Tested Diametrically |
| RC06 | 5.45 | 21/935 | C | 65 | PL | 3.43 | | Strong | 87.0 | Tested Diametrically |
| RC06 | 6.96 | 21/936 | C | 65 | PL | 4.50 | | Very Strong | 114.0 | Tested Diametrically |
| RC07 | 6.20 | 21/937 | C | 65 | PL | 4.50 | | Very Strong | 114.0 | Tested Diametrically |
| RC07 | 7.10 | 21/938 | C | 65 | PL | 4.26 | | Very Strong | 108.0 | Tested Diametrically |
| RC08 | 7.07 | 21/939 | C | 65 | PL | 1.70 | | Moderately Strong | 43.0 | Tested Diametrically |
| RC08 | 8.24 | 21/940 | C | 65 | PL | 2.96 | | Strong | 75.0 | Tested Diametrically |
| RC09 | 6.40 | 21/941 | C | 65 | PL | 5.21 | | Very Strong | 132.0 | Tested Diametrically |
| RC09 | 7.00 | 21/942 | C | 65 | PL | 1.23 | | Moderately Strong | 31.0 | Tested Diametrically |
| RC10 | 3.27 | 21/943 | C | 65 | PL | 4.38 | | Very Strong | 111.0 | Tested Diametrically |
| RC10 | 4.10 | 21/944 | C | 65 | PL | 2.60 | | Strong | 66.0 | Tested Diametrically |
| RC11 | 6.80 | 21/945 | C | 65 | PL | 4.38 | | Very Strong | 111.0 | Tested Diametrically |
| RC11 | 8.90 | 21/946 | C | 65 | PL | 3.79 | | Strong | 96.0 | Tested Diametrically |
| RC17 | 8.35 | 21/947 | C | 65 | PL | 3.55 | | Strong | 90.0 | Tested Diametrically |
| RC17 | 8.29 | 21/948 | C | 65 | PL | 4.50 | | Very Strong | 114.0 | Tested Diametrically |
| RC19 | 5.50 | 21/949 | C | 65 | PL | 4.14 | | Very Strong | 104.5 | Tested Diametrically |
| RC19 | 6.80 | 21/950 | C | 65 | PL | 4.62 | | Very Strong | 108.0 | Tested Diametrically |

Appendix 8
Survey Data

Survey Data

| Location | Irish Transverse Mercator | | Elevation | Irish National Grid | |
|-------------------------|---------------------------|------------|-----------|---------------------|------------|
| | Easting | Northing | | Easting | Northing |
| Boreholes | | | | | |
| BH01 | 693986.514 | 739217.399 | 56.45 | 294056.159 | 239192.090 |
| BH02 | 693926.010 | 739294.840 | 56.95 | 293995.641 | 239269.547 |
| BH03 | 694117.023 | 739155.527 | 55.01 | 294186.696 | 239130.205 |
| BH04 | 693732.812 | 739457.539 | 56.85 | 293802.400 | 239432.280 |
| BH05 | 693928.844 | 739604.500 | 58.72 | 293998.473 | 239579.274 |
| BH06 | 693927.326 | 739421.930 | 57.55 | 293996.956 | 239396.665 |
| BH07 | 694241.270 | 739411.796 | 58.99 | 294310.968 | 239386.531 |
| BH08 | 694331.307 | 739691.333 | 61.30 | 294401.022 | 239666.129 |
| BH09 | 694598.661 | 739652.377 | 61.68 | 294668.434 | 239627.166 |
| BH10 | 694446.855 | 739466.694 | 59.25 | 294516.597 | 239441.442 |
| BH11 | 694790.229 | 739307.430 | 59.88 | 294860.046 | 239282.145 |
| BH12 | 694615.966 | 739002.198 | 56.86 | 294685.748 | 238976.846 |
| BH13 | 694659.374 | 738763.773 | 52.09 | 294729.167 | 238738.369 |
| BH14 | 694546.422 | 738784.570 | 53.46 | 294616.190 | 238759.170 |
| BH15 | 694458.907 | 738814.666 | 54.44 | 294528.656 | 238789.272 |
| BH16 | 693655.329 | 739258.288 | 49.53 | 293724.902 | 239232.986 |
| BH17 | 694518.865 | 738836.591 | 54.89 | 294588.627 | 238811.202 |
| BH18 | 694562.423 | 738770.148 | 52.93 | 294632.195 | 238744.745 |
| Rotary Coreholes | | | | | |
| RC04 | 693637.963 | 739436.766 | 56.84 | 293707.531 | 239411.502 |
| RC05 | 693935.222 | 739548.071 | 58.60 | 294004.853 | 239522.833 |
| RC06 | 694016.492 | 739390.864 | 57.65 | 294086.142 | 239365.593 |
| RC07 | 694142.350 | 739365.230 | 57.84 | 294212.027 | 239339.954 |
| RC08 | 694212.597 | 739630.304 | 60.48 | 294282.287 | 239605.086 |
| RC09 | 694497.168 | 739610.386 | 61.10 | 294566.919 | 239585.165 |
| RC10 | 694428.449 | 739378.834 | 57.86 | 294498.187 | 239353.562 |
| RC11 | 694711.726 | 739248.236 | 59.49 | 294781.526 | 239222.938 |
| RC12 | 694562.423 | 738770.148 | 52.93 | 294632.195 | 238744.745 |
| RC13 | 694473.806 | 738837.204 | 55.00 | 294543.558 | 238811.815 |
| RC14 | 694269.076 | 739051.513 | 55.61 | 294338.783 | 239026.170 |
| RC16 | 694648.959 | 738608.023 | 45.96 | 294718.751 | 238582.586 |
| RC17 | 693707.911 | 739303.990 | 54.78 | 293777.495 | 239278.698 |
| RC18 | 693667.400 | 739242.451 | 49.86 | 293736.976 | 239217.145 |
| RC19 | 694613.822 | 739485.171 | 58.39 | 294683.599 | 239459.924 |
| RC20 | 694717.266 | 739392.581 | 59.02 | 294787.066 | 239367.314 |
| Trial Pits | | | | | |
| TP01 | 693958.608 | 739151.571 | 55.32 | 294028.247 | 239126.247 |
| TP02 | 693988.420 | 739286.118 | 57.37 | 294058.064 | 239260.824 |
| TP03 | 693767.173 | 739286.781 | 55.26 | 293836.770 | 239261.486 |
| TP04 | 693682.930 | 739502.916 | 56.95 | 293752.507 | 239477.667 |

Survey Data

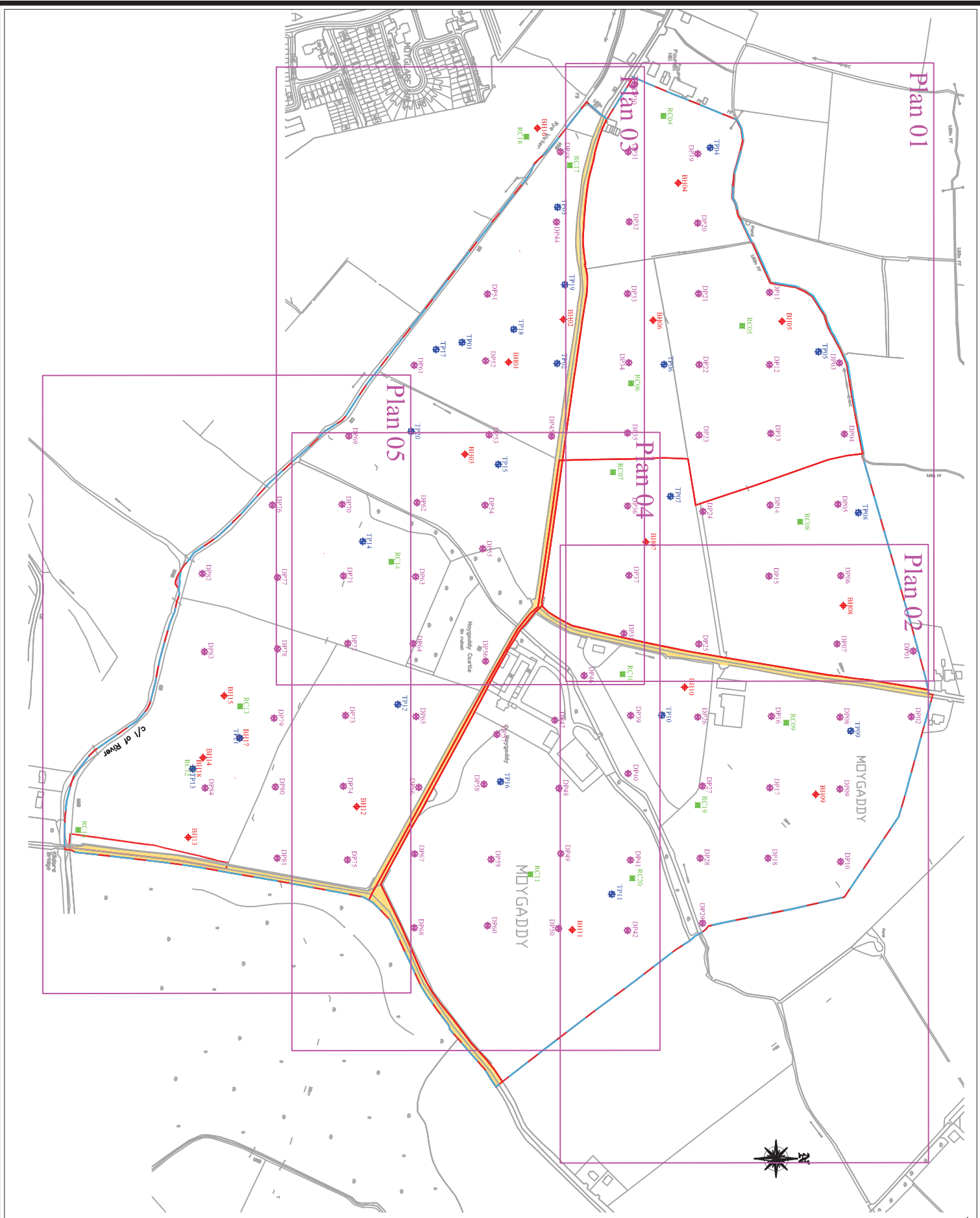
| Location | Irish Transverse Mercator | | Elevation | Irish National Grid | |
|-----------------------|---------------------------|------------|-----------|---------------------|------------|
| | Easting | Northing | | Easting | Northing |
| TP05 | 693971.792 | 739656.168 | 58.70 | 294041.430 | 239630.954 |
| TP06 | 693989.839 | 739437.563 | 57.88 | 294059.483 | 239412.302 |
| TP07 | 694176.647 | 739446.736 | 58.93 | 294246.331 | 239421.478 |
| TP08 | 694199.733 | 739712.642 | 61.26 | 294269.420 | 239687.442 |
| TP09 | 694508.798 | 739701.821 | 62.01 | 294578.551 | 239676.620 |
| TP10 | 694486.386 | 739434.493 | 58.96 | 294556.136 | 239409.234 |
| TP11 | 694739.889 | 739363.529 | 59.42 | 294809.695 | 239338.256 |
| TP12 | 694471.269 | 739060.502 | 56.97 | 294541.019 | 239035.162 |
| TP13 | 694562.423 | 738770.148 | 52.93 | 294632.195 | 238744.745 |
| TP14 | 694240.465 | 739010.894 | 55.01 | 294310.166 | 238985.542 |
| TP15 | 694131.238 | 739202.931 | 55.37 | 294200.914 | 239177.620 |
| TP16 | 694580.524 | 739205.916 | 58.33 | 294650.296 | 239180.608 |
| TP17 | 693968.747 | 739114.742 | 54.52 | 294038.389 | 239089.410 |
| TP18 | 693940.121 | 739224.755 | 55.98 | 294009.756 | 239199.447 |
| TP19 | 693876.942 | 739296.996 | 55.71 | 293946.562 | 239271.703 |
| TP20 | 694084.588 | 739079.517 | 55.01 | 294154.255 | 239054.179 |
| TP21 | 694518.865 | 738836.591 | 54.89 | 294588.627 | 238811.202 |
| Dynamic Probes | | | | | |
| DP01 | 694395.693 | 739790.416 | 62.17 | 294465.421 | 239765.234 |
| DP02 | 694488.532 | 739787.664 | 61.87 | 294558.280 | 239762.481 |
| DP03 | 693987.686 | 739685.908 | 58.58 | 294057.327 | 239660.700 |
| DP04 | 694088.248 | 739692.829 | 59.34 | 294157.911 | 239667.624 |
| DP05 | 694187.716 | 739683.631 | 60.98 | 294257.400 | 239658.424 |
| DP06 | 694288.959 | 739687.709 | 61.12 | 294358.665 | 239662.504 |
| DP07 | 694385.497 | 739682.425 | 61.53 | 294455.224 | 239657.219 |
| DP08 | 694489.069 | 739686.527 | 61.51 | 294558.818 | 239661.323 |
| DP09 | 694590.817 | 739686.475 | 61.71 | 294660.588 | 239661.271 |
| DP10 | 694693.928 | 739687.423 | 60.58 | 294763.721 | 239662.220 |
| DP11 | 693887.836 | 739587.012 | 58.01 | 293957.456 | 239561.782 |
| DP12 | 693990.198 | 739586.789 | 58.63 | 294059.841 | 239561.560 |
| DP13 | 694087.587 | 739588.545 | 58.95 | 294157.250 | 239563.317 |
| DP14 | 694188.942 | 739587.683 | 59.62 | 294258.627 | 239562.455 |
| DP15 | 694289.424 | 739586.183 | 59.97 | 294359.131 | 239560.956 |
| DP16 | 694488.048 | 739589.540 | 60.82 | 294557.798 | 239564.315 |
| DP17 | 694589.076 | 739587.354 | 60.73 | 294658.847 | 239562.129 |
| DP18 | 694688.772 | 739584.729 | 60.89 | 294758.565 | 239559.504 |
| DP19 | 693691.519 | 739485.259 | 57.06 | 293761.098 | 239460.006 |
| DP20 | 693789.642 | 739485.089 | 56.56 | 293859.242 | 239459.837 |
| DP21 | 693889.602 | 739486.389 | 57.21 | 293959.224 | 239461.138 |
| DP22 | 693990.017 | 739487.250 | 58.16 | 294059.660 | 239461.999 |
| DP23 | 694089.764 | 739487.208 | 58.44 | 294159.429 | 239461.958 |

Survey Data




| Location | Irish Transverse Mercator | | Elevation | Irish National Grid | |
|----------|---------------------------|------------|-----------|---------------------|------------|
| | Easting | Northing | | Easting | Northing |
| DP24 | 694198.133 | 739492.619 | 59.24 | 294267.821 | 239467.371 |
| DP25 | 694385.716 | 739486.593 | 59.28 | 294455.444 | 239461.345 |
| DP26 | 694489.024 | 739485.194 | 59.56 | 294558.775 | 239459.946 |
| DP27 | 694586.781 | 739491.852 | 58.59 | 294656.553 | 239466.606 |
| DP28 | 694688.953 | 739488.632 | 58.31 | 294758.747 | 239463.386 |
| DP29 | 694780.802 | 739491.934 | 56.47 | 294850.615 | 239466.689 |
| DP30 | 693593.273 | 739395.730 | 56.03 | 293662.832 | 239370.457 |
| DP31 | 693688.922 | 739386.795 | 57.17 | 293758.501 | 239361.521 |
| DP32 | 693787.843 | 739388.255 | 56.49 | 293857.444 | 239362.982 |
| DP33 | 693889.656 | 739385.777 | 56.89 | 293959.278 | 239360.504 |
| DP34 | 693987.346 | 739387.484 | 57.60 | 294056.989 | 239362.212 |
| DP35 | 694086.861 | 739385.871 | 57.91 | 294156.526 | 239360.599 |
| DP36 | 694190.231 | 739385.957 | 58.35 | 294259.918 | 239360.686 |
| DP37 | 694288.456 | 739387.753 | 58.62 | 294358.164 | 239362.483 |
| DP38 | 694370.568 | 739380.643 | 58.45 | 294440.294 | 239355.372 |
| DP39 | 694486.826 | 739390.243 | 58.25 | 294556.577 | 239364.974 |
| DP40 | 694569.043 | 739386.611 | 54.78 | 294638.812 | 239361.342 |
| DP41 | 694691.616 | 739389.831 | 59.36 | 294761.411 | 239364.563 |
| DP42 | 694791.212 | 739385.883 | 58.94 | 294861.028 | 239360.615 |
| DP43 | 693688.642 | 739290.847 | 52.18 | 293758.222 | 239265.552 |
| DP44 | 693788.258 | 739285.161 | 56.04 | 293857.859 | 239259.865 |
| DP45 | 694091.482 | 739278.290 | 56.67 | 294161.149 | 239252.995 |
| DP46 | 694430.386 | 739324.235 | 53.90 | 294500.125 | 239298.952 |
| DP47 | 694493.472 | 739282.726 | 58.49 | 294563.225 | 239257.434 |
| DP48 | 694590.116 | 739288.613 | 59.21 | 294659.890 | 239263.323 |
| DP49 | 694682.452 | 739291.233 | 59.96 | 294752.246 | 239265.944 |
| DP50 | 694788.363 | 739288.137 | 59.82 | 294858.180 | 239262.848 |
| DP51 | 693890.121 | 739187.554 | 55.56 | 293959.745 | 239162.238 |
| DP52 | 693984.693 | 739184.950 | 56.07 | 294054.337 | 239159.634 |
| DP53 | 694089.481 | 739189.955 | 55.39 | 294159.148 | 239164.641 |
| DP54 | 694189.069 | 739183.974 | 55.51 | 294258.757 | 239158.659 |
| DP55 | 694250.676 | 739180.873 | 51.64 | 294320.378 | 239155.557 |
| DP56 | 694409.931 | 739184.774 | 55.98 | 294479.667 | 239159.460 |
| DP57 | 694513.646 | 739200.814 | 58.11 | 294583.404 | 239175.504 |
| DP58 | 694584.206 | 739182.489 | 58.08 | 294653.979 | 239157.176 |
| DP59 | 694690.632 | 739192.594 | 58.36 | 294760.428 | 239167.284 |
| DP60 | 694784.383 | 739187.502 | 58.33 | 294854.199 | 239162.191 |
| DP61 | 693991.061 | 739083.755 | 53.29 | 294060.708 | 239058.417 |
| DP62 | 694185.443 | 739087.742 | 49.21 | 294255.131 | 239062.406 |
| DP63 | 694290.240 | 739085.762 | 55.96 | 294359.951 | 239060.426 |
| DP64 | 694385.154 | 739082.180 | 56.76 | 294454.885 | 239056.844 |

Survey Data

| Location | Irish Transverse Mercator | | Elevation | Irish National Grid | |
|----------|---------------------------|------------|-----------|---------------------|------------|
| | Easting | Northing | | Easting | Northing |
| DP65 | 694488.362 | 739086.289 | 57.03 | 294558.116 | 239060.954 |
| DP66 | 694588.543 | 739090.206 | 57.41 | 294658.318 | 239064.873 |
| DP67 | 694682.814 | 739084.421 | 57.54 | 294752.609 | 239059.087 |
| DP68 | 694787.254 | 739083.914 | 56.22 | 294857.072 | 239058.581 |
| DP69 | 694090.959 | 738991.035 | 49.72 | 294160.628 | 238965.677 |
| DP70 | 694187.890 | 738981.735 | 52.48 | 294257.580 | 238956.376 |
| DP71 | 694289.189 | 738983.578 | 55.45 | 294358.901 | 238958.220 |
| DP72 | 694384.733 | 738989.607 | 56.10 | 294454.465 | 238964.251 |
| DP73 | 694486.822 | 738986.510 | 56.87 | 294556.576 | 238961.154 |
| DP74 | 694586.960 | 738983.395 | 56.54 | 294656.736 | 238958.039 |
| DP75 | 694691.101 | 738989.216 | 56.20 | 294760.899 | 238963.862 |
| DP76 | 694188.862 | 738882.936 | 48.76 | 294258.553 | 238857.556 |
| DP77 | 694291.409 | 738890.282 | 54.52 | 294361.122 | 238864.904 |
| DP78 | 694392.533 | 738890.201 | 54.87 | 294462.268 | 238864.823 |
| DP79 | 694490.609 | 738885.308 | 55.95 | 294560.365 | 238859.930 |
| DP80 | 694587.972 | 738887.143 | 55.82 | 294657.749 | 238861.766 |
| DP81 | 694688.909 | 738889.761 | 54.95 | 294758.707 | 238864.385 |
| DP82 | 694286.007 | 738783.740 | 47.18 | 294355.719 | 238758.339 |
| DP83 | 694396.549 | 738786.809 | 53.35 | 294466.285 | 238761.409 |
| DP84 | 694589.396 | 738787.697 | 53.34 | 294659.174 | 238762.298 |



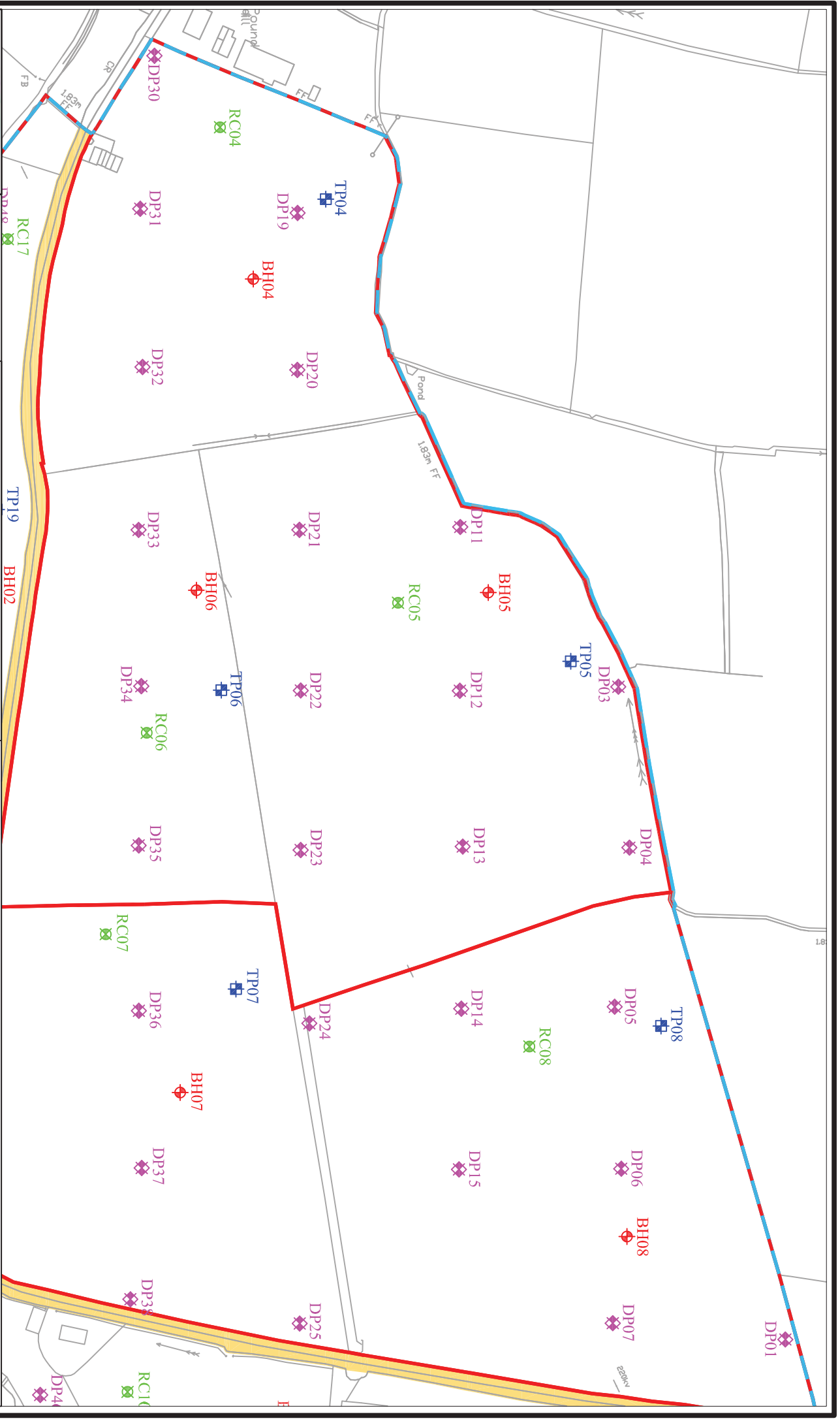
Legend:

-  Cable Percussive Borehole
-  Rotary Corehole
-  Trial Pit
-  Dynamic Probe

| | |
|------------------------|-------------------------|
| Clients: | Sky Castle Ltd |
| Engineers: | OCSC |
| Project: | Moygaddy |
| Date: | 04-08-2021 |
| Description: | Site Investigation Plan |
| Drawing Number: | SIL5863:Overall |
| Scale: | NTS |
| Rev: | 1 |
| Drawn by: | SL |

Site Investigations Ltd
 Carnugar
 The Grange
 Lucan
 Co. Dublin
 T: 01 6108768
 E: info@siteinvestigations.ie



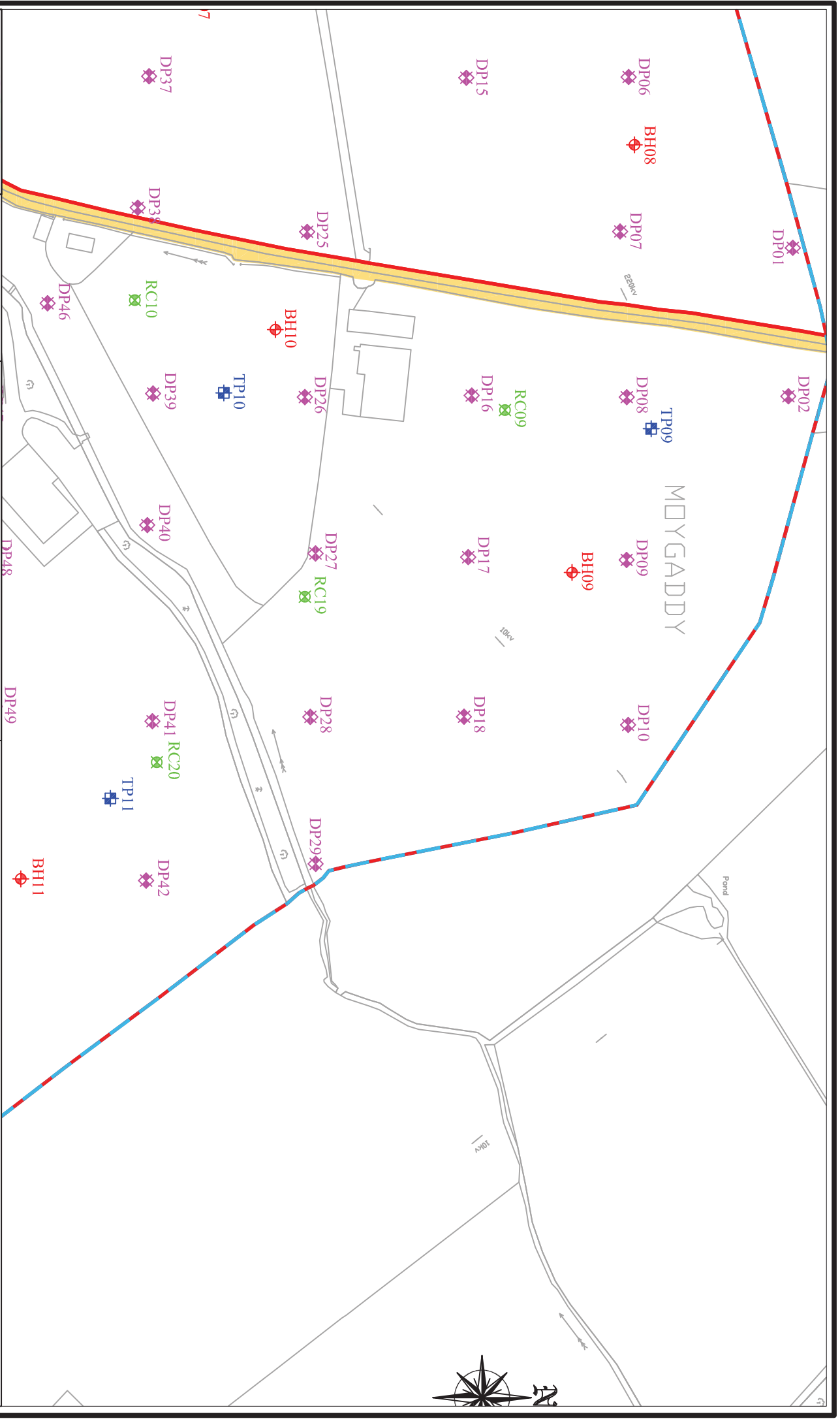


Site Investigations Ltd
 The Grange
 12th Lock Road
 Lucan
 Co. Dublin
 T: 01 6108768
 E: Info@siteinvestigations.ie
 www.siteinvestigations.ie

| | |
|----------------------|---------------------|
| Client : | Sky Castle Ltd |
| Engineer : | OOSC |
| Project : | Moygaddy |
| Date : | 04-08-2021 |
| Description : | Site Investigation |
| Scale : | Not to Scale |
| Rev : | 1 |
| Drawing | SIL586301/05 |
| Drawn by : | SL |

| | |
|--|---------------------------|
| | Cable Percussion Borehole |
| | Relay Corehole |
| | Trial Pit |
| | Dynamic Probe |





Site Investigations Ltd
 The Grange
 12th Lock Road
 Lucan
 Co. Dublin

T: 01 6108768
 E: Info@siteinvestigations.ie
www.siteinvestigations.ie

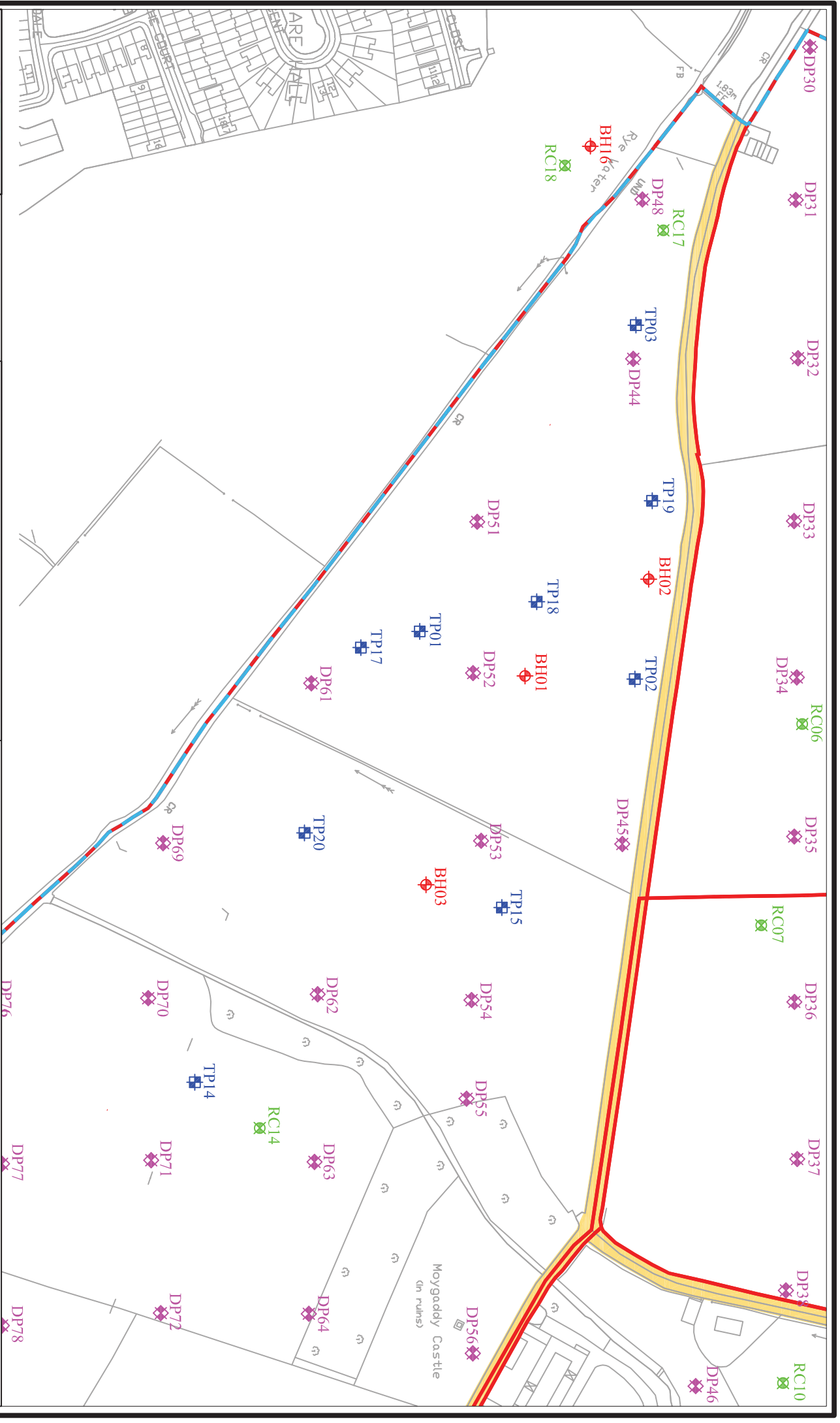
| | |
|----------------------|---------------------|
| Client : | Sky Castle Ltd |
| Engineer : | OOSC |
| Project : | Moygaddy |
| Date : | 04-08-2021 |
| Description : | Site Investigation |
| Drawing | SIL586302/05 |

| | |
|-------------------|--------------|
| Scale : | Not to Scale |
| Rev : | 1 |
| Drawn by : | SL |

Legend

- Cable Percussion Borehole
- Rotary Corehole
- Trial Pit
- Dynamic Probe



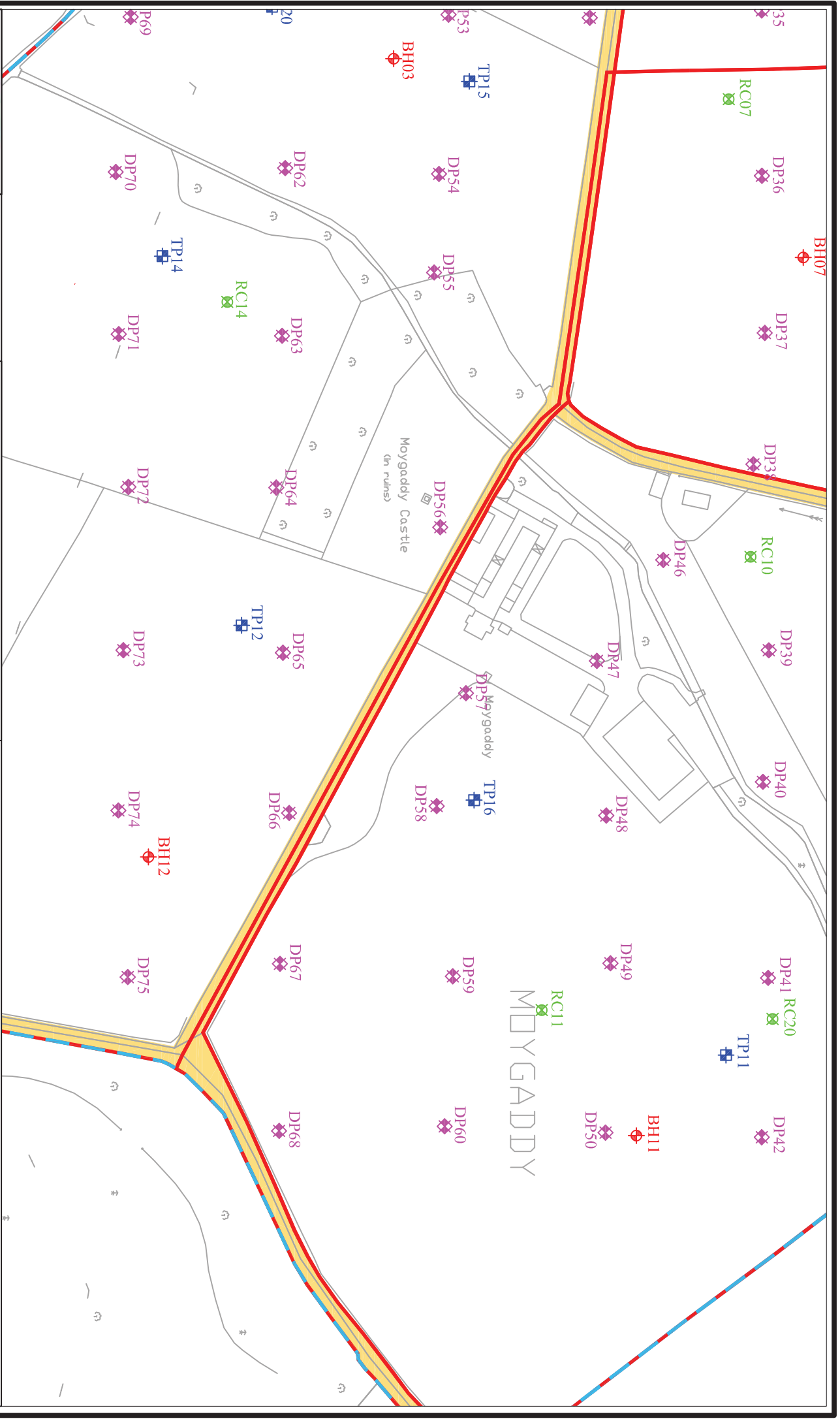


Site Investigations Ltd
 The Grange
 12th Lock Road
 Lucan
 Co. Dublin
 T: 01 6108768
 E: Info@siteinvestigations.ie
www.siteinvestigations.ie

| | |
|----------------------|----------------------|
| Client : | Sky Castle Ltd |
| Engineer : | OOSC |
| Project : | Moygaddy |
| Date : | 04-08-2021 |
| Description : | Site Investigation |
| Drawing | SIL5863/03/05 |
| Scale : | Not to Scale |
| Rev : | 1 |
| Drawn by : | SL |

| Legend | |
|--------|---------------------------|
| | Cable Percussion Borehole |
| | Relay Corehole |
| | Trial Pit |
| | Dynamic Probe |





Site Investigations Ltd
 The Grange
 12th Lock Road
 Lucan
 Co. Dublin
 T: 01 6108768
 E: Info@siteinvestigations.ie
www.siteinvestigations.ie

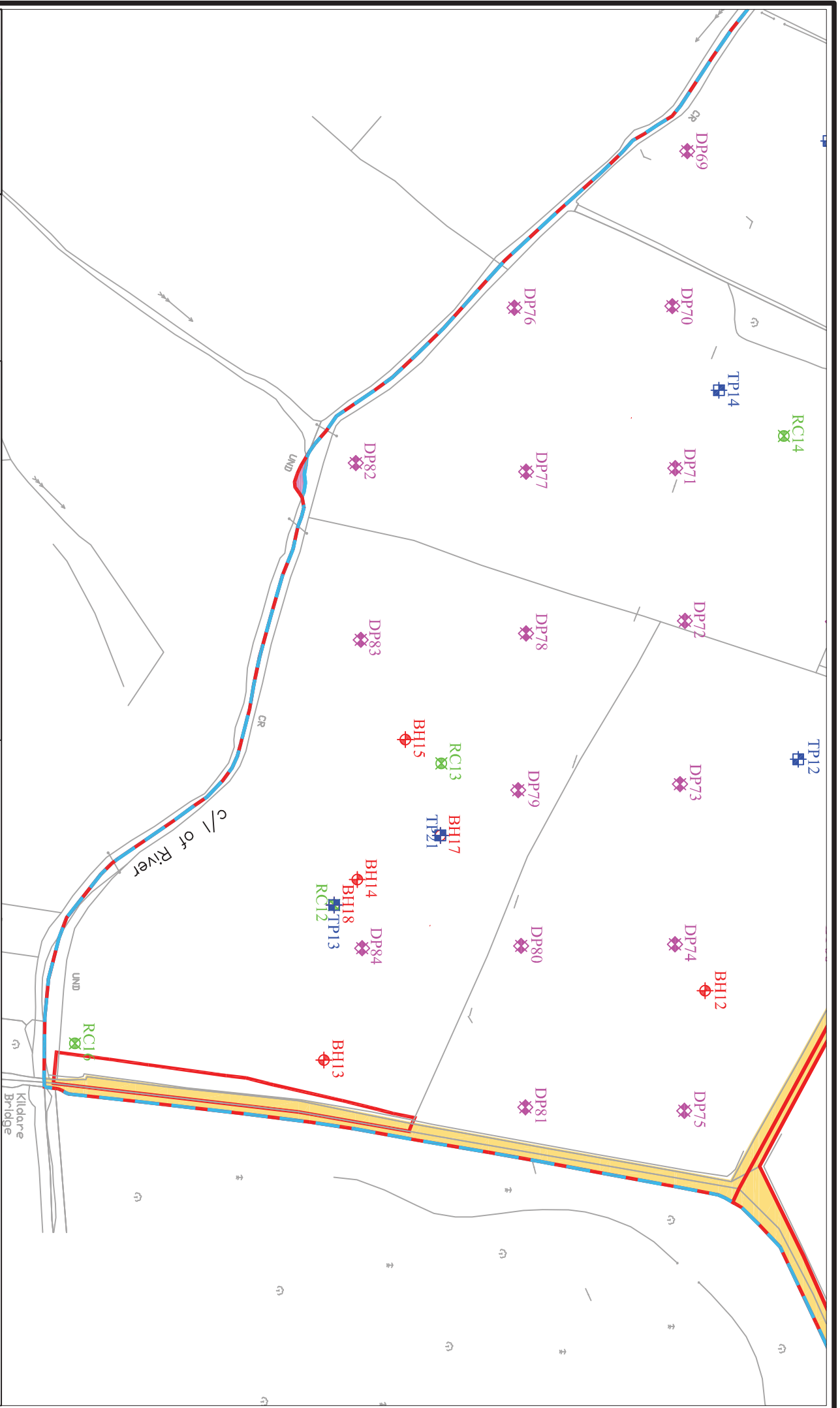
| | |
|----------------------|---------------------|
| Client : | Sky Castle Ltd |
| Engineer : | OOSC |
| Project : | Moygaddy |
| Date : | 04-08-2021 |
| Description : | Site Investigation |
| Drawing | SIL586304/05 |

| | |
|-------------------|--------------|
| Scale : | Not to Scale |
| Rev : | 1 |
| Drawn by : | SL |

Legend

- Cable Percussion Borehole
- Rotary Corehole
- Trial Pit
- Dynamic Probe





Site Investigations Ltd
 The Grange
 12th Lock Road
 Lucan
 Co. Dublin
 T: 01 6108768
 E: Info@siteinvestigations.ie
www.siteinvestigations.ie

| | |
|----------------------|----------------------|
| Client : | Sky Castle Ltd |
| Engineer : | OOSC |
| Project : | Moygaddy |
| Date : | 04-08-2021 |
| Description : | Site Investigation |
| Drawing | SIL5863105/05 |
| Scale : | Not to Scale |
| Rev : | 1 |
| Drawn by : | SL |

Legend

| | |
|--|---------------------------|
| | Cable Percussion Borehole |
| | Rotary Corehole |
| | Trial Pit |
| | Dynamic Probe |



S.I. Ltd Contract No: 5863A

Client: Sky Castle Ltd
Engineer: OCSC
Contractor: Site Investigations Ltd

Moygaddy,
Maynooth, Co. Meath
Additional Site Investigation Report

Prepared by:

.....
Stephen Letch

| | |
|-------------|------------|
| Issue Date: | 06/08/2021 |
| Status | Final |
| Revision | 1 |

Contents:

| | Page No. |
|----------------------|----------|
| 1. Introduction | 1 |
| 2. Site Location | 1 |
| 3. Fieldwork | 1 |
| 4. Ground Conditions | 2 |

Appendices:

1. Trial Pit Logs and Photographs
2. Survey Data

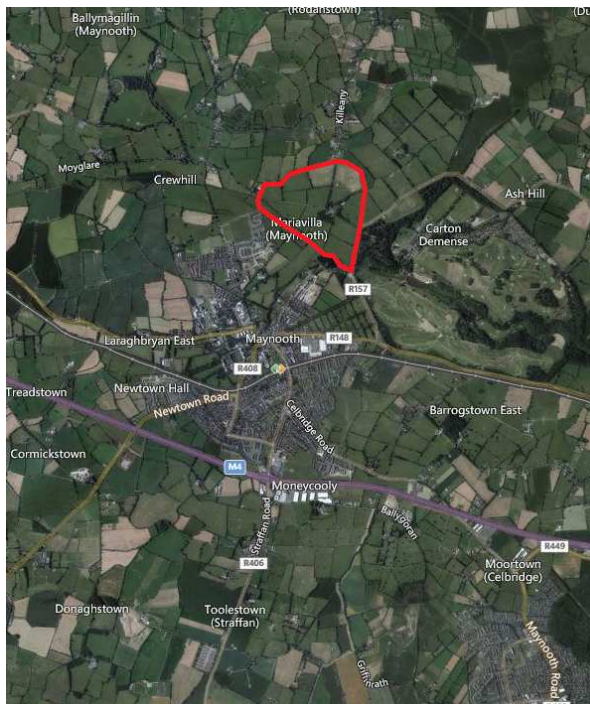
1. Introduction

On the instructions of OCSC, Site Investigations Ltd (SIL) was appointed to complete a ground investigation at Moygaddy, Maynooth, Co. Meath. The investigation was completed for the residential development on the site and was completed on behalf of the Client, Sky Castle Ltd. The fieldworks were started in June and completed in July 2021. Following completion of the initial fieldworks, the Client requested further investigatory works in one field on the site and this report covers those additional works.

This report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions discussed.

2. Site Location

The site is located to the north of Maynooth with the Kildare-Meath border running to the south of the site with Maynooth in Kildare and the site in Meath. Carton Demense is to the east of site with Dublin city further to the east. The first map below shows the location of the site to the north of Maynooth town and the second map shows the area of investigation (in red) within the site.



3. Fieldwork

The fieldworks comprised a programme of cable percussive boreholes, rotary coreholes, trial pits and dynamic probes. All fieldwork was carried out in accordance with BS 5930:2015, Engineers Ireland GI Specification and Related Document 2nd Edition 2016 and Eurocode 7: Geotechnical Design.

The fieldworks comprised of the following:

- 9 No. trial pits

3.1. Trial Pits

9 No. trial pits were excavated using a wheeled excavator. The pits were logged and photographed by SIL geotechnical engineer and were completed to try and identify the MADE GROUND within the area. Groundwater ingresses and pit wall stability were also recorded as the excavations progressed.

The trial pit logs and photographs are presented in Appendix 1.

3.2. Surveying


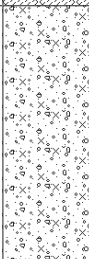


Following completion of all the fieldworks, a survey of the exploratory hole locations was completed using a GeoMax GPS Rover. The data is supplied on each individual log along with a site plan in Appendix 2.


4. Ground Conditions


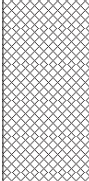

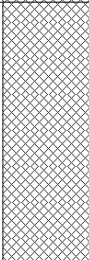



MADE GROUND was encountered in TP23, TP25 and TP26 and therefore indicates that the area of fill material is quite small. No environmental testing was scheduled for analysis of the fill material.


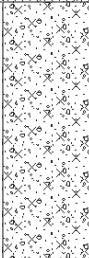
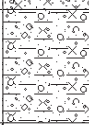

Appendix 1
Trial Pit Logs and Photographs


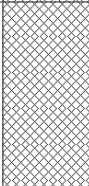
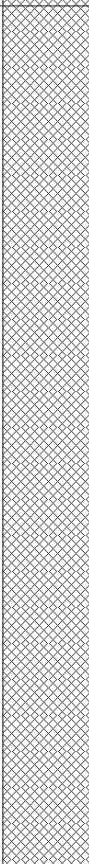



| | | | | | |
|-----------------------|----------------------|-------------------------|--------------------|------------|------------------------------|
| Contract No: 5863A | Trial Pit Log | | | | Trial Pit No: TP22 |
| Contract: | Moygaddy | Easting: | 694224.181 | Date: | 05/08/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739192.184 | Excavator: | JCB 3CX |
| Client: | Sky Castle Ltd | Elevation: | 55.19 | Logged By: | M. Kaliski |
| Engineer: | OCSC | Dimensions (LxWxD) (m): | 3.30 x 0.60 x 1.10 | Status: | FINAL |

| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
|--------------|-------|---|--|-------------|--------|-----------------------|------|--------|--------------|
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.20 | TOPSOIL. |  | 55.0 | 54.99 | | | | |
| | 0.5 | Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of limestone with high cobble content. Sand is fine to coarse. Cobbles are angular to subrounded of limestone. |  | 54.5 | | | | | |
| | 0.90 | Firm grey slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | 54.29 | | | | | |
| | 1.10 | Pit terminated as no fill material encountered. Pit terminated at 1.10m |  | 54.09 | | | | | |
| | 1.5 | | | 54.0 | | | | | |
| | 2.0 | | | 53.5 | | | | | |
| | 2.5 | | | 53.0 | | | | | |
| | 3.0 | | | 52.5 | | | | | |
| | 3.5 | | | 52.0 | | | | | |
| | | | | 51.5 | | | | | |


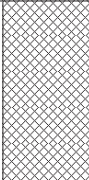
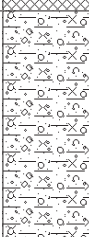
| | | | | | |
|--|----------------|---------------------|-------------------|----------|--|
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | Key: |
| | Natural soils. | Pit walls stable. | Dry | - | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental |


| Contract No: 5863A | | Trial Pit Log | | | | Trial Pit No: TP23 | | | |
|--|---|-------------------------|--------------------|--|---------------|--|-----------------------|--------|--------------|
| Contract: | Moygaddy | Easting: | 694171.219 | Date: | 05/08/2021 | | | | |
| Location: | Maynooth, Co. Meath | Northing: | 739144.288 | Excavator: | JCB 3CX | | | | |
| Client: | Sky Castle Ltd | Elevation: | 53.65 | Logged By: | M. Kaliski | | | | |
| Engineer: | OCSC | Dimensions (LxWxD) (m): | 3.50 x 0.60 x 1.80 | Status: | FINAL | | | | |
| Level (mbgl) | Stratum Description | | | Legend | Level (mOD) | | Samples / Field Tests | | Water Strike |
| Scale: Depth | | | | | Scale: Depth: | Depth | Type | Result | |
| 0.20 | TOPSOIL. | | |  | 53.5 | 53.45 | | | |
| 0.5 | MADE GROUND: grey brown silty gravelly sand with high cobble content and trace of tarmacadam and plastic bags fragments. | | |  | 53.0 | 52.95 | | | |
| 0.70 | MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with high cobble content and some plastic bag fragments. | | |  | | 52.75 | | | |
| 0.90 | MADE GROUND: dark grey slightly sandy slightly gravelly silty clay with medium cobble content and some steel wire and tree branch fragments. | | |  | 52.5 | | | | |
| 1.0 | | | | | | | | | |
| 1.5 | | | | | | | | | |
| 1.60 | Firm grey slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. | | |  | 52.0 | 52.05 | | | |
| 1.80 | Pit terminated as natural ground encountered. Pit terminated at 1.80m | | |  | | 51.85 | | | |
| 2.0 | | | | | | | | | |
| 2.5 | | | | | | | | | |
| 3.0 | | | | | | | | | |
| 3.5 | | | | | | | | | |
| | | | | | | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | | |
| | Natural soils. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | | |


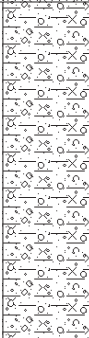

| Contract No: 5863A | | Trial Pit Log | | | | Trial Pit No: TP24 | | | |
|--|-------|---|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694195.767 | Date: | 05/08/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739169.748 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 55.38 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.20 x 0.60 x 1.10 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 55.28 | | | | |
| | | Grey brown silty gravelly fine to coarse SAND with high cobble content. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 55.0 | | | | |
| 0.5 | | | | | | | | | |
| | 0.80 | Firm grey slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 54.58 | | | | |
| 1.0 | | | | | 54.5 | | | | |
| | 1.10 | Pit terminated as no fill material encountered. Pit terminated at 1.10m | | | 54.28 | | | | |
| 1.5 | | | | | 54.0 | | | | |
| 2.0 | | | | | 53.5 | | | | |
| 2.5 | | | | | 53.0 | | | | |
| 3.0 | | | | | 52.5 | | | | |
| 3.5 | | | | | 52.0 | | | | |
| | | | | | 51.5 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Natural soils. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

| Contract No: 5863A | | Trial Pit Log | | | | Trial Pit No: TP25 | | | |
|--|-------|---|--|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694150.929 | Date: | 05/08/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739121.930 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 53.60 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.40 x 0.60 x 3.10 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | 53.5 | 53.50 | | | | |
| | | MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with high cobble content and some scrap metal fragments. |  | | | | | | |
| | 0.60 | MADE GROUND: dark grey slightly sandy slightly gravelly silty clay with medium cobble content and some red brick, plastic bag, rag and tree branch fragments. |  | 53.0 | 53.00 | | | | |
| | | | | 52.5 | | | | | |
| | | | | 52.0 | | | | | |
| | | | | 51.5 | | | | | |
| | | | | 51.0 | | | | | |
| | 2.90 | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 50.70 | | | | |
| | 3.10 | Pit terminated as natural ground encountered. Pit terminated at 3.10m |  | | 50.50 | | | | |
| | | | | 50.0 | | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Natural soils. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

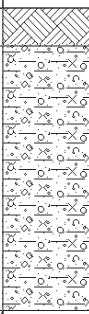
| | | | | | |
|-----------------------|----------------------|-------------------------|--------------------|------------|------------------------------|
| Contract No: 5863A | Trial Pit Log | | | | Trial Pit No: TP26 |
| Contract: | Moygaddy | Easting: | 694121.750 | Date: | 05/08/2021 |
| Location: | Maynooth, Co. Meath | Northing: | 739105.896 | Excavator: | JCB 3CX |
| Client: | Sky Castle Ltd | Elevation: | 53.76 | Logged By: | M. Kaliski |
| Engineer: | OCSC | Dimensions (LxWxD) (m): | 3.40 x 0.60 x 1.20 | Status: | FINAL |


| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
|--------------|-------|--|--|-------------|--------|-----------------------|------|--------|--------------|
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 53.66 | | | | |
| | | MADE GROUND: light grey brown silty gravelly sand with high cobble, medium boulder content and some red brick and plastic pipe fragments. |  | | 53.5 | | | | |
| | 0.60 | Firm brown slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 53.16 | | | | |
| | 1.20 | Pit terminated as natural ground encountered. Pit terminated at 1.20m | | | 52.56 | | | | |
| | | | | | 52.5 | | | | |
| | | | | | 52.0 | | | | |
| | | | | | 51.5 | | | | |
| | | | | | 51.0 | | | | |
| | | | | | 50.5 | | | | |
| | | | | | 50.0 | | | | |


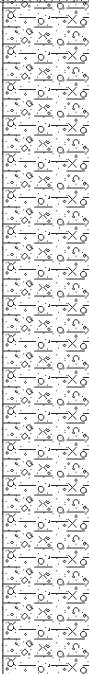

| | | | | | |
|--|----------------|---------------------|-------------------|----------|--|
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | Key: |
| | Natural soils. | Pit walls stable. | Dry | - | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental |


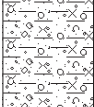
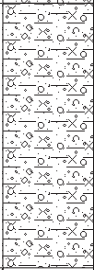

| Contract No: 5863A | | Trial Pit Log | | | | Trial Pit No: TP27 | | | |
|--|----------------|---|--|--------------------|--|------------------------------|------|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694111.948 | Date: | 05/08/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739071.753 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 54.29 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.30 x 0.60 x 1.00 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 54.19 | | | | |
| | | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter). |  | | 54.0 | | | | |
| | 0.5 | | | | 53.5 | | | | |
| | 1.00 | Pit terminated as no fill material encountered. Pit terminated at 1.00m | | | 53.29 | | | | |
| | 1.5 | | | | 53.0 | | | | |
| | 2.0 | | | | 52.5 | | | | |
| | 2.5 | | | | 52.0 | | | | |
| | 3.0 | | | | 51.5 | | | | |
| | 3.5 | | | | 51.0 | | | | |
| | | | | | 50.5 | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | Key: | | | | |
| | Natural soils. | Pit walls stable. | Dry | - | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | | | |

| | | | | | | |
|-----------------------|------------------------|-------------------------|--------------------|------------|------------------------------|--|
| Contract No: 5863A | <h1>Trial Pit Log</h1> | | | | Trial Pit No: TP28 | |
| Contract: | Moygaddy | Easting: | 694094.546 | Date: | 05/08/2021 | |
| Location: | Maynooth, Co. Meath | Northing: | 739022.870 | Excavator: | JCB 3CX | |
| Client: | Sky Castle Ltd | Elevation: | 53.10 | Logged By: | M. Kaliski | |
| Engineer: | OCSC | Dimensions (LxWxD) (m): | 3.20 x 0.60 x 0.80 | Status: | FINAL | |

| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
|--------------|-------|---|--|-------------|--------|-----------------------|------|--------|--------------|
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter). |  | 53.0 | 53.00 | | | | |
| | 0.80 | Pit terminated as no fill material encountered. Pit terminated at 0.80m | | | 52.30 | | | | |

| | | | | | |
|--|----------------|---------------------|-------------------|----------|--|
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | Key: B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental |
| | Natural soils. | Pit walls stable. | Dry | - | |

| Contract No: 5863A | | Trial Pit Log | | | | Trial Pit No: TP29 | | | |
|--|-------|---|---|--------------------|------------|------------------------------|--|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694133.893 | Date: | 05/08/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739141.152 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 54.69 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.00 x 0.60 x 1.90 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 54.59 | | | | |
| | | Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content and occasional black clay bands. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter). |  | | 54.5 | | | | |
| | 0.5 | | | | 54.0 | | | | |
| | 1.0 | | | | 53.5 | | | | |
| | 1.5 | | | | 53.0 | | | | |
| | 1.90 | Pit terminated as no fill material encountered. | | | 52.79 | | | | |
| | 2.0 | Pit terminated at 1.90m | | | 52.5 | | | | |
| | 2.5 | | | | 52.0 | | | | |
| | 3.0 | | | | 51.5 | | | | |
| | 3.5 | | | | 51.0 | | | | |
|  | | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | | Key: | | |
| | | Natural soils. | Pit walls stable. | Dry | - | | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | |

| Contract No: 5863A | | Trial Pit Log | | | | Trial Pit No: TP30 | | | |
|--|----------------|---|--|--------------------|--|------------------------------|------|--------|--------------|
| Contract: | | Moygaddy | Easting: | 694152.911 | Date: | 05/08/2021 | | | |
| Location: | | Maynooth, Co. Meath | Northing: | 739157.856 | Excavator: | JCB 3CX | | | |
| Client: | | Sky Castle Ltd | Elevation: | 54.82 | Logged By: | M. Kaliski | | | |
| Engineer: | | OCSC | Dimensions (LxWxD) (m): | 3.10 x 0.60 x 1.10 | Status: | FINAL | | | |
| Level (mbgl) | | Stratum Description | Legend | Level (mOD) | | Samples / Field Tests | | | Water Strike |
| Scale: | Depth | | | Scale: | Depth: | Depth | Type | Result | |
| | 0.10 | TOPSOIL. |  | | 54.72 | | | | |
| | | Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone. |  | | 54.5 | | | | |
| | 0.40 | Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter). |  | | 54.42 | | | | |
| | | | | | 54.0 | | | | |
| | 1.10 | Pit terminated as no fill material encountered. Pit terminated at 1.10m | | | 53.72 | | | | |
| | | | | | 53.5 | | | | |
| | | | | | 53.0 | | | | |
| | | | | | 52.5 | | | | |
| | | | | | 52.0 | | | | |
| | | | | | 51.5 | | | | |
| | | | | | 51.0 | | | | |
|  | Termination: | Pit Wall Stability: | Groundwater Rate: | Remarks: | Key: | | | | |
| | Natural soils. | Pit walls stable. | Dry | - | B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental | | | | |

TP22 Sidewall



TP22 Spoil



TP23 Sidewall



TP23 Spoil



TP24 Sidewall



TP24 Spoil



TP25 Sidewall



TP25 Spoil



TP26 Sidewall



TP26 Spoil



TP27 Sidewall



TP27 Spoil



TP28 Sidewall



TP28 Spoil



TP29 Sidewall



TP29 Spoil



TP30 Sidewall



TP30 Spoil



Appendix 2
Survey Data

Survey Data

| Location | Irish Transverse Mercator | | Elevation | Irish National Grid | |
|-------------------|---------------------------|------------|-----------|---------------------|------------|
| | Easting | Northing | | Easting | Northing |
| Trial Pits | | | | | |
| TP22 | 694224.181 | 739192.184 | 55.19 | 294293.877 | 239166.871 |
| TP23 | 694171.219 | 739144.288 | 53.65 | 294240.904 | 239118.964 |
| TP24 | 694195.767 | 739169.748 | 55.38 | 294265.457 | 239144.430 |
| TP25 | 694150.929 | 739121.930 | 53.60 | 294220.610 | 239096.601 |
| TP26 | 694121.750 | 739105.896 | 53.76 | 294191.425 | 239080.563 |
| TP27 | 694111.948 | 739071.753 | 54.29 | 294181.621 | 239046.413 |
| TP28 | 694094.546 | 739022.870 | 53.10 | 294164.215 | 238997.519 |
| TP29 | 694133.893 | 739141.152 | 54.69 | 294203.570 | 239115.827 |
| TP30 | 694152.911 | 739157.856 | 54.82 | 294222.592 | 239132.535 |



Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation

| | | | | | |
|--|--------------|---------------------|-----------|----------------|--|
| | Contract No: | 5863A | Client: | Sky Castle Ltd | Legend Key Locations By Type - Empty Locations By Type - TP |
| | Contract: | Moygaddy | Engineer: | OCSC | |
| | Location: | Maynooth, Co. Meath | Scale: | 1:1000 | |
| | Title: | Site Plan | Drawn By: | SL | |



APPENDIX F. Response to MCC Transportation Dept. Comments

Appendix F

This forms part of a response to the An Bord Pleanála Opinion Report Ref ABP-312213-21, regarding the proposed development at Moygaddy, Maynooth Environs, Co. Meath.

In this document, O'Connor Sutton Cronin (OCSC) has addressed items raised by the Meath County Council Transportation Planning Section in the Opinion Report, dated: 20th January 2022.

Accessibility and Integration

1)

The applicant is requested to upgrade the full extents of the L6219 towards its junction with the R157 and upgrade this junction to a Traffic Signal junction. All works are to be included in the redline site boundary. Details are to be agreed with MCC.

Response

The full extent of the L6219 will be upgraded with walkways and cycle lanes, which will tie into the junction and infrastructure of the R157. All of this will be included in the redline.

2)

The applicant is requested to provide a pedestrian and cycle path for the L6219/R157 junction to the Rye river Bridge on the R157 at the county boundary to create a joined-up pedestrian network. Details are to be agreed with MCC.

Response

A full pedestrian and cycle path has been included along the R157 with an independent pedestrian/cycle bridge crossing the rye river alongside the existing bridge structure.

3)

The applicant is requested to revise the design of the realigned L6219 to provide a suitable location for the future provision of a bus stop. Details are to be agreed with MCC.

Response

Details were discussed with MCC and it was noted that this provision of a bus stop will be made on the MOOR, and not the local road.

Access Junction

1)

The applicant should provide more details on the development access setting out which road users have priority at the junction. The Applicant should ensure that the stop line from the development access is located to the rear of the footpath along the L6219 and the junction is designed according to section 4.9 of the National Cycle Manual

Response

All access junctions have been updated to be compliant with DMURS and the National Cycle Manual.

Traffic Assessment

1)

The applicant is requested to provide the specific rates used for the growth calculation and to present the calculation in tabular format.

Response

This has been included in the Traffic Assessment.

2)

The applicant is requested to consider an Opening Year + 5 scenario (2028), in addition to the Opening Year and Opening Year + 15, as is the standard under the TII Traffic and Transport Assessment Guidelines.

Response

This has been included in the Traffic Assessment.

3)

The applicant is requested to include all land uses as set out in the masterplan in the Do Maximum scenario.

Response

All land uses which are expected to be operational by the Design Year (2040) have been included in the Do Maximum scenario.

4)

The applicant is requested to include all land uses as set out in the masterplan in the Do Maximum scenario.

Response

All land uses which are expected to be operational by the Design Year (2040) have been included in the Do Maximum scenario.

5)

The applicant should provide clarity in terms of the trip rates being applied, ensuring that they are taking full consideration of the location and proximity of the proposed development, and lack thereof, to convenient public transport.

Response

The Traffic Assessment has been updated to provide additional details regarding trip rates.

6)

The applicant is requested to provide the trip rates applied and trip generation estimated to the future land uses included for the do something and do maximum scenarios.

Response

The Traffic Assessment has been updated to provide additional details regarding trip rates and trip generation.

7)

The applicant is requested to state the assumptions made in the traffic distribution exercise and give a specific, proportional breakdown of the distribution and assignment of traffic to each junction.

Response

The Traffic Assessment has been updated to make use of a dynamically assigned Vissim micro-simulation model. The dynamic assignment automatically determines trip distribution based on user cost (delays, travel time/distance, etc.). Thus distribution is automated and it is not possible to provide diagrams based on a desktop study.

8)

The applicant's assessment indicates that a junction upgrade of Junction 4 is necessary for the opening year of the proposed development. The applicant is requested to extend the red line boundary to include this upgrade and to provide detailed layouts of the proposed upgrade to be agreed with MCC.

Response

The full MOOR has been workshopped with MCC and all their comments have been taken on board and agreed upon. Furthermore, the infrastructure to be included in the redline for the development has also been discussed with MCC and the junction upgrade will be included in a separate application specifically for the MOOR.

Road Safety

1)

The Applicant is requested to submit a Stage 1 Road Safety Audit.

Response

A road safety audit will be submitted as part of the requested quality audit.

2)

The Applicant should submit a Quality Audit that consists of an audit of walking facilities, cycling facilities and visual/mobility impaired accessibility facilities.

Response

This will be submitted.

Site Layout

1)

The Applicant should provide more details on the development access setting out which road users have priority at the junction. The Applicant should ensure that the stop line from the development access is located to the rear of the shared track along the L6219 and that the junction is designed according to section 4.9 of the National Cycle Manual.

Response

The development accesses have been designed in accordance with DMURS and the National Cycle Manual and workshopped with MCC.

2)

The Applicant should consider a solution where the realignment of the L6219 maintains the continuity and priority of the road. The Applicant should ensure the solution adheres to DMURS geometry guidelines with regard to horizontal radii such that it can be easily retrofitted to tie in with the MOOR should this requirement arise in the future.

Response

The design has been workshopped and agreed with MCC and designed in accordance with DMURS.

3)

The Applicant should undertake to ensure the bridge along the realigned and upgraded section of the L6219 is widened to facilitate the proposed road upgrade inclusive of any recommendations made on the footpath and cycle track provisions within this report.

Response

The bridge will be designed to accommodate footpaths and cycle tracks to ensure the continuity of the infrastructure.

4)

The Applicant should ensure that any junction that interacts with cycle track facilities is designed in accordance with the National Cycle Manual.

Response

This has been incorporated into the designs.

5)

The Applicant should provide a segregated footpath and cycle track on both sides of the realigned and upgraded section of the L6219 so that the road hierarchy is consistent. Pedestrian and cycle facilities on the north side of the L6219 will also serve future residential developments to the north. These facilities should extend for the full length of the realigned and upgraded section of the L6219 towards its junction with the R157.

Response

The facilities on the northern side of the L6219 will be constructed as part of further developments in that area. This has been agreed with MCC. The infrastructure on the L6219 will be extended to the R157.

6)

The Applicant should provide dropped kerbs and tactile paving on all arms of the internal junctions to facilitate all desired pedestrian movements.

Response

This has been incorporated into the designs.

7)

The Applicant should clarify the type of junction envisaged at this location and set out clearly how prioritisation will be handled.

Response

This has been incorporated into the designs.

8)

The Applicant should consider providing a turning head at the end of a 100m long home zone cut-de-sac located within the northeast section of the development so that refuse and emergency vehicles can undertake a turning movement at the end of the street.

Response

A turning head has been included in the development as suggested.

9)

The Applicant is requested to ensure that paths through the high amenity areas are of appropriate width to cater for both pedestrians and cyclists.

Response

This has been addressed by the architect.

10)

The Applicant should provide sight line analysis of all internal junctions and ensure that these are coordinated with any landscaping proposals.

Response

This has been incorporated into the drawings.

11)

The Applicant is requested to ensure that the materials specified within areas to be Taking in Charge are in accordance with MCC Taking In Charge (TIC) Policy document. The Applicant should liaise with the local authority in this regard.

Response

This has been addressed by the architect.

Further to the Opinion Report, a meeting was held with MCC on 14/07/2022 where the MOOR was workshopped. The table overleaf details the correspondence on various comments raised and how they were addressed.

| MOOR | | | |
|----------------|--|---|--|
| Item No | Meath Co Co Comment | OCSC Comment | Meath Co Co Comment |
| 1 | General Comment: design speed overall to be raised to 60 km/hr from 50 km/hr which would still be a DMURS design | MOOR speed raised to 60km/h between junctions with L6219 on the east and western sides. | Local roads outside of MOOR including MOOR to be 60 km/hr is acceptable. It seems to have 80 km/hr signs up on the Kildare County Council side but further past carton house we have the R157 at 60km /hr. So 60 km/hr would be in line with our existing R157 speed limits for this length of road. |
| 2 | General Comment: Boundary Treatment details for all layouts to be shown | MOOR design completed. Currently busy with drawing pack. These will be included in drawings | Noted for future submissions |
| 3 | General Comment: tactile paving details missing for some junctions and areas, these should be shown | This has been addressed at all junctions | Ok Noted, We would like footpaths and cycleways to have tactile paving coming into shared areas etc. Any cycle route on the road to have appropriate line marking etc in line with the National Cycle manual also |
| 4 | General Comment: Public lighting details are missing on all layouts | MOOR design completed. Currently busy with drawing pack. These will be included in drawings | Noted for future submissions, all public lighting designs will have a condition that the MCC public lighting section will have to be approved prior to |

| MOOR | | | |
|----------------|--|--|---|
| Item No | Meath Co Co Comment | OCSC Comment | Meath Co Co Comment |
| | | | commencement of the development |
| 5 | General Comment: There should be a right turn lane for all junctions from the main MOOR road into the minor/other roads | The traffic model indicates that this is not required | MCC notes this but would require right-hand turning lanes for traffic management reasons, not capacity reasons. |
| 6 | General Comment: A stage 1/2 Road Safety Audit should accompany any planning application | RSA will be completed once the drawing pack has been finalised | Noted |
| 7 | Drawing 1001 minor road to join perpendicular to the main line | This has been addressed | Noted for future submissions, just to add that this will be 2 lanes normal traffic route. |
| 8 | Drawing 1002 Left and right-hand turns from the main road MOOR into the minor roads should be shown. Traffic lights should be shown as this junction is at the SHD housing estates entrance. | The traffic model indicates that no turning lanes are required, and traffic signals are also not required at this junction | MCC notes this but would require right-hand turning lanes for traffic management reasons, not capacity reasons. |
| 9 | Drawing 1003 Are traffic lights needed here? The pedestrian and cycle access should be maintained from the south (Kilcloon road junction) along with full road access. | This junction will be signalised with a dedicated pedestrian and cycling facility tying in from the south | Noted for future submissions |

| MOOR | | | |
|----------------|--|--|--|
| Item No | Meath Co Co Comment | OCSC Comment | Meath Co Co Comment |
| 10 | Drawing 1004 As per previous comments for general, Boundary Treatment, public lighting and tactile paving are to be shown. | MOOR design completed. Currently busy with drawing pack. These will be included in drawings | Noted for future submissions and answers for comments 2, 3 and 4 |
| 11 | Drawing 1005 the traffic lights should be removed here. The design of the junction should be staggered. The MOOR road should be attractive for through traffic | A stagger has been introduced operating with priority-control | Noted for future submissions |
| 12 | Drawing 1006 the stop & traffic lights should be removed out at the Carton House entrance, a yellow box would suffice here. (question on whether this gate is actually used) | This has been addressed | Noted for future submissions |
| 13 | Drawing 1006 can the road layout no. 314 from the east be straightened up and come in perpendicular to the junction. | A redesign of this junction has been carried out, seeking to straighten the east-west axis as much as possible, while ensuring the quantum of land in front of the Carton Gate is minimised to discourage casual parking | Noted for future submissions |
| 14 | Drawing 1007 as previous comments for general, Boundary Treatment, public lighting and tactile paving to be shown. | MOOR design completed. Currently busy with drawing pack. These will be included in drawings | Noted for future submissions and answers for comments 2, 3 and 4 |

| MOOR | | | |
|----------------|--|---|------------------------------|
| Item No | Meath Co Co Comment | OCSC Comment | Meath Co Co Comment |
| 15 | Drawing 1008 Drawings 1707 improved cross-section with the existing bridge for pedestrian bridge 2. As in show the exiting bridge details alongside. | MOOR design completed. Currently busy with drawing pack. These will be included in drawings | Noted for future submissions |
| 16 | Drawing 1009 The road should be 7m in line with DMURS, this road could eventually become used for active travel measures & service vehicles. 3.5m lane widths | The road has been designed as 7m wide, in line with DMURS | Noted for future submissions |
| 17 | Drawing 1010 There are some details missing from the internal road here, including pedestrian and cycle routes of 2m, 1.75m and grass verge 1.5m | This has been addressed | Noted for future submissions |
| 18 | In drawing 1011 further details showing the transition of the shared area onto the bridge from the existing road should be shown drawing 1705 is well separated from the main bridge structure. Barrier details etc to be clarified. | MOOR design completed. Currently busy with drawing pack. These will be included in drawings | Noted for future submissions |

| MOOR | | | |
|----------------|--|--|---|
| Item No | Meath Co Co Comment | OCSC Comment | Meath Co Co Comment |
| 19 | Bridge Drawings 1707 improved cross-section with the existing bridge for pedestrian bridge 2. As in show the exiting bridge details alongside. Position of the parapets etc for the existing and new bridge. | MOOR design completed. Currently busy with drawing pack. These will be included in drawings | Noted for future submissions |
| 20 | Keep the layout as simple as possible, 2 signalised junctions for now for the layout. | The current MOOR design only has two signalised junctions | Noted for future submissions and agreed as per each planning submission |
| 21 | Comment from email OCSC Lizmary Alfirs | Comment 1 is in relation to raising the overall speed of the MOOR to 60km/h. Our western tie-in, into Moyglare Hall Estate road, ties into a roadway that runs in front of the Maynooth Community College. Would you, therefore, be happy with us implementing a design speed of 40km/h until we reach the intersection leading to the SHD development (circled in red), to ensure the speed is sufficiently dropped before reaching the school. | 50 km/hr in accordance with DMURS is fine outside the school unless there is a change from other departments for a special speed limit. |

Yours sincerely

Wian Marais
For O'Connor Sutton Cronin