



# APPENDIX 4-9

ENGINEERING SERVICES

REPORT

Meath County Council Meeting Purposes Only!

# Engineering Services Report

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**Moygaddy Castle SHD**

**For Sky Castle Ltd**

**PROJECT NO. S665**

**26 August 2022**



**OCSC**

O'CONNOR | SUTTON | CRONIN

Multidisciplinary  
Consulting Engineers



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**for**

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



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## 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](http://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.

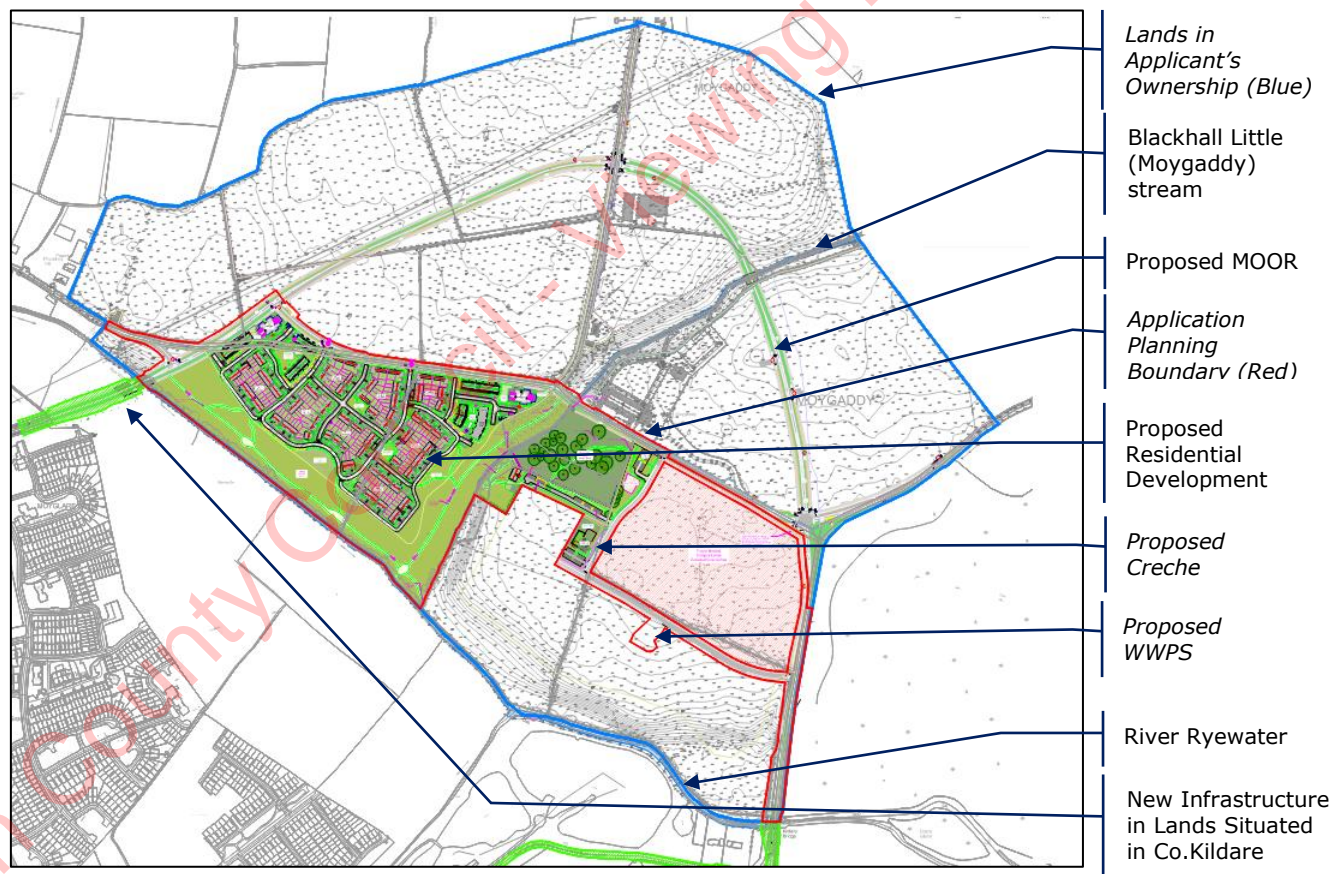


11. A total of 667 no. car parking spaces are provided on site located at surface level. The car parking provision includes 10 no. Electric Vehicle charging and Universally Accessible spaces allocated for the Apartment & Duplex units. All Houses will be constructed with provision for EV Charging.

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 (GSDSDS);
- 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**

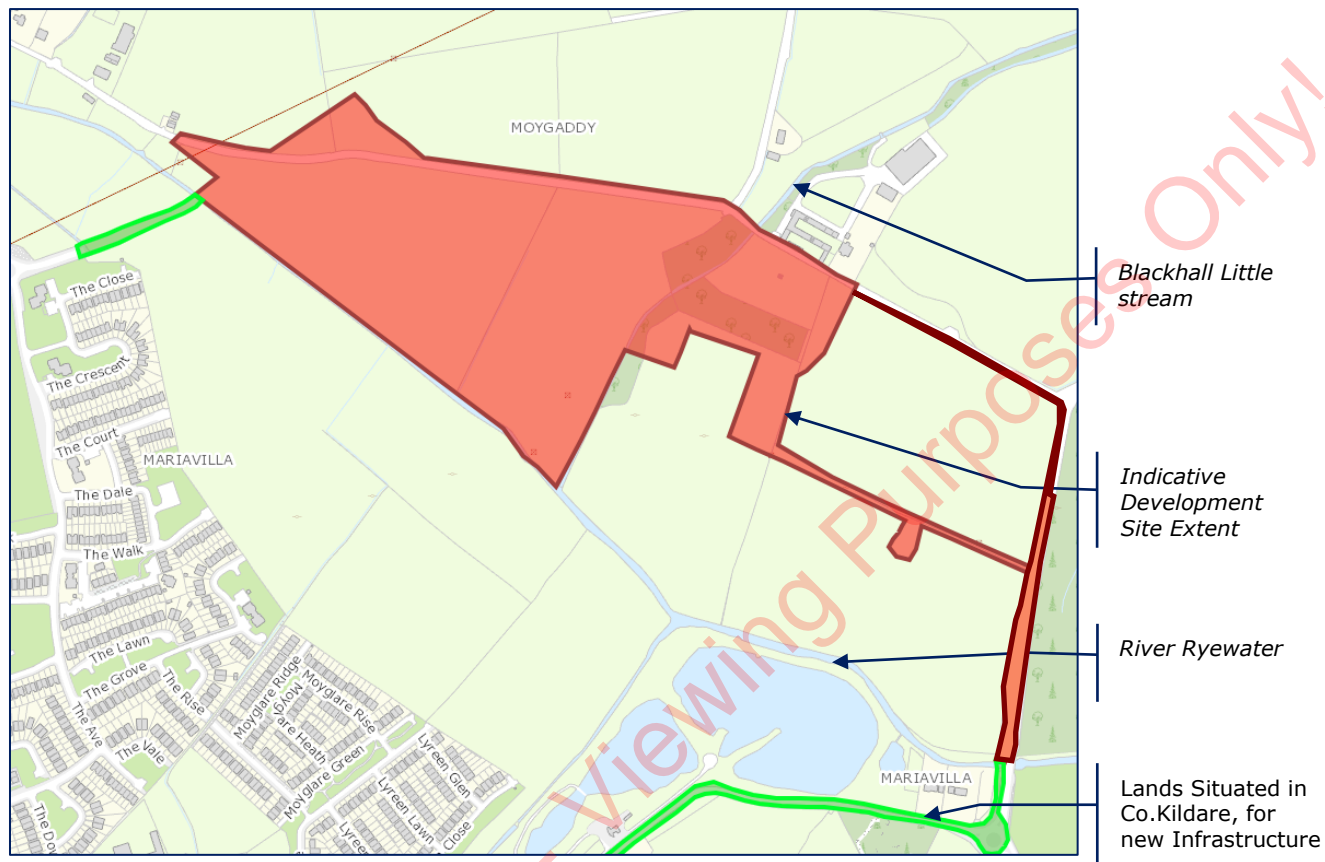
#### **3.4.1 Existing Surface Water Drainage Infrastructure**

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



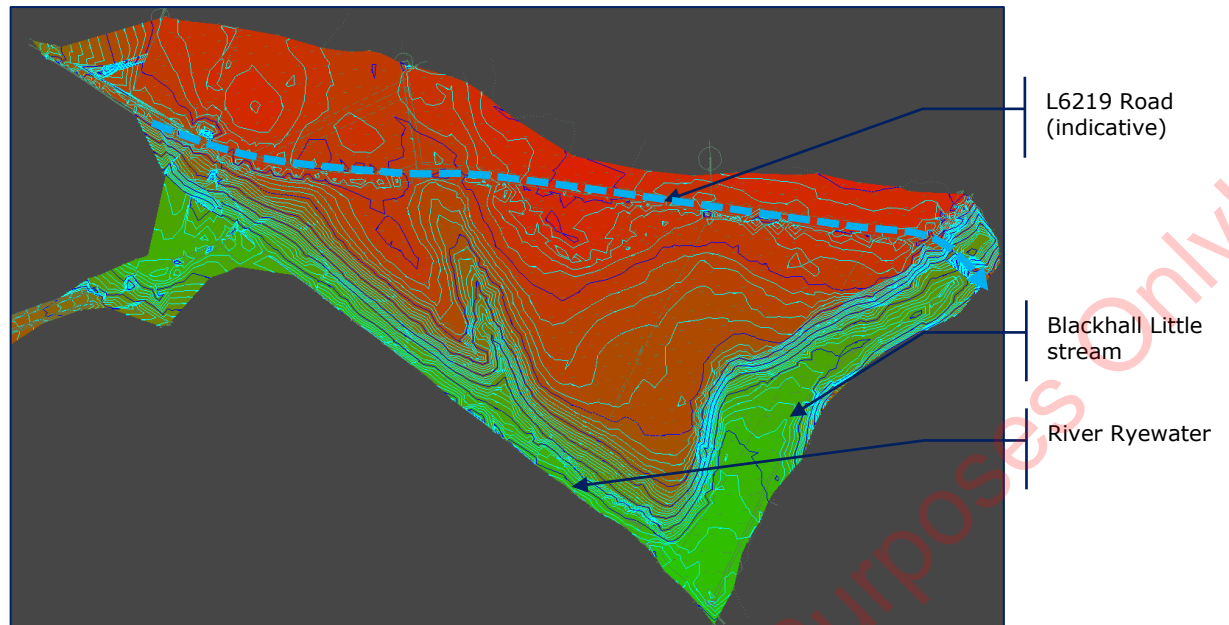
drains naturally to these watercourses; refer to **Figure 3.1** for overview of existing natural watercourses in the vicinity of the proposed development.



**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.

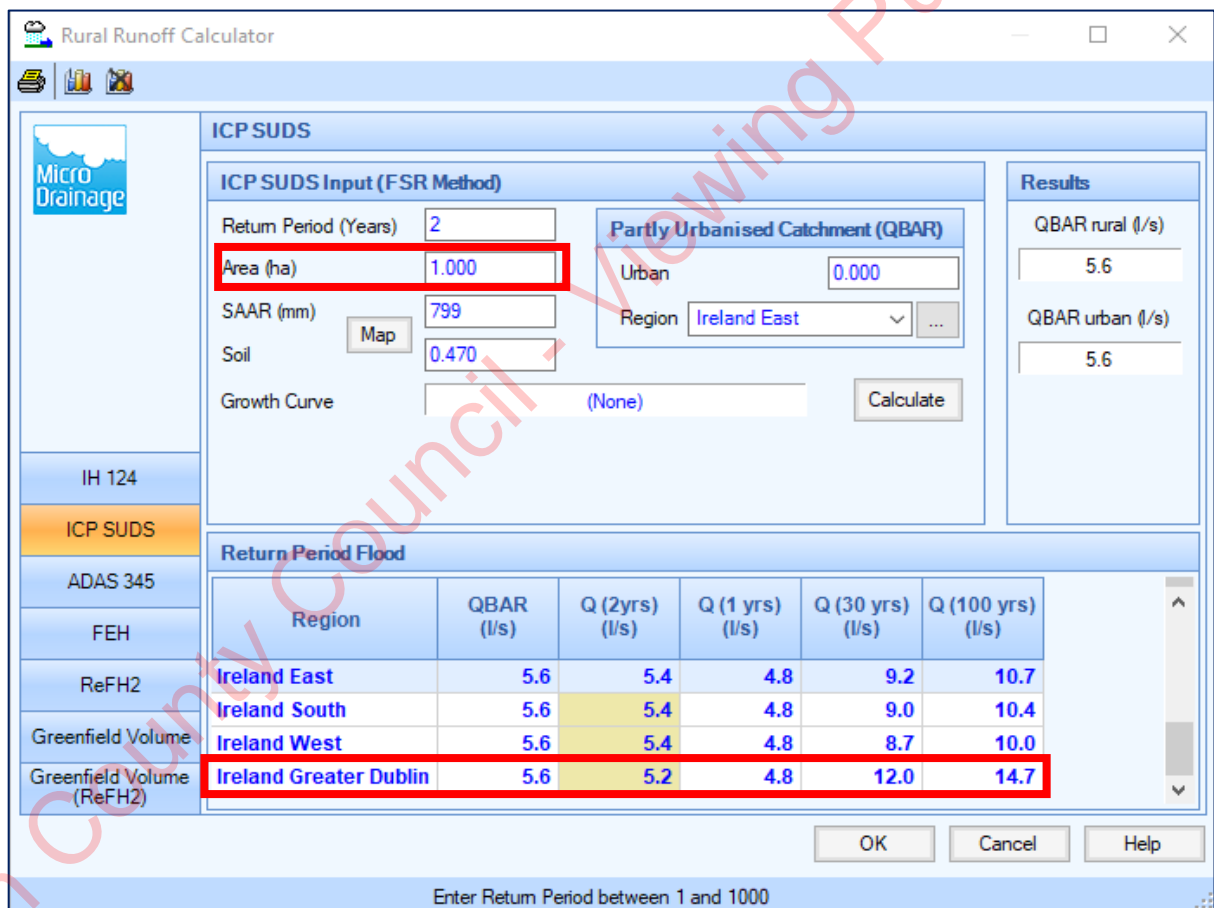
A copy of the Site Investigation Report is provided in **Appendix E** of this ESR.

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

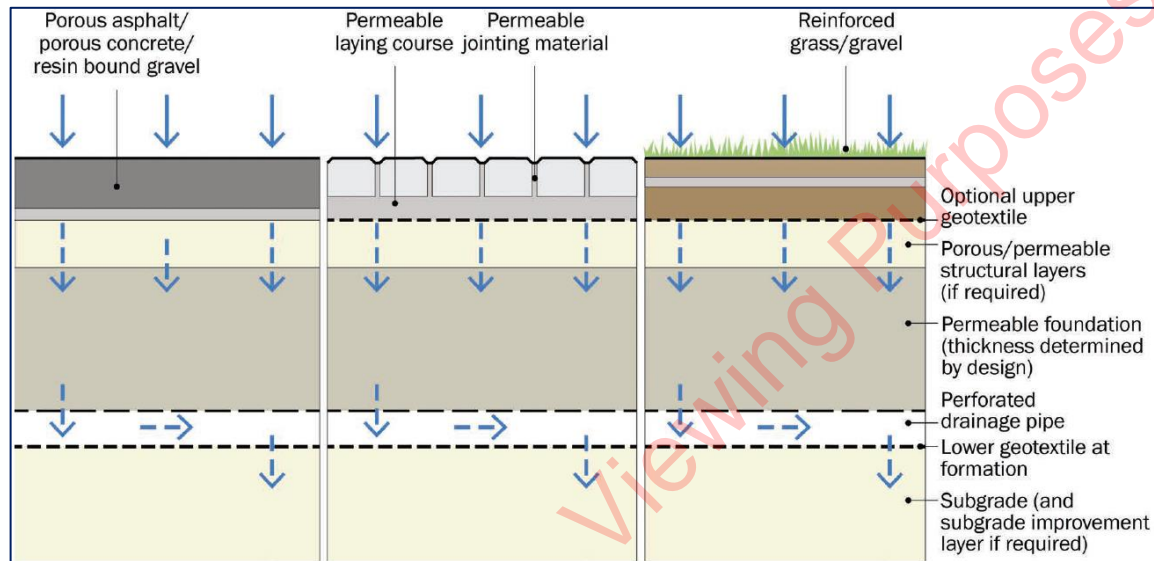
Rainwater harvesting are to be considered at individual residential units in the form of 'Water Butts', which can re-use the collected rainwater for gardening and other domestic watering purposes. Rainwater Butts help to reduce the overall volume of rainfall runoff entering the surface water network.



**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

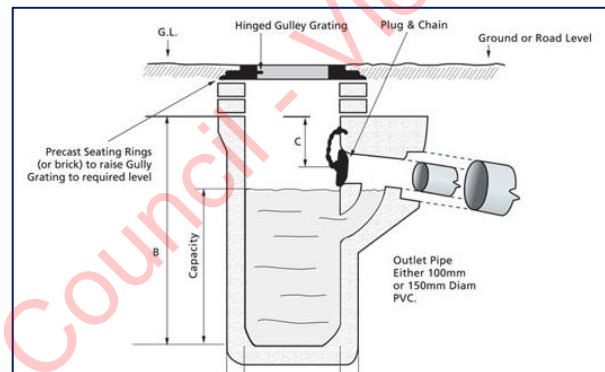
the proposed development. An overflow pipe, from the base-course, will be provided to the drainage network, which will allow for interception of initial rainfall, groundwater discharge, with an attenuated outflow to the main network in extreme rainfall events.

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.



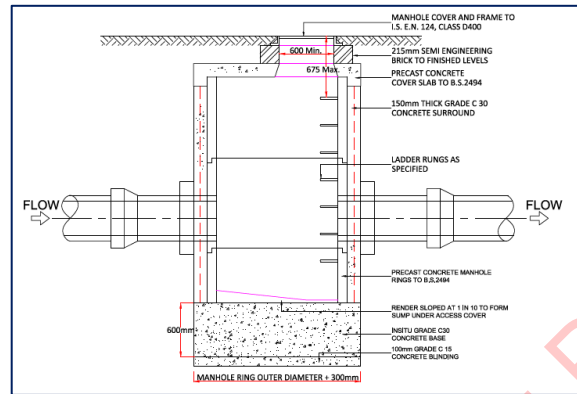
**Figure 3.6 - Trapped Road Gully (Typical Detail)**

### 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.

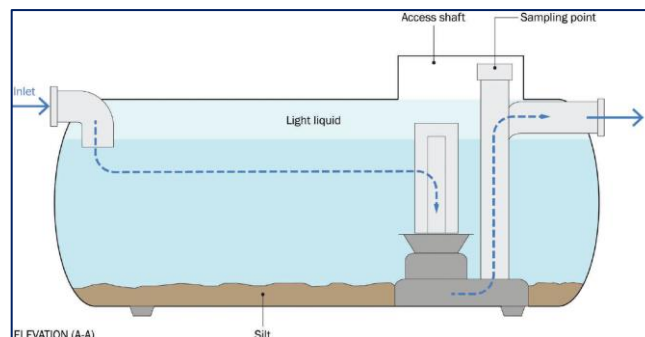


**Figure 3.10 - Vortex Hydro-Brake Flow Control Unit (Hydro International)**

#### 3.5.3.9 Oil Separator

Oil separators are designed to separate gross amounts of oil and large (>250 $\mu$ m) 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.



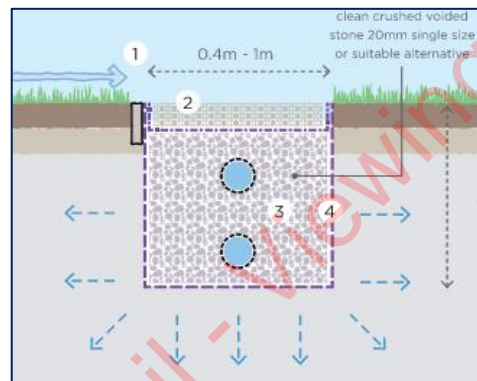
**Figure 3.11 - Typical Section Detail of Fuel Separator (CIRIA C753)**

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

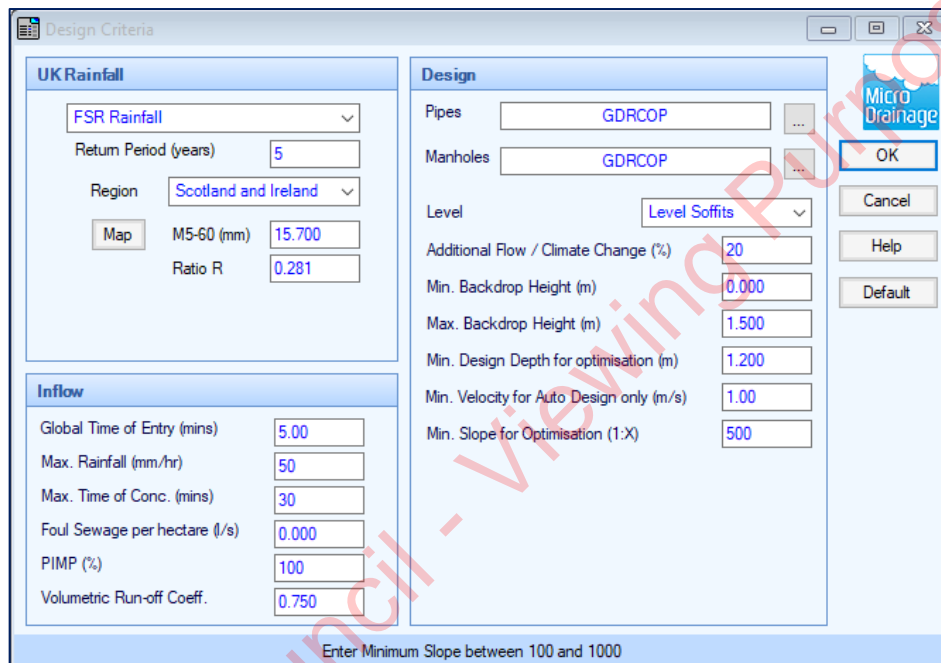
#### 3.6.1 Software Design Criteria

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 **M<sub>5-60</sub>** and **R** values, and the standard annual average rainfall (SAAR); as sourced from Met Éireann.



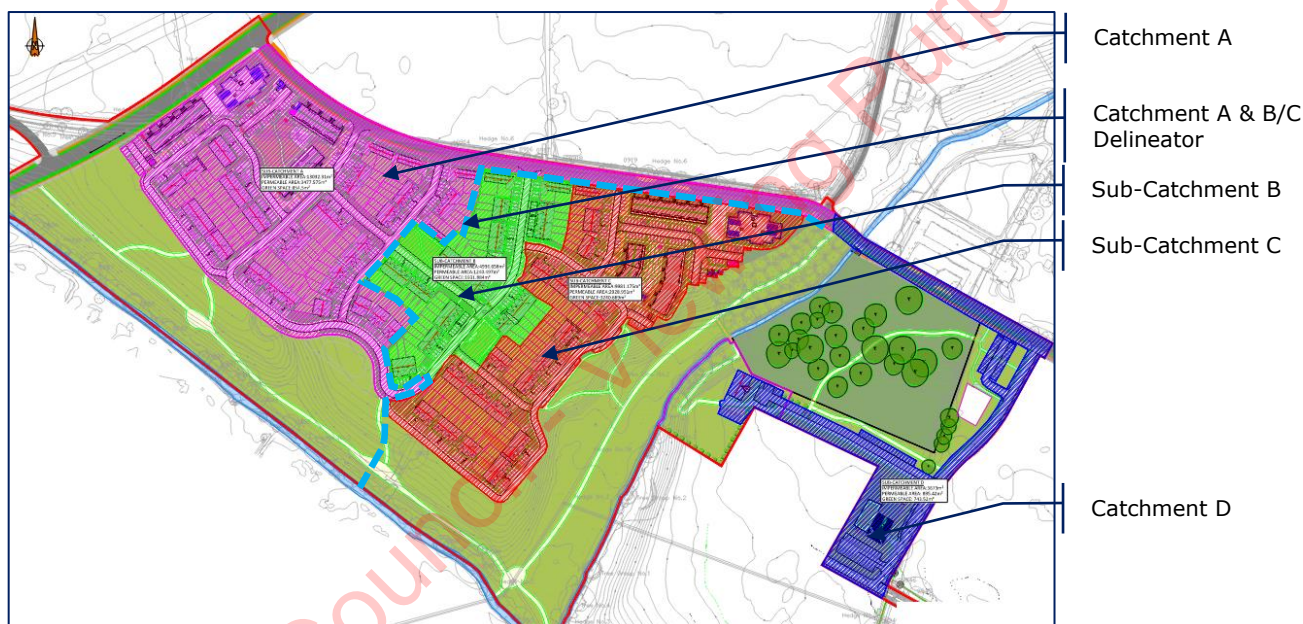
**Figure 3.13 - Surface Water Network Design Criteria (MicroDrainage Excerpt)**

### 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 25km<sup>2</sup> 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 *GSDSDS 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

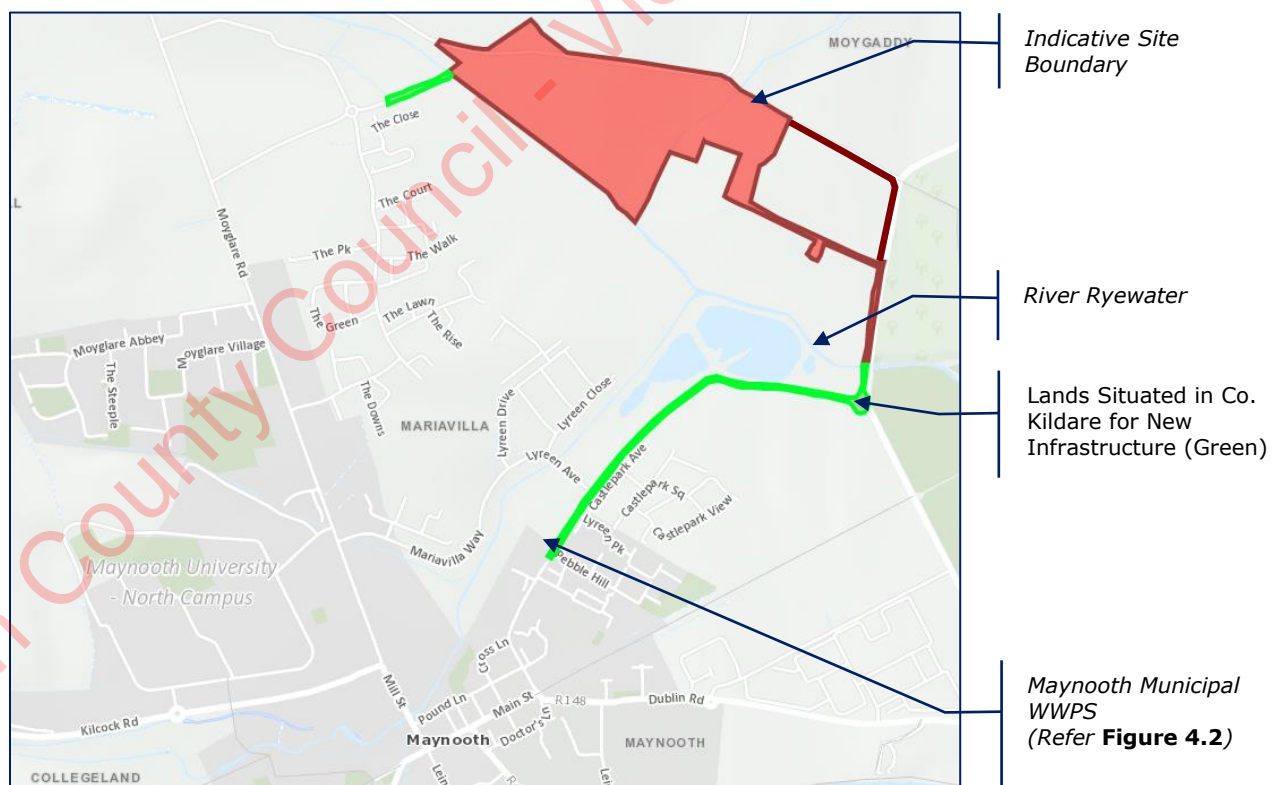
works are to greatly improve the performance and capacity of the municipal WWPS, with a section of the new pipeline infrastructure to be provided in Applicant-owned lands. This is discussed further in *Section 4.4*.

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 19<sup>th</sup> August 2022, which is included in **Appendix D** of this ESR.

### 4.3 Existing Wastewater Drainage

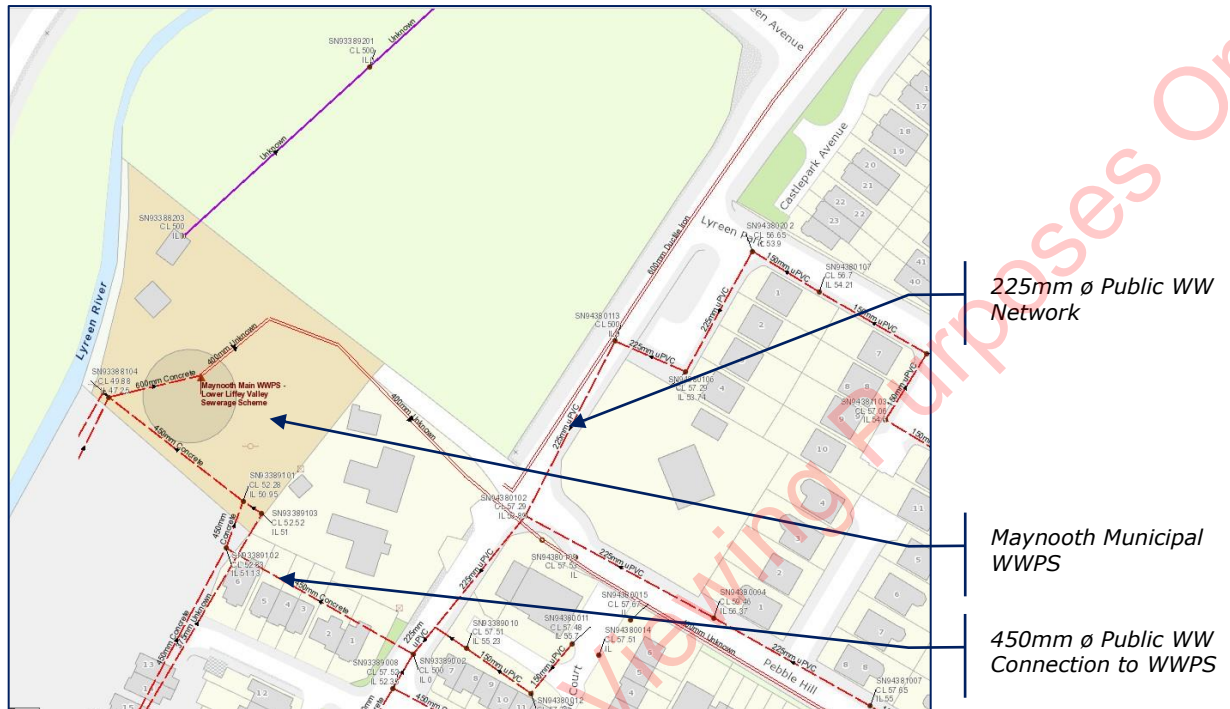
There is currently no existing wastewater infrastructure in the immediate vicinity of the site. Following detailed consultation with Irish Water, and returned Confirmation of Feasibility letter, it was confirmed that sections of the Maynooth Town's main wastewater infrastructure has capacity issues, 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.

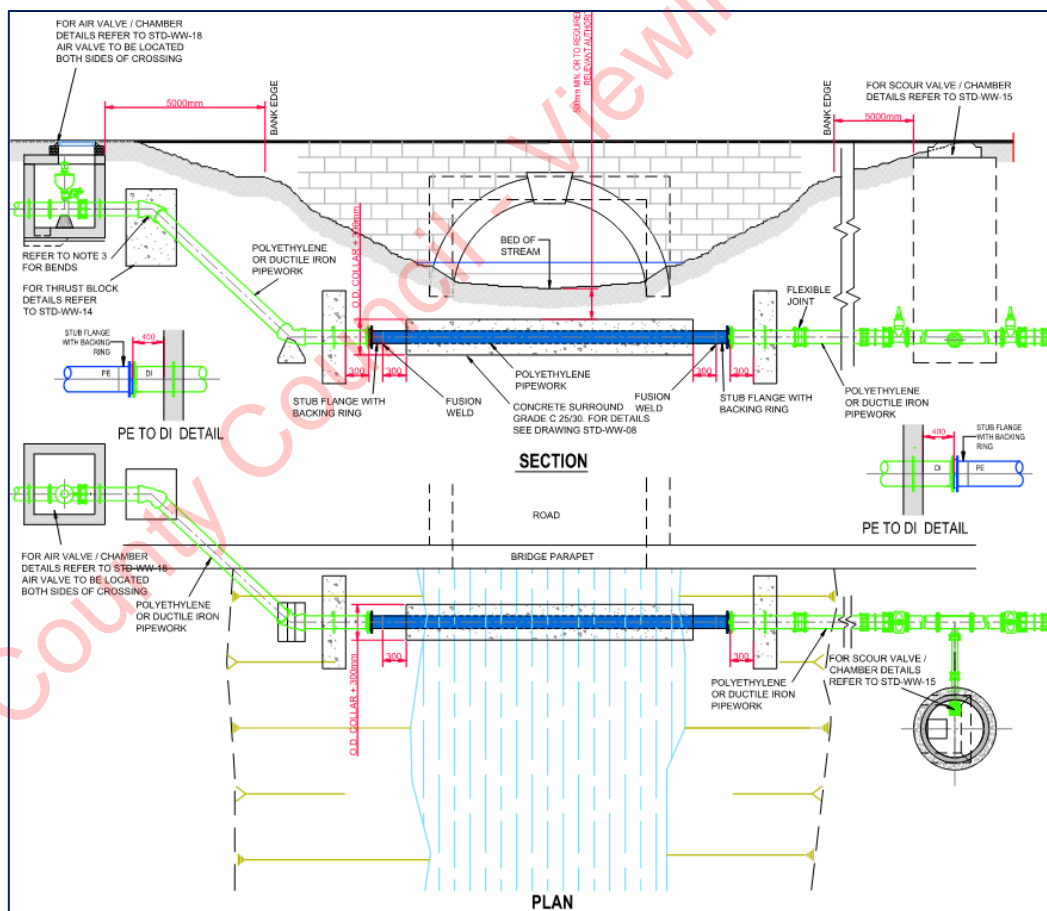
In order to accommodate the above design solution, a gravity crossing is to be provided from the residential development, eastward across the Blackhall Little stream. This is to be achieved by utilising a new pedestrian bridge structure to secure the wastewater pipe, to its soffit, as it crosses the 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 19<sup>th</sup> 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.

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## 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.

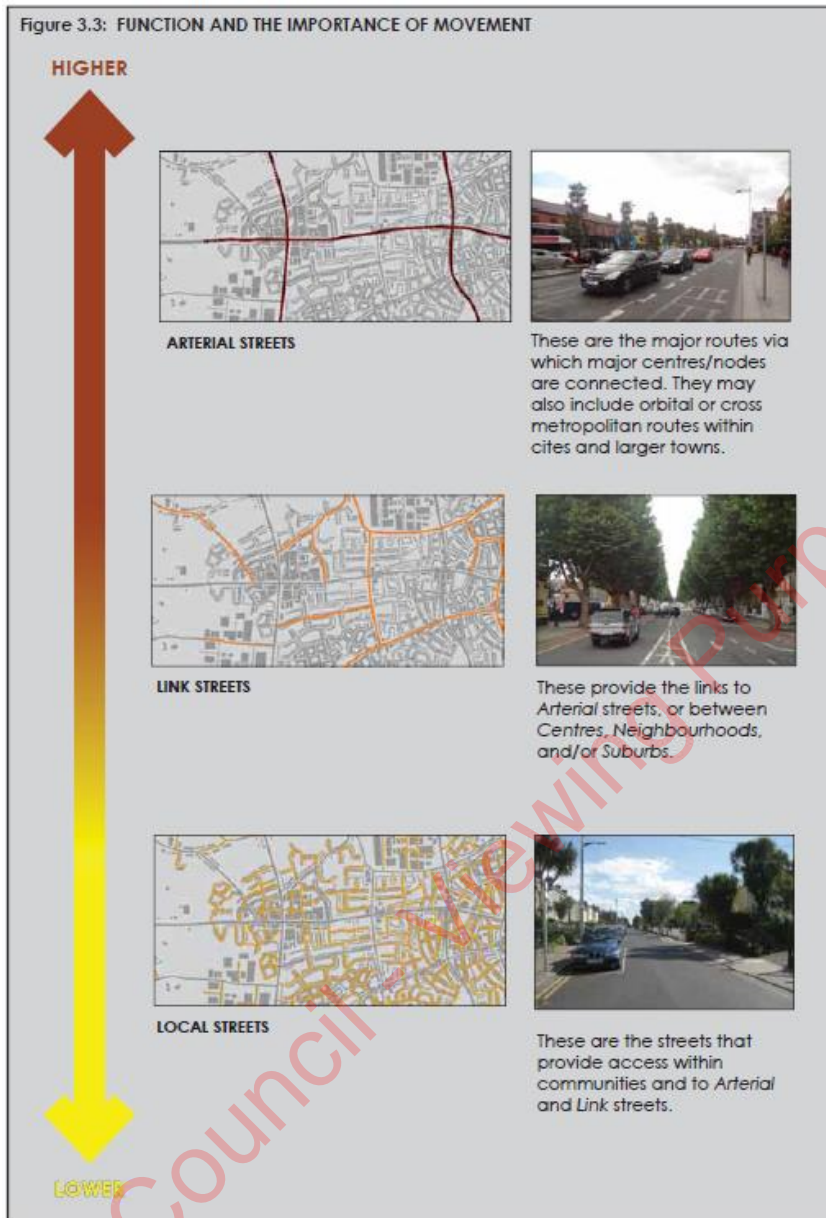
All junctions will be assessed in detail within the final Traffic Impact Assessment submitted.

## 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	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.

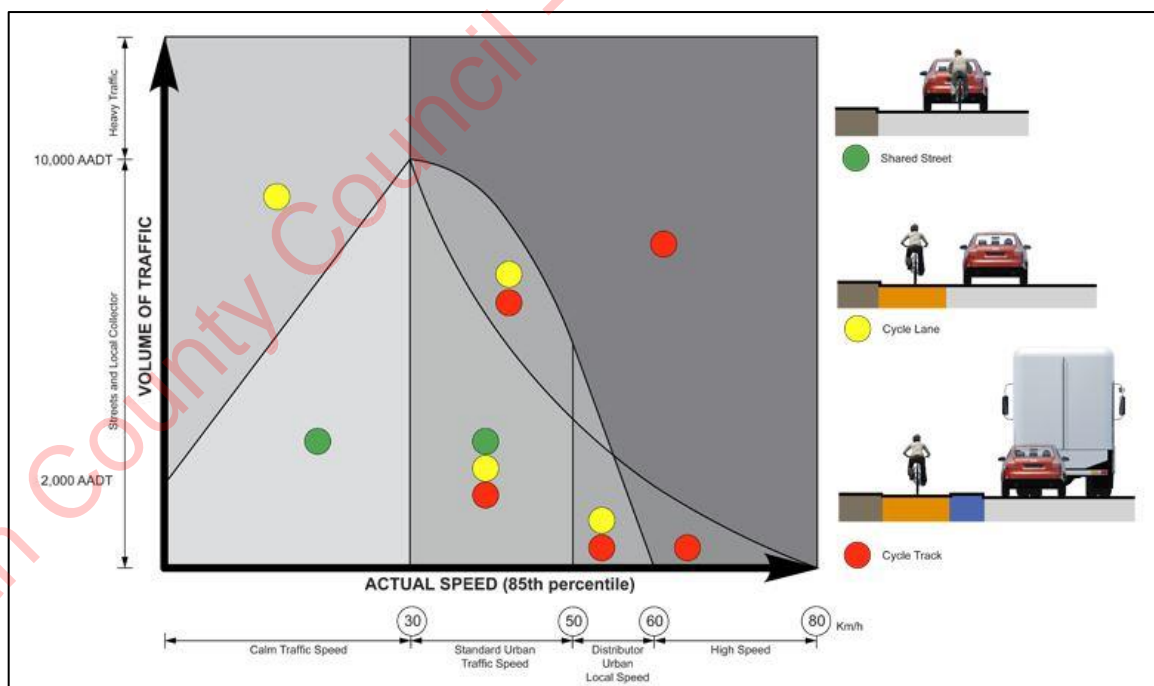
### 6.12.6 Footpaths

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


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Meath County Council - Viewing Purposes Only!

**APPENDIX A.  $Q_{BAR}$  Calculation and Rainfall Data**

Meath County Council - Viewing Purposes Only!



O'Connor Sutton Cronin		Page 1
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

Meath County Council - Viewing Purposes Only!

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

DURATION	Years														
	Interval 6months, 1year,	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,

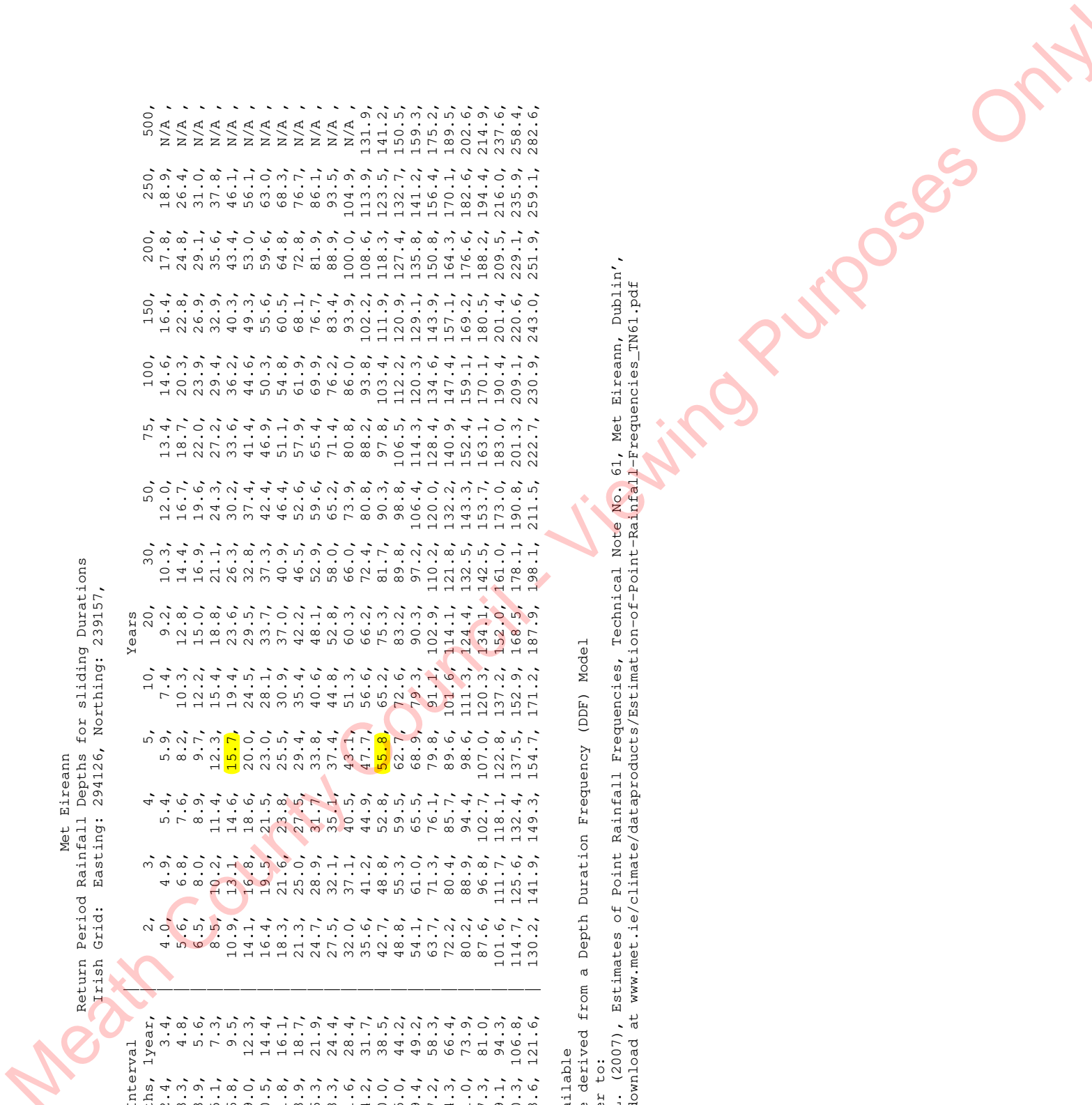
NOTES:

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](http://www.met.ie/climate/dataproducts/Estimation-of-Point-Rainfall-Frequencies_TN61.pdf)





## **APPENDIX B. Surface Water Design Criteria and Simulation Results**

Meath County Council - Viewing Purposes Only!

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

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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)	I.Area (ha)	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



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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

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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



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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



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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  
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Ireland

MOYGADDY CASTLE SHD



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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  
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MOYGADDY CASTLE SHD



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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



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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

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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

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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

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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

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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

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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 <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
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 <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
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 <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
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 <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )	Depth (m)	Area (m <sup>2</sup> )	Inf. Area (m <sup>2</sup> )
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



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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 \* 10m<sup>3</sup>/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.	Pipe 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

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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

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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**

Meath County Council - Viewing Purposes Only!

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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

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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



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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  
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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**

Meath County Council - Viewing Purposes Only!

Mark Killian  
 9 Prussia Street  
 Stoneybatter  
 Dublin 7  
 D07KT57

Uisce Éireann  
 Bosca OP 448  
 Oifig Sheachadta na  
 Cathrach Theas  
 Cathair Chorcaí

Irish Water  
 PO Box 448,  
 South City  
 Delivery Office,  
 Cork City.

[www.water.ie](http://www.water.ie)

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	<b>OUTCOME OF PRE-CONNECTION ENQUIRY</b> <b><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></b>
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"> <li>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).</li> <li>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</li> </ol>

	<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"> <li>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.</li> <li>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</li> </ol> <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"> <li>- identifying and repairing areas of infiltration</li> <li>- control of pumping stations in the catchment</li> <li>- increasing local storage in the area</li> </ul>
<p>The design and construction of the Water &amp; 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>	



The map included below outlines the current Irish Water infrastructure adjacent to your site:



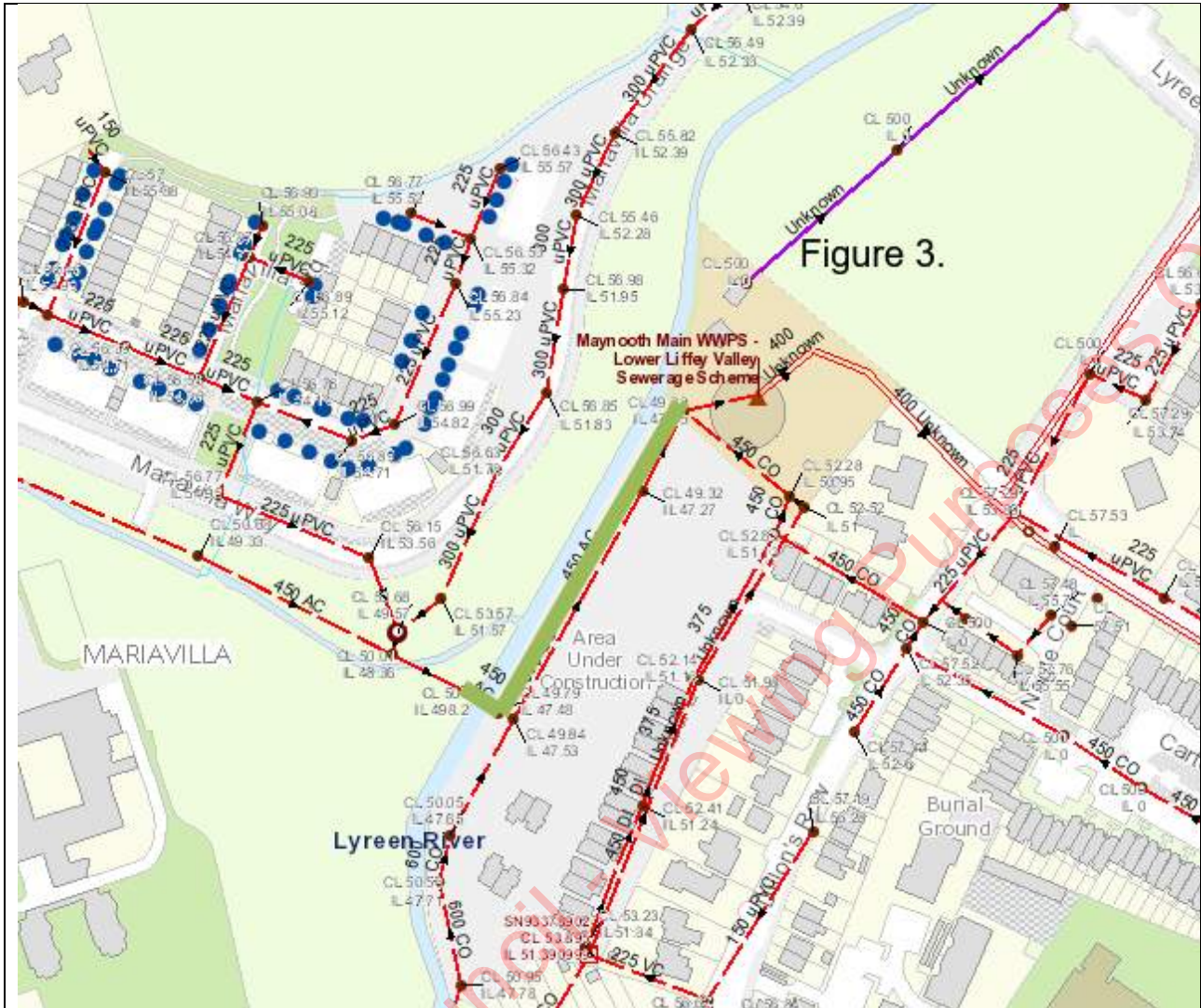


Figure 3.

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.

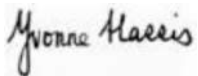
**General Notes:**

- 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](mailto: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](mailto:paulowr@water.ie) For further information, visit [www.water.ie/connections](http://www.water.ie/connections).

Yours sincerely,



**Yvonne Harris**

**Head of Customer Operations**

Meath County Council - Viewing Purposes Only!



## **APPENDIX E. Site Investigation Report**

Meath County Council - Viewing Purposes Only!

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**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

Meath County Council - Viewing Purposes Only!

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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





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 Foibart 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  $54\text{kN/m}^2$ . This can be used to calculate the ultimate bearing capacity, and this has been calculated to be  $295\text{kN/m}^2$ . Finally, a factor of safety is applied and with a factor of 3, an allowable bearing capacity of  $100\text{kN/m}^2$  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  $72\text{kN/m}^2$ , an ultimate bearing capacity of  $405\text{kN/m}^2$  and finally an allowable bearing capacity of  $135\text{kN/m}^2$ .

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  $19\text{kN/m}^3$ .
- 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 SO<sub>3</sub>. The BRE Special Digest 1:2005 – '*Concrete in Aggressive Ground*' guidelines require SO<sub>4</sub> values and after conversion (SO<sub>4</sub> = SO<sub>3</sub> 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**

Meath County Council - Viewing Purposes Only!

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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	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	GM75				
1.5						55.0	1.00	C	50 (3,4/50 for 85mm)				
1.60	1.60	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.				54.85							
2.0						54.5	2.00	B	GM76				
2.5						54.0	2.00	C	N=16 (2,3/3,4,4,5)				
2.80	2.80	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.				53.65							
3.0						53.5	3.00	B	GM77				
3.5						53.0	3.00	C	50 (8,11/50 for 200mm)				
4.0						52.5	4.00	B	GM78				
4.5						52.0	4.00	C	N=48 (12,13/11,14,12,11)				
5.0						51.5	5.00	B	GM79				
5.40	5.40	Obstruction - possible boulders.				51.05	5.00	C	50 (25 for 135mm/50 for 125mm)				
5.50	5.50	End of Borehole at 5.50m				50.95	5.50	C	50 (25 for 5mm/50 for 0mm)				
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	Arising			

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	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	1.50	Firm brown sandy slightly gravelly silty CLAY with high cobble content.				53.5	1.00	C	N=10 (2,2/3,2,3,2)			
2.0						53.0	2.00	B	GM67			
2.5						52.5	2.00	C	N=12 (4,5/3,3,3,3)			
3.0	2.80	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.				52.21						
3.5						52.0	3.00	B	GM68			
4.0						51.5	3.00	C	N=49 (6,6/11,12,13,13)			
4.5						51.0	4.00	B	GM69			
5.0	4.90	Obstruction - possible boulders.				50.5	4.00	C	N=50 (8,11/50 for 255mm)			
5.0	5.00	End of Borehole at 5.00m				50.11	5.00	C	50 (25 for 5mm/50 for 5mm)			
5.5						50.0						
6.0						49.5						
6.5						49.0						
7.0						48.5						
7.5						48.0						
8.0						47.5						
8.5						47.0						
9.0						46.5						
9.5						46.0						
						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	<b>Cable Percussion Borehole Log</b>	Borehole No: <b>BH04</b>
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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 N=15 (3,4/4,5,3,3)			
	1.5	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		55.5						
	2.0			55.0	2.00	B	GM87 N=17 (4,4/3,5,5,4)			
	2.5	3.10		54.5						
	3.0			54.0	3.00	B	GM88 N=49 (5,8/8,12,14,15)			
	3.5	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		53.75						
	4.0			53.5	3.00	C				
	4.5	6.20		53.0						
	5.0			52.5	4.00	B	GM89 50 (9,12/50 for 200mm)			
	5.5	6.30		52.0						
	6.0			51.5	5.00	B	GM90 50 (12,13/50 for 110mm)			
	6.5	Obstruction - possible boulders. End of Borehole at 6.30m		51.0						
	7.0			50.65	6.00	B	GM91 50 (15,10/50 for 100mm) 50 (25 for 5mm/50 for 5mm)			
	7.5	50.55	6.30	C						
	8.0			50.0						
	8.5			49.5						
	9.0			49.0						
	9.5			48.5						
				48.0						
				47.5						
				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: BH05			
Contract:		Moygaddy		Easting:		693928.844		Date Started:		21/07/2021		
Location:		Maynooth, Co. Meath		Northing:		739604.500		Date Completed:		21/07/2021		
Client:		Sky Castle Ltd		Elevation:		58.72		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.				58.5	58.52					
0.5		Brown sandy slightly gravelly silty CLAY with low cobble content.				58.0						
1.0	1.10	Firm becoming stiff brown sandy slightly gravelly silty CLAY with high cobble content.				57.5	57.62	1.00	B	GM61		
1.5						57.0		1.00	C	N=9 (1,1/2,2,3,2)		
2.0						56.5		2.00	B	GM62		
2.5						56.0		2.00	C	N=20 (3,5/5,6,4,5)		
3.0	2.80	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.				55.5	55.92	3.00	B	GM63		
3.5						55.0		3.00	C	N=43 (5,8/8,9,12,14)		
4.0						54.5		4.00	B	GM64		
4.5						54.0		4.00	C	N=48 (8,10/10,11,13,14)		
5.0	5.10	Obstruction - possible boulders.				53.5	53.62	5.00	B	GM65		
5.5	5.20	End of Borehole at 5.20m				53.0	53.52	5.00	C	50 (25 for 60mm/50 for 15mm)		
6.0						52.5		5.20	C	50 (25 for 5mm/50 for 5mm)		
6.5						52.0						
7.0						51.5						
7.5						51.0						
8.0						50.5						
8.5						50.0						
9.0						49.5						
9.5						49.0						


  


	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.		
	5.10	5.20	01:30	3.20	2.90	3.60	15/07	5.20	Dry				0.00	5.20	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	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	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	2.90	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.				54.65						
3.5						54.5	3.00	B	GM59			
4.0						54.0	3.00	C	N=50 (6,8/9,12,14,15)			
4.5						53.5	4.00	B	GM60			
4.70	4.80	Obstruction - possible boulders.				53.0	4.00	C	50 (9,12/50 for 210mm)			
5.0	4.80	End of Borehole at 4.80m				52.85	4.80	C	50 (25 for 5mm/50 for 5mm)			
5.5						52.75						
6.0						52.0						
6.5						51.5						
7.0						51.0						
7.5						50.5						
8.0						50.0						
8.5						49.5						
9.0						49.0						
9.5						48.5						
						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					54.49	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	2.00	B	GM49									
2.5						59.0		2.00	C	N=19 (3,3/4,6,5,4)									
3.0	2.90	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.				58.5	58.40	3.00	B	GM50									
3.5						58.0		3.00	C	N=35 (5,6/8,8,10,9)									
4.0						57.5		4.00	B	GM51									
4.5						57.0		4.00	C	50 (10,11/50 for 225mm)									
5.0						56.5		5.00	B	GM52									
5.5						56.0		5.00	C	50 (25 for 125mm/50 for 100mm)									
6.0	5.70	Obstruction - possible boulders.				55.5	55.60	5.80	C	50 (25 for 5mm/50 for 5mm)									
6.0	5.80	End of Borehole at 5.80m				55.5	55.50												
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	Arising			

Contract No: 5863	<b>Cable Percussion Borehole Log</b>	Borehole No: <b>BH09</b>
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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		1.00	B	GM41		
	1.0			60.5		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			59.5		2.00	B	GM42		
	2.5			59.0		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.		58.0	58.98					
	3.0			58.5		3.00	B	GM43		
	3.5			58.0		3.00	C	N=39 (4,7/9,9,11,10)		
	4.0			57.5		4.00	B	GM44		
	4.5			57.0		4.00	C	50 (6,9/50 for 200mm)		
	5.0			56.5		5.00	B	GM45		
	5.30	Obstruction - possible boulders.		56.0	56.38	5.00	C	50 (9,12/50 for 100mm)		
	5.40	End of Borehole at 5.40m		56.28	56.28	5.40	C	50 (25 for 5mm/50 for 5mm)		
	6.0			55.5						
	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						

	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	<b>Cable Percussion Borehole Log</b>	Borehole No: <b>BH10</b>
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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	TOPSOIL.		59.0	58.95					
	0.5	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		58.5		1.00	B	GM46 N=11 (2,2/3,3,3,2)		
	1.0			58.0		1.00	C			
	1.50	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		57.5	57.75			GM47 N=20 (5,4/5,5,4,6)		
	2.0			57.0		2.00	B			
	2.40	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		56.5	56.85			50 (25 for 5mm/50 for 0mm)		
	2.80			56.0	56.45					
	3.00	Obstruction - possible boulders.		56.0	56.25	3.00	C			
		End of Borehole at 3.00m		56.0						
				55.5						
				55.0						
				54.5						
				54.0						
				53.5						
				53.0						
				52.5						
				52.0						
				51.5						
				51.0						
				50.5						
				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	56.98	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:	
		From:	To:	Time:	Strike:	Rose:	Depth Sealed:	Date:	Hole Depth:	Water Depth:	From:	To:	Pipe:	From:	To:	Type:	Borehole terminated due to obstruction.	B: Bulk
		3.60	3.80	01:00				07/07	5.80	Dry				0.00	5.80	Arisings		D: Disturbed
		5.70	5.80	01:30														U: Undisturbed
																		ES: Environmental
																		W: Water
																		C: Cone SPT
																		S: Split spoon SPT

Contract No: 5863	<b>Cable Percussion Borehole Log</b>	Borehole No: <b>BH12</b>
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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			55.5	1.00	C	N=10 (1,1/3,3,2,2)			
	1.5	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		55.56						
	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	3.00	B	GM32			
	3.20			53.66	3.00	C	N=47 (5,4/9,9,14,15)			
	3.5	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		53.0						
	4.0			52.5	4.00	B	GM33			
	4.5			52.0	4.00	C	50 (9,13/50 for 175mm)			
	5.0			51.5	5.00	B	GM34			
	5.5			51.0	5.00	C	N=50 (7,9/50 for 250mm)			
	6.0			50.5	6.00	B	GM35			
	6.30	Obstruction - possible boulders.		50.56	6.00	C	50 (10,13/50 for 140mm)			
	6.40	End of Borehole at 6.40m		50.46	6.40	C	50 (25 for 5mm/50 for 0mm)			
	7.0			50.0						
	7.5			49.5						
	8.0			49.0						
	8.5			48.5						
	9.0			48.0						
	9.5			47.5						
				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	Arising			

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	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 (2,2/1,3,3)			
1.70	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	2.50	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.			49.59						
3.0					49.5	3.00	B	GM20			
3.5					49.0	3.00	C	N=45 (8,8/11,11,10,13)			
4.0					48.5						
4.5					48.0	4.00	B	GM21			
5.0					48.0	4.00	C	N=41 (7,9/9,10,11,11)			
5.5					47.5						
6.0					47.0	5.00	B	GM22			
6.10	6.10	Obstruction - possible boulders.			47.0	5.00	C	50 (8,10/50 for 210mm)			
6.20	6.20	End of Borehole at 6.20m			46.5						
6.5					46.0	45.99	B	GM23			
7.0					46.0	45.89	C	50 (26 for 85mm/50 for 10mm)			
7.5					46.0	6.00	C	50 (25 for 5mm/50 for 0mm)			
8.0					45.5						
8.5					45.0						
9.0					44.5						
9.5					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		

Contract No: 5863	<b>Cable Percussion Borehole Log</b>				Borehole No: <b>BH14</b>
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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	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				51.5	2.00	B	GM08		
	2.10	Soft brown sandy slightly gravelly silty CLAY with high cobble content.			51.36	2.00	C	N=7 (2,1/2,1,1,3)		
	2.5				51.0					
	3.0				50.5	3.00	B	GM09		
	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)		
	3.5				50.0					
	4.0				49.5	4.00	B	GM10		
	4.5				49.0	4.00	C	50 (9,9/50 for 225mm)		
	5.0				48.5	5.00	B	GM11		
	5.5				48.0	5.00	C	50 (7,10/50 for 210mm)		
	6.0				47.5	6.00	B	GM12		
	6.20				47.26	6.00	C	50 (8,10/50 for 175mm)		
	6.30	Obstruction - possible boulders. End of Borehole at 6.30m			47.16	6.50	C	50 (25 for 5mm/50 for 5mm)		
	6.5				47.0					
	7.0				46.5					
	7.5				46.0					
	8.0				45.5					
	8.5				45.0					
	9.0				44.5					
	9.5				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.		
	6.70	6.80	01:30				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	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 (1,2/3,2,2)				
1.80	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	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	6.70	Obstruction - possible boulders.			42.83	6.80	C	50 (25 for 5mm/50 for 5mm)				
7.0	6.80	End of Borehole at 6.80m			42.73							
7.5					42.5							
8.0					42.0							
8.5					41.5							
9.0					41.0							
9.5					40.5							
					40.0							

	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.		
	6.70	6.80	01:30	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: 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)			
	1.80	Firm brown sandy slightly gravelly silty CLAY with high cobble content.				51.13						
	2.0					51.0	2.00	B	GM14			
	2.5					50.5	2.00	C	N=13 (3,3/2,3,4,4)			
	2.50	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.				50.43						
	3.0					50.0	3.00	B	GM15			
	3.5					49.5	3.00	C	N=50 (8,8/50 for 250mm)			
	4.0					49.0	4.00	B	GM16			
	4.5					48.5	4.00	C	N=50 (8,9/50 for 230mm)			
	5.0					48.0	5.00	B	GM17			
	5.5					47.5	5.00	C	50 (10,13/50 for 135mm)			
	5.70	Obstruction - possible boulders.				47.23						
	5.80	End of Borehole at 5.80m				47.13	5.80	C	50 (25 for 5mm/50 for 0mm)			
	6.0					47.0						
	6.5					46.5						
	7.0					46.0						
	7.5					45.5						
	8.0					45.0						
	8.5					44.5						
	9.0					44.0						
	9.5					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		


**Appendix 2**  
**Rotary Corehole Logs and Photographs**

Meath County Council - Viewing Purposes Only!

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC04</b>
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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		TCR/%	SCR/%	RQD/%	FI/m	
0.0 - 6.70	Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.	[Pattern]	56.5							
6.70	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. <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>	[Pattern]	50.14	50.14	6.70 - 7.70	96	57	12	14	
7.70	<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>	[Pattern]	49.0		7.70 - 8.70	97	77	36		
8.70	End of Corehole at 9.70m	[Pattern]	47.0	47.14	8.70 - 9.70	97	68	0	19	

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC05</b>
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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		TCR/%	SCR/%	RQD/%	FI/m	
0.0 - 5.70	Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.	[Pattern]	58.5							
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. <i>Discontinuities - smooth to rough, planar, tight to open, sub-horizontal dip, clean with occasional grey staining.</i> <i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining.</i>	[Pattern]	52.90	52.90	5.70 - 6.70	96	83	28	11	
6.70	<i>Discontinuities - smooth to rough, planar, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.</i>	[Pattern]	52.0	52.0	6.70 - 7.70	96	52	16	14	
7.70	<i>Discontinuities - smooth to rough, planar, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.</i>	[Pattern]	51.0	51.0	7.70 - 8.70	92	88	22	11	
8.70	End of Corehole at 8.70m	[Pattern]	49.90	49.90						

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC06</b>
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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		TCR/%	SCR/%	RQD/%	FI/m	
0.5	Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.		57.5							
1.0										
1.5										
2.0										
2.5										
3.0										
3.5										
4.0										
4.5										
5.0										
5.30										
5.5			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		5.30 - 6.30	93	70	47
6.0		51.0				6.30 - 7.30	98	75	39	
7.5		50.15				7.30 - 8.30	80	76	32	10
8.0	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. End of Corehole at 8.30m		49.35							
8.5										
9.0										
9.5										

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC07</b>
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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		TCR/%	SCR/%	RQD/%	FI/m	
0.0 - 5.60	Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.		57.5							
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. <i>Discontinuities - smooth, occasionally rough, planar, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.</i>		52.24		5.60 - 6.60	97	97	66	12	
6.60	<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	
7.60	<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	
8.60	End of Corehole at 8.60m		49.24							

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC08</b>
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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				53.88	6.60 - 7.60	98	63	23		Ni	
7.5										11	
8.0					7.60 - 8.60	100	69	32		Ni	
8.5									13		
9.0				8.60 - 9.60	98	75	21		Ni		
9.5	9.60	End of Corehole at 9.60m		50.88					17		

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



Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC09</b>
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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		TCR/%	SCR/%	RQD/%	FI/m		
0.0	Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.		61.0								
0.5											
1.0											
1.5											
2.0											
2.5											
3.0											
3.5											
4.0											
4.5											
5.0											
5.5											
6.0											
6.30	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. <i>Discontinuities - smooth, occasionally rough, planar to undulating, tight to open, sub-horizontal, occasional sub-vertical dip, clean with occasional grey staining.</i>		54.80		6.30 - 7.30	94	85	50	9		
7.30					7.30 - 8.30	95	69	33			
8.30					8.30 - 9.30	99	75	12	14		
9.30	End of Corehole at 9.30m		51.80								

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC10</b>
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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	
0.5		Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.		57.5							
1.0				57.0							
1.5				56.5							
2.0				56.0							
2.80		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, occasionally stepped, tight to open, 10-30° dip, clean with occasional grey staining and occasional clay infill.</i>		55.0	55.06						
3.0				54.5		2.80 - 3.80	91	85	28		10
3.5				54.0							
4.0				53.5		3.80 - 4.80	95	70	55		Ni
4.5		<i>Discontinuities - non-intact.</i>		53.0							
5.0		<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>		52.5							
5.5		<i>Discontinuities - non-intact.</i>		52.0							
5.80		End of Corehole at 5.80m		52.06							
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	<b>Rotary Corehole Log</b>				Corehole No: <b>RC11</b>
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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>			52.99	6.50 - 7.50	97	83	43	9	
7.0					52.5						
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>			51.69	7.50 - 8.50	97	89	50	7	
8.0					51.5						
8.5											
9.0											
9.5	9.50	End of Corehole at 9.40m			49.99						

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC12</b>
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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						52.5							
1.0						52.0							
1.5						51.5							
2.0						51.0							
2.5						50.5							
3.0						50.0							
3.5						49.5							
4.0						49.0							
4.5						48.5							
5.0						48.0							
5.5						47.5							
6.0						47.0							
6.5						46.5		50 (4,5/50 for 30mm)					
7.0						46.0							
7.5						45.5							
8.0	8.00			End of Corehole at 8.00m		45.0	44.93	N=41 (3,6/8,9,10,14)					
8.5				44.5									
9.0				44.0									
9.5				43.5									
				43.0									

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC13</b>
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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										
8.5												
9.0												
9.5												

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC14</b>
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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					55.0							
1.0					54.5							
1.5					54.0							
2.0					53.5							
2.5					53.0							
3.0					52.5							
3.5					52.0							
4.0					51.5							
4.5					51.0							
5.0					50.5							
5.5					50.0							
6.0					49.5							
6.5					49.0		N=39 (3,5/7,9,10,13)					
7.0					48.5							
7.5					48.0							
8.0	8.00	End of Corehole at 8.00m		47.5	47.61	N=40 (3,4/6,10,10,14)						
8.5				47.0								
9.0				46.5								
9.5				46.0								

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC16</b>
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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												
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			37.96	N=37 (3,3/5,8,11,13)					
8.5						N=43 (3,6/8,9,12,14)						
9.0												
9.5												


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



Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC17</b>
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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											
1.0											
1.5											
2.0											
2.5											
3.0											
3.5											
4.0											
4.5											
5.0											
5.5											
6.0											
6.5											
6.80											
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>									
8.0											
8.5											
9.0											
9.5											
9.80		End of Corehole at 9.80m									

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

Contract No: 5863	<b>Rotary Corehole Log</b>				Corehole No: <b>RC18</b>
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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	<b>Rotary Corehole Log</b>				Corehole No: <b>RC19</b>
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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.		53.29		5.10 - 6.10	98	97	45	11	
5.5		<i>Discontinuities - smooth to rough, planar, occasionally stepped, tight to open, sub-horizontal dip, occasionally 60° dip and sub-vertical, clean.</i>		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	<b>Rotary Corehole Log</b>				Corehole No: <b>RC20</b>
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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												
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												
7.80		Open hole drilling - driller reports returns of limestone bedrock.										
8.0												
8.5												
9.0												
9.30		End of Corehole at 9.30m										
9.5												

	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**

Meath County Council - Viewing Purposes Only!

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Contract No: 5863		<b>Trial Pit Log</b>				Trial Pit No: <b>TP01</b>			
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. 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.			55.22				
	0.5				55.0	0.50	ICBR	MK14	
	1.0				54.5	1.00	B	MK15	
	1.80				54.0				
	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. <b>Pit terminated at 2.10m</b>			53.22				
	2.5				53.0				
	3.0				52.5				
	3.5				52.0				
					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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP02</b>			
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				
	0.60	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				
	1.50	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).			56.0	1.00	B	MK08	
					55.87				
					55.5				
	2.00				55.0	2.00	B	MK09	
					54.5				
	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	<b>Trial Pit Log</b>				Trial Pit No: <b>TP03</b>
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				
		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				
	0.5					0.50	B	MK01	
						0.50	ICBR	MK02	
	0.90				54.5				
	1.0	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				
					54.0		1.00	B	MK03
	1.40				53.86				
	1.5	Obstruction - boulders.							
		Pit terminated at 1.40m							
	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:
	Obstruction - boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental


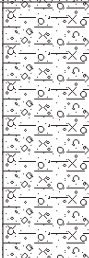
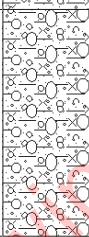


Contract No: 5863		<b>Trial Pit Log</b>				Trial Pit No: <b>TP04</b>			
Contract:		Moygaddy	Easting:	693682.930	Date:	17/06/2021			
Location:		Maynooth, Co. Meath	Northing:	739502.916	Excavator:	JCB 3CX			
Client:		Sky Castle Ltd	Elevation:	56.95	Logged By:	M. Kaliski			
Engineer:		OCSC	Dimensions (LxWxD) (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. 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.		56.85					
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).		56.5 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 54.55	2.40	B	MK45		
2.5		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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP05</b>			
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				
	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).			57.5				
					57.20				
	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).			57.0				
					57.0				▼
	2.60	Obstruction - boulders.			56.30				
		Pit terminated at 2.60m			56.10				
					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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP06</b>			
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								
	1.0			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					
	1.5			56.5		1.50	B	MK48	
	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 500mm diameter).		56.0					
	2.00			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. 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).					58.73				
	0.5					58.5	0.50	ICBR	MK51		
	1.0					58.0	1.00	B	MK52		
	1.5					57.5					
	2.0					57.0					
	2.40					56.53					
	2.50	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). Obstruction - boulders.				56.5	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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP08</b>			
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				
	0.5					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				
	1.0					1.00	B	MK38	
	1.40	Obstruction - boulders.			59.86				
	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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP09</b>			
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	<b>TOPSOIL.</b> 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	1.20	B	MK61	
	1.60	<b>Obstruction - boulders.</b> <b>Pit terminated at 1.60m</b>			60.5				
	2.0				60.41				
	2.5				60.0				
	3.0				59.5				
	3.5				59.0				
					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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP10</b>			
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	58.5	0.50	ICBR	MK62	
1.0				58.0	58.0	1.00	B	MK63	
1.5				57.5	57.5				
2.0				57.0	57.0				
2.40		Obstruction - boulders.		56.56	56.56	2.40	B	MK64	▼
2.5		Pit terminated at 2.40m		56.5	56.5				
3.0				56.0	56.0				
3.5				55.5	55.5				
				55.0	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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP11</b>			
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).		59.0 58.92	0.50	ICBR	MK57		
	1.50			58.5 58.0	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).		57.5 57.32					
	2.30	Obstruction - boulders. Pit terminated at 2.30m		57.12 57.0	2.20	B	MK59		
	2.50			56.5					
	3.00			56.0					
	3.50			55.5					
	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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP12</b>			
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. 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.		56.87					
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).		56.5 56.47	0.50	ICBR	MK34		
1.0	1.00			56.0	1.00	B	MK35		
1.5	1.50	Grey brown silty sandy fine to coarse, angular to subrounded		55.5	55.47			▼	
1.60	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	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 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 coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).		54.77					
2.30	2.30	Obstruction - boulders.		54.67					
2.5		Pit terminated at 2.30m		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.	1.50 Seepage	-		B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental			



Contract No: 5863	<b>Trial Pit Log</b>				Trial Pit No: <b>TP14</b>
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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP15</b>			
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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP16</b>			
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). 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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP17</b>			
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					
0.5	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	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	
		Pit terminated at 1.90m				53.5					
						53.0					
						52.5					
						52.0					

Contract No: 5863		<b>Trial Pit Log</b>				Trial Pit No: <b>TP20</b>			
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.				54.91			
		Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone.							
	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	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).				53.71			
	1.5					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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP21</b>						
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					
	1.80	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).					53.09					
	2.0						53.0	2.00	B	MK33		
	2.5						52.5					
	2.90	Obstruction - boulders.					52.0	51.99				▼
	3.0	Pit terminated at 2.90m					51.5					▼
	3.5						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**

Meath County Council - Viewing Purposes Only!

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# SOAKAWAY TEST



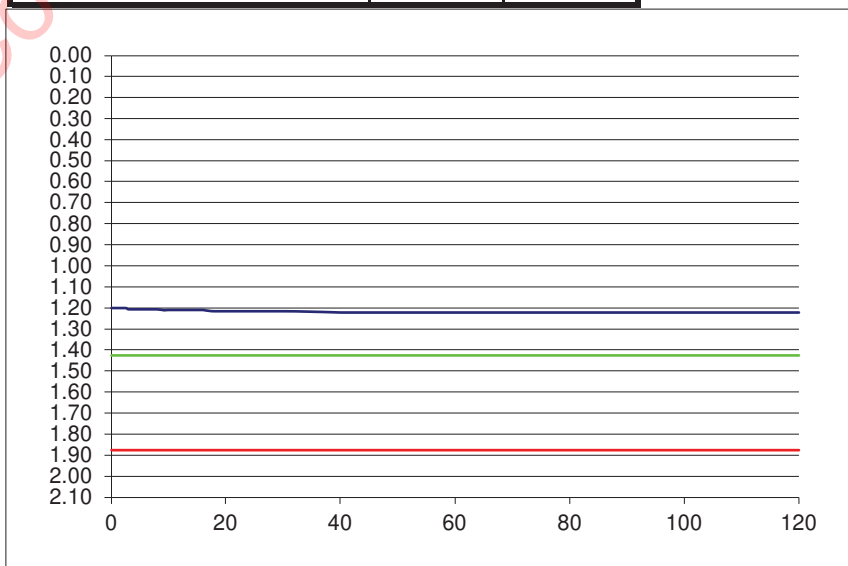
<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP01
<b>Date:</b>	16/06/2021

<b>Ground Conditions</b>		
From	To	
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

<b>Pit Dimensions (m)</b>	
Length (m)	4.30 m
Width (m)	0.60 m
Depth	2.10 m
<b>Water</b>	
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%)	<b>1.16</b> m <sup>3</sup>
Area of Drainage	<b>20.58</b> m <sup>2</sup>
Area of Drainage (75%-25%)	<b>6.99</b> m <sup>2</sup>
<b>Time</b>	
75% Full	N/A min
25% Full	N/A min
Time 75% to 25%	<b>N/A</b> min
Time 75% to 25% (sec)	<b>N/A</b> sec



**f =** Fail or  
m/min

Fail  
m/s

# SOAKAWAY TEST

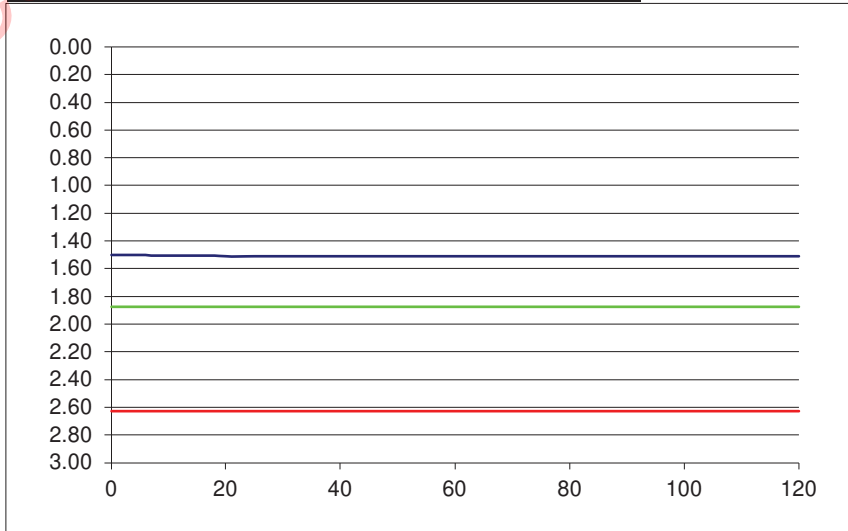


<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP02
<b>Date:</b>	16/06/2021

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)	Pit Dimensions (m)	
0	1.50	Length (m)	4.00 m
0.5	1.50	Width (m)	0.60 m
1	1.50	Depth	3.00 m
1.5	1.50	<b>Water</b>	
2	1.50	Start Depth of Water	1.50 m
2.5	1.50	Depth of Water	1.50 m
3	1.50	75% Full	1.88 m
3.5	1.50	25% Full	2.63 m
4	1.50	75%-25%	0.75 m
4.5	1.50	Volume of water (75%-25%)	<b>1.80</b> m <sup>3</sup>
5	1.50	Area of Drainage	<b>27.60</b> m <sup>2</sup>
6	1.50	Area of Drainage (75%-25%)	<b>9.30</b> m <sup>2</sup>
7	1.51	Time	
8	1.51	75% Full	N/A min
9	1.51	25% Full	N/A min
10	1.51	Time 75% to 25%	<b>N/A</b> min
12	1.51	Time 75% to 25% (sec)	<b>N/A</b> sec
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		



f = **Fail** or  
m/min

**Fail**  
m/s



## SOAKAWAY TEST

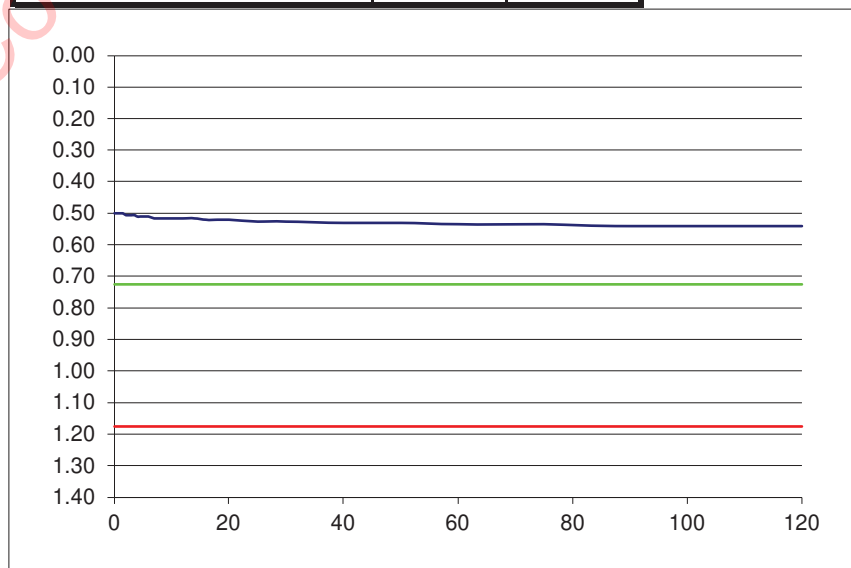


<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP03
<b>Date:</b>	16/06/2021

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	0.50	Length (m)	4.20 m
0.5	0.50	Width (m)	0.60 m
1	0.50	Depth	1.40 m
1.5	0.50	<b>Water</b>	
2	0.51	Start Depth of Water	0.50 m
2.5	0.51	Depth of Water	0.90 m
3	0.51	75% Full	0.73 m
3.5	0.51	25% Full	1.18 m
4	0.51	75%-25%	0.45 m
4.5	0.51	Volume of water (75%-25%)	<b>1.13</b> m <sup>3</sup>
5	0.51	Area of Drainage	<b>13.44</b> m <sup>2</sup>
6	0.51	Area of Drainage (75%-25%)	<b>6.84</b> m <sup>2</sup>
7	0.52	Time	
8	0.52	75% Full	N/A min
9	0.52	25% Full	N/A min
10	0.52	Time 75% to 25%	<b>N/A</b> min
12	0.52	Time 75% to 25% (sec)	<b>N/A</b> sec
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		



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

**Fail**  
m/s

## SOAKAWAY TEST



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

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	4.20 m
0.5	-	Width (m)	0.60 m
1	-	Depth	2.40 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	m <sup>2</sup>
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



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

<b>Ground Conditions</b>		
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	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	- m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	- m <sup>2</sup>
7	-	<b>Time</b>	
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



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

<b>Ground Conditions</b>		
<b>From</b>	<b>To</b>	
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	4.40 m
0.5	-	Width (m)	0.60 m
1	-	Depth	2.50 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	- m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	- m <sup>2</sup>
7	-	<b>Time</b>	
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

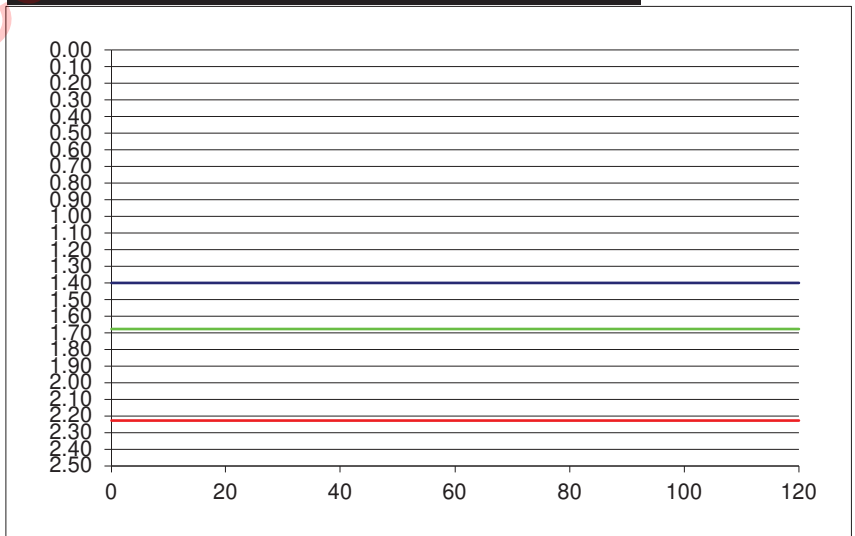


<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP07
<b>Date:</b>	17/06/2021

Ground Conditions		
From	To	Description
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)	Pit Dimensions (m)	
0	1.40	Length (m)	4.20 m
0.5	1.40	Width (m)	0.60 m
1	1.40	Depth	2.50 m
1.5	1.40	<b>Water</b>	
2	1.40	Start Depth of Water	1.40 m
2.5	1.40	Depth of Water	1.10 m
3	1.40	75% Full	1.68 m
3.5	1.40	25% Full	2.23 m
4	1.40	75%-25%	0.55 m
4.5	1.40	Volume of water (75%-25%)	<b>1.39</b> m <sup>3</sup>
5	1.40	Area of Drainage	<b>24.00</b> m <sup>2</sup>
6	1.40	Area of Drainage (75%-25%)	<b>7.80</b> m <sup>2</sup>
7	1.40	Time	
8	1.40	75% Full	N/A min
9	1.40	25% Full	N/A min
10	1.40	Time 75% to 25%	<b>N/A</b> min
12	1.40	Time 75% to 25% (sec)	<b>N/A</b> sec
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		



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

# SOAKAWAY TEST

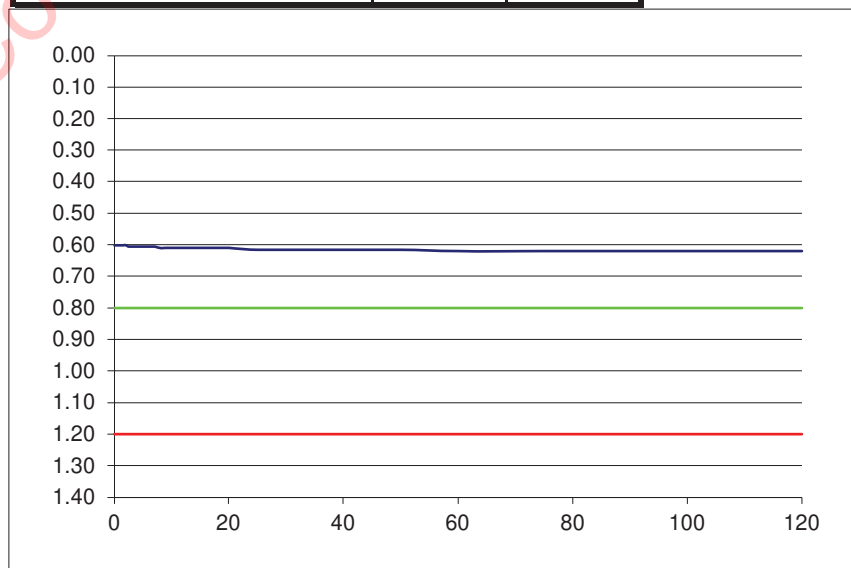


<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP08
<b>Date:</b>	17/06/2021

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	0.60	Length (m)	3.80 m
0.5	0.60	Width (m)	0.60 m
1	0.60	Depth	1.40 m
1.5	0.60	<b>Water</b>	
2	0.60	Start Depth of Water	0.60 m
2.5	0.61	Depth of Water	0.80 m
3	0.61	75% Full	0.80 m
3.5	0.61	25% Full	1.20 m
4	0.61	75%-25%	0.40 m
4.5	0.61	Volume of water (75%-25%)	<b>0.91</b> m <sup>3</sup>
5	0.61	Area of Drainage	<b>12.32</b> m <sup>2</sup>
6	0.61	Area of Drainage (75%-25%)	<b>5.80</b> m <sup>2</sup>
7	0.61	Time	
8	0.61	75% Full	N/A min
9	0.61	25% Full	N/A min
10	0.61	Time 75% to 25%	<b>N/A</b> min
12	0.61	Time 75% to 25% (sec)	<b>N/A</b> sec
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		



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

# SOAKAWAY TEST



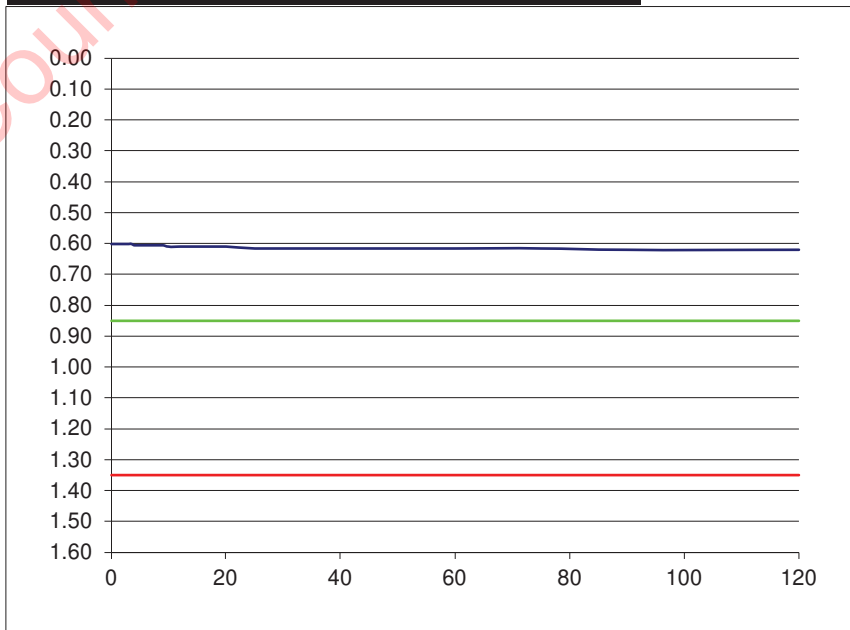
<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP09
<b>Date:</b>	17/06/2021

<b>Ground Conditions</b>		
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

<b>Pit Dimensions (m)</b>	
Length (m)	4.00 m
Width (m)	0.60 m
Depth	1.60 m
<b>Water</b>	
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 <sup>3</sup>
Area of Drainage	14.72 m <sup>2</sup>
Area of Drainage (75%-25%)	7.00 m <sup>2</sup>
<b>Time</b>	
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



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

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	4.30 m
0.5	-	Width (m)	0.60 m
1	-	Depth	2.40 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	- m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	- m <sup>2</sup>
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



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

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	4.10 m
0.5	-	Width (m)	0.60 m
1	-	Depth	2.30 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	m <sup>2</sup>
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



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

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	3.70 m
0.5	-	Width (m)	0.60 m
1	-	Depth	2.30 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	- m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	- m <sup>2</sup>
7	-	<b>Time</b>	
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



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

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	3.90 m
0.5	-	Width (m)	0.60 m
1	-	Depth	2.10 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	- m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	- m <sup>2</sup>
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

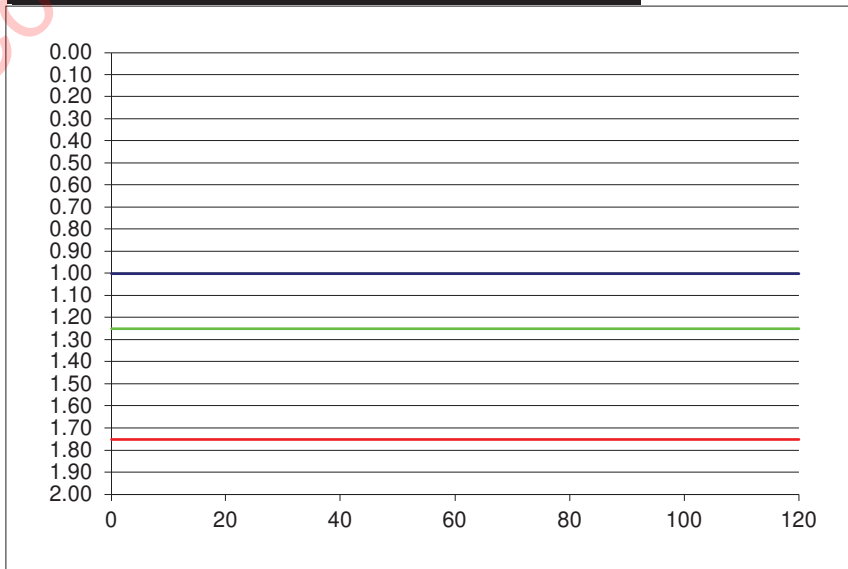


<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP14
<b>Date:</b>	17/06/2021

<b>Ground Conditions</b>		
From	To	Description
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)	<b>Pit Dimensions (m)</b>	
0	1.00	Length (m)	3.90 m
0.5	1.00	Width (m)	0.60 m
1	1.00	Depth	2.00 m
1.5	1.00	<b>Water</b>	
2	1.00	Start Depth of Water	1.00 m
2.5	1.00	Depth of Water	1.00 m
3	1.00	75% Full	1.25 m
3.5	1.00	25% Full	1.75 m
4	1.00	75%-25%	0.50 m
4.5	1.00	Volume of water (75%-25%)	<b>1.17</b> m <sup>3</sup>
5	1.00	Area of Drainage	<b>18.00</b> m <sup>2</sup>
6	1.00	Area of Drainage (75%-25%)	<b>6.84</b> m <sup>2</sup>
7	1.00	Time	
8	1.00	75% Full	N/A min
9	1.00	25% Full	N/A min
10	1.00	Time 75% to 25%	<b>N/A</b> min
12	1.00	Time 75% to 25% (sec)	<b>N/A</b> sec
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		



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

**Fail**  
m/s

## SOAKAWAY TEST



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

<b>Ground Conditions</b>		
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)		<b>Pit Dimensions (m)</b>	
0	-		Length (m)	4.20 m
0.5	-		Width (m)	0.60 m
1	-		Depth	1.60 m
1.5	-		<b>Water</b>	
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 <sup>3</sup>
5	-		Area of Drainage	- m <sup>2</sup>
6	-		Area of Drainage (75%-25%)	- m <sup>2</sup>
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



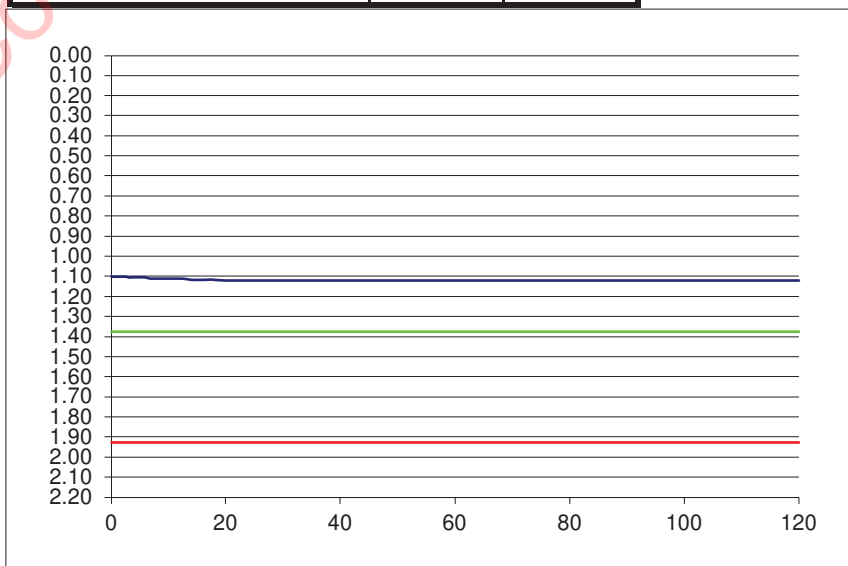
<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP16
<b>Date:</b>	17/06/2021

<b>Ground Conditions</b>		
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

<b>Pit Dimensions (m)</b>	
Length (m)	4.10 m
Width (m)	0.60 m
Depth	2.20 m
<b>Water</b>	
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%)	<b>1.35</b> m <sup>3</sup>
Area of Drainage	<b>20.68</b> m <sup>2</sup>
Area of Drainage (75%-25%)	<b>7.63</b> m <sup>2</sup>
<b>Time</b>	
75% Full	N/A min
25% Full	N/A min
Time 75% to 25%	<b>N/A</b> min
Time 75% to 25% (sec)	<b>N/A</b> sec



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

# SOAKAWAY TEST



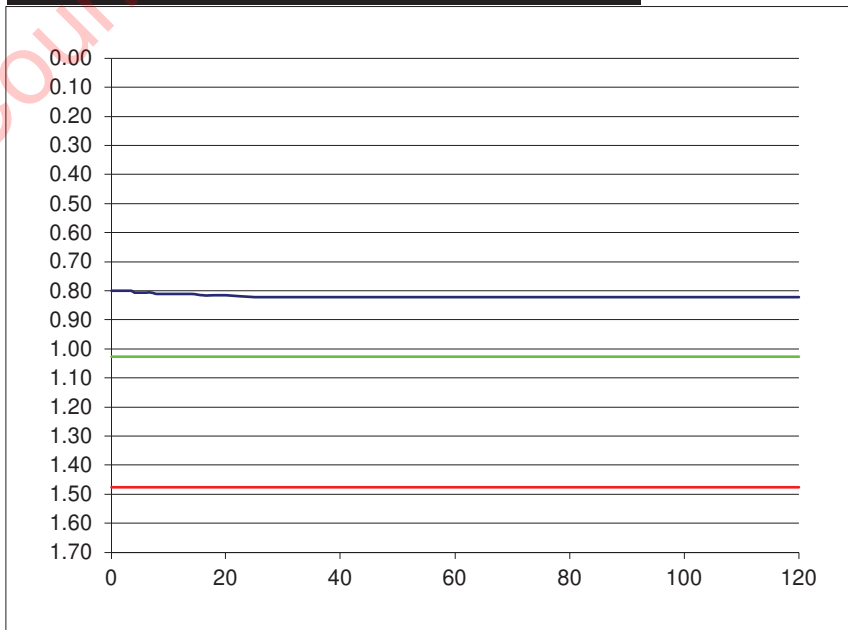
<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP17
<b>Date:</b>	16/06/2021

<b>Ground Conditions</b>		
From	To	
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

<b>Pit Dimensions (m)</b>	
Length (m)	4.20 m
Width (m)	0.60 m
Depth	1.70 m
<b>Water</b>	
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 <sup>3</sup>
Area of Drainage	16.32 m <sup>2</sup>
Area of Drainage (75%-25%)	6.84 m <sup>2</sup>
<b>Time</b>	
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



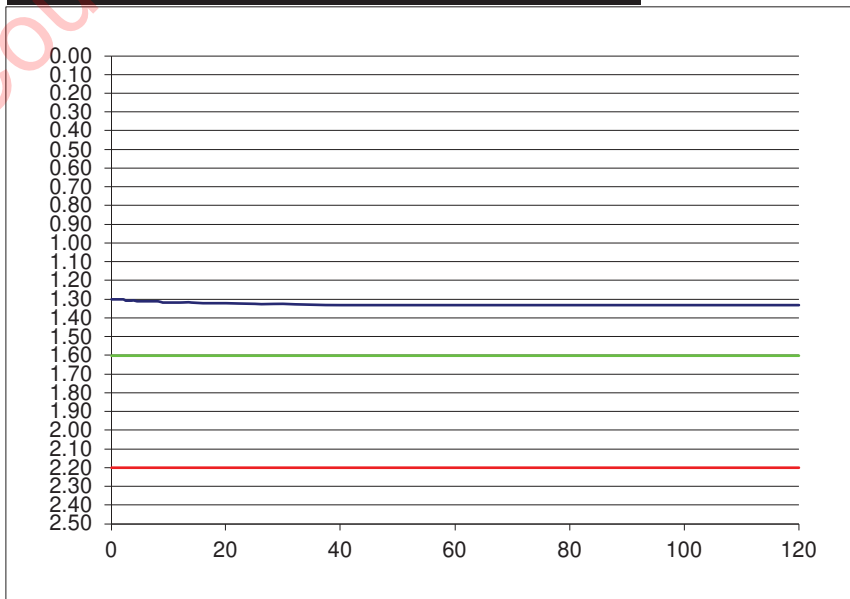
<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP18
<b>Date:</b>	16/06/2021

Ground Conditions		
From	To	Description
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 m <sup>3</sup>
Area of Drainage	23.50 m <sup>2</sup>
Area of Drainage (75%-25%)	8.10 m <sup>2</sup>
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



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

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	4.00 m
0.5	-	Width (m)	0.60 m
1	-	Depth	1.90 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	m <sup>2</sup>
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



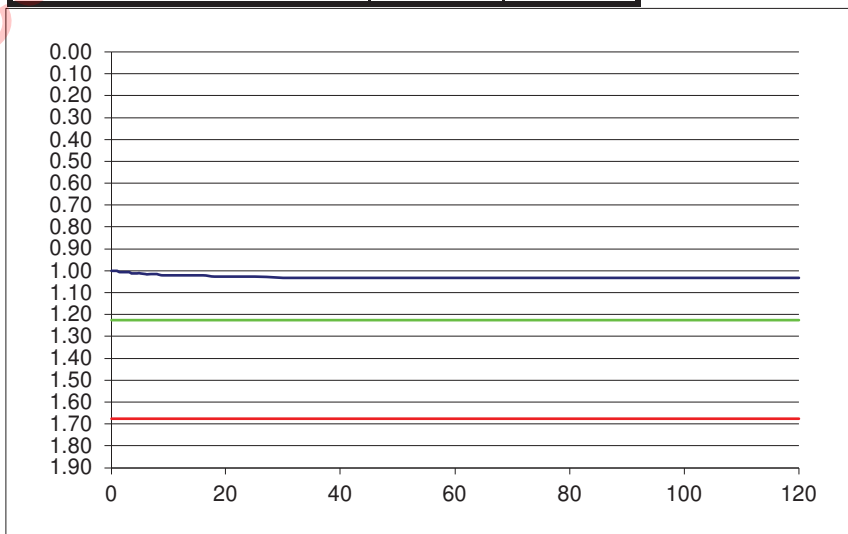
<b>Project Reference:</b>	5863
<b>Contract name:</b>	Moygaddy
<b>Location:</b>	Maynooth, Co. Meath
<b>Test No:</b>	TP20
<b>Date:</b>	16/06/2021

Ground Conditions		
From	To	Description
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%)	<b>1.05</b> m <sup>3</sup>
Area of Drainage	<b>17.10</b> m <sup>2</sup>
Area of Drainage (75%-25%)	<b>6.39</b> m <sup>2</sup>
Time	
75% Full	N/A min
25% Full	N/A min
Time 75% to 25%	<b>N/A</b> min
Time 75% to 25% (sec)	<b>N/A</b> sec



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



## SOAKAWAY TEST



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

<b>Ground Conditions</b>		
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)	<b>Pit Dimensions (m)</b>	
0	-	Length (m)	4.00 m
0.5	-	Width (m)	0.60 m
1	-	Depth	2.90 m
1.5	-	<b>Water</b>	
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 <sup>3</sup>
5	-	Area of Drainage	- m <sup>2</sup>
6	-	Area of Drainage (75%-25%)	- m <sup>2</sup>
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

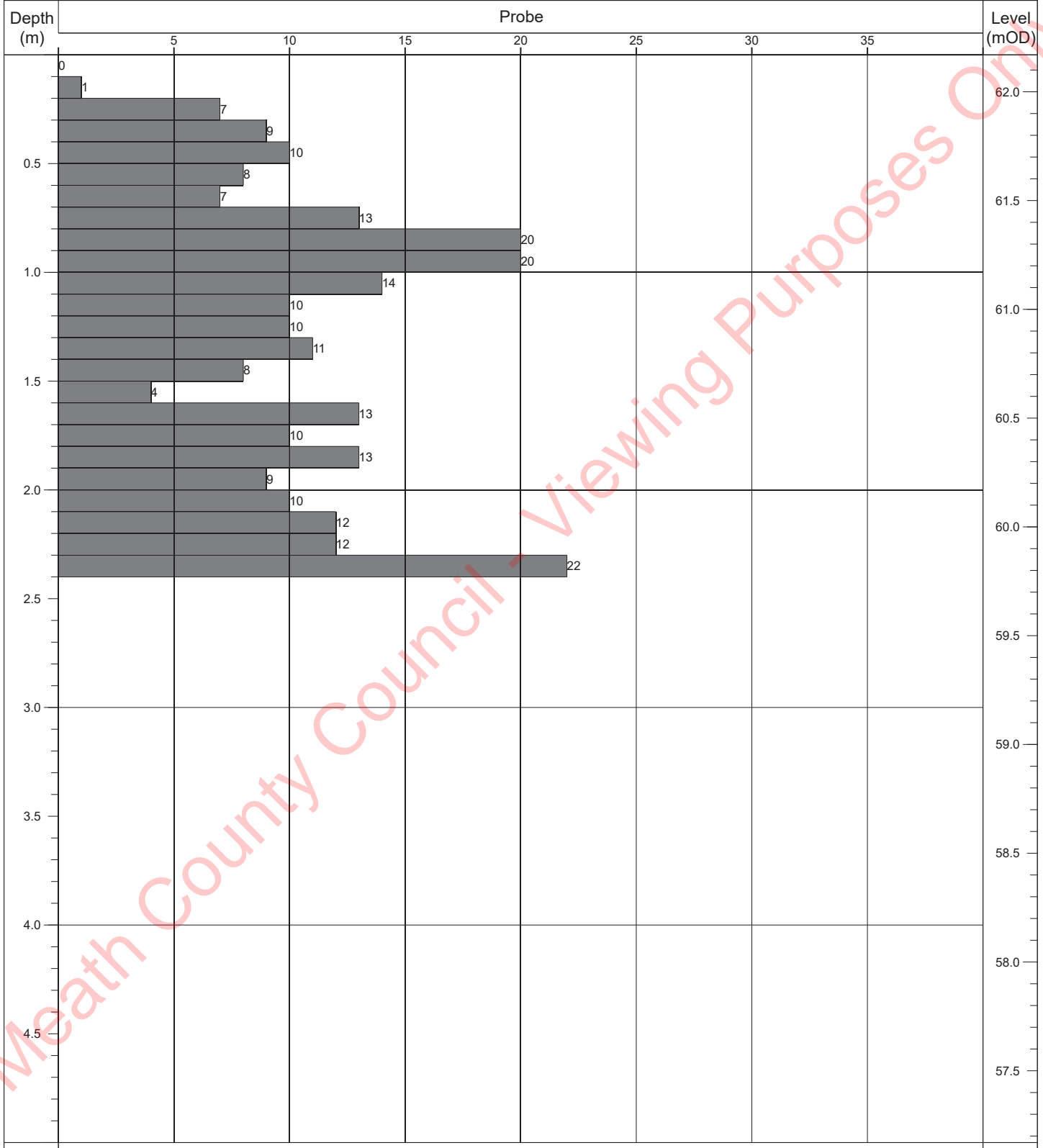
**Appendix 5**  
**Dynamic Probe Logs**

Meath County Council - Viewing Purposes Only!

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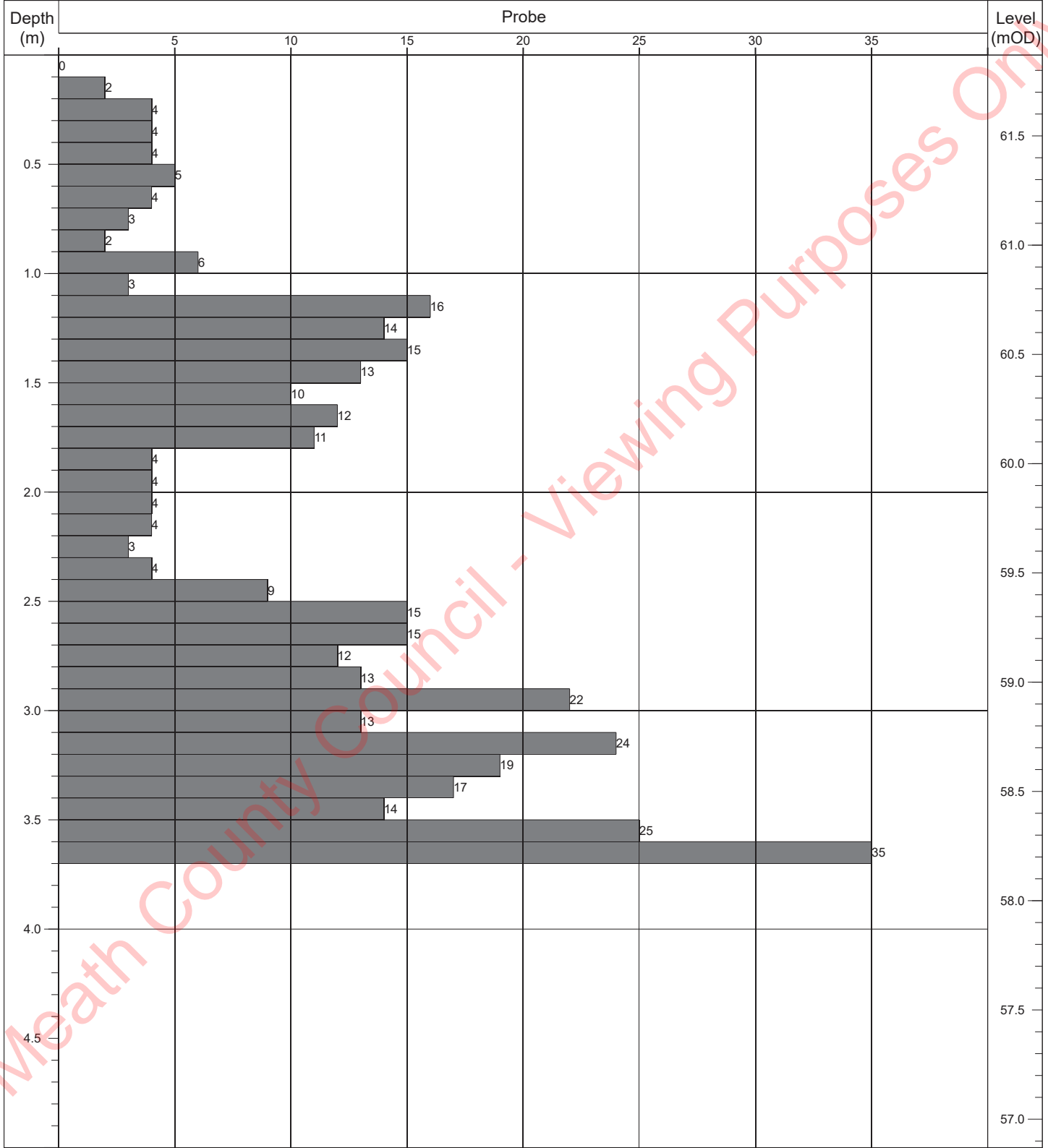
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP01</b>
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Contract:	Moygaddy	Easting:	694395.693	Date Started:	21/06/2021
Location:	Maynooth, Co. Meath	Northing:	739790.416	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	62.17	Scale: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



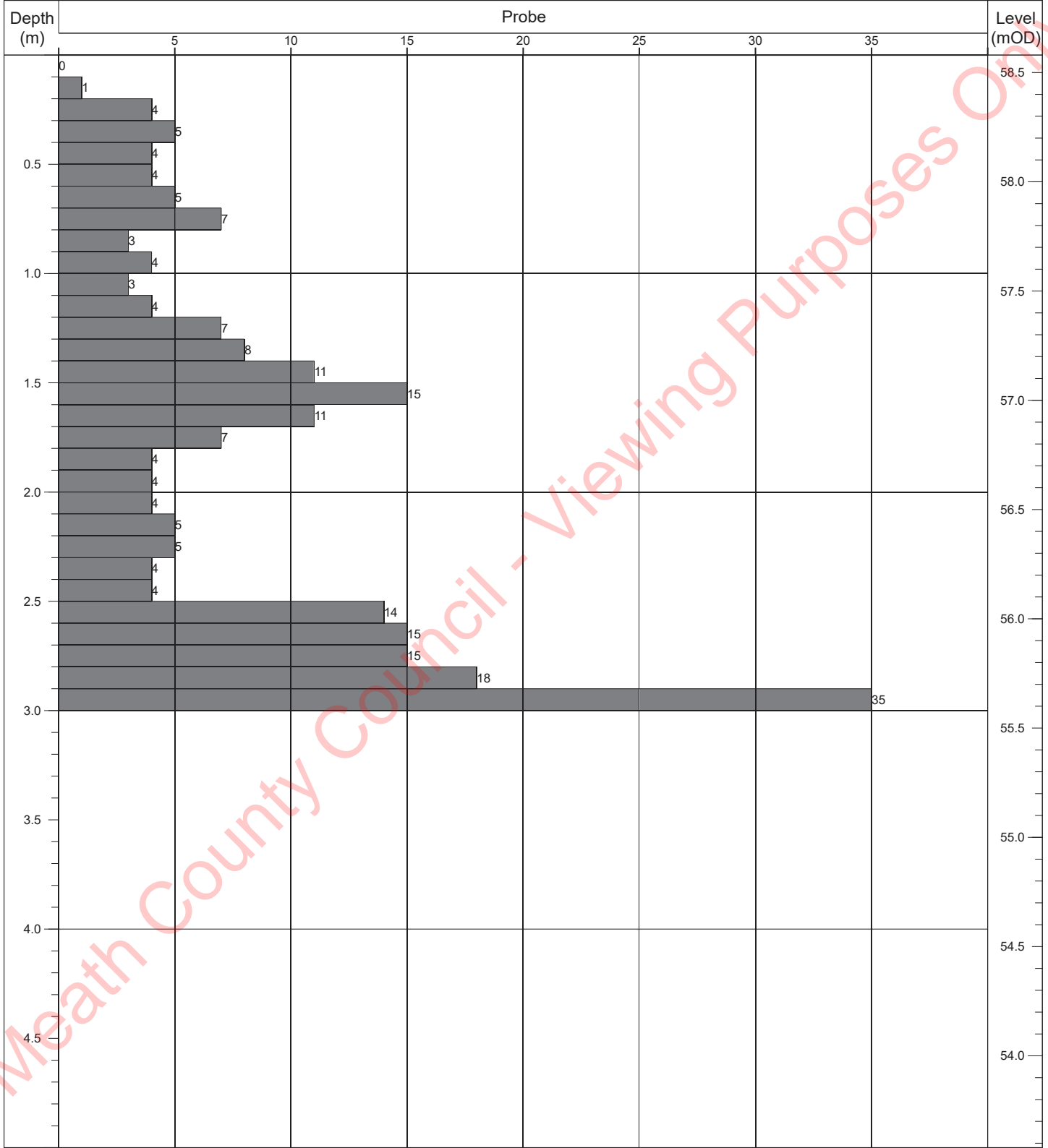
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP02</b>
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	<b>Dynamic Probe Log</b>			Probe No: <b>DP03</b>
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

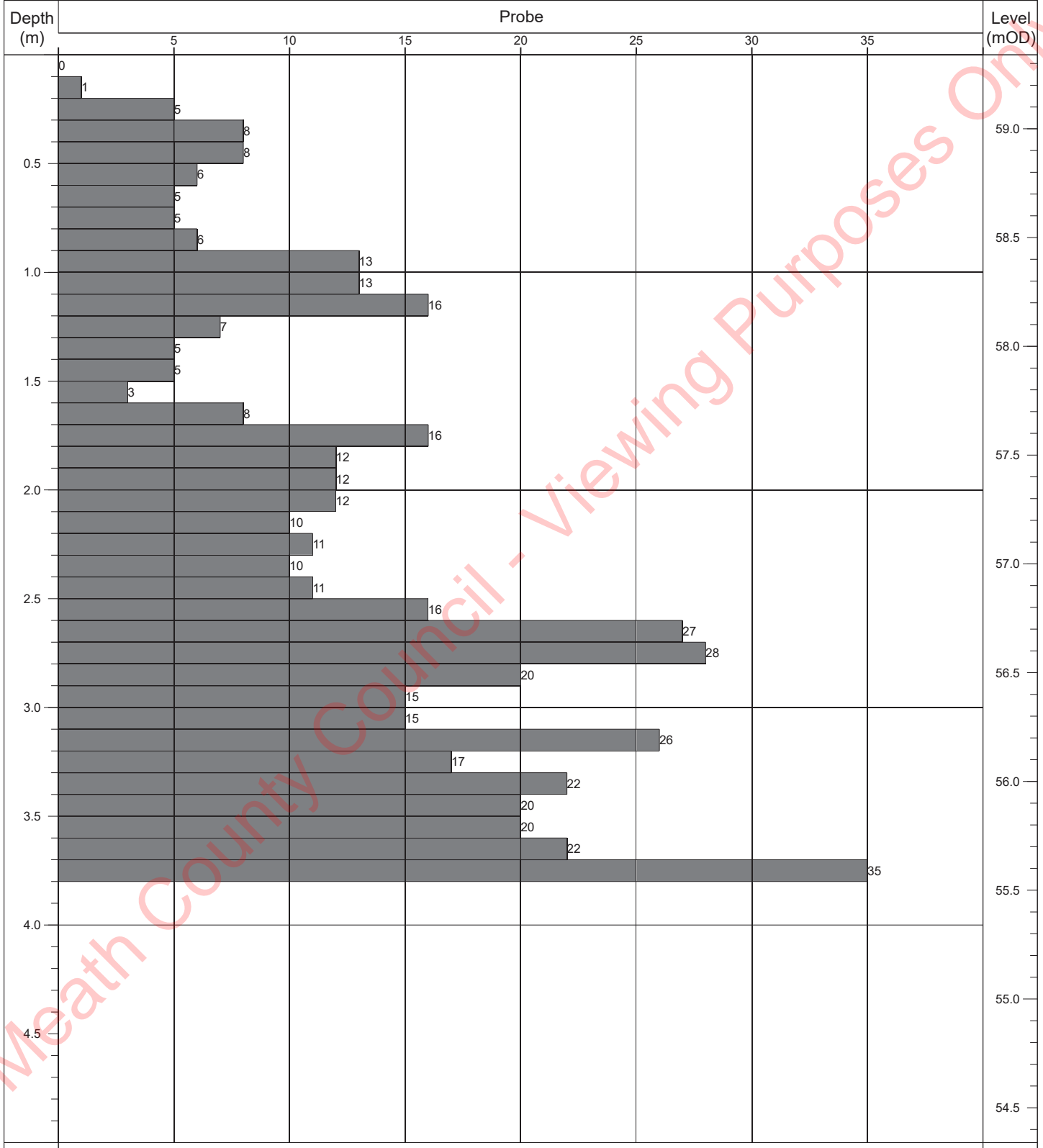



	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.00m	Obstruction - boulders.	DPH	50kg	500mm	



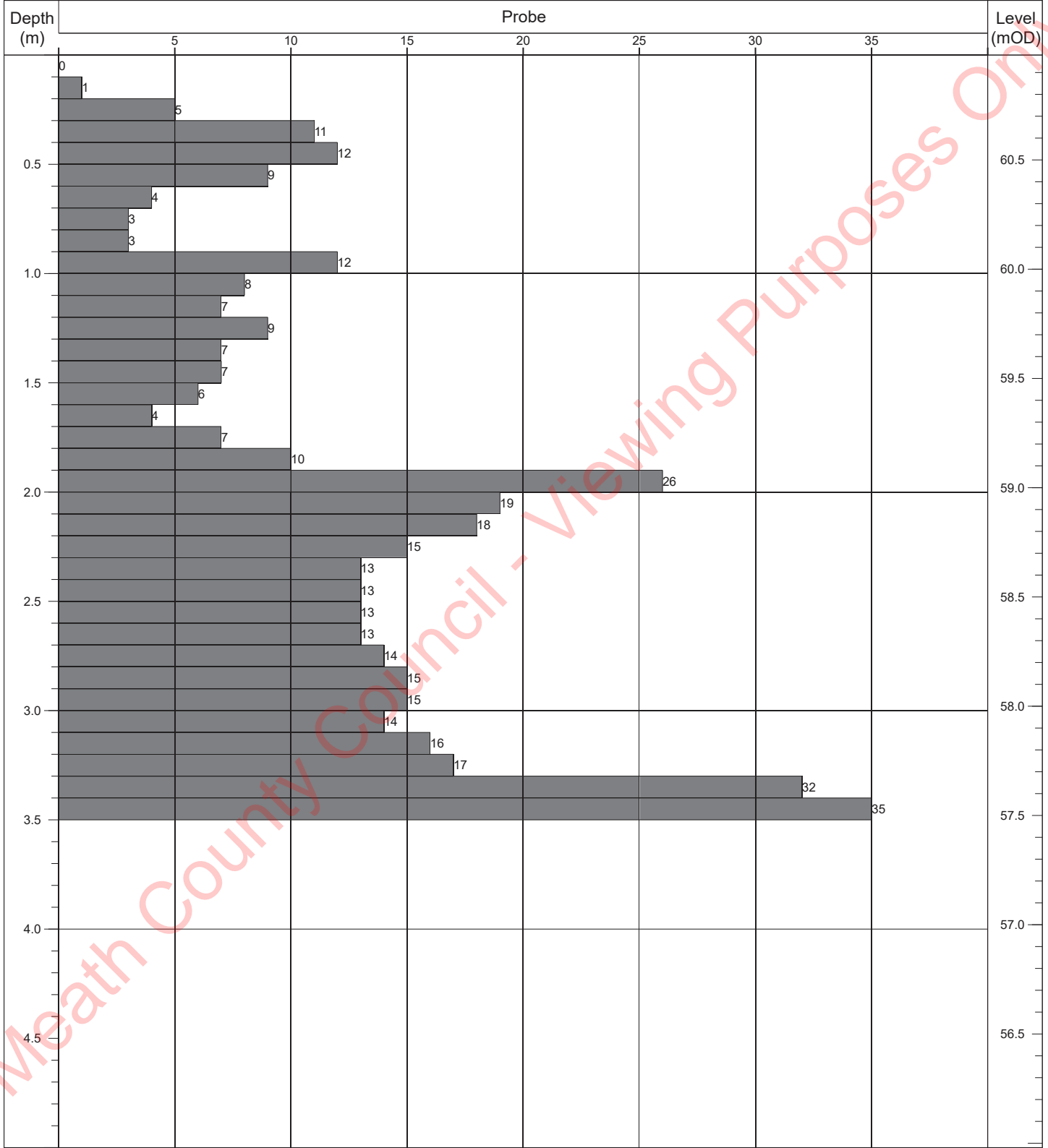
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP04</b>
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Contract:	Moygaddy	Easting:	694088.248	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739692.829	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	59.34	Scale:	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	

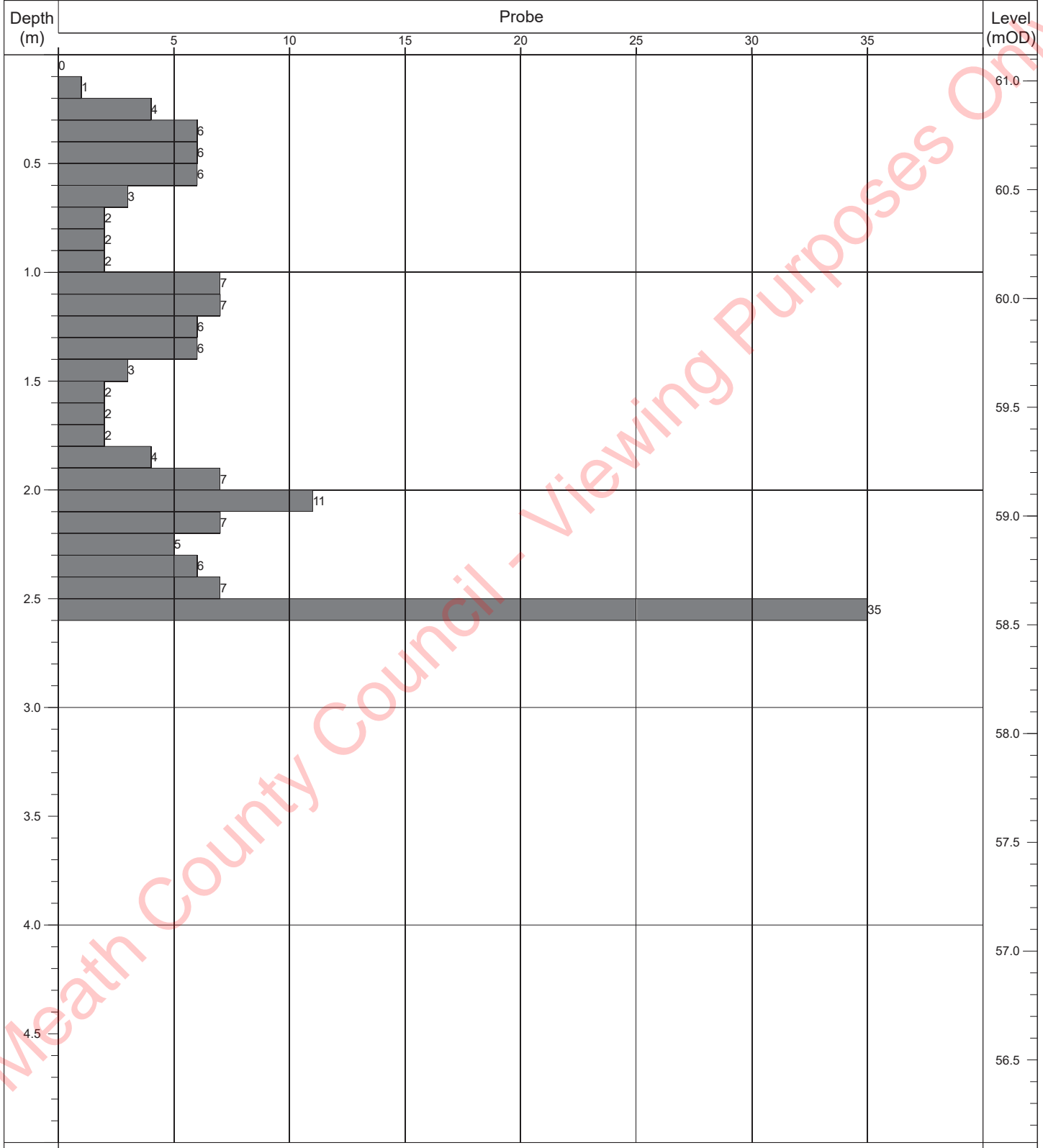
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP05</b>
Contract:	Moygaddy	Easting:	694187.716	Date Started: 22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739683.631	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	60.98	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

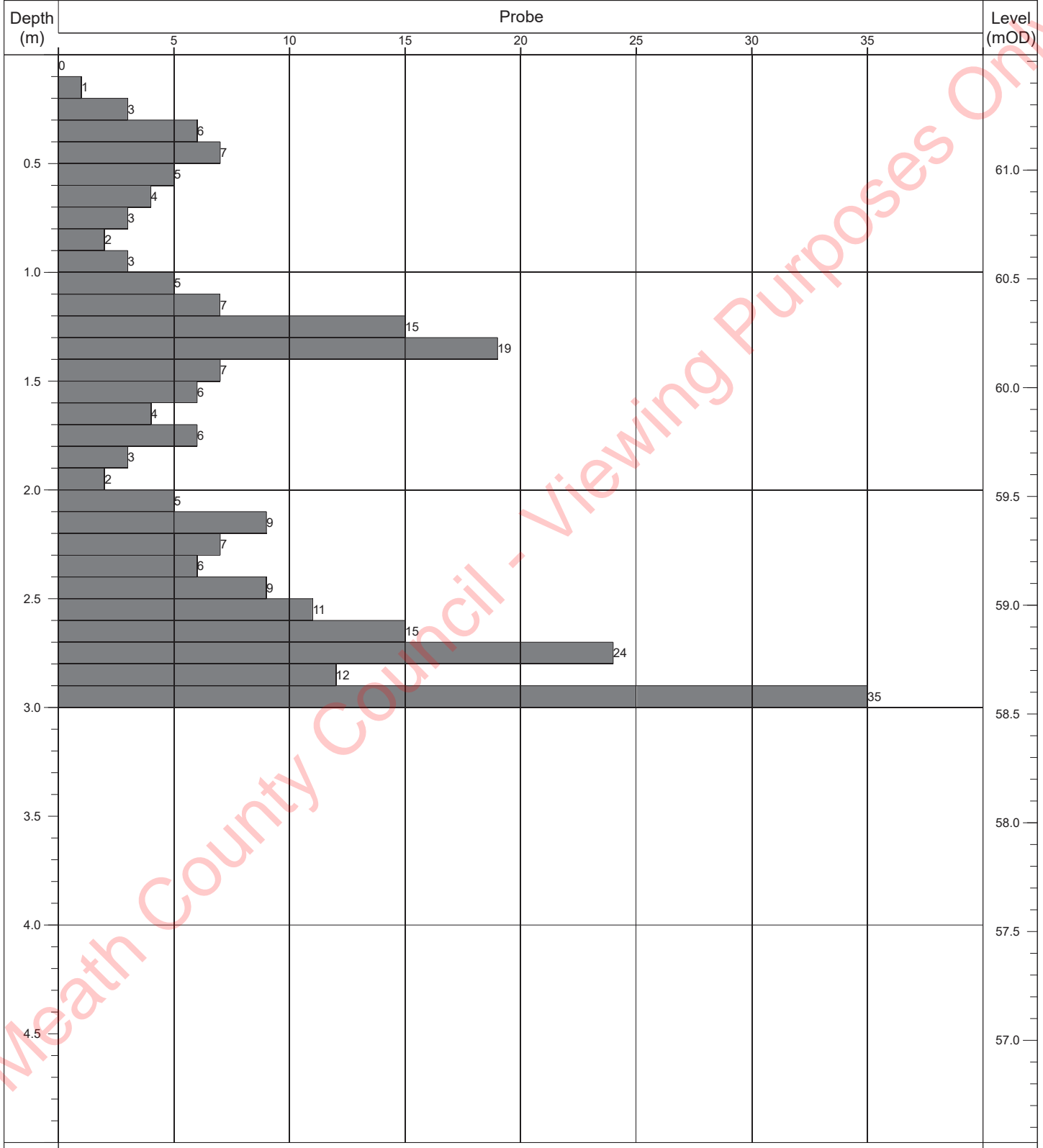
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP06</b>
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Contract:	Moygaddy	Easting:	694288.959	Date Started:	21/06/2021
Location:	Maynooth, Co. Meath	Northing:	739687.709	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	61.12	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



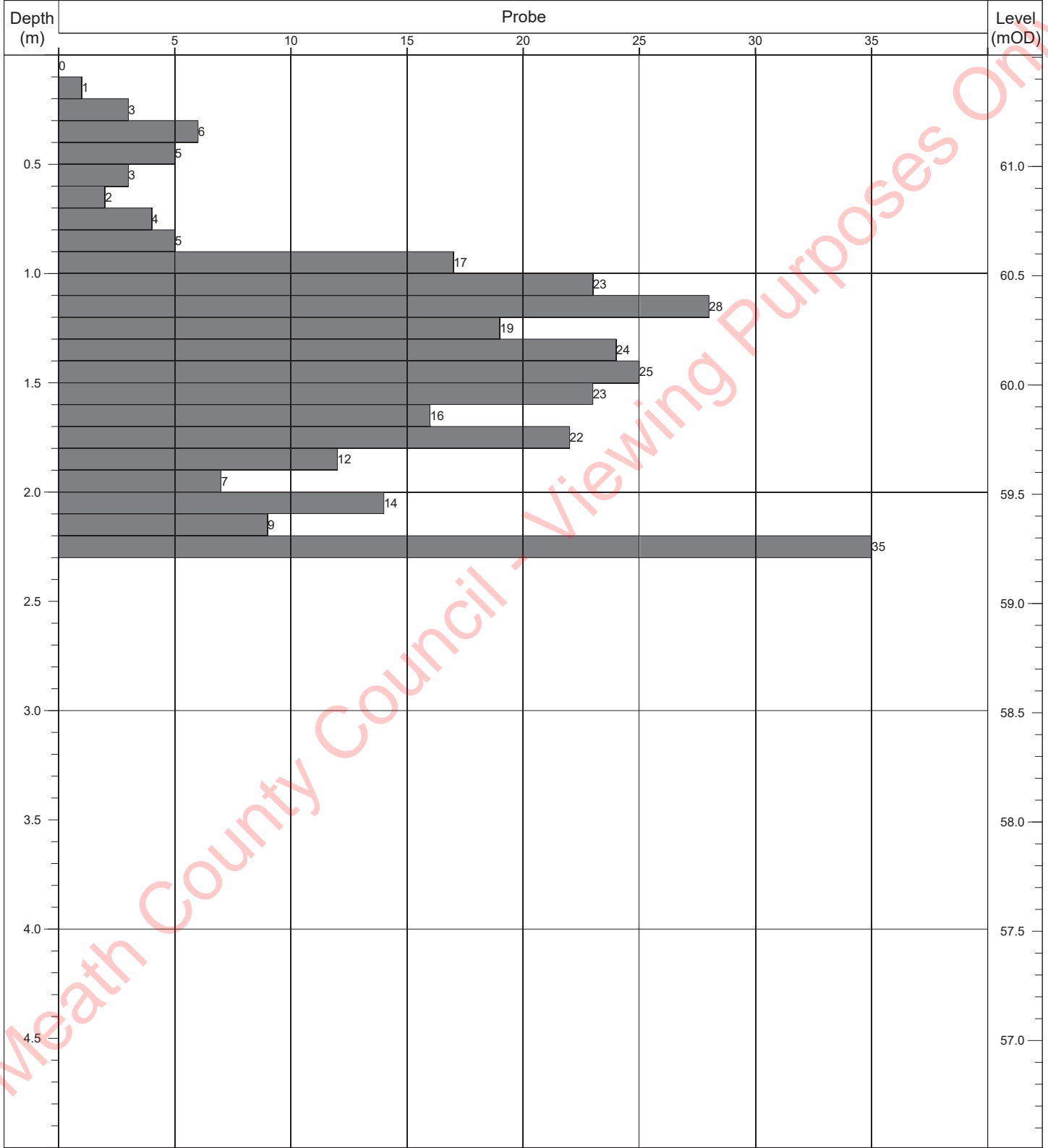
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.60m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP07</b>
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	

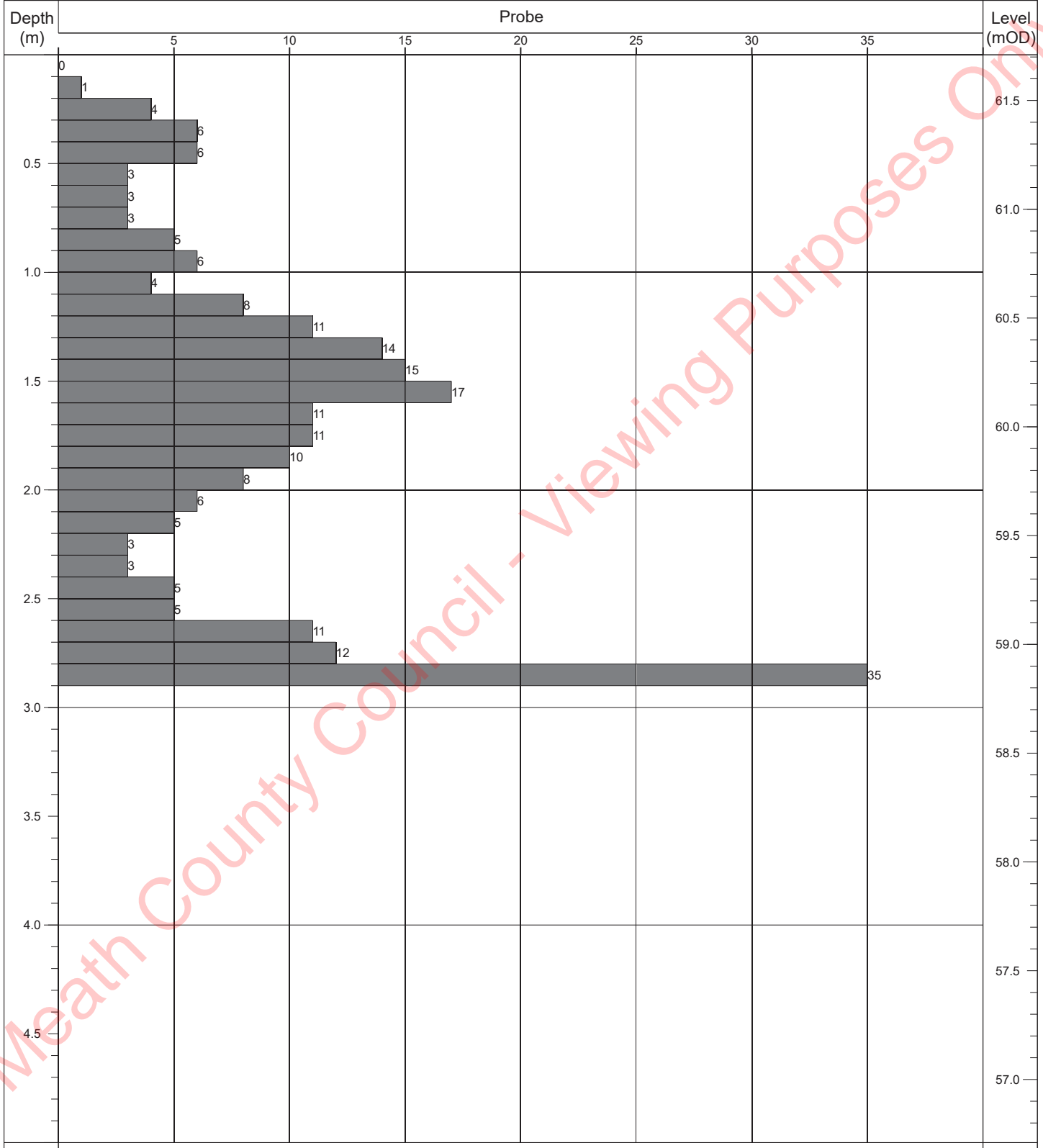
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP08</b>
Contract:	Moygaddy	Easting:	694489.069	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739686.527	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	61.51	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

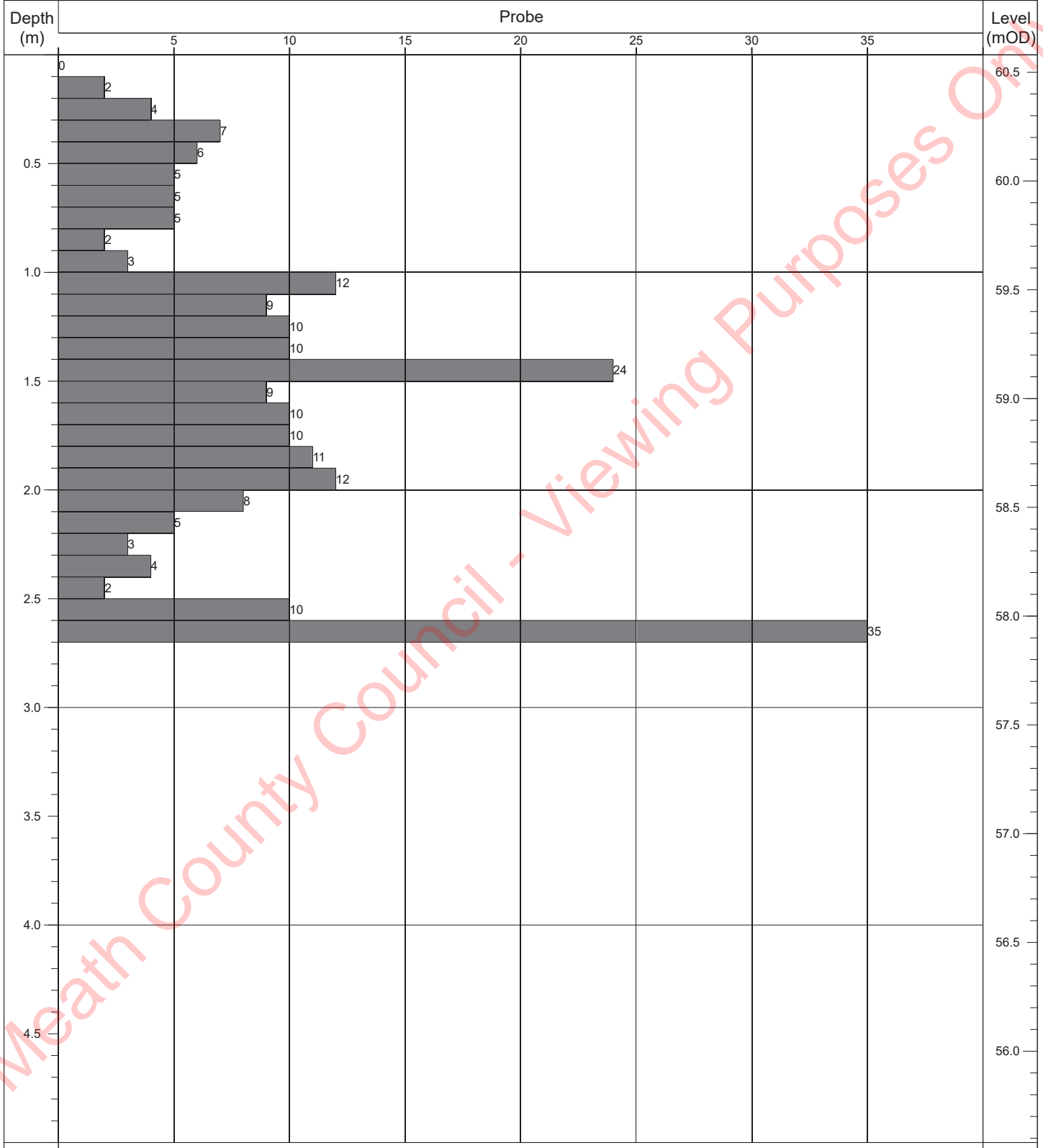


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP09</b>
Contract:	Moygaddy	Easting:	694590.817	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739686.475	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	61.71	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

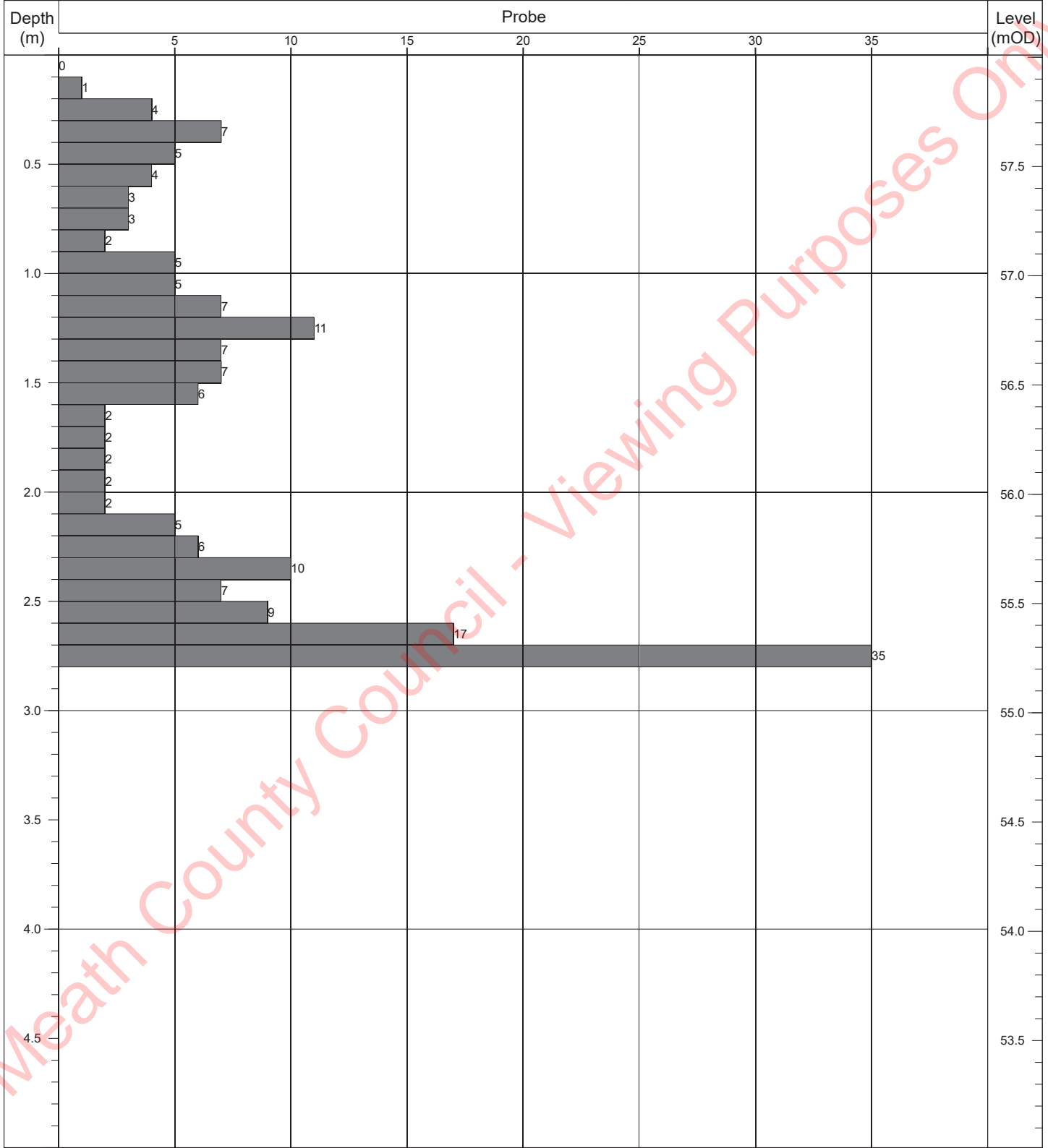
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP10</b>
Contract:	Moygaddy	Easting:	694693.928	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739687.423	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	60.58	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP11</b>
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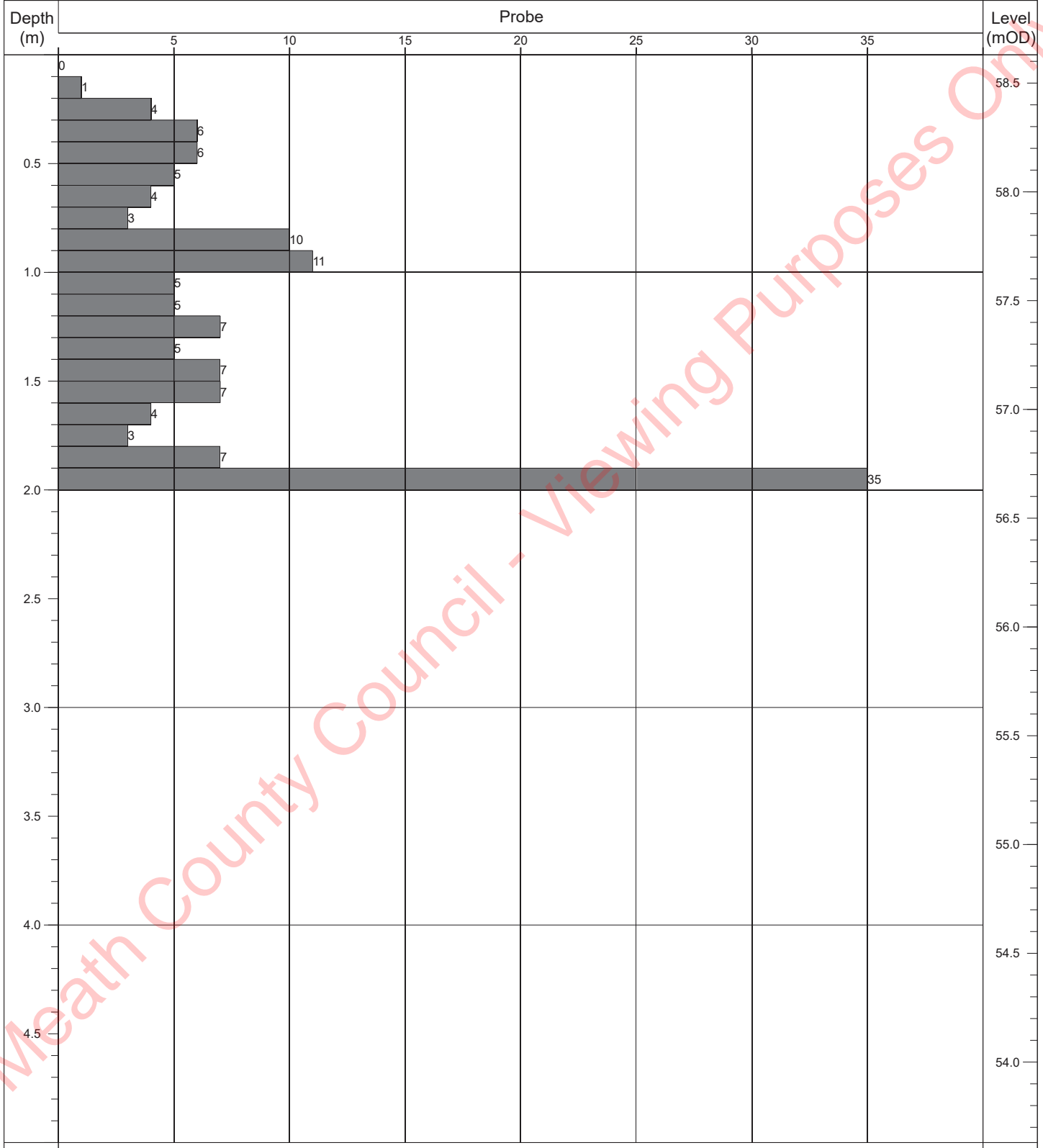
Contract:	Moygaddy	Easting:	693887.836	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739587.012	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.01	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1




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

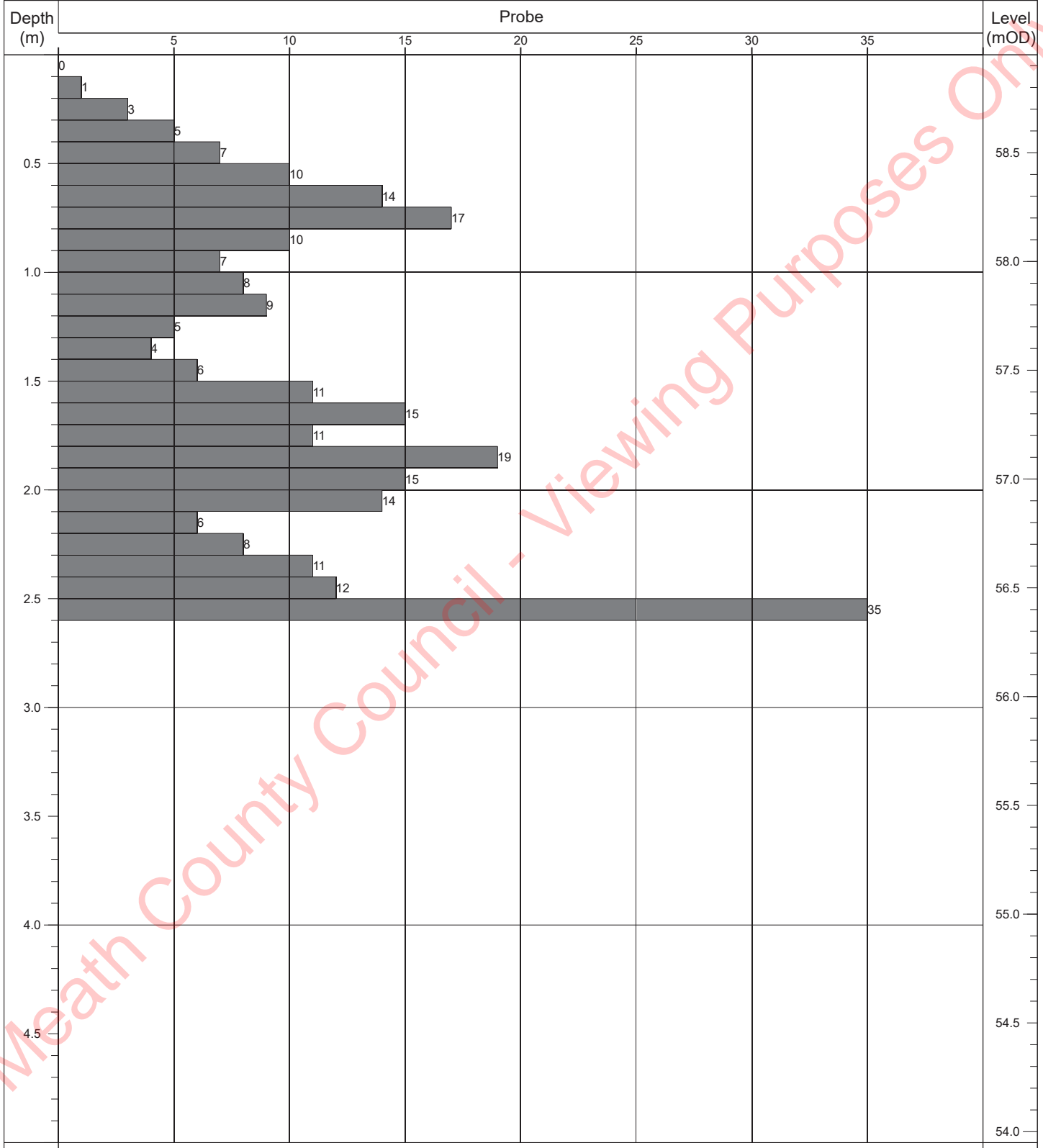
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP12</b>
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Contract:	Moygaddy	Easting:	693990.198	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739586.789	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.63	Scale:	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	<b>Dynamic Probe Log</b>			Probe No: <b>DP13</b>
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



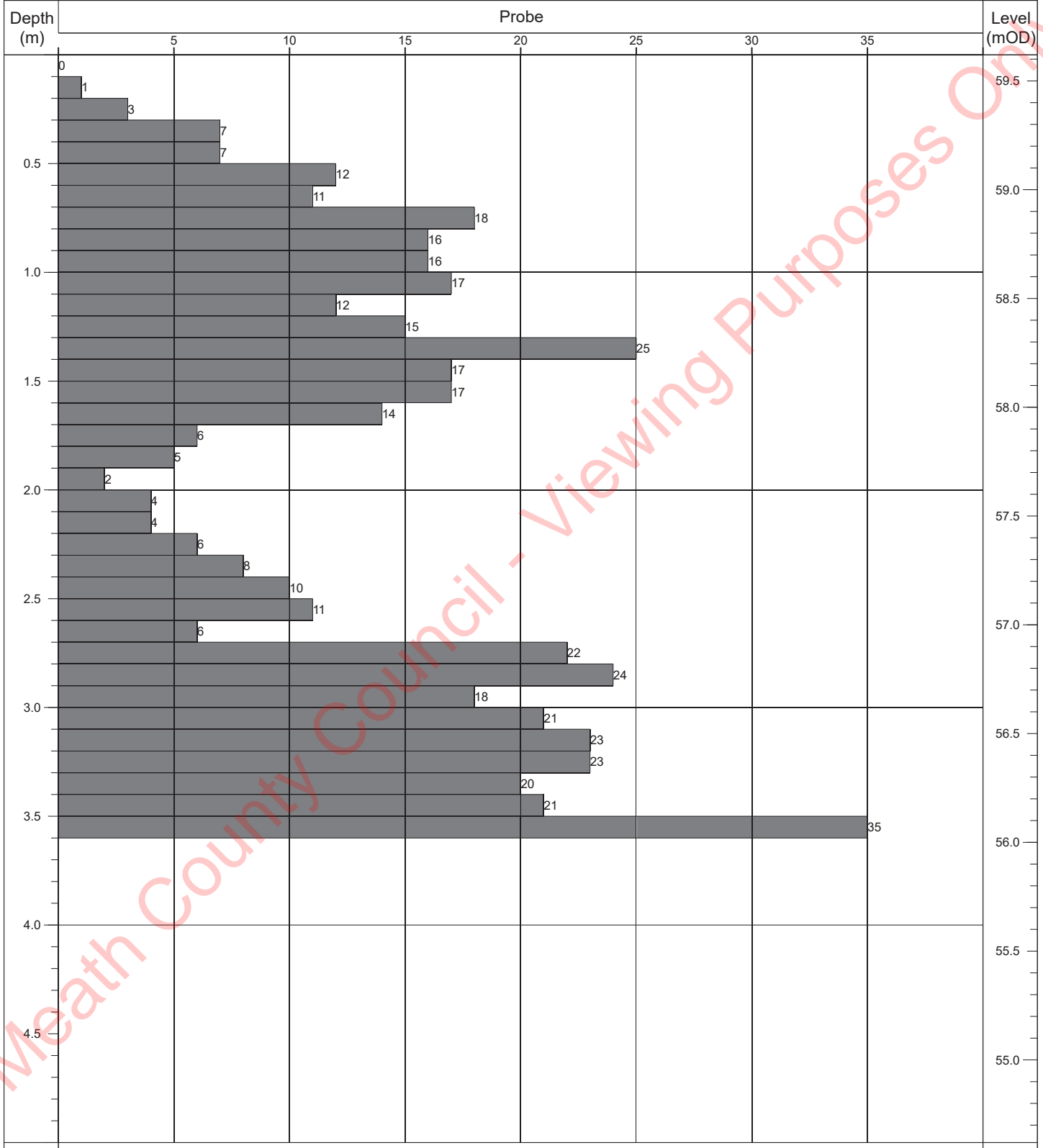
Meath County Council - Viewing Purposes Only!

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



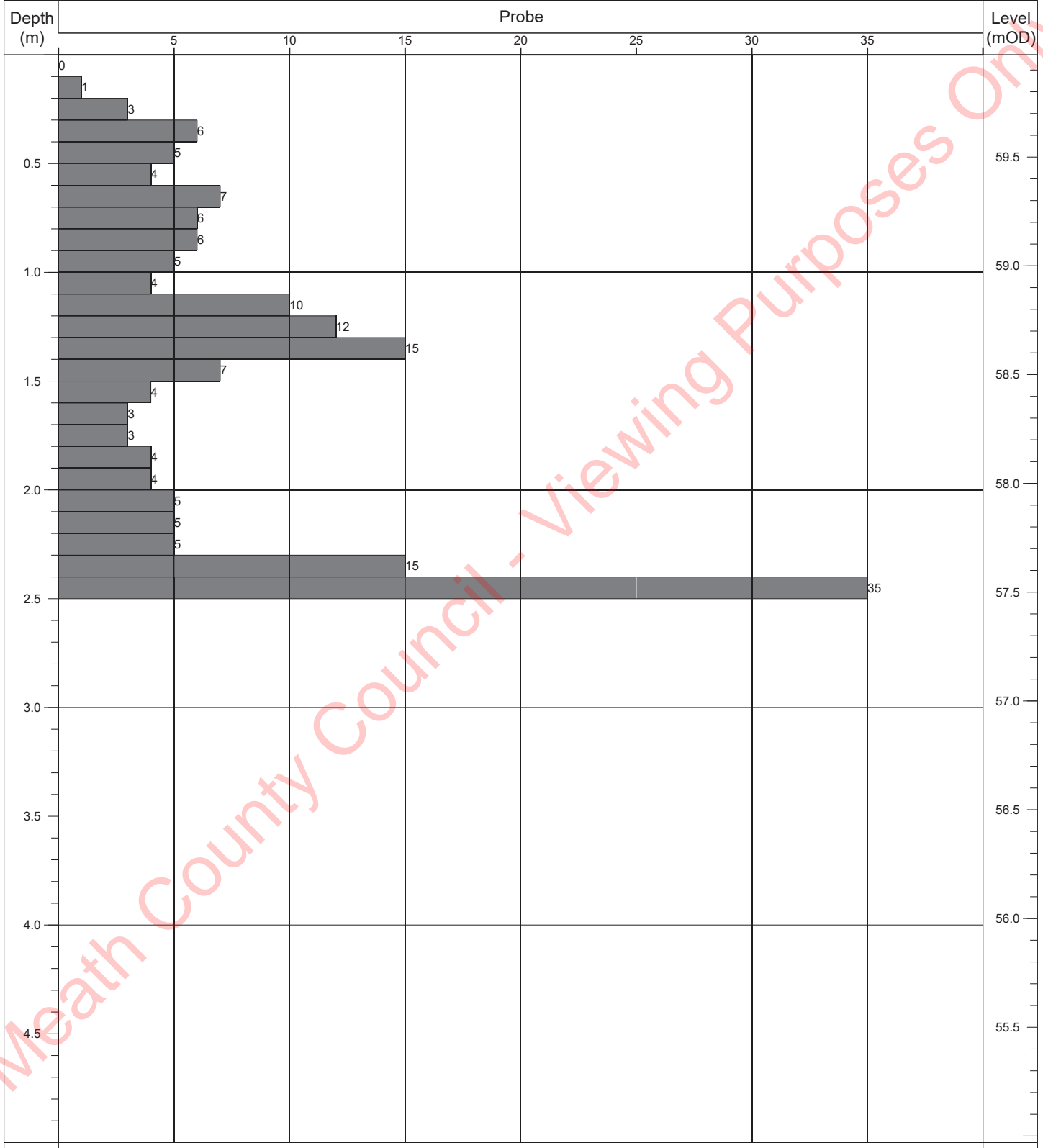
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP14</b>
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Contract:	Moygaddy	Easting:	694188.942	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739587.683	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	59.62	Scale: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



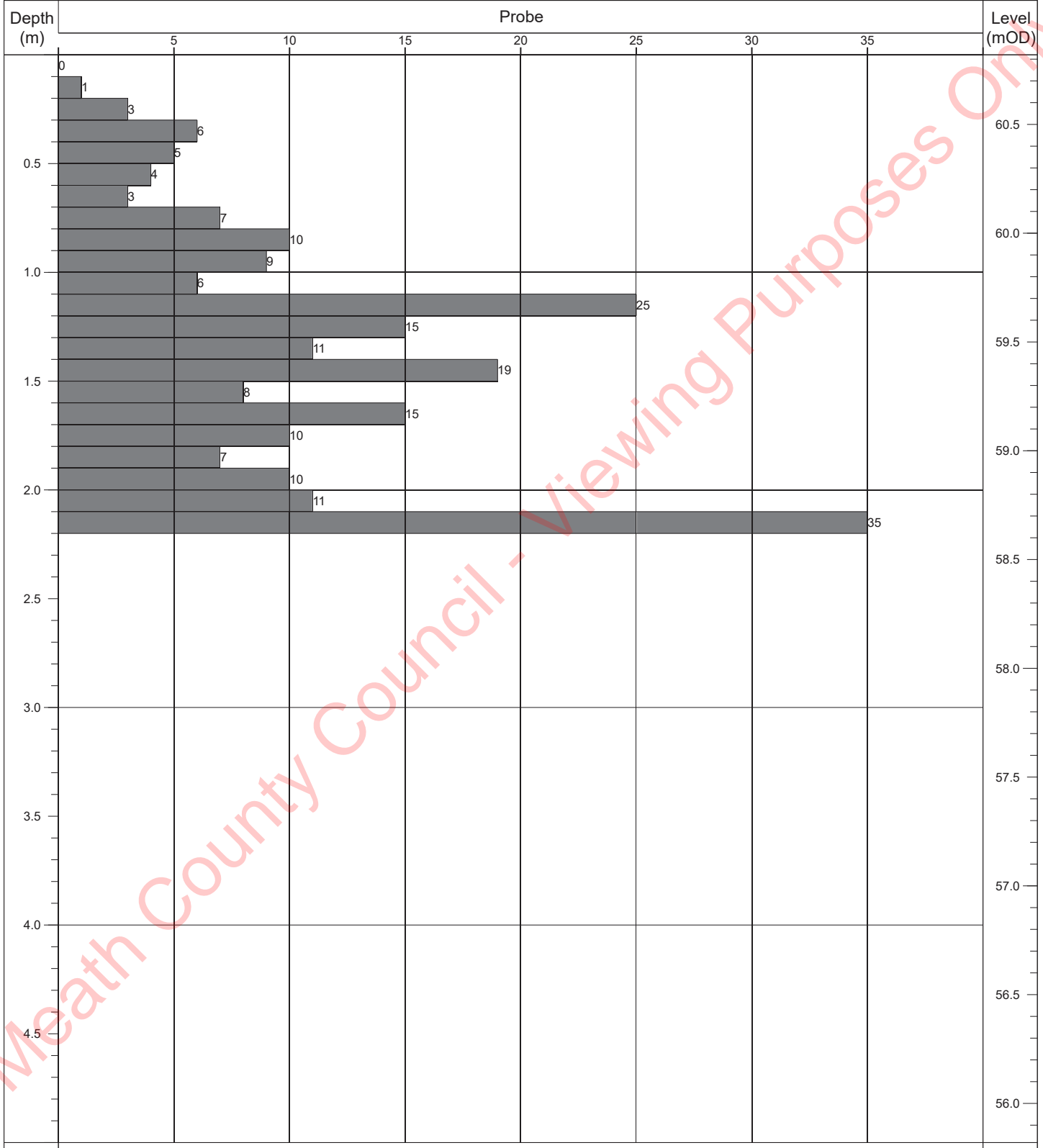
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.60m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP15</b>
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



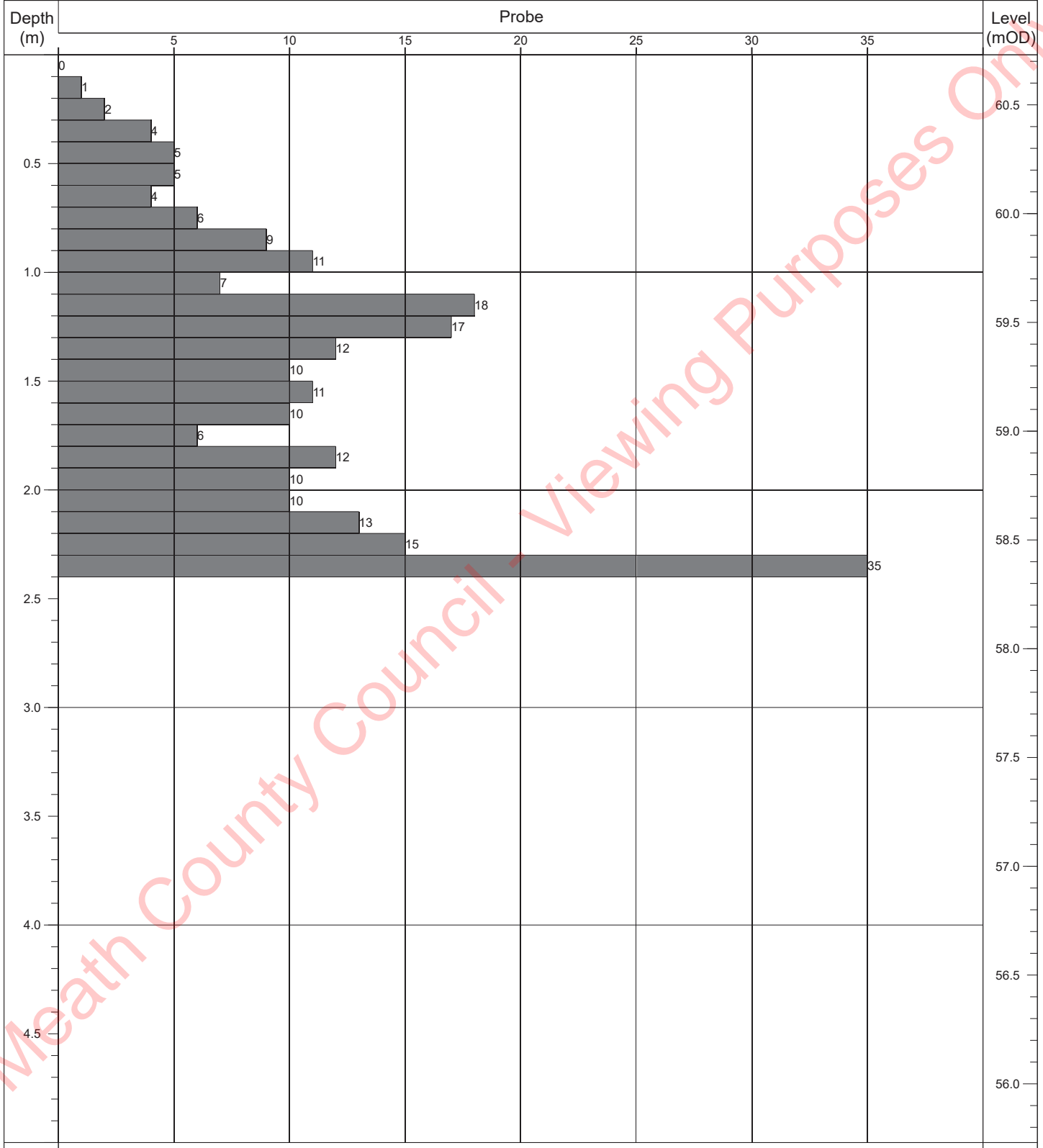
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.50m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP16</b>
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	

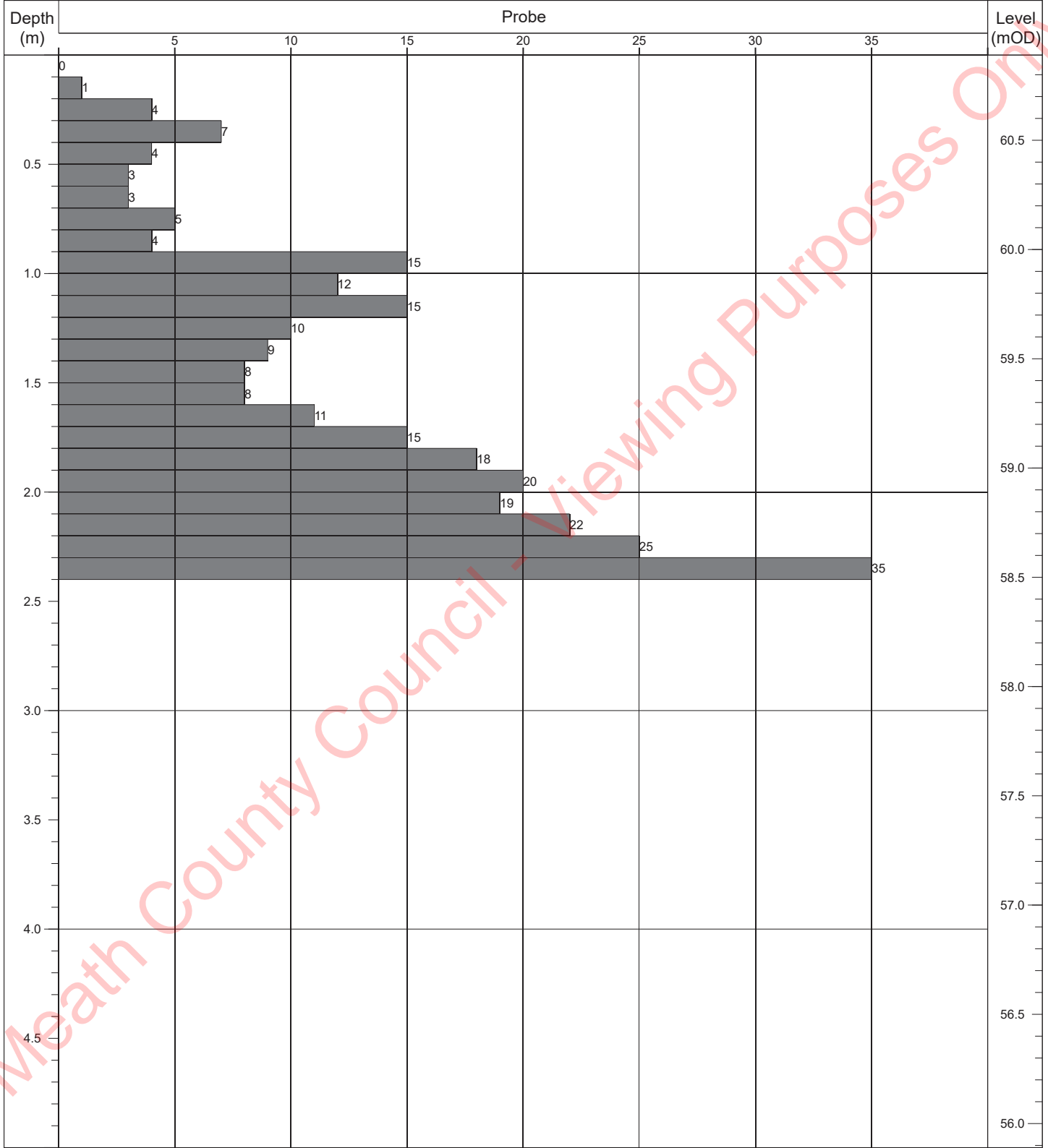
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP17</b>
Contract:	Moygaddy	Easting:	694589.076	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739587.354	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	60.73	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP18</b>
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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

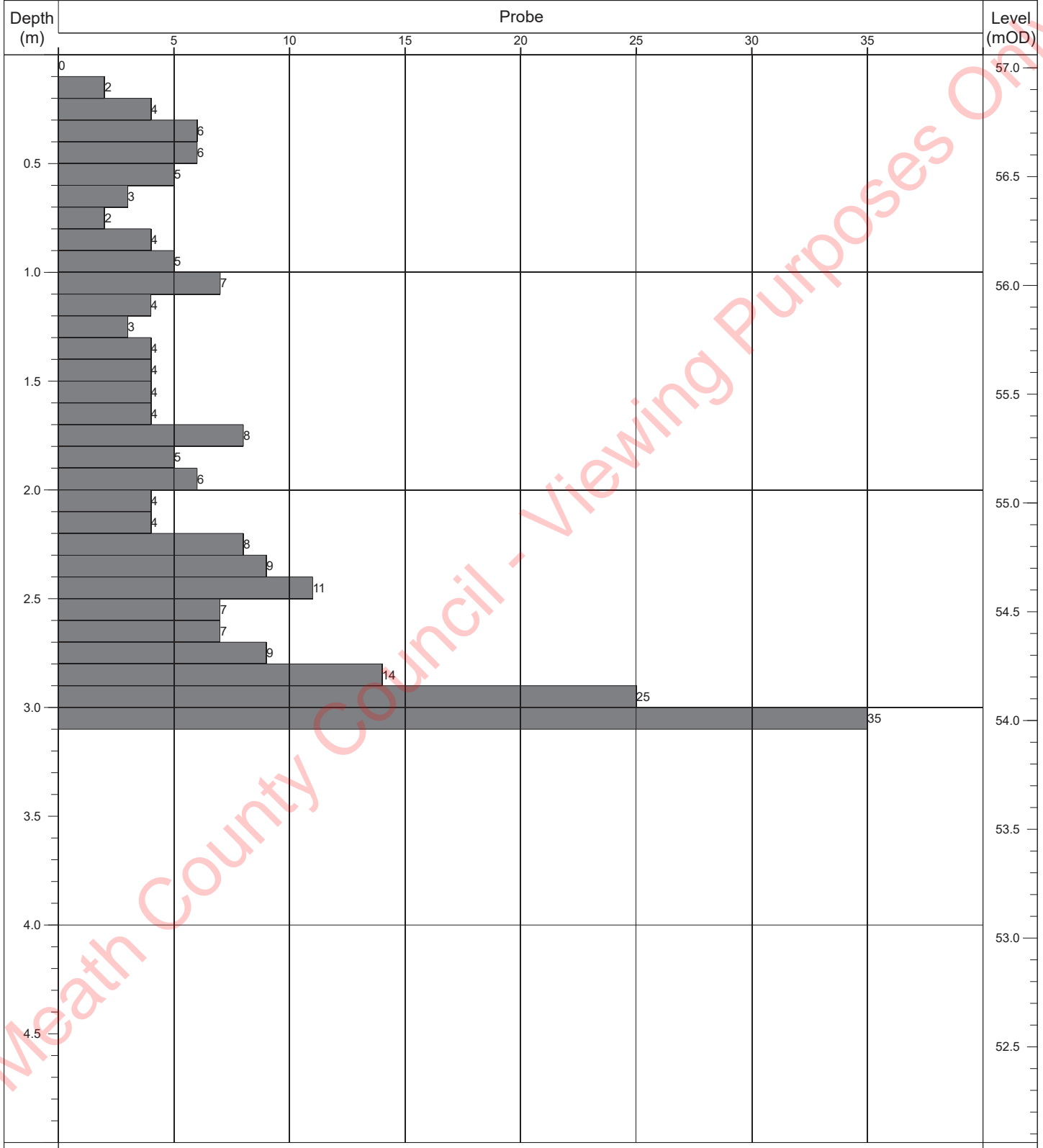



	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	



Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP19</b>
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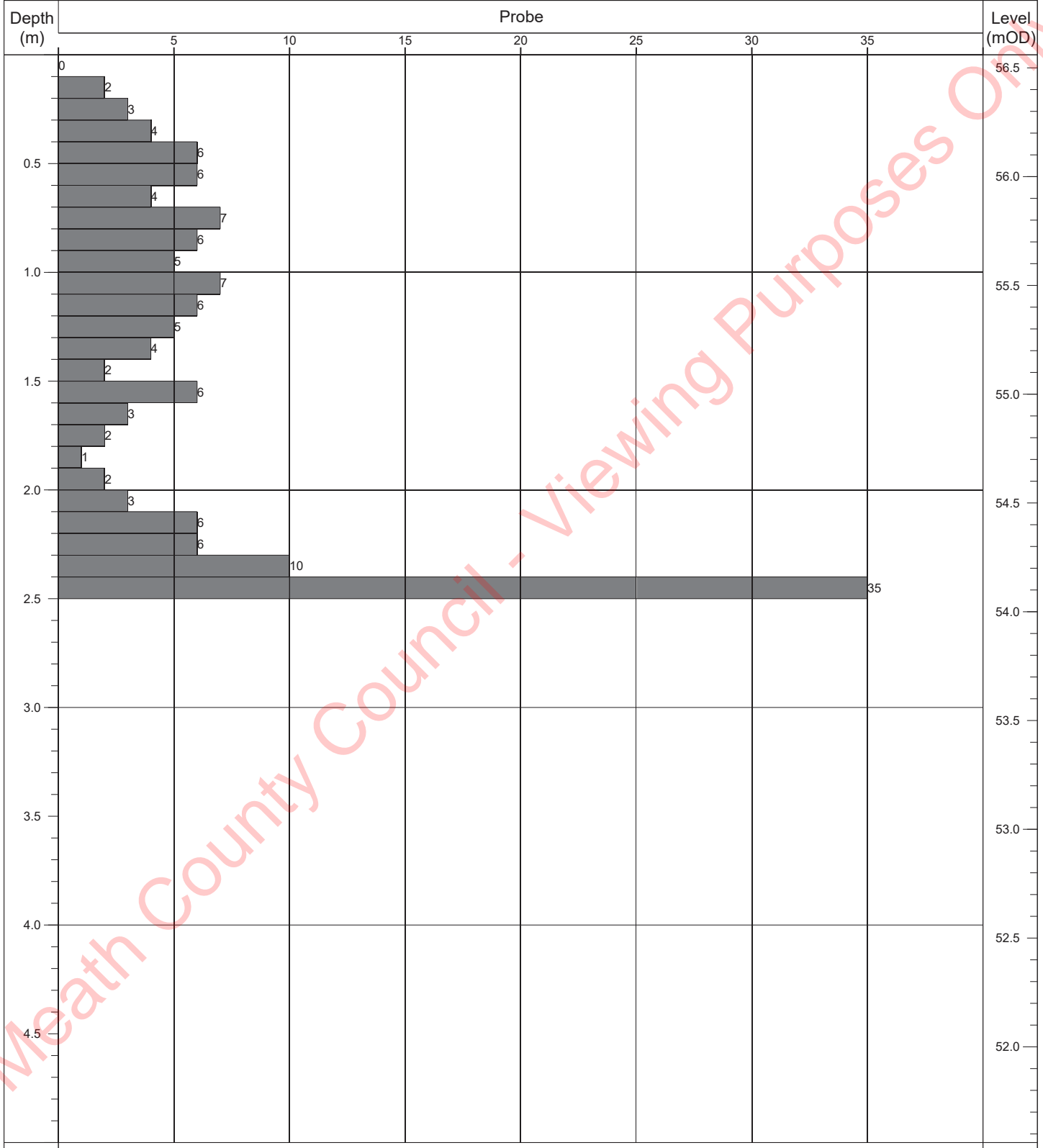
Contract:	Moygaddy	Easting:	693691.519	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739485.259	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	57.06	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP20</b>
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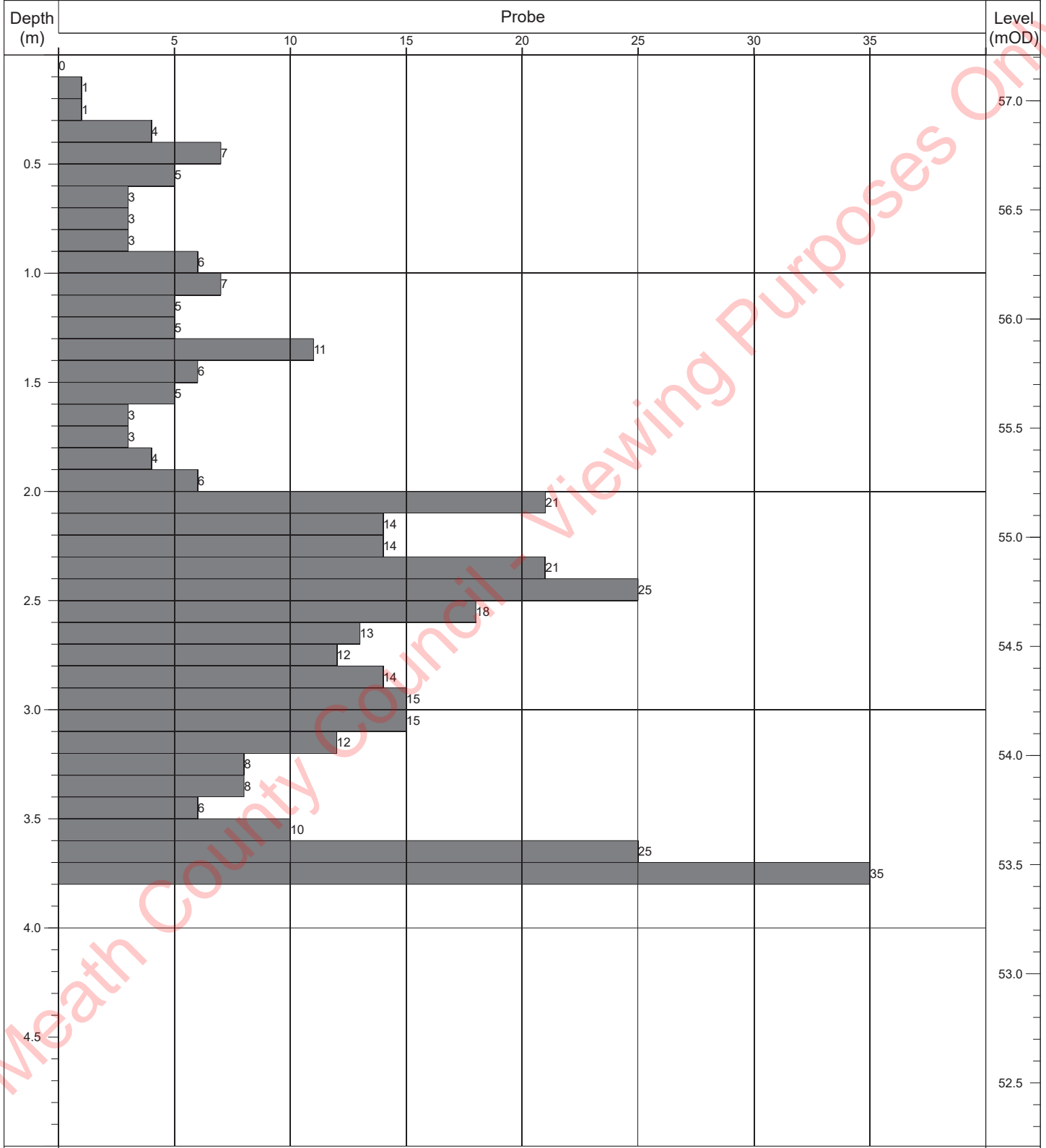
Contract:	Moygaddy	Easting:	693789.642	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739485.089	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.56	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP21</b>
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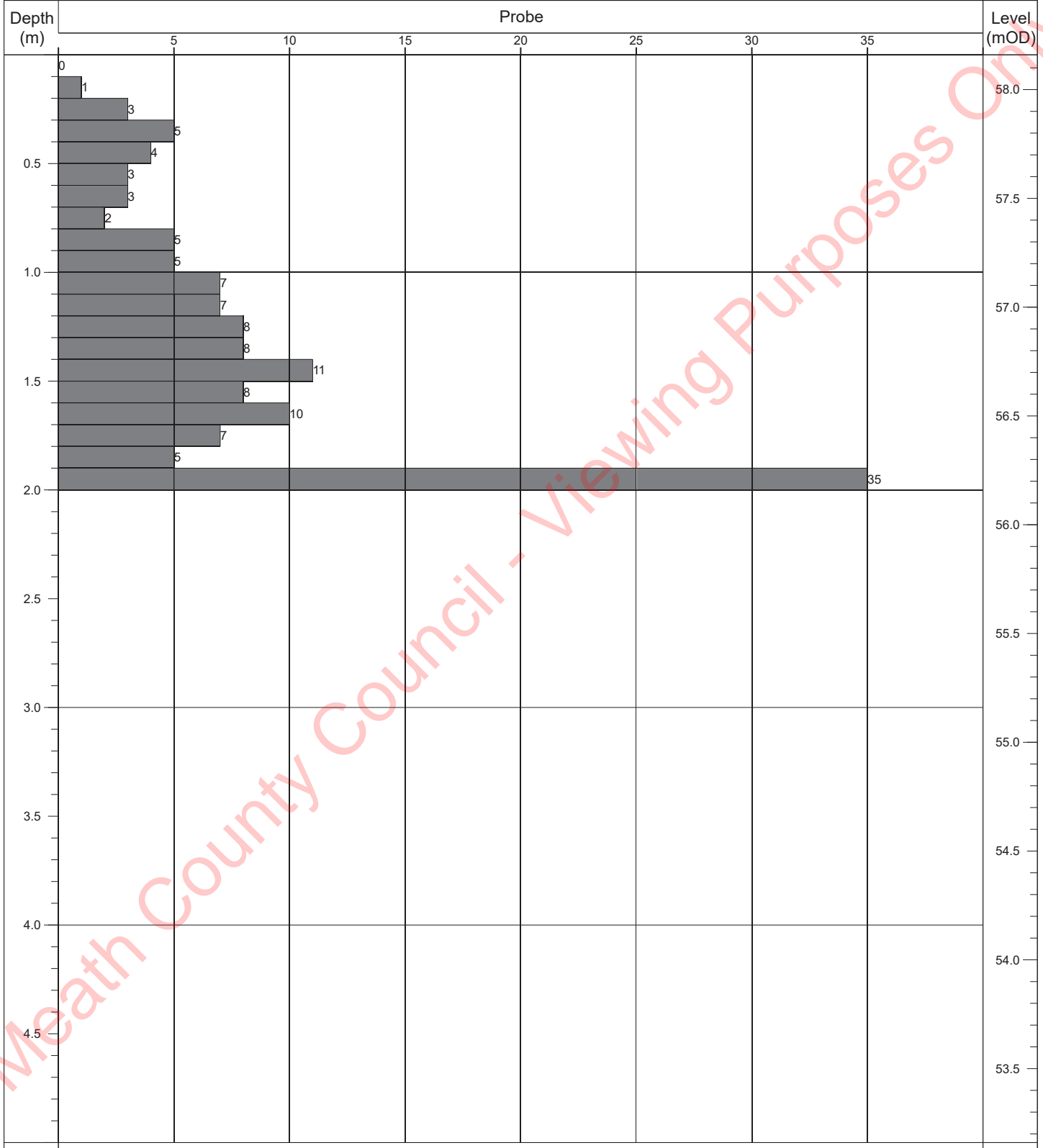
Contract:	Moygaddy	Easting:	693889.602	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739486.389	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	57.21	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

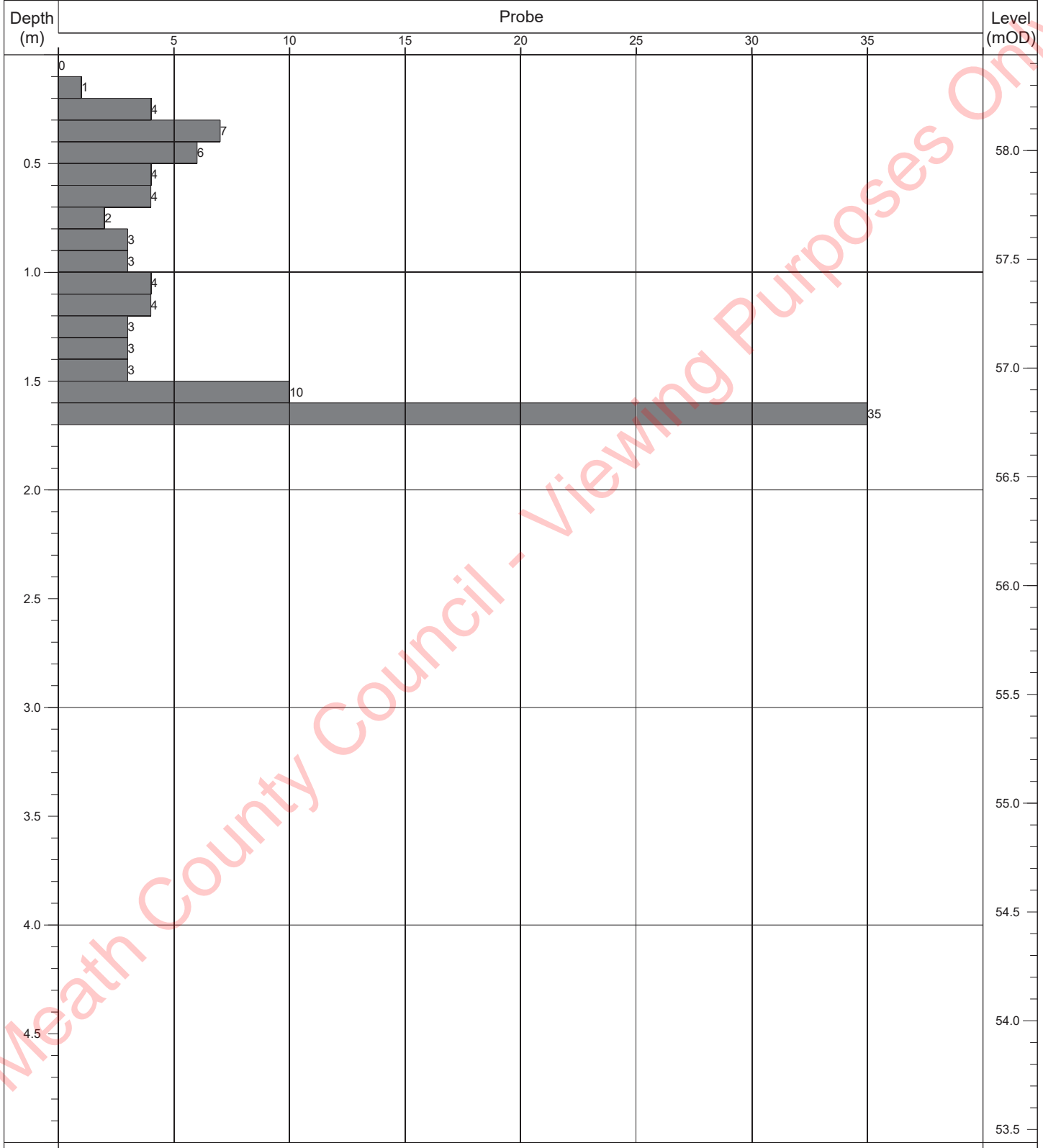
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP22</b>
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Contract:	Moygaddy	Easting:	693990.017	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739487.250	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.16	Scale:	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	

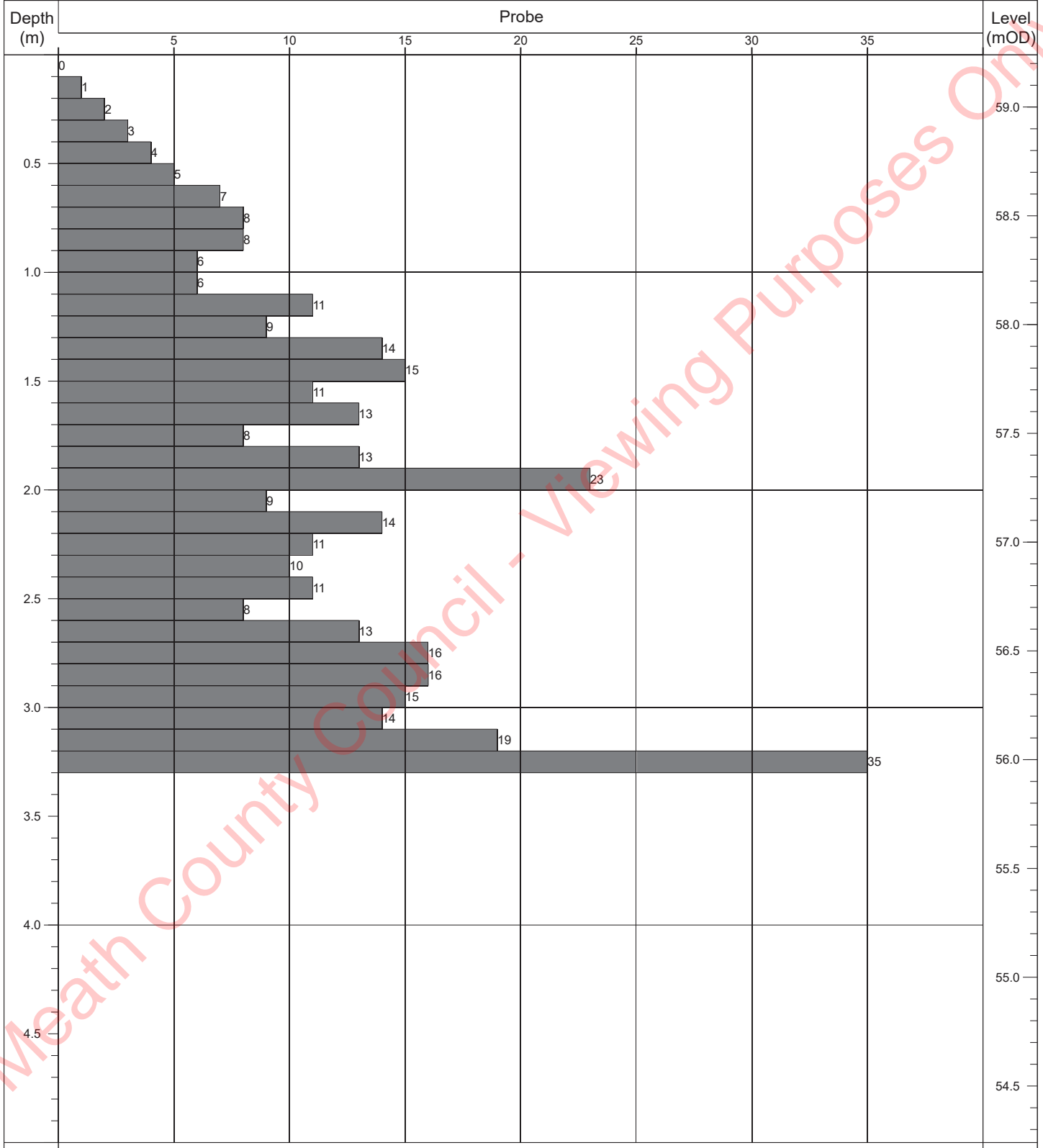
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP23</b>
Contract:	Moygaddy	Easting:	694089.764	Date Started: 22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739487.208	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.44	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



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

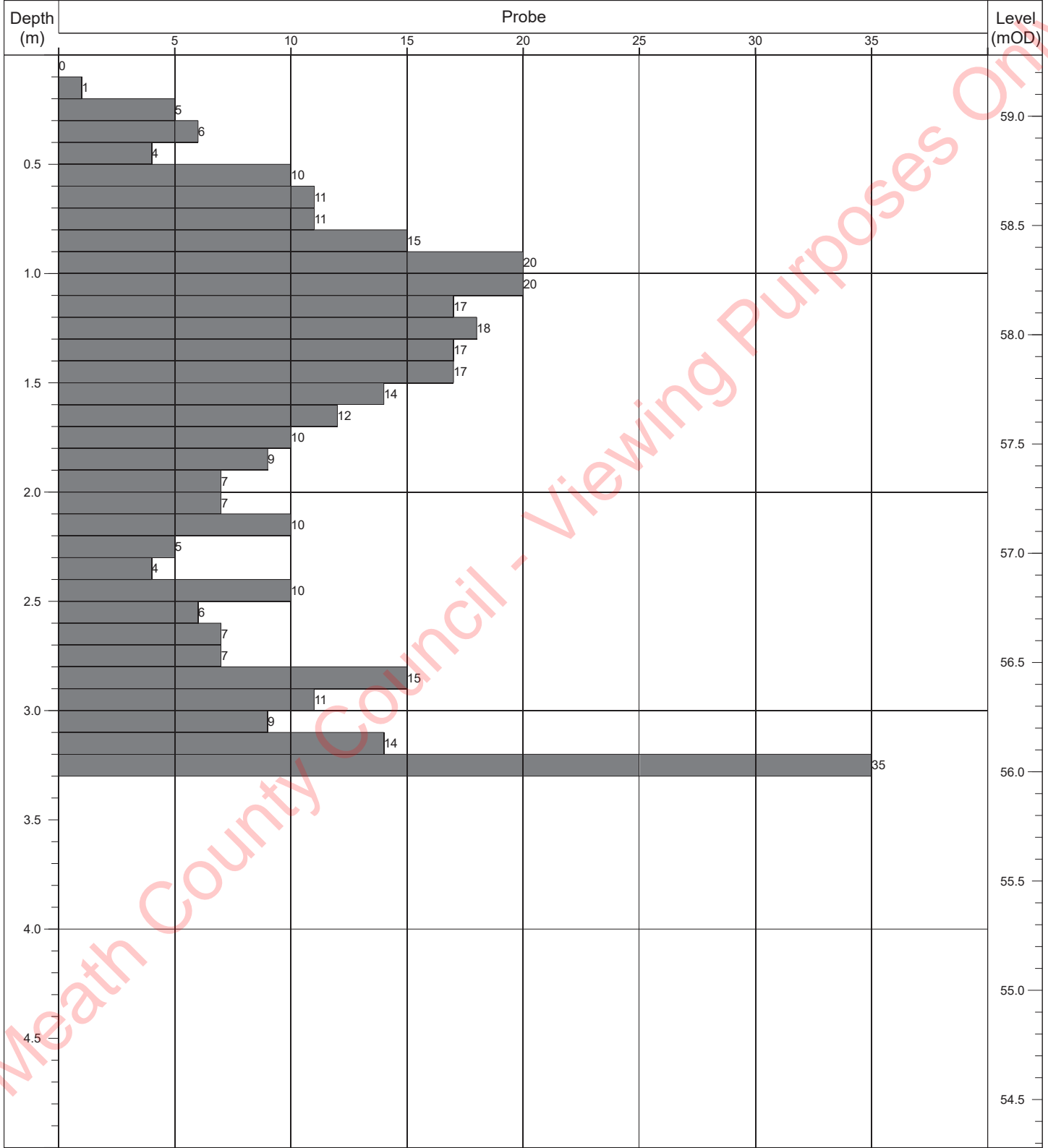


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP24</b>
Contract:	Moygaddy	Easting:	694198.133	Date Started: 22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739492.619	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	59.24	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



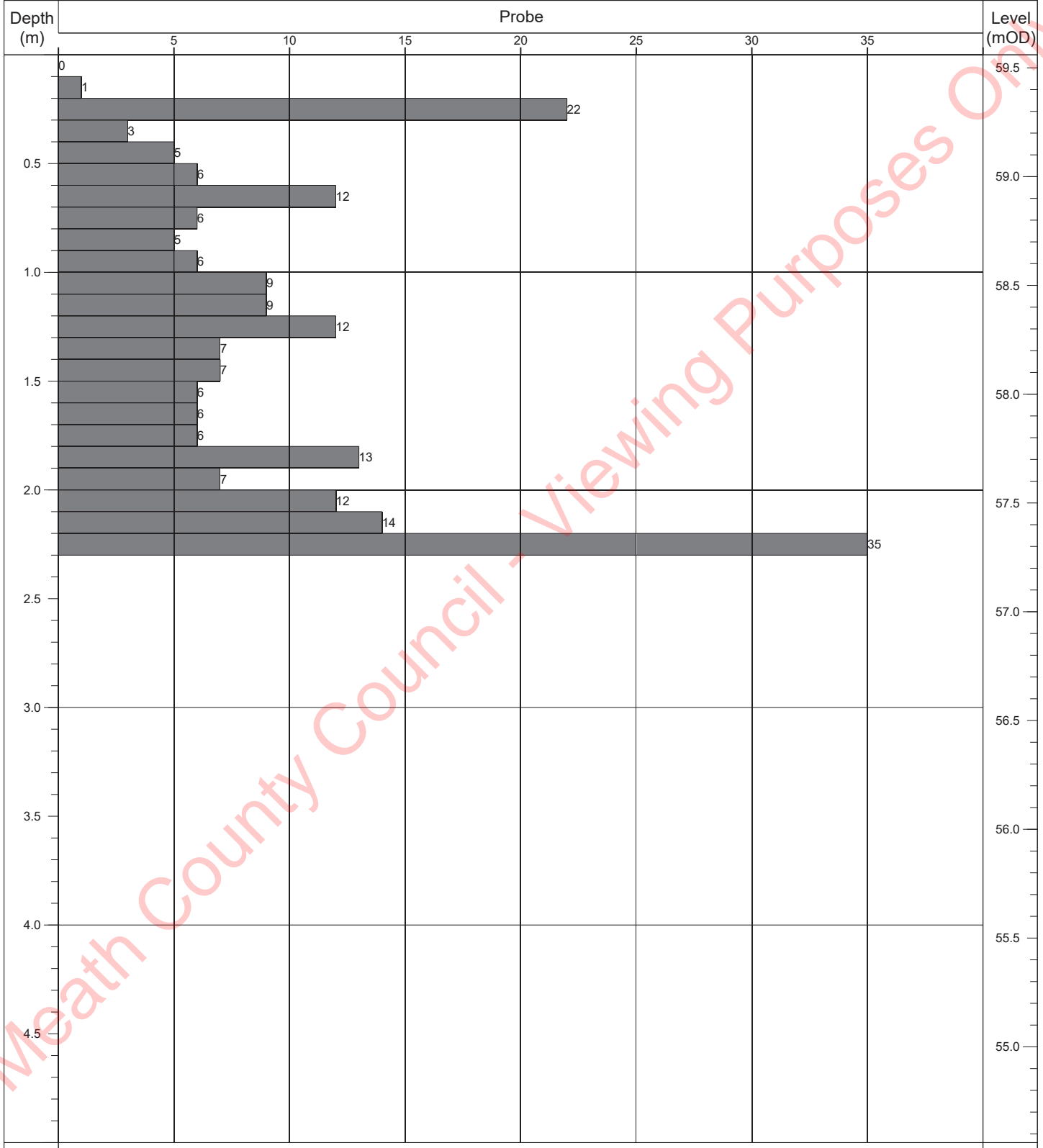
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.30m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP25</b>
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	

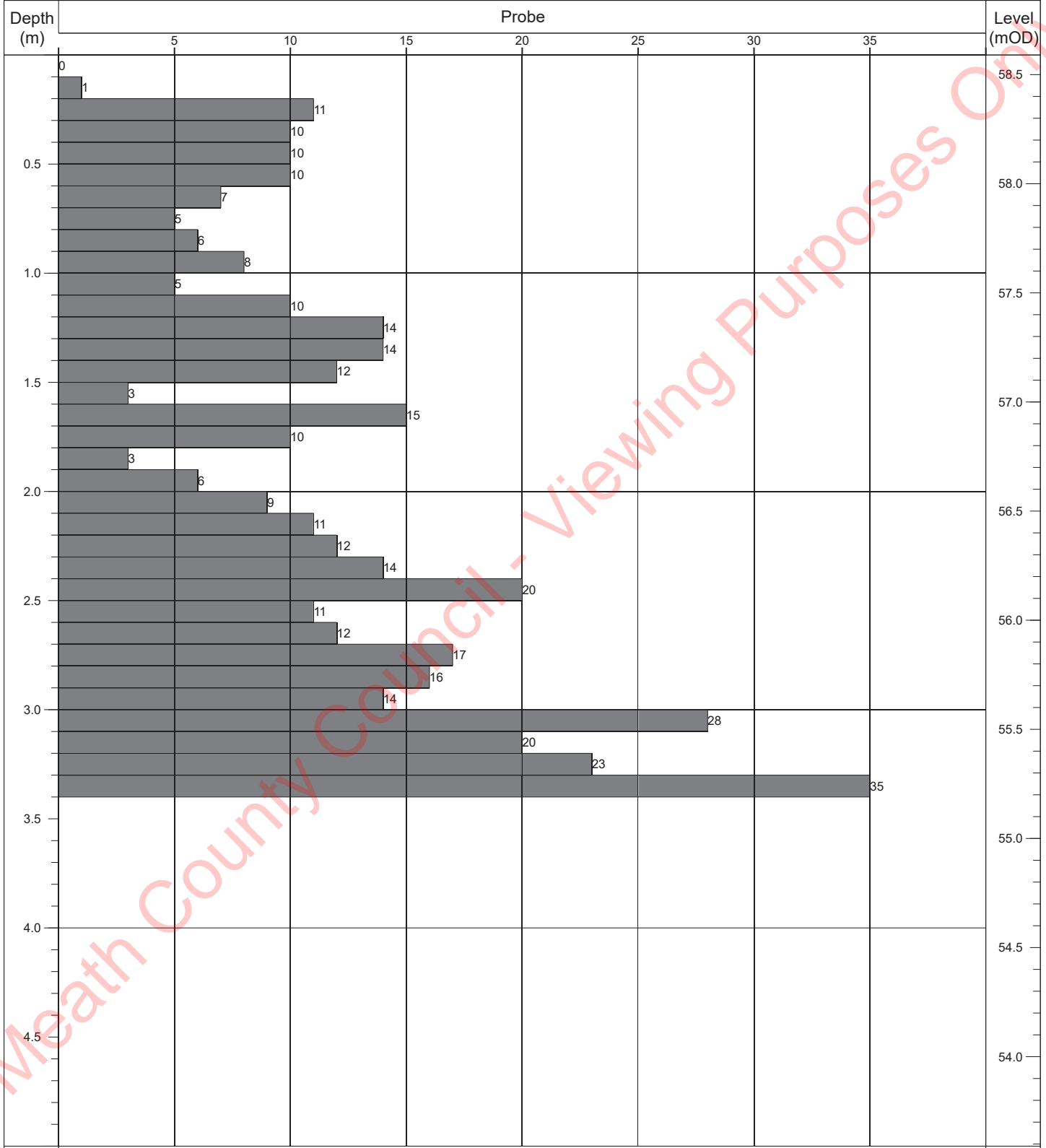
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP26</b>
Contract:	Moygaddy	Easting:	694489.024	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739485.194	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	59.56	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

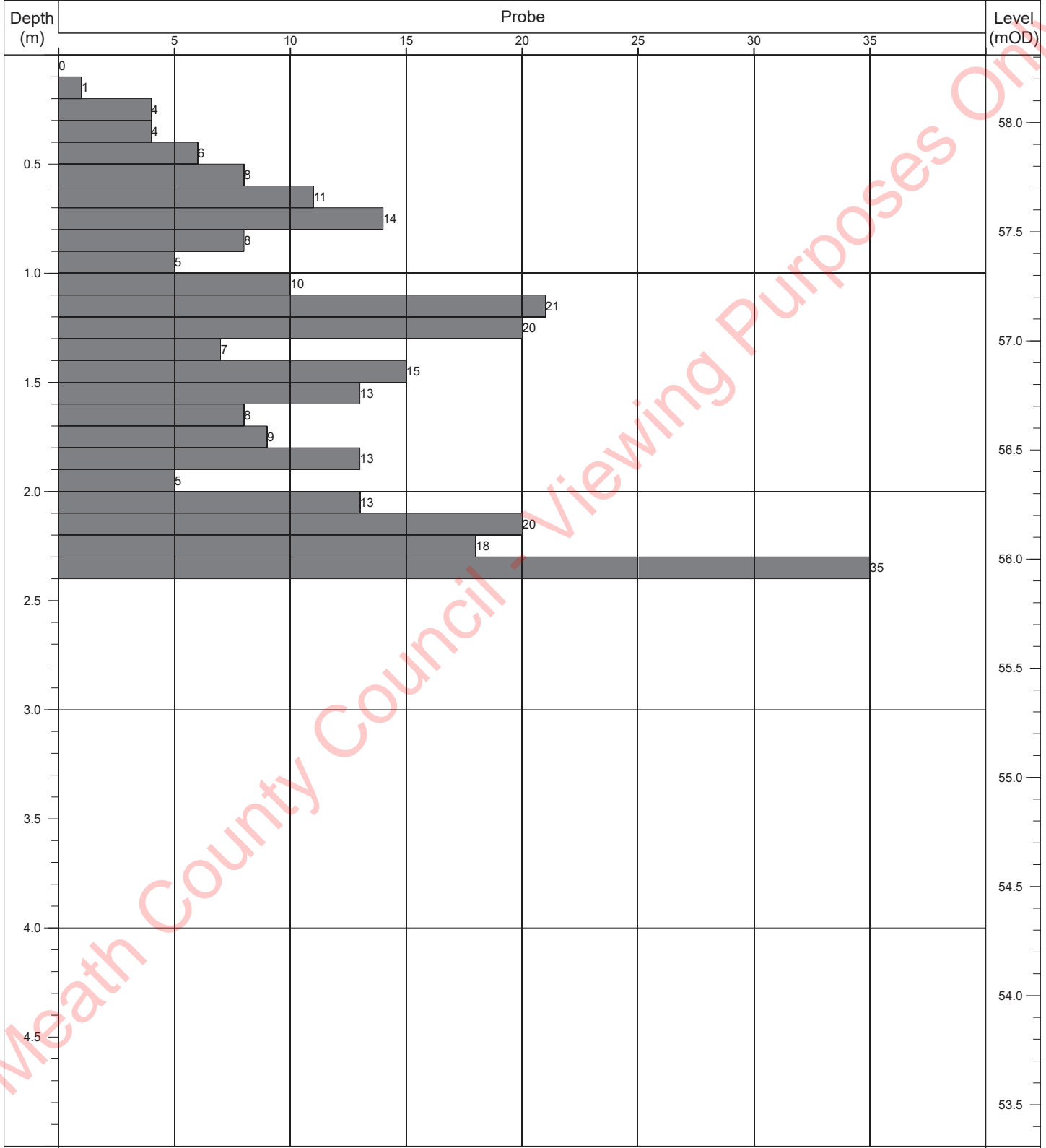
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP27</b>
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Contract:	Moygaddy	Easting:	694586.781	Date Started:	24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739491.852	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.59	Scale:	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	

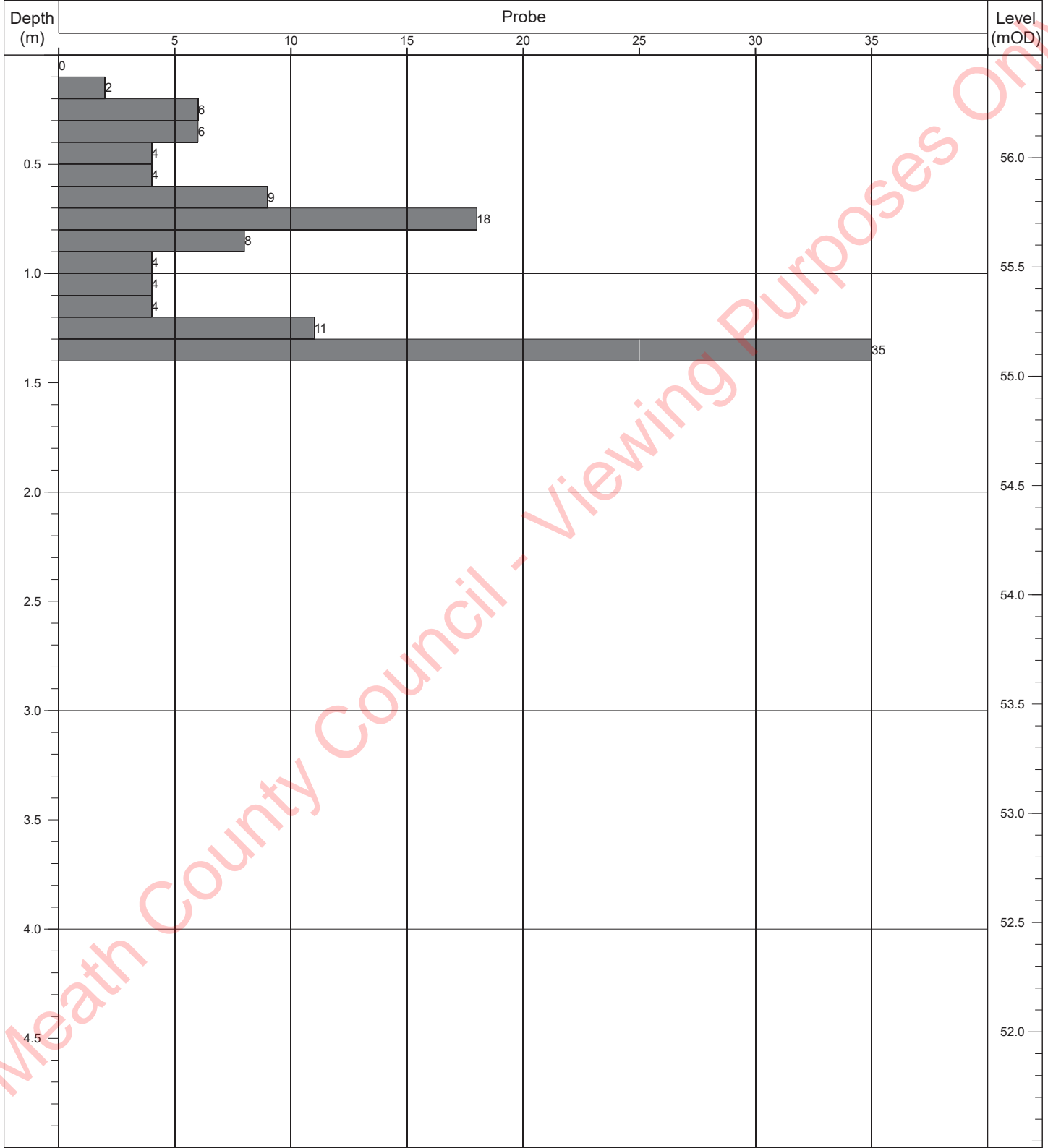
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP28</b>
Contract:	Moygaddy	Easting:	694688.953	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739488.632	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.31	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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



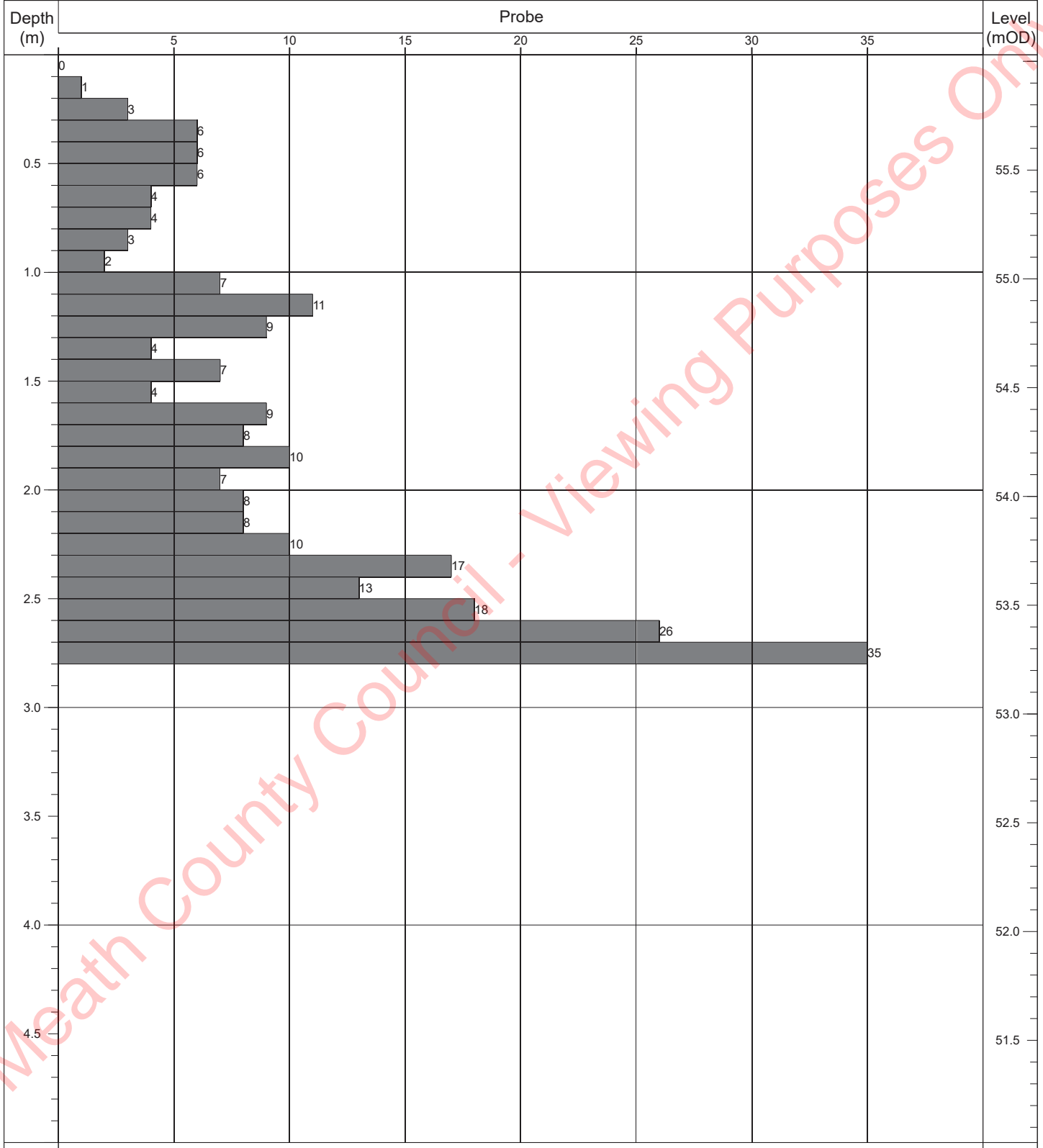
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP29</b>
Contract:	Moygaddy	Easting:	694780.802	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739491.934	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	56.47	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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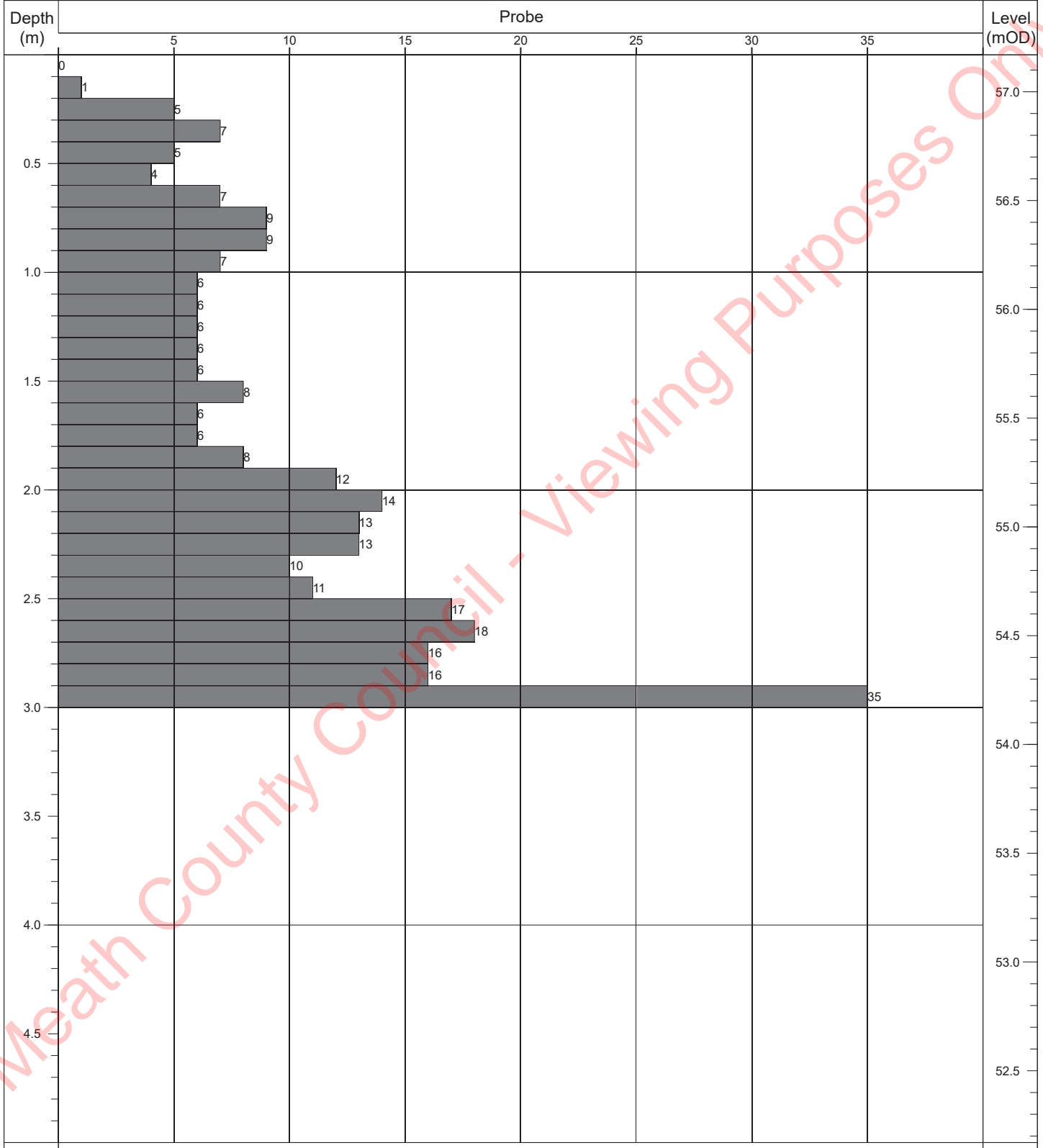
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	1.40m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP30</b>
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



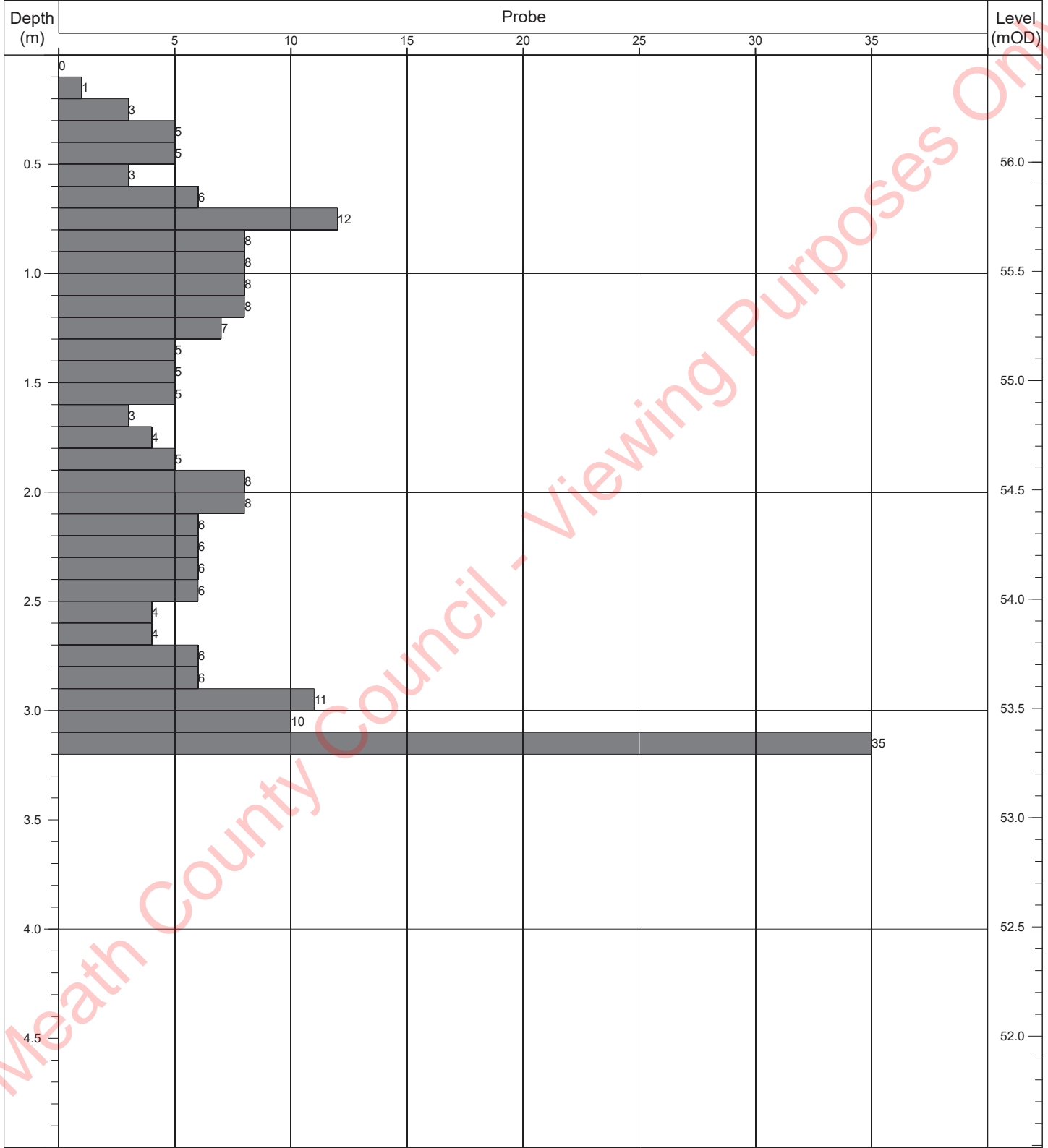
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.80m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP31</b>
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	

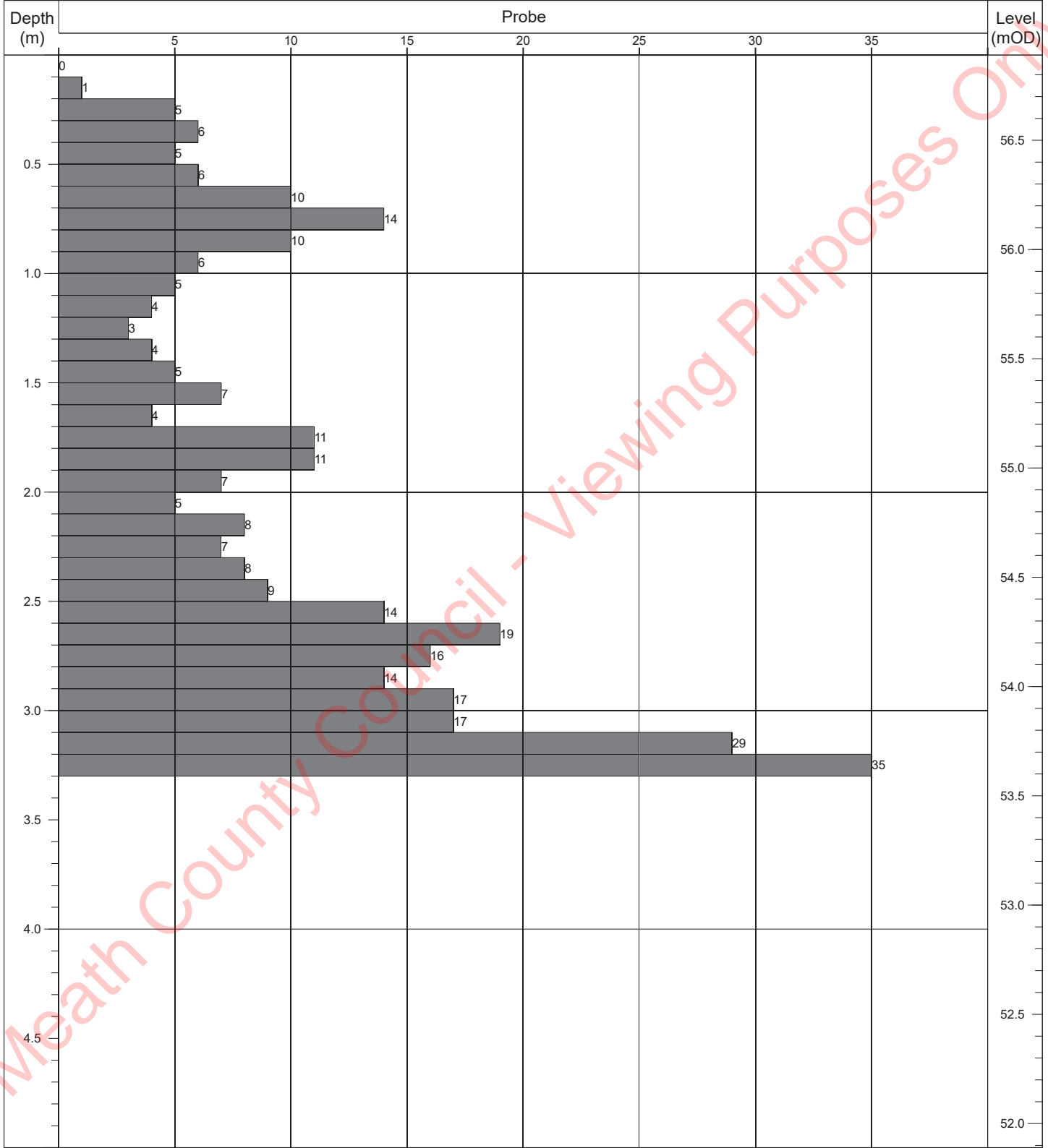
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP32</b>
Contract:	Moygaddy	Easting:	693787.843	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739388.255	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	56.49	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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




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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP33</b>
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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

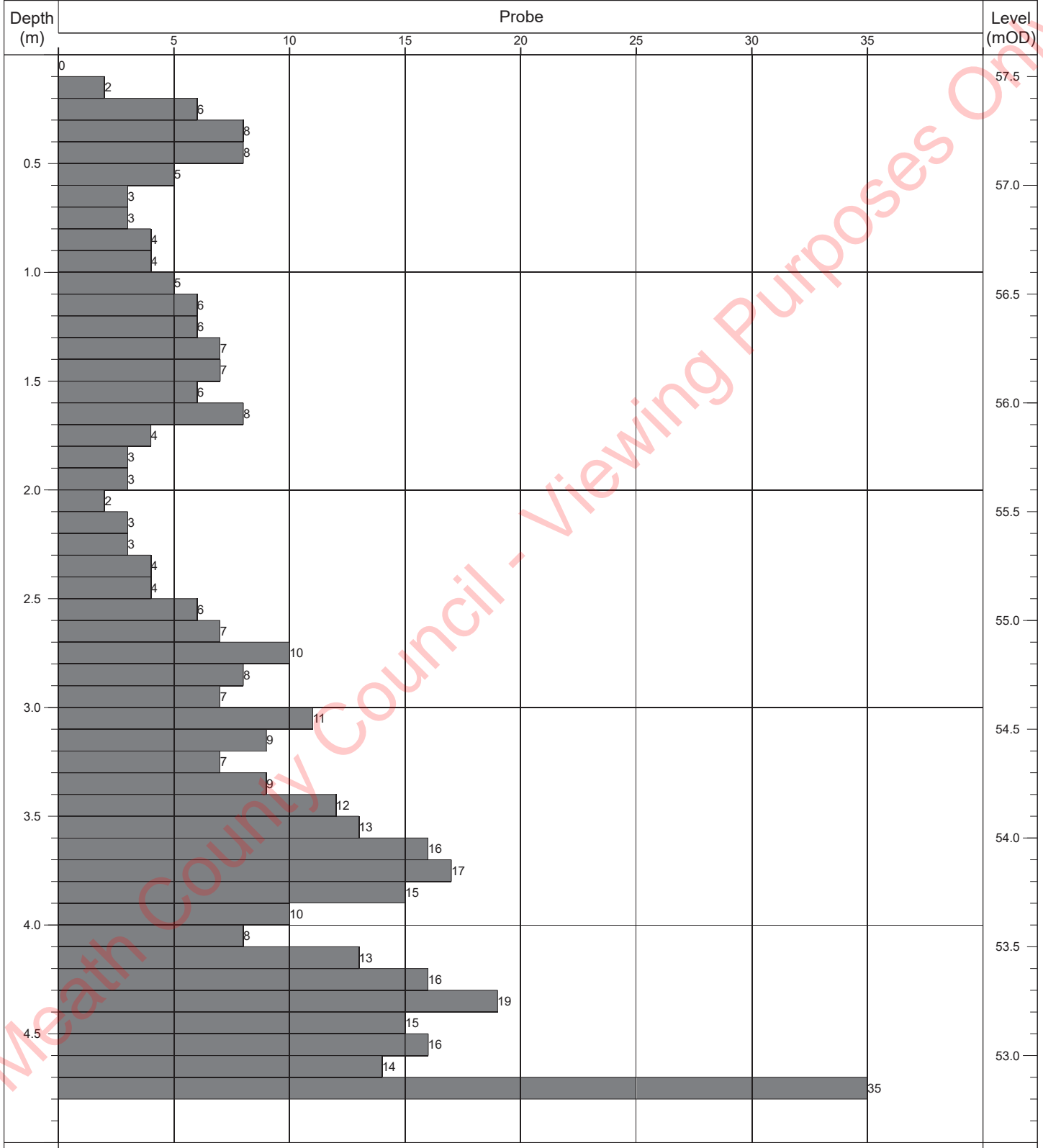


	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.30m	Obstruction - boulders.	DPH	50kg	500mm	



Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP34</b>
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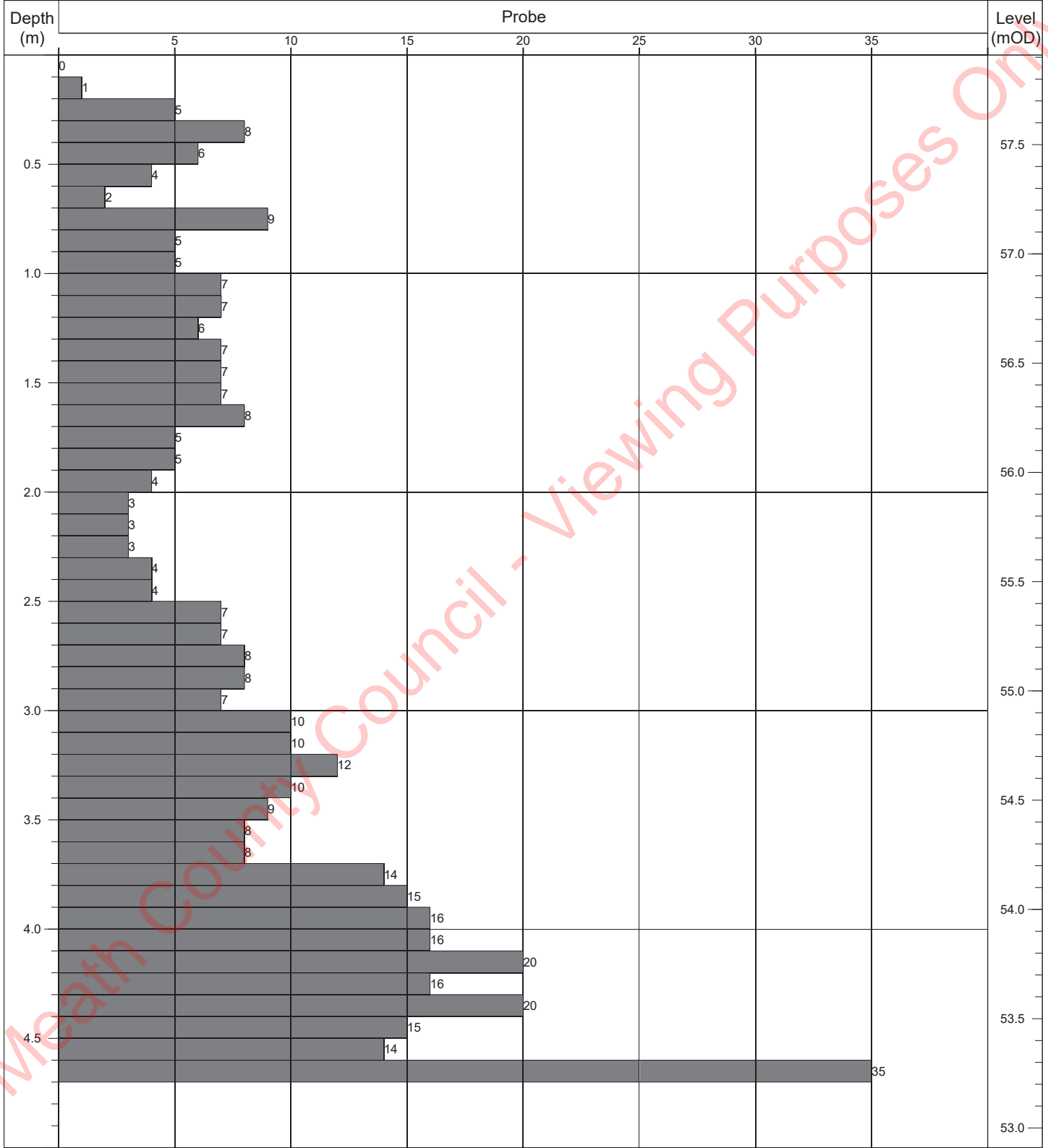
Contract:	Moygaddy	Easting:	693987.346	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739387.484	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	57.60	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP35</b>
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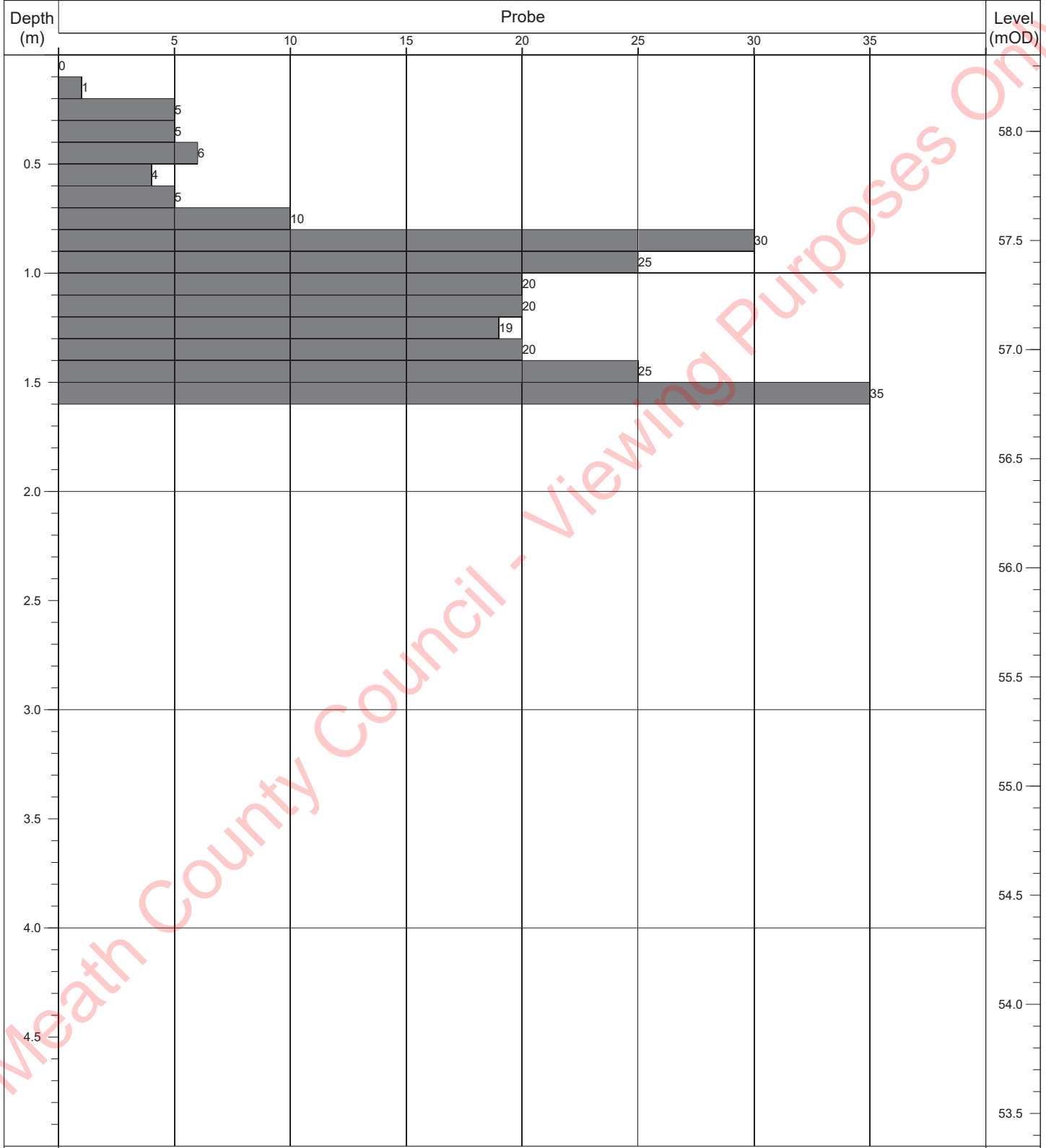
Contract:	Moygaddy	Easting:	694086.861	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739385.871	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	57.91	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

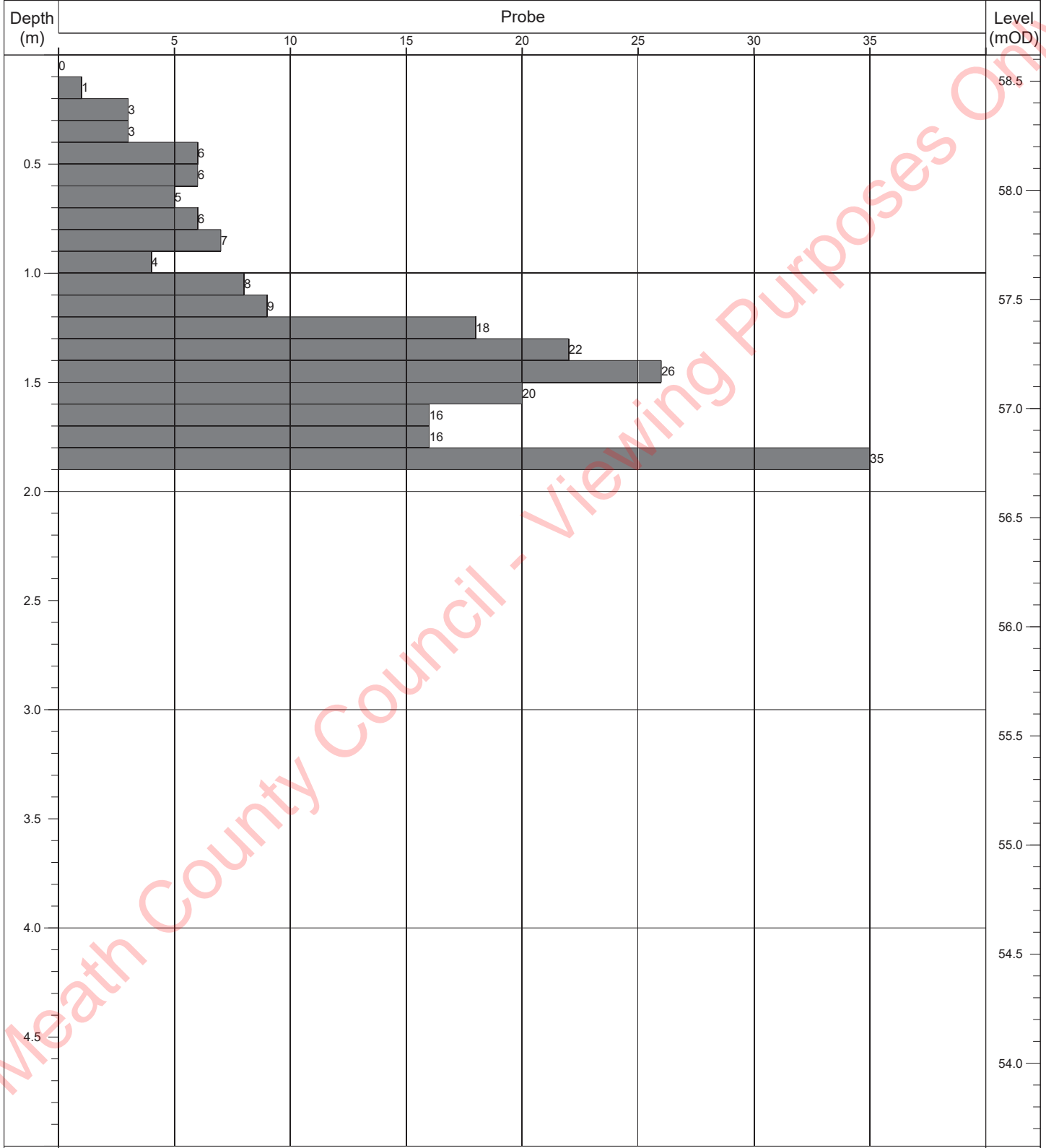
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP36</b>
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Contract:	Moygaddy	Easting:	694190.231	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739385.957	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.35	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



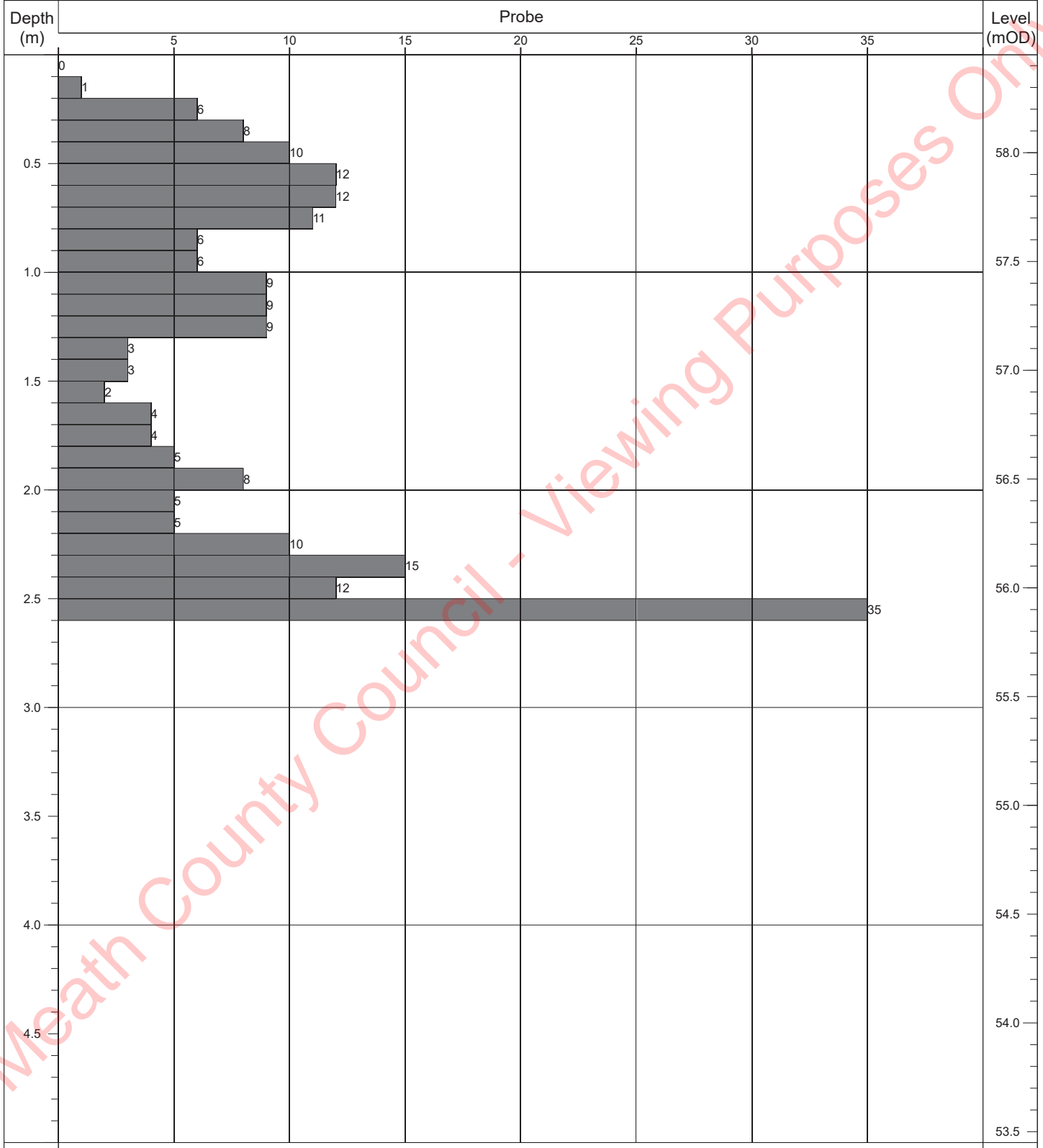
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	1.60m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP37</b>
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	

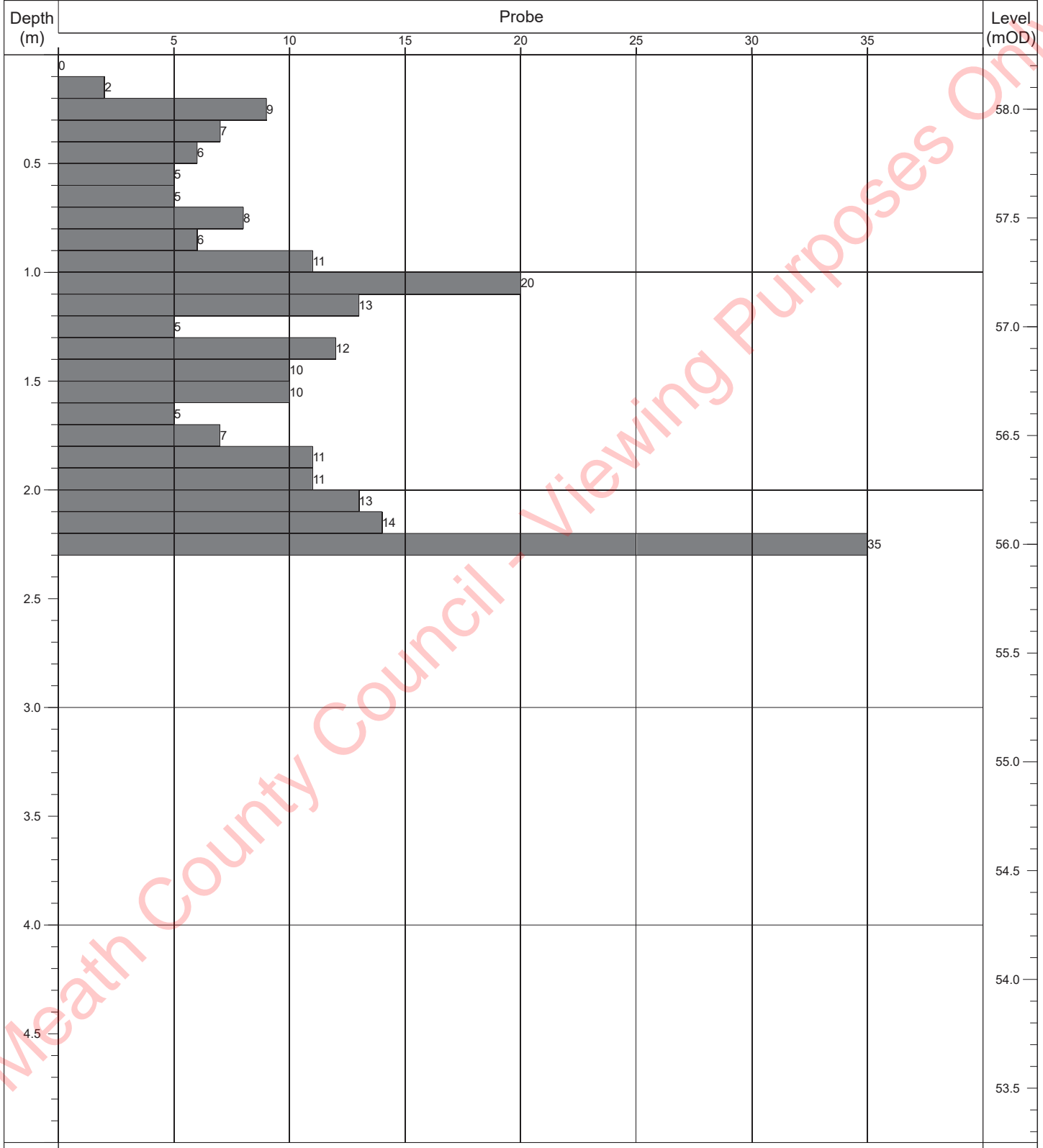
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP38</b>
Contract:	Moygaddy	Easting:	694370.568	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739380.643	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.45	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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




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



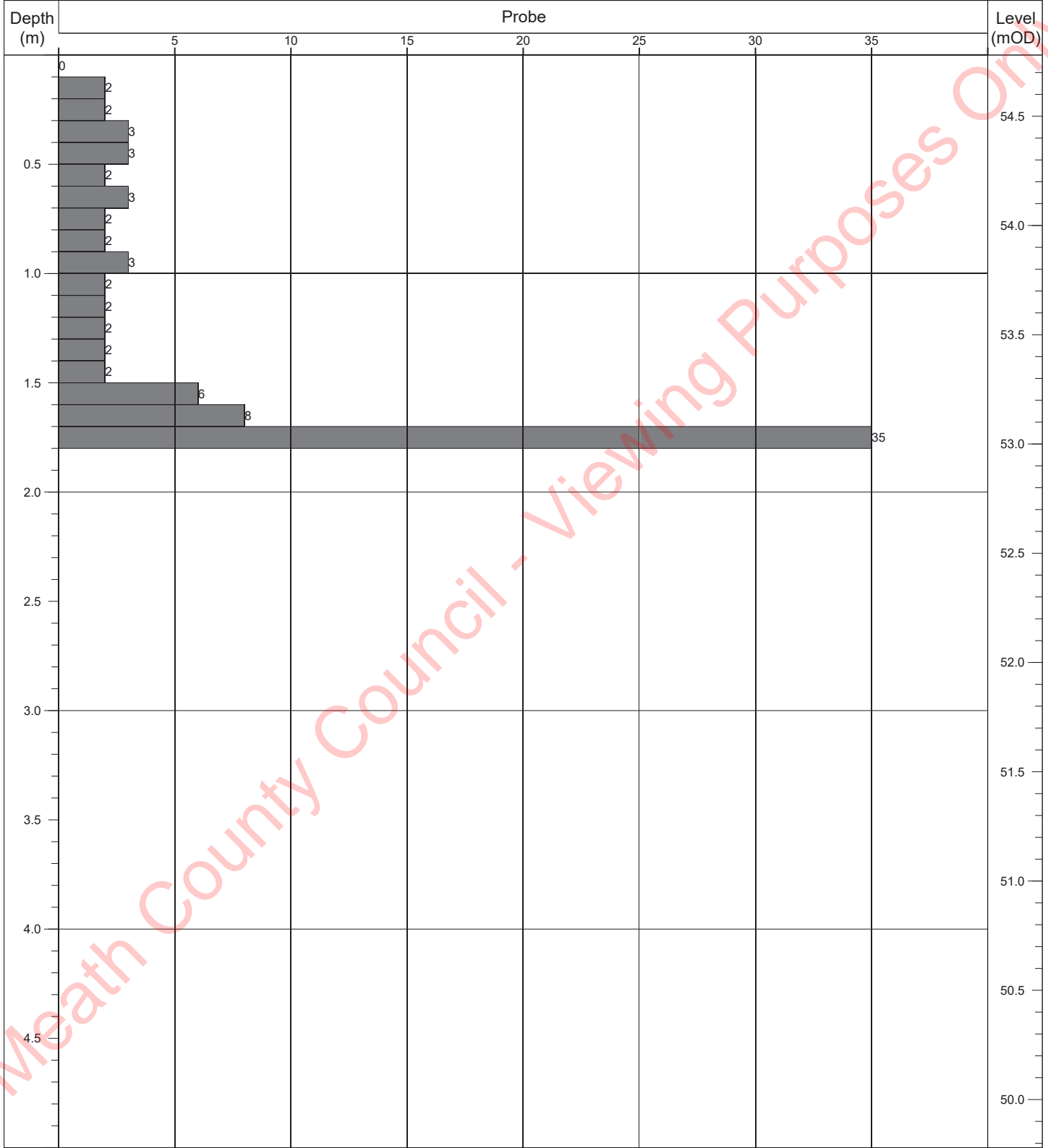
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP39</b>
Contract:	Moygaddy	Easting:	694486.826	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739390.243	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.25	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1




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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP40</b>
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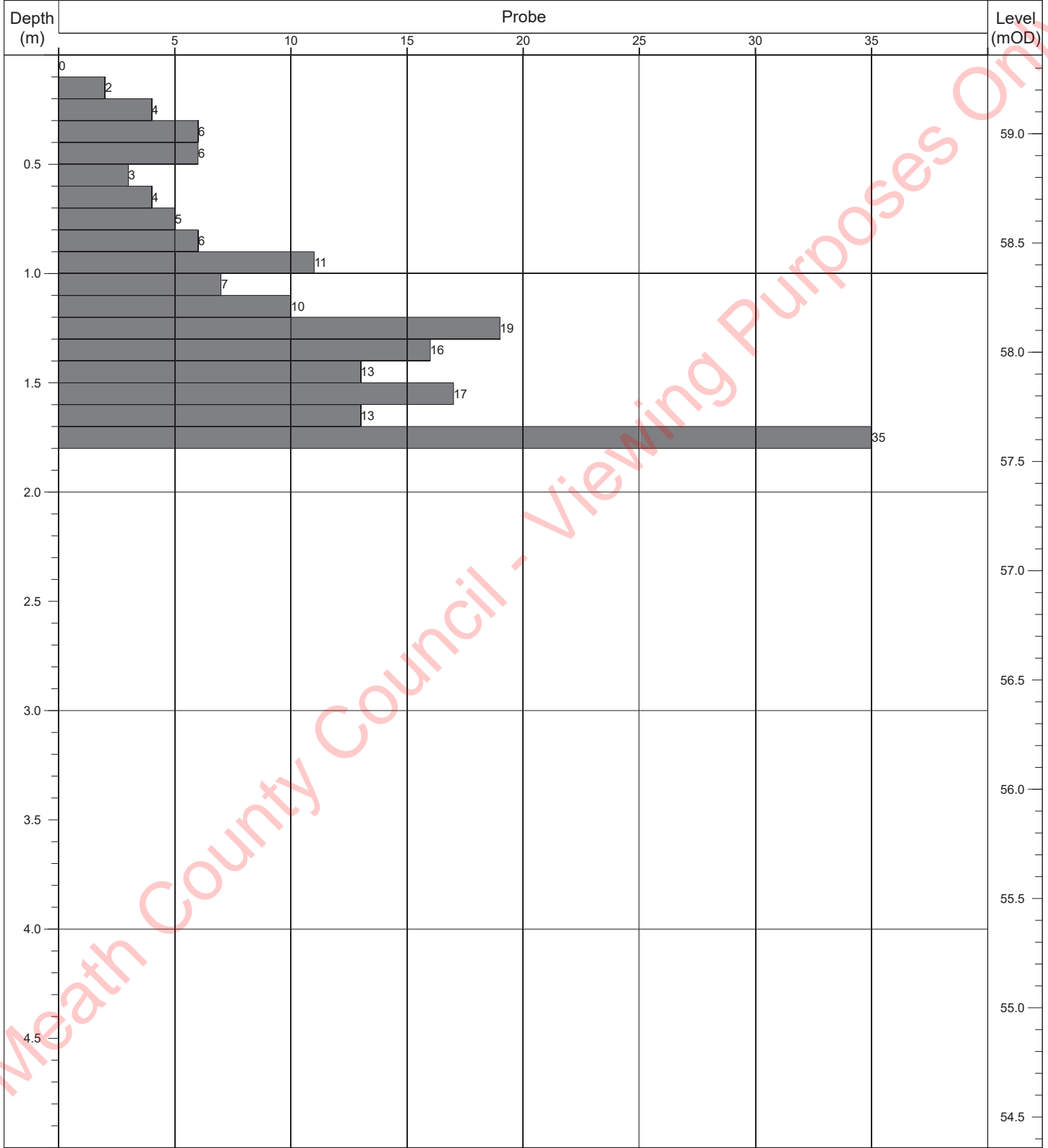
Contract:	Moygaddy	Easting:	694569.043	Date Started:	24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739386.611	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	54.78	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

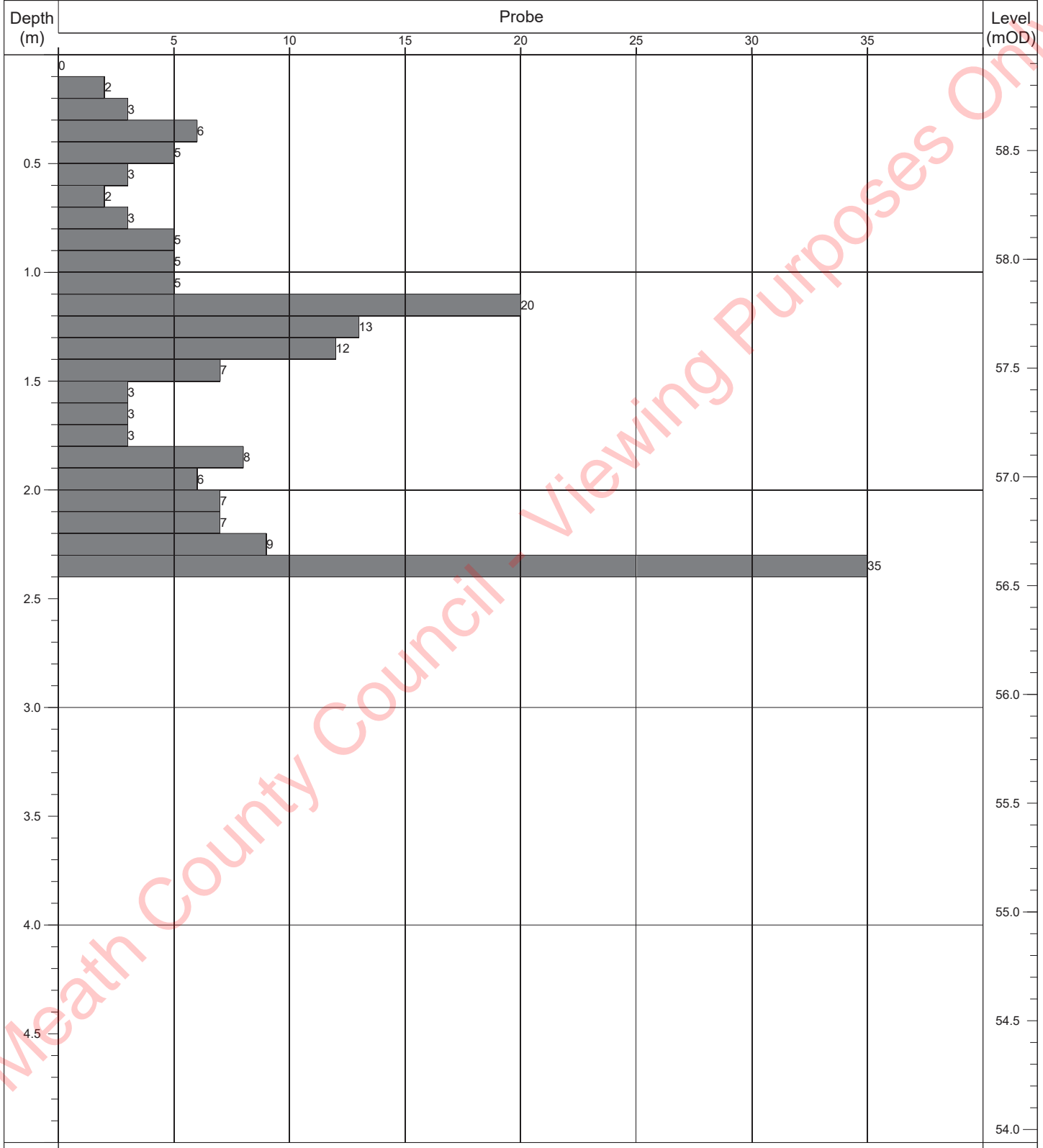
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP41</b>
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Contract:	Moygaddy	Easting:	694691.616	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739389.831	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	59.36	Scale:	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	

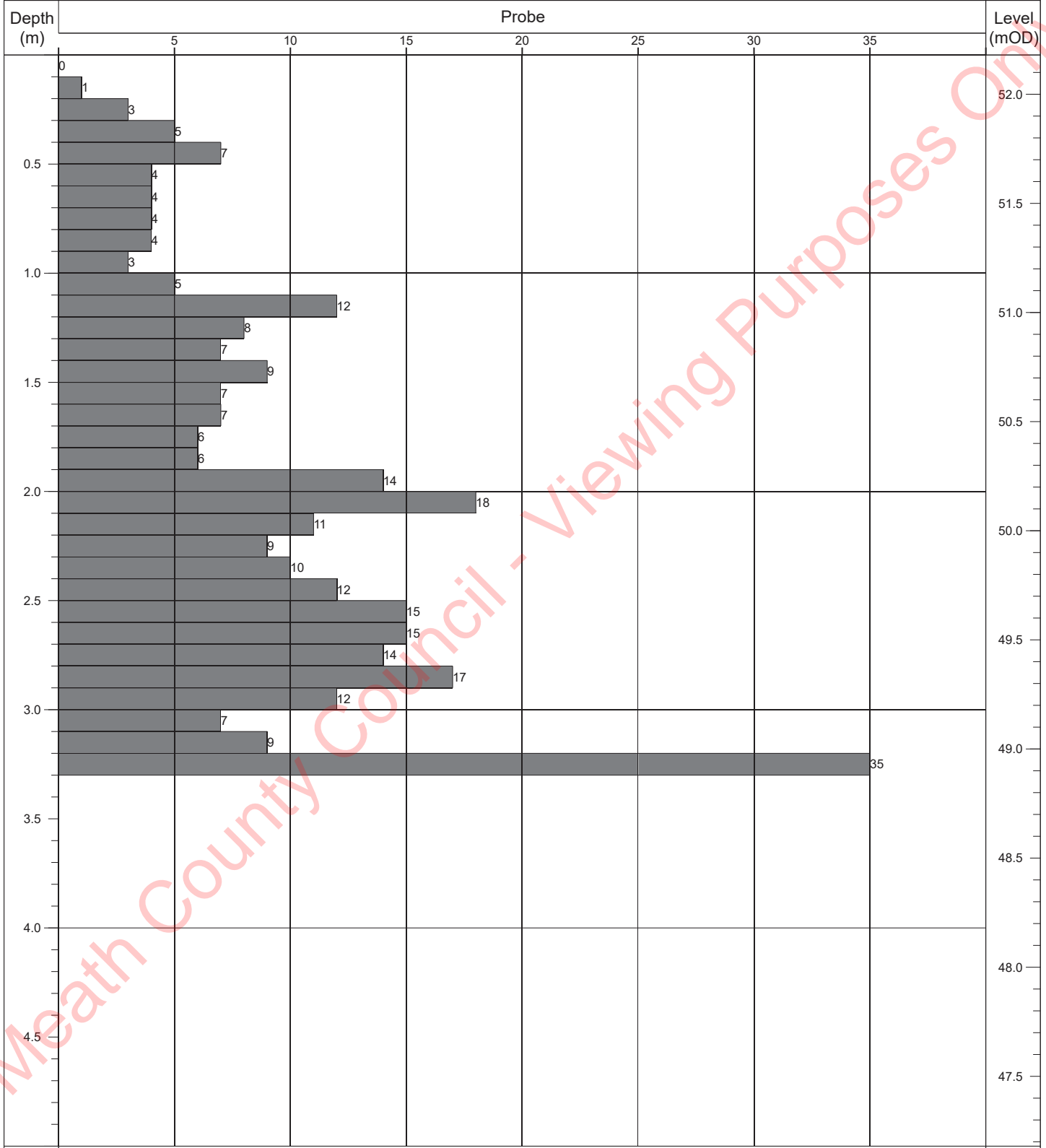
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP42</b>
Contract:	Moygaddy	Easting:	694791.212	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739385.883	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.94	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP43</b>
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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

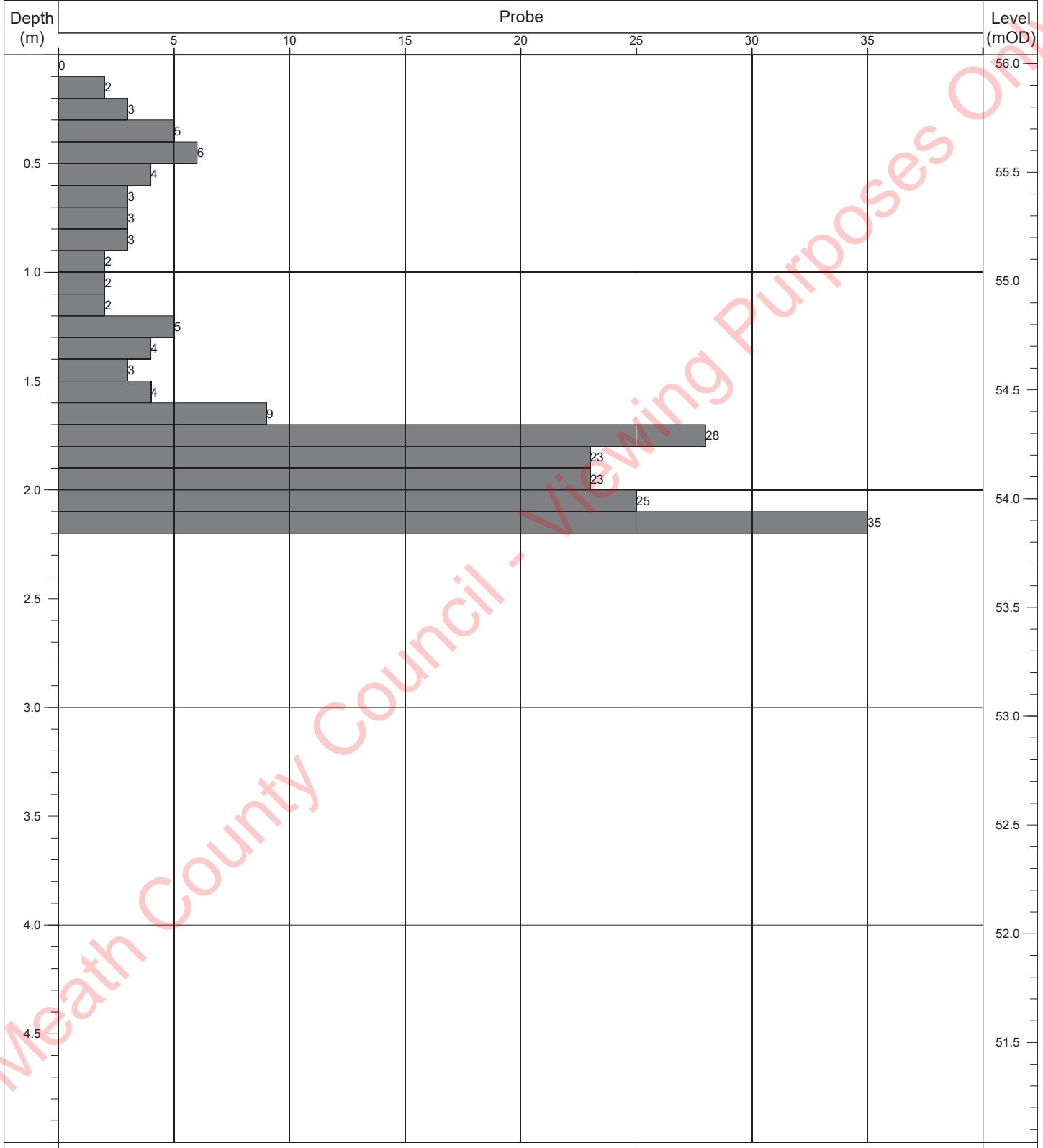



	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.30m	Obstruction - boulders.	DPH	50kg	500mm	



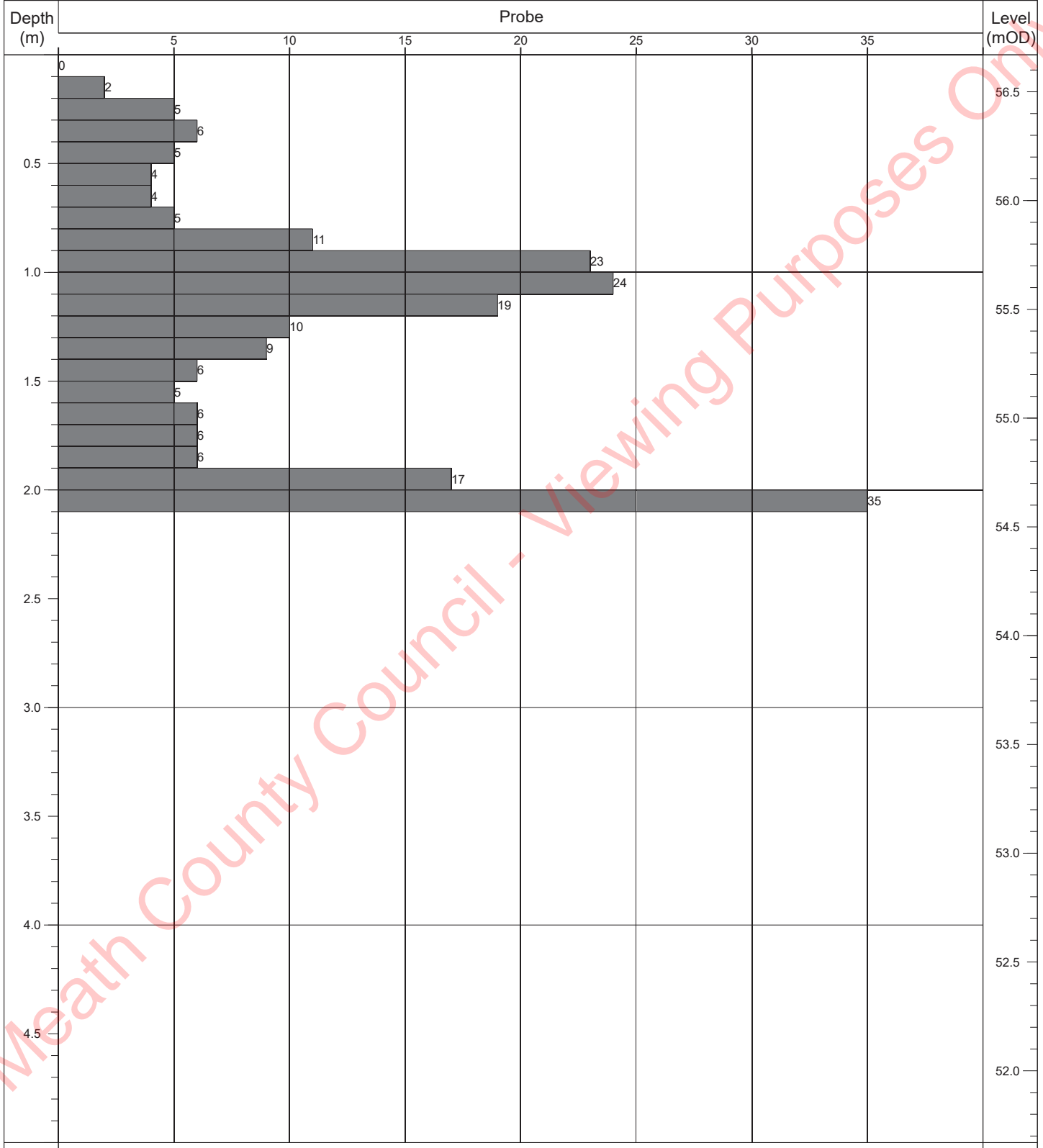
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP44</b>
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Contract:	Moygaddy	Easting:	693788.258	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739285.161	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.04	Scale:	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	

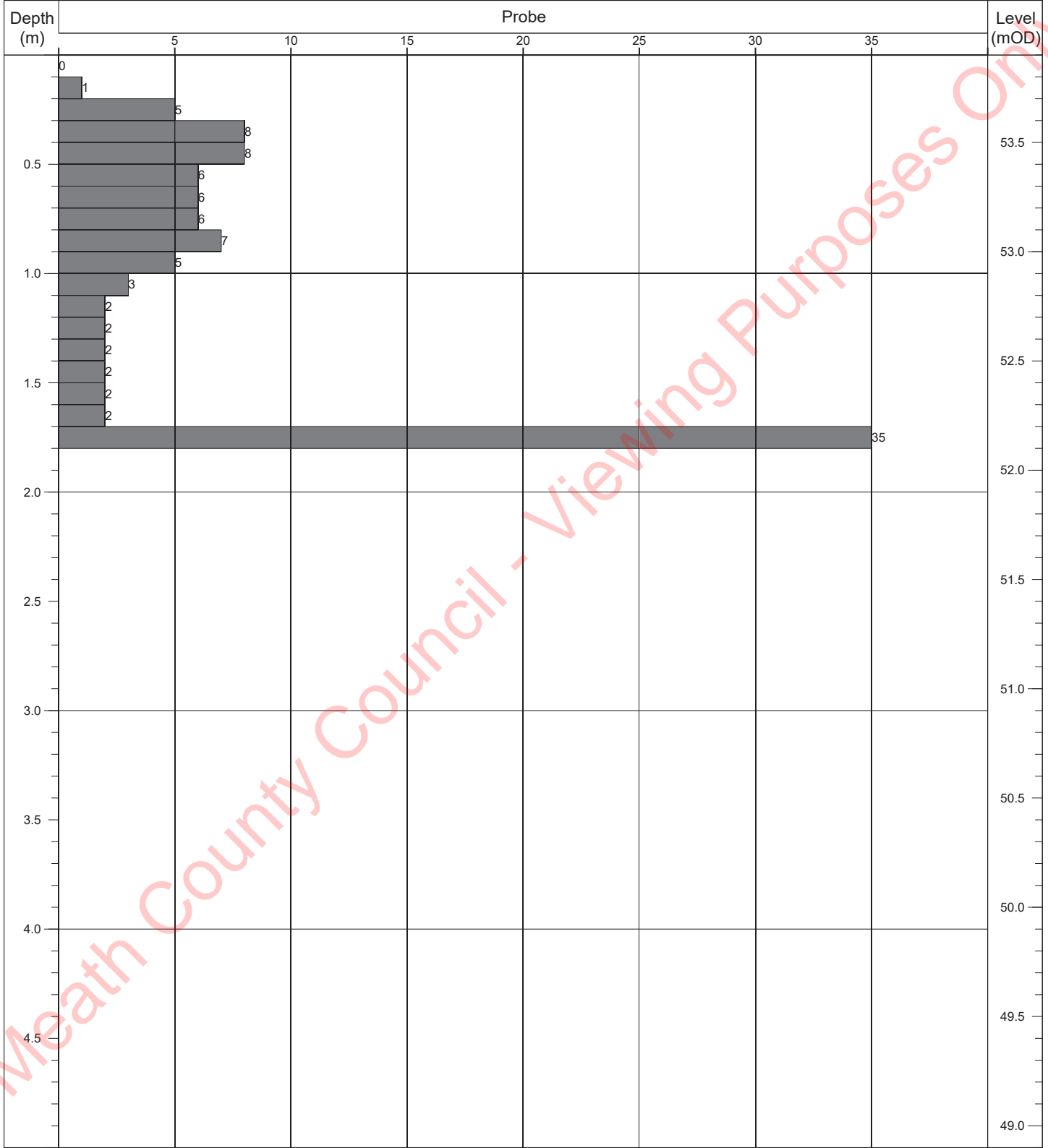
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP45</b>
Contract:	Moygaddy	Easting:	694091.482	Date Started: 18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739278.290	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	56.67	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

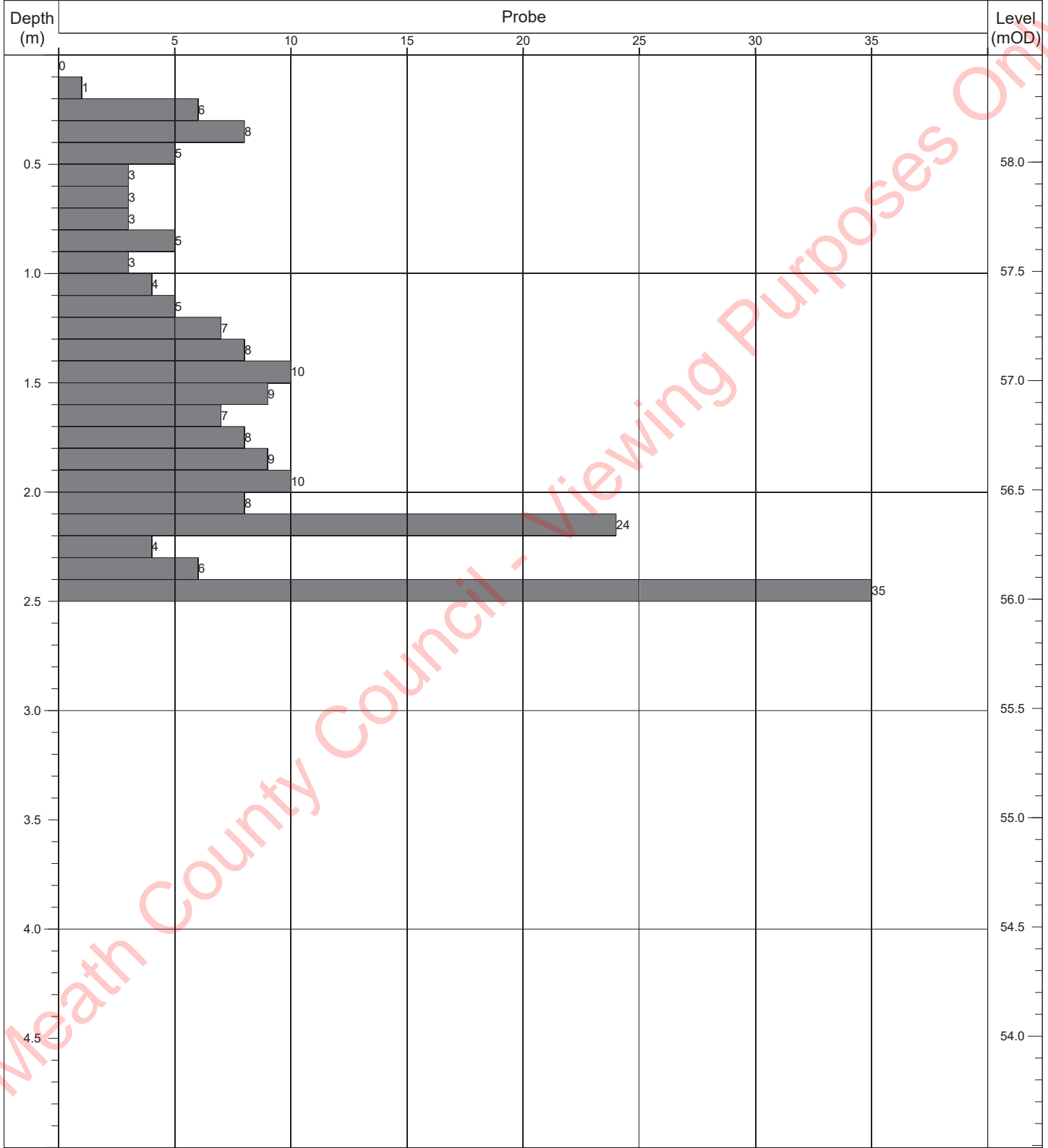
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP46</b>
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Contract:	Moygaddy	Easting:	694430.386	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739324.235	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	53.90	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



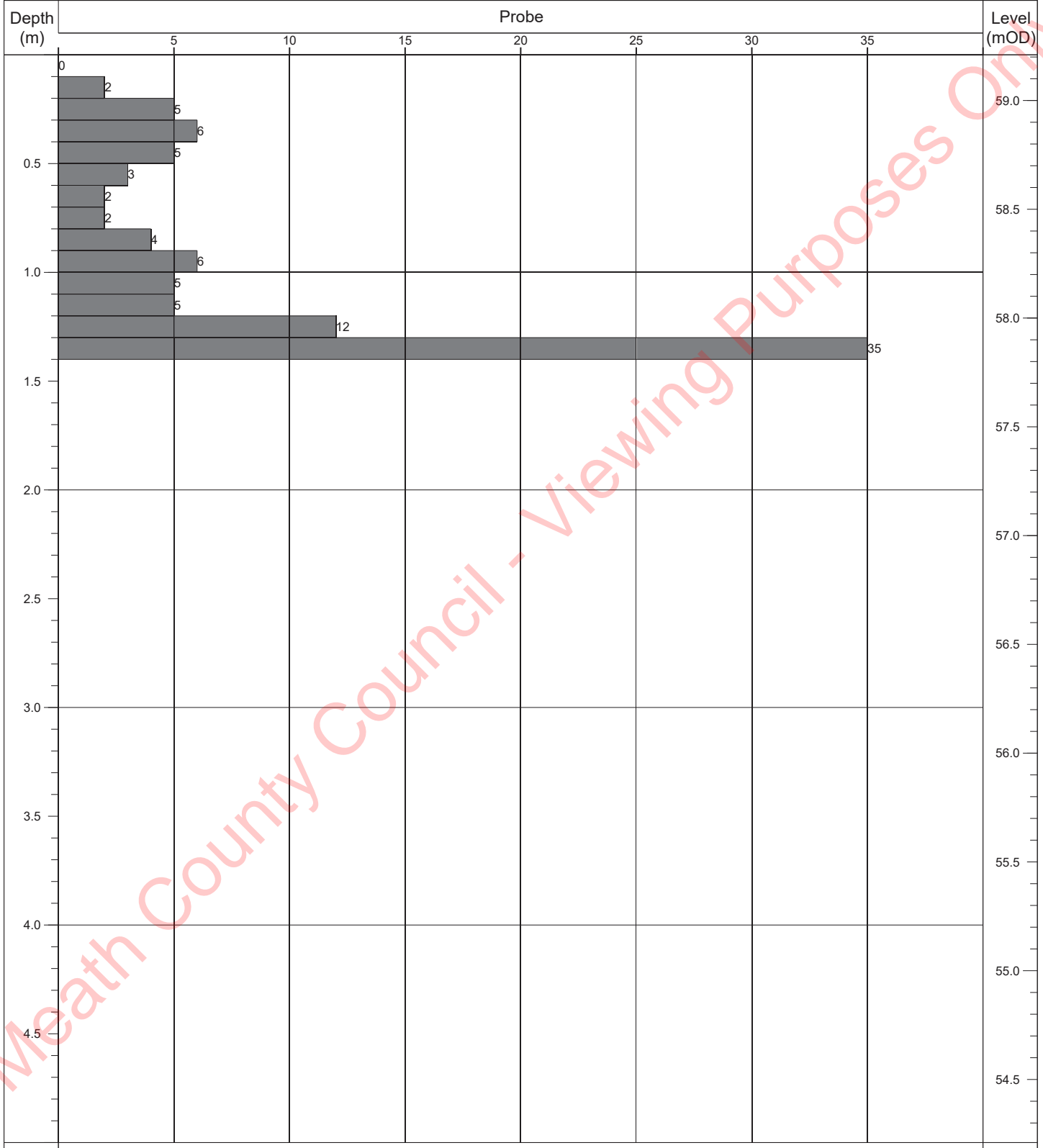
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	1.80m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP47</b>
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	

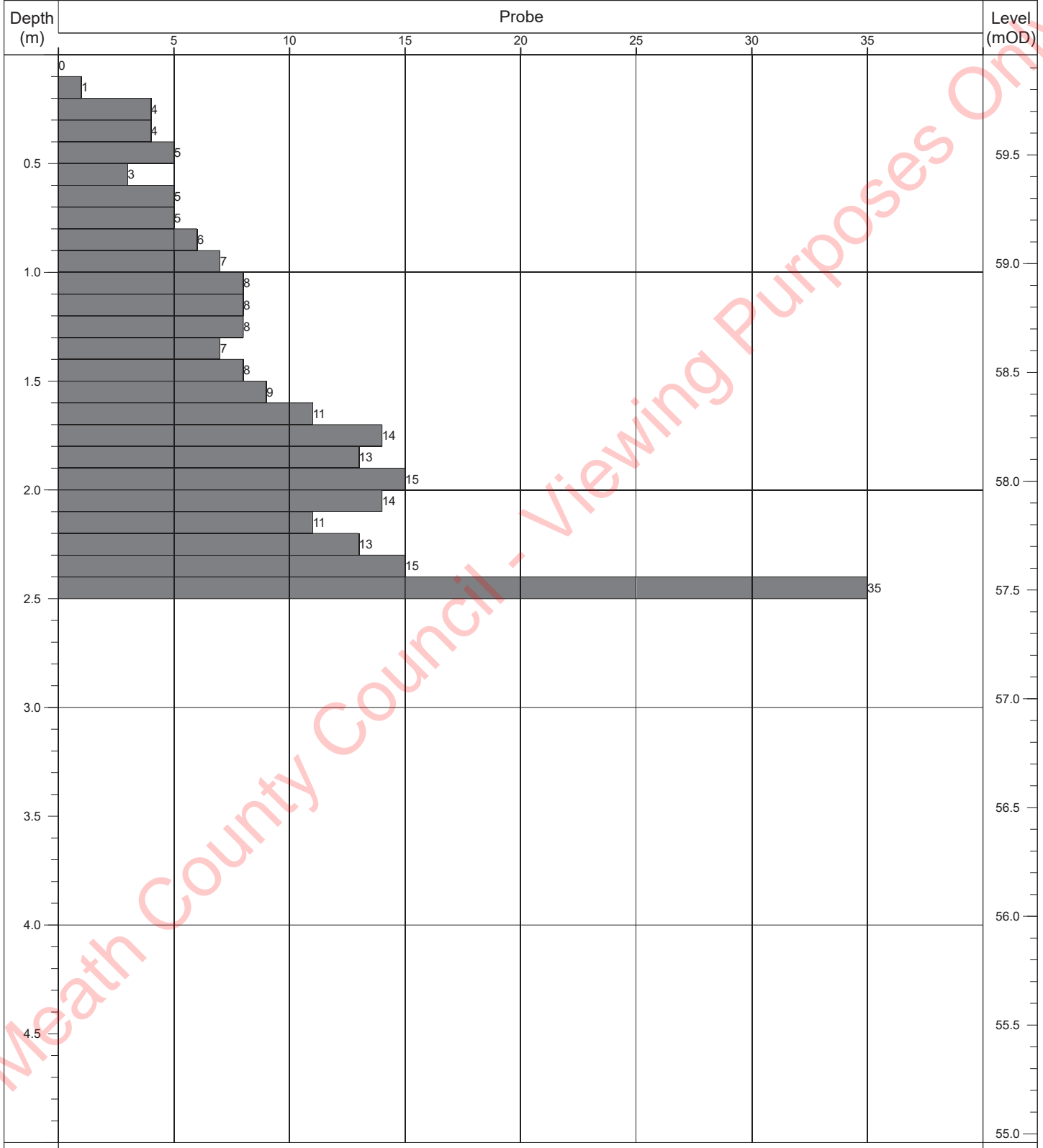
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP48</b>
Contract:	Moygaddy	Easting:	694590.116	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739288.613	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	59.21	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



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

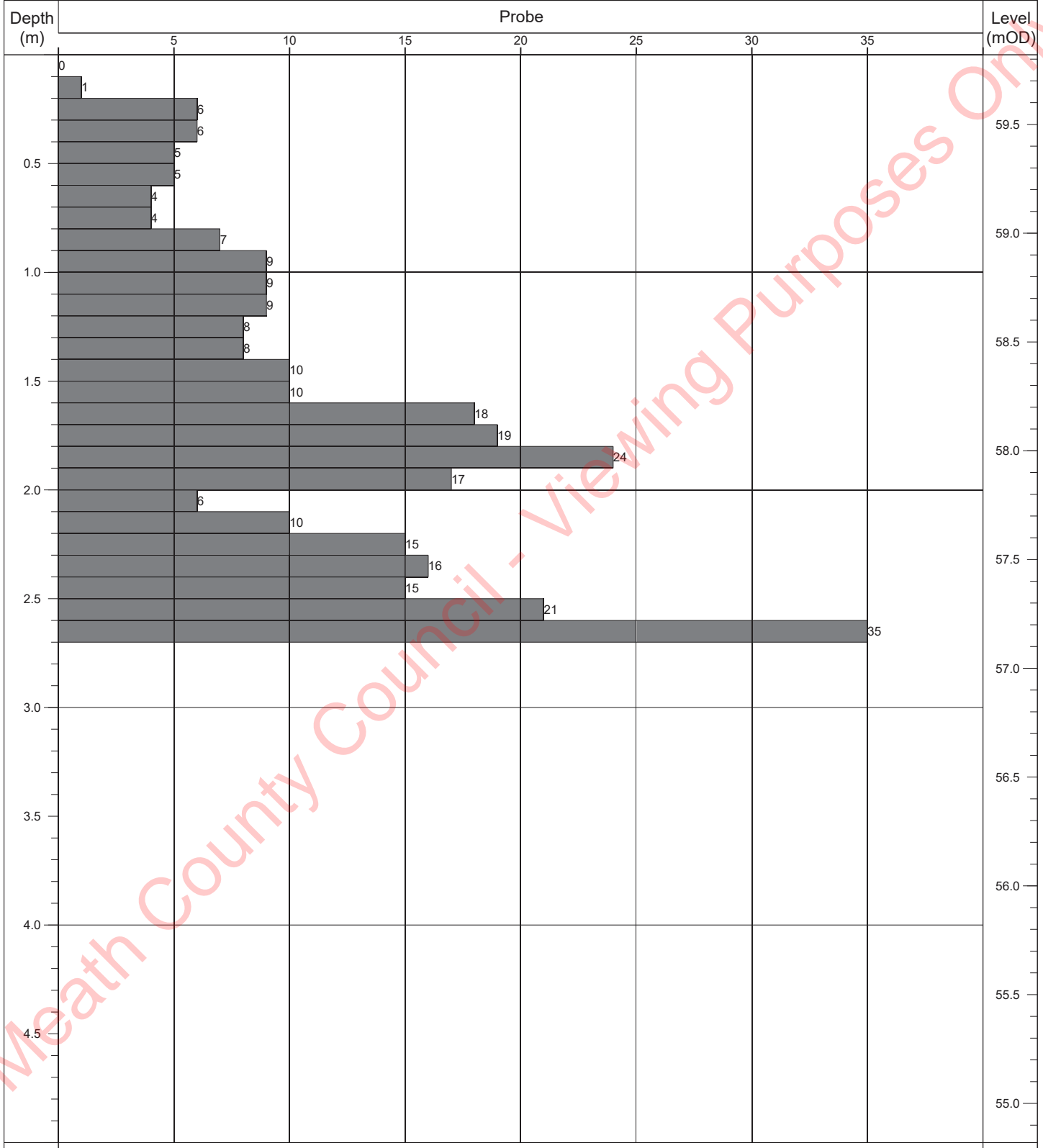



Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP49</b>
Contract:	Moygaddy	Easting:	694682.452	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739291.233	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	59.96	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



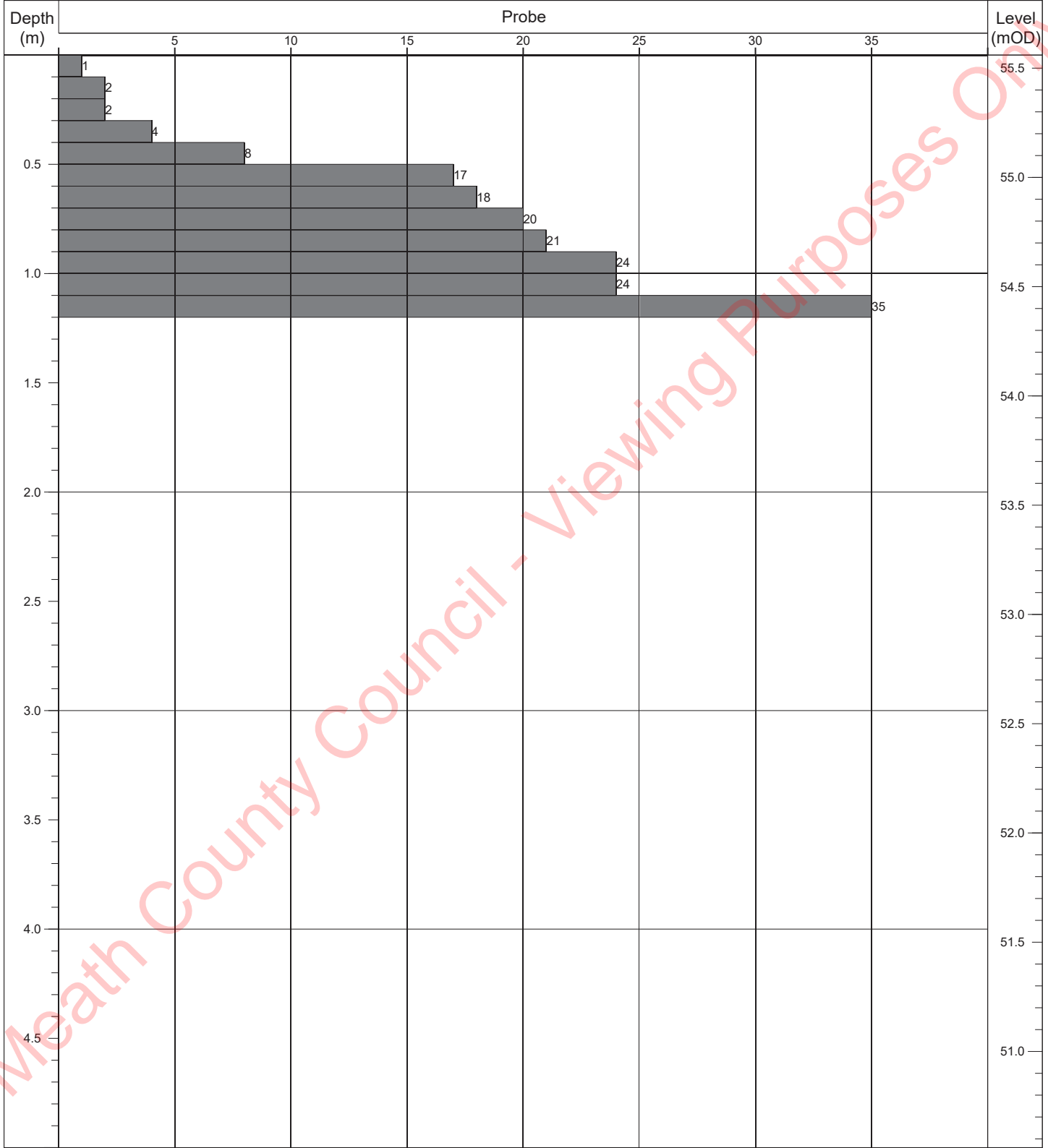
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP50</b>
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



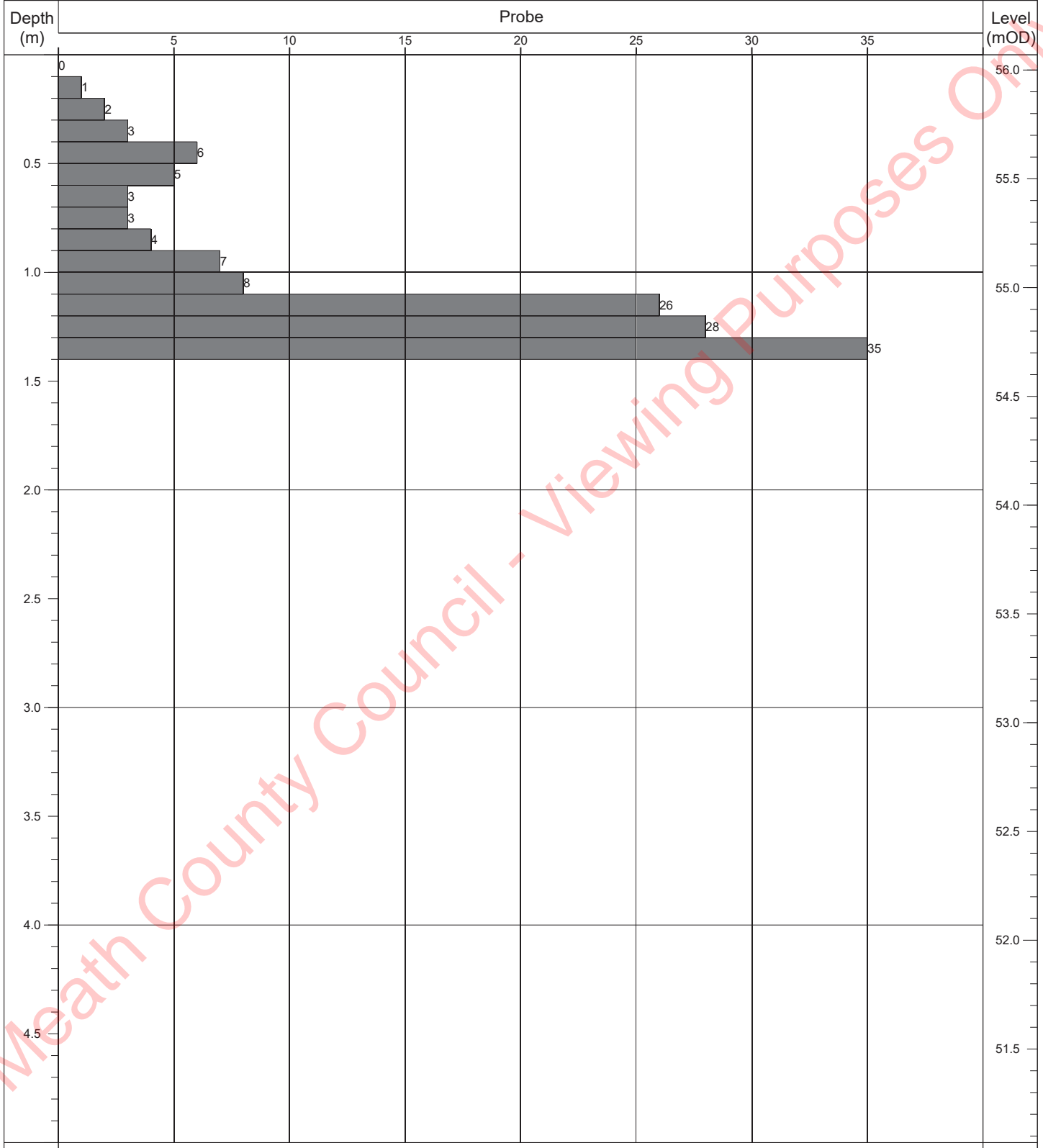
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.70m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP51</b>
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



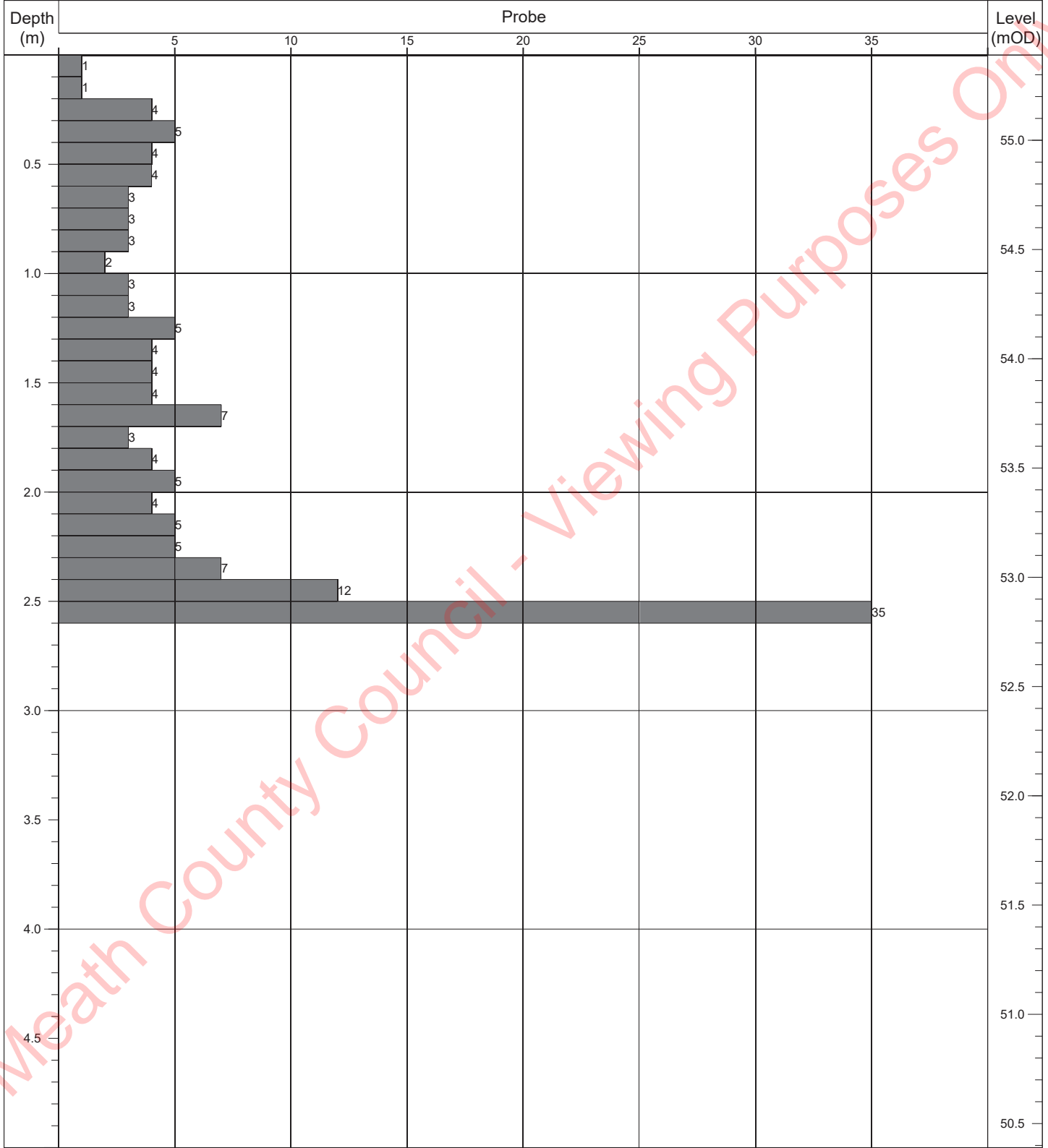
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	1.20m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP52</b>
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	

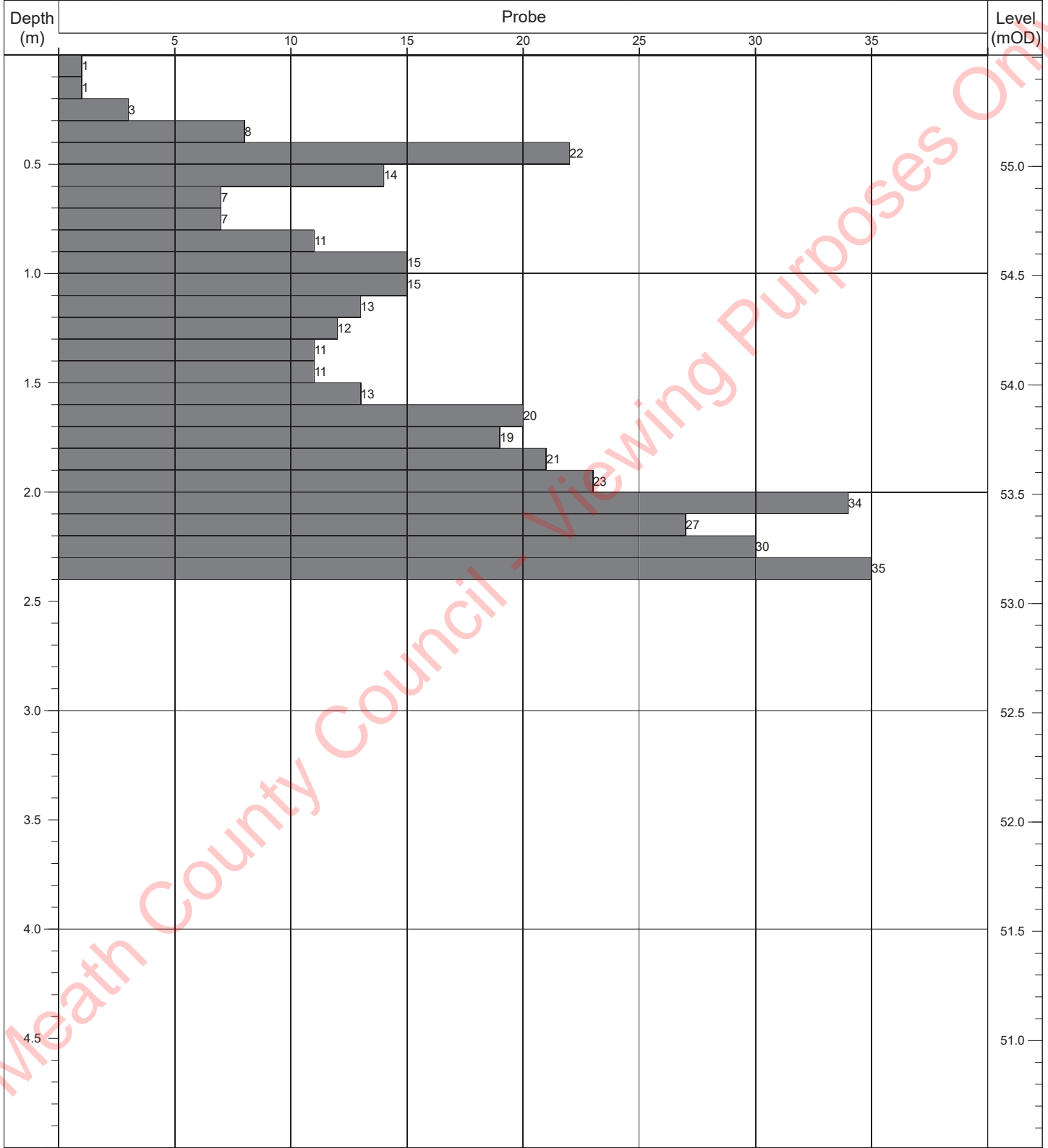
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP53</b>
Contract:	Moygaddy	Easting:	694089.481	Date Started: 18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739189.955	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	55.39	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1




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



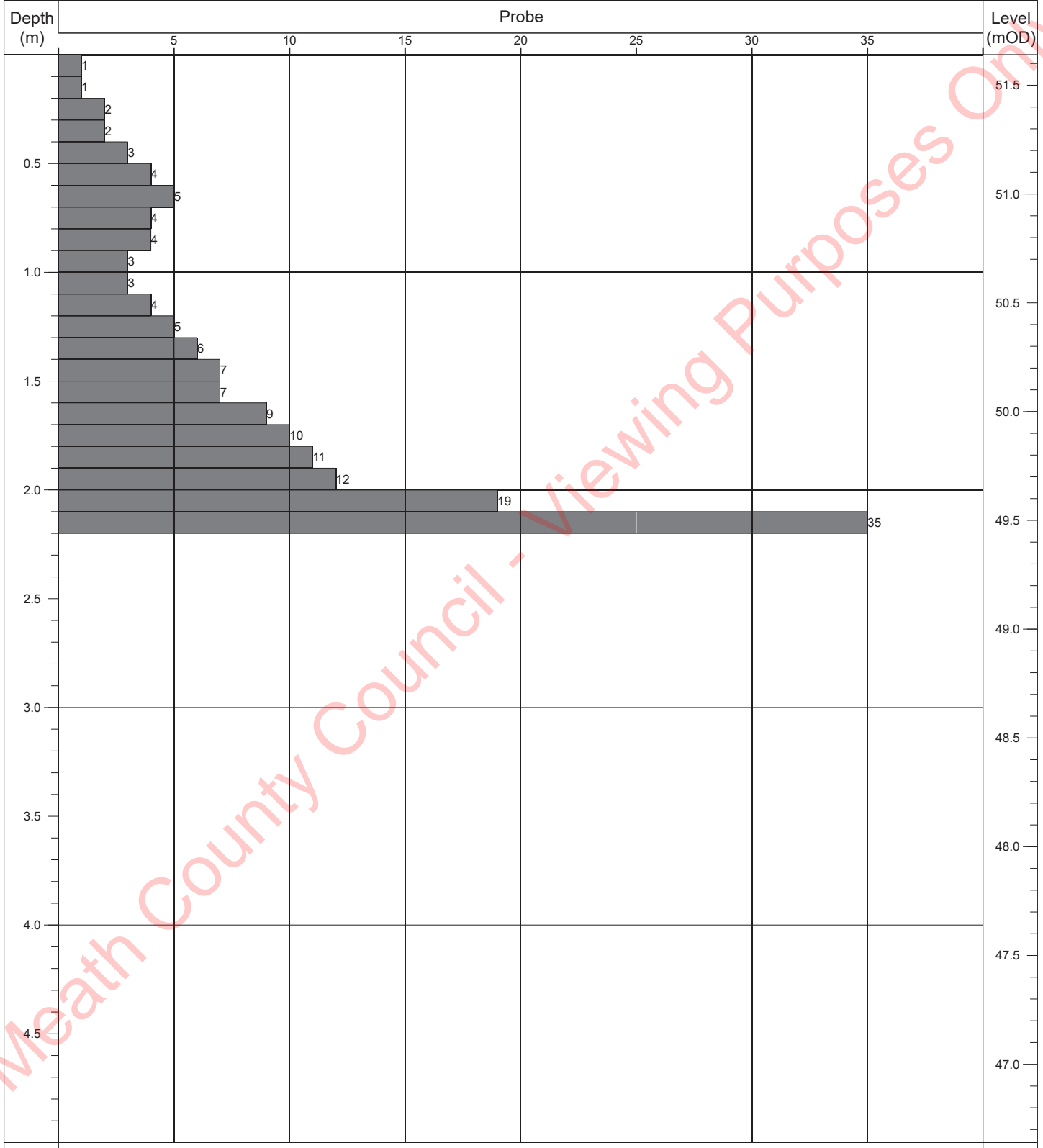
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP54</b>
Contract:	Moygaddy	Easting:	694189.069	Date Started: 18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739183.974	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	55.51	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

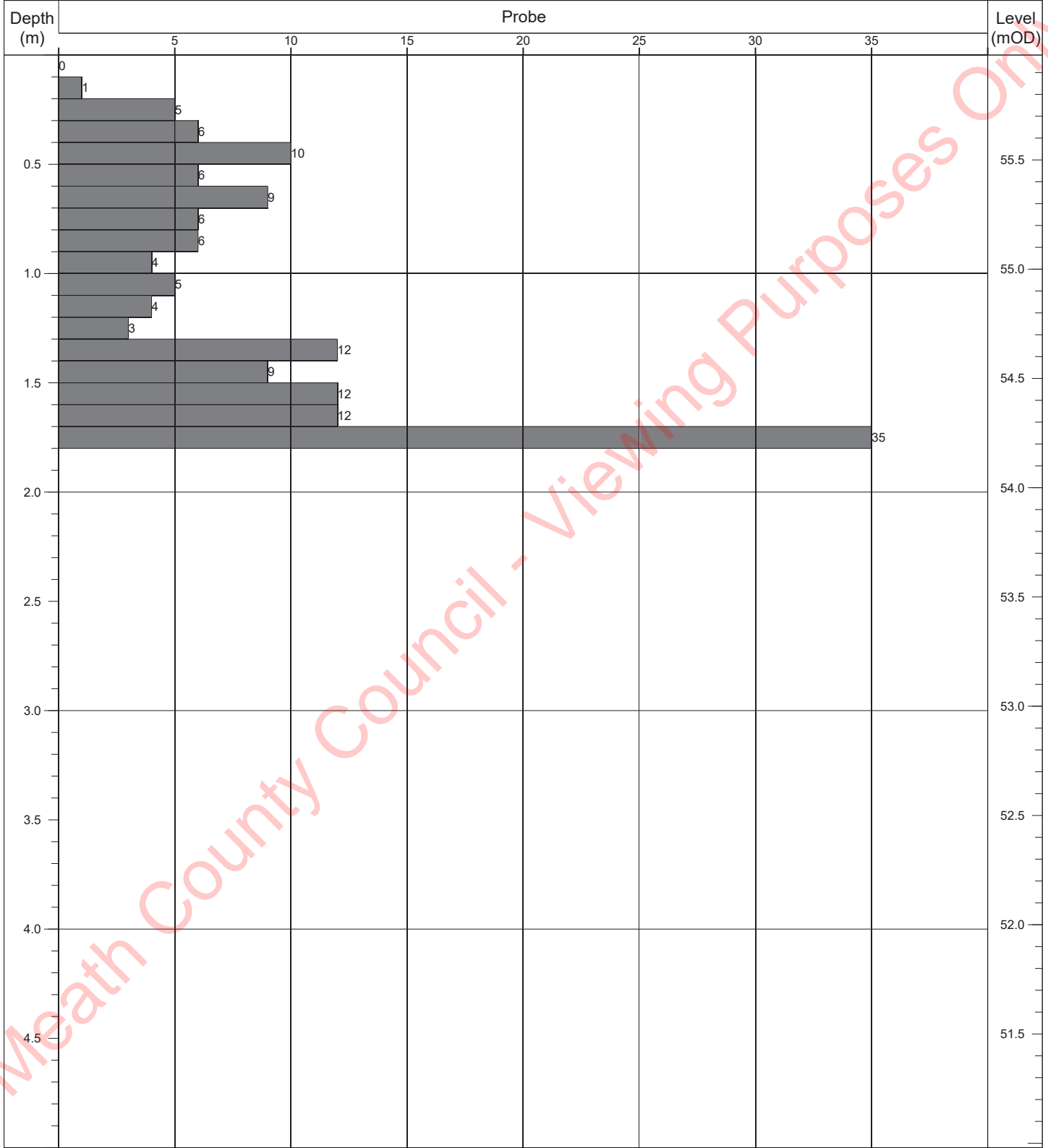
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP55</b>
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Contract:	Moygaddy	Easting:	694250.676	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739180.873	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	51.64	Scale:	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	

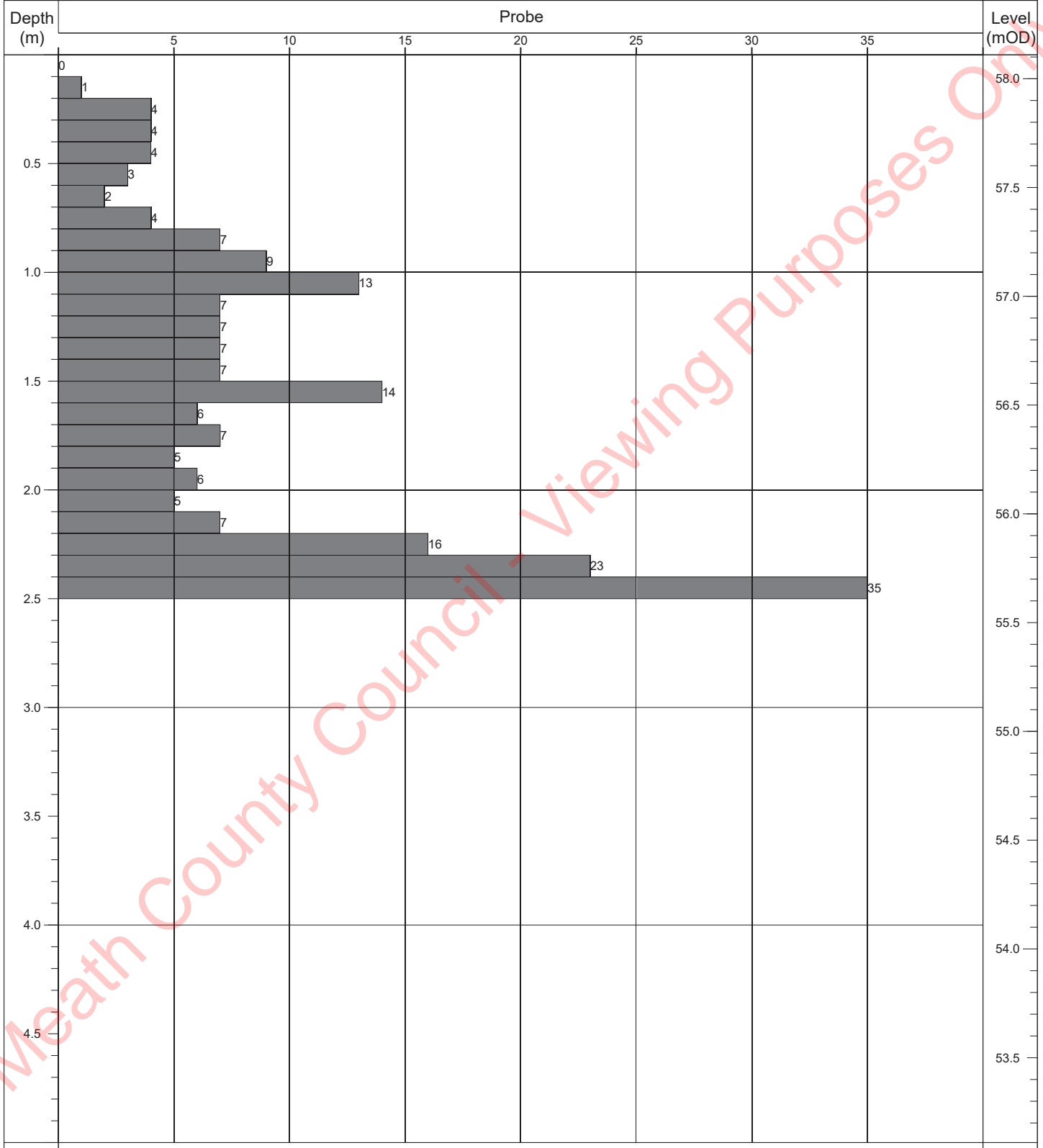
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP56</b>
Contract:	Moygaddy	Easting:	694409.931	Date Started: 21/06/2021
Location:	Maynooth, Co. Meath	Northing:	739184.774	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	55.98	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



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

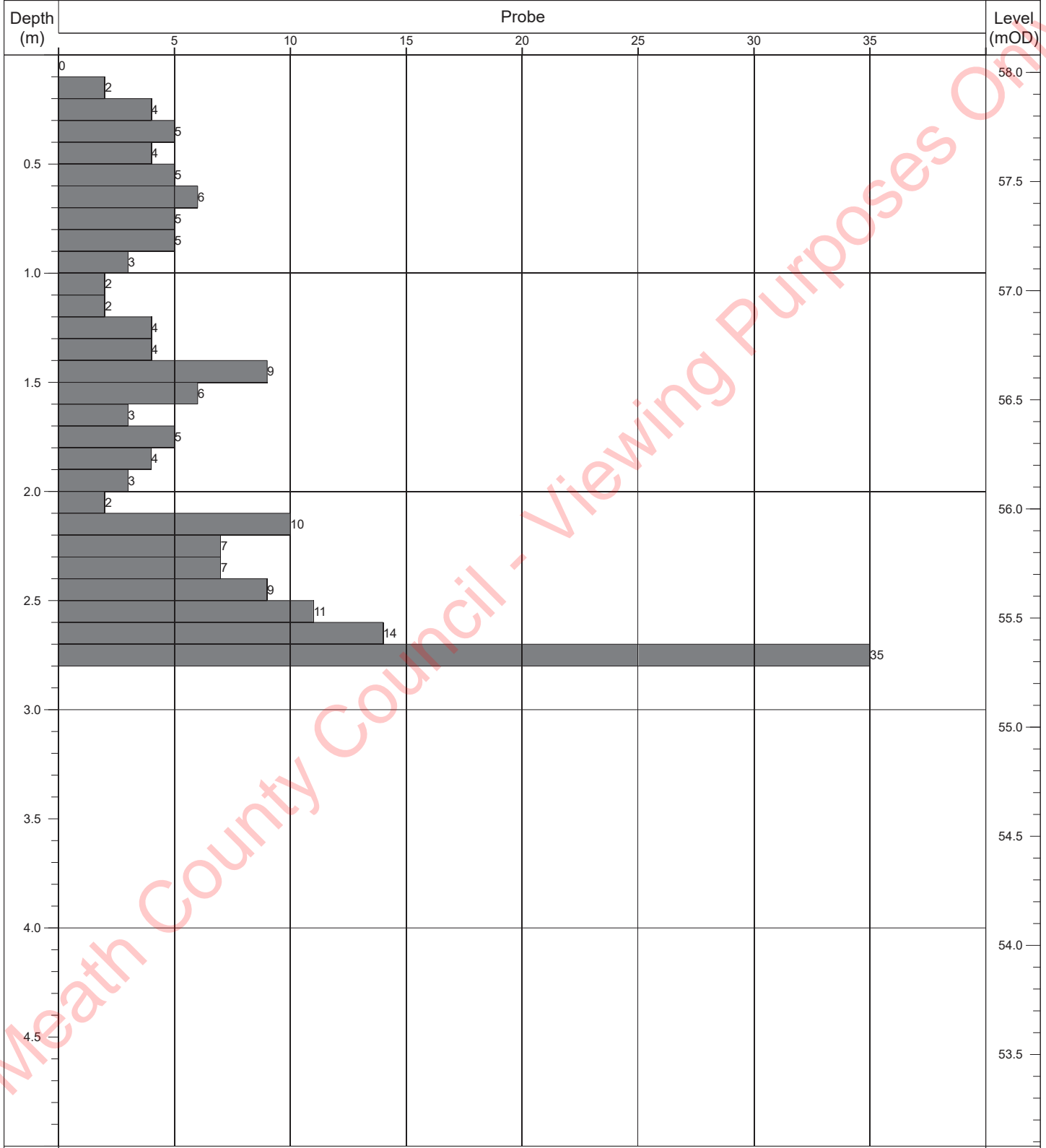
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP57</b>
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Contract:	Moygaddy	Easting:	694513.646	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739200.814	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.11	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



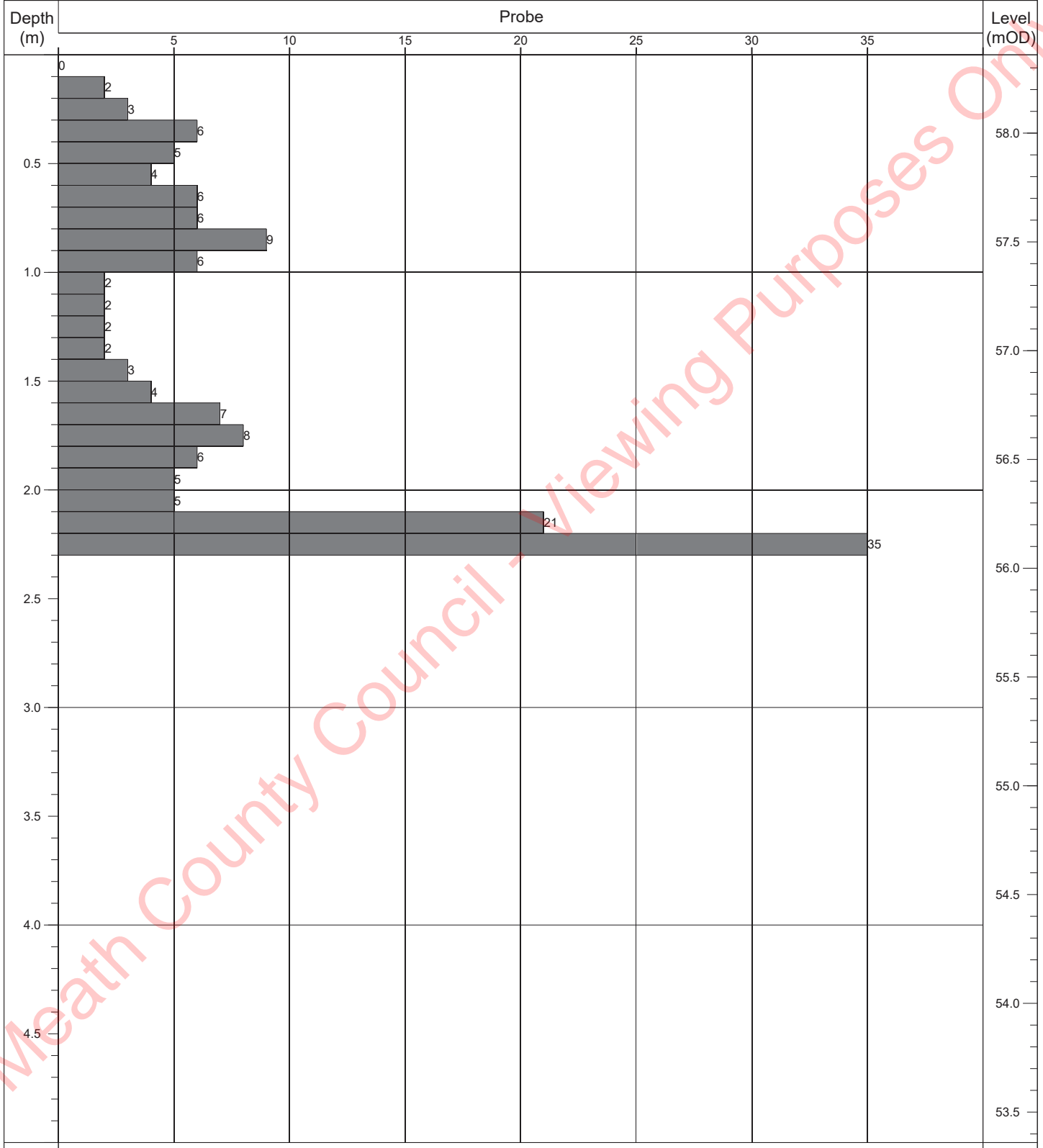
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP58</b>
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	

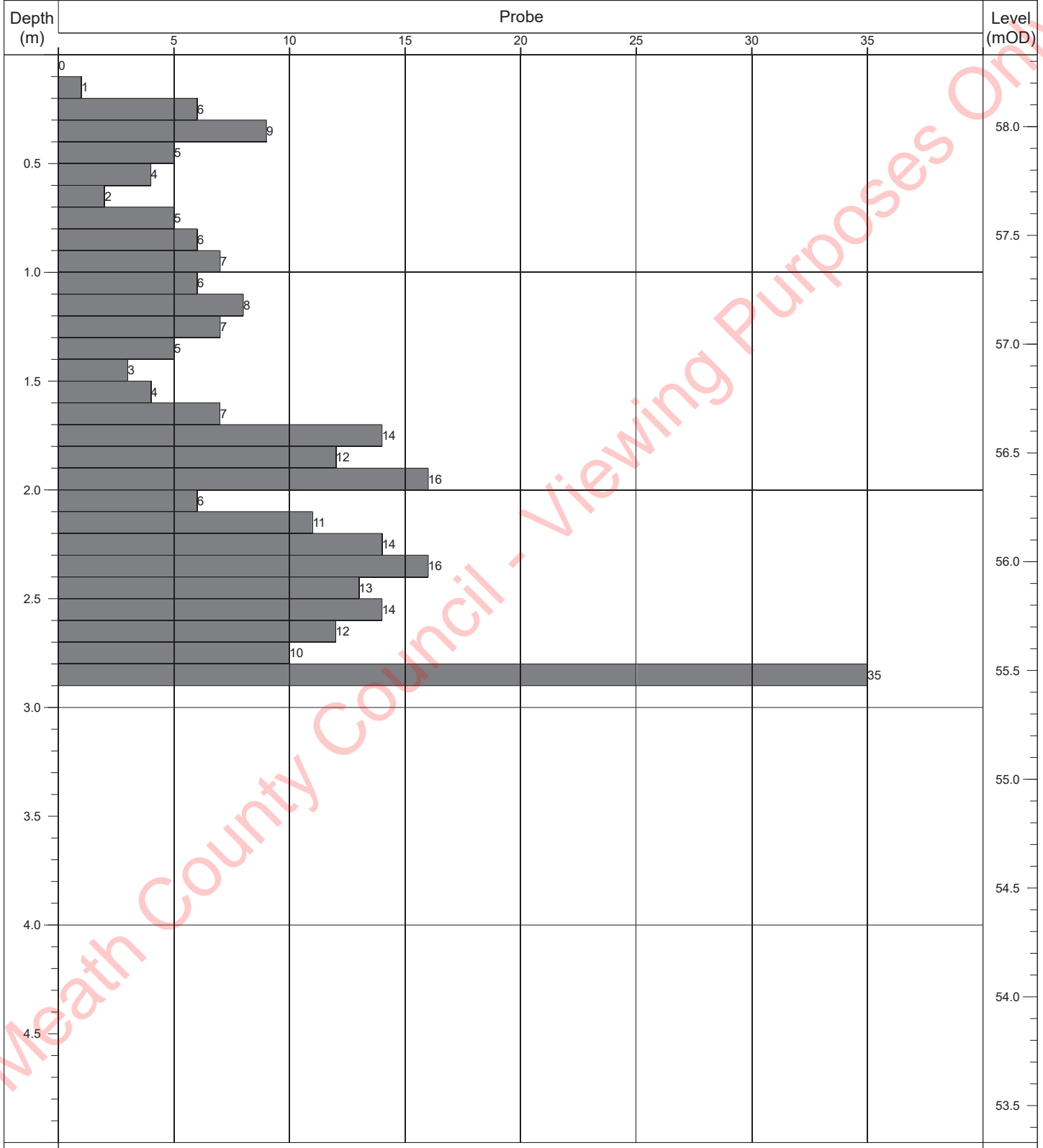
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP59</b>
Contract:	Moygaddy	Easting:	694690.632	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739192.594	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.36	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1




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



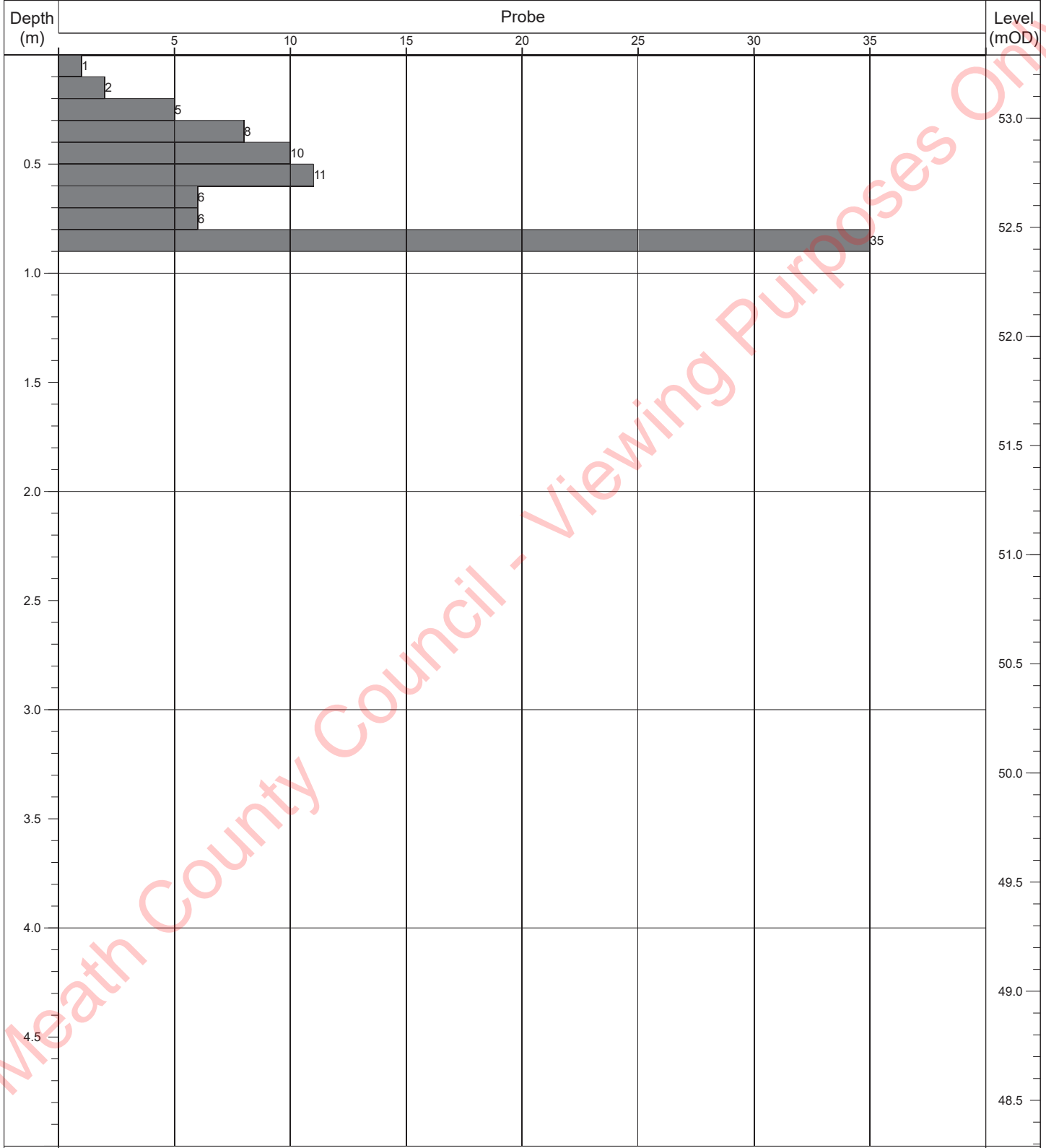
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP60</b>
Contract:	Moygaddy	Easting:	694784.383	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739187.502	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.33	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP61</b>
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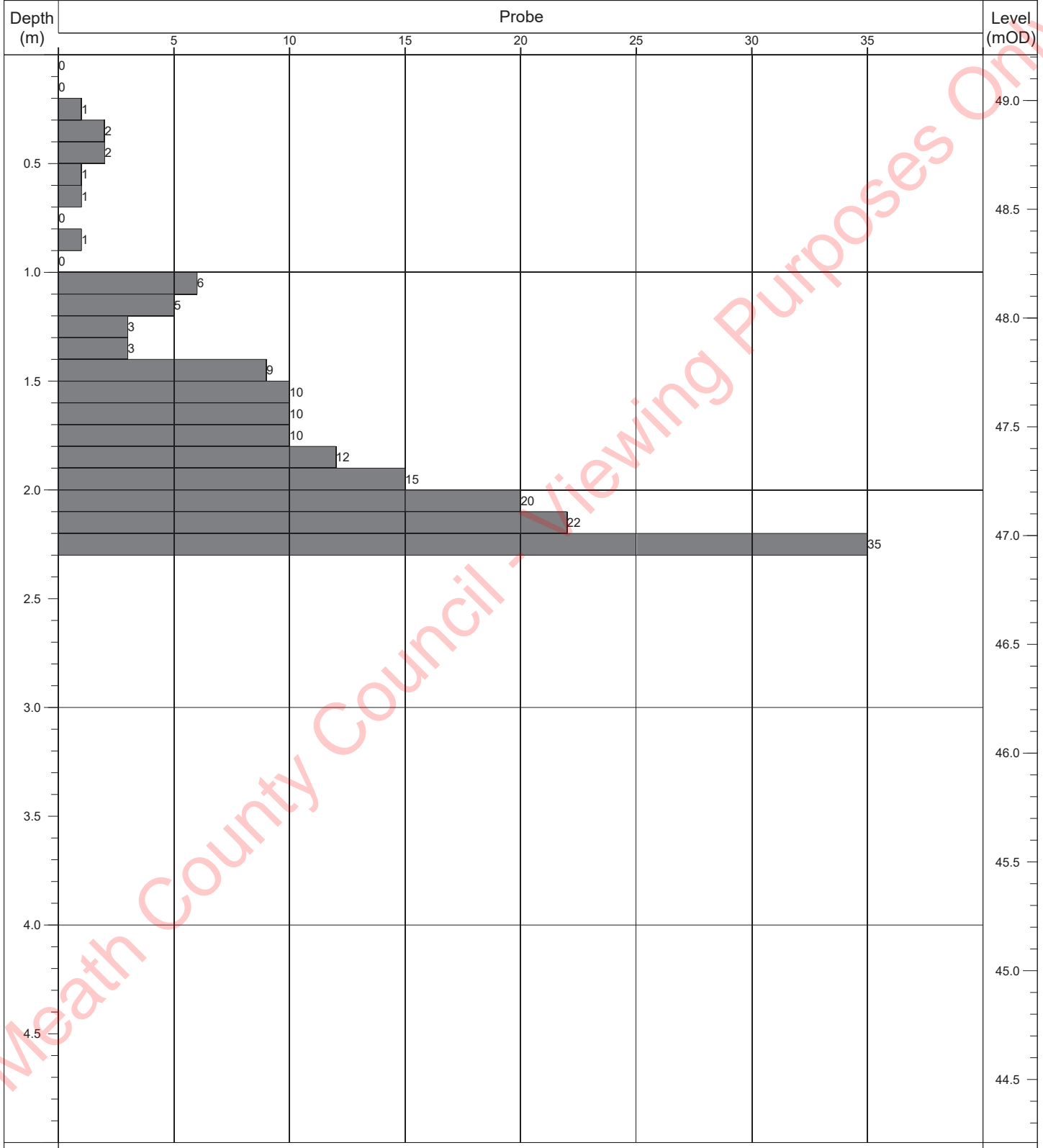
Contract:	Moygaddy	Easting:	693991.061	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739083.755	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	53.29	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP62</b>
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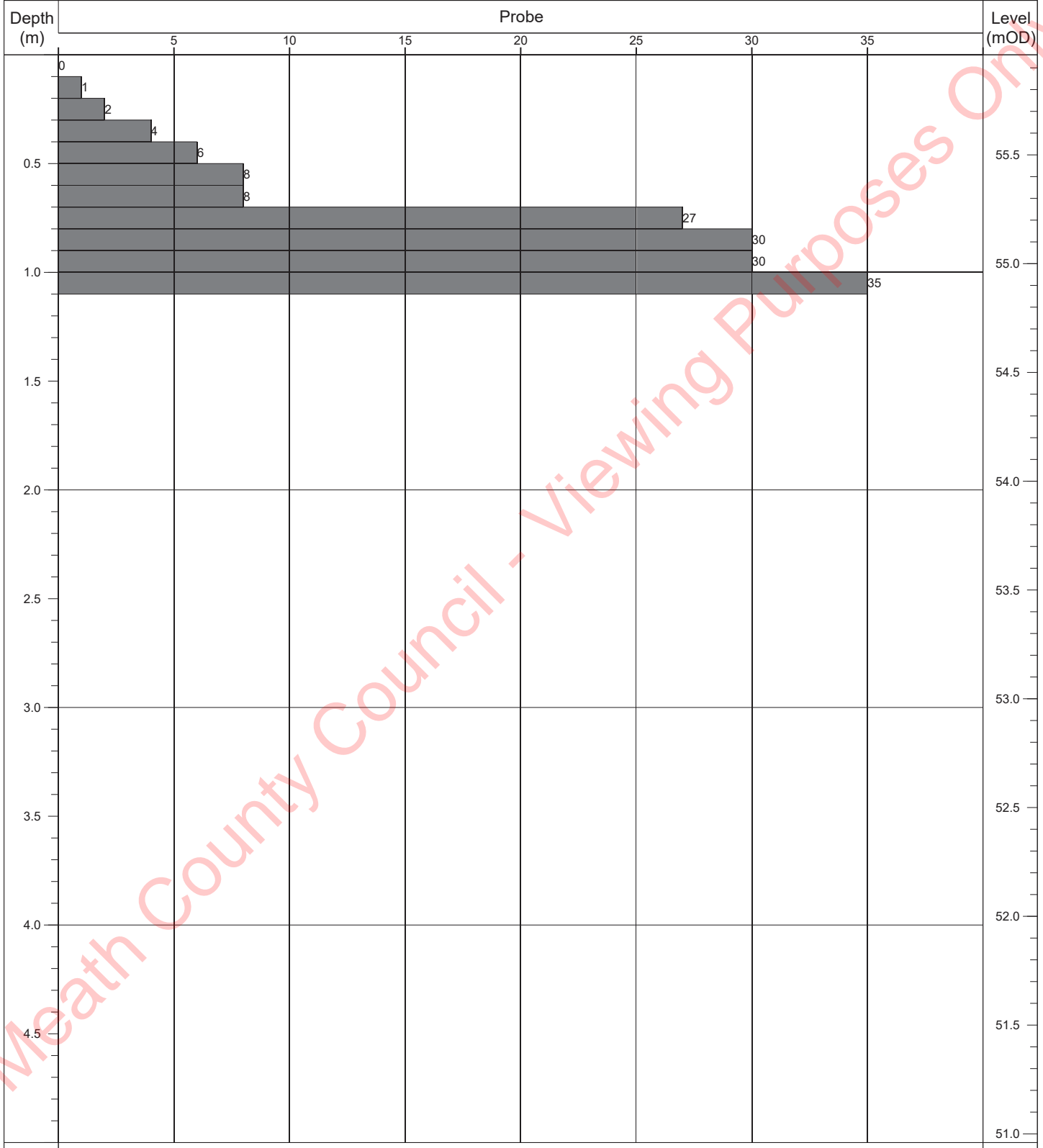
Contract:	Moygaddy	Easting:	694185.443	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739087.742	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	49.21	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

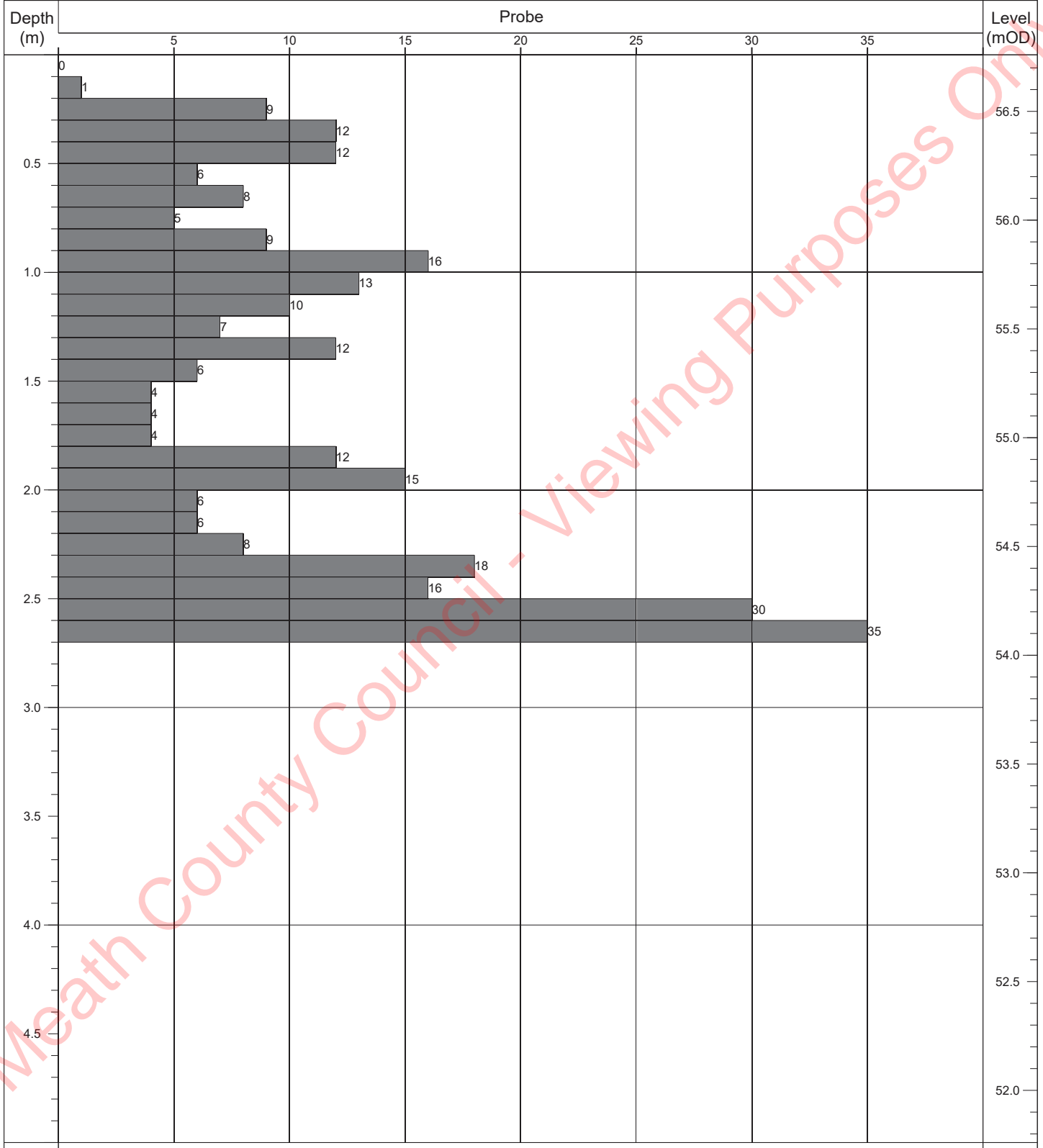
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP63</b>
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Contract:	Moygaddy	Easting:	694290.240	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739085.762	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	55.96	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



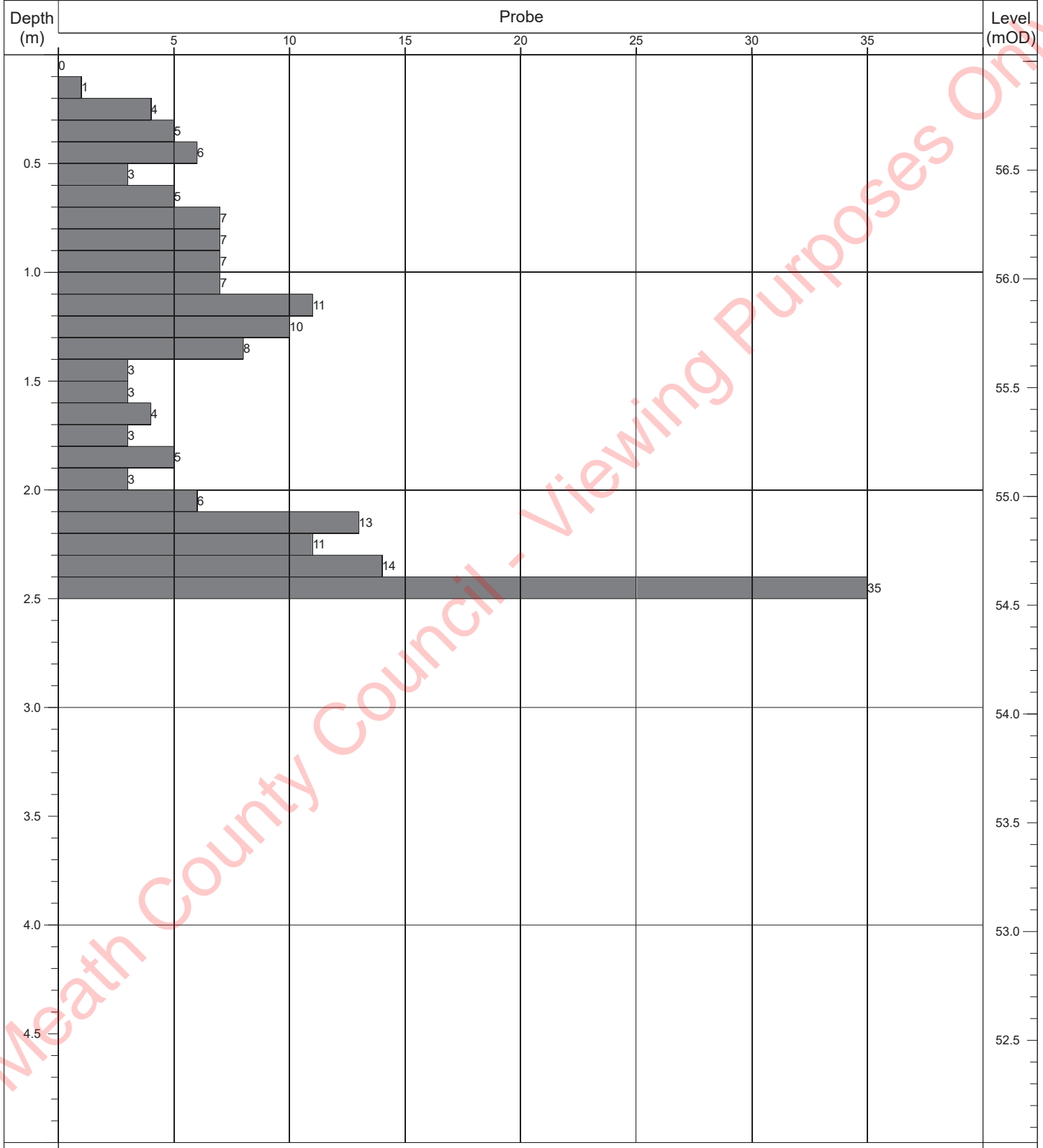
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	1.10m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP64</b>
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	

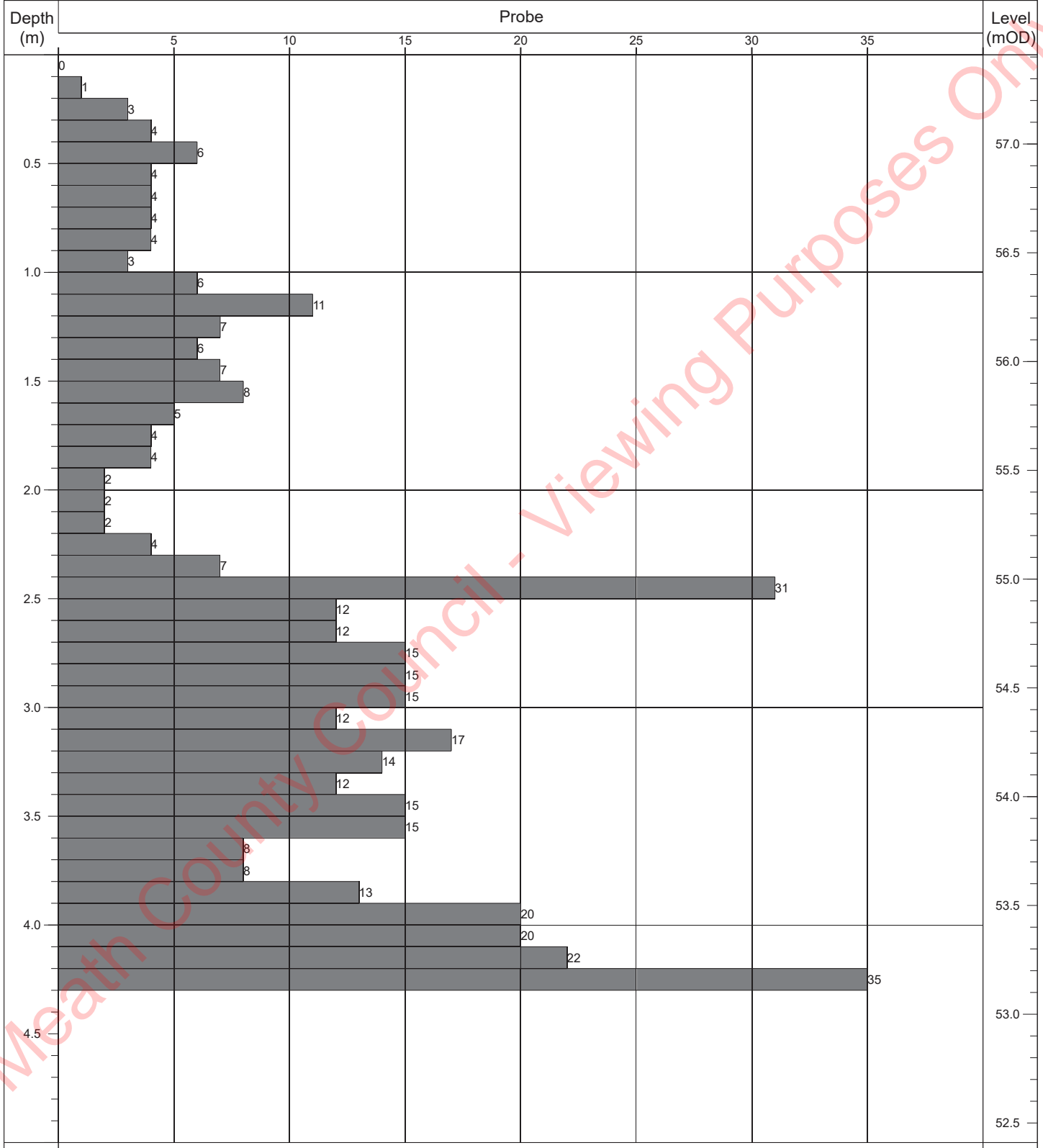
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP65</b>
Contract:	Moygaddy	Easting:	694488.362	Date Started: 21/06/2021
Location:	Maynooth, Co. Meath	Northing:	739086.289	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	57.03	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

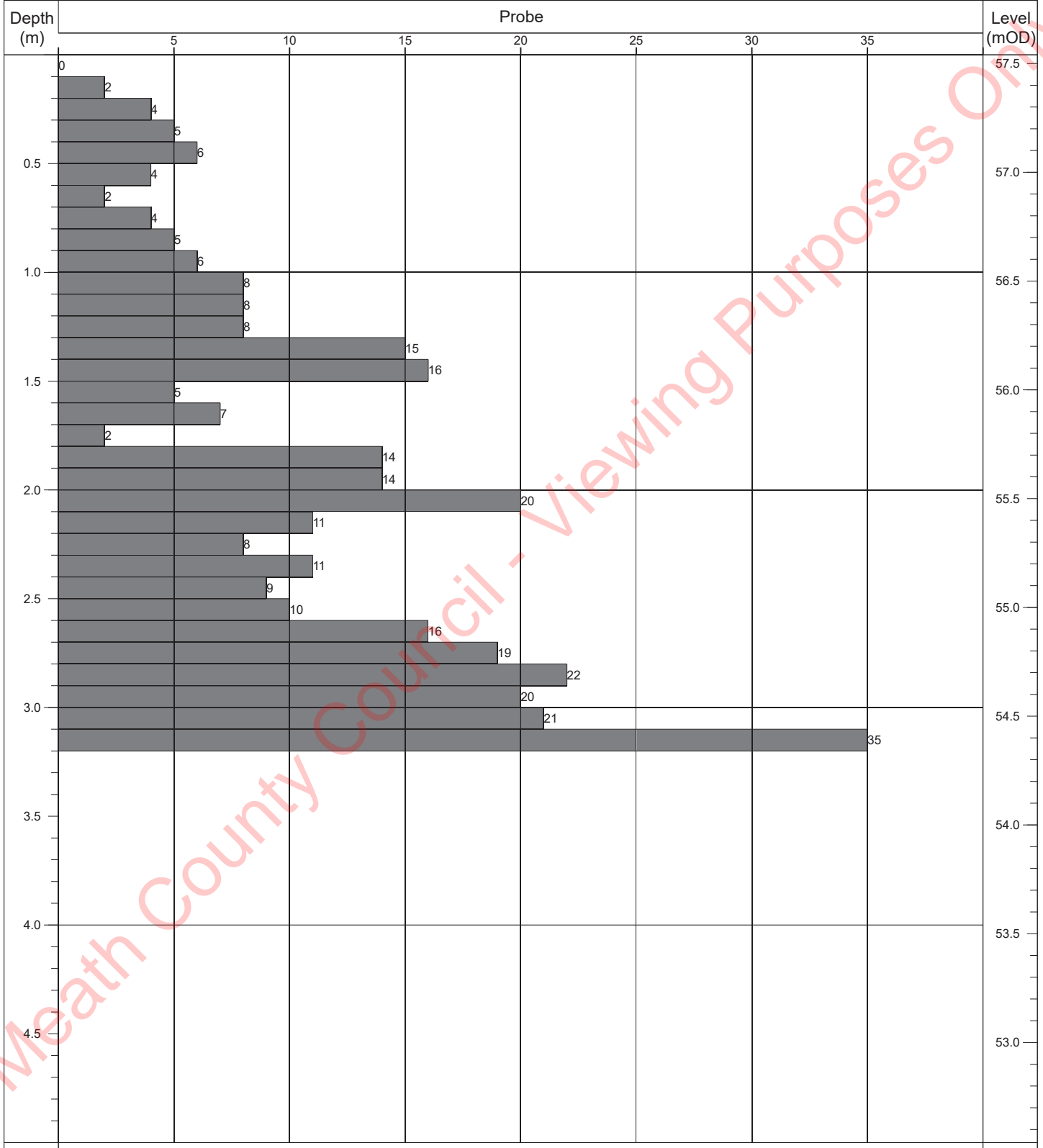



Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP66</b>
Contract:	Moygaddy	Easting:	694588.543	Date Started: 21/06/2021
Location:	Maynooth, Co. Meath	Northing:	739090.206	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	57.41	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



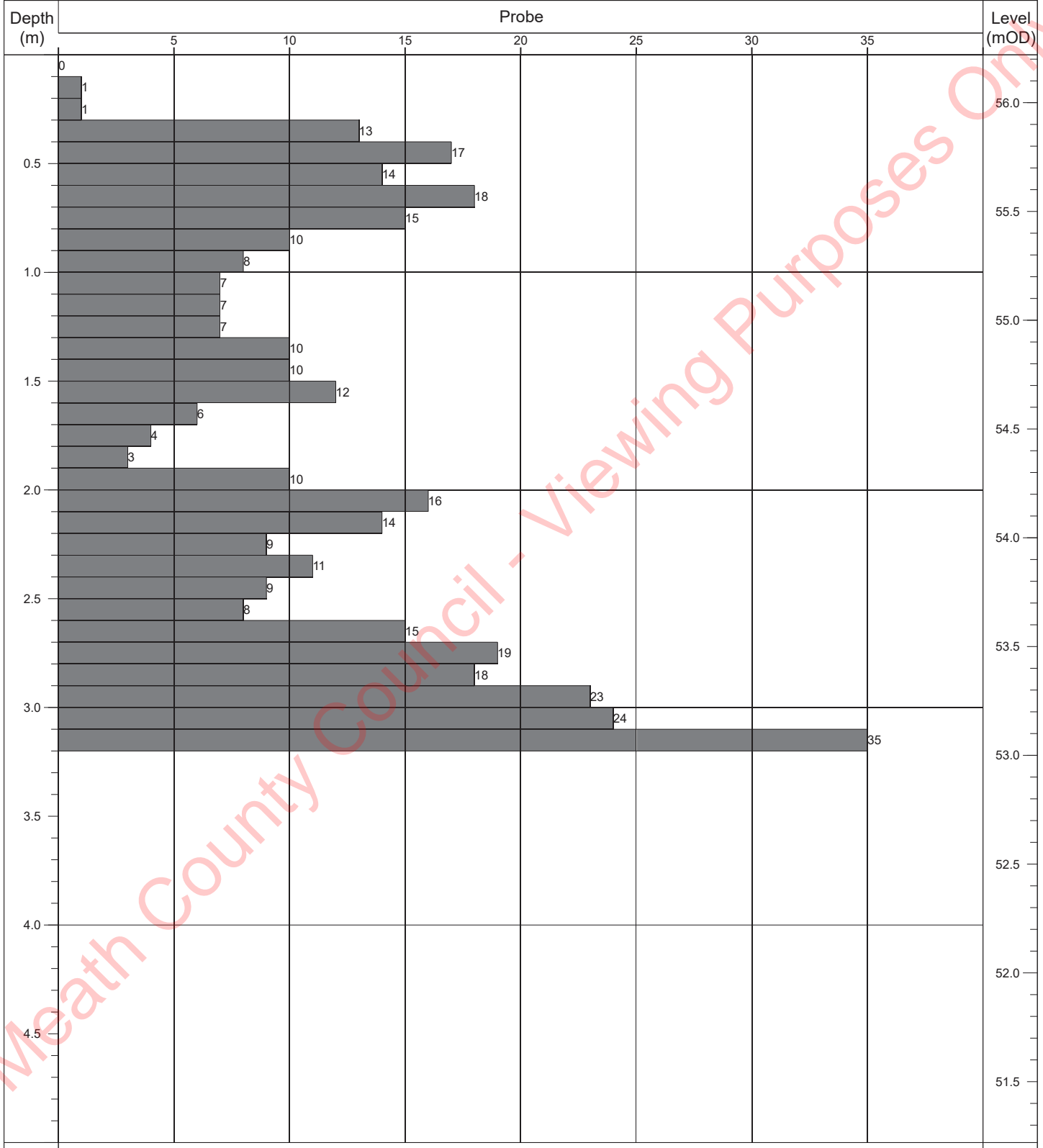
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	4.30m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP67</b>
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	

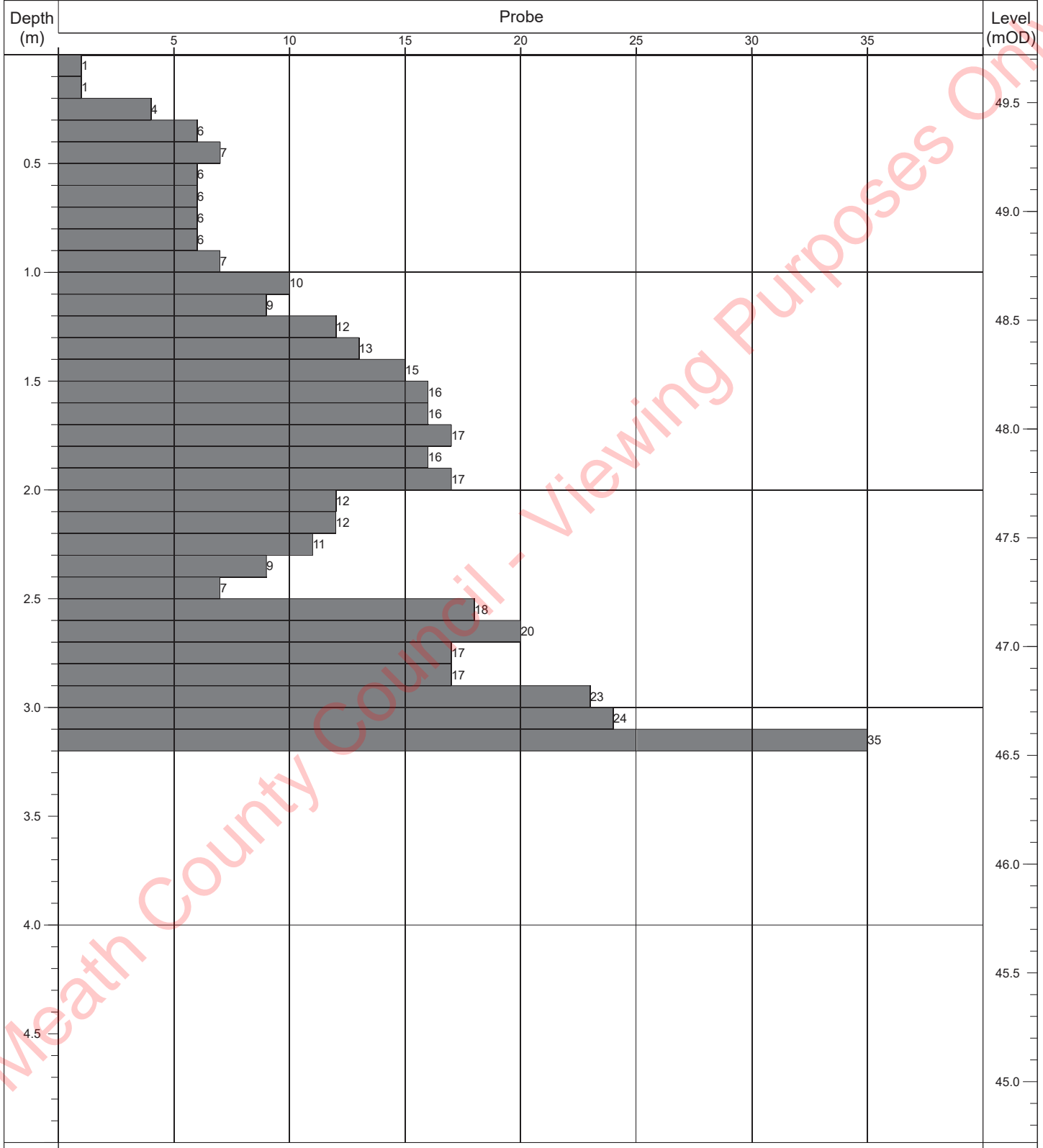
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP68</b>
Contract:	Moygaddy	Easting:	694787.254	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739083.914	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	56.22	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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




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

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP69</b>
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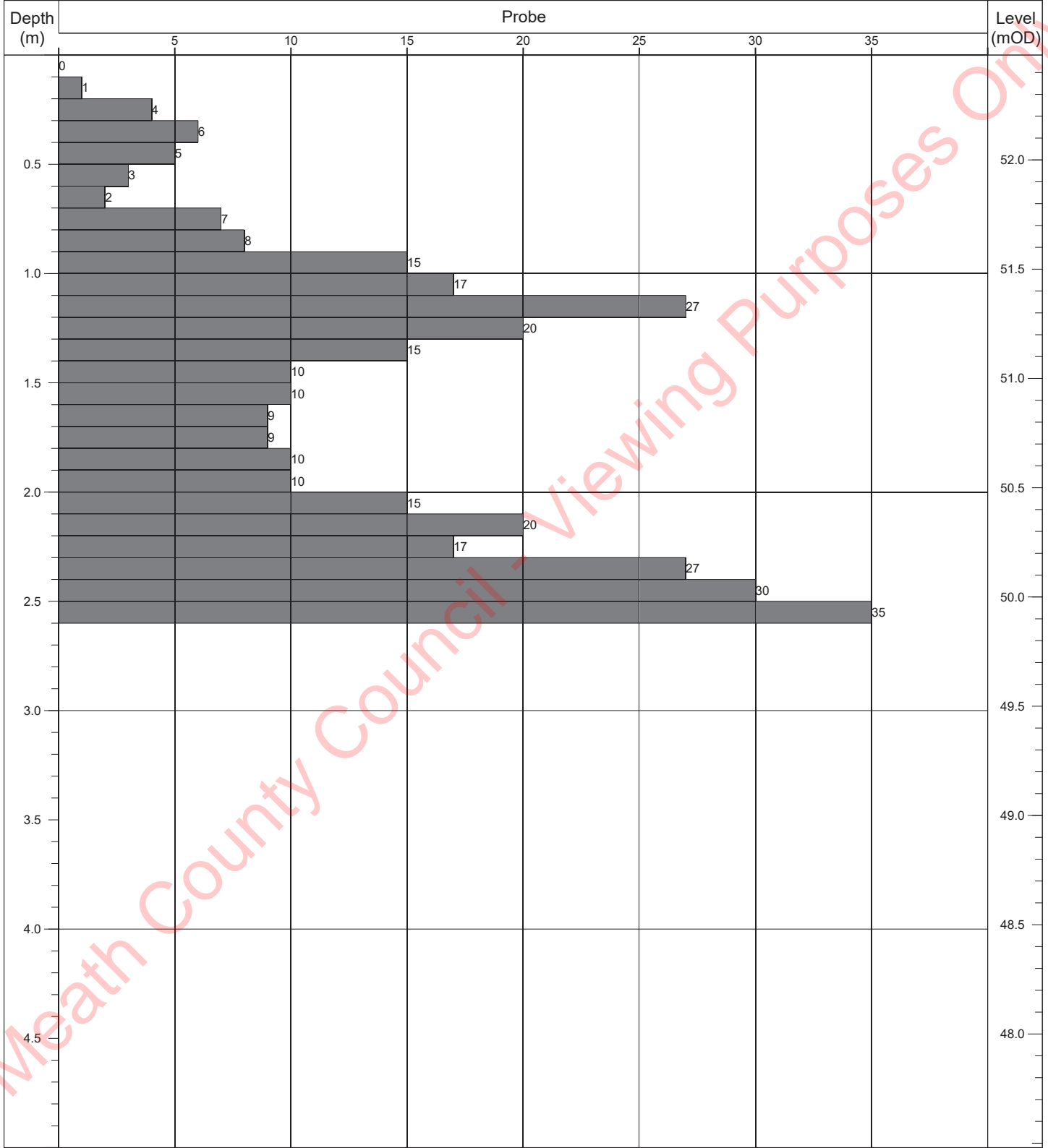
Contract:	Moygaddy	Easting:	694090.959	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738991.035	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	49.72	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1




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

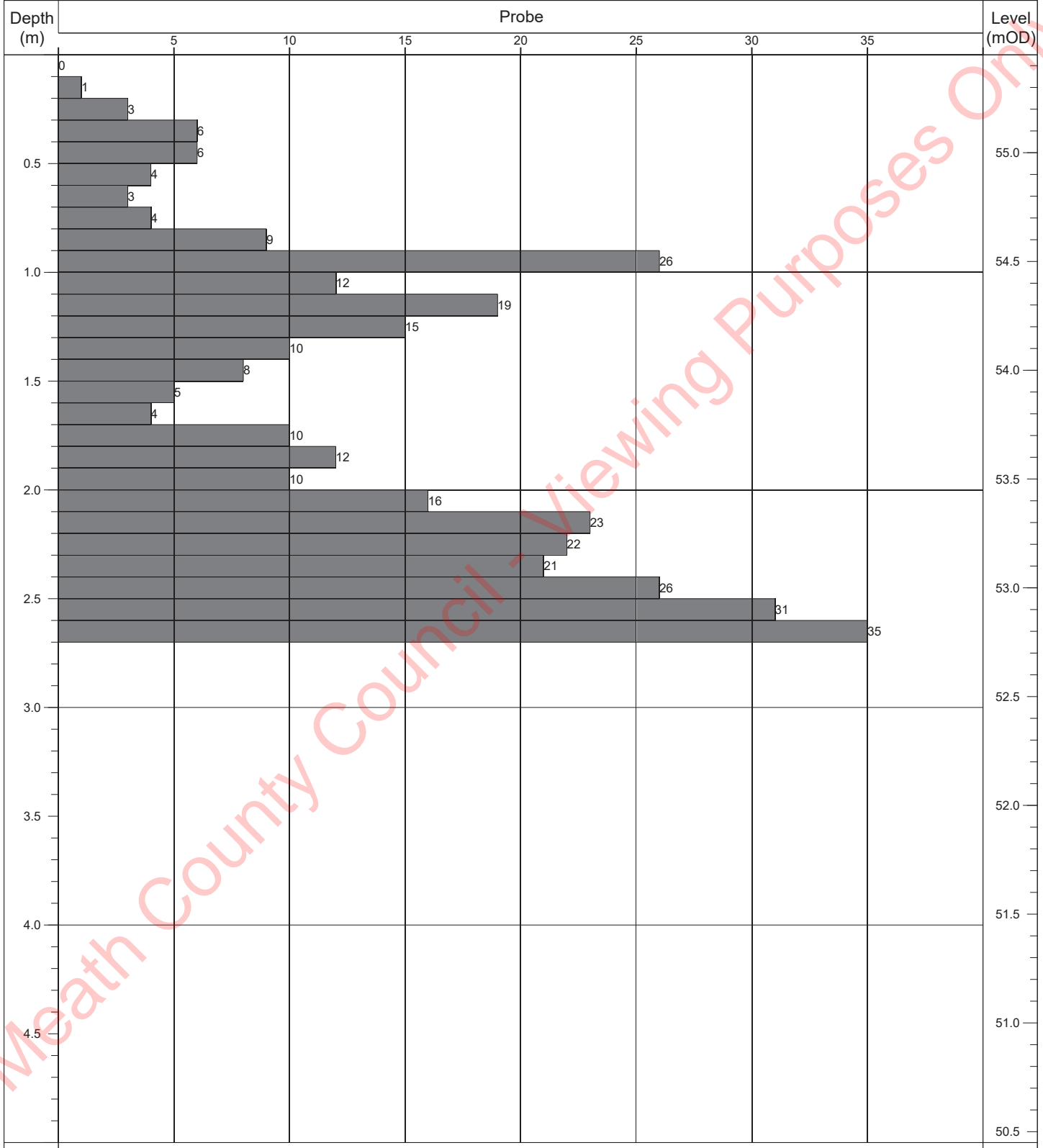
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP70</b>
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Contract:	Moygaddy	Easting:	694187.890	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738981.735	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	52.48	Scale:	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	

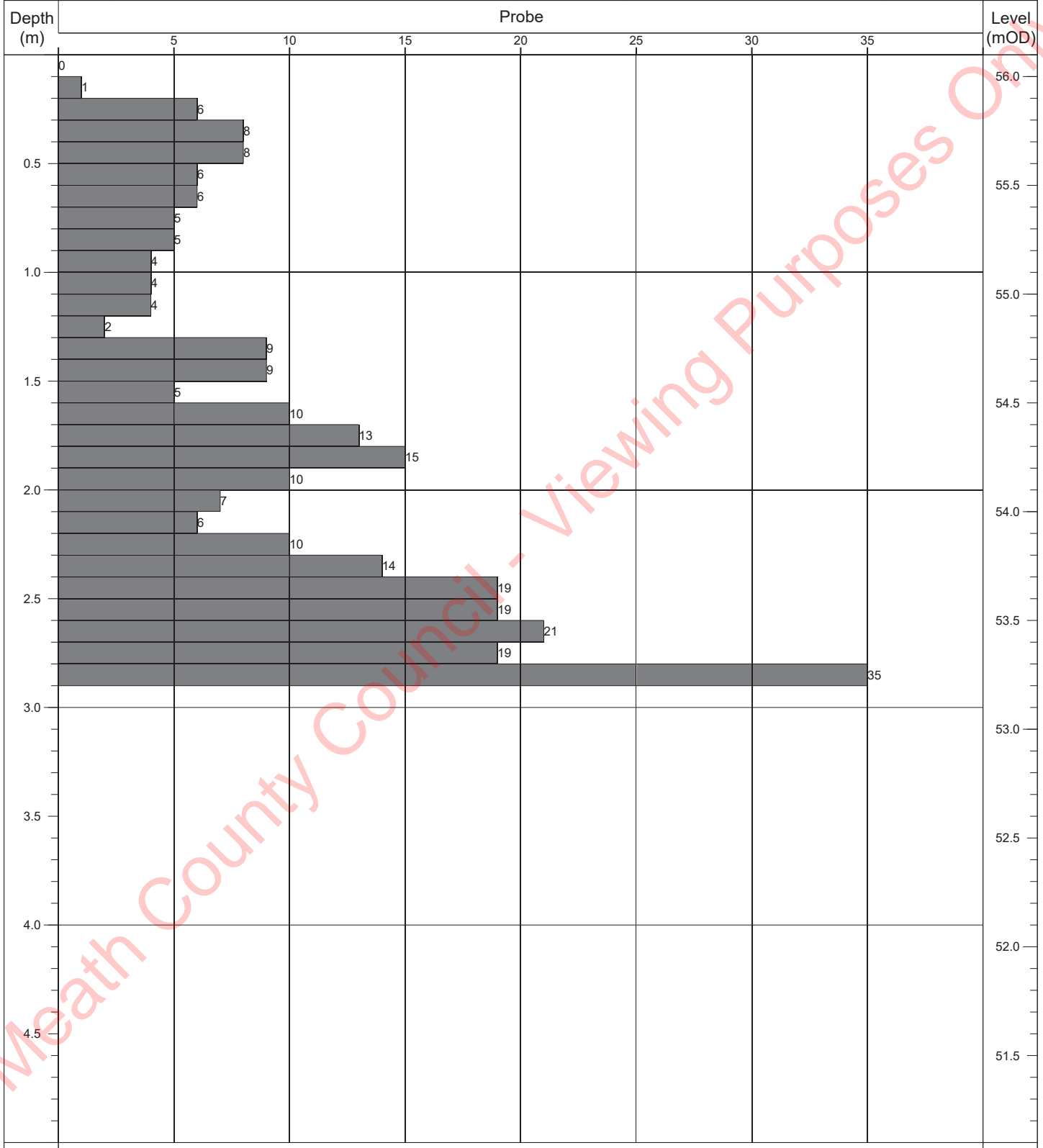
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP71</b>
Contract:	Moygaddy	Easting:	694289.189	Date Started: 18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738983.578	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	55.45	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



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

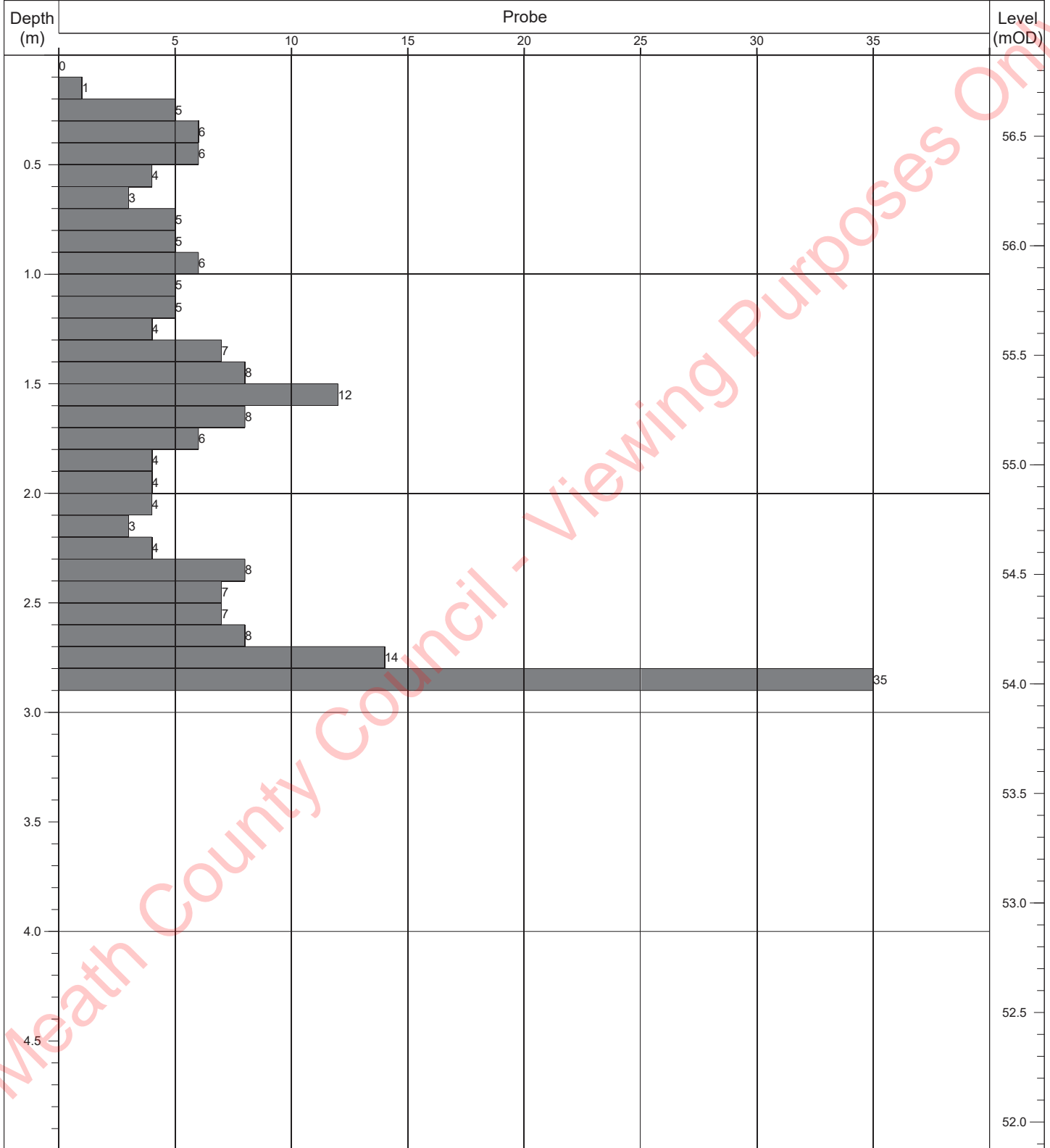


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP72</b>
Contract:	Moygaddy	Easting:	694384.733	Date Started: 18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738989.607	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	56.10	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: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



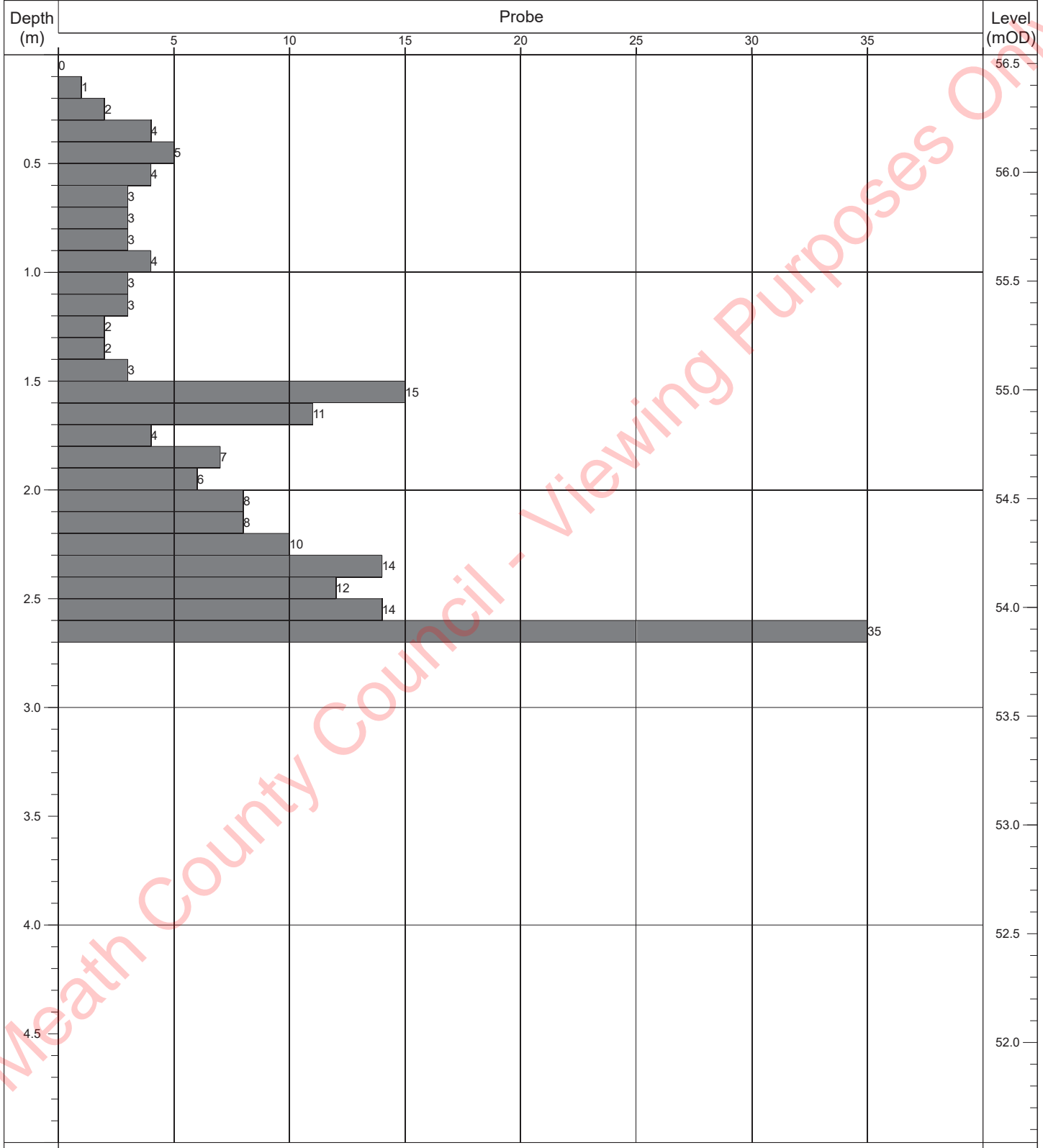
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.90m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP73</b>
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	<b>Dynamic Probe Log</b>			Probe No: <b>DP74</b>
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	

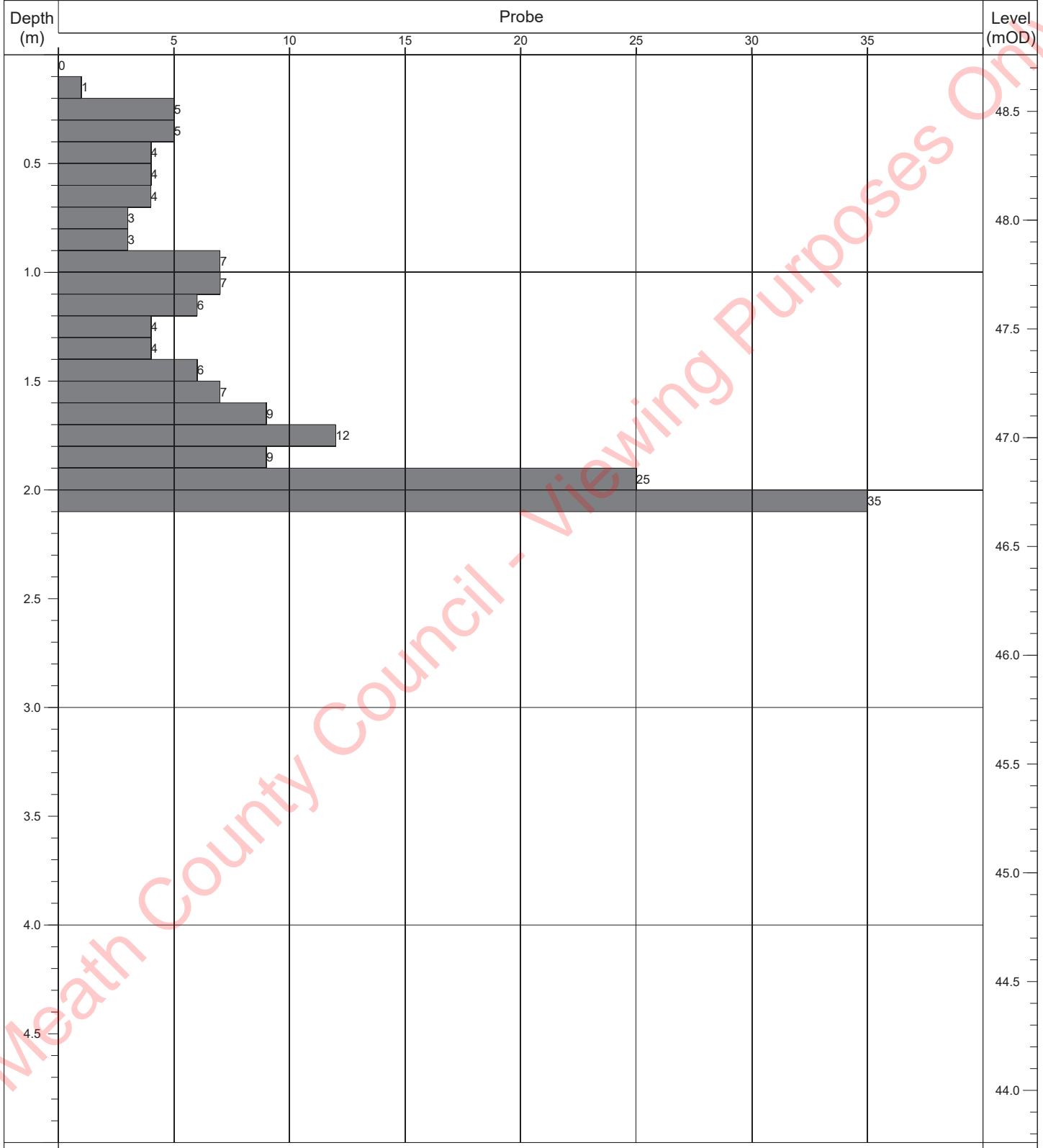
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP75</b>
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Contract:	Moygaddy	Easting:	694691.101	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	738989.216	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.20	Scale:	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

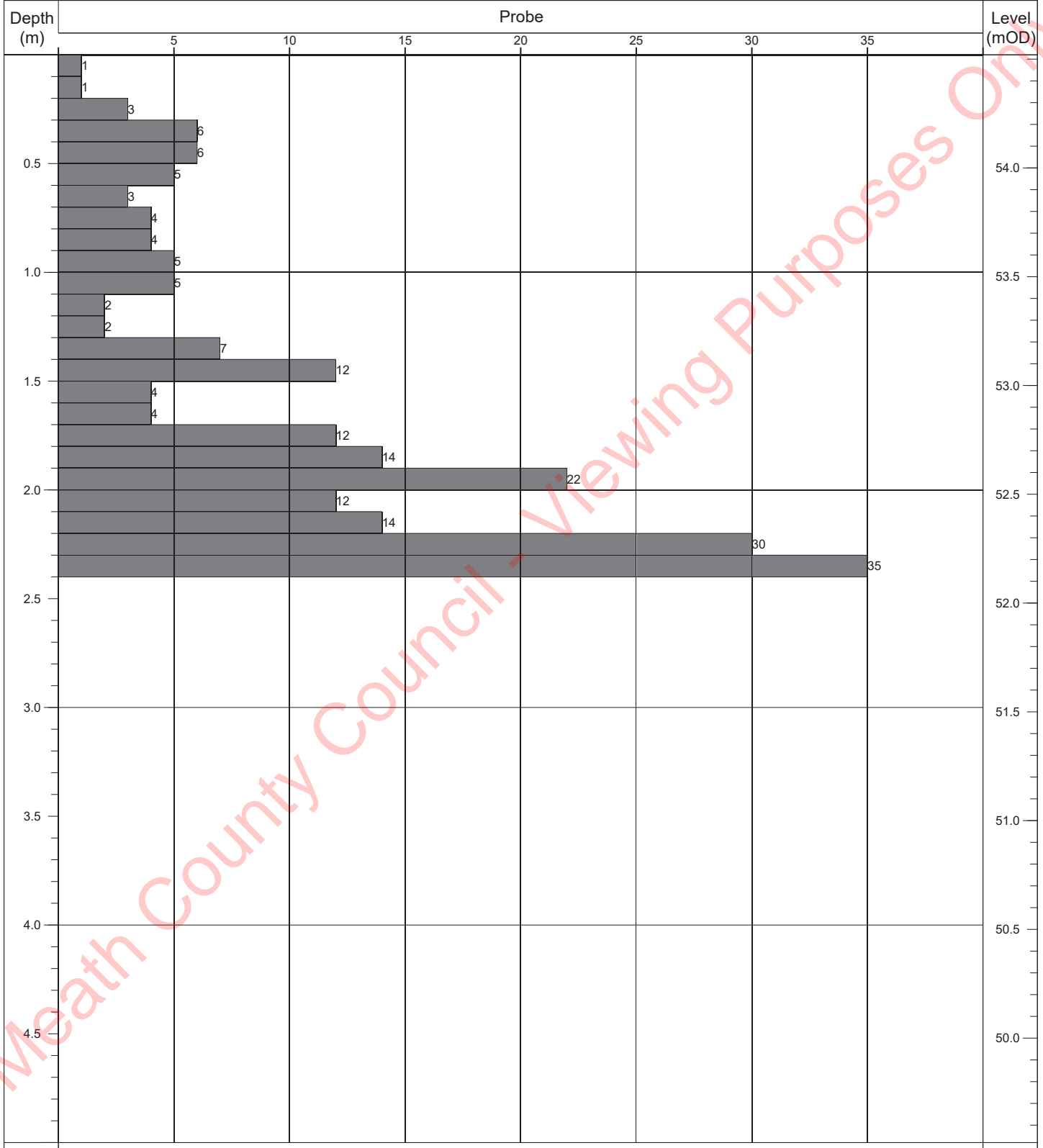
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	5.00m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP76</b>	
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	<b>Dynamic Probe Log</b>			Probe No: <b>DP77</b>
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

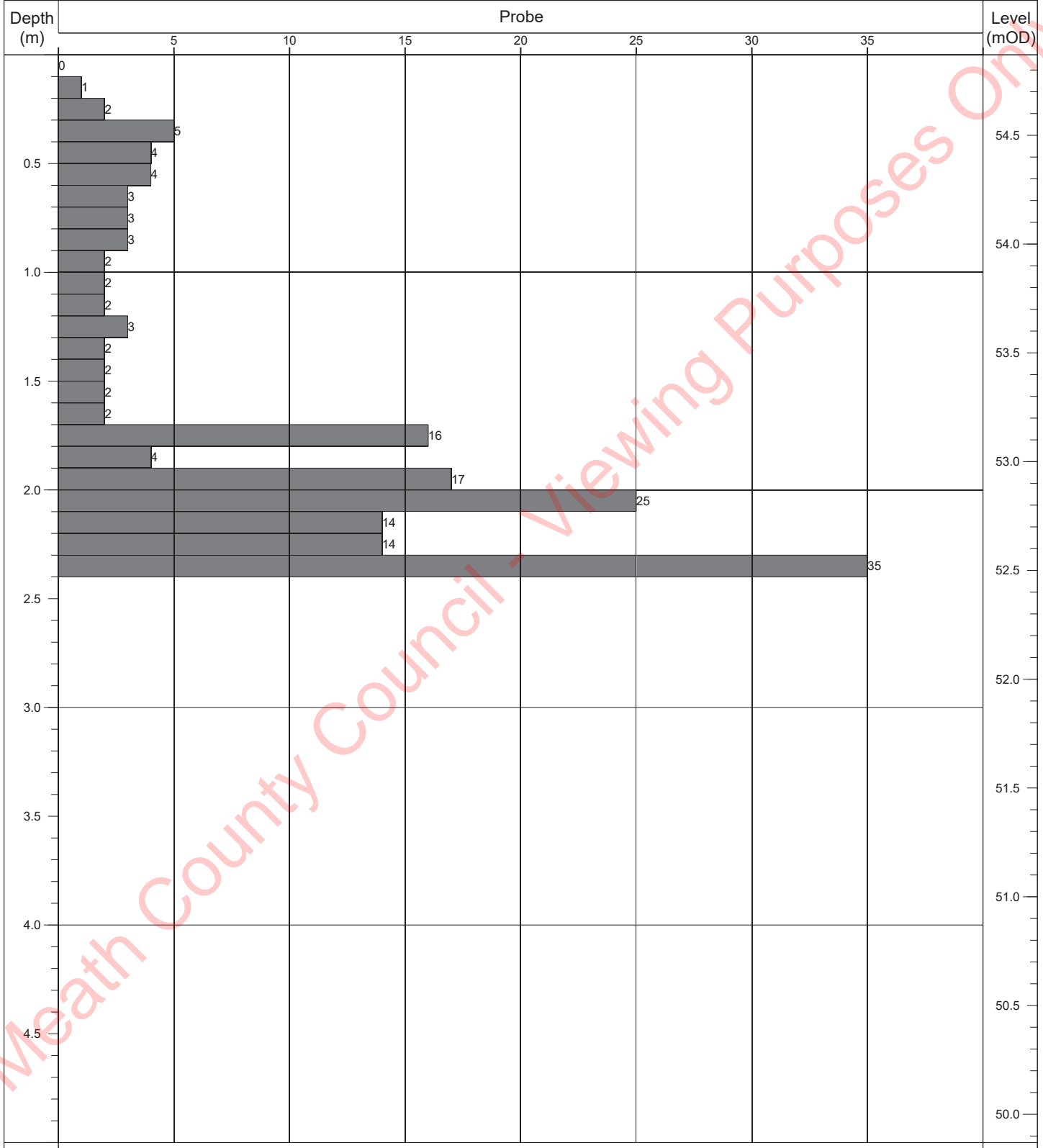



	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	



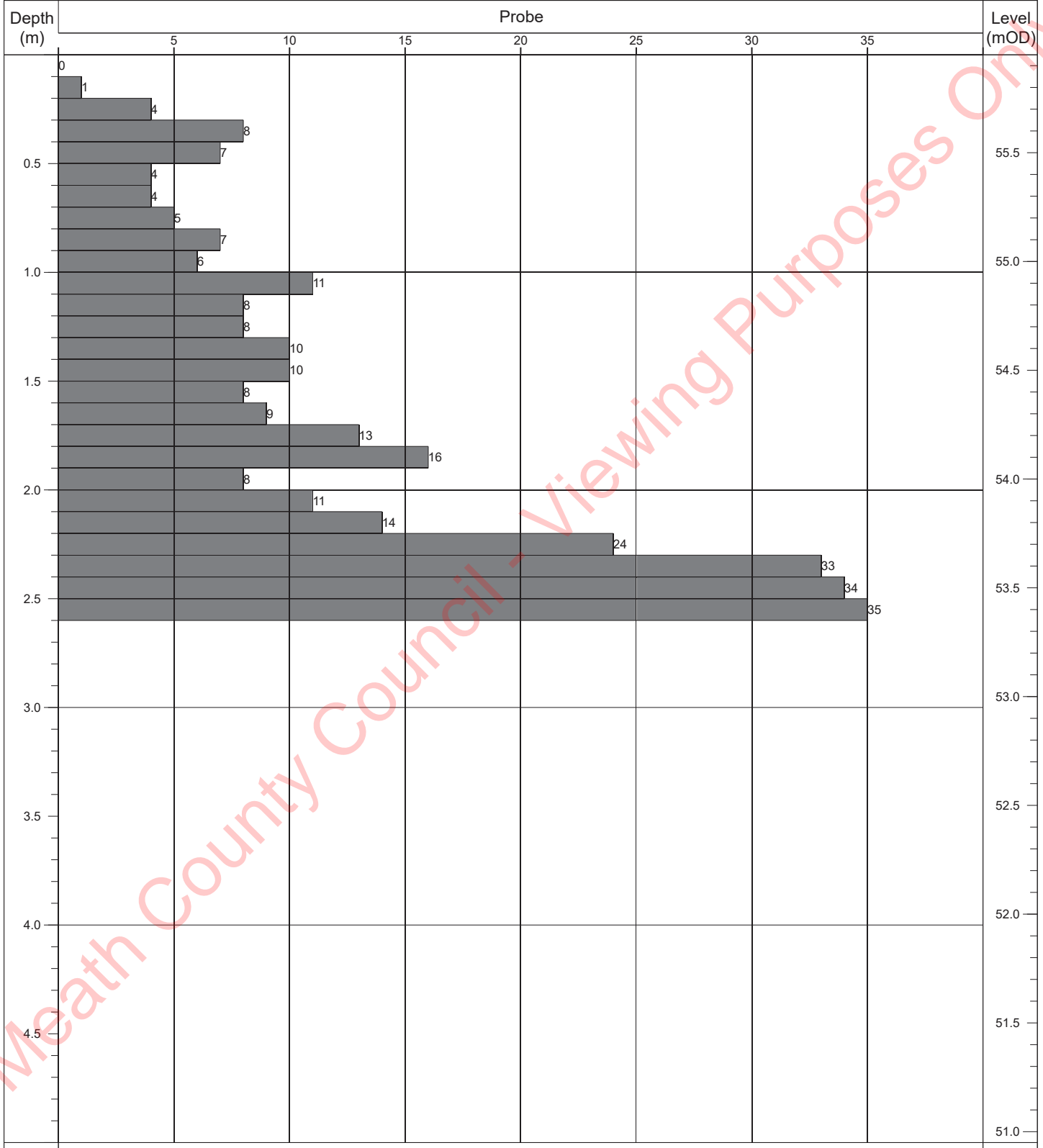
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP78</b>
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Contract:	Moygaddy	Easting:	694392.533	Date Started:	21/06/2021
Location:	Maynooth, Co. Meath	Northing:	738890.201	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	54.87	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



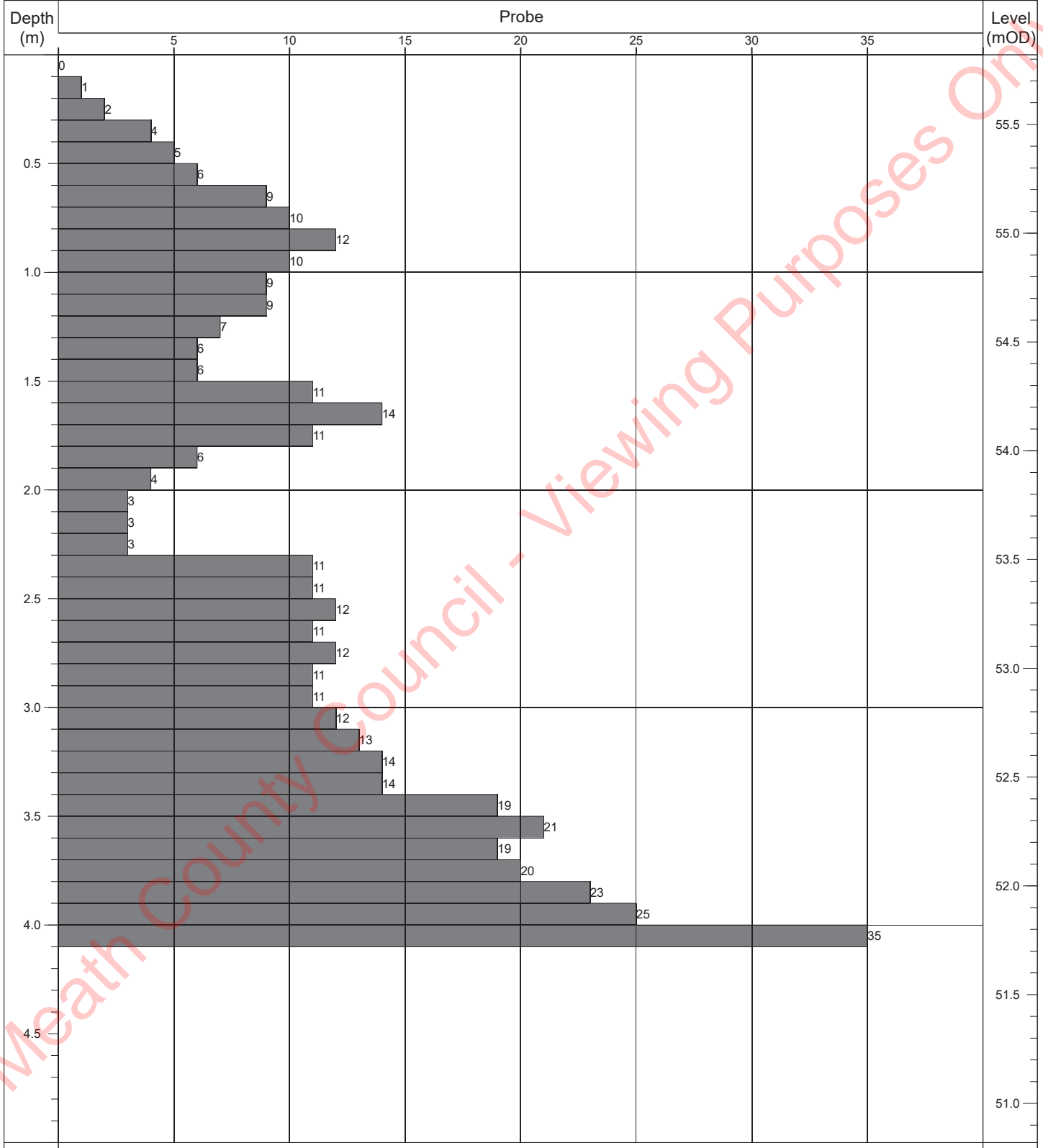
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP79</b>
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	

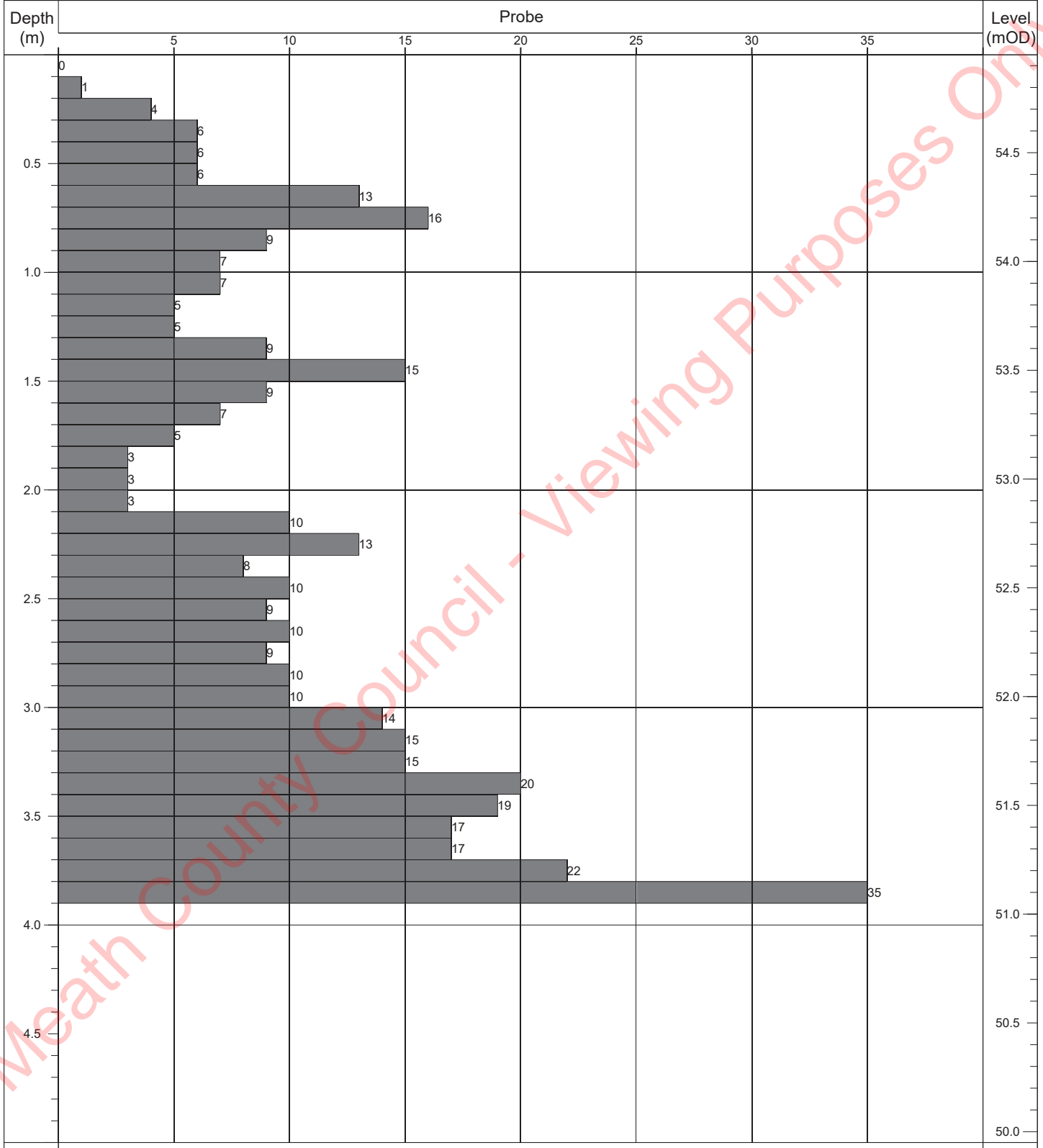
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP80</b>
Contract:	Moygaddy	Easting:	694587.972	Date Started: 22/06/2021
Location:	Maynooth, Co. Meath	Northing:	738887.143	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	55.82	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	4.10m	Obstruction - boulders.	DPH	50kg	500mm	

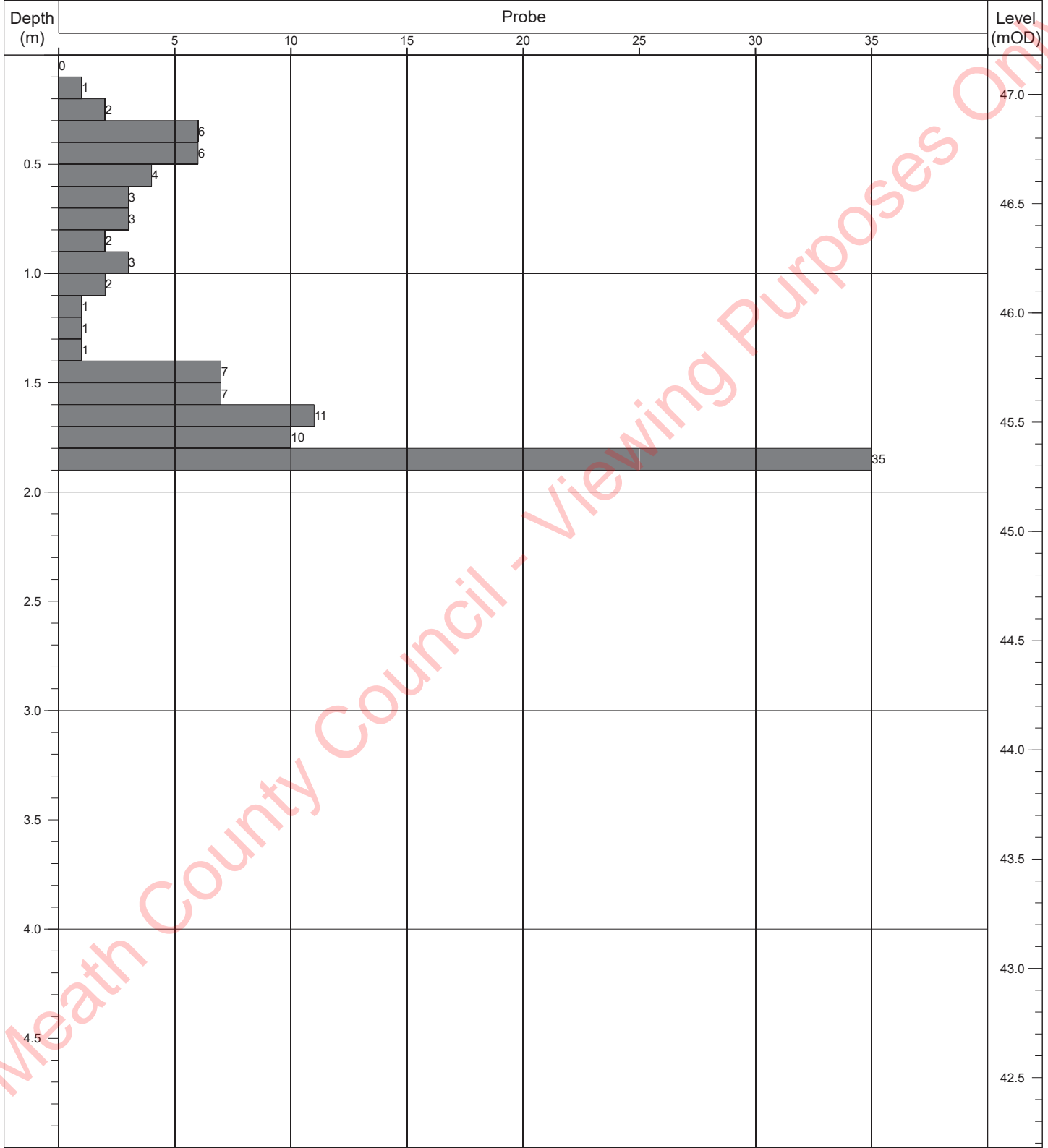
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP81</b>
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Contract:	Moygaddy	Easting:	694688.909	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	738889.761	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	54.95	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



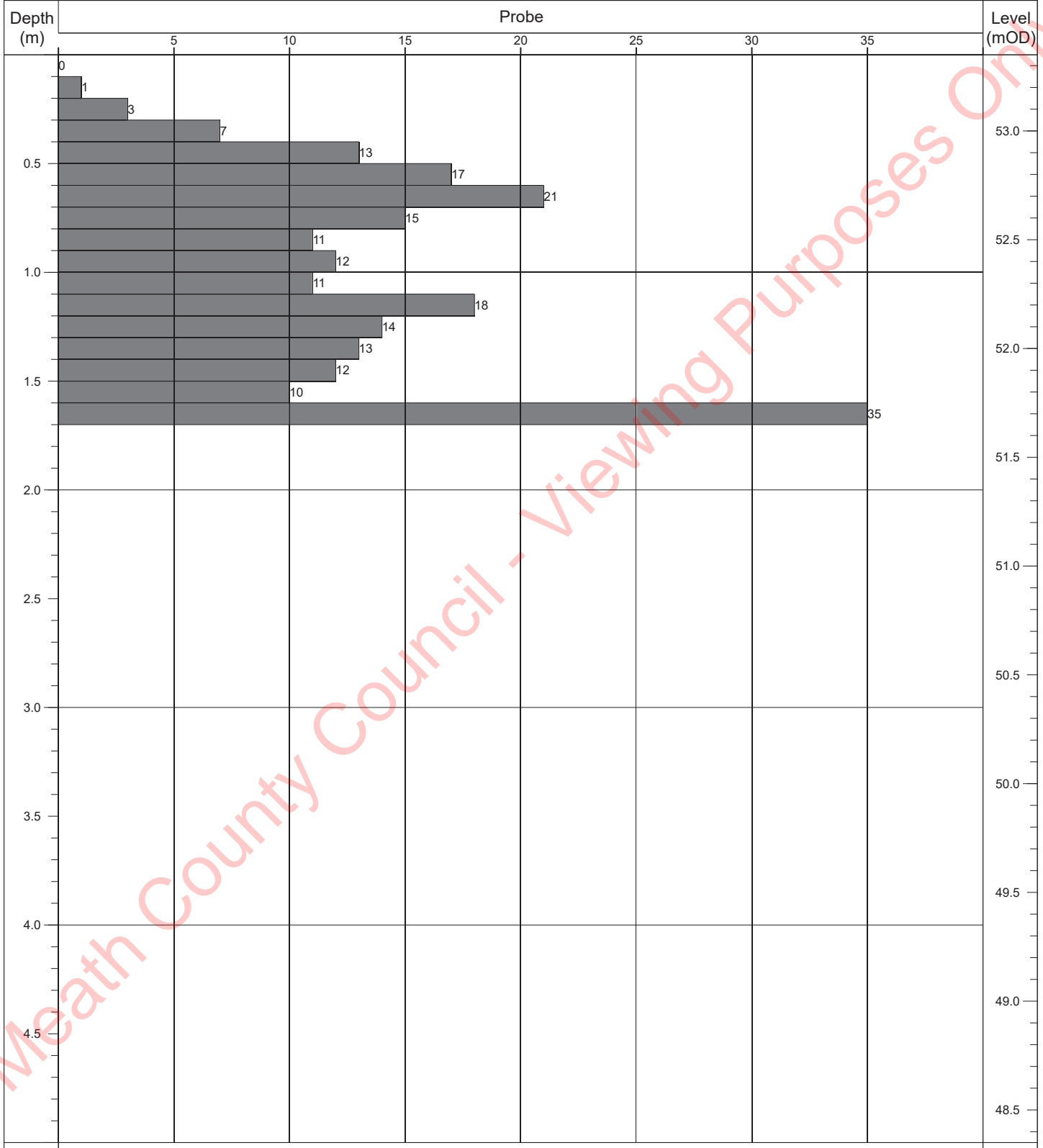
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.90m	Obstruction - boulders.	DPH	50kg	500mm	


Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP82</b>
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	

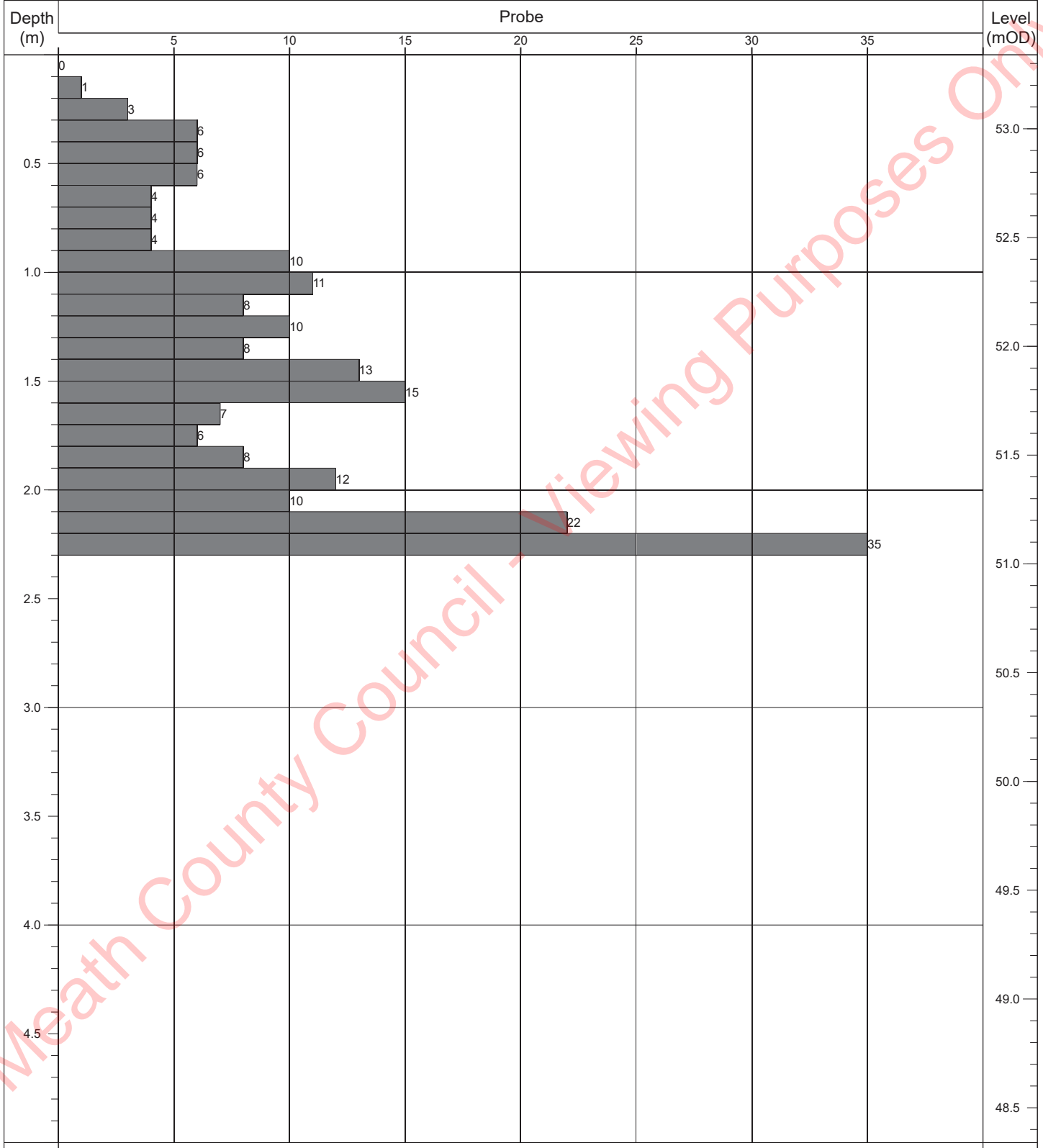
Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP83</b>
Contract:	Moygaddy	Easting:	694396.549	Date Started: 21/06/2021
Location:	Maynooth, Co. Meath	Northing:	738786.809	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	53.35	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1




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



Contract No: 5863	<b>Dynamic Probe Log</b>			Probe No: <b>DP84</b>
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**

Meath County Council - Viewing Purposes Only!

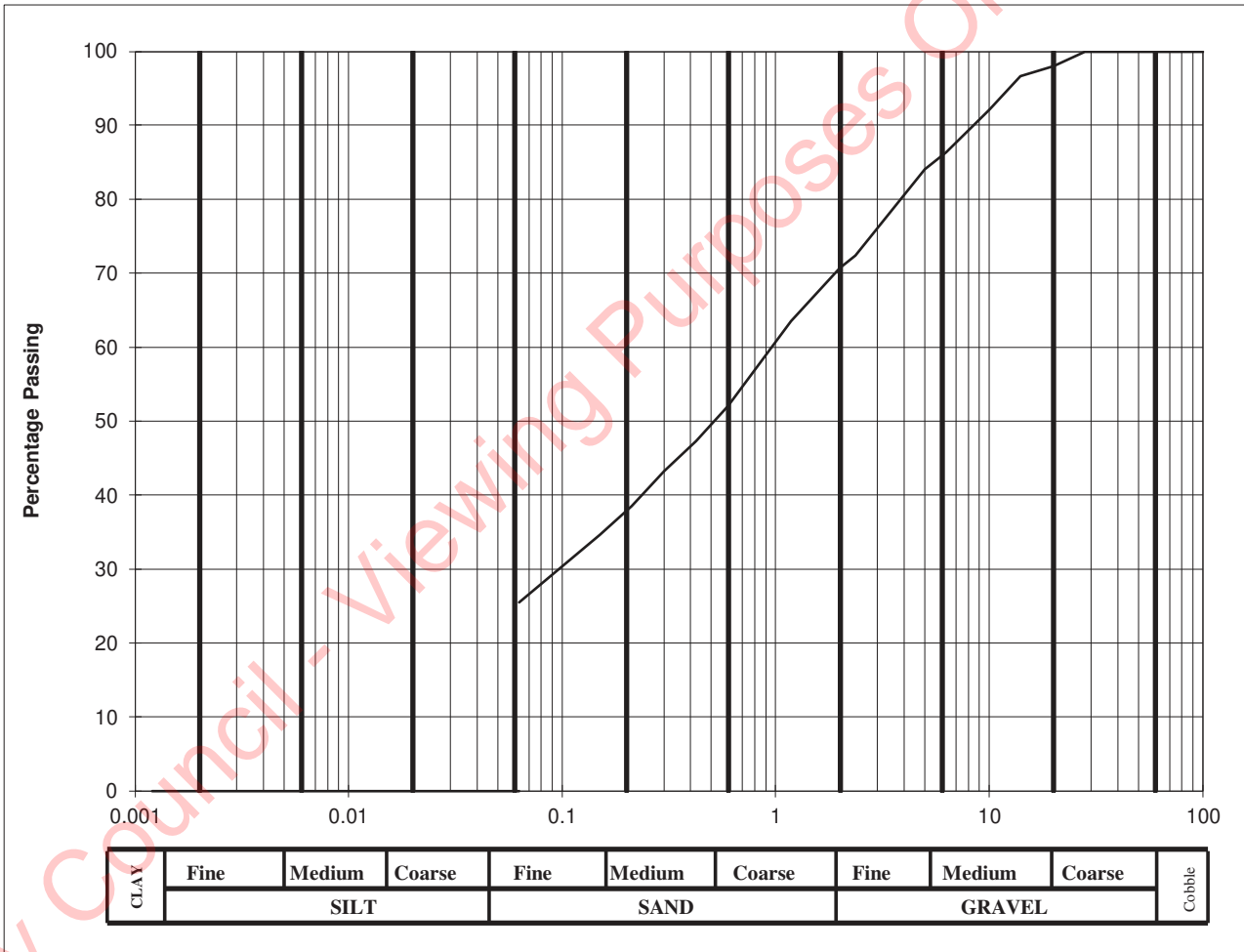
**Classification Tests in accordance with BS1377: Part 4**

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 <sup>3</sup>	Particle Density Mg/m <sup>3</sup>	% 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

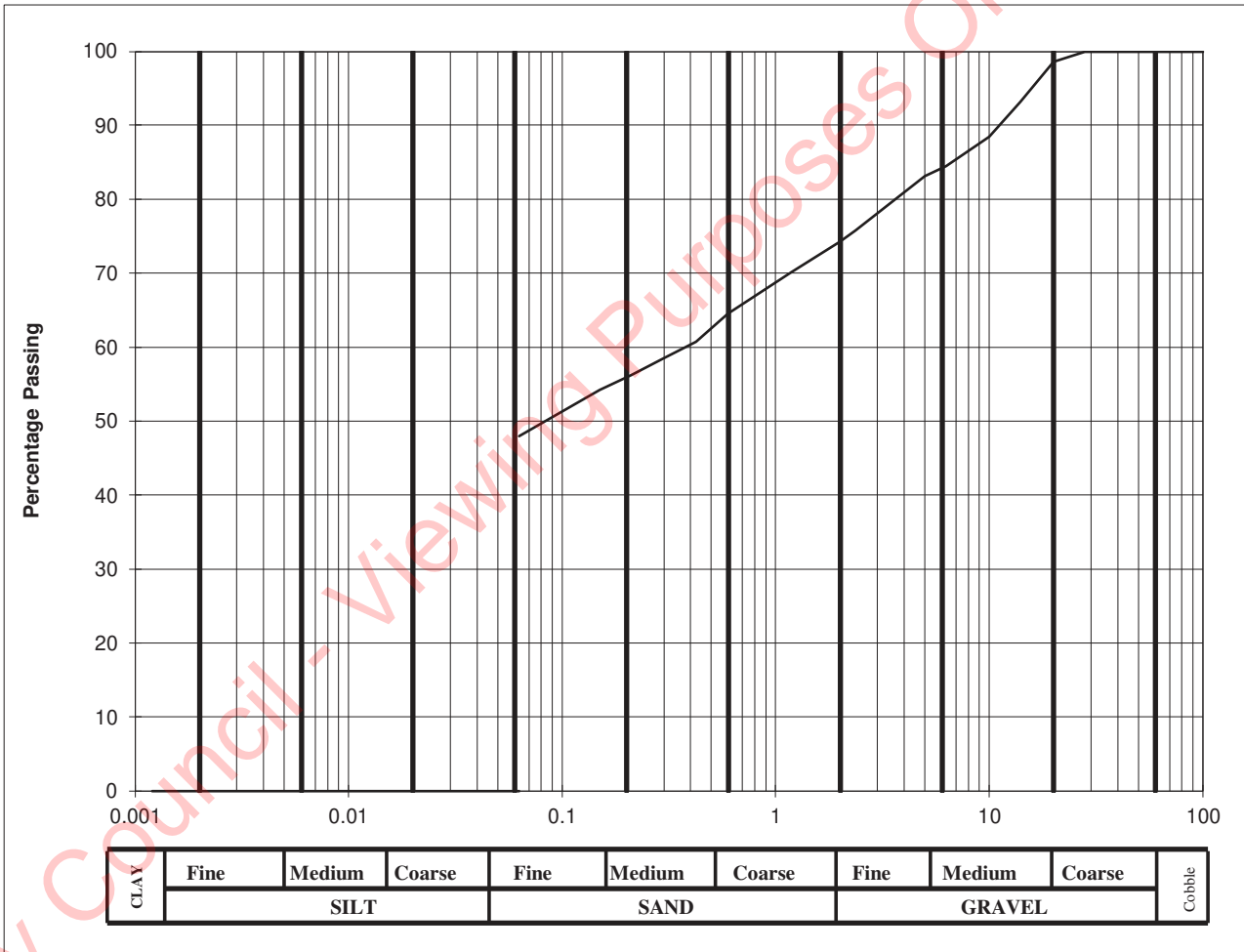
Lab. No :	21/856
Sample No :	MK15

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

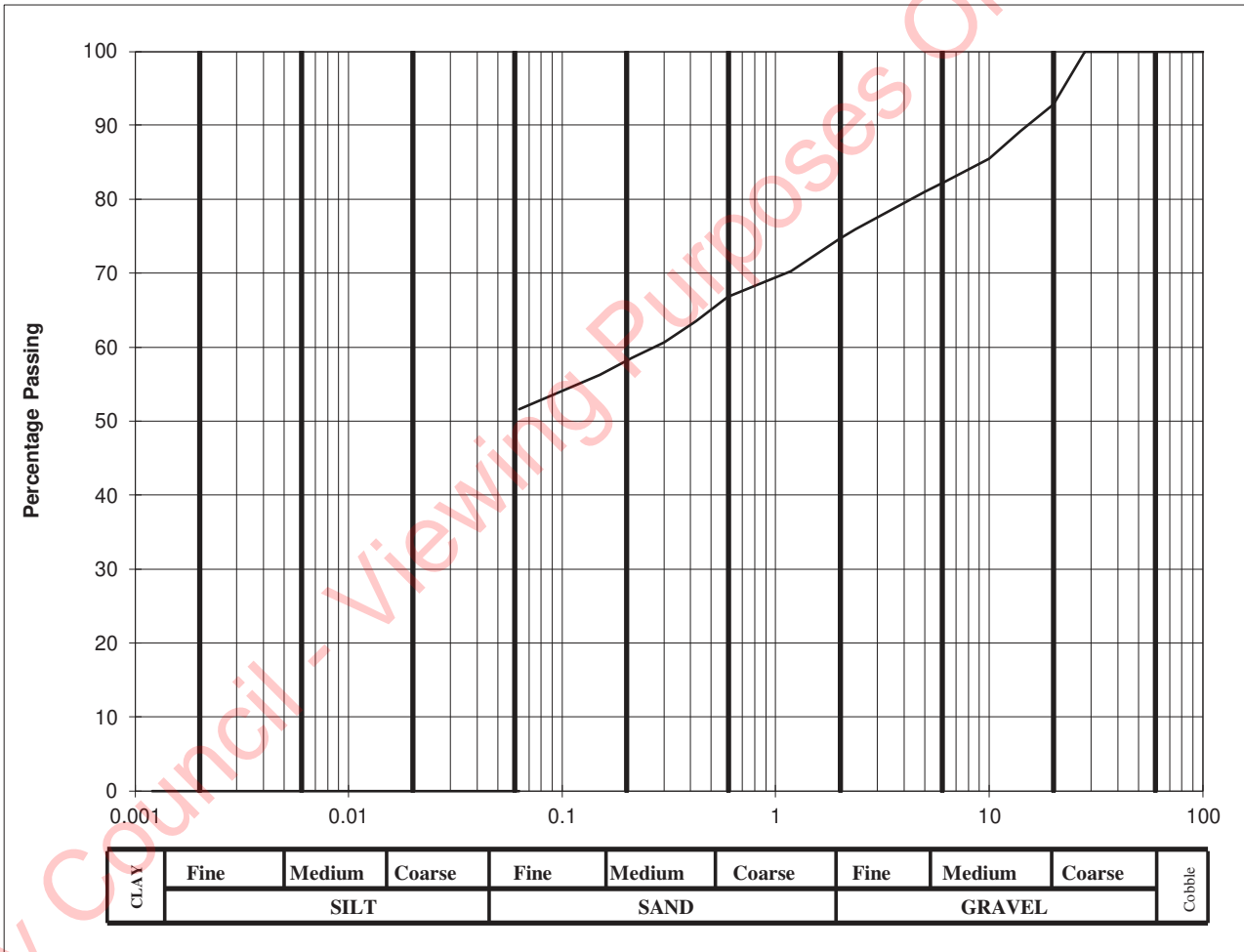
Lab. No :	21/860
Sample No :	MK44

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

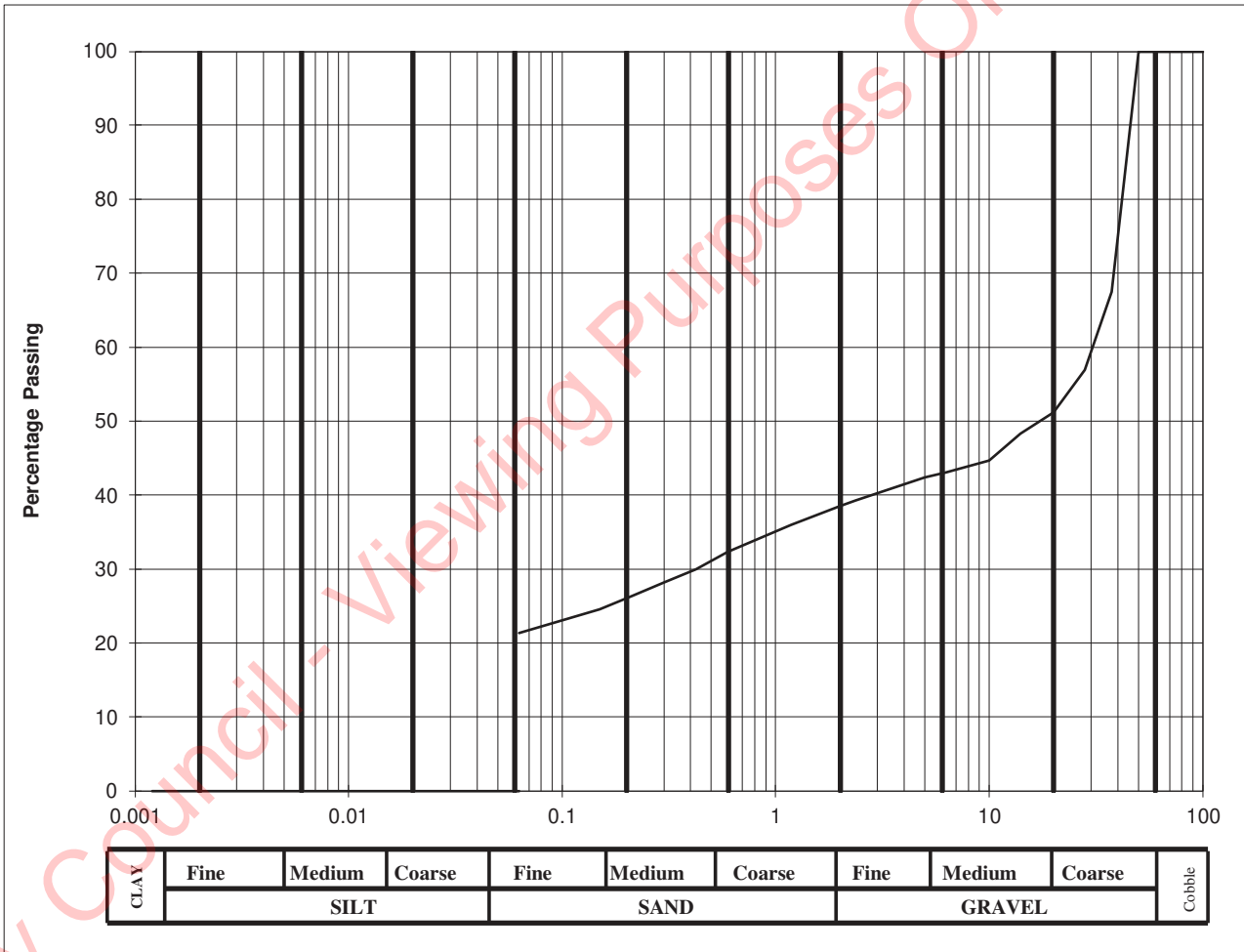
Hole ID :	TP 06
Depth, m :	1.00

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

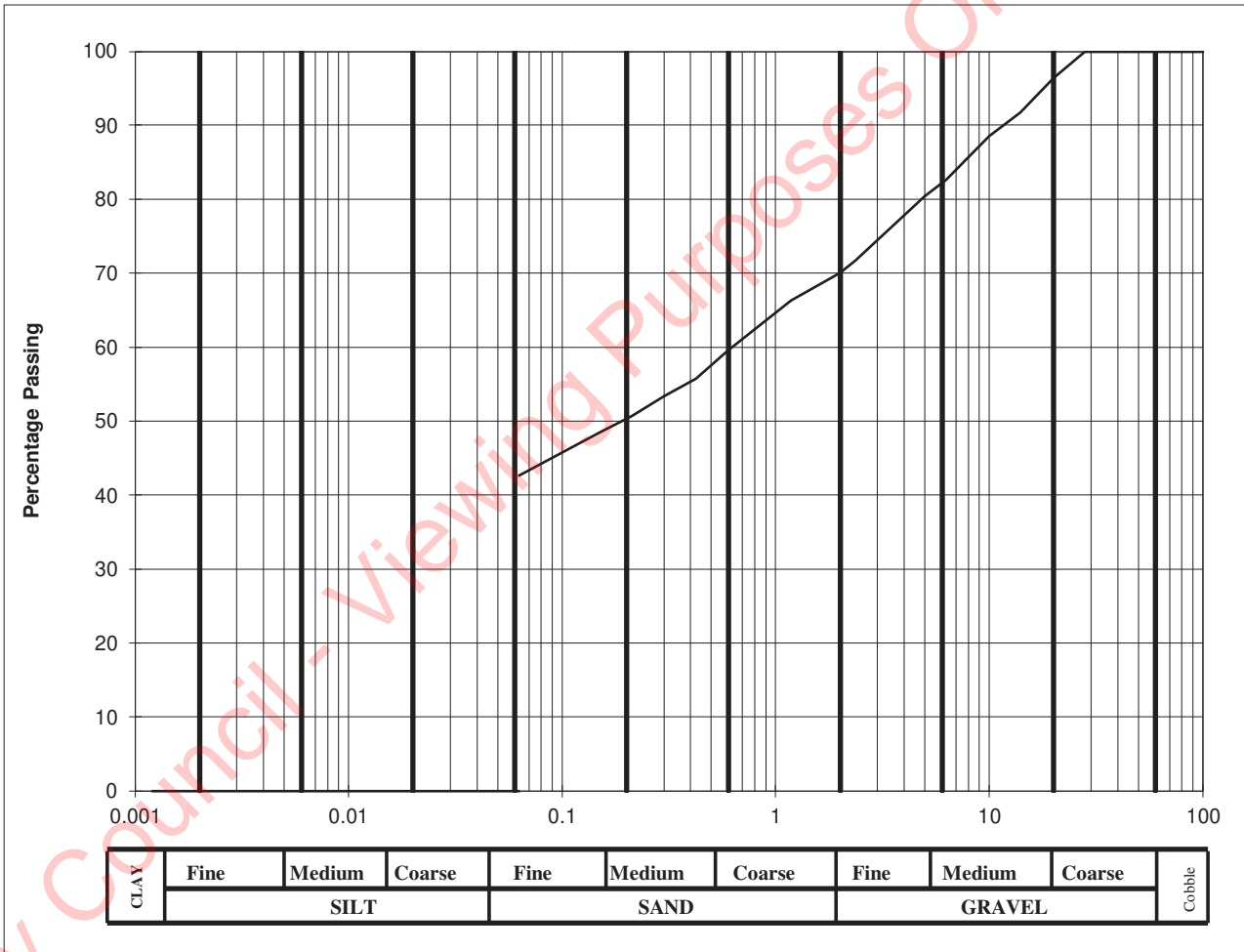
Lab. No :	21/866
Sample No :	MK38

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

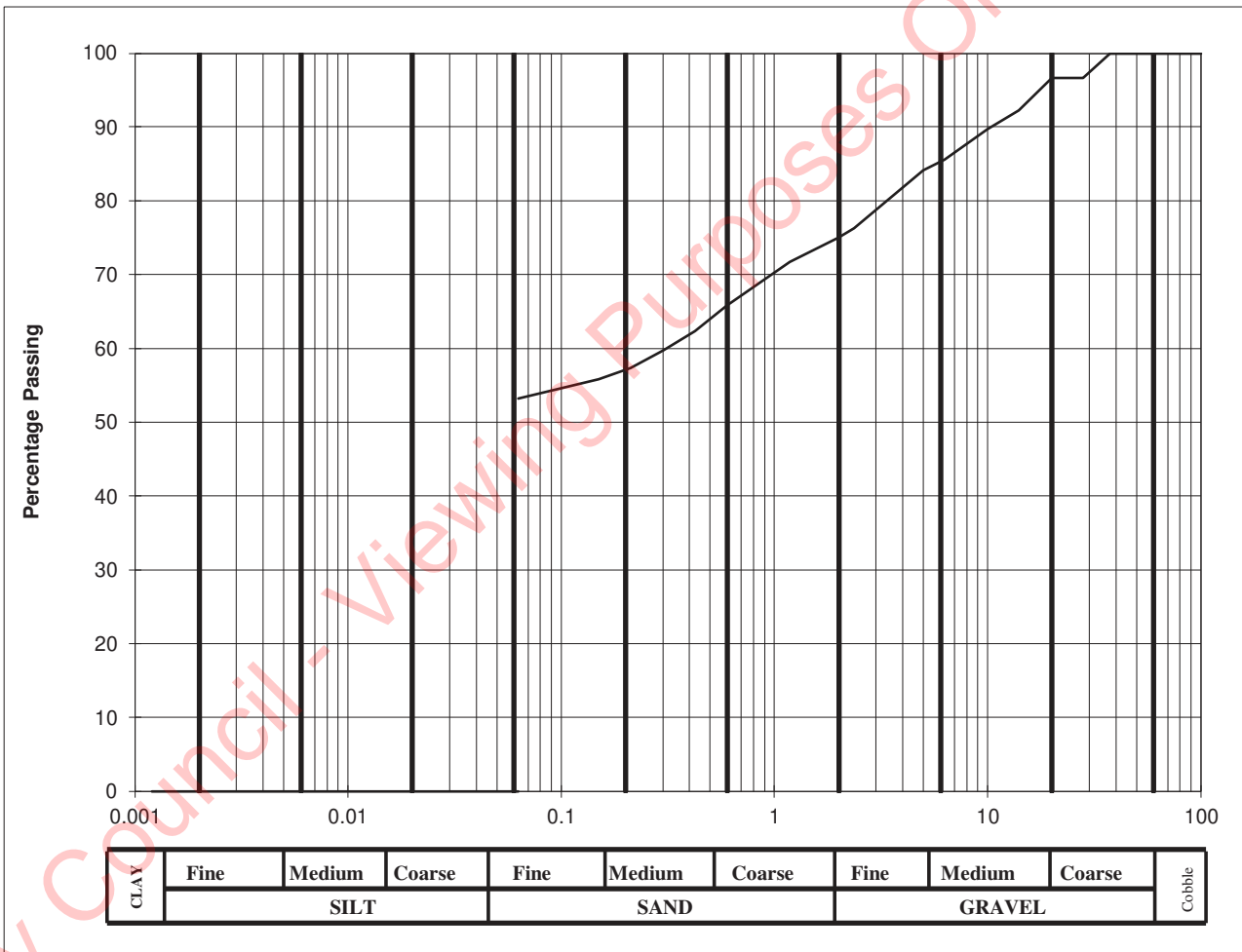
Lab. No :	21/869
Sample No :	MK63

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

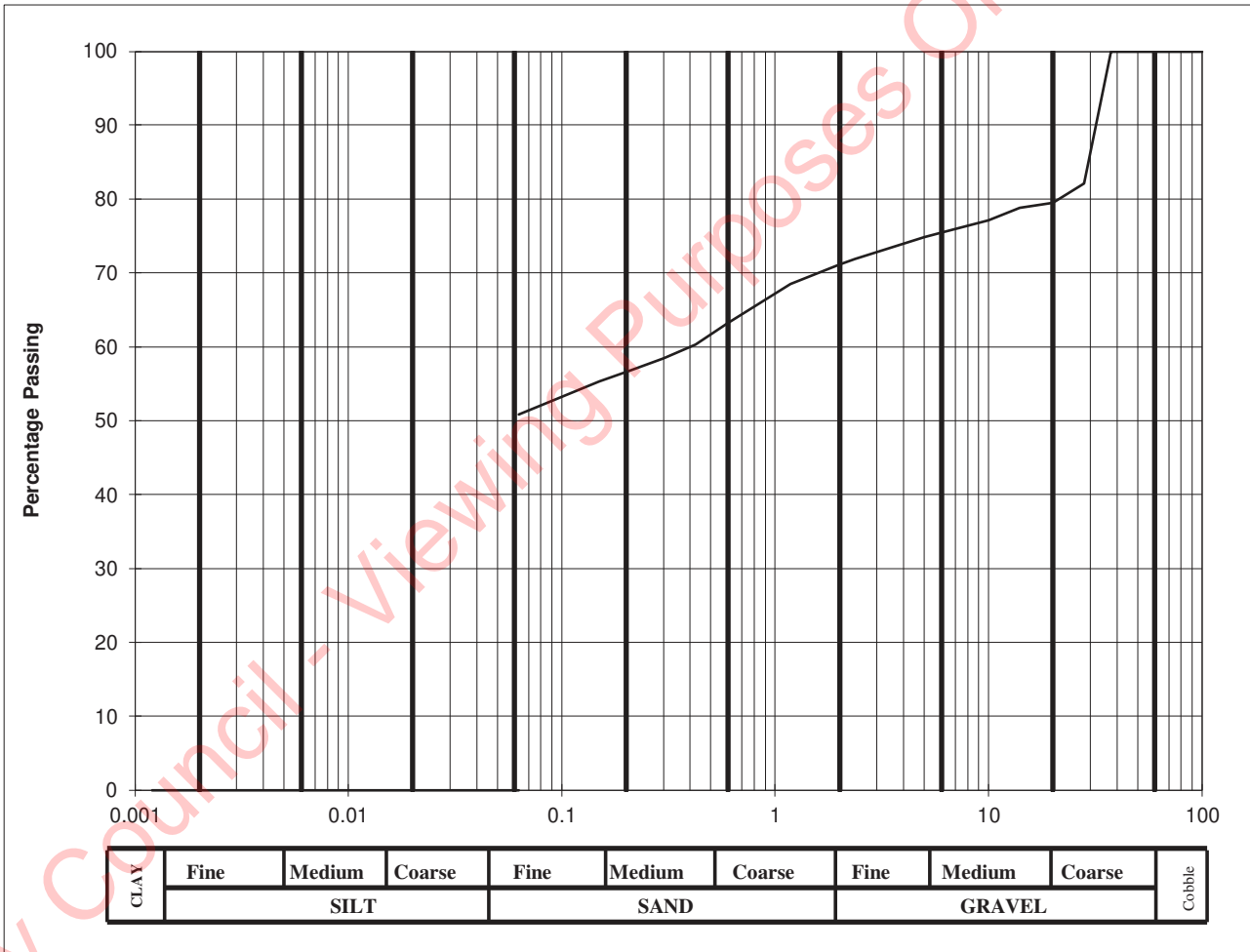
Lab. No :	21/871
Sample No :	MK58

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

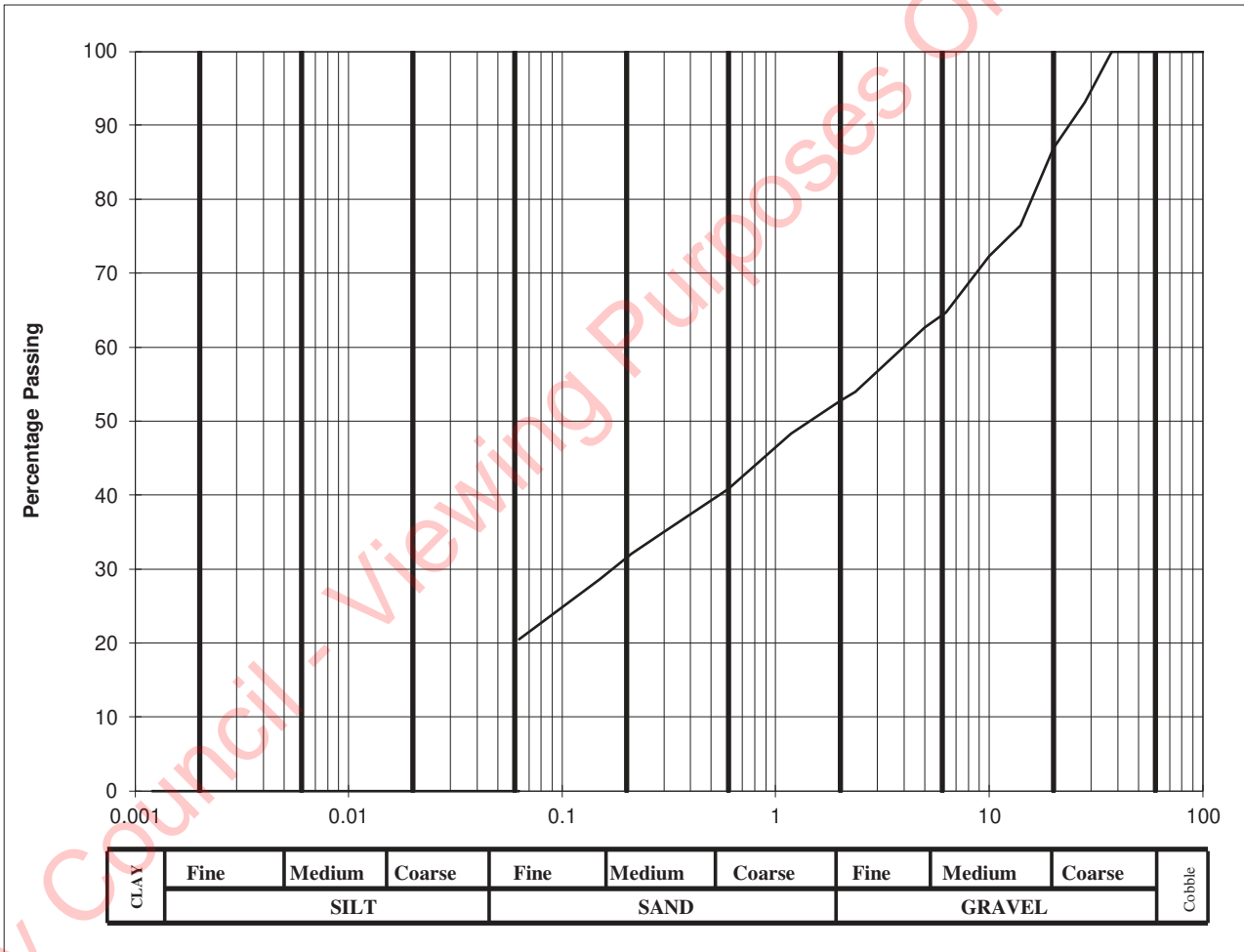
Hole ID :	TP 12
Depth, m :	1.00

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 1377 Particle Size Analysis

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

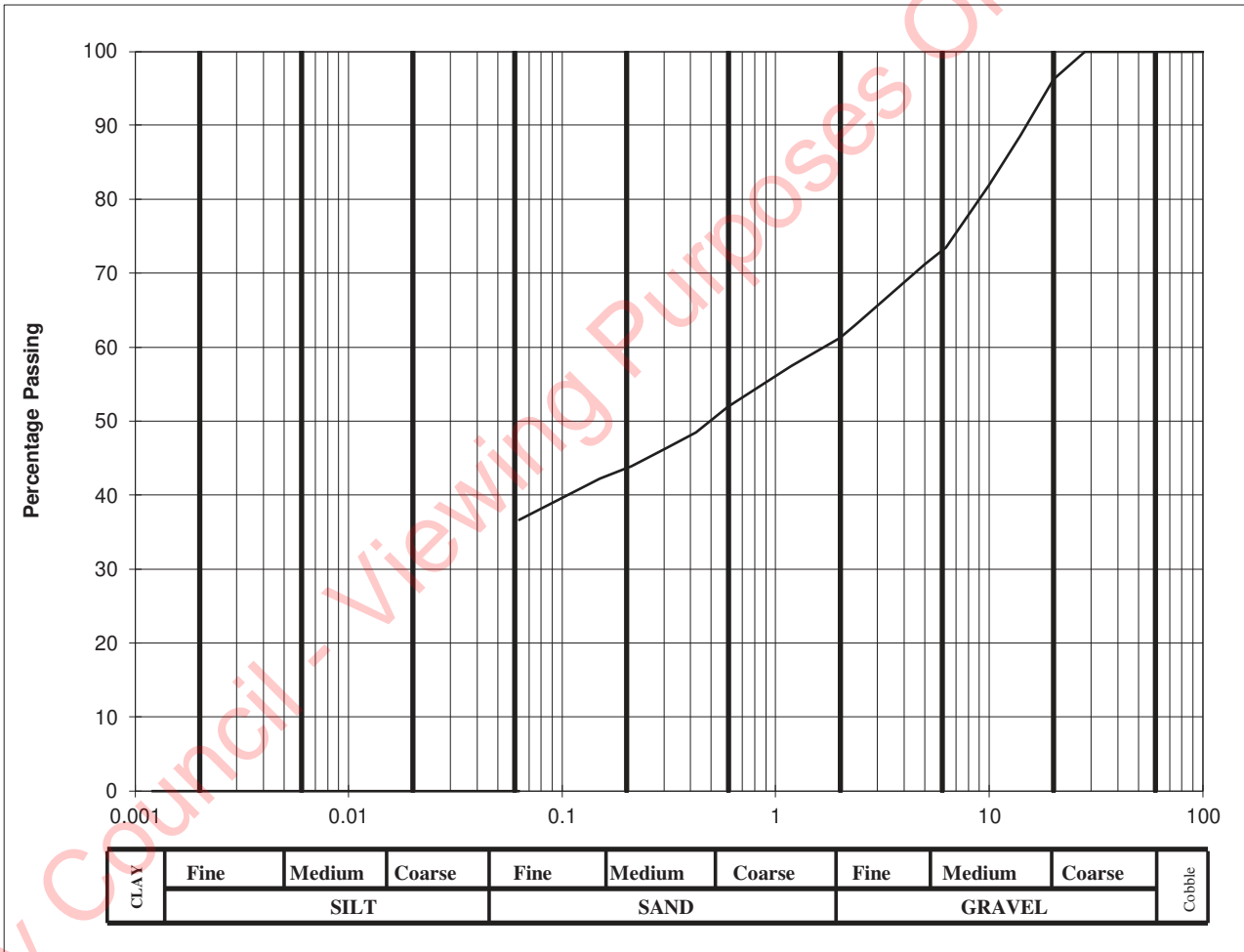
Lab. No :	21/875
Sample No :	MK29

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

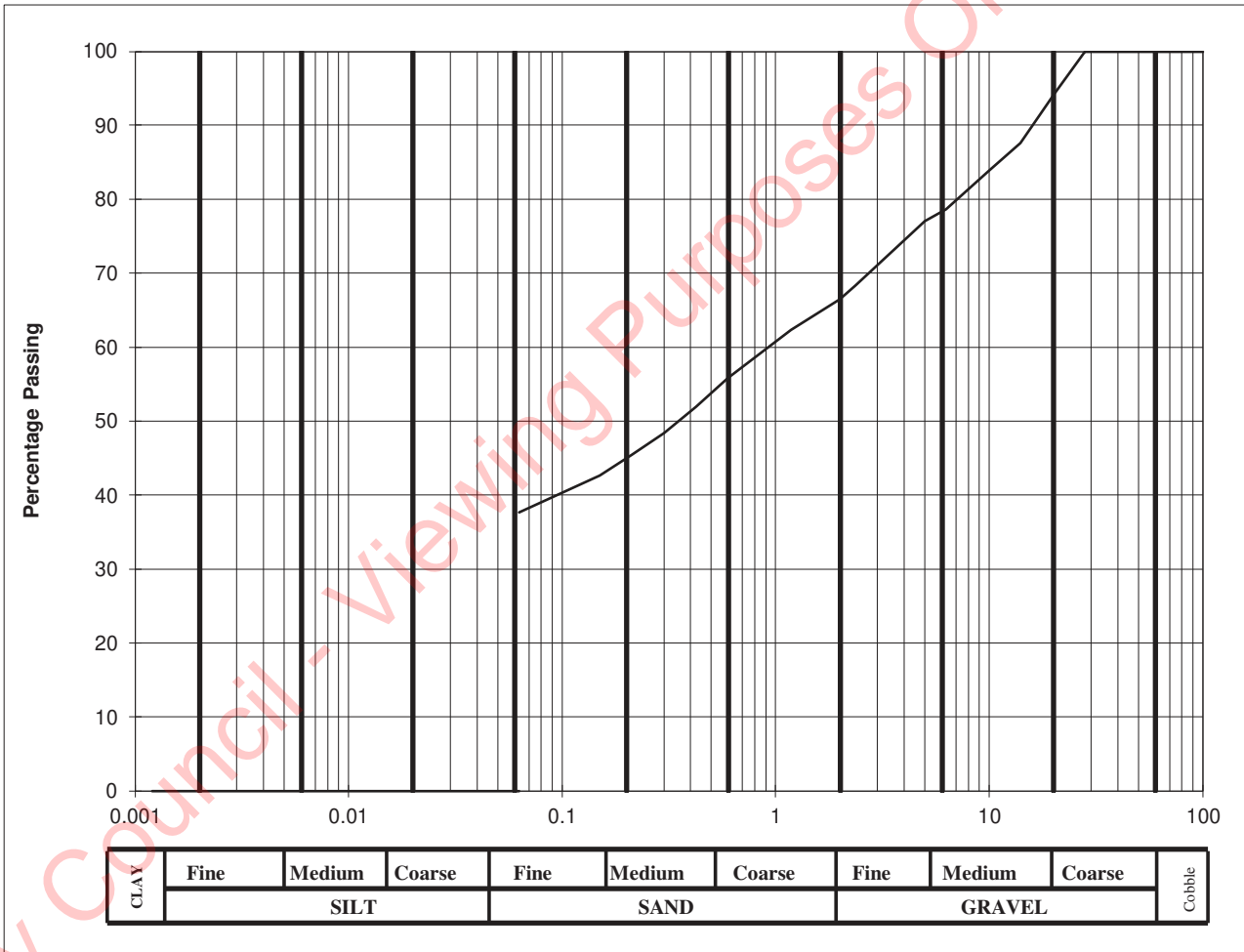
Hole ID :	TP 15
Depth, m :	1.00

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 <sub>3</sub> ) g/L	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO <sub>3</sub> ) %	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**

Meath County Council - Viewing Purposes Only!

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**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 <sup>2</sup> )	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**

Meath County Council - Viewing Purposes Only!

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## Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
<b>Boreholes</b>					
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
<b>Rotary Coreholes</b>					
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
<b>Trial Pits</b>					
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
<b>Dynamic Probes</b>					
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

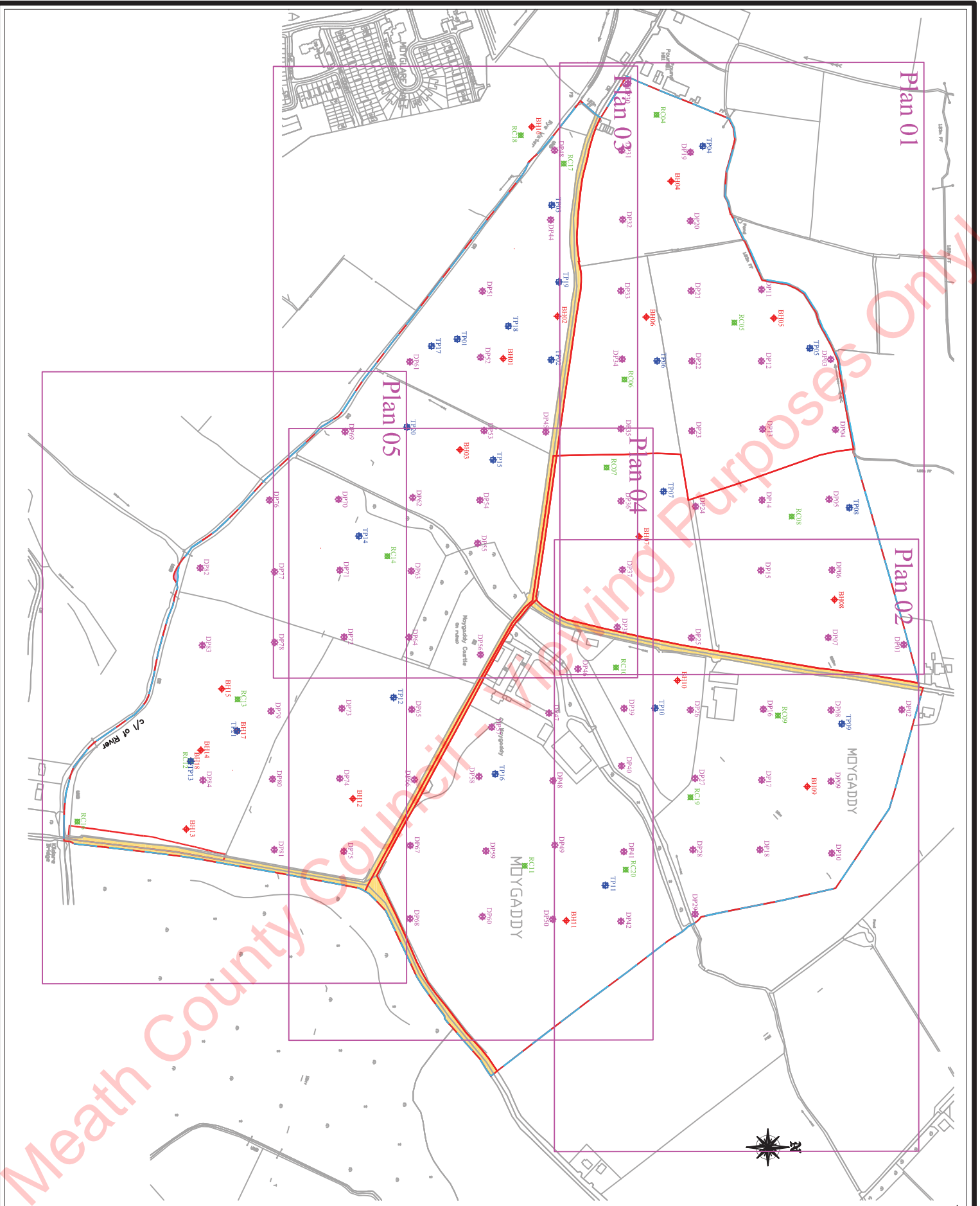
## Survey Data

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

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**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**  
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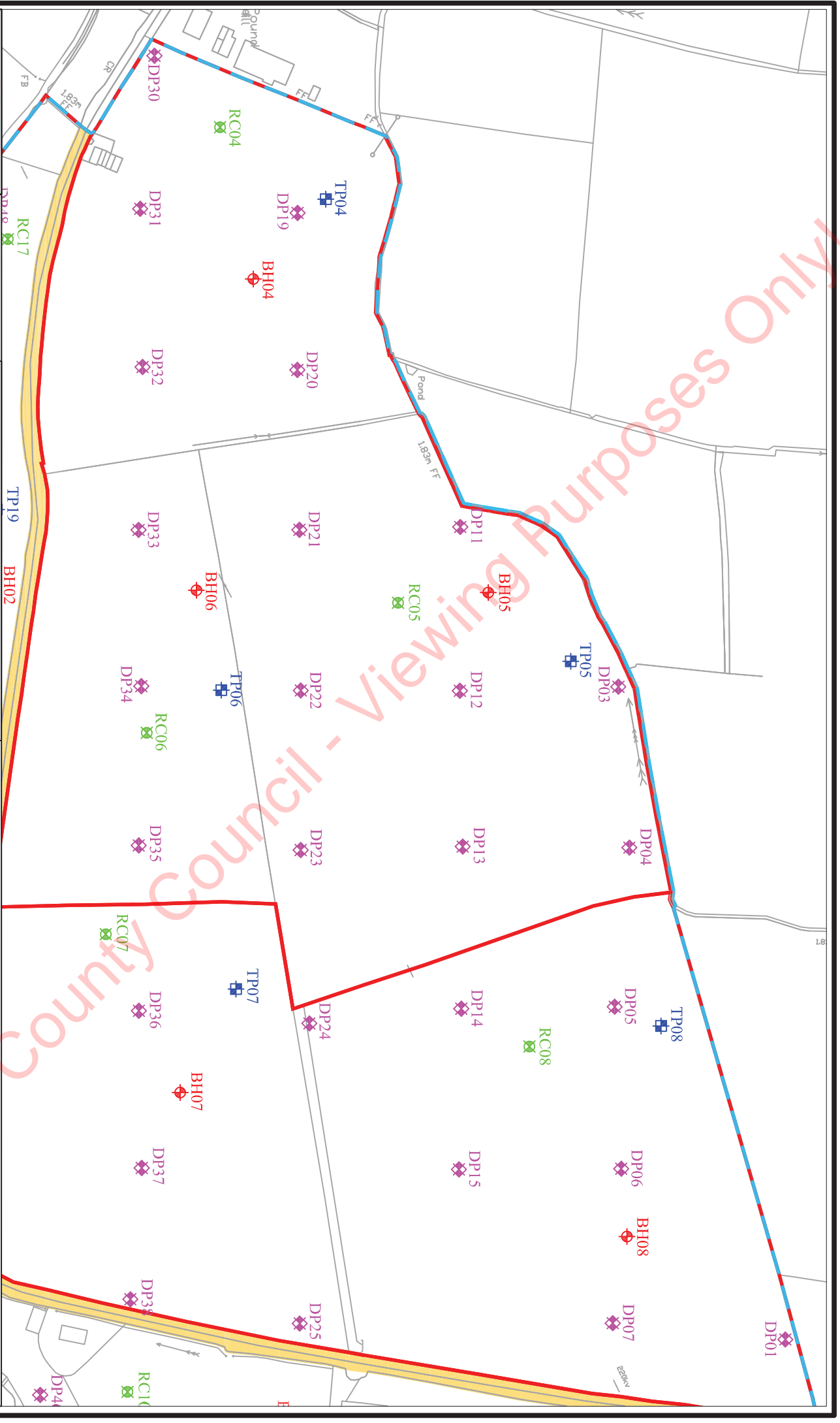
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Client: Sky Castle Ltd  
 Engineer: OOSC  
 Project: Moygaddy

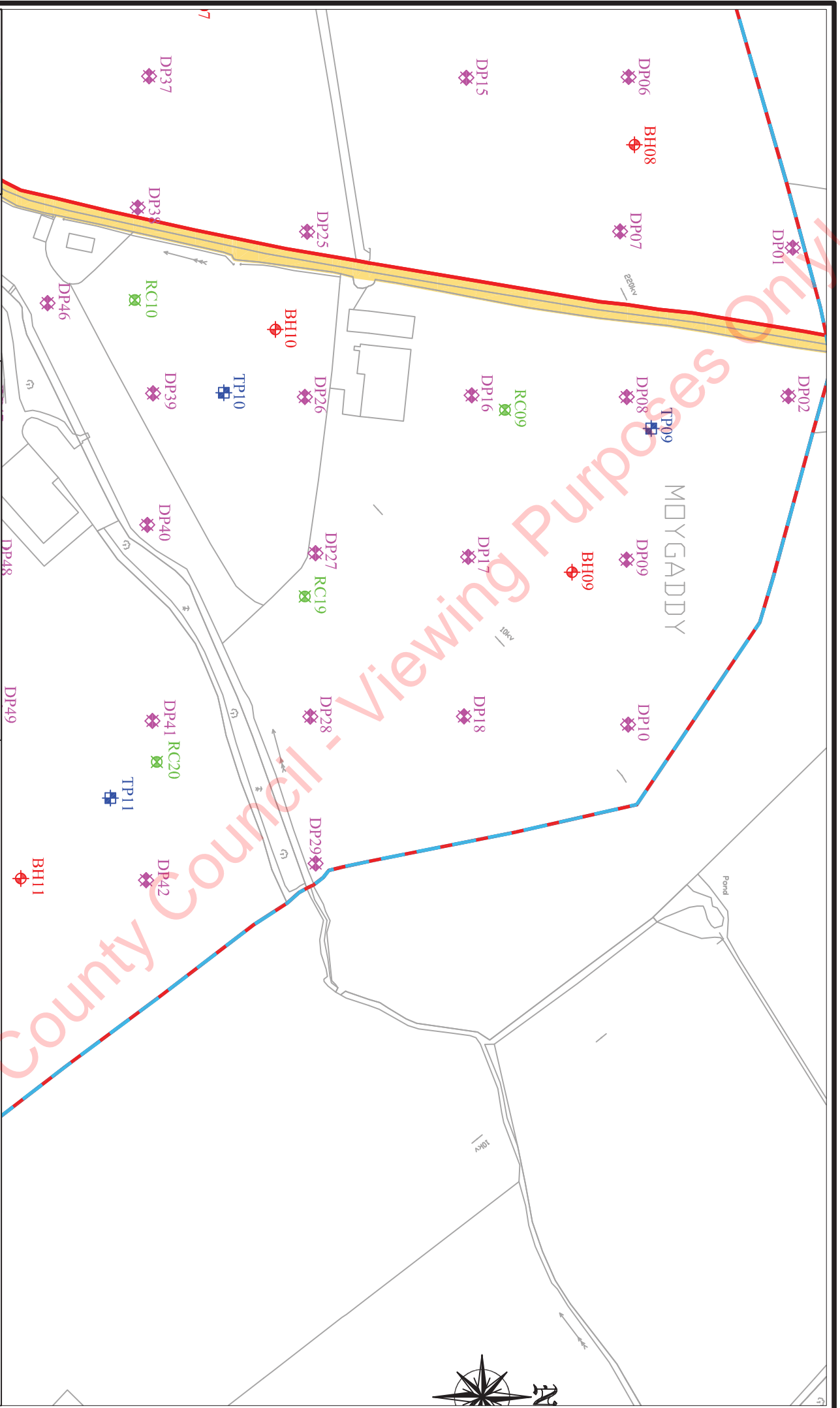
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 Drawing: SIL5863/01/05

Scale: Not to Scale  
 Rev: 1  
 Drawn by: SL

Legend	
	Cable Percussion Borehole
	Relay Corehole
	Trial Pit
	Dynamic Probe







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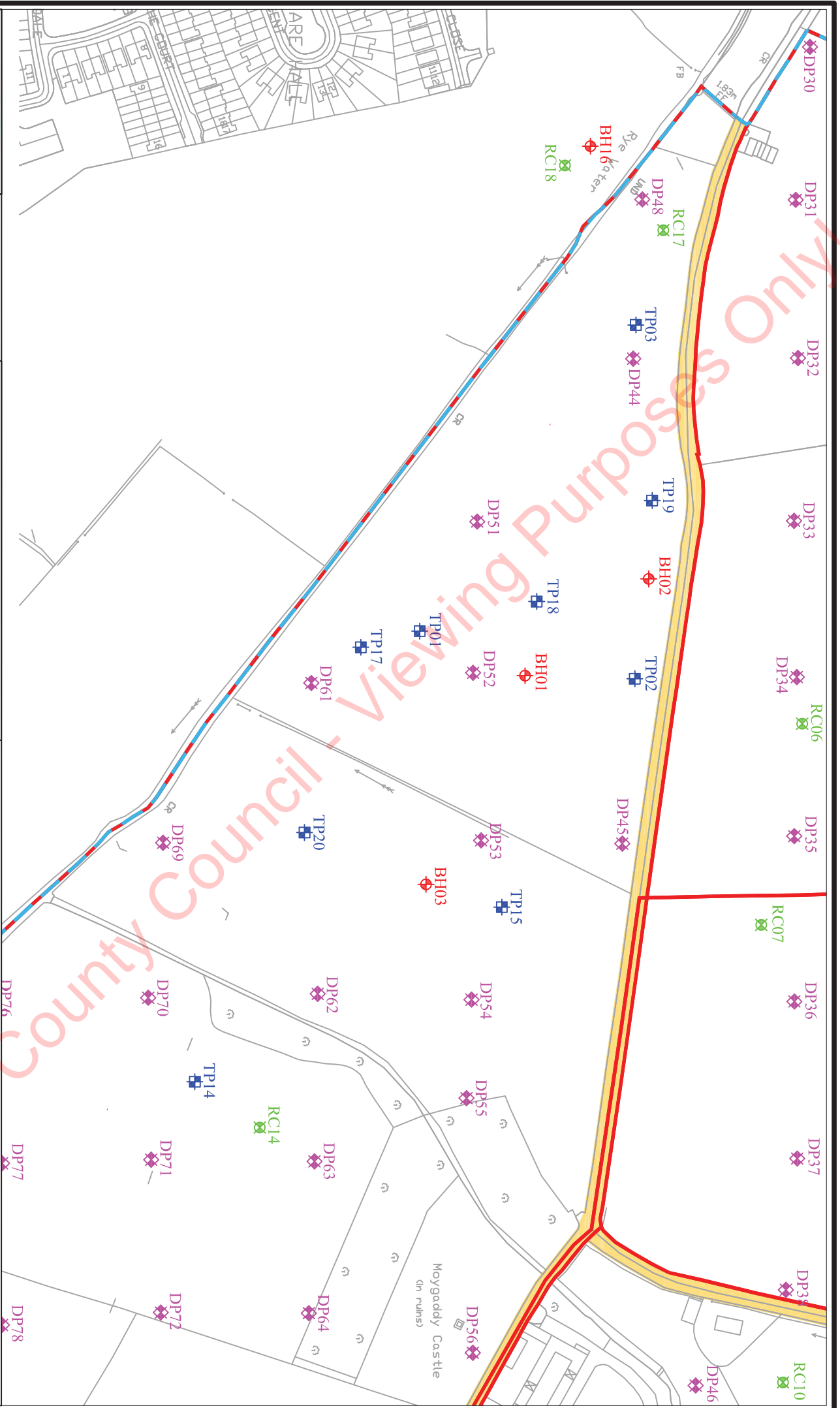
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<b>Client :</b>	Sky Castle Ltd
<b>Engineer :</b>	OOSC
<b>Project :</b>	Moygaddy
<b>Date :</b>	04-08-2021
<b>Description :</b>	Site Investigation
<b>Drawing :</b>	SIL586302/05
<b>Scale :</b>	Not to Scale
<b>Rev :</b>	1
<b>Drawn by :</b>	SL

**Legend**

- Cable Percussion Borehole
- Rotary Corehole
- Trial Pit
- Dynamic Probe





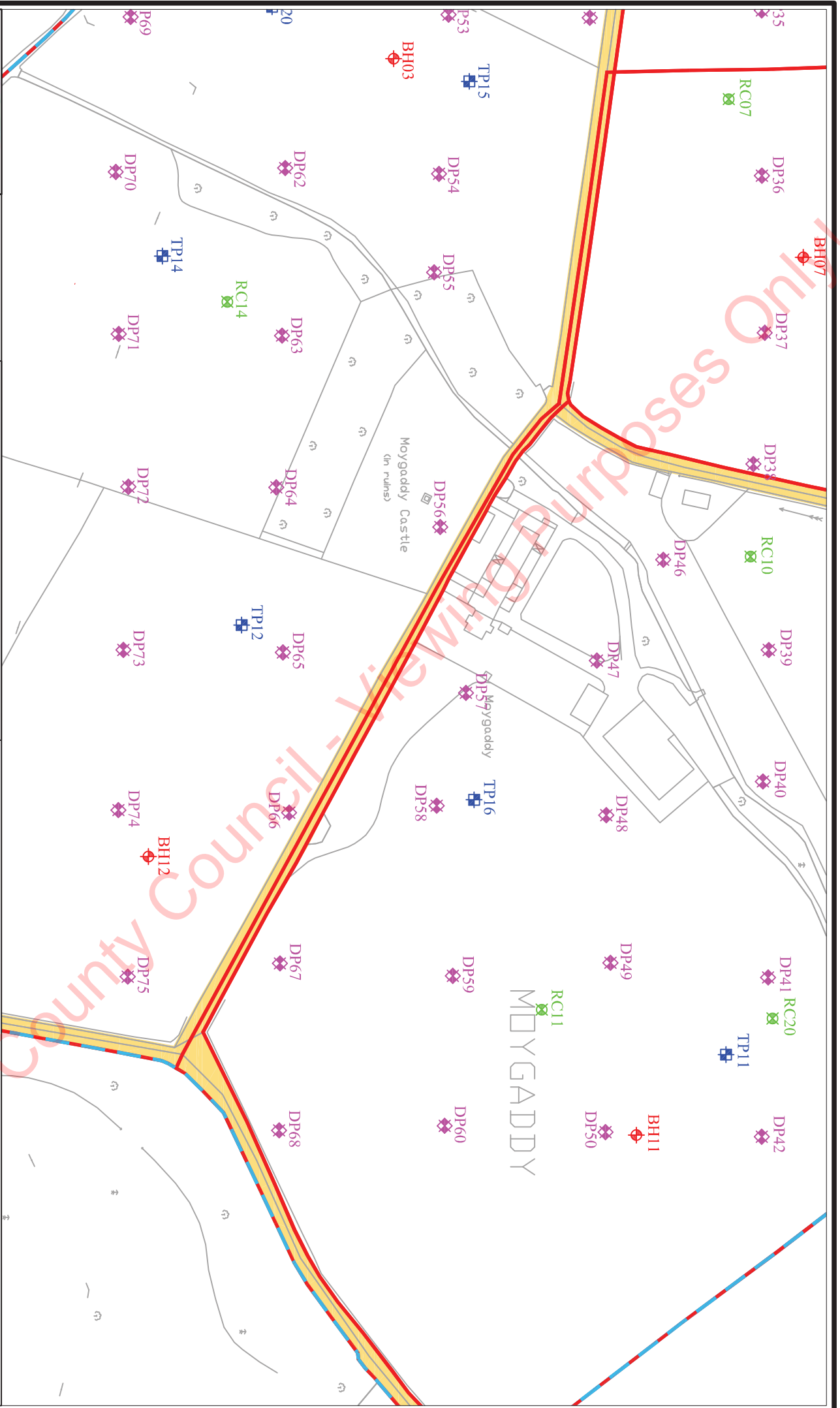
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<b>Client :</b>	Sky Castle Ltd	<b>Date :</b>	04-08-2021
<b>Engineer :</b>	OOSC	<b>Description :</b>	Site Investigation
<b>Project :</b>	Moygaddy	<b>Scale :</b>	Not to Scale
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		<b>Drawn by :</b>	SL

**Legend**

	Cable Percussion Borehole
	Relay Corehole
	Trial Pit
	Dynamic Probe





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<b>Client :</b>	Sky Castle Ltd
<b>Engineer :</b>	OOSC
<b>Project :</b>	Mogygaddy
<b>Date :</b>	04-08-2021
<b>Description :</b>	Site Investigation
<b>Drawing</b>	<b>SIL5863/04/05</b>
<b>Scale :</b>	Not to Scale
<b>Rev :</b>	1
<b>Drawn by :</b>	SL

**Legend**

	Cable Percussion Borehole
	Relay Corehole
	Trial Pit
	Dynamic Probe

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**Client:** Sky Castle Ltd

**Engineer:** OOSC

**Project:** Moygaddy

**Date:** 04-08-2021

**Description:** Site Investigation

**Drawing:** SIL5863/05/05

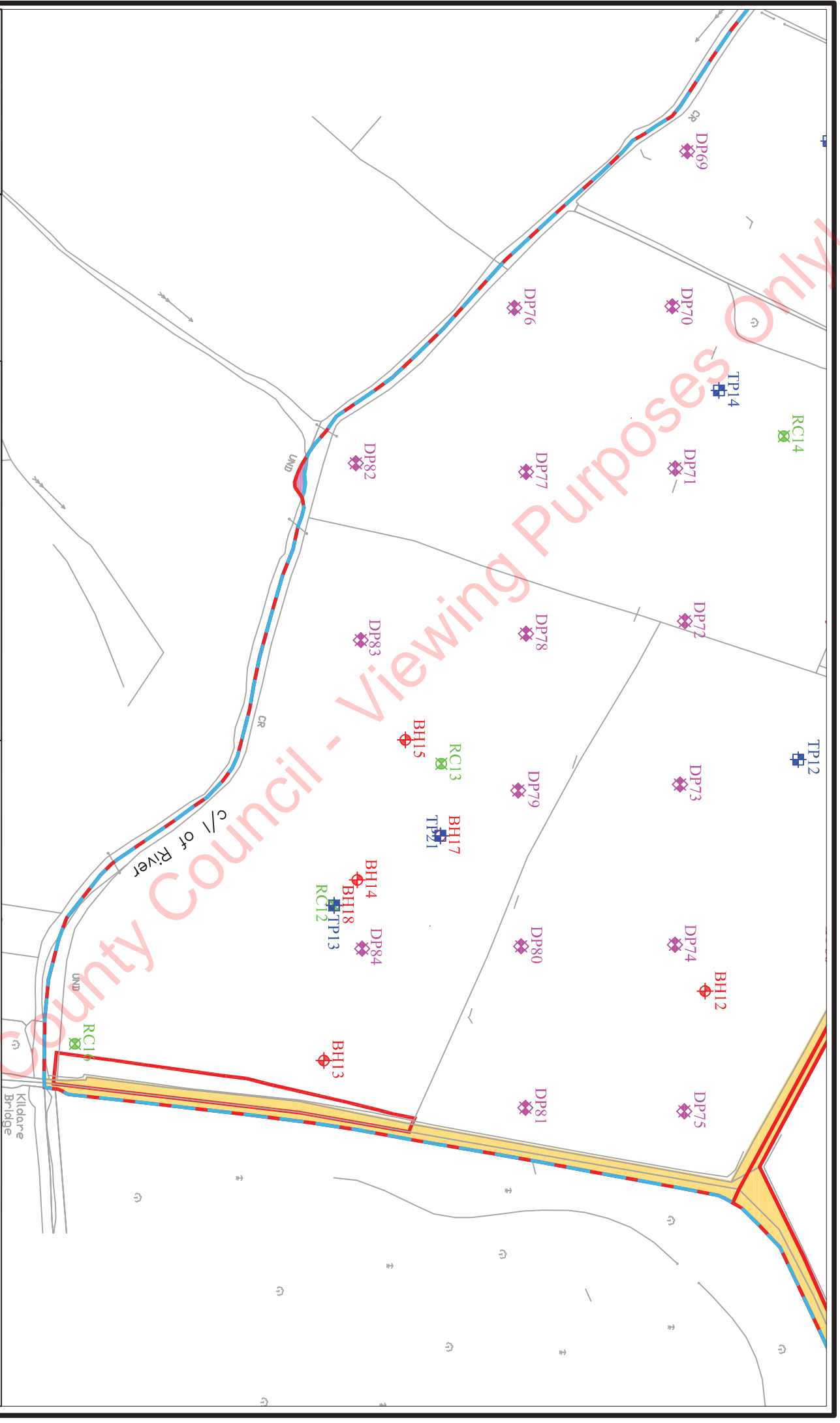
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**Rev:** 1

**Drawn by:** SL

**Legend:**

- Cable Percussion Borehole
- Rotary Corehole
- Trial Pit
- Dynamic Probe



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**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

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Contents:

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3. Fieldwork	1
4. Ground Conditions	2

Appendices:

1. Trial Pit Logs and Photographs
2. Survey Data

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## **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 2<sup>nd</sup> 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**

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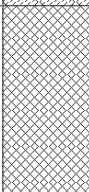

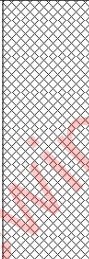


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Contract No: 5863A	<b>Trial Pit Log</b>				Trial Pit No: <b>TP22</b>
Contract:	Moygaddy	Easting:	694224.181	Date:	05/08/2021
Location:	Maynooth, Co. Meath	Northing:	739192.184	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.19	Logged By:	M. 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	
		TOPSOIL.							
	0.20	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.		55.0	54.99				
	0.5			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. Pit terminated as no fill material encountered. Pit terminated at 1.10m			54.29				
	1.10			54.0	54.09				
	1.5								
	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	<b>Trial Pit Log</b>				Trial Pit No: <b>TP23</b>
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	
		TOPSOIL.		53.5	53.45				
0.20		MADE GROUND: grey brown silty gravelly sand with high cobble content and trace of tarmacadam and plastic bags fragments.							
0.70		MADE GROUND: grey brown slightly sandy slightly gravelly silty clay with high cobble content and some plastic bag fragments.		53.0	52.95				
0.90		MADE GROUND: dark grey slightly sandy slightly gravelly silty clay with medium cobble content and some steel wire and tree branch fragments.			52.75				
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									

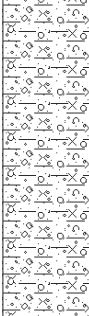
	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Natural soils.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental







Contract No: 5863A		<b>Trial Pit Log</b>				Trial Pit No: <b>TP26</b>			
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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP27</b>			
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. 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).			54.19				
	1.00	Pit terminated as no fill material encountered. Pit terminated at 1.00m			53.29				
					53.0				
					52.5				
					52.0				
					51.5				
					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		<b>Trial Pit Log</b>				Trial Pit No: <b>TP28</b>			
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				
	1.0				52.0				
	1.5				51.5				
	2.0				51.0				
	2.5				50.5				
	3.0				50.0				
	3.5				49.5				
		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: 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.							
		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).			54.59				
	0.5				54.5				
					54.0				
	1.0				53.5				
					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	<b>Trial Pit Log</b>				Trial Pit No: <b>TP30</b>
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**

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## Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
<b>Trial Pits</b>					
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

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	Contract No:	5863A	Client:	Sky Castle Ltd	<b>Legend Key</b>  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**

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## 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: 20<sup>th</sup> 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.

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<b>MOOR</b>			
<b>Item No</b>	<b>Meath Co Co Comment</b>	<b>OCSC Comment</b>	<b>Meath Co Co Comment</b>
<b>1</b>	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.
<b>2</b>	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
<b>3</b>	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
<b>4</b>	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

<b>MOOR</b>			
<b>Item No</b>	<b>Meath Co Co Comment</b>	<b>OCSC Comment</b>	<b>Meath Co Co Comment</b>
			commencement of the development
<b>5</b>	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.
<b>6</b>	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
<b>7</b>	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.
<b>8</b>	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.
<b>9</b>	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

<b>MOOR</b>			
<b>Item No</b>	<b>Meath Co Co Comment</b>	<b>OCSC Comment</b>	<b>Meath Co Co Comment</b>
<b>10</b>	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
<b>11</b>	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
<b>12</b>	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
<b>13</b>	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
<b>14</b>	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

<b>MOOR</b>			
<b>Item No</b>	<b>Meath Co Co Comment</b>	<b>OCSC Comment</b>	<b>Meath Co Co Comment</b>
<b>15</b>	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
<b>16</b>	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
<b>17</b>	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
<b>18</b>	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

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<b>MOOR</b>			
<b>Item No</b>	<b>Meath Co Co Comment</b>	<b>OCSC Comment</b>	<b>Meath Co Co Comment</b>
<b>19</b>	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
<b>20</b>	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
<b>21</b>	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