



APPENDIX 2-1

SCOPING RESPONSES

Kildare County Council Planning Department - Viewing Purposes Only

David Naughton

From: Environmental Co-ordination (Inbox) <Environmental_Co-ordination@agriculture.gov.ie>
Sent: Wednesday 27 October 2021 08:56
To: David Naughton
Subject: FW: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

Good Morning David

Further to my email below, I wish to inform you that the Department of Agriculture, Food & the Marine has no observations on the scoping document for the proposed development at this time.

Kind regards

Cathy Hewitt

Executive Officer

An tAonad um Chomhordú Timpeallachta, An Rannóg um Athrú Aeráide agus Beartas Bithfhuinnimh,
Environmental Co-ordination Unit | Climate Change & Bioenergy Policy Division |

An Roinn Talmhaíochta, Bia agus Mara

Department of Agriculture, Food and the Marine

Pailliún A, Páirc Gnó Grattan, Bóthar Átha Cliath, Port Laoise, Co Laoise, R32 K857

Pavilion A, Grattan Business Park, Dublin Road, Portlaoise, Co Laois, R32 K857

T +353 (0)57 868 9915 environmentalco-ordination@agriculture.gov.ie

www.agriculture.gov.ie

From: Environmental Co-ordination (Inbox)
Sent: Friday 22 October 2021 08:34
To: 'dnaughton@mkoireland.ie' <dnaughton@mkoireland.ie>
Cc: Hennebry, Breeda <Breeda.Hennebry@agriculture.gov.ie>
Subject: RE: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

Good Morning David

I have received your query below. Upon checking it would appear that we did not receive your original request for comments on the 9th August. The email you used as incorrect (there is an underscore excluded). However, I will forward the documents to the relevant sections and ask them to revert with any obs they may have ASAP.

Kind regards

Cathy Hewitt

Executive Officer

An tAonad um Chomhordú Timpeallachta, An Rannóg um Athrú Aeráide agus Beartas Bithfhuinnimh,
Environmental Co-ordination Unit | Climate Change & Bioenergy Policy Division |

An Roinn Talmhaíochta, Bia agus Mara

Department of Agriculture, Food and the Marine

Pailliún A, Páirc Gnó Grattan, Bóthar Átha Cliath, Port Laoise, Co Laoise, R32 K857

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T +353 (0)57 868 9915 environmentalco-ordination@agriculture.gov.ie

www.agriculture.gov.ie

From: McGoldrick, David
Sent: Thursday 21 October 2021 16:48
To: Environmental Co-ordination (Inbox)
Subject: FW: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

Hello,

Please see query below. Thanks.

David

From: David Naughton <dnaughton@mkoireland.ie>

Sent: 20 October 2021 16:24

To: Info@agriculture.gov.ie

Subject: FW: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

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Dear Sir or Madam,

Just following up on the below to see if the department has any comments or recommendations on the proposed project.

Kind regards,



David Naughton B.Sc. (Env.)

Environmental Scientist

MKO

Tuam Road, Galway

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From: David Naughton

Sent: Monday 9 August 2021 15:11

To: environmentalco-ordination@agriculture.ie

Subject: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

Dear Sir or Madam,

Please find attached a cover letter and Scoping Document for a proposed mixed use development in Moygaddy, Co. Meath. The site is located just north of Maynooth town.

As part of the scoping exercise for the proposed development, we would welcome any comments in relation to the proposed project.

If you have any queries, please do not hesitate to contact me.

Kind regards,



David Naughton B.Sc. (Env.)

Environmental Scientist

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Department of Agriculture, Food and the Marine

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An Roinn Talmhaíochta, Bia agus Mara

Tá an t-eolais san ríomhphost seo, agus in aon ceanglín leis, faoi phribhléid agus faoi rún agus le h-ghaigh an seolaí amháin. D'fhéadfadh ábhar an seoladh seo bheith faoi phribhléid profisiúnta nó dlíthiúil. Mura tusa an seolaí a bhí beartaithe leis an ríomhphost seo a fháil, tá cosc air, nó aon chuid de, a úsáid, a chóipeál, nó a scaoileadh. Má tháinig sé chugat de bharr dearmad, téigh i dteagmháil leis an seoltóir agus scríos an t-ábhar ó do ríomhaire le do thoil.

Kildare County Council Planning Department - Viewing Purposes Only

Emily Lynch

From: CorporateSupport.Unit <CorporateSupport.Unit@decc.gov.ie>
Sent: 27 August 2021 15:21
To: David Naughton
Cc: CorporateSupport.Unit
Subject: Reply from DECC re EIS 21/ 297 Proposed Mixed Use Development at Moygaddy, Co. Meath
Attachments: GSI datasets relevant to EIA & SEA_20210421.pdf; 21_297 Proposed Mixed Use Development at Moygaddy Co. Meath.pdf; 20210809 Frm MKO re DECC cover letter ref 210414.pdf

Good afternoon,

Please see attached and below a reply from Ms. Trish Smullen and Dr Clare Glanville (Senior Geologist) on behalf of Geological Survey Ireland, (a division of the Department of Environment, Climate and Communications) for the subject below.

Please forward an acknowledgment of receipt to CorporateSupport.Unit@decc.gov.ie at your earliest convenience. I have attached your letter of 09/08/2021 for reference.

Regards,
Enda Brady,
Corporate Support Unit,
Department of Environment, Climate and Communications.

From: GSI Planning
Sent: 27 August 2021 13:52
To: CorporateSupport.Unit
Cc: Clare Glanville; GSI Planning
Subject: Re: EIS 21/ 297 Proposed Mixed Use Development at Moygaddy, Co. Meath

Hi Enda,
Please see attached for return to MKO.
Thanks and regards,
Trish

From: GSI Planning
Sent: 10 August 2021 10:14
Cc: GSI Planning
Subject: EIS 21/ 297 Proposed Mixed Use Development at Moygaddy, Co. Meath

EIS 21/ 297 Proposed Mixed Use Development at Moygaddy, Co. Meath.

Request for observations by MKO for direct reply. Scoping document attached.

Regards,
Trish

Emily Lynch

From: CorporateSupport.Unit <CorporateSupport.Unit@decc.gov.ie>
Sent: 21 October 2021 10:34
To: David Naughton
Cc: CorporateSupport.Unit
Subject: RE: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

Good morning David,

Corporate Support Unit have forwarded two replies to you on 16/08/2021 (Inland Fisheries Ireland) and 27/08/2021 (Geological Survey Ireland). I have circulated the reminder below to the other appropriate contacts and asked for a reply (if any) before the end of this month. If there are any observations I will forward these to you.

Regards,
Enda Brady,
Corporate Support Unit,
Department of Environment, Climate and Communications.
087 623 7714

From: David Naughton [mailto:dnaughton@mkoireland.ie]
Sent: 19 October 2021 16:14
To: CorporateSupport.Unit
Cc: CorporateSupport.Unit
Subject: RE: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

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Dear Sir or Madam,

Just following up on the below to see if the department has any comments or recommendations on the proposed project.

Kind regards,



David Naughton B.Sc. (Env.)
Environmental Scientist

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Mr. David Naughton BSc
MKO,
Tuam Road,
Galway
H91VW84
1st September 2021

Re: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

Dear David,

The Department of Transport would like the following to be taken into consideration in relation to the proposed mixed use development at Moygaddy, Co. Meath

Given the proximity of the Moygaddy sites to the Royal Canal Greenway and NTA plans for additional cycling and pedestrian facilities within Maynooth, it will be vital that the masterplan being developed includes significant provision for cycling and pedestrian access from the sites to Maynooth train station, the University and the Royal Canal Greenway and also significant provision for cycle parking within the sites.

Yours sincerely,

Jacqui Traynor
Reform Communications Emergency Planning

—
An Roinn Iompair
Department of Transport

Lána Liosain, Baile Átha Cliath, D02 TR60
Leeson Lane, Dublin, D02 TR60

—
T +353 (0)1 604 1177
Jacquitraylor@transport.gov.ie www.gov.ie/transport

David Naughton

From: planning applications <planning.applications@failteireland.ie>
Sent: Thursday 19 August 2021 11:48
To: David Naughton
Subject: RE: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath
Attachments: Fáilte Ireland EIAR Guidelines.pdf

Hello David,

Thank you for your email regarding the scoping document for the proposed Mixed Use Development at Moygaddy, Co. Meath

Please see attached the updated copy of Fáilte Ireland's Guidelines for the Treatment of Tourism in an EIA, which you may find informative for the preparation of the Environmental Impact Assessment for the proposed project. The purpose of this report is to provide guidance for those conducting Environmental Impact Assessment and compiling an Environmental Impact Assessment Reports (EIAR), or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. These guidelines are non-statutory and act as supplementary advice to the EPA EIAR Guidelines outlined in section 2.

Regards,

Yvonne

Yvonne Jackson

Product Development-Environment & Planning Support | Fáilte Ireland
Áras Fáilte, 88/95 Amiens Street, Dublin 1. D01WR86
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Please consider the environment before printing this email

From: David Naughton <dnaughton@mkoireland.ie>
Sent: Monday 9 August 2021 16:16
To: planning applications <planning.applications@failteireland.ie>
Subject: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

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Dear Sir or Madam,

Please find attached a cover letter and Scoping Document for a proposed mixed use development in Moygaddy, Co. Meath. The site is located just north of Maynooth town.

As part of the scoping exercise for the proposed development, we would welcome any comments in relation to the proposed project.

If you have any queries, please do not hesitate to contact me.

Kind regards,



David Naughton B.Sc. (Env.)
Environmental Scientist

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Kildare County Council Planning Department - Internal Purposes Only



Fáilte Ireland
National Tourism Development Authority

EIAR Guidelines for the Consideration of Tourism and Tourism Related Projects



An tÚdarás Náisiúnta Forbartha Turasóireachta
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Baile Átha Cliath 1
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Éire

National Tourism Development Authority
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1. Introduction

Tourism is a growing sector and substantial part of the Irish Economy. It contributes to both urban and rural economies in every part of the country. The impact and interaction of tourism with the environment is complex and the assessment of environmental impacts is of utmost importance to creating a sustainable tourism economy and protecting the natural resources that are so often a tourism attraction.

The purpose of this report is to provide guidance for those conducting Environmental Impact Assessment and compiling an Environmental Impact Assessment Reports (EIAR), or those assessing EIARs, where the project involves tourism or may have an impact upon tourism. These guidelines are non-statutory and act as supplementary advice to the EPA EIAR Guidelines outlined in section 2.

This guidance document has been prepared by Cunnane Stratton Reynolds on behalf of Fáilte Ireland to update their EIA guidelines in line with changes in legislative requirements.

2. Background to this Document

Tourism is one of the largest and most important sectors of the economy, providing employment for approximately **260,000 people**, an economic contribution of **€8.4 billion**, and exchequer revenue of **€1.78 billion** in 2018, which helps fund other key public services.

In 2018 Ireland welcomed **10.6 million overseas visitors**.

Fáilte Ireland is the National Tourism Development Authority. Fáilte Irelands role is to support the tourism industry and work to sustain Ireland as a high-quality and competitive tourism destination. They provide a range of practical business supports to help tourism businesses better manage and market their products and services.

Fáilte Ireland also work with other state agencies and representative bodies, at local and national levels, to implement and champion positive and practical strategies that will benefit Irish tourism and the Irish economy.

Fáilte Ireland promotes Ireland as a holiday destination through a domestic marketing campaign (DiscoverIreland.ie) and manage a network of nationwide tourist information centres that provide help and advice for visitors to Ireland.

Tourism related projects cover a broad range of plans, programmes and developments, from the Wild Atlantic Way to a single hotel conversion. These guidelines apply to projects involving or impacting upon tourism. A tourism plan, strategy or programme where it is part of the statutory plan making process under the Planning and Development Acts (as amended), may be more appropriately assessed by a Strategic Environmental Assessment (SEA) as discussed in the next section.

It should be borne in mind that EIA is required where there is anticipated to be a significant impact on the environment, where tourism projects are of a prescribed type or meet thresholds identified below.

Where Natura 2000 Designated Sites are potentially affected by tourism development Appropriate Assessment must be carried out by the appropriate authority in accordance with Article 6(3) of the EU Habitats Directive.

3. Legislation and Statutory Guidance

Environmental Impact Assessment is a procedure that ensures that the environmental implications of decisions are taken into account before planning based decisions are made. The assessment results in a report, called an Environmental Impact Assessment Report (EIAR).

Legislation

These guidelines are produced under current EIAR legislative requirements, having regard to Directive 2011/92/EU (known as 'Environmental Impact Assessment' – EIA Directive), as amended by Directive EU 2014/52 which came into effect in May of 2017. These requirements were transposed into Irish Law on 1 September 2018 as most of the provisions of the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) came into effect. The principle of both Directives is to ensure that plans, programmes and projects likely to have significant effects on the environment are made subject to an environmental assessment, prior to their approval or authorisation.

Statutory Guidance

In response to the changes to the EIAR requirements under Directive EU 2014/52, the Environmental Protection Agency (EPA) developed Draft guidelines on the information to be contained in Environmental Impact Assessment Reports in August 2017. At the time of this document the guidelines have not been adopted from draft.

In addition to the EPA statutory guidance, the Department of Housing has produced Guidelines for Planning Authorities and An Bord Pleanála on carrying out Environmental Impact Assessment in August 2018.

The process of EIA is set out in the EPA EIAR Guidelines, which this document should be read in conjunction with and used as supplementary guidance to. The process for ascertaining whether an EIAR is required is known as 'screening' and the process to determine the breadth and scope of an EIAR is known as 'scoping'. Guidance on this can be found in Section 3.2 of the EPA Guidelines.

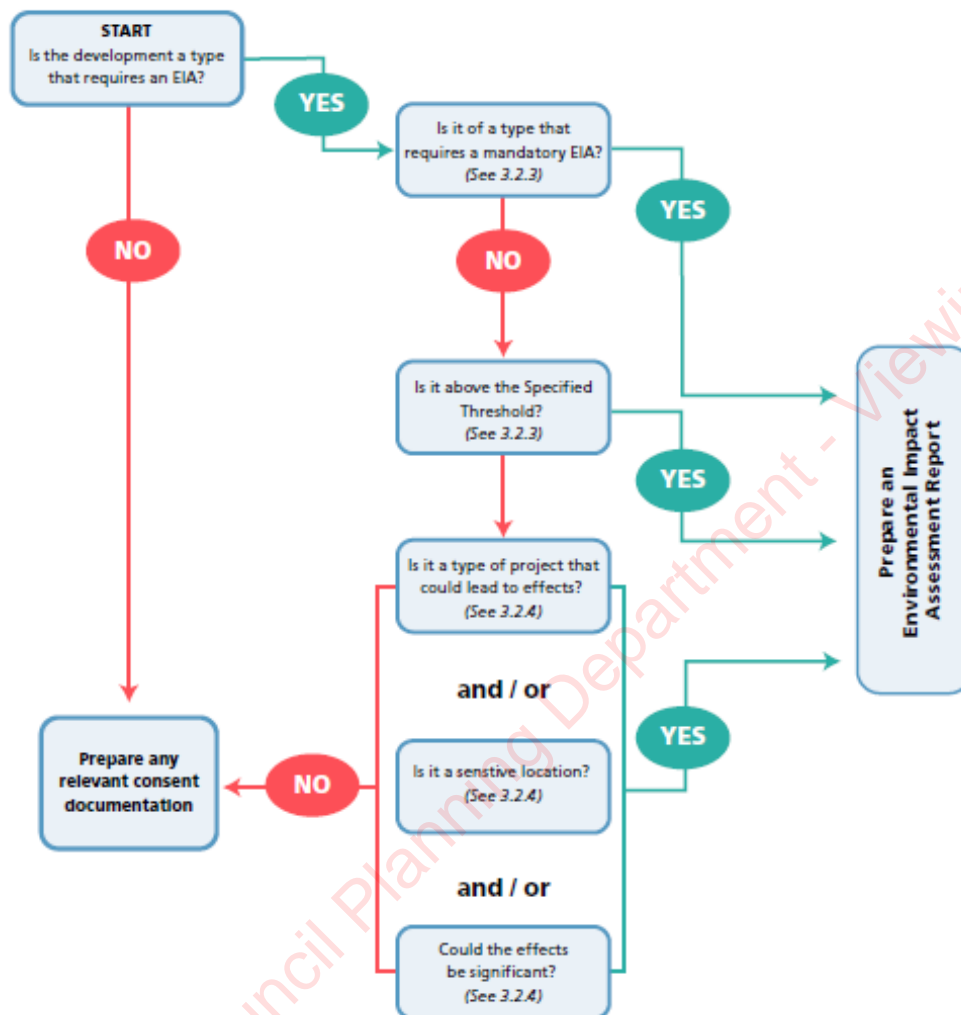
Screening

Through EIAR Screening, developments are either considered as requiring an EIAR due to the project type or because they exceed a threshold level. The screening process begins by establishing whether the proposal is a 'project' as understood by the Directive (as amended).

The prescribed development types and thresholds are set out in Annex I and II of the EIA Directive as transposed into Schedule 5 of the Planning and Development Regulations 2010-2018 (as amended). Development which do not exceed these thresholds but may require an EIAR are called sub threshold. Sub-Threshold considerations are outlined in Schedule 7 of European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018) as transposed from Annex III of the Directive. The Guidelines on Environmental Impact Assessment Reports note that projects at first glance may not appear to come under the Schedule

but on closer examination when the process is further examined, they may do so because of the sensitivity or significance of the receiving environment etc. Sub threshold developments require an EIAR if they are likely to have significant environmental impacts and must undergo assessment for likely significant impacts through an EIAR screening report. The contents of a screening report for subthreshold development are contained in Annex III of the EIA Directive.

Figure 1: EIAR Screening Process



(Taken from Fig 3.2 of the EPA Guidelines)

Tourism locations should be identified as sensitive receptors in screening assessments for particular impacts, depending on scale and sensitivity, as they would in a full EIAR. Section 6 below can act as guidance for Screening Reports as well as for full EIAR.

The screening process for considering where an EIAR is necessary, is summarised below in Figure 1 (excerpted from Figure 3.2 of the EPA Guidelines).

Strategic Environmental Assessment (SEA) is a more strategic level of environmental assessment that examines plans, policies, objectives and programmes specifically rather than projects. For some tourism developments it may be more appropriate that they be examined through SEA, while individual projects or specific proposals are likely to be more assessed through EIAR. If a project is part of a plan, programme or policy/objective assessed by SEA there will still be a requirement for an EIAR for that development.

EIAR Scoping

Scoping an EIAR is an opportunity to look at the breadth of issues and ensure that any areas of possible significant impact are assessed. Identifying sensitivities and stakeholders should take account of tourism facilities and consider Fáilte Ireland in scoping requests where necessary.

4. Assessing Tourism

There is no legal definition of 'tourism' in Irish legislation. The UNWTO definition of sustainable tourism is "*Tourism that takes full account of its current and future economic, social and environmental impacts, addressing the needs of visitors, the industry, the environment and host communities*". This is widely accepted as a key definition of tourism as we move to a more sustainable future.

Tourism assessments are frequently carried out by economic consultants and by specific tourism consultants. It is always advisable, particular for tourism projects, that suitably qualified and experienced personnel are used to determine the impact of tourism related projects or to assess the impact of more general proposals on a tourism asset identified in a particular location. There is a requirement for EIAR under current legislation to contain a statement of competency within all EIAR documents, including screening and scoping reports.

Projects which involve a tourism element

Tourism projects are wide ranging and diverse. While there are some projects which cater to tourism and are easily identified as such - Hotels, Museums, etc. there are other projects where tourism is a key service or element, but which may not be immediately obvious - forest trails, community facilities and others. EIAR conducted for developments containing tourist elements should be completed in accordance with the current guidance from the EPA.

Projects which include a tourism element have potential particular environmental effects which differ from a non-tourism development. These impacts can be intermittent, event related, inconsistent, dependent on weather, temporal, temporary or seasonal. This is considered within the prescribed environmental topics for EIAR outlined in Section 7 below.

Projects which may have an impact upon tourism

While tourism projects may be diverse, the projects which can impact tourism are considerably more wide ranging, from large infrastructural developments to local energy developments. Disruption to or suppression of a tourist resource or amenity can have very local or more strategic impacts, directly or indirectly- for example energy projects in a rural area can have both a negative and positive impact in different regards. There can be temporary, periodic or even seasonal impacts occurring during construction or operational periods.

According to the Fáilte Ireland Tourism Facts 2018 Report, the most important factors in determining the attractiveness of tourism destinations for visitors to Ireland are;

- Beautiful Scenery and Unspoiled Environment
- Hospitality
- Safety
- Nature, Wildlife and Natural Attractions
- History and Culture
- Pace of Life

These factors used for the promotion of tourism in Ireland are also barometers of sensitivity to change in tourism sensitive or dominant locations where development may have an impact upon the tourism asset. The potential for development to impact these sensitivities, and the environmental criteria under which they can be considered, are identified in section 7 of the guidelines.

5. Guiding Principles of EIAR

As outlined in the EPA Draft EIAR Guidelines, the fundamental principles to be followed when preparing an EIAR, including screening and scoping, are:

- Anticipating, avoiding and reducing significant effects
- Assessing and mitigating effects
- Maintaining objectivity
- Ensuring clarity and quality
- Providing relevant information to decision makers
- Facilitating better consultation.

Environmental assessment should be undertaken in accordance with the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018.

6. Consideration of Competency and Qualifications

As per Section 2.5 of the EPA Guidelines, EIAR is required to be completed by 'competent experts'.

Contributors to the preparation of environmental impact assessment reports, including screening and scoping assessments, should be qualified and competent. Sufficient expertise, in the relevant field of the project concerned, is required for the purpose of its examination by the competent authorities in order to ensure that the information provided by the developer is complete and of a high level of quality so that a full and proper assessment can be undertaken.

For tourism related projects, or projects likely to affect tourism assets, competent experts in the area of tourism should be utilised in the environmental assessment.

The competency of all involved in the production of an EIAR or any related report (eg. Screening and scoping) is required to be stated at the beginning of the EIAR report with further details as necessary in each following chapter.

Where tourism projects involve for example heritage or cultural components, input from heritage consultants, conservation architects, or historians may be required.

7. EIAR Requirements

The following are the key requirements for an EIAR under the current guidance. This is not a definitive list and should be read in conjunction with regulations.

- project description;
- assessment of alternatives considered;

- baseline assessment;
- impact assessment;
- cumulative impact
- interaction of impacts
- mitigation.

Project Description

Project descriptions are required to describe the whole project including site, scale, design and key factors. It is important that the EIAR and design team have a consistent understanding of the development description in full. The key requirements are outlined in section 3.5 of the EPA Guidelines however they identify the following;

- the location of the project
- the physical characteristics of the whole project
- the main characteristics of the operational phase of the project
- an estimate, by type and quantity, of the expected residues and emissions

The location of the project should include identifying key sensitive receptors (including tourism receptors). In the operational phase of the project any tourism based, or potentially tourism related activity, should be identified.

Assessment of Alternatives

The assessment of alternatives is a requirement of EIAR

Where tourism projects are location dependent the assessment of alternatives should consider alternative methods and technologies, detail the key considerations culminating in the selection of the design, the reasoning for these and the environmental effect of these decisions. This is particularly important for tourism projects which are often location tied. The developer is expected to consider reasonable alternatives. What is considered reasonable may vary from case to case.

Baseline Assessment

Baseline descriptions are evidence based, current descriptions of environmental characteristics with consideration of likely changes to the baseline environment evidenced in planning histories, unimplemented permissions, and applications pending determination. Baseline assessments should identify any tourism sensitivities in the zone of influence of a development. This zone of influence of a development is highly dependant on its **Context, Character, Significance, and Sensitivity**, as outlined in the Draft Guidelines. These characteristics apply to both the development and the environment.

For example, in a tourism context;

The location of sensitive tourism resources that are likely to be directly affected should be highlighted, and other premises which although located elsewhere, may be the subject of in combination impacts such as alteration of traffic flows or increased urban development.

The character of an area from a tourism perspective should be described and the principal types of tourism in the area. Where relevant, the specific environmental resources or attributes in the existing environment which each group uses or values should be stated and where relevant, indicate the time, duration or seasonality of any of those activities.

The significance of the tourism assets or activities likely to be affected should be highlighted. Reference to any existing formal or published designation or

recognition of such significance should be. Where possible the value of the contribution of such tourism assets and activities to the local economy should be provided.

If there are any significant concerns or opposition to the development known to exist among tourism stakeholders and interest groups, this should be highlighted. Identify, where possible, the particular aspect of the development which is of concern, together with the part of the existing tourism resource which may be threatened or impacted.

In addition, the baseline should include any methodologies employed in the study to obtain information, if particular databases are used to locate sensitive receptors they should be acknowledged. In relation to tourism information, the suggested information sources at the end of this document are a non-exhaustive list which may be of assistance in identifying tourism receptors.

Impact Assessment

The topics for consideration of impact are prescribed in the EIA Directive and transcribed into Irish law by the European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018 (S.I. No. 296 of 2018). Impact assessment should contain the likely significant effects of a development arising from both construction and operation of a development. Advice on describing the effects is contained within the Draft Guidelines and includes the **quality, significance, extent, probability, type** and **duration** of the effect, with particular descriptors for each. In describing effects upon tourism receptors these descriptors should take account of the particular aspects and sensitivities of tourism, for example a temporary annual effect from a development may have different impacts upon tourism if it falls at peak season rather than off-peak.

Impact assessment should be carried out as per EPA guidelines and the best practice for that prescribed topic. It may be considered appropriate to consider impact on tourism assets under the 'material assets' topic below.

Population and Human Health

The consideration of tourism projects within the Population and Human Health is extensive, with impacts ranging from rural employment population impacts of seasonal tourism, to the health impact of air pollution from increased traffic in urban areas.

The impact upon tourism can be considered within this section through the sensitivities of Hospitality, Safety and Pace of Life. Changes in population can impact the perception of pace of life or safety in a particular location. Impacts upon these issues in areas which rely heavily on tourism or have a particular sensitive tourism generator should be considered in this section.

Biodiversity

Particular tourist activities can have a significant impact upon biodiversity. Landscapes which are 'unspoiled' can be attractors of tourism. However, the disturbance to ecology must be managed to minimise impact. Biodiversity is also a tourism asset and should be protected as such from other development and should be provided for in proposals where possible.

Land, Soils and Geology

A link between tourism and this prescribed environmental factor, beyond the normal development impacts, is rare, however particular activities or facilities which use geological features may have an impact upon soils and geology, such as mountain biking trails, recreational uses of old quarries etc. Indirect impacts such as material use for extensive landscaping and public realm should also be considered.

Water

Tourism uses can be water intense, depending on development type. Recreational use of a surface water feature, water-based leisure centres etc have different impacts to standard development.

Air Quality and Climate

Tourism impact upon air quality is dependent on activity proposed and sensitivity of the location.

Noise and Vibration

A link between tourism and this prescribed environmental factor, beyond the normal development impacts, is rare, however the impact upon tourism of issues of noise and vibration can be significant. Construction adjoining hotels for example should consider the sensitivity of the development and ensure mitigation is in place.

Material Assets; Traffic and Transport

The different transport patterns associated with tourism activities is a key impact of tourism and should be considered especially for tourism projects. These produce temporal and seasonal changes on the norm and specialist consideration and interpretation should be given. Tourism proposals should, where possible, be well served by public transport and should be accessible by modes other than the car. The impact of traffic on tourism assets can be substantial and can vary in severity according to season, the weather, etc. The impact of construction traffic can be a particular concern in tourism sensitive areas in terms of noise pollution and visual impact. The construction programme of developments should work to avoid peak tourism periods in tourism areas and should consider planned or anticipated tourism events and festivals.

Cultural Heritage

Cultural heritage can be a key component of tourism projects and the impact of tourism on the maintenance of cultural heritage should be given the utmost consideration, whether positive or negative. As a tourism attraction, cultural heritage should be strongly considered in non-tourism developments and the impact upon tourism considered as a potential impact.

Archaeology

Archaeology can be of tourism interest and can be an attractive or key component of tourism projects. Archaeology can be a tourism attractor but is generally not kept in situ except in key cases which could also be considered under cultural heritage.

Material Assets; Waste Management

Tourism is a resource heavy activity and can impact waste streams and waste segregation. Impacts here should be considered strongly and with knowledge of the variation that arises from the particular tourist activity. Waste and Waste disposal issues can also impact the perception of an unspoiled environment, effecting tourism, which should be considered.

Material Assets

Material assets are utilities and infrastructure. Tourism itself could be considered a material asset as its impact upon the economy and the infrastructure in place to support it is a material consideration in assessing economic impact.

Landscape

The visual impact of a tourism development, especially in locations which are visually sensitive or renowned for their scenic or landscape beauty, should be considered carefully. A

development intended to utilise or enjoy a particular vista or environment should minimise impact upon that environment.

Major Accident and Natural Disaster

There is a requirement for tourist developments to describe expected significant effects on the environment of the proposed development's vulnerability to major accidents and/or natural disasters relevant to it. Where appropriate measures should be identified to prevent or mitigate the significant adverse effects of such accidents or disasters, including resulting from climate change, on the environment and detail the preparedness for the proposed response.

Interaction of Effects

Where two or more environmental impacts combine or interact they should be considered under the prescribed topics. It is best practice to provide a table of interactions within an EIAR or EIAR Screening Report.

Mitigation

Mitigation should follow the hierarchy of minimisation in descending order of preference- Avoid, Reduce, Remedy

Avoid sensitive tourism resources- such as views, access and amenity areas including habitats as well as historical or cultural sites and structures.

Reduce the exposure of sensitive resources to excessive environmental impact

Reduce the adverse effects to tourism land uses and patterns of activities, especially through interactions arising from significant changes in the intensity of use or contrasts of character or appearance.

Remedy any unavoidable significant residual adverse effects on tourism resources or activities.

Mitigation measures must be measurable and achievable within the bounds of the project.

Cumulative Impact

The cumulative impact is that of the project combined with any known likely project which will interact or compound an environmental impact.

Transboundary Impact

Transboundary impacts should be included in EIAR. In the case of tourism, especially international travel, the transboundary impacts may not be proximate to the EIAR site.

8. Sources of information on Tourism

Information available online

Fáilte Ireland

Fáilte Ireland offers detailed research analysis and insights into the Irish Tourism Industry. The National Tourism Development Authority has a portfolio of research across a number of areas including facts and figures, briefing papers and reports and visitor feedback. The Fáilte Ireland website has a dedicated research library which can be accessed [here](#)

Tourism Ireland

Tourism Ireland is responsible for marketing the island of Ireland overseas as a holiday and business tourism destination. Tourism Ireland publishes a range of research documents including; visitor facts and figures, seasonal updates and industry insights which are accessible [here](#)

Local Authorities

Local Authorities are an invaluable source of information. They produce tourism strategies and audits of tourism assets within their jurisdiction. Local authorities will also produce landscape and seascape studies. Protected views and prospects as well as the record of protected structures and other designated protected buildings are contained within the Statutory Development Plans.

Regional Authorities

Regional Authorities can also be consulted on high level strategic tourism and potential Regional Spatial and Economic Strategies (RSEs) should be consulted.

Central Statistics Office

The Central Statistics Office (CSO) is Ireland's national statistical office and their purpose is to impartially collect, analyse and make available statistics about Ireland's people, society and economy. The Tourism and Travel Section of the Central Statistics Office is the major source for tourism statistics in Ireland and is updated regularly.



David Naughton
MKO
Tuam Road
Galway
H91 VW84

27 August 2021

Re: Proposed Mixed Use Development at Moygaddy Co. Meath
Your Ref: 210414
Our Ref: 21/297

Dear David,

Geological Survey Ireland is the national earth science agency and is a division of the Department of the Environment, Climate and Communications. We provide independent geological information and advice and gather various data for that purpose. Please see our [website](#) for data availability. Use of our data or maps should be attributed correctly to 'Geological Survey Ireland'.

With reference to your letter dated 09 August 2021, concerning the proposed Mixed Use Development at Moygaddy Co. Meath, Geological Survey Ireland would encourage use of and reference to our datasets. Please find attached a list of our publicly available datasets that may be useful to the environmental assessment and planning process. We recommend that you review this list and refer to any datasets you consider relevant to your assessment. The remainder of this letter and following sections provide more detail on some of these datasets.

Geoheritage

Geological Survey Ireland is in partnership with the National Parks and Wildlife Service (NPWS, Department of Housing, Local Government and Heritage), to identify and select important geological and geomorphological sites throughout the country for designation as geological NHAs (Natural Heritage Areas). This is addressed by the Geoheritage Programme of Geological Survey Ireland, under 16 different geological themes, in which the minimum number of scientifically significant sites that best represent the theme are rigorously selected by a panel of theme experts.

County Geological Sites (CGSs), as adopted under the National Heritage Plan, include additional sites that may also be of national importance, but which were not selected as the very best examples for NHA designation. All geological heritage sites identified by Geological Survey Ireland are categorised as CGS pending any further NHA designation by NPWS. CGSs are now routinely included in County Development Plans and in the GIS of planning departments, to ensure the recognition and appropriate protection of geological heritage within the planning system. CGSs can be viewed online under the Geological Heritage tab on the online [Map Viewer](#).

The audit for Co. Meath was carried out in 2007. The full report details can be found at [The Geological Heritage of Meath](#). **Our records show that there are no CGSs in the vicinity of the proposed mix use development.**

Groundwater

Geological Survey Ireland's [Groundwater and Geothermal Unit](#), provides advice, data and maps relating to groundwater distribution, quality and use, which is especially relevant for safe and secure drinking water supplies and healthy ecosystems.

Proposed developments need to consider any potential impact on specific groundwater abstractions and on groundwater resources in general. We recommend using the groundwater maps on our [Map viewer](#) which should include: wells; drinking water source protection areas; the national map suite - aquifer, groundwater vulnerability, groundwater recharge and subsoil permeability maps.



For areas underlain by limestone, please refer to the karst specific data layers (karst features, tracer test database; turlough water levels (gwlevel.ie). Background information is also provided in the Groundwater Body Descriptions. Please read all disclaimers carefully when using Geological Survey Ireland data.

The Groundwater Data Viewer indicates a 'Locally Important Aquifer - Bedrock which is Moderately Productive only in Local Zones' underlies the proposed development. The Groundwater Vulnerability map indicates a range of groundwater vulnerabilities within the vicinity of the proposed development. We would therefore recommend use of the Groundwater Viewer to identify areas of High to Extreme Vulnerability and 'Rock at or near surface' in your assessments, as any groundwater-surface water interactions that might occur would be greatest in these areas.

[GWClimate](#) is a groundwater monitoring and modelling project that aims to investigate the impact of climate change on groundwater in Ireland. This is a follow on from a previous project (GWFlood) and the data may be useful in relation to Flood Risk Assessment (FRA) and management plans. Maps and data are available on the [Map viewer](#).

The Groundwater Protection Response overview and link to the main report is here: <https://www.gsi.ie/en-ie/programmes-and-projects/groundwater-and-geothermal-unit/projects/protecting-drinking-water/what-is-drinking-water-protection/county-groundwater-protection-schemes/Pages/default.aspx>.

Geological Mapping

Geological Survey Ireland maintains online datasets of bedrock and subsoils geological mapping that are reliable and accessible. We would encourage you to use these data which can be found [here](#), in your future assessments.

Geotechnical Database Resources

Geological Survey Ireland continues to populate and develop our national geotechnical database and viewer with site investigation data submitted voluntarily by industry. The current database holding is over 7500 reports with 134,000 boreholes; 31,000 of which are digitised which can be accessed through downloads from our [Geotechnical Map Viewer](#). We would encourage the use of this database as part of any baseline geological assessment of the proposed development as it can provide invaluable baseline data for the region or vicinity of proposed development areas. This information may be beneficial and cost saving for any site-specific investigations that may be designed as part of the project.

Natural Resources (Minerals/Aggregates)

Geological Survey Ireland provides data, maps, interpretations and advice on matters related to minerals, their use and their development in our [Minerals section](#) of the website. The Active Quarries, Mineral Localities and the Aggregate Potential maps are available on our [Map Viewer](#).

We would recommend use of the Aggregate Potential Mapping viewer to identify areas of High to Very High source aggregate potential within the area. In keeping with a sustainable approach we would recommend use of our data and mapping viewers to identify and ensure that natural resources used in the proposed development are sustainably sourced from properly recognised and licensed facilities, and that consideration of future resource sterilization is considered.

Geochemistry of soils, surface waters and sediments

Geological Survey Ireland provides baseline geochemistry data for Ireland as part of the Tellus programme. Baseline geochemistry data can be used to assess the chemical status of soil and water at a regional scale and to support the assessment of existing or potential impacts of human activity on environmental chemical quality. Tellus is a national-scale mapping programme which provides multi-element data for shallow soil, stream sediment and stream water in Ireland. At present, mapping consists of the border, western and midland regions. Data is available at <https://www.gsi.ie/en-ie/data-and-maps/Pages/Geochemistry.aspx>. This page also hosts Geochemical Mapping of Agricultural and Grazing Land Soil of Europe (GEMAS) and litho-geochemistry (rock geochemistry) from southeast Ireland datasets.



Geological Survey Ireland and partners are undertaking applied geochemistry projects to provide data for agriculture ([Terra Soil](#)), waste soil characterisation ([Geochemically Appropriate Levels for Soil Recovery Facilities](#)) and mineral exploration ([Mineral Prospectivity Mapping](#)).

Other Comments

Should development go ahead, all other factors considered, Geological Survey Ireland would much appreciate a copy of reports detailing any site investigations carried out. Should any significant bedrock cuttings be created, we would ask that they will be designed to remain visible as rock exposure rather than covered with soil and vegetated, in accordance with safety guidelines and engineering constraints. In areas where natural exposures are few, or deeply weathered, this measure would permit on-going improvement of geological knowledge of the subsurface and could be included as additional sites of the geoh heritage dataset, if appropriate. Alternatively, we ask that a digital photographic record of significant new excavations could be provided. Potential visits from Geological Survey Ireland to personally document exposures could also be arranged.

The data would be added to Geological Survey Ireland's national database of site investigation boreholes, implemented to provide a better service to the civil engineering sector. Data can be sent to Beatriz Mozo, Geological Mapping Unit, at Beatriz.Mozo@gsi.ie, 01-678 2795.

I hope that these comments are of assistance, and if we can be of any further help, please do not hesitate to contact me Clare Glanville, or my colleague Trish Smullen at GSIPlanning@gsi.ie.

Yours sincerely,

Clare Glanville
Senior Geologist
Geological Survey Ireland

Enc: Table - Geological Survey Ireland's Publicly Available Datasets Relevant to Planning, EIA and SEA processes.

Geological Survey Ireland's Publicly Available Datasets Relevant to Planning, EIA and SEA processes
following European Union (Planning and Development) (Environmental Impact Assessment) Regulations 2018
(S.I. No. 296 of 2018)

Geological Survey Ireland Programme	Dataset	Relevant EIA Topic	Coverage	Description / Notes	Link to Geological Survey Ireland map viewer
Geohazards	Landslide: National landslide database and landslide susceptibility map	Land & Soil/Climate/Landscape	National	Associated guidance documentation relating to the National Landslide Susceptibility Map is also available.	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=b68cf1e4a9044a5981f950e9b9c5625c
Geohazards	Groundwater Flooding (Historic)	Water	Regional	Provide information of historic flooding, both surface water and groundwater. [A lack of flooding presented in any specific location of the map only indicates that a flood has not been detected. It does not indicate that a flood cannot occur in that location at present or in the future]	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc
Geohazards	Groundwater Flooding (Predictive)	Water	Regional	Provides information on the probability of future karst groundwater flooding (where available). [The maps do not, and are not intended to, constitute advice. Professional or specialist advice should be sought before taking, or refraining from, any action on the basis of the flood maps]	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=848f83c85799436b808652f9c735b1cc
Geohazards	Radon Map	Land & Soils/Air	National		http://www.epa.ie/radiation/radonmap/
Geoheritage	County Geological Sites as adopted by National Heritage Plan and listed in County Development Plans	Land & Soils/Landscape	Regional	All geological heritage sites identified by Geological Survey Ireland are categorised as CGS pending any further NHA designation by NPWS.	https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=a30af518e87a4c0b2fbd2aaac3c228
Geological Mapping	Bedrock geology:	Land & Soils	National	1:100,000 scale and associated memoirs.	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7e1b6ab8d58&scale=0
Geological Mapping	Bedrock geology:	Land & Soils	Regional	1:50,000 scale	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7e1b6ab8d58&scale=0
Geological Mapping	Quaternary geology: Sediments	Land & Soils	National	1:50,000 scale	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7e1b6ab8d58&scale=0
Geological Mapping	Quaternary geology: Geomorphology	Land & Soils	National	1:50,000 scale	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=de7012a99d2748ea9106e7e1b6ab8d58&scale=0
Geological Mapping	Physiographic units:	Land & Soils	National	Broad-scale physical landscape units mapped at 1:100,000 scale in order to be represented as a cartographic digital map at 1:250,000 scale	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=afa76a420f54877843aca1bc075c62b
Geological Mapping	GeoUrban: Spatial geological data for the greater Dublin and Cork areas	Land & Soils	Regional	Includes 3D models	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9768f4818b79416093bb2212a850ce6&scale=0
Geological Mapping	Geotechnical database	Land & Soils	National	Digitised geotechnical and Site Investigation Reports and boreholes which can be accessed through online downloads	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=a21718be1873d47a585a3f0415b4a724c
Goldmine	Historical data sets including geological memoirs and 6" to 1 mile geological mapping records	Land & Soils/Water	National	available online	https://secure.dcaa.gov.ie/goldmine/index.html
Groundwater & Geothermal	Groundwater resources (aquifers)	Water	National	Data limited to 1:100,000 scale; sites should be investigated at local scale	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	Groundwater recharge.	Water	National	Data limited to 1:40,000 scale; sites should be investigated at local scale; long term annual average recharge	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	Groundwater vulnerability.	Water	National	Data limited to 1:40,000 scale; sites should be investigated at local scale	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	Group scheme and public supply source protection areas.	Water	National	Not all PWS / GWS have SPZ / ZOC. Check with IW / coco / NFGWS for private supplies.	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	Groundwater Protection Schemes	Water	National	Data is limited to scale of 1:40,000. Data does not include all of the source protection areas	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	Catchment and WFD management units.	Water	National		https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	karst specific data layers	water	National	For areas underlain by limestone, includes karst features, tracer test database; turf/rough water levels (gwlevel.ie)	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	Wells and Springs	Water	National	Not comprehensive, there may be unrecorded wells and springs	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=7e8a202301594687ab14629a10b748ef
Groundwater & Geothermal	Groundwater body Descriptions	Water	National	Not exhaustive; only those in designated SACs; could be other GWDTEs; for more information contact NPWS / EPA / site investigations Also, Roadmap for a Policy and Regulatory Framework for Geothermal Energy, November 2020	https://www.gsi.ie/en-ie/programmes-and-projects/groundwater-and-geothermal-unit/activities/understanding-ireland-groundwater/Pages/Groundwater-bodies.aspx
Groundwater & Geothermal	Geothermal Suitability maps	Land & Soils/Water	National		https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=9e46bee08de41278b90a991160c0b9e
Marine & Coastal Unit	INFOMAR - Ireland's national marine mapping programme; providing key baseline data for Ireland's	Water	National		https://secure.dcaa.gov.ie/GSI/INFOMAR_VIEWER/
Marine & Coastal Unit	CHERISH - Coastal change project (Climate, Heritage and Environments of Reefs, Islands, and Headlands)	Water	Regional		http://www.cherishproject.eu/en/
Marine & Coastal Unit	Coastal Vulnerability Index (CVI).	water / Land & Soils	Regional	Currently the project is being carried out on the east coast and will be rolled out nationally	https://www.gsi.ie/en-ie/programmes-and-projects/marine-and-coastal-unit/projects/Pages/Coastal-Vulnerability-Index.aspx
Minerals	Aggregate potential	Land & Soils/Material Assets	National	Consideration of mineral resources and potential resources as a material asset which should be explicitly recognised within the environmental assessment process	https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c285a49413aa6f1344416dc9956
Minerals	Active quarries	Land & Soils	National		https://dcenr.maps.arcgis.com/apps/webappviewer/index.html?id=ee8c4c285a49413aa6f1344416dc9956
Minerals	Historic mines	Land & Soils/Cultural Heritage	National	Inventory and Risk Classification 2009. Environmental Protection Agency, Economic Minerals Division and Geological Survey Ireland (DECC).	https://gis.epa.ie/EPAMaps/default?easting=7&northing=7&lid=EPA:LEMA_Facilities_Extractive_Facilities https://www.epa.ie/enforcement/mines/
Tellus	Geochemical data: multi-element data for shallow soil, stream sediment and stream water	Land & Soils	Regional	A national mapping programme	https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f72754
Tellus	Airborne geophysical data including radiometrics, electromagnetics and magnetics	Land & Soils	Regional	A national mapping programme	https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f72754
Tellus	urban geochemistry mapping (Dublin SURGE project).	Land & Soils	Regional		https://dcenr.maps.arcgis.com/apps/MapSeries/index.html?appid=6304e122b733498b99642707f72754

- Notes:
1. The maps and data listed above are available on the Geological Survey Ireland map viewer <https://www.gsi.ie/en-ie/data-and-maps/Pages/default.aspx>
2. Please read all disclaimers carefully when using Geological Survey Ireland data
3. Geological Survey Ireland and Irish Concrete Federation published guidelines for the treatment of geological heritage in the extractive industry in 2008.



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Environmental Health Department
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Co. Meath
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E: meath.peho@hse.ie

MKO Consultants
Tuam Rd
Galway
Ireland
H91 VW84

9th September 2021

Re: HSE SCOPING SUBMISSION REPORT

Dear Sir/Madam,

Please find enclosed the HSE consultation report in relation to the above proposal. The following HSE departments were notified of the consultation request for this development on 11th August 2021.

- Emergency Planning – Brendan Lawlor
- Estates – Helen Maher
- Assistant National Director for Health Protection – Kevin Kelleher/Helen Mulcahy
- CHO – Des O’Flynn

This report only comments on Environmental Health impacts of the scoping request. If you have any queries regarding this report the contact is Ms Elish O’Reilly, Principal Environmental Health Officer, Co. Clinic, Navan, Co. Meath.

Yours sincerely,

A handwritten signature in black ink that reads "Elish O'Reilly".

Principal Environmental Health Officer



Feidhmeannacht na Seirbhíse Sláinte
Health Service Executive

Environmental Health Department
County Clinic
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T: 046 9098758
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HSE EIS SCOPING REPORT

Environmental Health Service Consultation Report

(as a Statutory Consultee (Planning and Development Acts 2000,
& Regs made thereunder).

Date: 9th September 2021

Type of consultation: Scoping

Planning Authority: An Bord Pleanála

EHIS Reference: 1908

Applicant: Skycastle Ltd

Proposed Development: Development of site at Moygaddy, Maynooth, Co. Meath. The subject site is comprised of four main parcels of land including; residential units, an office/ tech business park, community infrastructure including a nursing home, primary care centre and public hospital and tourism and amenity centre, including a hotel, retail, sport and leisure facilities and a cultural heritage centre. It is envisaged that the Proposed Development will consist of six to eight separate planning applications for the different aspects of the proposed Moygaddy development. The EIAR will cumulatively assess all elements of the Proposed Development and will be submitted alongside the lodgement of the first planning application for Moygaddy, which is likely to be the nursing home and primary care centre elements of the Proposed Development.

This report only comments on Environmental Health impacts of the proposed development. We have made observations on the following specific areas:

Description of the Project:

The EIAR must fully describe the existing physical environment and detail any potential impacts on the existing environment both during the construction and operational phase of the project.

The design characteristics of the project and the reasons for proposing same should be outlined. It is recommended a diverse variety of household types is provided in the residential development to offer people a range of lifestyle, affordability and lifestage choices. All residential development should incorporate the 'Universal Design' Principle to ensure the housing can meet the needs of the occupants regardless of their age, size, ability or disability.

It is also recommended that the development proposals are assessed to ensure compliance with the objectives of the Meath County Development Plan 2020 -2026.

Later Consents Required:

Information on any possible future monitoring requirements for the proposed strategic urban development should be included in the EIAR.

Consideration of Alternatives:

The EIAR should fully describe and consider any alternatives to this project. The applicant should outline a rationale for the site selection and the proposed scheme design.

Public Consultation:

The EIAR should describe measures the applicant took to inform the public about the project. Details of feedback from the public regarding the proposal should be included within the EIAR. Public consultation should be a two way process between the applicant and the public. The EIAR should clearly demonstrate how the legitimate concerns of the public have been assessed and evaluated and how the outcome of consultation with the public influenced decision making within the environmental impact assessment.

Construction

The construction phase of the development creates the potential for temporary emissions which may have a negative impact on the environment and on the health of local residents. The applicant should assess the impacts of construction works having particular regard to:

- Waste Management,
- Pest Control Management,

- Dust Impacts,
- Excessive Noise
- Emissions to Surface/Groundwater

All sensitive receptors in the vicinity of construction works should be identified and measures implemented to ensure they are protected. It is also recommended a Site Specific Construction Management Plan is prepared and included in the EIAR.

Drainage

Any natural flood plains or wetlands on or in the vicinity of the site should be identified and measures implemented to ensure they are protected from the development. The impact of the proposed Strategic Urban Development on watercourses/wetlands further downstream should be assessed.

An integrated approach to surface water management should be implemented on the site. It is recommended that green space and nature based solutions are provided for the storage and conveyance of rainwater on site and to improve flood mitigation in line with the principals outlined in the Greater Dublin Strategic Drainage Study (SUDS)¹.

Climate

It is recommended the applicant ensures climate considerations are fully integrated into the planning of the strategic urban development and outlines how the proposed buildings contribute to climate action through their design. Specific measures which conserve energy consumption and reduce carbon emissions should be outlined in the EIAR.

The applicant should assess the vulnerability of the proposed development against the predicted impacts of a warming climate and they should predict and should outline proactive adaptation measures to ensure the long term resilience of the site infrastructure to the impacts of climate change.

Health

Directive 2014/52/EU has an increased requirement to assess potential significant impacts on Population and Human Health. In the experience of the EHS impacts on human health are generally inadequately assessed in EIA in Ireland. It is recommended that the wider determinants of health and wellbeing are considered. Guidance on determinants of health can be found at www.publichealth.ie

The proposed strategic urban development should be explored for any opportunity to promote physical activity and any potential for health gain should be exploited.

¹ <https://www.sdcc.ie/en/download-it/publications/gdsds-new-development.pdf>

It is recommended that measures to promote walking and cycling throughout the development are implemented along with proposals to ensure the connectivity of the site with the wider urban area. Recreational facilities should be provided to cater specifically for the needs of adolescents and the elderly, along with younger children.

Sustainable transport

The impact of traffic from the proposed Strategic Urban Development should be assessed by carrying out a traffic and transport assessment. An assessment of existing sustainable transport facilities and capacity should also be carried out. It is recommended that the applicant outlines a travel plan for the proposed development which will facilitate and promote the use of public or active transport options for residents.

Landscape

Green recreational space is proven to have positive impacts on health, both physical and mental.² The recent global pandemic has highlighted the importance of access to open green space for recreational purposes for the public. The provision of quality, usable, urban green space is of paramount importance as housing design becomes more compact.

The applicant should assess the impact the proposed Strategic Urban Development will have on existing biodiversity in the area. The applicant should also assess the impact of any possible loss of recreational and amenity green area as a result of the proposed development.

It is recommended that green planting is integrated at all opportunities throughout the development to improve the quality of the built environment and the applicant should outline a diverse range of green spaces for the development in the EIAR. The applicant shall also outline proposals to protect and promote biodiversity on the site.

Noise:

The World Health Organisation (WHO) has identified Environmental Noise as an increasing cause of ill health and detrimental effect on health and wellbeing³.

A full and thorough noise survey must be carried out to assess the impact of noise from the proposed Strategic Urban Development on the residents living in the vicinity. Noise

² Urban Green Space Interventions and Health – a review of impacts and effectiveness, WHO,2017
https://www.euro.who.int/_data/assets/pdf_file/0010/337690/FULL-REPORT-for-LLP.pdf

³ http://www.euro.who.int/_data/assets/pdf_file/0008/136466/e94888.pdf

from traffic movements or heavy goods vehicles associated with the operation of the development should also be included in the noise assessment.

It is essential that up to date baseline monitoring is carried out to establish the existing noise environment. All noise sensitive receptors in the vicinity of the facility shall be identified. The selection of noise monitoring locations for background noise is of critical importance in the noise survey, therefore the rationale for choosing the number and the positioning of these should be provided by the applicant.

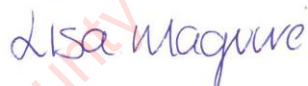
Once the existing noise environment has been established, the predicted increase in noise from the proposed Strategic Urban Development should then be quantified and assessed. It is this department's opinion that adherence to specified noise limit values does not always protect sensitive receptors from noise nuisance therefore the significance of the predicted change in the noise environment should be fully assessed. It is requested that this information is outlined and displayed clearly in the EIAR.

Sustainable Development

The significance of the impact the new Strategic Urban Development will have on the existing town centre of Maynooth should be examined and assessed in the EIAR. The applicant should demonstrate compliance with the Retail Planning Guidelines 2013⁴ and Retail Design Manual 2012⁵ which promote "*town centre vitality through a sequential approach to planning*".

It is recognised that Maynooth is designated as a strategic development area in the greater Dublin Metropolitan Area. There has already been a large volume of residential development permitted for the Maynooth area. It is imperative that the key infrastructure facilities and amenities currently within the town of Maynooth are examined to ensure the town can sustainably accommodate the proposed increase in residential development.

The cumulative impacts of any other proposed housing developments in the vicinity should also be assessed.



Lisa Maguire
Environmental Health Officer

⁴ <https://www.gov.ie/en/publication/aa2d8-retail-planning-guidelines-april-2012-418-mb/>

⁵ <https://www.gov.ie/en/publication/0b081-retail-design-manual-april-2012/>



**Iascach Intíre Éireann
Inland Fisheries Ireland**

16/08/2021

RE: EIA Scoping Document for the Proposed Mixed-Use Development at Moygaddy, Co. Meath

Inland Fisheries Ireland is responsible for the protection, management and conservation of the inland fisheries resource. "Fisheries" includes all inland fisheries recreational and commercial, sea angling and mollusc fisheries stipulated under the Fisheries Acts, the physical habitat upon which the fishery relies, the facilities and access, the quantity and quality of the water and the plant and animal life on which fish depend for shelter and food and the spawning areas where in fish deposit their eggs. The protective role of IFI relates to all aspects of the aquatic environment and all factors that influence the biotic communities within waters, which in any way relate to the propagation of fish stocks

The following observations and comments are of necessity of a general nature, while they apply to the proposed development in general, IFI request you have particular regard to the following in the proposed development:

The proposed development is located within the River Ryewater catchment, an important salmonid system. The River Rye Water supports a resident population of Brown trout, a migratory population of Sea trout and importantly a healthy population of the Atlantic salmon. Thus, it is vital to note that salmonid waters constraints apply to any development in this area. The Ryewater also supports populations of Freshwater Crayfish and Lamprey (both Habitats Directive Annex II species). It is also an important spawning tributary of the Liffey. The River Liffey itself is exceptional among most rivers in the area in supporting Atlantic salmon (*Salmo salar*, listed under Annex II and V of the EU Habitats Directive) and Sea trout, resident Brown trout (both *Salmo trutta*) and several other fish species. This highlights the sensitivity of local watercourses and the Liffey catchment in general. The river is regarded as a very important fishery.

IFI's policy is to maintain watercourses in their open natural state in order to prevent habitat loss preserve and enhance biological diversity and aid in pollution detection. An undisturbed buffer zone between development area and the Ryeriver bank should be maximised (10m minimum). The Moygaddy stream which runs through the middle of the site should not be altered or diverted and again an undisturbed buffer zone between development area and riverbank should be maximised. Riparian vegetation should be retained in as natural a state as possible at all times while providing open space and recreational amenity for river users. IFI is strongly opposed to any development on floodplain lands.



**Iascach Intíre Éireann
Inland Fisheries Ireland**

An Invasive Species and Biosecurity Plan should be included to treat and manage identified invasive species onsite.

Best practice should be implemented at all times in relation to any activities that may impact on surface water. Any discharges to surface streams present on the site must not impact negatively on the salmonid status of the system. Comprehensive surface water management measures must be implemented at the construction and operational stage to prevent any pollution entering local waterways. As specific details of the construction works at this site are as yet unknown IFI are not in a position to comment further on potential impacts

Consultation between the project team and IFI will be essential in order that a fisheries-sustainable solution is arrived at and incorporated in the final works programme.

Pre-construction baseline data (biotic and abiotic) is essential within the EIA process and IFI would be delighted to contribute any information that may be relevant to the fishery section (fish data can be accessed at <http://wfdfish.ie/>). Potential impacts (likely and significant effects) of the development on the system should be comprehensively assessed and recommendations and mitigation measures should be formulated. The identification of good baseline data across a range of sites, both close to the development and at a distance from the site will allow for comparison between the current situation and that which may develop over time if the project proceeds.

IFI have recently published the following guidelines which should also be referred to in the EIAR. They can be accessed on our website www.fisheriesireland.ie :

Revised "Planning for watercourses in the urban environment" which can provide guidance on site specific measures to enhance, protect, rehabilitate or establish riparian and aquatic habitats.

"River Restoration Works - Science based Guidance centred on Hydromorphological Principles in an Era of Climate Change – 2020" has also been published by IFI and describes a framework to plan, design, implement and monitor river restoration projects. A list of best practice riparian and instream measures are presented alongside measures to address channel connectivity and invasive species that are compliant with the EU Water Framework Directive (WFD), other EU Directives and State regulations.



Iascach Intíre Éireann
Inland Fisheries Ireland

I trust you will take our observations on board when compiling the EIAR.

Kind regards,

Roisin O' Callaghan

Fisheries Environmental Officer
Inland Fisheries Ireland - Dublin
Iascach Intíre Éireann
Inland Fisheries Ireland

Telephone: +353 (01) 8842651

Email: roisin.ocallaghan@fisheriesireland.ie

David Naughton

From: INFO <Information@tii.ie>
Sent: Thursday 23 September 2021 10:18
To: David Naughton
Subject: RE: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

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Dear Mr. Naughton,

Thank you for your email of 9 August 2021 regarding the above.

TII will endeavour to consider and respond to planning applications referred to it given its status and duties as a statutory consultee under the Planning Acts. The approach to be adopted by TII in making such submissions or comments will seek to uphold official policy and guidelines as outlined in the Section 28 Ministerial Guidelines 'Spatial Planning and National Roads Guidelines for Planning Authorities' (DoECLG, 2012). Regard should also be had to other relevant guidance available at www.TII.ie.

The issuing of this correspondence is provided as best practice guidance only and does not prejudice TII's statutory right to make any observations, requests for further information, objections or appeals following the examination of any valid planning application referred.

With respect to EIAR scoping issues, the recommendations indicated below provide only general guidance for the preparation of an EIAR, which may affect the national road network.

The developer/scheme promoter should have regard, inter alia, to the following:

- TII notes that the subject site accesses the regional/local road network prior to access to the M4, national road, consultations should be had with the relevant Local Authority/National Roads Design Office with regard to locations of existing and future national road schemes,
- TII would be specifically concerned as to potential significant impacts the development would have on the national road network (and junctions with national roads) in the proximity of the proposed development,
- The developer should assess visual impacts from existing national roads,
- The developer should have regard to any Environmental Impact Statement and all conditions and/or modifications imposed by An Bord Pleanála regarding road schemes in the area. The developer should in particular have regard to any potential cumulative impacts,
- The developer, in preparing EIAR, should have regard to TII Publications (formerly DMRB and the Manual of Contract Documents for Road Works),
- The developer, in preparing EIAR, should have regard to TII's Environmental Assessment and Construction Guidelines, including the Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (National Roads Authority, 2006),
- The EIAR/EIS should consider the Environmental Noise Regulations 2006 (SI 140 of 2006) and, in particular, how the development will affect future action plans by the relevant competent authority. The developer may need to consider the incorporation of noise barriers to reduce noise impacts (see Guidelines for the Treatment of Noise and Vibration in National Road Schemes (1st Rev., National Roads Authority, 2004)),

2022

- It would be important that, where appropriate, subject to meeting the appropriate thresholds and criteria and having regard to best practice, a Traffic and Transport Assessment (TTA) be carried out in accordance with relevant guidelines, noting traffic volumes attending the site and traffic routes to/from the site with reference to impacts on the national road network and junctions of lower category roads with national roads. In relation to national roads, TII's Traffic and Transport Assessment Guidelines (2014) should be referred to in relation to proposed development with potential impacts on the national road network. The scheme promoter is also advised to have regard to Section 2.2 of the NRA/TII TTA Guidelines which addresses requirements for sub-threshold TTA. Any improvements required to facilitate development should be identified. It will be the responsibility of the developer to pay for the costs of any improvements to national roads to facilitate the private development proposed as TII will not be responsible for such costs,
- The designers are asked to consult TII Publications to determine whether a Road Safety Audit is required,
- In the interests of maintaining the safety and standard of the national road network, the EIAR should identify the methods/techniques proposed for any works traversing/in proximity to the national road network.
- TII recommends that that applicant/developer should clearly identify haul routes proposed and fully assess the network to be traversed. Where abnormal 'weight' loads are proposed, separate structure approvals/permits and other licences may be required in connection with the proposed haul route and all structures on the haul route through all the relevant County Council administrative areas should be checked by the applicant/developer to confirm their capacity to accommodate any abnormal 'weight' load proposed.

The national road network is managed by a combination of PPP Concessions, Motorway Maintenance and Renewal Contracts (MMaRC) and local road authorities in association with TII. The applicant/developer should also consult with all PPP Companies, MMaRC Contractors and road authorities over which the haul route traverses to ascertain any operational requirements such as delivery timetabling, etc. and to ensure that the strategic function of the national road network is safeguarded.

Additionally, any damage caused to the pavement on the existing national road arising from any temporary works due to the turning movement of abnormal 'length' loads (e.g., tearing of the surface course, etc.) shall be rectified in accordance with TII Pavement Standards and details in this regard shall be agreed with the Road Authority prior to the commencement of any development on site.

Designers should consult TII Publications to determine whether a Road Safety Audit is required for any of the temporary works proposed. Any recommendations should be incorporated into designs.

Notwithstanding any of the above, the developer should be aware that this list is non-exhaustive, thus site and development specific issues should be addressed in accordance with best practice.

I trust that the above comments are of use in your EIAR preparation.

Yours sincerely,

Alban Mills
Senior Regulatory & Administration Executive
Ref No. TII21-114295



From: David Naughton <dnaughton@mkoireland.ie>

Sent: Monday 9 August 2021 18:05

To: Landuse Planning <LandUsePlanning@tii.ie>

Subject: 210414 - Scoping Document for Proposed Mixed Use Development at Moygaddy, Co. Meath

CAUTION: This email originated from outside of TII. Do not click links or open attachments unless you recognise the sender and are sure that the content is safe.

Dear Sir or Madam,

Please find attached a cover letter and Scoping Document for a proposed mixed use development in Moygaddy, Co. Meath. The site is located just north of Maynooth town.

As part of the scoping exercise for the proposed development, we would welcome any comments in relation to the proposed project.

If you have any queries, please do not hesitate to contact me.

Kind regards,



David Naughton B.Sc. (Env.)
Environmental Scientist

MKO
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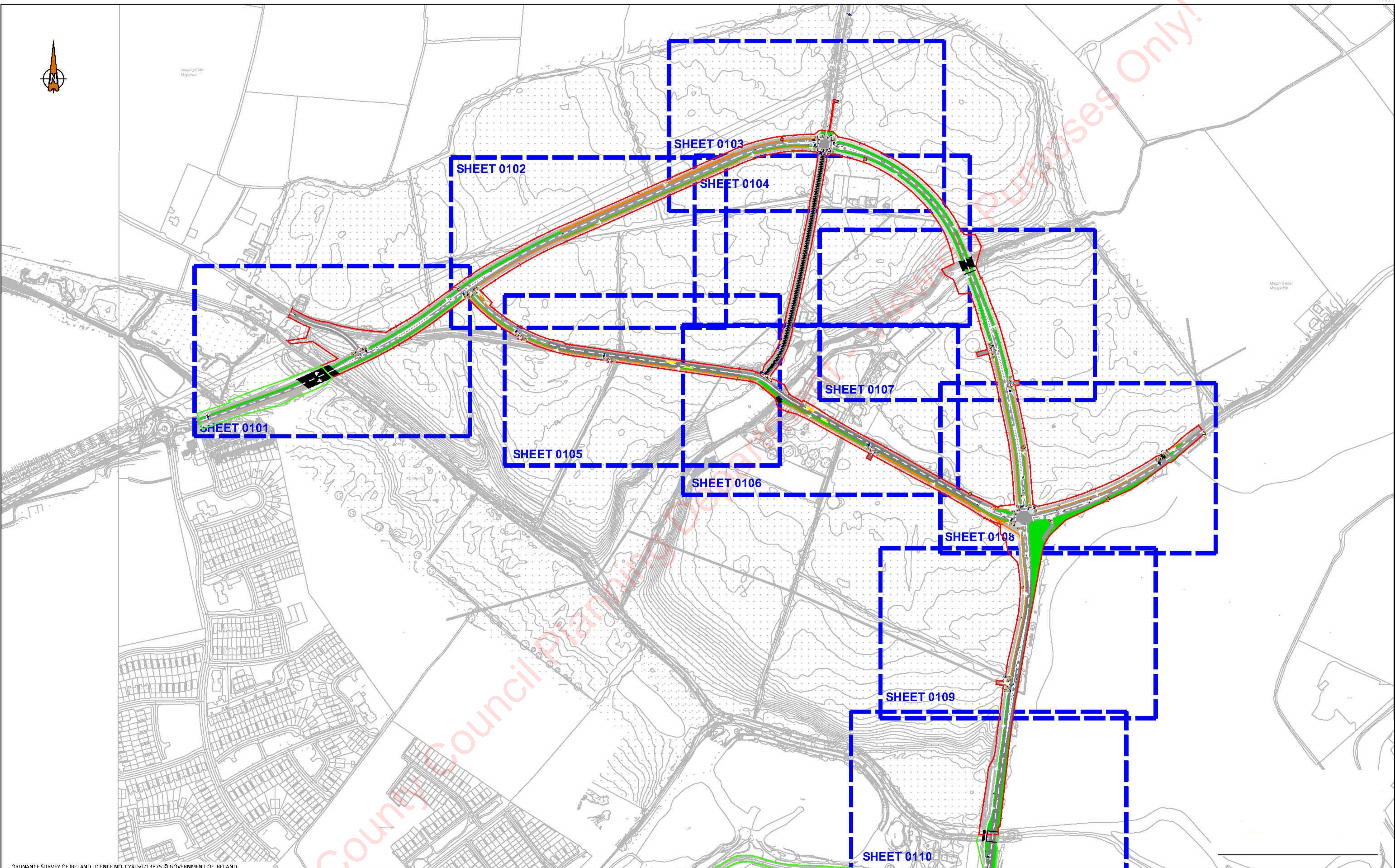
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APPENDIX 4-1

**SITE LAYOUT PLANNING
DRAWINGS**

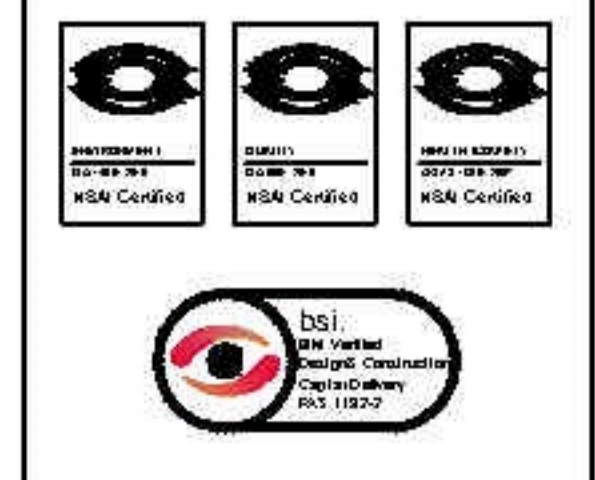
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PD1	15.08.22	FOR PLANNING	RM	WM					



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Client:	SKY CASTLE LTD								
Project:	MAYNOOTH OUTER ORBITAL ROAD								
Title:	ROADS GENERAL ARRANGEMENT AND PROFILE MASTERPLAN								
Code	Originator	Zone	Level	Type	Role	Number	Status	Revision	
S665	OCSC	MR	MH	DR	C	0100	S4	P01	
Date:	AUG '22	Scale:	1:2000@ A1	Drn by:	RM	Chkd by:	WM	Aprvd by:	AH



APPENDIX 4-2

CONSTRUCTION AND ENVIRONMENTAL MANAGEMENT PLAN

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CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN

MAYNOOTH OUTER ORBITAL ROAD

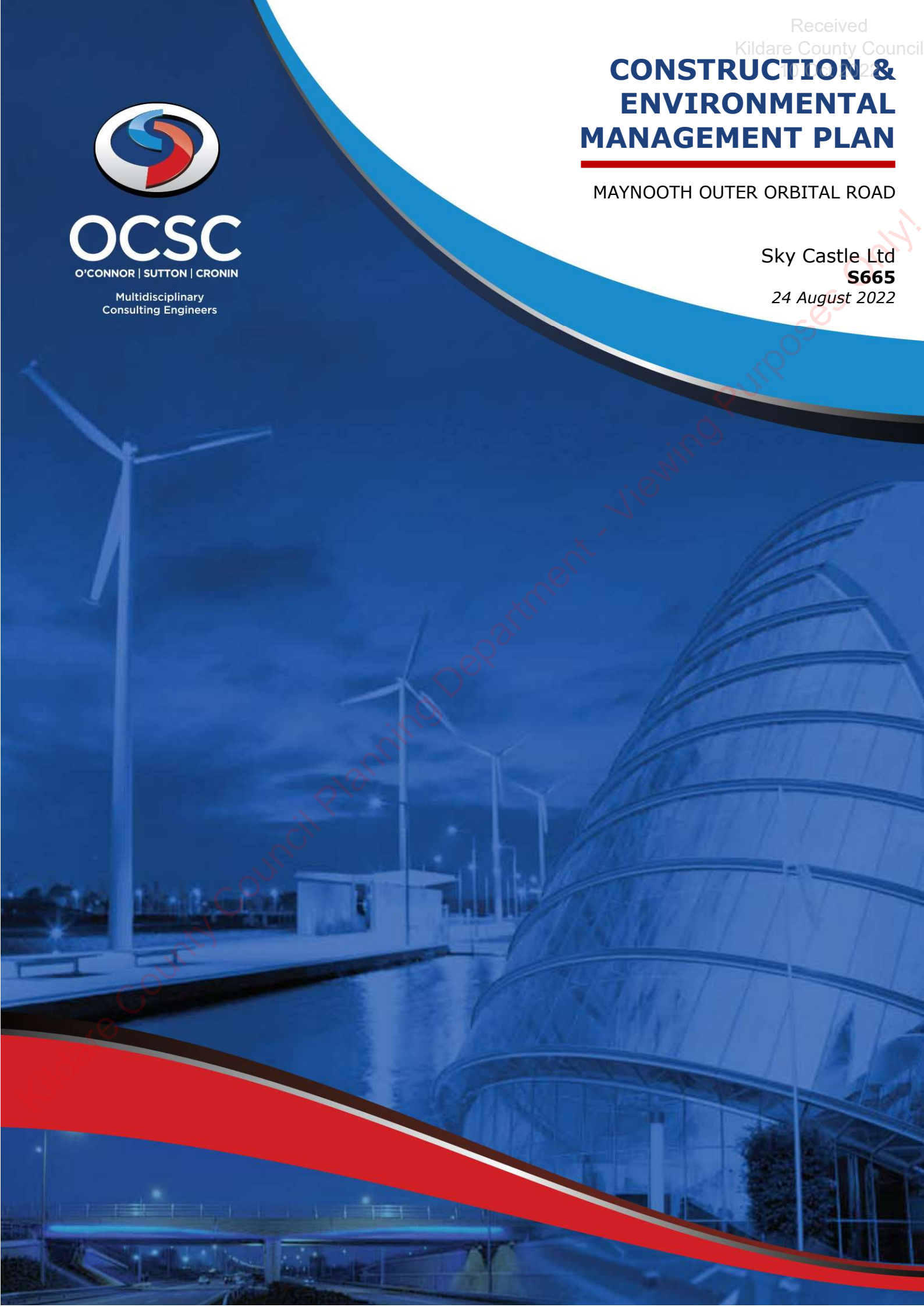
Sky Castle Ltd
S665
24 August 2022



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers



CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN

Maynooth Outer Orbital Road

Sky Castle Ltd
S665
24 August 2022

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CONSTRUCTION & ENVIRONMENTAL MANAGEMENT PLAN

MAYNOOTH OUTER ORBITAL ROAD



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OCSC Job No.: S665	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
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Rev.	Status	Authors	Checked	Authorised	Issue Date				
P01	S4	WM	AH	AH	24.08.2022				

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1 INTRODUCTION

APPOINTMENT

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by Sky Castle Ltd to carry out the design of the civil engineering services associated with the development of the proposed Maynooth Outer Orbital Road (MOOR) on lands at Moygaddy, Co. Meath, which is located northeast of the town of Maynooth, Co. Kildare.

SETTING

Maynooth environs is a large growth area, category II Town status located in south County Meath, and is an economically vibrant area with high-quality transport links to larger towns/cities. The Meath Development Plan 2021-2027 outlines the social, economic, and planning context for the Maynooth environs lands, setting the framework for the plan's policies and objectives. It has a core strategic vision that seeks to ensure that future growth is based on principles of sustainable development that meet the needs of residents per National and Regional guidelines. The environs of Maynooth is a Core Economic Area included in the Gateway Core Economic Area located on the M4 corridor. The wider Maynooth Environs Lands proposed land-use zoning includes A2 – New Residential, E1 – Strategic Employment Zones, G1 – Community Infrastructure, D1 – Tourism and H1 – High Amenity.

The delivery of the Maynooth Outer Orbital Route (MOOR) is critical to facilitating residential, high-end employment, tourist, and leisure development in the Maynooth environs lands and fulfilling the transport infrastructure needs in proximity to Maynooth University and Maynooth town.

ADMINISTRATIVE JURISDICTION

The proposed development is located primarily in the jurisdiction of Meath County Council (MCC), and therefore the Maynooth Outer Orbital Route design and the associated civil engineering services were carried out with reference to the following:

- Meath County Development Plan 2021-2027;
- Maynooth Environs Local Area Plan 2014 (incorporated into adopted MCDP);
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2019);

Even though Maynooth Environs is situated in the Meath County Council administrative area, the Maynooth Environs Local Area Plan contains an objective to liaise with Kildare County Council in the identification, design, reservation and delivery of the section of the Maynooth Outer Relief Road located within the administrative area of Meath County Council. The administrative area of Kildare County Council is located immediately adjacent to the LAP environs lands and some infrastructure improvements will be located within the Kildare County Council (KCC) administrative area. Therefore, the design will also be conducted with due regard to:

- Maynooth LAP
- Kildare County Development Plan
- Maynooth Traffic Management Plan

STUDY AREA

The subject site is located on the southernmost extent of County Meath, as shown in Figure 1, aligning with the county boundary to Co. Kildare. It is approximately 1.5km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth – Dunboyne Road, to the east;
- Agricultural lands, to the north and west; and
- River Rye Water, to the south;

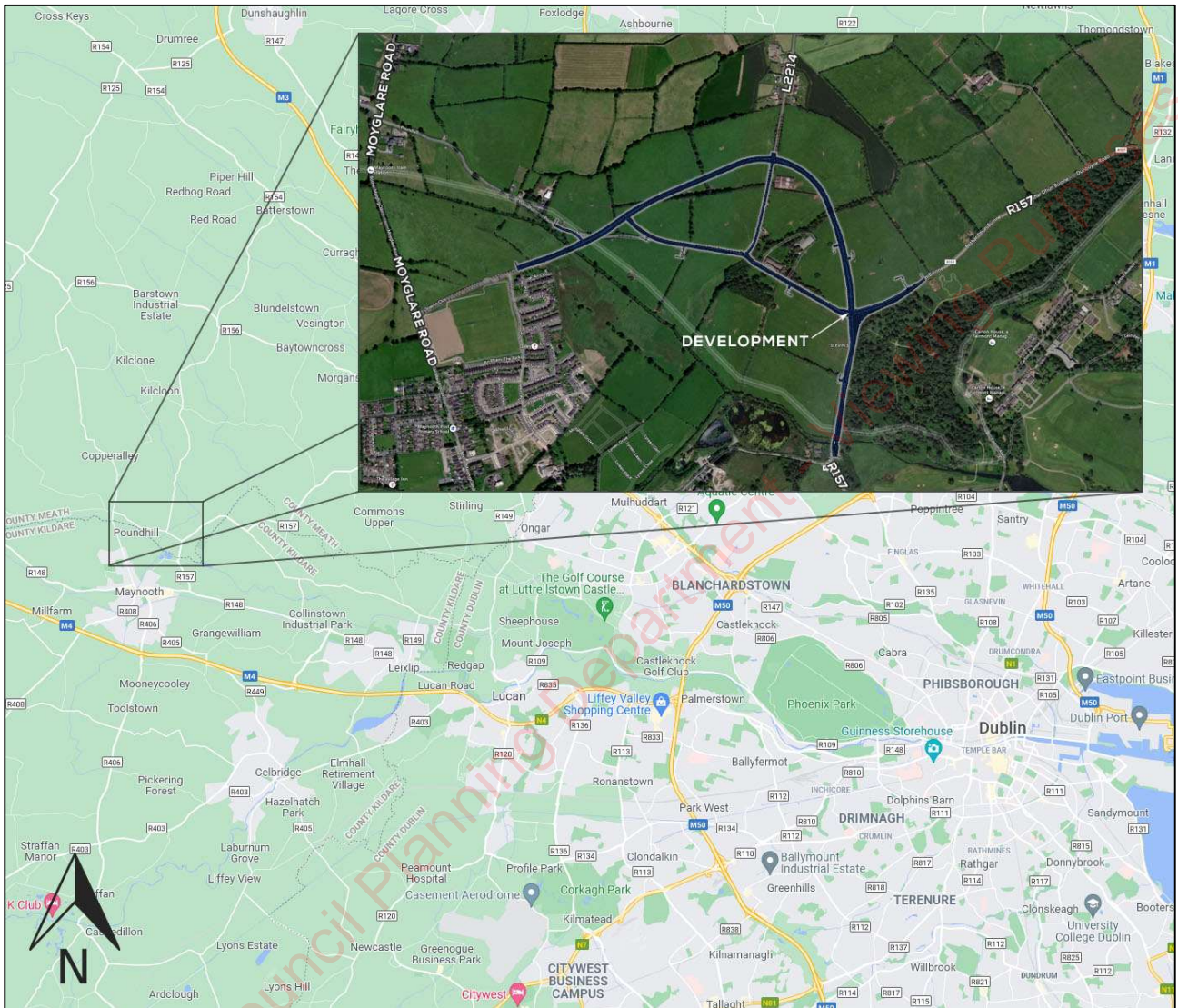


Figure 1: Development Locality Plan

The above image highlights the location of the overall road area and there are small areas of incidental works outside of that for elements such as attenuation facilities, demolition of existing roads, etc.

DEVELOPMENT DESCRIPTION

Planning Permission is sought by Sky Castle Ltd. for the development of the Maynooth Outer Orbital Road (MOOR) in the townland of Moygaddy, Maynooth Environs, Co. Meath.

The proposed road development will consist of the following:

1. Provision of approximately 1,700m of new distributor road (MOOR Arc) 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.
2. 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 L22143 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).
 - (iv) Realignment of a section of the existing L22143 local road and R157, which will entail the demolition of an existing section of the road which extends to circa 3,200 sqm.
 - (v) Provision of a new signalised junction at the realigned junction between the L22143 and R157.
 - (vi) Provision of a new signalised junction between the L2214 local road and the MOOR with right-turn lanes on approaches.
 - (vii) Reconfiguration of the L2214 section within the MOOR arc to a one-way from north to south with right-turn lanes, where applicable.

- (viii) Reconfiguration of the northbound lane of the L2214 within the arc to a shared facility for use by pedestrians and cyclists.
 - (ix) Addition of chicanes on the L6219 and L22143 local road to reduce traffic flow and encourage utilisation of the MOOR.
3. 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 Blackhall Little Stream on the L22143 adjacent to the existing unnamed bridge.
 - (iv) an integral single span bridge on the north-eastern section of the MOOR arc, over the Blackhall Little Stream, and associated floodplain works and embankments.
4. Provision of site landscaping, public lighting, site services and all associated site development works.
5. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

This document serves to inform the planning process in respect of the proposed development. It is intended that this Construction and Environmental Management Plan (CEMP) will be an interim assessment and it is not intended to be a final version to cover the eventual construction of any permitted development. This document will be expanded by the appointed contractor for the works. This document will be updated continuously to take account of any necessary changes on the foot of the recommendations of the EIAR, the planning process and throughout any phased construction period.

The CEMP to be prepared by the appointed contractor, and agreed upon with the Local Authority before the commencement of any construction works, will ultimately include details on the following:

- Daily and weekly working hours;
- Agreed haul routes for incoming materials;
- Licensed hauliers to be used;
- Disposal sites;
- Travel arrangements for construction personnel;
- Appropriate on-site parking arrangements for construction personnel to prevent overspill parking on the local road network;
- Temporary construction entrances to be provided;
- Wheel wash facilities if required;
- Road cleaning and sweeping measures to be put in place if required;
- Temporary construction signage to be put in place and maintained;
- Any proposed traffic management measures such as temporary traffic lights and signage on any public roads;
- Construction traffic routing;
- Temporary footpaths & road closures (if required);
- Fuel & oil storage;
- Noise vibration & dust monitoring and management;
- Construction waste management & disposal;
- Surface water runoff management.

2 CHARACTERISTICS OF THE DEVELOPMENT

DEVELOPMENT & SITE OVERVIEW

The MOOR will be a single carriageway road connecting the Maynooth environs between the east and west. A portion on the western side will be constructed in County Kildare and tie in with existing infrastructure by means of a new bridge and road section. This can be seen in the figure below.

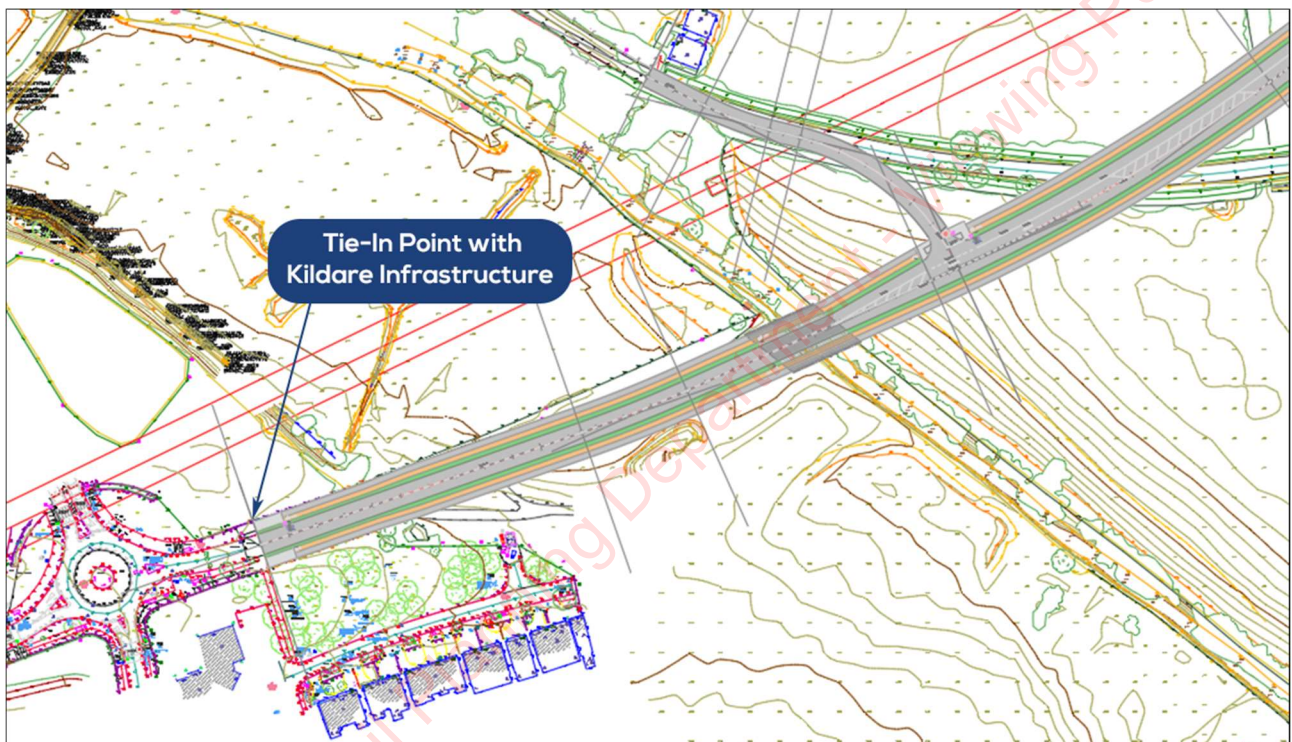


Figure 2: MOOR Western Kildare Tie-In

On the eastern side, the road will again tie in in County Kildare, just north of the roundabout on the R157. A separate cycle and pedestrian bridge will be constructed alongside the existing bridge to allow for continuation of this infrastructure, tying in with existing infrastructure in County Kildare. The tie-in location has been agreed with Kildare and on review of planning compliance submission made by Cairn Homes. This can be seen in the figure below.

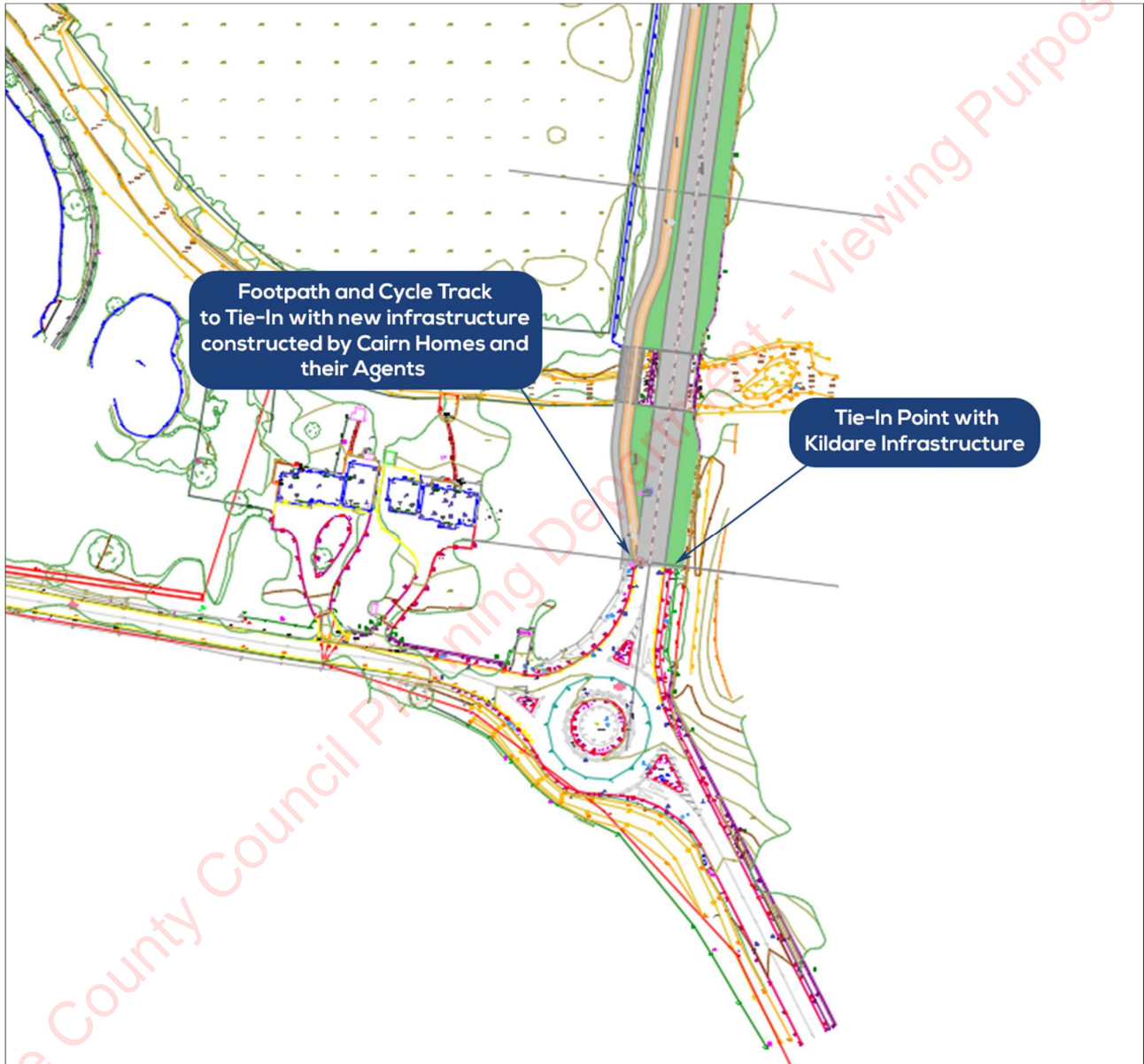


Figure 3: MOOR Eastern Kildare Tie-In

The rest of the MOOR will form an arc through the Maynooth Environs, connecting the western and eastern ends. A portion of the L6219 on the western side will be realigned to accommodate the arc. This section is shown in the figure below.

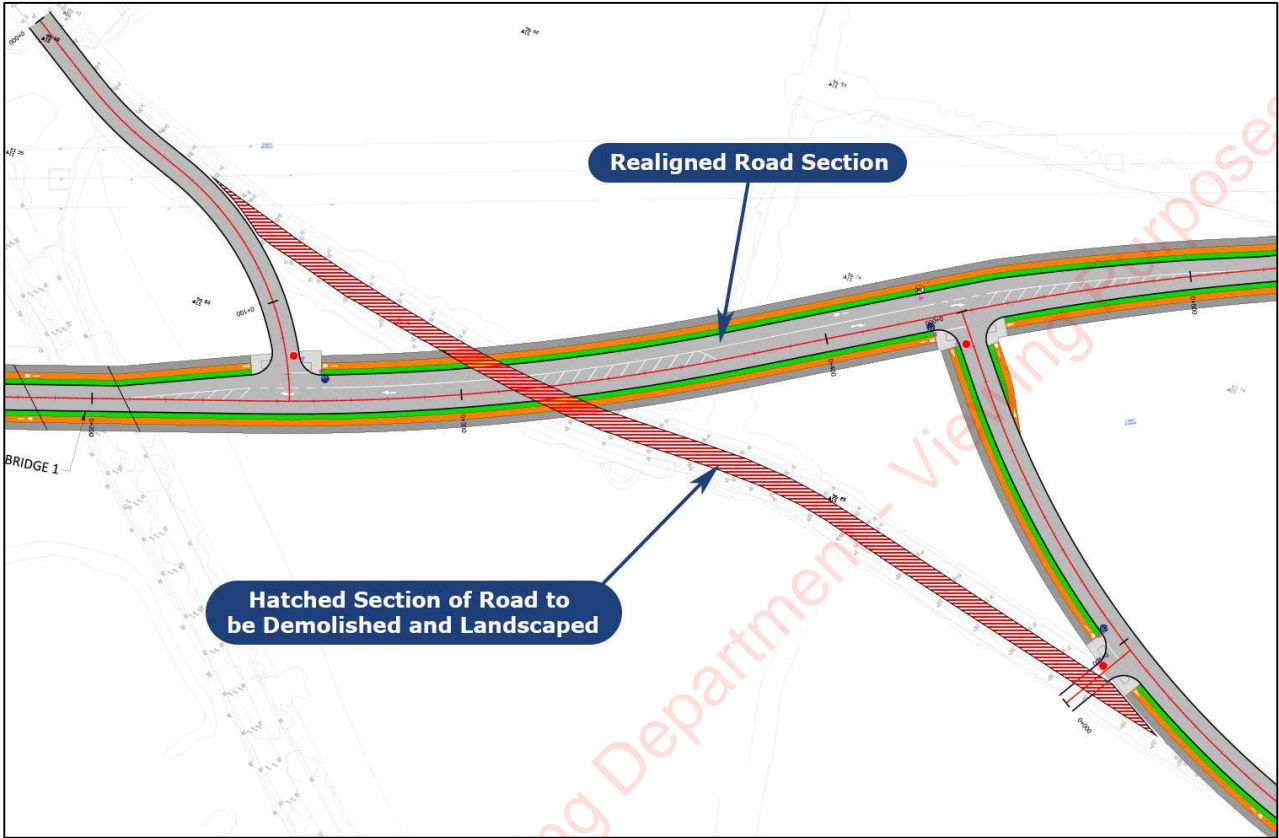


Figure 4: Road Section to be Realigned

The current L2214 (Kilcloon Road) will change to a north-to-south one-way road within the arc. The current south-to-north lane will be converted to a shared facility which can be used by pedestrians and cyclists. The new northern junction between the MOOR and the L2214 will be constructed as a signalised junction. The is shown in the figure below.

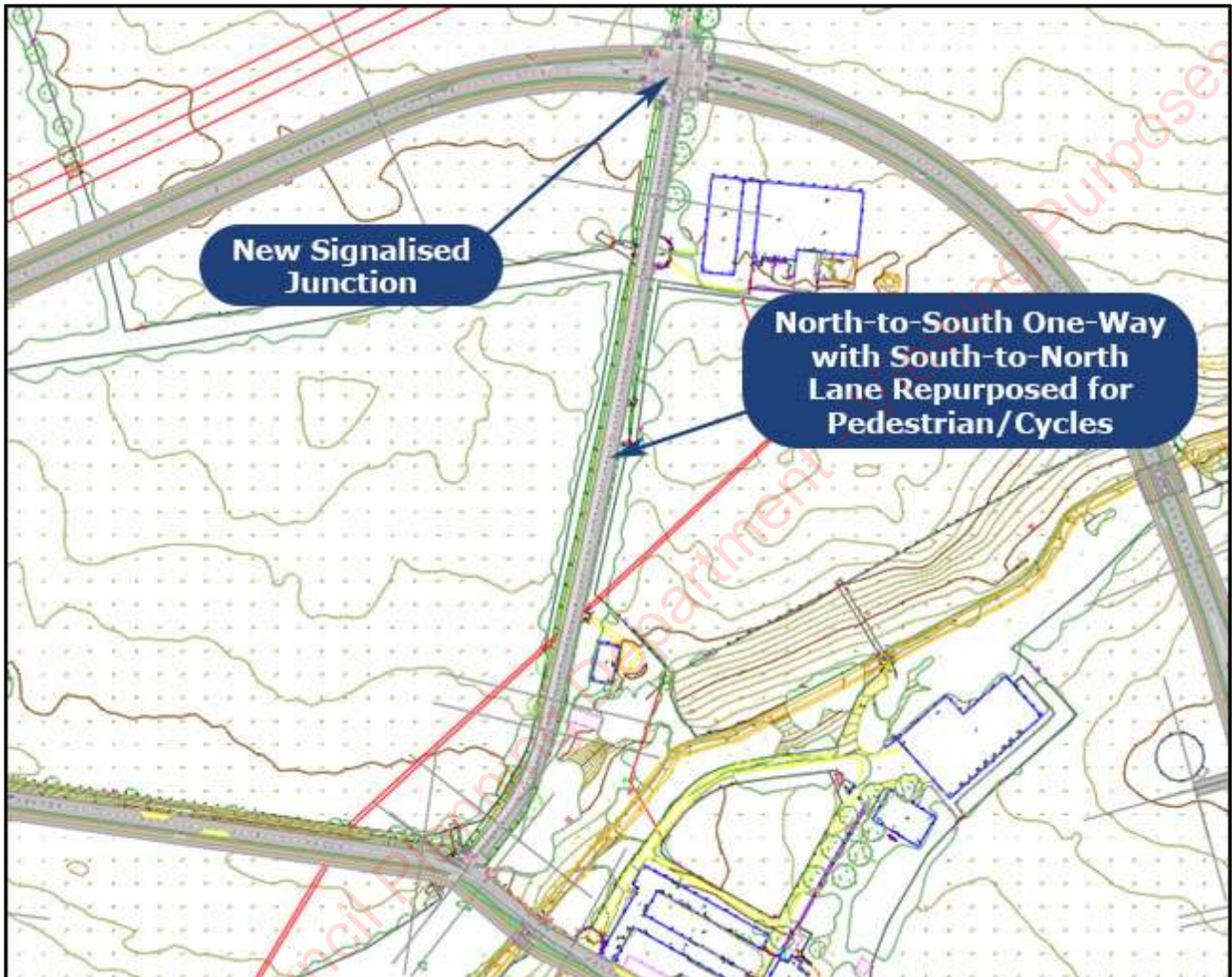


Figure 5: Center of Arc (L2214 - Kilcloon Road)

The junction between the R157, L6219, MOOR and Dunboyne Road on the eastern side of the arc will be realigned and constructed as 4-leg signalised junction, as shown below.

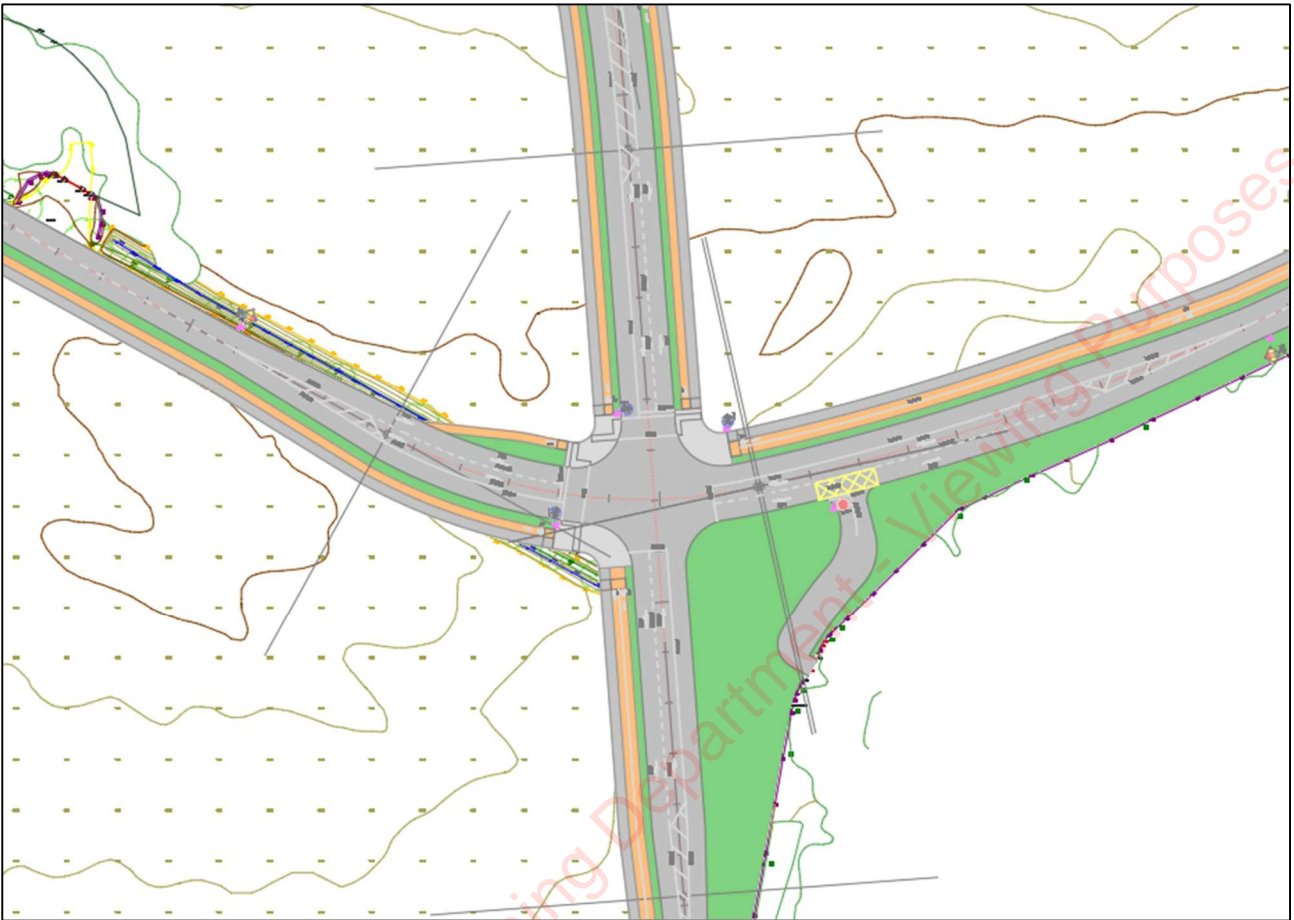


Figure 6: Realigned Signalised Junction on Eastern

For the construction of this junction, a portion of the existing R157 and Dunboyne Road will be realigned, as shown in the figure below.

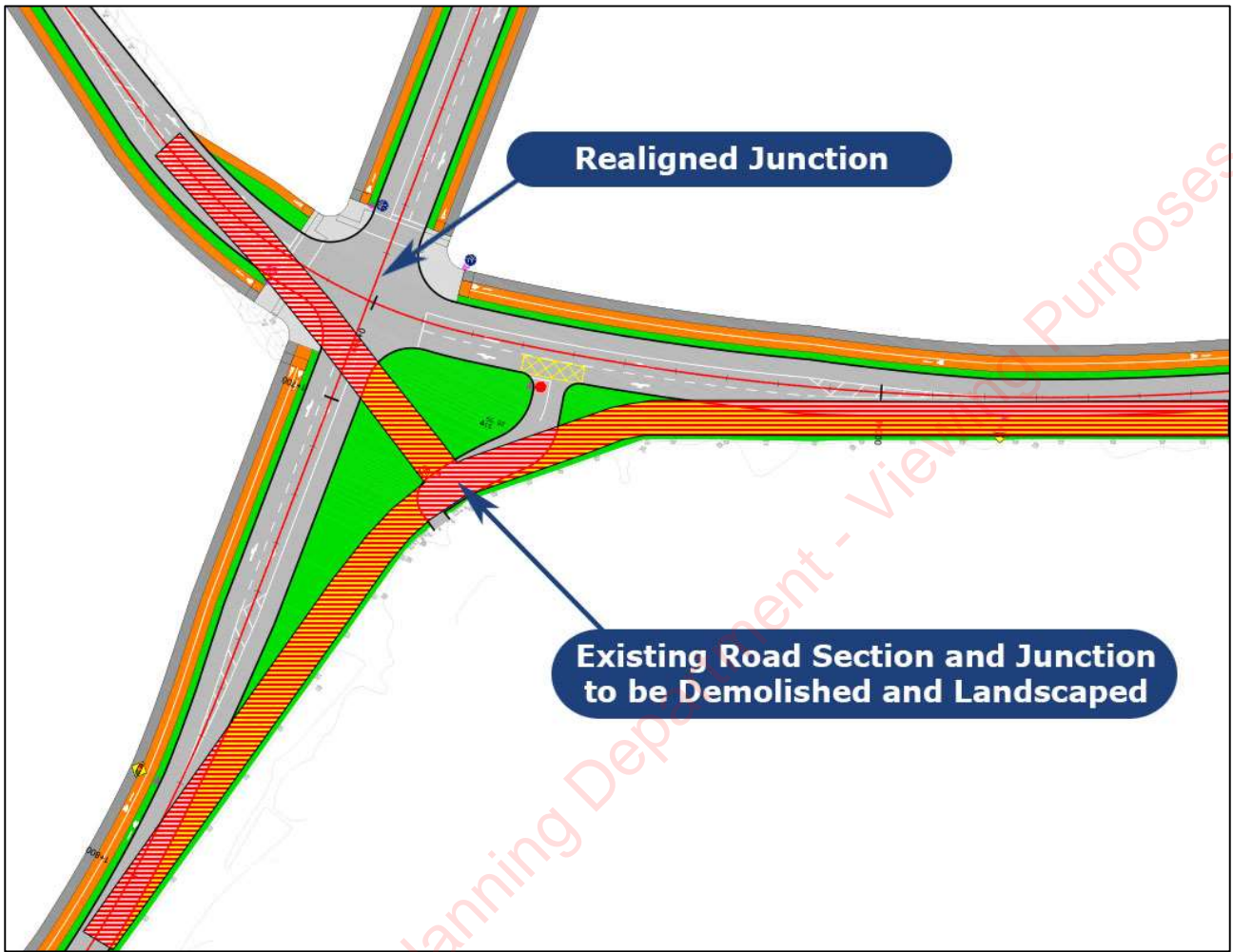


Figure 7: Existing R157/Dunboyne Road Realignment

Four different bridges will be constructed as part of the MOOR. These are highlighted in the figure below.

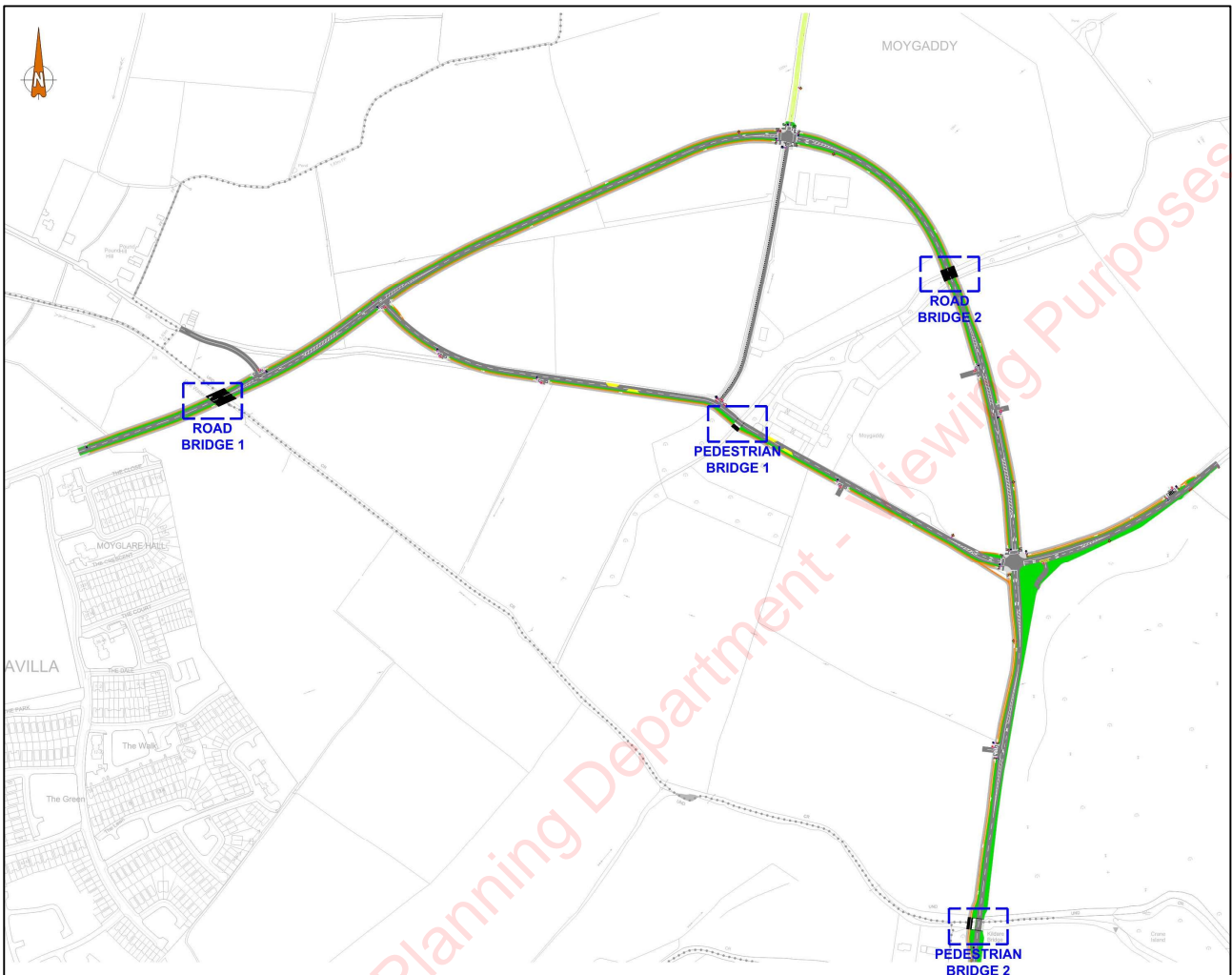


Figure 8: MOOR Bridges

Road bridges 1 and 2 will be new bridges which will be constructed as part of the MOOR. Pedestrian bridges 1 and 2 will be additional structures constructed adjacent to the existing bridge structures to accommodate pedestrian and cycle permeability. More information on these bridges is available in OCSC report "Bridge Options Report" submitted separately.

3 CONSTRUCTION PROGRAMME & PHASING

PHASING

It is anticipated that the construction of the full MOOR will be completed in one phase.

PROGRAMME

At present, the planned construction programme for the development is as follows:

- Planning Submission – September 2022
- Assumed Grant – Q4 2022
- Detailed Design Completion – Q2 2023
- Construction Commencement – Q3 2023
- Construction Completion – Q3 2025

It is anticipated that the construction duration will be approximately 21 months.

APPLICANT & DESIGN TEAM

The following are the main participants in the project:

Role	Name	Contact
Applicant	Sky Castle Ltd	Ronan Barrett
Consulting Engineer	OCSC	Anthony Horan
Landscape Architect	RMDA Ltd	Ronan Mac Diarmada
Planning Consultant	MKO	Pamela Harty
Main Contractor	TBC – Subject to Tender	TBC

Table 1: Project Participants

4 SITE ESTABLISHMENT

SITE ACCESS & OPERATIONS

Site access will be provided via the regional road network.

The location for the site compound and construction hauling route are shown in the figure overleaf. It should be noted that these are only indicative and will be finalised prior to construction.



Figure 9: Indicative Site Compound and Hauling Route

HOARDING

Perimeter hoarding will be provided around the different phases of the site and along the public road to prevent unauthorised access to the site. Controlled access points will also be provided. Hoarding will be maintained to a high standard and painted or covered as appropriate. Temporary hoarding will be provided as necessary within the site as safety restrictions to prevent public access. The locations of this temporary hoarding will vary as work progresses across the site.

TREE PROTECTION

Appropriate measures will be put in place to protect any trees on the site which are designated for protection or retention under any granted planning permission for the development. For more information and detailed measures, please refer to the EIAR and Arborist/Tree Protection reports submitted under separate cover.

ARCHAEOLOGY

Appropriate arrangements will be made with a licensed archaeologist to monitor soil stripping and other development works as may be conditioned in any planning permission for the proposed development. The environmental mitigation measures are described in detail in Chapter 15: Schedule of Mitigation and Chapter 12 Cultural Heritage within the EIAR.

ENABLING WORKS & WORKS ON THE PUBLIC ROAD

Works on the public road will be carried out subject to, and under, a Road Opening Licence from the Local Authority. All works on the public road will be carried out per the Local Authority and HSA guidelines for working on public roads, with traffic management per Chapter 8 of the TSM and the appropriate traffic management guidelines.

INSTREAM AND ADJACENT WORKS

The sustainable drainage network requires the construction of filler drains along the entire site boundary and the contribution of an outfall to the River Ryewater, which consists of the construction of a new concrete headwall at the edge of the river.

As headwalls and bridges are to be constructed in proximity to watercourses, OCSC has considered their construction methodology in detail.

HEADWALLS

All headwalls required for the construction of this scheme are small in nature and will be precast. As such, the site work will be minimal. The contractor will set out the position of the headwall and prepare the base with lean mix concrete or CI 808 crushed stone (product dependant). Once the base is prepared the headwall will be placed on the base in the pipeline and will be constructed from the back of the headwall.

BRIDGES

All of the bridges to be constructed as part of the scheme share a number of key characteristics. They all have:

- Piled foundations;
- Cast in situ abutments;
- Precast deck elements;

- On deck cast in situ slabs or screeds;
- Post-fix parapets.

In advance of the construction of each bridge, a bridge-specific Risk Assessment and Method Statement (RAMS) shall be produced by the Contractor. This RAMS will be reviewed by the Project Supervisor Construction Stage (PSCS) to ensure that the works are taking place in a safe manner. This RAMS will also be reviewed by the designer to ensure that the construction methodology is compatible with the individual design. As all of these structures are over water, approval for the RAMS will also be required from the project ecologist and Inland Fisheries Ireland. The RAMS will also require a review by the relevant local authority for the four structures to be built on or adjacent to the existing and proposed public road.

Although it is acknowledged that there are many ways to construct structures like this, which meet the requirements of all the aforementioned bodies, the below construction sequence is envisaged at this juncture to be likely adopted for construction:

1. Clear the works area and install silt traps and drainage controls under archaeological and ecological supervision as required;
2. Prepare the area with a geotextile and piling mat of approximately 300 to 600mm of 6F material;
3. Install bored piles for the foundations by way of a mobile CFA piling rig;
4. Mobilise the in situ reinforced concrete team of steel fixers and carpenters under engineering supervision to build the abutments and central piers (where required);
5. Place the main deck structure in accordance with a bespoke lifting plan prepared by a competent person;
6. Install falsework and permanent shutters;
7. Fix and pour the bridge deck;
8. Erect parapets and complete the bridge construction.

The bridges will be constructed both over and adjacent to the live water courses as shown in the figure below.

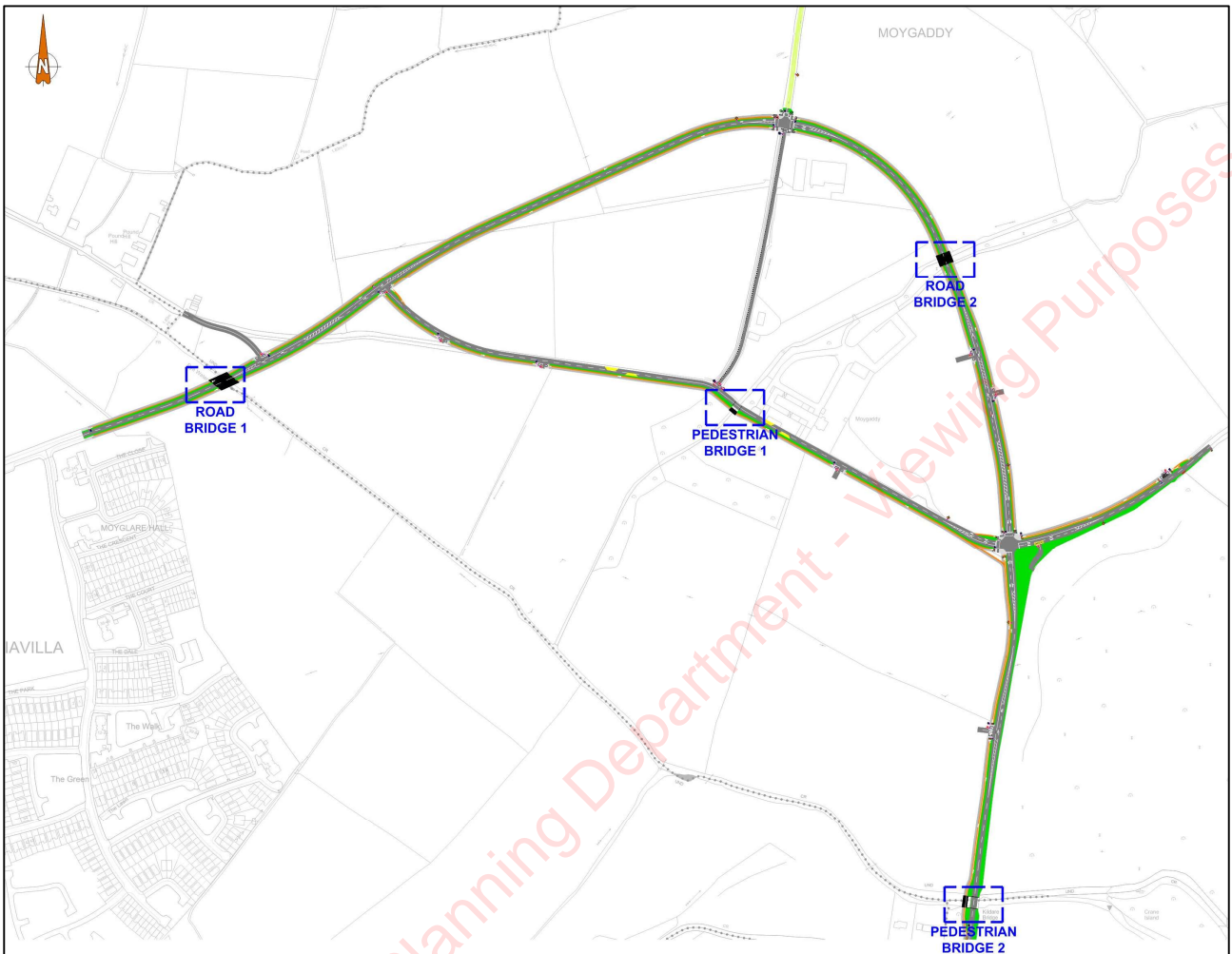


Figure 10: Location of Bridges on the MOOR

These bridges are designed to be constructed without carrying out works in the wetted area of the water courses. All structures in proximity to water and over water will be planned and built in line with a detailed Risk Assessment and Method Statement that takes into account the requirement of Inland Fisheries Ireland and the mitigation measures as outlined in the EIAR. The structures have been preliminarily designed based on the ground conditions present local to each individual structure and they are to be detail designed to the approval of Meath County Council in line with Transport

Infrastructure Ireland's design criteria for such structures. The construction of the bridges will be subject to appropriate oversight and supervision as is normal for similar public works.

Any plant and machinery being used should mitigate against oil spillage by sitting on a drip tray, with bunded surround, or similar approved. Silt traps and protection nets, or similar methods to prevent silt, debris, and other material, from falling into the river during construction activity should be employed. For more information, please refer to the EIAR submitted under separate cover.

All works in or near watercourses will be carried out in line with the Guidelines on the protection of fisheries during construction works in and adjacent waters" as published by Inland Fisheries Ireland in 2016 or as updated prior to construction works.

DEMOLITION

As part of this application, a section of the existing L6219 local road will be realigned. This will entail the demolition and removal of an existing section of the road, as indicated in the figure below.

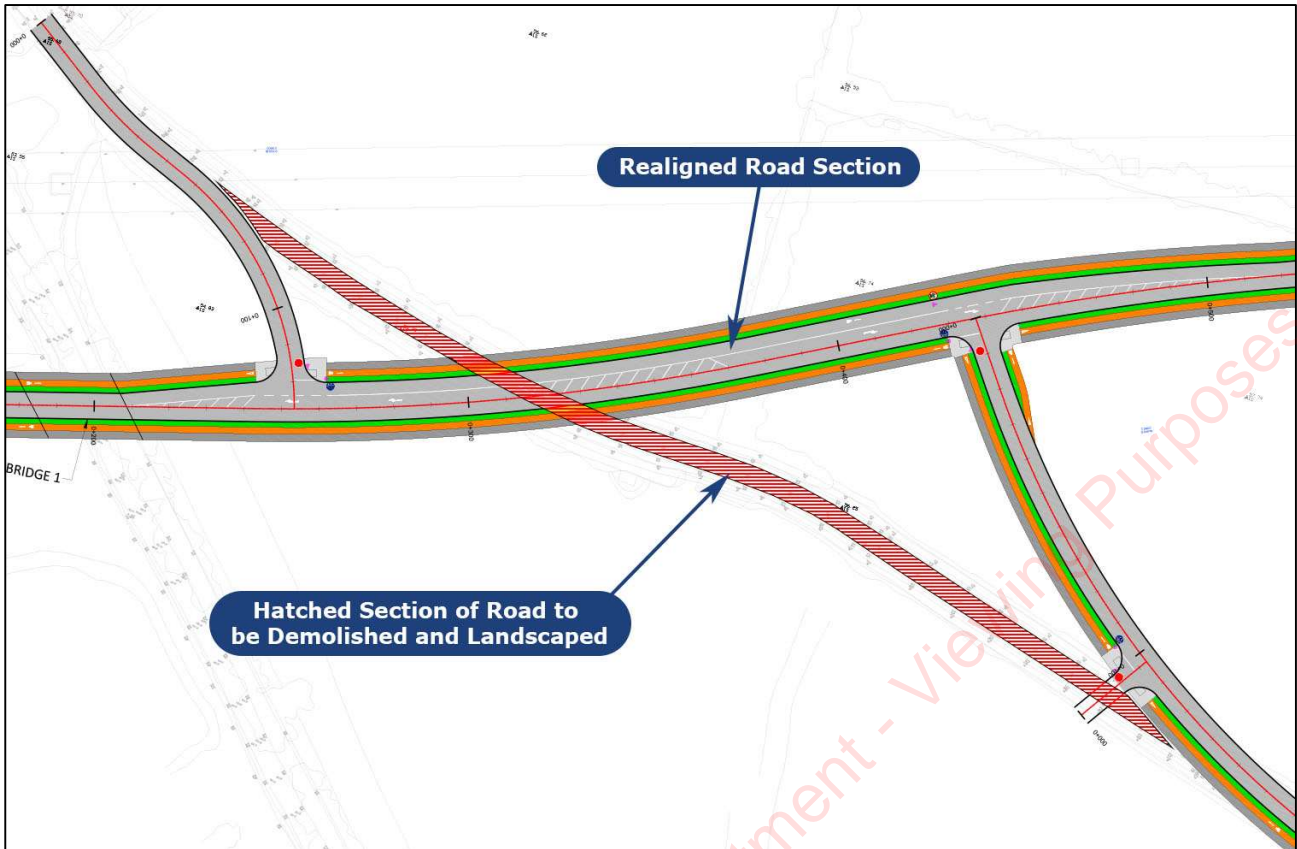


Figure 11: Road Section to be Demolished

The approximate combined demolition area of the existing road is c. 2 500 m².

Demolition of the above will generate low volumes of waste. The waste will predominantly be soil and stone with the potential for bitumen and tar to be found. Any road materials to be excavated and removed will be subject to a full suite of testing to establish if they are contaminated by way of either constituent or recent spillages. Any contaminants will be identified and disposed of in an appropriate facility should they be found.

The following table is a preliminary estimate of the demolition waste which might be generated, assuming a 200mm thick asphalt layer overlaying a 400mm thick stone layer with an average density of 2.3 tons/m³. It should be noted that these numbers are approximated and are not indicative of the final values of the site:

Predicted demolition waste targets for the proposed road realignment:

Waste Types	Waste	Recycle		Disposal	
	tonnes	%	tonnes	%	tonnes
Bound Road Materials	1 150	75	863	25	287
Unbound Road Materials	2 300	95	2 185	5	115

Table 2: Demolition Recycle Targets

In addition a further section of the existing L6219 local road on the east will be realigned. This will entail the demolition and removal of an existing section of the road, as indicated in the figure below.

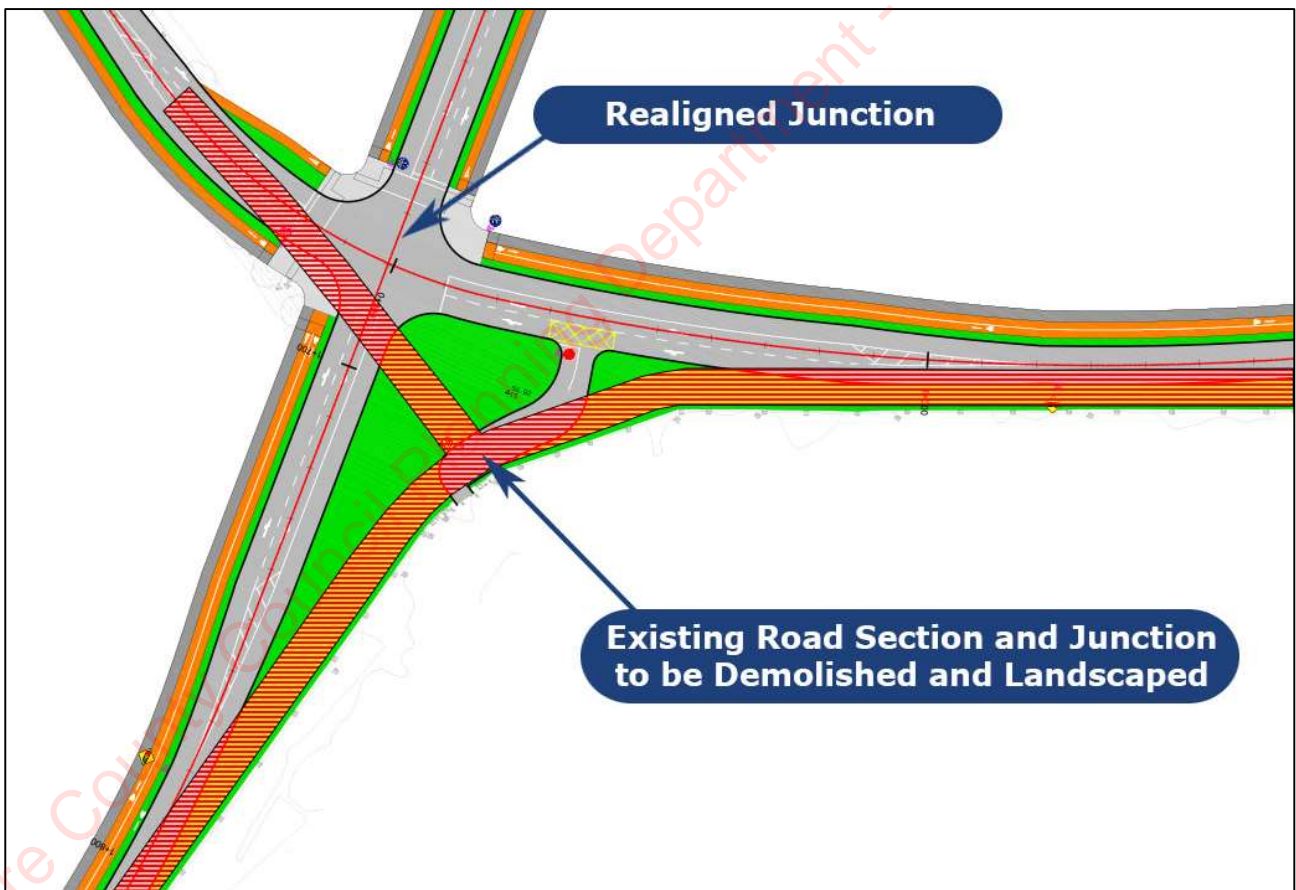


Figure 12: Road Section to be Demolished

The approximate combined demolition area of the existing road is c. 3 200 m².

Demolition of the above will generate low volumes of waste. The waste will predominantly be soil and stone with the potential for bitumen and tar to be found. Any road materials to be excavated and removed will be subject to a full suite of testing to establish if they are contaminated by way of either constituent or recent spillages. Any contaminants will be identified and disposed of in an appropriate facility should they be found.

The following table is a preliminary estimate of the demolition waste which might be generated, assuming a 200mm thick asphalt layer overlaying a 400mm thick stone layer with an average density of 2.3 tons/m³. It should be noted that these numbers are approximated and are not indicative of the final values of the site:

Predicted demolition waste targets for the proposed road realignment:

Waste Types	Waste	Recycle		Disposal	
	tonnes	%	tonnes	%	tonnes
Bound Road Materials	1 500	75	1 125	25	375
Unbound Road Materials	3 000	95	2 850	5	150

Table 3: Demolition Recycle Targets

5 ESTIMATED CUT & FILL

Topsoil and subsoil/stones will be excavated to accommodate roads, footpaths, services, and construction. It is noted that for all areas of new construction (excluding green areas such as public open spaces and gardens) that the existing topsoil needs to be removed. As is good sustainable practice the topsoil excavated on the site will all be utilised on the site and added to the existing topsoil in areas such as gardens and open spaces. This will improve the depth of the growing medium in these areas and remove any requirement to transport topsoil from the site. The geotechnical investigations of the site suggest that there is generally 100mm of topsoil in the area for construction with some areas of 200mm of topsoil uncovered in the study area. There will be a requirement to remove topsoil from the site. Based on a 3d ground model of the existing site the expected volume of materials has been calculated. The following calculations have been made (see Table 2 over):

Item	Cut Volume (m ³)		Fill Volume (m ³)
Roads	34 750		17 250
Total Cut	Cut	Reuse	Export
	34 750 m ³	17 250 m ³	17 500 m ³
Total Fill	Fill	Reuse	Import
	17 250 m ³	17 250 m ³	0 m ³
Total Haulage	c. 40 250 Tonnes		

Table 4: Development Cut & Fill Calculations

The cited figures in the table above are overall cumulative cut and fill volumes and relate to all proposed works at the site. It should be noted that these numbers are approximated and will be subject to change depending on construction methodologies and ambient weather conditions at the time of the works. It was assumed that the density of excavated material is approximately 2.3 tons/m³.

6 CONSTRUCTION TRAFFIC

TRAFFIC ROUTING

Regarding traffic routing, traffic management routes will utilise the Regional & National Road network and waste will be disposed of by licensed hauliers in appropriately licensed facilities only. All final traffic management routes will be agreed upon by the contractor with the relevant Local Authority in advance of the commencement of construction.

The exact location of batching plants and disposal sites will be established once a contractor has been appointed.

L6219/R157 REROUTING

As part of the work, the L6219 & R157 is to be rerouted onto the new proposed road network. It is envisaged that this will occur without recourse to a Road closure. The Contractor will build the new road network and reroute the L6219 & R157 traffic onto the new network prior to the demolition of the existing L6219 & R157. The traffic management procedures for this will be subject to a Road Opening Licence application to Meath County Council. All Traffic Management will be carried out in accordance with Ch. 8 of the Traffic Signs Manual and be managed and controlled by appropriately skilled and experienced staff in accordance with the conditions that are set out in the Road Opening licence procedure.

CONSTRUCTION TRAFFIC VOLUMES

It is difficult to assess the exact quantum of traffic that will be generated during the construction period. However, to estimate the volume and rate of construction traffic, it is first necessary to estimate the amount of excavation and earthworks required on the site, which is shown in the previous section.

Based on this, and from the experience of similar construction projects, it is considered that there will be a maximum of twelve HGVs serving the site during any given daytime hour. This is based upon the knowledge that it takes on average 10 minutes to load a lorry with spoil but could be as short as 5 minutes. As such, the two-way HGV traffic is unlikely to be higher than 24 vehicles per hour at any point of the day. Based on an 8-hour day and a 22-working day month, 24 vehicles per hour equates to 4,224 vehicles per month.

It is worth noting however that the 40 250 tonnes of combined recycling & disposal equate to just over 2 015 truckloads based on 20 tonnes per load. It should be further noted that three other developments, an office development, Nursing Home & Primary Care Centre & SHD development, are earmarked for construction during a similar timeframe as this development, within the same area. It could be possible that excess cut volumes from these sites can be used for the shortfall of fill volume for this site, reducing the amount of material that needs to be imported.

Measures will be put in place to minimise the amount of construction traffic generated by the development. These measures will include the reuse of materials within the site for landscape purposes, or within adjacent sites for fill, to limit the amount of spoilage.

It will be an objective of this development to reuse as much material as possible and minimise the amount of material to be transported off-site. Furthermore, the possibility will be investigated of using excess cut material in other developments which form part of the wider masterplan, implemented within the same timeframe of this development. This will minimise the transportation distance, which will reduce the environmental impacts and cost of the development.

The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable. Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site. Trips by construction workers will be limited by the

provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent. Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.

It is not anticipated that the amount of construction traffic will exceed the amount of operational traffic.

SITE PARKING

A limited number of on-site parking will be provided for construction workers and site visitors.

STAFF WELFARE

Appropriate welfare facilities will be provided on site for construction staff and will include, inter alia:

- Canteen facilities;
- Toilet and Shower Facilities;
- Office accommodation;
- Drying areas/changing areas;
- Tool storage areas.

CONSTRUCTION TRAFFIC MITIGATION MEASURES

The appointed contractor will put in place measures to keep public roads free of detritus and debris. This will include undertaking regular road sweeping by a mechanical sweeper and the provision of wheel wash facilities on the site.

7 SITE WASTE MANAGEMENT PLAN

Waste materials generated will be segregated on site. This will allow for the maximum possible degree of recycling. Where on-site segregation of certain waste types is not practical, off-site segregation will be carried out. Skips and receptacles will be provided to facilitate segregation at the source.

All waste receptacles leaving the site will be covered or enclosed. The on-site waste storage area will be secured within the overall site which will be hoarded off from the public and unauthorised access.

The appointed waste contractor will collect and transfer the waste as receptacles are filled. Any soil removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2008, the Waste Management (Collection Permit) Regulations 2007 and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be disposed of at a facility holding the appropriate licence or permit, as required. Written records will be maintained by the contractor(s) detailing the waste arising throughout the construction phase, the classification of each waste type, the contact details and the waste collection permit number of all waste contractors who collect waste from the site and the end destination and waste facility permit or licence number for all waste removed and disposed of off-site.

Dedicated bunded storage containers will be provided for hazardous wastes such as batteries, paints, oils, chemicals etc. if required.

The management of the main waste streams is detailed in the figure overleaf:

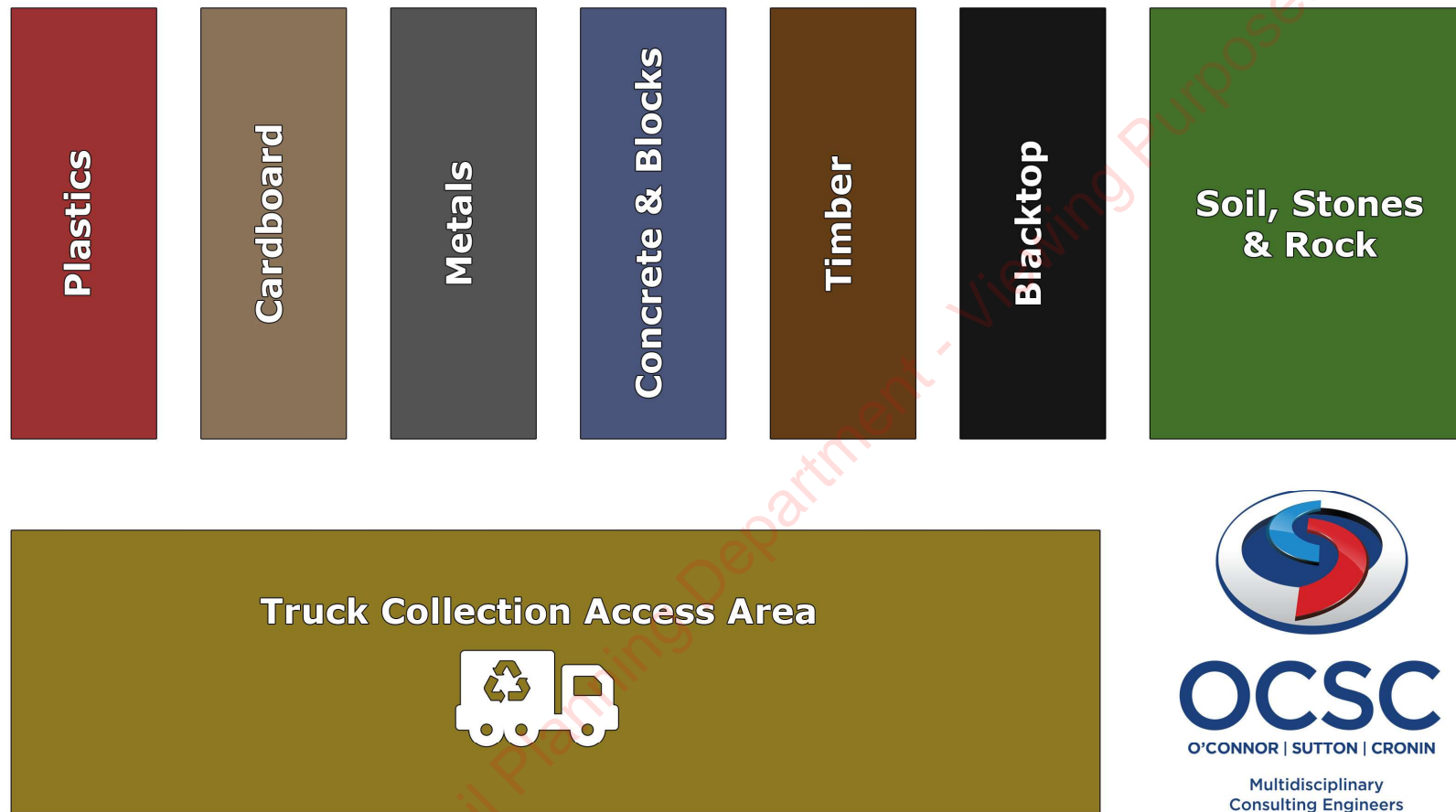


Figure 13: Proposed C&D Waste Storage Area (Scale: NTS)

WASTE MANAGEMENT CATEGORIES

SOIL/SUBSOIL

Any soil removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2011, the Waste Management (Collection Permit) Regulations 2007 and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments.

If any of the excavated spoil is found to be clean/inert, the site manager will investigate whether nearby construction sites may require clean fill material, to both minimise the costs of transport and to reuse as much material as possible. Any soil/subsoil deemed to be contaminated will be stored separately from the clean and inert soil/subsoil. The material will be appropriately classified as non-hazardous or hazardous under the www.hazwasteonline.com application and EC Council Decision 2003/33/EC, which establishes the criteria for the acceptance of waste at landfills, before being transported to an appropriately permitted/licensed facility by permitted contractors.

CONCRETE, BRICKS, TILES & CERAMICS

The majority of concrete, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and should be recycled, where possible.

HARD PLASTIC

Since hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. It will be diverted from landfill and recycled. All recyclable plastic will be segregated and recycled, where possible.

TIMBER

Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be segregated and stored in skips.

METAL

Metals will be segregated into mixed ferrous, cladding, aluminium, high-grade stainless steel, low-grade stainless steel etc. categories, where practical. Metal is highly recyclable and numerous companies will accept these materials. Metals will be segregated and stored in skips.

PLASTERBOARD

There are currently several recycling services for plasterboard in Ireland. Plasterboard from the construction phase will be stored in a separate skip, pending collection for recycling. The site manager will ensure that the oversupply of new plasterboard is carefully monitored to minimise waste.

GLASS

Glass materials will be segregated for recycling, where possible.

ORGANIC (FOOD) WASTE

An on-site canteen will be provided to allow workers to prepare and eat food. This facility will incorporate provisions so that organic waste will be segregated for separate collection. Segregation at source and separate collection of organic waste is required under the Waste Management (Food Waste) Regulations 2009 (if food is prepared on-site).

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

WEEE that does not contain hazardous components will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling. There are not expected to be any significant amounts of such materials as there are no existing buildings on the subject site.

NON-RECYCLABLE WASTE

C&D waste which is not suitable for reuse or recovery will be placed in separate skips or other receptacles. This will include polystyrene, some cardboard and plastic which are deemed unsuitable for recycling.

Before removal from the site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team to determine if recyclable materials have been misplaced. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

HAZARDOUS WASTES

On-site storage of any hazardous wastes produced (i.e. contaminated soil and/or waste fuels) will be kept to a minimum, with removal off-site organised regularly. Storage of all hazardous wastes on site will be undertaken to minimise exposure to on-site personnel and the public and to also minimise the potential for environmental impacts.

MANAGEMENT & CONTROL SYSTEMS

It will be the role of an appointed Waste Manager to try to find alternative options for waste before sending it to the landfill. Waste materials will be stored in the specifically designated compound. All waste collected from the site will be by a permitted waste contractor, under the Waste Management (Collection Permit) Regulations 2007 as amended. The contractor will provide the Waste Manager on site with documentation of the waste to be removed and a copy of the waste collection permit. Before the waste leaves the site, the Waste Manager will have documentation to show where the waste is being taken to, and that the facility is licensed to accept the particular waste. A receipt will be issued for each load that leaves the site.

All waste will be documented before leaving the site. Waste will be weighed by the contractor, either by a weighting mechanism on the truck or at the receiving facility.

These waste records will be maintained on-site by the Contractor. All movement of waste and the use of waste contractors will be undertaken under the Waste Management Acts 1996 - 2008, Waste Management (Collection Permit) Regulations 2007 and Amendments and Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project Waste Manager will maintain a copy of all waste collection permits.

Some wastes may be transported to another site for reuse on that site. The Waste Manager will be in contact with other sites to ensure that as much waste is reused as possible, such as concrete for fill purposes etc. All wastes leaving the site will be placed in appropriate containers. Any concrete, soil, gravel, or broken stone transported off-site will be covered to prevent dust or particle emissions from the load.

If the waste is being transported to another site, a copy of the Local Authority waste permit or EPA Waste Licence for that site will be provided to the nominated project Waste Manager. If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) document will be obtained from Dublin City Council (as the relevant authority on behalf of all local authorities in Ireland) and kept on-site along with details of the final destination (permits, licences etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered into a waste management recording system to be maintained on-site.

8 ENVIRONMENTAL MANAGEMENT

A full suite of Environmental Mitigation Measures are described in detail in Chapter 15: Schedule of Mitigation of the EIAR. The CEMP will be updated in accordance with the planning permission and any mitigation contained within the permission.

POLLUTION PREVENTION

Pollution prevention measures will be undertaken per best practice guidelines from Inland Fisheries Ireland (2016). There are no sensitive fisheries habitats on the site, however drainage ditches lead to the River Rye. A programme for the control of sediment will therefore be required. This will be put in place by the appointed contractor.

Only sediment-free run-off is to leave the site. A suitably sized detention basin or settlement area will be installed at the lowest point before discharge where excess run-off must leave the site. Silt curtains or earth berms will be used to channel run-off to locations where it can be controlled. These may take the form of an open detention area or, where the need arises, a portable skip/s, or similar, where inflow passes through straw bales, gravel etc.

The Site Manager will be responsible for the pollution prevention programme and will ensure that at least daily checks are carried out to ensure compliance. A record of these checks will be maintained.

The site compound will include a dedicated bund for the storage of dangerous substances including fuels, oils etc. Refuelling of vehicles/machinery will only be carried out within the bunded area. The site compound will display emergency contact details for Inland Fisheries Ireland, the National Parks and Wildlife Service, the Local Council, and the Environmental Protection Agency in the event of a pollution incident or environmental emergency. Adequate spill kits will be available in the event of a spill of oil or other hazardous substance.

TRAINING

All site personnel will be trained in the importance of good environmental practices including reporting to the Site Manager when pollution, or the potential for pollution, is suspected.

PROTECTION OF TREES

As noted previously, appropriate measures will be put in place to protect any trees on the site which are designated for protection or retention under any granted planning permission for the development. For more information and detailed measures, please refer to the EIAR and Arborist/Tree Protection reports submitted under separate cover.

NOISE CONTROL

Measures will be implemented to minimise the impact of noise emissions at sensitive locations during the construction phase. Such measures will include the following:

- Construction contractors will be required to comply with the requirements of the European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations and the Safety, Health and Welfare at Work (Control of Noise at Work) Regulations;
- All plant items used during the construction phase should comply with standards outlined in the 'Safety, Health and Welfare at Work (Control of Noise at Work) Regulations and the 'European Communities (Construction Plant and Equipment) (Permissible Noise Levels) Regulations'. Reference will be made to BS 5228: Part 1: 2009 (Noise Control on Construction and Open Sites - Part 1. Code of Practice for Basic Information and Procedures for Noise Control) and will include the following mitigation measures:
 - Training of site staff in the proper use and maintenance of tools and equipment;
 - The positioning of machinery on-site to reduce the emission of noise and to site personnel;

- Sources of significant noise will be enclosed where practicable;
 - Machines that could be in intermittent use will be shut down between work periods or will be throttled down to a minimum;
 - A plant known to emit noise strongly in one direction will, when possible, be orientated so that the noise is directed away from noise-sensitive areas; and
 - Plant and/or methods of work causing significant levels of vibration at sensitive premises will be replaced by other less intrusive plants and/or methods of working where practicable.
- The inherently quiet plant will be selected where appropriate;
 - Screening and enclosures will be utilised in areas where construction works are continuing in one area for a long period or around items such as generators or high-duty compressors. For maximum effectiveness, a screen will be positioned as close as possible to either the noise source or the receiver. The screen will be constructed of material with a mass of $>7\text{kg/m}^2$ and should have no gaps or joints in the barrier material. This can be used to limit noise impact to any noise-sensitive receptors;
 - Operators of all mobile equipment will be instructed to avoid unnecessary revving of machinery and mobile equipment will be throttled down or switched off when not in use;
 - Accordingly, where possible all construction traffic to be used on-site will have effective well- maintained silencers; and
 - All mobile plants will be maintained to a high standard to reduce any tonal or impulsive sounds.

For more information on noise control, including indicative locations for noise monitoring, please refer to the EIAR submitted under separate cover.

VIBRATION CONTROL

Any construction works that have the potential to cause vibration at sensitive receptors will be carried out per the limit values in Table 3 hereunder, at the most affected sensitive receptor.

Allowable PPV (mm/s) at Sensitive Receptors at Given Frequencies (Hz)		
<10 Hz	10 – 15 Hz	50 Hz and above
8 mm/s	12.5 mm/s	20 mm/s

Table 5: Vibration Limits

DUST CONTROL

The main activities that may give rise to dust emissions during construction include the following:

- Materials handling and storage; and
- Movement of vehicles (particularly HGVs) and mobile plants.

The following mitigation measures will be implemented on-site during the construction phase, as required:

- Site roads shall be regularly cleaned and maintained as appropriate;
- Hard surface roads shall be swept to remove mud and aggregate materials from their surface as a result of the development works;
- Any un-surfaced roads shall be restricted to essential site traffic only;
- Any road that has the potential to give rise to fugitive dust may be regularly watered, as appropriate, during extended dry and/or windy conditions;
- On-site speed limits will be stipulated to prevent the unnecessary generation of fugitive dust emissions;
- Material handling systems and site stockpiling of materials shall be designed and laid out to minimise exposure to the wind;
- A complaints register will be maintained on-site and any complaints relating to dust emissions will be immediately dealt with;
- In periods of dry weather when dust emissions would be greatest, a road sweeper, which would also dampen the road, will be employed to prevent the generation of dust;
- Water misting or sprays shall be used as required if particularly dusty activities are necessary during dry or windy periods; and

- If appropriate, dust monitoring will be carried out during the construction phase of the scheme. If the level of dust is found to exceed $350\text{mg}/\text{m}^2\text{day}$ in the vicinity of the site, further mitigation measures will be incorporated into the construction of the proposed scheme.

For more information on dust control, including indicative locations for dust monitoring, please refer to the EIAR submitted under separate cover.

9 CONSTRUCTION PHASE MITIGATION MEASURES

GENERAL MITIGATION MEASURES

The following general environmental mitigation measures are proposed during the construction phase:

- Before the outset of these works, small defined works areas will be fenced off at the location of the storm water outfalls (between the main construction site and both water courses). Silt fences will be attached to these fences. The silt fence will provide a solid barrier between the proposed pipelaying works and the Rye Water River and the Blackhall Little River
- The necessary pipelaying works will be undertaken within this defined area.
- Following the installation of the pipework and reinstatement of the ground, the small section of the silt fence that protects the Rye Water River or the Blackhall Little River will be removed to facilitate the construction of the outfall.
- No instream works will take place outside the period July 31st – September 31st in line with Inland Fisheries Ireland (2016) Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters.
- Cofferdams will be constructed using one-tonne sandbags at the edge of the Rye Water River and the Blackhall Little River at the outfall point to create dry working areas.
- A submersible pump will be used to dewater inside the cofferdam area and will discharge any waters to land at a location of over 30m from the rivers. The pumped waters will discharge through a silt bag.
- The bankside will be excavated and a small pre-cast concrete headwall installed (with outfall pipe included).
- The banks and channel beds will be reinstated to avoid erosion or runoff of silt. Following this, the dams will be removed.
- The surface water discharge point is likely to take less than one day to install.

- Sondes will be put in place in the Rye Water River and the Blackhall Little River upstream and downstream of the works area. These will continuously measure turbidity throughout the construction period. If there is a 10% or greater difference between upstream and downstream turbidity, an alarm will sound and a message will be sent to the site foreman and the ECoW. Works will be ceased.

CEMENT-BASED MITIGATION MEASURES

To avoid the release of cement-based material during construction, the following measures are proposed:

- No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products and pre-cast elements for culverts and concrete works will be used.
- No washing out of any plant used in concrete transport or concreting operations will be allowed on-site;
- Where concrete is delivered on-site, only chute cleaning will be permitted, using the smallest volume of water possible. No discharge of cement-contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed.
- Use weather forecasting to plan dry days for pouring concrete;
- Ensure pour site is free of standing water and plastic covers will be ready in case of sudden rainfall event.

SITE DRAINAGE/POLLUTION PREVENTION

Prior to the commencement of any construction activities, mitigation measures will be put in place to ensure the protection of surface water during the works. Surface waters will be managed, allowing water to percolate naturally to ground. Particular emphasis will also be placed on preventing any hazardous materials entering the surface water management system as well as spills or leaks of fuel oils.

The following measures will be put in place to prevent the transportation of silt laden water or pollutants from entering the wider environments including downstream watercourses.

- A solid boundary fence will be constructed around the construction footprint in order to create a defined perimeter for the proposed works, leaving a natural vegetation buffer between the construction footprint and the stream.
- No works will be undertaken outside the confines of this fence with the exception of the installation of the two surface water outfalls, which will be undertaken as a separate element of the development that is described below.
- A silt fence will also be attached to this boundary fence. This will protect the stream from any potential sediment laden surface water run-off generated during construction activities. The silt fence will comprise a geotextile membrane that will be buried beneath the ground to filter any run-off that may occur as a result of the proposed works.
- The silt fence will be monitored throughout the proposed works and will remain in place after the works are completed and until the exposed earth has re-vegetated.
- As construction advances there may be a small requirement to collect and treat surface water within the site. This will be completed using perimeter swales at low points around the construction areas, and if required water will be pumped from the swales into sediment bags prior to overland discharge allowing water to percolate naturally to ground;
- Discharge onto ground will be via a silt bag which will filter any remaining sediment from the pumped water.
- The entire discharge area from silt bags will be enclosed by a perimeter of double silt fencing;
- Any proposed discharge area will avoid potential surface water ponding areas, and will only be located where suitable subsoils are present;
- Daily monitoring and inspections of site drainage during construction will be completed;
- Earthworks will take place during periods of low rainfall to reduce run-off and potential siltation of watercourses; and,

- Good construction practices such as wheel washers and dust suppression on-site roads, and regular plant maintenance will ensure minimal risk.

CONSTRUCTION TRAFFIC ACCESS & MANAGEMENT

The following is a list of the proposed traffic management measures to be adopted during the construction works:

- Warning signs / Advanced warning signs will be installed at appropriate locations in advance of the construction access locations;
- Construction and delivery vehicles will be instructed to use only the approved and agreed means of access, and movement of construction vehicles will be restricted to these designated routes;
- Appropriate vehicles will be used to minimise environmental impacts from transporting construction material, for example, the use of dust covers on HGVs carrying dust-producing material;
- Speed limits of construction vehicles are to be managed by appropriate signage, to promote low vehicular speeds; No vehicle will be allowed to stop or park on the access road to the proposed development site.
- Ample parking will be provided within the site to cater for the staff and visitors during the construction phases of the proposed development.
- On-site wheel washing will be undertaken for construction vehicles to remove any debris prior to leaving the site, and to remove any potential debris on the local roads if it is deemed necessary; All vehicles will be suitably serviced and maintained to avoid any leaks or spillage of oil, petrol or diesel. All scheduled maintenance will not be carried out on the public highway; and
- Minimal impact on the surrounding road network will be ensured.

10 HEALTH AND SAFETY

GENERAL HEALTH, SAFETY AND ENVIRONMENTAL CONSIDERATION

Construction works will be carried out in such a way as to limit, as far as practicable, adverse environmental impact. Works will be carried out under the following general provisions:

- Planning approvals from the Local Authority;
- Requirements of the Local Authority.

As part of any Construction Method Statement, the process will ensure that construction techniques and materials used are a fundamental consideration of the design and intended long-term use and that the aims below are achieved:

- Design for durability and low maintenance;
- Design for flexibility and adaptability;
- Use of materials from sustainable sources;
- Use of local materials where possible.

Safety, health, and environmental issues of the development are primary considerations in the construction methods adopted. The construction team will develop detailed health and safety plans, and specific environmental, fire and accident procedures to suit the construction sequence of the development.

Contractors involved in the development will ensure that all non-English speaking employees are provided with relevant Health and Safety information in their national language. All contractors will be required to adopt the relevant skills certification required for that element of the work. A site-specific Safety Statement and a detailed Construction Stage Safety & Health Plan will be compiled before any works on-site and will be per the Health & Safety Authority and Local Authority guidelines.

CONTROL OF SUBSTANCES HAZARDOUS TO HEALTH

The strategy for controlling all substances and all work processes that may generate hazardous substances will have to be addressed and control measures put in place. Some of the control measures to be employed include the following:

- All fuel and chemicals are to be stored in designated areas, with deliveries of hazardous materials, supervised.
- Storage tanks and container facilities will be appropriately bundled.
- In the case of spills or discharges, remedial action will be taken as soon as possible under company procedures.
- Personal protective equipment (PPE) suitable to the pertaining conditions will be used by all site personnel.

ENVIRONMENTAL, EMERGENCY AND ACCIDENT PROCEDURE

Measures will be carried out to avoid environmental incidents, however, if these occur then the following types must be reported to the responsible person in the construction team. The overall strategy in the event of a spillage will be to 'Stop-Contain-Notify' in the event of:

- Spills or discharges to the atmosphere, water supplies, sewage systems, rivers, and other watercourses, or the ground:
 - Any chemical products
 - Oils or fuels
 - Effluent/fumes and gases
 - Waste or contaminated materials
- Damage to existing:
 - Trees and wildlife
 - Flora and existing local habitats
- Any environmental incidents that could lead to:
 - Local Authority or regulatory enforcement

- Public complaint

Emergency routes and procedures will be continuously adapted to suit the construction sequence and stage of the Development. An *Emergency & Evacuation Plan* will be prepared following the guidelines detailed below and updated regularly during construction:

- Definition of the management organisation and responsibility for safety
- Definition of appropriate fire prevention measures, including good housekeeping of site, welfare facilities and offices.
- Adequate provision of fire extinguishers across the site.
- Use of non-flammable/fire retardant materials for protection of finished works.
- Safe use and safe storage of flammable materials of all categories, whether solid, liquid or gas.
- Appropriate waste management procedures.
- Monitoring the type and frequency of fire inspections/audits.
- Development of evacuation plans, including escape routes, muster stations, means of sounding alarms and general emergency procedures.
- Site safety inductions and fire drills.
- The application of permit systems for Hot works, Confined Space Entry and Electrical Access Control.
- The provision of first aiders. Checking of emergency routes is available and unobstructed at all times.
- Liaison with the emergency services and occupants of the adjacent buildings.

First aid facilities will be established and at least one trained first aider will be present on-site at all times. In addition, trained Fire Wardens / Fire Marshalls will be in place on-site to address fire safety.

11 HOURS OF WORKING

Construction operations will be carried out under any granted planning conditions. It is expected that normal working hours will be from 07:00 – 19:00 Monday to Friday and from 08:00 – 15:00 on Saturdays.

It may be necessary for some specific construction activities to take place outside of these times and in those cases, a specific derogation will be sought from the Local Planning Authority.

Deliveries to the site will be arranged to arrive within normal working hours as set out above.

There may, again, be specific deliveries which need to arrive outside of these hours e.g. in respect of wide loads. In all such cases, the applicant will again liaise and agree to any necessary derogations with the Local Planning Authority.

12 VERIFICATION

This report was compiled and verified by:

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APPENDIX 4-3

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

Kildare County Council Planning Department - Viewing Purposes Only

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

MAYNOOTH OUTER ORBITAL ROAD

Sky Castle Ltd
S665
29 August 2022



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Kildare County Council Planning Department - Viewing Purposes Only

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

Maynooth Outer Orbital Road

Sky Castle Ltd
S665
29 August 2022

Kildare County Council Planning Department - Viewing Purposes Only

CONSTRUCTION & DEMOLITION WASTE MANAGEMENT PLAN

MAYNOOTH OUTER ORBITAL ROAD



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DOCUMENT CONTROL & HISTORY

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1 INTRODUCTION

APPOINTMENT

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by Sky Castle Ltd to carry out the design of the civil engineering services associated with the development of the proposed Maynooth Outer Orbital Road (MOOR) on lands at Moygaddy, Co. Meath, which is located northeast of the town of Maynooth, Co. Kildare.

SETTING

Maynooth environs is a large growth area, category II Town status located in south County Meath, and is an economically vibrant area with high-quality transport links to larger towns/cities. The Meath Development Plan 2021-2027 outlines the social, economic, and planning context for the Maynooth environs lands, setting the framework for the plan's policies and objectives. It has a core strategic vision that seeks to ensure that future growth is based on principles of sustainable development that meet the needs of residents per National and Regional guidelines. The environs of Maynooth is a Core Economic Area included in the Gateway Core Economic Area located on the M4 corridor. The wider Maynooth Environs Lands proposed land-use zoning includes A2 – New Residential, E1 – Strategic Employment Zones, G1 – Community Infrastructure, D1 – Tourism and H1 – High Amenity.

The delivery of the Maynooth Outer Orbital Route (MOOR) is critical to facilitating residential, high-end employment, tourist, and leisure development in the Maynooth environs lands and fulfilling the transport infrastructure needs in proximity to Maynooth University and Maynooth town.

ADMINISTRATIVE JURISDICTION

The proposed development is located primarily in the jurisdiction of Meath County Council (MCC), and therefore the Maynooth Outer Orbital Route design and the associated civil engineering services were carried out with reference to the following:

- Meath County Development Plan 2021-2027;
- Maynooth Environs Local Area Plan 2014 (incorporated into adopted MCDP);
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2019);

Even though Maynooth Environs is situated in the Meath County Council administrative area, the Maynooth Environs Local Area Plan contains an objective to liaise with Kildare County Council in the identification, design, reservation and delivery of the section of the Maynooth Outer Relief Road located within the administrative area of Meath County Council. The administrative area of Kildare County Council is located immediately adjacent to the LAP environs lands and some infrastructure improvements will be located within the Kildare County Council (KCC) administrative area. Therefore, the design will also be conducted with due regard to:

- Maynooth LAP
- Kildare County Development Plan
- Maynooth Traffic Management Plan

OVERVIEW AND PURPOSE OF THE CDWMP

This report sets out the Outline Construction & Demolition Waste Management Plan (CDWMP) for the proposed development site. This CDWMP is a preliminary plan written by OCSC multidisciplinary design engineers and will be finalised after the granting of planning permission.

The purpose of this plan is to provide information necessary to outline the final management of Construction and Demolition (C&D) Waste at the site and that this is undertaken in accordance with current legal and industry standards including the *Waste*

Management Acts 1996 - 2013 and associated Regulations 1, *Protection of the Environment Act 2003* as amended with EPA Acts 1992 to 2013 2, *Litter Pollution Act 1997* as amended 3 and the *relevant Waste Management Plans* and to provide information necessary to ensure that the management of waste produced by the site is carried out in accordance with all current legal and environmental standards. This report has been prepared in accordance with the 'Best Practice Guidelines for the Preparation of Construction & Demolition Waste Management Plans for Construction and Demolition Projects' document produced by the Environmental Protection Agency.

The primary legislative instruments that govern waste management in Ireland and are applicable to the project are:

- Waste Management Act 1996 (No. 10 of 1996) as amended. Sub-ordinate legislation includes: European Communities (Waste Directive) Regulations 2011 (SI 126 of 2011) as amended
- Waste Management (Collection Permit) Regulations (S.I. No. 820 of 2007) as amended
- Waste Management (Facility Permit and Registration) Regulations 2007, (S.I. No. 821 of 2007) as amended
- Waste Management (Licensing) Regulations 2004 (S.I. No. 395 of 2004) as amended
- Waste Management (Packaging) Regulations 2014 (S.I. 282 of 2014) as amended
- Waste Management (Planning) Regulations 1997 (S.I. No. 137 of 1997)
- Waste Management (Landfill Levy) Regulations 2015 (S.I. No. 189 of 2015)
- European Union (Waste Electrical and Electronic Equipment) Regulations 2014 (S.I. No. 149 of 2014)
- European Union (Batteries and Accumulators) Regulations 2014 (S.I. No. 283 of 2014) as amended
- Waste Management (Food Waste) Regulations 2009 (S.I. 508 of 2009), as amended
- European Union (Household Food Waste and Bio-waste) Regulation 2015 (S.I. No. 191 of 2015)
- Waste Management (Hazardous Waste) Regulations, 1998 (S.I. No. 163 of 1998) as amended
- Waste Management (Shipments of Waste) Regulations, 2007 (S.I. No. 419 of 2007) as amended

- Waste Management (Movement of Hazardous Waste) Regulations, 1998 (S.I. No. 147 of 1998)
- European Communities (Transfrontier Shipment of Waste) Regulations 1994 (SI 121 of 1994)
- European Union (Properties of Waste which Render it Hazardous) Regulations 2015 (S.I. No. 233 of 2015) as amended
- Environmental Protection Act 1992 (No. 7 of 1992) as amended.
- Litter Pollution Act 1997 (No. 12 of 1997) as amended.
- Planning and Development Act 2000 (No. 30 of 2000) as amended

One priority of the CDWMP shall be to promote recycling, reuse and recovery of waste and diversion from landfills wherever possible. Guidance will also be given to ensure the appropriate method of transportation of waste is used to prevent littering or other serious environmental pollution. This plan aims to ensure maximum recycling, reuse and recovery of waste with a diversion from landfills, wherever possible. It also seeks to provide guidance on the appropriate collection and transport of waste from the site to prevent issues associated with litter or more serious environmental pollution (e.g. contamination of soil and/or water).

In preparation for the CDWMP, the following publications have been used as references:

- BEST PRACTICE GUIDELINES for the preparation of construction & demolition waste management plans for construction & demolition projects. Environmental Protection Agency 2021.
- Construction and Demolition waste management - A handbook for contractors and site managers, FAS and the construction industry federation 2002.
- In tandem with the launch of the National Construction and Demolition waste council, the Department of the Environment, Heritage and Local Government published the "Guidelines for preparation of waste management plans for construction and demolition projects".
- BS 10175:2011+A2:2017, Investigation of potentially contaminated sites, Code of Practice.
- EPA, 2015, Waste Classification, List of Waste & Determining if Waste is Hazardous or Non-hazardous.

- EPA 2013, Guidance on the Management of Contaminated Land and Groundwater at EPA Licensed Sites.
- EPA 2007, Code of Practice, Environmental Risk Assessment for Unregulated Waste Disposal Sites.
- EA, 2015, Guidance on the classification and assessment of waste, Technical Guidance WM3.
- EA, 2019, Land Contamination: Risk Management (CLRM).

These guidelines cover issues to be addressed from the preplanning stage right through to completion. These include:

- Predicted Construction and demolition wastes;
- Classification of material;
- Waste disposal/recycling of construction & demolition wastes at the site;
- List of the sequence of operations to be followed;
- Provision of training for waste managers and site crew;
- Details of the proposed record-keeping system;
- Details of waste audit procedures and plans;
- Details of consultation with relevant stakeholders.

OVERVIEW OF C&D WASTE MANAGEMENT IN IRELAND

Directive 2006/12/EC (repealed with effect from 12th of December 2010) of the European Parliament and of the Council of 19th November 2008 on waste and Directive 2008/98/EC (amended by Directive (EU) 2018/851 and approved by the EU in July 2018, and transposed into Irish Law in July 2020) which is transposed into Irish law by the Waste Management Acts and the European Communities (Waste Directive) Regulations 2011 (the "Waste Directive Regulations") in addition the national legislation is relevant.

The European council of ministers has adopted the revised waste framework directive, a decision that means member states will now be expected to reach a 70% recycling rate for non-hazardous construction and demolition by 2020. The Waste Directive 2008/98, which is transposed into Irish law by the Waste Management Acts and the

European Communities (Waste Directive) Regulations 2011 (the "Waste Directive Regulations") states that uncontaminated soil and other naturally occurring material excavated in the course of construction activities where it is certain that the material will be used for the purposes of construction in its natural state on the site from which it was excavated will not be deemed to be waste. If it is used on a site elsewhere, it may or may not be waste depending on the individual circumstances of the case. It will not be waste if there is no intention to discard it.

The Third Schedule to the Waste Management Acts lists activities commonly regarded as disposal activities while common recovery activities are listed in the Fourth Schedule. Broadly, disposal means getting rid of waste forever by, for example, landfilling it or burning it without recovering the energy from it.

Directive 2008/98/EC lays down the five-step hierarchy of waste management options, with waste prevention as the preferred option, followed by re-use, recycling, recovery and safe disposal, in descending order.

The five-stage waste hierarchy, which is designed to prevent and reduce waste production, is made more certain and comprehensive and moved to a more prominent place in the Waste Directive 98/2008. Article 7 of the Waste Directive Regulations 2011, which came into force on March 31, 2011, transposes the waste hierarchy into Irish law. It is understood that it is not proposed to reuse any material on site with the possible exception of rubble from the demolition works. These will be confirmed by the Contractor and completed in accordance with all legislation. In addition, the directive also deals with the issue of "end of waste" and "by-products" and clarifies the definitions of recovery, disposal and by-product.

The Irish Government issued a policy statement in September 1998 known as 'Changing Our Ways', which identified objectives for the prevention, minimisation, reuse, recycling, recovery and disposal of waste in Ireland. The target for C&D waste in this report was to recycle at least 50% of C&D waste within a five-year period (by 2003), with a progressive increase to at least 85% over fifteen years (i.e. 2013). In response to the Changing Our Ways report, a task force (Task Force B4) representing the waste sector of the already established Forum for the Construction Industry, released a report

entitled 'Recycling of Construction and Demolition Waste' concerning the development and implementation of a voluntary construction industry programme to meet the Government's objectives for the recovery of C&D waste.

The most recent national policy document was published in July 2012, entitled 'A Resource Opportunity - Waste Management Policy in Ireland'. This document stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention. The document sets out a number of actions in relation to C&D waste and commits to undertake a review of specific producer responsibility requirements for C&D projects over a certain threshold.

The Environmental Protection Agency published a guidance document in 2021 BEST PRACTICE GUIDELINES for the preparation of construction & demolition waste management plans for construction & demolition projects. These guidelines outline the issues that need to be addressed from the pre-planning stage of development all the way through to its completion. These guidelines have been followed in the preparation of this document and include the following elements:

- Predicted C&D wastes and procedures to prevent, minimise, recycle and reuse wastes;
- Waste disposal/recycling of C&D wastes at the site;
- Provision of training for a waste manager and site crew;
- Details of the proposed record-keeping system;
- Details of waste audit procedures and plan; and
- Details of consultation with relevant bodies i.e. waste recycling companies

These guidance documents are considered to define best practice for C&D projects in Ireland and describe how C&D projects are to be undertaken such that environmental impacts and risks are minimised and maximum levels of waste recycling are achieved.

LEGISLATIVE REQUIREMENTS

WASTE MANAGEMENT ACTS, 1996 AS AMENDED AND REGULATIONS MADE UNDER THE ACTS

Waste management in Ireland is subject to EU, national and regional waste legislation which defines how waste materials must be managed, transported and treated. The overarching EU legislation is the Waste Framework Directive (2008/98/EC) which is transposed into national legislation in Ireland. The cornerstone of Irish waste legislation is the Waste Management Act 1996 (as amended).

In addition, the Irish government issues policy documents which outline measures aimed to improve waste management practices in Ireland and help the country to achieve EU targets in respect of recycling and disposal of waste. The most recent policy document A Resource Opportunity – Waste Management Policy in Ireland was published in 2012 and stresses the environmental and economic benefits of better waste management, particularly in relation to waste prevention.

The strategy for the management of waste from the construction phase is in line with the requirements of the Best Practice Guidelines for the Preparation of Waste Management Plans for Construction and Demolition Projects published in 2021. The guidance document Construction and Demolition Waste Management: A handbook for Contractors and Site Managers were also consulted in the preparation of this assessment.

The Waste Management Act, of 1996 (as amended) sets out the responsibilities and functions of various persons in relation to waste. In summary the act:-

- Prohibits a person from holding, transporting, recovering or disposing of waste in a manner which causes or is likely to cause environmental pollution.
- Requires any person who carries out activities of an agricultural, commercial or industrial nature to take all such reasonable steps as are necessary to prevent or minimise the production of waste.

- Prohibits the transfer of waste to any person other than an authorised person (i.e. a holder of a waste collection permit or a local authority.)
- Requires the environmental protection agency (EPA) to make a national plan in relation to hazardous waste.
- Requires local authorities to make waste management plans in relation to non-hazardous waste.
- Imposes certain obligations on local authorities to ensure that a service is provided for the collection of household waste and to provide facilities for the recovery and disposal of such waste;
- Enables the minister of the environment and local government to make regulations for various purposes to promote better waste management and provides for substantial penalties for offences including fines, imprisonment and/or liability for clean-up measures.

There are currently no Irish guidelines on the assessment of operational waste generation and guidance is taken from industry guidelines, plans and reports including the EMR Waste Management Plan 2015 – 2021 and BS 5906:2005 Waste Management in Buildings – Code of Practice.

WASTE MANAGEMENT (COLLECTION PERMIT) REGULATIONS, 2007 AS AMENDED

Waste from the proposed development may only be collected by the holder of a waste collection permit or a local authority. The effect of s.34 of the Waste Management Acts is that waste (whether hazardous or not) should only be given to a haulier or collector who has the correct permit under the Waste Management (Collection Permit) Regulations 2008 (the "Waste Collection Permit Regulations"), or whatever regulations amend or replace them, to collect and transport the particular waste in question, or to a local authority.

Waste storage and collection areas on site should be designed to prevent environmental pollution.

WASTE MANAGEMENT (SHIPMENTS OF WASTE) REGULATIONS 2007 S.I. NO. 419

Where waste from the proposed development is exported outside of Ireland for recovery or disposal the national TFS office within Dublin City Council must be notified. Certain financial guarantees must be in place and certificates issued by the national TFS officer prior to the waste movement taking place. If the waste involved is hazardous, the contractor must ensure that it complies with the Waste Management (Hazardous Waste) Regulations 1998 (as amended) and the European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011, unless it is exempted from compliance with those Regulations under art.35 of the Collection Permit Regulations. Hazardous waste can only be given to a collector or haulier with a collection permit under the Waste Collection Permit Regulations and the collector or haulier must bring the waste to a licensed hazardous waste management facility and ensure that it is shipped within Ireland in accordance with the stringent requirements of the European Communities (Shipments of Hazardous Waste exclusively within Ireland) Regulations 2011 and/or exported from Ireland in accordance with the Waste Management (Shipments of Waste) Regulations 2007 (as amended) and Council Regulation (EC) No. 1013/2006 on shipments of wastes, as amended (the "TFS Regulations").

POLICIES AND GUIDANCE – A HISTORY

DOEHLG – WASTE MANAGEMENT CHANGING OUR WAYS (SEPTEMBER 1998)

The October 1998 policy statement on waste management – "changing our ways" – outlines the government's policy objectives in relation to waste management and suggests some key issues and considerations that must be addressed in order to achieve these objectives. In particular, it focuses on the need to give clear and precise expression to the requirements of the hierarchy, by developing and pursuing integrated solutions, which combine progressive policies with a suitable and cost-effective waste infrastructure.

Changing our ways set the following ambitious targets for achievement over a fifteen-year time scale.

- A diversion of 50% of overall household waste away from landfill
- A minimum 65% reduction in biodegradable municipal wastes consigned to landfill
- The development of composting and other feasible biological treatment facilities capable of treating up to 300,000 tonnes of organic waste annually.
- Materials recycling of 35% of municipal waste.
- Recovery of at least 50% of construction and demolition waste within a five-year period, with a progressive increase to at least 85% over fifteen years.
- Rationalisation of municipal waste landfills with progressive and sustained reductions in numbers, leading to an integrated network of some 20 or so state-of-the-art facilities incorporating energy recovery and high standards of environmental protection.

DOEHLG – PREVENTING AND RECYCLING WASTE – DELIVERING CHANGE – A POLICY STATEMENT (2002)

The government added to the messages presented in waste management “changing our ways” with the publication of preventing and recycling waste – delivering change 2002. In addition to setting objectives, the policy statement set out how these might be achieved through investment from the national development plan in waste infrastructure. The key objectives of the policy statement are:

- The setting up of a market development group focusing on markets for recyclables.
- Formulating a national strategy on biodegradable waste policy.
- Expansion of the network of civic amenity sites and materials recycling facilities.

DOEHLG – WASTE MANAGEMENT – TAKING STOCK AND MOVING FORWARD (2004)

Waste management – taking stock and moving forward reviews progress of implementing key policies including the national waste prevention to 2004. It sets up a framework for implementing key policies including the national waste prevention programme and the setting up of a market development group. It also sets an objective

date of 1st January 2005 for the implementation of user-based sharing for waste collection.

DOEHLG – NATIONAL STRATEGY ON BIODEGRADABLE WASTE (2021)

The national strategy on biodegradable municipal waste published by the DoEHLG in 2021 sets out measures to progressively divert biodegradable municipal waste from landfill in accordance with the agreed targets in EU Directive 1999/31/EC on the landfill of waste (landfill Directive). By 2016, the region of 1.8 million tonnes of biodegradable municipal waste will need to be diverted annually in order to meet the directive's targets.

The strategy is based on the integrated waste management approach established as government policy since the publication of "change our ways" in 1998. The preferred options for dealing with biodegradable municipal waste (BMW) are:

- Prevention and minimisation – avoiding generating waste.
- Recycling – mainly paper and cardboard but also textiles.
- Biological treatment – mainly of kitchen and garden waste including composting.
- Residual treatments – thermal treatment with energy recovery by way of mechanical biological treatment.

WASTE MANAGEMENT PLAN FOR THE DUBLIN REGION 2005-2010

The Dublin Region Waste Management Plan 2005-2010 aims toward achieving 59% recycling, 25% incineration and 16% landfill. The 2011 annual progress report shows waste management rates are improving year on year. The household recycling rate is up 3%- 44%, municipal waste recovery is up 1% to 47% and landfilling has decreased by 1% to 53%. The region remains overly reliant on the landfill with 49% of commercial waste sent for disposal. There remains a need to develop recovery alternatives for residual waste.

EASTERN - MIDLANDS REGIONAL WASTE MANAGEMENT PLAN 2015 – 2021

The Eastern Midlands Regional Waste Management Plan 2015-2021 identified the following targets:

- Preparing for reuse and recycling rate of 60-70% of Municipal Waste by the end of 2030.
- Eliminate the use of landfilling of all major waste streams including municipal, industrial and construction and demolition wastes in favour of recovery of residual wastes.

NATIONAL WASTE PREVENTION PROGRAMME (NWPP)

A National Waste Prevention Programme (NWPP) operated by the EPA, focuses on reporting on the prevention and minimization of waste. It produces annual progress reports. A Resource Efficiency Unit (formerly known as the Core Prevention Team), within the EPA, promotes waste minimization. A Prevention Programme Steering Group also known as the NWPP Steering Committee was established to "liaise with public authorities, monitor the overall thrust of the NWPP, and provide strategic direction to the CPT." A new National Waste Prevention Plan entitled "Towards a Resource Efficient Ireland, A National Strategy to 2020" was published in 2014. A report on the Overview of progress made on waste prevention projects during 2014 was published by the EPA in 2015 and is available on its website.

2 PROJECT DESCRIPTION

STUDY AREA

The subject site is located on the southernmost extent of County Meath, as shown in Figure 1, aligning with the county boundary to Co. Kildare. It is approximately 1.5km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth – Dunboyne Road, to the east;
- Agricultural lands, to the north and west; and
- River Rye Water, to the south;

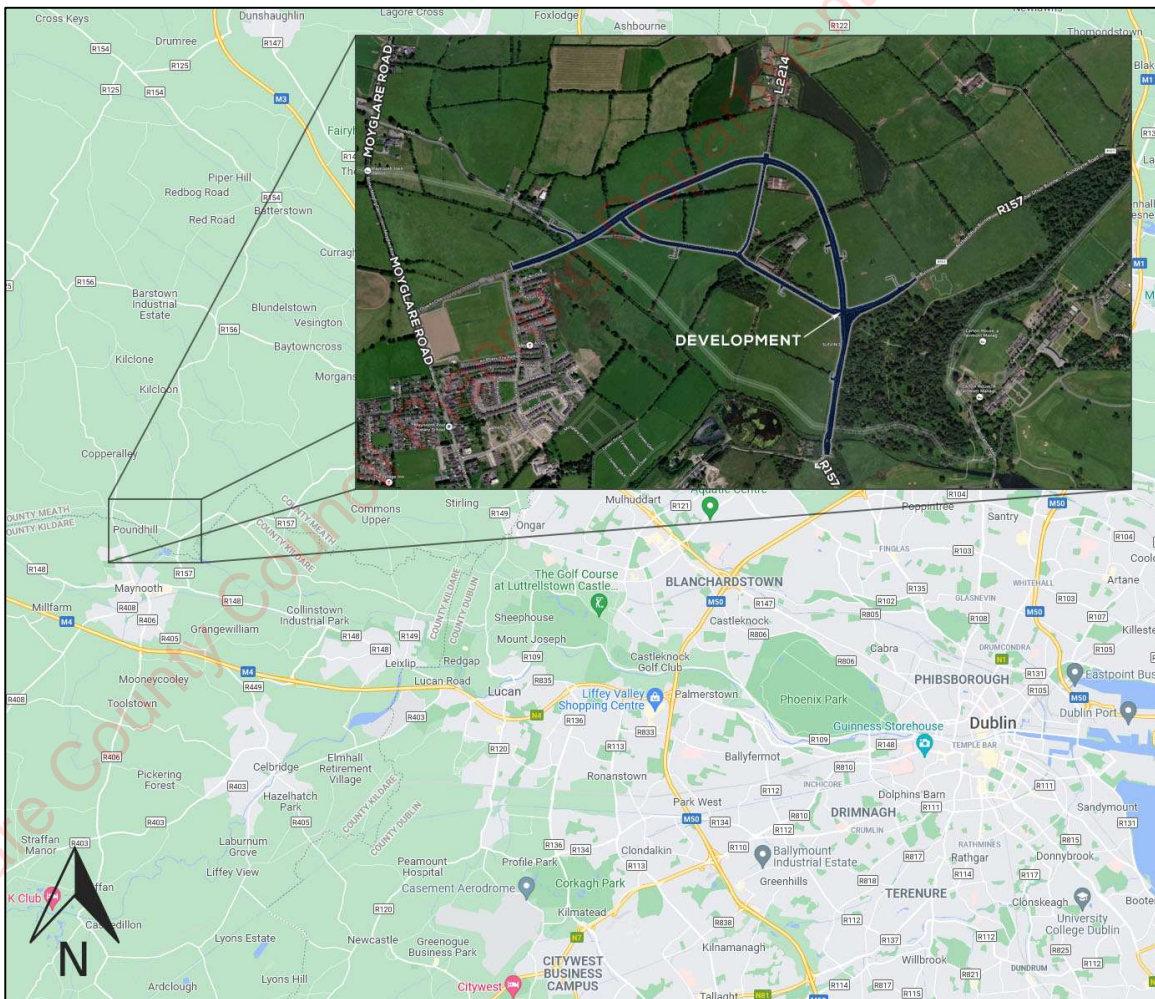


Figure 1: Development Locality Plan

The previous image highlights the location of the overall road area and there are small areas of incidental works outside of that for elements such as attenuation facilities, demolition of existing roads, etc.

DEVELOPMENT DESCRIPTION

Planning Permission is sought by Sky Castle Ltd. for the development of the Maynooth Outer Orbital Road (MOOR) in the townland of Moygaddy, Maynooth Environs, Co. Meath.

The proposed road development will consist of the following:

1. Provision of approximately 1,700m of new distributor road (MOOR Arc) 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.
2. 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 L22143 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).
 - (iv) Realignment of a section of the existing L22143 local road and R157, which will entail the demolition of an existing section of the road which extends to circa 3,200 sqm.
 - (v) Provision of a new signalised junction at the realigned junction between the L22143 and R157.
 - (vi) Provision of a new signalised junction between the L2214 local road and the MOOR with right-turn lanes on approaches.
 - (vii) Reconfiguration of the L2214 section within the MOOR arc to a one-way from north to south with right-turn lanes, where applicable.

- (viii) Reconfiguration of the northbound lane of the L2214 within the arc to a shared facility for use by pedestrians and cyclists.
 - (ix) Addition of chicanes on the L6219 and L22143 local road to reduce traffic flow and encourage utilisation of the MOOR.
3. 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 Blackhall Little Stream on the L22143 adjacent to the existing unnamed bridge.
 - (iv) an integral single span bridge on the north-eastern section of the MOOR arc, over the Blackhall Little Stream, and associated floodplain works and embankments.
4. Provision of site landscaping, public lighting, site services and all associated site development works.
5. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

DEVELOPMENT & SITE OVERVIEW

The MOOR will be a single carriageway road connecting the Maynooth environs between the east and west. A portion on the western side will be constructed in County Kildare and tie in with existing infrastructure by means of a new bridge and road section. This can be seen in the figure below.

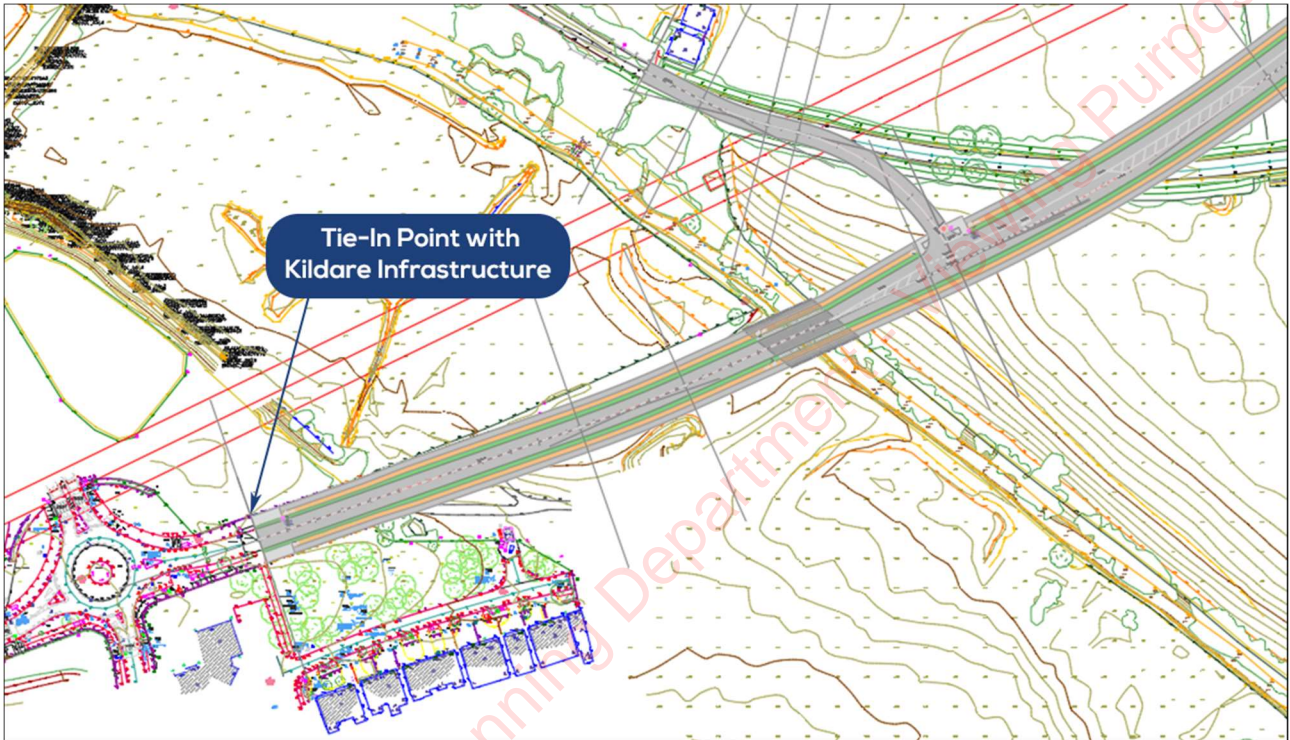


Figure 2: MOOR Western Kildare Tie-In

On the eastern side, the road will again tie in in County Kildare, just north of the roundabout on the R157. A separate cycle and pedestrian bridge will be constructed alongside the existing bridge to allow for continuation of this infrastructure, tying in with existing infrastructure in County Kildare. The tie-in location has been agreed with Kildare and on review of planning compliance submission made by Cairn Homes. This can be seen in the figure below.

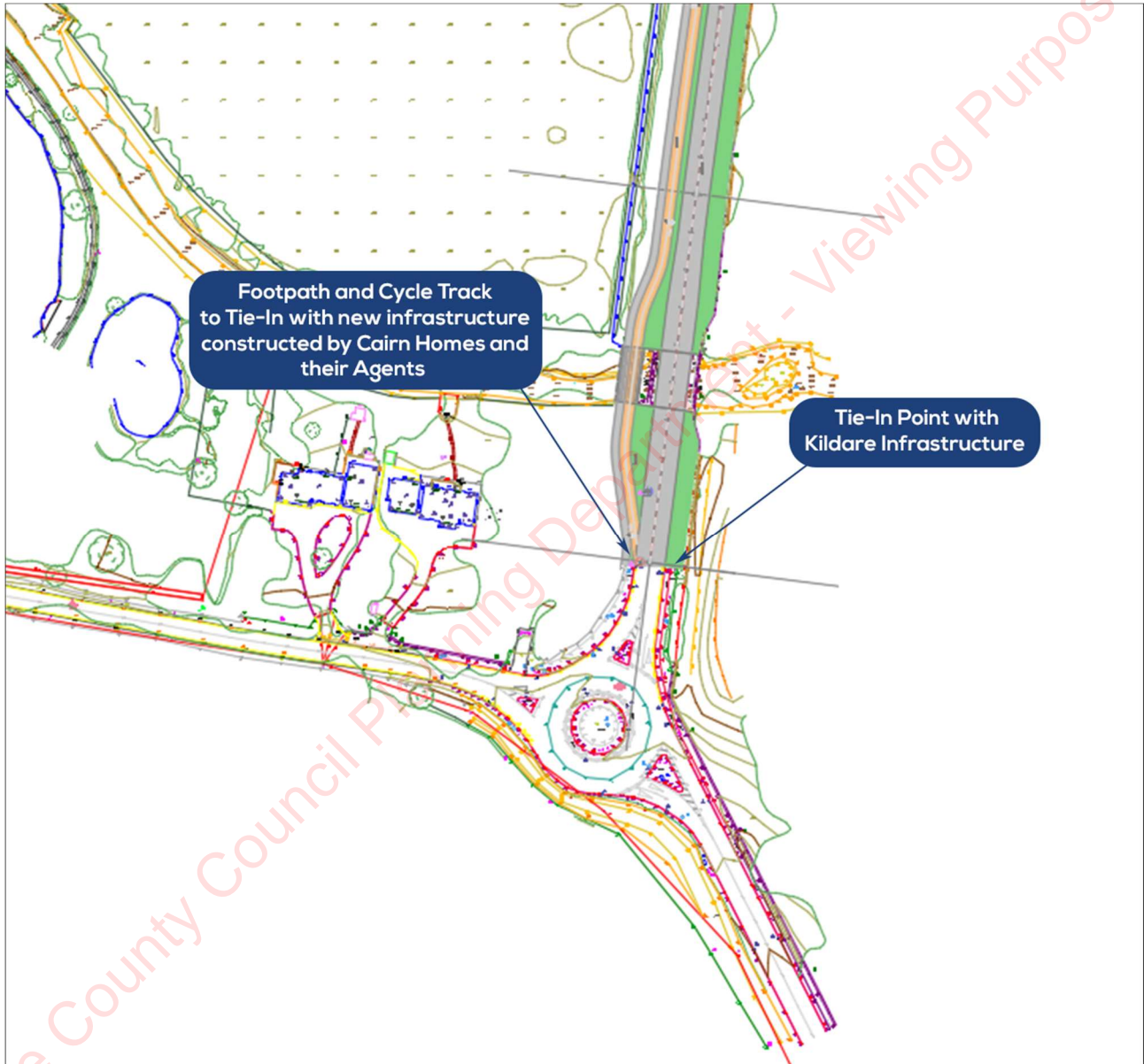


Figure 3: MOOR Eastern Kildare Tie-In

The rest of the MOOR will form an arc through the Maynooth Environs, connecting the western and eastern ends. A portion of the L6219 on the western side will be realigned to accommodate the arc. This section is shown in the figure below.

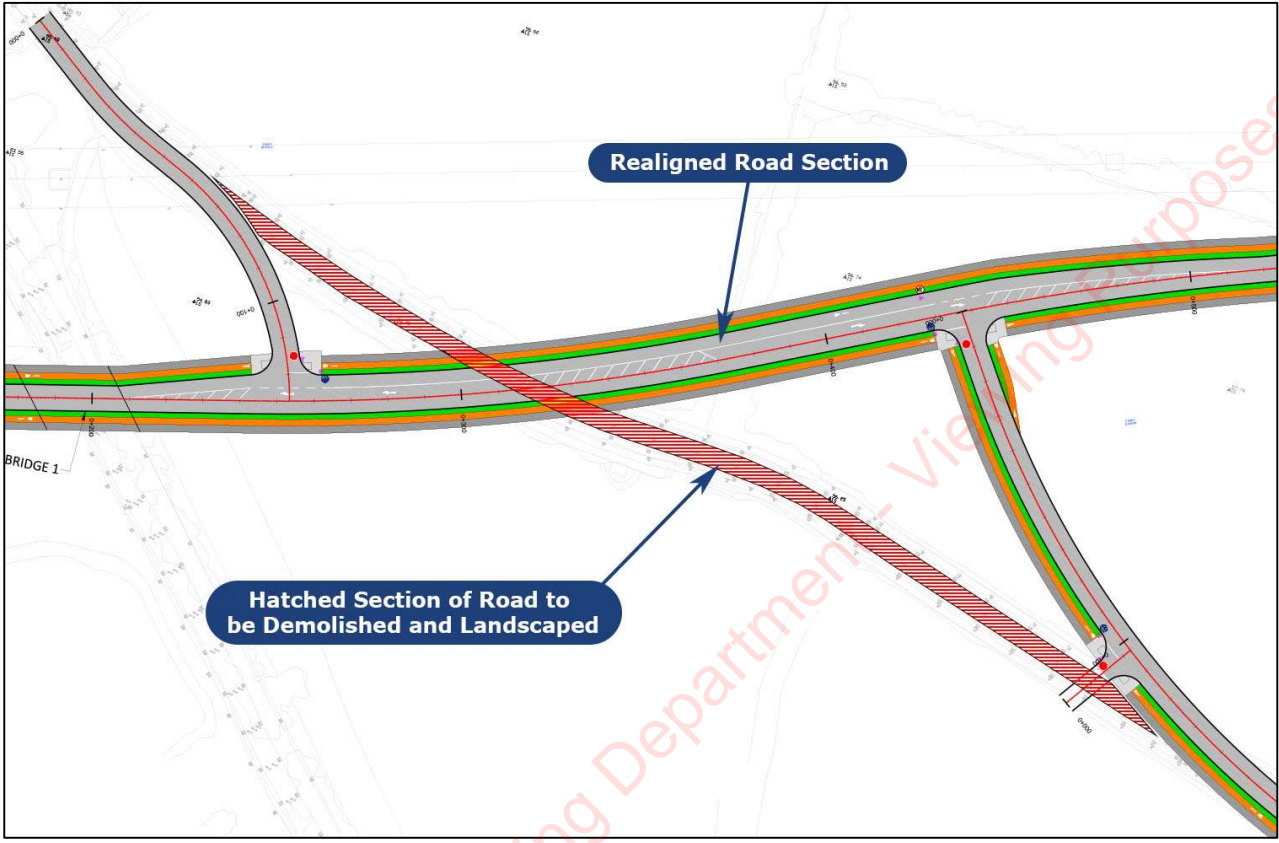


Figure 4: Road Section to be Realigned

The current L2214 (Kilcloon Road) will change to a north-to-south one-way road within the arc. The current south-to-north lane will be converted to a shared facility which can be used by pedestrians and cyclists. The new northern junction between the MOOR and the L2214 will be constructed as a signalised junction. The is shown in the figure below.

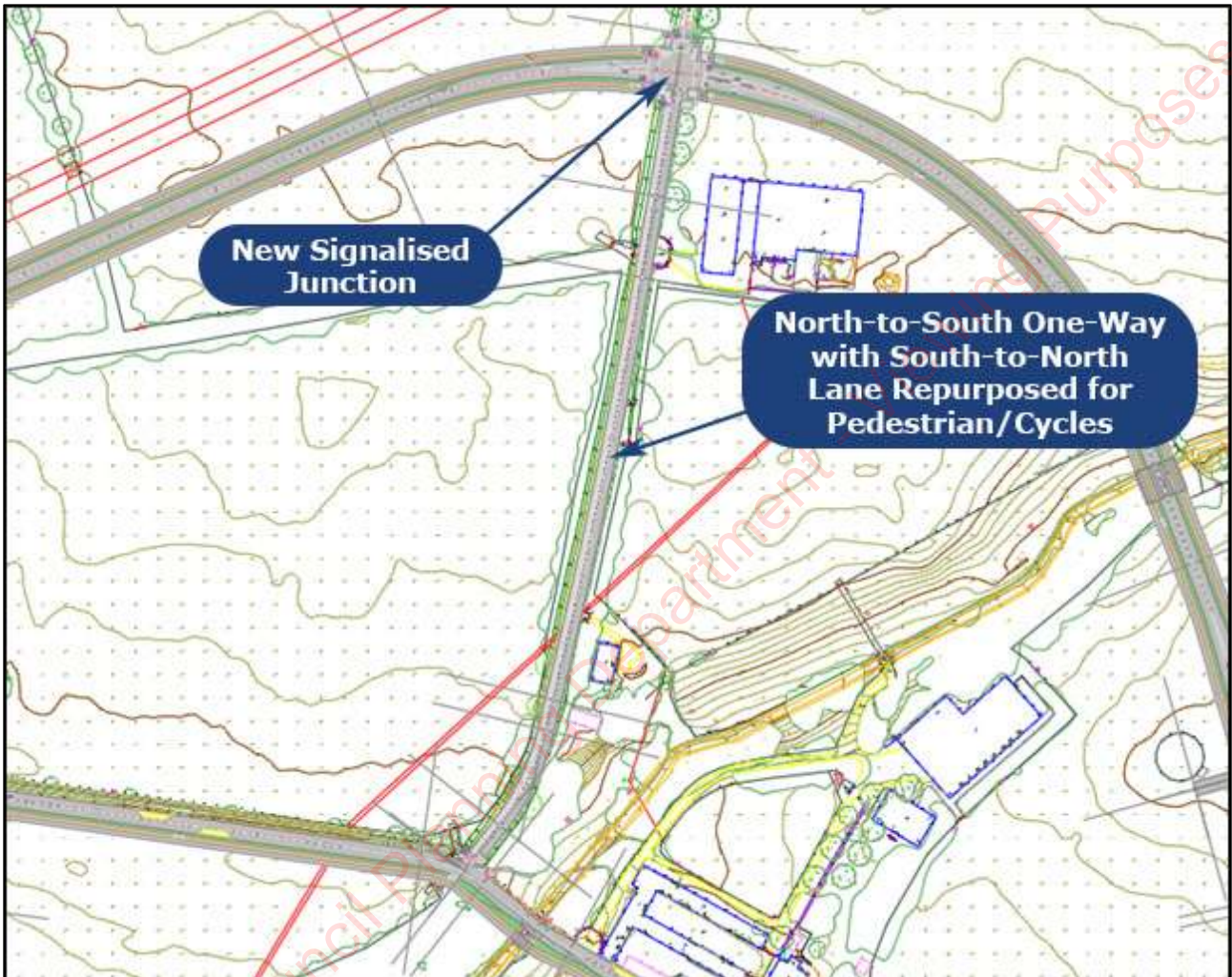


Figure 5: Center of Arc (L2214 - Kilcloon Road)

The junction between the R157, L6219, MOOR and Dunboyne Road on the eastern side of the arc will be realigned and constructed as 4-leg signalised junction, as shown below.

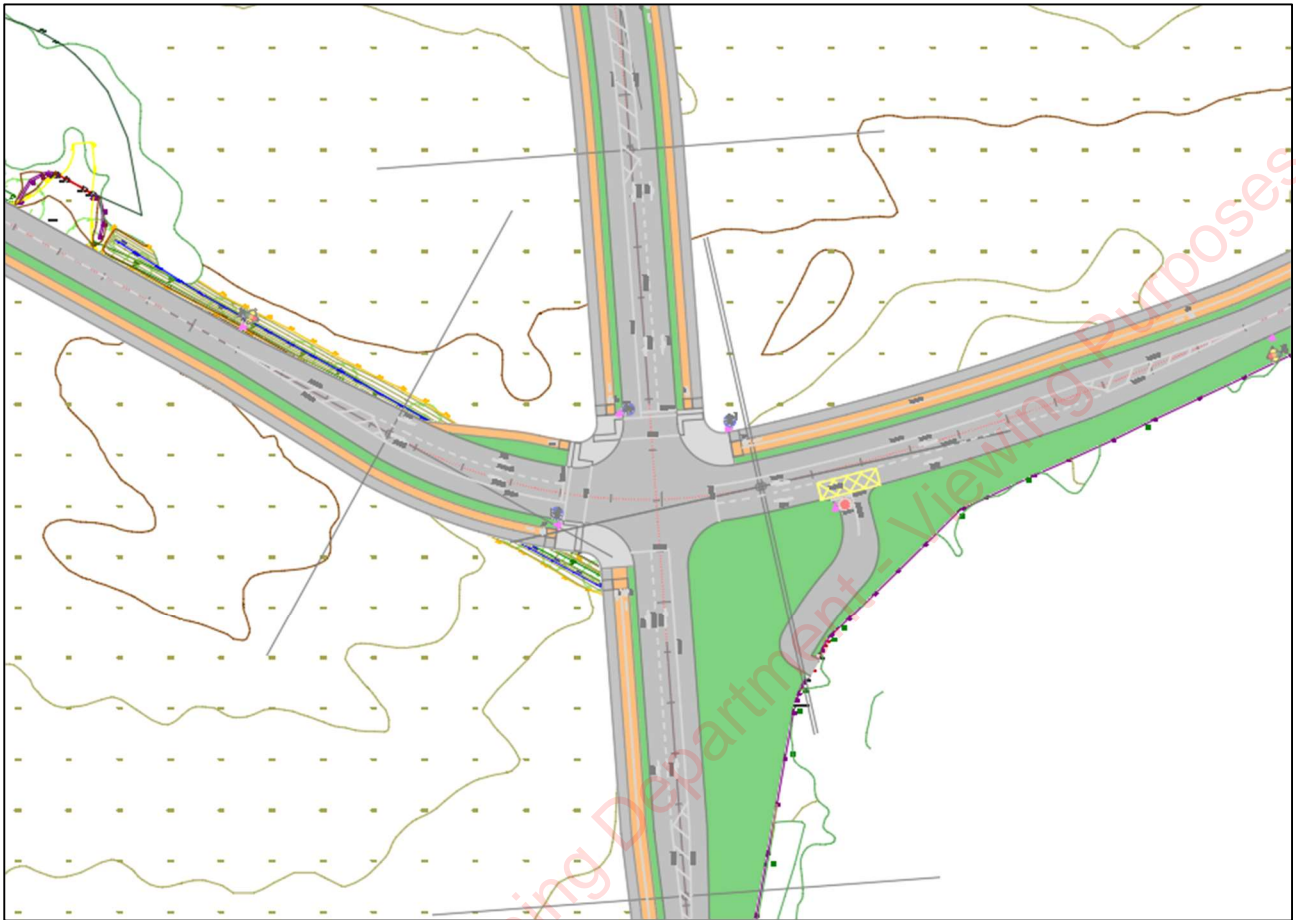


Figure 6: Realigned Signalised Junction on Eastern

For the construction of this junction, a portion of the existing R157 and Dunboyne Road will be realigned, as shown in the figure below.

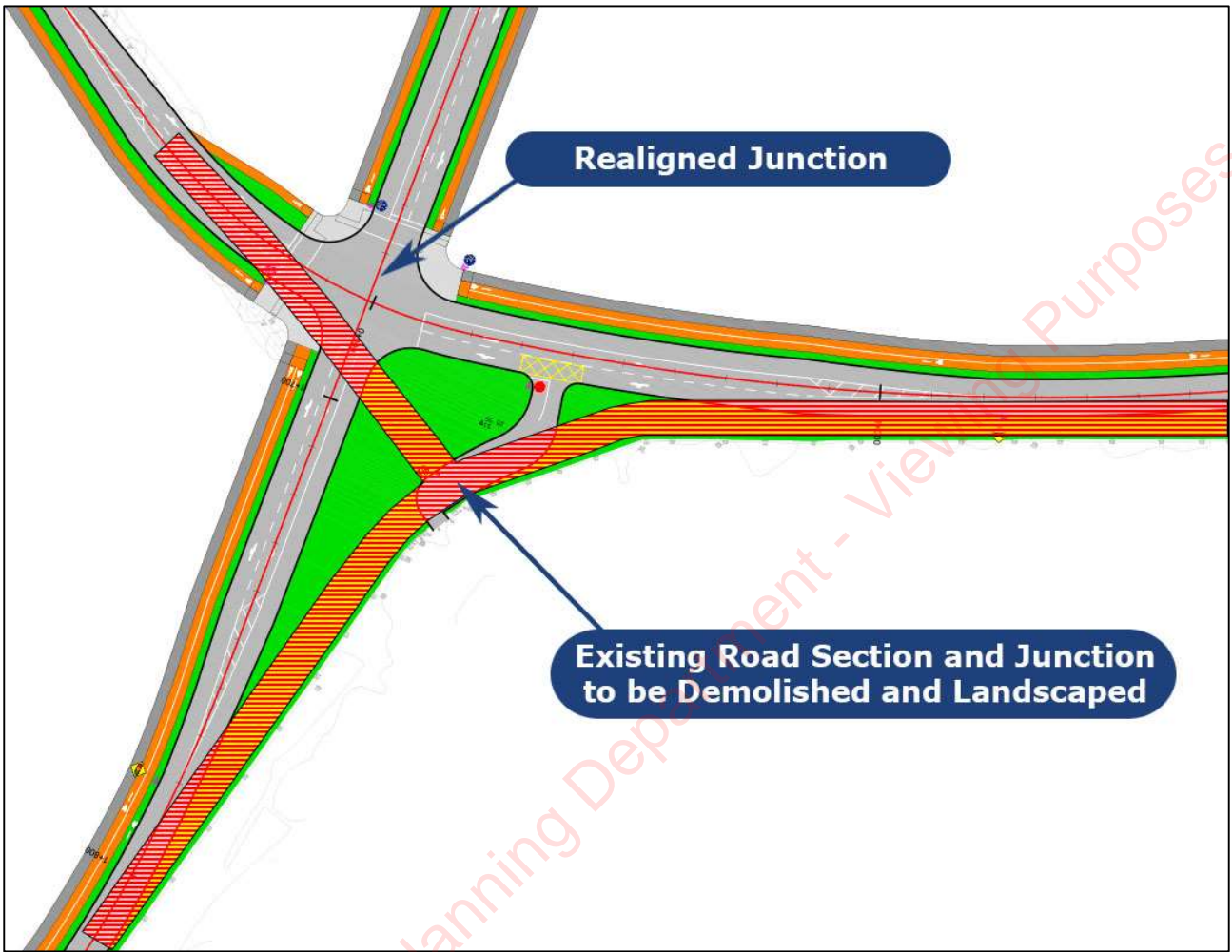


Figure 7: Existing R157/Dunboyne Road Realignment

Four different bridges will be constructed as part of the MOOR. These are highlighted in the figure below.

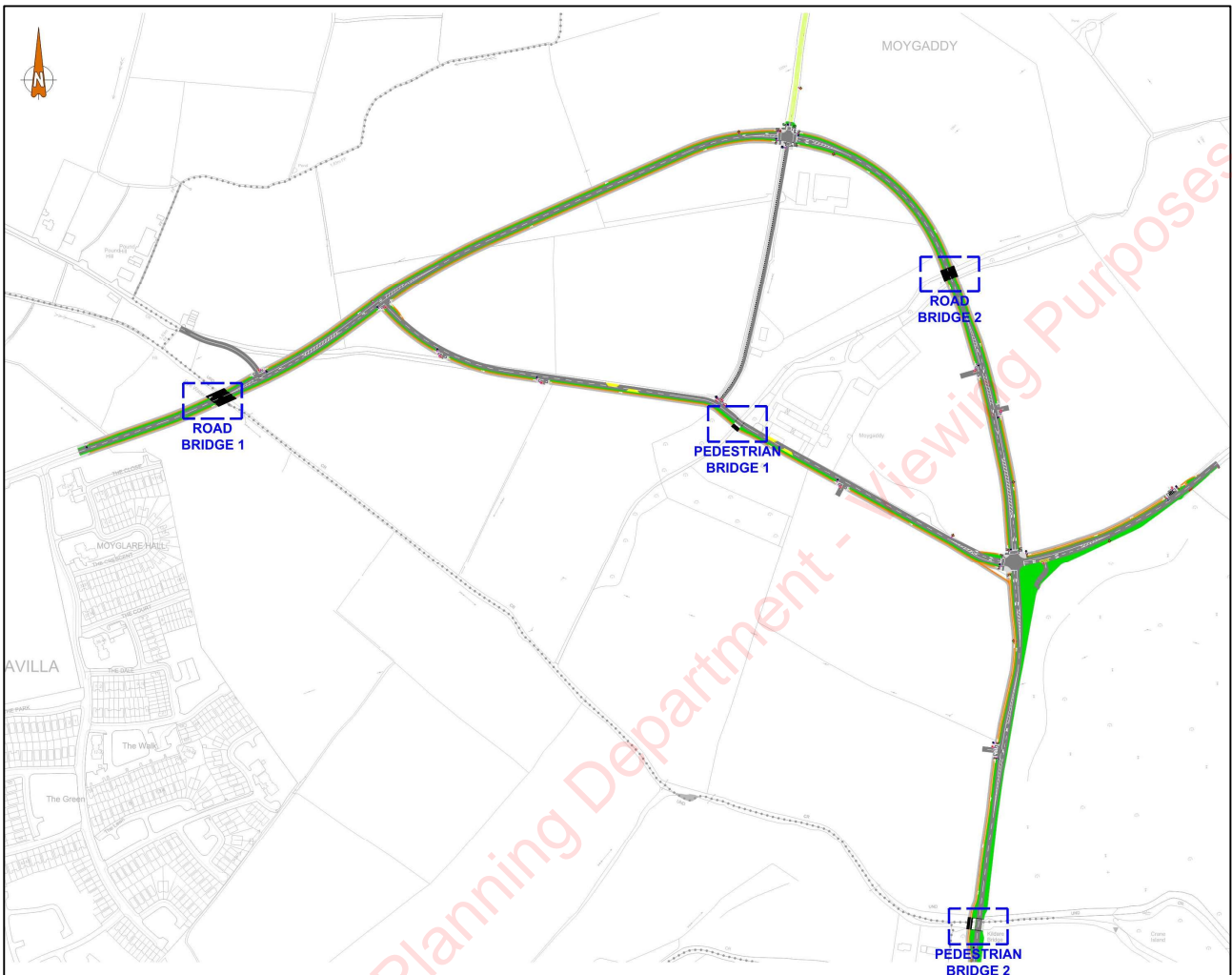


Figure 8: MOOR Bridges

Road bridges 1 and 2 will be new bridges which will be constructed as part of the MOOR. Pedestrian bridges 1 and 2 will be additional structures constructed adjacent to the existing bridge structures to accommodate pedestrian and cycle permeability. More information on these bridges is available in OCSC report "Bridge Options Report" submitted separately.

PHASING & CONSTRUCTION

It is anticipated that the construction of the full MOOR will be completed in one phase.

At present, the planned construction programme for the development is as follows:

- Planning Submission – September 2022
- Assumed Grant – Q4 2022
- Detailed Design Completion – Q2 2023
- Construction Commencement – Q3 2023
- Construction Completion – Q3 2025

It is anticipated that the construction duration will be approximately 21 months.

DEMOLITION

As part of this application, a section of the existing L6219 local road will be realigned. This will entail the demolition and removal of an existing section of the road, as indicated in the figure below.

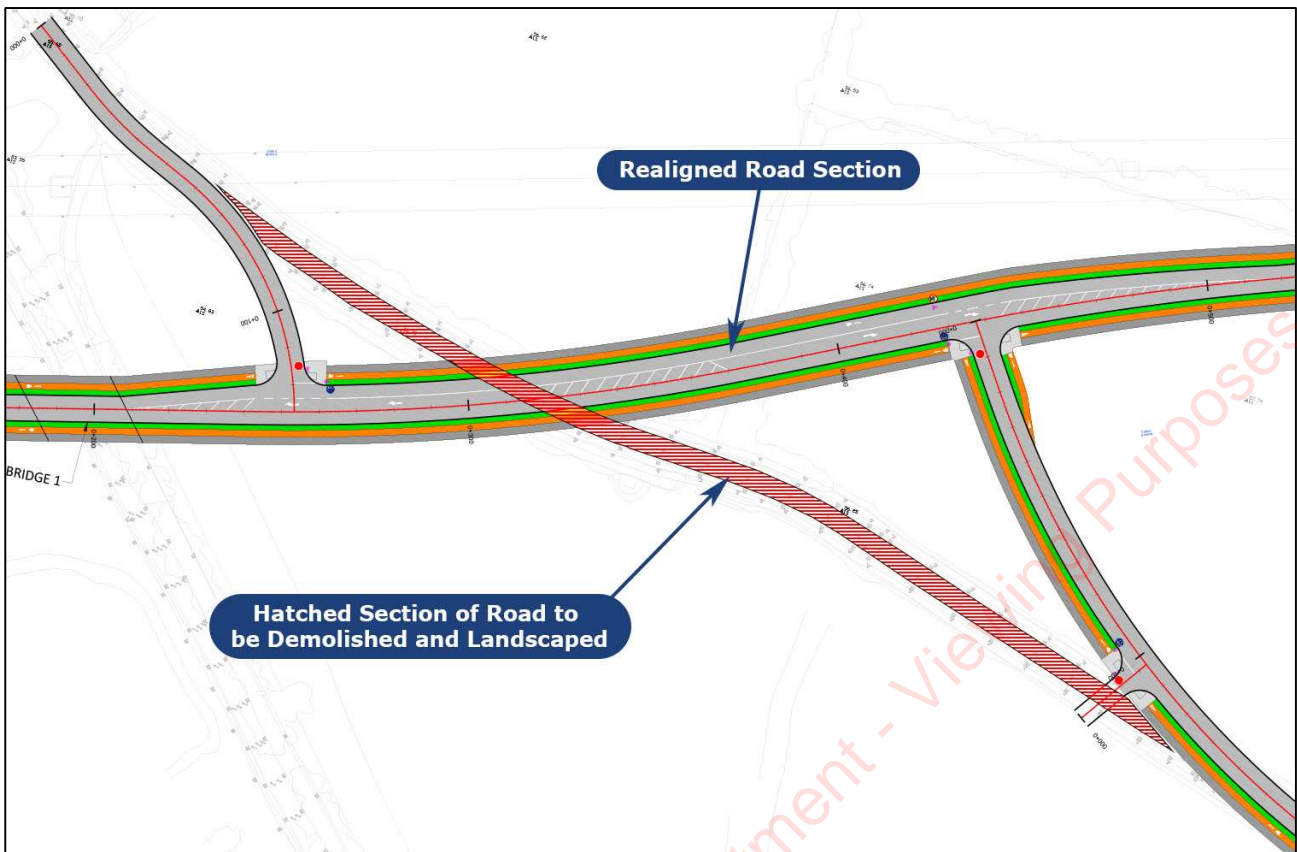


Figure 9: Road Section to be Demolished

The approximate combined demolition area of the existing road is c. 2 500 m².

Demolition of the above will generate low volumes of waste. The waste will predominantly be soil and stone with the potential for bitumen and tar to be found. Any road materials to be excavated and removed will be subject to a full suite of testing to establish if they are contaminated by way of either constituent or recent spillages. Any contaminants will be identified and disposed of in an appropriate facility should they be found.

The following table is a preliminary estimate of the demolition waste which might be generated, assuming a 200mm thick asphalt layer overlaying a 400mm thick stone layer with an average density of 2.3 tons/m³. It should be noted that these numbers are approximated and are not indicative of the final values of the site:

Predicted demolition waste targets for the proposed road realignment:

Waste Types	Waste	Recycle		Disposal	
	tonnes	%	tonnes	%	tonnes
Bound Road Materials	1 150	75	863	25	287
Unbound Road Materials	2 300	95	2 185	5	115

Table 1: Demolition Recycle Targets

In addition a further section of the existing L6219 local road on the east will be realigned. This will entail the demolition and removal of an existing section of the road, as indicated in the figure below.

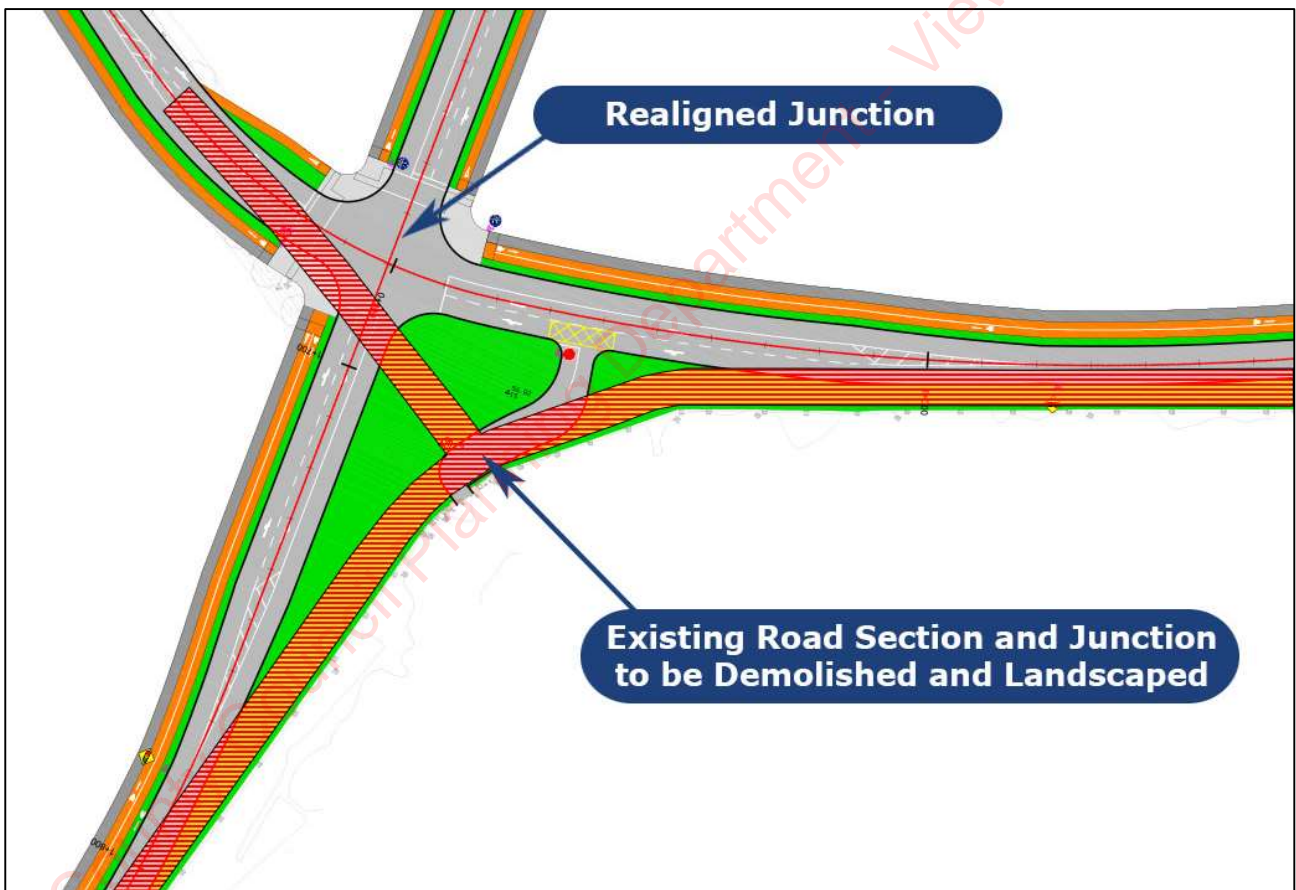


Figure 10: Road Section to be Demolished

The approximate combined demolition area of the existing road is c. 3 200 m².

Demolition of the above will generate low volumes of waste. The waste will predominantly be soil and stone with the potential for bitumen and tar to be found. Any road materials to be excavated and removed will be subject to a full suite of testing to establish if they are contaminated by way of either constituent or recent spillages. Any contaminants will be identified and disposed of in an appropriate facility should they be found.

The following table is a preliminary estimate of the demolition waste which might be generated, assuming a 200mm thick asphalt layer overlaying a 400mm thick stone layer with an average density of 2.3 tons/m³. It should be noted that these numbers are approximated and are not indicative of the final values of the site:

Predicted demolition waste targets for the proposed road realignment:

Waste Types	Waste	Recycle		Disposal	
	tonnes	%	tonnes	%	tonnes
Bound Road Materials	1 500	75	1 125	25	375
Unbound Road Materials	3 000	95	2 850	5	150

Table 2: Demolition Recycle Targets

3 KEY MATERIALS & QUANTITIES

CONSTRUCTION PHASE WASTE

The bulk of waste material generated from the proposed development will be from the excavation of the subsoil to accommodate the construction of the under-croft and foundation structures.

Soil generated as part of the construction works will be managed in accordance with a *Soil Waste Management Plan* to be produced by an environmental management company based on the site investigation results in advance of the construction stage. That report will identify the nature and classification of the soil waste and will detail management procedures to be implemented to ensure appropriate handling and disposal in accordance with Irish and EU legislative requirements.

Additional waste as part of construction activities is expected. This waste will be produced from surplus materials such as broken or cut-offs of concrete blocks, bricks, tiles, timber, steel reinforcement etc. Waste from packaging and the oversupply of materials is also expected and should be recycled where possible.

Paints, glues, adhesives, and other known hazardous substances will be stored in designated areas. They will generally be present in small volumes only and associated waste volumes generated will be kept to a minimum. Wastes will be stored in appropriate receptacles pending collection by an authorised waste contractor.

In addition, WEEE (containing hazardous components), printer toner/cartridges, batteries (Lead, Ni-Cd or Mercury) and/or fluorescent tubes and other mercury-containing waste may be generated from C&D activities or temporary site offices. These wastes (if encountered) will be stored in appropriate receptacles in designated areas of the site pending collection by an authorised waste contractor.

CATEGORIES OF CONSTRUCTION WASTE GENERATED

The European Waste Catalogue (EWC) classifies waste materials and categorises them according to what they are and how they are produced. It is referred to in a number of European Union directives and commission decisions regarding waste management.

In 1994, the first European waste catalogue and the hazardous waste list were published as two separate documents. The lists were used by the Environment Protection Agency for the compilation of waste data from 1995 and were adopted into Irish legislation by the Waste Management Act 1996. In 1996 the Environmental Protection Agency published a single list incorporated both the European Waste Catalogue and the Hazardous waste list. The European Waste Catalogue and the hazardous waste list are used for the classification of all wastes and hazardous wastes and are designed to form a consistent waste classification system across the EU. They form the basis of all national and international waste reporting obligations, such as those associated with waste licences and permits, the national waste database and the transport of waste. The EPA published a more concise guide of these in January 2002.

Correct classification is the foundation for ensuring that the collection, transportation, storage and treatment of waste is carried out in a manner that provides protection for the environment and human health and is in compliance with legal requirements.

The waste classification system applies across the EU and is the basis for all national and international waste reporting obligations. From 1 June 2015, waste classification is based on:

- Commission Decision of 18 December 2014, amending Decision 2000/532/EC on the list of waste pursuant to Directive 2008/98/EC of the European Parliament and of the Council (2014/955/EEC) [referred to hereafter as 'The List of Waste (LoW)'].
- Commission Regulation (EU) No 1357/2014 of 18 December 2014, replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives.

The aforementioned document consolidates the legislation and allows the generators of waste to classify the waste as hazardous or non-hazardous and in the process assign the correct List of Waste entry. It also replaces the 2002 European Waste Catalogue and the Hazardous Waste List

A non-exhaustive List of Waste expected for typical waste materials to be generated for this site is as follows and available online Waste Classification List of Waste & Determining if Waste is Hazardous or Non-hazardous APPLICABLE FROM 5 JULY 2018:

17 CONSTRUCTION AND DEMOLITION WASTES (INCLUDING EXCAVATED SOIL FROM CONTAMINATED SITES)	
17 01 01	concrete
17 01 02	bricks
17 01 03	tiles and ceramics
17 01 06*	mixtures of, or separate fractions of concrete, bricks, tiles and ceramics containing hazardous substances
17 01 07	mixtures of concrete, bricks, tiles and ceramics other than those mentioned in 17 01 06
17 02 01	wood
17 02 02	glass
17 02 03	plastic
17 02 04*	glass, plastic and wood containing or contaminated with hazardous substances
17 05 03*	soil and stones containing hazardous substances
17 05 04	soil and stones other than those mentioned in 17 05 03*
17 06 01*	insulation materials containing asbestos
17 06 03*	other insulation materials consisting of or containing hazardous substances
17 06 04	insulation materials other than those mentioned in 17 06 01* and 17 06 03*
17 06 05*	construction materials containing asbestos
17 09 04	mixed construction and demolition wastes other than those mentioned in 17 09 01, 17 09 02 and 17 09 03

Table 3: Construction & Demolition Wastes

ANTICIPATED CONSTRUCTION HAZARDOUS WASTE

Fuels used during construction will be classed as hazardous and these will be stored (for site machinery etc.), in suitable tanks with the draw-off points bunded. Where this is the case, it is not expected that there will be any fuel wastage.

Waste mixtures contain dangerous substances classified as hazardous waste. This will not be used as fill on the site and only be disposed of in a licensed hazardous waste facility.

ESTIMATED CONSTRUCTION WASTE GENERATED

Taken from the Irish EPA figures, the following is the breakdown of construction and demolition waste types expected to be generated from a typical site such as this per m².

Waste Types	%
Soil & Stones	83
Concrete, Bricks, tiles, plastics etc	13
Asphalt, tar/tar products	1
Metals	1
Others	2
Total Waste	100

Table 4: Waste materials generates from a typical Irish construction site

It should be noted that until final materials and detailed construction methodologies have been confirmed, it is difficult to predict with a high level of accuracy the construction waste that will be generated from the proposed works as the exact materials and quantities may be subject to some degree of change and variation during the construction process.

If the material is deemed to be waste, then removal and reuse/recovery/disposal of the material will be carried out in accordance with the Waste Management Acts 1996 – 2011 as amended, the Waste Management (Collection Permit) Regulations 2007 as amended and the Waste Management (Facility Permit & Registration) Regulations 2007 as amended. Once all available beneficial reuse options have been exhausted, the options of recycling and recovery at waste-permitted and licensed sites will be considered.

In the event that contaminated material is encountered and subsequently classified as hazardous, this material will be stored separately from any non-hazardous material. It will require off-site treatment at a suitable facility or disposal abroad via Transfrontier Shipment of Wastes (TFS):

Category	Qualifying Criteria
Category A	Inert Material, suitable for disposal at a waste permitted site in Ireland
Category B	Inert Material is suitable for disposal at an inert waste landfill in Ireland. Note this can be subdivided into B1 and B2
Category C	Non-hazardous material, suitable for disposal at a landfill facility in Ireland or for disposal/recovery in continental Europe
Category D	Hazardous material as defined by the application of the 'Hazardous Waste Classification Tool'5 is suitable for disposal/recovery in Continental Europe.

Table 5: Waste Categories

The following table shows typical target values for the management of waste at the site, to be completed by the contractor prior to starting on site.

Waste Types	Waste		Reuse/Recover		Recycle		Disposal	
	tonnes	%	tonnes	%	tonnes	%	tonnes	
Soil & Stones	40250	20	8050	0	0	80	32200	
Concrete, Bricks, tiles, plastics etc	6304	0	0	80	5043	20	1261	
Asphalt, tar/tar products	485	0	0	20	97	80	388	
Metals	485	5	24	90	436	5	24	
Others	970	10	97	40	388	50	485	
Total	48494	-	8171	-	5965	-	34358	

Table 6: Predicted construction waste targets for the proposed development

4 SITE WASTE MANAGEMENT PLAN

Waste materials generated will be segregated on site. This will allow for the maximum possible degree of recycling. Where on-site segregation of certain waste types is not practical, off-site segregation will be carried out. Skips and receptacles will be provided to facilitate segregation at the source.

All waste receptacles leaving the site will be covered or enclosed. The on-site waste storage area will be secured within the overall site which will be hoarded off from the public and unauthorised access.

The appointed waste contractor will collect and transfer the waste as receptacles are filled. Any soil removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2008, the Waste Management (Collection Permit) Regulations 2007 and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments.

All waste arisings will be handled by an approved waste contractor holding a current waste collection permit. All waste arisings requiring disposal off-site will be disposed of at a facility holding the appropriate licence or permit, as required. Written records will be maintained by the contractor(s) detailing the waste arising throughout the construction phase, the classification of each waste type, the contact details and the waste collection permit number of all waste contractors who collect waste from the site and the end destination and waste facility permit or licence number for all waste removed and disposed of off-site.

Dedicated bunded storage containers will be provided for hazardous wastes such as batteries, paints, oils, chemicals etc. if required.

The management of the main waste streams is detailed in the figure overleaf:



Figure 11: Proposed C&D Waste Storage Area (Scale: NTS)

WASTE MANAGEMENT CATEGORIES

SOIL/SUBSOIL

Any soil removed off-site will be carried by contractors licensed under the Waste Management Acts 1996 - 2011, the Waste Management (Collection Permit) Regulations 2007 and Amendments and the Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments.

If any of the excavated spoil is found to be clean/inert, the site manager will investigate whether nearby construction sites may require clean fill material, to both minimise the costs of transport and to reuse as much material as possible. Any soil/subsoil deemed to be contaminated will be stored separately from the clean and inert soil/subsoil. The material will be appropriately classified as non-hazardous or hazardous under the www.hazwasteonline.com application and EC Council Decision 2003/33/EC, which establishes the criteria for the acceptance of waste at landfills, before being transported to an appropriately permitted/licensed facility by permitted contractors.

CONCRETE, BRICKS, TILES & CERAMICS

The majority of concrete, bricks, tiles and ceramics generated as part of the construction works are expected to be clean, inert material and should be recycled, where possible.

HARD PLASTIC

Since hard plastic is a highly recyclable material, much of the plastic generated will be primarily from material off-cuts. It will be diverted from landfill and recycled. All recyclable plastic will be segregated and recycled, where possible.

TIMBER

Timber that is uncontaminated, i.e. free from paints, preservatives, glues etc., will be segregated and stored in skips.

METAL

Metals will be segregated into mixed ferrous, cladding, aluminium, high-grade stainless steel, low-grade stainless steel etc. categories, where practical. Metal is highly recyclable and numerous companies will accept these materials. Metals will be segregated and stored in skips.

PLASTERBOARD

There are currently several recycling services for plasterboard in Ireland. Plasterboard from the construction phase will be stored in a separate skip, pending collection for recycling. The site manager will ensure that the oversupply of new plasterboard is carefully monitored to minimise waste.

GLASS

Glass materials will be segregated for recycling, where possible.

ORGANIC (FOOD) WASTE

An on-site canteen will be provided to allow workers to prepare and eat food. This facility will incorporate provisions so that organic waste will be segregated for separate collection. Segregation at source and separate collection of organic waste is required under the Waste Management (Food Waste) Regulations 2009 (if food is prepared on-site).

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT (WEEE)

WEEE that does not contain hazardous components will be stored in dedicated covered cages/receptacles/pallets pending collection for recycling. There are not expected to be any significant amounts of such materials as there are no existing buildings on the subject site.

NON-RECYCLABLE WASTE

C&D waste which is not suitable for reuse or recovery will be placed in separate skips or other receptacles. This will include polystyrene, some cardboard and plastic which are deemed unsuitable for recycling.

Before removal from the site, the non-recyclable waste skip/receptacle will be examined by a member of the waste team to determine if recyclable materials have been misplaced. If this is the case, efforts will be made to determine the cause of the waste not being segregated correctly and recyclable waste will be removed and placed into the appropriate receptacle.

HAZARDOUS WASTES

On-site storage of any hazardous wastes produced (i.e. contaminated soil and/or waste fuels) will be kept to a minimum, with removal off-site organised regularly. Storage of all hazardous wastes on site will be undertaken to minimise exposure to on-site personnel and the public and to also minimise the potential for environmental impacts.

MANAGEMENT & CONTROL SYSTEMS

It will be the role of an appointed Waste Manager to try to find alternative options for waste before sending it to the landfill. Waste materials will be stored in the specifically designated compound. All waste collected from the site will be by a permitted waste contractor, under the Waste Management (Collection Permit) Regulations 2007 as amended. The contractor will provide the Waste Manager on site with documentation of

the waste to be removed and a copy of the waste collection permit. Before the waste leaves the site, the Waste Manager will have documentation to show where the waste is being taken to, and that the facility is licensed to accept the particular waste. A receipt will be issued for each load that leaves the site.

All waste will be documented before leaving the site. Waste will be weighed by the contractor, either by a weighting mechanism on the truck or at the receiving facility. These waste records will be maintained on-site by the Contractor. All movement of waste and the use of waste contractors will be undertaken under the Waste Management Acts 1996 - 2008, Waste Management (Collection Permit) Regulations 2007 and Amendments and Waste Management (Facility Permit & Registration) Regulations 2007 and Amendments. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. The nominated project Waste Manager will maintain a copy of all waste collection permits.

Some wastes may be transported to another site for reuse on that site. The Waste Manager will be in contact with other sites to ensure that as much waste is reused as possible, such as concrete for fill purposes etc. All wastes leaving the site will be placed in appropriate containers. Any concrete, soil, gravel, or broken stone transported off-site will be covered to prevent dust or particle emissions from the load.

If the waste is being transported to another site, a copy of the Local Authority waste permit or EPA Waste Licence for that site will be provided to the nominated project Waste Manager. If the waste is being shipped abroad, a copy of the Transfrontier Shipping (TFS) document will be obtained from Dublin City Council (as the relevant authority on behalf of all local authorities in Ireland) and kept on-site along with details of the final destination (permits, licences etc.). A receipt from the final destination of the material will be kept as part of the on-site waste management records.

All information will be entered into a waste management recording system to be maintained on-site.

SITE MANAGEMENT

RESOURCE MANAGER

A dedicated Resource manager will be appointed to ensure commitment, efficiency and site protocols are upheld during the construction stage.

The role of the Resource manager will be to record, oversee and manage the everyday handling of waste on the site.

Their training will be in setup and maintaining record-keeping systems and how to produce an audit to ensure waste management targets are being met.

They shall also be trained in the best methods for the segregation and storage of recyclables. They will also be familiar with the suitability of material reuse and know how to implement the CDWMP.

Dún Laoghaire-Rathdown County Council will be consulted throughout the Construction phase to ensure that all available waste reduction, reuse and recycling options are being explored and utilised and that compliant Waste Management is being carried out at the site.

SITE CREW

This shall be the responsibility of the resource manager and a training programme will be organised, and incorporated into typical onsite inductions to give an awareness of waste segregation on the site.

This will outline the types and treatments that should be given to different materials and hazardous materials.

DOCUMENTATION

All waste will be weighed and documented prior to leaving the site. Records will be kept at the site and at the relevant waste facility.

All movement of waste and the use of waste contractors will be undertaken in accordance with the *Waste Management Acts 1996 - 2011*, *Waste Management (Collection Permit) Regulations 2007* as amended and *Waste Management (Facility Permit & Registration) Regulations 2007* and amended. This includes the requirement for all waste contractors to have a waste collection permit issued by the NWCPO. If the waste is being transported to another site, a copy of the Local Authority waste COR/permit or EPA Waste/IE Licence for that site will be provided to the nominated project waste manager.

Construction and Demolition municipal waste will be separated and stored wherever possible and monitored/inspected by the site foreperson prior to removal to ensure that site protocol for recycling is being adhered to.

RECORD KEEPING

Specialist companies, where required, will be contacted to determine their suitability and each company's record reviewed to ensure relevant current collection permits/licenses are held.

Companies will also be contacted to gather information regarding the treatment of hazardous materials and if required costs of handling and the best methods of transportation for recycling or reuse when hauling off-site.

Records shall be kept for each material leaving the site for all types of use or disposal. This shall take the following basic outline form:

- Waste taken for reuse off-site
- Waste taken for recycling
- Waste taken for disposal

- Reclaimed waste materials brought to the site for reuse.

For any movement of waste, a docket shall be signed and recorded by the waste manager, detailing the type and weight of material and source or destination.

This will be readily comparable with all delivery records to the site, so a waste generation percentage for each material can be determined.

This will allow ease of comparison of figures with targets established for the recovery, reuse and recycling of Construction waste. It will also highlight the source of failure in meeting these targets.

WASTE AUDITS

The resource manager shall perform audits at the site during the complete construction phase of the works.

This shall ensure that all records are maintained for all movements of all materials.

Records shall also be readily available for comparison with the site's targets.

At the completion of the Construction phase, a final report will be prepared to outline the results of the Resource Management process and the total reuse, recycling and recovery figures for the site.

SIGNAGE

The resource manager shall ensure that appropriate signage is in place

STORAGE

The resource manager shall ensure that appropriate storage is provided for the different waste streams including:

- Dedicated skips
- Hazardous materials storage
- Stockpile management

5 PREDICTED IMPACTS OF THE PROPOSED DEVELOPMENT

Assuming all the proposed mitigation measures are implemented, the following impacts are expected to arise as a result of the proposed development.

CONSTRUCTION PHASE

Significant volumes of waste materials will be generated during the construction of the proposed development. Careful management of waste including segregation at source will help to ensure maximum recycling, reuse and recovery are achieved, in accordance with current local national waste targets.

It is expected however that a certain amount of waste will still need to be disposed of at landfill. Assuming appropriate facilities are provided, environmental impacts (e.g. litter, contamination of soil or water etc.) arising from waste storage are expected to be minimal. Particular attention must be given to the appropriate management of construction waste containing contaminated or hazardous materials. The use of suitably licenced waste contractors will ensure compliance with relevant legal requirements and appropriate off-site management of waste.

In summary, if the final CDWMP is implemented and a high level of due diligence is carried out at the site, it is envisaged that the environmental impact of the construction phase of the proposed development will be short-term and slight, with respect to waste management.

OPERATION PHASE

As with the construction phase, waste materials will be generated during the operational phase of the proposed development. Again, careful management of these, including segregation at source, will help ensure acceptable local and national waste targets are met. It is expected that some waste, for example, mixed non-recyclables will still be required to be disposed of at landfill.

Assuming appropriate on-site storage is provided, environmental impacts (e.g. litter and to a lesser extent contamination of soil and water etc.) arising from waste storage are expected to be minimal. Bin stores will be located throughout the development. The use of suitably licenced waste contractors will ensure compliance with the relevant legal requirements and appropriate off-site management of waste.

In summary, if the operational phase management plan is implemented and a high level of due diligence is carried out at the site, it is envisaged that the environmental impact of the operation phase of the proposed development will be long-term and slight, with respect to waste management. A separate Operation Waste Management Plan has been prepared for this phase.

6 VERIFICATION

This report was compiled and verified by:

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APPENDIX 4-4

BRIDGE OPTIONS REPORT

Kildare County Council Planning Department - Viewing Purposes Only

BRIDGE OPTIONS REPORT

MOYGADDY MASTERPLAN LANDS

Sky Castle Ltd

S665

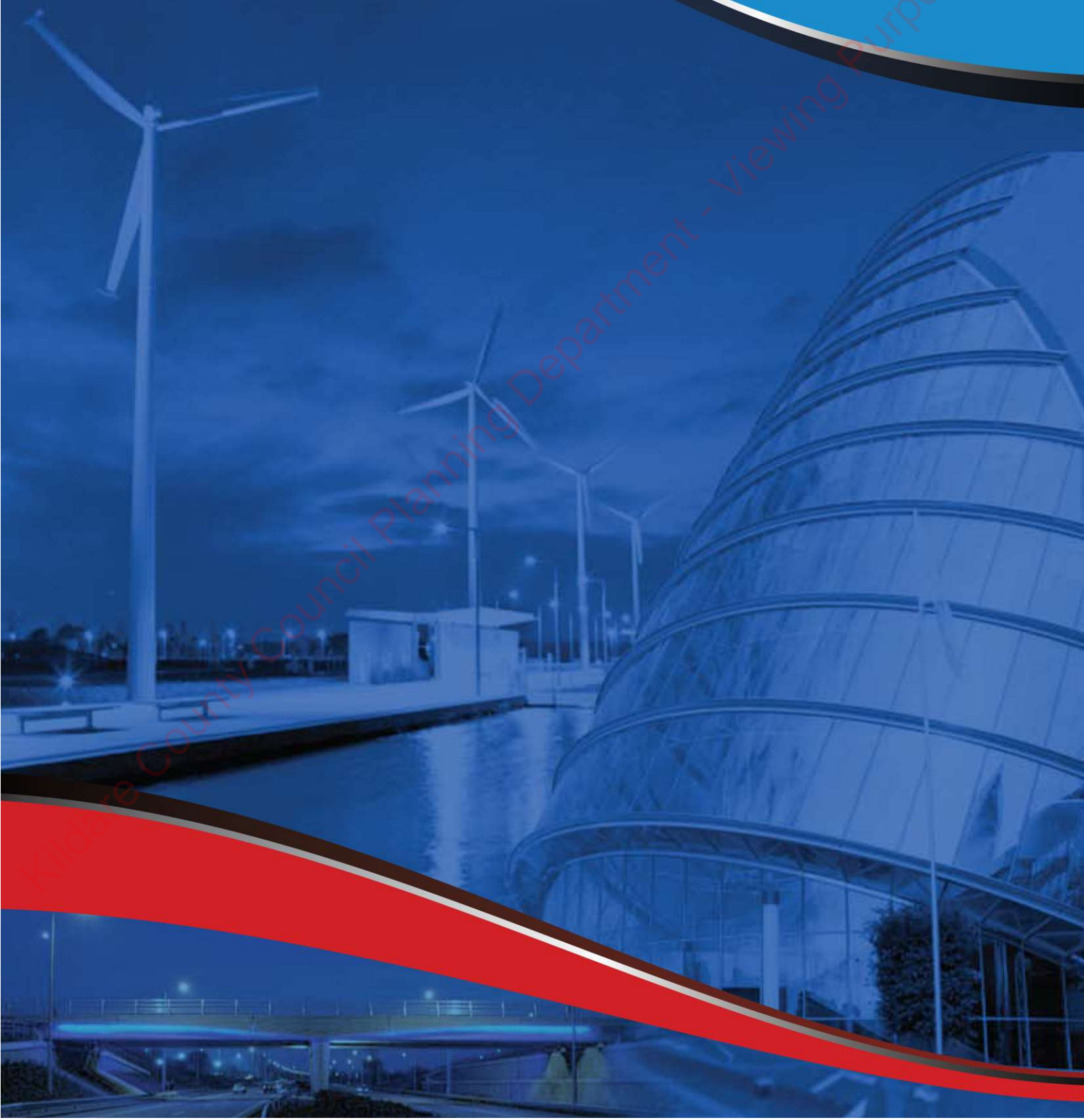
19 August 2022



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Kildare County Council Planning Department - Viewing Purposes Only

BRIDGE OPTIONS REPORT

Moygaddy Masterplan Lands

Sky Castle Ltd
S665
19 August 2022

Kildare County Council Planning Department - Viewing Purposes Only

BRIDGE OPTIONS REPORT

MOYGADDY MASTERPLAN LANDS



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DOCUMENT CONTROL & HISTORY

OCSC Job No.: S665	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
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1 INTRODUCTION

APPOINTMENT

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by Sky Castle Ltd to carry out the design of the civil engineering services associated with the development of the proposed Maynooth Outer Orbital Road (MOOR) on lands at Moygaddy, Co. Meath, which is located northeast of the town of Maynooth, Co. Kildare.

SETTING

Maynooth environs is a large growth area, category II Town status located in south County Meath, and is an economically vibrant area with high-quality transport links to larger towns/cities. The Meath Development Plan 2021-2027 outlines the social, economic, and planning context for the Maynooth environ lands, setting the framework for the plan's policies and objectives. It has a core strategic vision that seeks to ensure that future growth is based on principles of sustainable development that meet the needs of residents per National and Regional guidelines. The environs of Maynooth is a Core Economic Area included in the Gateway Core Economic Area located on the M4 corridor. The wider Maynooth Environs Lands proposed land-use zoning includes A2 – New Residential, E1 – Strategic Employment Zones, G1 – Community Infrastructure, D1 – Tourism and H1 – High Amenity.

The delivery of the Maynooth Outer Orbital Route (MOOR) is critical to facilitating residential, high-end employment, tourist, and leisure development in the Maynooth environ lands and fulfilling the transport infrastructure needs in proximity to Maynooth University and Maynooth town.

ADMINISTRATIVE JURISDICTION

The proposed development is located primarily in the jurisdiction of Meath County Council (MCC), and therefore the Maynooth Outer Orbital Route design and the associated civil engineering services were carried out with reference to the following:

- Meath County Development Plan 2021-2027;
- Maynooth Environs Local Area Plan 2014 (incorporated into adopted MCDP);
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2019);

Even though Maynooth Environs is situated in the Meath County Council administrative area, the Maynooth Environs Local Area Plan contains an objective to liaise with Kildare County Council in the identification, design, reservation and delivery of the section of the Maynooth Outer Relief Road located within the administrative area of Meath County Council. The administrative area of Kildare County Council is located immediately adjacent to the LAP environs lands and some infrastructure improvements will be located within the Kildare County Council (KCC) administrative area. Therefore, the design will also be conducted with due regard to:

- Maynooth LAP
- Kildare County Development Plan
- Maynooth Traffic Management Plan

STUDY AREA

The subject site is located on the southernmost extent of County Meath, as shown in Figure 1, aligning with the county boundary to Co. Kildare. It is approximately 1.5km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth – Dunboyne Road, to the east;

- Agricultural lands, to the north and west; and
- River Rye Water, to the south;

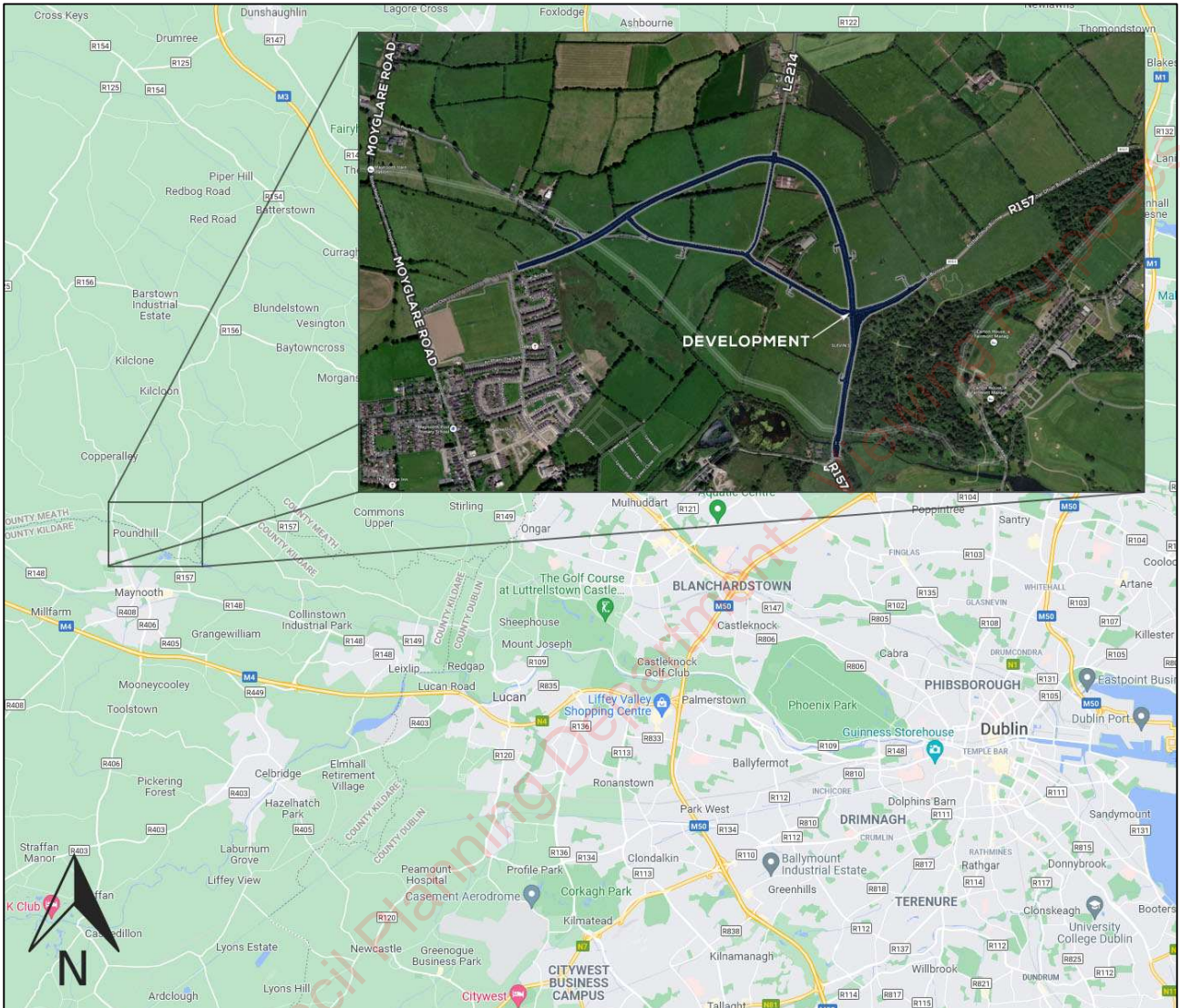


Figure 1: Development Locality Plan

BRIDGE STRUCTURES

There are five bridge structures required within the project's extent. Two bridge structures carry a regional road and a shared pedestrian/cyclist laneway, and three structures carry a shared pedestrian/cyclist laneway only. These are referred to as 'road' bridges and 'pedestrian' bridges for the remainder of the report. All bridge structures will be built to facilitate the phased development. This Options Report has been prepared per TII standard DN-STR-03001 Appendix B.

2 DESCRIPTION OF STRUCTURES AND OPTIONS CONSIDERED

SITE LOCATION

The proposed development is bounded by the River Ryewater to the south, and farmland to the north. A Site-Specific Flood Risk Assessment has determined that the development is located without a flood zone. Refer to the separate SSFRA OCSC report, S665-OCSC-1C-XX-RP-C-0009, and JBA Consulting's Flood Risk Assessment report on the Moygaddy Masterplan for details. The conclusions in these reports have been considered in the road alignment and hence, the geometry and type of bridge structures.

Refer to the figure below for the location of Applicant-owned lands, in the Maynooth Environs area, in which the new bridge structures are to be provided, along with local watercourses. A total of 5nr. bridge structures are to be provided through the Maynooth Environs area, to facilitate the provision of the new Maynooth Outer Orbital Route (MOOR) and improvements to pedestrian and cycle connectivity throughout.



Figure 2: Site Location and Local Watercourses

BRIDGE STRUCTURES

A total of 5 nr. bridge structures are to be provided through the Maynooth Environs area, to facilitate the provision of the new Maynooth Outer Orbital Route (MOOR) and improvements to pedestrian and cycle connectivity throughout.

Refer to the figure below for the location of the proposed bridge structures.

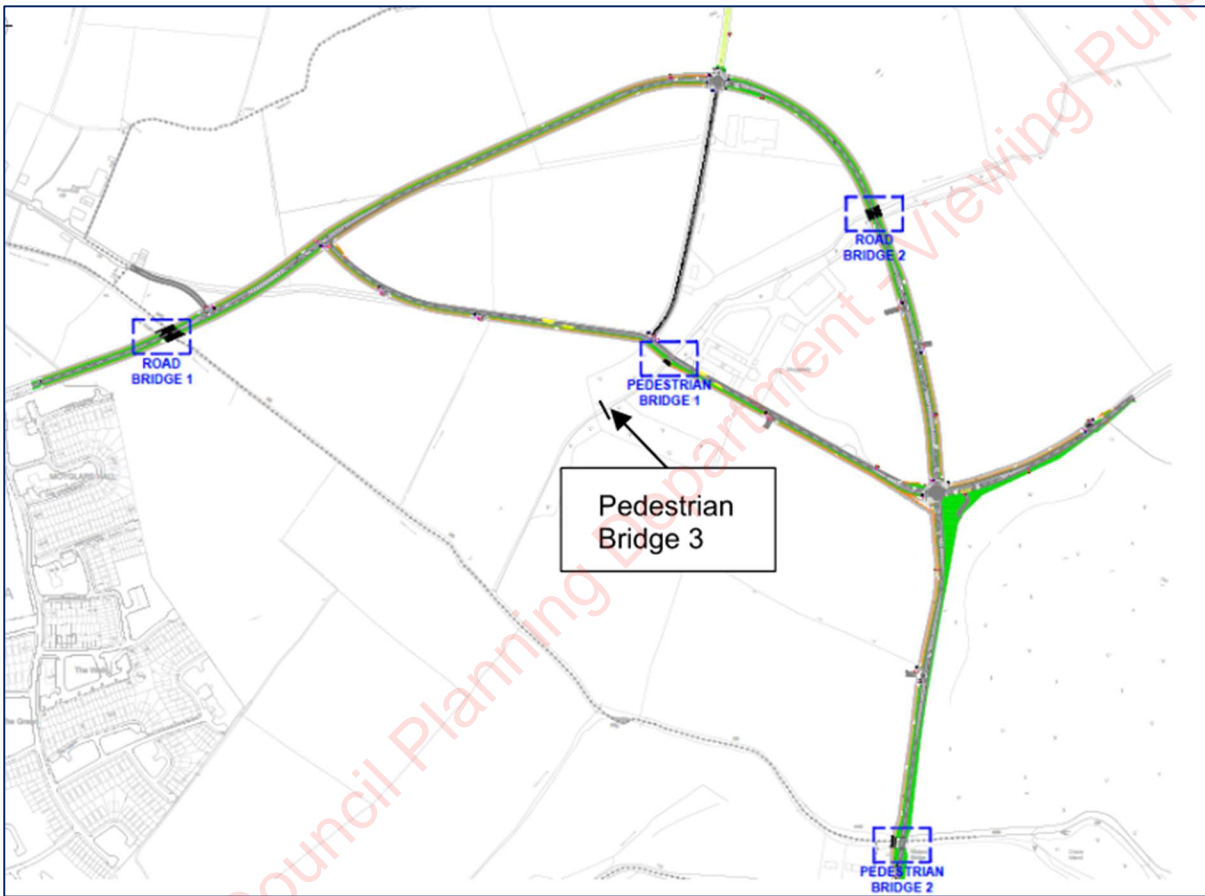


Figure 3: Location of Bridges

The noted bridges are summarised as follows:

ROAD BRIDGE 1

This is to comprise a 50m span across the River Rye Water, and link west Maynooth to the proposed new MOOR, which shall include pedestrian and cycle facilities and extension of water main assets to serve new development in Maynooth Environs. The elevation and cross-section of this bridge is shown in the figure below.

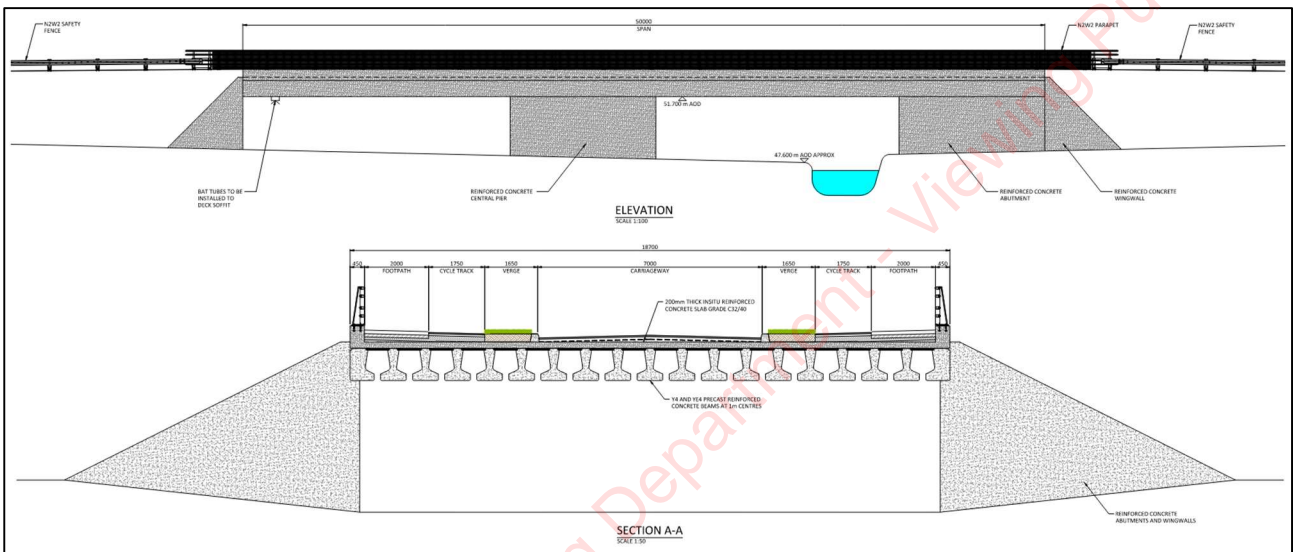


Figure 4: Road Bridge 1 Cross-Section and Elevation

ROAD BRIDGE 2

This is to comprise a short-span vehicular bridge, as part of the new MOOR, including pedestrian and cycle facilities. The elevation and cross-section of this bridge is shown in the figure below.

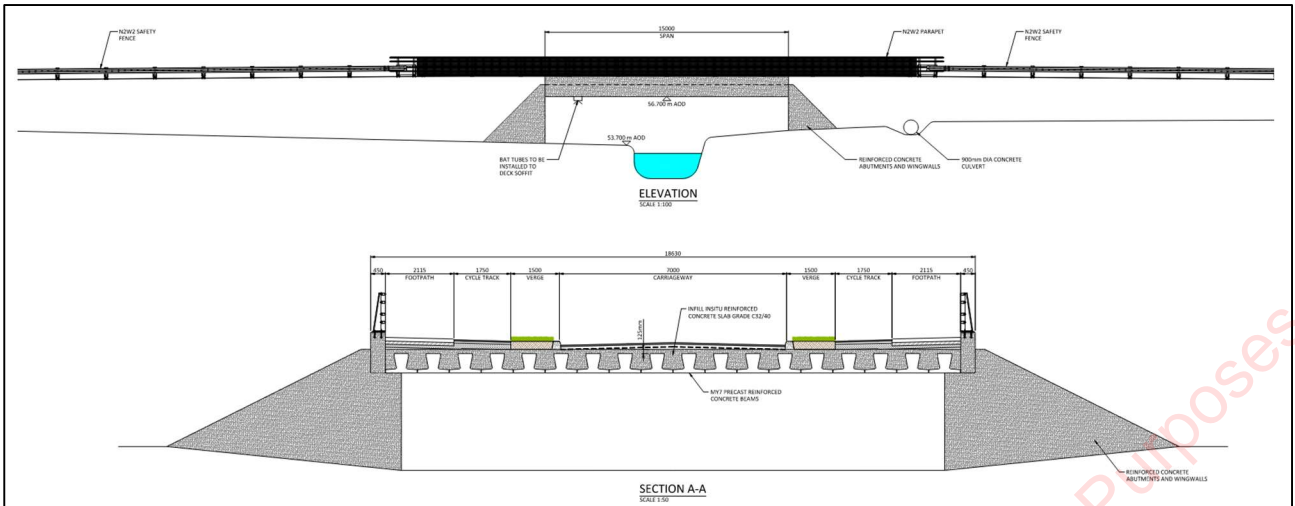


Figure 5: Road Bridge 2 Cross-Section and Elevation

PEDESTRIAN BRIDGE 1

This is a new pedestrian and cycle bridge structure that will be erected adjacent to the downstream side of the existing vehicular bridge at this location, which spans the Blackhall Little stream. It is to be a standalone, independent structure. The elevation and cross-section of this bridge is shown in the figure below.

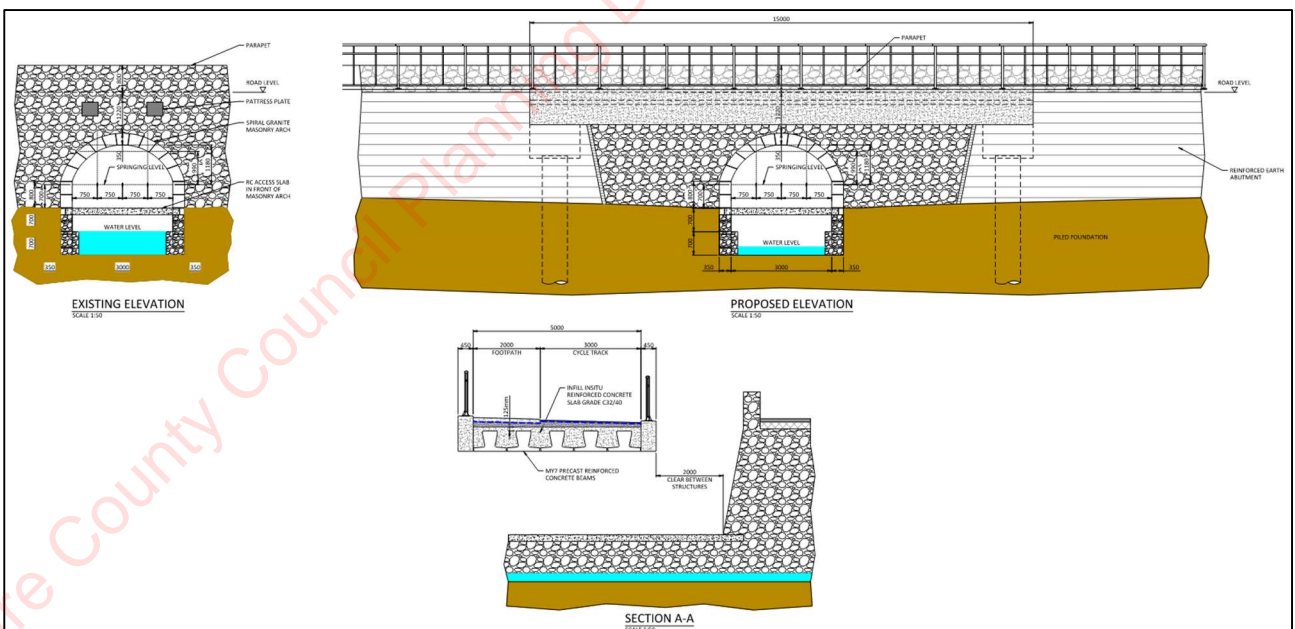


Figure 6: Pedestrian Bridge 1 Cross-Section and Elevation

PEDESTRIAN BRIDGE 2

This is a new pedestrian and cycle bridge structure that will be erected adjacent to the upstream/western side of the existing Kildare Bridge at this location and is to be a standalone, independent structure, that shall also support new water main assets. New wastewater rising mains shall also be installed underground, adjacent to this bridge structure, to its west. The elevation and cross-section of this bridge is shown in the figure below.

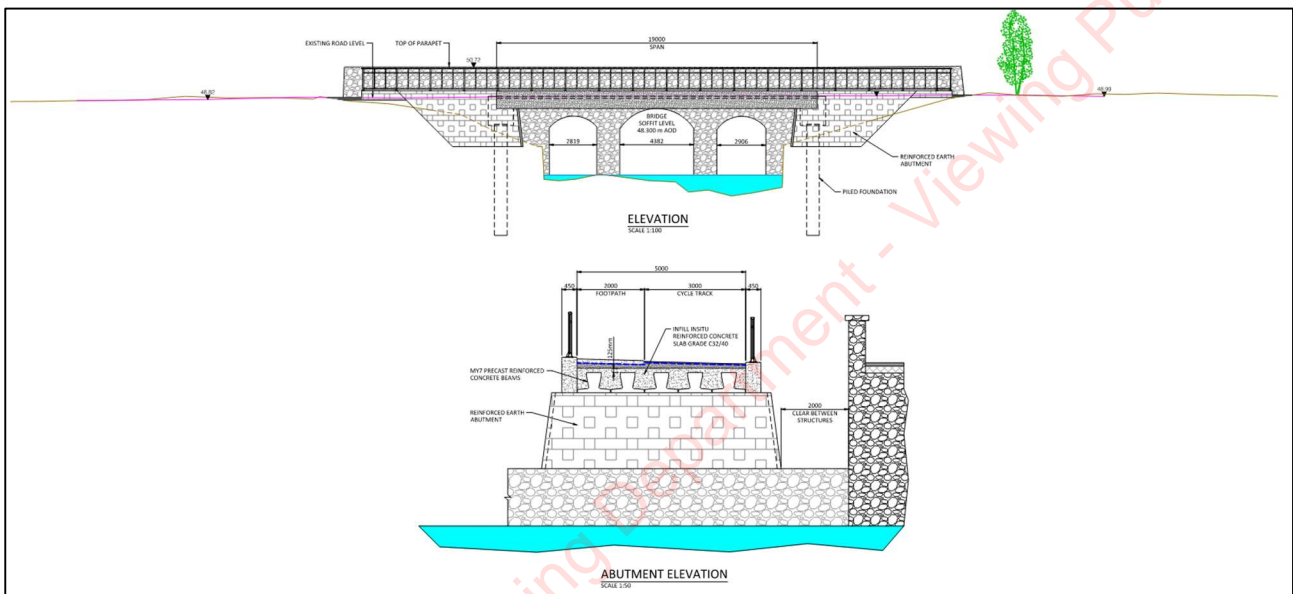


Figure 7: Pedestrian Bridge 2 Cross-Section and Elevation

PEDESTRIAN BRIDGE 3

A new pedestrian and cycle bridge structure is to be provided as part of the Strategic Housing Development scheme, over the Blackhall Little, linking the residential units with the proposed scout's den and creche. The new bridge structure will also support a gravity wastewater pipe, to facilitate a connection over to the location of the proposed strategic wastewater pumping station. The elevation and cross-section of this bridge will be similar to Pedestrian Bridge 1, shown in Figure 6.

FUNCTION OF THE STRUCTURES

The function of the structures is to carry motorists, pedestrians and cyclists over the two watercourses, the River Rye and the Blackhall Little Stream, that dissect the proposed development. The structures are to have little or no impact on the adjacent flood plain and properties. A freeboard of 600mm between the design flood level and the minimum bridge soffit level has been adopted. The location of bridge supports will be located outside of the flood plain where practically possible. The purpose of this report is to discuss the various options of structural form to minimise the impact on the surrounding environs.

ALIGNMENTS AND CROSS-SECTIONS

The vertical and horizontal alignments are designed by OCSC. They are in accordance with TII standard DN-GEO-03031 Rural Road Link Design. A design speed of 60 kph is adopted for the development. The road bridge design consists of a 7m wide single carriageway with a hard paved verge, footpath and cycle track. The pedestrian bridges are 5m wide between parapets and have a 2m wide footpath and a 3m wide cycle track.

GROUND CONDITIONS

A number of percussion boreholes, rotary cores, dynamic probes and trial pits have been undertaken on the site. The existing ground strata consist of a brown overlying a black sandy gravelly clay which is consistent in the Leinster region. Occasional cobbles are present in the clay, which is limestone in origin. The underlying bedrock consists of strong limestone interbedded with strong calcareous mudstone.

STRUCTURE OPTIONS

Three options have been explored for the development:

1. In-situ reinforced concrete bridge deck.

2. Precast reinforced concrete bridge deck.
3. Composite steel girder and in-situ bridge deck.

All options are integral in their abutments to minimise future maintenance requirements and adhere to the TII standards. The abutments are formed of reinforced concrete which sits on bored concrete piles in all instances.

The evaluation of the options considered in the remainder of this report relates to the road bridges only. The pedestrian bridge options are identical in nature but have a narrower bridge deck. i.e the options for the pedestrian bridge deck construction are in-situ reinforced concrete, precast beams and an in-situ deck, and a steel girder with an in-situ deck. The evaluation of the options and the recommendation in the following chapters are applicable to both road bridges and pedestrian bridges.

3 TECHNICAL EVALUATION

OPTION 1 – IN-SITU REINFORCED CONCRETE BRIDGE DECK

A reinforced concrete bridge deck continuous over pier supports (where applicable) and integral at the abutment bank seats and a voided deck. For a span length of 25m, the depth of the deck is approximated at 1.25m.

The technical advantages of this option are:

- The supports are outside the width of the flood plain, eliminating the risk of scouring and an effect on the existing hydrology.
- Integral construction removes the need for bearings and expansion joints at deck level.
- Concrete will require minimal future maintenance over the river.
- The geometry of the structure on plan and elevation is easily manipulated

The technical disadvantages of this option are:

- The construction of in-situ concrete options required significant falsework and formwork over the river.
- There is a significant time required in steel fixing, with less quality control than is typically available for precast construction, leading to long-term durability and maintenance issues.
- There are multiple pours required leading to cold-formed joints and potential water ingress locations at small void locations.

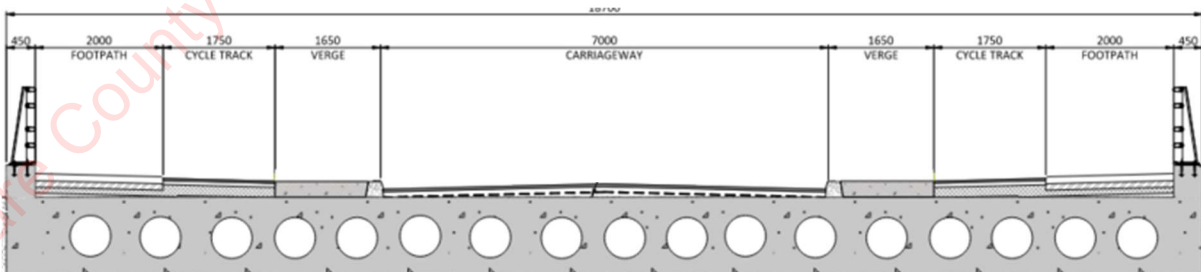


Figure 8: Reinforced Concrete In-situ Deck

OPTION 2 – PRECAST REINFORCED CONCRETE BRIDGE AND IN-SITU DECK

A precast concrete bridge deck is simply supported at abutment and pier locations with an in-situ deck. All structures are integral at the abutment bank seats. For a span length of 25m, the depth of the deck is approximated at 1.20m.

The technical advantages of this option are:

- The supports are outside the width of the flood plain, eliminating the risk of scouring and an effect on the existing hydrology.
- Integral construction removes the need for bearings and expansion joints at deck level.
- Concrete will require minimal future maintenance over the river.
- Falsework and formwork are largely reduced in comparison to an in-situ option.
- Quality control is factory controlled.
- Steel fixing and shuttering on-site are significantly reduced, as are the hazards and risks associated with the works, and construction over a watercourse.
- The available span lengths for precast products will suffice for all bridge structures, bringing the economy to the scheme from repetition.

The technical disadvantages of this option are:

- The single-span option is not as efficient as the two-span option of Option 1 (Applicable at 1no. structure only)
- The heavy lifting of prefabricated elements

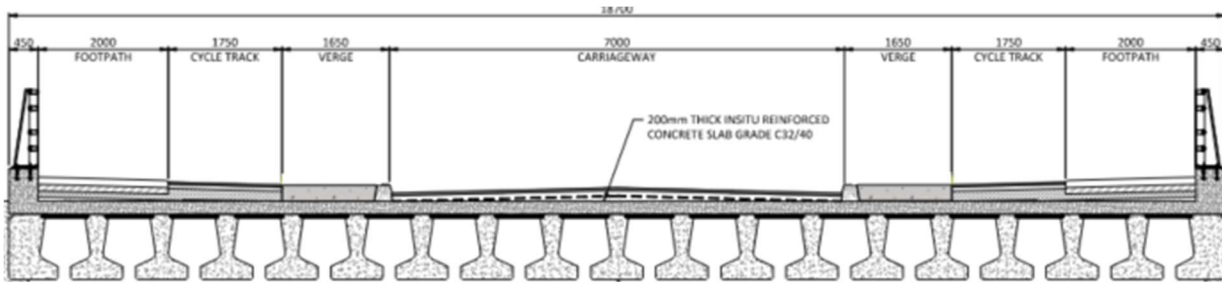


Figure 9: Precast Beams and In-situ Deck

OPTION 3 – COMPOSITE STEEL GIRDER AND IN-SITU DECK

A steel girder bridge beam arrangement with an in-situ deck. All structures are to be integral at the bridge abutments. The bridge is continuous over the pier supports where applicable (1no. road bridge structure) The overall depth of the girder and RC deck is approximately 1.2m, 1.0m girder depth and 200mm RC deck.

The technical advantages of this option are:

- The supports are outside the width of the flood plain, eliminating the risk of scouring and an effect on the existing hydrology.
- Integral construction removes the need for bearings and expansion joints at deck level.
- The structure is lightweight in comparison with a concrete alternative.
- The girders are fabricated and assembled off-site

The technical disadvantages of this option are:

- Maintenance - The steel girders will require a paint protection system which will need to be maintained over a period of 120 years, in an area of difficult access over a watercourse.
- The economy is achieved with spans in the vicinity of 25-45m, as opposed to the 15-25m spans required for this development.

- Structural steel availability is low with a large lead in times due to import requirements. Concrete and reinforcement are locally and readily available.

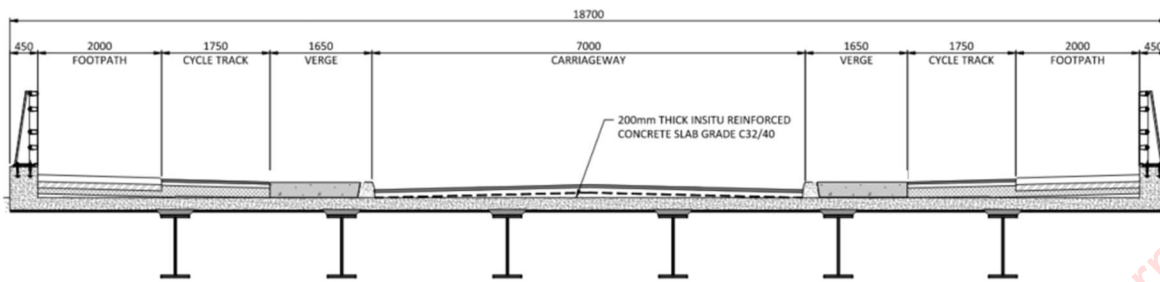


Figure 10: Composite Steel Girder and In-situ Deck

4 ECONOMIC EVALUATION

At this early stage in the project, it is difficult to calculate a precise value for each structural option, particularly with the inflation in construction products witnessed in recent years. As all substructure is the same for all options, the costs below are based upon the superstructure bridge deck only. The figures below are based on Road Bridge 1, which consists of a two-span deck totalling 50m in length, and 18.7m in width.

OPTION 1 – IN-SITU REINFORCED CONCRETE BRIDGE DECK

The in-situ deck will require falsework in the floodplain/watercourse, steel fixing and shuttering. The supports remain consistent across all options. The rate used to calculate the deck construction is €1200 / m². Note, that the rate includes costs for falsework, reinforcement, concrete, pavement installation, waterproofing, and parapet install. The total cost is 50m x 18.7m x 1200 = **€1,122,000**

OPTION 2 – PRECAST REINFORCED CONCRETE BRIDGE AND IN-SITU DECK

The precast beams will be manufactured and lifted on-site. The in-situ deck will be constructed on top of the permanent shuttering planks, eliminating any falsework in the watercourse. The current rate for the precast beams is €450 per metre. The number of beams per span is 18no. The rate used to calculate the deck construction is €625 / m². Note, that the rate includes costs for lifting operations, reinforcement, concrete, pavement installation, waterproofing, and parapet install.

Construction Cost: Precast Beams = 18no. x 2no. spans x 25m per beam x €450 =
€405,000

Deck Construction = 50m x 18.7m x 625 = €584,375

Total Cost = **€989,375**

OPTION 3 – COMPOSITE STEEL GIRDER AND IN-SITU DECK

The steel girder option requires a paint protection system to be applied to the beams prior to site installation. The rate for structural steel supply including the paint protection system is €3000 per tonne. The cross-sectional area per girder is 0.06m² allowing 10% for connections. There are 6no. girders are required to take the deck cross-section. Note, that the cost does not include future maintenance requirements.

Construction Cost: Steel Girders = 6no. x 2no. spans x 25m per beam x €3000/tonne
x 7.85 t/m³ x 0.06 m²/girder = €423,900
Deck construction (as before) = €584,375
Total Cost = **€1,008,275**

The land take requirement and substructure are the same for all three options. Option 2 is the cheapest option and has very low future maintenance costs. The cost of falsework and reinforcement tonnage contribute significantly to the total construction cost of Option 1, making it the most expensive option. Although Option 3 is not much more expensive than Option 1, the future maintenance costs over the design life of the steel girder option are viewed as a substantial additional cost, ranging in the hundreds of thousands.

5 AESTHETIC EVALUATION

The aesthetics of the bridge structures is an important aspect to consider. The scale and diversity of the development will create various viewing angles for all structures. However, a balance is required between function, value, constructability, and aesthetics. Due to the traditional structural nature of each bridge option, the aesthetics will be inherently similar i.e. a beam and slab solution. The optimisation of the aesthetic between the three options is achieved by reducing structural depth, creating a slim, clean line visual for the viewer and reducing the impact on its surroundings. Another consideration is the view of the structure for the road user, pedestrian and cyclist, so pavement type and parapet aesthetic are important considerations.

OPTION 1 – IN-SITU REINFORCED CONCRETE BRIDGE DECK

The in-situ deck is estimated as 1.25m in depth, while this is only fractionally deeper than the alternatives, it will have the greatest impact on the surroundings. There is an option to create a cantilevered narrow edge than can support the footway and parapet on the road bridges, however, this is difficult to form, shutter and steel-fix over a watercourse.

OPTION 2 – PRECAST REINFORCED CONCRETE BRIDGE AND IN-SITU DECK

The precast beam option is 1.2m in depth. There is an option to precast an edge beam with a curved or tapering soffit which can create a shadow effect which appears to make the deck shallower to the eye. Forming the edge beam is a controlled factory process and it can easily be dropped into position and tied in with the in-situ deck pour. Various options can be considered at tender and detailed design stages.

OPTION 3 – COMPOSITE STEEL GIRDER AND IN-SITU DECK

The composite steel and in-situ deck will be 1.2m deep. The cantilevered deck is a natural visual line for a narrow element, creating the least impact on the surrounding area. Over the lifetime of the structure, significant maintenance will be required for the steelwork, unless this is undertaken in a timely manner, any paint flaking or corrosion pitting can become a detrimental aesthetic.

6 MAINTENANCE REQUIREMENT EVALUATION

The maintenance requirements for a bridge structure can be the largest cost over its design life if not fully considered in the concept. They can largely outweigh the initial construction cost if not 'designed out' effectively, and in instances, lead to the requirement of a complete structural replacement. The key items to consider in the maintenance of a bridge are materials, bearings, joints, and workmanship. The three options proposed are integral structures, hence, bearings and expansion joints have been designed out of any future maintenance requirements. Resurfacing and waterproofing of the RC deck are common to all three options, so they are not further considerations.

OPTION 1 – IN-SITU REINFORCED CONCRETE BRIDGE DECK

The maintenance costs for the in-situ option will be low. The risk with the in-situ pour is in the quality of workmanship and cover to reinforcement. Any areas that do not achieve the required cover, due to lower quality control associated with on-site works, may be subject to reinforcement corrosion and concrete spalling over time.

OPTION 2 – PRECAST REINFORCED CONCRETE BRIDGE AND IN-SITU DECK

The precast option has the least maintenance costs if any. The quality control of the reinforcement and tendon fixing for the precast beams will reduce the risk of corrosion and spalling in the future. The high grade of concrete strength, typically C50/60 will also increase the resistance to penetrating chlorides, carbonation and freeze-thaw attack.

OPTION 3 – COMPOSITE STEEL GIRDER AND IN-SITU DECK

The composite steel and in-situ deck will require a maintenance schedule for the girders. The paint system is likely to require a full refurbishment after approx. 25 years. This will be a substantial cost in the design life of the structure requiring access and encapsulation over the watercourse.

7 FURTHER CONSIDERATIONS

HYDRAULIC CONSIDERATION

A flood study has been undertaken for the entire scheme. The flood plains have been considered in the calculation of the bridge spans, flood levels and clear heights to the bridge soffit, which remains constant for all three options. For this report, the hydraulic criteria do not impact the three options considered.

HEALTH AND SAFETY CONSIDERATIONS

Other than standard construction-related health & safety issues, the primary health and safety concern with the construction of this bridge is working adjacent to and over a river.

Option 1, the in-situ deck, requires considerable falsework over the watercourse. Shuttering, fixing and casting the deck will be time-consuming and labour intensive, giving a high potential for incidents.

Option 2, the precast concrete beam option, requires the lifting of heavy precast elements. However, once the main beams are in position, precast panels are laid across the beams from a safe working platform for the in-situ works, which are considerably less intense than Option 1 with regard to reinforcement size and quantity. The prefabrication of the precast beams reduces the time for construction on site, which is a significant reduction of risk for the scheme.

Option 3, the steel girder and in-situ deck offer similar health and safety benefits as Option 2. There is slightly more time and consideration in the cantilevered deck edge which is likely to be cast in situ, hence falsework supported off the main beams is required. However, a proprietary product may be available to attach to the main girder prior to lifting in, or perhaps the cantilevered deck may be offered as precast, both can be considered at the detailed design stage.

CONSTRUCTION AND BUILDABILITY

The construction and buildability of a bridge over a river are critical considerations. The use of precast beams in Option 2 and the prefabricated steel members in Option 3 give them a distinct advantage over Option 1, which requires falsework over the river to carry out the in-situ construction.

While Options 2 and 3 do not require falsework over the river, they do require significant transport and crane operations to install the heavy precast/prefabricated elements. There is very good access to the development from the eastern side via N4 and regional roads from Leixlip and Maynooth.

Option 1, while of relative standard construction has some complex falsework requirements over the river. There will also be restrictions on the time of year that construction can take place due to fisheries and flood considerations. Option 2 is a standard form of construction which has been commonly used in Ireland in recent decades and as such would be the most straightforward from a buildability perspective. Similarly, Option 3 is a simple form of construction, but consideration has to be given to forming the deck, which is not as straightforward as Option 2 as previously described.

GROUND CONDITIONS

The ground strata are formed of topsoil underlaid by clay. The brown/black clay varies in stiffness with depth and can be described as typical conditions across the North Leinster region. Beneath the clay a very strong limestone bedrock is present. As all bridge options are integral piled solutions that extend to bedrock, the ground conditions do not affect the three options presented.

8 RECOMMENDATION

In addition to whole-life costs, the most critical technical considerations in evaluating the options proposed for these bridges are:

- Construction over a watercourse
- Maintenance considerations

Option 1 has the highest cost and most complex construction requirements. There is higher health and safety, constructability and environmental risk associated with the in-situ works over a watercourse. There are greater time and labour requirements for the workforce on-site. The maintenance costs and aesthetics are similar for both concrete options.

Option 2 has the lowest cost and maintenance requirements and simplest construction requirements. The aesthetics can be altered via a precast edge beam at the detailed design stage if required. The health and safety and constructability aspects of the proposal are advantageous over all the other options. There are economic benefits from repetition in the prefabrication of standardised precast beams for all bridge locations across the development. Alternative solutions such as girders will vary in plate thicknesses and depths, while in-situ decks will require differing reinforcement sizes and additional design and construction timeframes.

Option 3, while construction cost is competitive with the other options, has a large cost implication due to future maintenance requirements. The construction sequence is relatively simple and there are reduced health and safety risks due to prefabrication off-site. The narrow deck profile will give the impression of a 'light' design in comparison to a concrete alternative.

Based on the points above, Option 2 appears to offer the best solution for the bridge structures required within this development.

9 VERIFICATION

This report was compiled and verified by:

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O'Connor Sutton Cronin & Associates



Kildare County Council Planning Department - Viewing Purposes Only



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APPENDIX 4-6

MOOR PRELIMINARY DESIGN REPORT

Kildare County Council Planning Department - Viewing Purposes Only

PRELIMINARY DESIGN REPORT

MAYNOOTH OUTER ORBITAL ROAD

Sky Castle Ltd
S665
29 August 2022



OCSC

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Kildare County Council Planning Department - Viewing Purposes Only

PRELIMINARY DESIGN REPORT

Maynooth Outer Orbital Road

Sky Castle Ltd
S665
29 August 2022

Kildare County Council Planning Department - Viewing Purposes Only

PRELIMINARY DESIGN REPORT

MAYNOOTH OUTER ORBITAL ROAD



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DOCUMENT CONTROL & HISTORY

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1 INTRODUCTION & DESCRIPTION

APPOINTMENT

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by Sky Castle Ltd to carry out the design of the civil engineering services associated with the development of the proposed Maynooth Outer Orbital Road (MOOR) on lands at Moygaddy, Co. Meath, which is located northeast of the town of Maynooth, Co. Kildare.

SETTING

Maynooth environs is a large growth area, category II Town status located in south County Meath, and is an economically vibrant area with high-quality transport links to larger towns/cities. The Meath Development Plan 2021-2027 outlines the social, economic, and planning context for the Maynooth environ lands, setting the framework for the plan's policies and objectives. It has a core strategic vision that seeks to ensure that future growth is based on principles of sustainable development that meet the needs of residents per National and Regional guidelines. The environs of Maynooth is a Core Economic Area included in the Gateway Core Economic Area located on the M4 corridor. The wider Maynooth Environs Lands proposed land-use zoning includes A2 – New Residential, E1 – Strategic Employment Zones, G1 – Community Infrastructure, D1 – Tourism and H1 – High Amenity.

The delivery of the Maynooth Outer Orbital Route (MOOR) is critical to facilitating residential, high-end employment, tourist, and leisure development in the Maynooth environ lands and fulfilling the transport infrastructure needs in proximity to Maynooth University and Maynooth town.

ADMINISTRATIVE JURISDICTION

The proposed development is located primarily in the jurisdiction of Meath County Council (MCC), and therefore the Maynooth Outer Orbital Route design and the associated civil engineering services were carried out with reference to the following:

- Meath County Development Plan 2021-2027;
- Maynooth Environs Local Area Plan 2014 (incorporated into adopted MCDP);
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2019);

Even though Maynooth Environs is situated in the Meath County Council administrative area, the Maynooth Environs Local Area Plan contains an objective to liaise with Kildare County Council in the identification, design, reservation and delivery of the section of the Maynooth Outer Relief Road located within the administrative area of Meath County Council. The administrative area of Kildare County Council is located immediately adjacent to the LAP environs lands and some infrastructure improvements will be located within the Kildare County Council (KCC) administrative area. Therefore, the design will also be conducted with due regard to:

- Maynooth LAP
- Kildare County Development Plan
- Maynooth Traffic Management Plan

PURPOSE OF THE DESIGN REPORT

This report sets out to:

1. Coalate all of the work done to date and in particular the preliminary design of the Maynooth Outer Orbital Road
2. Validate the need for the scheme
3. Examine the implications and impacts of the scheme
4. Ensure that appropriate design standards will be applied.

STUDY AREA

The subject site is located on the southernmost extent of County Meath, as shown in Figure 1, aligning with the county boundary to Co. Kildare. It is approximately 1.5km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth – Dunboyne Road, to the east;
- Agricultural lands, to the north and west; and
- River Rye Water, to the south;

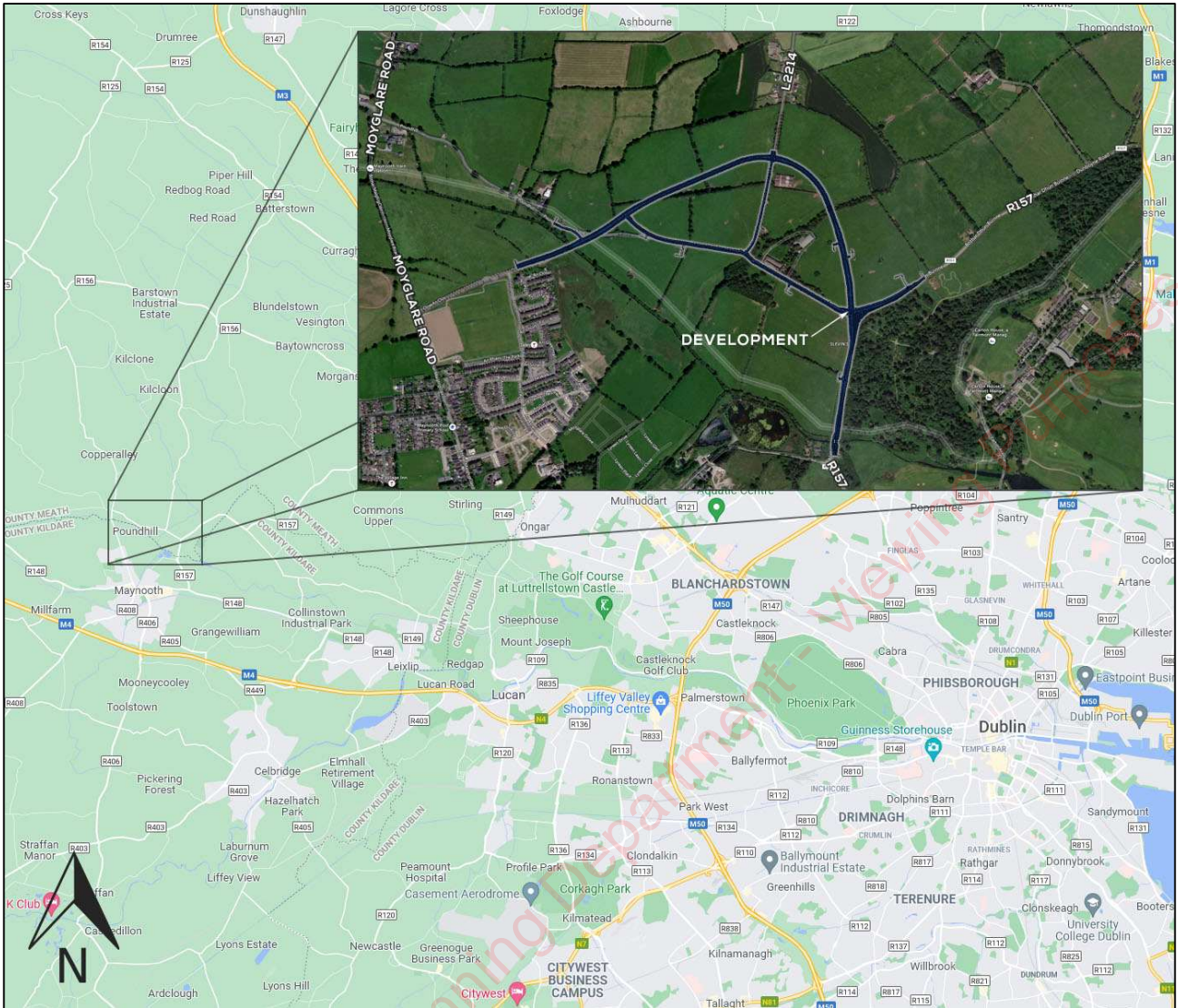


Figure 1: Development Locality Plan

The above image highlights the location of the overall road area and there are small areas of incidental works outside of that for elements such as attenuation facilities, demolition of existing roads, etc.

EXISTING SITE OVERVIEW

The overall total site area is **c.95.7-hectares** and is zoned by Meath County Council for various uses including employment and residential.

The site is currently greenfield and used for agricultural purposes, and can be accessed from the L6219, L2214 and R157 roads that bisect the site.

Ground levels across the site typically fall gently across the site, with a sharp decline at the southern boundary and in the centre of the site, both locations bound the River Rye Water and Blackhall Little Stream respectively.

DEVELOPMENT DESCRIPTION

Planning Permission is sought by Sky Castle Ltd. for the development of the Maynooth Outer Orbital Road (MOOR) in the townland of Moygaddy, Maynooth Environs, Co. Meath.

The proposed road development will consist of the following:

1. Provision of approximately 1,700m of new distributor road (MOOR Arc) 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.
2. 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 L22143 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).
 - (iv) Realignment of a section of the existing L22143 local road and R157, which will entail the demolition of an existing section of the road which extends to circa 3,200 sqm.

- (v) Provision of a new signalised junction at the realigned junction between the L22143 and R157.
 - (vi) Provision of a new signalised junction between the L2214 local road and the MOOR with right-turn lanes on approaches.
 - (vii) Reconfiguration of the L2214 section within the MOOR arc to a one-way from north to south with right-turn lanes, where applicable.
 - (viii) Reconfiguration of the northbound lane of the L2214 within the arc to a shared facility for use by pedestrians and cyclists.
 - (ix) Addition of chicanes on the L6219 and L22143 local road to reduce traffic flow and encourage utilisation of the MOOR.
3. 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 Blackhall Little Stream on the L22143 adjacent to the existing unnamed bridge.
 - (iv) an integral single span bridge on the north-eastern section of the MOOR arc, over the Blackhall Little Stream, and associated floodplain works and embankments.
4. Provision of site landscaping, public lighting, site services and all associated site development works.
5. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

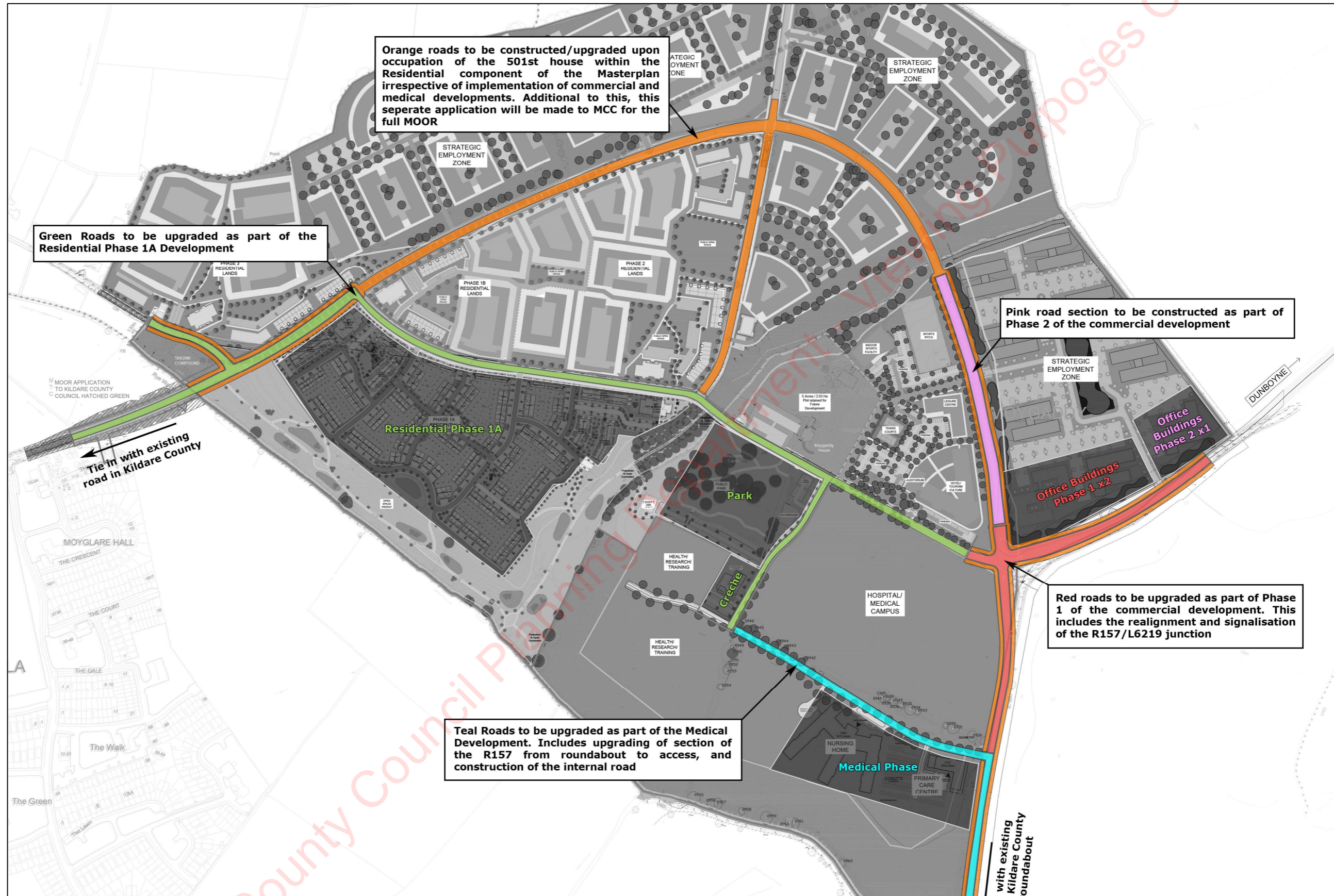
MASTERPLAN CONTEXT

The various masterplan development applications will be submitted on the basis that the MOOR will be delivered in phases, linked to individual planning applications which form part of the wider Masterplan for the Maynooth Environs/Moygaddy lands.

The colour of the first three columns links to the figure on the next page. Specific road infrastructure upgrades will be required depending on the timetable when each phase is constructed. The last column of the table indicates in which scenario year the trip generation of that section of the development will be relevant.

Item	Linked Road Infrastructure	Trip Generation Year
Medical Phase		
Primary Care Centre & Nursing Home	Upgrade the R157 from the roundabout in the south up to the access to medical facility	Opening Year (2025)
Medical Research Campus	Full MOOR already operational	Design Year (2040)
Public Hospital	Full MOOR already operational	Design Year (2040)
Office Phase		
Office Buildings Phase 1 x2	Upgrade the R157 north of medical facility access up to the junction between the R157 and the L6219	Opening Year (2025)
	Upgrade R157/L6219 junction to 3-leg signalised junction	Opening Year (2025)
	Upgrade R157 east of junction towards Dunboyne	Opening Year (2025)
Office Buildings Phase 2 x1	Construct the first section of the eastern leg of the MOOR (northern leg of junction) up to the stream	Opening Year (2025)
Office Buildings Phase 3 & 4 x6	Full MOOR already operational	Design Year (2040)
Residential Phases		
Residential Phase 1A, Park & Creche	Construct link road in the west and upgrade road up to junction with R157	Opening Year (2025)
Residential Phase 1B	Full MOOR already operational	Opening Year + 5 (2030)
Residential Phase 2	Full MOOR already operational	Design Year (2040)
Residential Phase 3	Full MOOR already operational	Design Year (2040)
Other Phases		
Tourism and Sports Campus	Full MOOR already operational	Opening Year + 5 (2030)
Hotel	Full MOOR already operational	Design Year (2040)

Table 1: Moygaddy Masterplan Phasing



NEED FOR SCHEME

The provision of the Maynooth Outer Orbital Route (MOOR) is an objective of the Meath County Development Plan 2021-2027 within the Maynooth Environs Written Statement objective CER OBJ 1 that states:

"It is an objective of the Planning Authority to require the submission with any application for development of lands at Moygaddy a Master Plan for the written agreement of the Executive of the Planning Authority which shall address the following:

- Proposals for accessing of lands which shall adhere to the permitted Part VIII realignment of the junction of the R157 Regional Road and Moygaddy Road.*
- Proposals providing for the delivery of the Maynooth Outer Relief Road in tandem with development."*

It is an objective within the Maynooth Local Area Plan to provide the Outer Orbital Route to ease traffic congestion and to improve quality of life in Maynooth. This plan notes strategic transport improvements are required and the Maynooth Local Area Plan has a critical role in ensuring the needs of the future population are planned for, this includes the delivering of strategic transport improvements particularly the completion of the Maynooth Outer Orbital Route.

CONSULTATION

OCSC held discussions with Kildare County Council (KCC) and Meath County Council (MCC) on this scheme, as detailed below:

- OCSC met with MCC on 19 July 2021 to open preliminary discussions on the design of the MOOR. In attendance were Martin Murry (Director of Services for Infrastructure) and Nicholas Whyatt (Senior Engineer Transportation). Since this meeting, a Traffic Modelling Scoping Report has been issued to MCC. It should be

noted that KCC specifically requested a Dynamically Assigned traffic model for this scheme. The Developer opted to request OCSC to utilise the PTV Vissim micro-simulation software package to prepare the requested model, which could then be incorporated into the wider KCC transport study for Maynooth as a whole.

- As noted previously, although the scheme is planned within the MCC 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 were Brigette Rea, Daragh Conlan, George Willoughby, Jonathan Hennessy, and Lisa Kirwan, all from KCC. The same Traffic Modelling Scoping Report has also been issued to KCC.
- OCSC met with MCC on 20 June 2022. In attendance were Michael Costelloe, Joe McGarvey and Paul McNulty. This meeting aimed to establish the outstanding design requirements of the MOOR. Several comments were received, which were included in the design.

In addition, the following submissions were made as part of the proposed development:

- 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 (Appended as Annexure D).
- 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.

2 CHARACTERISTICS OF THE DEVELOPMENT

DEVELOPMENT & SITE OVERVIEW

The MOOR will be a single carriageway road connecting the Maynooth environs between the east and west. A portion on the western side will be constructed in County Kildare and tie in with existing infrastructure by means of a new bridge and road section. This can be seen in the figure below.

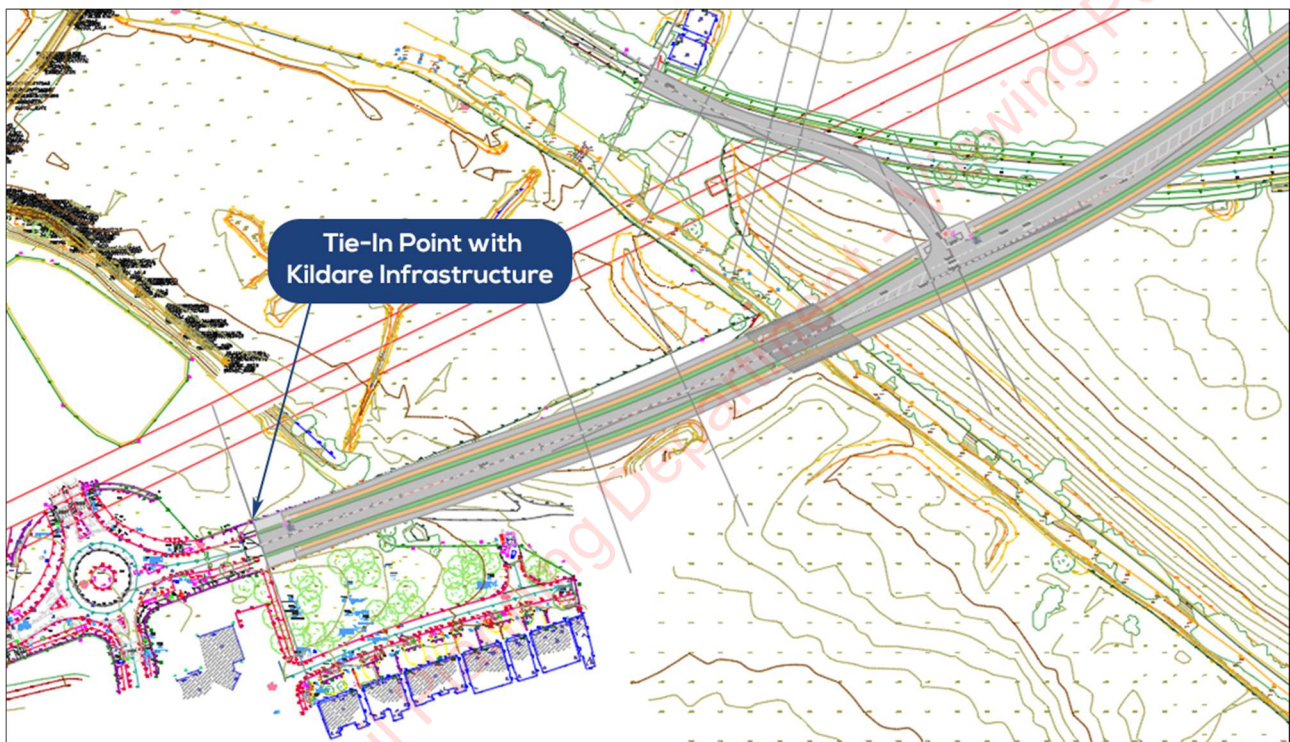


Figure 2: MOOR Western Kildare Tie-In

On the eastern side, the road will again tie in in County Kildare, just north of the roundabout on the R157. A separate cycle and pedestrian bridge will be constructed alongside the existing bridge to allow for continuation of this infrastructure, tying in with existing infrastructure in County Kildare. The tie-in location has been agreed with Kildare and on review of planning compliance submission made by Cairn Homes. This can be seen in the figure below.

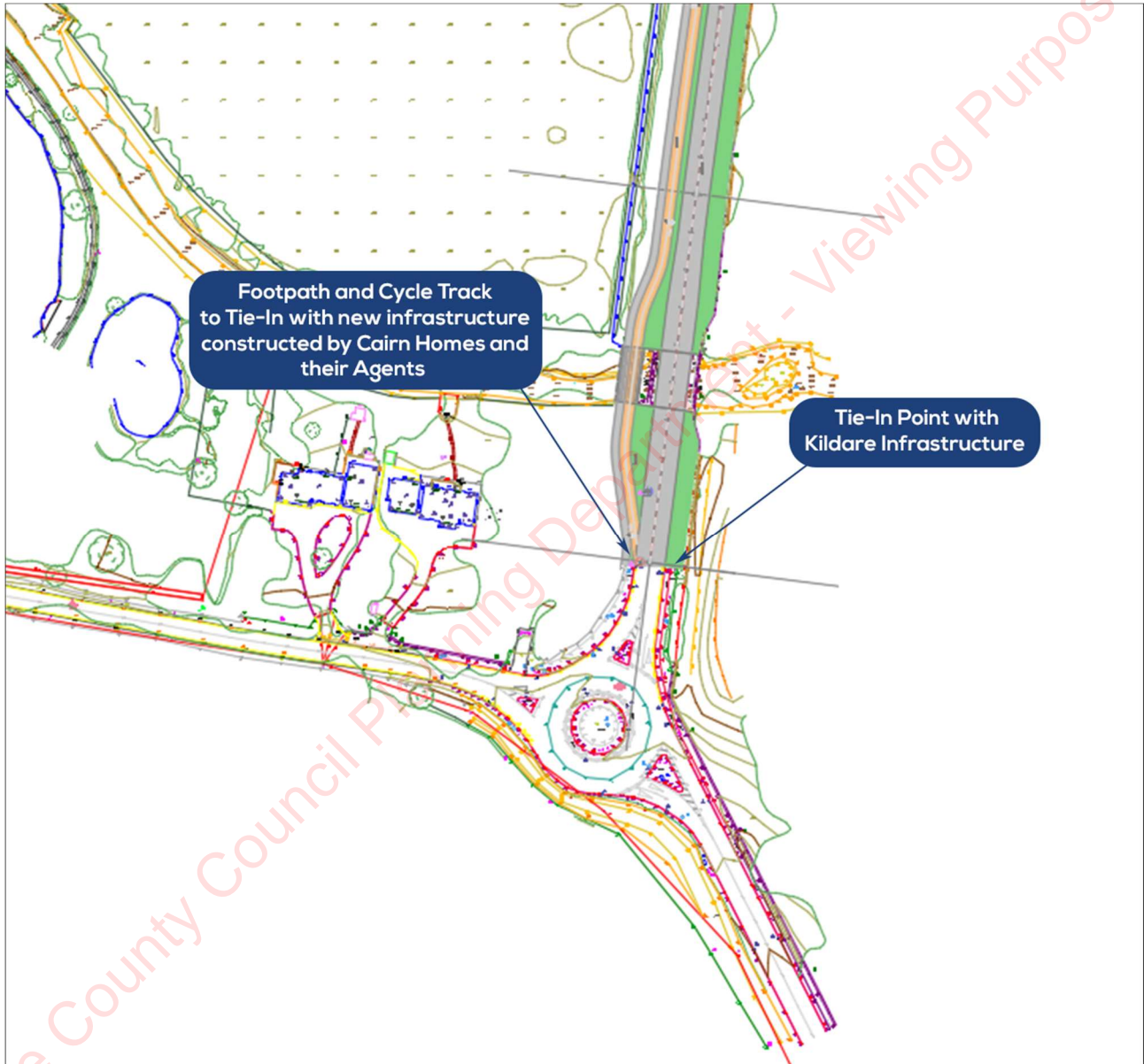


Figure 3: MOOR Eastern Kildare Tie-In

The rest of the MOOR will form an arc through the Maynooth Environs, connecting the western and eastern ends. A portion of the L6219 on the western side will be realigned to accommodate the arc. This section is shown in the figure below.

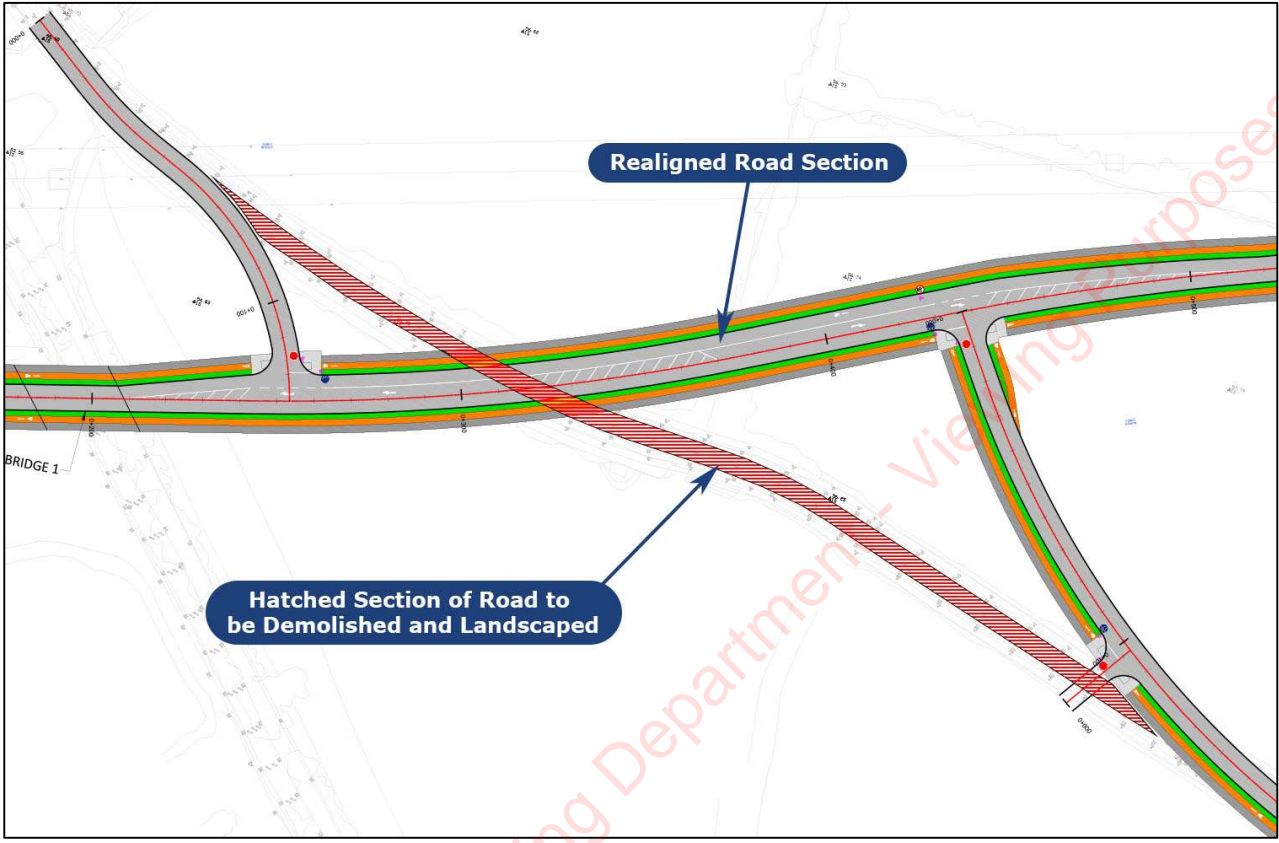


Figure 4: Road Section to be Realigned

The current L2214 (Kilcloon Road) will change to a north-to-south one-way road within the arc. The current south-to-north lane will be converted to a shared facility which can be used by pedestrians and cyclists. The new northern junction between the MOOR and the L2214 will be constructed as a signalised junction. The is shown in the figure below.

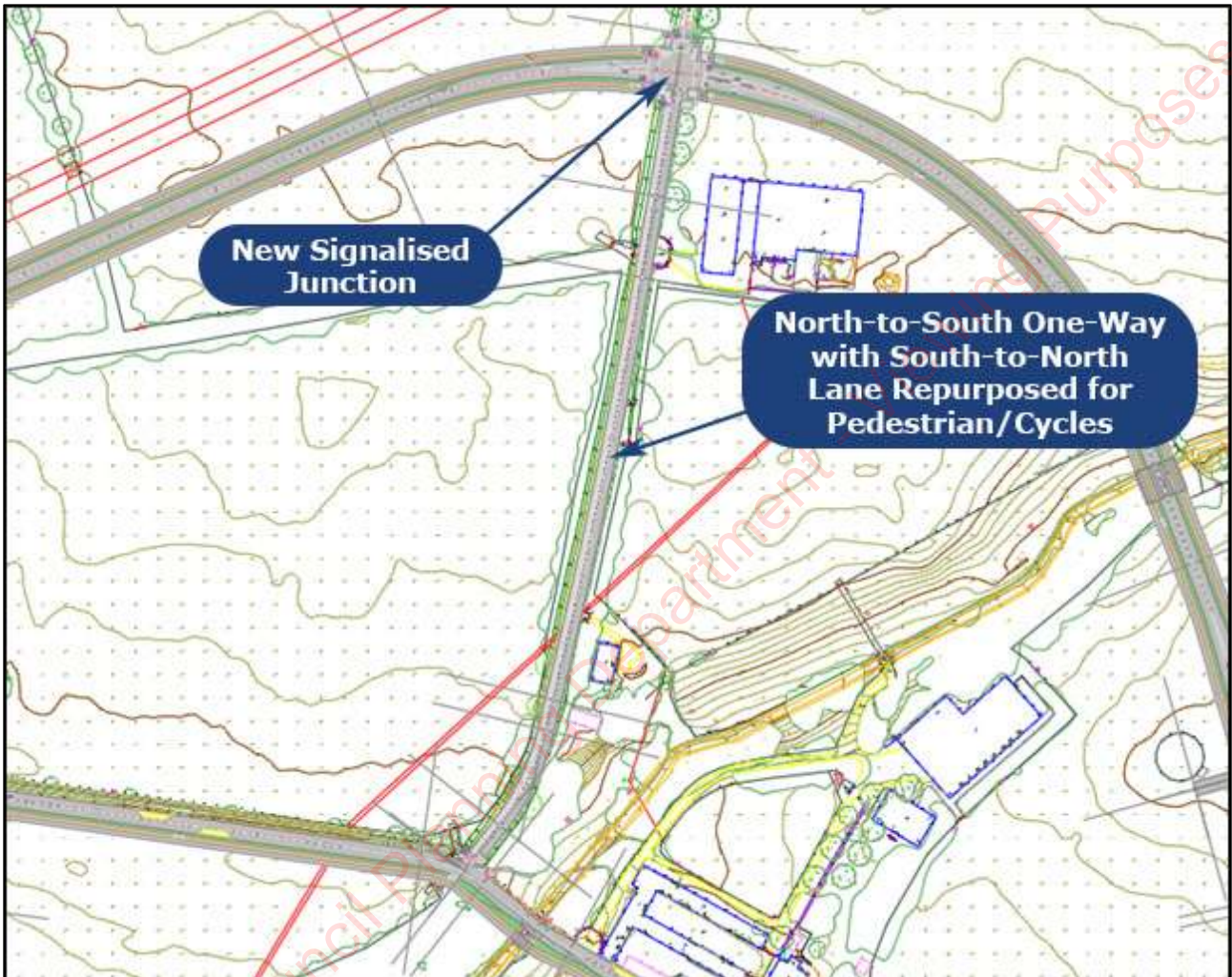


Figure 5: Center of Arc (L2214 - Kilcloon Road)

The junction between the R157, L6219, MOOR and Dunboyne Road on the eastern side of the arc will be realigned and constructed as 4-leg signalised junction, as shown below.

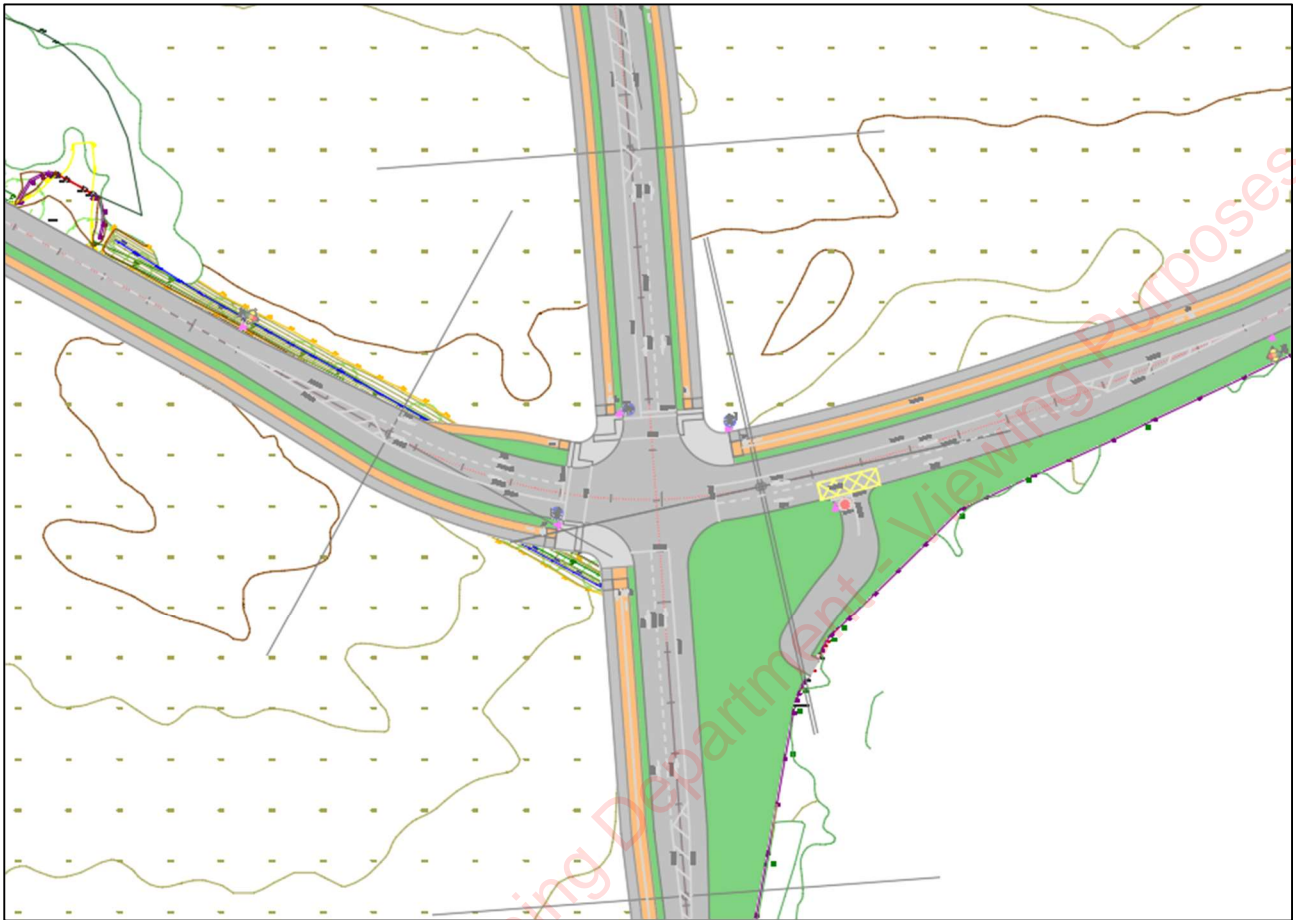


Figure 6: Realigned Signalised Junction on Eastern

For the construction of this junction, a portion of the existing R157 and Dunboyne Road will be realigned, as shown in the figure below.

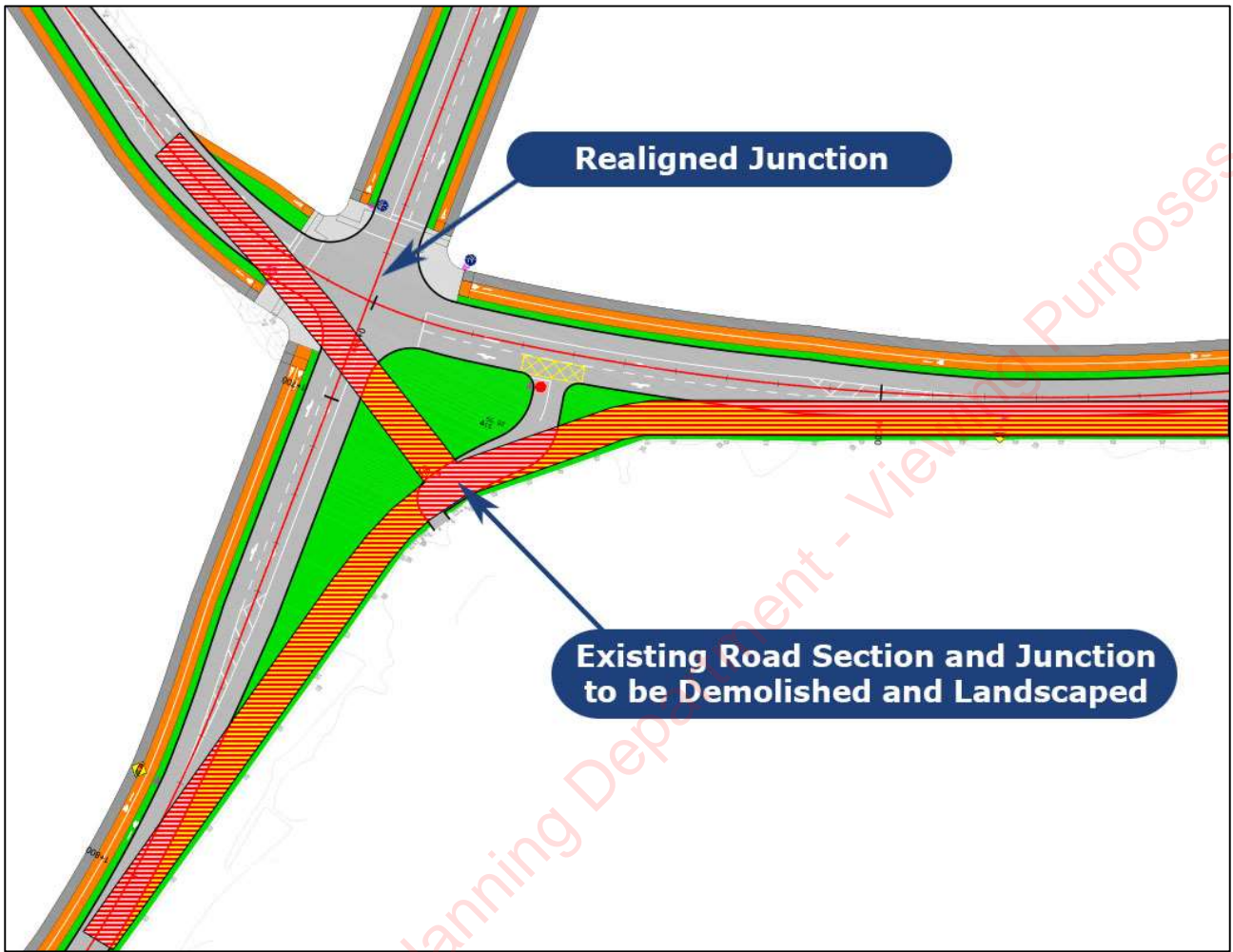


Figure 7: Existing R157/Dunboyne Road Realignment

Four different bridges will be constructed as part of the MOOR. These are highlighted in the figure below.

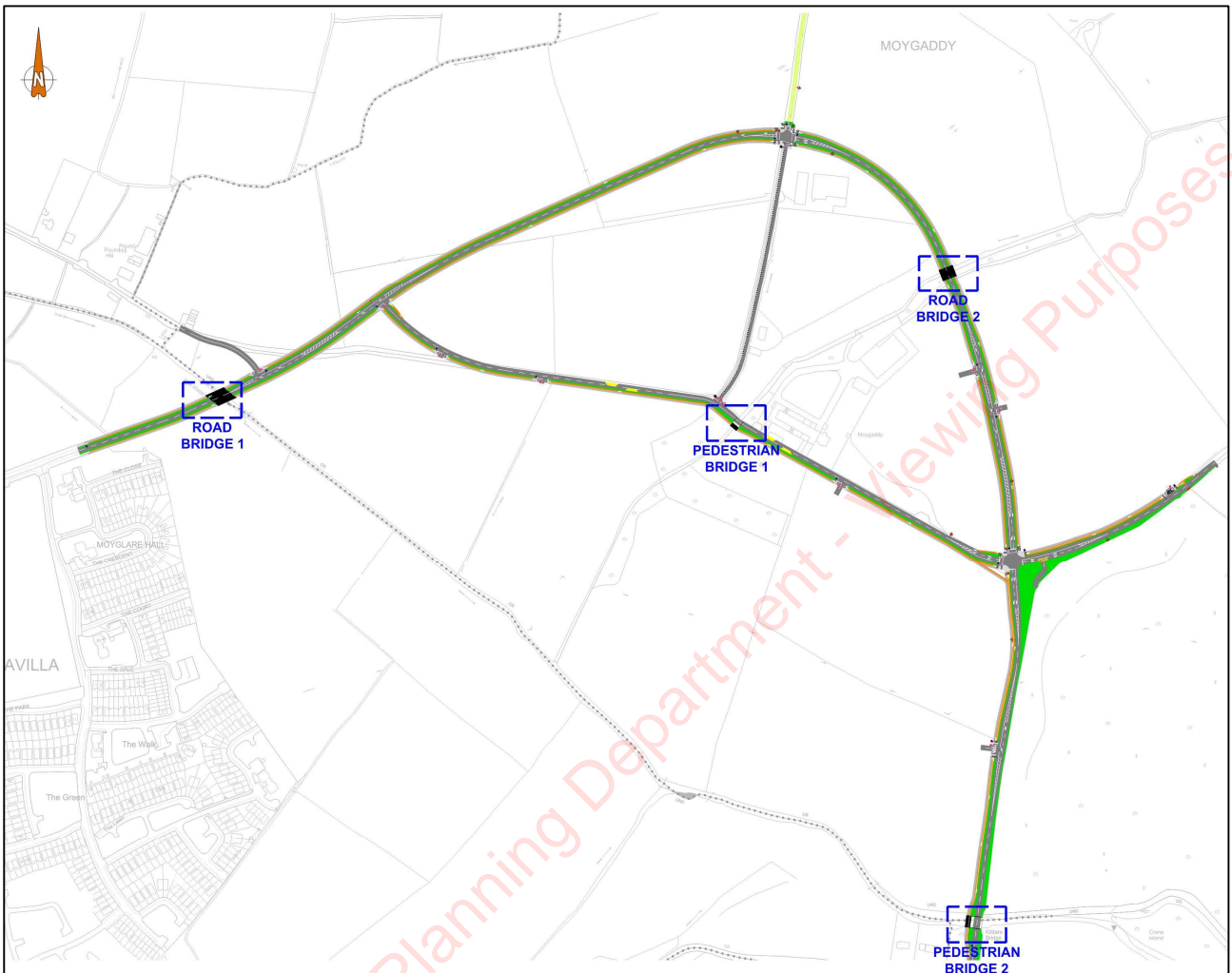


Figure 8: MOOR Bridges

Road bridges 1 and 2 will be new bridges which will be constructed as part of the MOOR. Pedestrian bridges 1 and 2 will be additional structures constructed adjacent to the existing bridge structures to accommodate pedestrian and cycle permeability. More information on these bridges is available in OCSC report "Bridge Options Report" submitted separately.

3 TRAFFIC IMPACT

A traffic assessment was carried out, paying due consideration to the following guidelines below, in order to ensure that the orbital route is designed accordingly to cater for all future development in the nearby lands.

- *Traffic & Transport Assessment Guidelines (2014)* as published by the former National Roads Authority (NRA) now Transport Infrastructure Ireland (TII);
- *Guidelines for Traffic Impact Assessment (1997)* as published by the Chartered Institute of Highways & Transportation;
- *Meath County Council Development Plan 2021-2027*.
- Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections, TII (October 2016)
- Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts, TII (October 2016)
- TA 79/99 "Traffic Capacity of Urban Roads" from the DMRB

The Traffic Impact Assessment was done by means of a Dynamically Assigned Vissim Micro-Simulation model, as requested by Kildare County Council, with the overall aim of defining each junction along the MOOR and detailing the required size of each junction including number of lanes, requirements of turning lanes etc. This document has been submitted as part of this application, under separate cover.

4 COLLISION HISTORY

OCSC interrogated the Road Safety Authority (RSA) website <https://www.rsa.ie/en/RSA/Road-Safety/RSA-Statistics/> in order to ascertain the number, location, date, and severity of collisions in the area in recent years. The site provides details of all accidents by year between 2005 and 2016 (latest available statistics). Collisions/accidents are categorised by severity i.e. fatal, serious, and minor. The statistics also identify what the collision type was i.e. vehicle only, pedestrian, cyclist/motorcyclist etc. In that regard the dataset provides a host of information that can be used to identify the requirements for, and potential benefits of, any road upgrade. The figure below shows an extract from the dataset for the MOOR environs.

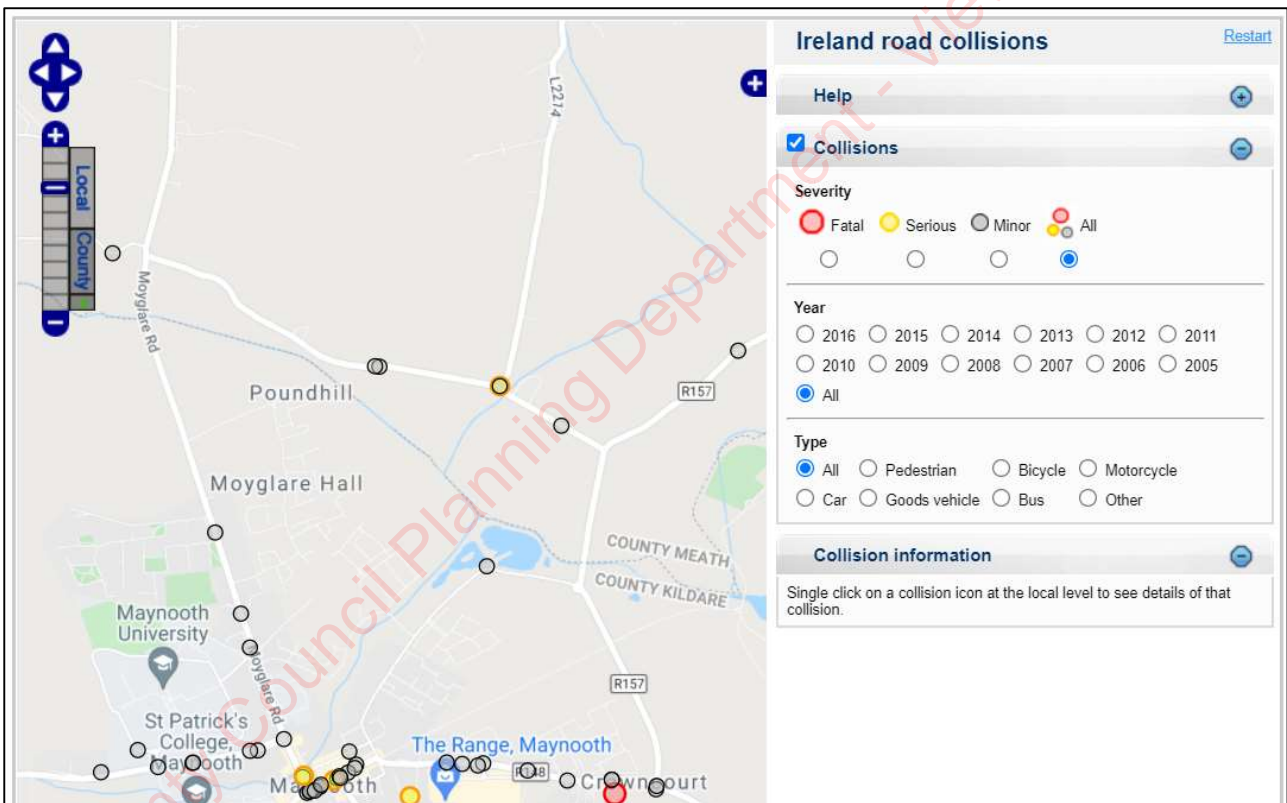


Figure 9: Collision History

OCSC collated the raw collision data into a table in order to assist in the assessment of same. This is shown in table below. The table summarises only those recorded accidents which took place along the L6219 & L2214 that directly relate to the provision of the Maynooth Outer Orbital Route.

RSA Collision History			
Year	Fatal	Serious	Minor
2005	0	0	0
2006	0	0	0
2007	0	0	0
2008	0	0	0
2009	0	0	0
2010	0	0	0
2011	0	1	2
2012	0	0	0
2013	0	0	0
2014	0	0	1
2015	0	0	0
2016	0	0	1
Total	0	1	3

Table 2: RSA Collision Data MOOR Study Area

While there were no fatal accidents over the period, 1 no. serious accidents, and 3 no. minor accidents occurred. There is, therefore, potential safety benefits accruing from completing the remaining section of the MOOR. The provision of the Maynooth Outer Orbital Route will also help alleviate traffic congestion with the centre of Maynooth itself.

5 GEOMETRY & DESIGN STANDARDS

APPLICABLE TECHNICAL STANDARDS

The scheme has been designed in accordance with the Design Manual for Urban Roads and Streets (DMURS) and the following standard documents:

- DMURS;
- National Cycle Manual;
- TD 36/93;
- Report of the Study Group on Dimensions of Agricultural Bridges and Underpasses (UK Dept. Transport; Oct 1985);
- NRA TD 19/13;
- Traffic Signs Manual 2010 with Amendments (July 2013);
- HD 26/06;
- Greater Dublin Strategic Drainage Study (GDSDS);
- Greater Dublin Code of Practice for Drainage Works;
- The SUDS Manual CIRIA 2007;
- The Flood Studies Report (1975) and Supplementary Reports;
- HD 19/12;
- NRA Design Manual for Roads and Bridges (NRA DMRB);
- NRA IAN 02/11 Interim Requirements for the Use of Eurocodes for the Design of Road Structures Amendment No. 1.

ROAD CLASSIFICATION

The movement function of a street is described on DMURS using a hierarchy system that classifies streets into the following categories, as shown in Figure 10:

- Arterial Streets
- Link Streets

- Local Streets

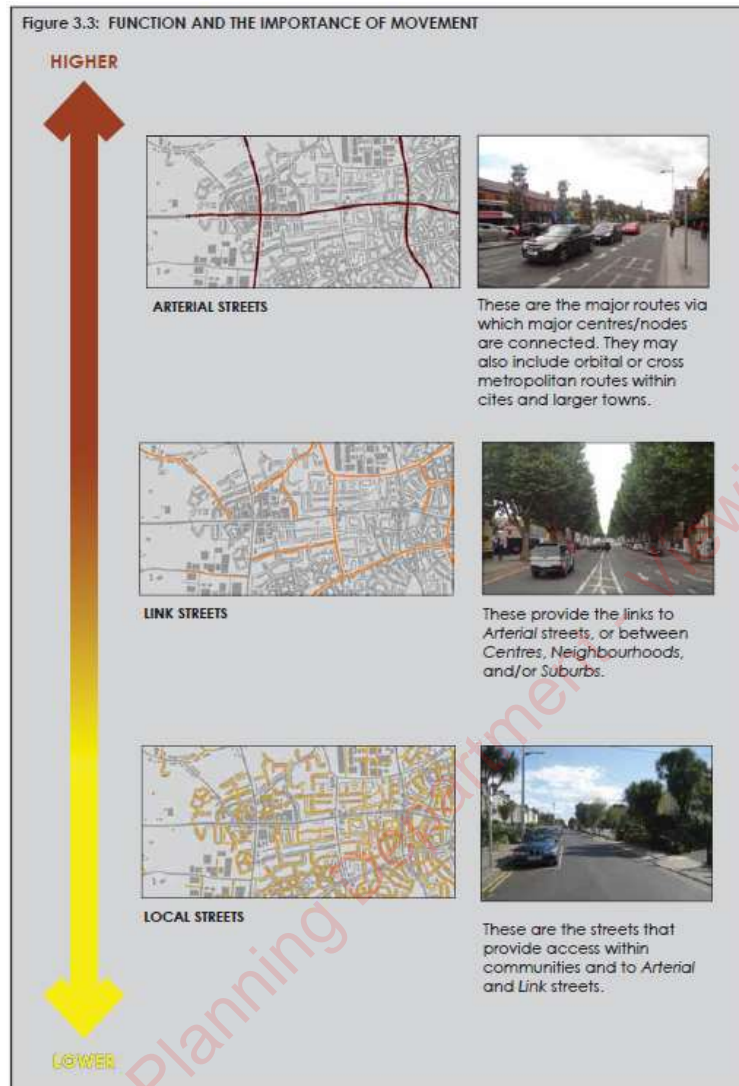


Figure 10: DMURS Hierarchy of Streets

The proposed MOOR will be classified as a **Link Road**. Table 3.1 of DMURS illustrates how this road hierarchy relates to other relevant documents, shown in the table below.

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.

Table 3: DMURS Road Terminology

This designation is appropriate as the nearby M4 serves as a primary distributor road. The proposed link road will provide high quality infrastructure to serve local traffic and cyclists and cater for the future development in the study area.

ROAD DESIGN SPEEDS

The design speed is the maximum speed at which it is envisaged/intended that the majority of vehicles will travel under normal conditions.

The current speed limits within the Study Area are as follows:

- Moyglare Road – Speed Limit 50 km/h;
- L6219 – Speed Limit 80 km/h;
- R157 North of Roundabout – Speed limit 80km/h;
- R157 South of Roundabout – Speed limit 50km/h;
- L2214 – Speed Limit 80 km/h.

The proposed speed limits, which have been workshopped with Meath County Council and ties in with existing speed limits, are shown in the figure below.

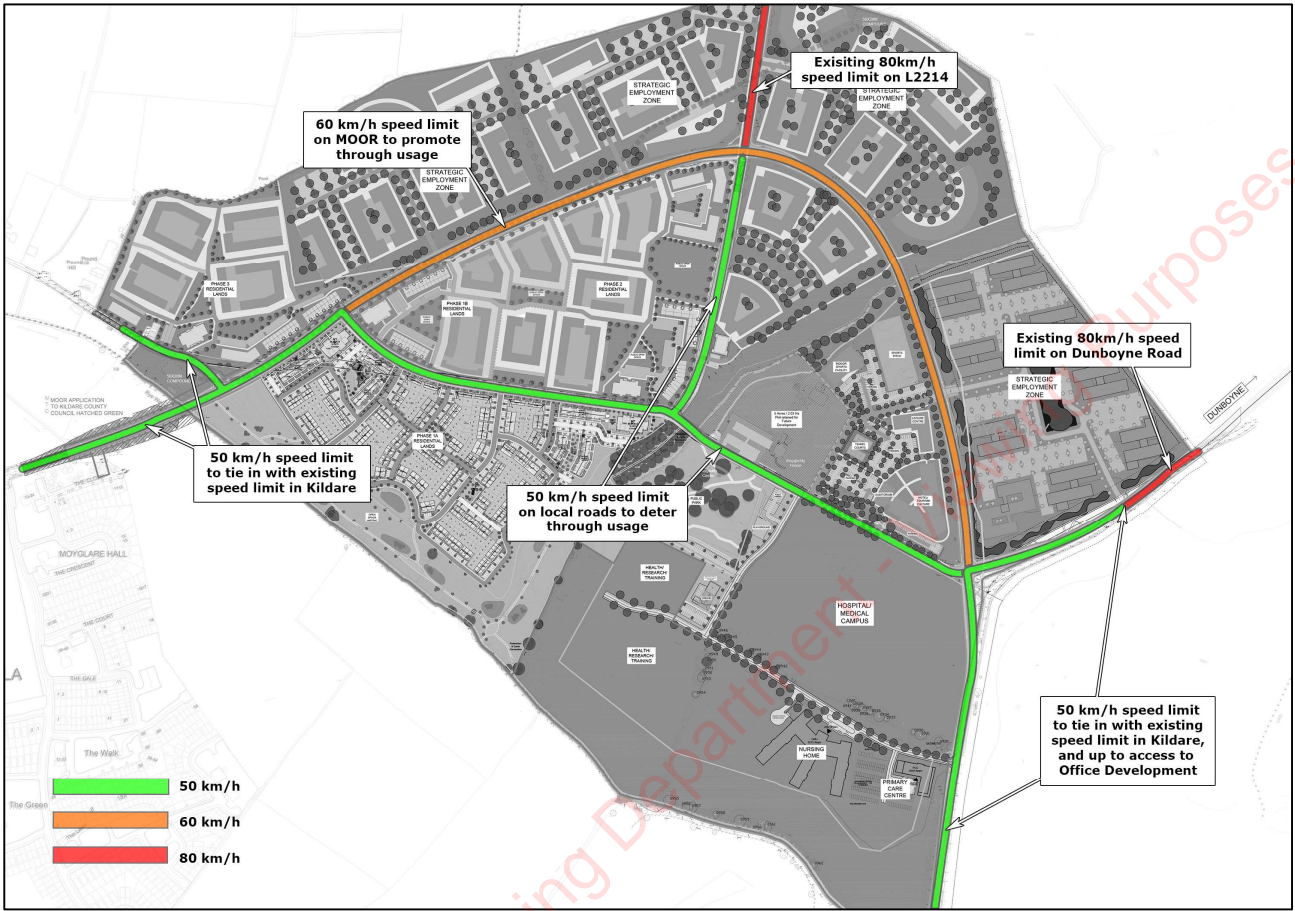


Figure 11: MOOR Proposed Speed Limits

ROAD CROSS SECTIONS

INTRODUCTION

The proposed MOOR is considered as consisting of four main elements. The carriageway, the verge, the footpath, and a cycle track. The proposed cross section is shown below.

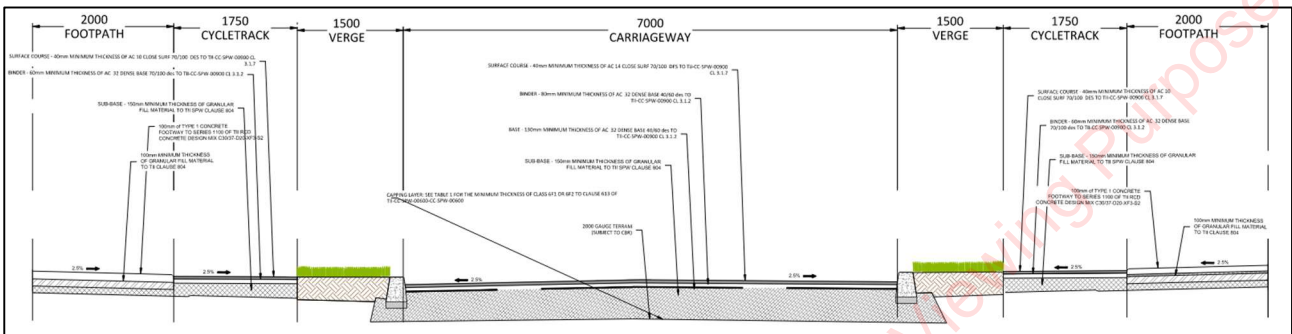


Figure 12: MOOR Cross Section

CARRIAGEWAY

The carriageway cross-section is 7.00m wide (DMURS 4.4.1) as the road will be classified as a Link Road with low to moderate Design Speeds (60 km/h), and will be frequently used by large vehicles, i.e. buses. This carriageway width is selected from Figure 4.55 of DMURS, which is shown overleaf.

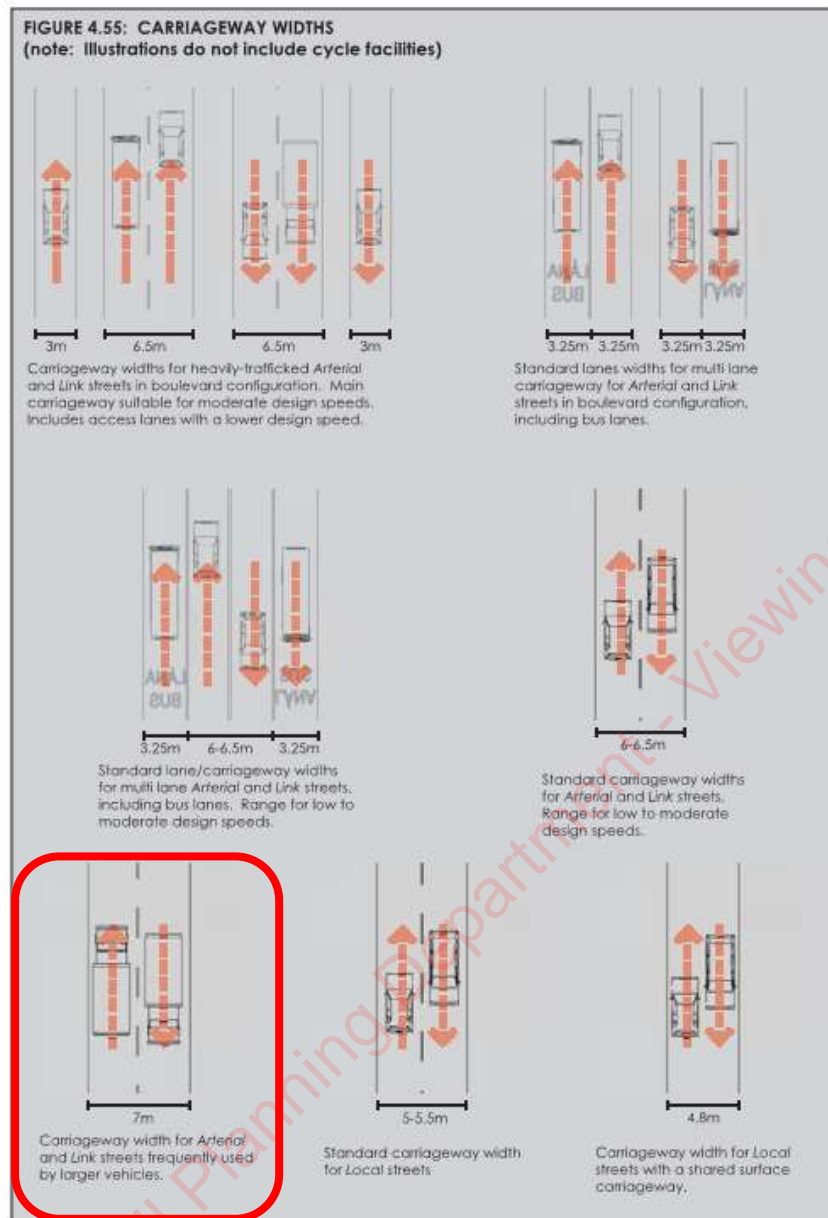


Figure 13: DMURS Carriageway Widths

The selection of this width of carriageway is considered appropriate by OCSC and is in line with the previous Part VIII for the MOOR and also in line with the recently approved Maynooth Eastern Ring Road.

Upgrade works to the R157 will also utilise a 7.0m carriageway width to comply with the MOOR and MERR design.

FOOTPATHS

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

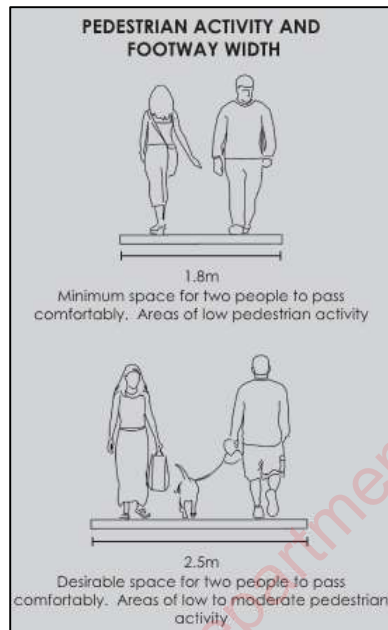


Figure 14: SMURS Figure 4.34 Width

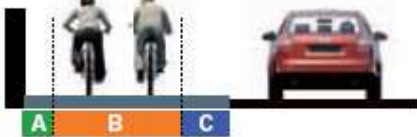
It is determined that the Link Road is defined as suburban in character and as such OCSC regard 2.0m as an appropriate provision given the expected demand. This is in line with the previous Part VIII application.

A minimum of a 2.0m footpath will also be provided along the R157 including pedestrian infrastructure adjacent to the Kildare Bridge to the junction of the R157 & Dunboyne Road.

CYCLE TRACKS

The cycle lanes and crossings were designed in accordance with the National Cycle Manual (NCM). All cycle facilities along the MOOR are off-road and segregated facilities.

Based on the Cycle Width Calculator in the NCM, the estimated appropriate cycle path width is 1.75m, giving room for a single file lane with overtaking room. These cycle paths are one-way and will be located on both sides of the proposed road. The cycle paths are separated from traffic by a kerb and there will be a horizontal separation on the inside, between the cycle path and footpath.



A Inside Edge	B Cycling Regime	C Outside Edge	D Additional Features
Kerb 0.25m	Single File 0.75m	30kph, 3.0m wide lane 0.50m	Uphill 0.25m Sharp bends 0.25m
Channel Gully 0.25m	Single File - Overtaking, Partially using next lane 1.25m	50kph, 3.0m wide lane 0.75m	Cyclist stacking, Stopping and starting 0.50m
Wall, Fence or Crash Barrier 0.65m	Basic Two-Way 1.75m	Raised kerb, dropped Kerb or physical barrier 0.50m	Around primary schools, Interchanges, or for larger tourist bikes 0.25m
Poles or Bollards 0.50m	Single File - Overtaking, Partially using next lane 2.00m	Kerb to vegetation etc. (i.e. cycleway) 0.25m	Taxi ranks, loading, line of parked cars 1.00m (min 0.8m)
	2 Abreast - overtaking (tracks and cycleways) 2.50m		Turning pocket cyclists 0.50m

Example:
To determine required cycle width, select the appropriate Inside Edge, Cycling Regime, Outside Edge and any Additional Features

Channel Gully 0.25m	Single File - Overtaking, Partially using next lane 1.25m	50kph, 3.0m wide lane 0.75m	Around primary schools, Interchanges, or for larger tourist bikes 0.25m
---------------------	---	-----------------------------	---

-0.25m
 +1.25m
 +0.75m
 +0.25m
Required width = 2.50m Note: This is the maximum width for an on road cycle lane. Cycle tracks can be wider.

Figure 15: NCM Width Calculator

It should be noted that Meath County Council have indicated that they wish the design of the MOOR to be consistent and tie into the already completed section at Maria Villa, this may change the requirements set out above from 1.75m in line with the NCM to 2.0m. Further consultation will be required with Meath County Council to clarify this requirement.

Cycle facilities will also be provided along the R157 from the masterplan lands to the Junction of the R157 with the Dunboyne Road. Cycle facilities will also be provided adjacent to the Kildare Bridge. The design of cycle infrastructure along the R157 will be in line with the proposed MOOR design and will take cognisance of the current design of the Maynooth Eastern Ring Road (MEER).

All priority T-Junctions and signalised junctions have been designed in order to achieve the requirements of the National Cycle Manual.

PLANTED VERGE

OCSC have considered the requirements of the width of the planted verge as set out in section 4.3.1 of DMURS and have determined that a minimum of 1.5m is appropriate. Consideration was given to the use of space for a SUDS design that will complement the drainage design of the MOOR. Consideration has also been given to the requirements of the ESB HV wayleave so that the width of the footpath, cycle track and verge could potentially accommodate this service. In addition, the verge can accommodate road signage, lighting columns and other street furniture in order to reduce clutter in the footway.

HORIZONTAL AND VERTICAL GEOMETRY

The alignment of the MOOR was designed so that the geometric elements, including horizontal and vertical curvature, super elevation and sight distance are in line with DMURS, having values consistent with the design speed of 60 km/h.

The relevant horizontal and vertical geometric design values are highlighted in DMURS Table 4.3 overleaf for the 60 km/h Design Speed. A standard carriageway cross fall of 2.5% was adopted throughout with super elevation applied if necessary, noting that adverse camber is allowable under DMURS designs in accordance with Table 4.3. A cross fall of 2.5% was also used for footpaths and cycle facilities.

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.

Figure 16: DMURS Carriageway Geometric Parameters

Upgrade works to the R157 also follows the horizontal and vertical geometry set out in DMURS, for the applicable speeds shown in Figure 11. A standard carriageway cross fall of 2.5% and a cross fall of 2.5% was also used for footpaths and cycle facilities.

BRIDGE STRUCTURES

All of the bridges to be constructed as part of the scheme share a number of key characteristics. They all have:

- Piled foundations;
- Cast in situ abutments;
- Precast deck elements;
- On deck cast in situ slabs or screeds;
- Post-fix parapets.

The bridges will be constructed both over and adjacent to the live water courses as shown in the figure overleaf.

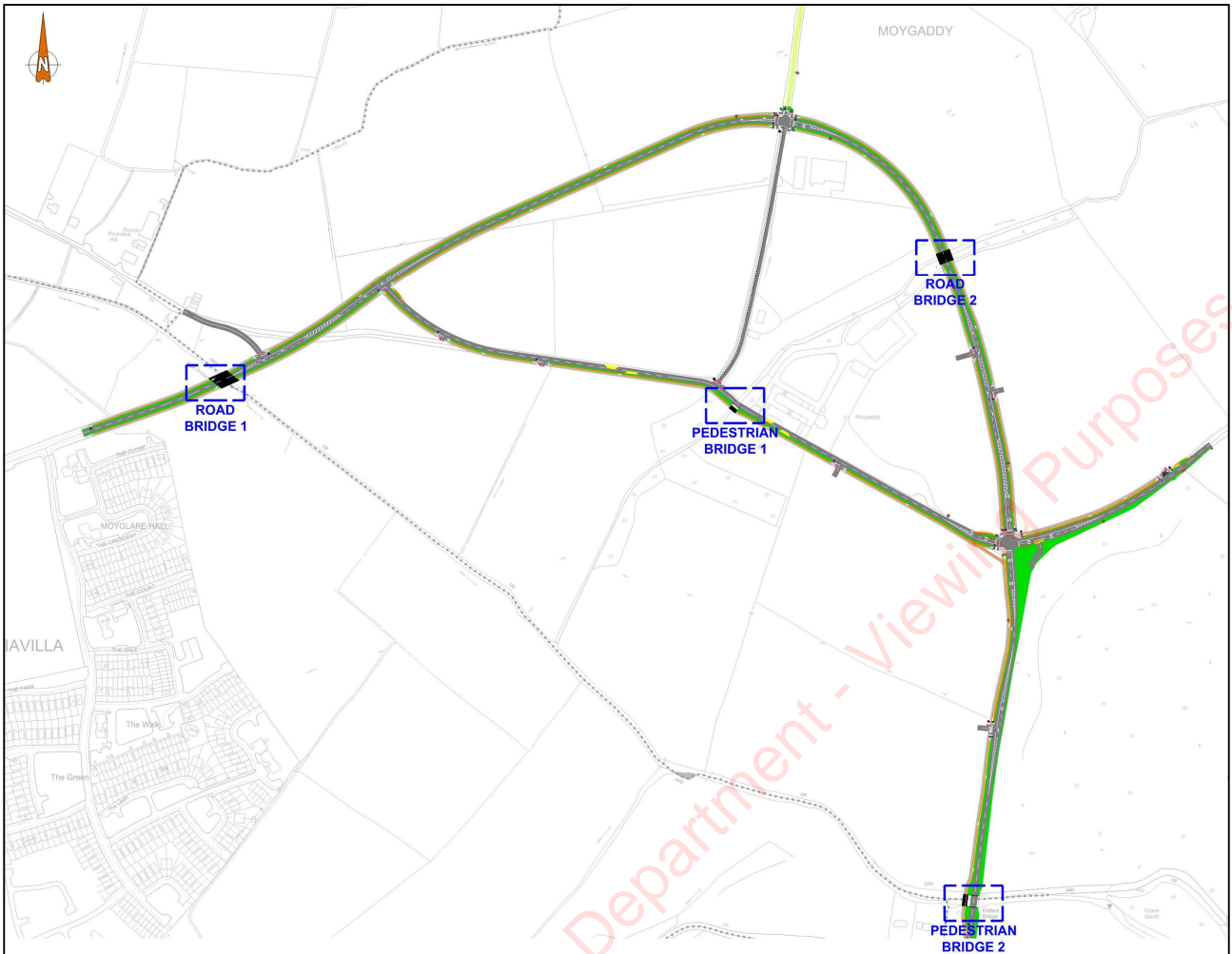


Figure 17: Location of Bridges on the MOOR

A separate "Bridge Options Report" has been prepared and submitted as part of this application under separate cover. More information on the design of the bridges are detailed therein.

6 JUNCTION STRATEGY

The primary principle in the design of junctions along the route was to provide junctions that are safe and consistent with existing layouts in order to present a uniformity of approach to drivers. In addition, junctions will have sufficient capacity to accommodate design year peak traffic flows thus optimising network capacity. The primary junction strategy objectives were:

- 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 an economic solution, so that the cost of implementing the design will be, to the maximum possible extent, offset by the economic benefits derived;
- To optimise road construction costs;
- To minimise environmental impacts, such as air pollution and engine noise, by minimising fuel consumption through reductions in the number of speed changes and the number of stop/starts required.

Section 4.4.3 of DMURS Junction Design states that priority junctions should be applied where Local streets meet Link streets. In addition to the aforementioned, after discussions with Meath County Council it was decided that priority type T-Junctions should be applied throughout the scheme where possible as priority type T-Junctions are typically more cost effective and require less space than other solutions such as large roundabouts or signalised junctions.

The junction of the MOOR and the R157 under the approved R157 realignment under Meath County Council planning refence P8/10011 was shown as a roundabout. Meath County Council have indicated to OCSC that a signalised junction would be in line with their current preferences and this solution should be explored. The provisions of a signalised junction at this location would significantly reduce the current footprint required by the Part VIII roundabout. This junction has been designed as a signalised junction.

Furthermore, the junction between the L2214 and the MOOR has also been designed as a signalised junction, with the remainder of junctions operating as priority T-junctions. All junctions on the MOOR also includes right-turn lanes. This was not shown as a requirement as per the traffic analysis, however MCC have indicated that this is required for traffic management.

The following Figure 18 indicates the location and operations of junctions along the MOOR.



Figure 18: Junctions Along MOOR

JUNCTION 1

Realigned junction of the L6219 and the MOOR. This junction takes the form of a priority type junction with a right-turn lane from the MOOR into the L6219.

JUNCTION 2

Access to Phase 1 & 2 residential lands. This junction takes the form of a priority type junction with a right-turn lane from the MOOR into the L6219.

JUNCTION 3

Junction of the MOOR & L2214. This junction takes the form of a signalised junction. It should be noted that south-to-north lane on the L2214, within the arc, will be repurposed to a shared pedestrian and cyclist facility. This means that the portion of the L2214 within the arc will change to a one-way north-to-south lane. Right-turn movements on the western approach will be prohibited, which means that this road can only be accessed by a through movement on the L2214, or a left-turn movement on the eastern approach.

JUNCTION 4

Junction of the L6219 & L2214. This junction takes the form of a priority T-junction. It should be noted that south-to-north lane on the L2214, within the arc, will be repurposed to a shared pedestrian and cyclist facility. This means that the portion of the L2214 within the arc will change to a one-way north-to-south lane.

JUNCTION 5

Junction of the MOOR and R157. This junction takes the form of a four-legged signalised junction with accompanying right-turn lanes on all approaches.

7 GROUND INVESTIGATIONS, SOIL CLASSIFICATION & EARTHWORKS BALANCE OPTIMISATION

OCSC instructed Site Investigations Ltd (SIL) to complete a ground investigation at the site. The report presents the factual geotechnical data obtained from the field and laboratory testing with interpretation of the ground conditions.

The full Site Investigation report has been included as Appendix A of this report.

8 DRAINAGE, STRUCTURES & PAVEMENT

SURFACE WATER DRAINAGE OVERVIEW

The general principals behind the drainage design will be as follows:

- The proposed road will cross existing watercourses, namely the river Ryewater and the Blackhall Little stream. These crossings have been designed so as not to interfere with the surface water drainage regime of the area through which the road passes, nor cause any adverse flood impact;
- Existing overland flows which the proposed road crosses and may block, will be intercepted and discharged to a suitable outfall;
- The drainage of the proposed road will be designed such that surface water drainage and sub-grade drainage will be provided for the mainline carriageway and all new sections of minor roads. This discharge will be directed to the existing watercourses and discharged properly, following attenuation and treatment through fuel separators;
- The maintenance or improvement to the quality of the existing drainage network;
- The application of Sustainable Drainage Systems (SuDS) to the surface water drainage system where possible.

The road drainage for the scheme has been designed in accordance with the GSDSDS. The elements of the drainage to be constructed will be constructed in accordance with the *Greater Dublin Region Code of Practice for Drainage Works*, and Traffic Infrastructure Ireland's (TII) *RCD 500 series* and *Drainage Design for National Road Schemes*. Any SuDS elements incorporated into the scheme will be designed in accordance with The SuDS Manual, C753 (published by CIRIA, 2007). All drainage designs have been carried out with regard to both Meath and Kildare County Council's respective Development Plans and Frameworks.

All rainfall runoff on the new MOOR is to be captured by adequately spaced trapped road gullies, which connect to a main carrier drain under the road. The rainfall runoff on the aligning footpath and cycle-track shall be intercepted by the dividing tree-lined grass verge, with excess runoff only being collected by the road's gully network.

Surface water attenuation will be used to control surface water runoff rates from all hard surfaces in accordance with the GSDSDS, with these being restricted to a maximum flow rate of 5.5 l/s/ha, which is less than the calculated greenfield runoff equivalent.

The rate of discharge from the storage facility will be controlled by means of a flow restricting device at the outfall i.e., vortex Hydrobrake, or similar approved. The level of discharge will be restricted to that of the natural catchment and the remainder of the flow will be attenuated upstream of the flow restriction. The size and volume of storage facilities will in general be based on the 1 in 100-year storm event. For flows in excess of the 1-in-30-year storm event up to the 1-in-100-year storm event, attenuated runoff will be retained within the site of the road. Where feasible, this will be stored in areas such as landscaped areas and carriageway surfaces, and returned to the drainage system to be discharged through the flow control device following the storm event. Where storage of this volume in surface areas is not feasible, the attenuation facilities will be increased in size to accommodate the 1-in-100-year storm event. For larger events (i.e., in excess of the 1-in-100-year storm event), excess runoff will be directed overland to receiving watercourses via designated routes.

The attenuation systems are to largely comprise enclosed vegetated ponds, and shall be preceded by a Class 1 bypass fuel separator.

SURFACE WATER DESIGN CRITERIA

The proposed surface water network is to be designed in accordance with the GSDSDS, using MicroDrainage Network Design package, by Innovyze Inc., which simulates the performance of the integrated drainage network for varying rainfall return periods and storm durations.

The MicroDrainage Network Design software applies the Flood Studies Report (FSR) methodology for analysis of the rainfall profiles. However, the input design parameters that were used, as part of this design, were based on the available Flood Studies Update (FSU) data, i.e., the return period rainfall depths for sliding durations, which determine

the M5-60 and R values, and the standard annual average rainfall (SAAR); as sourced from Met Éireann. The primary design parameters used in design are as follows:

Parameter	Value
Annual Average Rainfall (AAR) Value	799mm
Rainfall 'M5-60' Value	15.70mm
Ration R	0.281
Impermeability Factor for paved areas	1.0
Time of Entry	minutes
Smallest pipe diameter to use for carriageway drainage	225mm
Roughness Coefficient	0.6
Minimum permissible velocity (self-cleansing velocity)	1.0 m/s
Maximum velocity	2.99 m/s
Minimum cover to pipes (unprotected)	1200mm
Line up pipe soffits at connection	YES
Return Period for carriageway drainage	2 years
Return period for culvert design	100 years
Return period for bridge design	1000 years

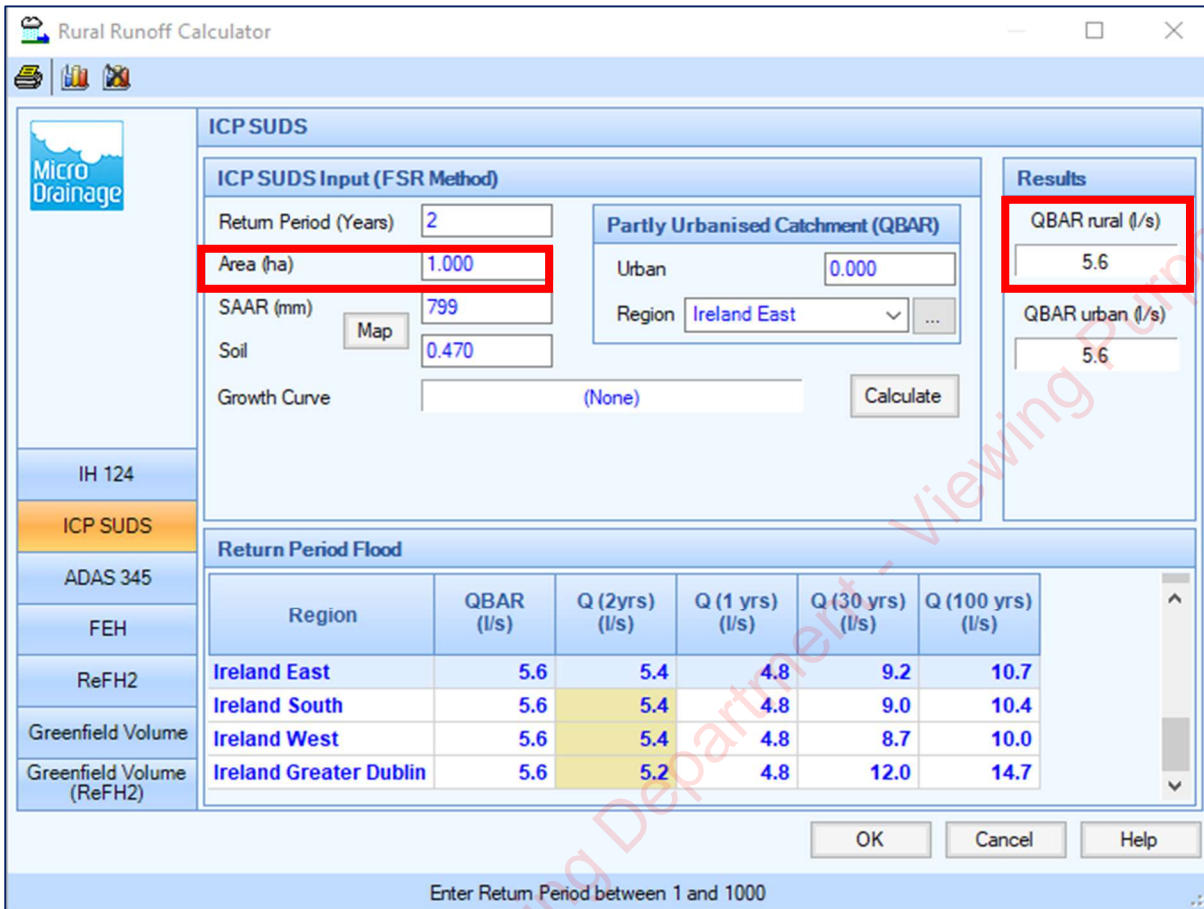
SURFACE WATER CATCHMENTS & ATTENUATION

The proposed surface water network is to be split into a 4nr. catchments, in order to optimise the network based on the natural topography of the site, and therefore replicating natural discharge rates and volumes.

The new road and associated footpath and cycle track is to discharge the treated and attenuated rainfall runoff from each catchment to the existing watercourse along its southern and eastern boundaries, namely the river Ryewater and the Blackhall Little stream.

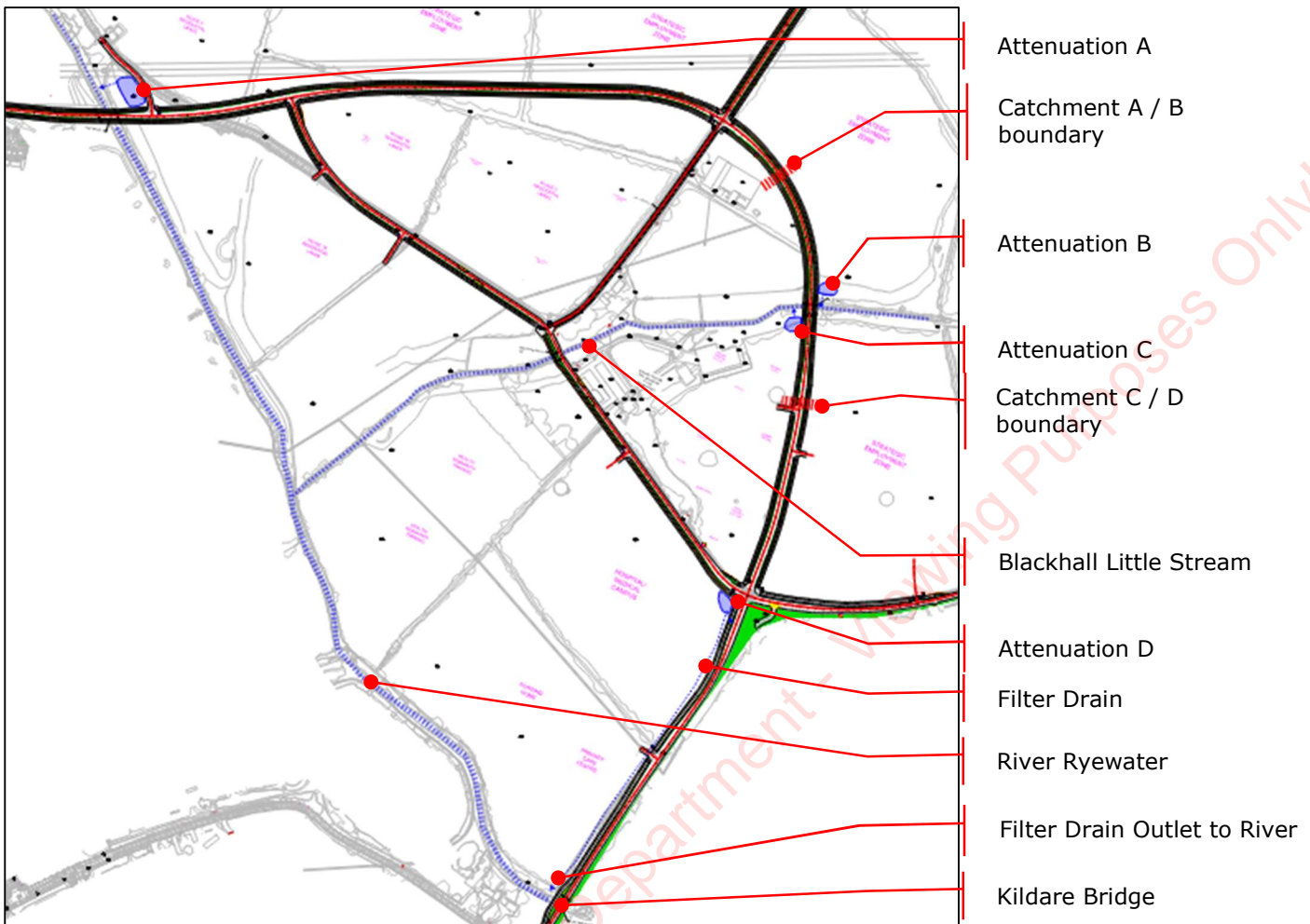
The discharge rates are to be restricted to a maximum flow rate from each catchment of **5.5 l/s/ha**, which is **less than** the current greenfield equivalent runoff rate. Refer

to the image below for details of the existing greenfield runoff rate, which has been calculated using the ICPSuDS Input, (Flood Studies Report, FSR).



Attenuation ponds are to be provided upstream of the outfall location from each catchment. Each of the attenuation systems have been designed to attenuate the design 1% AEP event, with an additional 20% factor for Climate Change projections, and shall comprise a grassed / vegetated pond, with protected headwalls.

An overview of the surface water catchment boundaries, along with the attenuation zones and outfall locations are illustrated on the following image.



A summary of the attenuation strategy is as follows:

Attenuation A: 765m³ – discharge to River Ryewater;

Attenuation B: 125m³ – discharge to Blackhall Little stream;

Attenuation C: 120m³ – discharge to Blackhall Little stream;

Attenuation D: 140m³ – discharge to new filter drain that discharges to river Ryewater.

As note previously, each drainage network is to discharge at a flow rate of 5.5 l/s/ha, which is less than the calculated greenfield equivalent rate.

While catchment areas A, B and C comprise all new road infrastructure, and are do discharge treated and attenuated runoff to the watercourse immediately adjacent, Catchment D is to discharge its attenuated and treated flows to a new filter drein that

is to replace an existing open drain as part of the upgrade of the R157 road, which is to form part of the MOOR. This section of the proposed MOOR, on the eastern side of the Maynooth Environs, is to consist of realigned and upgrade of the existing R157 road infrastructure, with rainfall runoff to be directed to the new filter drain via repositioned road gullies (along with some new ones).

A non-return valve is to be fixed to the headwall of each outfall to watercourse.

FLOOD RISK ASSESSMENT

JBA Consulting have carried out a detailed Flood Risk Assessment (FRA) on the masterplan area for the Maynooth Environs. This FRA included a detailed update to the model of the river Ryewater and its local tributaries, based on a recent detailed topographic survey. The new model also included the new bridge structures that have been discussed elsewhere within this report.

The results of the FRA, and its associated output flood extent mapping, confirmed that there was no adverse impact on existing lands in the vicinity of the study area, with no additional nuisance flooding caused as a result of the proposed new road or associated developments.

Refer to JBA Consulting's Masterplan Flood Risk Assessment Report, submitted under separate cover for further details.

SECTION 50 APPLICATION

A Section 50 application to the Office of Public Works (OPW) is to be submitted following grant of planning permission, for each of the proposed bridge structures.

It is noted that an assessment on potential flood risk, in line with OPW's Section 50 specific requirements, have been assessed as part of JBA consulting's flood study and risk assessment for the Maynooth Environs, with no adverse impact noted.

WASTEWATER DRAINAGE OVERVIEW

OCSC and the applicant have had continued detailed discussions with Irish Water in relation to the delivery of a new strategic wastewater pumping station, which is to be sited on Applicant owned lands within Maynooth Environs, as part of a separate planning application. New wastewater drainage infrastructure is to be installed along the route of the proposed MOOR, which is to facilitate new development in the Maynooth Environs by allowing for a connection to the new WWPS. All new wastewater infrastructure shall be in accordance with Irish Water's requirements.

POTABLE WATER OVERVIEW

New watermain infrastructure is to be installed along the route of the proposed MOOR, which is to facilitate new development in the Maynooth Environs. These are to be routed along the footpath / cycle track on both sides of the carriageway, and shall be in accordance with Irish Water's requirements.

9 CONCLUSIONS & RECOMMENDATIONS

CONCLUSIONS

Having completed the preliminary design of the scheme, the following conclusions can now be made:

- The need for the scheme has been established.
- The scheme will also relieve pressure at certain key junctions within the existing road network.
- The new bridge on the western side will provide a second river crossing for traffic from Moyglare Road to Maynooth environs and eastwards.
- The scheme will bring a reduction in the frequency and severity of road collisions
- The design of the scheme has been carried out in accordance with DMURS.

RECOMMENDATIONS

It is recommended that the Maynooth Outer Orbital Road as described in this Preliminary Design Report be approved by Meath County Council so that it will form the basis for the detailed design and construction of the Road.

10 VERIFICATION

This report was compiled and verified by:

Wian Marais BE (US), BE (Hons) (UP), Professional Engineer (ECSA)

Civil Engineer

O'Connor Sutton Cronin & Associates



Appendix A **SITE INVESTIGATION REPORT**

S.I. Ltd Contract No: 5863

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

Moygaddy,
Maynooth, Co. Meath
Site Investigation Report

Prepared by:

.....

Stephen Letch

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

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4. Laboratory Testing	4
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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

Kildare County Council Planning Department - Viewing Purposes Only

5863 – Moygaddy
Maynooth, Co. Meath

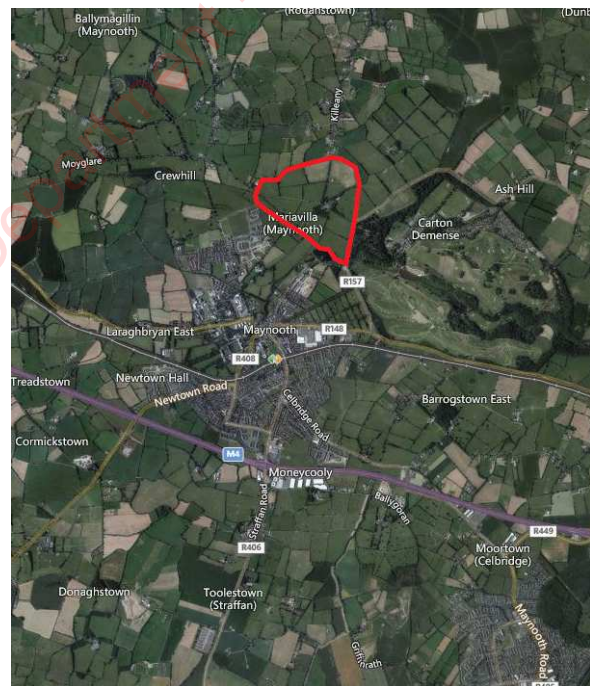
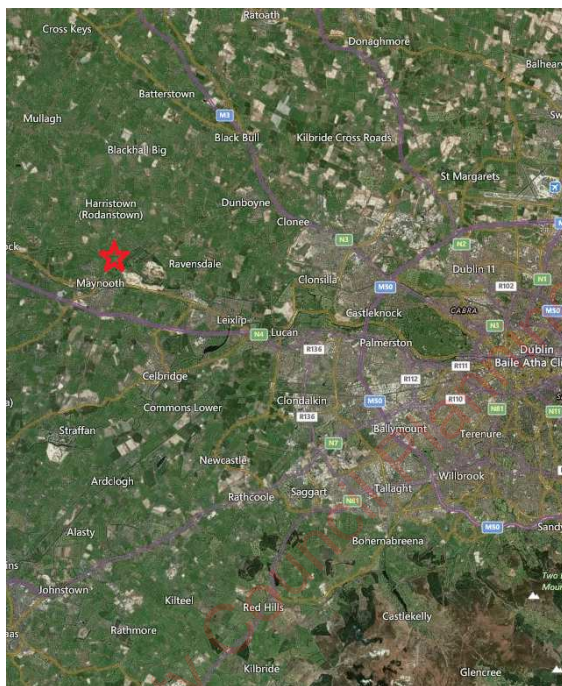
1. Introduction

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

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

2. Site Location

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



3. Fieldwork

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

The fieldworks comprised of the following:

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

3.1. Cable Percussive Boreholes with Rotary Coreholes

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

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

The cable percussive borehole logs are presented in Appendix 1.

3.2. Rotary Coreholes

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

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

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

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

3.3. Trial Pits with Soakaway Tests

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

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

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

3.4. Dynamic Probes

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

The dynamic probe results can be used to analyse the strength of the soil strata encountered by the probe. 'Proceedings of the Trinity College Dublin Symposium of Field and Laboratory Testing of Soils for Foundations and Embankments' presents a paper by 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 54kN/m^2 . This can be used to calculate the ultimate bearing capacity, and this has been calculated to be 295kN/m^2 . Finally, a factor of safety is applied and with a factor of 3, an allowable bearing capacity of 100kN/m^2 would be anticipated using the lower SPT values.

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

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

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

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

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

6.2. Groundwater

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

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

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

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

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

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

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

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

6.3. Soakaway Tests

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

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

6.4. Pavement Design

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

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

6.5. Aggressive Ground Conditions

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

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

Appendix 1
Cable Percussive Borehole Logs

Kildare County Council Planning Department - Viewing Purposes Only

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH01
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Contract:	Moygaddy	Easting:	693986.514	Date Started:	30/06/2021
Location:	Maynooth, Co. Meath	Northing:	739217.399	Date Completed:	30/06/2021
Client:	Sky Castle Ltd	Elevation:	56.45	Drilled By:	G. Macken
Engineer:	OCSC	Borehole Diameter:	200mm	Status:	FINAL


Depth (m)		Stratum Description	Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill
Scale	Depth			Scale	Depth	Depth	Type	Result		
	0.20	TOPSOIL.		56.25						
	0.5	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		56.0						
	1.0			55.5	1.00	B				
	1.5			55.0	1.00	C		GM75 50 (3,4/50 for 85mm)		
	1.60	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		54.85						
	2.0			54.5	2.00	B				
	2.5			54.0	2.00	C		GM76 N=16 (2,3/3,4,4,5)		
	2.80	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		53.65						
	3.0			53.5	3.00	B				
	3.5			53.0	3.00	C		GM77 50 (8,11/50 for 200mm)		
	4.0			52.5	4.00	B				
	4.5			52.0	4.00	C		GM78 N=48 (12,13/11,14,12,11)		
	5.0			51.5	5.00	B				
	5.40			51.0	5.00	C		GM79 50 (25 for 135mm/50 for 125mm)		
	5.50	Obstruction - possible boulders. 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
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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	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	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	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	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
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Contract:	Moygaddy	Easting:	694117.023	Date Started:	22/07/2021
Location:	Maynooth, Co. Meath	Northing:	739155.527	Date Completed:	22/07/2021
Client:	Sky Castle Ltd	Elevation:	55.01	Drilled By:	G. Macken
Engineer:	OCSC	Borehole Diameter:	200mm	Status:	FINAL


Depth (m)		Stratum Description	Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill	
Scale	Depth			Scale	Depth	Depth	Type	Result			
	0.20	TOPSOIL.			54.81						
	0.5	Firm brown sandy slightly gravelly silty CLAY with low cobble content.			54.5						
	1.0				54.0	1.00	B	GM66 N=10 (2,2/3,2,3,2)			
	1.5	Firm brown sandy slightly gravelly silty CLAY with high cobble content.			53.5	53.51					
	2.0				53.0	2.00	B	GM67 N=12 (4,5/3,3,3,3)			
	2.5	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.			52.5	52.21					
	3.0				52.0		3.00	B	GM68 N=49 (6,6/11,12,13,13)		
	3.5				51.5		3.00	C			
	4.0				51.0		4.00	B	GM69 N=50 (8,11/50 for 255mm)		
	4.5		50.5	4.00	C						
	4.90	Obstruction - possible boulders. End of Borehole at 5.00m			50.11	50.01	5.00	C	50 (25 for 5mm/50 for 5mm)		
	5.00				50.0					5.00	C
	5.5				49.5						
	6.0				49.0						
	6.5				48.5						
	7.0				48.0						
	7.5				47.5						
	8.0				47.0						
	8.5				46.5						
	9.0				46.0						
	9.5				45.5						

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH04
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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			55.5	1.00	C				
	1.50		Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		55.35					
	2.0			55.0	2.00	B	GM87 N=17 (4,4/3,5,5,4)			
	2.5			54.5	2.00	C				
	3.0	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.			53.75					
	3.5			53.5	3.00	B	GM88 N=49 (5,8/8,12,14,15)			
	4.0			53.0	3.00	C				
	4.5			52.5	4.00	B	GM89 50 (9,12/50 for 200mm)			
	5.0		52.0	4.00	C					
	5.5		51.5	5.00	B	GM90 50 (12,13/50 for 110mm)				
	6.0		51.0	5.00	C					
	6.20	Obstruction - possible boulders. End of Borehole at 6.30m		50.65						
	6.30			50.55	6.00	B	GM91 50 (15,10/50 for 100mm) 50 (25 for 5mm/50 for 5mm)			
	6.5			50.0	6.30	C				
	7.0		49.5							
	7.5		49.0							
	8.0		48.5							
	8.5		48.0							
	9.0		47.5							
	9.5		47.0							

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH05
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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						
	1.10	Firm becoming stiff brown sandy slightly gravelly silty CLAY with high cobble content.		57.5	57.62	1.00 1.00	B C	GM61 N=9 (1,1/2,2,3,2)		
	1.5			57.0						
	2.0			56.5		2.00 2.00	B C	GM62 N=20 (3,5/5,6,4,5)		
	2.5			56.0	55.92					
	2.80	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		55.5		3.00 3.00	B C	GM63 N=43 (5,8/8,9,12,14)		
	3.5			55.0						
	4.0			54.5		4.00 4.00	B C	GM64 N=48 (8,10/10,11,13,14)		
	4.5			54.0						
	5.0			53.5	53.62 53.52	5.00 5.00 5.20	B C C	GM65 50 (25 for 60mm/50 for 15mm) 50 (25 for 5mm/50 for 5mm)		
	5.10 5.20	Obstruction - possible boulders. End of Borehole at 5.20m		53.0						
	5.5			52.5						
	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						

	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
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Contract:	Moygaddy	Easting:	693927.326	Date Started:	20/07/2021
Location:	Maynooth, Co. Meath	Northing:	739421.930	Date Completed:	20/07/2021
Client:	Sky Castle Ltd	Elevation:	57.55	Drilled By:	G. Macken
Engineer:	OCSC	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)		Stratum Description	Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill
Scale	Depth			Scale	Depth	Depth	Type	Result		
	0.20	TOPSOIL.		57.35						
	0.5	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		57.0						
	1.0			56.5	1.00	B	GM57			
	1.40			56.15	1.00	C	N=10 (1,2/2,2,3,3)			
	1.5	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		56.0						
	2.0			55.5	2.00	B	GM58			
	2.5			55.0	2.00	C	N=20 (3,4/4,5,6,5)			
	3.0	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		54.65						
	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			53.0	4.00	C	50 (9,12/50 for 210mm)			
	4.80	Obstruction - possible boulders. End of Borehole at 4.80m		52.85	4.80	C	50 (25 for 5mm/50 for 5mm)			
	5.0			52.75						
	5.5			52.0						
	6.0			51.5						
	6.5			51.0						
	7.0			50.5						
	7.5			50.0						
	8.0			49.5						
	8.5			49.0						
	9.0			48.5						
	9.5			48.0						

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH07
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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 N=11 (1,2/2,3,3,3)			
	1.5			57.5	1.00	C				
	1.60	Firm brown sandy slightly gravelly silty CLAY with high cobble content.		57.39						
	2.0	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		57.0	2.00	B	GM54 N=13 (2,3/3,4,3,3)			
	2.5			56.5	2.00	C				
	2.60			56.39						
	3.0	Obstruction - possible boulders. End of Borehole at 4.50m		56.0	3.00	B	GM55 N=50 (8,8/50 for 255mm)			
	3.5			55.5	3.00	C				
	4.0			55.0	4.00	B	GM56 50 (11,11/50 for 200mm)			
	4.40	54.59	4.00	C	50 (25 for 5mm/50 for 0mm)					
	4.50	54.49	4.50	C						
	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
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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		
	0.40	TOPSOIL.		61.0	60.90					
0.5		Firm brown sandy slightly gravelly silty CLAY with low cobble content.		60.5		1.00	B	GM48 N=11 (1,1/2,2,3,4)		
1.0				60.0		1.00	C			
1.5	1.70	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		59.5	59.60			GM49 N=19 (3,3/4,6,5,4)		
2.0				59.0		2.00	B			
2.5		Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		58.5	58.40			GM50 N=35 (5,6/8,8,10,9)		
3.0	2.90			58.0		3.00	B			
3.5				57.5				GM51 50 (10,11/50 for 225mm)		
4.0				57.0		4.00	B			
4.5				56.5				GM52 50 (25 for 125mm/50 for 100mm)		
5.0				56.0		5.00	B			
5.5	5.70	Obstruction - possible boulders. End of Borehole at 5.80m		55.5	55.60			50 (25 for 5mm/50 for 5mm)		
6.0	5.80			55.0	55.50	5.80	C			
6.5				54.5						
7.0				54.0						
7.5				53.5						
8.0				53.0						
8.5				52.5						
9.0				52.0						
9.5				51.5						

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH09
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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						
	1.0			1.00	B	GM41				
	1.5			1.00	C	N=10 (2,2/2,3,2,3)				
	1.80	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		60.0	59.88					
	2.0			2.00	B	GM42				
	2.5	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		59.5		2.00	C	N=21 (3,3/4,5,5,7)		
	3.0			59.0	58.98					
	3.5			58.5	3.00	B	GM43			
	4.0			58.0	3.00	C	N=39 (4,7/9,9,11,10)			
	4.5	Obstruction - possible boulders.		57.5		4.00	B	GM44		
	5.0			57.0	4.00	C	50 (6,9/50 for 200mm)			
	5.30			56.5	5.00	B	GM45			
	5.40	End of Borehole at 5.40m		56.38	56.28	5.00	C	50 (9,12/50 for 100mm)		
	5.5			56.0		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	Cable Percussion Borehole Log	Borehole No: BH10
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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		
	1.0			58.0		1.00	C	N=11 (2,2/3,3,3,2)		
	1.50	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		57.5	57.75					
	2.0			57.0		2.00	B	GM47		
	2.40	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		56.5	56.85	2.00	C	N=20 (5,4/5,5,4,6)		
	2.80	Obstruction - possible boulders.		56.0	56.45					
	3.00	End of Borehole at 3.00m		56.0	56.25	3.00	C	50 (25 for 5mm/50 for 0mm)		
	3.5			55.5						
	4.0			55.0						
	4.5			54.5						
	5.0			54.0						
	5.5			53.5						
	6.0			53.0						
	6.5			52.5						
	7.0			52.0						
	7.5			51.5						
	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: 2.80	To: 3.00	Time: 02:00	Strike:	Rose:	Depth Sealed:	Date: 09/07	Hole Depth: 3.00	Water Depth: Dry	From:	To:	Pipe:	From: 0.00	To: 3.00	Type: Arisings	Borehole terminated due to obstruction.		

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH11
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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 N=13 (2,2/3,3,4,3)		
	1.5				58.5	1.00	C			
	1.70	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.			58.18					
	2.0				58.0	2.00	B	GM37 N=21 (4,4/5,5,6,5)		
	2.5				57.5	2.00	C			
	3.0				57.0					
	2.90	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.			56.98	3.00	B	GM38 N=43 (5,5/9,10,11,13)		
	3.5				56.5	3.00	C			
	4.0				56.0	4.00	B	GM39 N=50 (7,9/50 for 275mm)		
	4.5				55.5	4.00	C			
	5.0				55.0	5.00	B	GM40 50 (10,12/50 for 175mm)		
	5.5				54.5	5.00	C			
	5.70				54.0					
	5.80	Obstruction - possible boulders. End of Borehole at 5.80m			54.18 54.08	5.80	C	50 (25 for 5mm/50 for 5mm)		
	6.0				53.5					
	6.5				53.0					
	7.0				52.5					
	7.5				52.0					
	8.0				51.5					
	8.5				51.0					
	9.0				50.5					
	9.5				50.0					

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH12
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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	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		55.56	1.00	C	N=10 (1,1/3,3,2,2)			
	1.5			55.5						
	2.0			55.0	2.00	B	GM31			
	2.5			54.5	2.00	C	N=21 (3,5/5,6,5,5)			
	3.0			54.0						
	3.20	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		53.66	3.00	B	GM32			
	3.5			53.5	3.00	C	N=47 (5,4/9,9,14,15)			
	4.0			53.0						
	4.5			52.5	4.00	B	GM33			
	5.0			52.0	4.00	C	50 (9,13/50 for 175mm)			
	5.5			51.5						
	6.0			51.0	5.00	B	GM34			
	6.30			50.56	5.00	C	N=50 (7,9/50 for 250mm)			
	6.40	Obstruction - possible boulders. End of Borehole at 6.40m		50.46	6.00	B	GM35			
	6.5			50.0	6.00	C	50 (10,13/50 for 140mm)			
	7.0			49.5	6.40	C	50 (25 for 5mm/50 for 0mm)			
	7.5			49.0						
	8.0			48.5						
	8.5			48.0						
	9.0			47.5						
	9.5			47.0						

	Chiselling:			Water Strikes:			Water Details:			Installation:			Backfill:			Remarks:		Legend: B: Bulk D: Disturbed U: Undisturbed ES: Environmental W: Water C: Cone SPT S: Split spoon SPT
	From:	To:	Time:	Strike:	Rose:	Depth Sealed:	Date:	Hole Depth:	Water Depth:	From:	To:	Pipe:	From:	To:	Type:	Borehole terminated due to obstruction.		
	6.30	6.40	01:30				06/07	6.40	Dry				0.00	6.40	Arising			

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH13
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Contract:	Moygaddy	Easting:	694659.374	Date Started:	08/07/2021
Location:	Maynooth, Co. Meath	Northing:	738763.773	Date Completed:	08/07/2021
Client:	Sky Castle Ltd	Elevation:	52.09	Drilled By:	G. Macken
Engineer:	OCSC	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)		Stratum Description	Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill
Scale	Depth			Scale	Depth	Depth	Type	Result		
	0.20	TOPSOIL.		52.0	51.89					
	0.5	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		51.5						
	1.0			51.0		1.00	B	GM18		
	1.5			50.5		1.00	C	N=9 (2,2/2,1,3,3)		
	1.70	Firm brown sandy slightly gravelly silty CLAY with high cobble content.		50.39						
	2.0			50.0		2.00	B	GM19		
	2.5			49.5		2.00	C	N=14 (4,4/3,3,4,4)		
	2.50	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		49.59						
	3.0			49.0		3.00	B	GM20		
	3.5			48.5		3.00	C	N=45 (8,8/11,11,10,13)		
	4.0			48.0		4.00	B	GM21		
	4.5			47.5		4.00	C	N=41 (7,9/9,10,11,11)		
	5.0			47.0		5.00	B	GM22		
	5.5			46.5		5.00	C	50 (8,10/50 for 210mm)		
	6.0			46.0		6.00	B	GM23		
	6.10	Obstruction - possible boulders.		45.99		6.00	C	50 (26 for 85mm/50 for 10mm)		
	6.20	End of Borehole at 6.20m		45.89		6.20	C	50 (25 for 5mm/50 for 0mm)		
	6.5			45.5						
	7.0			45.0						
	7.5			44.5						
	8.0			44.0						
	8.5			43.5						
	9.0			43.0						
	9.5			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	Arisings			

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH14
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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	0.20	TOPSOIL.		53.26						
0.5		Soft brown sandy slightly gravelly silty CLAY with low cobble content.		53.0						
1.0				52.5	1.00	B	GM07			
1.5				52.0	1.00	C	N=7 (1,1/2,1,3,1)			
2.0	2.10	Soft brown sandy slightly gravelly silty CLAY with high cobble content.		51.5	2.00	B	GM08			
2.5				51.0	2.00	C	N=7 (2,1/2,1,1,3)			
3.0				50.5	3.00	B	GM09			
3.5	3.20	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		50.0	3.00	C	N=48 (2,3/9,11,13,15)			
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	6.20	Obstruction - possible boulders.		47.26	6.00	B	GM12			
6.5	6.30	End of Borehole at 6.30m		47.16	6.00	C	50 (8,10/50 for 175mm)			
7.0				47.0	6.50	C	50 (25 for 5mm/50 for 5mm)			
7.5				46.5						
8.0				46.0						
8.5				45.5						
9.0				45.0						
9.5				44.5						
				44.0						

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH15
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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	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									
	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	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		52.14						
	2.5			52.0	2.00	C	N=14 (3,2/4,3,3,4)			
	3.0									
	3.5			51.5						
	4.0			51.0						
	4.5			50.5						
	5.0			50.0						
	5.5			49.5						
	6.0			49.0						
	6.5			48.5						
	6.70	Obstruction - possible boulders. End of Borehole at 6.80m		47.74						
	6.80			47.64	6.80	C	50 (25 for 5mm/50 for 0mm)			
	7.0			47.5						
	7.5			47.0						
	8.0			46.5						
	8.5			46.0						
	9.0			45.5						
	9.5			45.0						

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH16
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Contract:	Moygaddy	Easting:	693655.329	Date Started:	01/07/2021
Location:	Maynooth, Co. Meath	Northing:	739258.288	Date Completed:	01/07/2021
Client:	Sky Castle Ltd	Elevation:	49.53	Drilled By:	G. Macken
Engineer:	OCSC	Borehole Diameter:	200mm	Status:	FINAL

Depth (m)		Stratum Description	Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill
Scale	Depth			Scale	Depth	Depth	Type	Result		
	0.20	TOPSOIL.		49.33						
	0.5	Firm brown sandy slightly gravelly silty CLAY with low cobble content.		49.0						
	1.0			48.5	1.00	B	GM80			
	1.5			48.0	1.00	C	N=9 (1,2/2,3,2,2)			
	1.80			47.73						
	2.0	Stiff brown sandy slightly gravelly silty CLAY with high cobble content.		47.5	2.00	B	GM81			
	2.5			47.0	2.00	C	N=16 (2,3/3,5,4,4)			
	2.50			47.03						
	3.0	Stiff becoming very stiff black slightly sandy gravelly silty CLAY with low cobble content.		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			42.83						
	6.80	Obstruction - possible boulders. End of Borehole at 6.80m		42.73	6.80	C	50 (25 for 5mm/50 for 5mm)			
	7.0			42.5						
	7.5			42.0						
	8.0			41.5						
	8.5			41.0						
	9.0			40.5						
	9.5			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.		
	2.80	2.90	01:00	3.60	3.40	4.00	21/07	6.80	Dry				0.00	6.80	Arisings			

Contract No: 5863	<h1 style="margin: 0;">Cable Percussion Borehole Log</h1>	Borehole No: BH17
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Contract:	Moygaddy	Easting:	694518.865	Date Started:	05/07/2021
Location:	Maynooth, Co. Meath	Northing:	738836.591	Date Completed:	05/07/2021
Client:	Sky Castle Ltd	Elevation:	54.89	Drilled By:	G. Macken
Engineer:	OCSC	Borehole Diameter:	200mm	Status:	FINAL


Depth (m)		Stratum Description	Legend	Level (mOD)		Samples and Insitu Tests			Water Strike	Backfill
Scale	Depth			Scale	Depth	Depth	Type	Result		
	0.20	TOPSOIL.		54.69						
		Firm brown sandy slightly gravelly silty CLAY.		54.5						
	0.5			54.0	1.00	B	GM01			
	1.0			53.5	1.00	C	N=8 (1,2/2,1,2,3)			
	1.5			53.0						
	2.0			52.69	2.00	B	GM02			
	2.20	Stiff brown sandy slightly gravelly silty CLAY with low cobble content.		52.5	2.00	C	N=14 (2,5/3,3,4,4)			
	2.5			52.0						
	3.0			51.5	3.00	B	GM03			
	3.5			51.0	3.00	C	N=16 (3,3/3,4,5,4)			
	3.80	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		51.09	4.00	B	GM04			
	4.0			50.5	4.00	C	N=47 (8,6/9,10,13,15)			
	4.5			50.0						
	5.0			49.5	5.00	B	GM05			
	5.5			49.0	5.00	C	50 (7,13/18,32,,)			
	6.0			48.5						
	6.50	Obstruction - possible boulders. End of Borehole at 6.50m		48.39	6.50	C	50 (25 for 100mm/50 for 20mm) 50 (25 for 5mm/50 for 5mm)			
	7.0			48.0						
	7.5			47.5						
	8.0			47.0						
	8.5			46.5						
	9.0			46.0						
	9.5			45.5						
				45.0						

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

Contract No: 5863	Cable Percussion Borehole Log	Borehole No: BH18
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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 N=9 (1,1/3,2,2,2)			
	1.5			51.5	1.00	C				
	1.80	Firm brown sandy slightly gravelly silty CLAY with high cobble content.		51.13						
	2.0			51.0	2.00	B	GM14 N=13 (3,3/2,3,4,4)			
	2.5		50.5	2.00	C					
	2.50	Very stiff black slightly sandy gravelly silty CLAY with low cobble content.		50.43						
	3.0			50.0	3.00	B	GM15 N=50 (8,8/50 for 250mm)			
	3.5			49.5	3.00	C				
	4.0			49.0	4.00	B	GM16 N=50 (8,9/50 for 230mm)			
	4.5			48.5	4.00	C				
	5.0			48.0	5.00	B	GM17 50 (10,13/50 for 135mm)			
	5.5		47.5	5.00	C					
	5.70	Obstruction - possible boulders. End of Borehole at 5.80m		47.23						
	5.80			47.13	5.80	C	50 (25 for 5mm/50 for 0mm)			
	6.0									
	6.5									
	7.0									
	7.5									
	8.0									
	8.5									
	9.0									
	9.5									

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

Appendix 2
Rotary Corehole Logs and Photographs

Kildare County Council Planning Department - Viewing Purposes Only

Contract No: 5863	Rotary Corehole Log			Corehole No: RC04
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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) Scale	Depth	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.		56.5								
1.0												
1.5												
2.0												
2.5												
3.0												
3.5												
4.0												
4.5												
5.0												
5.5												
6.0												
6.5												
6.70												
7.0		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>		50.14								
7.5				6.70 - 7.70	96	57	12		14			
8.0				7.70 - 8.70	97	77	36					
8.5		<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>		48.0								
9.0				8.70 - 9.70	97	68	0		19			
9.70		End of Corehole at 9.70m		47.14								

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

Rotary Corehole Log

Contract No: 5863				Corehole No: RC05	
Contract:	Moygaddy	Easting:	693935.222	Date Started:	15/07/2021
Location:	Maynooth, Co. Meath	Northing:	739548.071	Date Completed:	15/07/2021
Client:	Sky Castle Ltd	Elevation:	58.60	Drilled By:	MEDL
Engineer:	OCSC	Rig Type:	Sondeq	Status:	FINAL

Depth (m)	Stratum Description	Legend	Level (mOD)		Samples	Rock Indices				Backfill
			Scale	Depth		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		[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	-

Rotary Corehole Log

Contract No: 5863				Corehole No: RC06	
Contract:	Moygaddy	Easting:	694016.492	Date Started:	15/07/2021
Location:	Maynooth, Co. Meath	Northing:	739390.864	Date Completed:	15/07/2021
Client:	Sky Castle Ltd	Elevation:	57.65	Drilled By:	MEDL
Engineer:	OCSC	Rig Type:	Sondeq	Status:	FINAL

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

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

Contract No: 5863	Rotary Corehole Log	Corehole No: RC07
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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) Scale	Depth	Stratum Description	Legend	Level (mOD)		Samples	Rock Indices				Backfill
				Scale	Depth		TCR/%	SCR/%	RQD/%	FI/m	
		Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.									
	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	
	7.0	<i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining and occasional clay infill.</i>			51.0	6.60 - 7.60	99	65	41	11	
	8.0	<i>Discontinuities - smooth to rough, planar, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining.</i>			50.0	7.60 - 8.60	90	75	53	8	
	8.60	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	Rotary Corehole Log			Corehole No: RC08
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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										Ni	
8.5									13		
9.0									Ni		
9.5	9.60	End of Corehole at 9.60m							17		
					50.88						

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

Contract No: 5863	Rotary Corehole Log	Corehole No: RC09
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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			Scale	Depth		TCR/%	SCR/%	RQD/%	FI/m					
0.5 1.0 1.5 2.0 2.5 3.0 3.5 4.0 4.5 5.0 5.5 6.0		Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.		61.0 60.5 60.0 59.5 59.0 58.5 58.0 57.5 57.0 56.5 56.0 55.5 55.0											
6.30 6.5 7.0 7.5 8.0 8.5 9.0 9.30				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 54.5 54.0 53.5 53.0 52.5 52.0	54.80	6.30 - 7.30	94	85	50	9			
						<i>Discontinuities - non-intact.</i>		53.0	53.0	7.30 - 8.30	95	69	33	Ni	
								<i>Discontinuities - smooth to rough, planar to slightly undulating, tight to open, sub-horizontal and sub-vertical dip, clean with occasional grey staining and calcite crystals.</i>		52.5	52.5	8.30 - 9.30	99	75	12
				End of Corehole at 9.30m		51.80 51.5	51.80								

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

Contract No: 5863	Rotary Corehole Log	Corehole No: RC10
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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	
		Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.		57.5							
0.5				57.0							
1.0				56.5							
1.5				56.0							
2.0				55.5							
2.5				55.0	55.06						
3.0	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.		54.5		2.80 - 3.80	91	85	28		10
3.5		<i>Discontinuities - smooth, planar, occasionally stepped, tight to open, 10-30° dip, clean with occasional grey staining and occasional clay infill.</i>		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		4.80 - 5.80	96	60	31		9
5.5		<i>Discontinuities - non-intact.</i>		52.0	52.06						Ni
5.80		End of Corehole at 5.80m		51.5							
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							

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

Contract No: 5863	Rotary Corehole Log			Corehole No: RC11
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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				59.0							
1.0				58.5							
1.5				58.0							
2.0				57.5							
2.5				57.0							
3.0				56.5							
3.5				56.0							
4.0				55.5							
4.5				55.0							
5.0				54.5							
5.5				54.0							
6.0				53.5							
6.5	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>		53.0	52.99	6.50 - 7.50	97	83	43	9	
7.0				52.5							
7.5				52.0							
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>		51.5	51.69	7.50 - 8.50	97	89	50	7	
8.0				51.0							
8.5				50.5		8.50 - 9.50	95	91	71		
9.0			50.0	49.99							
9.5	9.50	End of Corehole at 9.40m									

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

Rotary Corehole Log

Contract No: 5863				Contract: Moygaddy	Easting: 694562.423	Date Started: 08/07/2021
Location: Maynooth, Co. Meath			Northing: 738770.148	Date Completed: 08/07/2021		
Client: Sky Castle Ltd			Elevation: 52.93	Drilled By: MEDL		
Engineer: OCSC			Rig Type: Sondeq	Status: FINAL		

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



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

Contract No: 5863	Rotary Corehole Log			Corehole No: RC13
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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			47.00	N=39 (5,5/7,9,10,13)						
8.5												
9.0												
9.5												

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

Contract No: 5863	Rotary Corehole Log	Corehole No: RC14
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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		47.61		N=40 (3,4/6,10,10,14)						
8.5				47.5								
9.0				47.0								
9.5				46.5								
				46.0								

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

Contract No: 5863	Rotary Corehole Log			Corehole No: RC16
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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				45.5							
1.0				45.0							
1.5				44.5							
2.0				44.0							
2.5				43.5							
3.0				43.0							
3.5				42.5							
4.0				42.0							
4.5				41.5							
5.0				41.0							
5.5				40.5							
6.0				40.0							
6.5				39.5		N=37 (3,3/5,8,11,13)					
7.0				39.0							
7.5			38.5								
8.0	8.00	End of Corehole at 8.00m		38.0	37.96	N=43 (3,6/8,9,12,14)					
8.5				37.5							
9.0				37.0							
9.5				36.5							

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

Contract No: 5863	Rotary Corehole Log			Corehole No: RC17
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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		TCR/%	SCR/%	RQD/%	FI/m		
0.0	Open hole drilling - driller reports returns of sandy gravelly silty CLAY with cobbles.		54.5								
0.5											
1.0											
1.5											
2.0											
2.5											
3.0											
3.5											
4.0											
4.5											
5.0											
5.5											
6.0											
6.5											
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. <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>		47.98								
7.5					6.80 - 7.80	98	57	45		Ni	
8.0						7.80 - 8.80	98	66	43		9
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	-

Rotary Corehole Log

Contract No: 5863				Corehole No: RC18	
Contract:	Moygaddy	Easting:	693667.400	Date Started:	20/07/2021
Location:	Maynooth, Co. Meath	Northing:	739242.451	Date Completed:	20/07/2021
Client:	Sky Castle Ltd	Elevation:	49.86	Drilled By:	MEDL
Engineer:	OCSC	Rig Type:	Sondeq	Status:	FINAL

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

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

Kildare County Council Planning Department - Viewing Purposes Only

Rotary Corehole Log

Contract No: 5863	Rotary Corehole Log			Corehole No: RC19	
Contract:	Moygaddy	Easting:	694613.822	Date Started:	12/07/2021
Location:	Maynooth, Co. Meath	Northing:	739485.171	Date Completed:	12/07/2021
Client:	Sky Castle Ltd	Elevation:	58.39	Drilled By:	MEDL
Engineer:	OCSC	Rig Type:	Sondeq	Status:	FINAL

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

Rotary Corehole Log

Contract No: 5863				Contract: Moygaddy	Easting: 694717.266	Date Started: 09/07/2021
Location: Maynooth, Co. Meath	Northing: 739392.581	Date Completed: 09/07/2021	Client: Sky Castle Ltd	Elevation: 59.02	Drilled By: MEDL	Engineer: OCSC
Rig Type: Sondeq	Status: FINAL					

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

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

5863 – Moygaddy
Rotary Core Photographs

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



5863 – Moygaddy
Rotary Core Photographs

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

Kildare County Council Planning Department - Viewing Purposes Only

Contract No: 5863	Trial Pit Log				Trial Pit No: TP01
Contract:	Moygaddy	Easting:	693958.608	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739151.571	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.32	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.30 x 0.60 x 2.10	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			55.22				
		Soft becoming firm brown sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			55.0				
	0.5					0.50	ICBR	MK14	
	1.0					1.00	B	MK15	
	1.80				53.52				
	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).			53.22				
	2.10	Obstruction - boulders.							
		Pit terminated at 2.10m							
	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	Trial Pit Log				Trial Pit No: TP02
Contract:	Moygaddy	Easting:	693988.420	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739286.118	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	57.37	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.00 x 0.60 x 3.00	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			57.27				
		Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			57.0				
0.5						0.50	ICBR	MK07	
	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				
					56.5				
1.0						1.00	B	MK08	
					56.0				
	1.50	Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			55.87				
					55.5				
2.0						2.00	B	MK09	
					55.0				
					54.5				
3.0	3.00	Pit terminated at 3.00m			54.37	3.00	B	MK10	
					54.0				
					53.5				

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

Contract No: 5863	Trial Pit Log				Trial Pit No: TP03
Contract:	Moygaddy	Easting:	693767.173	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739286.781	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.26	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.20 x 0.60 x 1.40	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			55.16				
		Firm brown slightly sandy slightly gravelly silty CLAY with low cobble and boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter).			55.0	0.50 0.50	B ICBR	MK01 MK02	
	0.90	Firm brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 300mm diameter).			54.36	1.00	B	MK03	
	1.40	Obstruction - boulders.			53.86				
		Pit terminated at 1.40m							

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

Contract No: 5863	Trial Pit Log				Trial Pit No: TP04
Contract:	Moygaddy	Easting:	693682.930	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739502.916	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	56.95	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.20 x 0.60 x 2.40	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			56.85				
		Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			56.5				
0.5	0.50	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter).			56.45	0.50	ICBR	MK43	
					56.0	1.00	B	MK44	
					55.5				
					55.0				▼
					54.65				
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.			54.55	2.40	B	MK45	
		Pit terminated at 2.40m			54.5				
					54.0				
					53.5				
					53.0				

	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Obstruction - boulders.	Pit walls stable.	2.00 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5863	Trial Pit Log				Trial Pit No: TP05
Contract:	Moygaddy	Easting:	693971.792	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739656.168	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	58.70	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	3.90 x 0.60 x 2.60	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			58.60				
		Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			58.5				
	0.60	Firm brown slightly sandy slightly gravelly clayey SILT. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone.			58.10	0.50	ICBR	MK39	
					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).			57.20	1.00	B	MK40	
					57.5				
	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter).			57.0	2.00	B	MK41	▼
					57.20				
	2.60	Obstruction - boulders.			56.30	2.50	B	MK42	
					56.5				
					56.30				
					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	Trial Pit Log				Trial Pit No: TP06
Contract:	Moygaddy	Easting:	693989.839	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739437.563	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	57.88	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.40 x 0.60 x 2.50	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			57.78				
		Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone.			57.58				
	0.30	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter).		57.5		0.50	ICBR	MK46	
				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.		56.5		1.50	B	MK48	
				56.0					
	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 500mm diameter).		55.8		2.20	B	MK49	▼
				55.5					
	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 500mm diameter).		55.5		2.50	B	MK50	
	2.50	Obstruction - boulders.		55.38					
		Pit terminated at 2.50m		55.0					
				54.5					
				54.0					

	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Obstruction - boulders.	Pit walls stable.	2.00 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5863	Trial Pit Log				Trial Pit No: TP07
Contract:	Moygaddy	Easting:	694176.647	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739446.736	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	58.93	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.20 x 0.60 x 2.50	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			58.83				
	0.20	Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone.			58.73				
		Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone.			58.5	0.50	ICBR	MK51	
	0.5	Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			58.0	1.00	B	MK52	
	1.0				57.5				
	1.5				57.0				
	2.0				56.5				
	2.40	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble			56.53				
	2.50	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.			56.43	2.50	B	MK53	
		Pit terminated at 2.50m			56.0				
	3.0				55.5				
	3.5				55.0				

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

Contract No: 5863	Trial Pit Log				Trial Pit No: TP08
Contract:	Moygaddy	Easting:	694199.733	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739712.642	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	61.26	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	3.80 x 0.60 x 1.40	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			61.16				
		Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			61.0				
	0.5					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	Trial Pit Log				Trial Pit No: TP09
Contract:	Moygaddy	Easting:	694508.798	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739701.821	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	62.01	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.00 x 0.60 x 1.60	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL. Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			61.91				
	0.5				61.5	0.50	ICBR	MK60	
	1.0				61.0	1.20	B	MK61	
	1.60	Obstruction - boulders. Pit terminated at 1.60m			60.41				
	2.0				60.0				
	2.5				59.5				
	3.0				59.0				
	3.5				58.5				

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

Contract No: 5863	Trial Pit Log				Trial Pit No: TP10
Contract:	Moygaddy	Easting:	694486.386	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739434.493	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	58.96	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.30 x 0.60 x 2.40	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			58.86				
	0.40	Soft brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			58.56				
0.5		Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).		58.5	58.56	0.50	ICBR	MK62	
1.0				58.0		1.00	B	MK63	
1.5				57.5					
2.0				57.0					
2.40		Obstruction - boulders.		56.56	56.56	2.40	B	MK64	▼
2.5		Pit terminated at 2.40m		56.5					
3.0				56.0					
3.5				55.5					
				55.0					

	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Obstruction - boulders.	Pit walls stable.	2.10 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5863	Trial Pit Log				Trial Pit No: TP11
Contract:	Moygaddy	Easting:	694739.889	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739363.529	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	59.42	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.10 x 0.60 x 2.30	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL. Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone.			59.32				
	0.50	Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			58.92	0.50	ICBR	MK57	
	1.50				58.00	1.50	B	MK58	
	2.10	Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			57.32	2.20	B	MK59	
	2.30	Obstruction - boulders. Pit terminated at 2.30m			57.12				
	2.50				57.00				
	3.00				56.50				
	3.50				56.00				
					55.50				

	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Obstruction - boulders.	Pit walls stable.	1.80 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental


Contract No: 5863	Trial Pit Log				Trial Pit No: TP12
Contract:	Moygaddy	Easting:	694471.269	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739060.502	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	56.97	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	3.70 x 0.60 x 2.30	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			56.87				
		Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			56.5				
0.5	0.50	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).		56.5	56.47	0.50	ICBR	MK34	
1.0				56.0		1.00	B	MK35	
1.5	1.50	Grey brown silty sandy fine to coarse, angular to subrounded		55.5	55.47				▼
1.60		GRAVEL of limestone with high cobble and low boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			55.37				
2.0		Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).		55.0		2.00	B	MK36	
2.20	2.20	Stiff black slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to			54.77				
2.30	2.30	coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			54.67				
2.5		Obstruction - boulders.			54.5				
		Pit terminated at 2.30m							
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	Trial Pit Log				Trial Pit No: TP13
Contract:	Moygaddy	Easting:	694562.423	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	738770.148	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	52.93	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	3.90 x 0.60 x 2.10	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			52.83				
		Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with high cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			52.5	0.50	ICBR	MK27	
	0.5				52.0	1.00	B	MK28	
	1.20	Grey brown silty sandy fine to coarse, angular to subrounded GRAVEL of limestone with high cobble and low boulder content. Sand is fine to coarse. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			51.73				
	1.5				51.5	1.50	B	MK29	
	1.60	Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			51.33				
	2.0				51.0	2.00	B	MK30	▼
	2.10	Obstruction - boulders. Pit terminated at 2.10m			50.83				
	2.5				50.5				
	3.0				50.0				
	3.5				49.5				
					49.0				

	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Obstruction - boulders.	Pit walls stable.	1.80 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5863	Trial Pit Log				Trial Pit No: TP14
Contract:	Moygaddy	Easting:	694240.465	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739010.894	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.01	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	3.90 x 0.60 x 2.00	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			54.91				
		Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.							
	0.5				54.5	0.50	ICBR	MK24	
	1.0				54.0	1.00	B	MK25	
	1.5				53.5				
	1.60	Stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			53.41				
	2.0	2.00			53.0	1.80	B	MK26	
		Obstruction - boulders.			53.01				
		Pit terminated at 2.00m							
	2.5				52.5				
	3.0				52.0				
	3.5				51.5				

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


Contract No: 5863	Trial Pit Log				Trial Pit No: TP15
Contract:	Moygaddy	Easting:	694131.238	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739202.931	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.37	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.20 x 0.60 x 1.60	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			55.27				
		Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			55.0				
0.5	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	
1.0					54.5				
					54.0	1.00	B	MK23	
1.5	1.60	Obstruction - boulders. Pit terminated at 1.60m			53.77				▼
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.	1.60 Medium	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5863	Trial Pit Log				Trial Pit No: TP16
Contract:	Moygaddy	Easting:	694580.524	Date:	17/06/2021
Location:	Maynooth, Co. Meath	Northing:	739205.916	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	58.33	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.10 x 0.60 x 2.20	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			58.23				
		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).			58.0	0.50	ICBR	MK54	
					57.5				
					57.0	1.00	B	MK55	
					56.5				
	2.10				56.23				
	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 500mm diameter). Obstruction - boulders.			56.13	2.20	B	MK56	
		Pit terminated at 2.20m			56.0				
					55.5				
					55.0				
					54.5				

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

Contract No: 5863	Trial Pit Log			Trial Pit No: TP17	
Contract:	Moygaddy	Easting:	693968.747	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739114.742	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	54.52	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.20 x 0.60 x 1.70	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL. Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			54.42				
	0.5				54.0	0.50	ICBR	MK17	
	1.0				53.5	1.00	B	MK18	
	1.70	Obstruction - boulders. Pit terminated at 1.70m			52.82				
	2.0				52.5				
	2.5				52.0				
	3.0				51.5				
	3.5				51.0				

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

Contract No: 5863	Trial Pit Log				Trial Pit No: TP18
Contract:	Moygaddy	Easting:	693940.121	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739224.755	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.98	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.10 x 0.60 x 2.50	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			55.88				
		Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			55.5	0.50	ICBR	MK11	
	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
					54.5				
					54.0				
	2.50	Obstruction - boulders. Pit terminated at 2.50m			53.5	53.48	2.50	B	MK13
					53.0				
					52.5				

	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Strength of soil and boulders.	Pit walls stable.	Dry	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5863	Trial Pit Log				Trial Pit No: TP19
Contract:	Moygaddy	Easting:	693876.942	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739296.996	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.71	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.00 x 0.60 x 1.90	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			55.61				
	0.20	Soft brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.		55.5	55.51				
	0.5	Firm grey brown slightly sandy slightly gravelly silty CLAY with high cobble and medium boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			55.0	0.50	ICBR	MK04	
	1.0				54.5	1.00	B	MK05	
	1.70	Stiff grey slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles and boulders are angular to subrounded of limestone (up to 400mm diameter).			54.0	54.01			▼
	1.90	Obstruction - boulders.			53.81	1.80	B	MK06	
	2.0	Pit terminated at 1.90m			53.5				
	2.5				53.0				
	3.0				52.5				
	3.5				52.0				

	Termination:	Pit Wall Stability:	Groundwater Rate:	Remarks:	Key:
	Obstruction - boulders.	Pit walls stable.	1.70 Seepage	-	B = Bulk disturbed D = Small disturbed CBR = Undisturbed CBR ES = Environmental

Contract No: 5863	Trial Pit Log				Trial Pit No: TP20
Contract:	Moygaddy	Easting:	694084.588	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	739079.517	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	55.01	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	3.90 x 0.60 x 1.90	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL. Soft brown slightly sandy slightly gravelly silty CLAY. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone.			54.91				
	0.40	Firm grey brown slightly sandy slightly gravelly silty CLAY with medium cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			54.61				
0.5				54.5	0.50	ICBR	MK19		
1.0				54.0	1.00	B	MK20		
1.30		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	Trial Pit Log				Trial Pit No: TP21
Contract:	Moygaddy	Easting:	694518.865	Date:	16/06/2021
Location:	Maynooth, Co. Meath	Northing:	738836.591	Excavator:	JCB 3CX
Client:	Sky Castle Ltd	Elevation:	54.89	Logged By:	M. Kaliski
Engineer:	OCSC	Dimensions (LxWxD) (m):	4.00 x 0.60 x 2.90	Status:	FINAL

Level (mbgl)		Stratum Description	Legend	Level (mOD)		Samples / Field Tests			Water Strike
Scale:	Depth			Scale:	Depth:	Depth	Type	Result	
	0.10	TOPSOIL.			54.79				
		Soft becoming firm brown slightly sandy slightly gravelly silty CLAY with low cobble content. Sand is fine to coarse. Gravel is fine to coarse, angular to subrounded of limestone. Cobbles are angular to subrounded of limestone.			54.5	0.50	ICBR	MK31	
	0.5				54.0	1.00	B	MK32	
	1.0				53.5				
	1.80	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	2.00	B	MK33	
	2.0				53.0				
	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

Kildare County Council Planning Department - Viewing Purposes Only

SOAKAWAY TEST



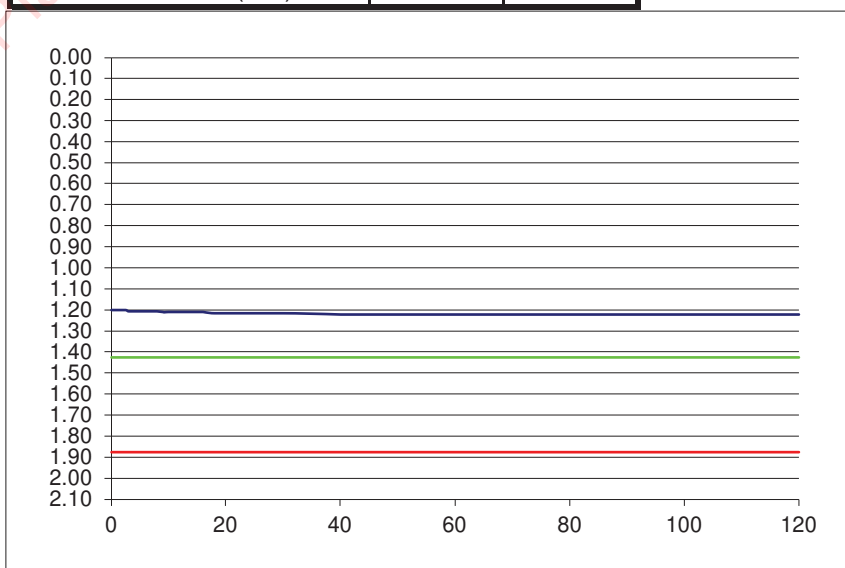
Project Reference:	5863
Contract name:	Moygaddy
Location:	Maynooth, Co. Meath
Test No:	TP01
Date:	16/06/2021

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

Remarks:
Obstruction at 2.10mbgl.

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

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



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



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

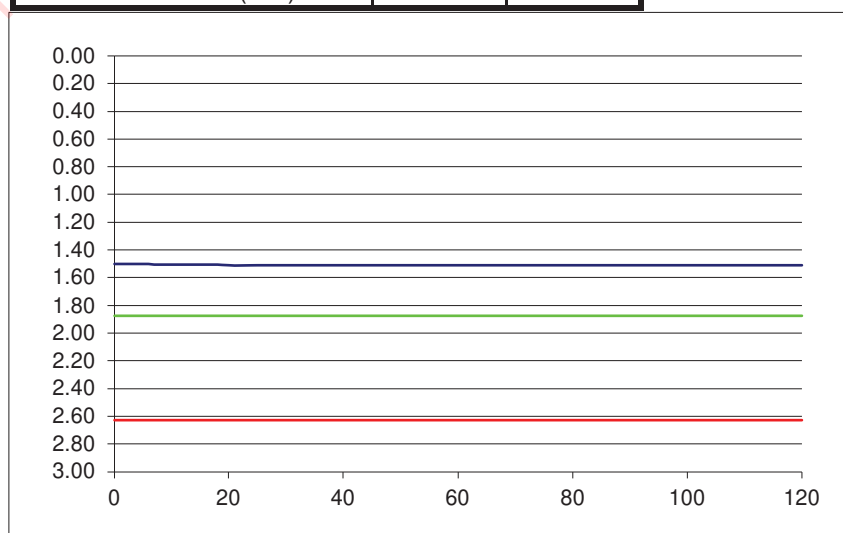
Ground Conditions

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

Remarks:

Test completed at base of pit.

Elapsed Time (mins)	Fall of Water (m)	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	Water	
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%)	1.80 m ³
5	1.50	Area of Drainage	27.60 m ²
6	1.50	Area of Drainage (75%-25%)	9.30 m ²
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%	N/A min
12	1.51	Time 75% to 25% (sec)	N/A 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

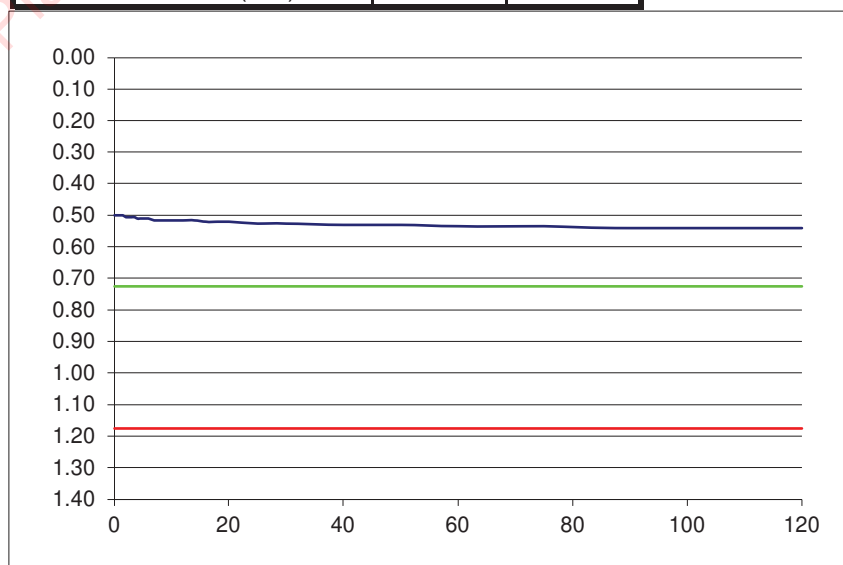


Project Reference:	5863
Contract name:	Moygaddy
Location:	Maynooth, Co. Meath
Test No:	TP03
Date:	16/06/2021

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

Remarks:
Obstructions at 1.40mbgl.

Elapsed Time (mins)	Fall of Water (m)	Pit Dimensions (m)	
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	Water	
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%)	1.13 m ³
5	0.51	Area of Drainage	13.44 m ²
6	0.51	Area of Drainage (75%-25%)	6.84 m ²
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%	N/A min
12	0.52	Time 75% to 25% (sec)	N/A 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



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

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

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

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

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

SOAKAWAY TEST



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

Ground Conditions

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

Remarks:

Obstruction at 2.60mbgl.

Water ingress at 1.70mbgl - soils saturated and unsuitable for soakaway design.

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

f = **Fail**
m/min

or

Fail
m/s

SOAKAWAY TEST



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

Ground Conditions

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

Remarks:

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

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

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

SOAKAWAY TEST



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

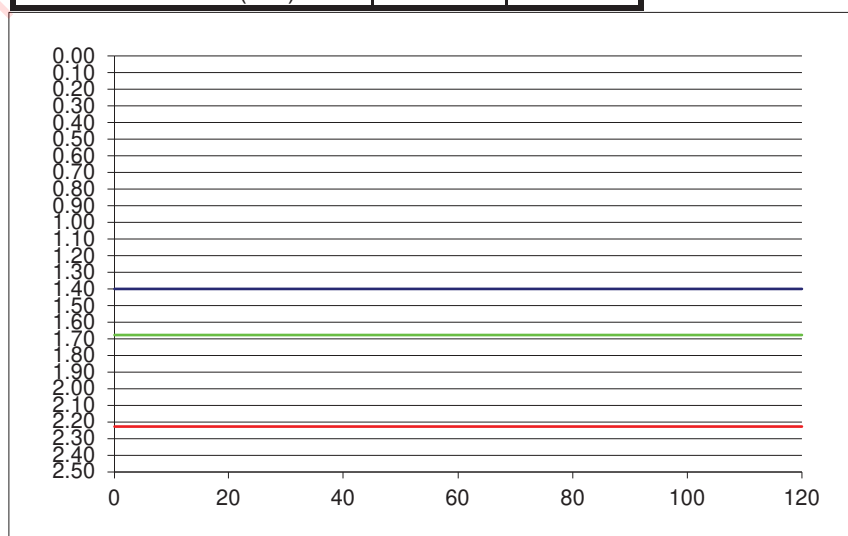
Ground Conditions

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

Remarks:

Obstructions at 2.50mbgl.

Elapsed Time (mins)	Fall of Water (m)	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	Water	
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%)	1.39 m ³
5	1.40	Area of Drainage	24.00 m ²
6	1.40	Area of Drainage (75%-25%)	7.80 m ²
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%	N/A min
12	1.40	Time 75% to 25% (sec)	N/A 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** or
m/min

Fail
m/s

SOAKAWAY TEST



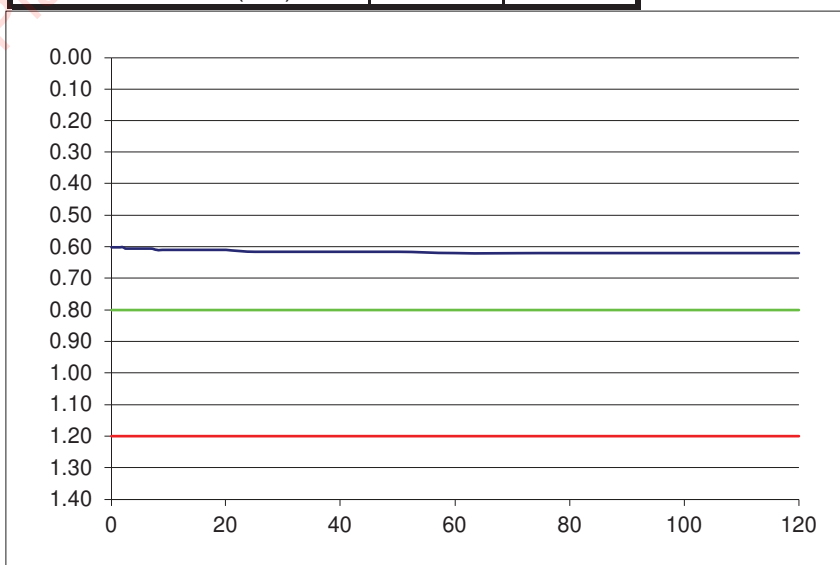
Project Reference:	5863
Contract name:	Moygaddy
Location:	Maynooth, Co. Meath
Test No:	TP08
Date:	17/06/2021

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

Remarks:
Obstructions at 1.40mbgl.

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

Pit Dimensions (m)	
Length (m)	3.80 m
Width (m)	0.60 m
Depth	1.40 m
Water	
Start Depth of Water	0.60 m
Depth of Water	0.80 m
75% Full	0.80 m
25% Full	1.20 m
75%-25%	0.40 m
Volume of water (75%-25%)	0.91 m ³
Area of Drainage	12.32 m ²
Area of Drainage (75%-25%)	5.80 m ²
Time	
75% Full	N/A min
25% Full	N/A min
Time 75% to 25%	N/A min
Time 75% to 25% (sec)	N/A sec



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



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

Ground Conditions

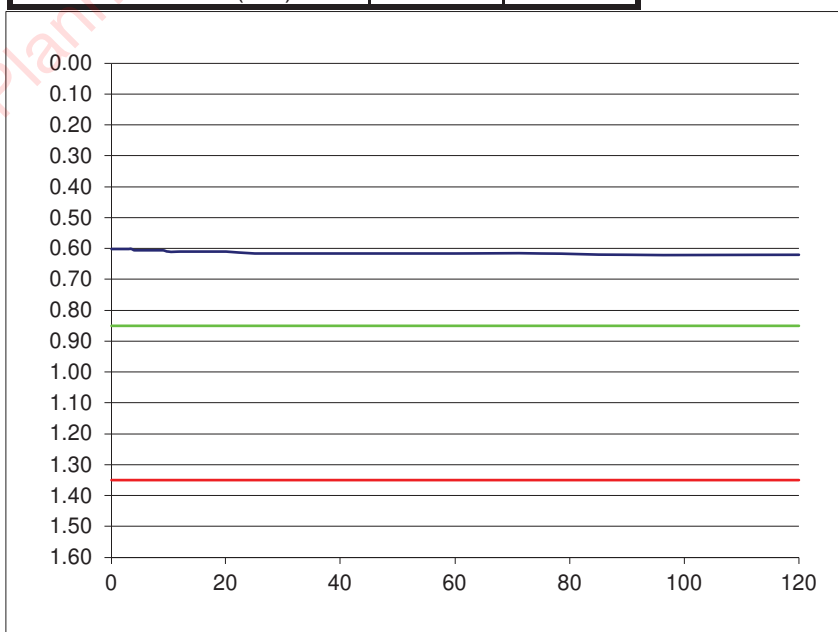
From	To	
0.00	0.10	TOPSOIL.
0.10	1.60	Firm becoming stiff grey brown slightly sandy slightly gravelly silty CLAY with high cobble and low boulder content.

Remarks:

Obstructions at 1.60mbgl.

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

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



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



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

Ground Conditions

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

Remarks:

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

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

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

SOAKAWAY TEST



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

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

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

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

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

SOAKAWAY TEST



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

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

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

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

f = Fail or Fail
m/min m/s

SOAKAWAY TEST



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

Ground Conditions

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

Remarks:

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

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

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

SOAKAWAY TEST



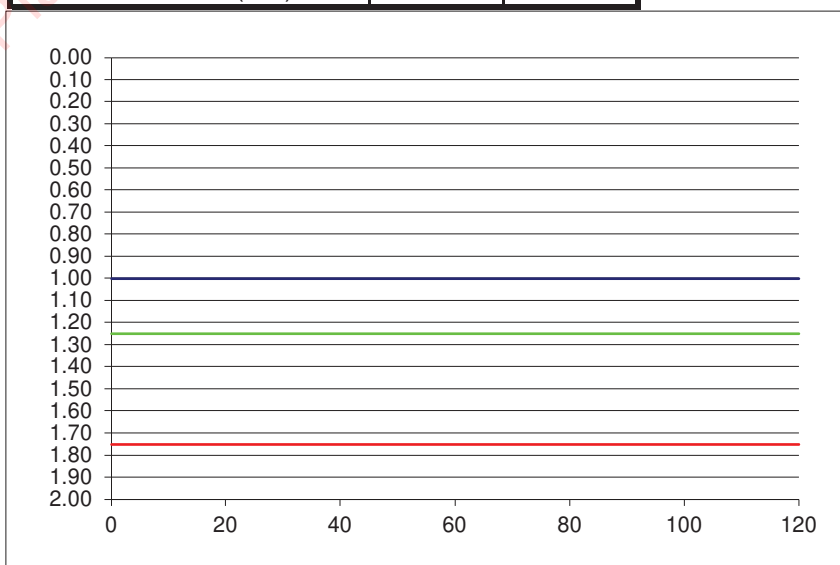
Project Reference:	5863
Contract name:	Moygaddy
Location:	Maynooth, Co. Meath
Test No:	TP14
Date:	17/06/2021

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

Remarks:
Obstructions at 2.00mbgl.

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

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



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



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

Ground Conditions

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

Remarks:

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

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

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

SOAKAWAY TEST



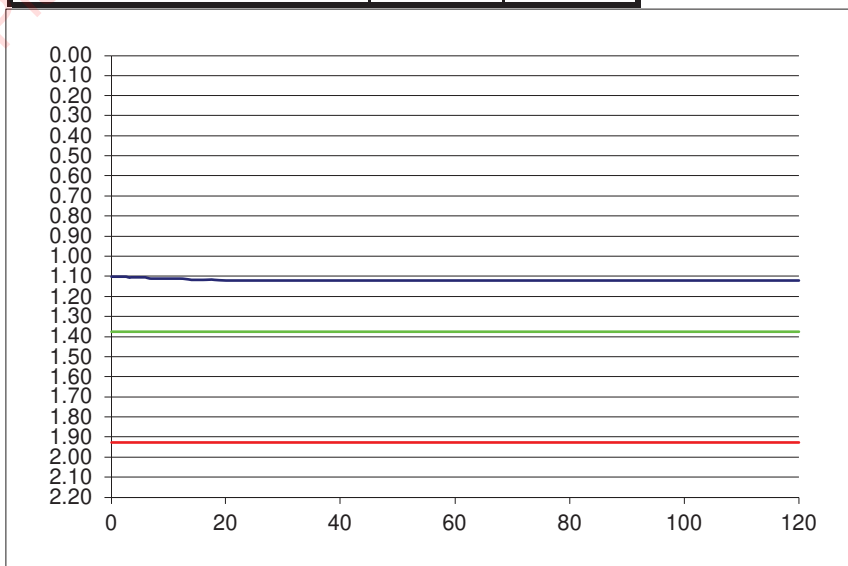
Project Reference:	5863
Contract name:	Moygaddy
Location:	Maynooth, Co. Meath
Test No:	TP16
Date:	17/06/2021

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

Remarks:
Obstructions at 2.20mbgl.

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

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



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



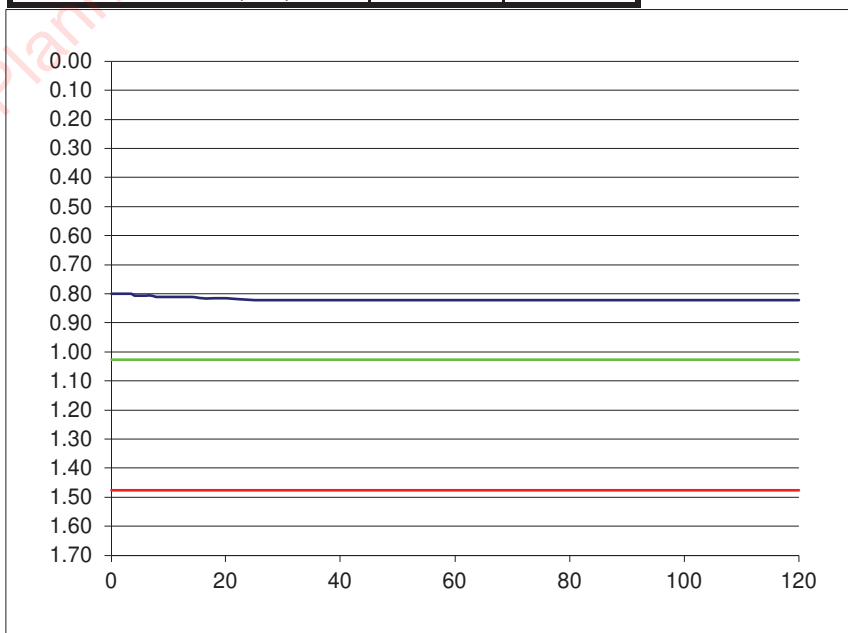
Project Reference:	5863
Contract name:	Moygaddy
Location:	Maynooth, Co. Meath
Test No:	TP17
Date:	16/06/2021

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

Remarks:
Obstructions at 1.70mbgl.

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

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



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



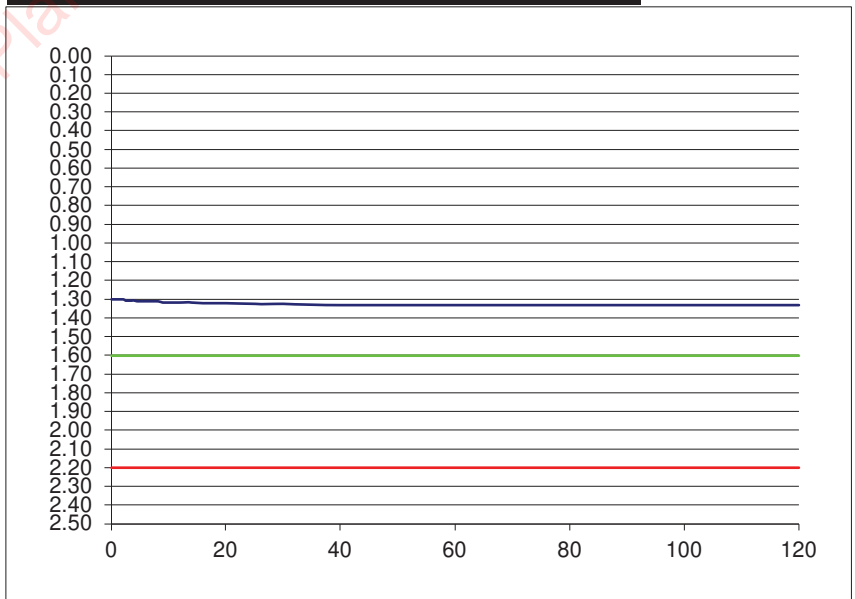
Project Reference:	5863
Contract name:	Moygaddy
Location:	Maynooth, Co. Meath
Test No:	TP18
Date:	16/06/2021

Ground Conditions		
From	To	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 ³
Area of Drainage	23.50 m ²
Area of Drainage (75%-25%)	8.10 m ²
Time	
75% Full	N/A min
25% Full	N/A min
Time 75% to 25%	N/A min
Time 75% to 25% (sec)	N/A sec



f = Fail m/min or Fail m/s

SOAKAWAY TEST



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

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

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

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

f = Fail or Fail
m/min m/s

SOAKAWAY TEST



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

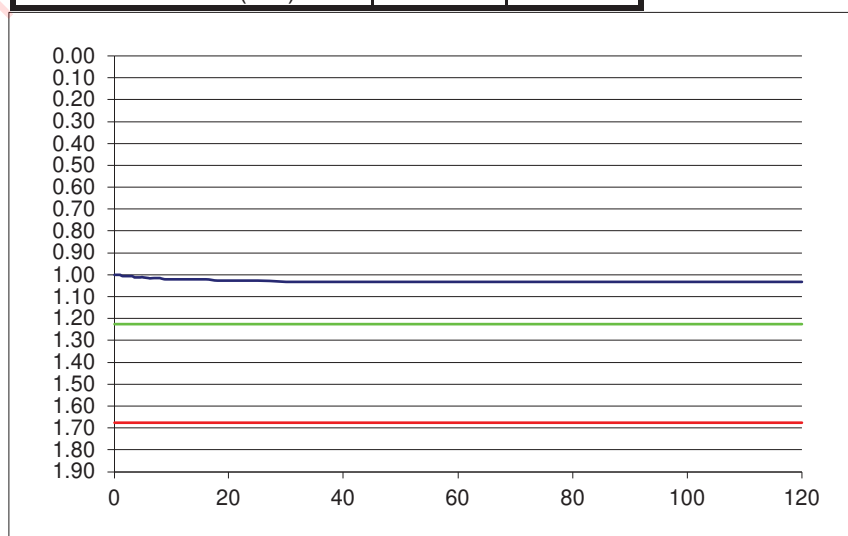
Ground Conditions

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

Remarks:

Obstructions at 1.90mbgl.

Elapsed Time (mins)	Fall of Water (m)	Pit Dimensions (m)	
0	1.00	Length (m)	3.90 m
0.5	1.00	Width (m)	0.60 m
1	1.00	Depth	1.90 m
1.5	1.01	Water	
2	1.01	Start Depth of Water	1.00 m
2.5	1.01	Depth of Water	0.90 m
3	1.01	75% Full	1.23 m
3.5	1.01	25% Full	1.68 m
4	1.01	75%-25%	0.45 m
4.5	1.01	Volume of water (75%-25%)	1.05 m ³
5	1.01	Area of Drainage	17.10 m ²
6	1.02	Area of Drainage (75%-25%)	6.39 m ²
7	1.02	Time	
8	1.02	75% Full	N/A min
9	1.02	25% Full	N/A min
10	1.02	Time 75% to 25%	N/A min
12	1.02	Time 75% to 25% (sec)	N/A sec
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		



f = **Fail** or
m/min

Fail
m/s

SOAKAWAY TEST



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

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

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

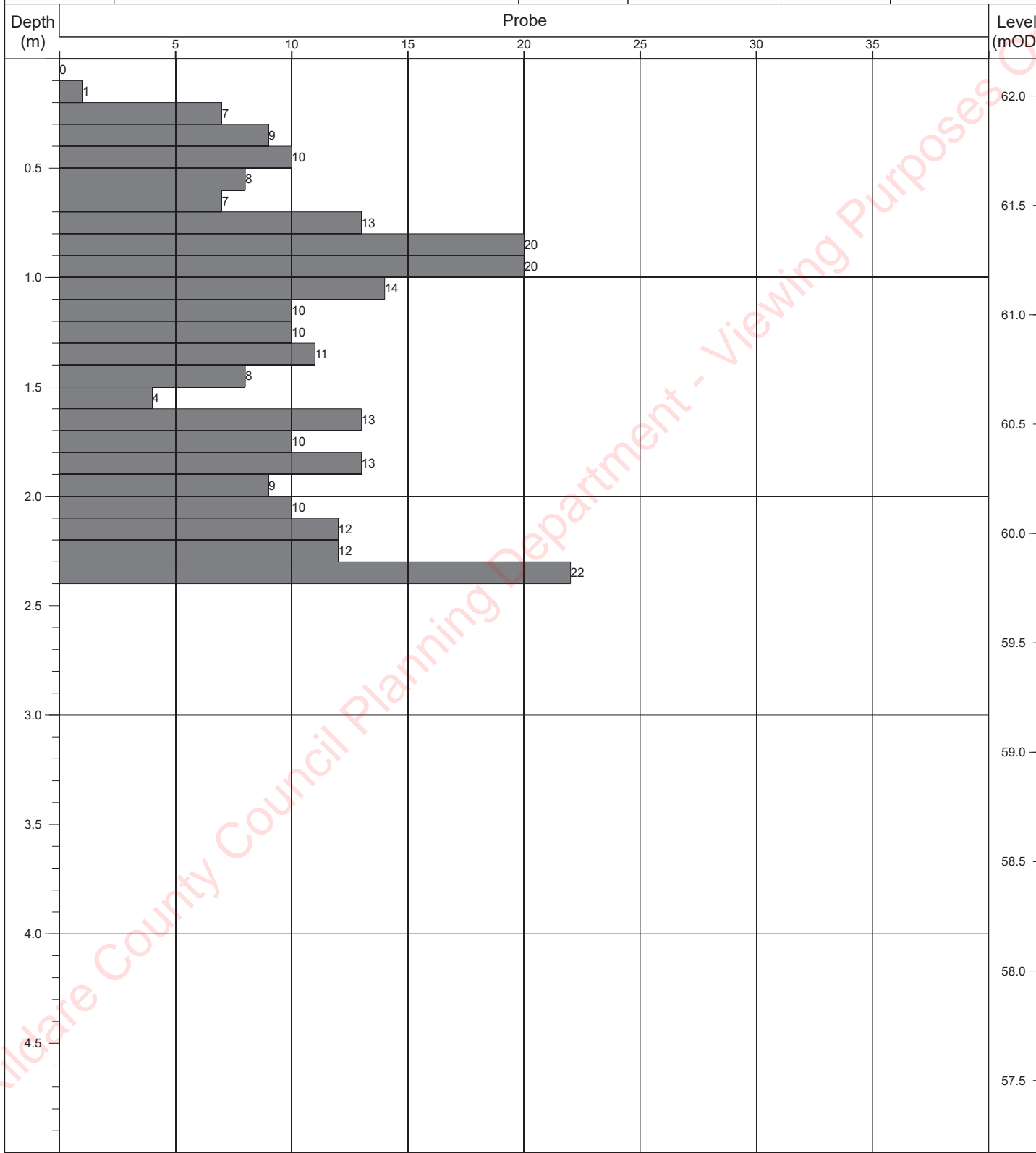
Elapsed Time (mins)	Fall of Water (m)		Pit Dimensions (m)		
0	-		Length (m)	4.00	m
0.5	-		Width (m)	0.60	m
1	-		Depth	2.90	m
1.5	-		Water		
2	-		Start Depth of Water	-	m
2.5	-		Depth of Water	-	m
3	-		75% Full	-	m
3.5	-		25% Full	-	m
4	-		75%-25%	-	m
4.5	-		Volume of water (75%-25%)	-	m ³
5	-		Area of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

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

Appendix 5
Dynamic Probe Logs

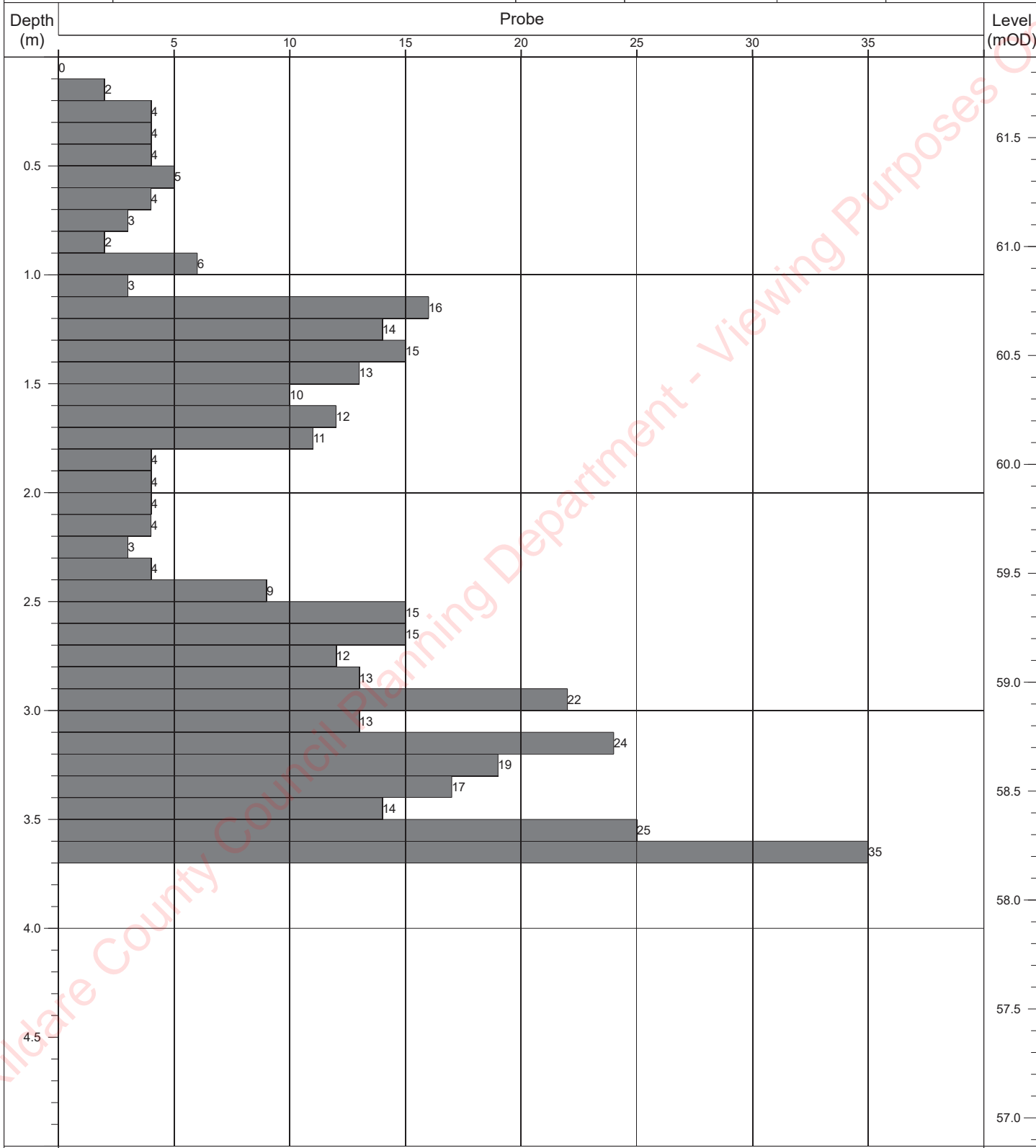
Kildare County Council Planning Department - Viewing Purposes Only

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



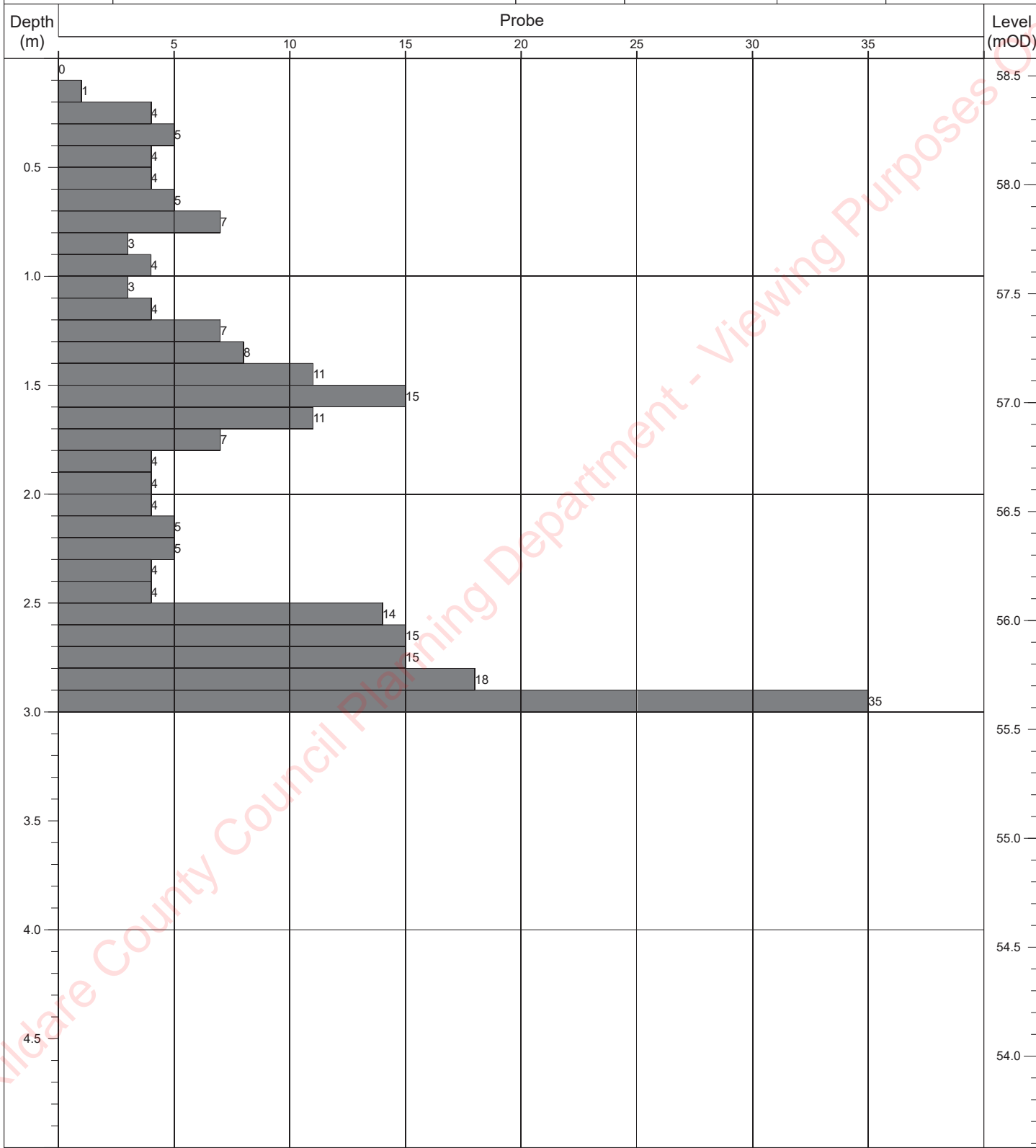
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



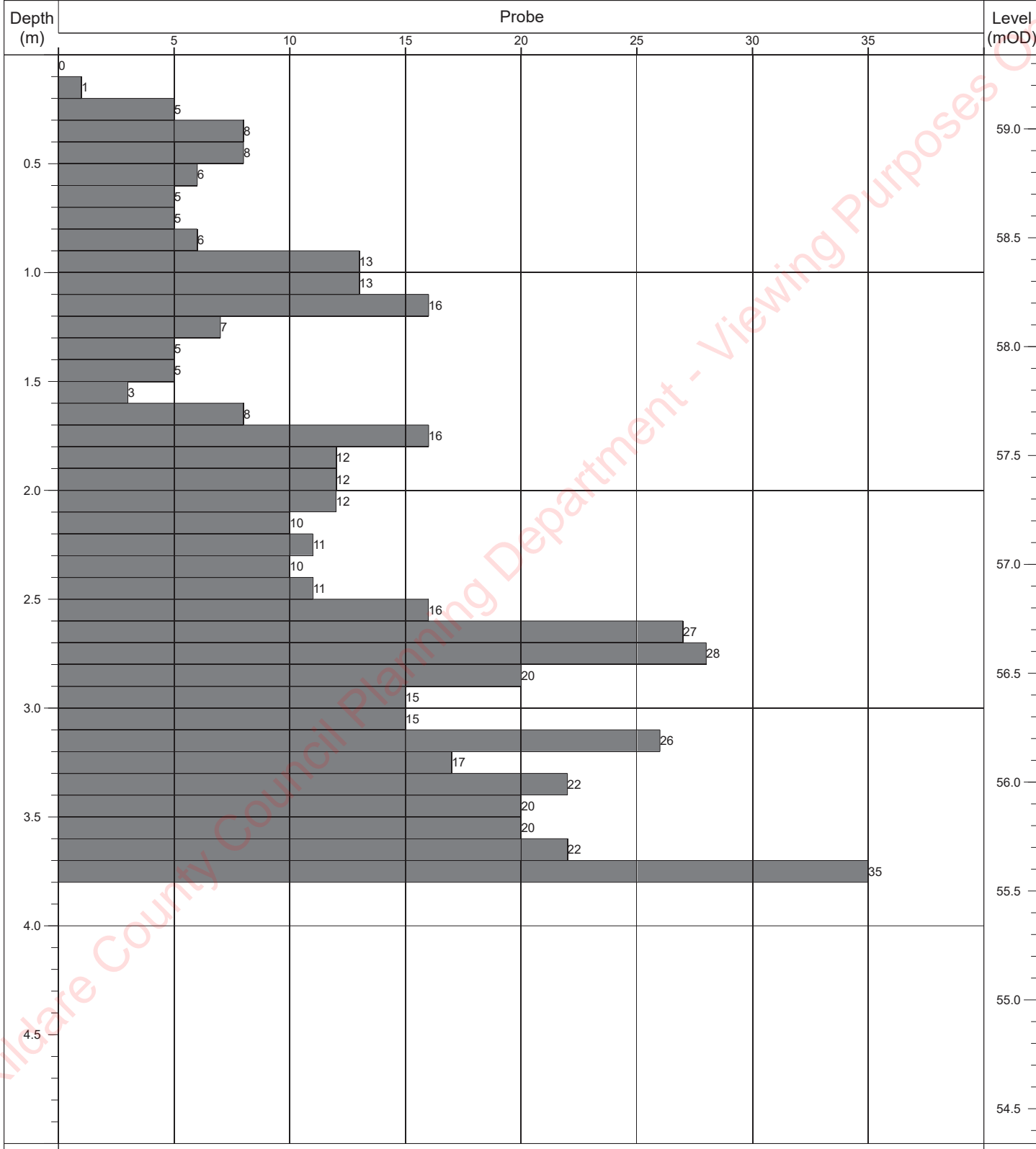
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.70m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP03	
Contract:	Moygaddy	Easting:	693987.686	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739685.908	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.58	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



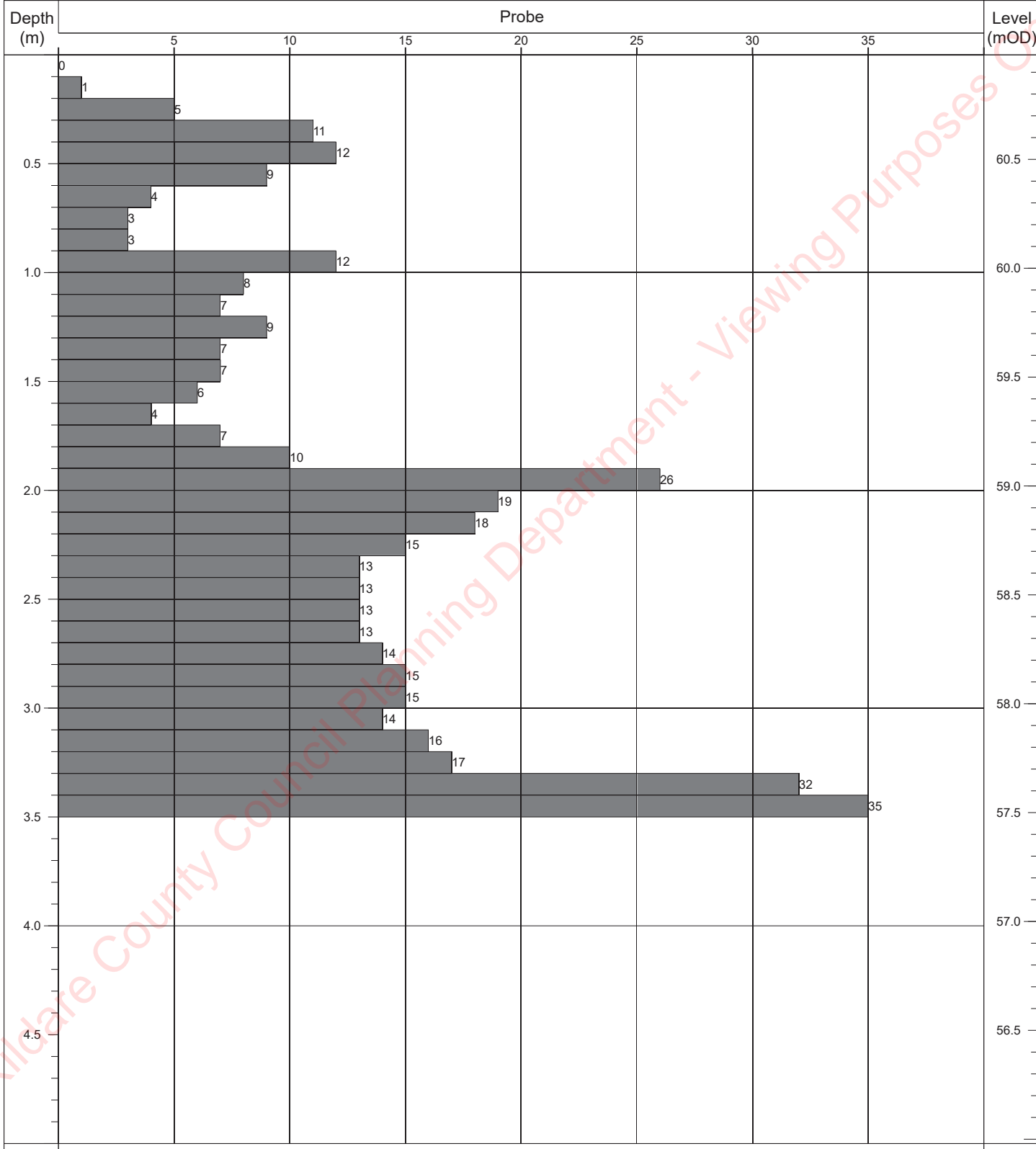
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.00m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP04	
Contract:	Moygaddy	Easting:	694088.248	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739692.829	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	59.34	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



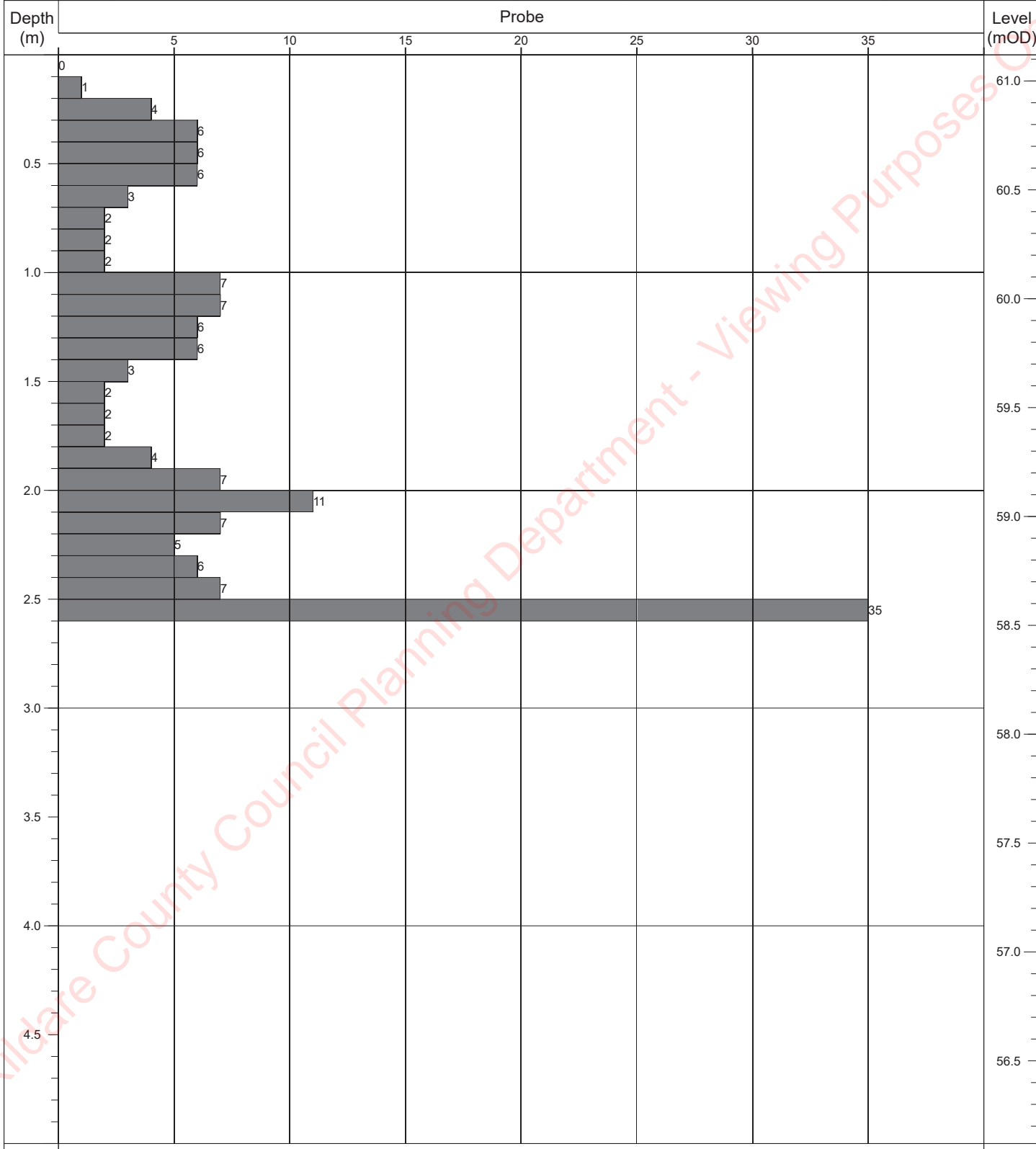
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.70m	Obstruction - boulders.	DPH	50kg	500mm	

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



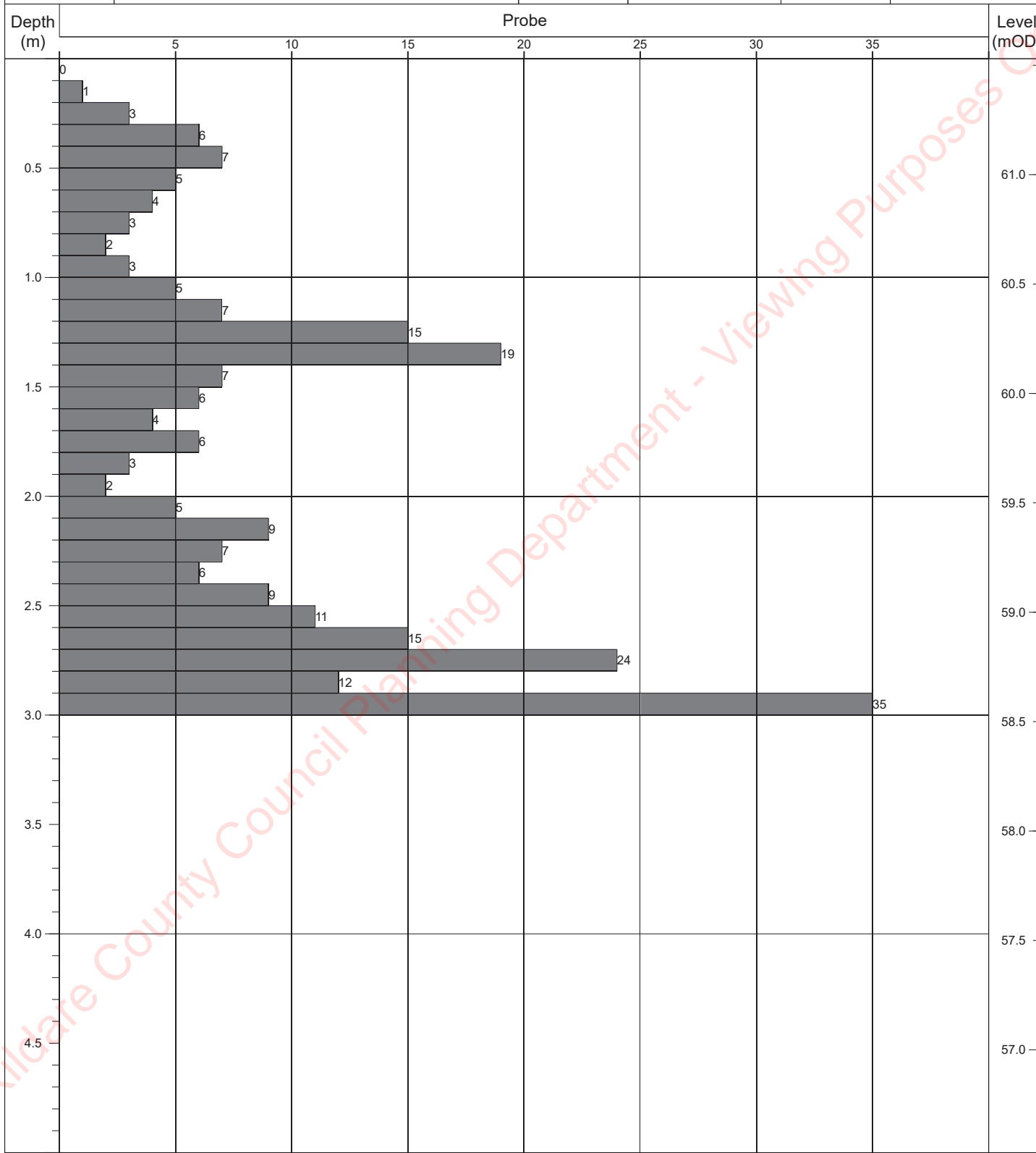
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.50m	Obstruction - boulders.	DPH	50kg	500mm	

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



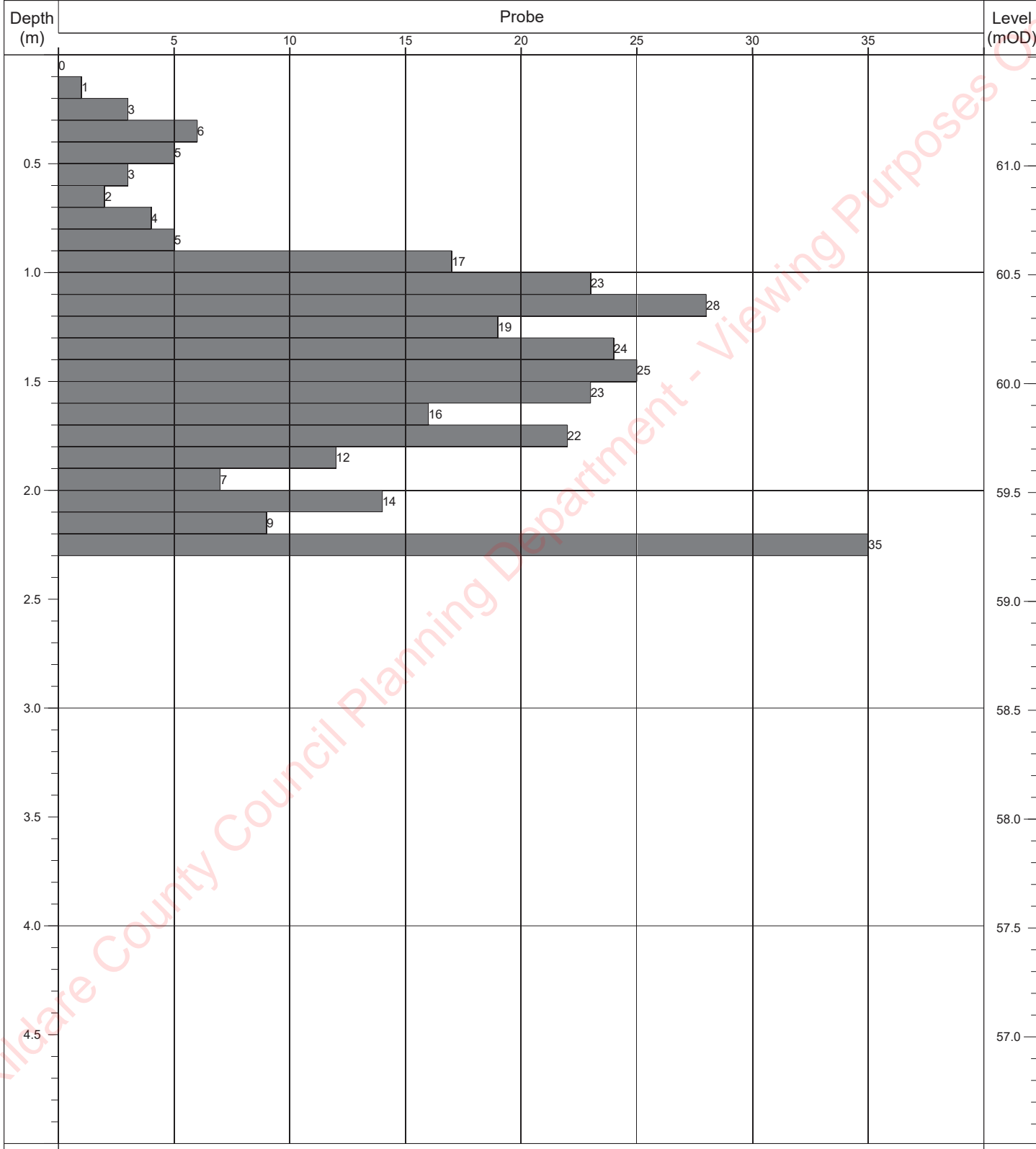
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.60m	Obstruction - boulders.	DPH	50kg	500mm	

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



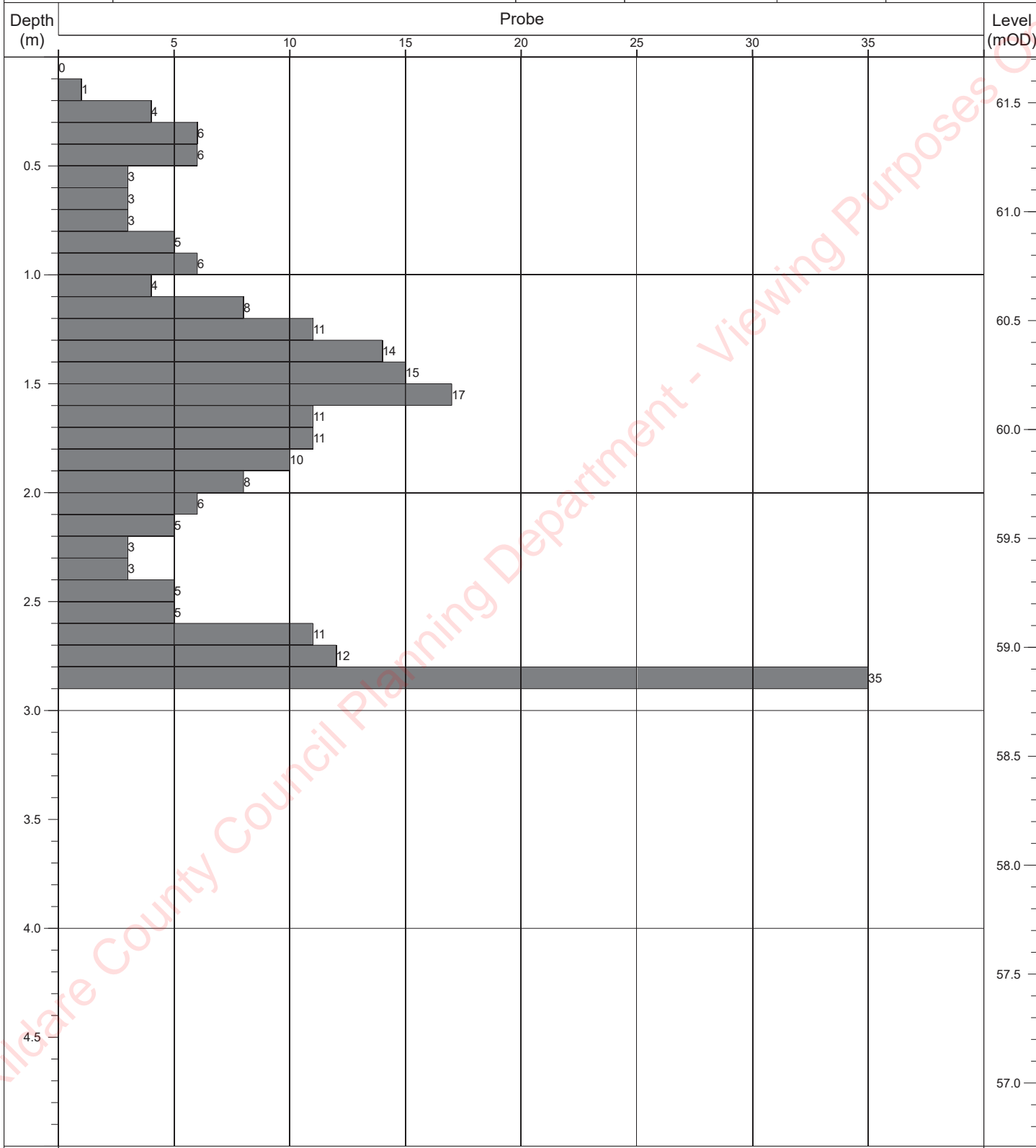
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	3.00m	Obstruction - boulders.	DPH	50kg	500mm	

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



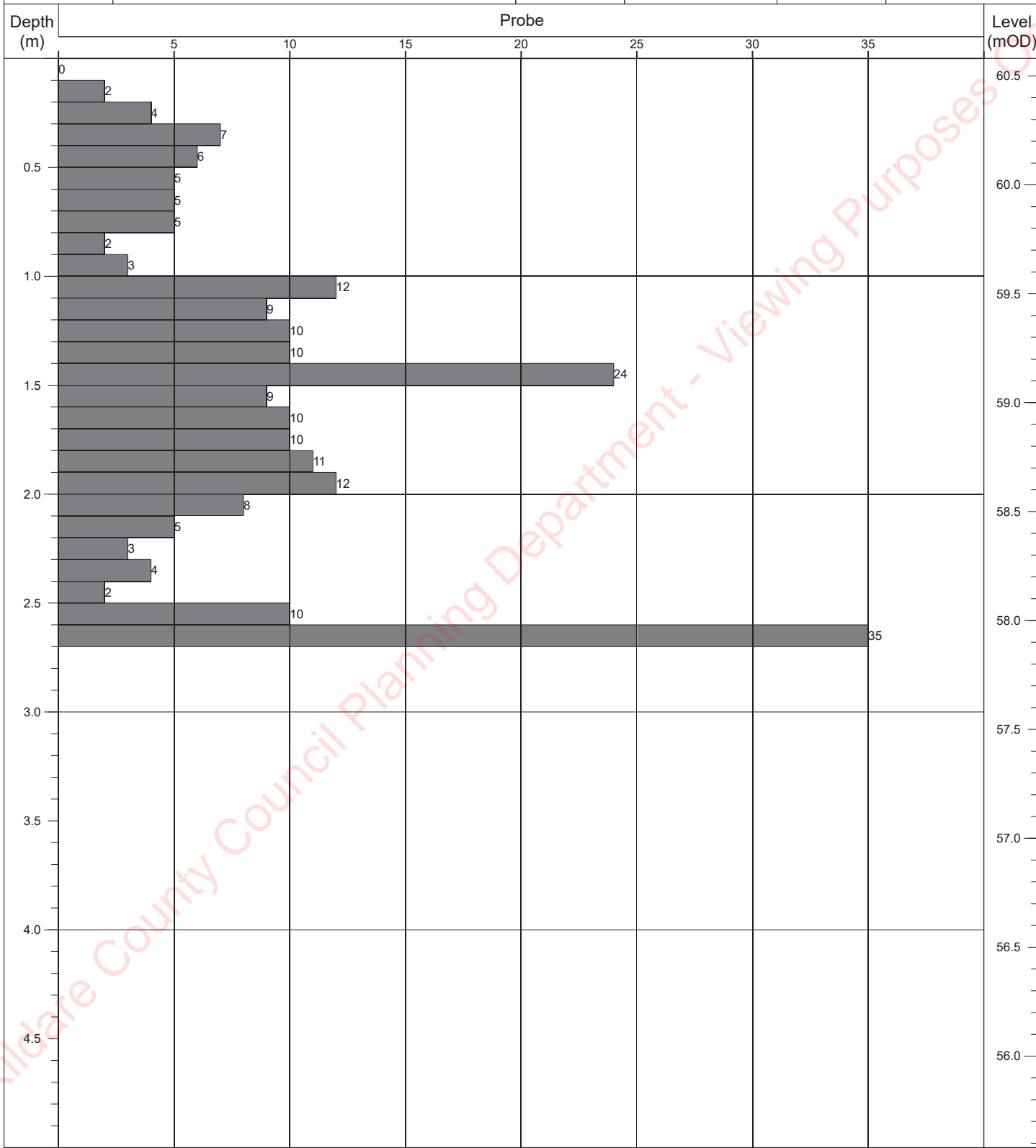
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.30m	Obstruction - boulders.	DPH	50kg	500mm	

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



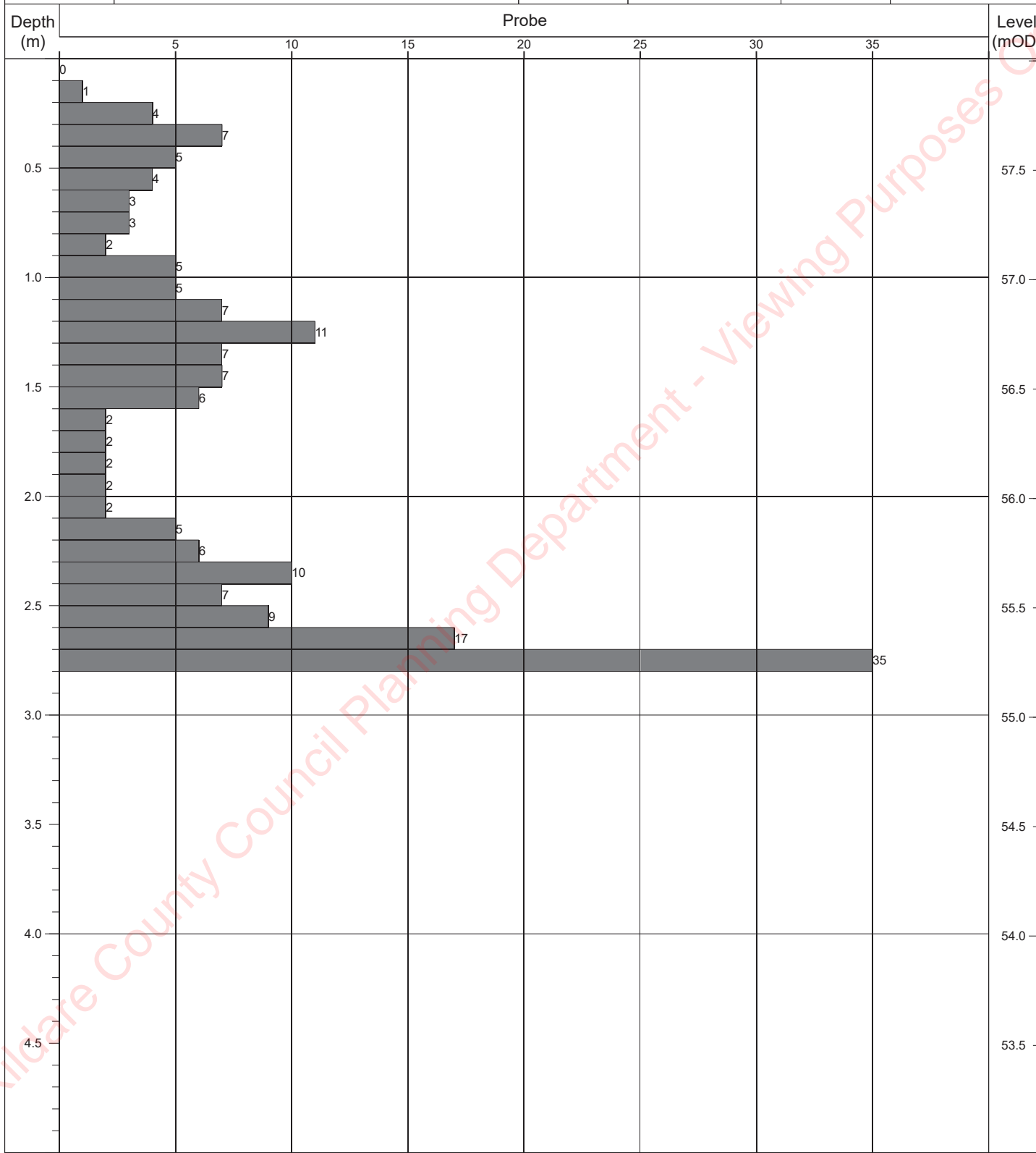
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.90m	Obstruction - boulders.	DPH	50kg	500mm	

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



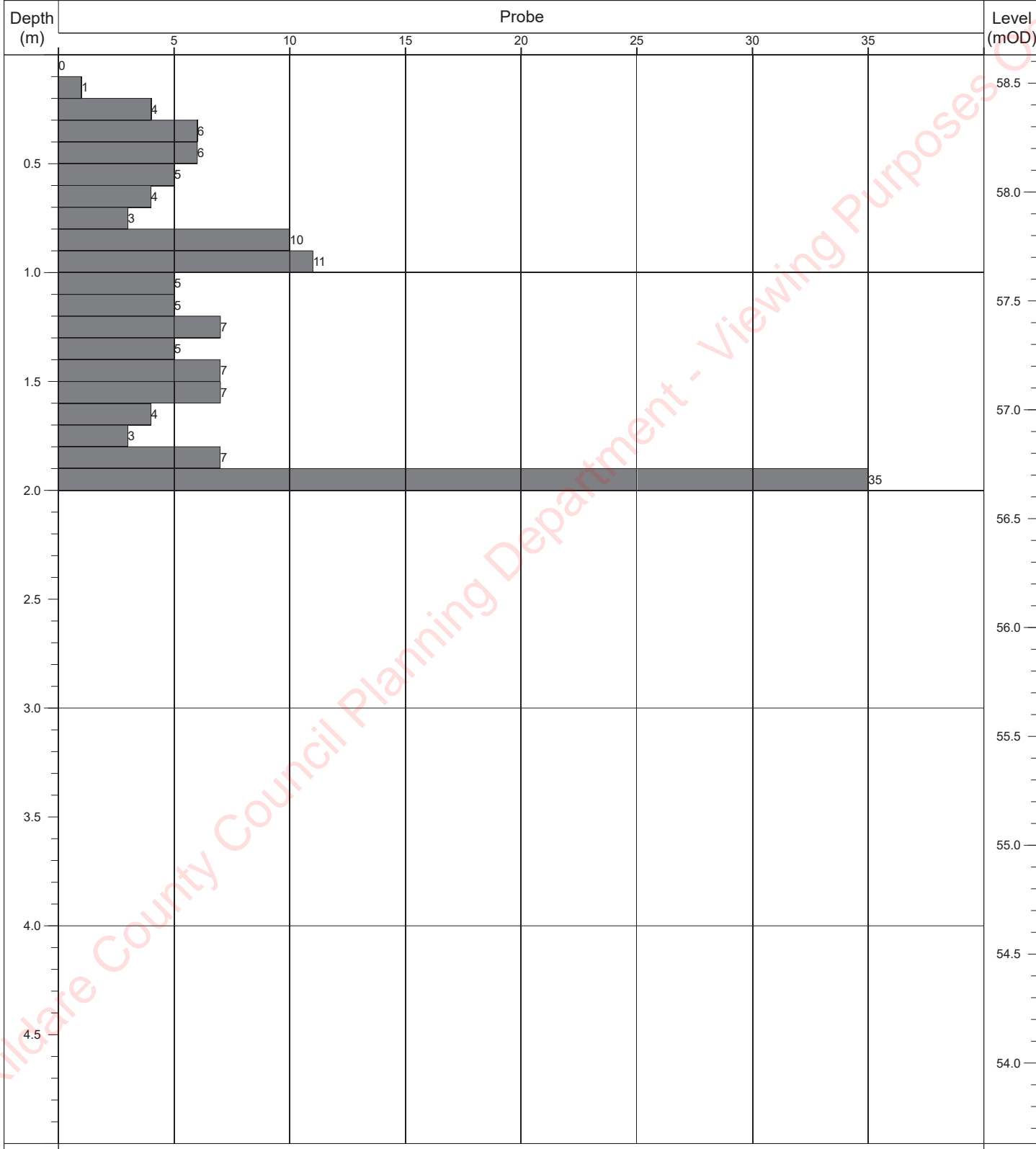
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.70m	Obstruction - boulders.	DPH	50kg	500mm	

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



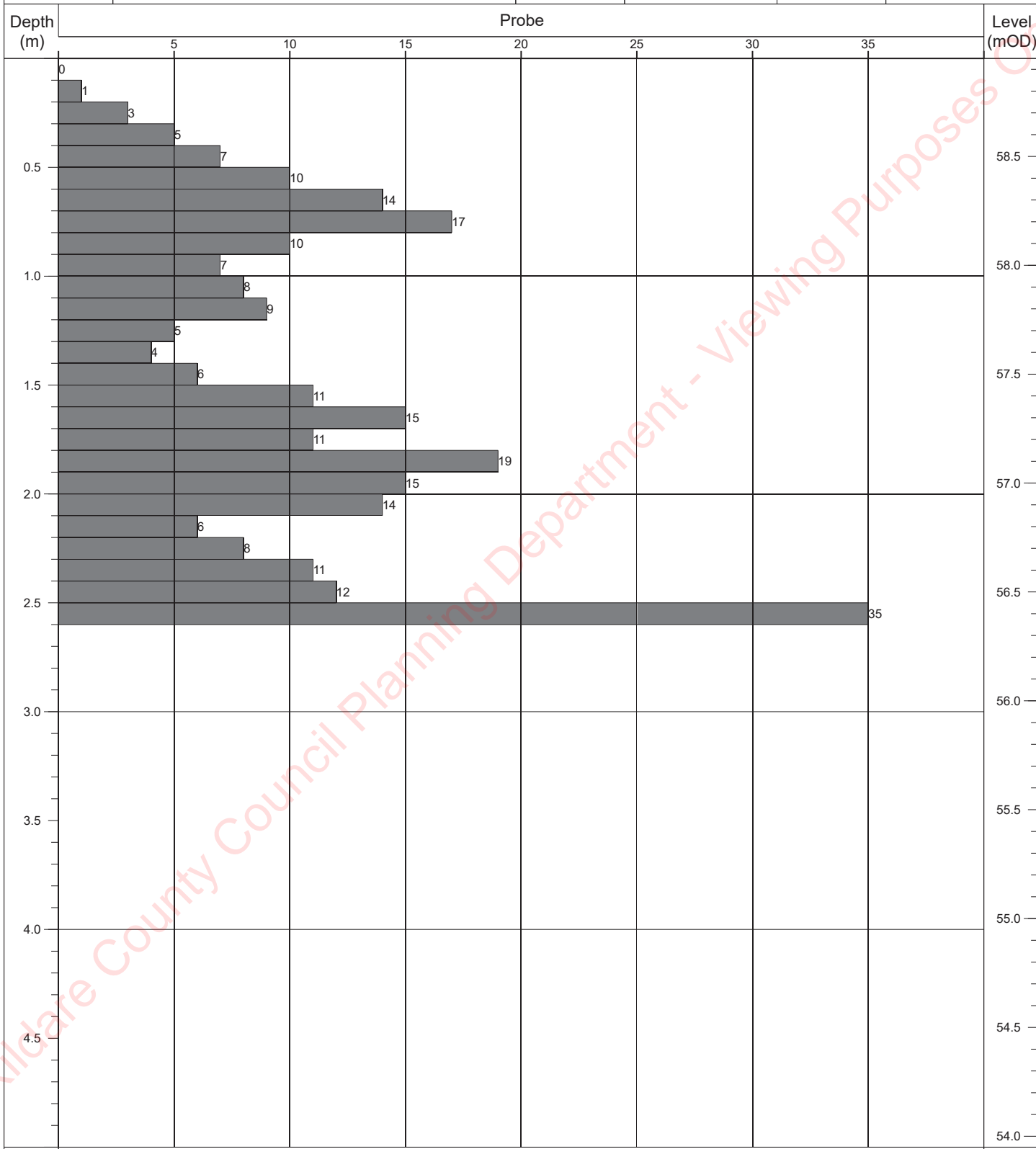
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.80m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP12	
Contract:	Moygaddy	Easting:	693990.198	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739586.789	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.63	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



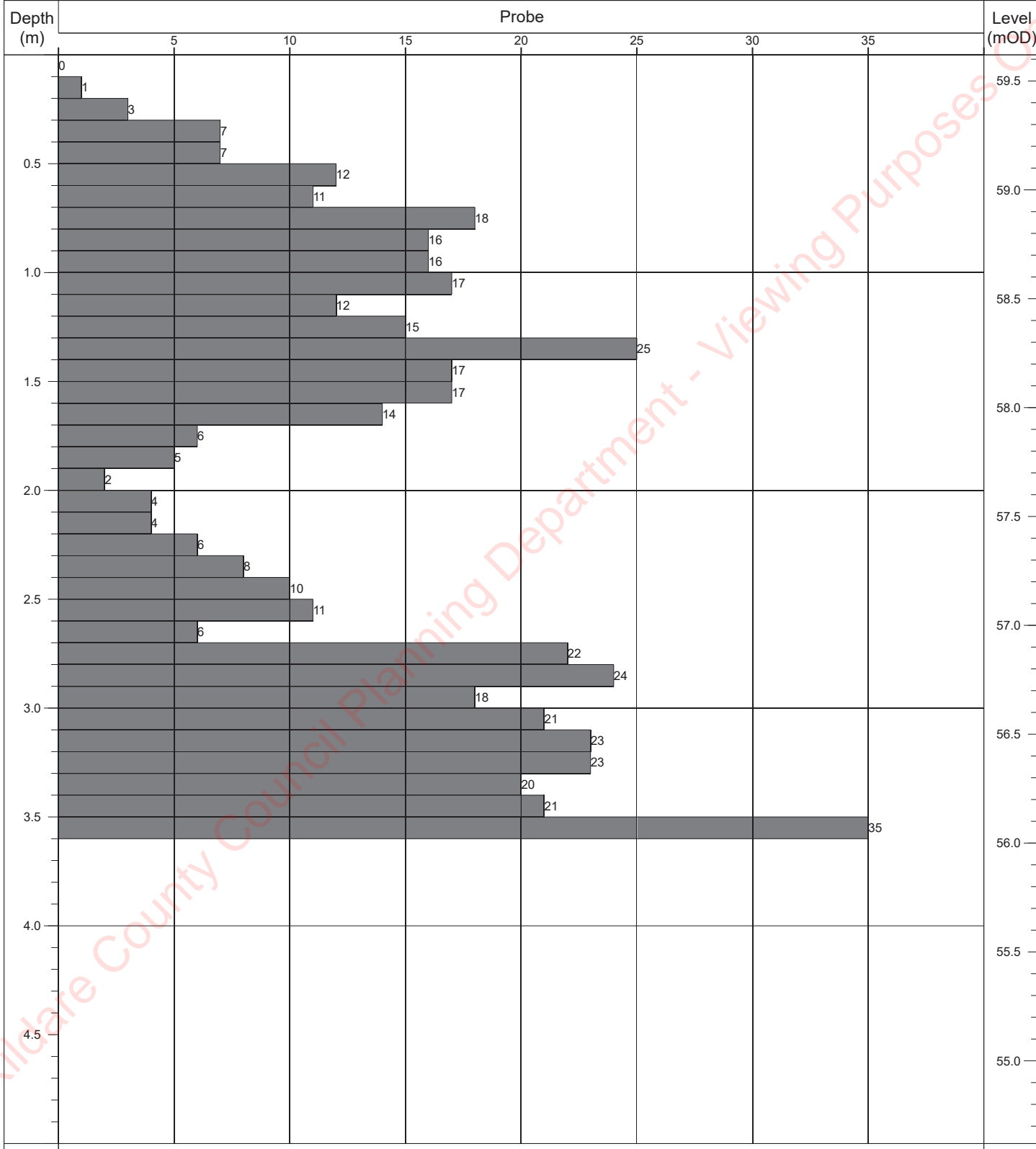
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.00m	Obstruction - boulders.	DPH	50kg	500mm	

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



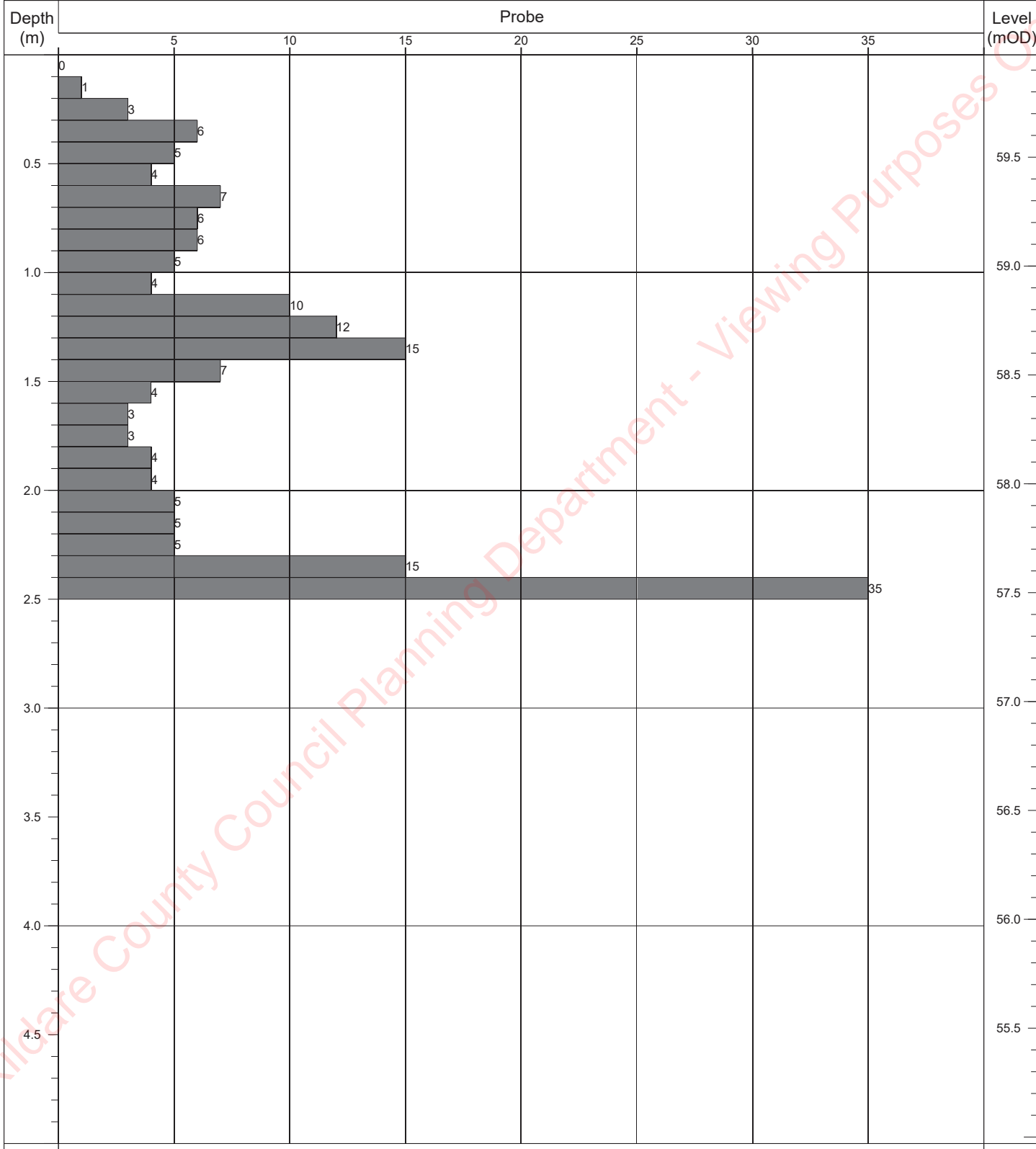
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.60m	Obstruction - boulders.	DPH	50kg	500mm	

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



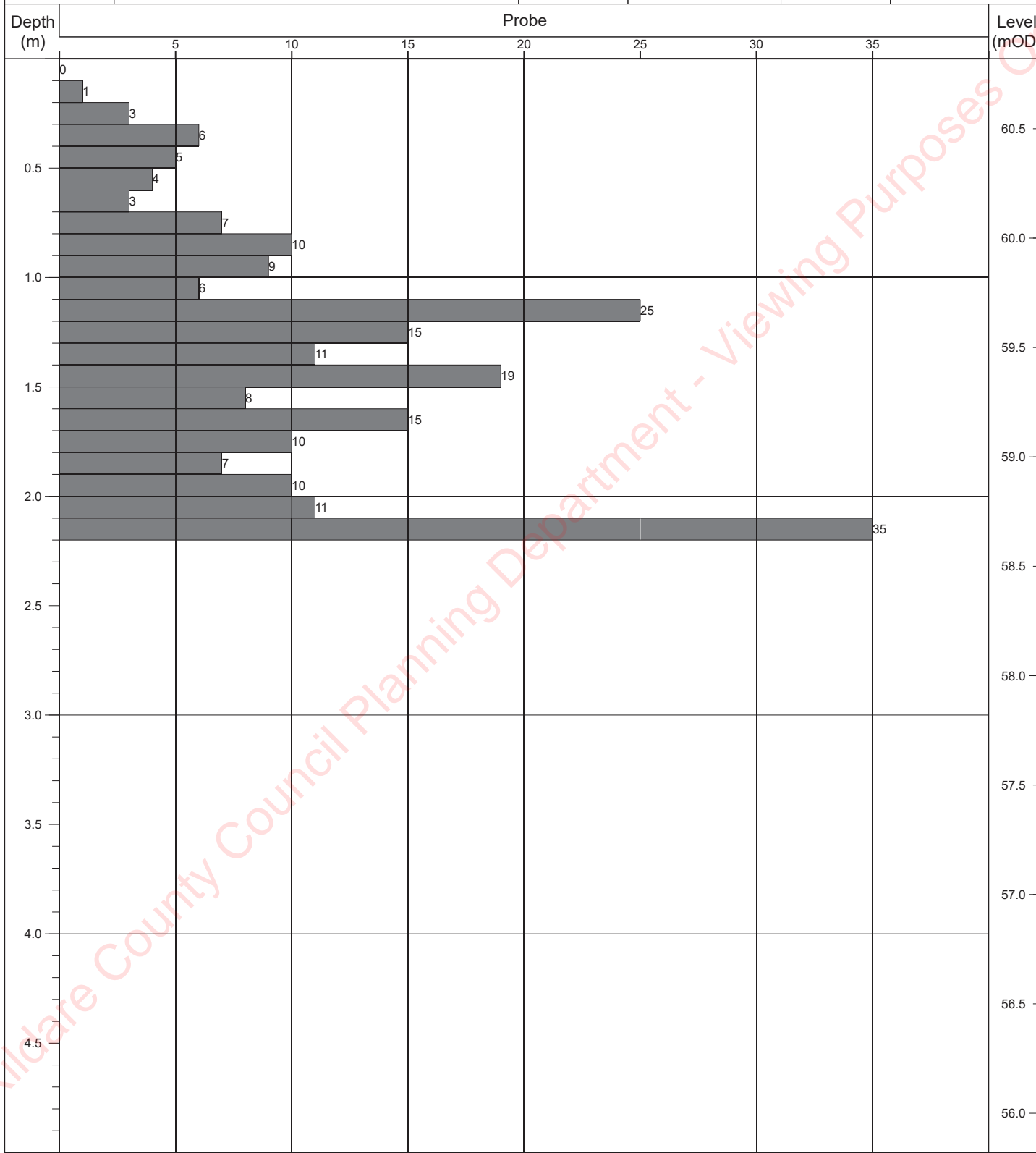
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	Depth:	Reason:	Type:	Mass	Drop:	
	3.60m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP15	
Contract:	Moygaddy	Easting:	694289.424	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739586.183	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	59.97	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



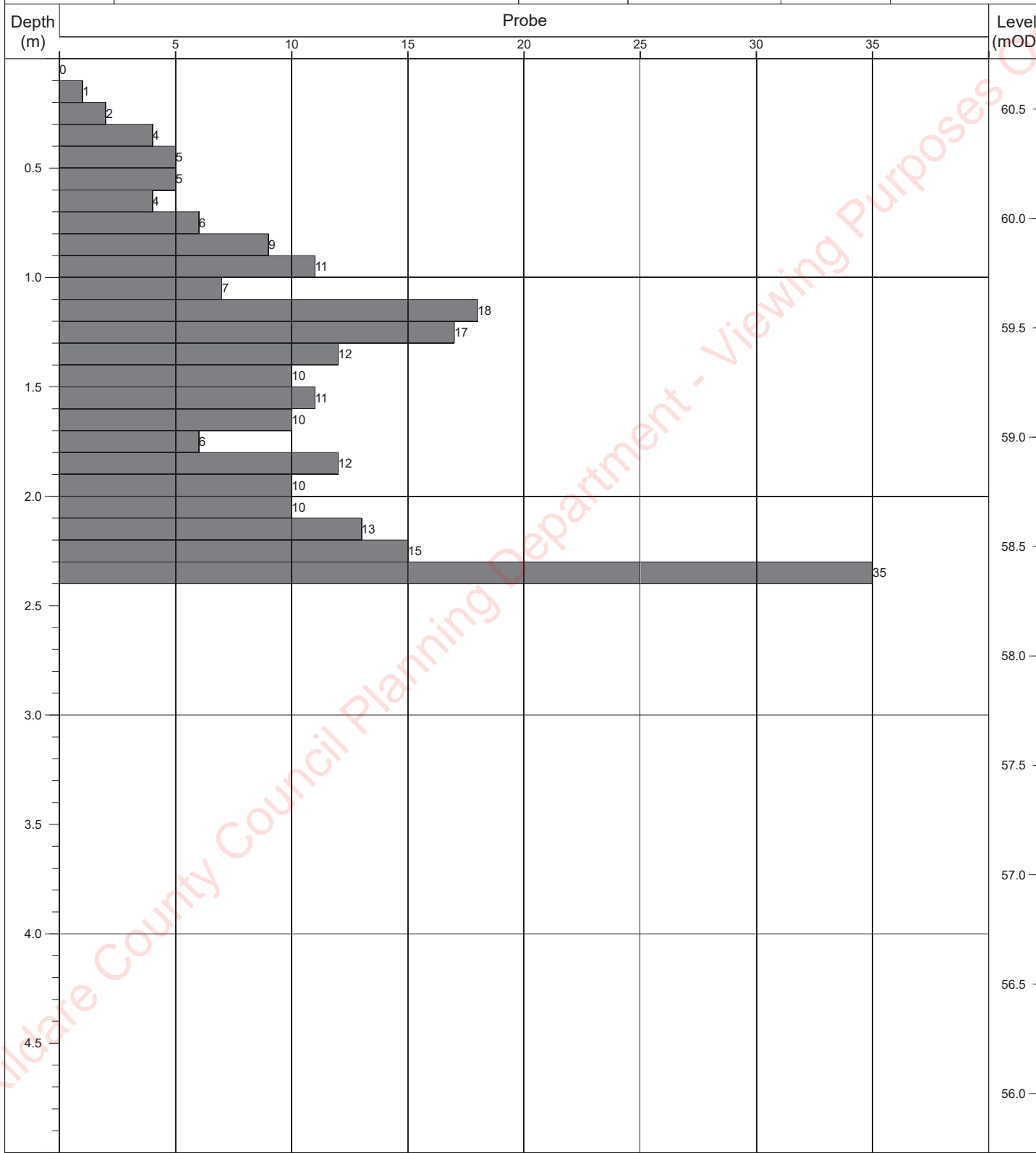
	Termination:		Probe Details:			Remarks:
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	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

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



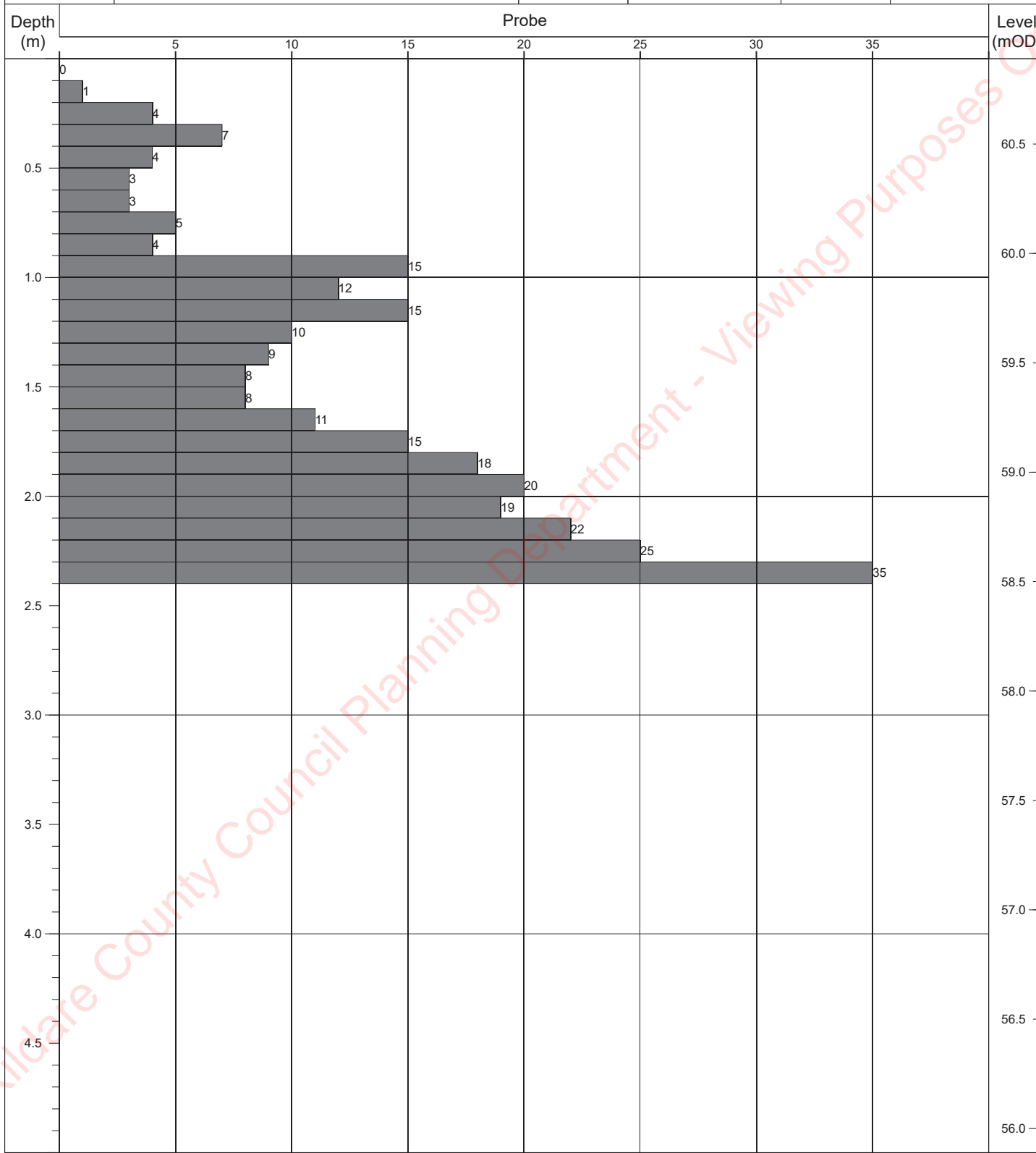
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.20m	Obstruction - boulders.	DPH	50kg	500mm	

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



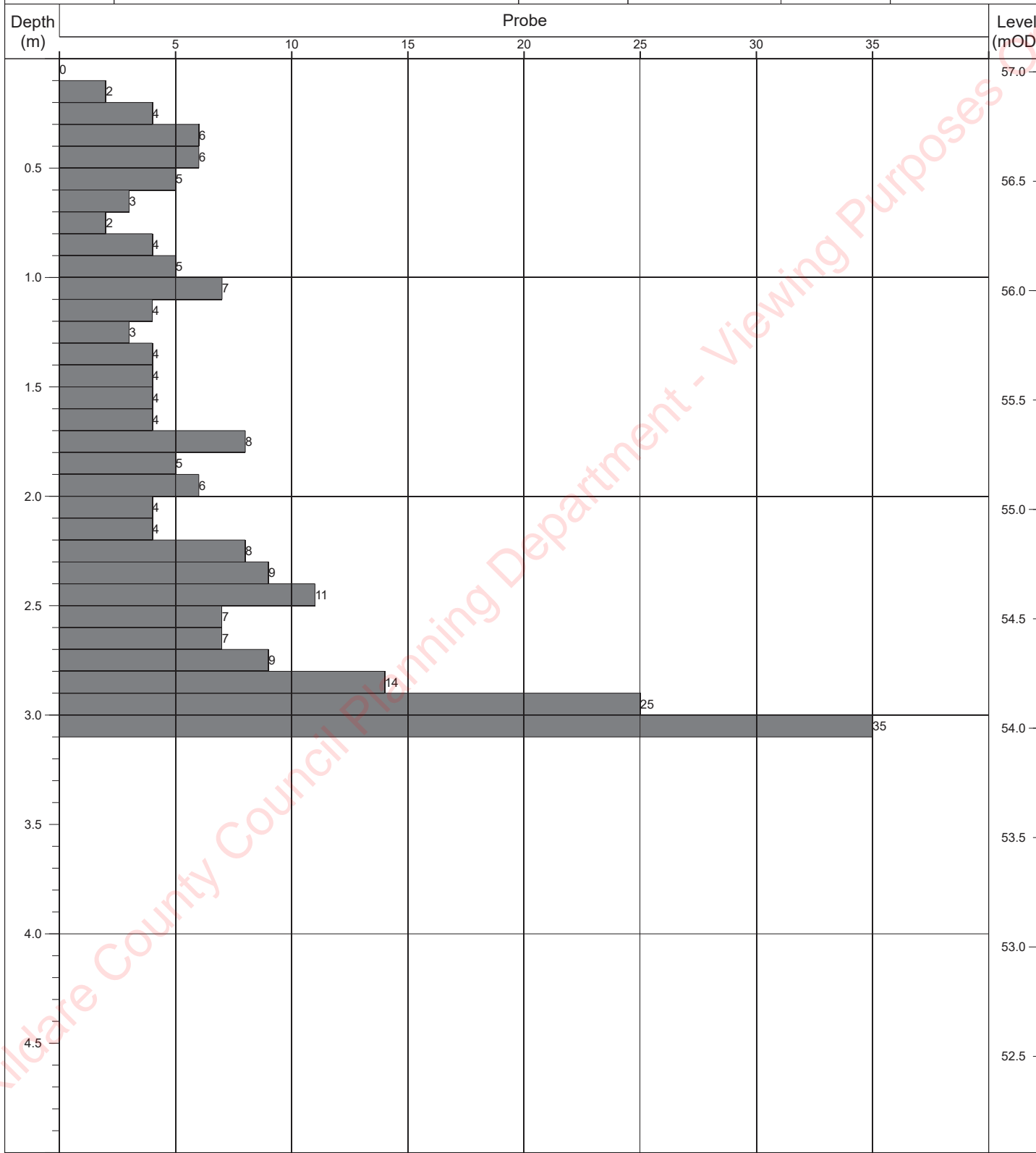
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP18	
Contract:	Moygaddy	Easting:	694688.772	Date Started:	24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739584.729	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	60.89	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



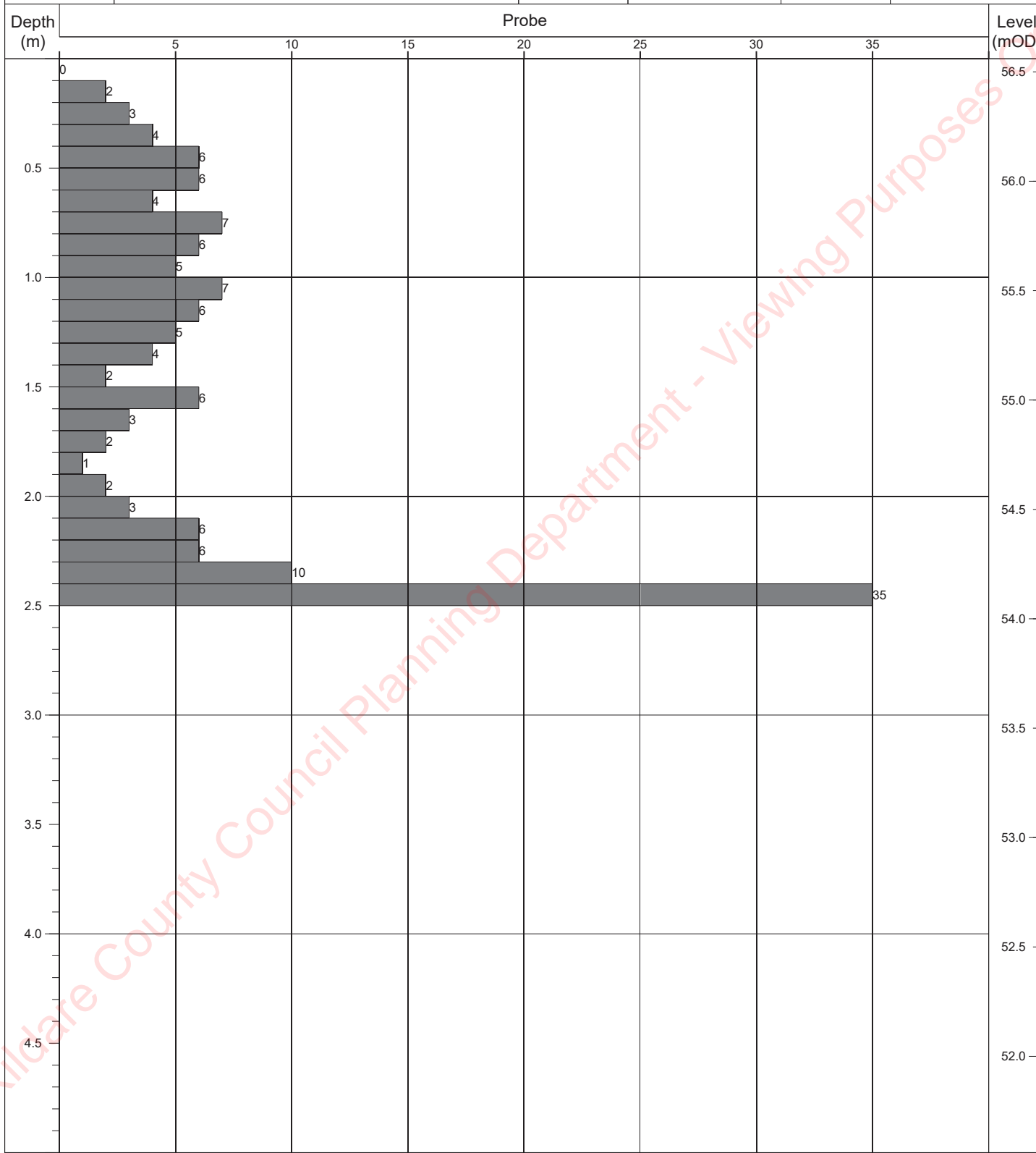
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



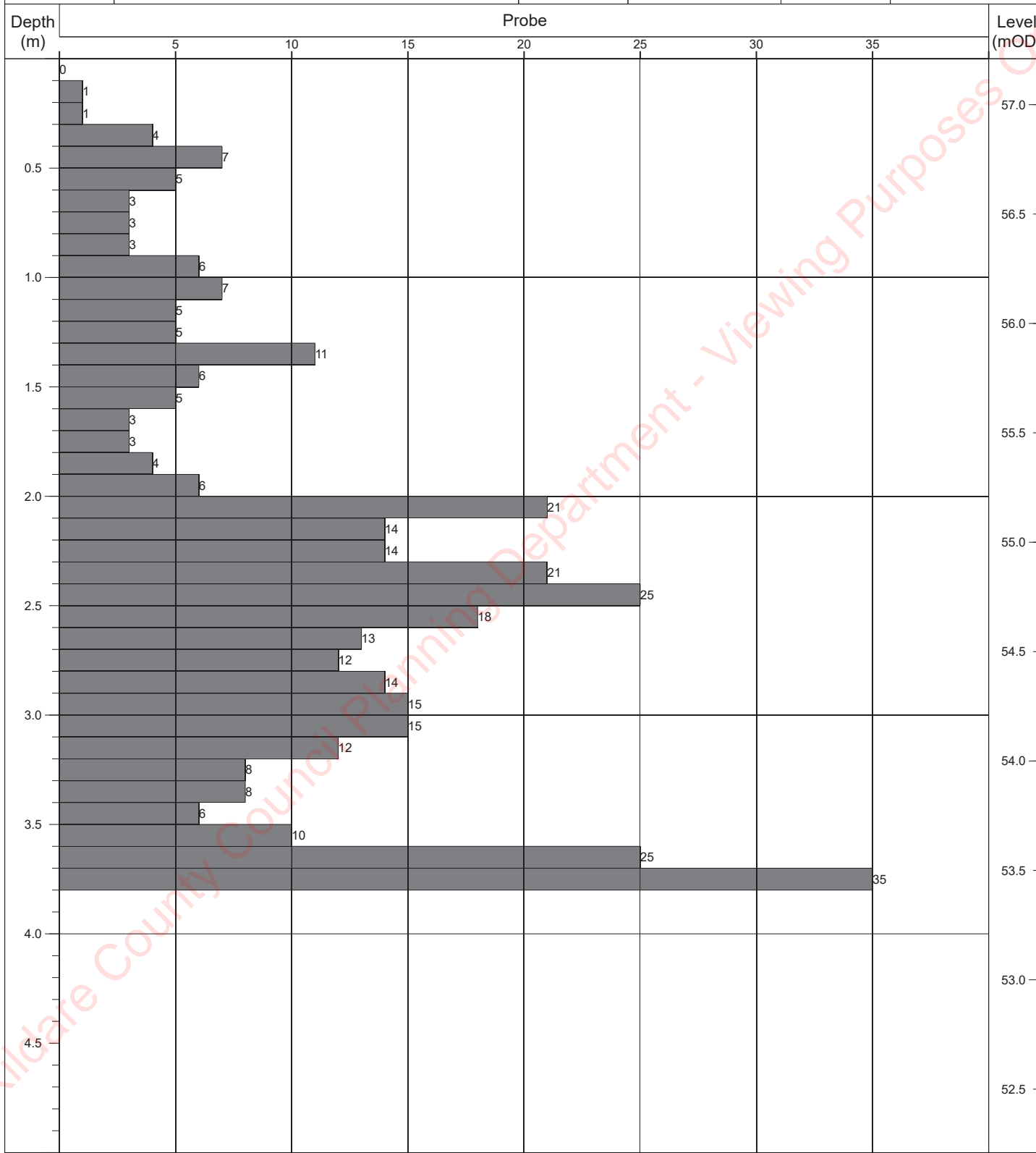
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.10m	Obstruction - boulders.	DPH	50kg	500mm	

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



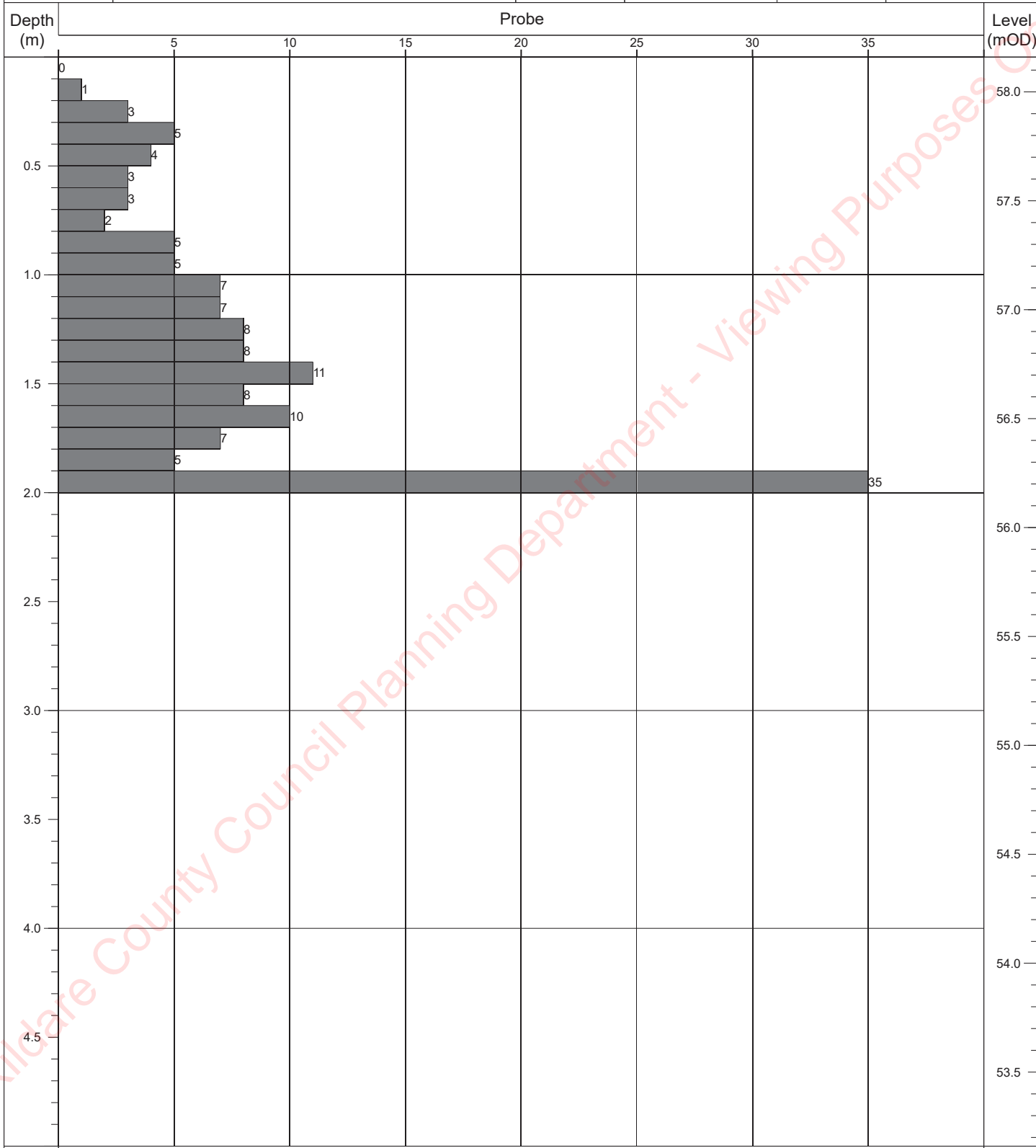
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

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



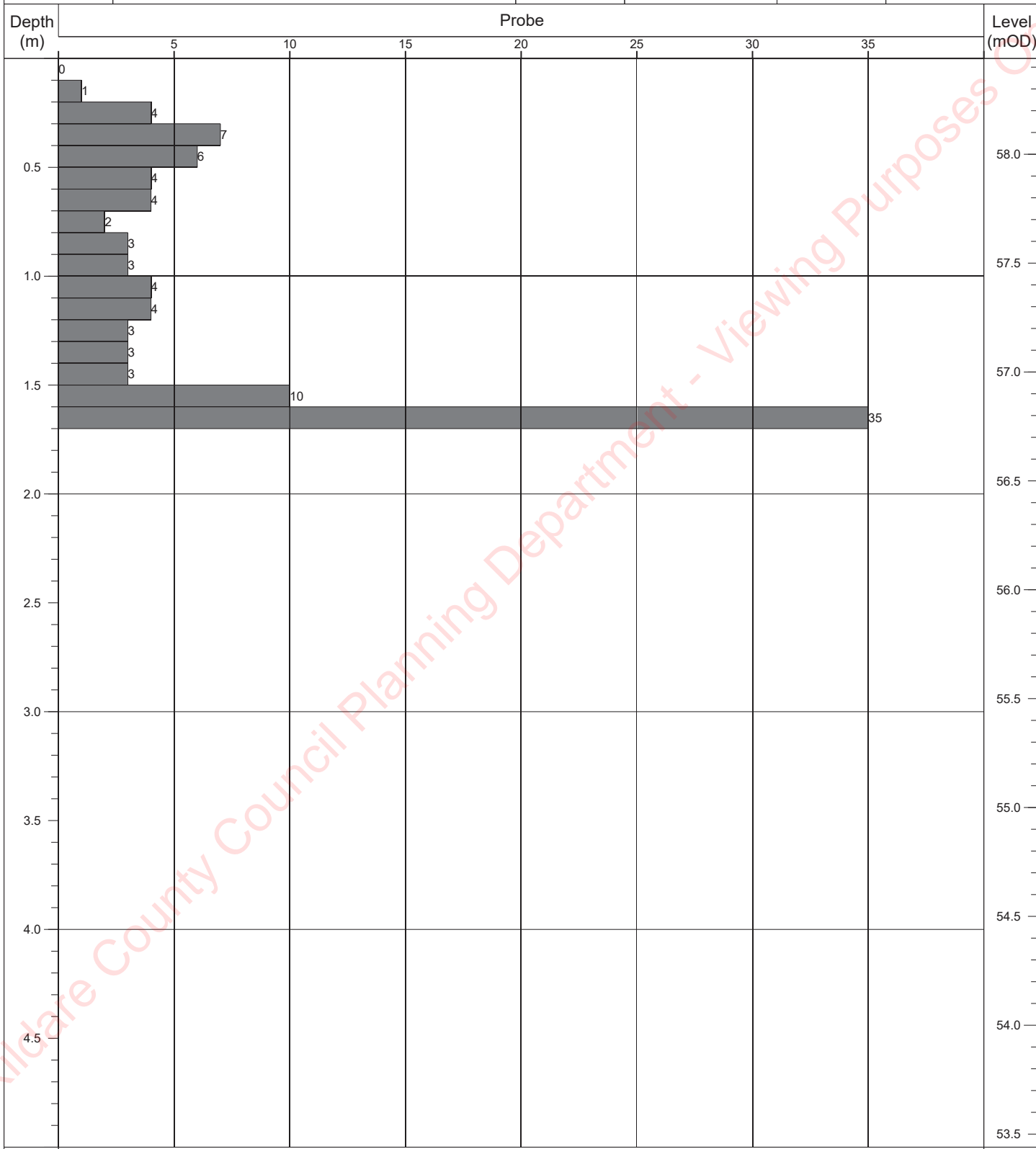
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.80m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP22
Contract:	Moygaddy	Easting:	693990.017	Date Started: 22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739487.250	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.16	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



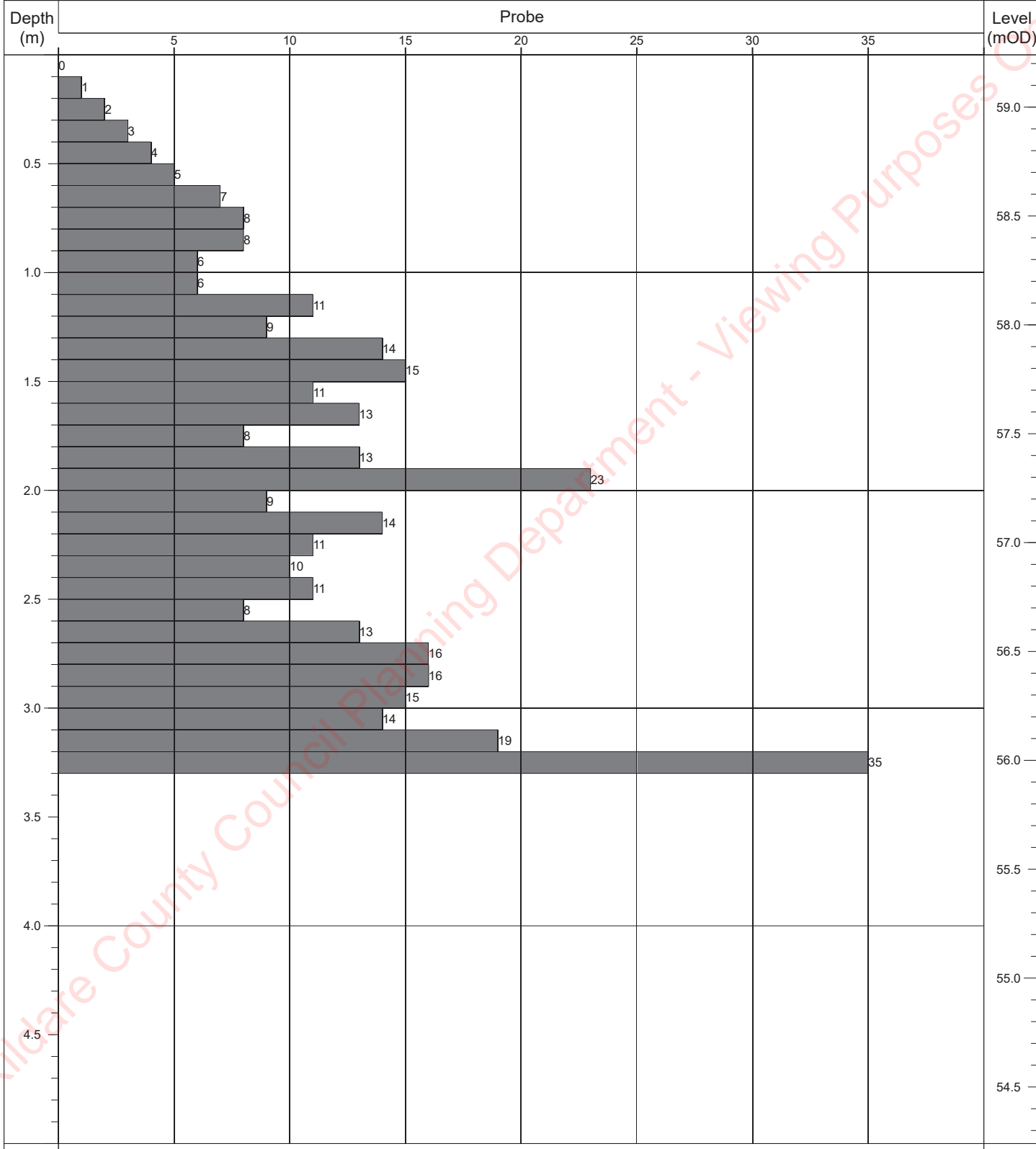
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.00m	Obstruction - boulders.	DPH	50kg	500mm	

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



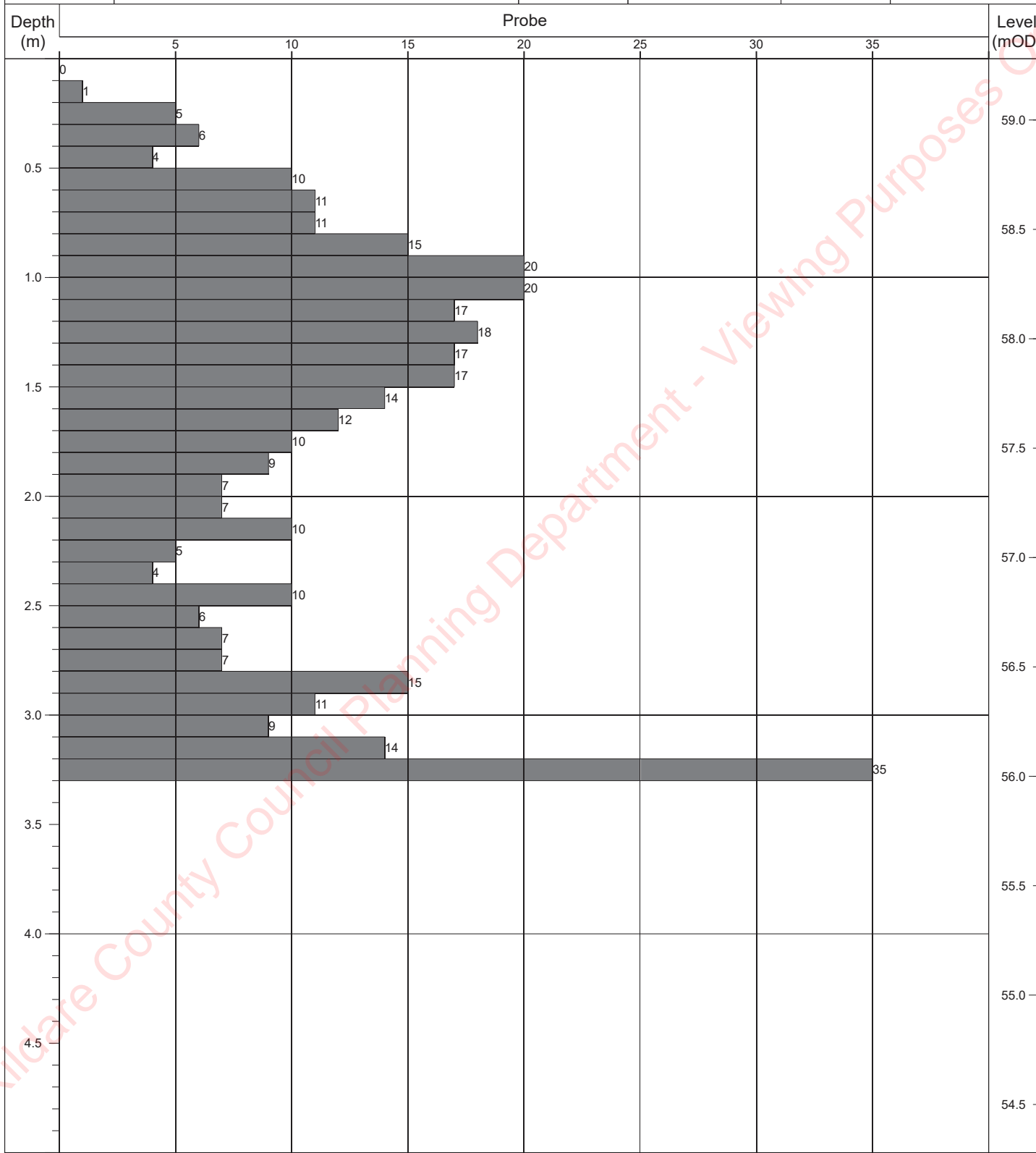
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	Depth:	Reason:	Type:	Mass	Drop:	
	1.70m	Obstruction - boulders.	DPH	50kg	500mm	

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



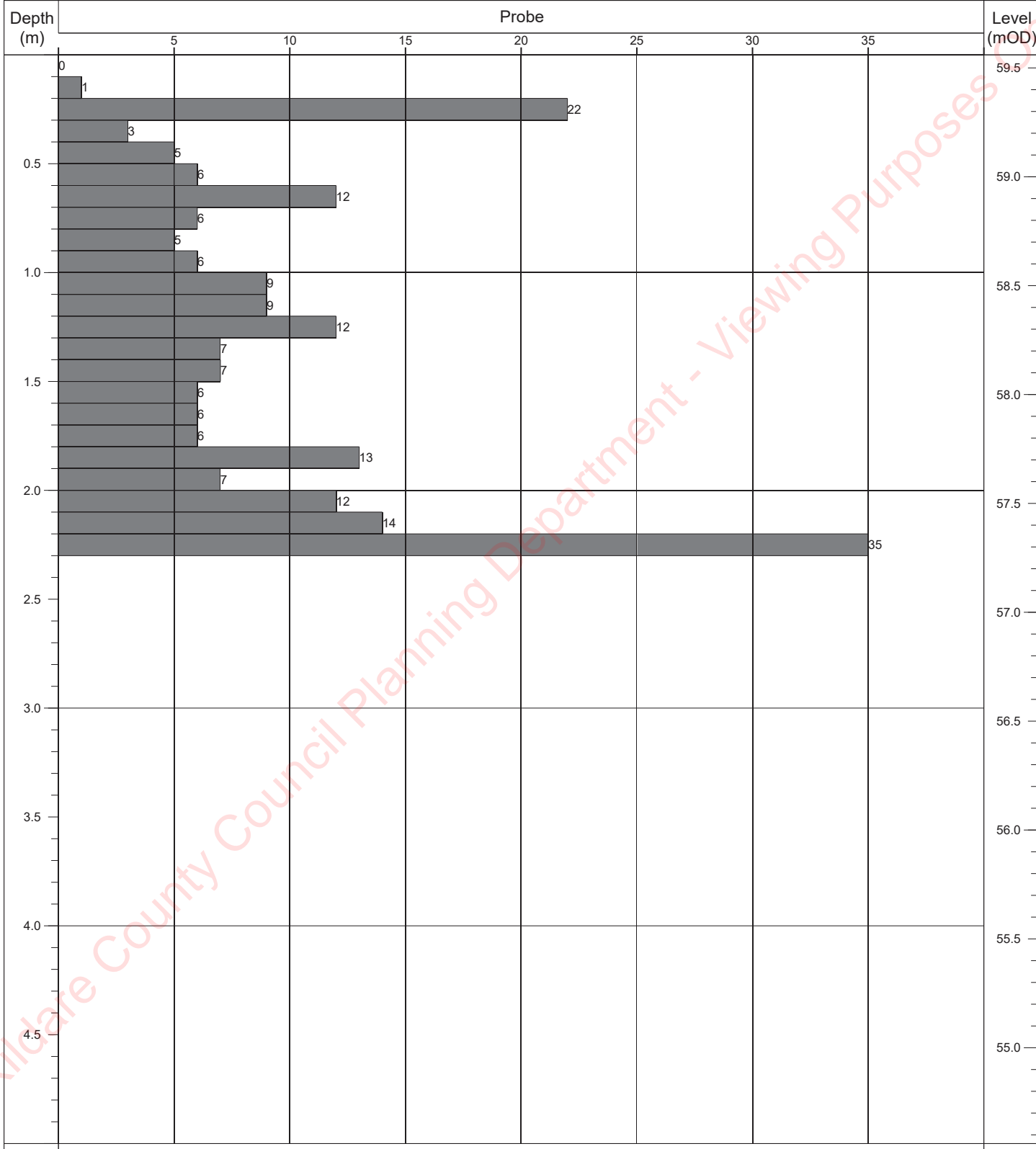
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.30m	Obstruction - boulders.	DPH	50kg	500mm	

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



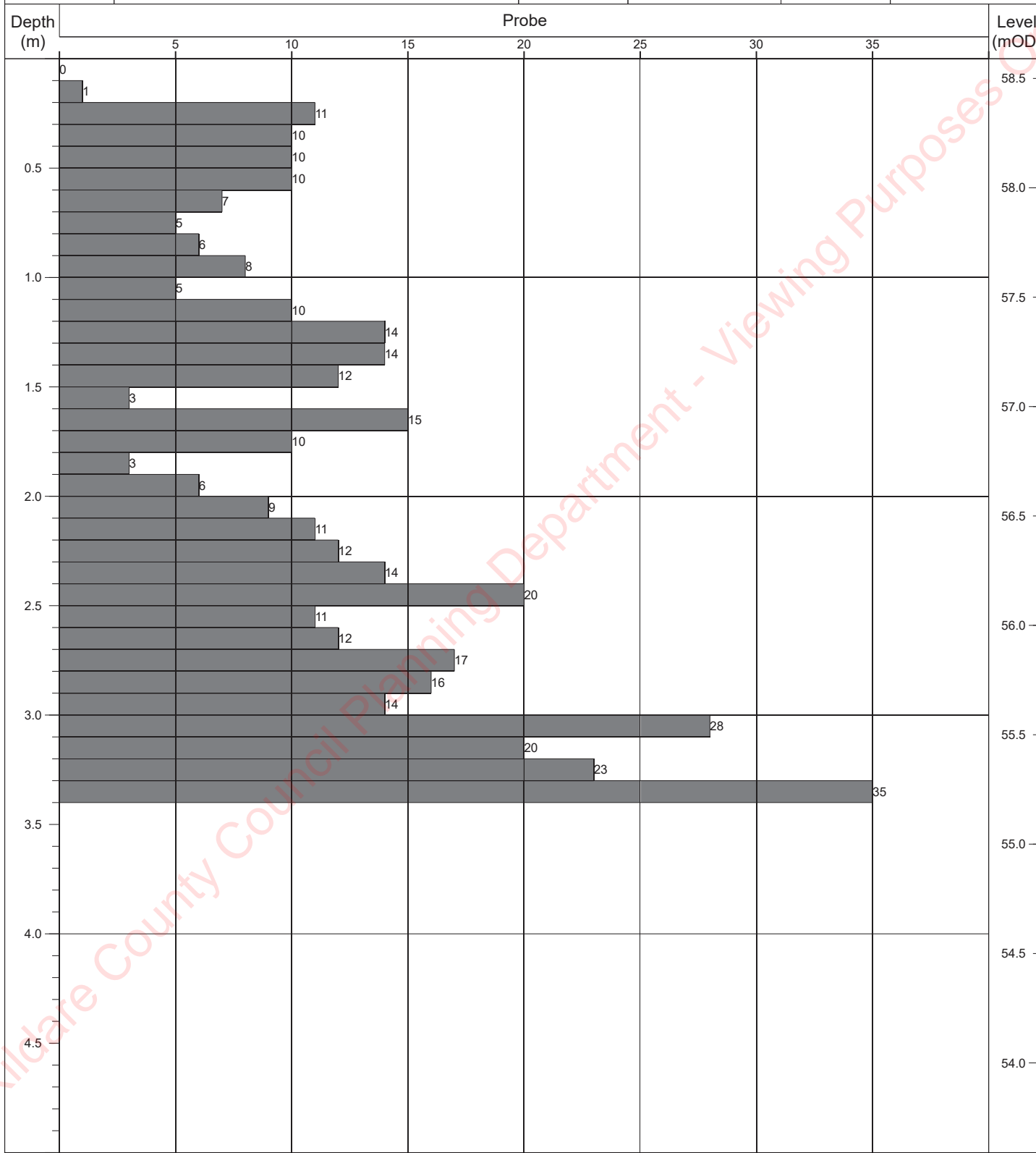
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	Depth:	Reason:	Type:	Mass	Drop:	
	3.30m	Obstruction - boulders.	DPH	50kg	500mm	

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



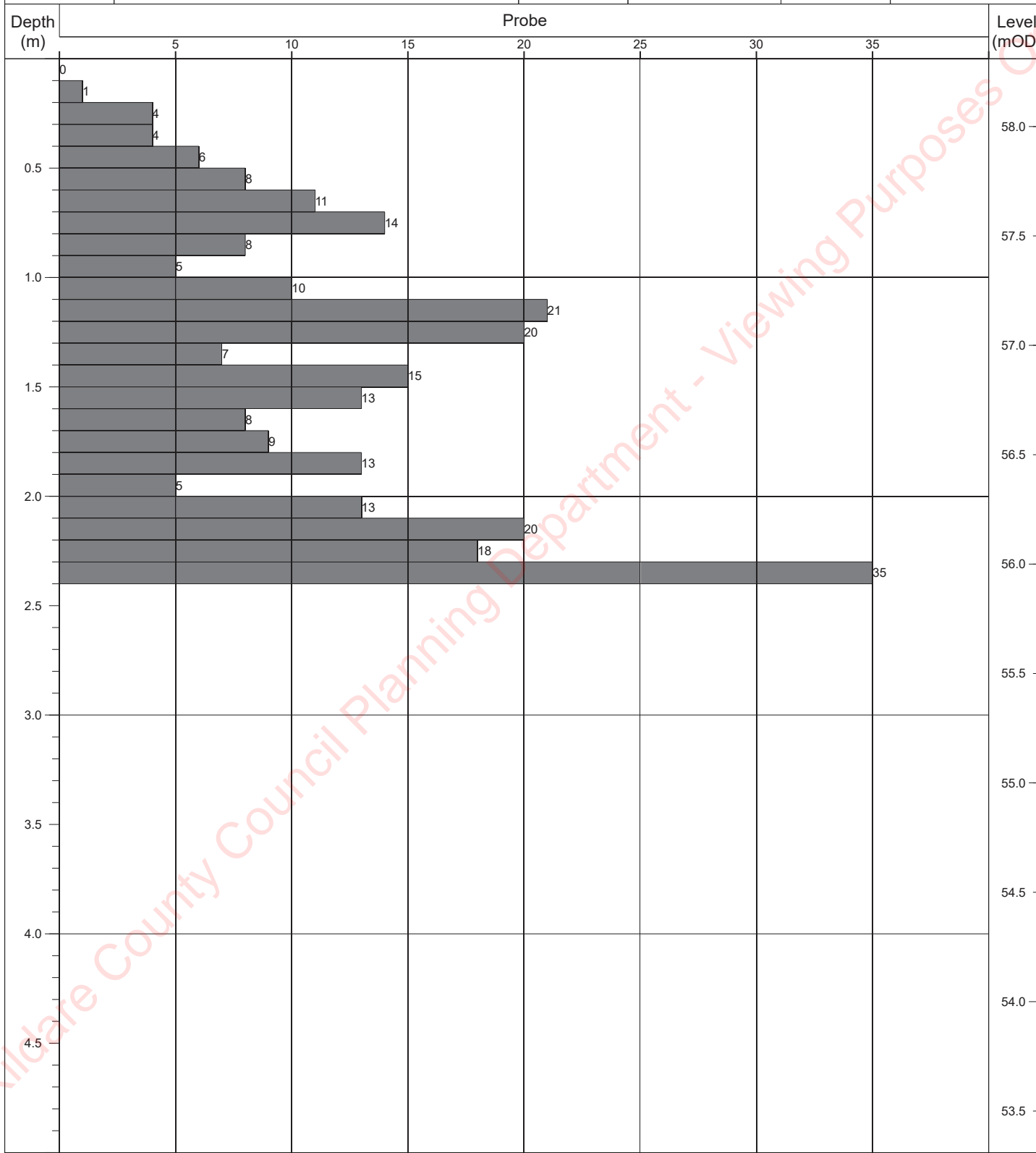
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

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



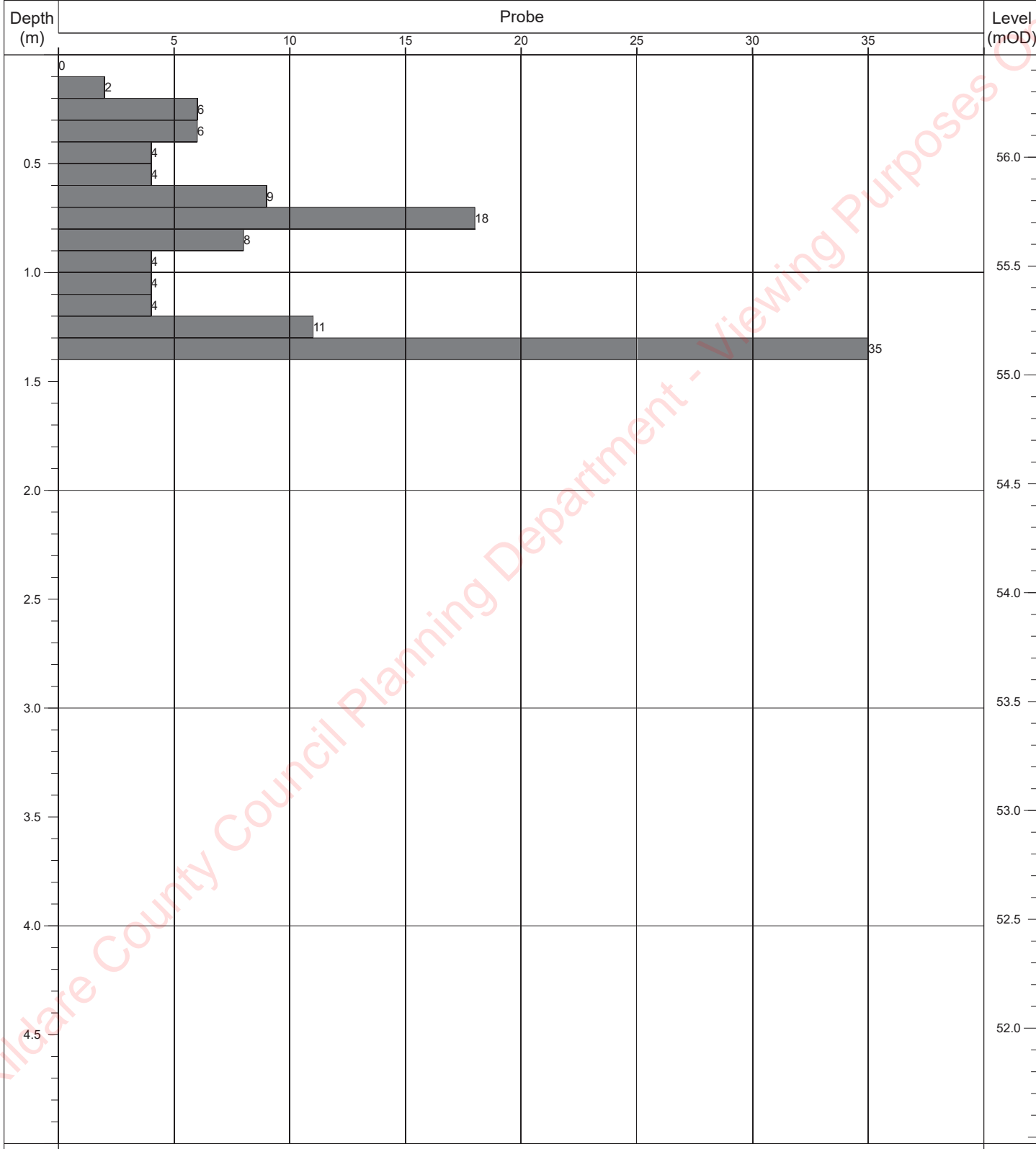
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	Depth:	Reason:	Type:	Mass	Drop:	
	3.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



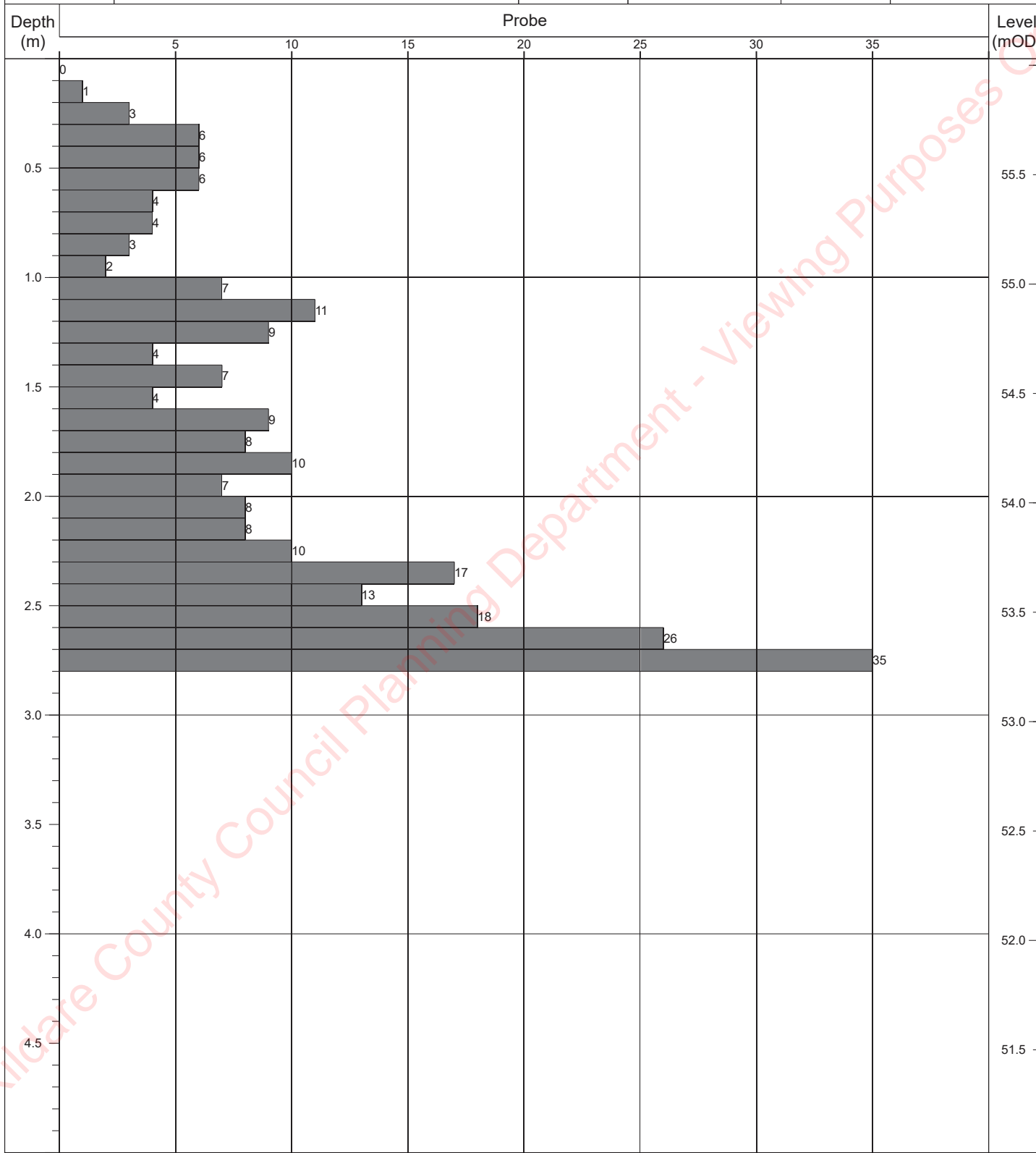
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



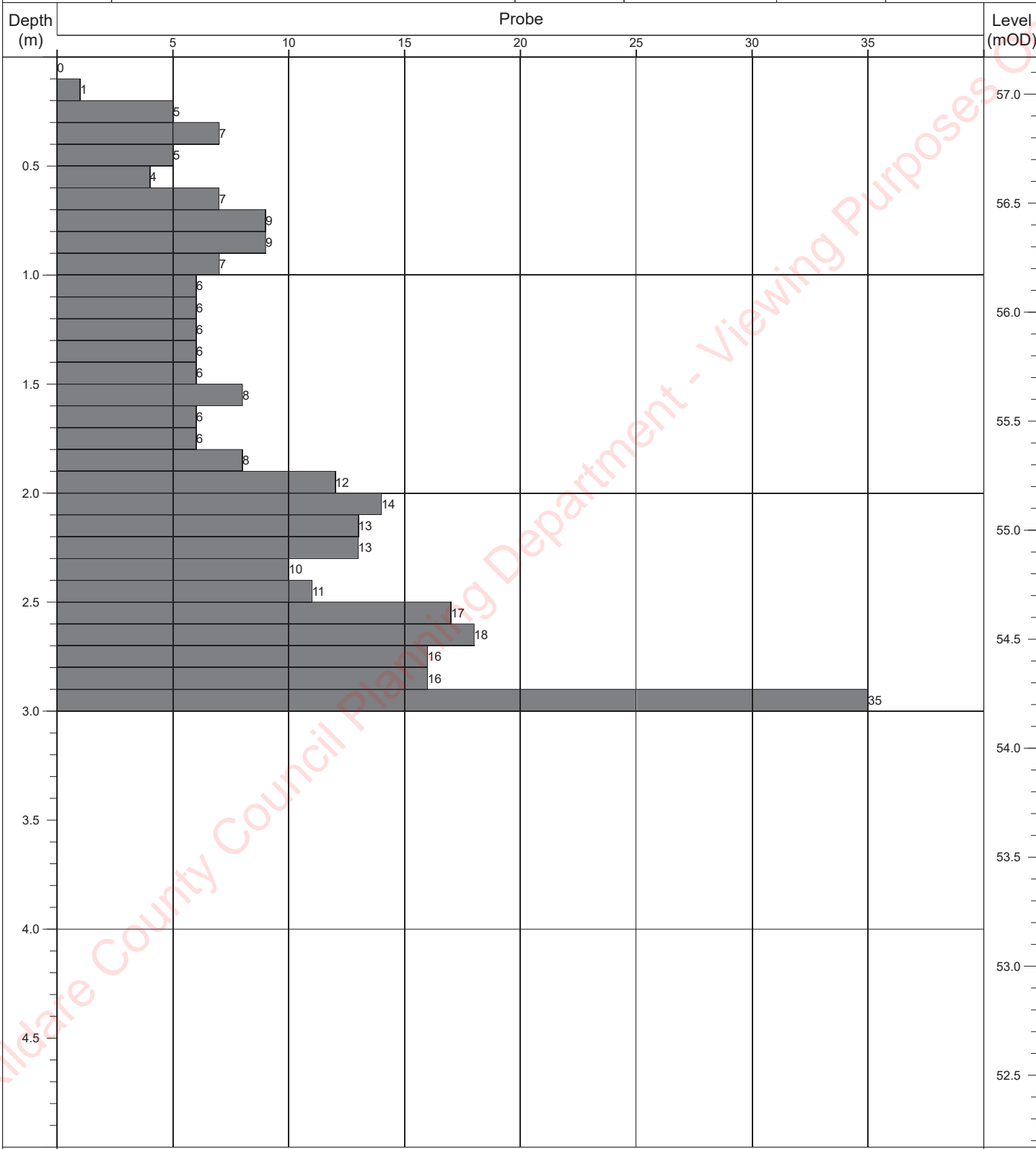
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	Depth:	Reason:	Type:	Mass	Drop:	
	1.40m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP30	
Contract:	Moygaddy	Easting:	693593.273	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739395.730	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.03	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



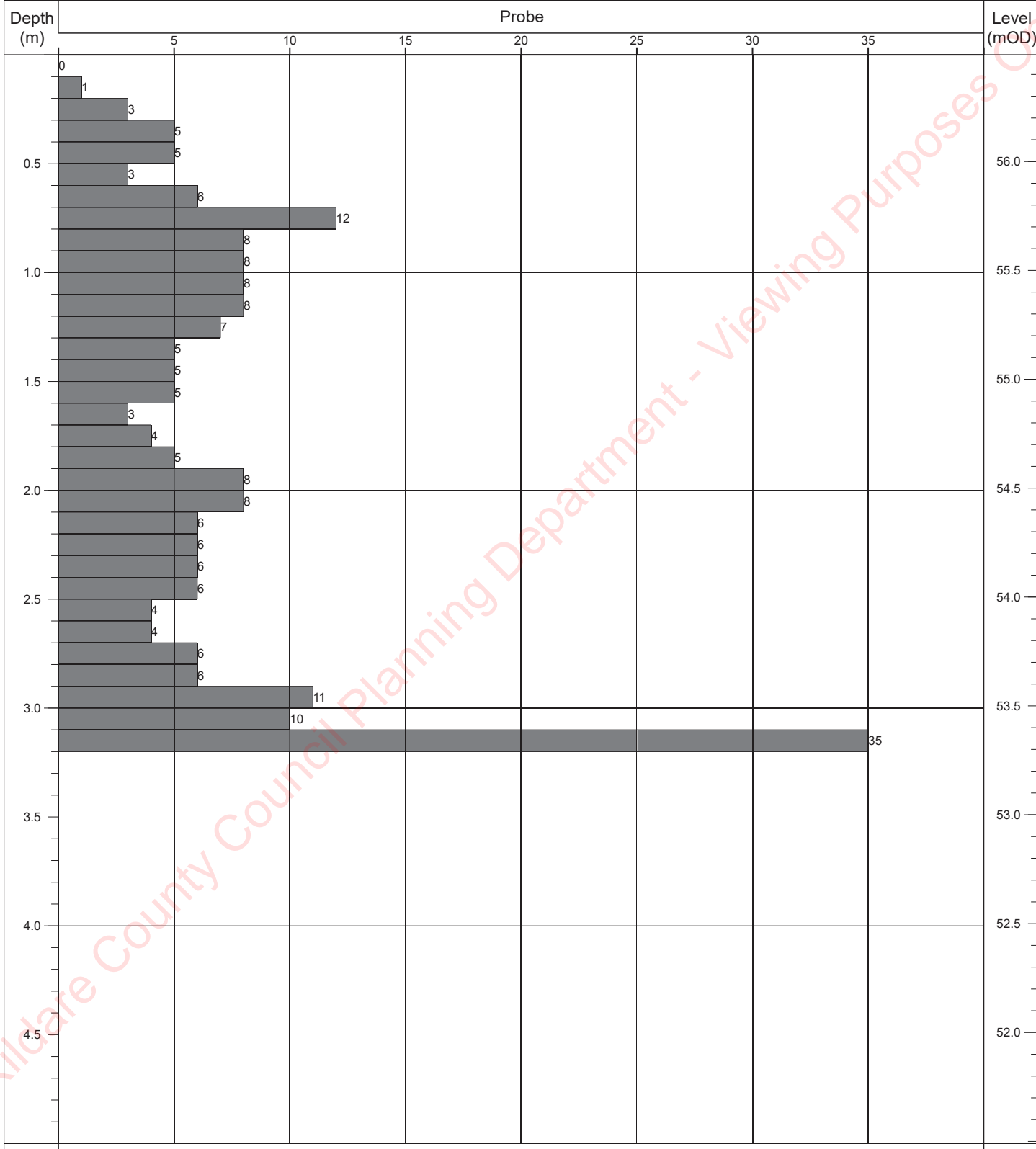
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.80m	Obstruction - boulders.	DPH	50kg	500mm	

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



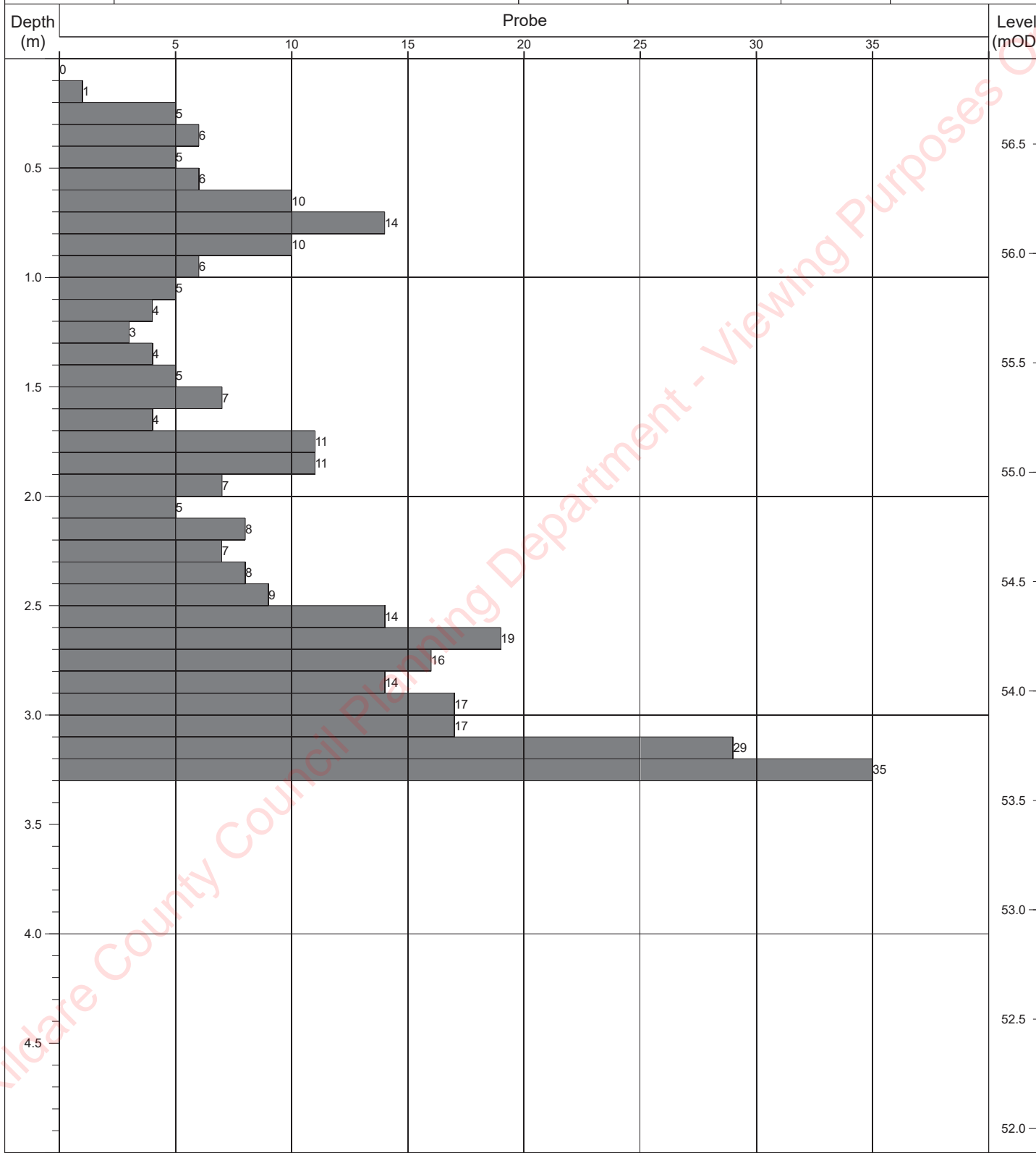
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	3.00m	Obstruction - boulders.	DPH	50kg	500mm	

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



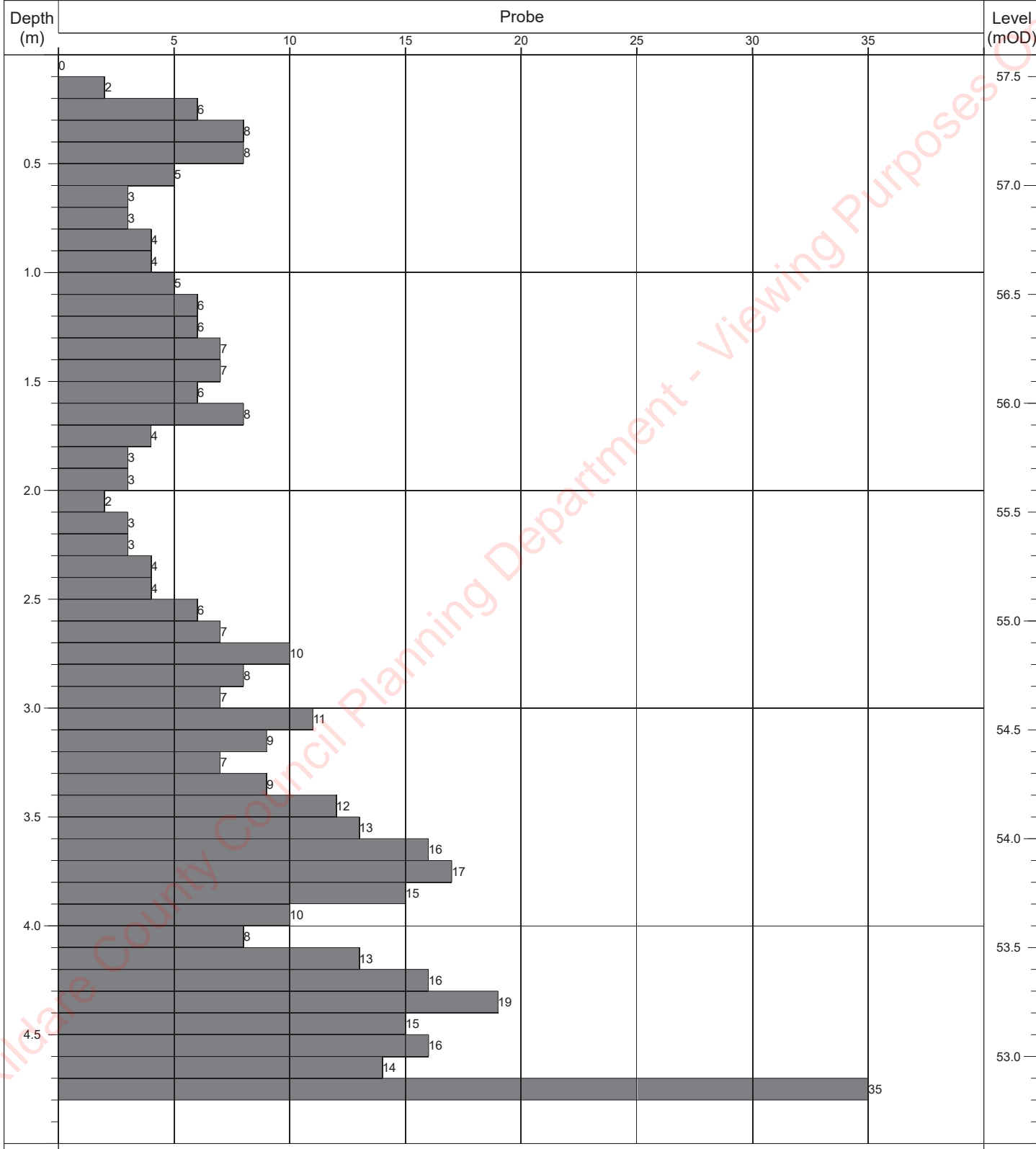
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	Depth:	Reason:	Type:	Mass	Drop:	
	3.20m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			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
Engineer: OCSC	Rig Type: Competitor 130	Sheet No: Sheet 1 of 1				



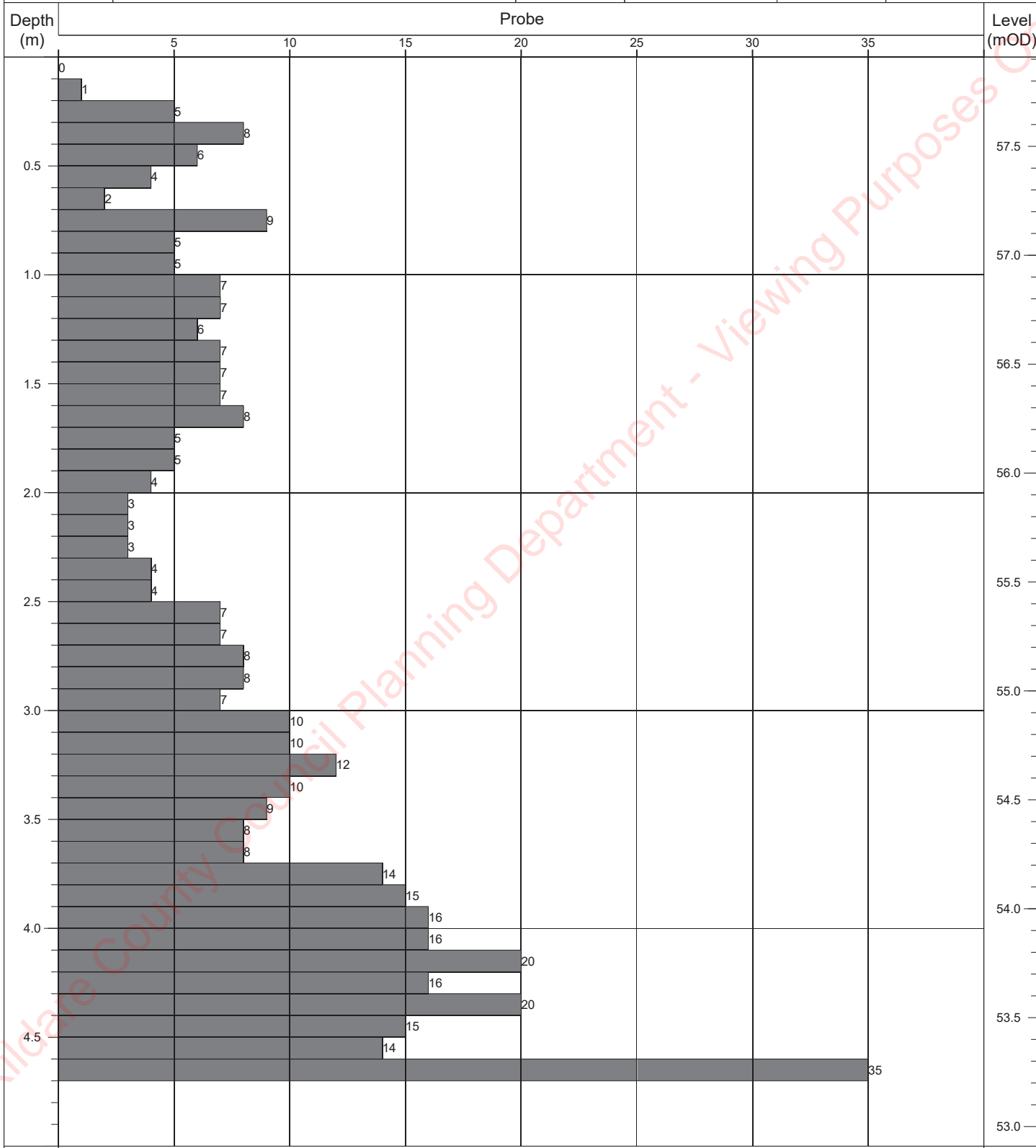
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	3.30m	Obstruction - boulders.	DPH	50kg	500mm	

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



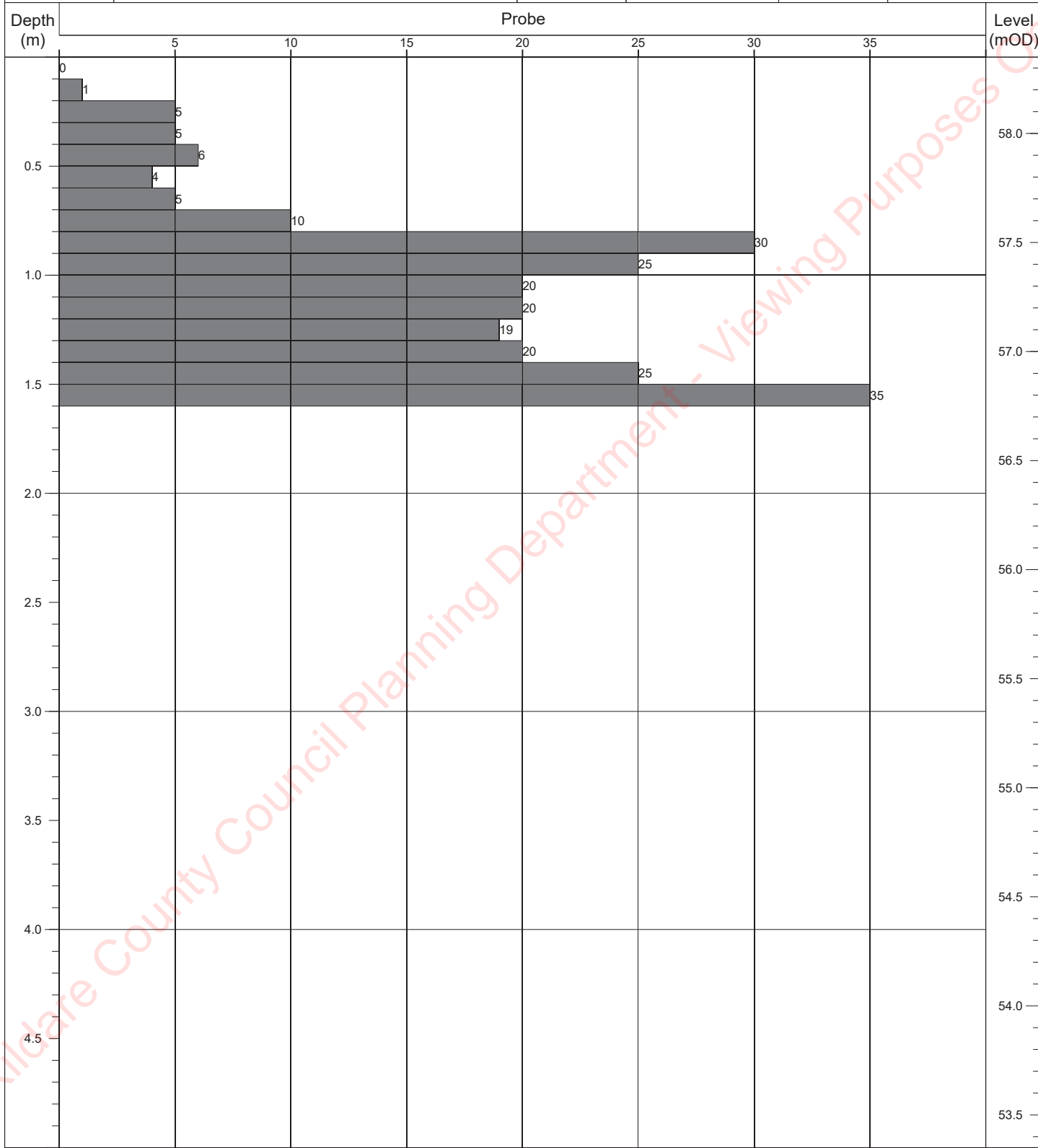
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	Depth:	Reason:	Type:	Mass	Drop:	
	4.80m	Obstruction - boulders.	DPH	50kg	500mm	

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



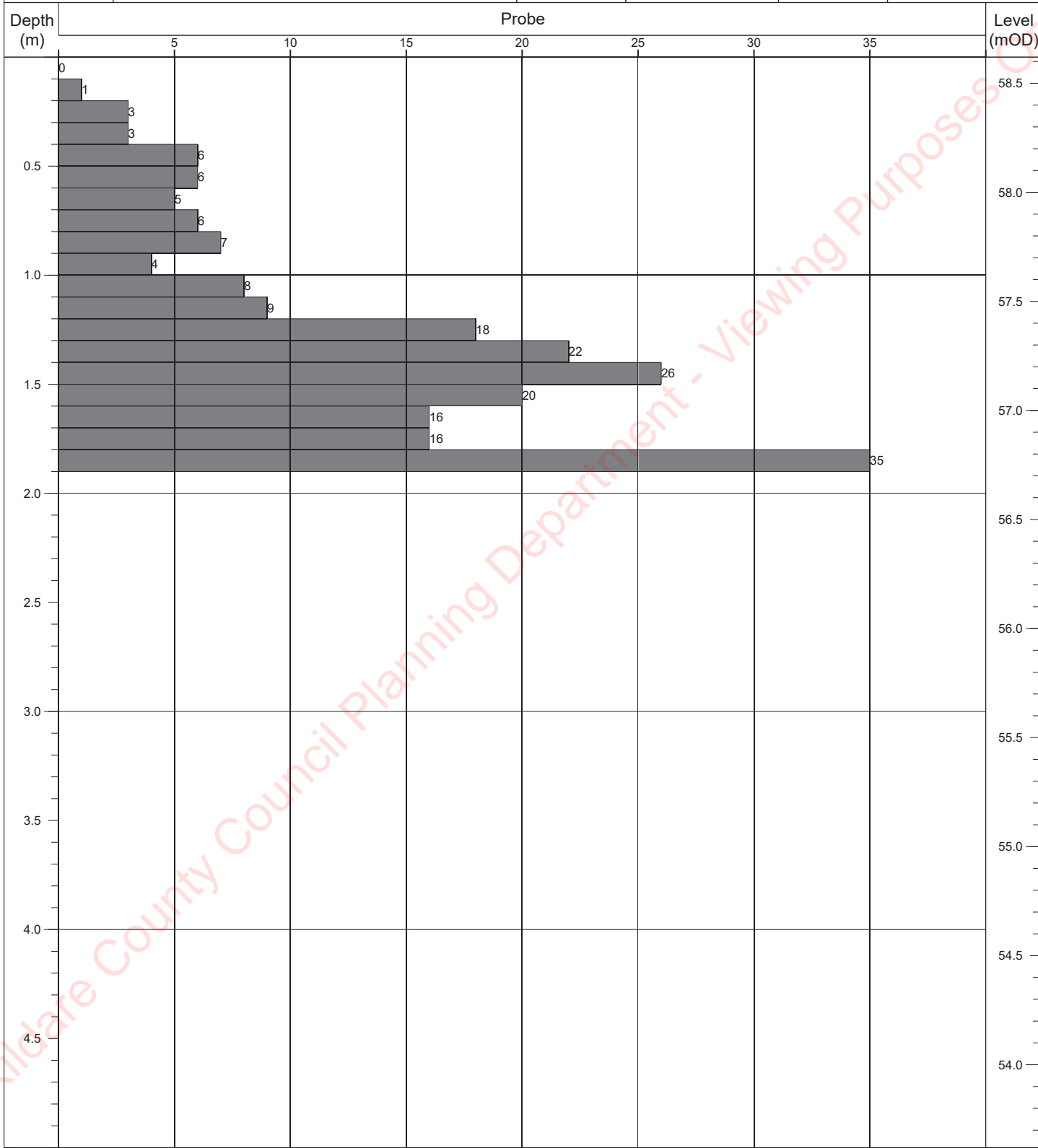
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	Depth:	Reason:	Type:	Mass	Drop:	
	4.70m	Obstruction - boulders.	DPH	50kg	500mm	

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



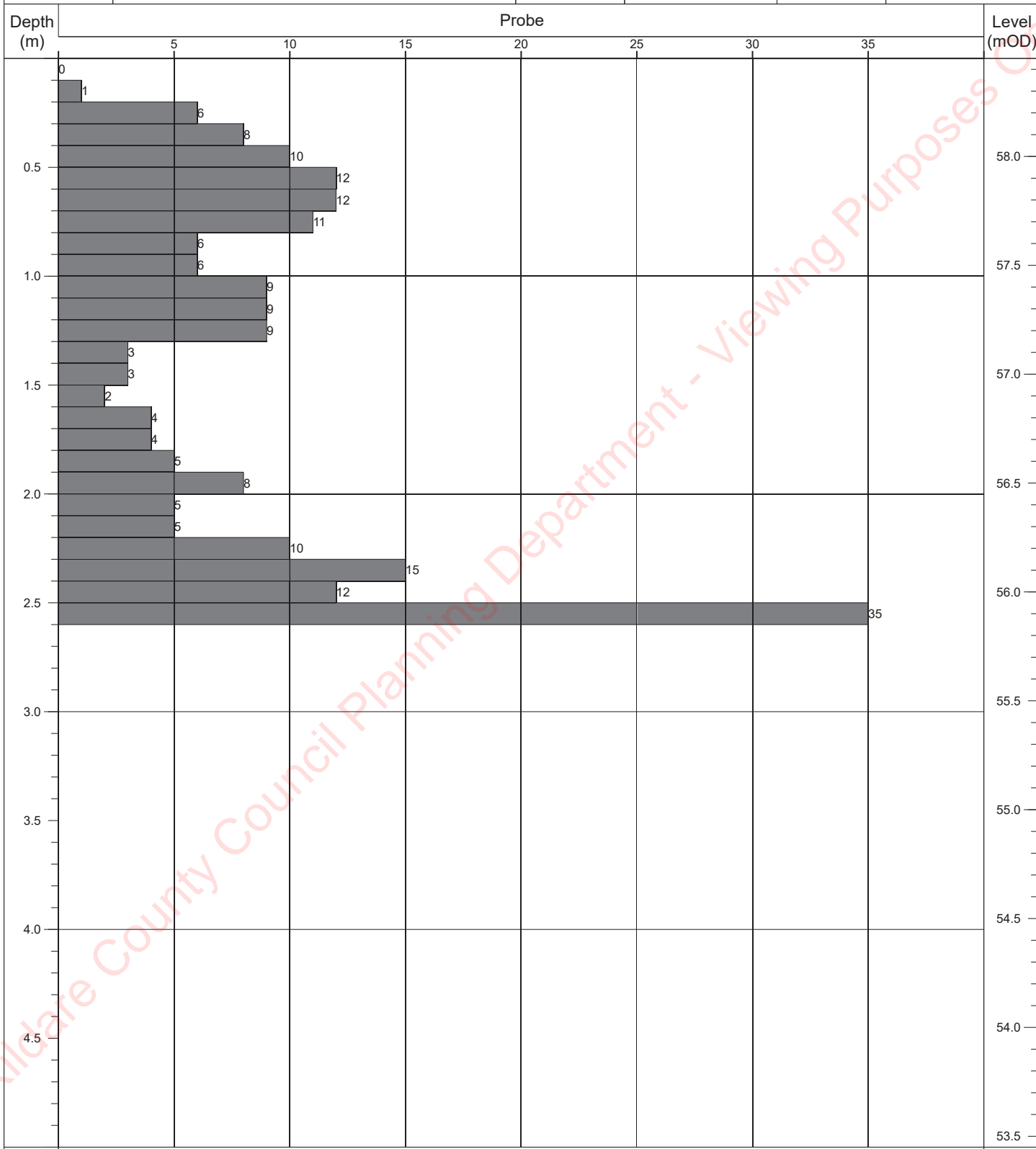
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	1.60m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP37
Contract:	Moygaddy	Easting:	694288.456	Date Started: 22/06/2021
Location:	Maynooth, Co. Meath	Northing:	739387.753	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	58.62	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



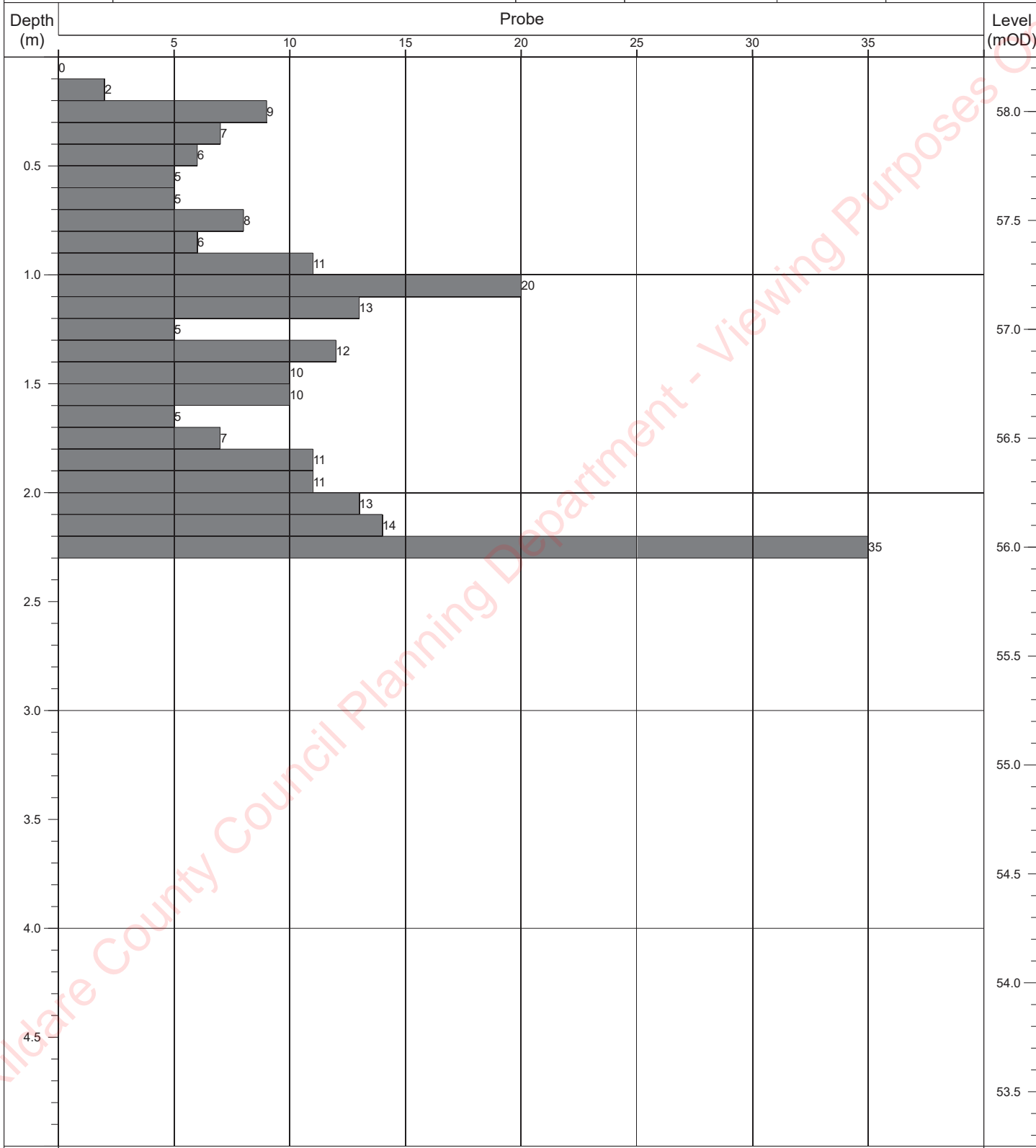
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	Depth:	Reason:	Type:	Mass	Drop:	
	1.90m	Obstruction - boulders.	DPH	50kg	500mm	

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



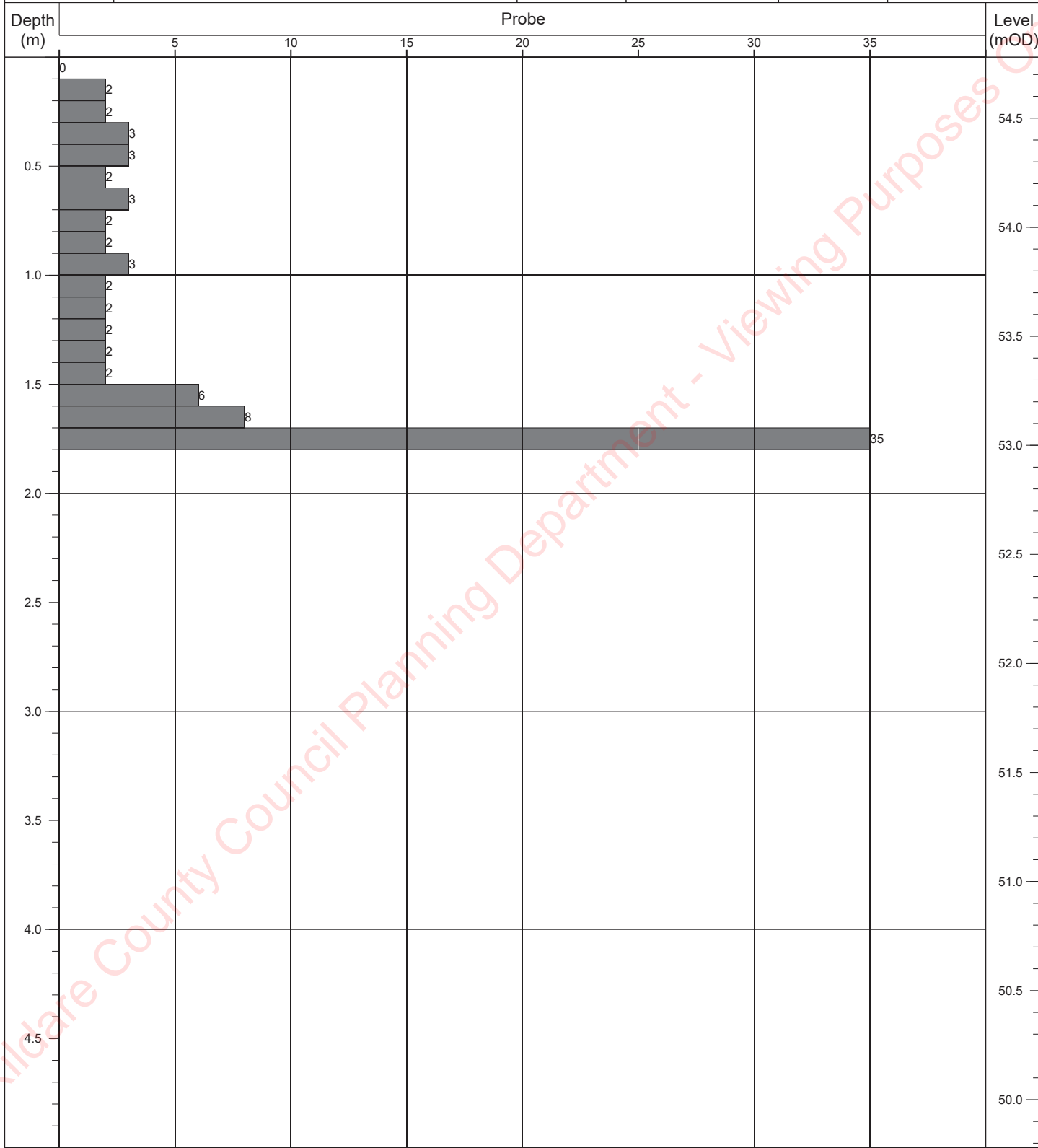
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.60m	Obstruction - boulders.	DPH	50kg	500mm	

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



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

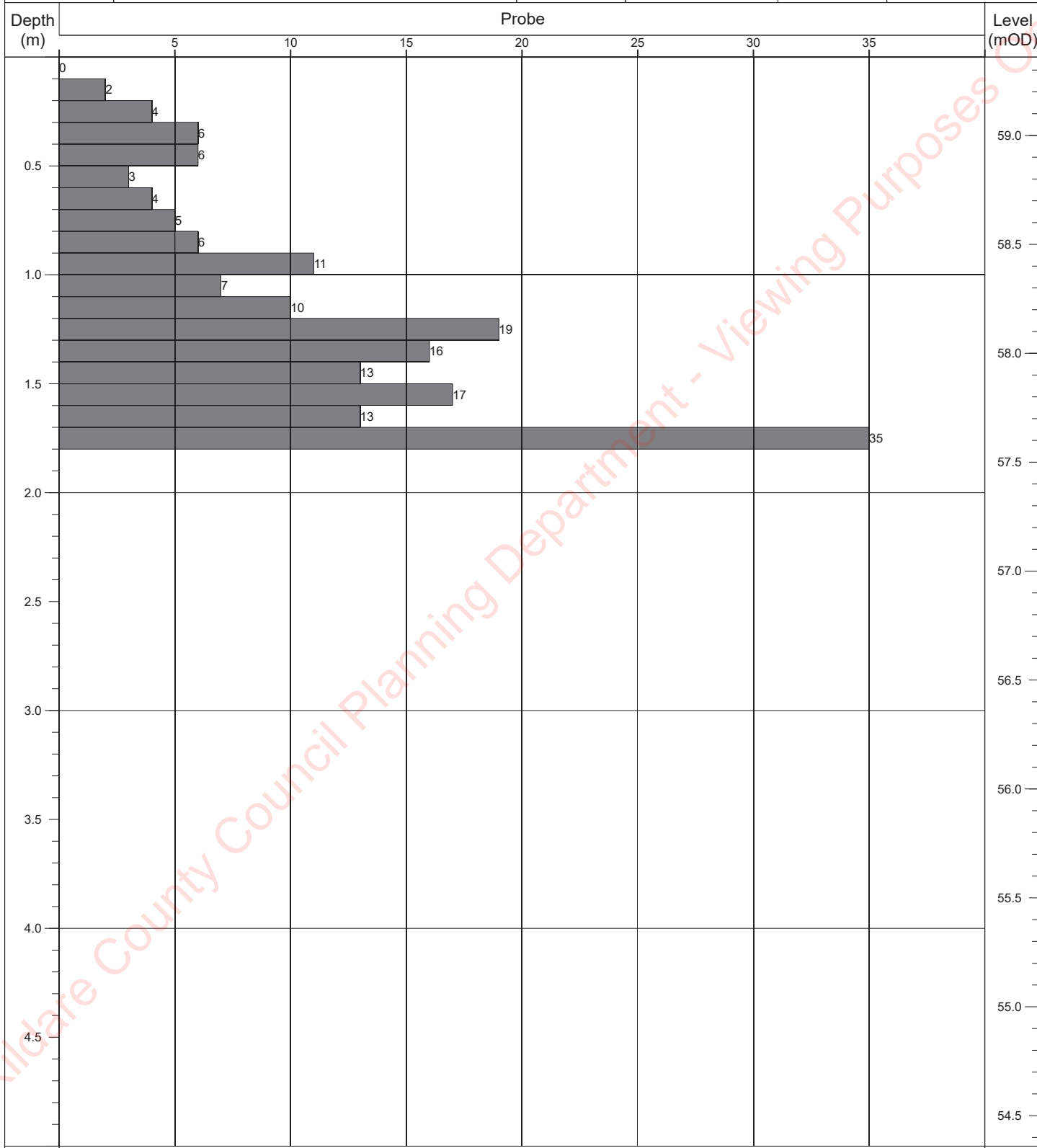
Contract No: 5863	Dynamic Probe Log			Probe No: DP40
Contract:	Moygaddy	Easting:	694569.043	Date Started: 24/06/2021
Location:	Maynooth, Co. Meath	Northing:	739386.611	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	54.78	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of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



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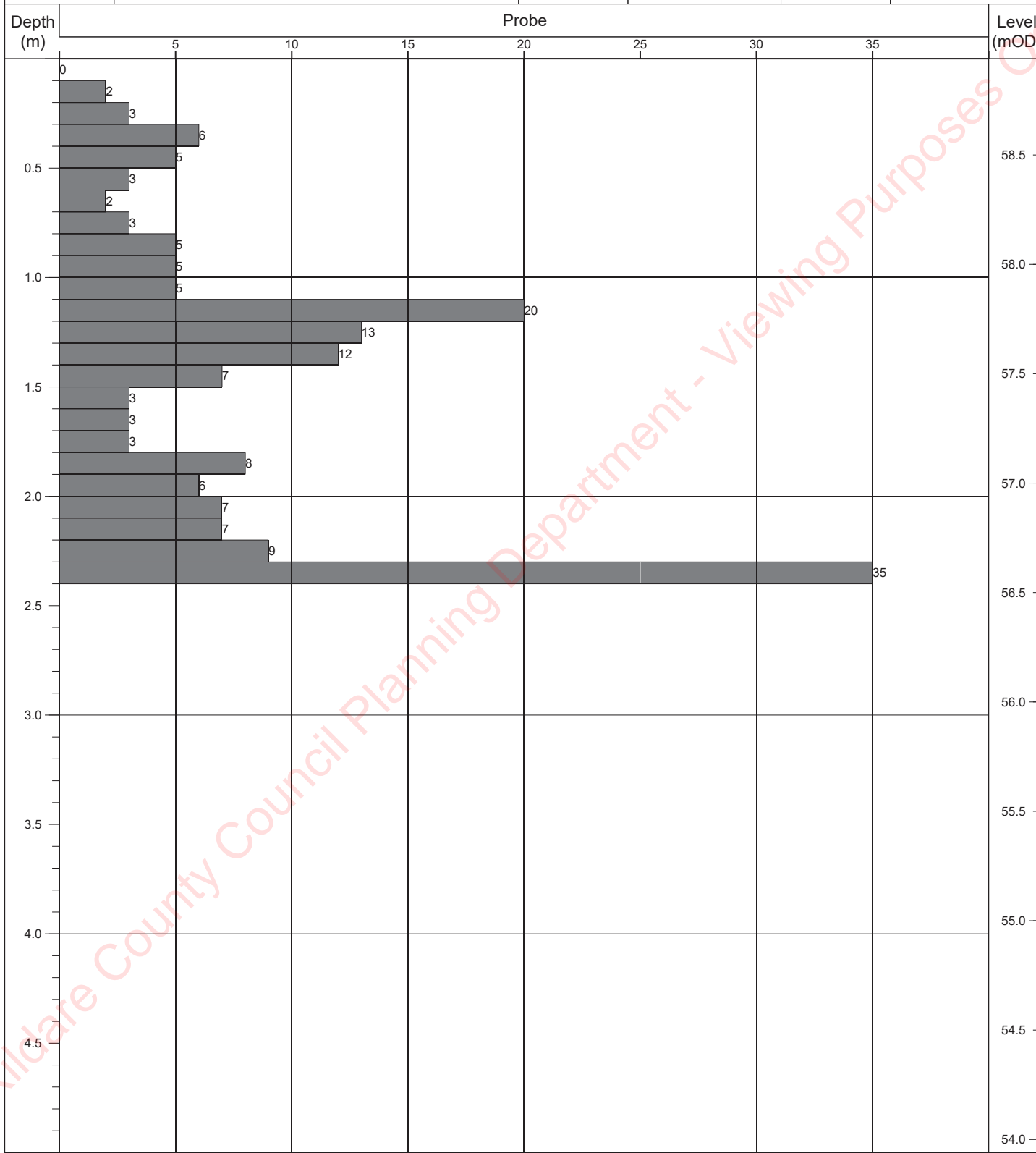
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	1.80m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP41	
Contract:	Moygaddy	Easting:	694691.616	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739389.831	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	59.36	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



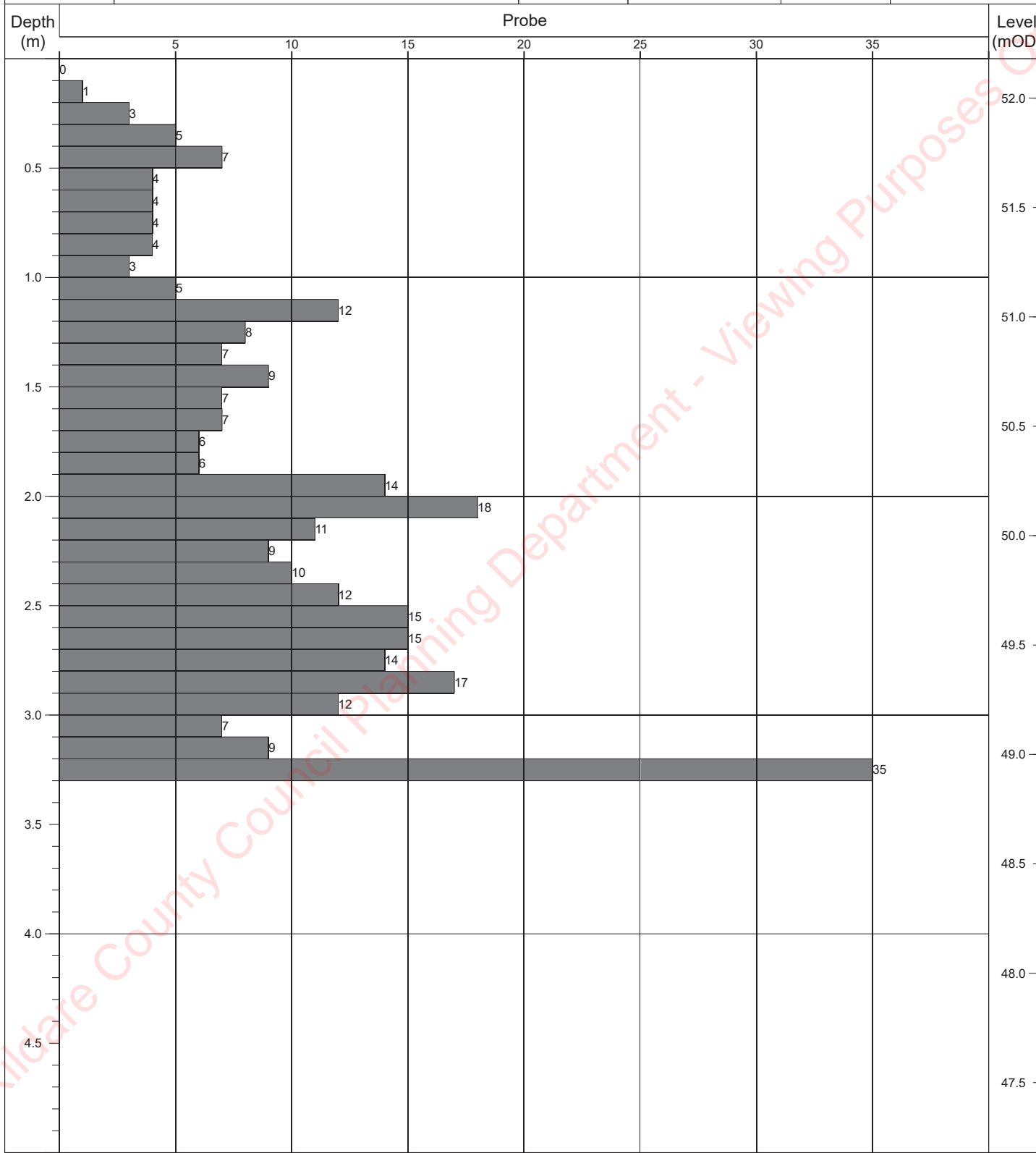
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	1.80m	Obstruction - boulders.	DPH	50kg	500mm	

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



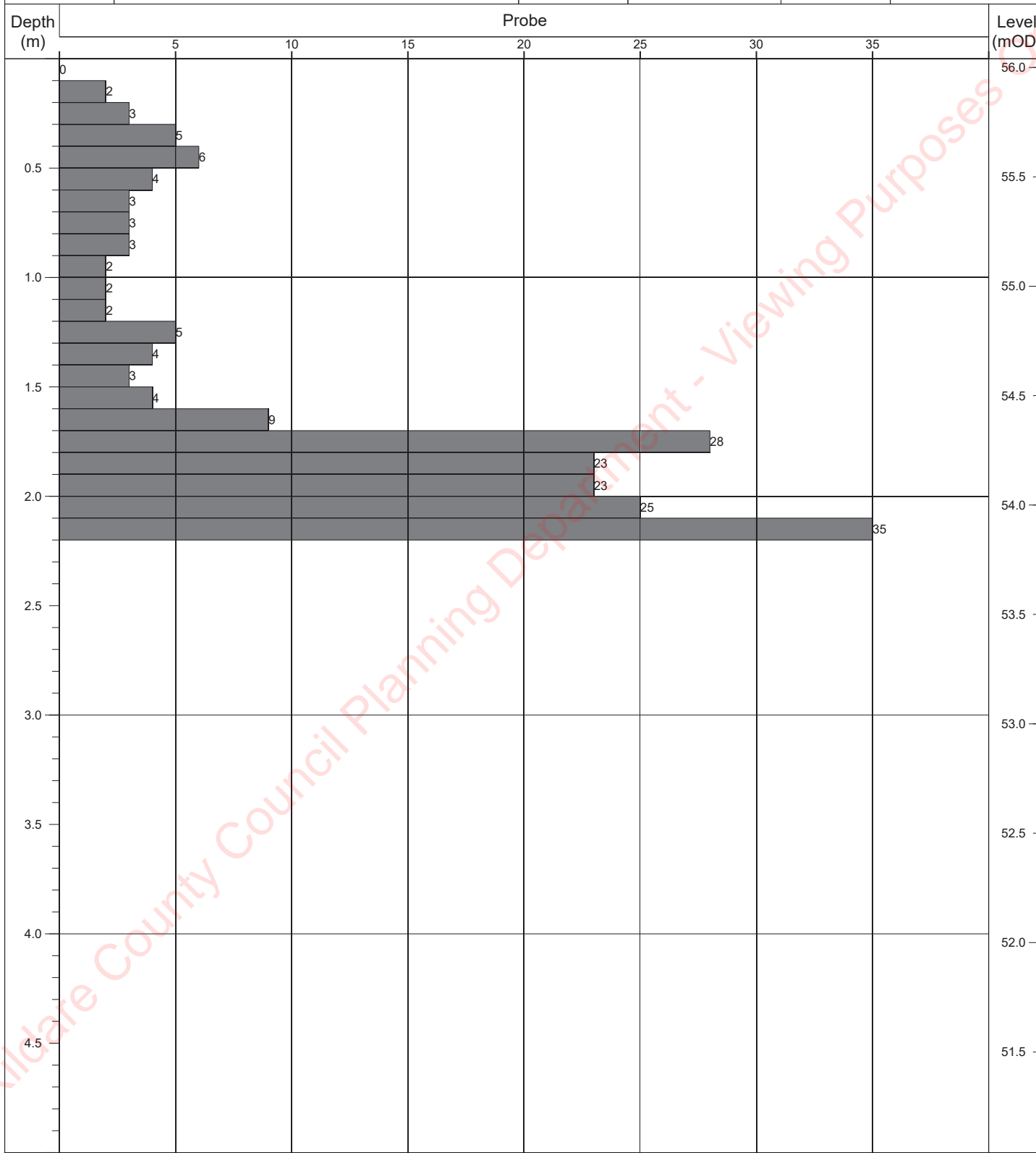
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP43	
Contract:	Moygaddy	Easting:	693688.642	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739290.847	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	52.18	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



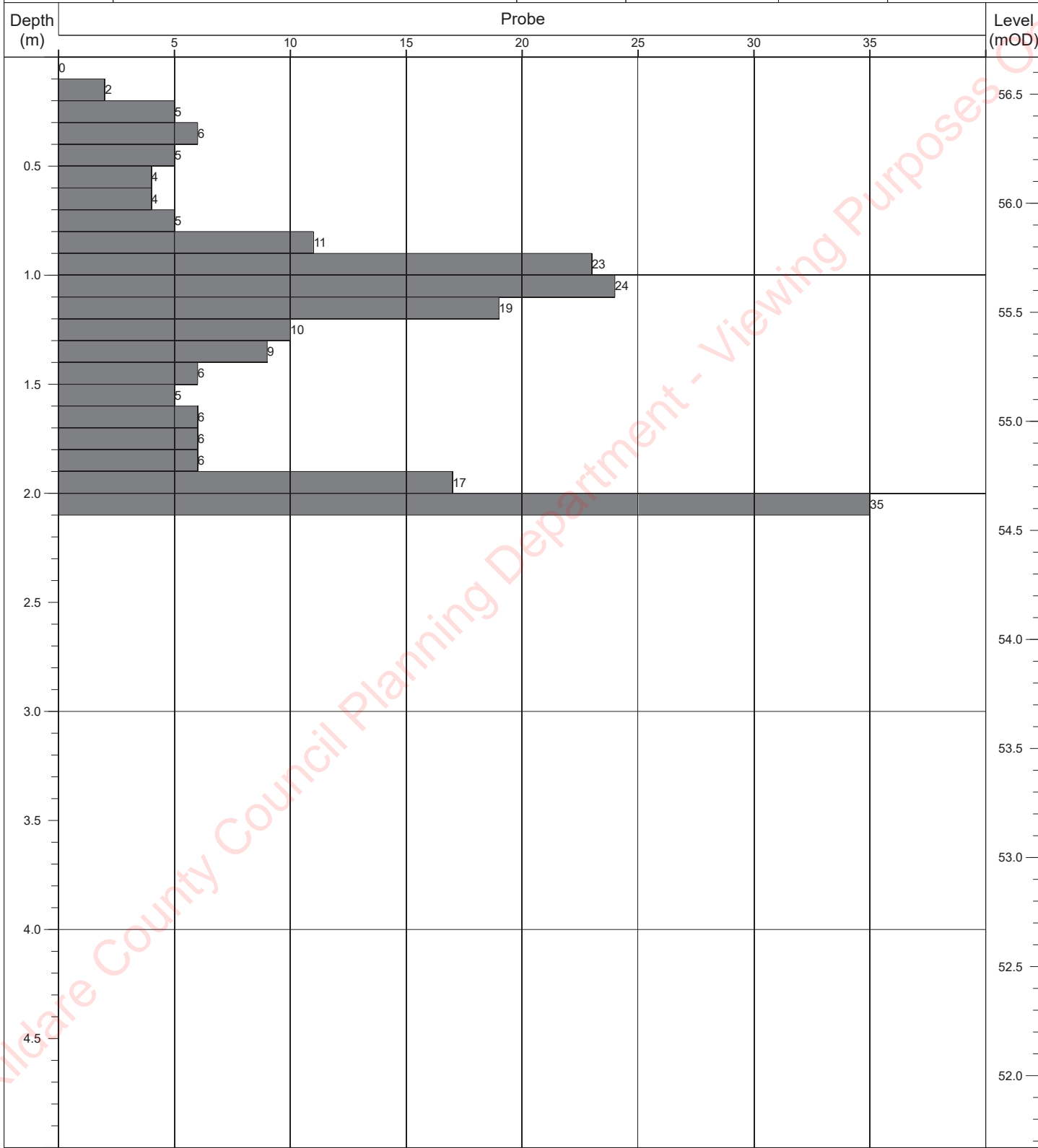
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	3.30m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP44	
Contract:	Moygaddy	Easting:	693788.258	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739285.161	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.04	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



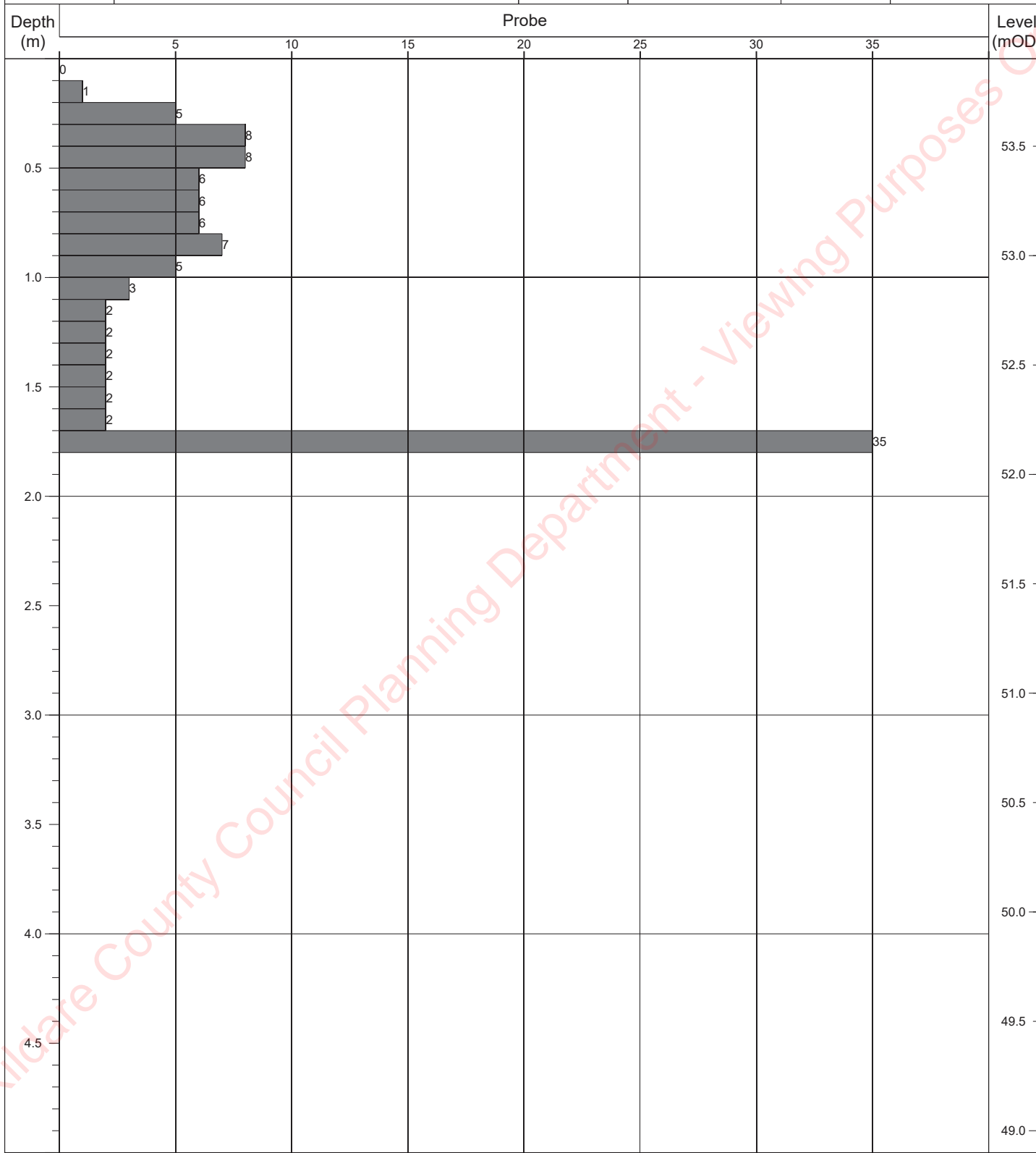
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.20m	Obstruction - boulders.	DPH	50kg	500mm	

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



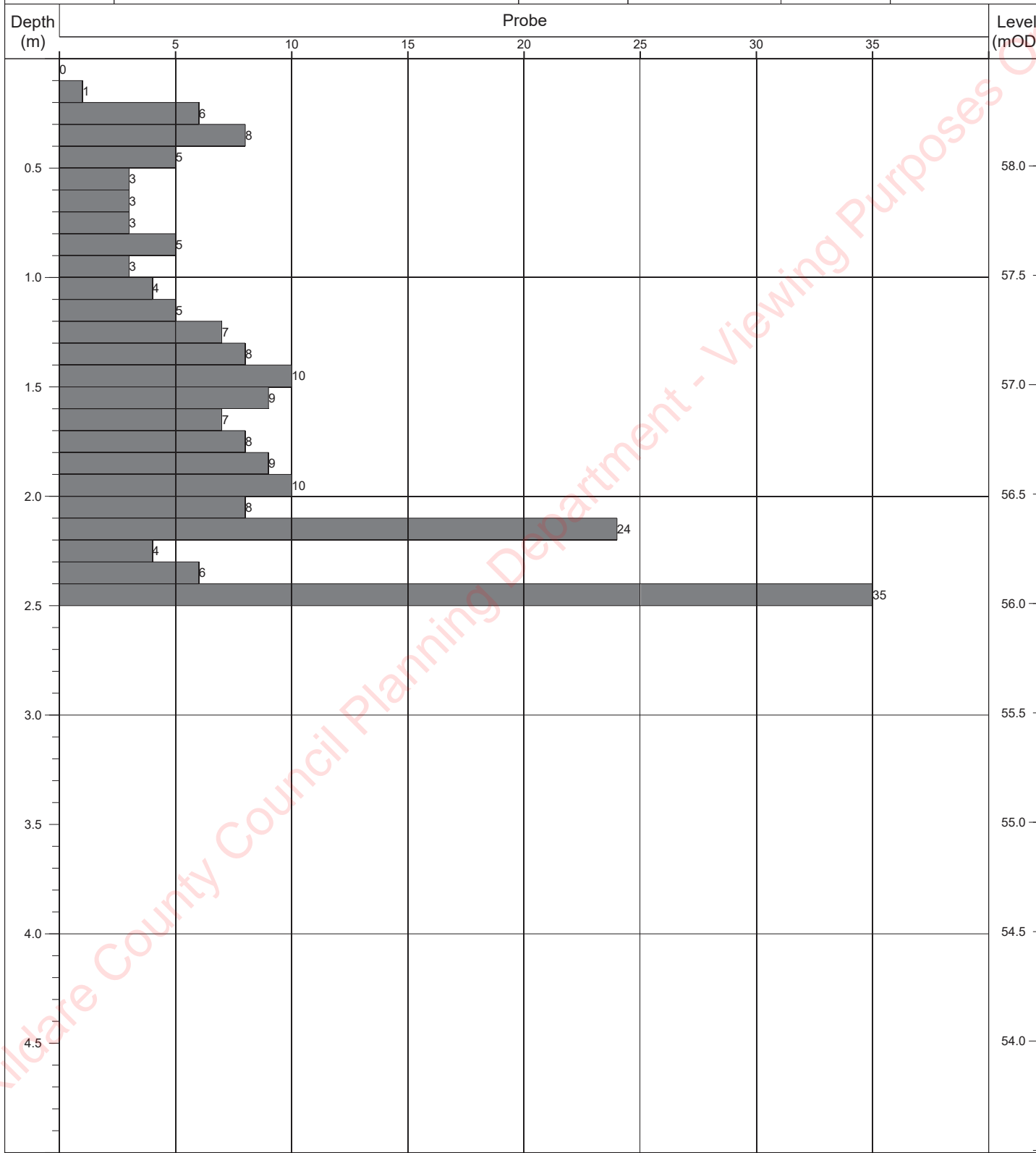
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.10m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP46
Contract:	Moygaddy	Easting:	694430.386	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739324.235	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	53.90	Scale: 1:25
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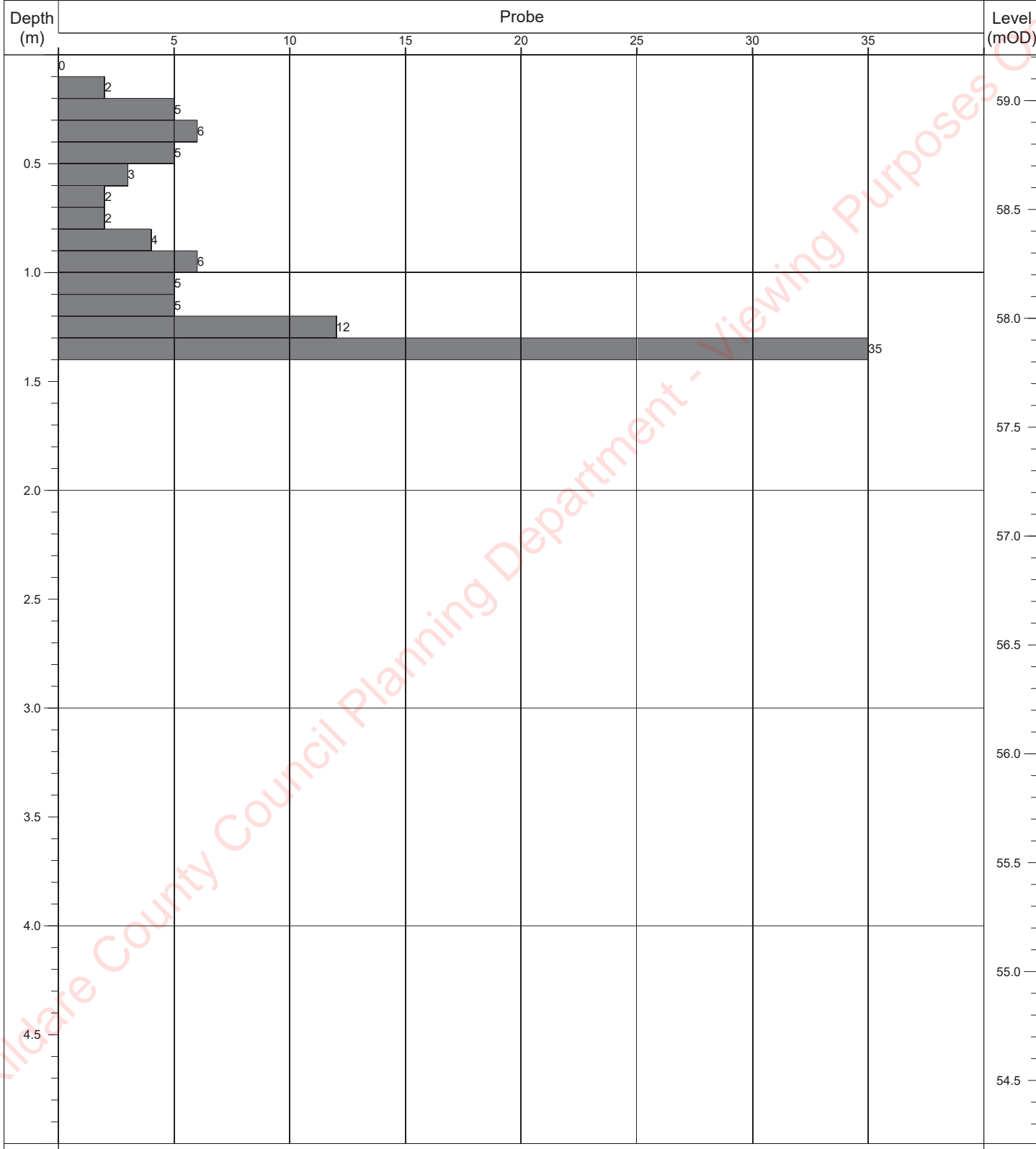
	Termination:		Probe Details:			Remarks:
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	1.80m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP47	
Contract:	Moygaddy	Easting:	694493.472	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739282.726	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.49	Scale:	1:25
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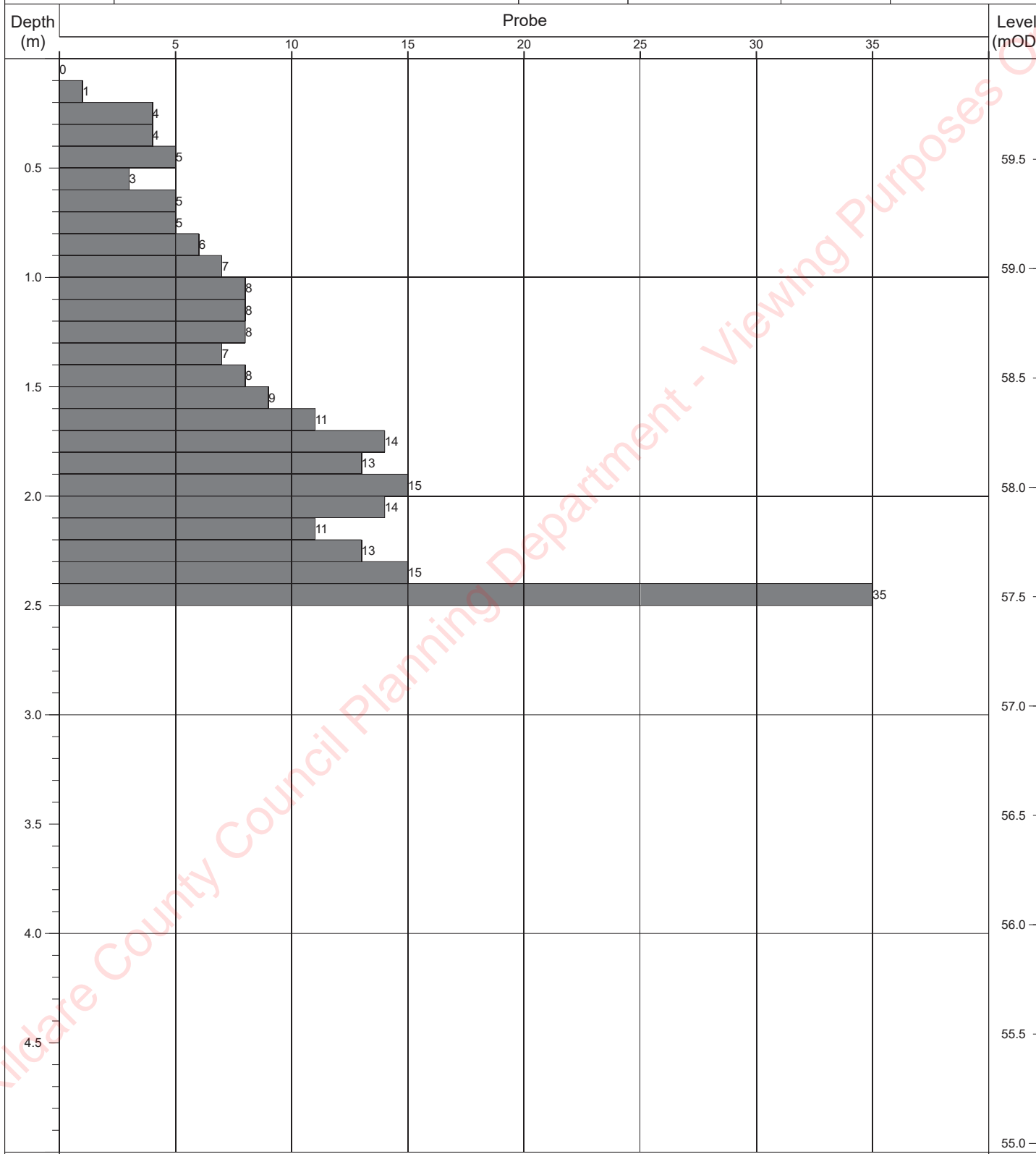
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	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

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



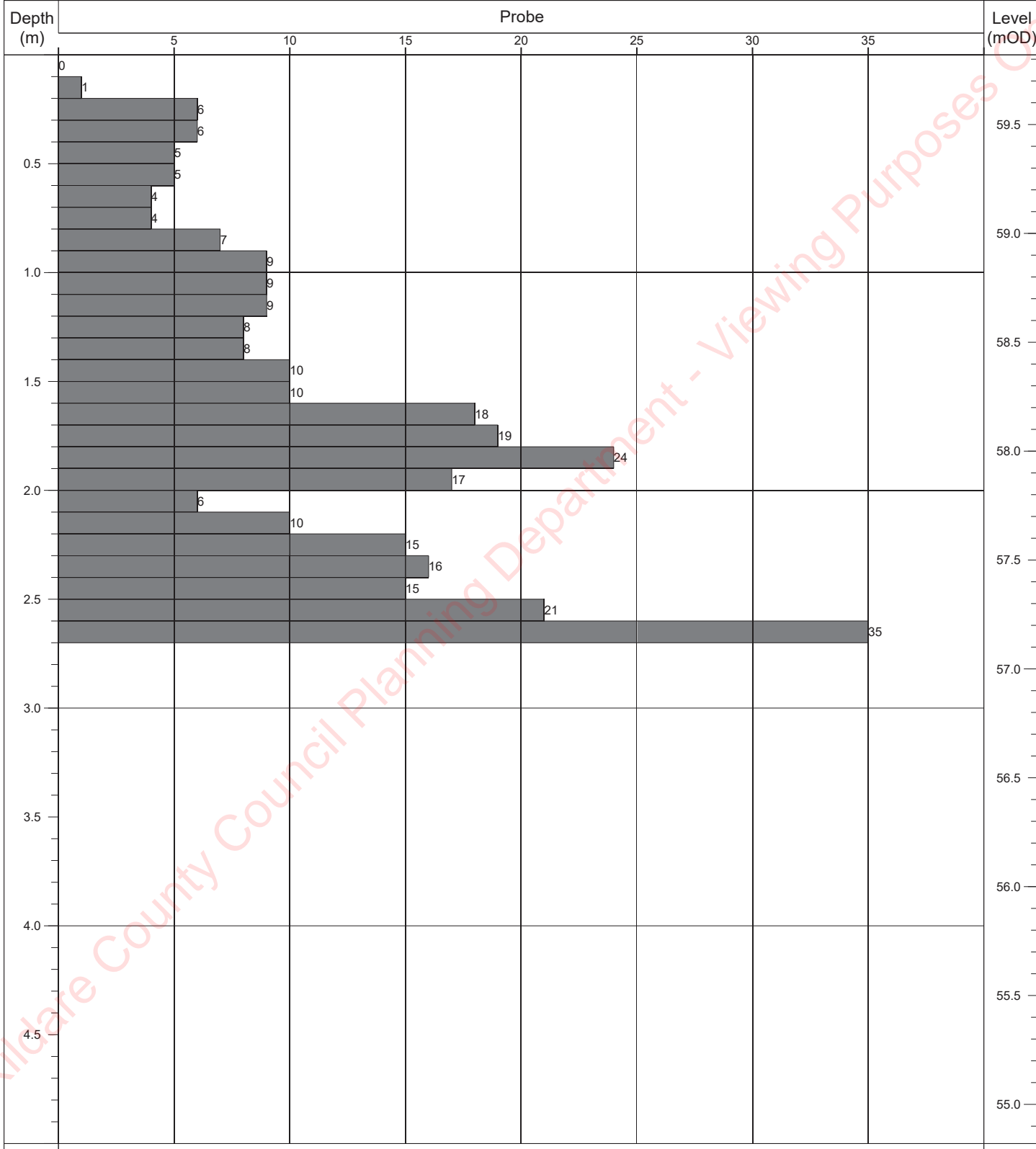
	Termination:		Probe Details:			Remarks:
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	1.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



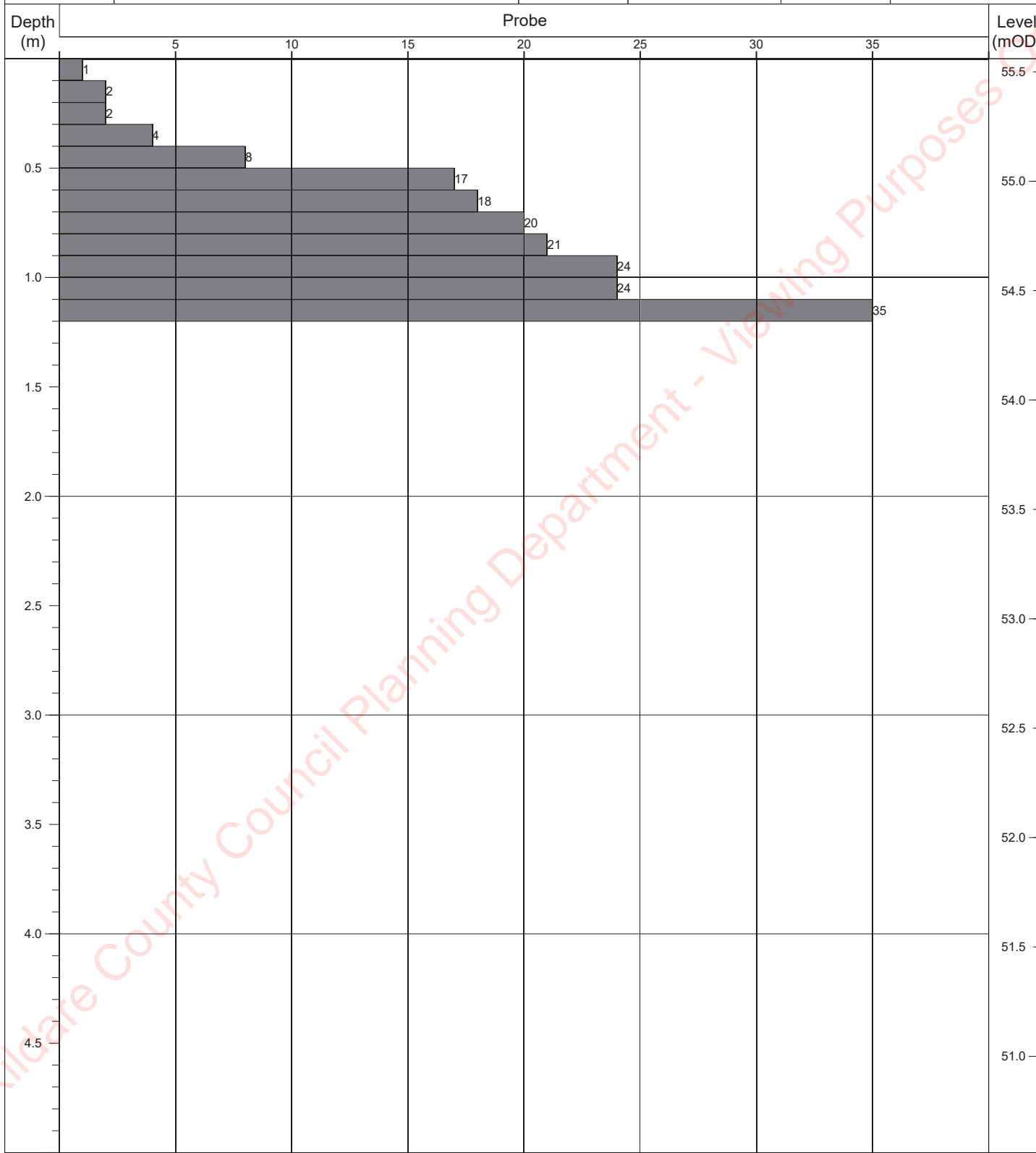
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	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP50	
Contract:	Moygaddy	Easting:	694788.363	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739288.137	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	59.82	Scale:	1:25
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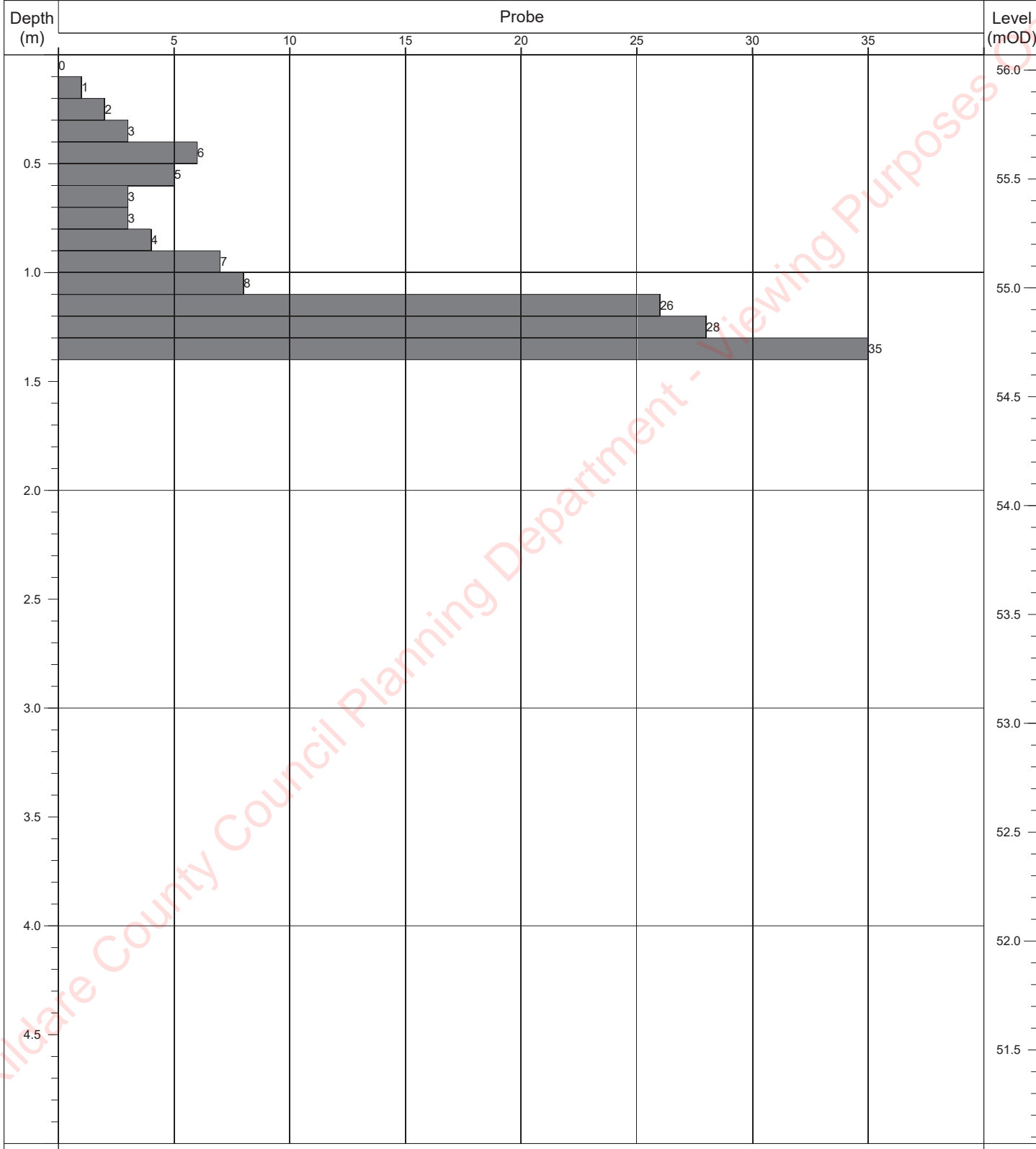
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.70m	Obstruction - boulders.	DPH	50kg	500mm	

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



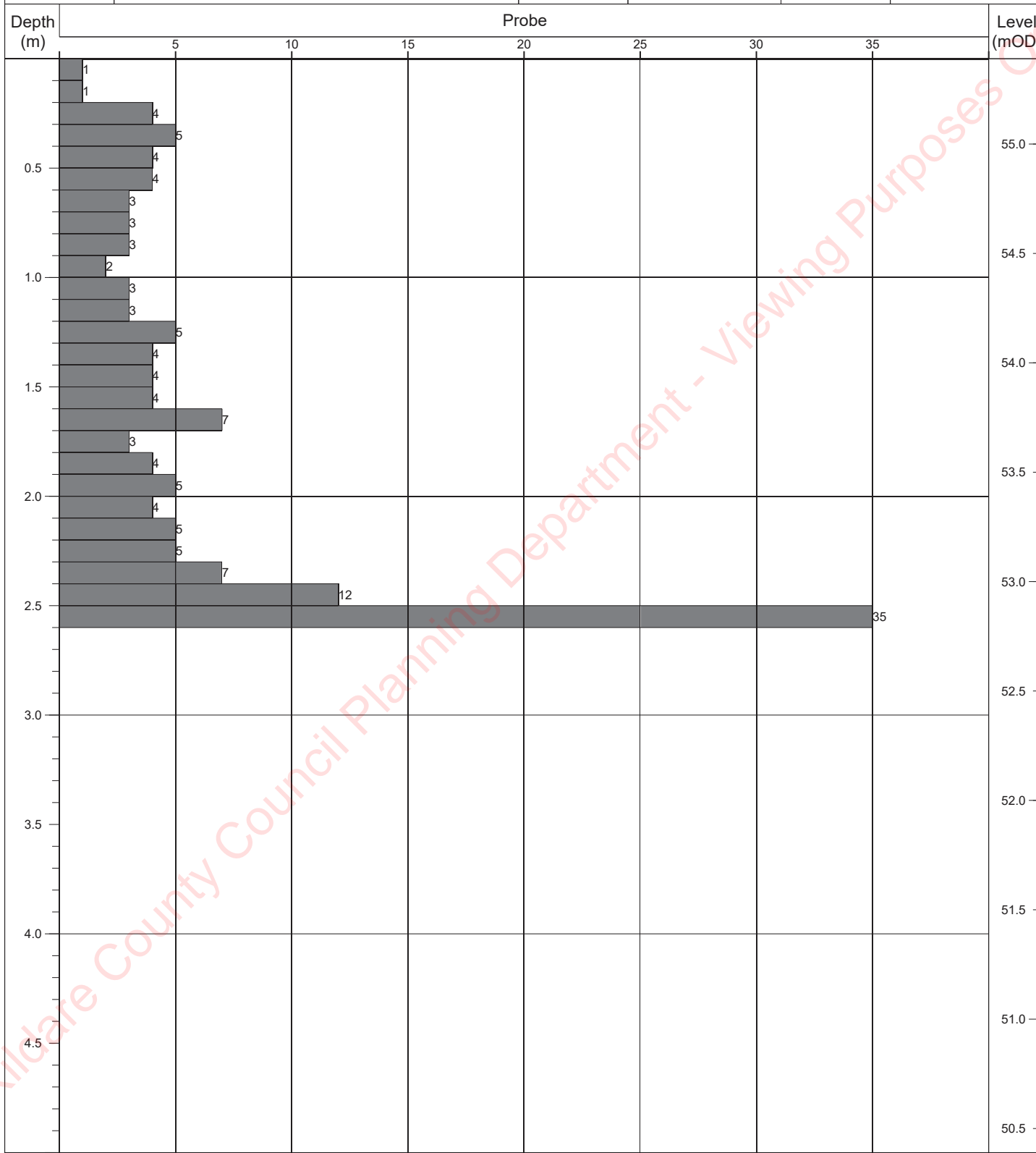
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	1.20m	Obstruction - boulders.	DPH	50kg	500mm	

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



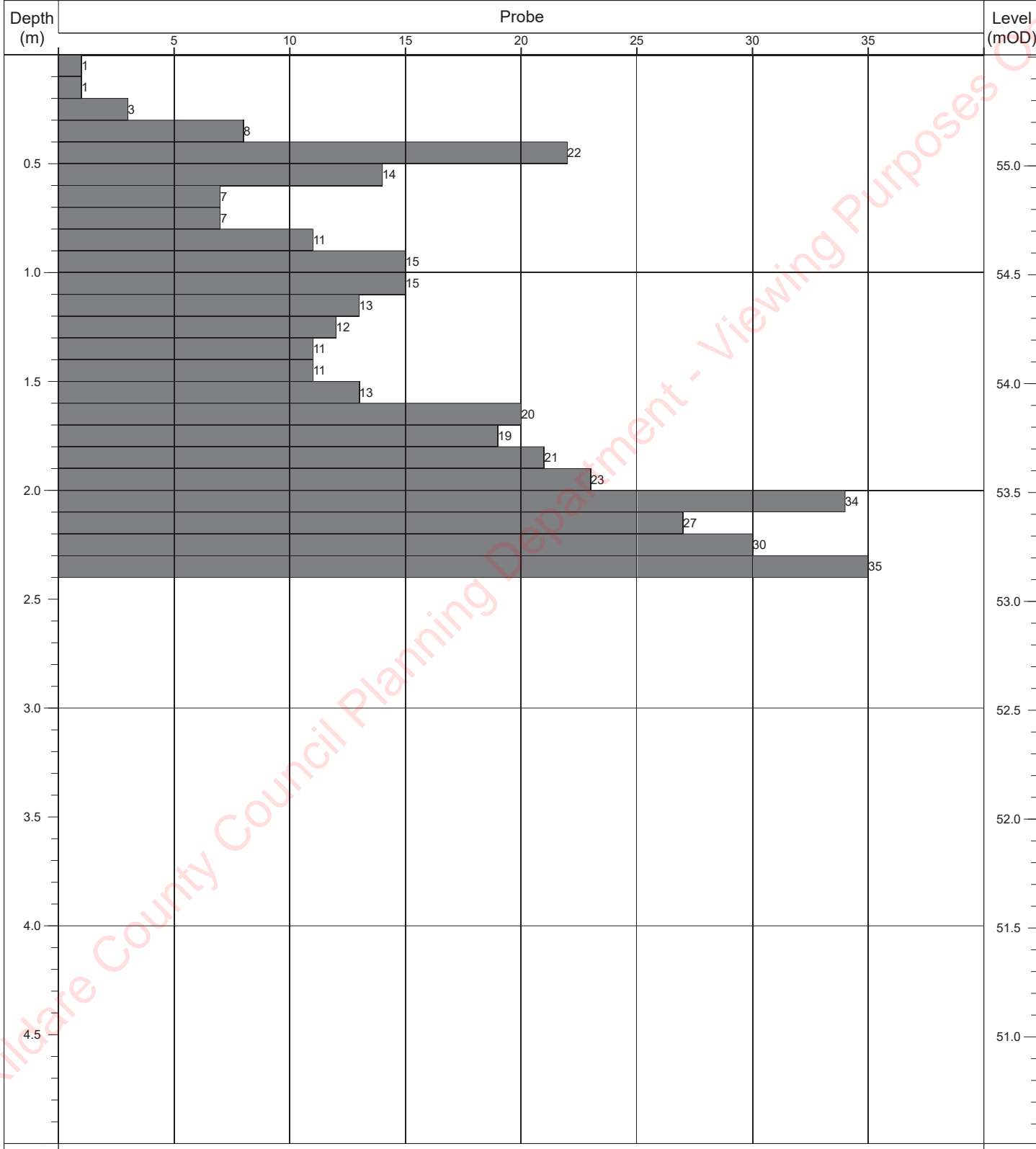
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	1.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



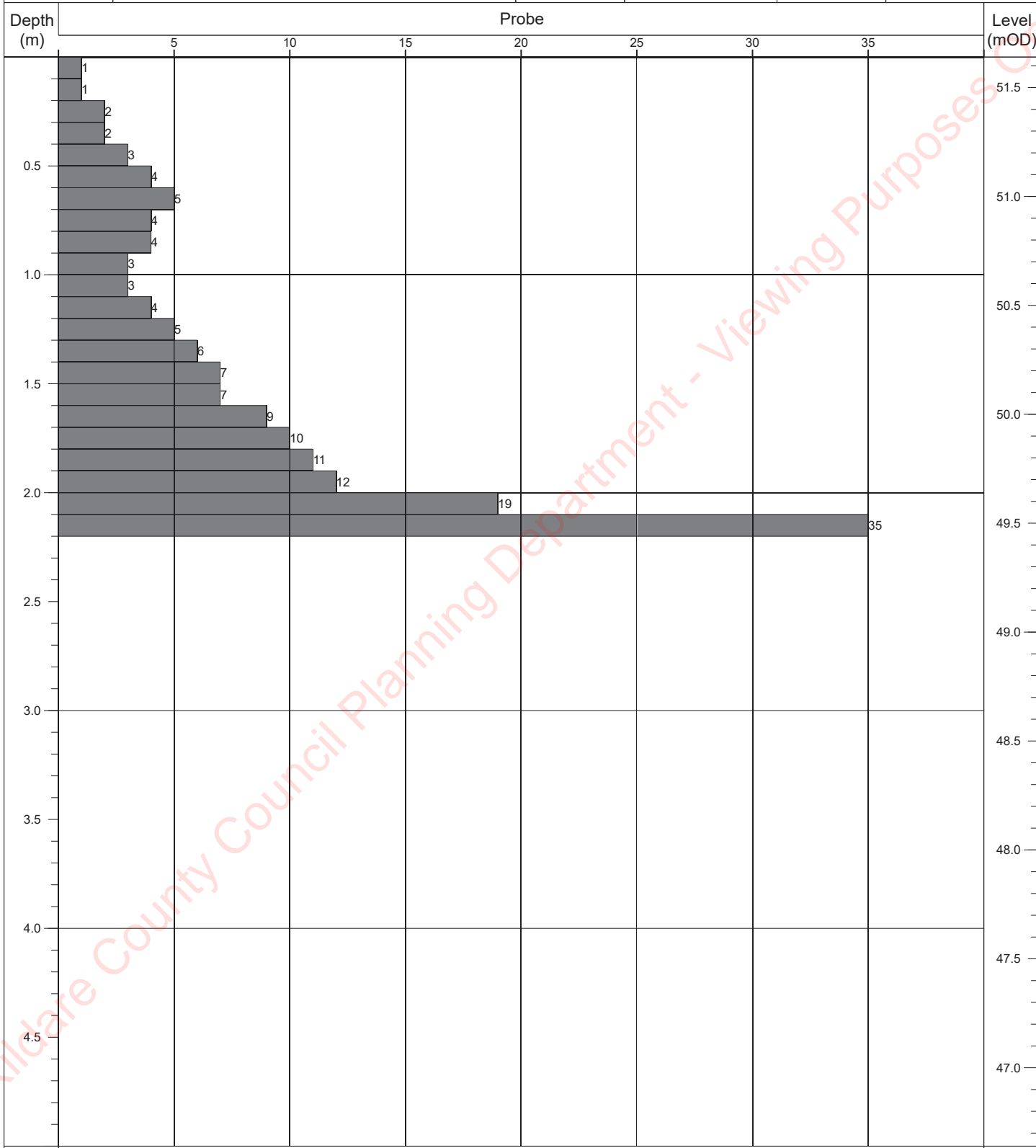
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	Depth:	Reason:	Type:	Mass	Drop:	
	2.60m	Obstruction - boulders.	DPH	50kg	500mm	

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



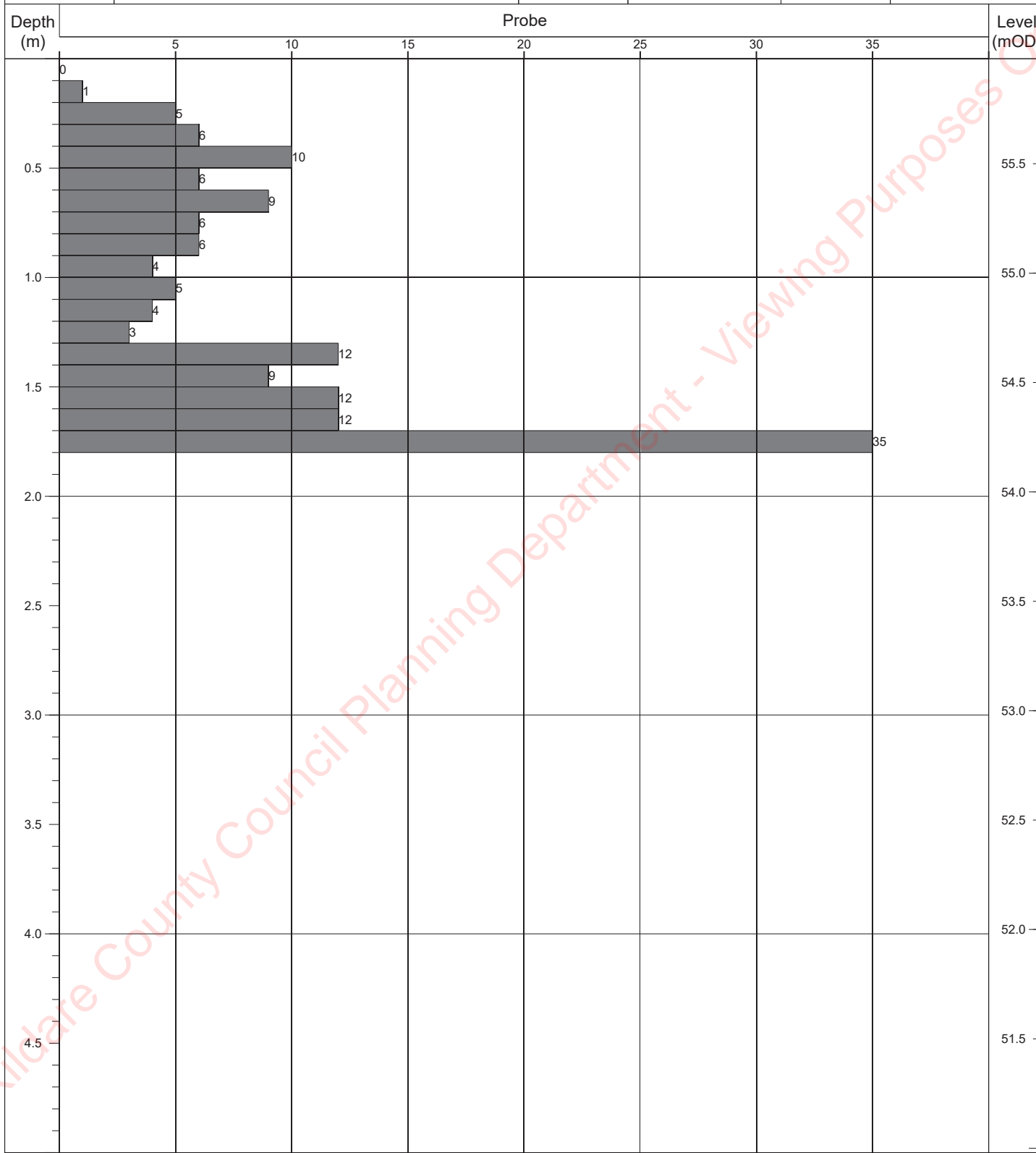
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	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



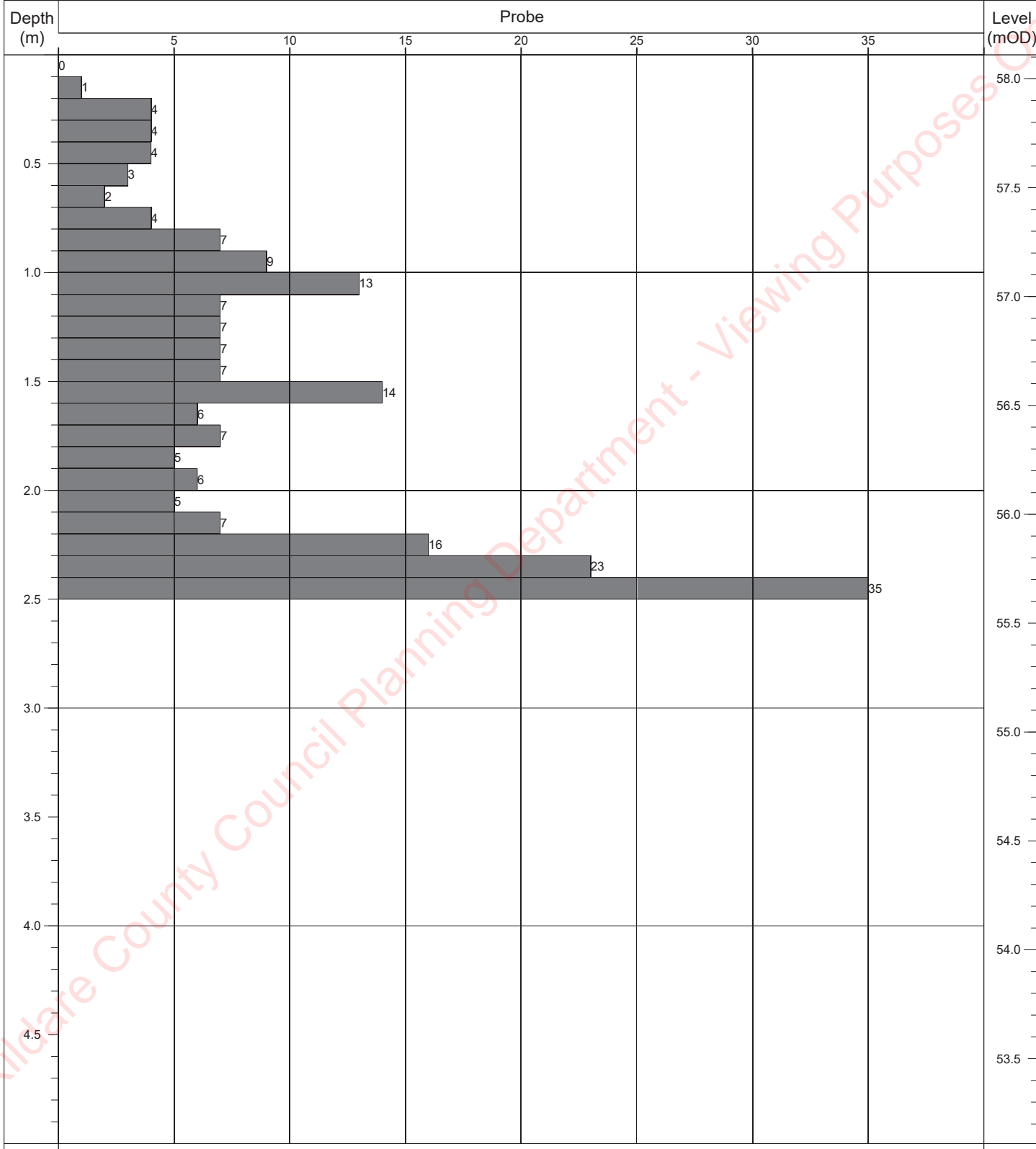
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	2.20m	Obstruction - boulders.	DPH	50kg	500mm	

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



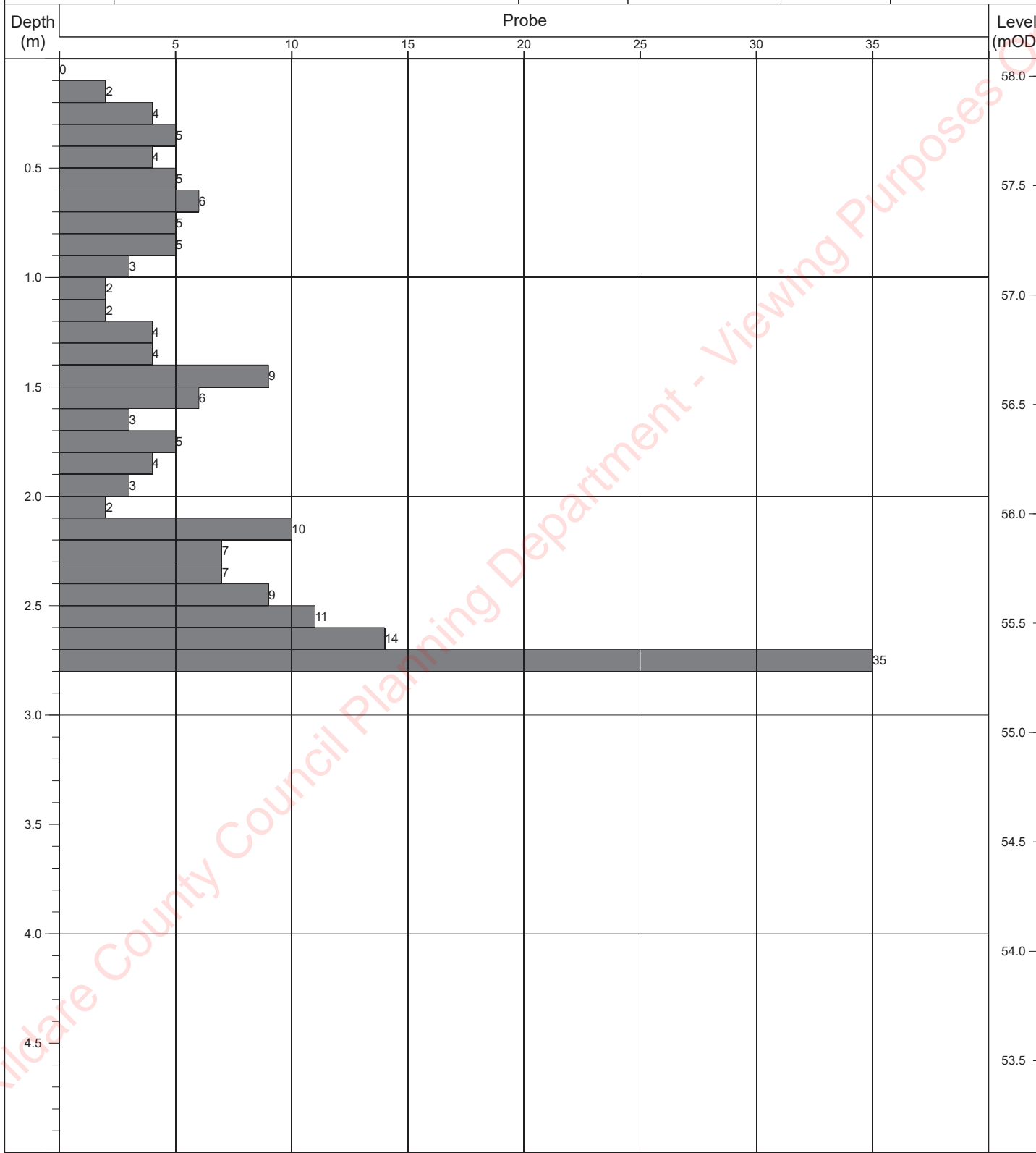
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	1.80m	Obstruction - boulders.	DPH	50kg	500mm	

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



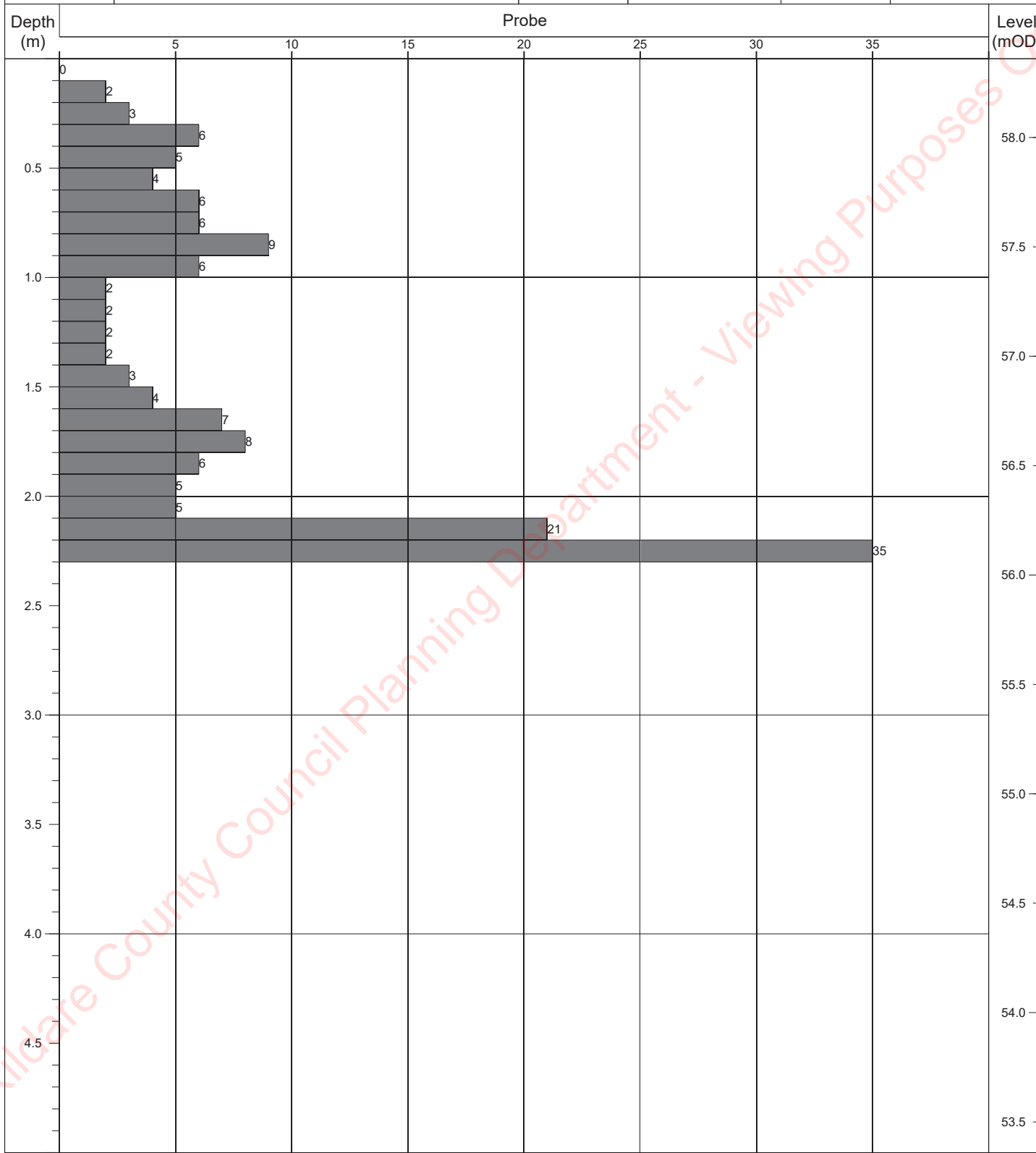
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	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			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					



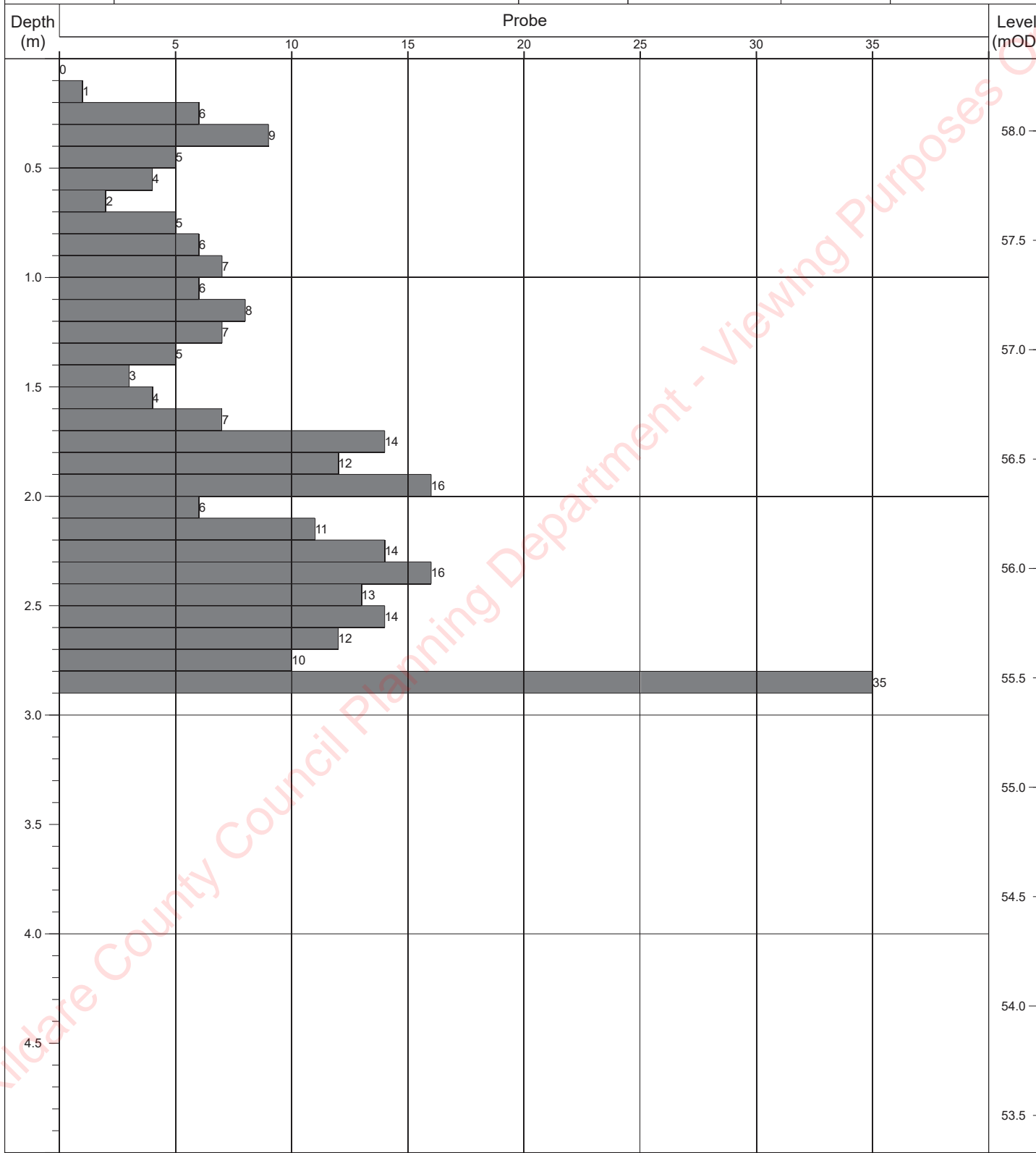
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	2.80m	Obstruction - boulders.	DPH	50kg	500mm	

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



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

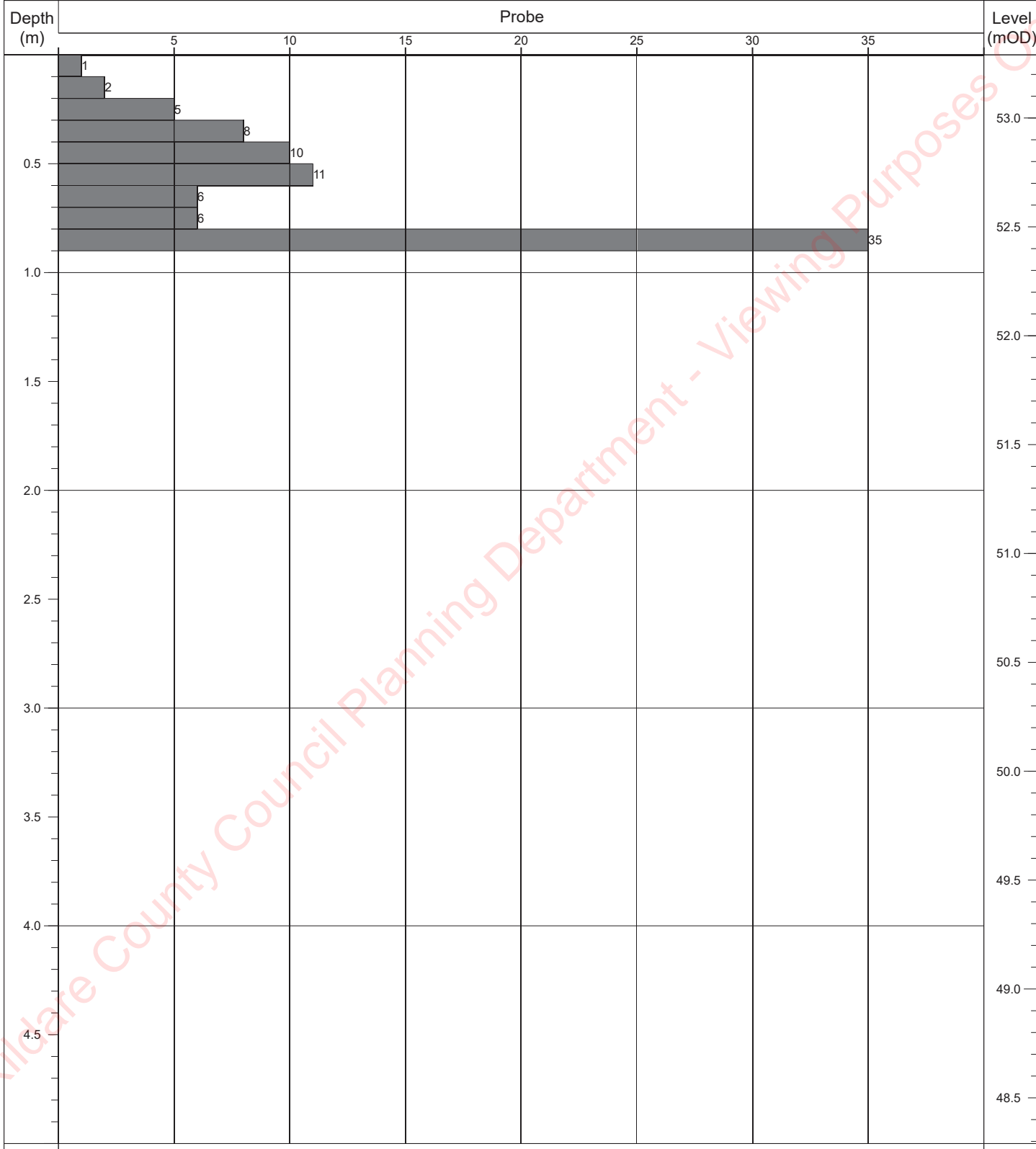
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Contract:	Moygaddy	Easting:	694784.383	Date Started:	23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739187.502	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	58.33	Scale:	1:25
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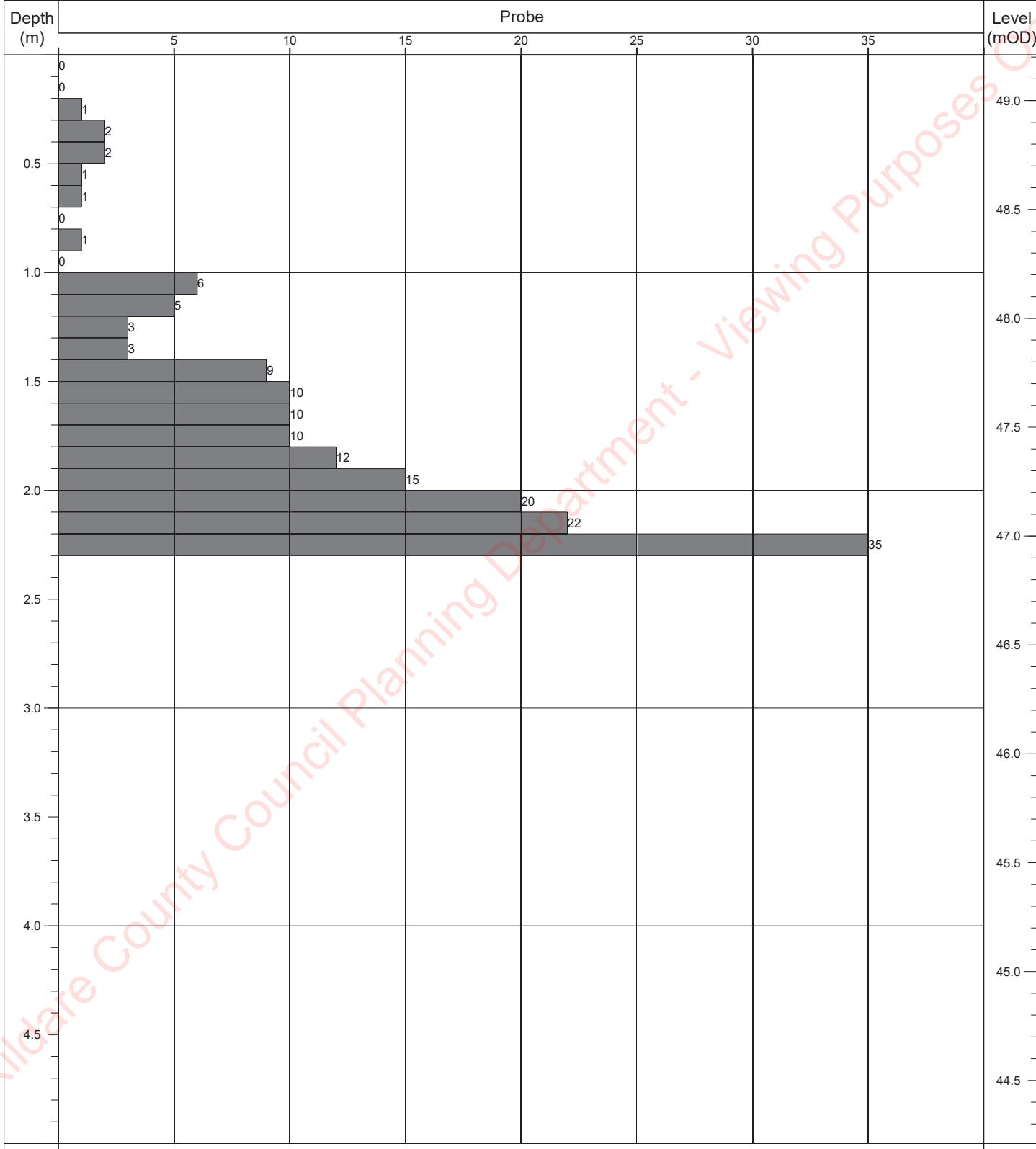
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	2.90m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP61	
Contract:	Moygaddy	Easting:	693991.061	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739083.755	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	53.29	Scale:	1:25
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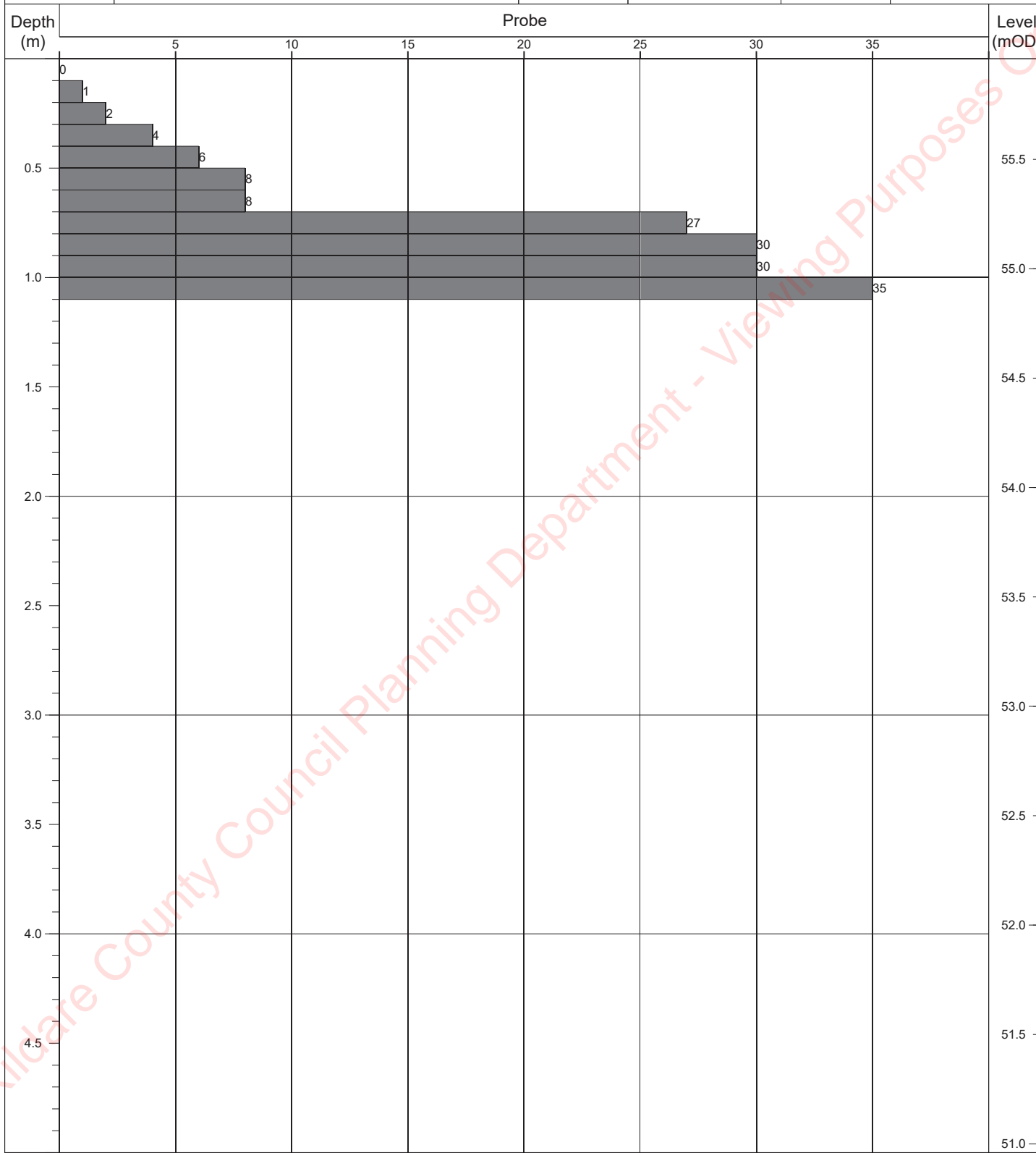
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	0.90m	Obstruction - boulders.	DPH	50kg	500mm	

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



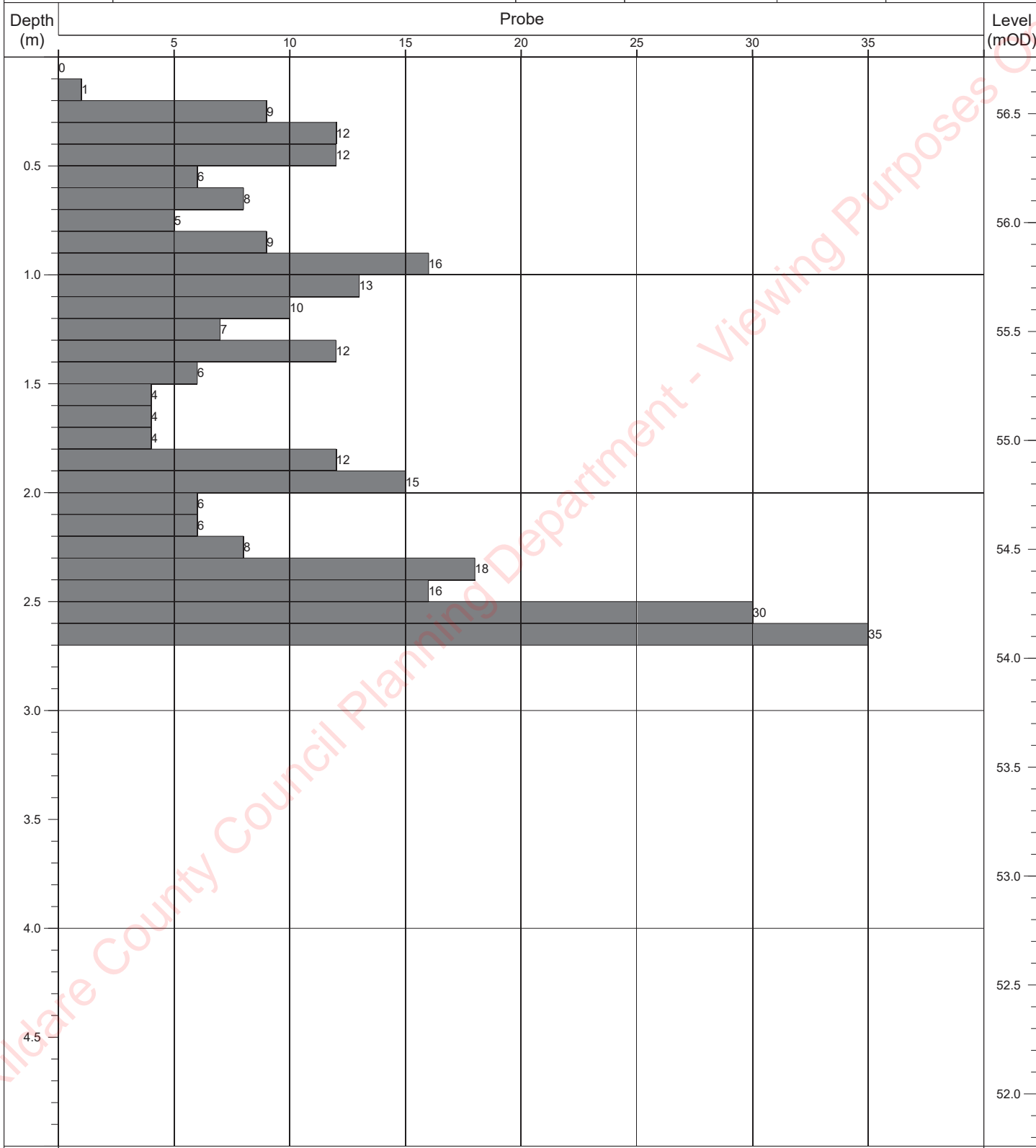
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	2.30m	Obstruction - boulders.	DPH	50kg	500mm	

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



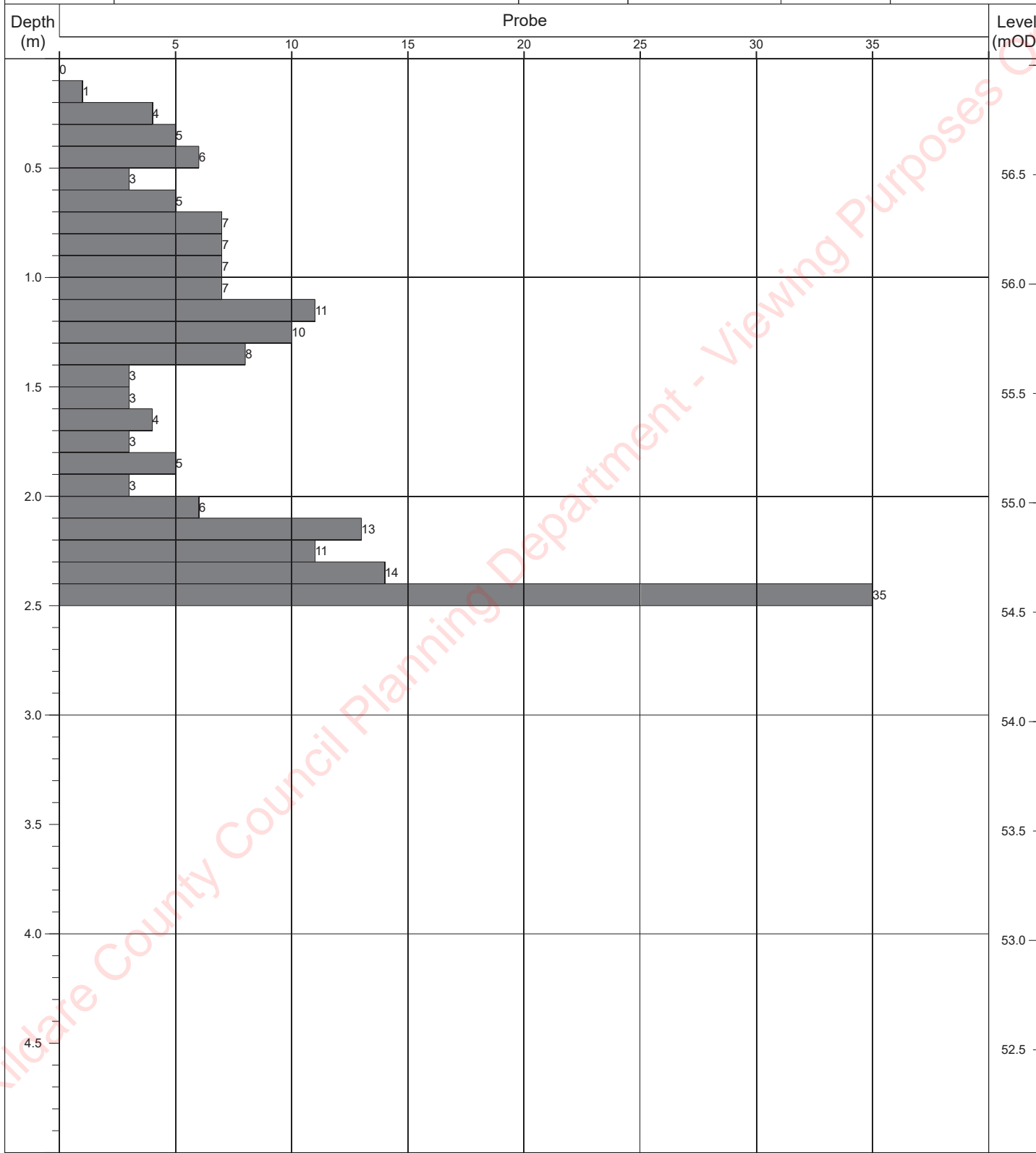
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	Depth:	Reason:	Type:	Mass	Drop:	
	1.10m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP64	
Contract:	Moygaddy	Easting:	694385.154	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	739082.180	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.76	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



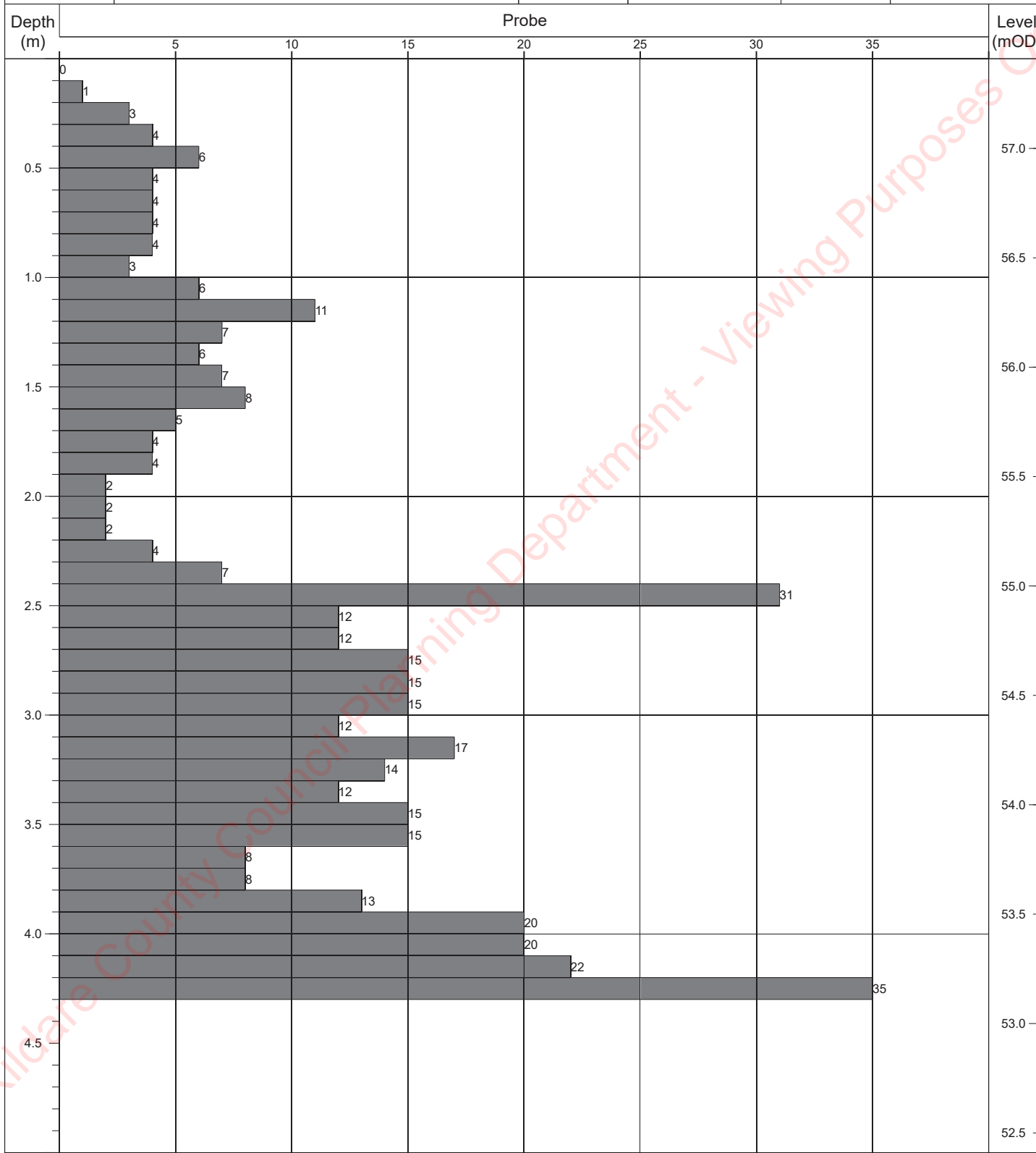
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.70m	Obstruction - boulders.	DPH	50kg	500mm	

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



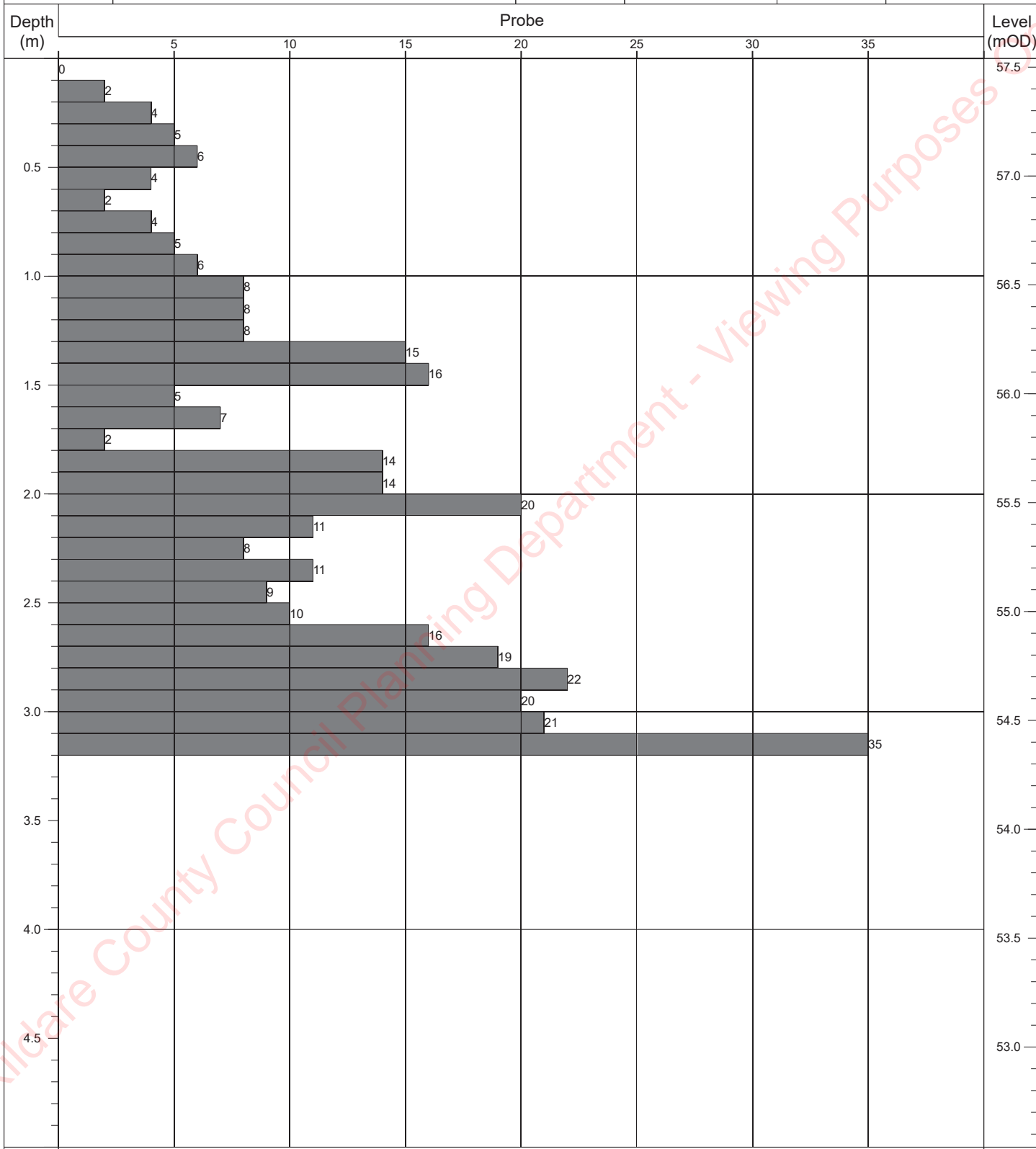
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.50m	Obstruction - boulders.	DPH	50kg	500mm	

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



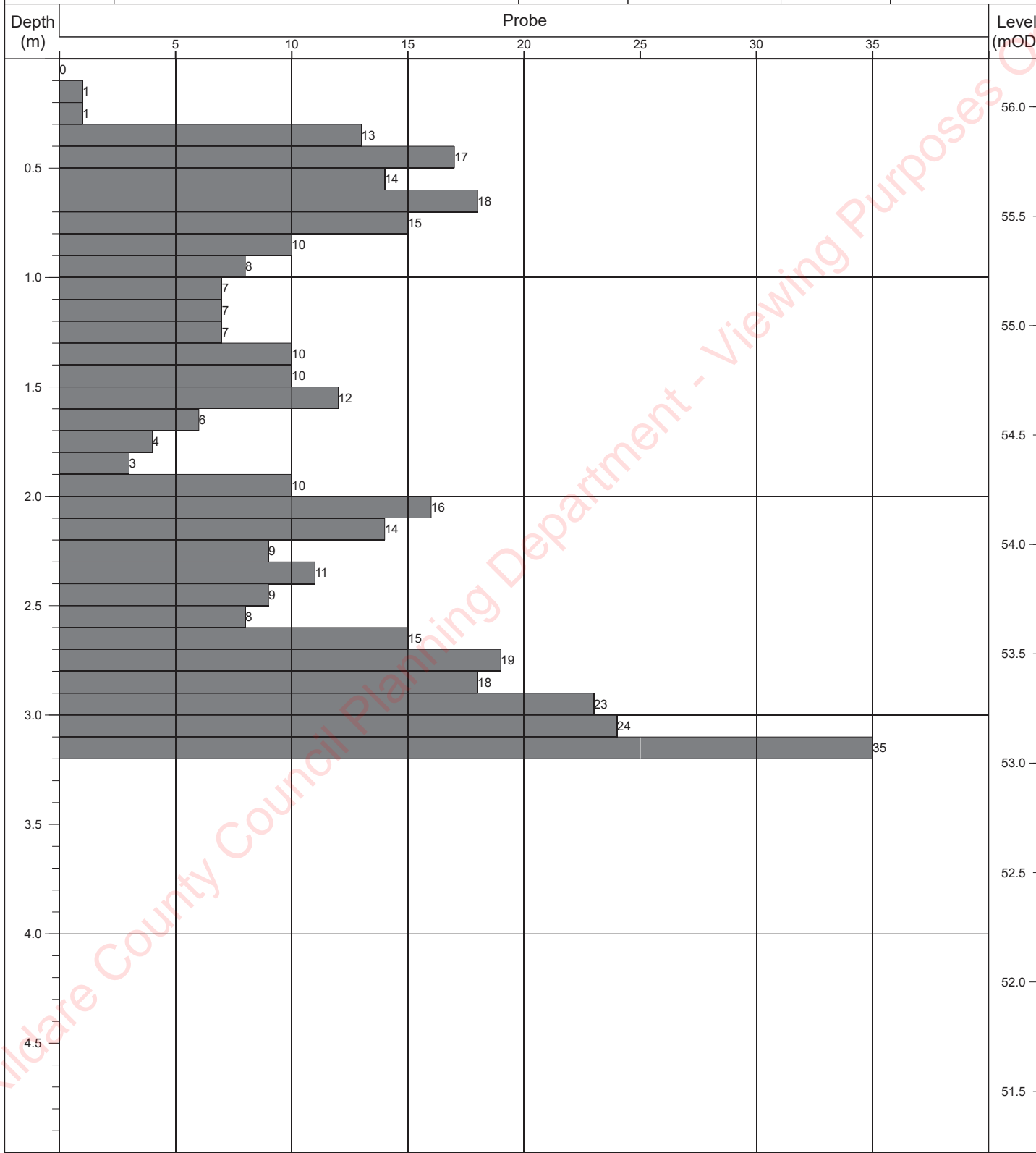
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	4.30m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP67
Contract:	Moygaddy	Easting:	694682.814	Date Started: 23/06/2021
Location:	Maynooth, Co. Meath	Northing:	739084.421	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	57.54	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



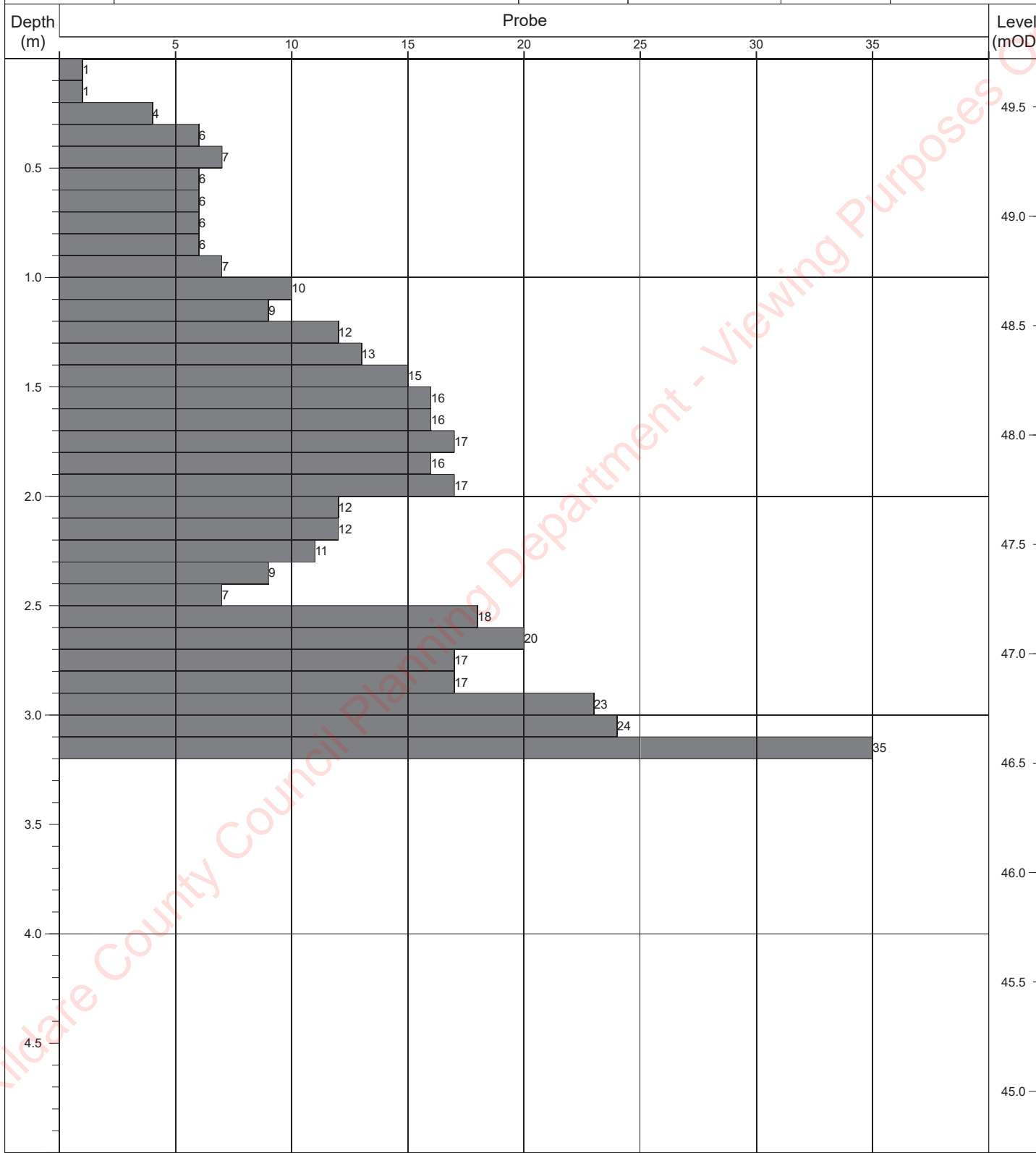
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.20m	Obstruction - boulders.	DPH	50kg	500mm	

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



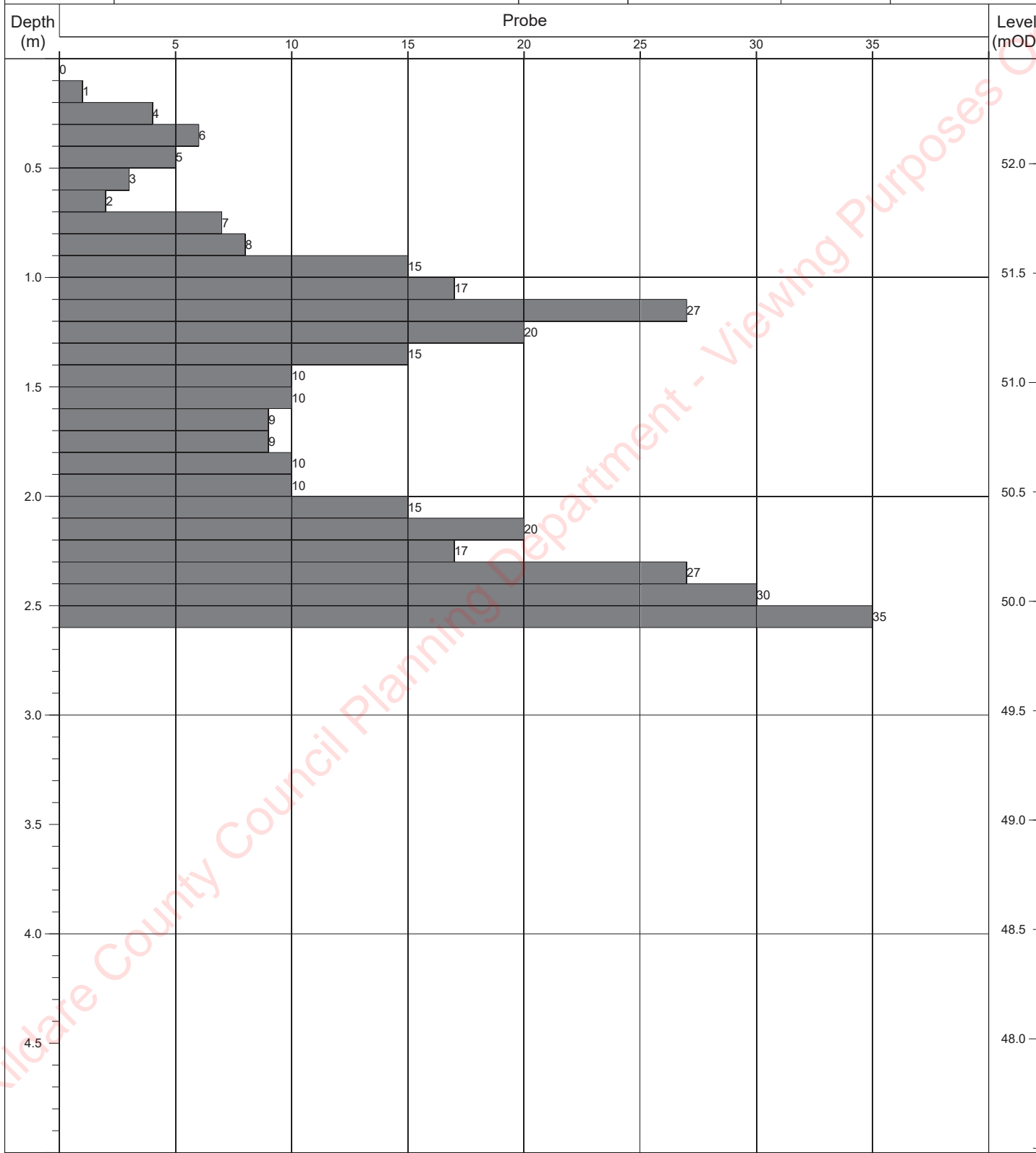
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.20m	Obstruction - boulders.	DPH	50kg	500mm	

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



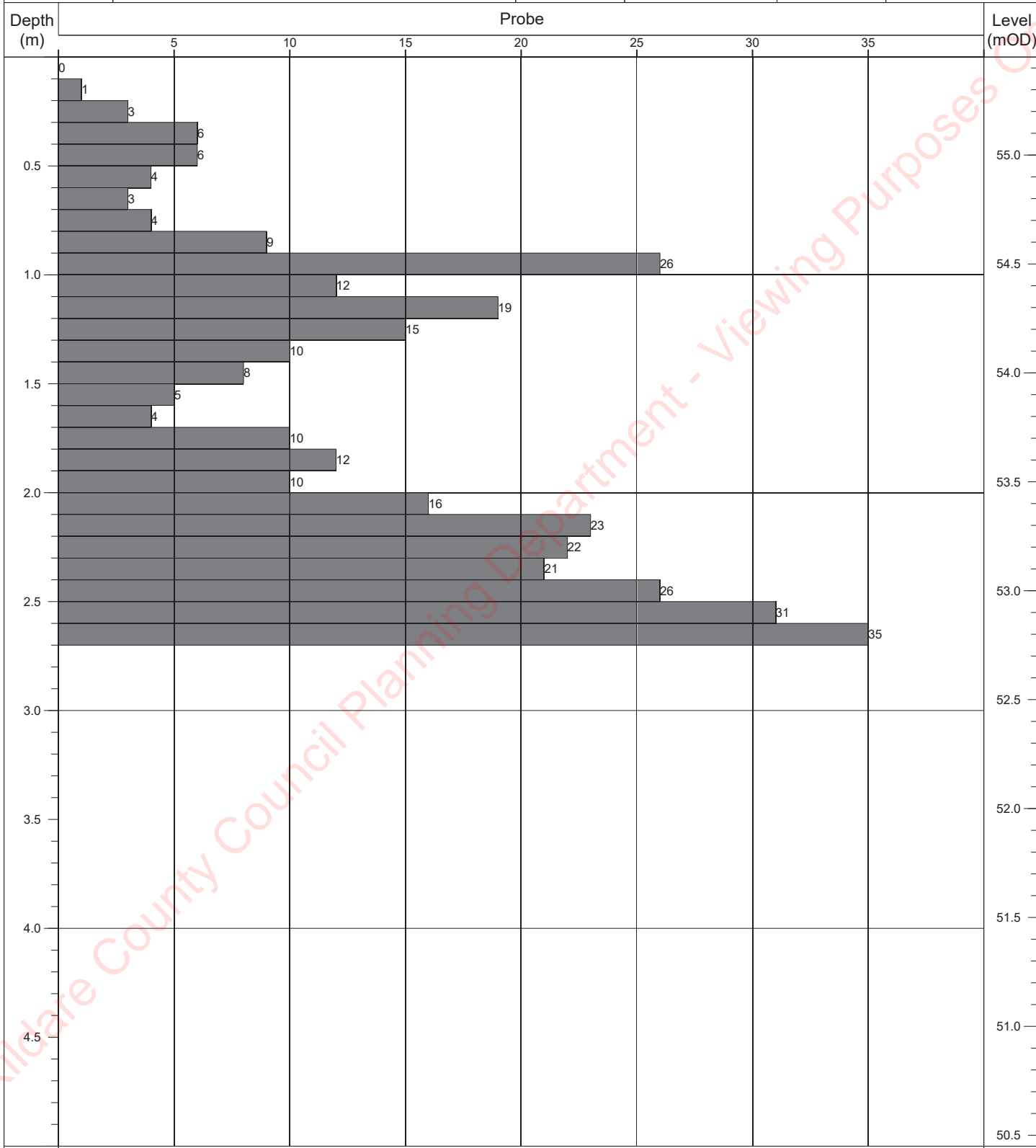
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.20m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP70	
Contract:	Moygaddy	Easting:	694187.890	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738981.735	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	52.48	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



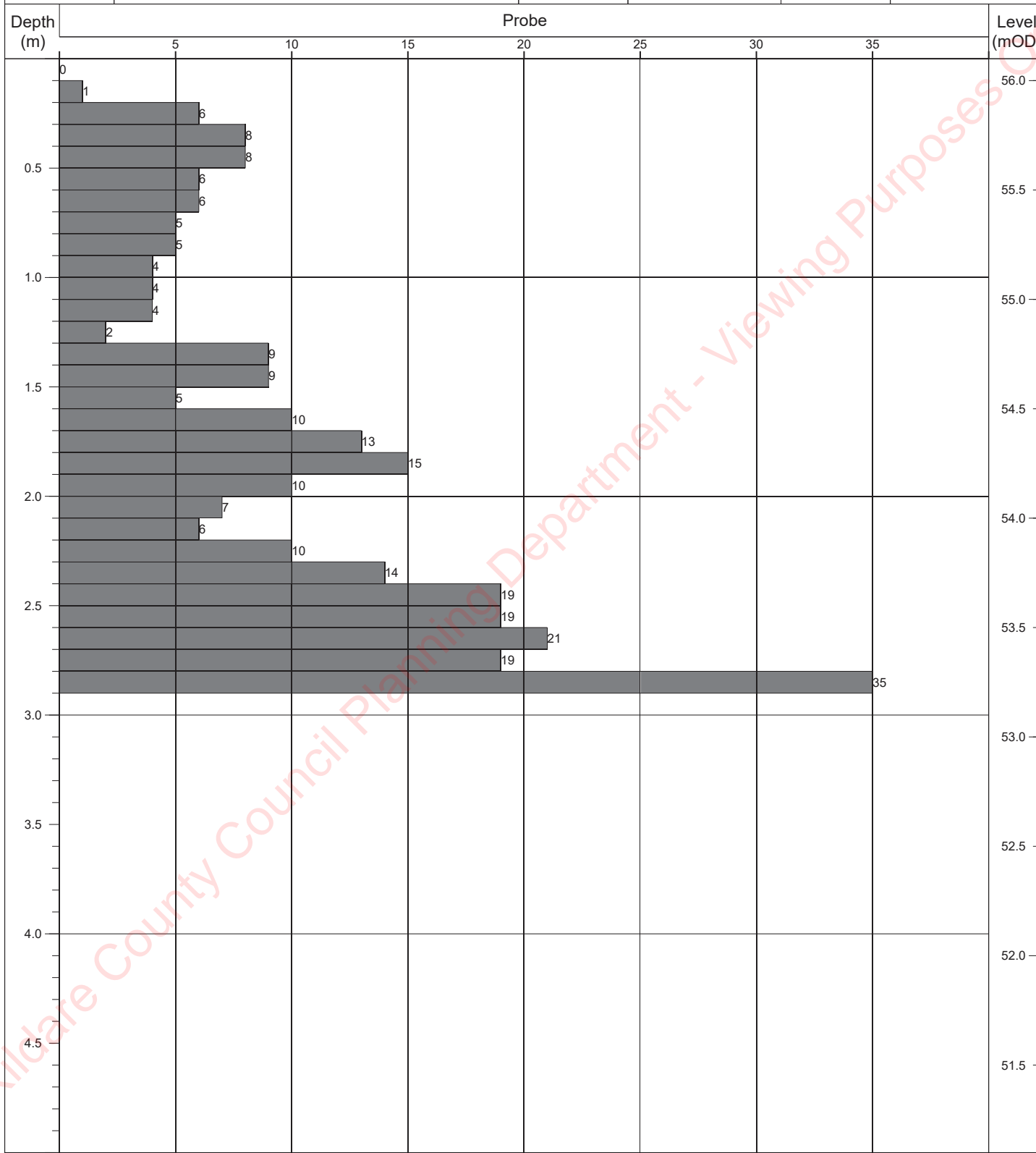
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.60m	Obstruction - boulders.	DPH	50kg	500mm	

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



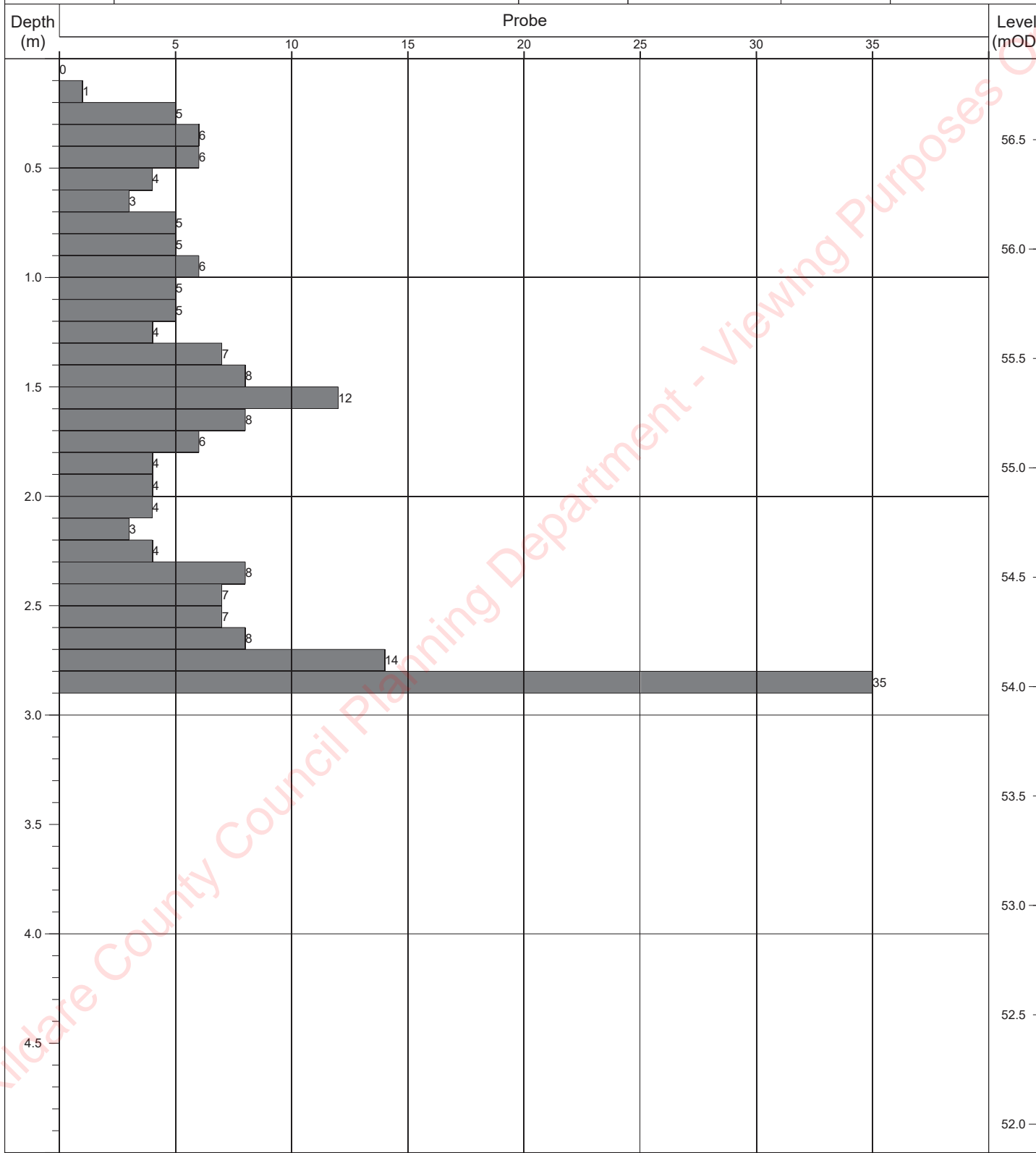
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.70m	Obstruction - boulders.	DPH	50kg	500mm	

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



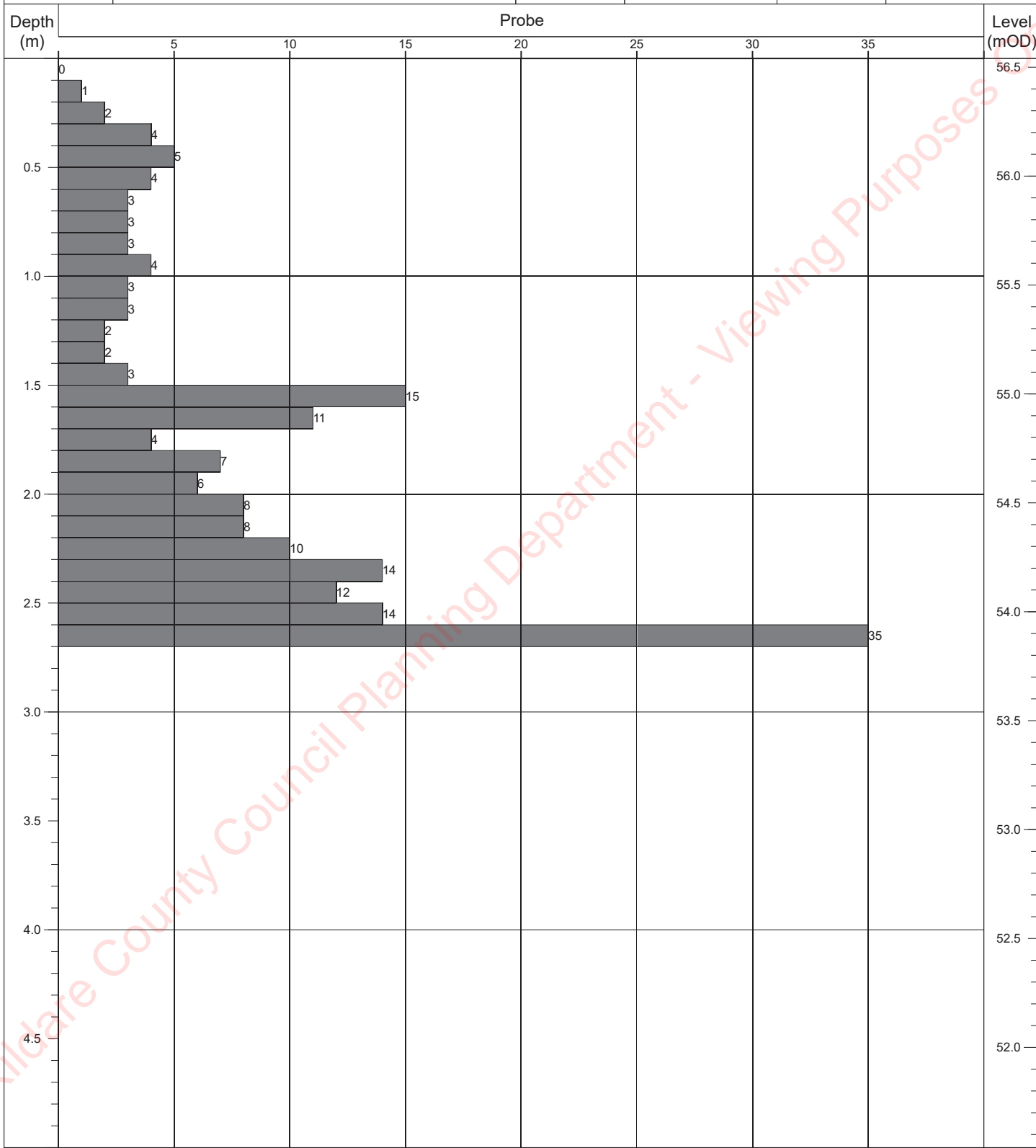
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.90m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP73	
Contract:	Moygaddy	Easting:	694486.822	Date Started:	21/06/2021
Location:	Maynooth, Co. Meath	Northing:	738986.510	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.87	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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


Contract No: 5863	Dynamic Probe Log			Probe No: DP74
Contract:	Moygaddy	Easting:	694586.960	Date Started: 22/06/2021
Location:	Maynooth, Co. Meath	Northing:	738983.395	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	56.54	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



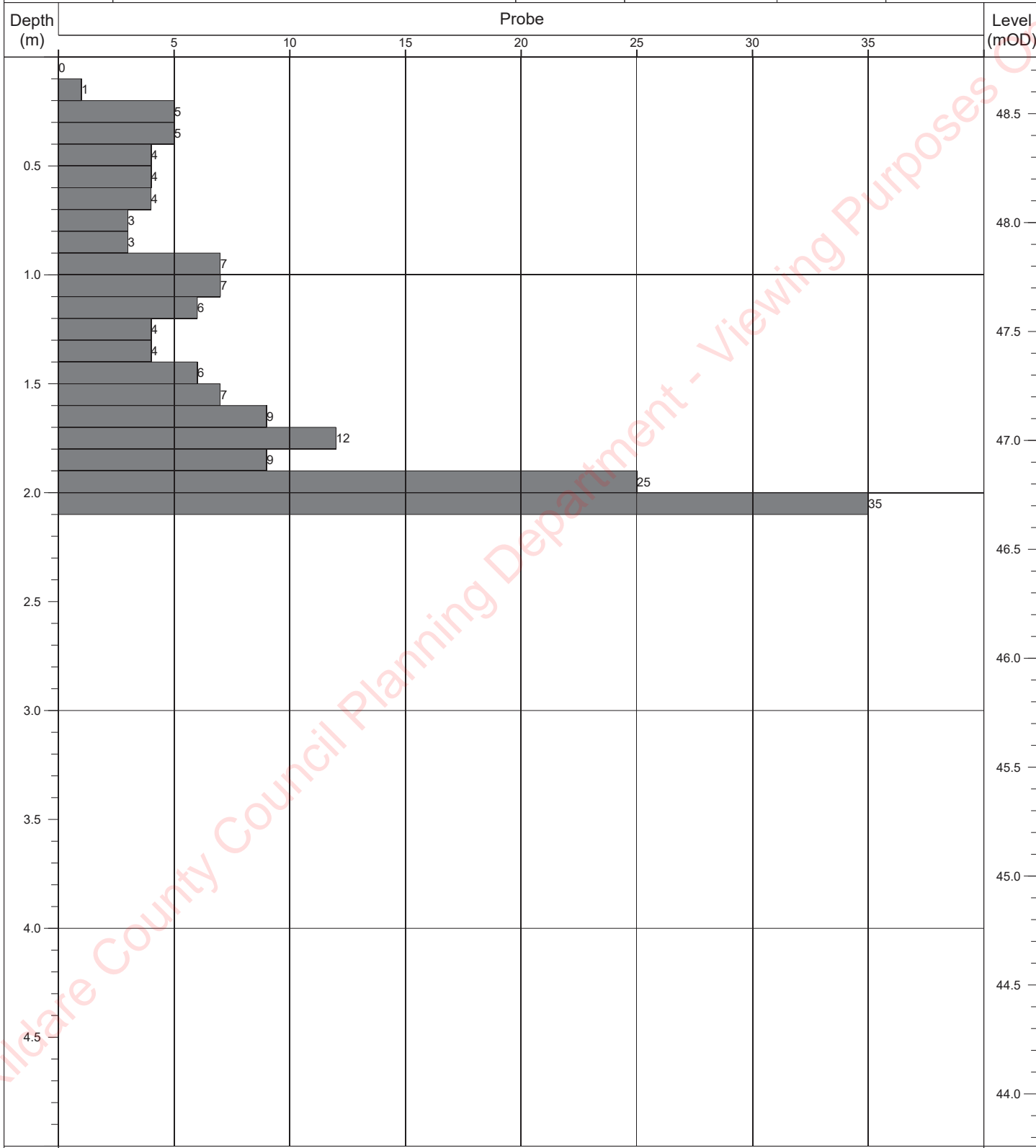
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.70m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log				Probe No: DP75
Contract:	Moygaddy	Easting:	694691.101	Date Started:	22/06/2021
Location:	Maynooth, Co. Meath	Northing:	738989.216	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	56.20	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1

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

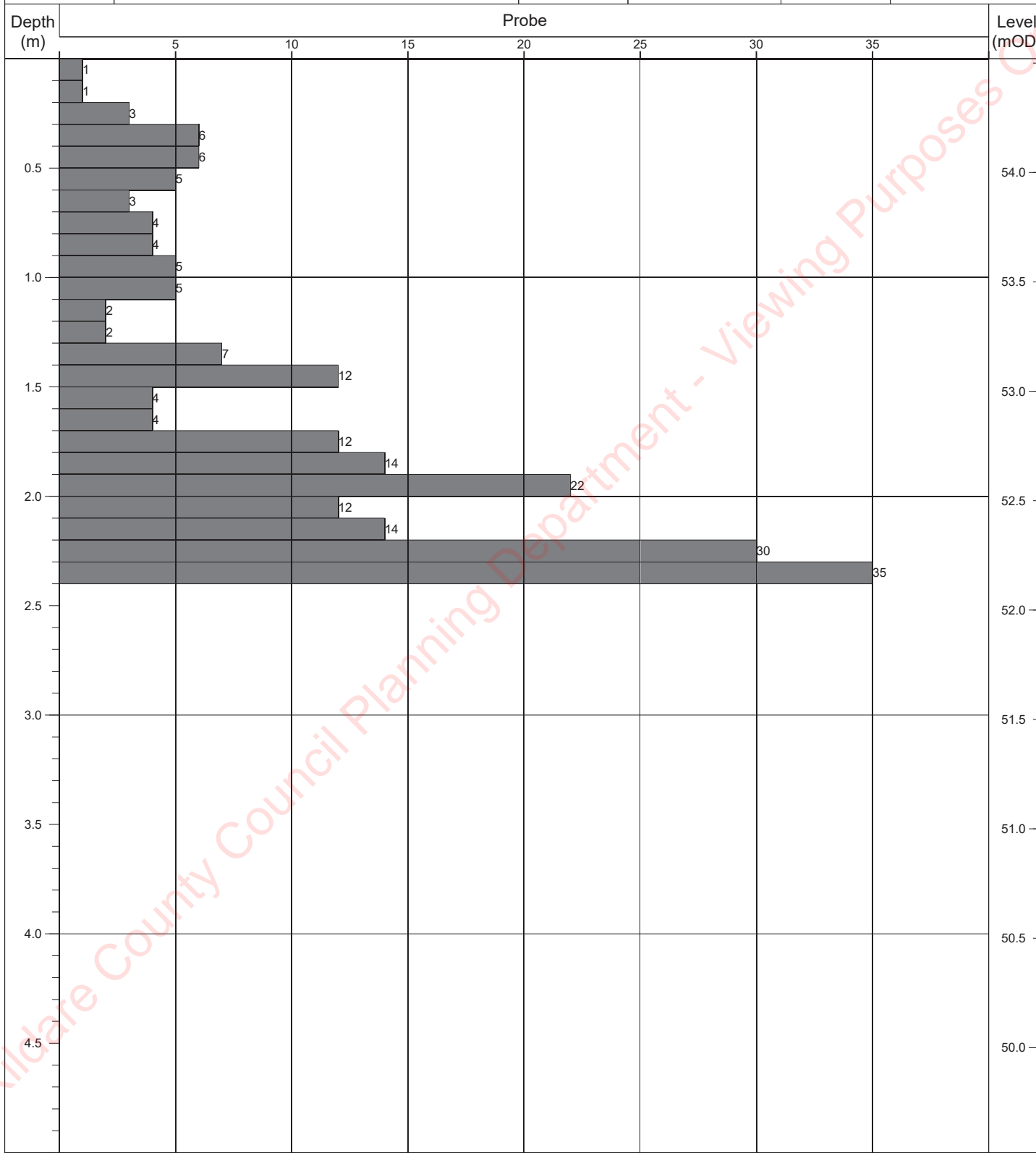
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	5.00m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP76	
Contract:	Moygaddy	Easting:	694188.862	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738882.936	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	48.76	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



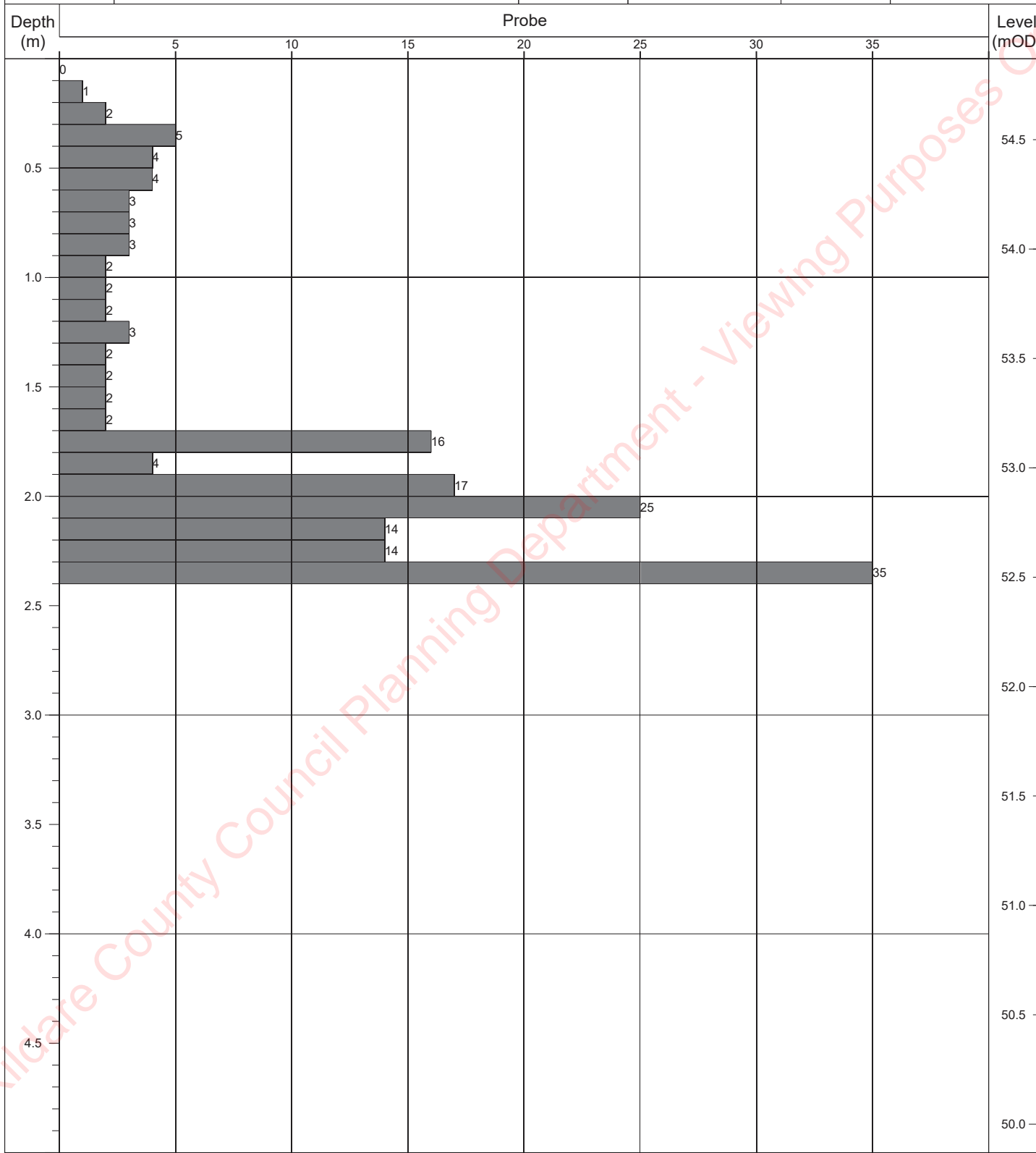
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.10m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP77
Contract:	Moygaddy	Easting:	694291.409	Date Started: 18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738890.282	Logged By: E. Magee
Client:	Sky Castle Ltd	Elevation:	54.52	Scale: 1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No: Sheet 1 of 1



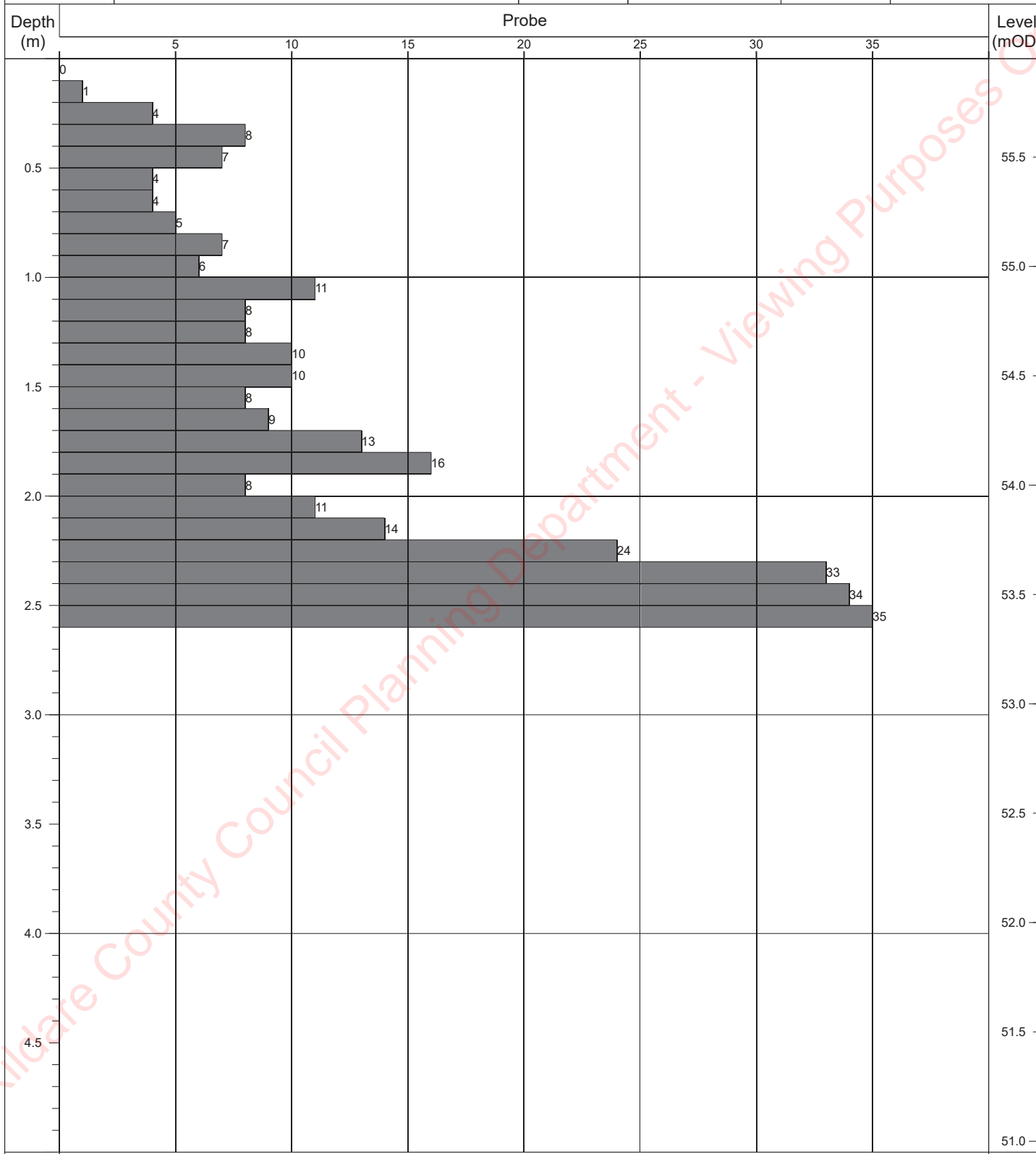
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

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



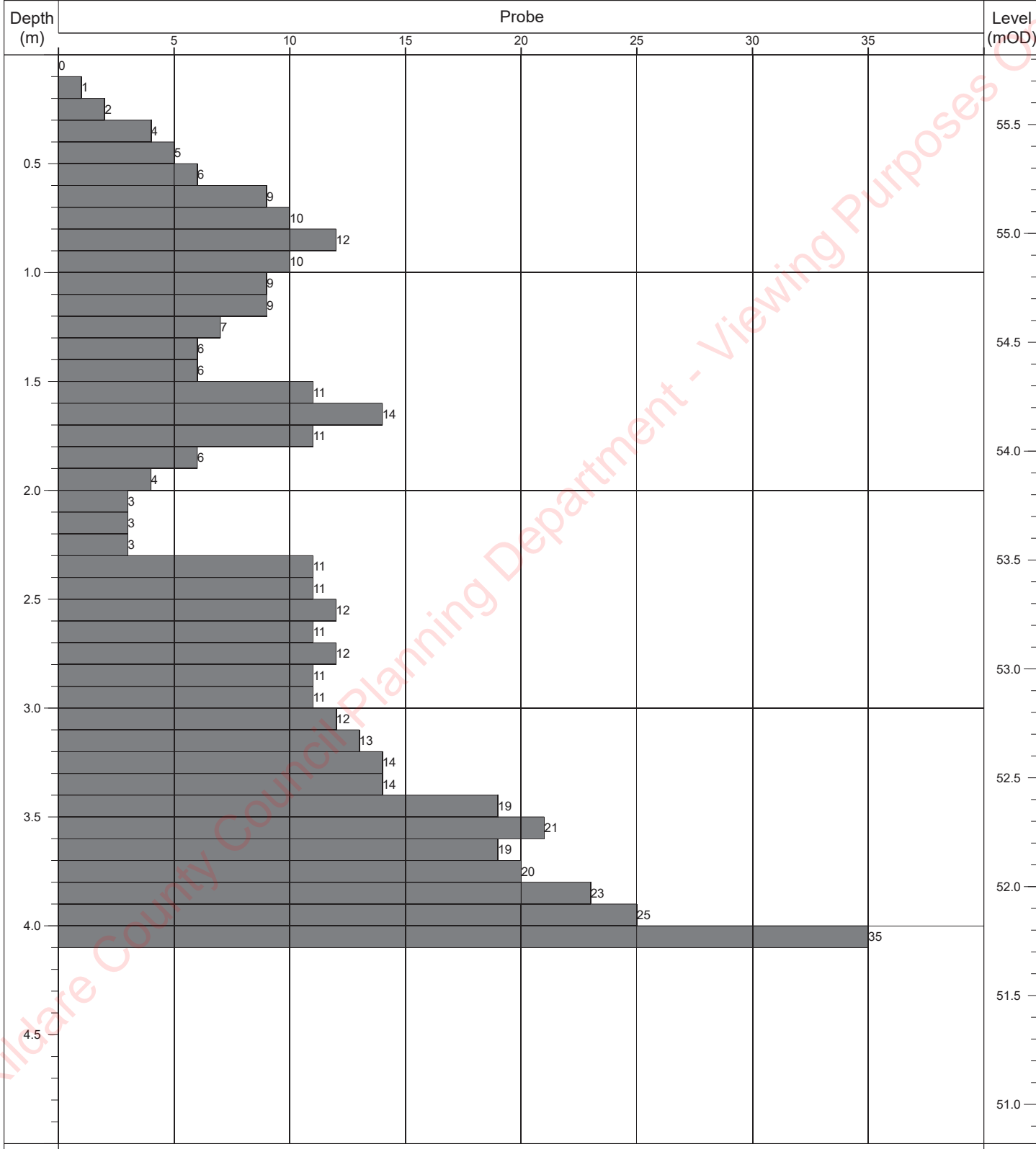
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.40m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP79	
Contract:	Moygaddy	Easting:	694490.609	Date Started:	21/06/2021
Location:	Maynooth, Co. Meath	Northing:	738885.308	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	55.95	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



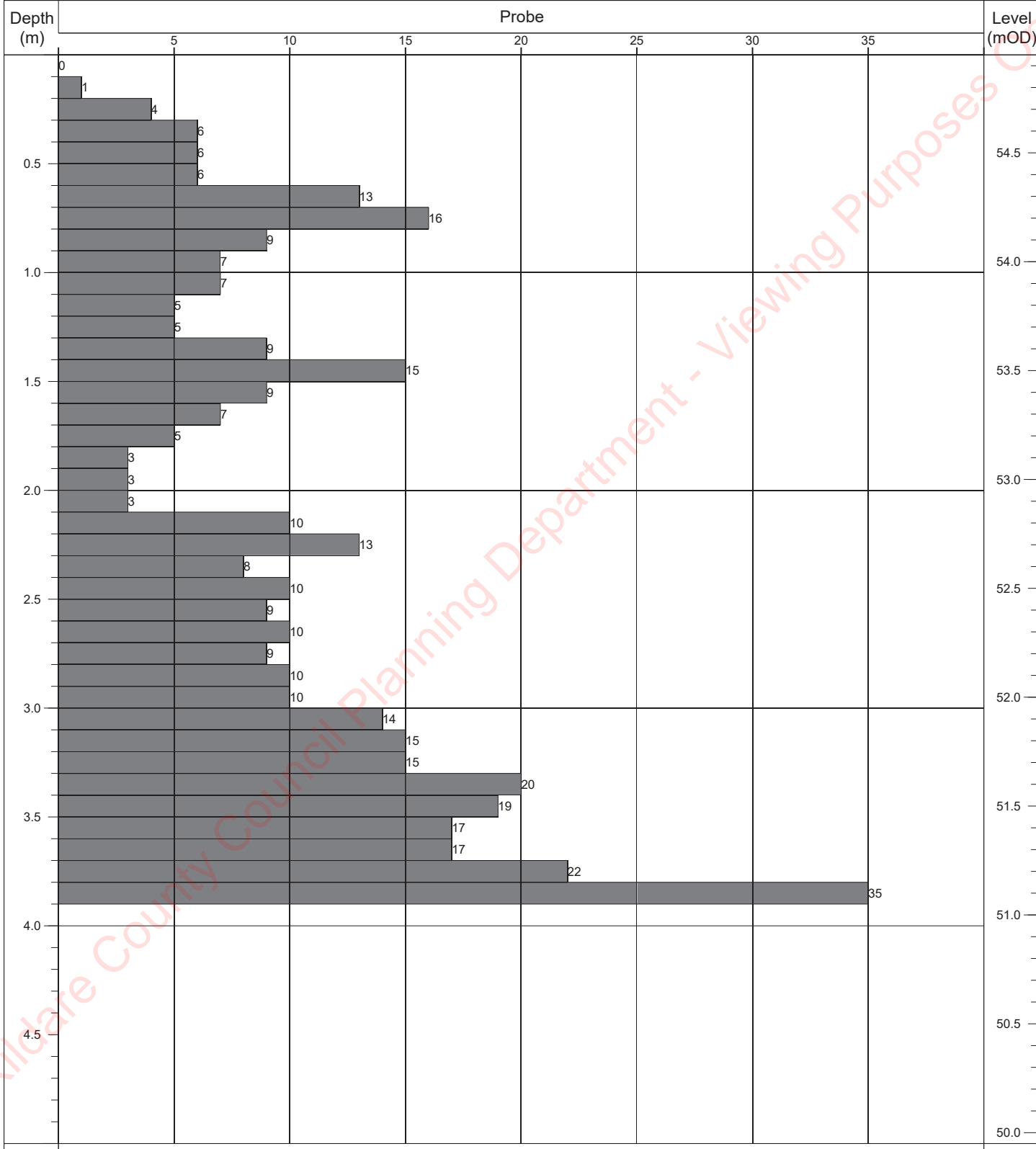
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	2.60m	Obstruction - boulders.	DPH	50kg	500mm	

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



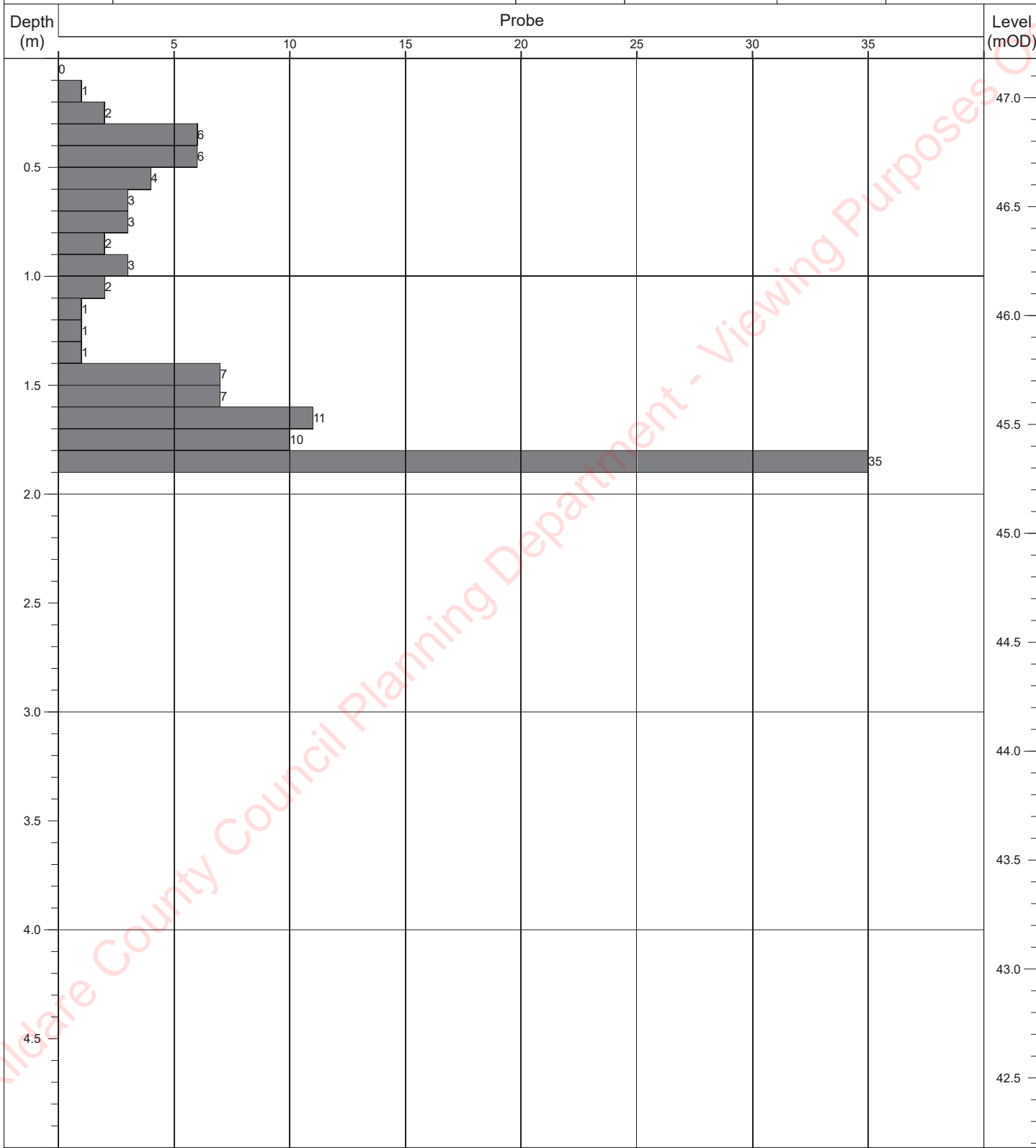
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	4.10m	Obstruction - boulders.	DPH	50kg	500mm	

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



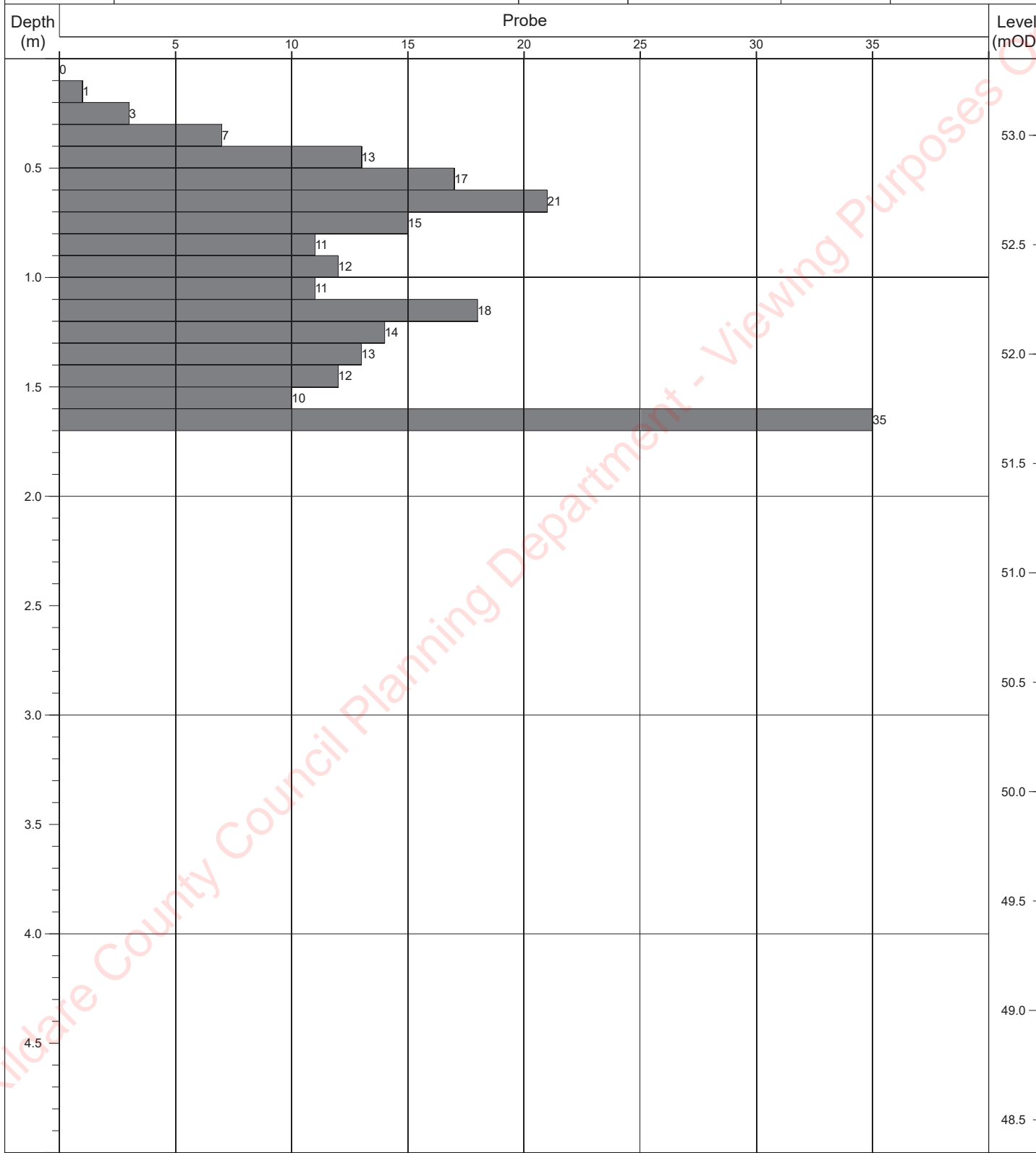
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	3.90m	Obstruction - boulders.	DPH	50kg	500mm	

Contract No: 5863	Dynamic Probe Log			Probe No: DP82	
Contract:	Moygaddy	Easting:	694286.007	Date Started:	18/06/2021
Location:	Maynooth, Co. Meath	Northing:	738783.740	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	47.18	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



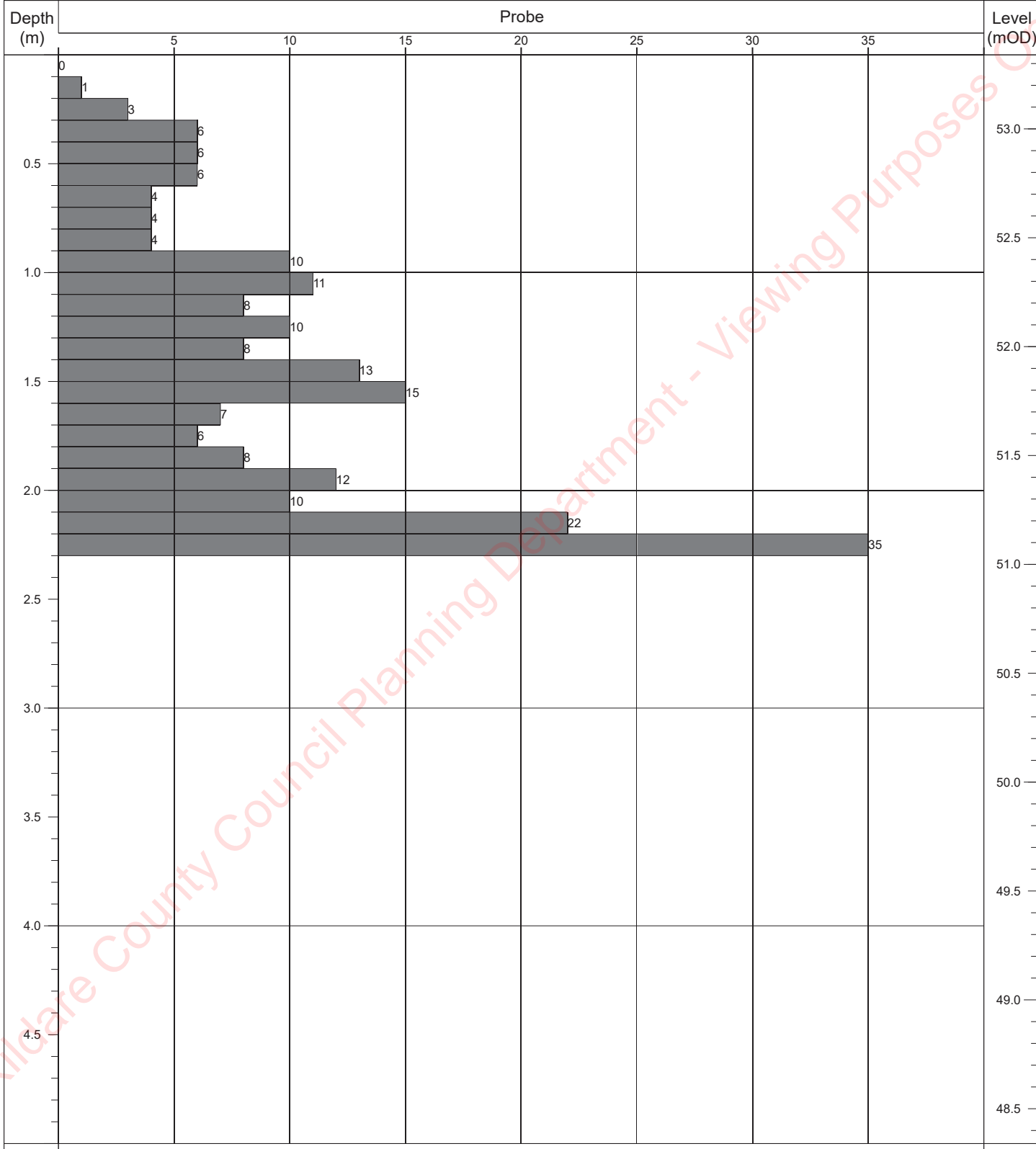
	Termination:		Probe Details:			Remarks:
	Depth:	Reason:	Type:	Mass	Drop:	
	1.90m	Obstruction - boulders.	DPH	50kg	500mm	

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



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

Contract No: 5863	Dynamic Probe Log			Probe No: DP84	
Contract:	Moygaddy	Easting:	694589.396	Date Started:	21/06/2021
Location:	Maynooth, Co. Meath	Northing:	738787.697	Logged By:	E. Magee
Client:	Sky Castle Ltd	Elevation:	53.34	Scale:	1:25
Engineer:	OCSC	Rig Type:	Competitor 130	Sheet No:	Sheet 1 of 1



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

Appendix 6
Geotechnical Soil Laboratory Test Results

Kildare County Council Planning Department - Viewing Purposes Only

Classification Tests in accordance with BS1377: Part 4

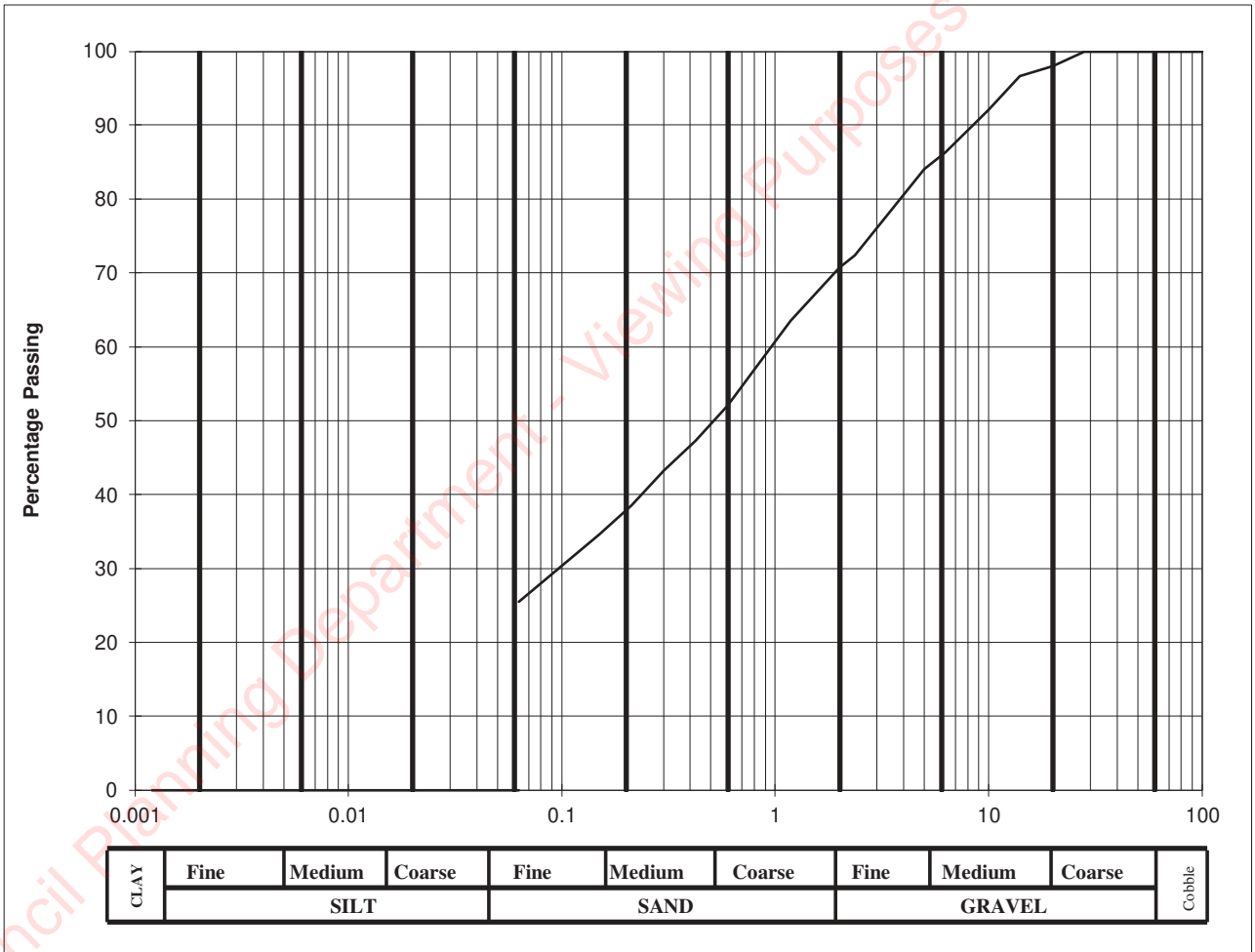
Client	Sky Castle Ltd.
Site	Moygaddy
S.I. File No	5863 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email info@siteinvestigations.ie
Report Date	12th July 2021

Hole ID	Depth	Sample No	Lab Ref No.	Sample Type	Natural Moisture Content %	Liquid Limit %	Plastic Limit %	Plastic Index %	Min. Dry Density Mg/m ³	Particle Density Mg/m ³	% passing 425um	Comments	Remarks C=Clay; M=Silt Plasticity: L=Low; I=Intermediate; H=High; V=Very High; E=Extremely High
TP01	1.00	MK15	21/856	B	17.6	32	18	14			47.3		CL
TP04	1.00	MK44	21/860	B	14.3	38	20	18			60.7		CI
TP06	1.00	MK47	21/863	B	15.6	37	20	17			63.5		CI
TP08	1.00	MK38	21/866	B	8.4	31	19	12			30.0		CL
TP10	1.00	MK63	21/869	B	14.6	35	18	17			55.7		CL/CI
TP11	1.00	MK58	21/871	B	18.0	34	18	16			62.3		CL
TP12	1.00	MK35	21/873	B	17.5	36	20	16			60.3		CI
TP13	1.50	MK29	21/875	B	11.5	32	18	14			37.9		CL
TP15	1.00	MK23	21/878	B	12.8	34	20	14			48.5		CL
TP19	1.00	MK05	21/883	B	12.2	34	19	15			51.9		CL

BS 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	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

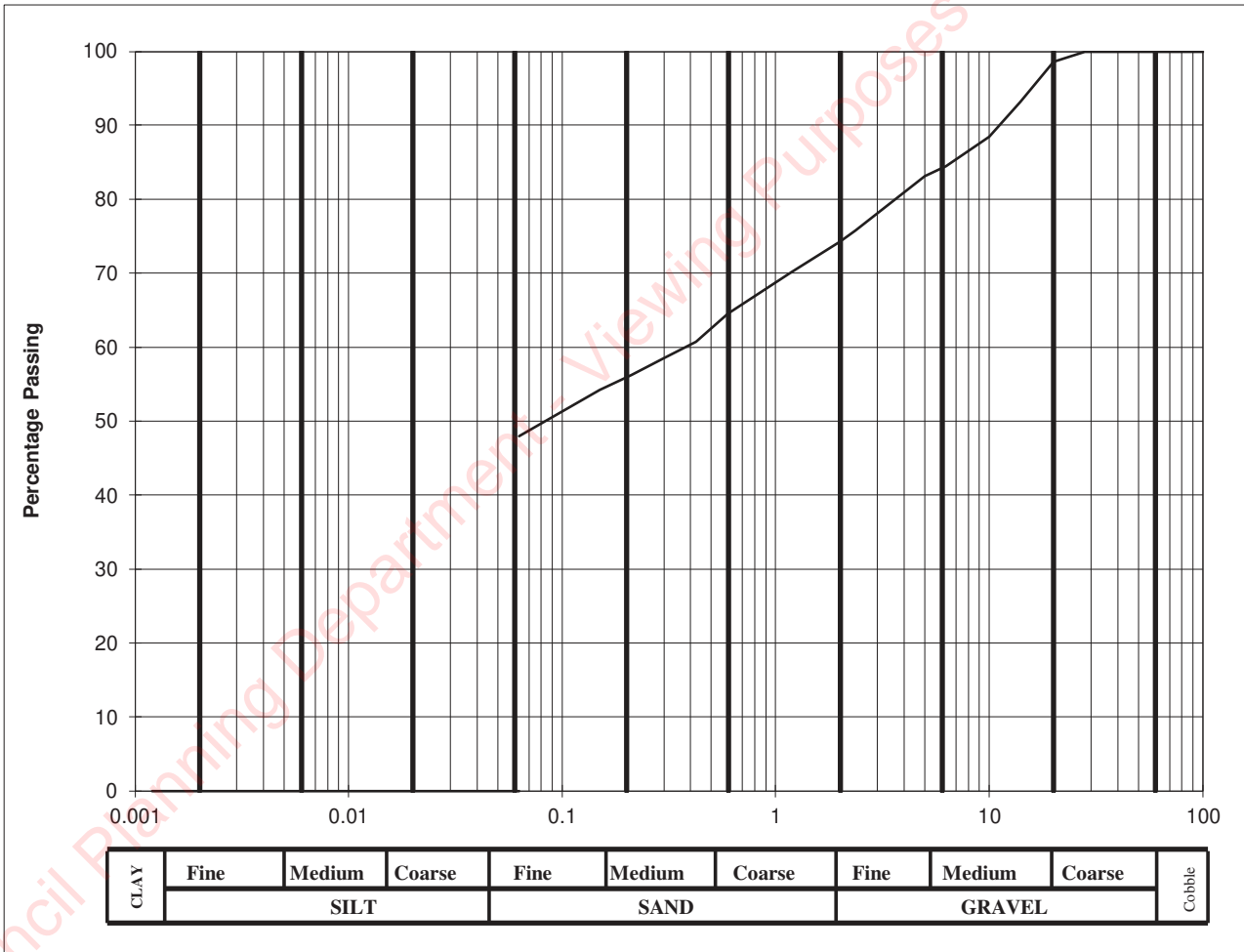
Hole ID :	TP 01
Depth, m :	1.00

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 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	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

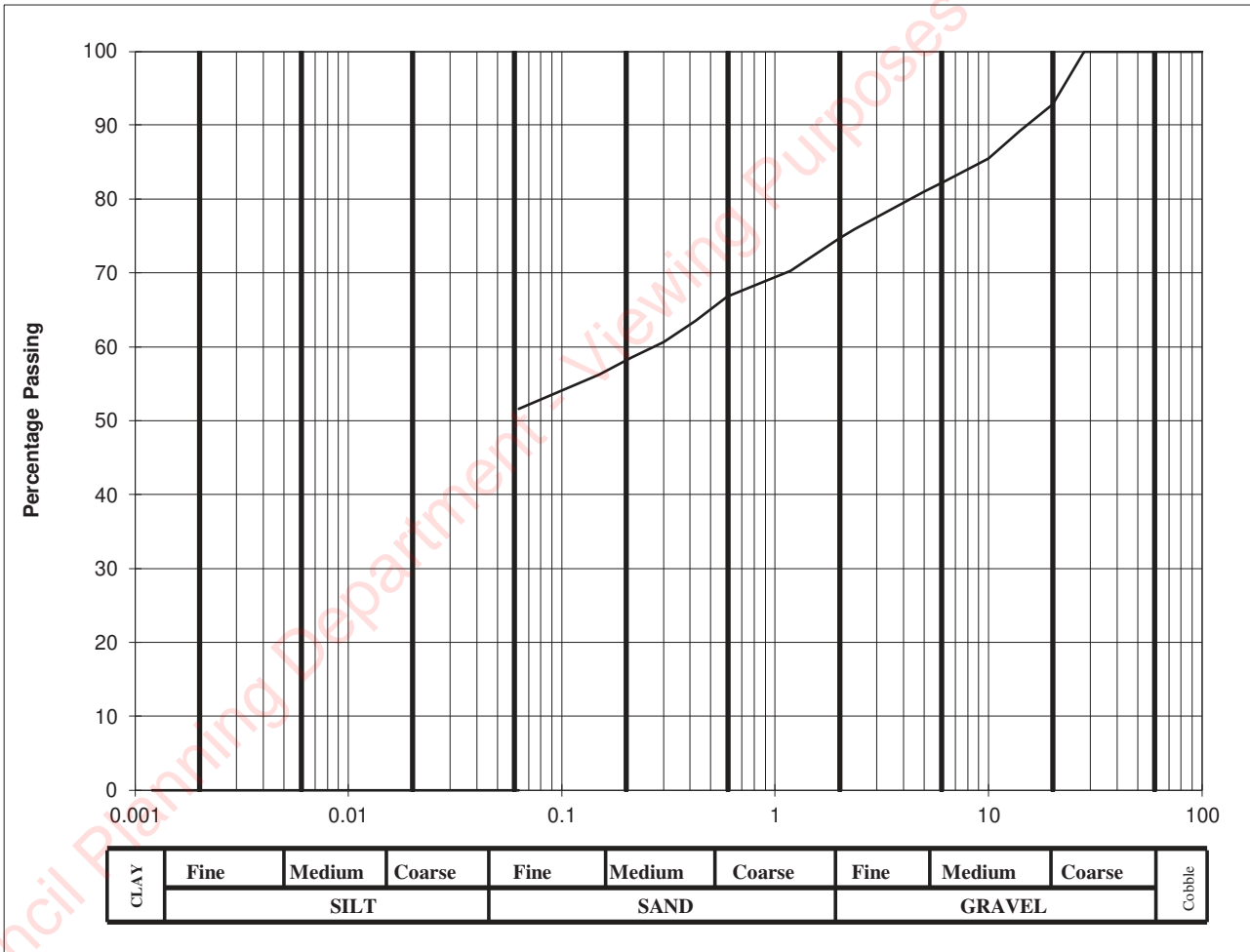
Hole ID :	TP 04
Depth, m :	1.00

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 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	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

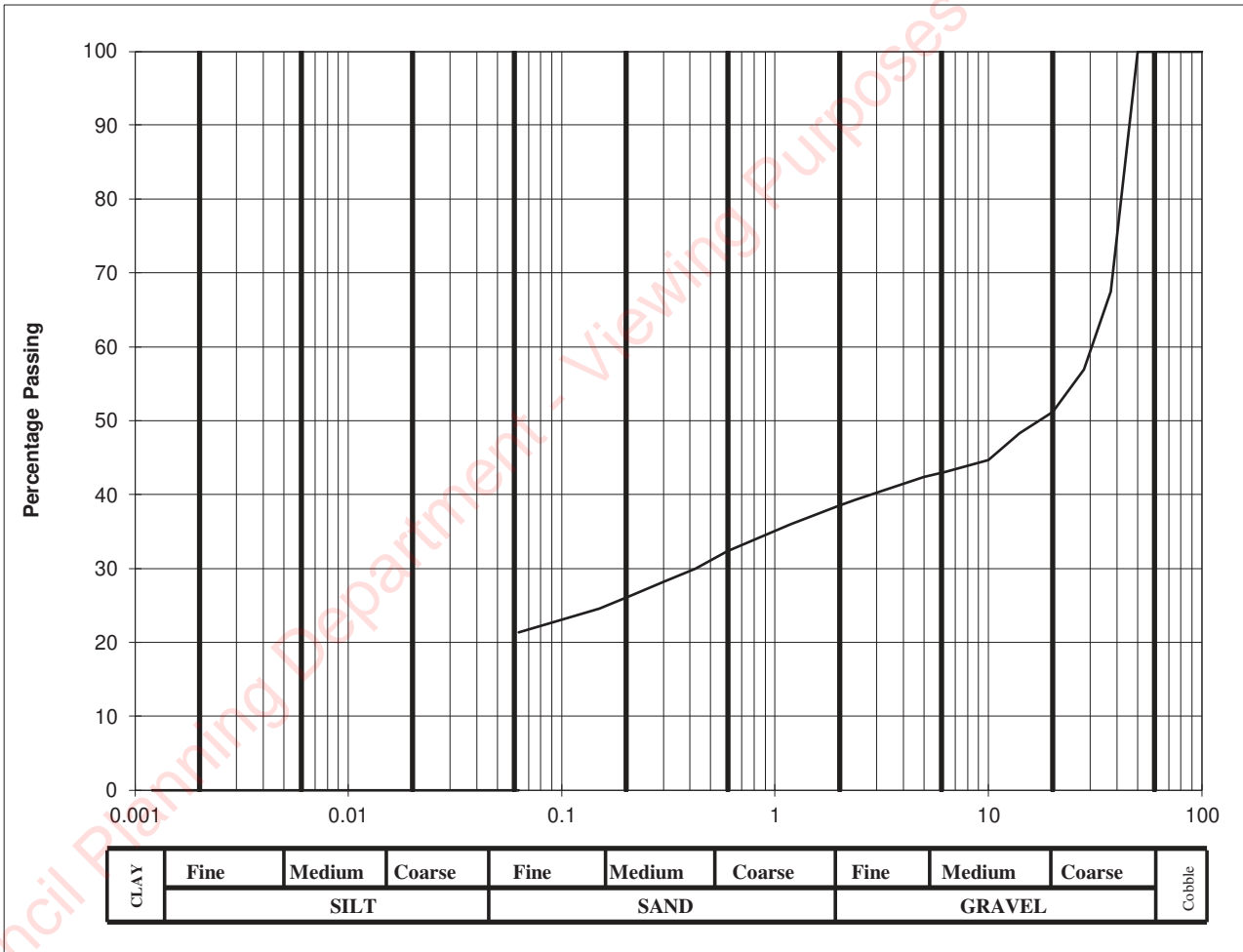
Hole ID :	TP 06
Depth, m :	1.00

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 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	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

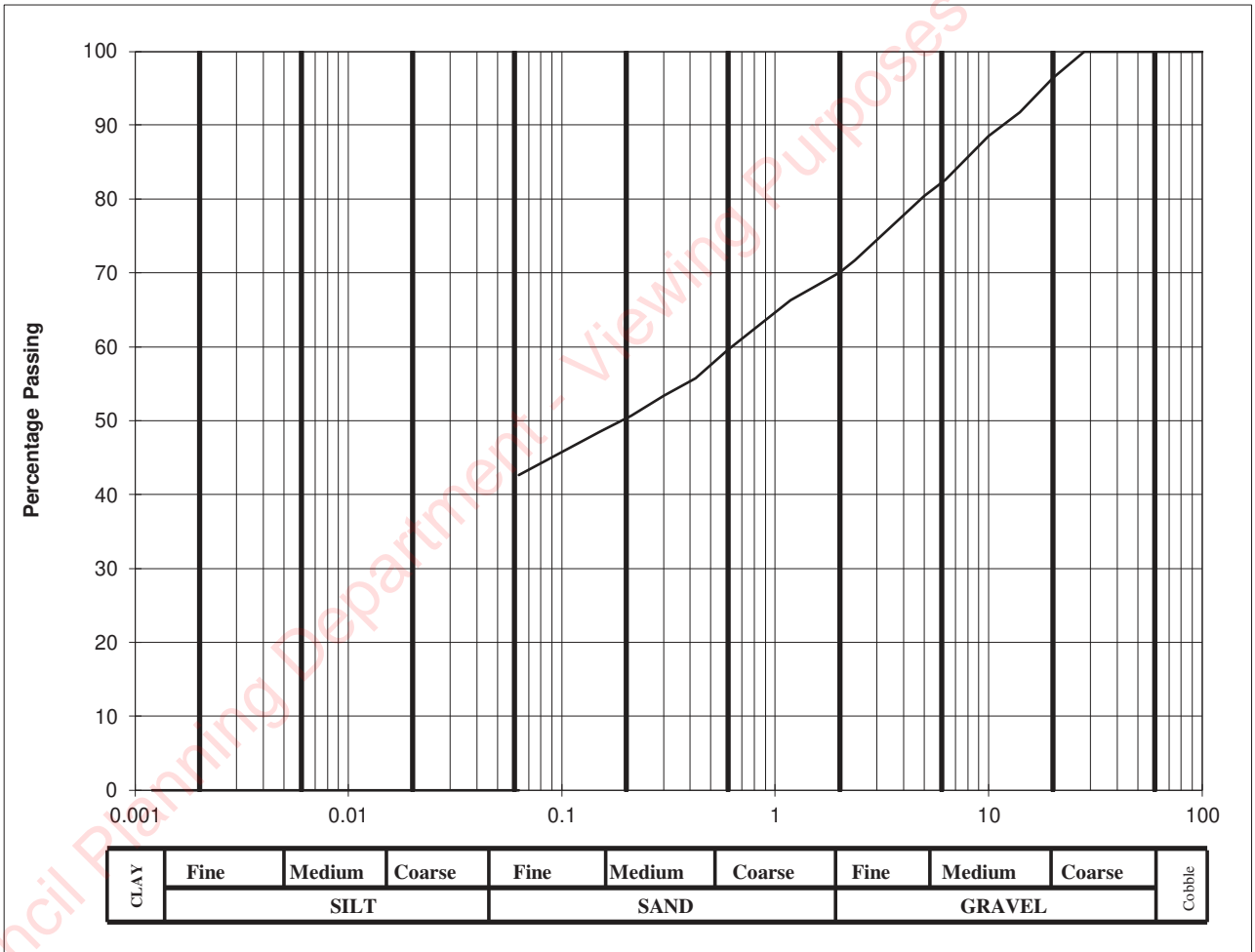
Hole ID :	TP 08
Depth, m :	1.00

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 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	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

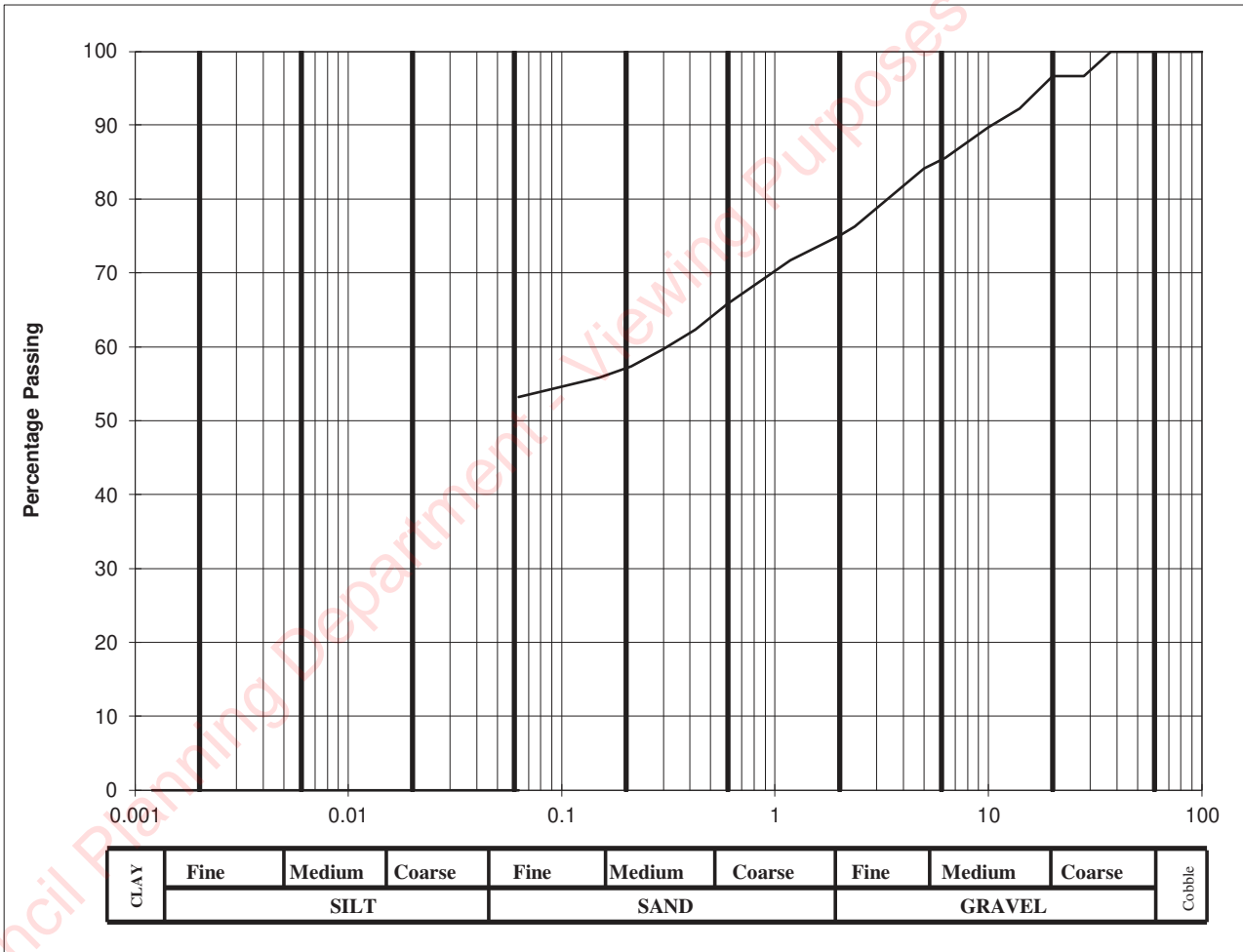
Hole ID :	TP 10
Depth, m :	1.00

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 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	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

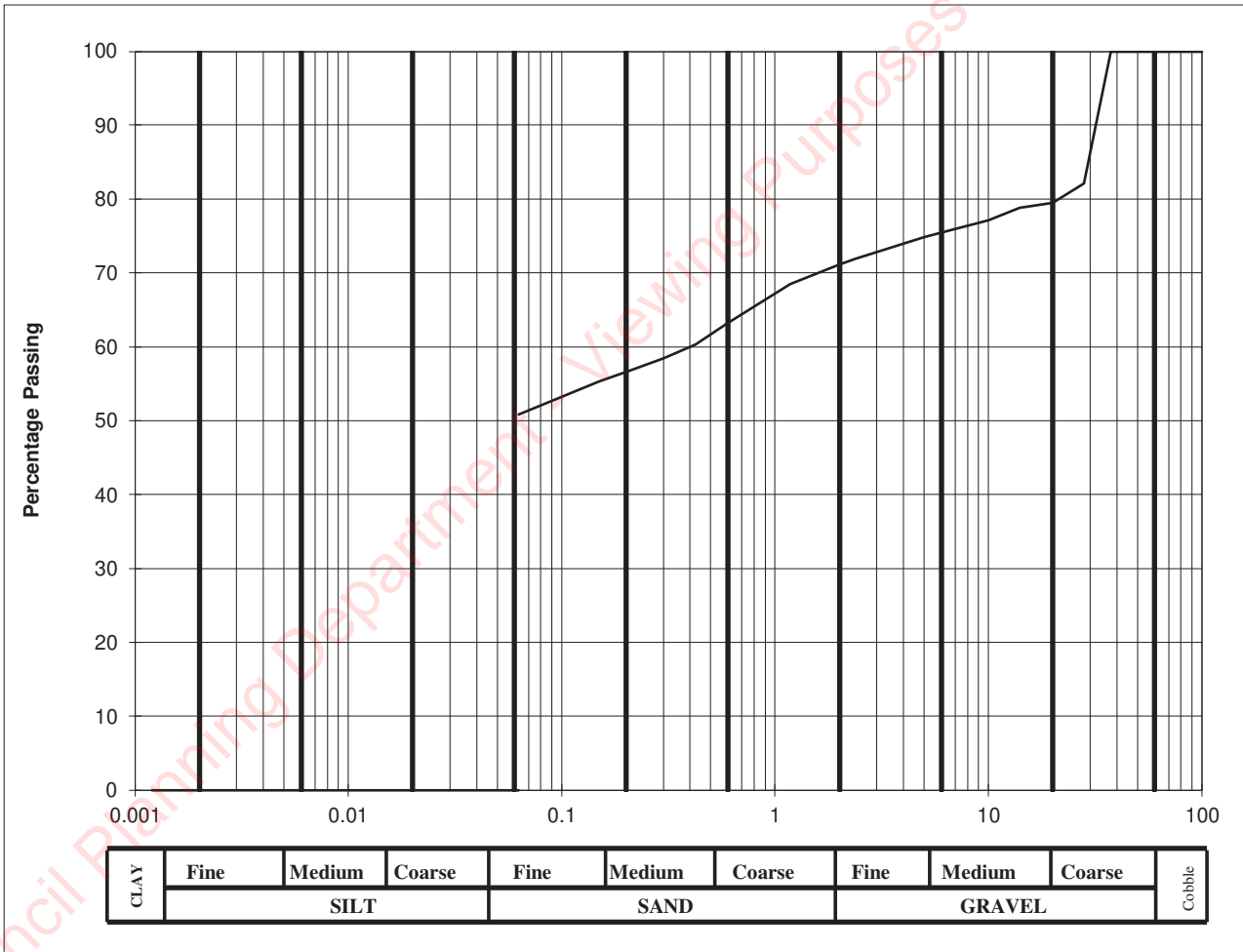
Hole ID :	TP 11
Depth, m :	1.50

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 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	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

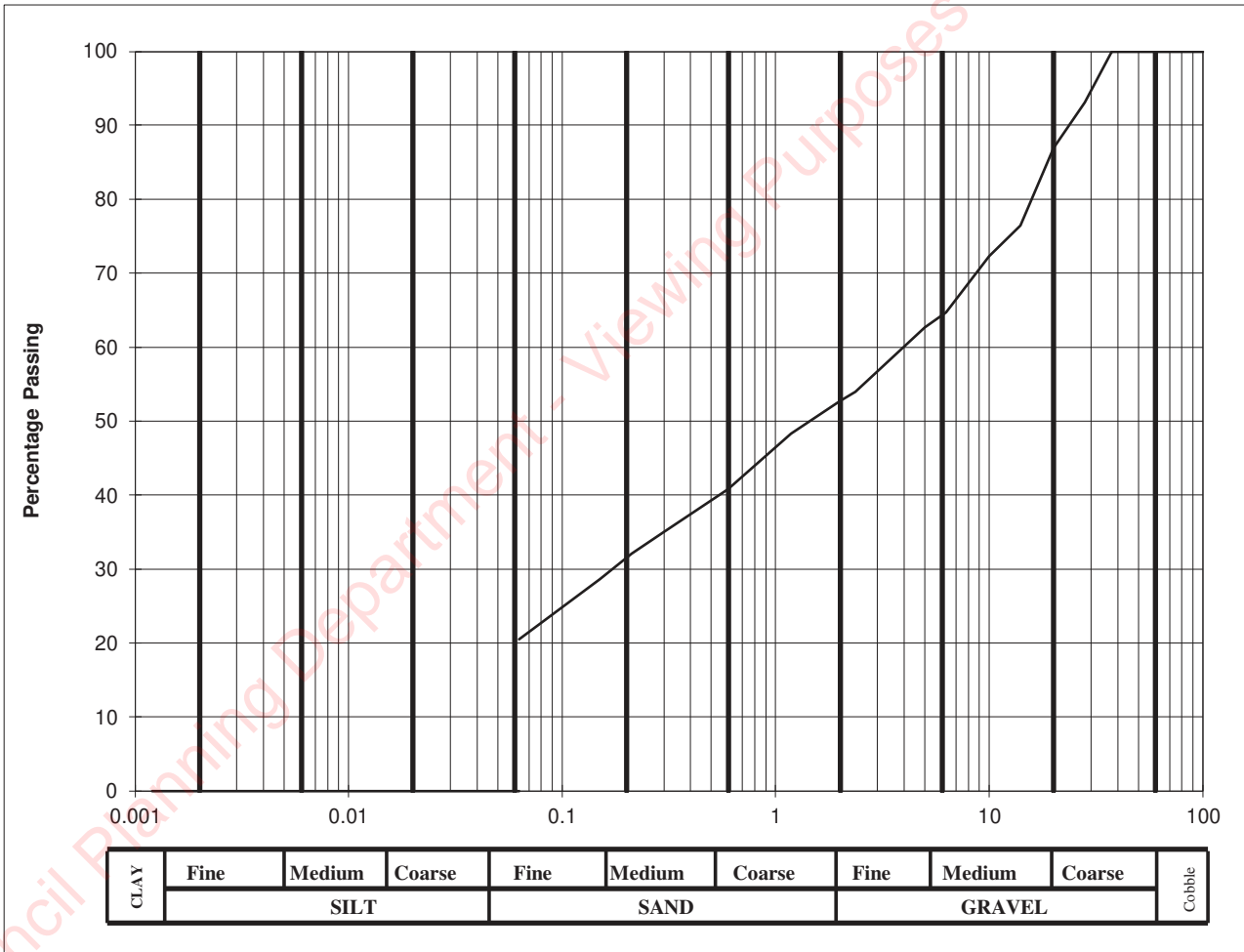
Hole ID :	TP 12
Depth, m :	1.00

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

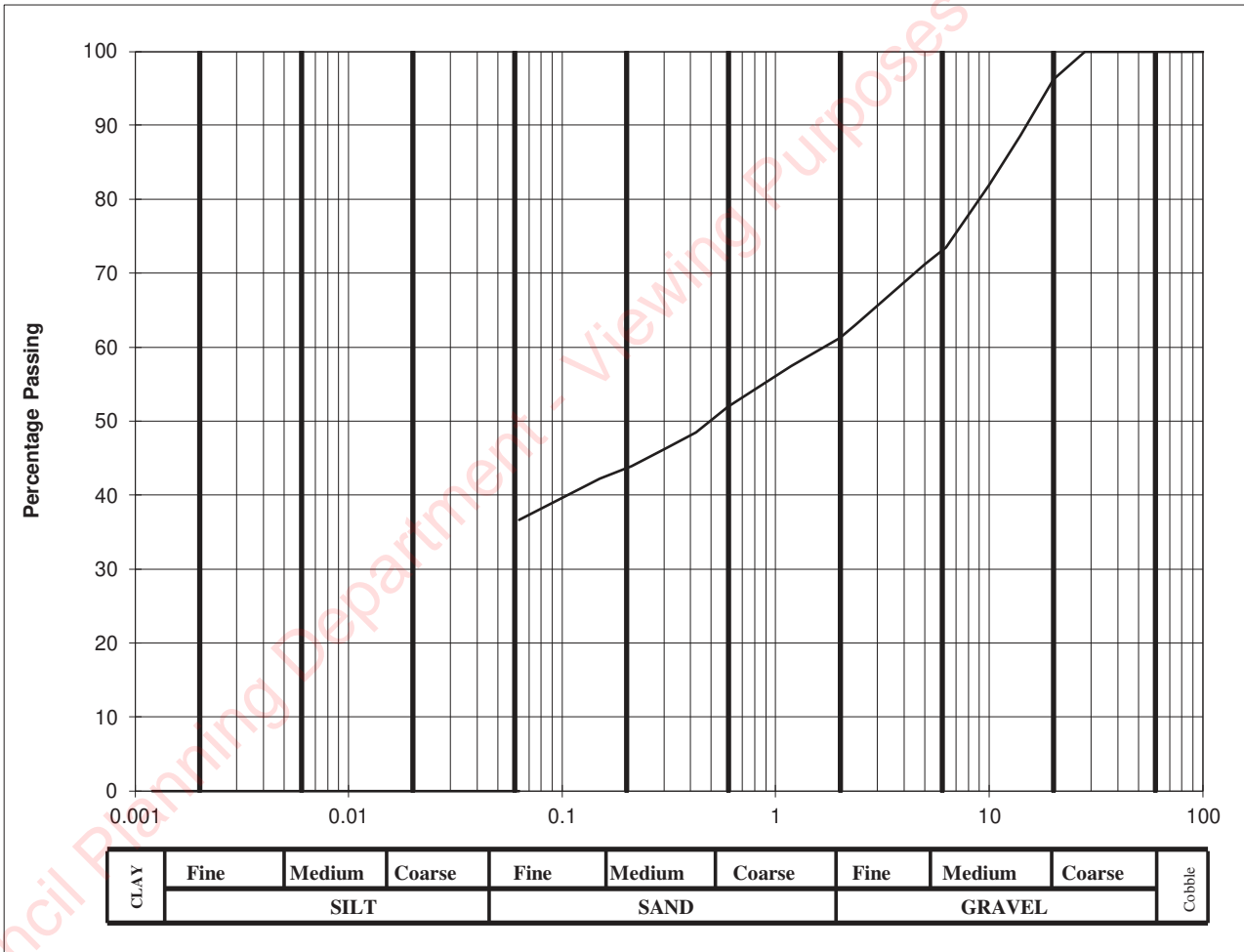
BS 1377 Particle Size Analysis

Site Investigations Limited

Received
Kildare County Council
10 Oct 2022

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

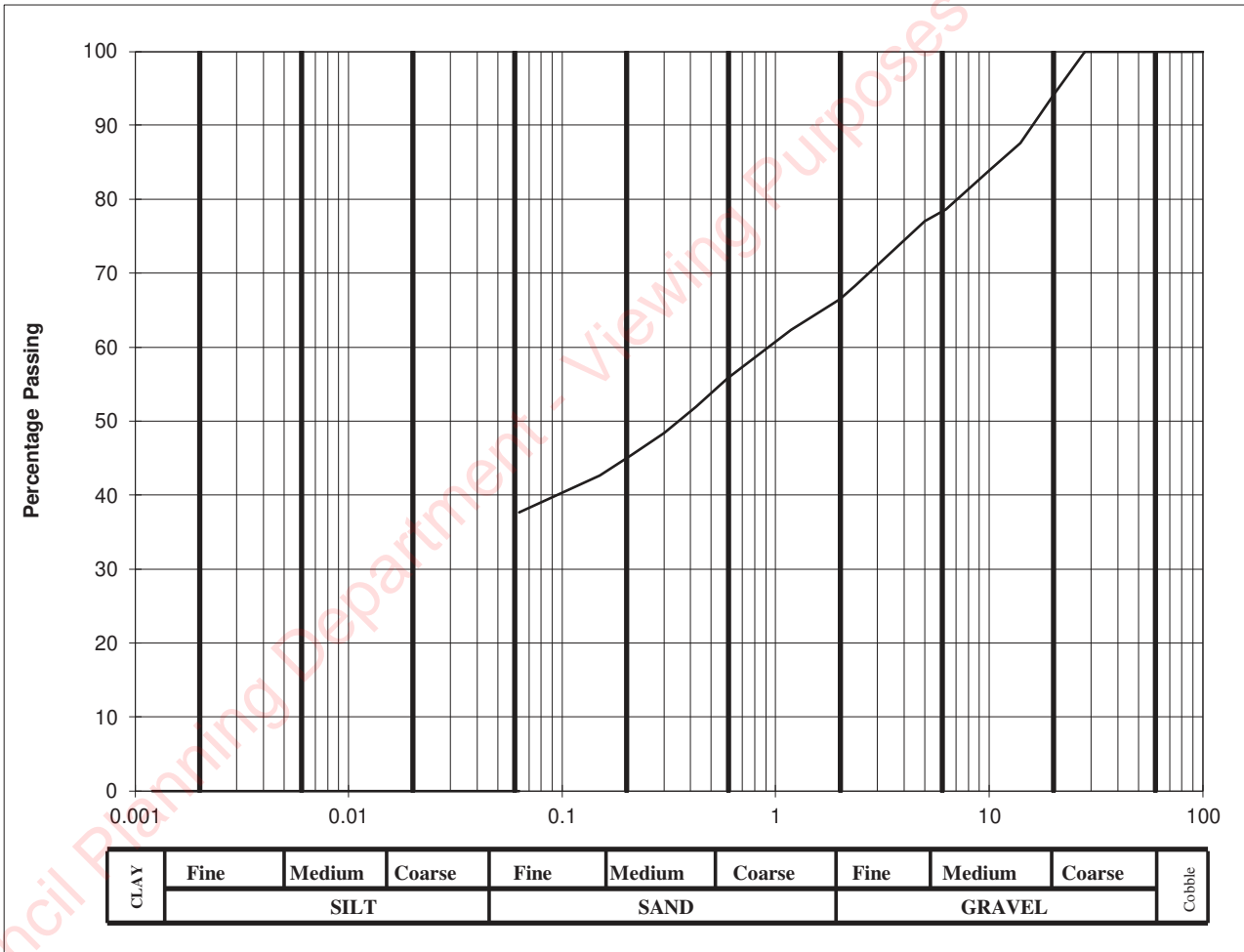
Hole ID :	TP 15
Depth, m :	1.00

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 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	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

Received
 Kildare County Council
 0 Oct 2022

Client	Sky Castle Ltd.
Site	Moygaddy
S.I. File No	5863 / 21
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	12th July 2021

Hole Id	Depth (mBGL)	Sample No	Lab Ref	pH Value	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) g/L	Water Soluble Sulphate Content (2:1 Water-soil extract) (SO ₃) %	Loss on Ignition (Organic Content) %	Chloride ion Content (water:soil ratio 2:1) %	% passing 2mm	Remarks
TP01	1.00	MK15	21/856	8.59	0.120	0.085		0.26	70.7	
TP04	1.00	MK44	21/860	8.75	0.126	0.093		0.21	74.2	
TP06	1.00	MK47	21/863	8.80	0.126	0.094		0.23	74.7	
TP08	1.00	MK38	21/866	8.73	0.117	0.045		0.22	38.5	
TP10	1.00	MK63	21/869	8.66	0.122	0.085		0.24	70.0	
TP12	1.00	MK35	21/873	8.71	0.127	0.090		0.24	71.1	
TP15	1.00	MK23	21/878	8.73	0.123	0.075		0.24	61.2	
TP19	1.00	MK05	21/883	8.67	0.120	0.080		0.26	66.5	

Appendix 7
Geotechnical Rock Laboratory Test Results

Kildare County Council Planning Department - Viewing Purposes Only

Point Load Test Broch,E. & Franklin,J.A.,IRSM Point Load Test Method
Uniaxial Compressive Strength in accordance with BS1881

Client	Sky Castle Ltd.
Site	Moygaddy
S.I. File No	5863 / 19
Test Lab	Site Investigations Ltd., Carhugar The Grange, 12th Lock Rd., Lucan Co. Dublin. Tel (01) 6108768 Email:info@siteinvestigations.ie
Report Date	22nd July 2021

Hole ID	Depth (m)	Lab Ref No.	Sample Type	Diameter / Height (mm)	Test Type	Is (MN/m ²)	Compressive Strength (MPa)	Strength Designation	Approx. Equivalent UCS Value (MPa)	Remarks
RC04	6.78	21/931	C	65	PL	4.73		Very Strong	119.5	Tested Diametrically
RC04	8.47	21/932	C	65	PL	3.79		Strong	96.0	Tested Diametrically
RC05	6.20	21/933	C	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC05	8.17	21/934	C	65	PL	2.13		Strong	54.0	Tested Diametrically
RC06	5.45	21/935	C	65	PL	3.43		Strong	87.0	Tested Diametrically
RC06	6.96	21/936	C	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC07	6.20	21/937	C	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC07	7.10	21/938	C	65	PL	4.26		Very Strong	108.0	Tested Diametrically
RC08	7.07	21/939	C	65	PL	1.70		Moderately Strong	43.0	Tested Diametrically
RC08	8.24	21/940	C	65	PL	2.96		Strong	75.0	Tested Diametrically
RC09	6.40	21/941	C	65	PL	5.21		Very Strong	132.0	Tested Diametrically
RC09	7.00	21/942	C	65	PL	1.23		Moderately Strong	31.0	Tested Diametrically
RC10	3.27	21/943	C	65	PL	4.38		Very Strong	111.0	Tested Diametrically
RC10	4.10	21/944	C	65	PL	2.60		Strong	66.0	Tested Diametrically
RC11	6.80	21/945	C	65	PL	4.38		Very Strong	111.0	Tested Diametrically
RC11	8.90	21/946	C	65	PL	3.79		Strong	96.0	Tested Diametrically
RC17	8.35	21/947	C	65	PL	3.55		Strong	90.0	Tested Diametrically
RC17	8.29	21/948	C	65	PL	4.50		Very Strong	114.0	Tested Diametrically
RC19	5.50	21/949	C	65	PL	4.14		Very Strong	104.5	Tested Diametrically
RC19	6.80	21/950	C	65	PL	4.62		Very Strong	108.0	Tested Diametrically

Appendix 8
Survey Data

Kildare County Council Planning Department - Viewing Purposes Only

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
Boreholes					
BH01	693986.514	739217.399	56.45	294056.159	239192.090
BH02	693926.010	739294.840	56.95	293995.641	239269.547
BH03	694117.023	739155.527	55.01	294186.696	239130.205
BH04	693732.812	739457.539	56.85	293802.400	239432.280
BH05	693928.844	739604.500	58.72	293998.473	239579.274
BH06	693927.326	739421.930	57.55	293996.956	239396.665
BH07	694241.270	739411.796	58.99	294310.968	239386.531
BH08	694331.307	739691.333	61.30	294401.022	239666.129
BH09	694598.661	739652.377	61.68	294668.434	239627.166
BH10	694446.855	739466.694	59.25	294516.597	239441.442
BH11	694790.229	739307.430	59.88	294860.046	239282.145
BH12	694615.966	739002.198	56.86	294685.748	238976.846
BH13	694659.374	738763.773	52.09	294729.167	238738.369
BH14	694546.422	738784.570	53.46	294616.190	238759.170
BH15	694458.907	738814.666	54.44	294528.656	238789.272
BH16	693655.329	739258.288	49.53	293724.902	239232.986
BH17	694518.865	738836.591	54.89	294588.627	238811.202
BH18	694562.423	738770.148	52.93	294632.195	238744.745
Rotary Coreholes					
RC04	693637.963	739436.766	56.84	293707.531	239411.502
RC05	693935.222	739548.071	58.60	294004.853	239522.833
RC06	694016.492	739390.864	57.65	294086.142	239365.593
RC07	694142.350	739365.230	57.84	294212.027	239339.954
RC08	694212.597	739630.304	60.48	294282.287	239605.086
RC09	694497.168	739610.386	61.10	294566.919	239585.165
RC10	694428.449	739378.834	57.86	294498.187	239353.562
RC11	694711.726	739248.236	59.49	294781.526	239222.938
RC12	694562.423	738770.148	52.93	294632.195	238744.745
RC13	694473.806	738837.204	55.00	294543.558	238811.815
RC14	694269.076	739051.513	55.61	294338.783	239026.170
RC16	694648.959	738608.023	45.96	294718.751	238582.586
RC17	693707.911	739303.990	54.78	293777.495	239278.698
RC18	693667.400	739242.451	49.86	293736.976	239217.145
RC19	694613.822	739485.171	58.39	294683.599	239459.924
RC20	694717.266	739392.581	59.02	294787.066	239367.314
Trial Pits					
TP01	693958.608	739151.571	55.32	294028.247	239126.247
TP02	693988.420	739286.118	57.37	294058.064	239260.824
TP03	693767.173	739286.781	55.26	293836.770	239261.486
TP04	693682.930	739502.916	56.95	293752.507	239477.667

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
TP05	693971.792	739656.168	58.70	294041.430	239630.954
TP06	693989.839	739437.563	57.88	294059.483	239412.302
TP07	694176.647	739446.736	58.93	294246.331	239421.478
TP08	694199.733	739712.642	61.26	294269.420	239687.442
TP09	694508.798	739701.821	62.01	294578.551	239676.620
TP10	694486.386	739434.493	58.96	294556.136	239409.234
TP11	694739.889	739363.529	59.42	294809.695	239338.256
TP12	694471.269	739060.502	56.97	294541.019	239035.162
TP13	694562.423	738770.148	52.93	294632.195	238744.745
TP14	694240.465	739010.894	55.01	294310.166	238985.542
TP15	694131.238	739202.931	55.37	294200.914	239177.620
TP16	694580.524	739205.916	58.33	294650.296	239180.608
TP17	693968.747	739114.742	54.52	294038.389	239089.410
TP18	693940.121	739224.755	55.98	294009.756	239199.447
TP19	693876.942	739296.996	55.71	293946.562	239271.703
TP20	694084.588	739079.517	55.01	294154.255	239054.179
TP21	694518.865	738836.591	54.89	294588.627	238811.202
Dynamic Probes					
DP01	694395.693	739790.416	62.17	294465.421	239765.234
DP02	694488.532	739787.664	61.87	294558.280	239762.481
DP03	693987.686	739685.908	58.58	294057.327	239660.700
DP04	694088.248	739692.829	59.34	294157.911	239667.624
DP05	694187.716	739683.631	60.98	294257.400	239658.424
DP06	694288.959	739687.709	61.12	294358.665	239662.504
DP07	694385.497	739682.425	61.53	294455.224	239657.219
DP08	694489.069	739686.527	61.51	294558.818	239661.323
DP09	694590.817	739686.475	61.71	294660.588	239661.271
DP10	694693.928	739687.423	60.58	294763.721	239662.220
DP11	693887.836	739587.012	58.01	293957.456	239561.782
DP12	693990.198	739586.789	58.63	294059.841	239561.560
DP13	694087.587	739588.545	58.95	294157.250	239563.317
DP14	694188.942	739587.683	59.62	294258.627	239562.455
DP15	694289.424	739586.183	59.97	294359.131	239560.956
DP16	694488.048	739589.540	60.82	294557.798	239564.315
DP17	694589.076	739587.354	60.73	294658.847	239562.129
DP18	694688.772	739584.729	60.89	294758.565	239559.504
DP19	693691.519	739485.259	57.06	293761.098	239460.006
DP20	693789.642	739485.089	56.56	293859.242	239459.837
DP21	693889.602	739486.389	57.21	293959.224	239461.138
DP22	693990.017	739487.250	58.16	294059.660	239461.999
DP23	694089.764	739487.208	58.44	294159.429	239461.958

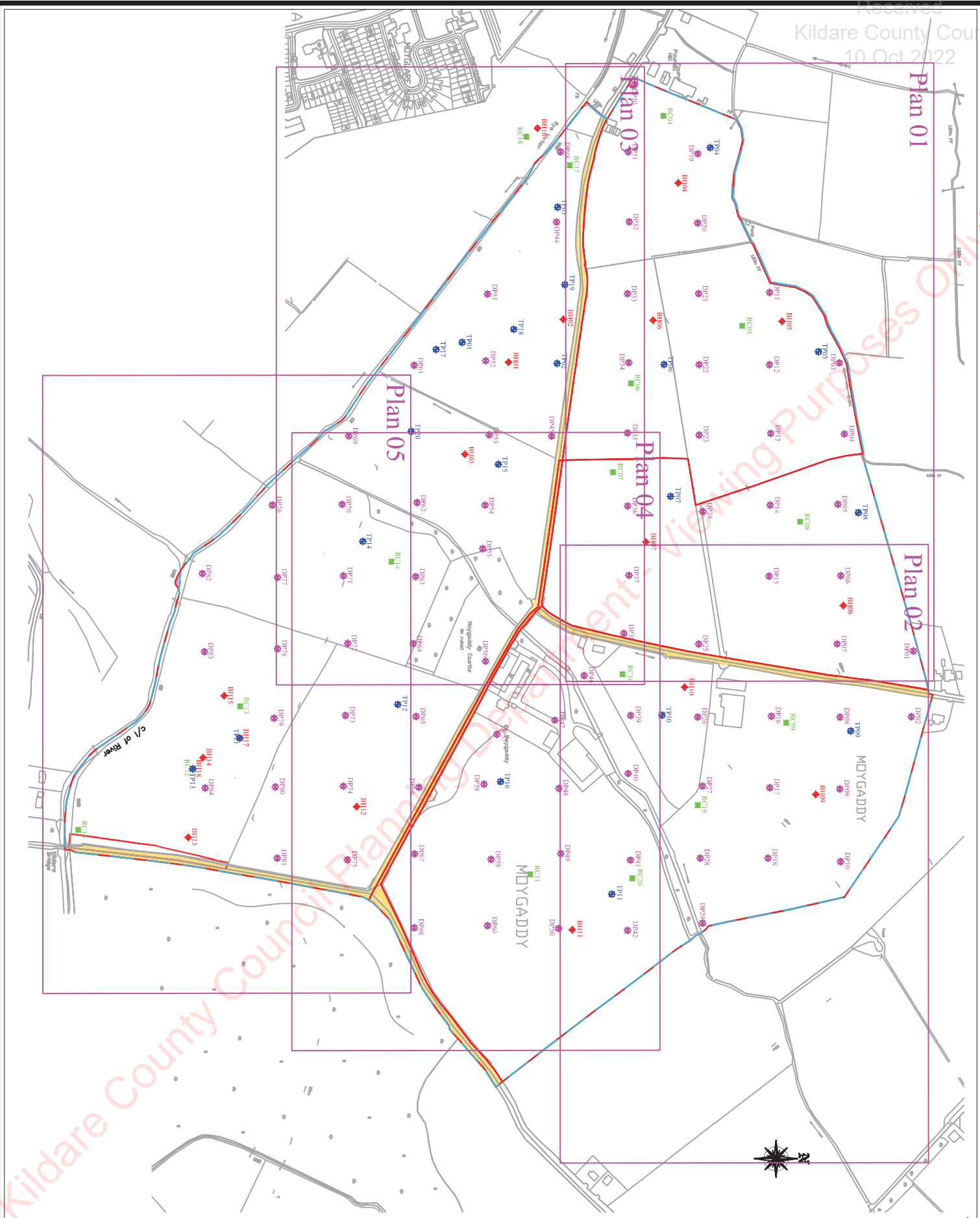
Survey Data







Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
DP24	694198.133	739492.619	59.24	294267.821	239467.371
DP25	694385.716	739486.593	59.28	294455.444	239461.345
DP26	694489.024	739485.194	59.56	294558.775	239459.946
DP27	694586.781	739491.852	58.59	294656.553	239466.606
DP28	694688.953	739488.632	58.31	294758.747	239463.386
DP29	694780.802	739491.934	56.47	294850.615	239466.689
DP30	693593.273	739395.730	56.03	293662.832	239370.457
DP31	693688.922	739386.795	57.17	293758.501	239361.521
DP32	693787.843	739388.255	56.49	293857.444	239362.982
DP33	693889.656	739385.777	56.89	293959.278	239360.504
DP34	693987.346	739387.484	57.60	294056.989	239362.212
DP35	694086.861	739385.871	57.91	294156.526	239360.599
DP36	694190.231	739385.957	58.35	294259.918	239360.686
DP37	694288.456	739387.753	58.62	294358.164	239362.483
DP38	694370.568	739380.643	58.45	294440.294	239355.372
DP39	694486.826	739390.243	58.25	294556.577	239364.974
DP40	694569.043	739386.611	54.78	294638.812	239361.342
DP41	694691.616	739389.831	59.36	294761.411	239364.563
DP42	694791.212	739385.883	58.94	294861.028	239360.615
DP43	693688.642	739290.847	52.18	293758.222	239265.552
DP44	693788.258	739285.161	56.04	293857.859	239259.865
DP45	694091.482	739278.290	56.67	294161.149	239252.995
DP46	694430.386	739324.235	53.90	294500.125	239298.952
DP47	694493.472	739282.726	58.49	294563.225	239257.434
DP48	694590.116	739288.613	59.21	294659.890	239263.323
DP49	694682.452	739291.233	59.96	294752.246	239265.944
DP50	694788.363	739288.137	59.82	294858.180	239262.848
DP51	693890.121	739187.554	55.56	293959.745	239162.238
DP52	693984.693	739184.950	56.07	294054.337	239159.634
DP53	694089.481	739189.955	55.39	294159.148	239164.641
DP54	694189.069	739183.974	55.51	294258.757	239158.659
DP55	694250.676	739180.873	51.64	294320.378	239155.557
DP56	694409.931	739184.774	55.98	294479.667	239159.460
DP57	694513.646	739200.814	58.11	294583.404	239175.504
DP58	694584.206	739182.489	58.08	294653.979	239157.176
DP59	694690.632	739192.594	58.36	294760.428	239167.284
DP60	694784.383	739187.502	58.33	294854.199	239162.191
DP61	693991.061	739083.755	53.29	294060.708	239058.417
DP62	694185.443	739087.742	49.21	294255.131	239062.406
DP63	694290.240	739085.762	55.96	294359.951	239060.426
DP64	694385.154	739082.180	56.76	294454.885	239056.844

Survey Data

Location	Irish Transverse Mercator		Elevation	Irish National Grid	
	Easting	Northing		Easting	Northing
DP65	694488.362	739086.289	57.03	294558.116	239060.954
DP66	694588.543	739090.206	57.41	294658.318	239064.873
DP67	694682.814	739084.421	57.54	294752.609	239059.087
DP68	694787.254	739083.914	56.22	294857.072	239058.581
DP69	694090.959	738991.035	49.72	294160.628	238965.677
DP70	694187.890	738981.735	52.48	294257.580	238956.376
DP71	694289.189	738983.578	55.45	294358.901	238958.220
DP72	694384.733	738989.607	56.10	294454.465	238964.251
DP73	694486.822	738986.510	56.87	294556.576	238961.154
DP74	694586.960	738983.395	56.54	294656.736	238958.039
DP75	694691.101	738989.216	56.20	294760.899	238963.862
DP76	694188.862	738882.936	48.76	294258.553	238857.556
DP77	694291.409	738890.282	54.52	294361.122	238864.904
DP78	694392.533	738890.201	54.87	294462.268	238864.823
DP79	694490.609	738885.308	55.95	294560.365	238859.930
DP80	694587.972	738887.143	55.82	294657.749	238861.766
DP81	694688.909	738889.761	54.95	294758.707	238864.385
DP82	694286.007	738783.740	47.18	294355.719	238758.339
DP83	694396.549	738786.809	53.35	294466.285	238761.409
DP84	694589.396	738787.697	53.34	294659.174	238762.298

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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
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Client: Sky Castle Ltd

Engineer: OOSC

Project: Moygaddy

Date: 04-08-2021

Description: Site Investigation

Drawing: SIL586301/05

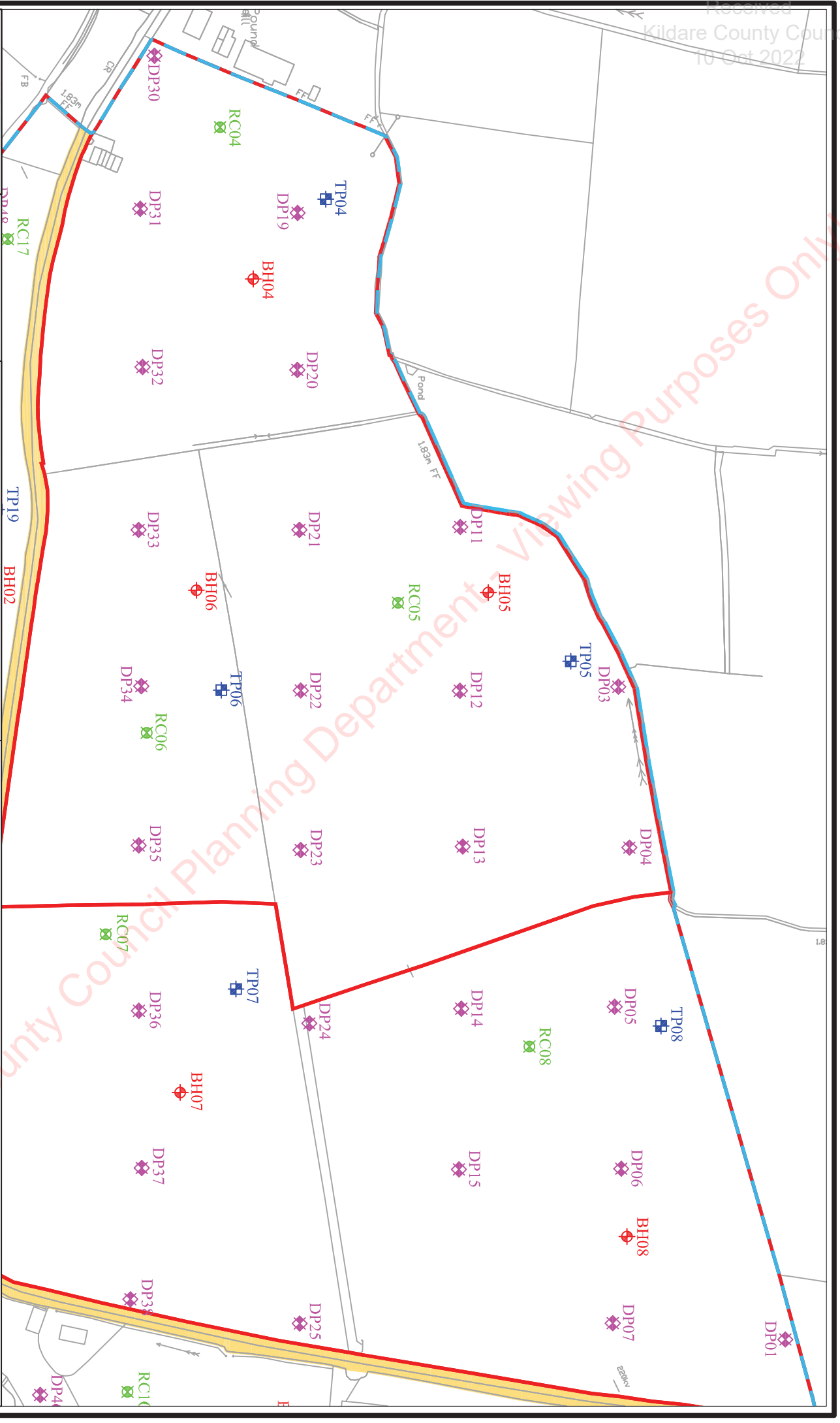
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Rev: 1

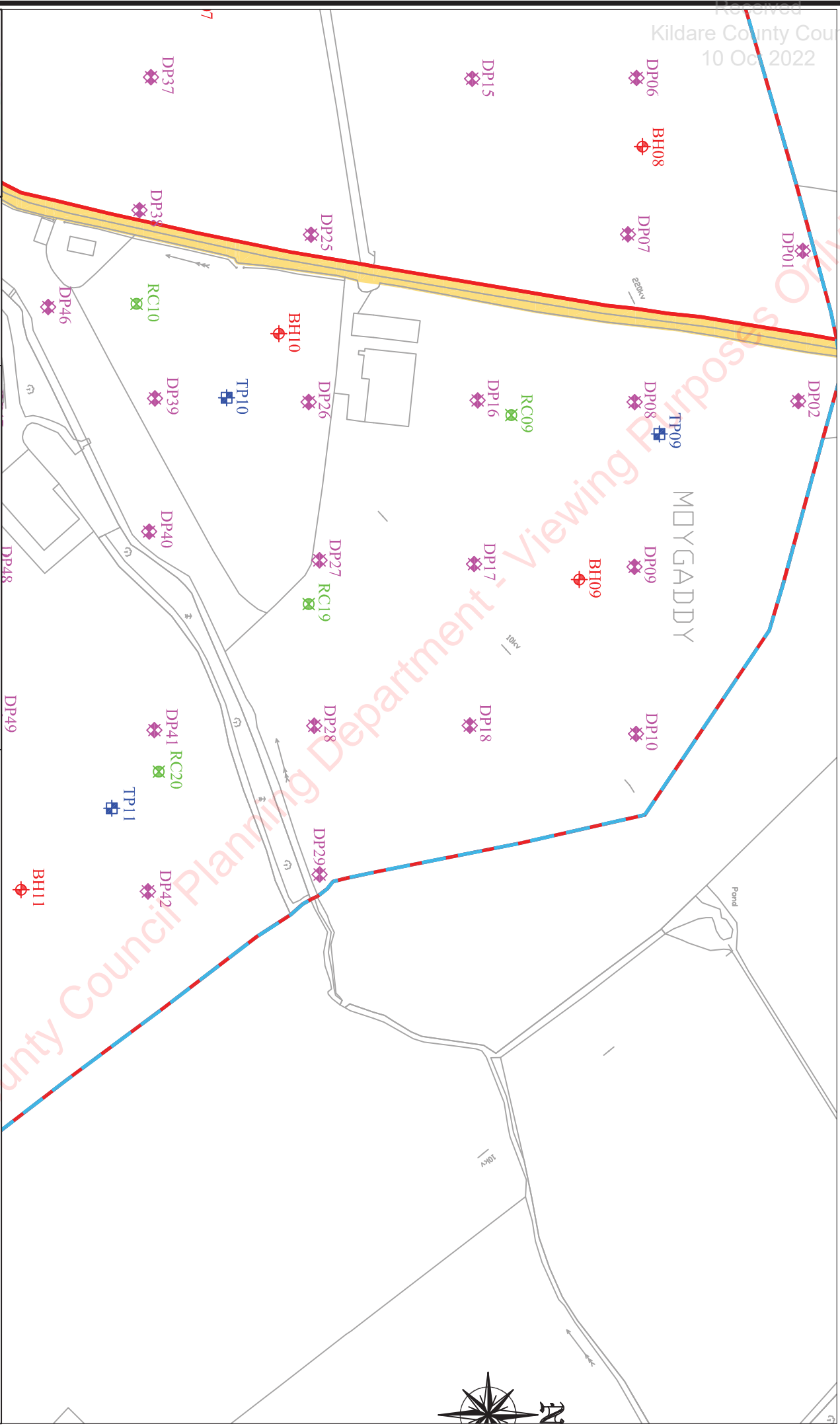
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Legend

- Cable Percussion Borehole
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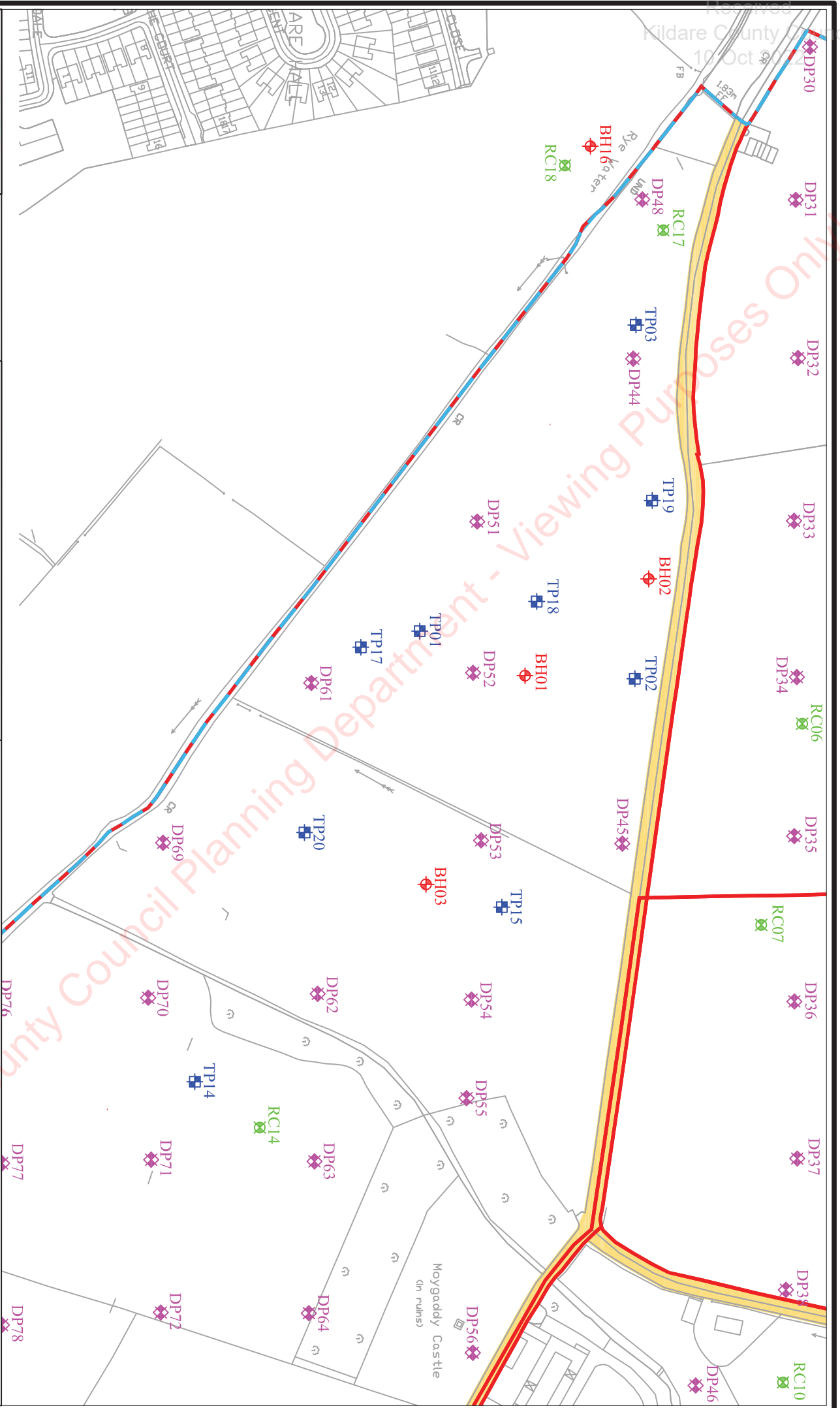
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Project :	Moygaddy
Date :	04-08-2021
Description :	Site Investigation
Drawing :	SIL586302/05
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Legend

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





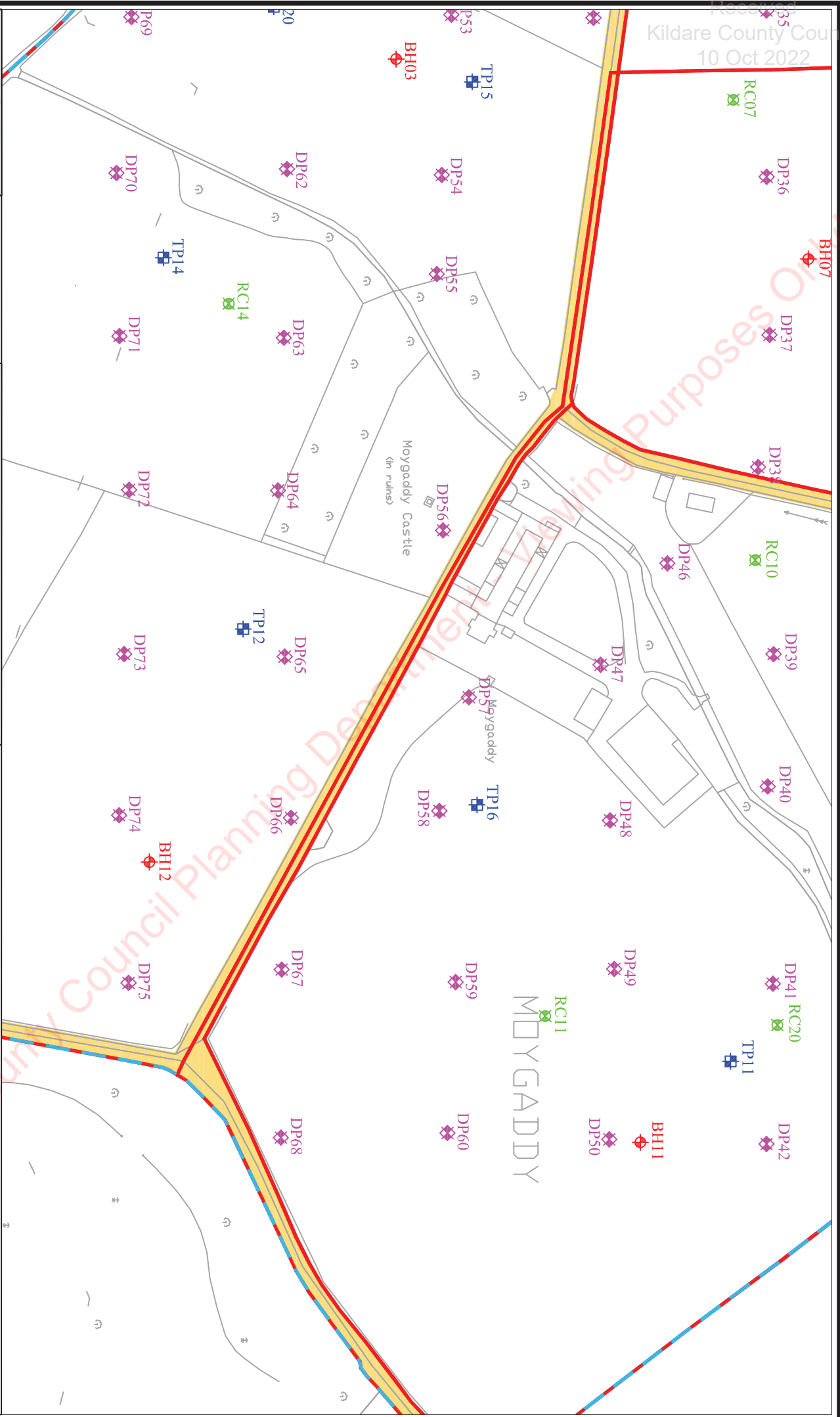
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Client :	Sky Castle Ltd
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Project :	Moygaddy
Date :	04-08-2021
Description :	Site Investigation
Drawing	SIL5863/03/05
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Legend

	Cable Percussion Borehole
	Relay Corehole
	Trial Pit
	Dynamic Probe





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Project :	Moygaddy
Date :	04-08-2021
Description :	Site Investigation
Drawing	SIL586304/05
Scale :	Not to Scale
Rev :	1
Drawn by :	SL

Legend

	Cable Percussion Borehole
	Relay Corehole
	Trial Pit
	Dynamic Probe





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Engineer: OOSC

Project: Moygaddy

Date: 04-08-2021

Description: Site Investigation

Drawing: SIL586305/05

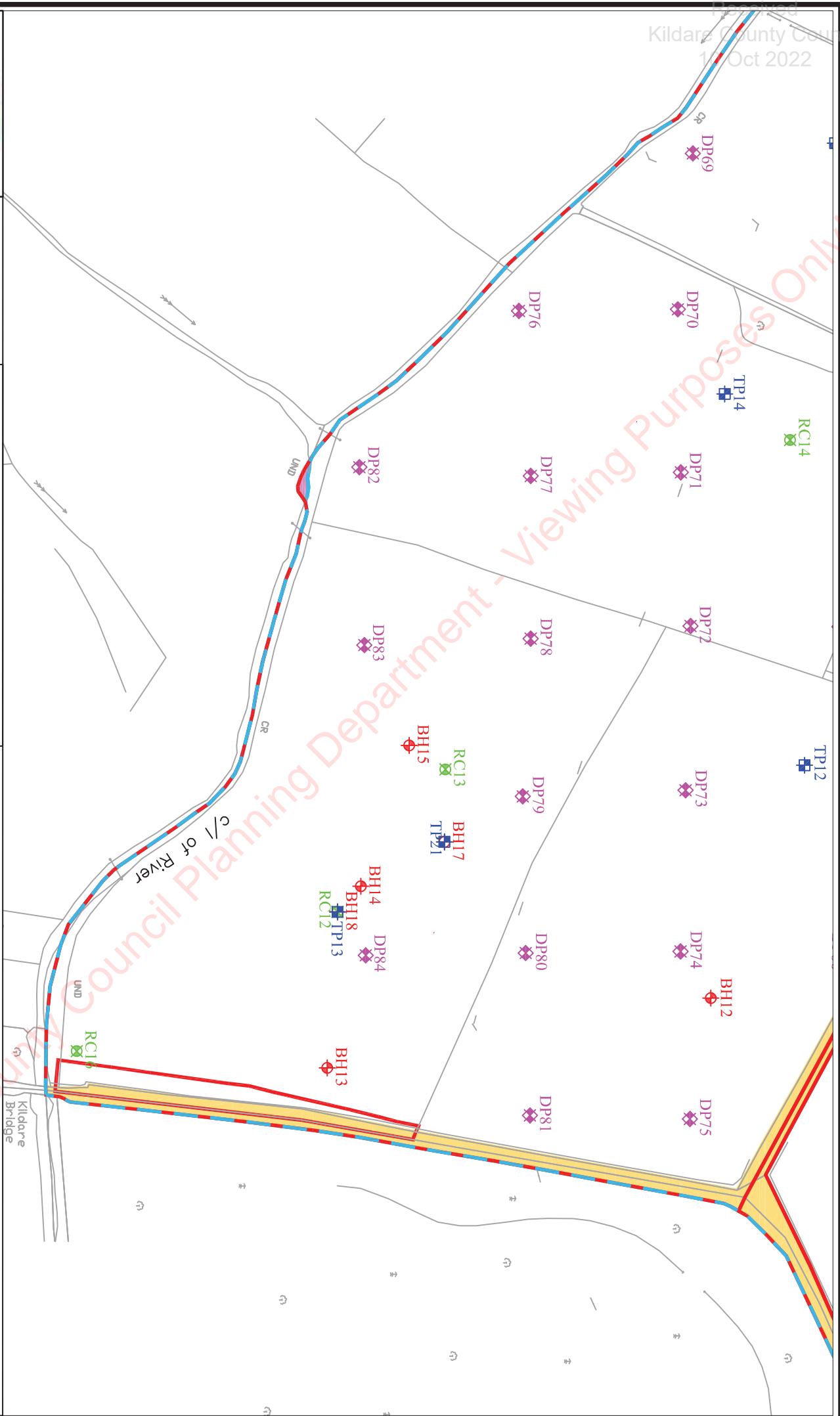
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Rev: 1

Drawn by: SL

Legend:

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



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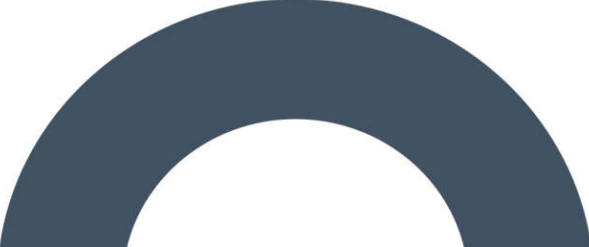
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Bat Report

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Planning and
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Consultants

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1. INTRODUCTION

MKO was commissioned to undertake a bat survey for a proposed Mixed-Use Scheme at Moygaddy, Co. Meath and Co. Kildare. (Grid Ref: N 94468 39390).

MKO undertook two dusk and one dawn bat activity surveys in 2021 and a bridge inspection in August 2022, within the site of the proposed development works. The main objective of the surveys was to gather information on roosting, commuting, and foraging bats using the site and to identify any important features for bats. Three full spectrum bat detectors, Song Meter SM4BAT (Wildlife Acoustics, Maynard, MA, USA), were deployed for the duration of the survey period (4 weeks) to record bat activity at six fixed locations.

The bat survey and assessment were informed by a desk study and with reference to the following guidelines:

- *Bat Surveys for Professional Ecologists – Good Practice Guidelines (3rd edn.) (Collins, 2016)*
- *Bat Roosts in Trees (Andrews, 2018)*
- *Best Practice Guidelines for the Conservation of Bats in the Planning of National Road Schemes (NRA, 2006a)*
- *Guidelines for the Treatment of Bats during the Construction of National Road Schemes (NRA, 2006b)*
- *British Bat Calls: A Guide to Species Identification (Russ, 2012)*
- *Bat Mitigation Guidelines for Ireland. Irish Wildlife Manuals, No. 25. (Kelleher & Marnell, 2006)*
- *Bat Mitigation Guidelines for Ireland – V2. Irish Wildlife Manuals, No. 134. (Marnell, Kelleher & Mullen 2022)*
- *Guidance Note 08/18: Bats and Artificial Lighting in the UK (ILP, 2018)*

1.1 Policy and Legislation

All Irish bats are protected under European legislation, namely the Habitats Directive (92/43/EEC). All Irish species are listed under Annex IV of the Directive, requiring strict protection for individuals, their breeding sites and resting places. The Lesser horseshoe bat (*Rhinolophus hipposideros*) is further listed under Annex II of the Directive, requiring the designation of conservation areas for the species. Under this Directive, Ireland is obliged to maintain the favourable conservation status of Annex-listed species. This Directive has been transposed into Irish law through the European Communities (Birds and Natural Habitats) Regulations 2011 (S.I. No. 477/2011).

In addition, Irish species are further protected by national legislation (Wildlife Acts 1976-2021). Under this legislation, it is an offence to intentionally disturb, injure or kill a bat or disturb its roost. Any work at a roost site must be carried out with the agreement of the National Parks and Wildlife Service (NPWS) and a derogation licence must be granted before works commence.

1.2 Statement of Authority

The bat surveys were undertaken by MKO ecologists Tim Murphy (BSc.), Neil Campbell (BSc.) and Kevin McElduff (BSc.) who have over 1 years' experience in ecological consultancy. All staff have relevant academic qualifications to complete the surveys and assessments that they were required to do. This report was prepared by Tim Murphy (BSc.) and was reviewed by Aoife Joyce (BSc., MSc.). Aoife has over three years' experience in ecological assessments and has completed CIEEM and BCI courses in Bat Impacts and Mitigation, Bat Tree Roost Identification and Endoscope training and Kaleidoscope Pro Analysis.

2.

CHARACTERISTICS OF PROPOSED DEVELOPMENT

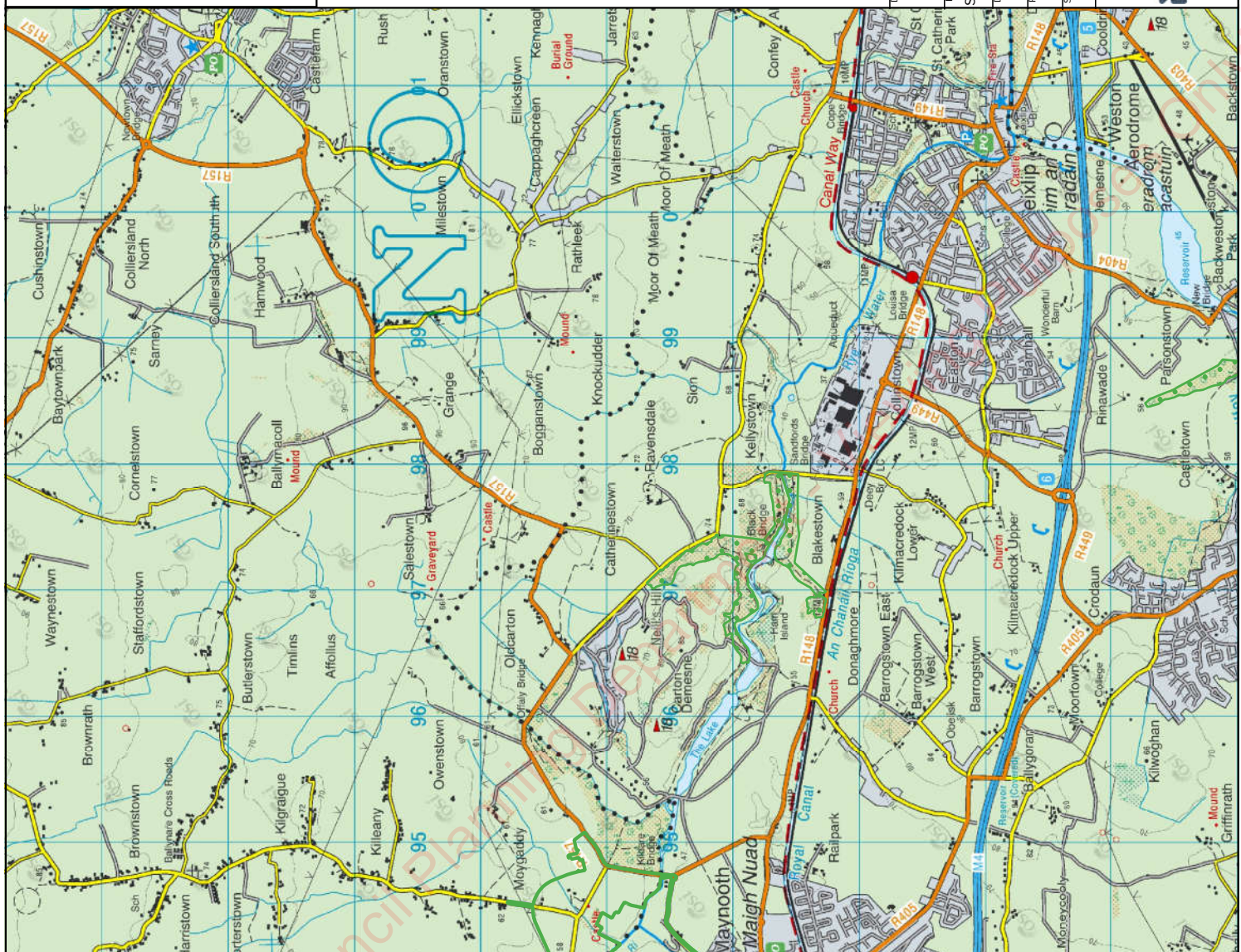
The proposed development site is located in the townland of Moygaddy, Maynooth Environs, Co. Meath and Co. Kildare (Grid Ref: N 94468 39390).

Sky Castle Ltd. intends to submit to a total of six planning applications as part of the Moygaddy Mixed Use Development (henceforth referred to as the Proposed Development). A total of three planning applications will be submitted to Meath County Council as the competent authority. One planning application seeks to provide a Strategic Employment Zone (Biotechnology & Life Sciences Campus) (Site A), the second planning application for Community Infrastructure which includes a Nursing Home and Primary Care Centre (Site B), and the third planning application for the delivery of the proposed Maynooth Outer Orbital Road (MOOR).

A planning application for a Strategic Housing Development (SHD) (Site C) will be submitted to An Bord Pleanála under the Strategic Housing Provisions of the Planning and Development (Housing) and Residential Tenancies Act, 2016.

There will also be two separate planning applications submitted to Kildare County Council (KCC) for shared infrastructure, proposed services and utilities connections to Maynooth town in County Kildare. One planning application to KCC includes a proposed pedestrian / cycle bridge adjacent to the existing Kildare Bridge, as well as a proposed wastewater connection to the Maynooth Municipal Wastewater Pumping Station to the southeast of the Proposed Development. The second planning application to be submitted to KCC is located to the southwest of Site C (SHD) for the provision of an integral single span bridge over the River Rye Water with associated flood plain works and embankments.

Figures 2-1 and 2-2 show site location and site boundaries.



Map Legend



EIAR Site Boundary



EIAR Site Boundary

Project Title		Sky Castle Ltd - Moygaddy Mixed Use Scheme, Co. Meath & Co. Kildare	
Drawn By		Checked by	
Project No.	CM	Drawing No.	CM
210414			
Scale	1:49,500	Date	2022-08-30

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Figure 2-1

Map Legend

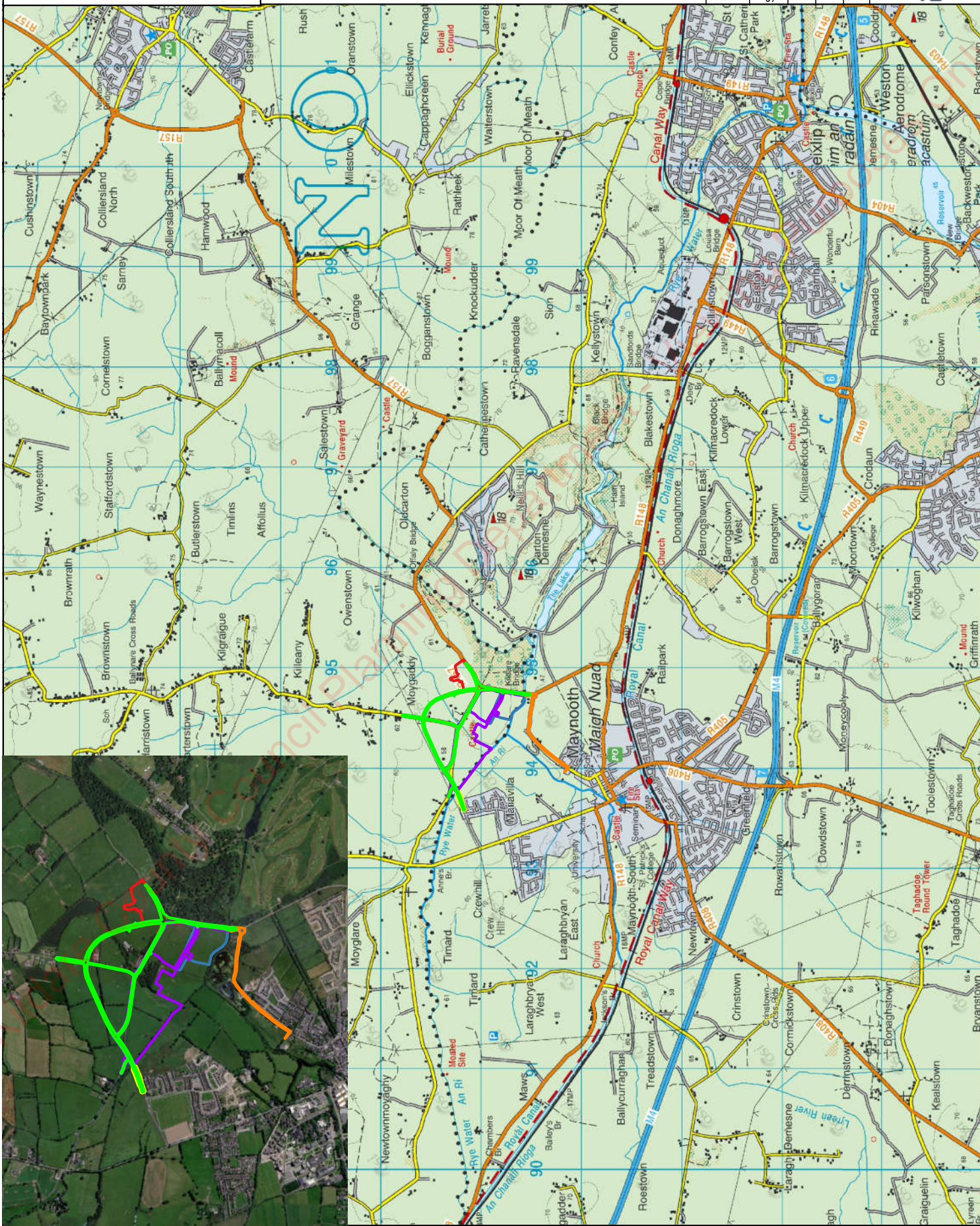
- ▭ Site A - Strategic Employment Zone
- ▭ Site B - Healthcare Facilities
- ▭ Site C - Strategic Housing Development
- ▭ MOOR- Maynooth Outer Orbital Road
- ▭ Kildare Bridge
- ▭ Moyglare Bridge

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Drawing Title	
Six Planning Applications Site Boundaries	
Project Title	
Sky Castle Ltd - Moygaddy Mixed Use Scheme, Co. Meath & Co. Kildare	
Drawn by	Checked by
CM	CM
Project No.	Drawing No.
210414	CM
Scale	Figure 2-2
1:49,500	2022-08-30
Date	

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3. METHODS

3.1 Consultation

A scoping exercise was undertaken as part of the proposed development. A Scoping Document, providing details of the application site and the proposed development, was prepared by MKO and circulated to the Development Applications Unit in August 2021. As of 23rd August 2022, no response has yet been received.

3.2 Desktop Study

A desktop review of published material was undertaken to inform all subsequent field studies and assessments. The aim of the desktop review was to identify the presence of species of interest within the proposed site and surrounding region.

3.2.1 National Bat Database of Ireland

The National Bat Database of Ireland holds records of bat observations received and maintained by Bat Conservation Ireland. These records include results of national monitoring schemes, roost records as well as ad-hoc observations. The database was searched for bat presence and roost records within a 10km radius of the proposed development site.

In addition, information on species' range and distribution, available in the 2019 Article 17 Reports (NPWS, 2019), was reviewed in relation to the location of the Proposed Development. The NPWS monitors the conservation status of European protected habitats and species and reports their findings to the European Commission every 6 years in the form of an Article 17 Report. The most recent report for the Republic of Ireland was submitted in 2019.

3.2.2 Designated Sites

The National Parks and Wildlife Service (NPWS) map viewer and website provides information on rare and protected species, sites designated for nature conservation and their conservation objectives. A search was undertaken of sites designated for the conservation of bats within a 10 km radius of the Study Area (BCI 2012, Hundt, 2012, SNH 2019). This included European designated sites, i.e. SACs, and nationally designated sites, i.e. NHAs and pNHAs.

3.3 Ecological Appraisal (Bats)

Bat walkover surveys of the study area were carried out during daylight hours on the 8th July, 22nd July, 9th August 2021 and 18th August 2022. The landscape features on the site were visually assessed for potential use as bat roosting habitats and commuting/foraging habitats using a protocol set out in BCT *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn.) (Collins, 2016). Table 4.1 of the 2016 BCT Guidelines identifies a grading protocol for assessing structures, trees and commuting/foraging habitat for bats. The protocol is divided into four Suitability Categories: *High, Moderate, Low* and *Negligible*.

3.3.1 Roost Surveys

During the bat walkover surveys, a search for roosts was undertaken within the boundary of the proposed development. The aim was to determine the presence of roosting bats and the need for

further survey work or mitigation. During the walkover, mature trees, a castle tower and bridge within the proposed development site were assessed for their suitability to support bats.

This comprised a detailed inspection of the exteriors and interiors (if accessible) to look for evidence of bat use, including live and dead specimens, droppings, feeding remains, urine splashes and fur oil staining and noises (Collins, 2016).

The small castle tower and bridge (IG Ref: N 94448 39151 & N 94726 38561) were subject to a roost assessment. The exteriors of the structures were inspected first from ground level, with the aid of binoculars. The search included the ground, accessible windowsills, walls, and roofs. A systematic search of all accessible interiors was also undertaken by a licensed bat ecologist. Searches were carried out with the aid of torches and a ladder and focused on walls, floors, roofs, windowsills, lintels, etc. Results of the roost assessments are detailed in section 4.3 below.

Trees within the site were also assessed from ground level, with the aid of binoculars. Any potential tree roosts were examined for the presence of rot holes, hazard beams, cracks and splits, partially detached bark, knot holes, gaps between overlapping branches and any other potential roost features (i.e. PRFs) identified by Andrews (2018).

3.4 Emergence Survey

A dusk emergence survey was carried out on the evening of the 8th July 2021 on the small castle tower (Grid Ref: N 94448 39151). Two surveyors were equipped with active full spectrum bat detectors, Batlogger M (Elekon AG, Lucerne, Switzerland). Where possible, species identification was made in the field and any other relevant information was also noted, e.g. numbers, behaviour, features used, etc. All bat echolocation was recorded for subsequent analysis to confirm species identifications.

Conditions were suitable for bat surveys on all survey nights. The emergence surveys commenced 30 minutes before sunset and concluded 1 hour after sunset and were followed by walked transect surveys. The purpose was to identify any bat species, numbers, access points and roosting locations within the structure.

3.5 Dusk and Dawn Activity Surveys

Dusk and dawn activity surveys were carried out on 8th July, 22nd July and 9th August 2021. Two surveyors were equipped with active full spectrum bat detectors, a Batlogger M (Elekon, Lucerne, Switzerland) and walked a transect route within the site, focusing on potentially suitable habitat features for bats. Where possible, species identification was made in the field and any other relevant information was also noted, e.g. numbers, behaviour, features used, etc. All bat echolocation was recorded for subsequent analysis to confirm species identifications.

The dusk survey on 8th July 2021 commenced 30 minutes before sunset and was completed within 3 hours after sunset. Conditions were suitable for bat survey as per Collins (2016); dry, mild (18° C at sunset) with only light air (Beaufort Scale Force 1). The moon was not visible, and cloud cover was approximately 100% during the dusk survey.

The dawn survey on 22nd July 2021 commenced 2 hours before sunrise and was completed at sunrise. Conditions were suitable for bat survey as per Collins (2016); dry, mild (15° C at sunrise) with only light air (Beaufort Scale Force 1). Cloud cover was approximately 10% throughout the dawn survey.

The dusk survey on 9th August 2021 commenced 30 minutes before sunset and was completed within 3 hours after sunset. Conditions were suitable for bat survey as per Collins (2016); dry, mild (17° C at sunset), with only light air to light breeze (Beaufort Scale Force 1). Cloud cover was approximately 25% throughout the dusk survey.

July and August are within the optimum survey period for bat activity surveys, provided weather conditions are favourable (Collins, 2016). No limitations associated with seasonality, timing or weather conditions were identified.

Table 3-1 - Bat Activity Survey Effort 2021

Date	Surveyor	Type	Sunrise/Sunset	Weather
8 th July 2021	Tim Murphy and Neil Campbell	Dusk	21:52	18° C; Dry, Light air
22 nd July 2021	Tim Murphy and Neil Campbell	Dawn	05:27	15° C; Dry, Light air
9 th August 2021	Tim Murphy and Neil Campbell	Dusk	21:05	17° C; Dry, Light air

3.6

Static Detector Surveys

Full spectrum bat detectors, Song Meter SM4BAT (Wildlife Acoustics, Maynard, MA, USA), were deployed during static surveys to record bat activity at six fixed locations over 2-week periods in 2021. The six locations of static detectors were selected to represent the range of habitats present within the site, including favourable bat habitats as well as open spaces within the site. Settings used were those recommended by the manufacturer for bats, with minor adjustments in gain settings and band pass filters to reduce background noise when recording. Detectors were set to record from 30 minutes before sunset until 30 minutes after sunrise. The Song Meter automatically adjusts sunset and sunrise times using the Solar Calculation Method when provided with GPS coordinates.

The survey was designed to utilise three static detectors to monitor bat activity. Two Song Meter SM4BAT detectors were deployed on site on 8th July 2021. The Song Meter SM4, dual-channel acoustic recorder is capable of the long-term acoustic monitoring of bats. After approximately two weeks, the static detectors were relocated to three separate new locations within the site. Static detector locations can be found in Figure 3-1. The static detectors were collected on the 9th August 2021.

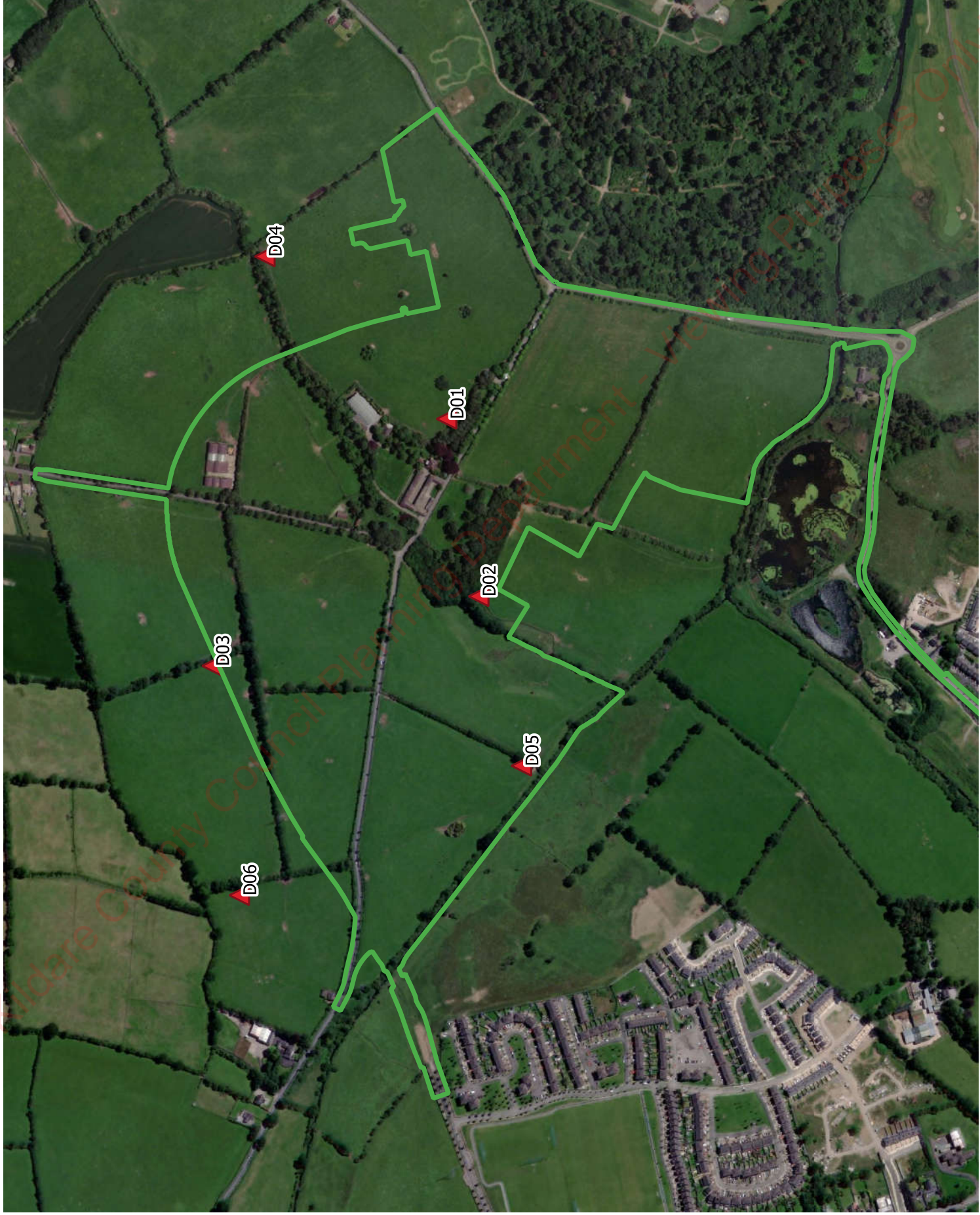
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Map Legend
 EIAR Site Boundary
 Detector Locations

Static Detector Locations

Project Title	Moygaddy Mixed Use Scheme, Co. Meath & Co. Kildare
Drawn By	TM
Checked By	AJ
Project No.	210414
Drawing No.	Fig - 3-1
Date	23.08.2022
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3.6.1 Analysis of Static Detector Results

Echolocation signal characteristics (including signal shape, peak frequency of maximum energy, signal slope, pulse duration, start frequency, end frequency, pulse bandwidth, inter-pulse interval and power spectra) were compared to published signal characteristics for local bat species (Russ, 1999). Myotis species (potentially Daubenton’s bat (*M. daubentonii*), Whiskered bat (*M. mystacinus*), Natterer’s bat (*M. nattereri*) were considered as a single group, due to the difficulty in distinguishing them based on echolocation parameters alone (Russ, 1999). The echolocation of soprano pipistrelle (*P. pygmaeus*) and common pipistrelle (*P. pipistrellus*) are distinguished by having distinct (peak frequency of maximum energy in search flight) of ~55 kHz and ~46 kHz respectively (Jones & van Parijs, 1993).

Plate 3-1 below shows a typical sonogram of echolocation pulses for common pipistrelle recorded with a SM4BAT bio-acoustic static bat recording device. The recorded file is illustrated using Wildlife Acoustics Kaleidoscope software.

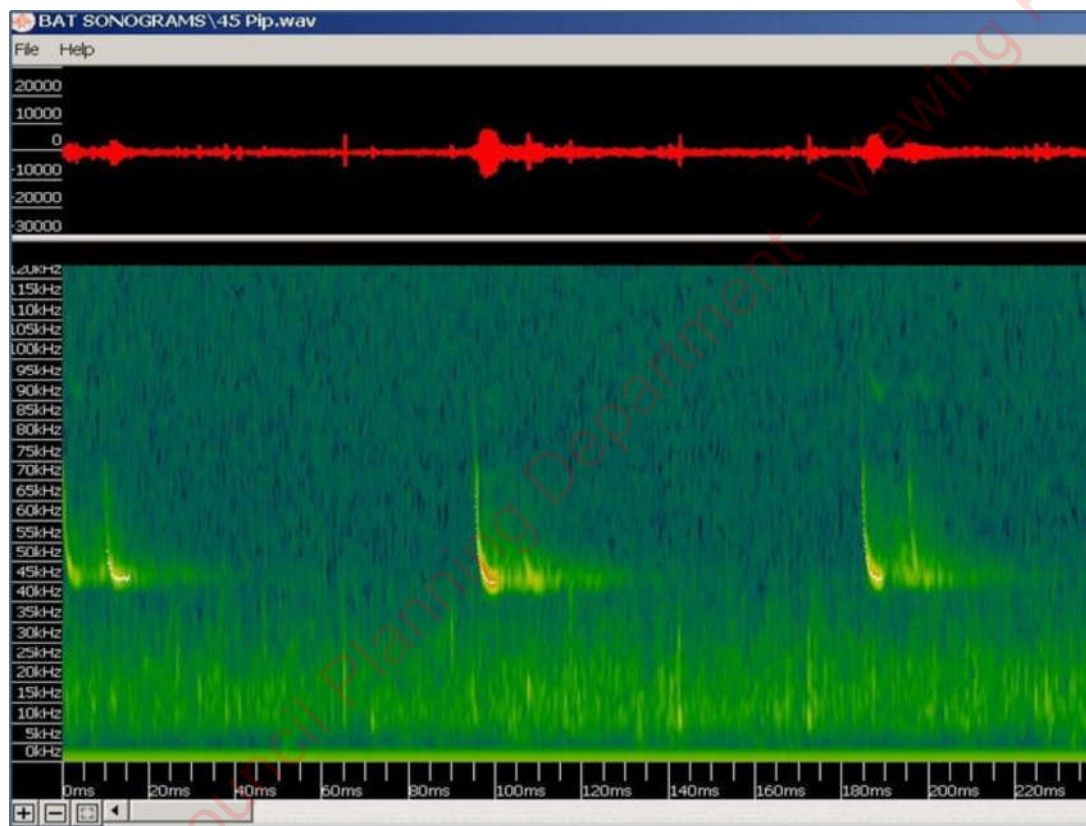


Plate 3-1 Sonogram of Echolocation Pulses of Common pipistrelle (Peak Frequency 45kHz)

Individual bats of the same species cannot be distinguished by their echolocation alone. Thus, ‘bat passes’ was used as a measure of activity (Collins, 2016). For the purposes of this survey, a bat pass was defined as a recording of an individual species/species group’s echolocation containing at least two echolocation pulses and of maximum 15 seconds length.



3.7

Survey Limitations

Survey design and effort was created in accordance with the most current best practice guidelines for surveying bats (Collins, 2016).

The information provided in this report accurately and comprehensively describes the baseline environment. July and August are within the optimal survey period for bat activity surveys, (Collins, 2016). In addition, there were no limitations associated with weather conditions or access. Therefore, a full and comprehensive survey was achieved.

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4. RESULTS

4.1 Desktop Study

4.1.1 National Bat Database of Ireland

A review of the National Biodiversity Data Centre was made on the 26th November 2021, to obtain bat records from within 1km and 10km of the proposed development site.

Within the 1km square (N9439) there were no records of any bat species. Within the 10km hectad search (N93) there were records of seven bat species. Table 4-1 lists the bat species recorded within the hectad which pertains to the current study area (N93).

Table 4-1 NBDC Bat Records

Hectad	Species	Database	Status
N93	Daubenton's bat <i>Myotis daubentonii</i>	National Bat Database of Ireland	HD Annex IV, WA
N93	Common pipistrelle <i>Pipistrelle pipistrellus</i>	National Bat Database of Ireland	HD Annex IV, WA
N93	Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	National Bat Database of Ireland	HD Annex IV, WA
N93	Natterer's bat <i>Myotis nattereri</i>	National Bat Database of Ireland	HD Annex IV, WA
N93	Brown long-eared bat <i>Plecotus auritus</i>	National Bat Database of Ireland	HD Annex IV, WA
N93	Lesser Noctule <i>Nyctalus leisleri</i>	National Bat Database of Ireland	HD Annex IV, WA
N93	Whiskered Bat <i>Myotis mystacinus</i>	National Bat Database of Ireland	HD Annex IV, WA

4.1.2 Designated Sites

Within Ireland, the Lesser horseshoe bat is the only bat species requiring the designation of Special Areas of Conservation (SACs) and the proposed development site is situated outside the known range of this species. Natural Heritage Areas (NHAs) and proposed Natural Heritage Areas (pNHAs) may be designated for any bat species. A search of NHAs and pNHAs within a 10 km radius of the Study Area found no sites designated for the conservation of bats.

4.2 Bat Habitat Appraisal

A walkover survey was conducted on the 8th July, 22nd July and 9th August. Habitats within the site include **Improved Agricultural Grassland (GA1)**, **Stone Walls and Other Stonework (BL1)**, **Scrub (WS1)**, **Hedgerow (WL1)**, **Treeline (WL2)**, **Buildings and Artificial Surfaces (BL3)** **Eroding/Upland rivers (FW1)** and **(Mixed) broadleaf woodland (WD1)**.

With regard to foraging and commuting bats, the exposed areas of open grassland habitats were considered *Negligible-Low* suitability, i.e. habitat that could be used by small numbers of commuting or foraging bats (Collins, 2016). Mature hedgerows, treelines and scrub habitats show potential for foraging and commuting bats. These habitats connect the wider area via linear features such as the Blackhall Little Stream and Rye Water River. As such, these habitats were classified as *Moderate* suitability, i.e. Continuous habitat connected to the wider landscape that could be used by bats for commuting such as

lines of trees and scrub (Collins, 2016). Low stone walls, which form the field boundaries may be utilized by occasional commuting and foraging bats and were classified as having *Low* suitability for commuting and foraging bats.

With regard to roosting bats, mature trees were assessed for their suitability to support roosting bats. A number of individual trees throughout the proposed development site were assessed as have *Low-Moderate* roosting potential. This included two individual mature ash (*Fraxinus excelsior*) trees located on the eastern boundary of site A, two individual mature ash trees located on the eastern boundary of site B, One mature Ash and one mature Sycamore (*Acer pseudoplatanus*) at the eastern section of site C and one mature ash at the northern boundary of the MOOR along the Blackwater little stream.

A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (Collins, 2016). All other hedgerows and treelines which are being retained were assessed as having *Negligible* roosting potential due to their size and lack of PRFs.

The castle tower was assessed as having *High* roosting potential i.e. a structure with one or more potential roost sites that are obviously suitable for use by larger number of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat (Collins, 2016) due to the presence of a number of PRF's visible during the roost inspection. The bridge did not provide any significant suitable roosting features and was classified as "*Negligible*" to "*Low*" Suitability for roosting bats.

All other habitats present were assigned a *Negligible* value. Further details on structures within the site, can be found in section 4.3 below.



Plate 4-1 WL1 present in the northern section of the site



Plate 4-2 WL2 in the background & GAI in the foreground

4.3 Roost Surveys

4.3.1 Castle Tower

A dedicated exterior roost inspection survey was undertaken during daylight hours on 8th of July 2021 (Plate 4-3 – 4-5). The tower castle is two stories and approximately 30 feet tall. The tower consists of stone walls and a partially collapsed stone roof. The interior of the structure was accessible through the main door at the ground level and the multiple windows on the first floor. The PRF's consisted of ivy cover over outer walls and a large number of crevices in the stonework. Gaps with potential for roosting bats were present between the stonework. The ivy cover was extensive along the south facing wall. Due to the number of PRF's, the tower was identified as having "*High suitability*" potential for roosting bats, i.e. a structure with one or more potential roost sites that are obviously suitable for use by larger number of bats on a more regular basis and potentially for longer periods of time due to their size,

shelter, protection, conditions and surrounding habitat (Collins, 2016). No evidence of bat use, including droppings, fur oil staining, signs of feeding remain etc., were identified within or surrounding the building. No bats were observed exiting or entering the building during the dusk activity survey.



Plate 4-3 South facing wall of the castle tower with dense ivy cover



Plate 4-4 East facing wall of the castle tower with potential access through door and window



Plate 4-5 North facing wall of castle tower with potential access through windows



4.3.2 Kildare Bridge

A dedicated exterior roost inspection survey was undertaken on Kildare bridge (Grid Ref: N 94726 38561) during daylight hours on 18th of August 2022 (Plate 4-6 – 4-7). The bridge did not provide any significant suitable roosting features and no evidence of bats or bat use was found during the inspection. As such, it was classified as “Negligible” to “Low” Suitability for roosting bats.



Plate 4-6 Exterior bridge view



Plate 4-7 Interior bridge view

The results of the bat surveys, carried out in 2021 indicate that the proposed development site does provide suitable habitat for a roosting bat population of ecological significance; however, no roosts were identified on site.

4.4 Emergence Survey

An emergence survey was carried out on 8th July 2021 by two surveyors to assess the castle tower structure. During the emergence survey, no bats were observed exiting or entering the structure. However, bats were observed commuting and foraging between the trees and commuting to surrounding areas. It is noted that there are structures located to the north of the castle tower, not forming part of the application, which may also provide potential habitat for roosting bats.

4.5 Dusk and Dawn Activity Surveys

Numerous foraging and commuting bats were recorded during the dusk and dawn bat activity surveys. Overall, bat activity was low with a total of 521 bat passes recorded across all surveys. Activity was dominated by common pipistrelle (*Pipistrellus pipistrellus*) n=293. This was followed by Leisler’s bat (*Nyctalus leisleri*) n=159 and soprano pipistrelle (*Pipistrellus pygmaeus*) n=67. In addition, very small numbers of brown long-eared bat (*Plecotus auritus*) n=2 were also recorded. Activity levels were concentrated along the treeline edge habitats and field boundary hedgerows bordering the Study Area (Figure 4-1 – 4-3). Plate 4-8 shows total bat species composition and Table 4-2 presents the results per survey. Plate 4-9 shows total bat passes per night.

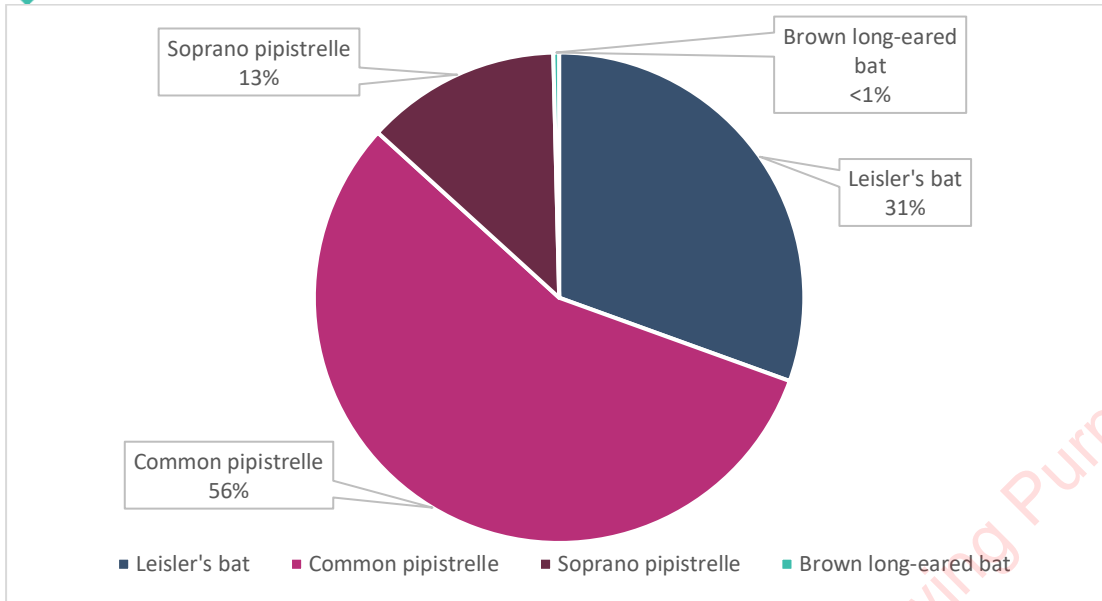


Plate 4-8 Species Composition – Dusk and Dawn surveys

Table 4-2 - Manual Transect Bat Pass Results Per Survey

Species	Dusk 8 th July 2021	Dawn 22 nd July 2021	Dusk 9 th August 2021	Total
Brown long-eared bat	-	-	2	2
Leisler's bat	150	6	3	159
Common pipistrelle	124	47	122	293
Soprano pipistrelle	46	3	18	67
Grand Total	320	56	145	521

There was an accumulation of bat activity around the small castle tower and surrounding WD1 habitat to the eastern section of Site C (Figure 4-1). The concentration of activity can be attributed to the surveyors being positioned here for 1.5hours during the emergence survey on the small castle tower. Bats were recorded commuting between the structure and foraging along woodland, hedgerow and treeline boundaries. However, no bats were observed emerging or re-entering the structure. This was followed by walked transects for the remainder of the surveys.

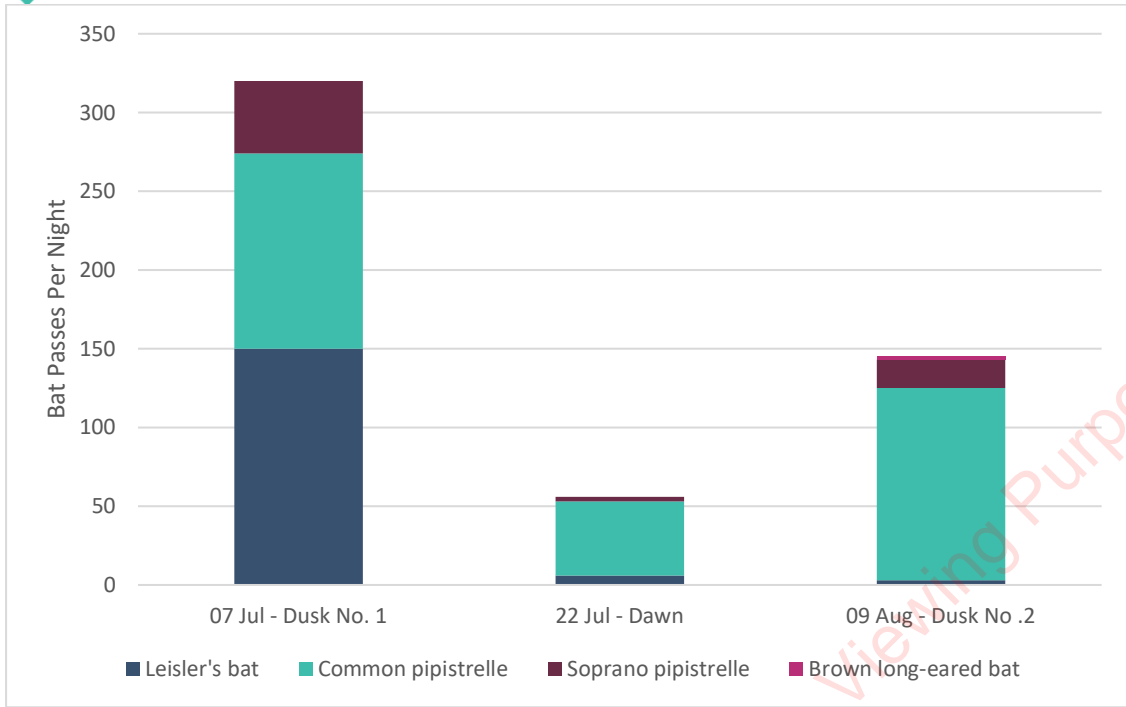


Plate 4-9 Species Composition Per Survey

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Map Legend

- EIAR Site Boundary
 - Transect Route
- Species**
- Leisler's bat
 - Common pipistrelle
 - Soprano pipistrelle

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Drawing Title	
Manual Transect Results - 7th July 2021	
Project Title	
Moygaddy Mixed Use Scheme, Co. Meath & Co. Kildare	
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Map Legend

-  EIAR Site Boundary
-  Transect Route

Species

-  Leisler's bat
-  Common pipistrelle
-  Soprano pipistrelle

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Drawing Title Manual Transect Results - 22nd July 2021	
Project Title Moygaddy Mixed Use Scheme, Co. Meath & Co. Kildare	
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Map Legend

 EIAR Site Boundary
 Transect Route
Species
 Leisler's bat
 Common pipistrelle
 Soprano pipistrelle
 Brown long-eared bat

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Static Detector Survey Results

Three static detectors were deployed on the site at six different locations (Figure 3-1), based on likely areas of bat activity, for a total of 33 nights in July/August 2021. These detectors allowed a specified look into species composition, commuting and foraging activities within the site.

All recordings were later analysed using bat call analysis software Kaleidoscope Pro v.5.4.2 (Wildlife Acoustics, MA, USA). Bat species were identified using established call parameters, to create site-specific custom classifiers. All identified calls were also manually verified. In total, 20,160 bat passes were recorded.

Analysis of the detector recordings positively identified five bats to species level with *Myotis* genus also present. Bat species included: common pipistrelle (*Pipistrellus pipistrellus*) n=10,061, Leisler's bat (*Nyctalus leisleri*) n=6,062 and soprano pipistrelle (*Pipistrellus pygmaeus*) n=3,596. *Myotis* spp. n=276, brown long-eared bat (*Plecotus auritus*) n=97 and nathusius' pipistrelle (*Pipistrellus nathusii*) were rarely encountered, with 1% or less compared to the total bats recorded (Plate 4-10).

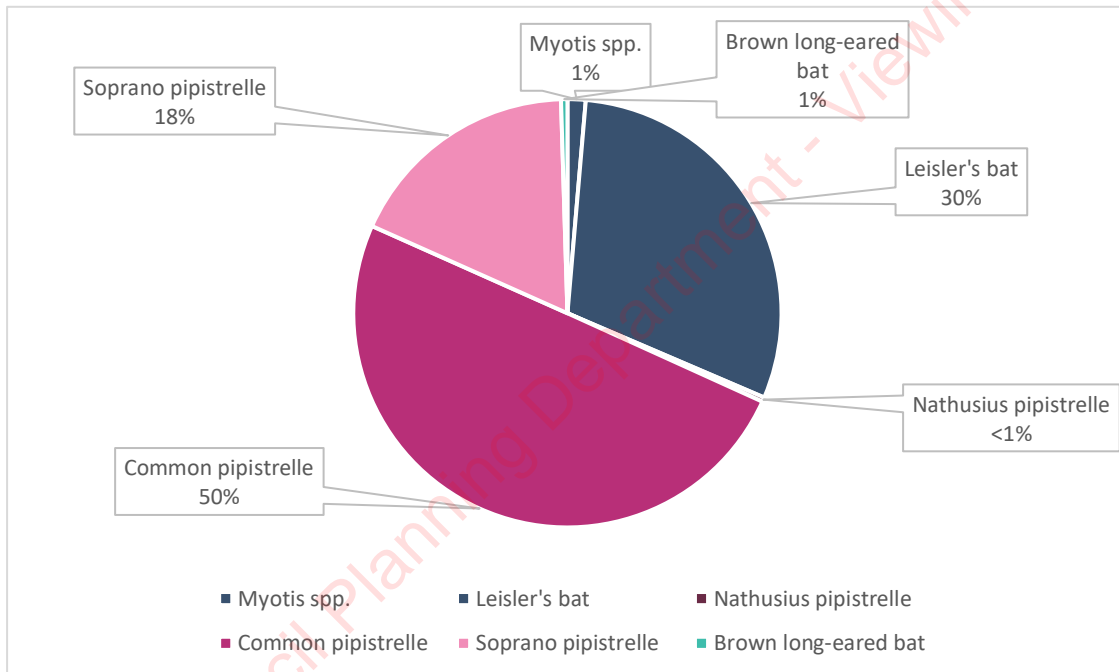


Plate 4-10 - Species Composition

Plate 4-11 shows total bat passes per detector. Detectors D01, D02 and D03 are associated with the first two-week deployment from 8th July to 22nd July 2021. Detector D01 was located to the northeast of Site C along a birch treeline habitat next to and open grassland. Detector D02 was located to the southeast of Site C along a treeline edge habitat, adjacent to the stream running north to south through the Study Area. Detector D03 was located along the hedgerow in the northwest of the Maynooth Outer Orbital Road (MOOR) Site. This area has a strong linear feature, that could provide suitable commuting and foraging opportunities for bats.

Detectors D04, D05 and D06 are associated with the second two-week deployment from 22nd July to 9th August 2021. Detector D04 was located north of Site A and east of the MOOR Site where two hedgerows converge. This area had high quality linear features suitable for foraging and commuting bats. Detector D05 was located along a hedgerow next to the Rye Water River along the southern boundary of Site C. Detector D06 was located to the northwest of Site C and the MOOR Site. Figure 3-1 shows all static detector locations.

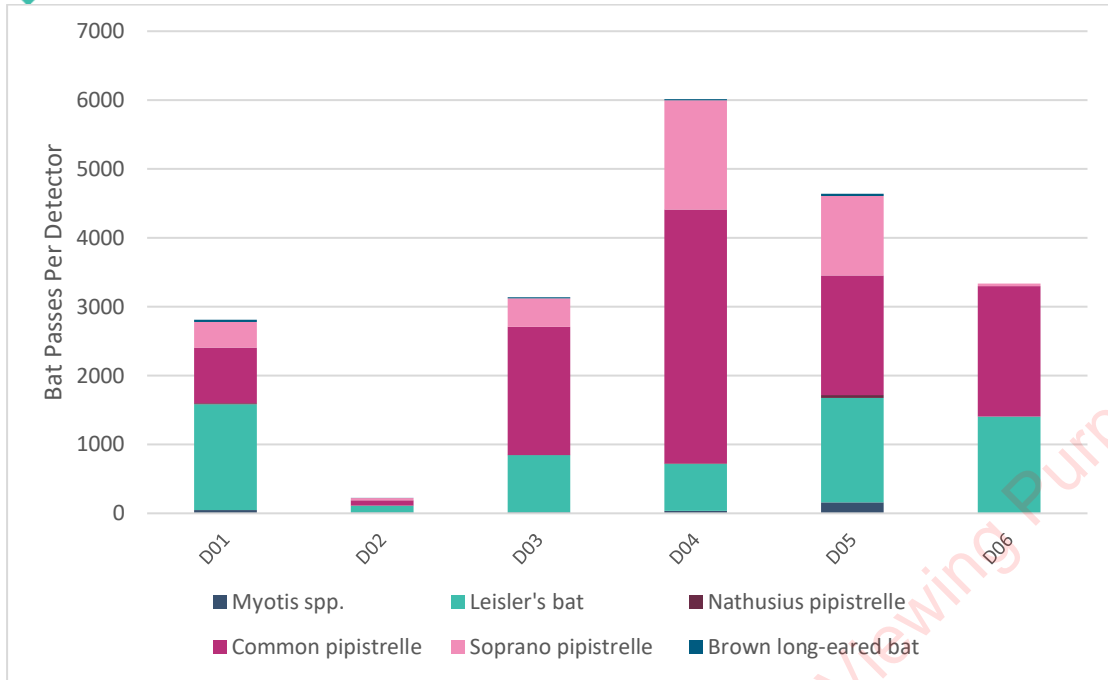


Plate 4-11 - Bat Passes Per Detector

Analysis of the detector recordings also highlighted the total bat passes per night. Species composition per night is shown in Plate 4-12. Nights from 1 to 16 are associated with the first deployment locations (D1, D2 and D3). Nights from 17 to 33 include bat passes from the second deployment locations D4, D5 and D6. Activity varied across each deployment and each night. The graph demonstrates that common pipistrelle, Leisler's bat and soprano pipistrelle species were most commonly recorded during the survey periods. These species are common and widespread across Ireland.

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Proposed Mixed Use Scheme, Moygaddy, Co. Meath
BR F - Moygaddy - 210414 - 2022.08.30

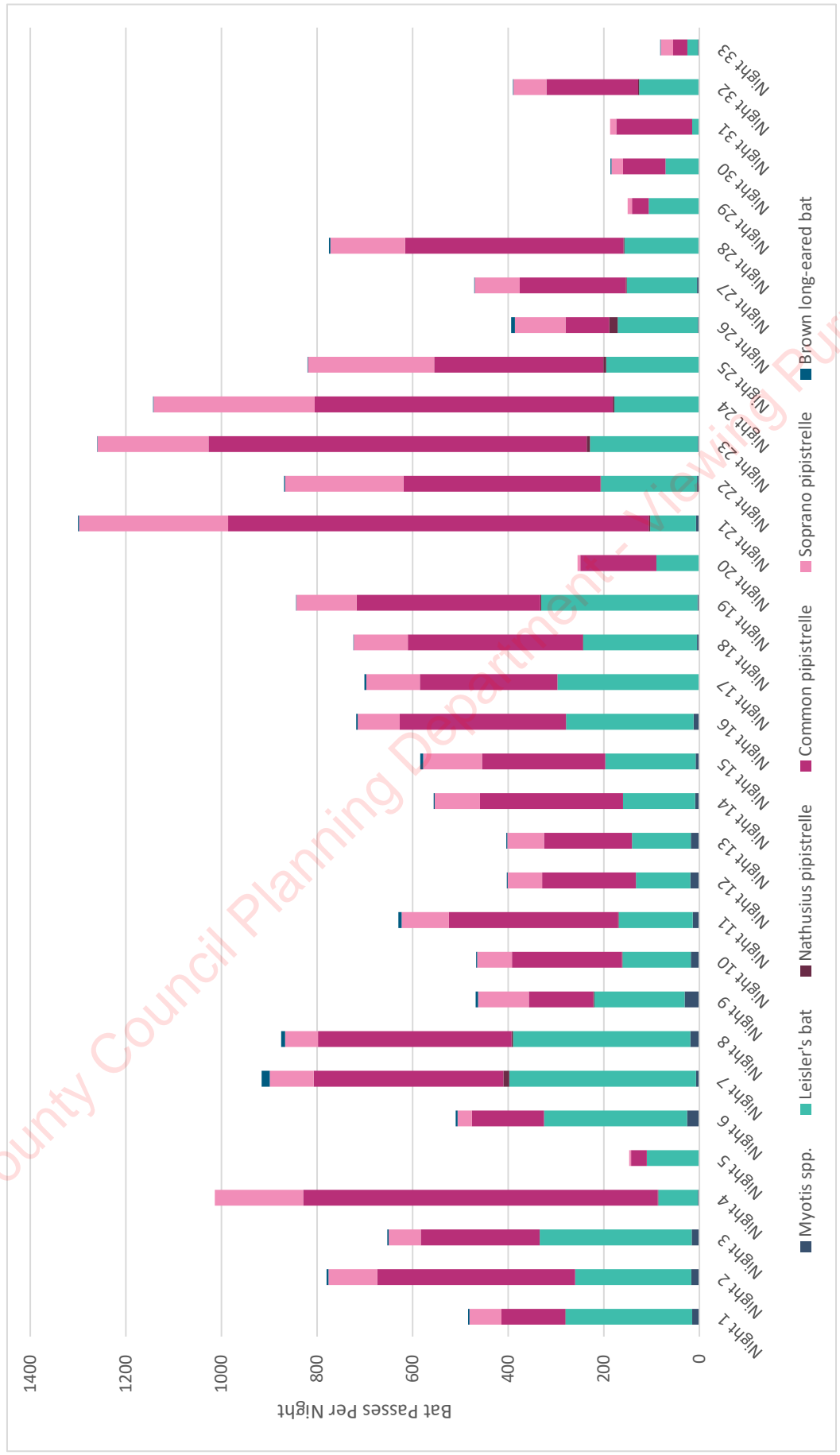


Plate 4-12 - Bat Passes Per Night

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4.7 Importance of Bat Population Recorded at the Site

Ecological evaluation within this section follows a methodology that is set out in Chapter three of the 'Guidelines for Assessment of Ecological Impacts of National Roads Schemes' (NRA, 2009).

All bat species in Ireland are protected under the Bonn Convention (1992), Bern Convention (1982) and the EU Habitats Directive (92/43/EEC). Additionally, in Ireland bat species are afforded further protection under the Birds and Natural Habitats Regulations (2011) and the Wildlife Acts 1976-2021.

Bats as an Ecological Receptor have been assigned *Local Importance (Higher value)* on the basis that the habitats within the proposed development site are utilized by a regularly occurring bat population of *Local Importance*.

No roosting bats or evidence of bat use was identified within the structures or trees within the site. The results of the bat surveys, carried out in 2021 indicate that the proposed development site does provide suitable habitat for a roosting bat population of ecological significance. However, no roosting site of *National Importance* (i.e. site greater than 100 individuals) was recorded within the site.

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5. OVERALL FINDINGS

The daytime roost inspections identified the Kildare bridge and castle tower as having “Negligible” to “Low” and “*High*” roosting potential, respectively, due to the presence/lack of presence of PRFs. No evidence of roosting bats was identified within any of the structures during the daytime roost inspections. Mature trees within the site may provide potential suitable roosting habitat for bats, although no roosts were identified during the surveys.

Following the daytime inspections, a dedicated emergence survey was carried out on the tower castle. No bats were observed emerging from the structure; however, bats were observed commuting and foraging along linear habitat features within the proposed development site. The site does not support any maternity roosts or a roost of National Importance.

Bat activity levels were mainly associated with woodland edge, treeline and hedgerow habitats within the proposed development site. Species composition was comprised predominantly of common pipistrelle, Leisler’s bat and soprano pipistrelle, all of which are common and widespread across Ireland.

Impact Assessment and proposed mitigation measures are outlined in Section 6.7 of Chapter 6.



6. CONCLUSION

In total, six bat species were recorded across the proposed development site. No roosting bats were identified within the site. Foraging and commuting was mainly associated with woodland edge, mature treeline and hedgerows habitats forming field boundaries.

The surveys methodology and results provided in this report are in accordance with the relevant industry guidance. The information provided in this report accurately and comprehensively describes the baseline environment. July and August are within the optimal survey period for bat activity surveys. In addition, there were no limitations associated with weather conditions or access. Therefore, a full and comprehensive survey was achieved.

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APPENDIX 8-1

FLOOD RISK ASSESSMENT

Kildare County Council Planning Department - Viewing Purposes Only

Moygaddy Masterplan Flood Risk Assessment

Technical Report

August 22

2021s1492

Sky Castle Ltd.

23 Rockhill,

Blackrock

Co. Dublin

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A3-C02 / 25th August 2022	Minor Changes	Sky Castle Ltd.

Contract

This report describes work commissioned by Ronan Barrett, on behalf of Sky Castle Ltd, by a letter dated 10 September 2021. Sky Castle Ltd's representative for the contract was Anthony Horan, on behalf of O'Connor Sutton Cronin and Associates (OCSC). Paul Browne, Anastasiya Ilyasova, David Casey and Ross Bryant of JBA Consulting carried out this work.

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Abbreviations

1D	One-Dimensional (modelling)
2D	Two-Dimensional (modelling)
AEP	Annual Exceedance Probability
AFA	Area for Further Assessment
CFRAM	Catchment Flood Risk Assessment and Management
DEHLG.....	Department of the Environment, Heritage and Local Government
FFL.....	Finished Floor Level
FRA.....	Flood Risk Assessment
FSU	Flood Study Updates
GSDSDS	Greater Dublin Strategic Drainage Strategy
GSI.....	Geological Survey Ireland
MCC.....	Meath County Council
MCDP	Meath County Development Plan
MRFS.....	Mid-Range Future Scenario
NCFHM	National Coastal Flood Hazard Mapping
NIFM	National Indicative Fluvial Mapping
OD.....	Ordnance Datum
OPW	Office of Public Works
PFRA	Preliminary Flood Risk Assessment
RPS.....	Record of Protected Structure
SFRA	Strategic Flood Risk Assessment

1 Executive Summary

The Site Specific Flood Risk Assessment (SFRA) has been prepared for the entire land bank of c. 240 acres at Maynooth Environs Moygaddy which forms the Masterplan area owned by Sky Castle Ltd. The development is located in the townland of Moygaddy, Co Meath although some of the road/bridge infrastructure will be located in Co Kildare.

Individual planning applications are to be submitted for

- An office campus
- A Primary Care Centre & Nursing Home
- The Maynooth Outer Orbital Route (MOOR)
- A Strategic Housing Development of 360no Homes, creche, Scout Den, Public Park and Playground,
- Utility connections & road, pedestrian and cycle connections with Maynooth, County Kildare

A review of the available flood maps confirms that both the Ryewater River and the Blackhole Little Stream overtop during the 1% AEP and 0.1% AEP flood events, which results in limited inundation to the Masterplan site. To confirm the flood extents for the Masterplan site a hydraulic model has been developed for the study area.

Based on the findings of the SFRA and hydraulic model, all development proposed is located within Flood Zone C i.e. at a low risk of flooding. Some of the road bridge, pedestrian & cycle and utility connection infrastructure where they cross the Rye Water & Blackhole Little stream, which by their nature, are within Flood Zones A & B.

The new bridge infrastructure has been designed to ensure they have no impact on flooding and therefore, there will be no increase in flood risk resulting from the development. If planning permission is granted, a Section 50 application will be submitted to the OPW for all the proposed bridge structures.

Climate change and residual risks (blockage) have also been assessed for the Masterplan site. The results confirm the development will not be impacted by the predicted impact of climate change nor by the modelled blockage events.

In summary, the FRA was undertaken in accordance with 'The Planning System and Flood Risk Management - Guidelines for Planning Authorities' (2009), and agrees with the core principles contained within

2 Introduction

2.1 Terms of Reference and Scope

JBA Consulting was appointed by Sky Castle Ltd to prepare a comprehensive Site-Specific Flood Risk Assessment (SSFRA) study for the proposed masterplan development of a site located in Moygaddy, Co. Meath. The development of the site will involve the construction of utility road bridge infrastructure connections that will be undertaken in Maynooth, Co. Kildare. The masterplan within Moygaddy has been identified in the Meath County Development Plan 2021-2027 (Masterplan Reference: MP 16).

Under the 'Planning System and Flood Risk Management - Guidelines for Planning Authorities' (DEHLG / OPW, 2009), proposed development must undergo a Flood Risk Assessment (FRA) prior to planning to ensure sustainability and effective management of flood risk. The planning authorities in this instance are Meath County Council (MCC) and Kildare County Council (KCC).

2.2 Flood Risk Assessment; Aims and Objectives

This study is being completed to inform the future design and development of the site as it relates to flood risk. It aims to identify, quantify and communicate to the client the risk of flooding to land, property and people and the measures that would be recommended to manage the risk in order to facilitate the development of the site.

The objects of this FRA are to:

- Identify potential sources of flood risk;
- Confirm the level of flood risk, and identify key hydraulic features;
- Assess the impact the proposed development has on flood risk;
- Develop appropriate flood risk mitigation and management measures, which will allow for the long-term development of the site.

Recommendations for development have been provided in the context of the 'Planning System and Flood Risk Management - Guidelines for Planning Authorities' by the DEHLG / OPW (2009). A review of the likely effects of climate change, and the long-term impacts this may have on development has also been undertaken.

For general information on flooding, the definition of flood risk, flood zones and other terms, refer to 'Understanding Flood Risk' in Appendix A.

2.3 Development Proposal

It is proposed to construct the following developments:

- a residential estate on a c.13.52ha site, as part of a c.96ha masterplan development (MP 16), located in Moygaddy, Co. Meath.
- Maynooth Outer Orbital Road (MOOR)
- 2 road bridges
- 3 pedestrian and cycle bridges

The c.96-hectare Moygaddy masterplan site area is to be subject to a phased development over a 25+ year period, with the initial phasing comprising:

- Maynooth Outer Orbital Road;
- 360nr. residential development, creche and public park (SHD ABP-312213-21)
- Phase 1 Medical i.e., Primary Care Centre and Nursing Home
- Phase 1 Biomedical, Lifesciences and Technology Park i.e., 3nr. Office Blocks

The overall masterplan development provides for a total of 5no bridges across the Ryewater River and Blackhall Little Stream. This consists of 2no. road bridges and 3no pedestrian walkway/cycleway bridges.

The SHD application will be submitted to An Bord Pleanála and each of the other applications are to be submitted to Meath County Council for planning permission under independent applications, with further applications for the remaining masterplan area to be submitted on a phased basis, until all development within Masterplan area is completed. Planning applications will also be submitted to Kildare County Council for the road, bridge, pedestrian/cycle path and utility connection infrastructure within County Kildare.

The masterplan area is aligned with the River Ryewater along its southern boundary, and is also bisected (North – South) by the Blackhall Little Stream, near its centre. All development that is to occur on site is to provide significant sustainable drainage infrastructure that is to be integrated with the intensive landscaping, and comply with Meath County Council's County Development Plan and SuDS policies. All rainfall runoff is to be treated and attenuated on site, with development discharge rates restricted to a flow rate that is less than the greenfield equivalent runoff rate (5.61 l/s/ha). The proposed bridge designs are provided in Appendix B.

Refer to Figure 2-1 or the site location masterplan.

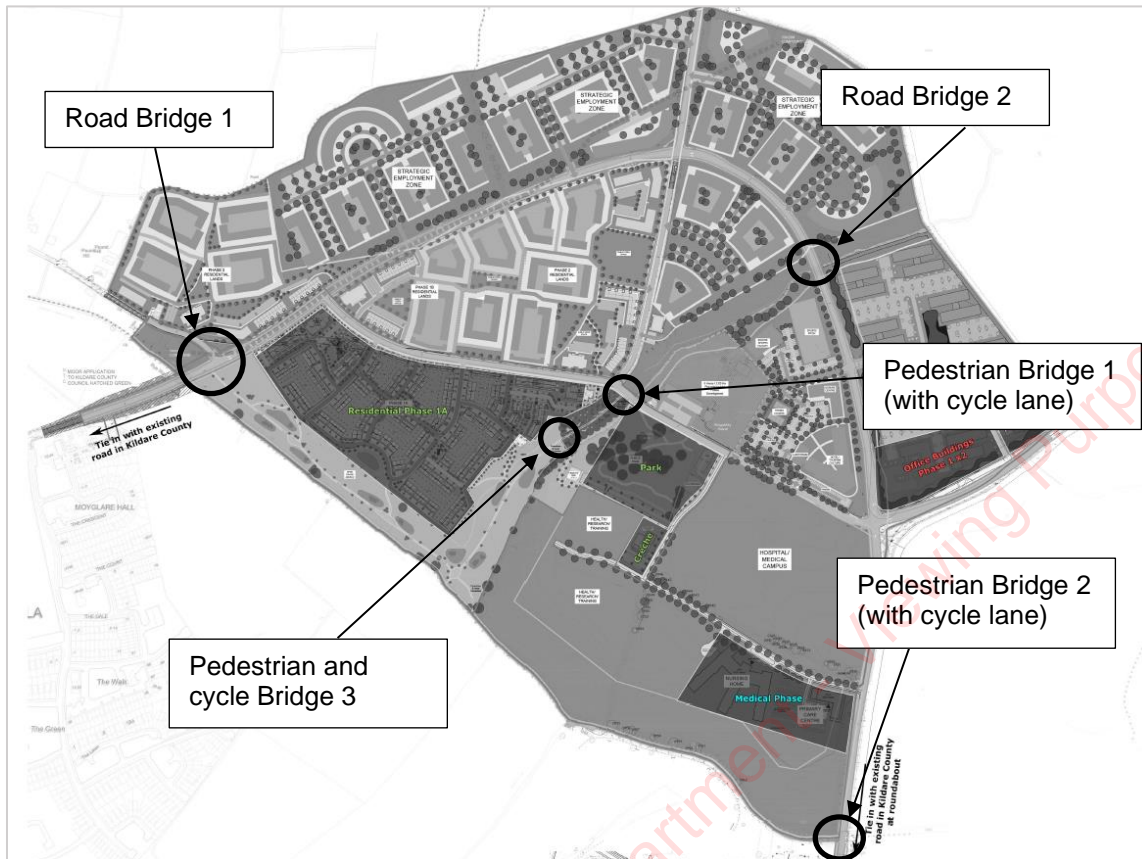


Figure 2-1: Site Location Masterplan (Source: OCSC)

2.4 Report Structure

Section 3 of this report gives an overview of the study location and associated watercourses. Section 4 contains background information and initial assessment of flood risk. The hydraulic model and hydrology are outlined in Section 5. Mitigation measures are outlined in Section 6, while conclusions are provided in Section 7.

3 Site Background

This section describes the watercourses and hydraulic features, topography, geology and wider geographical areas of Moygaddy, Co. Meath and Maynooth, Co. Kildare.

3.1 Location

The proposed site is mainly located in Moygaddy, Co. Meath, but works will also extend across the Ryewater River as part of the bridge/ road construction and to facilitate connections to utility infrastructure. The lands are primarily agricultural greenfields however there are some residential dwellings and farm buildings within the site boundary. A number of local access roads cross the site.

Maynooth town is located to the south of the site across the Ryewater River.

Refer to Figure 3-1 for the existing site overview.

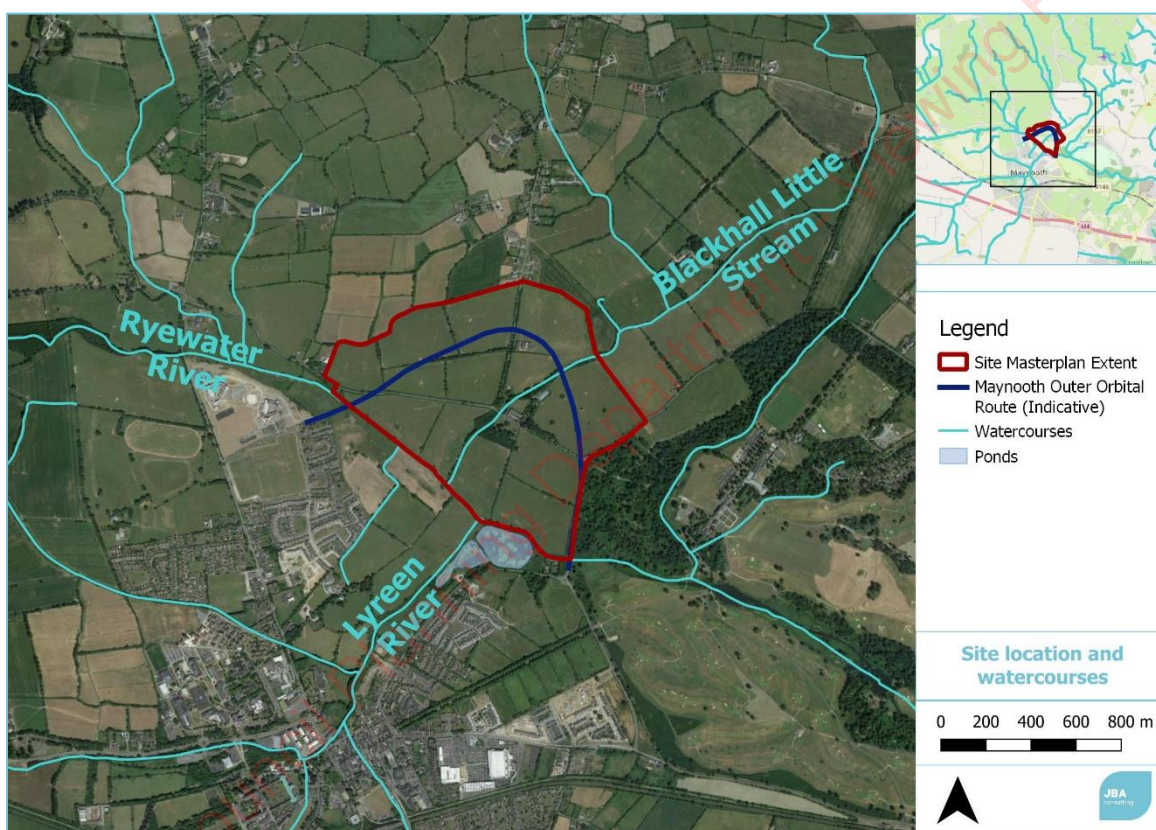


Figure 3-1: Site Location and watercourses

3.2 Site Topography

The masterplan site covers some 96Ha. It consists mainly of open fields. Public topographical data was available for review from the Geological Survey Ireland (GSI), courtesy of the OPW. Digital Terrain Model LiDAR data has been reviewed, which is topographical data that does not include buildings. As expected, the site falls naturally towards the Ryewater and Blackhole Little Stream. These 2 watercourses serve to naturally drain these lands. There is a high point located to the north with an elevation of c.62.66mOD. There is a low point at the southeast corner, located in the Ryewater river channel, with an elevation of c.44.40mOD. Refer to Figure 3-2 for the local topography.

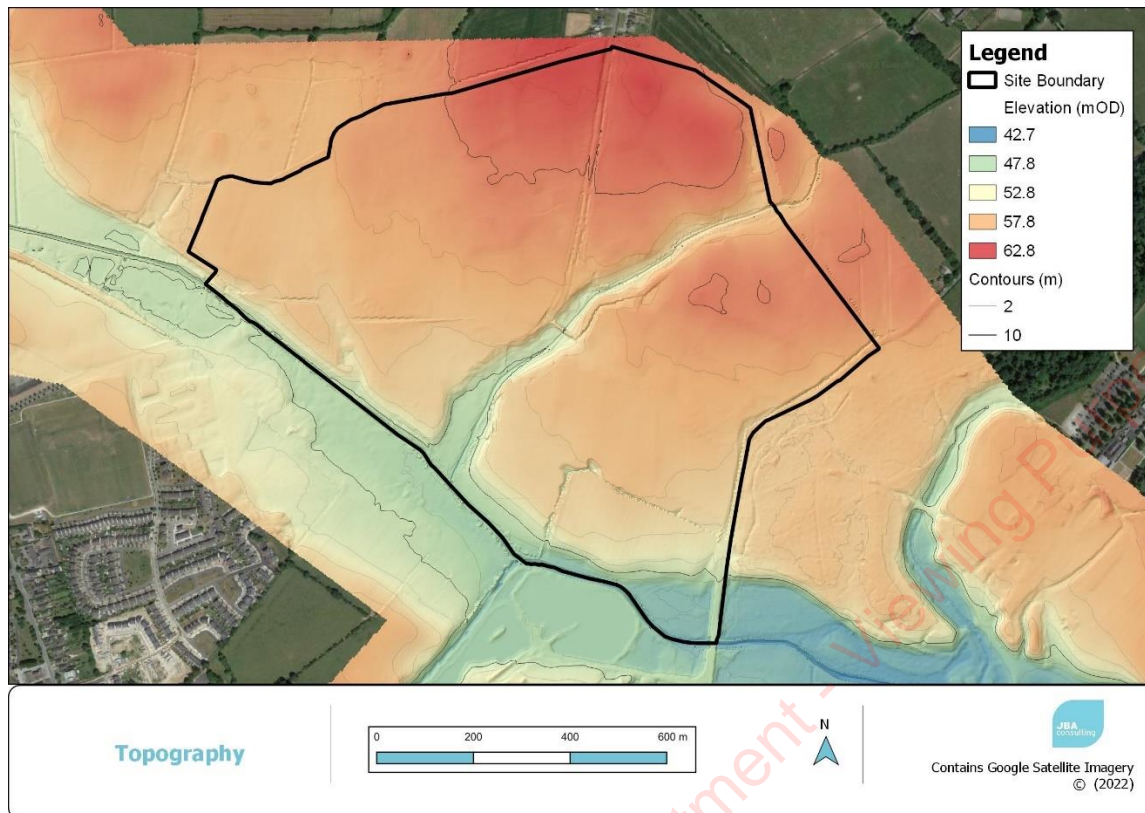


Figure 3-2: Site Topography (Source: site survey)

3.3 Watercourses

There are several watercourses in the area, and these are summarised as follows:

The main local watercourse is the Ryewater, also known as the River Rye. The Ryewater rises in Agher, Co. Meath. It flows through Kilcock, Maynooth and Leixlip before discharging to the River Liffey. The main tributaries of the Ryewater near Maynooth are summarised (amongst others) as follows:

To the north of the Ryewater, the Blackhole Little Stream runs through the site in a NE-NW direction. This stream rises near Cullendragh, Co. Meath and flows for c.10.3km before discharging to the Ryewater.

To the south, the Lyreen River merges with the Ryewater River along the southern boundary of the site. It flows through Maynooth town centre. It is c.12.2km in length and rises near Rathcoffey, Co. Kildare.

Refer to Figure 3-1 for an overview of local watercourses.

3.4 Site Geology

3.4.1 Local Subsoils

The GSI geological maps were available for review. The local subsoils are presented in Figure 3-3. The quaternary sediments present on site are TLs - Limestone till Carboniferous; while Alluvium undifferentiated gravelly is located along the waterbody systems. A thin line of Bedrock outcrop along the left bank of the Blackhole Little Stream at site. The underlying bedrock on-site is identified as 'Lucan Formation' and described as "dark limestone and shale (calp)". There were no karstic features identified on-site.

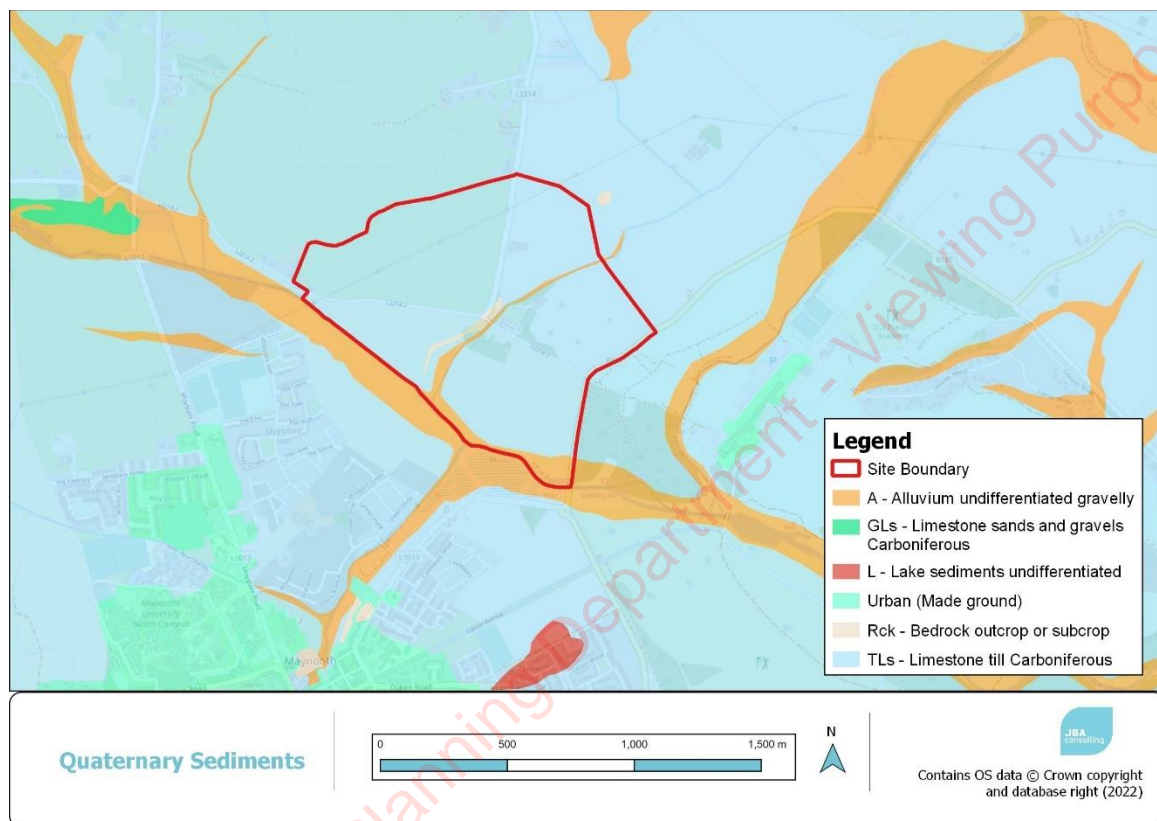


Figure 3-3: Quaternary Sediments (Source: GSI Database)

4 Flood Risk Identification

An assessment of the potential for, and scale of, flood risk at the site is conducted using historic and predictive information. This identifies any sources of potential flood risk to the site and reviews historic information. The findings from the flood risk identification stage of this FRA are provided in the following sections.

4.1 Flood History

A number of sources of flood information were reviewed to establish any recorded flood history at, or near the site. This includes the OPWs national flood information portal, www.floodinfo.ie, and general internet searches.

4.1.1 Floodinfo.ie

The OPW host a national flood information portal, www.floodinfo.ie, which highlights areas at risk of flooding through the collection of recorded data and observed flood events. Refer to Figure 4-1 for an overview of past flood events in the Maynooth / Moygaddy areas.

Two areas of possible groundwater flooding have been identified onsite, at the south-eastern area of the site in close proximity to the Ryewater and an area at the junction between the Blackhole Little Stream and Ryewater River.

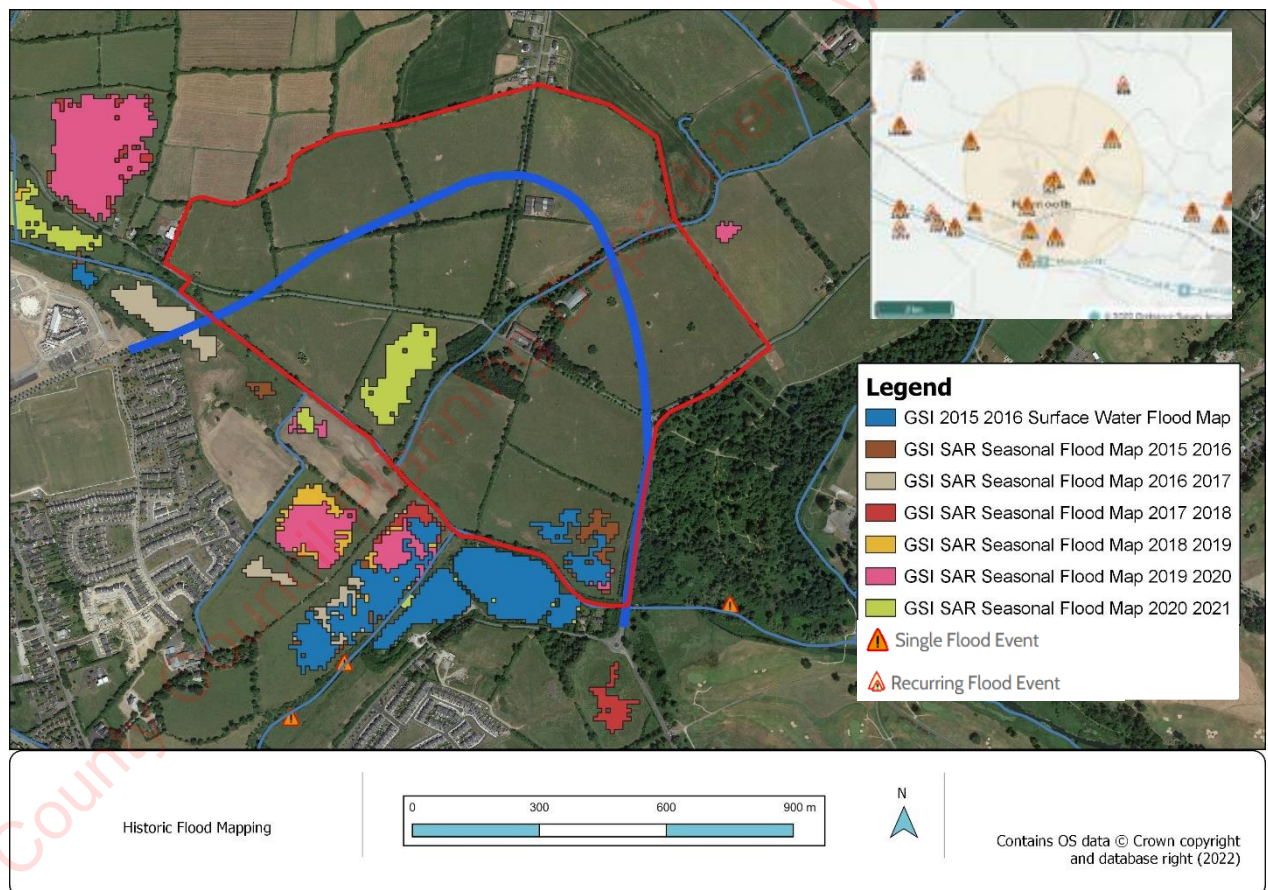


Figure 4-1: Flood History (floodinfo.ie)

Maynooth has been associated with significant flooding in its recent history. A summary of recent flood events is outlined as follows:

- ID-1948 - Lands along the Rye Water were flooded during the November 2000 event
- ID-11489 - Minor flooding along the Lyreen River near the fish ponds during October 2011
- ID-352 -In November 2000, flooding occurred on the Lyreen River at the weir near the fish ponds upstream of the confluence with the Rye Water

- ID-1942 - In June 1993, farmlands were flooded near the M4 motorway culvert and Jackson's Bridge. The flood source was the Lyreen River. Met Éireann estimated the June 1993 event equated to a 1-in-50 year storm;
- ID-1523 - Low lying lands and the R157 Maynooth-Dunboyne regional road in Co. Meath were flooded in 14th-15th November 2002.
- Surface water flooding from the Winter 2015/2016 flood event was identified at the southeast corner of the masterplan site. This flooding is located to the north east of Lyreen River and three artificial fishing ponds in County Kildare, and the surface water flooding close to the Masterplan boundary itself.

There were no historic or predictive groundwater flooding extents identified within a 2.5km radius of the masterplan site

4.1.2 Internet Searches

An internet search was conducted to gather information about whether the existing site was affected by flooding previously. The search returned no results.

4.2 Predictive Flooding

The local area has been subject to several predictive flood mapping or modelling studies and other related studies and plans:

- Meath County Development Plan 2021-2027 Strategic Flood Risk Assessment;
- Eastern Catchment Flood Risk Assessment and Management (CFRAM) Study;
- National Indicative Fluvial Mapping (NIFM) Study.

The level of detail presented by each method varies according to the quality of the information used and the approaches involved.

4.2.1 Meath County Development Plan 2021-2027 Strategic Flood Risk Assessment

In accordance with Section 11 of the Planning and Development Act 2000 (as amended), Meath County Council (MCC) completed a review of the Meath County Development Plan (MCDP) 2013-2019 and subsequently prepared a new MCDP for the period 2021-2027. A Strategic Flood Risk Assessment (SFRA) for the MCDP 2021-2027 was prepared by JBA in accordance with the requirements of 'The Planning System and Flood Risk Management - Guidelines for Planning Authorities' (2009) and Circular PL2/2014 'Flooding Guidelines' by the Department of Housing, Local Government and Heritage. The SFRA provides an assessment of all types of flood risk within the County and assisted MCC in making informed strategic land-use planning decisions and formulate flood risk policies. This flood risk information has enabled MCC to apply 'The Guidelines' sequential approach, and where necessary, the Justification Test, to appraise sites for suitable land zonings and identify how flood risk can be managed as part of the MCDP.

Flood zone mapping for the Moygaddy area was prepared as part of the Maynooth Environs LAP. A review shows that areas along the Rye Water and Blackhole Little Stream are subject to flooding during the 1% (Flood Zone A) and 0.1% (Flood Zone B) AEP fluvial flood events. These areas have accordingly been zoned as 'H1 - High Amenity'. Refer to Figure 4-2.

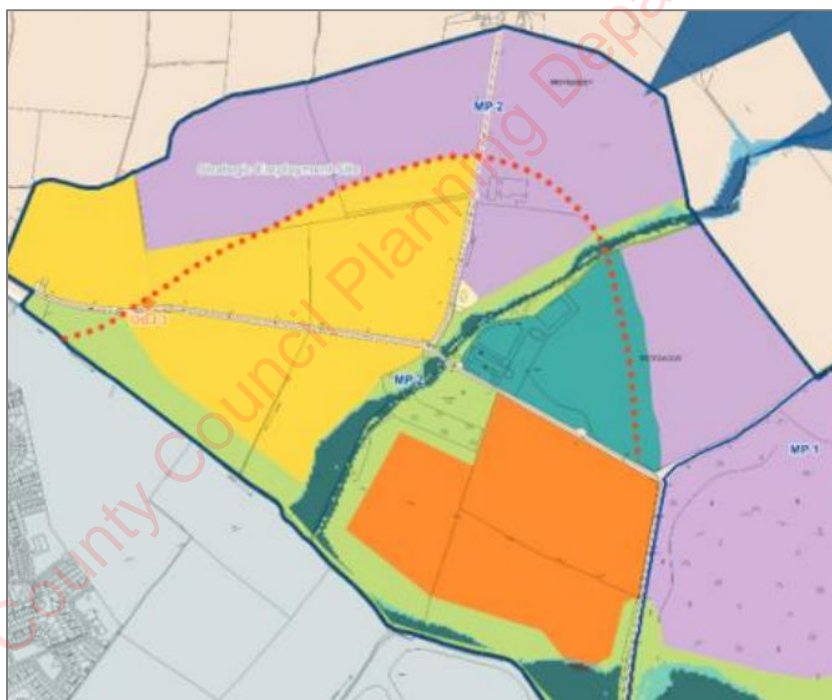


Figure 4-2: Extract from Maynooth County Plan Zoning (Meath SFRA)

4.2.2 Eastern Catchment Flood Risk Assessment and Management (CFRAM) Study

The primary source of data with which to identify flood risk to the site is the Eastern CFRAM study. The Eastern CFRAM study covers c.6,300 sq.km and involves detailed hydraulic modelling of rivers and their tributaries, along with coastal flood modelling. Flood maps are publicly available for the 10%, 1% and 0.1% AEP fluvial flood events, and covers Maynooth Town (amongst others):

Maynooth was identified as an Area for Further Assessment (AFA) as part of the superseded OPW PFRA study. The AFAs were the focus of the CFRAM studies. The flood extents for the Maynooth area were available from the OPW CFRAM WMS online layers. A review shows lands along the Rye Water and Blackhole Little Stream are subject to flooding during the 10%, 1% (Flood Zone A) and 0.1% (Flood Zone B) AEP fluvial flood events. The CFRAM extents are based on the undefended scenario, and therefore do not take account of flood protection structures such as embankments. Refer to Figure 4-3 for the CFRAM fluvial flood extents and Table 4-1 for CFRAM flood levels in Moygaddy. The study also confirms no flooding on the subject site for the 10%, 0.5% and 0.1% AEP from coastal flood events.

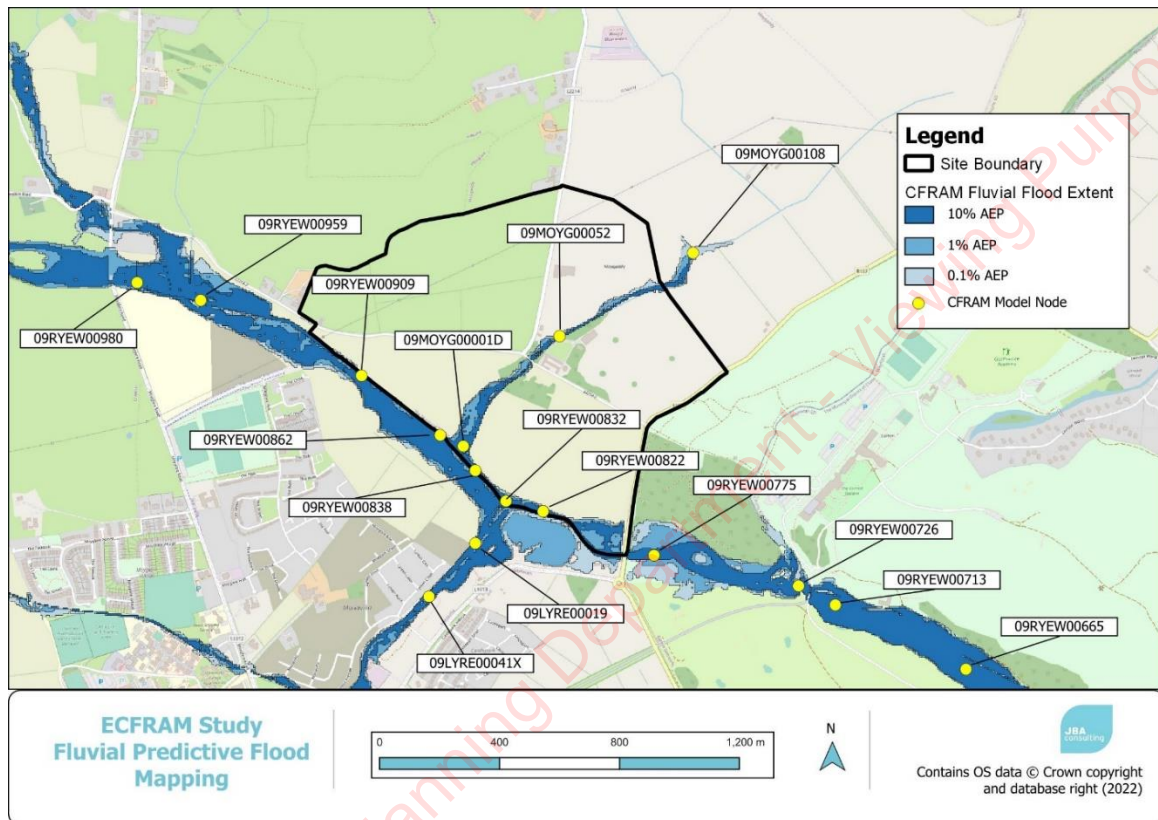


Figure 4-3: ECFRAM Study Fluvial Flood Extents (Source: Floodinfo.ie)

Table 4-1: ECFRAMS Flood Levels (mOD) (Source: Floodinfo.ie)

ECFRAMS Model Node	10% AEP	1%AEP	0.1%AEP
Blackhole Little Stream			
09MOYG00108	57.80	58.21	58.56
09MOYG00052	51.97	52.37	52.80
09MOYG00001D	48.12	48.40	48.52
Ryewater River			
09RYEW00980	51.94	52.12	52.334
09RYEW00959	50.95	51.23	51.29
09RYEW00909	49.70	49.98	50.31
09RYEW00862	47.94	48.19	48.45
09RYEW00838	47.31	47.64	48.04
09RYEW00832	46.89	47.38	47.85
09RYEW00822	46.60	47.04	47.55
09RYEW00775	45.28	45.65	46.11
09RYEW00726	44.64	44.87	45.24
09RYEW00713	44.66	44.88	45.22
09RYEW00665	44.62	44.82	45.11

ECFRAMS Model Node	10% AEP	1%AEP	0.1%AEP
Lyreen River			
09LYRE00019	47.51	47.85	48.08
09LYRE00041X	47.84	48.27	48.68

4.2.3 National Indicative Fluvial Mapping (NIFM) Study.

Data has been produced for catchments greater than 5km² in areas for which flood maps were not produced under the National CFRAM Programme and should be read in this context. The NIFM datasets have been edited to remove overlaps with the datasets produced under the National CFRAM Programme and other flood studies. The NIFM datasets should be read in conjunction with the outputs of the National CFRAM Programme and other studies.

Refer to Figure 4-4 for NIFM flood extents

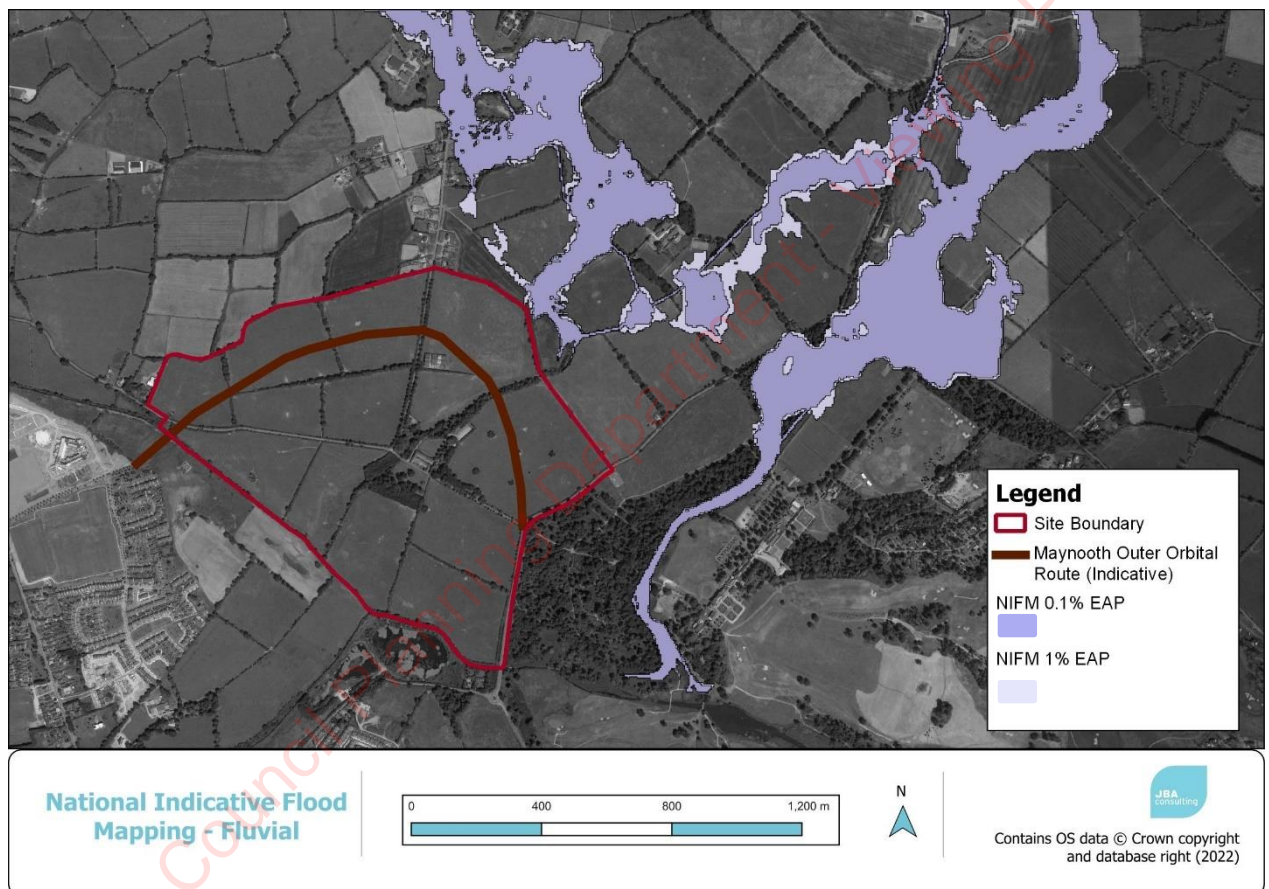


Figure 4-4: NIFM for Moygaddy area (Source: Floodinfo.ie)

4.3 Flood Sources

The initial stage of a site-specific Flood Risk Assessment (FRA) requires the identification and consideration of probable sources of flooding. Following the initial phase of this FRA, it is possible to summarise the level of potential risk posed by each source of flooding. The flood sources are described as follows:

4.3.1 Fluvial / River

There are several watercourses in the area, principally the Ryewater, Blackhole Little Stream and Lyreen River. The Ryewater lies along the Masterplan boundary and discharges to the River Liffey in Leixlip, Co. Kildare. The flood risk is identified as follows:

- The Meath County Development Plan 2021-2027 Strategic Flood Risk Assessment shows that areas of the masterplan site are subject to flooding during the 1% (Flood Zone A) and 0.1% (Flood Zone B) AEP fluvial flood events. The remaining areas are therefore within Flood Zone C;
- The Eastern CFRAM study shows that areas of the masterplan site and the proposed MOOR corridor are located in lands which are subject to flooding during the 10%, 1% (Flood Zone A) and 0.1% (Flood Zone B) AEP fluvial flood events;
- The National Indicative Fluvial Mapping (NIFM) study shows that lands immediately northeast of the masterplan site are subject to flooding during the 1% (Flood Zone A) and 0.1% (Flood Zone B) AEP fluvial flood events, however, the floodwaters do not encroach onto the Masterplan site area.

Based on the identified fluvial flood risk, a hydraulic model has been developed to confirm the Flood Zone A/B flood extents within the site, while also appraising for the potential impacts of climate change and also testing for residual risks (blockage). The hydraulic model is outlined in Section 5, which also includes the flood map outputs.

Utilising hydraulic model outputs site-specific mitigation measures to manage the ongoing fluvial risk are outlined in Section 6. Residual risk is further discussed in Section 6.3.

4.3.2 Tidal / Coastal

Maynooth and Moygaddy are located inland and are not impacted by predictive and historic tidal flooding, as confirmed by the Eastern CFRAM and National Coastal Flood Hazard Mapping (NCFHM) 2021 studies.

The risk of tidal flooding has been screened out at this stage.

4.3.3 Pluvial / Surface Water

Pluvial, or surface water, flooding is the result of rainfall-generated flows that arise before runoff can enter a watercourse or sewer. It is usually associated with high-intensity rainfall events. Flood risk from pluvial sources exists in all areas. Adequate surface water drainage systems will assist with the alleviation and management of pluvial flooding risk.

It is noted that there were instances of surface water flooding from the Winter 2015/2016 flood event at the southeast corner of the masterplan site. This event represented the largest groundwater flood on record. This flood map encompasses fluvial (rivers) and pluvial (rain) flooding in non-urban areas and has been developed under the GWflood¹ project as a by-product of the historic groundwater flood map. It was not clear at the time of writing this report whether the flooding in the southeast corner was fluvial or pluvial-related.

Site-specific mitigation measures to manage the pluvial flooding risk are outlined in Section 6. Residual risk is further discussed in Section 6.3.

4.3.4 Groundwater

Review of the historic flooding and GSI datasets outlined in Section Figure 4-1 provides some indication that historic groundwater flooding has occurred within the masterplan site. However, the confidence rating given to the occurrence of the event is 'Low'. Following review of the topography of the affected areas are partially elevated to the Ryewater and Blackhole Little Stream flood plains. If groundwater flooding was to occur onsite it will be contained within the low-lying flood plains.

¹ GWflood project (2016-2019) (gsi.ie)

No development is proposed within these areas therefore, the flood risk from groundwater flooding has been screened out at this stage.

Kildare County Council Planning Department - Viewing Purposes Only

5 Hydraulic Model

5.1 Hydrology Assessment

To assist in the estimation of potential flood risk to the proposed development within the Masterplan Area, from each of the Ryewater River, Moygaddy Stream and Lyreen River, this section provides flow estimates for the 1% and 0.1% AEP flood event flows.

5.1.1 Catchment Characteristics

The catchment characteristics for the HEPs have been transferred from corresponding node from FSU database. The physical characteristics of the catchment influence the hydrology, this includes catchment size (AREA), soil type, steepness and the average annual rainfall. The values have been reviewed and the URBEXT value was updated, using the latest CORINE 2018 land use data set and information from myplan.ie. Table 4-1 outlines the parameters calculated for the site catchment. Figure 5-2 overpage details the catchment area.

Table 5-1: Catchment Characteristics (source: OPW FSU)

Descriptor	HEP_1	HEP_2	HEP_3	HEP_4a	HEP_4b	HEP_5	HEP_6
FSU Node	09_301_2	09_1857_2	09_1863_2	09_1241_1	09_1060_3	09_611_3	09_1260_3
Area	59.141	70.314	71.806	17.086	18.00	87.635	193.858
SAAR	805.71	804.55	803.76	807.87	805.46	768.16	785.64
FARL	1	1	1	1	1	1	1
BFI Soil	0.474	0.474	0.475	0.444	0.442	0.473	0.477
URBEXT	0.037	0.031	0.034	0	0	0.045	0.048
MSL	15.108	16.173	16.674	8.992	10.314	16.684	19.465
S1085	2.114	1.832	1.971	6.193	5.444	1.794	2.468
Stream Frequency	29	35	37	7	9	37	99
DrainD	0.806	0.833	0.837	1.096	1.125	0.699	0.809
ArtDrain2	0.2818	0.245	0.2455	0	0	0	0.1116
Soil (number)	2(25%), 4(75%)	2(25%), 4(75%)	2(35%), 4(65%)	2(50%), 4(50%)	2(55%), 4(45%)	2(90%), 4(10%)	2(65%), 4(35%)
M5-2day	54	54	54	54	54	54	54
r	0.33	0.33	0.33	0.33	0.33	0.33	0.33

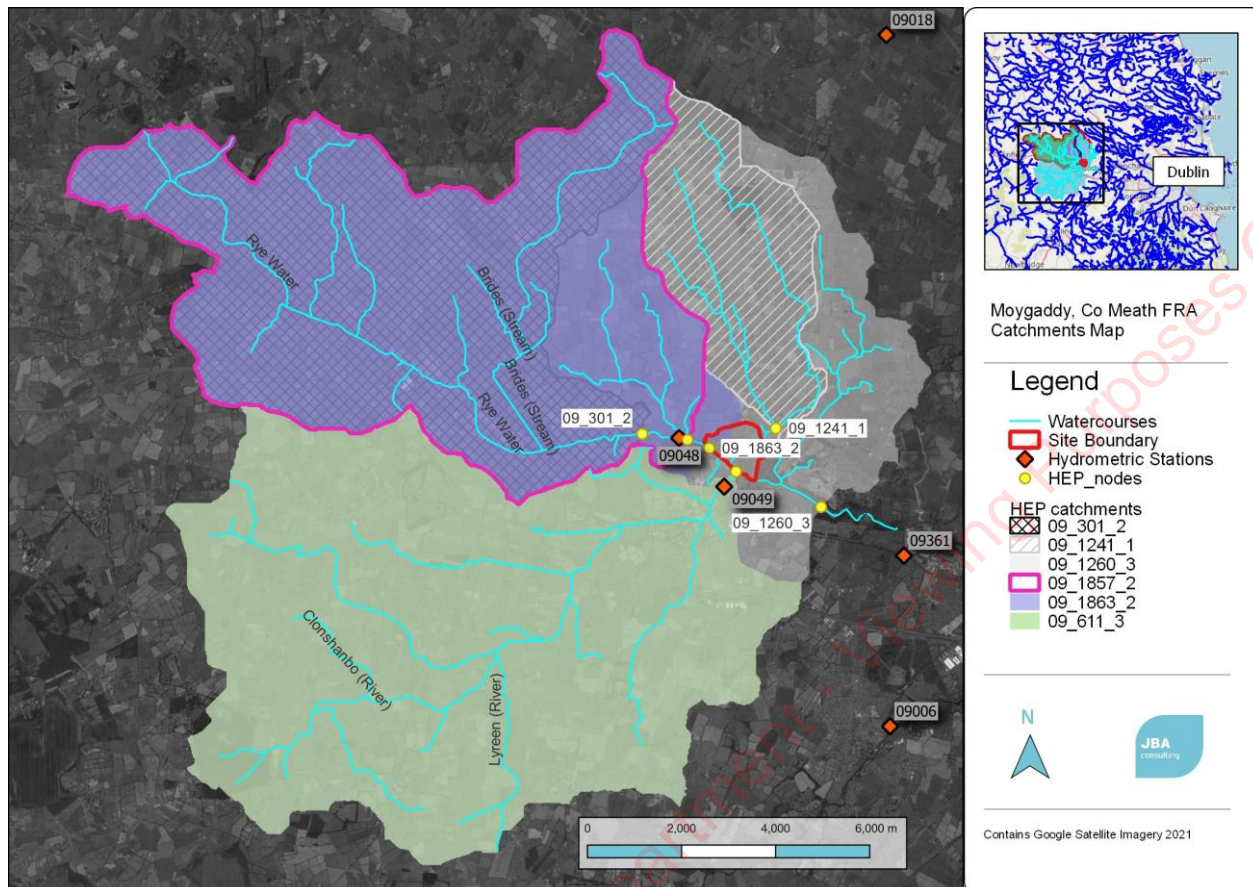


Figure 5-1: Catchment Area

5.1.2 Flow estimation

The flow estimations for the Ryewater River, Blackhole Little Stream and Lyreen Stream are provided in Table 5-2. The FSU (Flood Studies Update) method was selected as it produced more conservative flows and is considered the most applicable method based on the catchment size and characteristics.

Table 5-2: Design Flows (m³/s)

Site code	Flood peak (m ³ /s) for the following return periods (% AEP)						
	50%	20%	10%	5%	2%	1%	0.1%
HEP_1	17.19	26.64	31.97	37.13	43.83	48.82	66.35
HEP_2	20.01	29.21	35.41	41.41	49.02	54.62	73.63
HEP_3	20.75	30.29	36.72	42.94	50.83	56.64	76.35
HEP_4a	6.35	9.85	11.82	13.72	16.20	18.04	24.53
HEP_5	13.71	21.25	25.49	29.61	34.95	38.93	52.91
HEP_6	46.44	71.98	86.37	100.30	118.42	131.88	179.25

5.1.3 Climate Change

Current OPW guidance requires that the effects of climate change be considered when assessing flood risk. The expected increase in peak flows, rainfall and tidal level is provided in the draft OPW guidance which provides allowances for two different climate change scenarios. These are the Mid-Range Future Scenario (MRFS) and the High-End Forecast Scenario (HEFS). The recommended allowances for climate change are given in Table 5-3 below. The potential implications for the proposed development within the Masterplan Area from climate change are discussed further in Section 5.1.3.

Table 5-3: OPW Climate Change Guidance

	MRFS	HEFS
Extreme Rainfall Depths	+20%	+30%
Flood Flows	+20%	+30%
Mean Sea Level Rise	+500mm	+1000m

5.2 Hydraulic Model

To provide a detailed assessment of flood risk within the Masterplan site area, a 1D-2D ESTRY-TUFLOW hydraulic model was constructed. It allows for the modelling of river channels, streams, floodplains and hydraulic structures to predict water levels for a range of scenarios (see Figure 5-2 for the hydraulic model structure). The hydraulic model was developed in the following stages:

- A 1D-2D ESTRY-TUFLOW model of the Ryewater River and Blackhole Little Stream was created using a DTM and available surveyed data;
- The Lyreen River was represented in the 2d model.
- Existing structures were inserted into the model based on survey data and a baseline condition was established, in the vicinity of the site. Refer Figure 5-2 for the existing structure in the vicinity of the masterplan site;
- Hydraulic simulations were run to derive the existing flood extents for the 1% and 0.1% AEP flood events;
- The post-development design has been assessed against a climate change scenario (MRFS);
- Residual risks have been tested to assess the residual risk for the site.



Figure 5-2: Model Schematisation

5.2.1 Site Survey

The flood model of the Ryewater River and Blackhole Little Stream has been based on OPW sourced site survey data (2013). This was supplemented and updated by site specific river survey data undertaken during July 2021 by Murphy Surveys.

A comprehensive site survey was undertaken of the site and wider lands during September 2021. This survey data was incorporated into the model to ensure that the model is based on accurate and up to date data.

5.3 Model Results

The model results are presented in the following sections that focus on the confirmation of Flood Zone A & B, while also providing the post-development flood extents for the various development areas.

5.3.1 Delineation of Flood Zone A and B

The model results show the Masterplan area is not impacted by fluvial inundation during both the 1% and 0.1% AEP fluvial flood events. The flood extents identified in parts of the masterplan site are presented in Figure 5-3 and indicative flood levels are presented in Table 5-4. The complete output from the model is presented in Appendix D.

The outputs from hydraulic model have been compared to the CFRAM model outputs (Figure 4-3) and the results show a good agreement between the two studies. This provides confidence in the produced flood extents and also suggest a well-defined flood plain.



Figure 5-3: 1% and 0.1% AEP fluvial flood extents - pre-development scenario

5.4 Post-Development Model Results

The post-development model results are presented in the following sections. As no development is proposed within Flood Zone A/B the post-development model only includes the proposed bridge structures outlined in Section 5.4.1.

The resulting flood map is presented in Figure 5-5 and levels in Table 5-4.

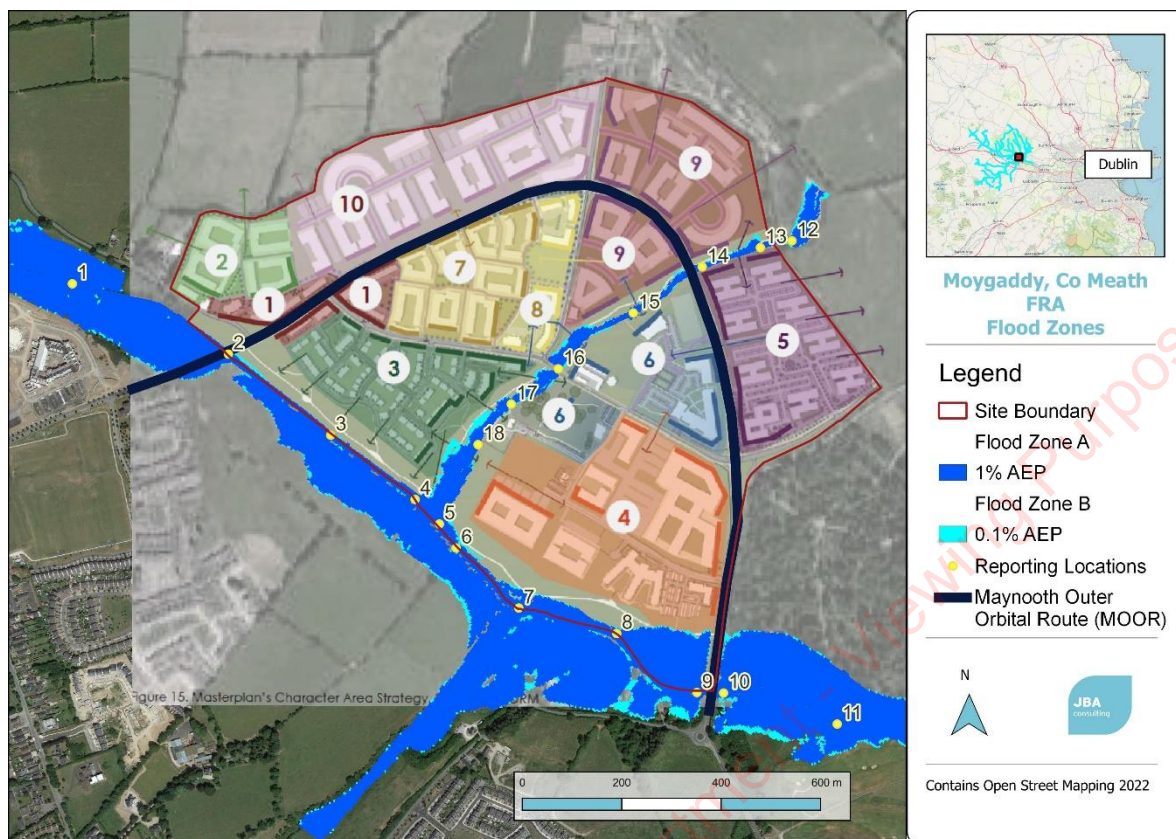


Figure 5-4: 1% and 0.1% AEP fluvial flood extents - post-development scenario

Table 5-4: Flood Levels (mOD)

Reporting Location	1%AEP	0.1%AEP	1% AEP MRFS
1	50.98	51.01	51.00
2	50.17	50.30	50.25
3	49.33	49.39	49.37
4	48.52	48.63	48.58
5	48.72	48.63	48.72
6	48.20	48.36	48.29
7	47.77	47.99	47.90
8	47.12	47.36	47.26
9	46.59	46.90	46.77
10	46.24	46.43	46.35
11	45.68	45.93	45.83
12	56.73	56.91	56.83
13	56.25	56.41	56.34
14	55.22	55.40	55.32
15	54.07	54.15	54.13
16	52.78	53.44	53.04
17	50.34	50.48	50.43
18	49.39	49.53	49.47

5.4.1 Post-Development Bridge Structures

As part of the dynamic modelling exercise a specific scenario has been developed to assess the potential impact of with the proposed bridges in place and the results are presented in the following section. The proposed bridges which are integral to the development of the Masterplan site is presented in Figure 5-5.

Note: that the results presented in the following section are the 1% and 0.1% AEP flood events. All bridge structures will undergo a Section 50 application post granting of planning which will be assessed in accordance with the Section 50 design standards.

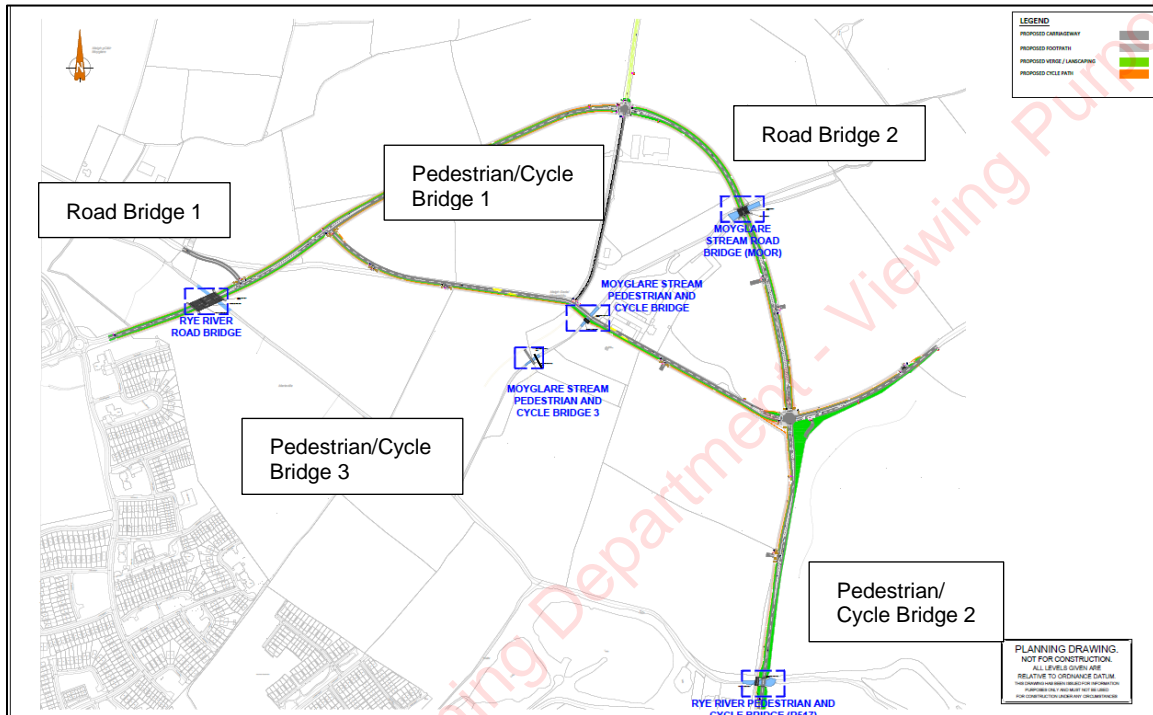


Figure 5-5: Bridge Structures

5.4.1.1 Road Bridge 1

This proposed bridge forms part of the MOOR and it will link the subject land with County Kildare at Moygaddy. This new road bridge will also have a pedestrian and cycle facilities. The proposed bridge soffit level has been set at 51.7mOD which provides a minimum freeboard of 1.10m above the 0.1% AEP flood level. The bridge design is provided in Figure 5-6.

The bridge design is based a multi-span design consisting of two 25m span sections.

The post-development flood levels are presented in Figure 5-6.

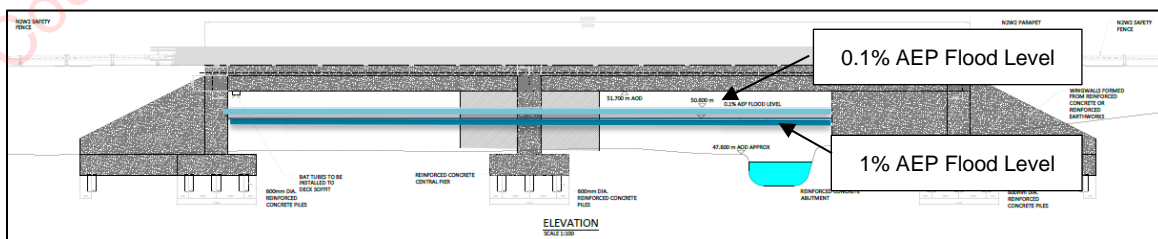


Figure 5-6: Post-development Flood Levels for Road Bridge 1

Post-development modelling has been undertaken of the proposed Road Bridge 1 structure. The results confirm that the bridge has been designed to convey the 1% AEP and 0.1% AEP flood events without increasing flood risk upstream and downstream of the site. The flood levels are presented in Figure 5-6.

Note: The bridge has been designed to the OPW's Section 50 design standards and an application will be submitted to the OPW following granting of planning.

5.4.1.2 Road Bridge 1

This proposed bridge forms part of the MOOR and it will link the Western and Eastern half of the subject Masterplan lands by providing a crossing over the Blackhole Little Stream. The proposed bridge soffit level has been set at 48.3mOD which provides a minimum freeboard of 1.36m above the 0.1% AEP flood level.

The model confirms that there is no impact on level during the 1% AEP or 0.1% AEP events. The post-development flood levels are presented in Figure 5-7.

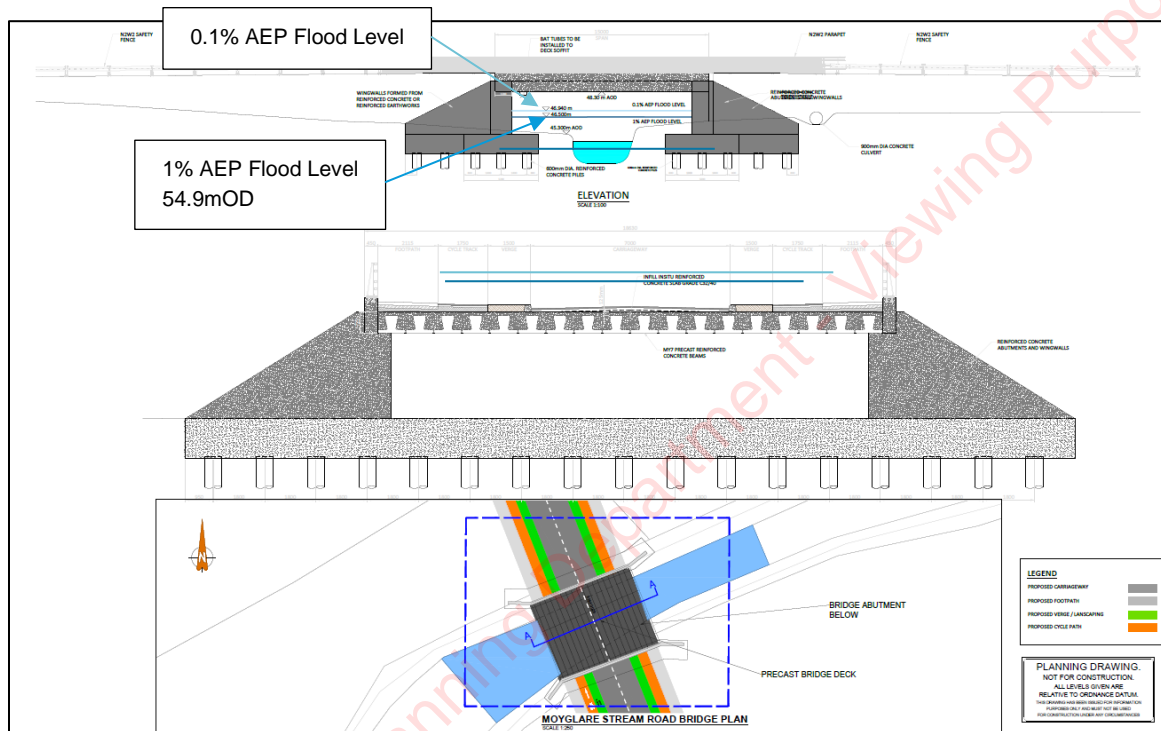


Figure 5-7: Proposed Bridge Layout- Road Bridge 2

5.4.2 Pedestrian Bridge 1 (with Cycle Lane)

The existing road bridge on the L2214 local road which crosses the Blackhole Little Stream does not have existing pedestrian or cycle facilities.

As part of the proposed development within the Masterplan area, it is proposed that a new pedestrian and cycle bridge will be installed to the south of the existing road bridge.

The modelled flood levels are as follows: 1%AEP is 52.82mOD and 0.1% AEP - 53.37mOD. The model confirms that there is no impact on flood level during the 1% AEP or 0.1% AEP events. The post-development flood levels are presented in Figure 5-8

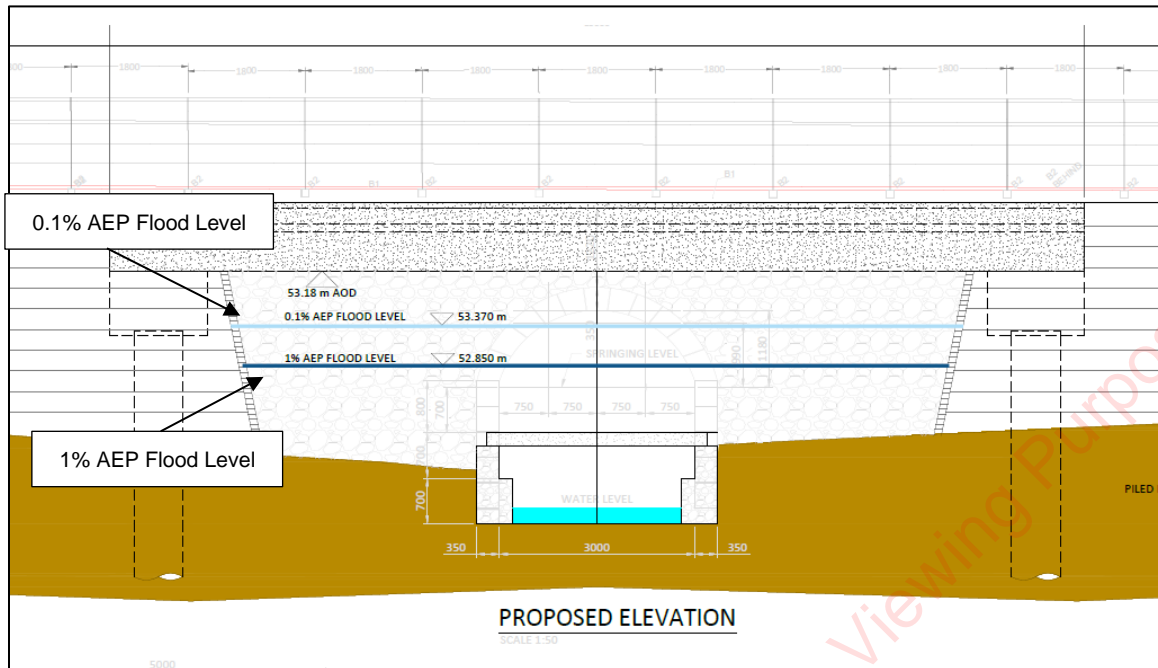


Figure 5-8: Post-development Flood Levels for Pedestrian Bridge 1

As the proposed pedestrian and cycle bridge will be located on the downstream face of the existing road bridge, it has no impact on the hydraulic flow regime and therefore has no impact on the existing flood levels.

5.4.3 Pedestrian Bridge 2 (with cycle lane)

To enhance connectivity and permeability between the Masterplan lands and Maynooth town, a new pedestrian and cycle bridge is proposed to the west of the existing Kildare Bridge.

The 'Pedestrian Bridge 2' is located upstream of the Kildare Bridge, the existing bridge structure over the Ryewater River along the R157. The main flow restriction in the area is caused by the existing Kildare Bridge.

A single span bridge is proposed which is wider than the existing multi-span arch bridge. Refer to Figure 5-9.

The existing 1% and 0.1 % AEP flood event level are 46.57mOD and 46.94mOD respectively. The proposed bridge soffit level has been set at 48.3mOD which provides a minimum freeboard of 1.36m above the 0.1% AEP flood level.

The model confirms that post-construction of the new bridge there is no impact on level during the 1% AEP or 0.1% AEP events. The post-development flood levels are presented in Figure 5-9. Some minor infilling is required in order to facilitate construction of the earthen embankments within Flood Zone A/B.

Furthermore, due to the single span nature of the bridge it will not increase the risk of blockage occurring in the area, nor is there any impact on flood levels upstream of the bridge for both the 1% AEP and 0.1% AEP flood events. The post-development flood levels are presented in Figure 5-9.

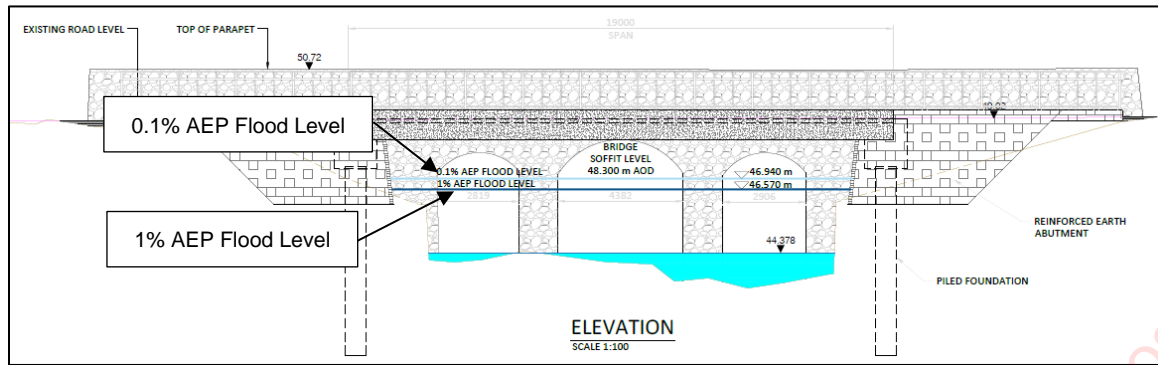


Figure 5-9: Post-development Flood Levels for Pedestrian Bridge 2

5.4.4 Pedestrian Bridge 3

In order to enhance permeability and connectivity between the proposed residential development to the west of the Blackhole Little Stream and the east, a second pedestrian and cycle bridge will be installed. The Pedestrian Bridge 3 provides local walkway access across the Blackhole Little. Refer to Figure 5-10 for the location of the bridge. The bridge will be of lightweight construction with a span of 30m.

The modelled 1% AEP and 0.1% AEP flood levels at the bridge are 50.20mOD and 50.35mOD respectively.

The bridge will undergo a Section 50 application to the OPW post-planning.

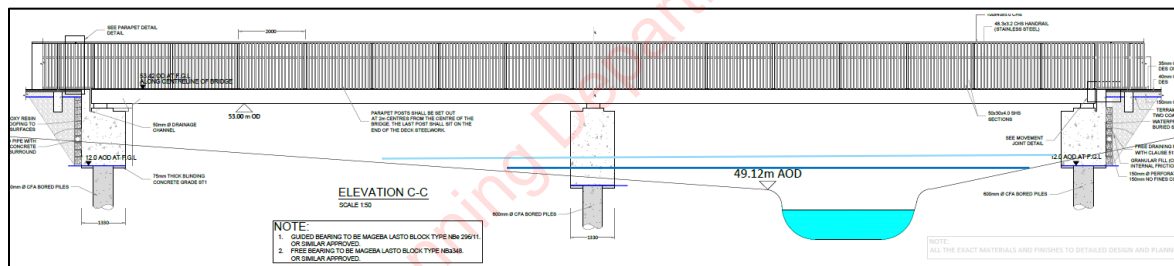


Figure 5-10: Pedestrian and cycle Bridge 3 Location

5.5 Office (Areas 5, 9 and 10)

With reference to Figure 2-1, the Office space covers Area 5 (Eastern), 9 (Central) and 10 (western) sections of the masterplan. Areas 5 and 9 are located adjacent to the Blackhole Little Stream. Review of Figure 5-11 confirms that all the office area are located in Flood Zone C.

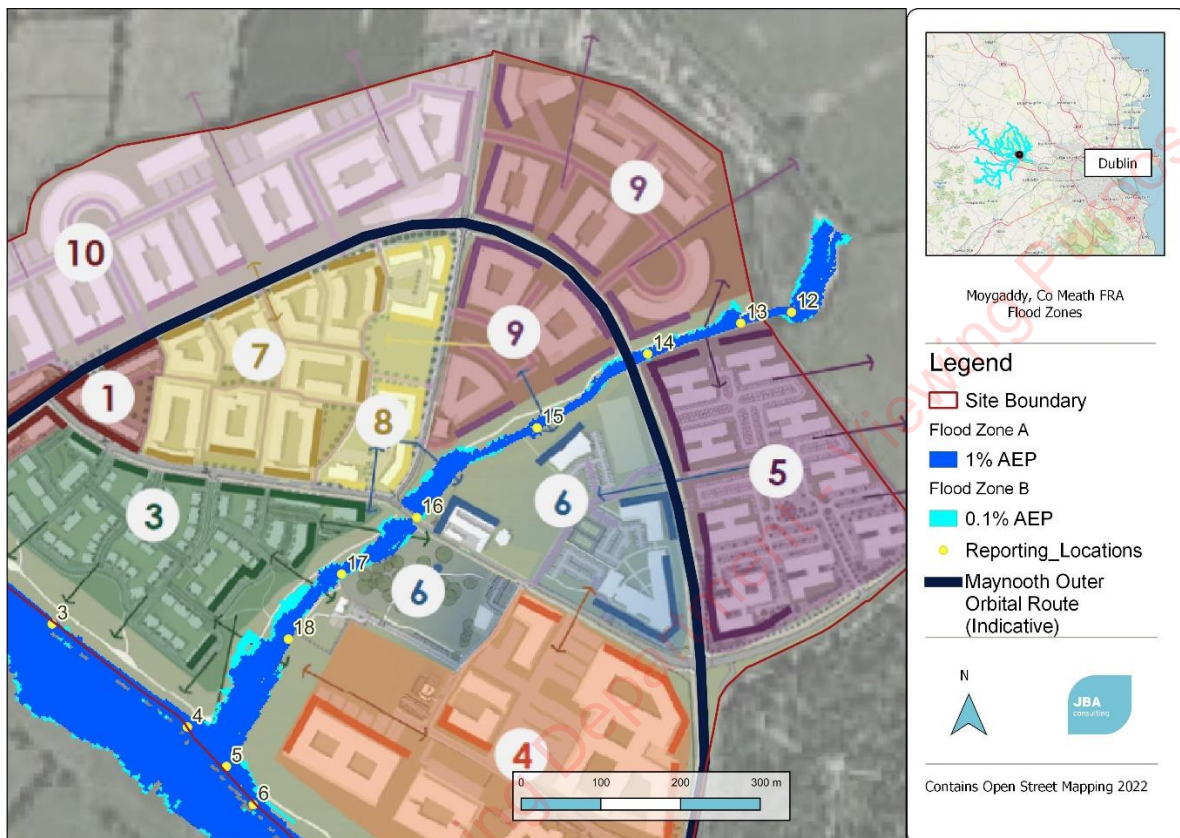


Figure 5-11: Office Areas (5,9 & 10)- Flood Zone

5.6 Primary Care & Nursing Home

The Primary Care & Nursing Home is located in Area 4 of the Masterplan. The Blackhole Little Stream runs along the site to the west and the Ryewater to the south. All areas of the development have been located on Flood Zone C, refer to Figure 5-12 for the flood extents in proximity to the Primary Care & Nursing Home.



Figure 5-12: Primary Care & Nursing Home- Flood Zone

5.7 MOOR

The Maynooth Outer Orbital Route (MOOR) is the main road infrastructure that connects the development to the wider Maynooth area. The majority of the MOOR is located in Flood Zone C, however it does cross the Ryewater and Blackhole Little Stream. Where the MOOR infrastructure crosses the Ryewater/ Blackhole Little Stream a bridge structure will be provided with the soffit level placed above the 1% AEP and 0.1% AEP flood levels. Figure 5-13 provides the flood extents along the MOOR route.

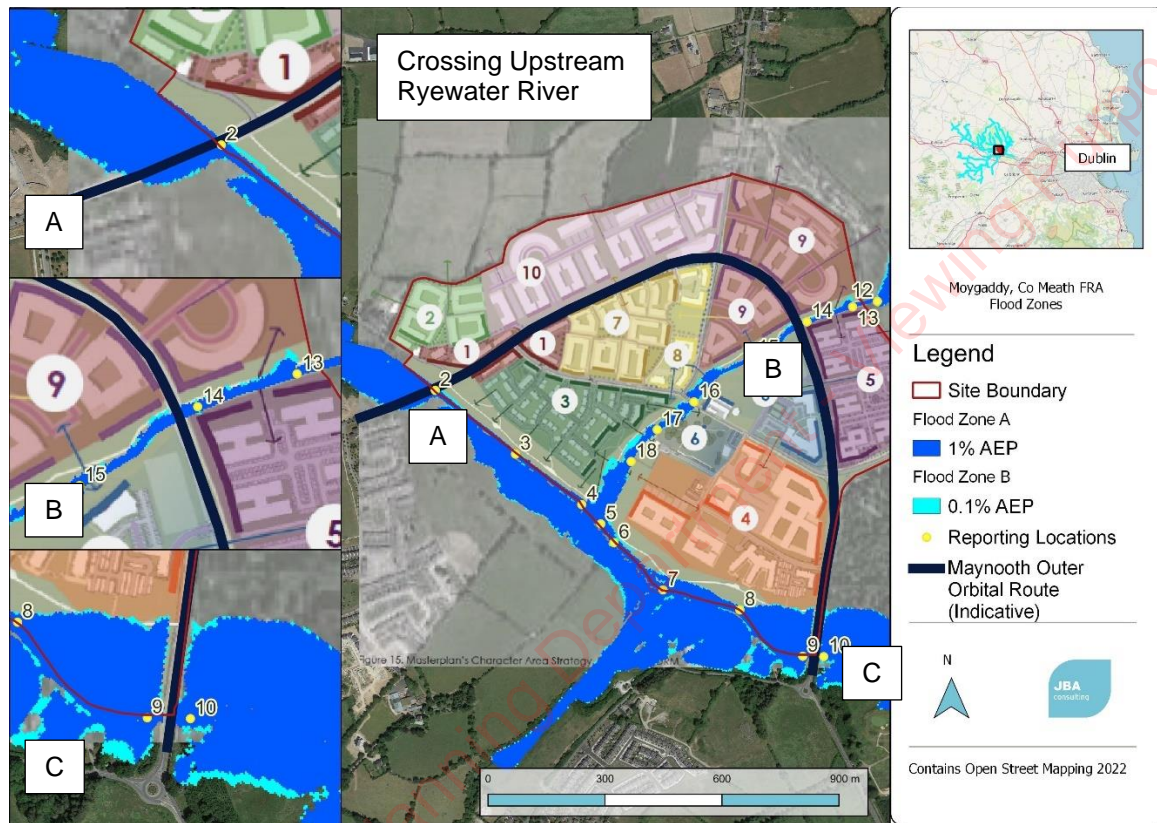


Figure 5-13: MOOR- Flood Zone

5.8 SHD application for 360 Homes, Creche, Scout Den, Public Park & playground

The SHD will consist of 360no Homes, creche, Scout Den, Public Park and Playground, located in zones 3, 6 and 4. The locations are provided in Figure 5-14.

The areas are follows;

- Area 2 - South-West Residential Zone
- Area 3 - Southern Residential Area
- Area 6 - Moygaddy Central - Local Services, Leisure & Tourism
- Area 7 - Central Residential Area and
- Area 8 - Transitional residential Area

Review of Figure 5-14 confirms that development under the SHD areas are all located in Flood Zone C and are not impacted by any of the modelled flood events.

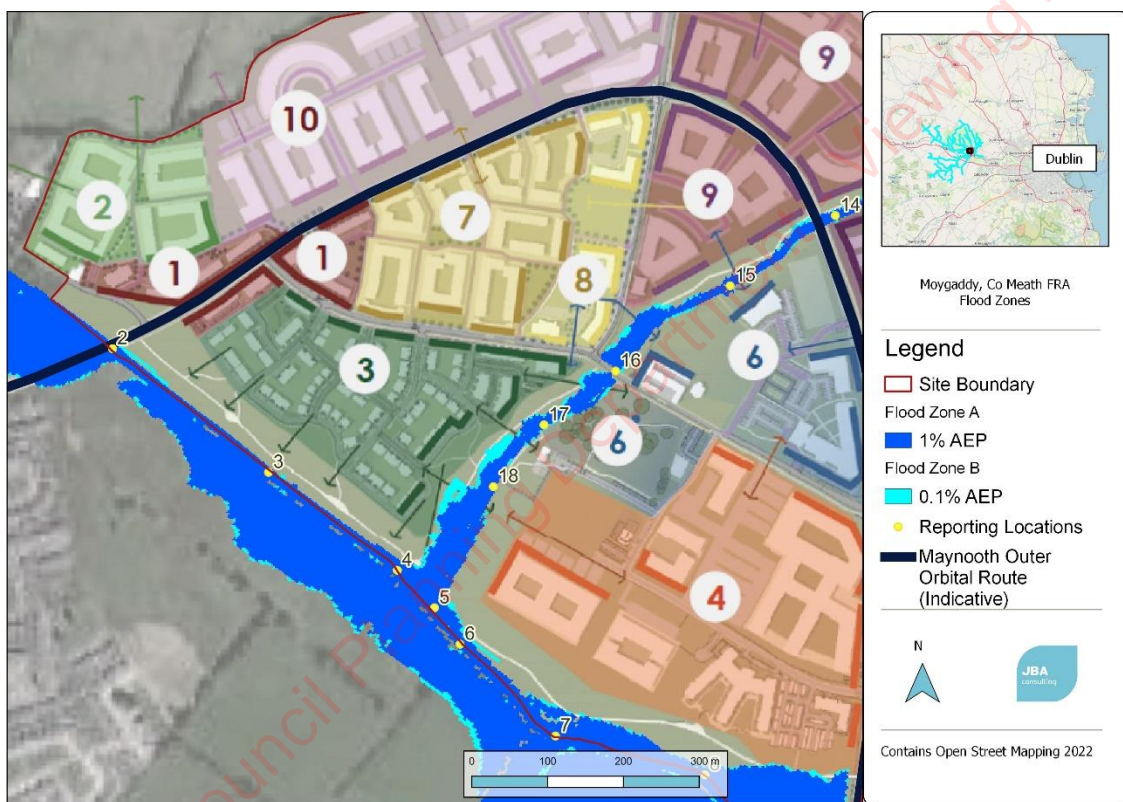


Figure 5-14: SHD Flood Zone

6 Flood Risk Assessment

6.1 Flood Risk

A review of the available historic and predictive flood risk information contained in Section 4 confirms that the majority of the Masterplan site is located in Flood Zone C and it has not been identified as being at risk from flooding during the 0.1% AEP fluvial event. Localised areas of flood extent are in proximity to the Blackhole Little Stream and Ryewater River, however these areas are zoned as high amenity and no development is proposed in these areas save for bridge infrastructure.

The flood extents have been confirmed by the development of a hydraulic model based on up-to-date survey information.

The proposed residential properties, creche, public park & scout den which are subject to a SHD planning application will be located in Flood Zone C, and not at risk of a 0.1% AEP flood event. Further mitigating measures and analyses is undertaken in Section 6.

The proposed bridges will not be impacted by the 1% AEP and 0.1% AEP flood events and will not increase the flood risk elsewhere. A Section 50 assessment for each bridge structure will be prepared following the granting of planning.

6.1.1 Finished Floor Levels (Fluvial / River Flood Risk)

Based on a review of the available and predictive information, all residential development within the masterplan area will be located wholly within Flood Zone C. Therefore, site-specific mitigation measures are not required to manage the ongoing fluvial risk.

For any residential dwelling located in proximity to the Ryewater River or Blackhole Little Stream, the minimum FFL needs to be set 300mm above the 1% AEP climate change (MRFS) flood event.

With reference to Figure 5-3 which provides the monitoring point locations, the minimum FFLs along the Ryewater River and Blackhole Little Stream is provided in Table 6-1, also refer to Appendix D. The provided minimum FFL will also protect against the 0.1% AEP flood event.

Table 6-1: Minimum FFLs (mOD)

Reporting Location	1% AEP MRFS	
1	51.03	51.33
2	50.50	50.8
3	48.63	48.93
4	48.60	48.9
5	56.83	57.13
6	56.34	56.64
7	55.32	55.62
8	53.10	53.4
9	48.34	48.64
10	47.95	48.25
11	46.84	47.14
12	46.39	46.69

6.1.2 Surface Water Drainage Systems (Pluvial / Rainfall Flood Risk)

The existing masterplan site is greenfield in nature. A stormwater system has been designed by OCSC for the purposes of each individual planning application and specific design measures will be included within the proposed development to manage surface water flows. It is recommended that the system is designed in accordance with the Greater Dublin Strategic Drainage Strategy (GSDSDS) guidance document and the Meath County Development Plan 2021-2027 and associated SFRA. This recommends a minimum allowance for climate change of 20% increase in rainfall depths / intensities for the 100-year Mid-Range Future Scenario (MRFS) event. We note that OSCS have acknowledged that these criteria are incorporated into their designs.

6.2 Climate Change

In accordance with the OPW guidelines, it is necessary to assess the risk associated with climate change. The masterplan site has been assessed in accordance with the Mid-Range Future Scenario (MRFS) for 1% AEP. FFL have been set to be a minimum of 300mm above the peak water level reported for the MRFS scenario

6.3 Residual Risk

Residual risks are defined as risks that remain after all risk avoidance, substitution and mitigation measures have been taken. This flood risk assessment identifies the following as the main sources of residual risk to the development proposal:

- Blockage of Bridge structures,
- Failure of the surface water drainage systems (pluvial risk).

As part of the FRA assessment, all proposed and existing bridges that could impact upon the masterplan site will be tested for blockage (66%). For the larger road bridge (Road Bridge 1) a more realistic blockage value of 33% has also been adopted. The purpose is to ensure that any development within the masterplan site will not be impacted during a blockage scenario. The result of the modelling confirms that the provided minimum FFLs in Table 6-1 is sufficient to protect the development from the identified residual risks.

To protect against the potential failure of the stormwater system it is recommended that a threshold of 150mm is provided from the ground floor level to the surrounding hardstanding area.

The climate change assessment for the masterplan site has been based on the assessment outlined in Section 5.1.3. The minimum FFL onsite is based on the 1% AEP MRFS climate change event.

7 Conclusion

JBA Consulting has undertaken a site-specific Flood Risk Assessment (FRA) for the masterplan site located in the townland of Moygaddy, Co Meath. The existing site is greenfield in nature.

A review of the available sources of flooding indicates there are no instances of historic flooding on-site, and the site is at a low risk of fluvial / river flooding.

This FRA has determined that the site is predominantly located within Flood Zone C. Localised areas in proximity to the Blackhole Little Stream and Ryewater River are within Flood Zone A, however as these areas are zoned High Amenity, it is noted that no development is proposed in these areas save for bridge & utility infrastructure. The residential, office, nursing home and primary care development will be located in Flood Zone C., therefore does not require site-specific mitigation measures to manage the risk of fluvial flooding.

Climate change has been assessed for the development for the Mid-Range Future Scenario (MRFS). At a minimum, all FFLs onsite will be placed 300mm above the 1% AEP MRFS climate change and the relevant minimum FFLs have been provided for the various model nodes along the Ryewater River and Blackhole Little Stream.

Residual risks have been assessed for the development such as the potential blockage of existing and proposed bridges that could impact upon the site. The results confirm that the proposed minimum FFLs provided are sufficient to protect against the identified residual risks.

The various proposed bridge structures have been included within the model and the results confirm that they will not be impacted by the modelled 1% AEP and 0.1% AEP flood events, and nor will they increase flood risk elsewhere. A Section 50 application will be submitted for each structure to the OPW following the granting of planning.

This FRA was undertaken in accordance with 'The Planning System and Flood Risk Management - Guidelines for Planning Authorities' (2009), and agrees with the core principles contained within.

Appendices

A Appendix - Understanding Flood Risk

Flood Risk is generally accepted to be a combination of the likelihood (or probability) of flooding and the potential consequences arising. Flood Risk can be expressed in terms of the following relationship:

Flood Risk = Probability of Flooding x Consequences of Flooding

A.1 Probability of Flooding

The likelihood or probability of a flood event (whether tidal or fluvial) is classified by its Annual Exceedance Probability (AEP) or return period years, a 1% AEP flood 1 in 100 chance of occurring in any given year. In this report, flood frequency will primarily be expressed in terms of AEP, which is the inverse of the return period, as shown in the table below and explained above. This can be helpful when presenting results to members of the public who may associate the concept of return period with a regular occurrence rather than an average recurrence interval and is the terminology which will be used throughout this report.

Table: Conversion between return periods and annual exceedance probabilities

Return period (years)	Annual exceedance probability (%)
2	50
10	10
50	2
100	1
200	0.5
1000	0.1

A.2 Flood Zones

Flood Zones are geographical areas illustrating the probability of flooding. For the purpose of the Planning Guidelines, there are 3 types of levels of flood zones, A, B and C.

Zone	Description
Flood Zone A	Where the probability of flooding is highest, greater than 1% (1 in 100) from river flooding or 0.5% (1 in 200) for coastal/ tidal Flooding
Flood Zone B	Moderate probability of flooding, between 1% and 0.1% from rivers and between 0.5% and 0.1% from coastal/ tidal.
Flood Zone C	Lowest probability of flooding, less than 0.1% from both rivers and coastal/ tidal.

It is important to note that the definition of the flood zones is based on an undefended scenario and does not take into account the presence of flood protection structures such as flood walls or embankments. This is to allow for the fact that there is a residual risk of flooding behind the defences will be maintained in perpetuity.



A.3 Consequences of Flooding

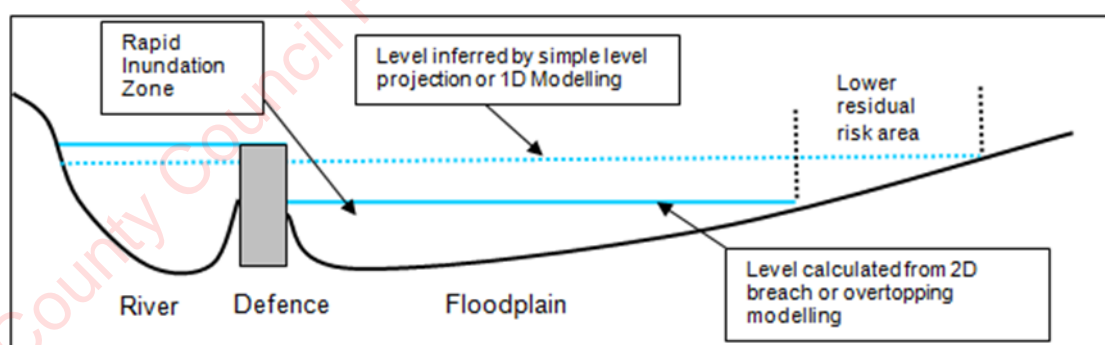
Consequences of flooding depend on the Hazards caused by flooding (depth of water, speed of flow. Rate of onset, duration, wave-action effects, water quality) and the vulnerability of receptors (type of development, nature, e.g. age-structure of the population, presence and reliability of mitigation measures etc.)

The 'Planning System and Flood Risk Management' provides three vulnerability categories, based on type of development, nature, which are detailed in the Guidelines, and are summarised as:

- **Highly vulnerable**, including residential properties, essential infrastructure and emergency service facilities
- **Less vulnerable**, such as retail and commercial and local transport infrastructure, such as changing rooms.
- **Water compatible**, including open space, outdoor recreation and associated essential infrastructure, such as changing rooms.

A.4 Residual Risk

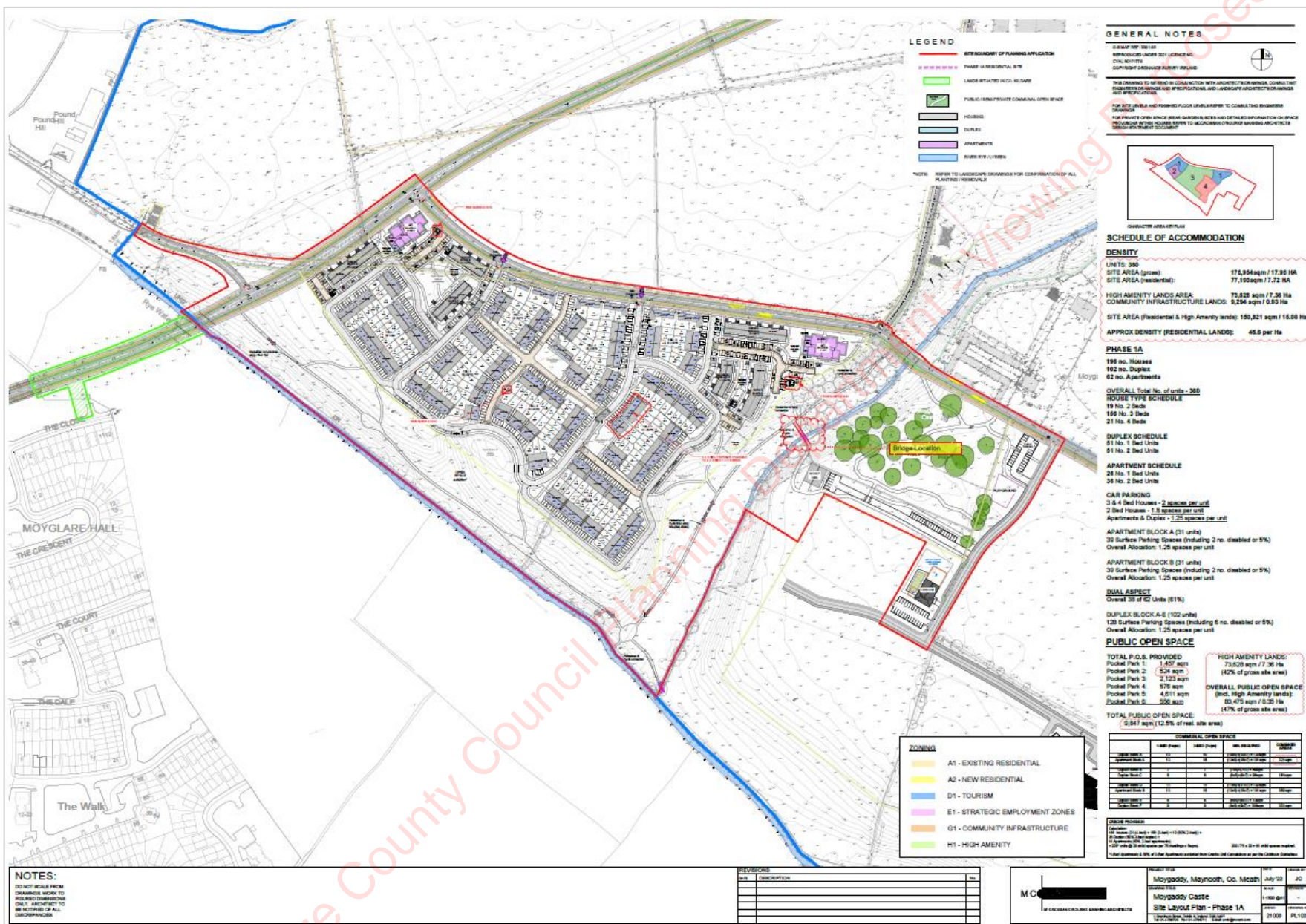
The presence of flood defences, by their very nature, hinder the movement of flood water across the floodplain and prevent flooding unless river levels rise above the defence crest level or a breach occurs. This is known as residual risk:



B Site Layout

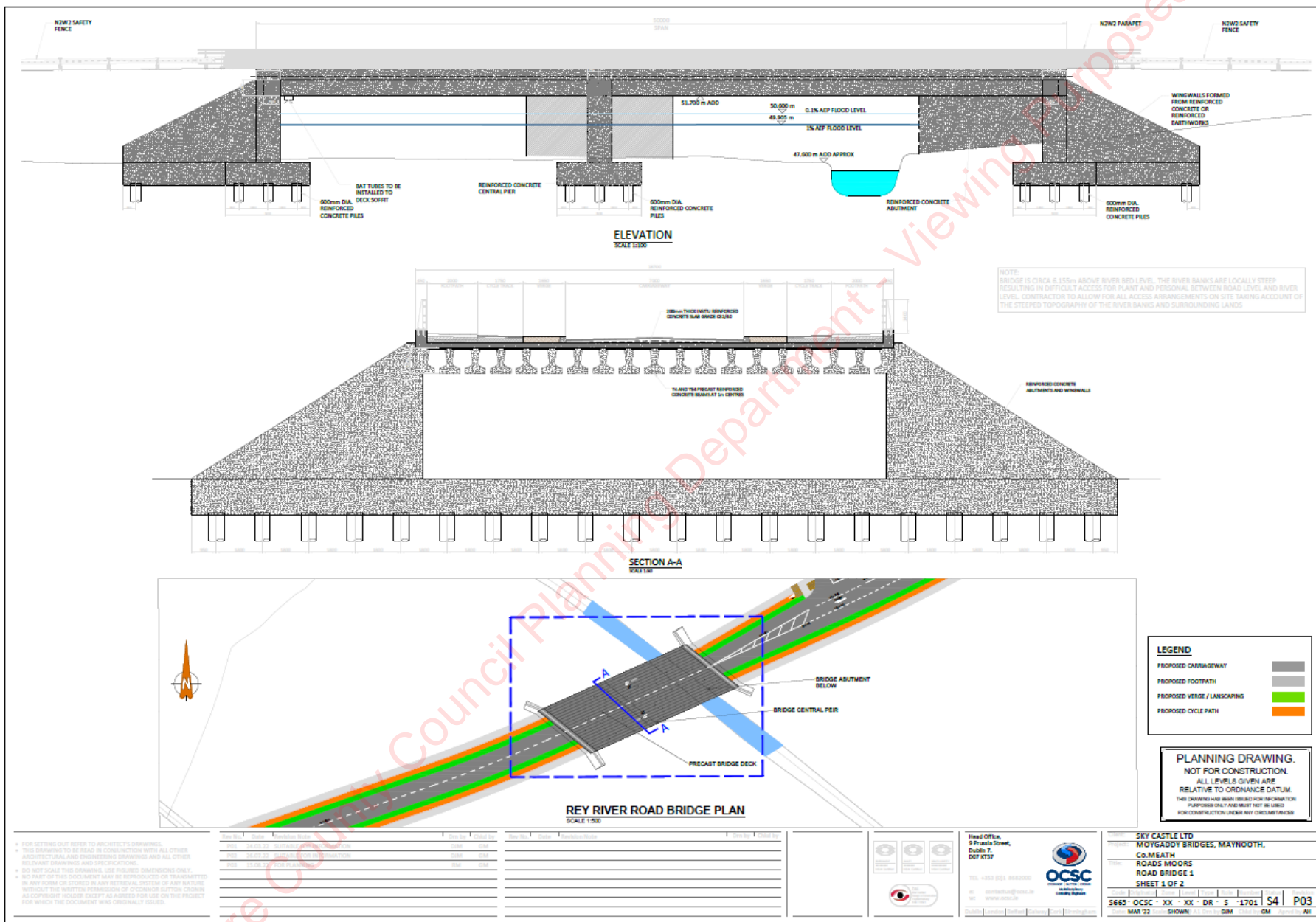
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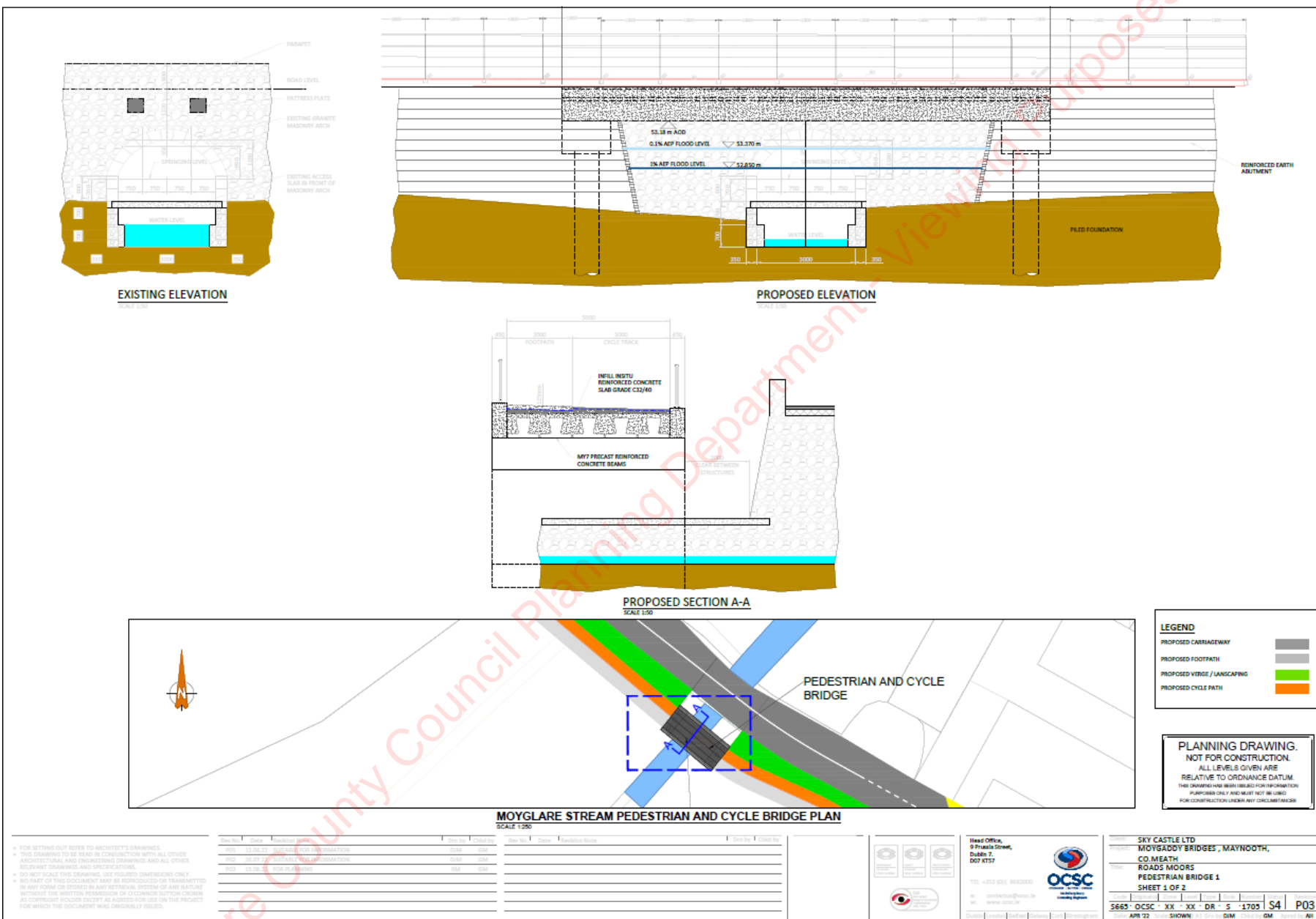




C Bridge Design

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EXISTING ELEVATION

PROPOSED ELEVATION

PROPOSED SECTION A-A
SCALE 1:50

MOYGLARE STREAM PEDESTRIAN AND CYCLE BRIDGE PLAN
SCALE 1:250

LEGEND

PROPOSED CARRIAGEWAY	
PROPOSED FOOTPATH	
PROPOSED VERGE / LANDSCAPING	
PROPOSED CYCLE PATH	

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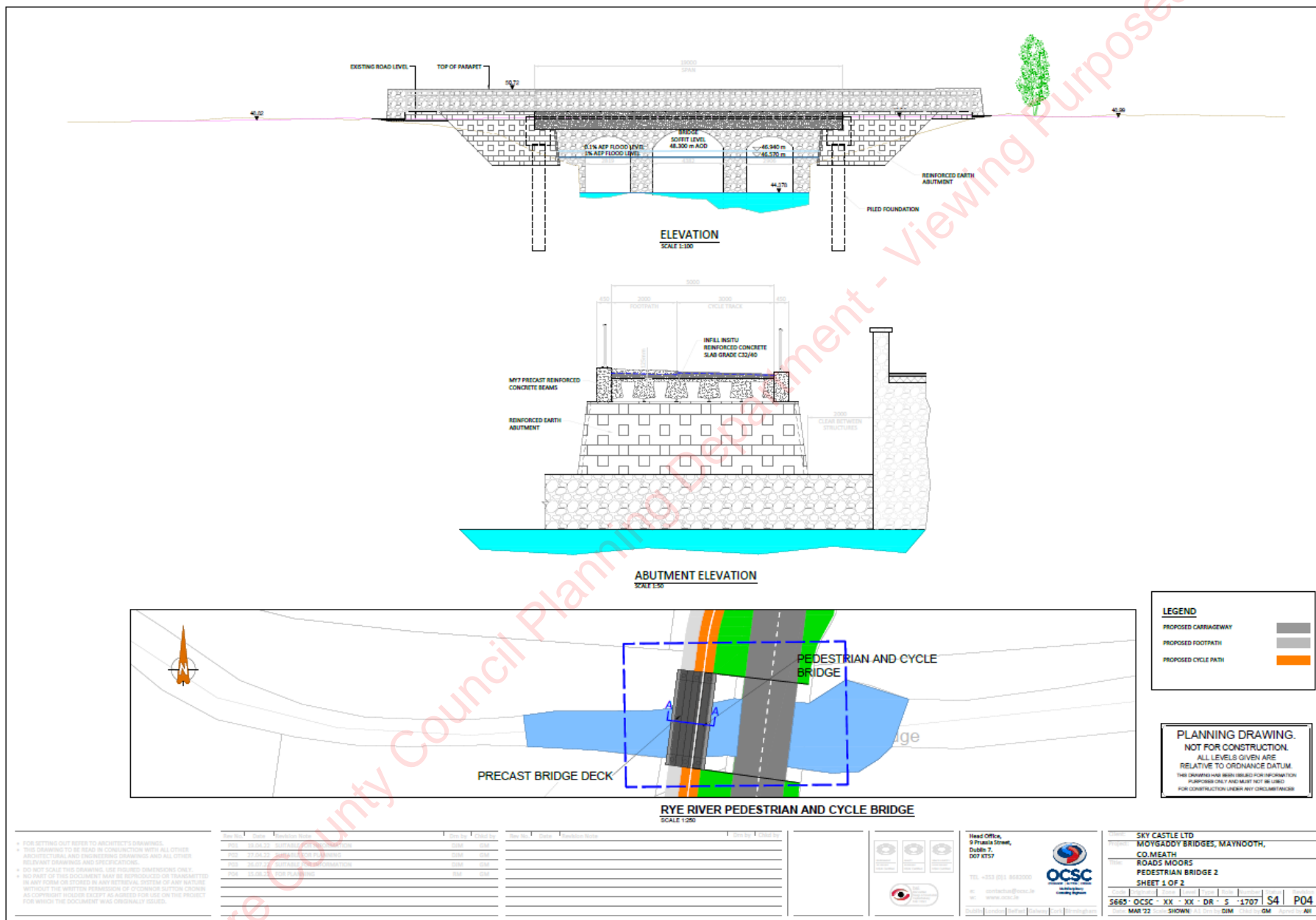
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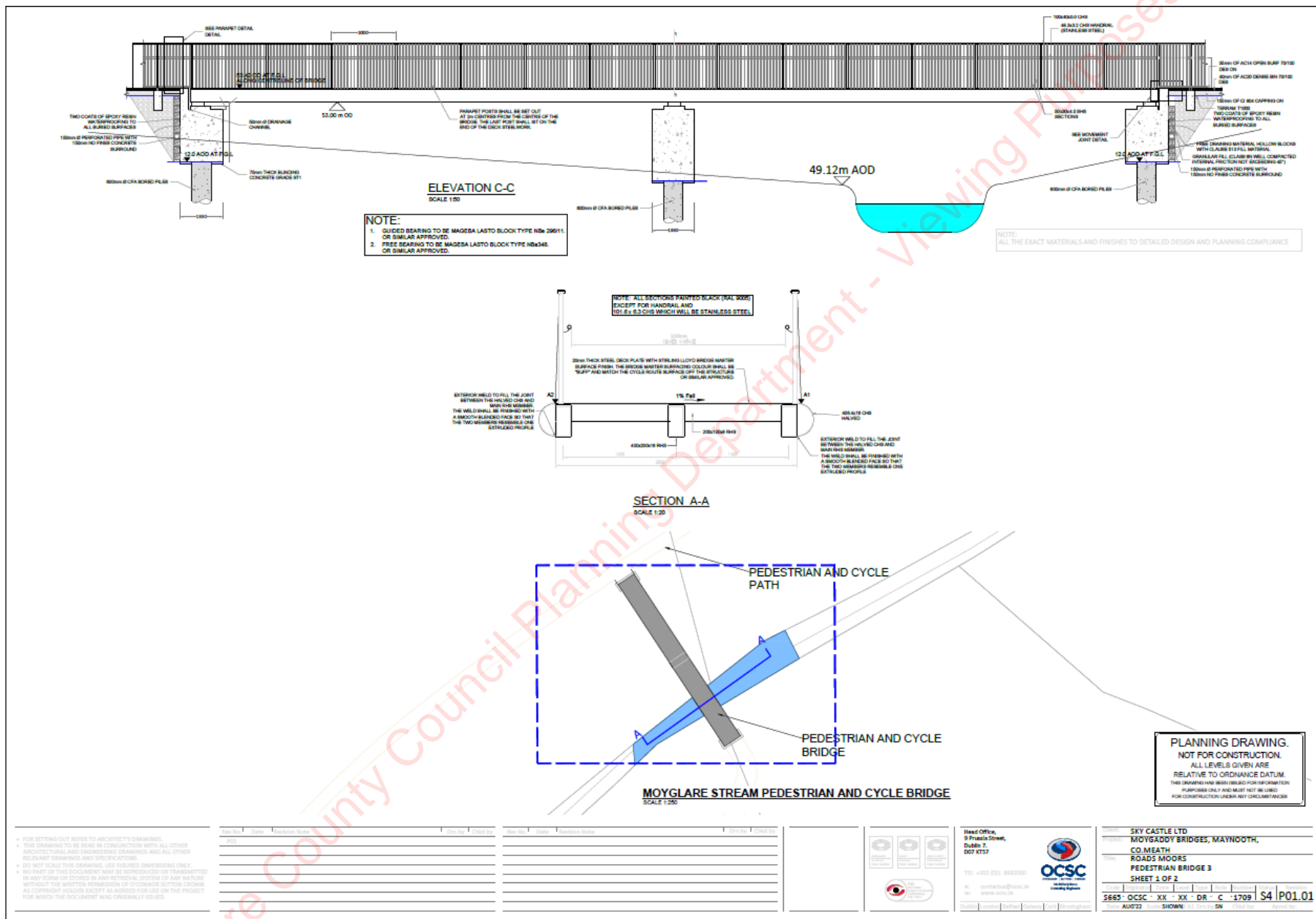
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D Hydraulic Model Results

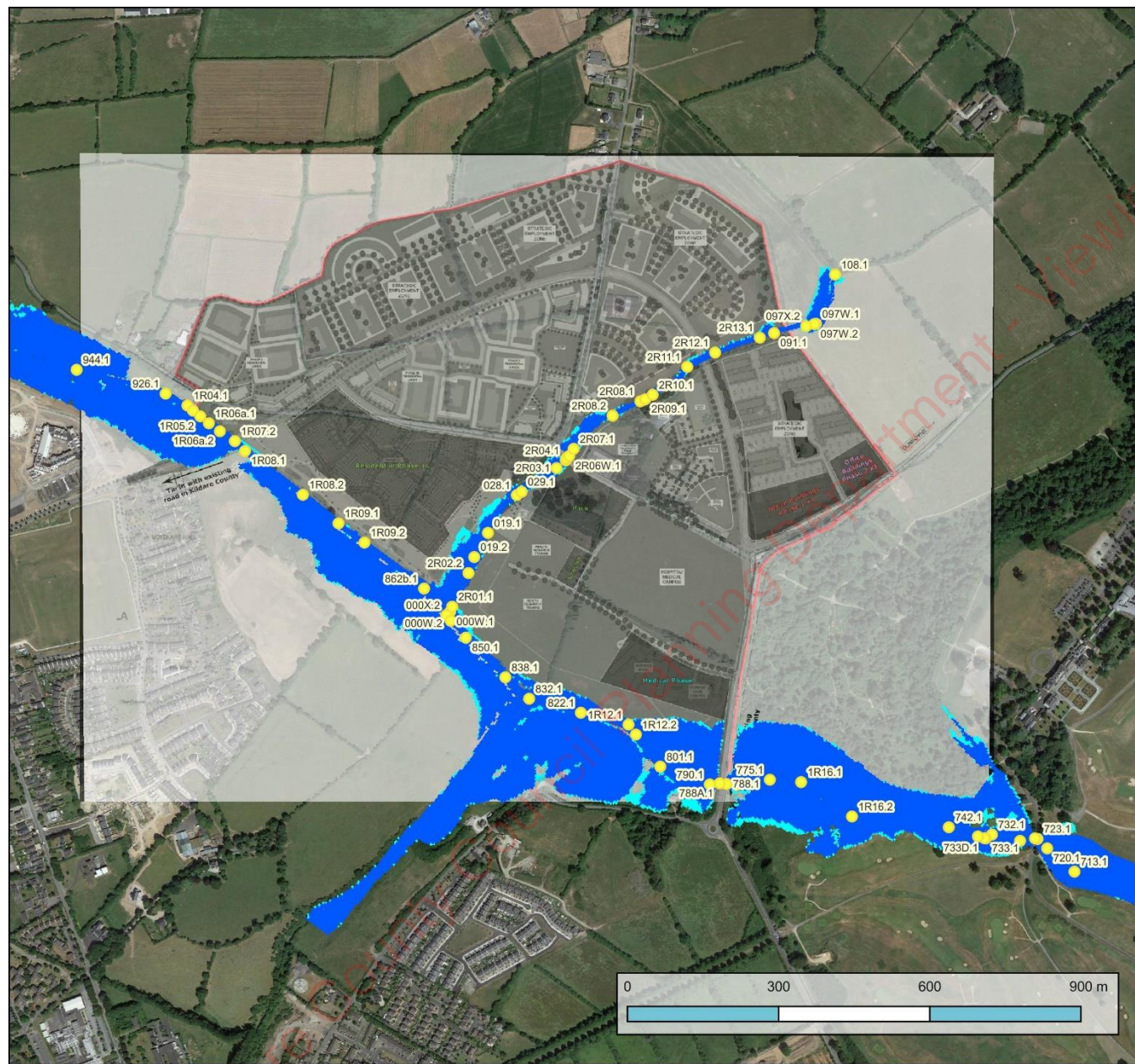
D.1 1D Model Flows

Table A- 1: Modelled Existing Scenario 1D Peak Levels (mOD) from Present Day (Current) events on Ryewater River

Node	1% AEP	0.1% AEP	1% AEP MRFS
862b.1	48.5152	48.6282	48.5815
944.1	50.9766	51.0124	50.9993
926.1	50.5178	50.5798	50.5539
1R04.1	50.4107	50.5111	50.47
1R04.2	50.3814	50.4927	50.4479
1R05.2	50.3564	50.4755	50.4283
1R06a.1	50.3298	50.4533	50.4047
1R06a.2	50.2768	50.4052	50.3548
1R07.2	50.1678	50.3007	50.2487
1R08.1	50.0948	50.2187	50.1701
1R08.2	49.6562	49.7362	49.7036
1R09.1	49.3313	49.3949	49.3681
1R09.2	49.0241	49.063	49.0412
000X.2	48.3987	48.5057	48.471
862a.2	48.3637	48.4859	48.431
850.1	48.1991	48.3551	48.2904
838.1	47.8758	48.0756	47.9978
832.1	47.7711	47.9857	47.904
822.1	47.5025	47.7656	47.6649
1R12.1	47.1217	47.3575	47.2606
1R12.2	46.992	47.2148	47.1204
801.1	46.751	47.0156	46.9024
790.1	46.5862	46.9049	46.7731
788A.1	46.525	46.8323	46.7074
788.1	46.3524	46.5492	46.4657
785.1	46.2398	46.4267	46.35
775.1	45.9914	46.1723	46.097
1R16.1	45.9104	46.1181	46.0309
1R16.2	45.6814	45.9283	45.8257
742.1	45.314	45.5813	45.4728
735.1	45.1852	45.464	45.3478
733D.1	45.4462	45.431	45.3118
733.1	45.4247	45.4295	45.3102
732.1	45.0994	45.3965	45.2742
726.1	44.9494	45.2635	45.1306
723A.1	44.8749	45.1848	45.0538
723.1	44.7445	44.9908	44.8895
720.1	44.7103	44.9516	44.8525
713.1	44.6887	44.9267	44.8291

Table A- 2: Modelled Existing Scenario 1D Peak Levels (mOD) from Present Day (Current events) on Moygaddy Stream

Node	1% AEP	0.1% AEP	1% AEP MRFS
108.1	58.2463	58.3764	58.3247
097W.1	57.691	57.7888	57.7507
097W.2	56.8717	57.0403	56.974
097X.2	56.7292	56.909	56.8345
91.1	56.2464	56.4096	56.338
2R13.1	56.0133	56.2031	56.1248
2R12.1	55.2243	55.3971	55.3247
2R11.1	54.7584	54.9523	54.8727
2R10.1	54.1255	54.2294	54.1837
2R09.1	54.0677	54.1547	54.1251
2R08.1	53.3826	53.5292	53.4443
2R08.2	52.8672	53.4229	53.0742
2R07.1	52.7953	53.4476	53.0198
2R06W.1	52.7823	53.4424	53.0386
2R05.1	0	0	0
2R04.1	51.3359	51.4777	51.4104
2R03.1	51.0603	51.2278	51.1539
29.1	50.3436	50.4805	50.4256
28.1	50.2802	50.4117	50.3589
19.1	49.3925	49.529	49.4734
19.2	48.8728	48.9851	48.9408
2R02.2	48.7254	48.8481	48.803
2R01.1	48.505	48.6139	48.5759
000W.1	48.6324	48.6105	48.6732
000W.2	48.7191	48.6272	48.7213



Moygaddy, Co Meath FRA Flood Zones

Legend

- Site Boundary
- Reporting Locations
- Flood Zone A
- 1% AEP
- Flood Zone B
- 0.1% AEP



Contains Open Street Mapping 2022

E Flood Zones

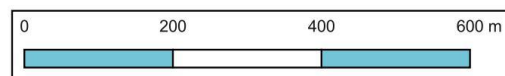
Kildare County Council Planning Department - Viewing Purposes Only



Legend

- Masterplan Extents
- Maynooth Outer Orbital Route (Indicative)
- Flood Zone A
- 1% AEP
- Flood Zone B
- 0.1% AEP

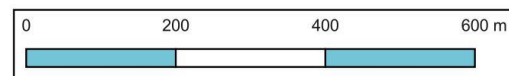
**Moygaddy, Co Meath FRA
Flood Zones**



Contains Google Satellite Imagery
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**Moygaddy, Co Meath FRA
Flood Zone A with Climate
Change**



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APPENDIX 8-2

LAB REPORTS

Kildare County Council Planning Department Viewing Purposes Only

McCarthy Keville & O'Sullivan Ltd
2nd Floor
H91VW84
Tuam Road
Galway
Ireland



Attention : David Naughton
Date : 23rd August, 2021
Your reference : 210414
Our reference : Test Report 21/12143 Batch 1
Location : Moygaddy Mixed Use Scheme
Date samples received : 10th August, 2021
Status : Final Report
Issue : 1

Three samples were received for analysis on 10th August, 2021 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.
All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Hayley Prowse
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: McCarthy Keville & O'Sullivan Ltd
 Reference: 210414
 Location: Moygaddy Mixed Use Scheme
 Contact: David Naughton
 EMT Job No: 21/12143

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
 H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

EMT Sample No.	1-3	4-6	7-9									
Sample ID	SW-1	SW-2	SW-3									
Depth												
COC No / misc												
Containers	H P BOD	H P BOD	H P BOD									
Sample Date	05/08/2021	05/08/2021	05/08/2021									
Sample Type	Surface Water	Surface Water	Surface Water									
Batch Number	1	1	1									
Date of Receipt	10/08/2021	10/08/2021	10/08/2021									
										LOD/LOR	Units	Method No.
Dissolved Phosphorus #	330	48	87							<5	ug/l	TM30/PM14
Chloride #	27.1	24.4	27.6							<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	2.1	3.8	3.1							<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	0.03	<0.02	0.03							<0.02	mg/l	TM38/PM0
Ortho Phosphate as P #	0.20	<0.03	0.04							<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH3 #	0.12	0.14	0.08							<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH4 #	0.13	0.15	0.08							<0.03	mg/l	TM38/PM0
BOD (Settled) #	<1	<1	<1							<1	mg/l	TM58/PM0
Electrical Conductivity @25C #	642	652	645							<2	uS/cm	TM76/PM0
pH #	7.97	8.25	8.30							<0.01	pH units	TM73/PM0
Total Nitrogen	3.5	1.9	1.7							<0.5	mg/l	TM38/TM125/PM0
Total Suspended Solids #	112	<10	<10							<10	mg/l	TM37/PM0

Please see attached notes for all abbreviations and acronyms

Kildare County Council Planning Department - Viewing Purposes Only

EMT Job No.: 21/12143

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Please include all sections of this report if it is reproduced

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

Element Materials Technology

Method Code Appendix

EMT Job No: 21/12143

Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry); WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009; SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified	Yes			
TM37	Modified methods: TSS: USEPA 100.2 (1980), EN612:2000 and APHA SMEWW 2540D:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition. Gravimetric determination of Total Suspended Solids (TSS) and Volatile Suspended Solids (VSS). Sample is filtered through a 1.5um pore size glass fibre filter and the resulting residue is dried and weighed at 105°C for TSS and 550°C for VSS	PM0	No preparation is required.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.	Yes			
TM38/TM125	Total Nitrogen/Organic Nitrogen by calculation	PM0	No preparation is required.				
TM58	APHA SMEWW 5210B:1999 22nd Edition. Comparable with ISO 5815:1989. Measurement of Biochemical Oxygen Demand. When cBOD (Carbonaceous BOD) is requested a nitrification inhibitor is added which prevents the oxidation of reduced forms of nitrogen, such as am	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM76	Modified US EPA method 120.1 (1982). Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			

McCarthy Keville & O'Sullivan Ltd
2nd Floor
H91VW84
Tuam Road
Galway
Ireland



Attention : David Naughton
Date : 21st December, 2021
Your reference : 21041
Our reference : Test Report 21/19583 Batch 1
Location : Moygaddy Mixed Use Scheme
Date samples received : 9th December, 2021
Status : Final Report
Issue : 1

Three samples were received for analysis on 9th December, 2021 of which three were scheduled for analysis. Please find attached our Test Report which should be read with notes at the end of the report and should include all sections if reproduced. Interpretations and opinions are outside the scope of any accreditation, and all results relate only to samples supplied.

All analysis is carried out on as received samples and reported on a dry weight basis unless stated otherwise. Results are not surrogate corrected.

Authorised By:



Bruce Leslie
Project Manager

Please include all sections of this report if it is reproduced

Element Materials Technology

Client Name: McCarthy Keville & O'Sullivan Ltd
Reference: 21041
Location: Moygaddy Mixed Use Scheme
Contact: David Naughton
EMT Job No: 21/19583

Report : Liquid

Liquids/products: V=40ml vial, G=glass bottle, P=plastic bottle
H=H₂SO₄, Z=ZnAc, N=NaOH, HN=HNO₃

Please see attached notes for all abbreviations and acronyms

EMT Sample No.	1-3	4-6	7-9												LOD/LOR	Units	Method No.
Sample ID	SW1	SW2	SW3														
Depth																	
COC No / misc																	
Containers	H P BOD	H P BOD	H P BOD														
Sample Date	08/12/2021	08/12/2021	08/12/2021														
Sample Type	Surface Water	Surface Water	Surface Water														
Batch Number	1	1	1														
Date of Receipt	09/12/2021	09/12/2021	09/12/2021														
Total Phosphorus	702	400	355												<5	ug/l	TM30/PM14
Chloride #	20.4	33.9	30.6												<0.3	mg/l	TM38/PM0
Nitrate as NO3 #	17.8	16.2	15.7												<0.2	mg/l	TM38/PM0
Nitrite as NO2 #	0.08	0.04	0.05												<0.02	mg/l	TM38/PM0
Ortho Phosphate as PO4	0.85	0.30	0.38												<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH3 #	0.39	0.12	0.17												<0.03	mg/l	TM38/PM0
Ammoniacal Nitrogen as NH4 #	0.41	0.13	0.18												<0.03	mg/l	TM38/PM0
BOD (Settled) #	5	3	3												<1	mg/l	TM58/PM0
Electrical Conductivity @25C #	400	534	570												<2	uS/cm	TM76/PM0
pH #	7.82	8.00	8.05												<0.01	pH units	TM73/PM0
Total Suspended Solids #	122	108	75												<10	mg/l	TM37/PM0

Kildare County Council Planning Department - Viewing Purposes Only

Element Materials Technology

Notification of Deviating Samples

Client Name: McCarthy Keville & O'Sullivan Ltd
Reference: 21041
Location: Moygaddy Mixed Use Scheme
Contact: David Naughton

EMT Job No.	Batch	Sample ID	Depth	EMT Sample No.	Analysis	Reason
No deviating sample report results for job 21/19583						

Please note that only samples that are deviating are mentioned in this report. If no samples are listed it is because none were deviating.
Only analyses which are accredited are recorded as deviating if set criteria are not met.

EMT Job No.: 21/19583

SOILS

Please note we are only MCERTS accredited (UK soils only) for sand, loam and clay and any other matrix is outside our scope of accreditation.

Where an MCERTS report has been requested, you will be notified within 48 hours of any samples that have been identified as being outside our MCERTS scope. As validation has been performed on clay, sand and loam, only samples that are predominantly these matrices, or combinations of them will be within our MCERTS scope. If samples are not one of a combination of the above matrices they will not be marked as MCERTS accredited.

It is assumed that you have taken representative samples on site and require analysis on a representative subsample. Stones will generally be included unless we are requested to remove them.

All samples will be discarded one month after the date of reporting, unless we are instructed to the contrary.

If you have not already done so, please send us a purchase order if this is required by your company.

Where appropriate please make sure that our detection limits are suitable for your needs, if they are not, please notify us immediately.

All analysis is reported on a dry weight basis unless stated otherwise. Limits of detection for analyses carried out on as received samples are not moisture content corrected. Results are not surrogate corrected. Samples are dried at 35°C ±5°C unless otherwise stated. Moisture content for CEN Leachate tests are dried at 105°C ±5°C.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

Where a CEN 10:1 ZERO Headspace VOC test has been carried out, a 10:1 ratio of water to wet (as received) soil has been used.

% Asbestos in Asbestos Containing Materials (ACMs) is determined by reference to HSG 264 The Survey Guide - Appendix 2 : ACMs in buildings listed in order of ease of fibre release.

Sufficient amount of sample must be received to carry out the testing specified. Where an insufficient amount of sample has been received the testing may not meet the requirements of our accredited methods, as such accreditation may be removed.

Negative Neutralization Potential (NP) values are obtained when the volume of NaOH (0.1N) titrated (pH 8.3) is greater than the volume of HCl (1N) to reduce the pH of the sample to 2.0 - 2.5. Any negative NP values are corrected to 0.

The calculation of Pyrite content assumes that all oxidisable sulphides present in the sample are pyrite. This may not be the case. The calculation may be an overestimate when other sulphides such as Barite (Barium Sulphate) are present.

WATERS

Please note we are not a UK Drinking Water Inspectorate (DWI) Approved Laboratory .

ISO17025 accreditation applies to surface water and groundwater and usually one other matrix which is analysis specific, any other liquids are outside our scope of accreditation.

As surface waters require different sample preparation to groundwaters the laboratory must be informed of the water type when submitting samples.

Where Mineral Oil or Fats, Oils and Grease is quoted, this refers to Total Aliphatics C10-C40.

DEVIATING SAMPLES

All samples should be submitted to the laboratory in suitable containers with sufficient ice packs to sustain an appropriate temperature for the requested analysis. The temperature of sample receipt is recorded on the confirmation schedules in order that the client can make an informed decision as to whether testing should still be undertaken.

SURROGATES

Surrogate compounds are added during the preparation process to monitor recovery of analytes. However low recovery in soils is often due to peat, clay or other organic rich matrices. For waters this can be due to oxidants, surfactants, organic rich sediments or remediation fluids. Acceptable limits for most organic methods are 70 - 130% and for VOCs are 50 - 150%. When surrogate recoveries are outside the performance criteria but the associated AQC passes this is assumed to be due to matrix effect. Results are not surrogate corrected.

DILUTIONS

A dilution suffix indicates a dilution has been performed and the reported result takes this into account. No further calculation is required.

BLANKS

Where analytes have been found in the blank, the sample will be treated in accordance with our laboratory procedure for dealing with contaminated blanks.

NOTE

Data is only reported if the laboratory is confident that the data is a true reflection of the samples analysed. Data is only reported as accredited when all the requirements of our Quality System have been met. In certain circumstances where all the requirements of the Quality System have not been met, for instance if the associated AQC has failed, the reason is fully investigated and documented. The sample data is then evaluated alongside the other quality control checks performed during analysis to determine its suitability. Following this evaluation, provided the sample results have not been effected, the data is reported but accreditation is removed. It is a UKAS requirement for data not reported as accredited to be considered indicative only, but this does not mean the data is not valid.

Where possible, and if requested, samples will be re-extracted and a revised report issued with accredited results. Please do not hesitate to contact the laboratory if further details are required of the circumstances which have led to the removal of accreditation.

Please include all sections of this report if it is reproduced

REPORTS FROM THE SOUTH AFRICA LABORATORY

Any method number not prefixed with SA has been undertaken in our UK laboratory unless reported as subcontracted.

Measurement Uncertainty

Measurement uncertainty defines the range of values that could reasonably be attributed to the measured quantity. This range of values has not been included within the reported results. Uncertainty expressed as a percentage can be provided upon request.

ABBREVIATIONS and ACRONYMS USED

#	ISO17025 (UKAS Ref No. 4225) accredited - UK.
SA	ISO17025 (SANAS Ref No.T0729) accredited - South Africa
B	Indicates analyte found in associated method blank.
DR	Dilution required.
M	MCERTS accredited.
NA	Not applicable
NAD	No Asbestos Detected.
ND	None Detected (usually refers to VOC and/SVOC TICs).
NDP	No Determination Possible
SS	Calibrated against a single substance
SV	Surrogate recovery outside performance criteria. This may be due to a matrix effect.
W	Results expressed on as received basis.
+	AQC failure, accreditation has been removed from this result, if appropriate, see 'Note' on previous page.
>>	Results above calibration range, the result should be considered the minimum value. The actual result could be significantly higher.
*	Analysis subcontracted to an Element Materials Technology approved laboratory.
AD	Samples are dried at 35°C ±5°C
CO	Suspected carry over
LOD/LOR	Limit of Detection (Limit of Reporting) in line with ISO 17025 and MCERTS
ME	Matrix Effect
NFD	No Fibres Detected
BS	AQC Sample
LB	Blank Sample
N	Client Sample
TB	Trip Blank Sample
OC	Outside Calibration Range

Element Materials Technology

Method Code Appendix

EMT Job No: 21/19583

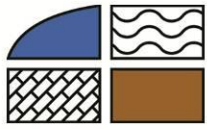
Test Method No.	Description	Prep Method No. (if appropriate)	Description	ISO 17025 (UKAS/S ANAS)	MCERTS (UK soils only)	Analysis done on As Received (AR) or Dried (AD)	Reported on dry weight basis
TM30	Determination of Trace Metals by ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry): WATERS by Modified USEPA Method 200.7, Rev. 4.4, 1994; Modified EPA Method 6010B, Rev.2, Dec 1996; Modified BS EN ISO 11885:2009: SOILS by Modified USEP 6010B, Rev.2, Dec.1996; Modified EPA Method 3050B, Rev.2, Dec.1996	PM14	Preparation of waters and leachates for metals by ICP OES/ICP MS. Samples are filtered for Dissolved metals, and remain unfiltered for Total metals then acidified				
TM37	Modified methods: TSS: USEPA 100.2 (1980), EN612:2000 and APHA SMEWW 2540D:1999 22nd Edition; VSS: USEPA 1684 (Jan 2001), USEPA 160.4 (1971) and SMEWW 2540E:1999 22nd Edition. Gravimetric determination of Total Suspended Solids (TSS) and Volatile Suspended Solids (VSS). Sample is filtered through a 1.5um pore size glass fibre filter and the resulting residue is dried and weighed at 105°C for TSS and 550°C for VSS	PM0	No preparation is required.	Yes			
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.				
TM38	Soluble Ion analysis using Discrete Analyser. Modified US EPA methods: Chloride 325.2 (1978), Sulphate 375.4 (Rev.2 1993), o-Phosphate 365.2 (Rev.2 1993), TON 353.1 (Rev.2 1993), Nitrite 354.1 (1971), Hex Cr 7196A (1992), NH4+ 350.1 (Rev.2 1993) – All anions comparable to BS ISO 15923-1: 2013l	PM0	No preparation is required.	Yes			
TM58	APHA SMEWW 5210B:1999 22nd Edition. Comparable with ISO 5815:1989. Measurement of Biochemical Oxygen Demand. When cBOD (Carbonaceous BOD) is requested a nitrification inhibitor is added which prevents the oxidation of reduced forms of nitrogen, such as am	PM0	No preparation is required.	Yes			
TM73	Modified US EPA methods 150.1 (1982) and 9045D Rev. 4 - 2004) and BS1377-3:1990. Determination of pH by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			
TM76	Modified US EPA method 120.1 (1982). Determination of Specific Conductance by Metrohm automated probe analyser.	PM0	No preparation is required.	Yes			



APPENDIX 8-3

WATER FRAMEWORK DIRECTIVE ASSESSMENT

Kildare County Council Planning Department - Viewing Purposes Only



**HYDRO
ENVIRONMENTAL
SERVICES**

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Received
Kildare County Council
1st 2022

**WATER FRAMEWORK DIRECTIVE ASSESSMENT
PROPOSED MOYGADDY MIXED USE DEVELOPMENT, CO. MEATH**

FINAL REPORT

Prepared for:
SKY CASTLE LTD

Prepared by:
HYDRO-ENVIRONMENTAL SERVICES

DOCUMENT INFORMATION


Document Title:	WATER FRAMEWORK DIRECTIVE ASSESSMENT PROPOSED MIXED USE DEVELOPMENT, MOYGADDY, MAYNOOTH, CO. KILDARE
Issue Date:	30 TH AUGUST 2022
Project Number:	P1615-0
Project Reporting History:	NONE
Current Revision No:	FINAL_REV F0
Author:	MICHAEL GILL CONOR MCGETTIGAN JENNY LAW
Signed:	 <hr/> Michael Gill B.A., B.A.I., M.Sc., MIEI Managing Director – Hydro-Environmental Services
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1. INTRODUCTION

1.1 BACKGROUND

Hydro-Environmental Services (HES) were commissioned by MKO to complete a Water Framework Directive (WFD) Compliance Assessment as an accompanying document for a proposed 'Mixed Use Development' at Moygaddy, Co. Meath.

The 'Proposed Development' comprises a number of components:

- **Site A** – Strategic Employment Zone, which consists of three office buildings, public road widening, and road realignment works along the existing R157 Regional Road and L22143 Local Road, the delivery of a new public access road under the Maynooth Outer Orbital Road (MOOR) scheme, internal access road and associated car parking;
- **Site B** – Healthcare Facilities which includes a nursing home and primary care centre as well public road widening and road realignment works along the existing R157 Regional Road, internal access road and associated car parking, and all associated infrastructure;
- **Site C** – Strategic Housing Development which consists of 360 no. residential homes, a creche facility, scout den, public park and internal access roads, approximately 500m of distributor road, pedestrian and cycle improvements, 2 no. cycle bridges, shared communal and private open space and all associated site development works.
- **Maynooth Outer Orbital Road (MOOR)** which consists of approximately 1.7km of new distributor road, a single span bridge, pedestrian and cycle improvement measures, a pedestrian & cycle bridge, upgrade works to existing road network and all associated utilities.
- **The Kildare Bridge** planning application includes road upgrade works to the existing R157 Regional Road, a proposed pedestrian / cycle bridge adjacent to the existing Kildare Bridge, as well as a proposed wastewater connection to the Maynooth Municipal Wastewater Pumping Station to the southeast of the Proposed Development in County Kildare.
- **The Moyglare Bridge** planning application includes for the provision of an integral single span bridge over the Rye Water River with associated flood plain works and embankments, as well as services and utilities connections.

The 'Proposed Development' consists of six planning applications under the definition of one 'Proposed Development' due to the proximity, timeline and links between the applications. Three planning applications will be submitted to Meath County Council (MCC) (Site A, Site B and MOOR). One planning application will be submitted to An Bord Pleanála (Site C: SHD) as the competent authority. Two planning applications will be submitted to Kildare County Council (KCC) as the proposed development is located on the northern environs of Maynooth town, Co. Kildare, and works are required to connect the Proposed Development to the road network and services and utility infrastructure within Co. Kildare.

The purpose of this WFD assessment is to determine whether specific components or activities associated with the proposed development at Moygaddy, will compromise WFD objectives or result in a deterioration of the status of any waterbodies in the vicinity or downstream of the site. This assessment will provide details of proposed mitigation measures if there is a perceived risk deterioration in the status of any waterbody.

1.2 STATEMENT OF AUTHORITY

Hydro-Environmental Services (HES) are a specialist hydrological, hydrogeological and environmental practice that delivers a range of water and environmental management consultancy services to the private and public sectors across Ireland and Northern Ireland. HES was established in 2005, and our office is located in Dungarvan, County Waterford. We routinely complete impact assessments for hydrology and hydrogeology for a large variety of project types.

This WFD assessment was prepared by Michael Gill, Conor McGettigan and Jenny Law.

Michael Gill (BA, BAI, Dip Geol., MSc, MIEI) is an Environmental Engineer and Hydrogeologist with over 18 years' environmental consultancy experience in Ireland. Michael has completed numerous hydrological and hydrogeological impact assessments for a variety of development types across Ireland. He has substantial experience in surface water drainage design and SUDs design and surface water/groundwater interactions.

Conor McGettigan (BSc, MSc) is a junior Environmental Scientist, holding an M.Sc. in Applied Environmental Science (2020) from University College Dublin. Conor has also completed a B.Sc. in Geology (2016) from University College Dublin. In recent times Conor has assisted in the preparation of hydrological and hydrogeological impact assessments for a variety of developments.

Jenny Law (BSc) is a master's student in Applied Environmental Geoscience. Jenny holds a BSc in Earth and Ocean Science. In recent times Jenny has assisted in the preparation of hydrological and hydrogeological impact assessments for a variety of developments.

1.3 WATER FRAMEWORK DIRECTIVE

The EU Water Framework Directive (2000/60/EC), as amended by Directives 2008/105/EC, 2013/39/EU and 2014/101/EU, was established to ensure the protection of the water environment. The Directive was transposed in Ireland by the European Communities (Water Policy) Regulations 2003 (S.I. No. 722 of 2002).

The Directive requires that all member states protect and improve water quality in all waters, with the aim of achieving good ecological status by 2027 at the latest WFD aims. Any new development must ensure that this fundamental requirement of the Directive is not compromised.

The WFD is implemented through the River Basin Management Plans (RBMP) which comprises a six-yearly cycle of planning, action and review. RBMPs include identifying river basin districts, water bodies, protected areas and any pressures or risks, monitoring and setting environmental objectives. In Ireland the first RBMP covered the period from 2010 to 2015 with the second cycle plan covering the period from 2018 to 2021.

The River Basin Management Plan (2018 - 2021) objectives, which have been integrated into the design of the proposed development, include:

- Ensure full compliance with relevant EU legislation;
- Prevent deterioration and maintain a 'high' status where it already exists;
- Protect, enhance and restore all waters with aim to achieve at least good status by 2021;
- Ensure waters in protected areas meet requirements; and,
- Implement targeted actions and pilot schemes in focused sub-catchments aimed at (1) targeting water bodies close to meeting their objectives and (2) addressing more complex issues that will build knowledge for the third cycle.

Our understanding of these objectives is that surface waters, regardless of whether they have 'Poor' or 'High' status, should be treated the same in terms of the level of protection and mitigation measures employed, i.e. there should be no negative change in status at all.

Kildare County Council Planning Department - Viewing Purposes Only

2. WATERBODY IDENTIFICATION CLASSIFICATION

2.1 INTRODUCTION

This section identifies those surface water and groundwater bodies with potential to be affected by the proposed development and reviews any available WFD information.

2.2 SURFACE WATERBODY IDENTIFICATION

Regionally, the site is located in the Liffey and Dublin Bay surface water catchment within Hydrometric Area 09 of the Eastern River Basin District (www.epa.ie). Locally the site is located predominantly within the Liffey_SC_080 and the Rye Water_030 sub-basin, whilst the very eastern part of the site is located within the Rye water_040 sub-basin. The south-eastern portion of the site at Kildare Bridge, is situated within the Lyreen_SC_010 sub-catchment and the Lyreen_020 WFD river sub-basin.

Sites A, B and C are bounded to the south by the Rye Water River, referred to by the EPA as the Rye Water_030 (IE_EA_09R010400). The Rye Water River travels through the south of the MOOR at two points, one located to the west and one located to the east. The Blackhall Little stream is a tributary of the Rye water, flowing through the centre of the site from north to south. The Blackhall Little stream also crosses the MOOR at two locations, at the northeast and centre of the site. The Rye Water then flows ~8km to the southeast towards Leixlip, where it then feeds into the River Liffey (IE_EA_09L011900). The River Liffey continues east for approximately 18km before discharging into the Liffey Estuary Upper transitional waterbody, which in turn discharges into the Liffey Estuary Lower transitional waterbody and the Dublin Bay coastal waterbody thereafter.

Figure A below highlights those surface waterbodies located downstream of the proposed development at Moygaddy.

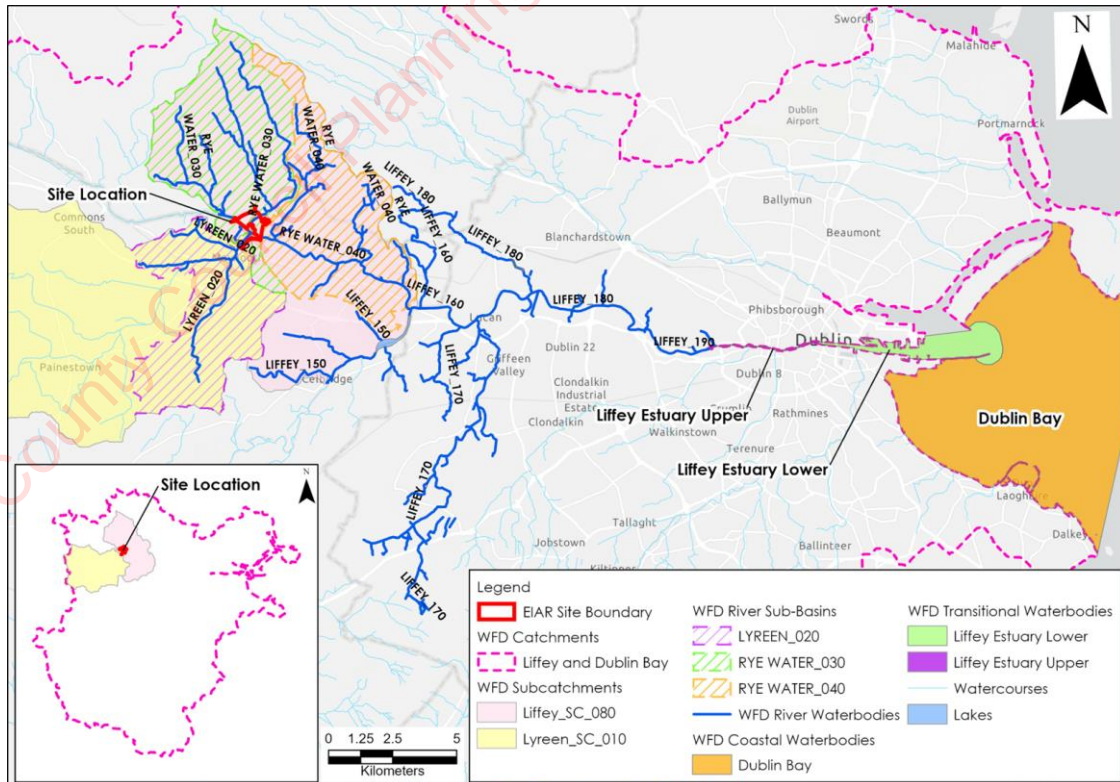


Figure A: Hydrological Setting and Downstream Surface Water Bodies

2.3 SURFACE WATER BODY CLASSIFICATION

A summary of the WFD status and risk result for Surface Water Bodies (SWBs) downstream of the proposed development are shown in **Table A**.

The Rye Water_030 river waterbody (IE_EA_09R010400) that bounds Sites A, B and C to the south and includes the Blackhall Little stream that flows through the centre of the proposed development achieved "Moderate" status in the latest WFD Cycle (2013-2018) (www.catchments.ie). Downstream of the R157 the Rye Water_040 waterbody (IE_EA_09R010600) is of "Poor" status. The Rye Water_040 discharges into the Liffey_150 waterbody (IE_EA_09L011900) at Leixlip which has achieved 'Good' status in the latest round (2013-2018). Downstream the Liffey_160 waterbody (IE_EA_09L012040) achieved 'poor' status, whilst the lower reach of the River Liffey, including the Liffey_170 (IE_EA_09L012100), Liffey_180 (IE_EA_09L012350) and the Liffey_190 (IE_EA_09L012360) waterbodies all achieved a 'Moderate' status in the latest WFD Cycle (2013-2018). Both the Liffey Estuary Upper (IE_EA_090_0400) and Liffey Estuary Lower transitional waterbodies achieved 'Good' status, and so too did the Dublin Bay coastal waterbody (IE_EA_090_0000) under the WFD 2013-2018. This status is based on the ecological, chemical and quantitative status of the SWB.

The 2 no. river waterbodies immediately downstream of the proposed development have been deemed to be "at risk" of failing to meet their WFD objectives. The Rye Water_030 in the vicinity of the site is listed as being under significant pressure from agriculture activities and domestic wastewater. Agriculture, urban runoff and domestic wastewater have been identified as significant pressures on the Rye Water_040 waterbody. The risk status for the downstream Liffey_150, Liffey_160 river waterbodies and the Liffey Estuary Upper and Liffey Estuary Lower transitional waterbodies are under review. The Liffey_150 is listed on (www.catchments.ie) as being under significant pressure from urban run-off, whilst the Liffey_160 is listed as being under significant pressure from agriculture. Urban wastewater is identified as a significant pressure for the Liffey Estuary Upper transitional waterbody. The Liffey_170, Liffey_180 and the Liffey_190 river waterbodies are 'at risk' of failing to meet their WFD objectives. These lower reaches of the Liffey River are listed as being under significant pressures from urban wastewater and urban run-off. The Dublin Bay coastal waterbody is not at risk of failing to meet its WFD objectives.

SWB status for the 2013-2018 WFD cycle are shown on **Figure B**.

Table A: Summary WFD Information for Surface Water Bodies

SWB	Overall Status	Risk Status	Pressures
Rye Water_030	Moderate	At Risk	Agriculture and domestic wastewater
Rye Water_040	Poor	At Risk	Agriculture urban runoff and domestic wastewater
Liffey_150	Good	Under Review	Urban Run-off
Liffey_160	Poor	Under Review	Agriculture
Liffey_170	Moderate	At Risk	Urban Wastewater and Urban Run-off
Liffey_180	Moderate	At Risk	Urban Wastewater and Urban Run-off
Liffey_190	Moderate	At Risk	Urban Wastewater and Urban Run-off
Liffey Estuary Upper	Good	Review	Urban Wastewater
Liffey Estuary Lower	Good	Review	-
Dublin Bay	Good	Not at Risk	-

2.4 GROUNDWATER BODY IDENTIFICATION

According to data from the GSI database the proposed development is underlain by the Dinantian Upper Impure Limestones of the Lucan Formation and are classified by the GSI as being a Locally Important Aquifer – Bedrock which is Moderately Productive only in Local Zones. The site is underlain by the Dublin Groundwater Body (GWB) (IE_EA_G_008) which is characterised by poorly productive bedrock.

2.5 GROUNDWATER BODY CLASSIFICATION

The site is located within the Dublin Groundwater Body (GWB) (IE_EA_G_008). This GWB achieved “Good” status under the WFD 2013-2018 review cycle (**Table B**). This status is based on the quantitative and chemical status of the GWB.

The risk status of the Dublin Groundwater Body (GWB) (IE_EA_G_008) is currently “under review”. No significant pressures have been identified to be impacting on this GWB.

Table B: Summary WFD Information for Groundwater Bodies

GWB	Overall Status	Risk Status	Pressures
Dublin	Good	Under Review	-

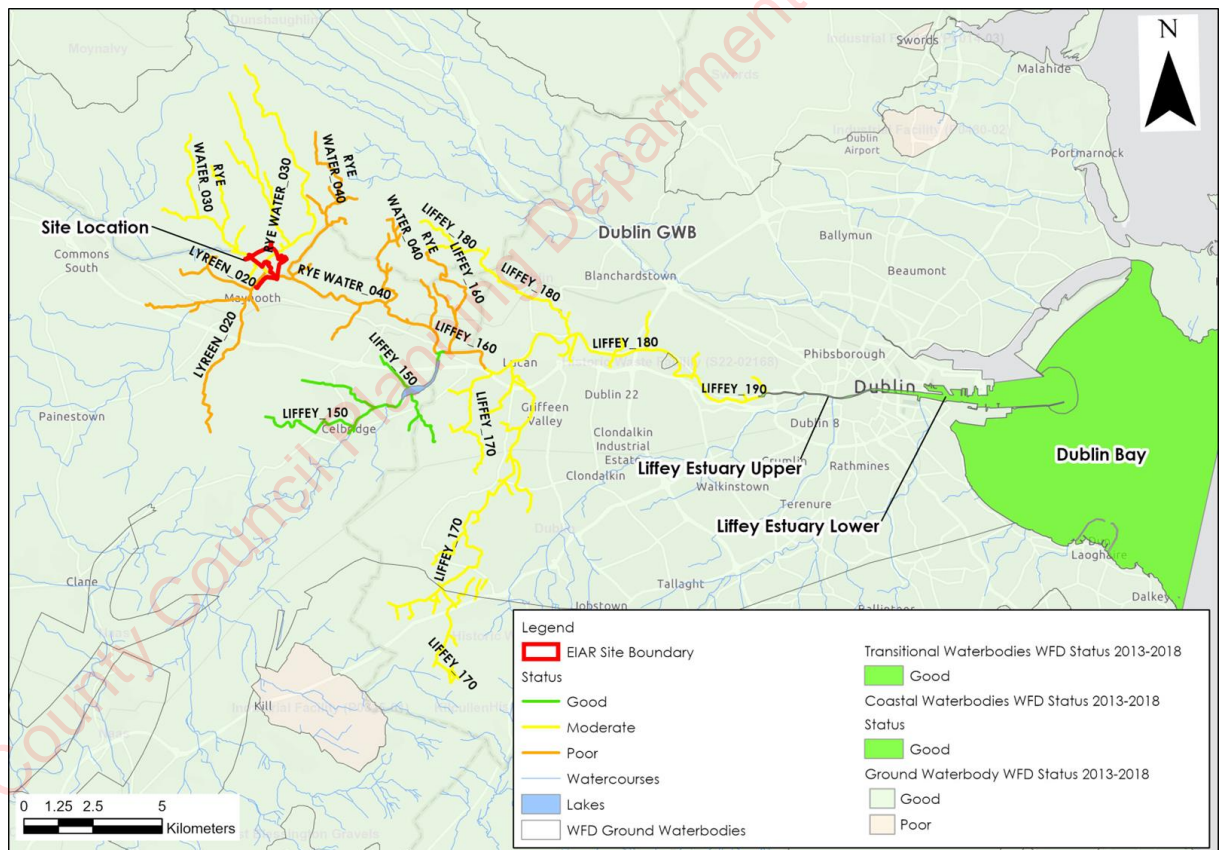


Figure B: WFD Surface Waterbody Status (2013-2018)

3. WFD SCREENING

As discussed in **Section 2**, there are a total of 10 no. surface water bodies that are located in the vicinity or downstream of the proposed development site. In addition, 1 no. groundwater body underlies the proposed development site.

3.1 SURFACE WATER BODIES

As shown in **Figure A** above, there are 7 no. river water bodies, 2 no. transitional waterbody and 1 no. coastal waterbody located in the vicinity or downstream of the proposed development.

With consideration for the construction and operational phases of the proposed development, it is considered that the Rye water _030 and Rye Water _040 that are in the vicinity and downstream of the site are carried through into the WFD Impact Assessment. All sections of the downstream Liffey River (Liffey_150, Liffey_160, Liffey_170, Liffey_180 and Liffey_190) have been screened out due to their distal location from the proposed development site and the large volumes of water within these surface waterbodies. The downstream transitional waterbodies including the Liffey Estuary Upper, Liffey Estuary Lower and the downstream coastal waterbody of Dublin Bay, have been screened out also due to their distal location from the proposed development site, the large volumes of water within these surface waterbodies and the saline nature of these waters.

3.2 GROUNDWATER BODIES

The underlying Dublin groundwater body will be carried through to the WFD Impact Assessment due to its proximal location directly underlying the proposed development site.

3.3 WFD SCREENING SUMMARY

A summary of WFD Screening discussed above is shown in **Table C**.

Table C: Screening of WFD water bodies located within the study area

Type	WFD Classification	Waterbody Name/ID	Inclusion in Assessment	Justification
Surface Waterbody	River	Rye Water_030	Yes	The proposed development is in the vicinity and downstream of the Rye Water_030 River. An assessment is required to consider potential impacts of the proposed development to this SWB.
	River	Rye Water_040	Yes	The proposed development is in the vicinity and downstream of the Rye Water_040 River. An assessment is required to consider potential impacts of the proposed development to this SWB.
	River	Liffey_150	No	The Liffey River waterbody has been screened out due to its distal location from the proposed development site and the large volume of water within the river.
	River	Liffey_160	No	The Liffey River waterbody has been screened out due to its distal location from the proposed development site and the large volume of water within the river.
	River	Liffey_170	No	The Liffey River waterbody has been

				screened out due to its distal location from the proposed development site and the large volume of water within the river.
	River	Liffey_180	No	The Liffey River waterbody has been screened out due to its distal location from the proposed development site and the large volume of water within the river.
	River	Liffey_190	No	The Liffey River waterbody has been screened out due to its distal location from the proposed development site and the large volume of water within the river.
	Transitional	Liffey Estuary Upper	No	The Liffey Estuary Upper transitional waterbody has been screened out due to its distal location from the proposed development site, the large volume of water within the estuary and the saline nature of these waters.
	Transitional	Liffey Estuary Lower	No	The Liffey Estuary Lower transitional waterbody has been screened out due to its distal location from the proposed development site, the large volume of water within the estuary and the saline nature of these waters.
	Coastal	Dublin Bay	No	The Dublin Bay coastal waterbody has been screened out due to its distal location from the proposed development site, the large volumes of water within the surface waterbody and the saline nature of its water.
Groundwater Body	Groundwater	Dublin	Yes	The proposed development site immediately overlies the groundwater body. An assessment is required to consider potential impacts of the proposed development to this GWB.

4. WFD COMPLIANCE ASSESSMENT

4.1 PROPOSED DEVELOPMENT

The proposed development comprises a strategic employment zone (Site A), healthcare facilities (Site B), a strategic housing development (Site C), Maynooth Outer Orbital Road (MOOR) which consists of approximately 1.7km of new distributor road along with upgrade works, a standalone pedestrian and cycle bridge adjacent to the existing Kildare Bridge and the provision of an integral single span bridge (Moyglare Bridge) over the Rye Water River.

Aspects of each of the components of the proposed development include:

The Strategic Employment Zone (**Site A**) will consist of:

- The proposed development comprises 3 no. office blocks and all associated site development works
- The development includes a surface car park which includes 323 no. car parking spaces and 320 no. bicycle car parking spaces.
- Undertaking of road upgrade works on the R157 Dunboyne Road and the construction of a section of the Maynooth Outer Orbital Route and provision of associated pedestrian and cycle infrastructure.
- Vehicular access to the site will be provided via the R157 Dunboyne Road.
- Provision of a new pedestrian & cycle bridge structure at the River Rye Water adjacent to the existing Kildare Bridge.
- Provision of roof mounted solar PV panels on Office Blocks A, B & C.
- Provision of 3 no. ESB Kiosks.
- Provision of bin stores, bike stands, landscaping, boundary treatments and public lighting and all other site development works and services ancillary to the proposed development.

The Healthcare Facilities (**Site B**) will consist of:

- Construction of a new two-storey Nursing Home of 156 no. bedrooms with a Gross Floor Area (GFA) of 8,576m², including vehicular pick up/drop-off area and service road;
- Construction of a new three-storey Primary Care Centre (PCC) with a Gross Floor Area (GFA) of 3,049m²;
- The development includes a shared surface car park providing 161 no. car parking spaces.
- Provision of communal (semi-private) and public open space
- Provision of hard and soft landscaping including amenity equipment, fencing and gates.
- Provision of substation and public lighting.
- Proposed road improvement and realignment works along the R157 Dunboyne Road

The Strategic Housing Development SHD (**Site C**) will consist of:

- Construction of 360 no. residential homes comprising:
 - 196 no houses (including 19 no. 2 beds, 156 no. 3 beds and 21 no. 4 beds).
 - 102 no. duplexes (including 51 no. 1 beds and 51 no. 2 beds) set out in 6 no. blocks.
 - 62 no. apartments (including 26 no. 1 beds and 36 no. 2 beds) set out in 2 no. blocks.
- Provision of a public park and playground with associated 42 no. car parking spaces adjacent to Moygaddy Castle Towerhouse and pedestrian and cyclist links along the Blackhall Little and Rye Water River. The overall public open space (including the High Amenity Lands) equates to 7.98 hectares.

- Provision of private open spaces in the form of balconies and terraces is provided to all individual apartments and duplexes to all elevations.
- Development of a two-storey creche facility (514 sqm), outdoor play area and associated parking of 29 no. spaces.
- 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.
- 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.
- Proposed road improvement and realignment works of the existing L6219 local road
- Provision of 3 no. vehicular and pedestrian accesses from the L6219 local road and an additional vehicular and pedestrian access from the R157 to the Childcare and Scout Den facilities.
- 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.
- Provision of site landscaping, public lighting, bin stores, 3 no. ESB unit substations, site services and all associated site development works.

The planning application for the Maynooth Outer Orbital Road (**MOOR**) will consist of:

- Provision of approximately 1,700m of new distributor road (MOOR Arc) 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.
- Proposed road improvement and realignment works including:
 - 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.
 - Provision of pedestrian and cycle improvement measures along the L6219 and L22143 which abuts the boundary of Moygaddy House which is a Protected Structure (RPS ref 91558).
 - Provision of pedestrian and cycle improvement measures along the R157 which abuts the Carton Demense Wall which is a Protected Structure (RPS Ref 91556).
 - Realignment of a section of the existing L22143 local road and R157, which will entail the demolition of an existing section of the road which extends to circa 3,200 sqm.
 - Provision of a new signalised junction at the realigned junction between the L22143 and R157.
 - Provision of a new signalised junction between the L2214 local road and the MOOR with right-turn lanes on approaches.
 - Reconfiguration of the L2214 section within the MOOR arc to a one-way from north to south with right-turn lanes, where applicable.
 - Reconfiguration of the northbound lane of the L2214 within the arc to a shared facility for use by pedestrians and cyclists.
 - Addition of chicanes on the L6219 and L22143 local road to reduce traffic flow and encourage utilisation of the MOOR.
- Provision of site landscaping, public lighting, site services and all associated site development works.

The planning application for the **Kildare Bridge** will consist of:

- Provision of a new bridge structure comprising the following:
 - a pedestrian and cycle bridge structure to be erected adjacent to the upstream/western side of the existing Kildare Bridge, with a 2m clearance, with the infrastructure tying into new infrastructure in Co. Meath.
 - This bridge will be a standalone, independent structure that will also support new water main assets

- New wastewater rising mains to be installed underground adjacent the bridge structure, to the west.
- New walkways and cycle track will tie-in with new infrastructure to be constructed by Cairn Homes and their Agents in County Kildare.
- Provision of site landscaping, public lighting, site services and all associated site development works.

The planning application for the **Moyglare Bridge** will consist of:

- Provision of approximately 200m of new portion of distributor road comprising of 7.0m carriageway with footpaths, cycle tracks and grass verges. All associated utilities and public lighting including storm water drainage with SuDS treatment and attenuation. This new road section with pedestrian and cycle infrastructure will tie in with existing infrastructure which provides access to the Maynooth Community College and Moyglare Hall Estate.
- Provision of a new bridge structure comprising the following:
 - an integral 50m 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.
 - The bridge will include pedestrian and cycle facilities
 - Extension of the water main assets to serve new developments in Maynooth Environs
- Provision of site landscaping, public lighting, site services and all associated site development works.

It is proposed that surface water within Sites A, B and C (from roads, roofs and hardstanding areas) will drain via gravity to hydrocarbon interceptors, and infiltration area/attenuation storage areas. The main Site A, Site B and Site C attenuation systems will comprise underground poly-tunnel systems, to be located within the Proposed Development's green spaces in Site A and within the shared car park area of Site B and within the public open spaces in Site C with adequate drainage to maintain functionality. Various other SuDS (sustainable drainage systems) have been incorporated into the surface water drainage design including permeable pavements, swales, hydrocarbon interceptors, rainwater harvesting systems, and downstream attenuation/infiltration.

A proposed new connection to one of the existing watermains local to the site will be made for the Proposed Development. There is a 200mm watermain just south from the Kildare bridge, south of the Proposed Development. An extension from the existing 200mm watermain to be provided along the MOOR road, to the connection point at the site boundaries of Site A & Site B. It is proposed to provide an extension to the existing 200mm watermain at Moyglare Close, to serve Site C. The Proposed Development will be subject to a New Connection Agreement with Irish Water, with all details in accordance with their requirements.

It is proposed to provide a new underground pumping station constructed to IW standards and specifications to the west of the proposed nursing home building at Site B within the Proposed Development. The Proposed Development (Both Site A to the north and Site B to the east and Site C to the west of the proposed pumping station) will drain by gravity to the Pumping Station where it will then be pumped to the existing Irish Water network along the L1013 Local Road in County Kildare, approximately 1km south of the proposed pumping station. The foul sewers are sealed and there will be no discharge of wastewater to ground within the Proposed Development. Wastewater will be pumped from the Proposed Development to the Maynooth pumping station, and onwards from Maynooth pumping station to the Leixlip Wastewater Treatment Plant.

The proposed development works include works in close proximity to waterbodies. There are a number of potential adverse effects to both surface and groundwater.

The primary risks of degradation of surface water bodies include:

- Changes in surface runoff flow volumes and flow patterns;
- Entrainment of suspended solids in surface waters; and,
- Chemical pollution of surface waters by oil and or fuels.

The primary risks of degradation of groundwaters include:

- Chemical pollution of groundwaters by oils and fuels; and,
- Changes in local groundwater flow patterns.

4.2 POTENTIAL EFFECTS

4.2.1 Construction Phase (Unmitigated)

4.2.1.1 Potential Surface Water Quality Impacts from Earthworks

Construction phase activities including site levelling and excavations for building foundations, and attenuation tanks will require earthworks resulting in the removal of vegetation cover where present and excavation of soil and subsoils. The main risk will be from surface water runoff from bare soil and spoil storage areas during construction works.

These activities can result in the release of suspended solids in surface water runoff and could result in an increase in the suspended sediment load, resulting in increased turbidity. This could affect the water quality and fish stocks of downstream water bodies such as the River Rye Water.

Estimated flow volumes at the EPA gauging station on the Rye Water River at Annes BR (Station Code: 09048) and on the Rye Water at Leixlip (Station Code: 09001) highlight the increase in flow volumes downstream. The EPA estimate that 95% of flows in the Rye Water River, approximately 500m upstream from the proposed development equal or exceed 0.060m³/s while in the Rye Water at Maynooth, 95% of flows equal or exceed 0.133m³/s at Leixlip. Therefore, there is a significant increase in flow volumes from the Rye Water_030 River in the vicinity of the proposed development site to the Rye Water_040 River downstream.

These contaminants have the potential to cause a deterioration in the overall status of the Rye Water_030 and could result in the prevention of the Rye water_030 SWB from achieving 'Good' status in the future, due to its proximal location to the proposed development. Further downstream the status of the Rye Water_040 river waterbody is unlikely to be impacted even in an unmitigated scenario due to the significant increase in flow volumes between the Rye Water_030 and Rye Water_040 Rivers.

A summary of potential status change to SWBs arising from surface water quality impacts from earthworks during the construction phase of the proposed development in the unmitigated scenario are outlined in **Table D**.

Table D: Surface Water Quality Impacts during Construction Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Potential Status Change
Rye Water_030	IE_EA_09R010400	Moderate	Poor
Rye Water_040	IE_EA_09R010600	Poor	Poor

4.2.1.2 Groundwater Quality Impacts

Accidental spillage during refuelling of construction plant with petroleum hydrocarbons is a significant pollution risk to groundwater. The accumulation of small spills of fuels and lubricants

during routine plant use can also be a pollution risk. Chemicals such as paints and detergents also pose a threat to the groundwater environment. Potential accidental wastewater discharges from temporary on-site welfare facilities have the potential to impact on groundwater quality. Runoff from concrete works can impact on surface water and groundwater quality.

These sources of contamination have the potential to impact on groundwater quality in the underlying groundwater bodies.

A summary of potential status change to the GWB arising from potential groundwater quality impacts during the construction phase of the proposed development in the unmitigated scenario are outlined in **Table E**.

Table E: Groundwater Quality Impacts during Construction Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Change
Dublin	IE_EA_G_008	Good	Moderate

4.2.2 Operational Phase (Unmitigated)

4.2.2.1 Reduced Groundwater Flows

Without appropriate mitigation replacement of the existing greenfield surfaces with impermeable hardstanding surfaces can affect and redirect rainfall recharge to the groundwater flow system at the development site, and as a result can alter local groundwater flow patterns. This may have an adverse impact on the quantitative status of the Dublin GWB.

A summary of potential status change to GWBs arising from reduced groundwater flows during the operation stage of the proposed development in the unmitigated scenario are outlined in **Table F**.

Table F: Potential Impact on Groundwater Flows during Operational Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Change
Dublin	IE_EA_G_008	Good	Moderate

4.2.2.2 Groundwater Quality Impacts

Surface water runoff from roads and car parking areas can potentially contain elevated levels of contaminants such as hydrocarbons and suspended solids. These could alter pH or nutrient concentrations in groundwater. The use of fertilizers (organic and inorganic, which can increase nitrate and phosphate concentrations in groundwater) and pesticides could also impact on groundwater quality. These contaminants have the potential to adversely impact local groundwater quality in the underlying aquifers.

A summary of potential status change to the Dublin GWB arising from groundwater quality impacts during the operation stage of the proposed development in the unmitigated scenario are outlined in **Table G**.

Table G: Groundwater Quality Impacts during Operational Phase (Unmitigated)

GWB	WFD Code	Current Status	Assessed Change
Dublin	IE_EA_G_008	Good	Moderate

4.2.2.3 Surface Water Quality Impacts

Surface water runoff from roads and car parking areas can potentially contain elevated levels of contaminants such as hydrocarbons and suspended solids. These could alter pH or nutrient concentrations in surface water. The use of fertilizers (organic and inorganic, which can increase nitrate and phosphate concentrations in and surface water). These contaminants have the potential to cause a deterioration in the overall status and could result in the prevention of the Rye Water_030 SWB from achieving 'Good' status in the future, due to its proximal location to the proposed development. Further downstream the status of the Rye Water_040 river waterbody is less at risk.

A summary of potential status change to SWBs arising from surface water quality impacts during the operation stage of the proposed development in the unmitigated scenario are outlined in **Table H**.

Table H: Surface Water Quality Impacts during Operational Phase (Unmitigated)

SWB	WFD Code	Current Status	Assessed Change
Rye Water_030	IE_EA_09R010400	Moderate	Poor
Rye Water_040	IE_EA_09R010600	Poor	Poor

4.3 MITIGATION MEASURES

In order to mitigate against the potential adverse effects on surface and groundwater quality, quantity and flow patterns, mitigation measures will be implemented during the construction and operational phases of the proposed development. These are outlined below.

4.3.1 Construction Phase

4.3.1.1 Mitigation Measures for Surface water Quality

Management of surface water runoff and subsequent treatment prior to release off-site will be undertaken during construction work as follows:

- Silt fencing will be constructed around the construction footprint in order to create a defined perimeter for the proposed works, leaving a natural vegetation buffer between the construction footprint (other than operational surface water outfall installations which are described below) and surface water receptors and associated riparian habitats.
- A silt fence will also be attached to solid boundary fencing where it is in place and where there is a surface water receptor. This will protect the stream from any potential sediment laden surface water run-off generated during construction activities.
- The silt fence will comprise a geotextile membrane that will be buried beneath the ground to filter any run-off that may occur as a result of the proposed works. The silt

fence will be monitored throughout the proposed works and will remain in place after the works are completed and until the exposed earth has re-vegetated.

- As construction advances there may be a requirement to collect and treat surface water within the site. This will be completed using perimeter swales at low points around the construction areas, and if required water will be pumped from the swales into sediment bags prior to overland discharge allowing water to percolate naturally to ground;
- Discharge onto ground at a distance of over 30m from nearby watercourses (Rye Water River and Blackhall Little Stream) will be via a silt bag which will filter any remaining sediment from the pumped water. The entire discharge area from silt bags will be enclosed by a perimeter of double silt fencing;
- A suitably sized detention basin or settlement area will be installed at the lowest point before discharge to ground where excess run-off must leave the site. Silt curtains or earth berms will be used to channel run-off to locations where it can be controlled. These may take the form of an open detention area or, where the need arises, a portable skip/s, or similar, where inflow passes through straw bales, gravel etc.
- Any proposed discharge area will avoid potential surface water ponding areas, and will only be located where suitable subsoils are present;
- Daily monitoring and inspections of site drainage during construction will be completed;
- No instream works will take place outside the period July 1st – September 31st in line with Inland Fisheries Ireland (2016) Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters.
- All guidance / mitigation measures proposed by the OPW or the Inland Fisheries Ireland is incorporated into the design of the proposed works.
- Surface water outfalls will be constructed in accordance with the measures described in Section 4.3.1.3 below and subject to agreement with IFI.
- Good construction practices such wheel washers and dust suppression on site roads, and regular plant maintenance, which will be implemented, will ensure minimal risk. The Construction Industry Research and Information Association (CIRIA) provide guidance on the control and management of water pollution from construction sites ('Control of Water Pollution from Construction Sites, guidance for consultants and contractors', CIRIA, 2001), which provides information on these issues. This will ensure that surface water arising during the course of construction activities will contain minimum sediment.
- Preventative measures during construction have been incorporated into the Construction and Environmental Management Plan, which will be updated upon grant of permission and to provide any additional measures required pursuant to planning conditions and agreements with the planning authority.
- There will be no direct discharge to any water body, and therefore no risk of hydraulic loading or contamination will occur;
- The MOOR stream crossing upgrade works, the Moyglare Bridge and the Kildare Bridge Works will all require a Section 50 application (Arterial Drainage Act, 1945). The river/stream crossings will be designed in accordance with OPW guidelines/requirements on applying for a Section 50 consent, where considered necessary by the designer.

Construction phase activities at Kildare Bridge include directional drilling which will require earthworks resulting in removal of vegetation cover and excavation of any minor local pockets of organic soil/subsoils, and bedrock. The main risk from directional drilling will be from frac-out, therefore the following mitigation measures will be followed:

- For directional drilling the area around the bentonite batching, pumping and recycling plant will be bunded using terram (as it will clog) and sandbags in order to contain any spillages.
- Drilling fluid returns will be contained within a sealed tank / sump to prevent migration from the works area;

- Spills of drilling fluid will be clean up immediately and stored in an adequately sized skip before been taken off-site;
- The drilling fluid/bentonite will be non-toxic and naturally biodegradable (i.e., Clear Bore Drilling Fluid or similar will be used);
- The drilling process / pressure will be constantly monitored to detect any possible leaks or breakouts into the surrounding geology or local watercourse;
- This will be gauged by observation and by monitoring the pumping rates and pressures. If any signs of breakout occur then drilling will be immediately stopped;
- Any frac-out material will be contained and removed off-site;

Release of effluent from on-site wastewater systems during the construction phase has the potential to impact on groundwater and surface waters. The proposed mitigation measures relating to wastewater effluent include:

- A self-contained port-a-loo with an integrated waste holding tank will be used at the site compounds, maintained by the providing contractor, and removed from site on completion of the construction works; and,
- No wastewater will be discharged on-site during either the construction or operational phase.

4.3.1.2 Mitigation Measures to Protect Groundwater Quality

The potential pollution of groundwater during the construction phase will be mitigated by the provision of appropriate controls and working methods. These include best practice methods for storage and handling of fuels and chemicals and include:

- All plant and machinery will be serviced before being mobilised to site;
- No plant maintenance will be completed on site, any broken down plant will be removed from site to be fixed;
- Refuelling will be completed in a controlled manner using drip trays at all times;
- Mobile bowsers, tanks and drums will be stored in secure, impermeable storage areas away from open water;
- Fuel containers will be stored within a secondary containment system, e.g. bunds for static tanks or a drip tray for mobile stores;
- Containers and bunding for storage of hydrocarbons and other chemicals will have a holding capacity of 110% of the volume to be stored;
- Ancillary equipment such as hoses and pipes will be contained within the bund;
- Taps, nozzles or valves will be fitted with a lock system;
- Fuel and chemical stores including tanks and drums will be regularly inspected for leaks and signs of damage;
- Drip-trays will be used for fixed or mobile plant such as pumps and generators in order to retain oil leaks and spills;
- Only designated trained operators will be authorised to refuel plant on site;
- Procedures and contingency plans will be set up to deal with emergency accidents or spills; and,
- An emergency spill kit with oil boom, absorbers etc. will be kept on-site for use in the event of an accidental spill. A specific team of staff will be trained in the use of spill containment.

Highest standards of site management will be maintained, and utmost care and vigilance followed to prevent accidental contamination or unnecessary disturbance to the site and surrounding environment during construction. A suitably qualified individual will be given the task of overseeing the pollution prevention measures agreed for the site to ensure that they are operating safely and effectively as well as having responsibility for the implementation of Emergency Procedures for spill control measures.

The proposed mitigation measures relating to concrete include:

- No batching of wet-cement products will occur on site. Ready-mixed supply of wet concrete products and where possible, emplacement of pre-cast elements, will take place.
- No washing out of any plant used in concrete transport or concreting operations will be allowed on-site;
- Where possible pre-cast elements for culverts and concrete works will be used.
- Where concrete is delivered on site, only the chute will be cleaned, using the smallest volume of water practicable. No discharge of cement contaminated waters to the construction phase drainage system or directly to any artificial drain or watercourse will be allowed. Chute cleaning water will be undertaken at lined cement washout ponds.
- Weather forecasting will be used to plan dry days for pouring concrete.
- The pour site will be kept free of standing water and plastic covers will be ready in case of sudden rainfall event.

4.3.1.3 Mitigation Measures to Protect against Morphological Changes to Surface Water Courses & Drainage Patterns

Diversion, culverting and bridge crossing of surface watercourses can result in morphological changes, changes to drainage patterns and alteration of aquatic habitats. Construction of structures over water courses has the potential to significantly interfere with water quality and flows during the construction phase. Mitigation by design is the key factor in minimising the potential for effects on water course morphology.

The proposed mitigation measures relating to morphological changes include:

- The proposed design for water course crossings and culverts, which minimises interactions with water courses, ensures that there will be no perceptible effects on the morphology of those watercourses.
- Prior to the outset of these works, small defined works areas will be fenced off at the location of the storm water outfall (between the main construction site and both water courses). Silt fences will be attached to these fences. The silt fence will provide a solid barrier between the proposed pipelaying works and the Rye Water River and Blackhall Little Stream.
- The necessary pipelaying works will be undertaken within this defined area.
- Following the installation of the pipework and reinstatement of the ground, the small section of the silt fence that protects the Rye Water River/Blackhall Little Stream will be removed to facilitate the construction of the outfall.
- No instream works will take place outside the period July 31st – September 31st in line with Inland Fisheries Ireland (2016) Guidelines on Protection of Fisheries During Construction Works in and Adjacent to Waters.
- Cofferdams will be constructed using one tonne sandbags at the edge of the Rye Water River/Blackhall Little Stream at the outfall point to create dry working areas.
- A submersible pump will be used to dewater inside the coffer dammed area and will discharge any waters to land at a location of over 30m from the rivers. The pumped waters will discharge through a silt bag.
- The bankside will be excavated and a small pre-cast concrete headwall installed (with outfall pipe included).
- The banks and channel bed will be reinstated to avoid erosion or run off of silt. Following this the dams will be removed.
- The surface water discharge point is likely to take less than one day to install. During the near stream construction work double row silt fences will be emplaced immediately down-gradient of the construction area for the

- duration of the construction phase. There will be no batching or storage of cement allowed in the vicinity of the crossing construction areas; and,
- All watercourse crossing works will require a Section 50 application (Arterial Drainage Act, 1945). The river/stream crossings will be designed in accordance with OPW guidelines/requirements on applying for a Section 50 consent, where considered necessary by the designer.

4.3.2 Operational Phase

4.3.2.1 Mitigation Measures to Protect Groundwater Flow Regimes

The alteration of local groundwater flow patterns due to the replacement of the greenfield surface with hardstand surfaces will be minimised by the incorporation of a properly designed surface drainage and gravity sewer network, and by using underground attenuation tanks for drainage management which will control discharge to the Rye Water River less than the greenfield rates.

Sites A, B & C will direct surface water from surfaced areas roads, and roofs, via gravity, infiltration area/attenuation storage, hydrocarbon interceptors and filtration drain to outfalls at the River Rye Water/Blackhall Little, just west of the Kildare Bridge and the Blackhall Little stream. The remaining areas are considered green space and will be allowed to drain naturally to ground, with negligible impact on the performance of the surface water network, and groundwater flows and therefore do not contribute to the surface water drainage networks.

Surface water attenuation will be used to control runoff from all hard surfaces in accordance with the Greater Dublin Strategic Drainage Study (GDSDS), with these being restricted to a maximum flow rate of 5.5 l/s/ha, which is less than the calculated greenfield runoff equivalent. Attenuation Storage will be provided at strategic locations, in the form of unlined proprietary poly-tunnel storage units (or similar approved). These poly-tunnel storage units will be underground, in proposed green-spaces for both Site A and Site C and in the car parking area for Site B, for the attenuation of rainfall runoff prior to discharge. The attenuation for the proposed MOOR are to comprise of largely enclosed vegetated ponds, and be preceded by a Class 1 bypass fuel separator.

Attenuation Storage will temporarily store excessive surface water, due to the restricted flow rates during rainfall events up to, and including, the design 1% AEP with a 20% additional allowance for climate change. This will allow for the limiting discharge rates to less than greenfield run off rates at the Proposed Development outfall.

Discharge rates at the proposed surface outfalls, that serve Sites A, B and C are to be restricted by using a flow control device, in a chamber upstream of the outfalls, such as Hydro-Brake Optimum Vortex Flow control unit, or similar approved by Meath and Kildare County Councils, downstream of the proposed attenuation systems.

It is proposed that surface water run off on the MOOR is to be captured by adequately spaced trapped road gullies, which connect to a main carrier drain under the road. The rainfall runoff on the aligning footpath and cycle track shall be intercepted by the dividing tree-lined grass verge, with excess runoff only being collected by the road's gully network.

Surface water run off on the Kildare Bridge and the Moyglare Bridge are to be captured by the proposed drainage features proposed as part of the MOOR.

The proposed surface water network is to be split into 4 no. catchments, in order to optimise the network based on the natural topography of the site.

A series of best practice SuDs drainage design controls have been included in the site drainage design to ensure there is no perceptible impact on groundwater flows. These include rainwater harvesting at Sites A and C, Permeable paving and road gullies.

4.3.2.2 Mitigation Measures to Protect Groundwater Quality

Potential emissions to ground and / or surface water include storm water run-off and wastewater.

In relation to storm water run-off, the surface water drainage system will consist of a gravity sewer network that will convey runoff from the roofs and paved areas of the development to outfall manholes, which will discharge at controlled flow rates to the Rye Water River/Blackhall Little Stream. Discharge will be less than the greenfield equivalent runoff rate. Temporary underground attenuation will also be provided at separate locations in the form of underground cellular storage units. Silt traps will be provided for upstream of the attenuation tanks. Surface water will pass through oil interceptors prior to discharging from the site.

Wastewater from the development will discharge to the proposed onsite underground wastewater pumping station, which will ultimately link up to the existing Maynooth town wastewater network prior to discharging to Leixlip Wastewater Treatment Plant. The wastewater treatment plant is regulated and operates under an EPA licence which controls emissions to acceptable levels.

Rainfall allowed to percolate to ground and/or flow via subsurface flow to the Rye Water River/Blackhall Little Stream will be within the green/ landscaped areas of Site A and so there is no significant source of pollution related to these areas.

These standard drainage design controls will ensure the development will not give rise to any significant surface water or groundwater quality impacts at or downstream of the site.

4.3.2.3 Mitigation Measures to Protect Surface Water Quality

Water quality of the surface water, discharging from site, is to be improved with the following provisions:

- Permeable Paving in all private driveways;
- Intensive landscaping, where practical;
- Trapped road gullies on all road carriageways, to trap silt and gross pollutants;
- 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.
- Silt traps to be provided on manholes immediately upstream of attenuation systems, as a further preventative measure to trap silt and other gross pollutants;
- Surface water attenuation storage in the form of poly-tunnel installation at both Site A and Site C (green spaces) and Site B (car parking area);
- A Class 1 Bypass Fuel/Oil Separator is to be provided as an additional and final mitigation measure, prior to surface water discharge from the Proposed Development sites.

These standard drainage design controls will ensure the development will not give rise to any significant surface water quantity impacts or increased flood risk downstream of the site.

4.3.3 Potential Effects with the Implementation of Mitigation

In all instances, the mitigation measures described in **Section 4.3** are sufficient to meet the WFD Objectives. The assessment of WFD elements for the WFD waterbodies is summarised in **Table I** below.

Table I: Summary of WFD Status for Unmitigated and Mitigated Scenarios

WFD Element	WFD Code	Current Status	Assessed Status – Unmitigated	Assessed Status – with Mitigation Measures
Rye Water_030 SWB	IE_EA_09R010400	Moderate	Poor	Moderate
Rye Water_040 SWB	IE_EA_09R010600	Poor	Poor	Poor
Dublin GWB	IE_EA_G_008	Good	Moderate	Good

5. SUMMARY AND CONCLUSION

5.1 SUMMARY

WFD status for SWBs (Surface Water Bodies) and GWB (Groundwater Body) hydraulically linked to the proposed development site are defined in **Section 2** above.

The surface water connections from the proposed development site to the Rye Water River/Blackhall Little Stream could transfer poor quality surface water that may affect its WFD status. However, as described in **Section 4.2.1.1**, flow volumes in the Rye Water_040 at Louisa Bridge are significantly greater than those recorded in the Rye Water_030 River upstream from the proposed development.

Nevertheless, a series of mitigation measures, designed for the protection of surface and groundwater quality, have been proposed to ensure the protection of receiving waters during the construction and operational phase of the proposed development.

Surface water drainage measures, pollution control and other preventative measures have been incorporated into the project design to minimise significant negative or adverse impacts on water quality including the adjacent Rye Water River Blackhall Little Stream. Preventative measures during construction include fuel and concrete management and a waste management plan which have been incorporated into the Construction and Environmental Management Plan. A range of surface water control measures will also be used including silt fencing along the Rye Water River/Blackhall Little Stream and the maintenance of a set back from the watercourse during construction.

During the operational phase, the key surface water control measure is that there will be a gravity fed sewer network, water drainage system with a Hydro-Brake flow restrictor, filter drain and attenuation systems along with petrol / oil interceptors prior to outflow to the Rye Water River/Blackhall Little Stream. The proposed system will control discharge volume and discharge quality to acceptable greenfield levels. It is also proposed to retain the existing riparian zone which will act as a buffer between the development and the river/stream.

There will be no change in GWB or SWB status in the underlying GWBs or downstream SWBs resulting from the proposed development. There will be no change in quantitative (volume) or qualitative (chemical) status, and the underlying GWBs and downstream SWBs are protected from any potential deterioration.

In the event where the current status of the waterbody is Poor (i.e. Rye Water_040) the proposed development will not prevent them from achieving Good Status in the future.

As such, the proposed development will not impact upon any surface water or groundwater body as it will not cause a deterioration of the status of the body and/or it will not jeopardise the attainment of good status. Therefore, the proposed development is compliant with the requirements of the Water Framework Directive (2000/60/EC) and the Groundwater Directive (2006/118/EC).

* * * * *

Kildare County Council Planning Department - Viewing Purposes Only

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APPENDIX 9-1

PUBLIC LIGHTING REPORT

Kildare County Council Planning Department - Viewing Purposes Only

DATE: 16 August 2022

DESIGNER: Alex Naper

PROJECT No: SES 09922 Rev C

PROJECT NAME: MOOR – Maynooth Outer Orbital Road - Sky Castle Ltd



Distributor road section designed in accordance with EN13201-2:2015 Category P2 with longitudinal uniformity meeting requirements of EN13201-2:2015 Category M4.

Junction sections designed in accordance with EN13201-2:2015 Category C3.

Link road section designed in accordance with EN13201-2:2015 Category P3 with longitudinal uniformity meeting requirements of EN13201-2:2015 Category M5.

Rev B: Updated layout.

Rev C: Existing HID luminaires added

Outdoor Lighting Report

PREPARED BY:

Sabre Electrical Services Ltd.
Unit 11,
Bellview Industrial Estate,
Tolka Valley Road,
Dublin 11
Phone Number: 01 8110875
Contact: Graham Sheehan
eMail: graham@sabrelighting.ie

Layout Report

General Data

Dimensions in Metres Angles in Degrees

Calculation Grids

ID	Grid Name	X	Y	X' Length	Y' Length	X' Spacing	Y' Spacing
1	Grid 1	693864.63	739395.68	54.00	68.83	1.50	1.50
2	Grid 2	693959.70	739297.35	46.43	43.42	1.50	1.50
3	Grid 3	693909.10	739363.32	172.43	109.41	1.50	1.50
4	Grid 4	694078.43	739267.61	52.41	43.42	1.50	1.50
5	Grid 5	694125.23	739254.25	195.00	54.00	1.50	1.50
6	Grid 6	694300.72	739246.43	52.41	43.42	1.50	1.50
7	Grid 7	694463.49	739145.49	52.41	43.42	1.50	1.50
8	Grid 8	694656.84	739000.69	120.00	99.00	1.50	1.50
9	Grid 9	694343.70	739623.78	118.04	98.84	1.48	1.50
10	Grid 10	694576.26	739100.39	175.00	374.26	1.50	1.50
11	Grid 11	694437.37	739569.37	219.63	99.00	2.75	1.50
12	Grid 12	694056.27	739503.77	144.00	295.00	1.50	1.50
13	Grid 13	693911.77	739445.58	108.00	146.74	1.50	1.50
14	Grid 14	694395.42	739629.43	69.00	184.00	1.50	1.50
15	Grid 15	694318.46	739267.24	69.00	321.76	1.50	1.50
16	Grid 16	694619.02	738523.02	114.00	138.00	1.50	1.50
17	Grid 17	694628.61	738660.04	114.00	362.00	1.50	1.50
18	Grid 18	694779.13	739002.56	274.00	189.00	1.50	1.50
19	Grid 19	694333.57	739208.13	365.00	85.44	1.50	1.50
20	Grid 20	693513.62	739293.26	151.01	375.94	1.50	1.50

Luminaires



Luminaire A Data

Supplier	C U Phosco
Type	P863-128-R2E-730-W3-425-55W
Lamp(s)	730SS
Lamp Flux (klm)	7.78
File Name	P863-128-R2E-730-W3-425-55W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	463.7, 84.3, 0.0
No. in Project	28

Luminaire B Data

Supplier	C U Phosco
Type	E950-28-P4A-730-C550-14W
Lamp(s)	730N
Lamp Flux (klm)	2.08
File Name	E950-28-P4A-730-C0550-14W.ies
Maintenance Factor	0.83
Imax70,80,90(cd/klm)	659.3, 183.1, 0.3
No. in Project	2



Luminaire C Data

Supplier	C U Phosco
Type	P862-256-R2E-730-W3-425-107W
Lamp(s)	730SS
Lamp Flux (klm)	14.97
File Name	P862-256-R2E-730-W3-425-107W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	458.4, 47.0, 0.0
No. in Project	27



Luminaire D Data

Supplier	C U Phosco
Type	P862-256-R2E-730-W3-250-64W
Lamp(s)	730SS
Lamp Flux (klm)	8.84
File Name	P862-256-R2E-730-W3-250-64W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	458.4, 47.0, 0.0
No. in Project	4

DATE: 16 August 2022 DESIGNER: Alex Naper
PROJECT No: SES 09922 Rev C PROJECT NAME: MOOR – Maynooth Outer Orbital Road - Sky Castle Ltd

Luminaires



Luminaire E Data

Supplier	C U Phosco
Type	P862-256-R2E-730-W3-300-76W
Lamp(s)	730SS
Lamp Flux (klm)	10.70
File Name	P862-256-R2E-730-W3-300-76W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	458.4, 47.0, 0.0
No. in Project	37



Luminaire F Data

Supplier	C U Phosco
Type	P863-128-R4-730-W3-300-40W
Lamp(s)	730SS
Lamp Flux (klm)	5.53
File Name	P863-128-R4-730-W3-300-40W.ies
Maintenance Factor	0.87
Imax70,80,90(cd/klm)	386.2, 27.2, 0.4
No. in Project	10

Luminaire J Data

Supplier	
Type	2685 SNN-1C#
Lamp(s)	1 ST 150 17500 2000 E40
LampFlux(klm)/Colour	17.50 1950 / 23
File Name	Arc 2685 SNN 1C# 1 ST 150 17500 1950 E 40.Idt
Maintenance Factor	0.75
Imax70,80,90(cd/klm)	352.0, 100.0, 5.0
No. in Project	6

Kildare County Council Planning Department - Viewing Purposes Only

DATE: 16 August 2022 DESIGNER: Alex Naper
PROJECT No: SES 09922 Rev C PROJECT NAME: MOOR – Maynooth Outer Orbital Road - Sky Castle Ltd

Layout

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
1	C	693893.29	739395.63	10.00	306.00	0.00	0.00	0.50			
2	C	693884.52	739362.91	10.00	136.00	0.00	0.00	0.50			
3	C	693933.49	739398.17	10.00	128.00	0.00	0.00	0.50			
4	A	693913.80	739367.43	8.00	47.00	0.00	0.00	0.50			
5	A	693958.11	739331.85	8.00	45.00	0.00	0.00	0.50			
6	A	693982.74	739327.61	8.00	248.00	0.00	0.00	0.50			
7	A	694008.53	739306.37	8.00	69.00	0.00	0.00	0.50			
8	A	693937.48	739346.51	8.00	53.00	0.00	0.00	0.50			
9	A	694040.33	739296.89	8.00	76.00	0.00	0.00	0.50			
10	A	694074.42	739291.17	8.00	78.00	0.00	0.00	0.50			
11	A	694108.62	739295.82	8.00	263.00	0.00	0.00	0.50			
12	A	694130.13	739283.09	8.00	82.00	0.00	0.00	0.50			
13	A	694163.81	739278.39	8.00	83.00	0.00	0.00	0.50			
14	B	693980.93	739311.36	6.00	151.00	0.00	0.00	0.40			
15	B	694112.38	739277.66	6.00	169.00	0.00	0.00	0.40			
16	A	694197.52	739273.55	8.00	85.00	0.00	0.00	0.50			
17	A	694231.04	739268.57	8.00	85.00	0.00	0.00	0.50			
18	A	694263.20	739263.98	8.00	85.00	0.00	0.00	0.50			
19	A	694296.89	739259.28	8.00	77.00	0.00	0.00	0.50			
20	A	694325.52	739253.15	8.00	73.00	0.00	0.00	0.50			
21	A	694350.78	739235.67	8.00	57.00	0.00	0.00	0.50			
22	F	694336.89	739268.29	8.00	317.00	0.00	0.00	0.50			
23	A	694379.13	739215.14	8.00	64.00	0.00	0.00	0.50			
24	A	694408.87	739198.81	8.00	60.00	0.00	0.00	0.50			
25	A	694438.79	739182.31	8.00	62.00	0.00	0.00	0.50			
26	A	694468.63	739165.98	8.00	61.00	0.00	0.00	0.50			
27	A	694498.75	739159.64	8.00	250.00	0.00	0.00	0.50			
28	A	694513.73	739141.44	8.00	55.00	0.00	0.00	0.50			
29	A	694482.37	739138.84	8.00	322.00	0.00	0.00	0.50			
30	D	694702.40	739062.93	10.00	304.00	0.00	0.00	0.50			
31	E	694686.20	739062.69	10.00	260.00	0.00	0.00	0.50			
32	D	694726.91	739065.21	10.00	227.00	0.00	0.00	0.50			
33	E	694703.44	739081.44	10.00	2.00	0.00	0.00	0.50			
34	E	694723.50	739097.46	10.00	191.00	0.00	0.00	0.50			
35	A	694663.96	739056.65	10.00	63.00	0.00	0.00	0.50			
36	D	694730.09	739046.72	10.00	102.00	0.00	0.00	0.50			

DATE: 16 August 2022 DESIGNER: Alex Naper
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Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
37	D	694705.42	739037.94	10.00	23.00	0.00	0.00	0.50			
38	E	694707.20	739017.51	10.00	355.00	0.00	0.00	0.50			
39	E	694709.77	738982.63	10.00	2.00	0.00	0.00	0.50			
40	E	694753.36	739070.04	10.00	284.00	0.00	0.00	0.50			
41	E	694792.18	739081.88	10.00	291.00	0.00	0.00	0.50			
42	E	694830.26	739095.30	10.00	292.00	0.00	0.00	0.50			
43	E	694712.76	738943.79	10.00	2.00	0.00	0.00	0.50			
44	E	694708.66	738905.08	10.00	354.00	0.00	0.00	0.50			
45	E	694699.89	738866.95	10.00	348.00	0.00	0.00	0.50			
46	E	694692.32	738828.99	10.00	348.00	0.00	0.00	0.50			
47	E	694685.87	738789.77	10.00	349.00	0.00	0.00	0.50			
48	E	694681.26	738750.46	10.00	349.00	0.00	0.00	0.50			
49	E	694676.11	738711.51	10.00	349.00	0.00	0.00	0.50			
50	J	694686.56	738669.65	10.00	170.00	5.00	0.00	2.00			
51	J	694683.53	738647.14	10.00	170.00	5.00	0.00	2.00			
52	J	694681.45	738629.74	10.00	170.00	5.00	0.00	2.00			
53	J	694679.68	738609.10	10.00	170.00	5.00	0.00	2.00			
54	J	694674.47	738565.02	10.00	179.00	5.00	0.00	2.00			
55	E	694866.18	739112.99	10.00	304.00	0.00	0.00	0.50			
56	E	694900.50	739133.56	10.00	295.00	0.00	0.00	0.50			
57	E	694932.80	739154.34	10.00	303.00	0.00	0.00	0.50			
58	E	694924.94	739131.59	10.00	118.00	0.00	0.00	0.50			
59	A	694543.95	739124.55	8.00	55.00	0.00	0.00	0.50			
60	A	694574.07	739108.02	8.00	55.00	0.00	0.00	0.50			
61	A	694604.26	739091.24	8.00	55.00	0.00	0.00	0.50			
62	A	694634.40	739074.35	8.00	55.00	0.00	0.00	0.50			
63	E	694700.33	739131.26	10.00	2.00	0.00	0.00	0.50			
64	E	694714.20	739165.97	10.00	192.00	0.00	0.00	0.50			
65	E	694707.49	739198.13	10.00	189.00	0.00	0.00	0.50			
66	E	694700.32	739232.09	10.00	189.00	0.00	0.00	0.50			
67	E	694692.51	739267.89	10.00	189.00	0.00	0.00	0.50			
68	E	694668.67	739290.87	10.00	20.00	0.00	0.00	0.50			
69	E	694675.95	739328.25	10.00	194.00	0.00	0.00	0.50			
70	E	694662.56	739367.87	10.00	204.00	0.00	0.00	0.50			
71	E	694650.61	739399.35	10.00	211.00	0.00	0.00	0.50			
72	E	694637.49	739432.77	10.00	200.00	0.00	0.00	0.50			

DATE: 16 August 2022 DESIGNER: Alex Naper
PROJECT No: SES 09922 Rev C PROJECT NAME: MOOR – Maynooth Outer Orbital Road - Sky Castle Ltd

Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
73	E	694444.07	739585.34	10.00	78.00	0.00	0.00	0.50			
74	C	694419.89	739630.01	10.00	357.00	0.00	0.00	0.50			
75	E	694455.92	739603.76	10.00	249.00	0.00	0.00	0.50			
76	C	694392.79	739610.16	10.00	274.00	0.00	0.00	0.50			
77	C	694409.11	739590.31	10.00	84.00	0.00	0.00	0.50			
78	C	694442.13	739661.78	10.00	171.00	0.00	0.00	0.50			
79	C	694433.45	739719.16	10.00	349.00	0.00	0.00	0.50			
81	E	694523.13	739574.51	10.00	243.00	0.00	0.00	0.50			
82	E	694554.52	739552.85	10.00	227.00	0.00	0.00	0.50			
83	E	694487.52	739592.02	10.00	243.00	0.00	0.00	0.50			
84	E	694582.12	739527.05	10.00	219.00	0.00	0.00	0.50			
85	E	694605.19	739497.98	10.00	214.00	0.00	0.00	0.50			
86	E	694623.32	739466.11	10.00	205.00	0.00	0.00	0.50			
87	C	693969.92	739420.83	10.00	122.00	0.00	0.00	0.50			
88	C	694007.60	739441.66	10.00	120.00	0.00	0.00	0.50			
89	C	694046.60	739460.24	10.00	117.00	0.00	0.00	0.50			
90	C	694085.95	739477.73	10.00	117.00	0.00	0.00	0.50			
91	C	694125.32	739495.25	10.00	115.00	0.00	0.00	0.50			
92	C	694164.72	739512.72	10.00	116.00	0.00	0.00	0.50			
93	C	694203.98	739530.23	10.00	118.00	0.00	0.00	0.50			
94	C	694243.41	739547.73	10.00	118.00	0.00	0.00	0.50			
95	C	694282.64	739565.09	10.00	111.00	0.00	0.00	0.50			
96	C	694321.57	739580.88	10.00	111.00	0.00	0.00	0.50			
97	C	694362.99	739590.09	10.00	88.00	0.00	0.00	0.50			
98	C	694439.58	739760.92	10.00	353.00	0.00	0.00	0.50			
99	C	694448.02	739803.25	10.00	349.00	0.00	0.00	0.50			
100	C	693760.38	739284.08	10.00	119.00	0.00	0.00	0.50			
101	C	693784.47	739320.17	10.00	309.00	0.00	0.00	0.50			
102	C	693725.22	739289.87	10.00	300.00	0.00	0.00	0.50			
103	F	693734.04	739298.83	8.00	38.00	0.00	0.00	0.50			
104	C	693847.09	739361.25	10.00	309.00	0.00	0.00	0.50			
105	C	693825.29	739321.26	10.00	128.00	0.00	0.00	0.50			
106	C	693690.52	739271.34	10.00	295.00	0.00	0.00	0.50			
111	F	694357.76	739301.16	8.00	338.00	0.00	0.00	0.50			
112	F	694368.26	739339.59	8.00	349.00	0.00	0.00	0.50			
113	F	694377.23	739377.91	8.00	338.00	0.00	0.00	0.50			



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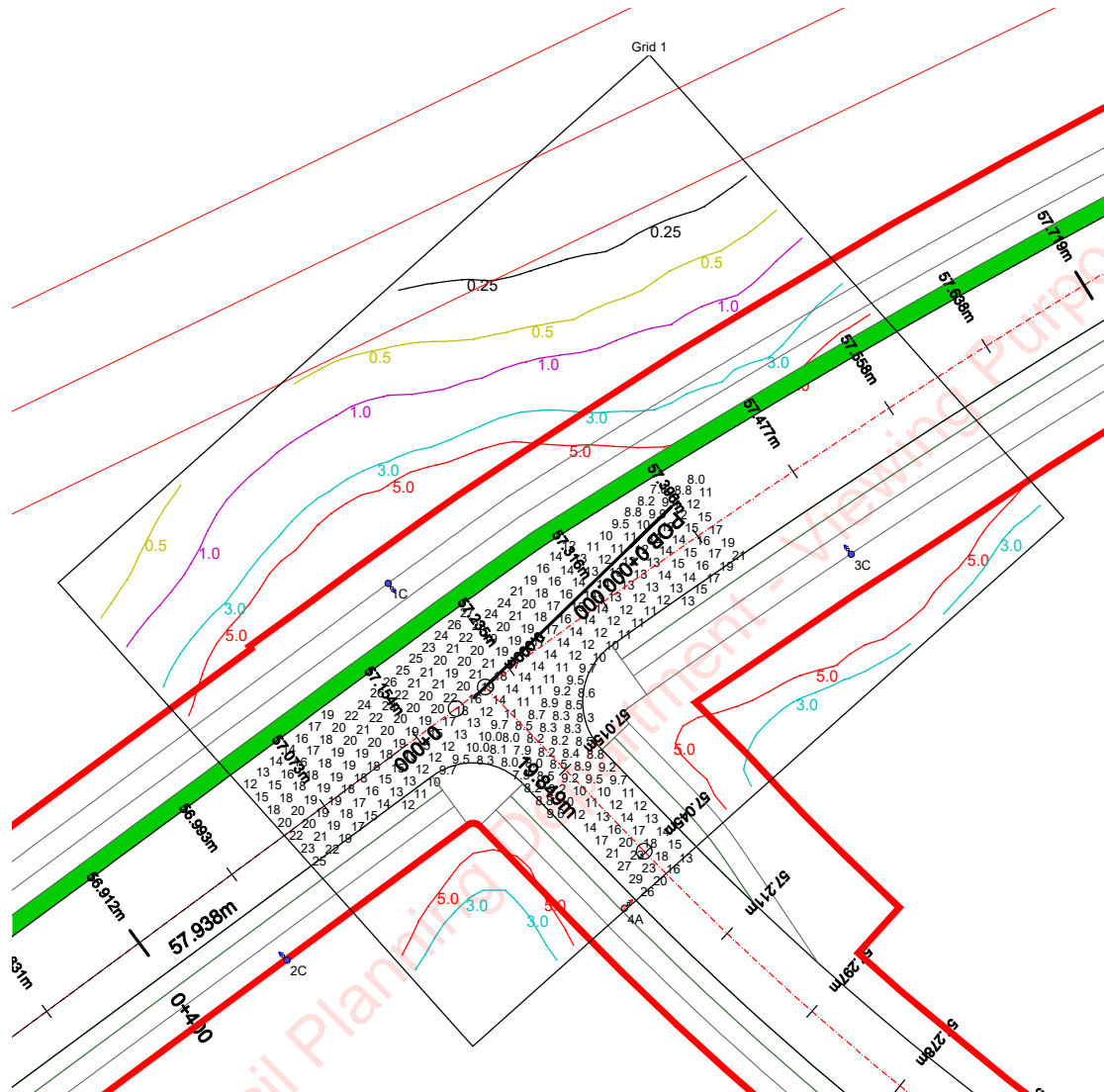
Layout Continued

ID	Type	X	Y	Height	Angle	Tilt	Cant	Out-reach	Target X	Target Y	Target Z
114	F	694385.75	739416.30	8.00	340.00	0.00	0.00	0.50			
115	F	694393.60	739454.76	8.00	339.00	0.00	0.00	0.50			
116	F	694401.10	739493.28	8.00	345.00	0.00	0.00	0.50			
117	F	694408.06	739531.35	8.00	351.00	0.00	0.00	0.50			
118	F	694414.57	739569.78	8.00	351.00	0.00	0.00	0.50			
119	J	694670.51	738542.82	10.00	170.00	5.00	0.00	2.00			

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Horizontal Illuminance (lux)

Grid 1

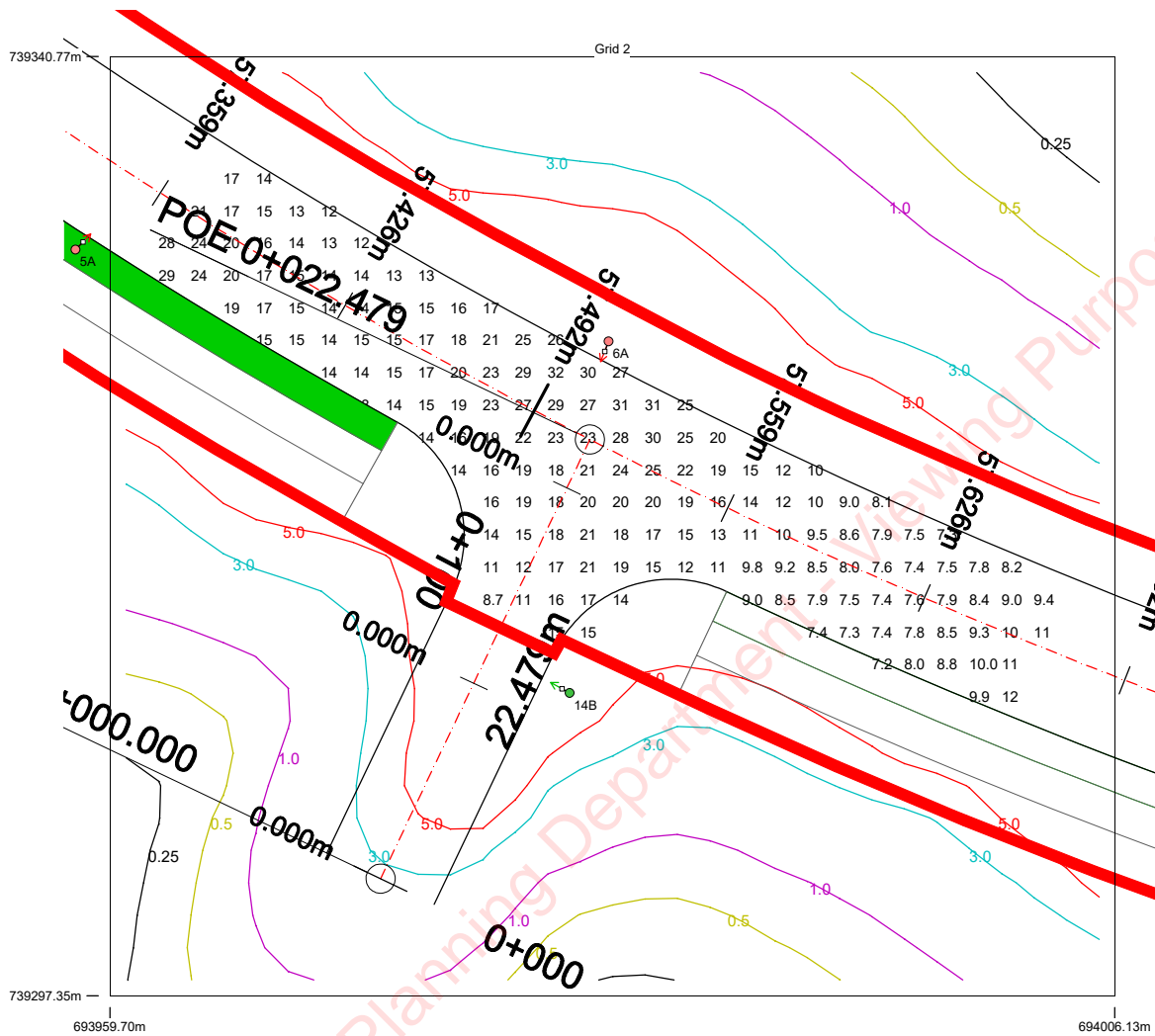


Results

Eav	15.24
Emin	7.63
Emax	28.68
Emin/Emax	0.27
Emin/Eav	0.50

Horizontal Illuminance (lux)

Grid 2

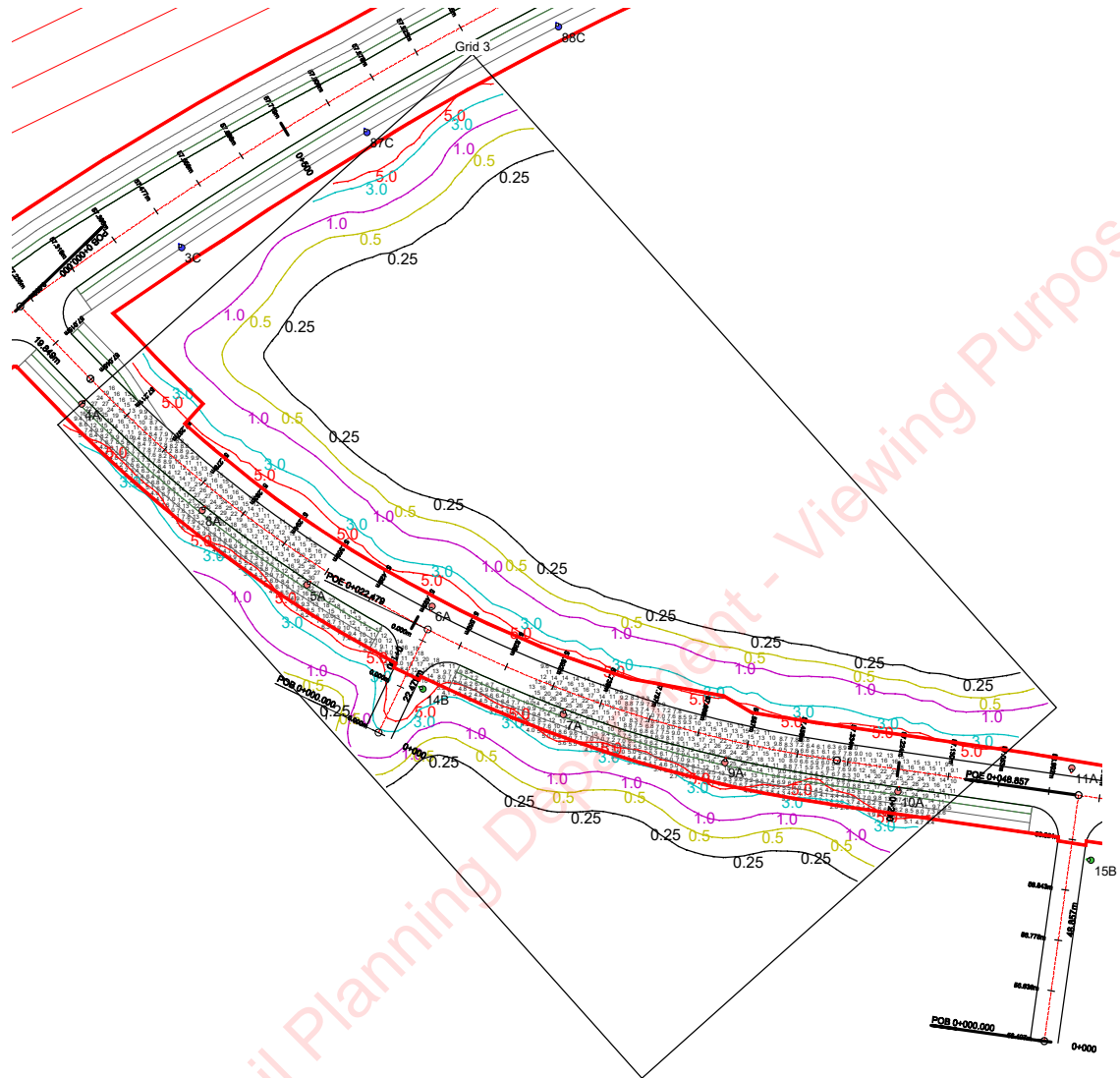


Results

Eav	15.62
Emin	7.25
Emax	32.15
Emin/Emax	0.23
Emin/Eav	0.46

Horizontal Illuminance (lux)

Grid 3

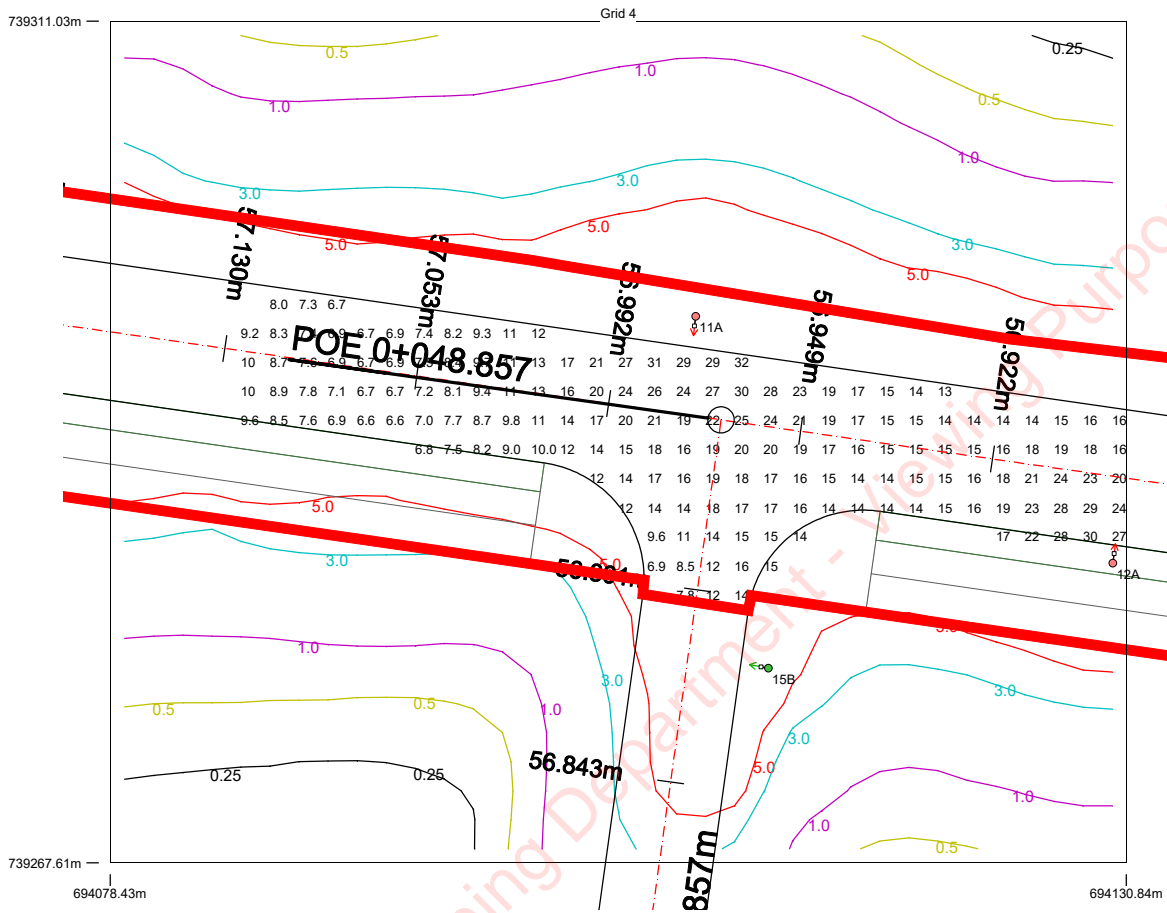


Results

Eav	11.59
Emin	2.58
Emax	29.50
Emin/Emax	0.09
Emin/Eav	0.22

Horizontal Illuminance (lux)

Grid 4

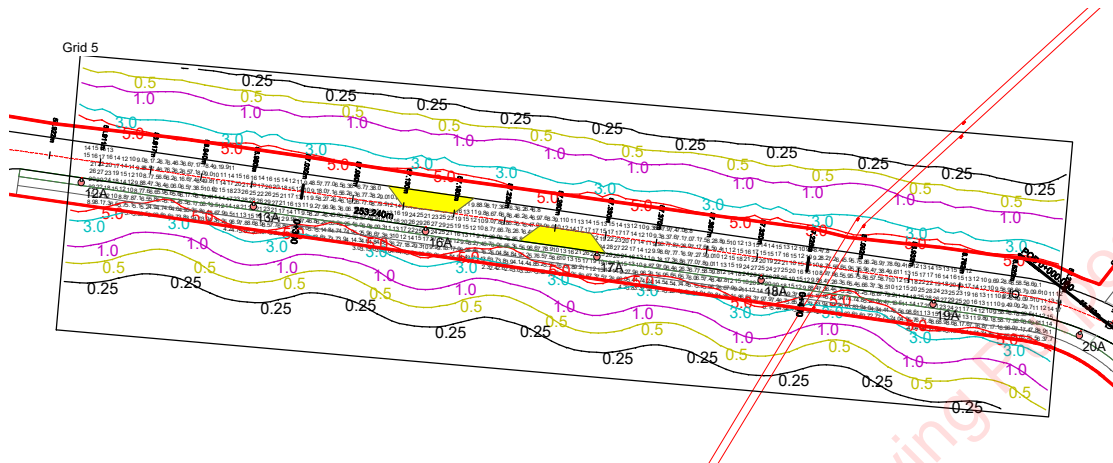


Results

Eav	15.06
Emin	6.56
Emax	31.93
Emin/Emax	0.21
Emin/Eav	0.44

Horizontal Illuminance (lux)

Grid 5



Results

Eav	10.71
Emin	2.25
Emax	29.30
Emin/Emax	0.08
Emin/Eav	0.21

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Horizontal Illuminance (lux)

Grid 6

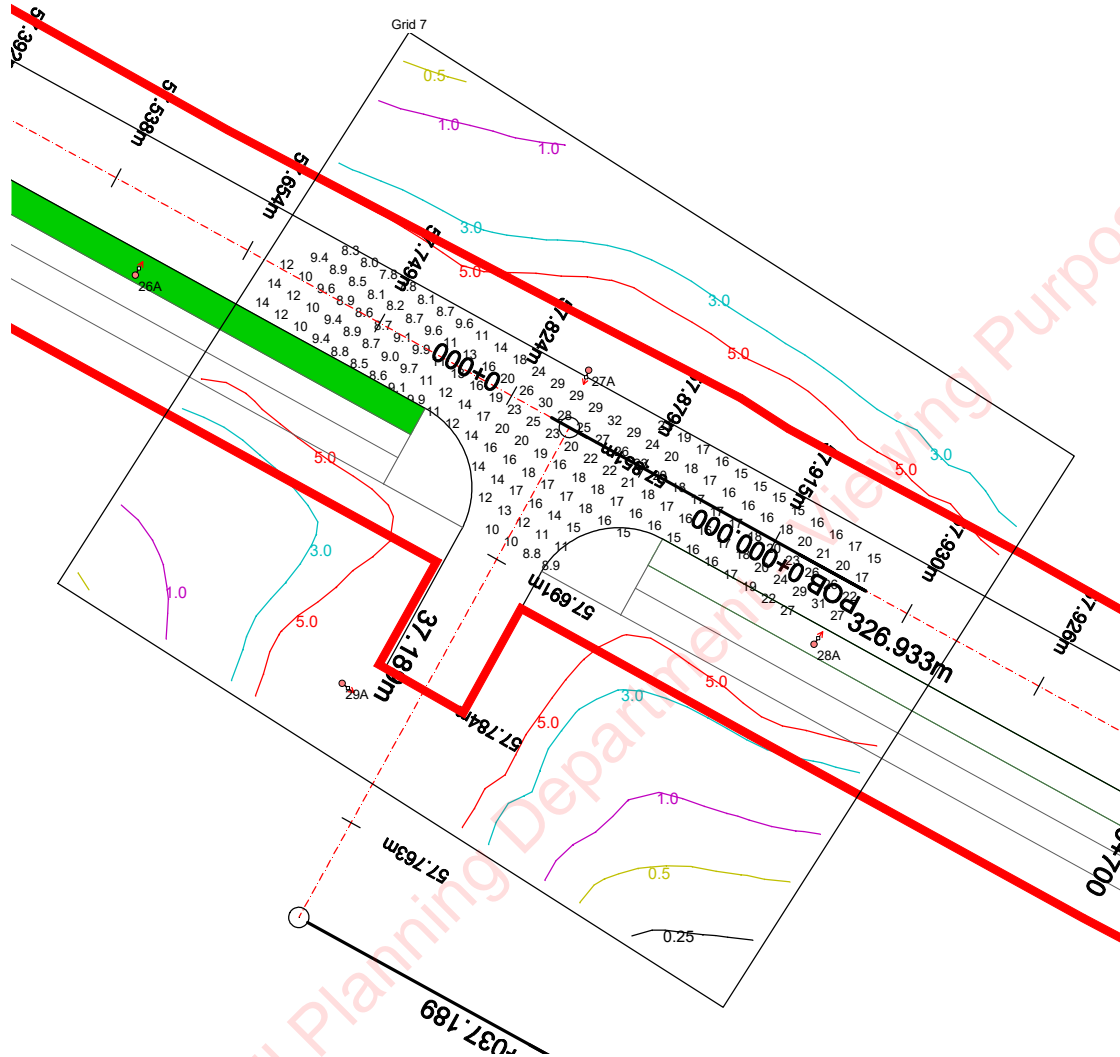


Results

Eav	15.46
Emin	6.87
Emax	32.79
Emin/Emax	0.21
Emin/Eav	0.44

Horizontal Illuminance (lux)

Grid 7

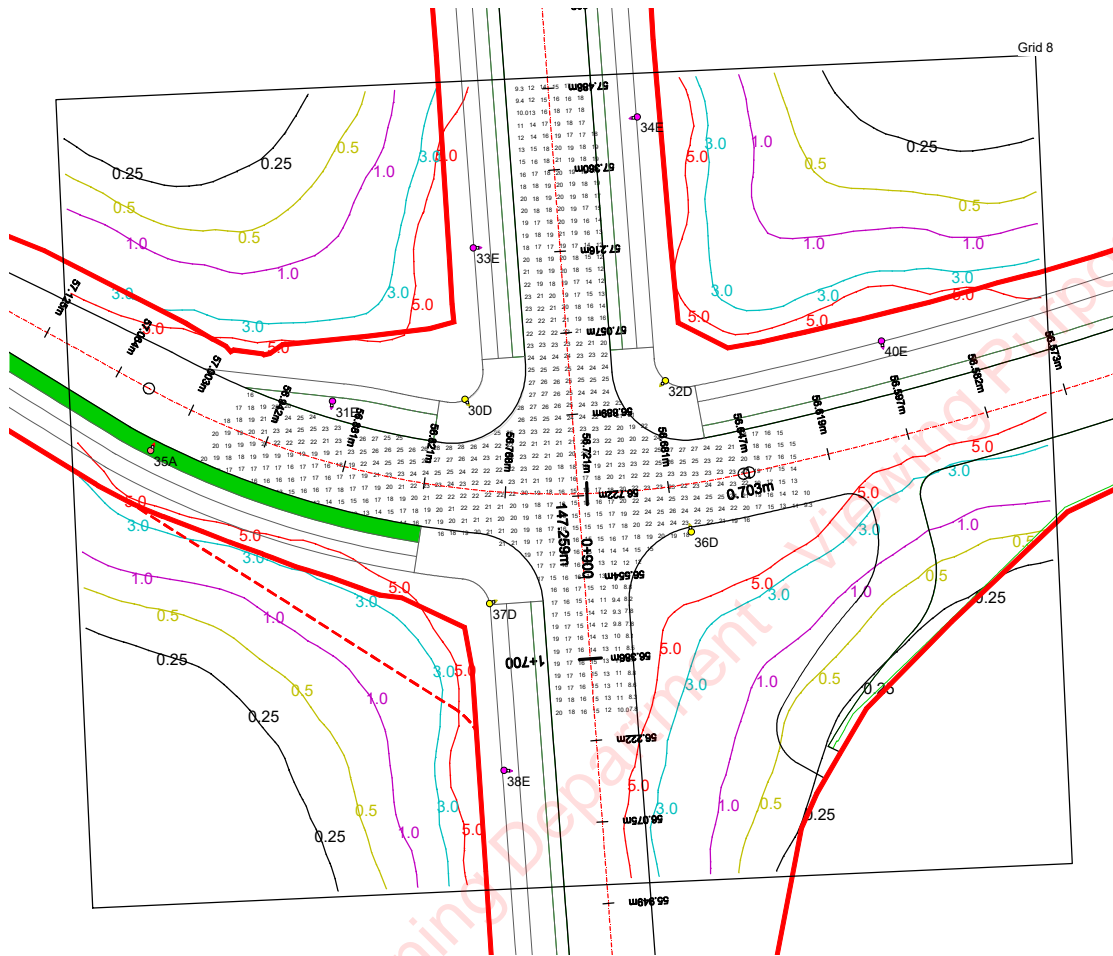


Results

Eav	16.18
Emin	7.79
Emax	31.75
Emin/Emax	0.25
Emin/Eav	0.48

Horizontal Illuminance (lux)

Grid 8

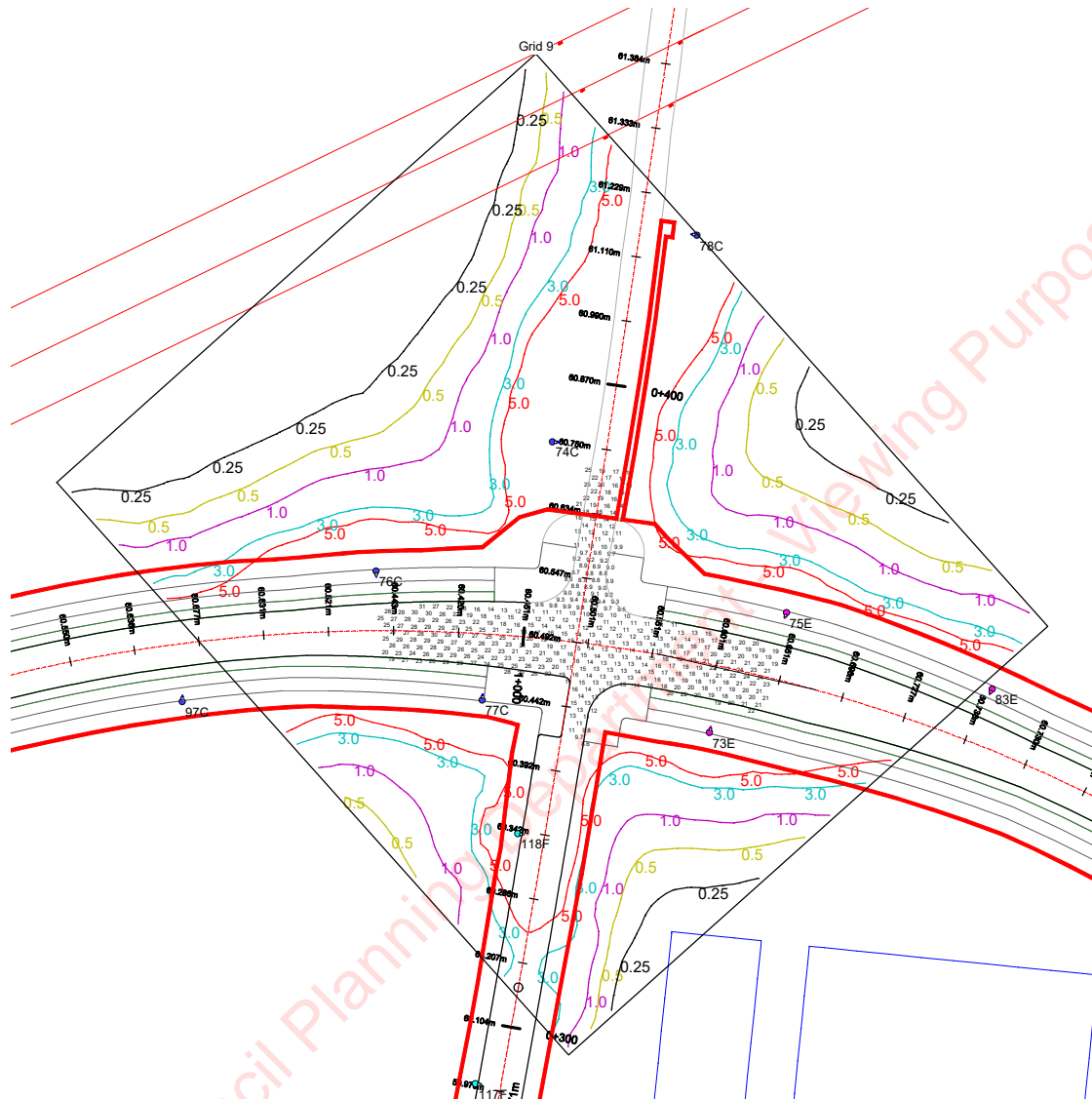


Results

Eav	18.98
Emin	7.75
Emax	28.42
Emin/Emax	0.27
Emin/Eav	0.41

Horizontal Illuminance (lux)

Grid 9

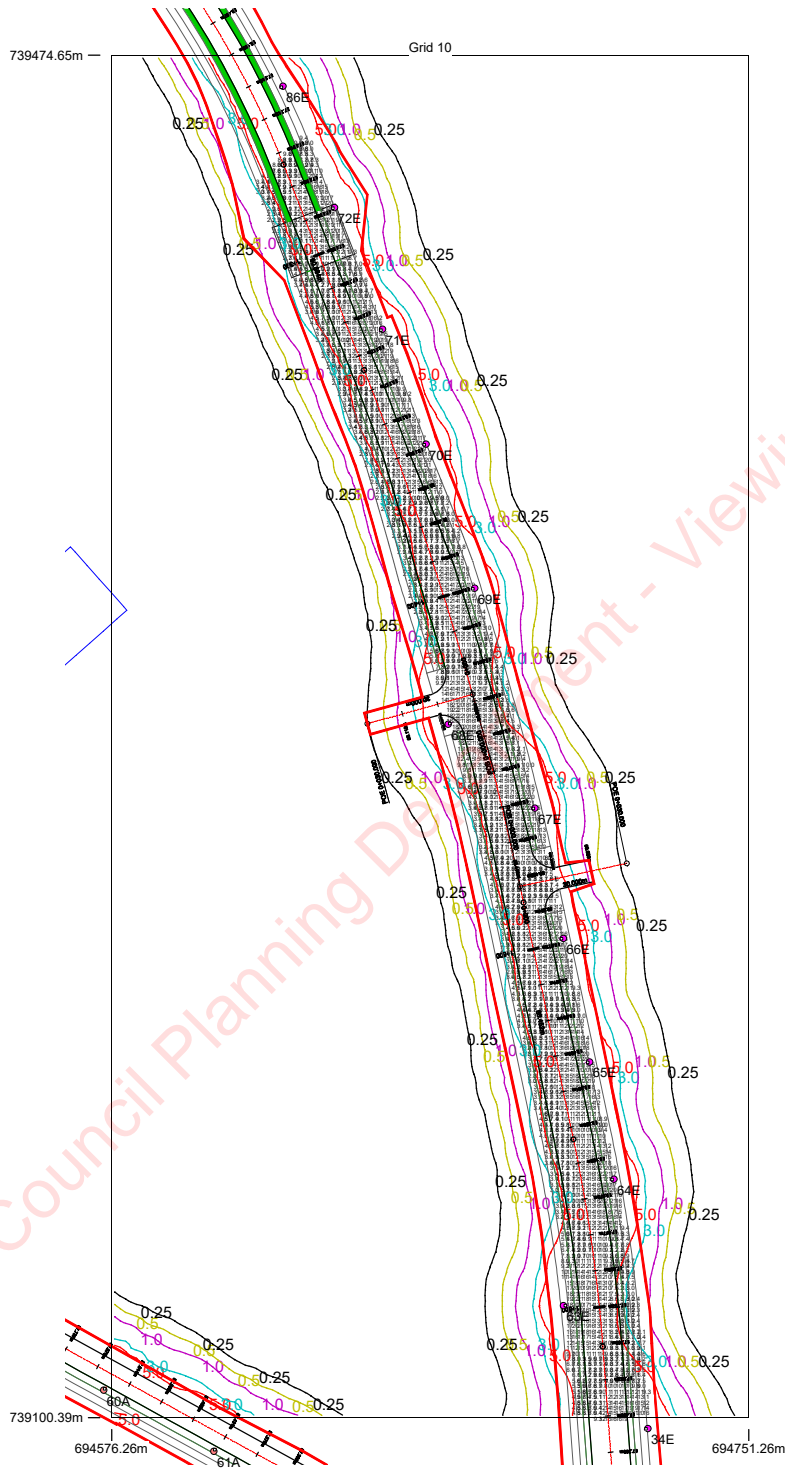


Results

Eav	17.49
Emin	8.56
E _{max}	30.79
Emin/E _{max}	0.28
Emin/Eav	0.49

Horizontal Illuminance (lux)

Grid 10

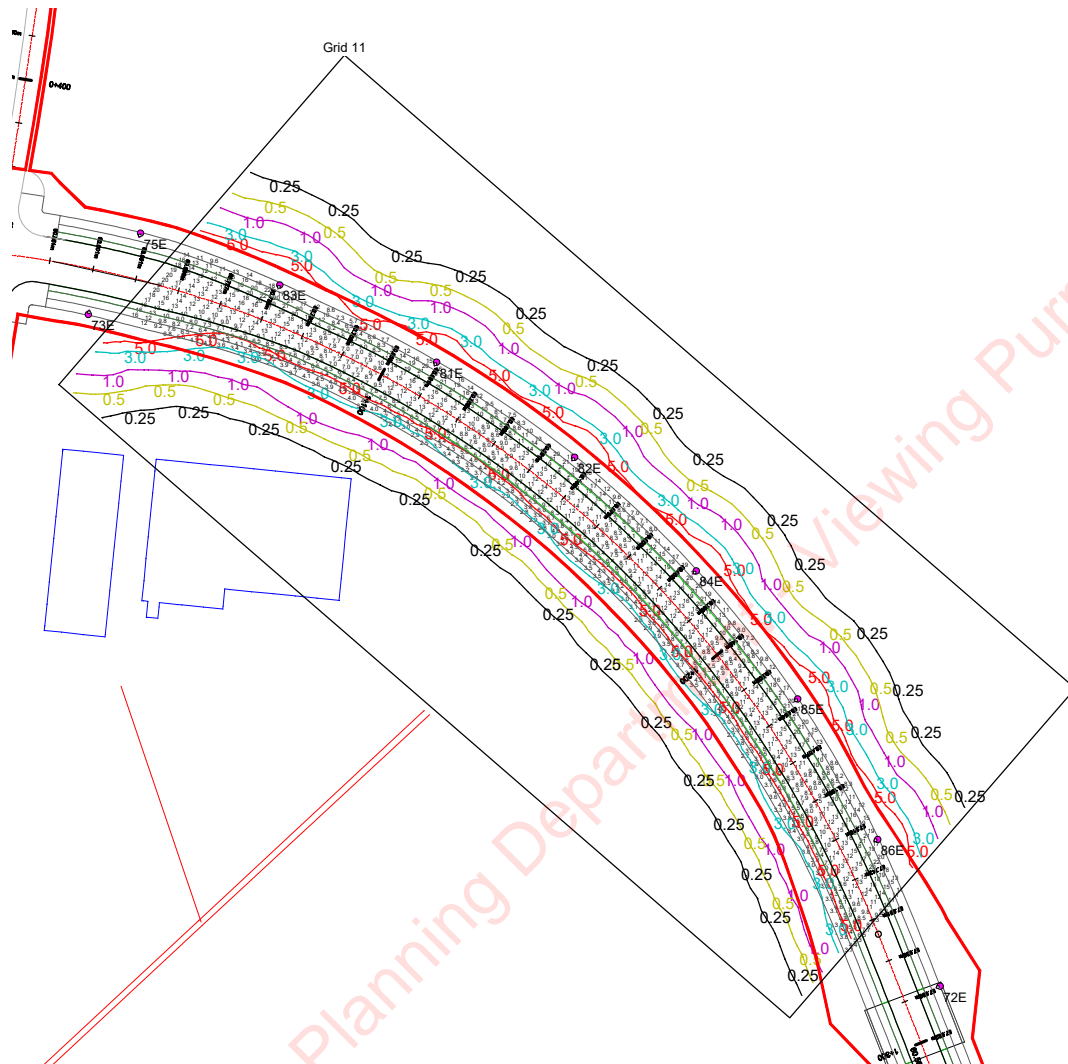


Results

Eav	10.61
Emin	2.09
Emax	22.39
Emin/Emax	0.09
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 11

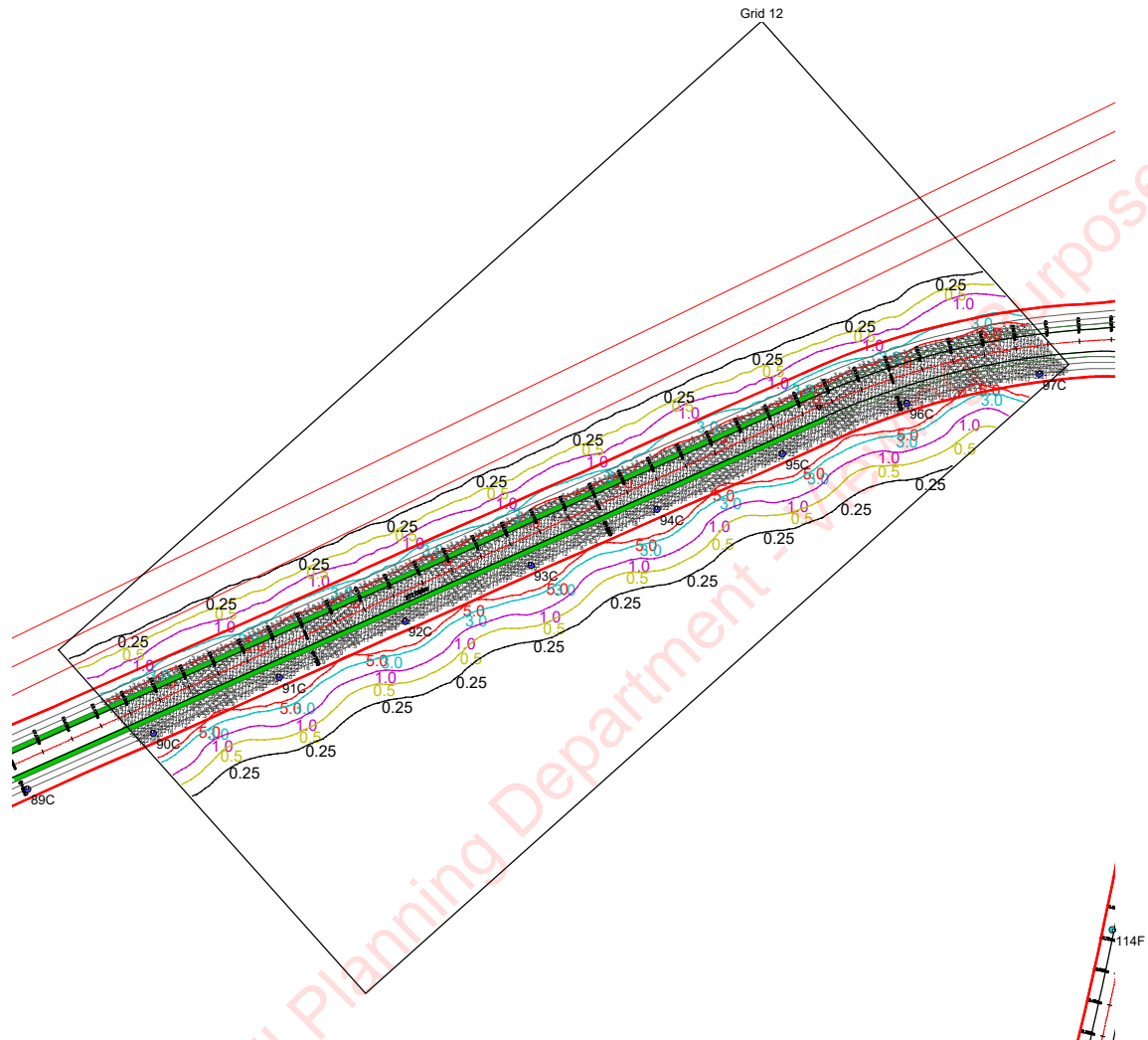


Results

Eav	10.42
Emin	2.51
Emax	21.66
Emin/Emax	0.12
Emin/Eav	0.24

Horizontal Illuminance (lux)

Grid 12

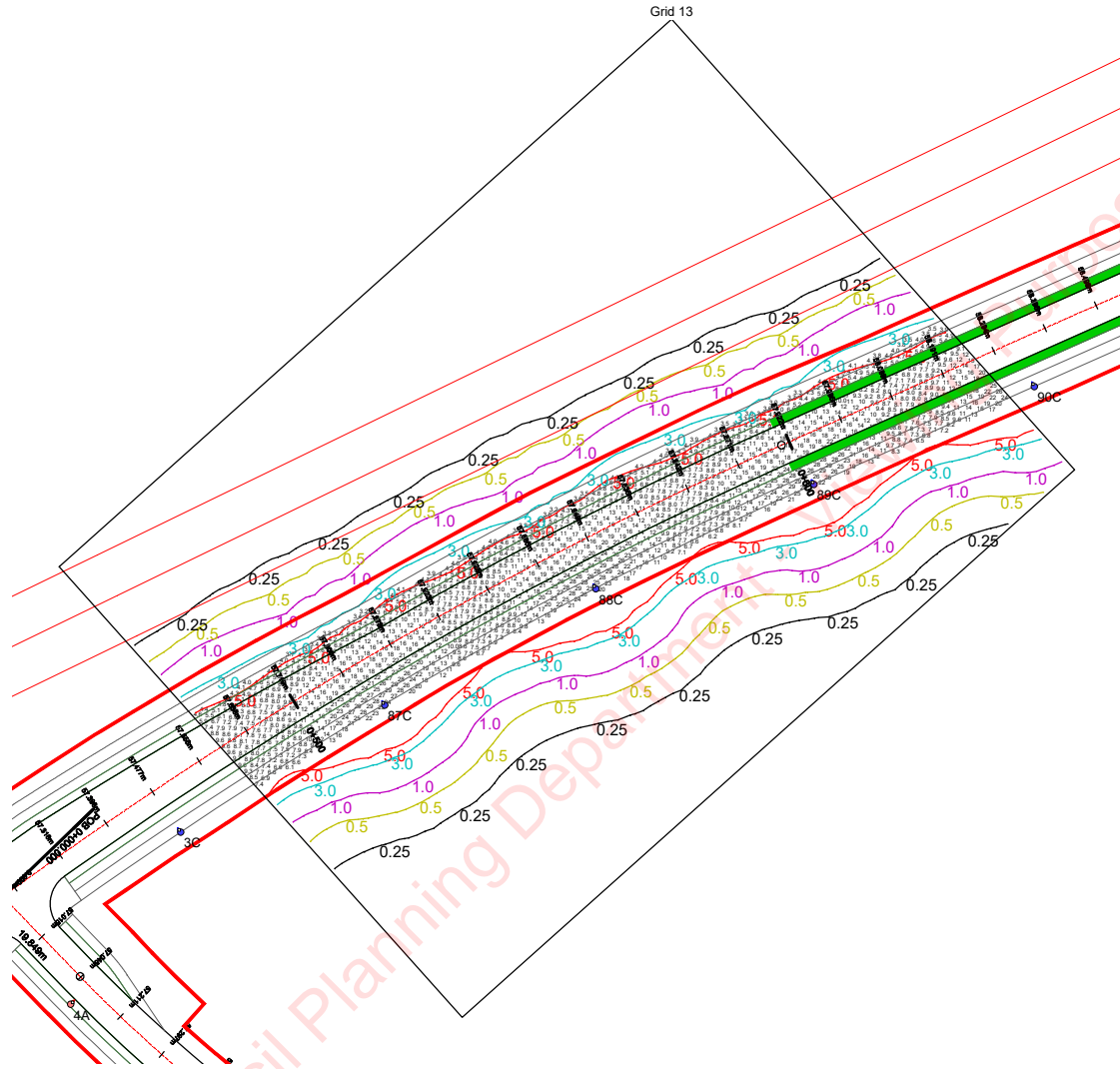


Results

Eav	12.33
Emin	3.00
E _{max}	30.25
E _{min} /E _{max}	0.10
E _{min} /E _{av}	0.24

Horizontal Illuminance (lux)

Grid 13



Results

Eav	11.68
Emin	2.97
Emax	29.38
Emin/Emax	0.10
Emin/Eav	0.25

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DESIGNER: Alex Naper

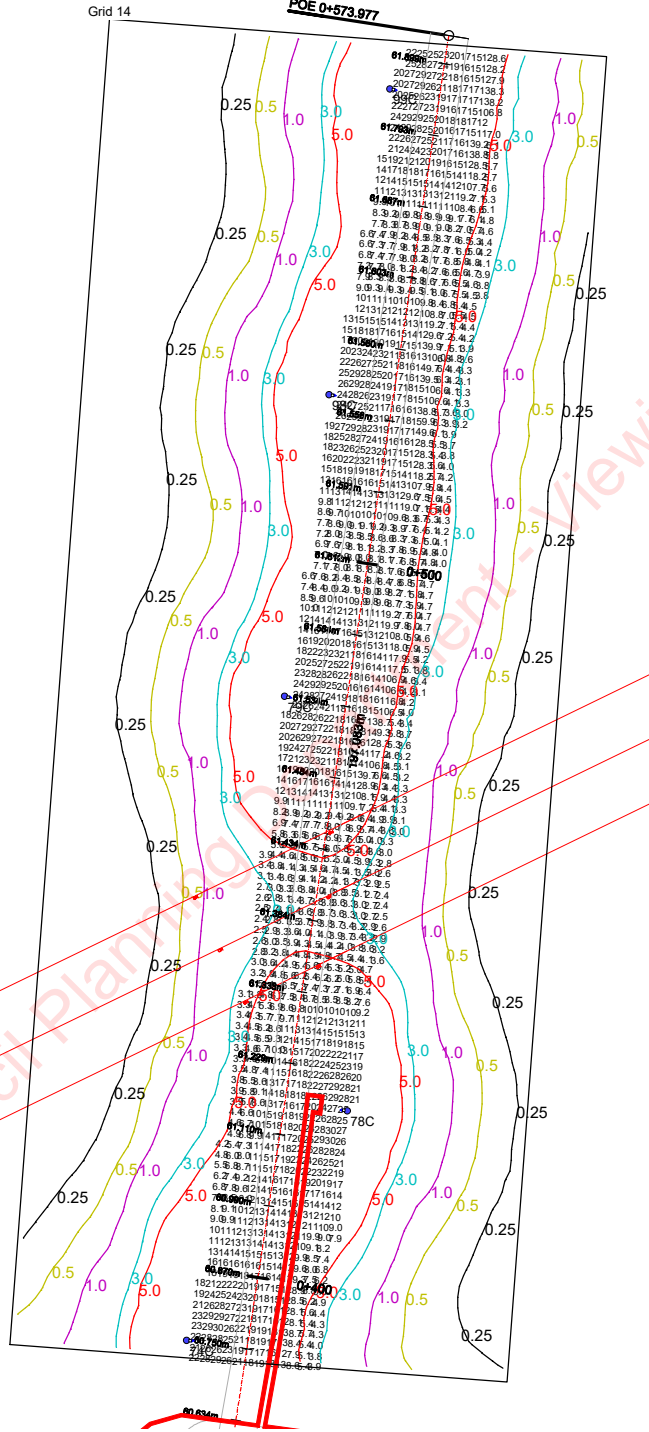
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Horizontal Illuminance (lux)

Grid 14

Grid 14

POE 0+573.977

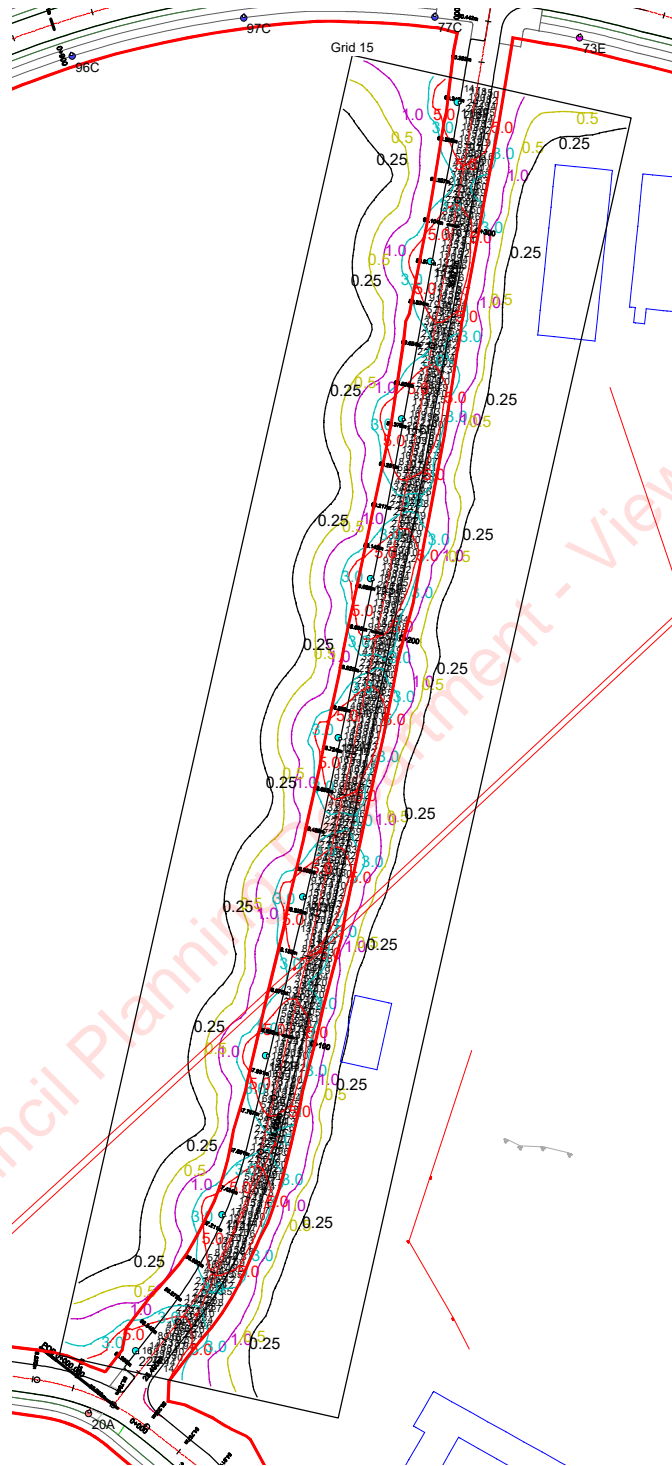


Results

Eav	12.30
Emin	2.41
Emax	29.89
Emin/Emax	0.08
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 15



Results

Eav	9.01
Emin	1.87
Emax	22.13
Emin/Emax	0.08
Emin/Eav	0.21

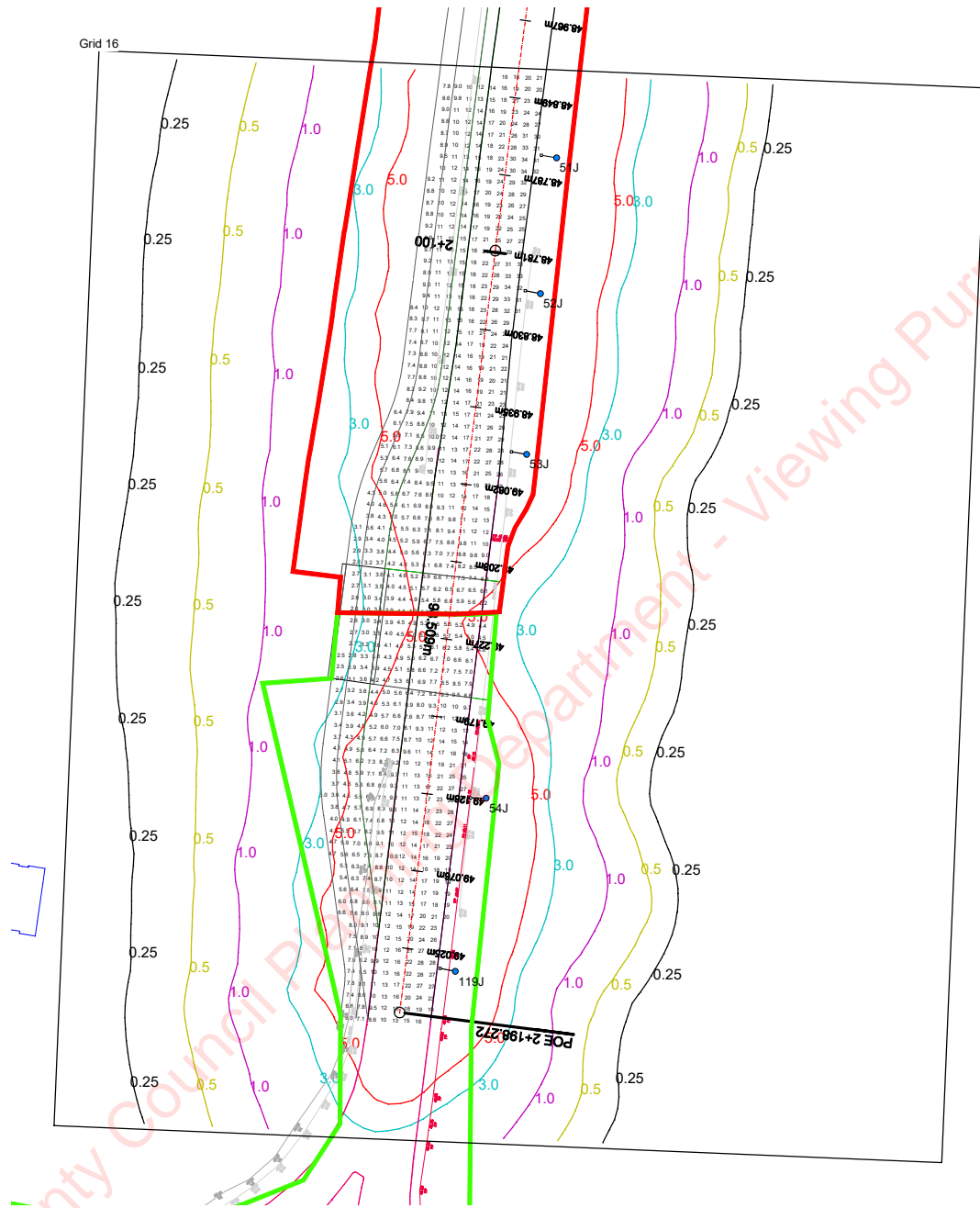
DATE: 16 August 2022

DESIGNER: Alex Naper

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Horizontal Illuminance (lux)

Grid 16

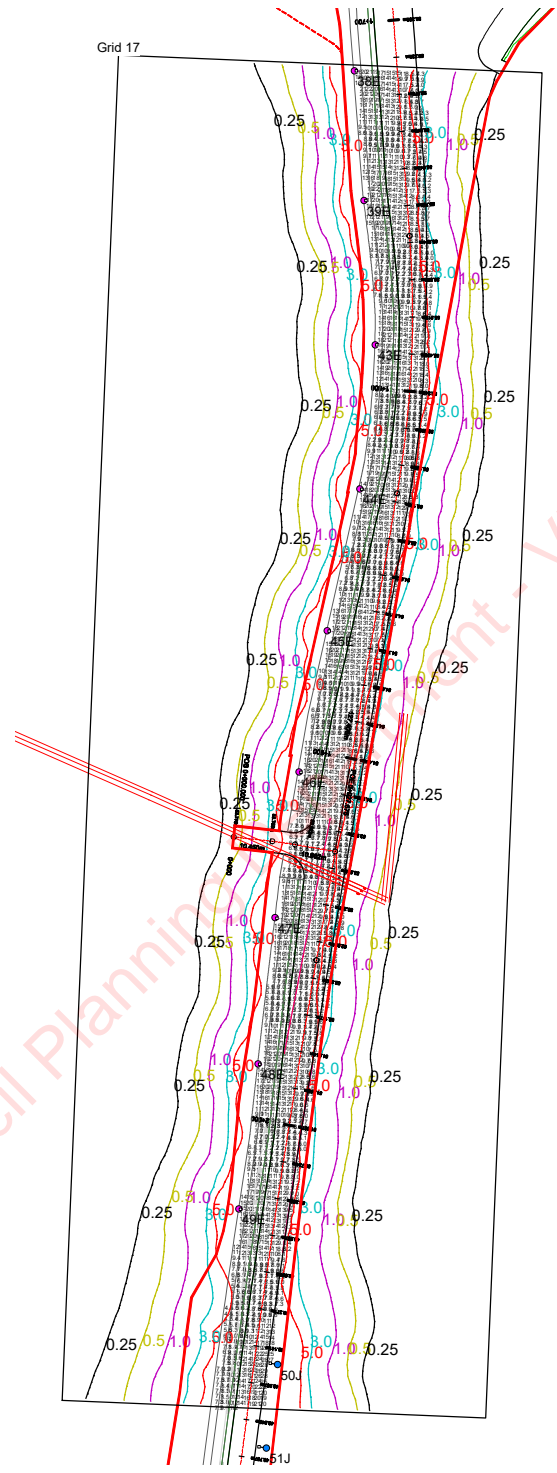


Results

Eav	12.41
Emin	2.45
Emax	34.24
Emin/Emax	0.07
Emin/Eav	0.20

Horizontal Illuminance (lux)

Grid 17

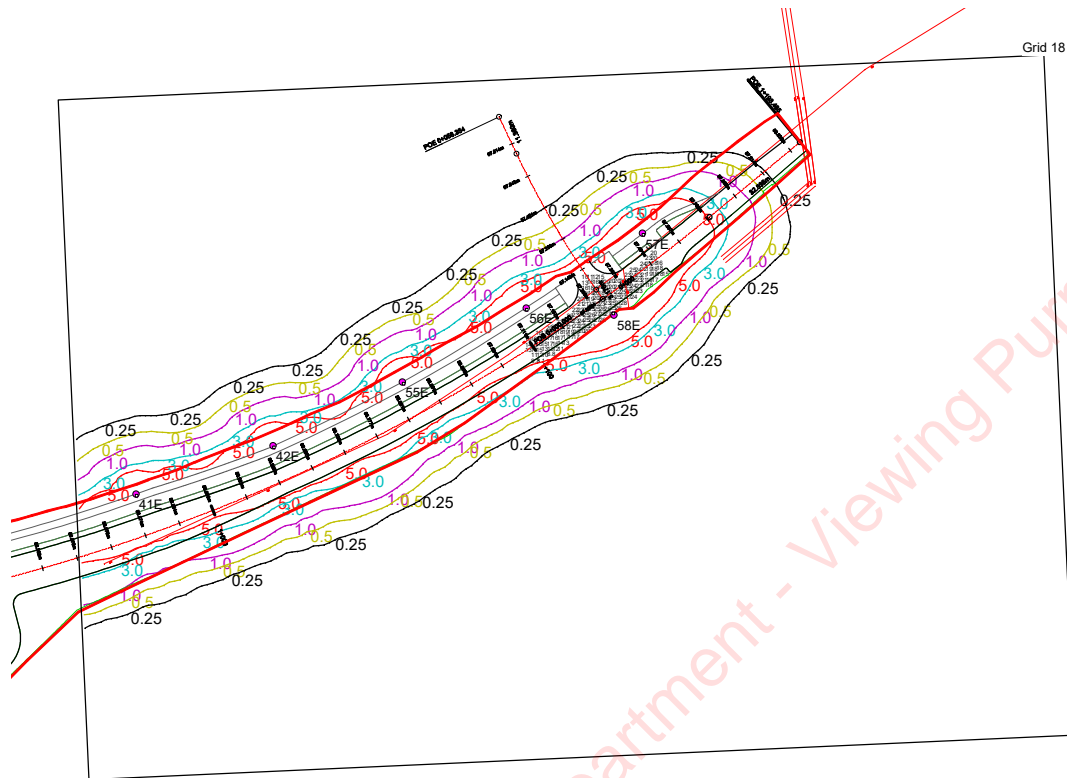


Results

Eav	10.69
Emin	2.65
Emax	28.54
Emin/Emax	0.09
Emin/Eav	0.25

Horizontal Illuminance (lux)

Grid 18



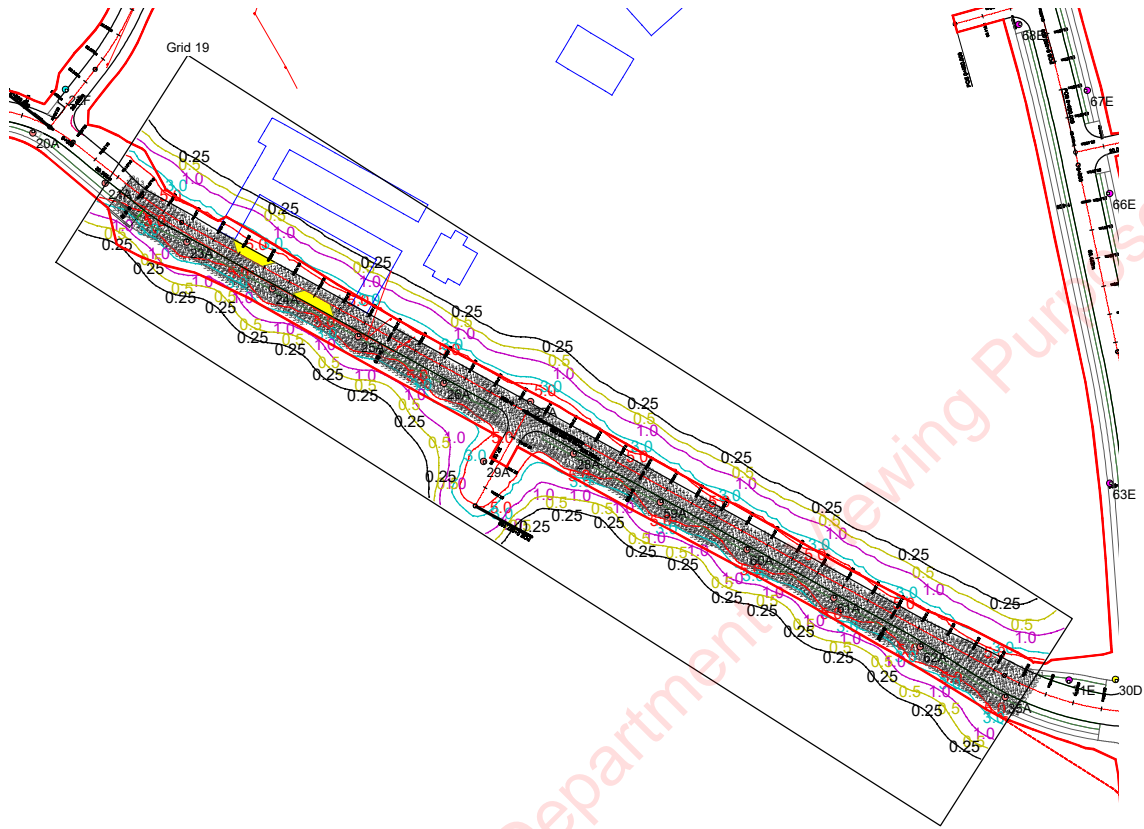
Results

Eav	19.83
Emin	8.05
Emax	27.57
Emin/Emax	0.29
Emin/Eav	0.41

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Horizontal Illuminance (lux)

Grid 19

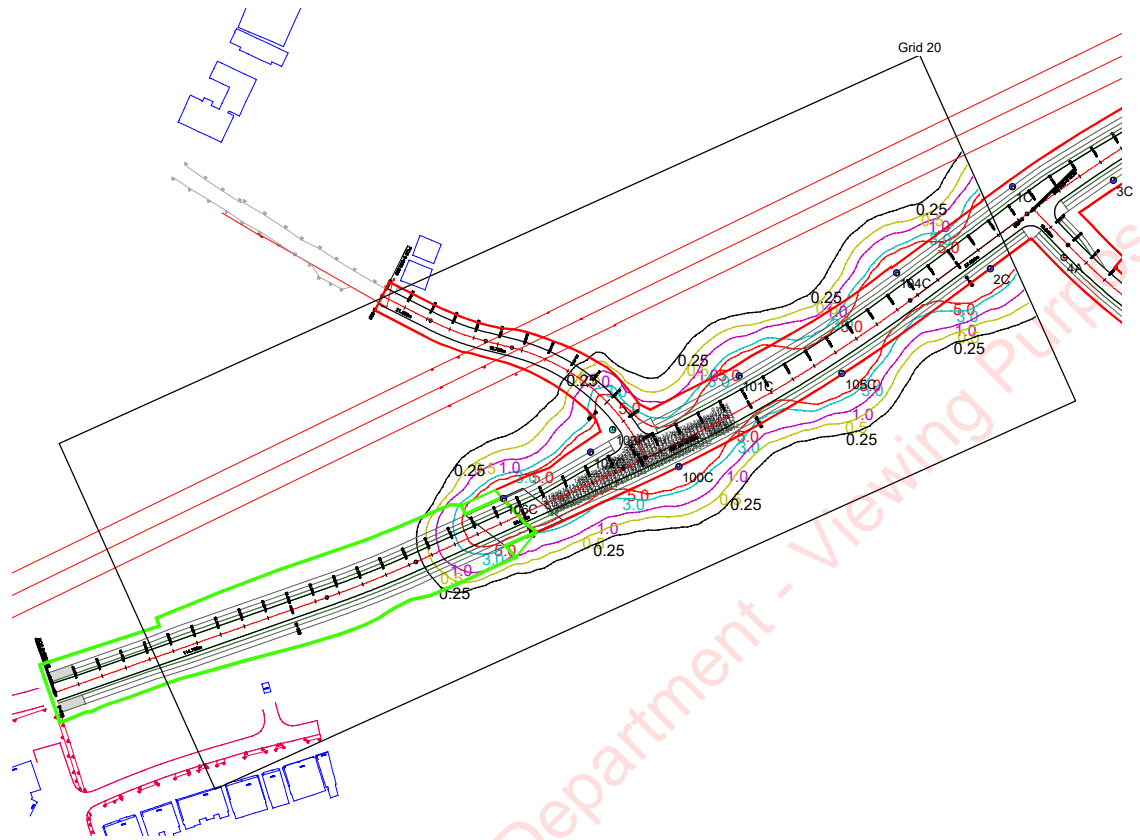


Results

Eav	11.01
Emin	2.36
Emax	31.00
Emin/Emax	0.08
Emin/Eav	0.21

Horizontal Illuminance (lux)

Grid 20



Results

Eav	15.07
Emin	6.86
Emax	27.68
Emin/Emax	0.25
Emin/Eav	0.46



APPENDIX 10-1

**EQUIPMENT SPECIFICATION
AND WEATHER CONDITIONS**

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Survey details

Weather	Cloud cover	0 %
	Precipitation	0 mm
	Temperature	28 °C at set up, falling to 17 °C overnight, returning to 28 °C next day
	Wind direction	SE
	Wind speed	0-2 m/s during daytime, falling to 0 m/s overnight
	WS measurement	Anemo anemometer 2 m above ground level
Field details	DB1 calibration	Station N4 20.07.21 1615 @ 39.3 mV/Pa
	DB2 calibration	Station N3 20.07.21 1530 @ 41.4 mV/Pa
	DB3 calibration	Station N1 20.07.21 1440 @ 42.0 mV/Pa
	DB4 calibration	Station N5 20.07.21 1415 @ 41.0 mV/Pa
	DB5 calibration	Station N2 20.07.21 1549 @ 42.9 mV/Pa
	Acoustic field	Free field
	Microphone height	1.2 m above ground level
	Standard	ISO 1996 (2016 & 2017)
Instruments	Survey operator	Damian Brosnan BSc MSc MIOA MIEI
	Calibrator	Bruel & Kjaer Type 4231 Serial 2342544 Verification 13.05.21
	SLM DB1	NTi Audio XL2 Serial A2A-13658-E0 Microphone A14735 Pre-amp 7066 Verification 13.05.21
	SLM DB2	NTi Audio XL2 Serial A2A-14337-E0 Microphone A14972 Pre-amp 7266 Verification 13.05.21
	SLM DB3	NTi Audio XL2 Serial A2A-15392-E0 Microphone A16340 Pre-amp 7956 Verification 13.05.21
	SLM DB4	NTi Audio XL2 Serial A2A-15429-E0 Microphone A16329 Pre-amp 7945 Verification 14.02.20
	SLM DB5	NTi Audio XL2 Serial A2A-17932-E0 Microphone A18747 Pre-amp 9220 Verification 24.07.20
	Certificates	Available on request



APPENDIX 10-2

BASELINE NOISE MONITORING RESULTS

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Baseline noise data

Start time	N1	N1	N2	N2	N3	N3	N4	N4	N5	N5
	L _{Aeq}	L _{AF90}	L _{Aeq}	L _{AF90}	L _{Aeq}	L _{AF90}	L _{Aeq}	L _{AF90}	L _{Aeq}	L _{AF90}
20/07/2021 15:00	61	38	-	-	-	-	-	-	50	39
20/07/2021 15:15	61	38	-	-	-	-	-	-	52	41
20/07/2021 15:30	60	40	-	-	-	-	-	-	52	41
20/07/2021 15:45	62	43	-	-	-	-	-	-	51	40
20/07/2021 16:00	63	41	46	39	54	38	-	-	52	41
20/07/2021 16:15	64	45	47	42	54	38	-	-	52	41
20/07/2021 16:30	63	45	47	40	54	36	-	-	52	41
20/07/2021 16:45	63	45	46	40	54	38	-	-	52	43
20/07/2021 17:00	64	45	47	41	55	39	64	47	52	42
20/07/2021 17:15	64	48	48	42	54	38	64	43	54	44
20/07/2021 17:30	65	46	47	41	54	37	64	45	52	42
20/07/2021 17:45	64	47	48	41	54	38	64	48	52	42
20/07/2021 18:00	63	45	47	39	52	37	63	40	52	39
20/07/2021 18:15	63	43	46	40	53	37	64	43	51	41
20/07/2021 18:30	62	38	47	39	52	36	63	42	51	40
20/07/2021 18:45	62	40	45	39	53	36	62	39	51	39
20/07/2021 19:00	62	40	47	38	52	36	61	40	51	41
20/07/2021 19:15	60	37	46	36	53	36	62	38	49	38
20/07/2021 19:30	60	38	44	37	52	36	61	36	50	39
20/07/2021 19:45	59	38	44	37	53	38	61	37	49	38
20/07/2021 20:00	58	35	42	34	51	39	60	35	49	38
20/07/2021 20:15	61	37	45	36	54	37	62	36	51	38
20/07/2021 20:30	59	37	42	36	51	36	61	38	51	37
20/07/2021 20:45	60	38	43	37	51	37	60	40	49	37
20/07/2021 21:00	58	39	42	37	51	37	61	41	49	38
20/07/2021 21:15	59	39	43	38	52	37	60	39	49	38
20/07/2021 21:30	54	38	42	36	49	35	59	36	47	38
20/07/2021 21:45	57	39	43	37	49	35	60	36	49	39
20/07/2021 22:00	55	39	40	36	51	36	58	36	47	40
20/07/2021 22:15	55	37	40	35	49	34	59	35	47	39
20/07/2021 22:30	55	37	45	35	46	34	58	32	48	38
20/07/2021 22:45	56	37	40	35	48	35	59	34	47	39
20/07/2021 23:00	54	36	39	33	48	34	58	33	47	38
20/07/2021 23:15	56	35	46	32	46	32	58	32	49	38
20/07/2021 23:30	56	36	47	35	51	34	60	35	49	38
20/07/2021 23:45	52	34	41	32	45	31	56	31	45	37
21/07/2021 00:00	53	31	37	29	43	29	52	29	41	36
21/07/2021 00:15	52	30	42	27	44	29	55	27	45	36
21/07/2021 00:30	47	31	34	28	43	28	51	28	42	37
21/07/2021 00:45	49	30	35	28	38	26	51	26	40	36
21/07/2021 01:00	53	30	37	27	38	27	54	28	39	36
21/07/2021 01:15	34	29	32	27	45	27	49	26	41	36
21/07/2021 01:30	45	29	33	26	38	27	47	26	42	35
21/07/2021 01:45	30	28	29	26	30	26	46	26	38	35
21/07/2021 02:00	49	28	34	26	40	28	50	27	40	35
21/07/2021 02:15	31	27	29	25	33	27	48	27	38	35
21/07/2021 02:30	47	27	32	25	41	26	46	25	36	35
21/07/2021 02:45	31	26	39	24	32	25	50	25	40	35
21/07/2021 03:00	48	28	44	26	32	27	49	26	39	35
21/07/2021 03:15	31	27	30	26	30	26	31	27	36	35
21/07/2021 03:30	31	28	28	26	30	26	45	28	38	35
21/07/2021 03:45	47	29	33	27	33	27	51	29	39	36
21/07/2021 04:00	53	29	37	27	33	27	50	29	39	36
21/07/2021 04:15	51	29	35	28	35	27	51	29	40	35

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21/07/2021 04:30	44	31	36	29	45	28	55	30	44	36
21/07/2021 04:45	54	34	52	32	37	32	54	32	43	38
21/07/2021 05:00	55	34	51	33	46	33	56	33	43	38
21/07/2021 05:15	55	35	46	33	51	35	55	34	46	38
21/07/2021 05:30	59	37	49	37	50	37	59	37	48	38
21/07/2021 05:45	57	37	47	36	50	37	59	36	46	38
21/07/2021 06:00	62	40	53	38	53	41	61	41	48	40
21/07/2021 06:15	64	44	57	42	57	44	65	49	52	42
21/07/2021 06:30	65	45	51	44	55	45	65	48	52	43
21/07/2021 06:45	64	45	47	44	56	44	65	47	54	44
21/07/2021 07:00	64	46	48	44	56	44	64	46	53	45
21/07/2021 07:15	65	46	52	43	58	44	65	45	54	46
21/07/2021 07:30	65	45	50	41	59	41	65	48	53	44
21/07/2021 07:45	63	41	51	37	54	37	65	43	52	41
21/07/2021 08:00	63	41	52	37	54	37	63	43	52	39
21/07/2021 08:15	63	39	49	36	54	36	63	38	52	40
21/07/2021 08:30	63	37	50	36	57	35	63	44	52	40
21/07/2021 08:45	64	37	55	35	56	34	63	36	51	43
21/07/2021 09:00	61	36	43	33	52	32	62	37	51	43
21/07/2021 09:15	62	37	50	35	53	33	63	38	51	42
21/07/2021 09:30	62	38	42	34	53	35	62	42	54	43
21/07/2021 09:45	62	36	42	34	52	34	62	35	50	41
21/07/2021 10:00	62	39	43	34	52	34	62	38	50	39
21/07/2021 10:15	61	34	53	34	53	34	62	37	51	38
21/07/2021 10:30	61	34	53	32	52	33	61	39	50	37
21/07/2021 10:45	60	38	46	33	51	33	61	36	51	38
21/07/2021 11:00	61	37	45	34	51	34	61	35	50	39
21/07/2021 11:15	60	35	52	34	54	34	62	38	50	38
21/07/2021 11:30	62	39	45	35	52	34	62	33	51	40
21/07/2021 11:45	60	37	52	35	52	34	61	35	50	38
21/07/2021 12:00	60	37	44	34	51	34	61	40	50	37
21/07/2021 12:15	61	36	42	35	51	34	61	34	49	38
21/07/2021 12:30	61	37	46	36	51	35	62	41	51	40
21/07/2021 12:45	60	35	43	35	52	35	61	40	50	39
21/07/2021 13:00	59	37	39	34	51	35	61	38	52	39
21/07/2021 13:15	60	39	45	35	51	35	61	39	50	39
21/07/2021 13:30	62	38	44	36	51	35	62	38	50	40
21/07/2021 13:45	60	37	43	36	53	35	62	42	50	37
21/07/2021 14:00	61	38	45	36	51	36	62	41	50	37
21/07/2021 14:15	61	39	47	38	54	37	62	38	51	39
21/07/2021 14:30	61	37	53	39	52	36	63	45	51	39
21/07/2021 14:45	62	40	57	39	52	37	63	45	51	40
21/07/2021 15:00	-	-	51	38	50	37	63	41	-	-
21/07/2021 15:15	-	-	45	38	52	37	62	42	-	-
21/07/2021 15:30	-	-	45	39	53	38	64	43	-	-
21/07/2021 15:45	-	-	49	40	51	38	64	43	-	-
21/07/2021 16:00	-	-	-	-	-	-	64	46	-	-
21/07/2021 16:15	-	-	-	-	-	-	64	46	-	-
21/07/2021 16:30	-	-	-	-	-	-	64	46	-	-
21/07/2021 16:45	-	-	-	-	-	-	63	43	-	-

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APPENDIX 11-1

PHOTOMONTAGE ASSESSMENT TABLES

Kildare County Council Planning Department - Viewing Purposes Only

1.

PHOTOMONTAGE ASSESSMENT TABLES

This document should be read in conjunction with the Volume 2 photomontage booklet forming Volume 2 of this EIAR. The following images are shown in the Photomontage Booklet for each viewpoint location:

- **Baseline VVM:** Shows the baseline landscape/streetscape conditions as it currently exists in a do-nothing scenario.
- **Proposed VVM;** Shows a scaled render of the Proposed Development within the current landscape/streetscape.
- **Proposed VVM & Cumulative Wirelines:** Shows the photomontage as presented in the 'Proposed VVM' view; as well as wirelines indicating the relative physical position and scale of the Proposed Development irrespective of screening. The wirelines of the various above ground development elements are colour coded with the following:
 - **Red Wireline = Site A** - Proposed Strategic Employment Zone
 - **Blue Wireline = Site B** – Proposed Healthcare Facilities
 - **Purple Wireline = Site C** - Proposed Strategic Housing Development

Less visually prominent elements of the Proposed Development such as the MOOR, Kildare Bridge works and Moyglare Bridge are included in the photomontages. In order to ensure the photomontage booklet is clean and coherent, no wirelines have been added around these surface features within the 'Proposed VVM & Cumulative Wirelines', as this would have resulted a relatively confusing visual output. Where they will be seen, the MOOR, the Kildare Bridge works and the Moyglare Bridge are included in the photomontages and are assessed within the assessment narrative in the photomontage assessment tables below.

The following tables demonstrate a structured assessment of the 17 no. photomontages (15 No. Viewpoints) included in the Volume 2 photomontage booklet. The assessment follows the 'Assessment of Visual Effects' methodology included in Section 11.2.4 in Chapter 11. The likely significance of visual effects occurring at each viewpoint is determined in each table by balancing viewpoint (and receptor) sensitivity with the magnitude of change. A residual visual effect accounting for mitigating factors is stated in the final row of each table, following the EPA (2022) Definition of Significance.

The viewpoint assessments account for the potential of cumulative visual effects, such as inter-visibility between the Proposed Development elements of Site A (Strategic Employment Zone), Site B (Healthcare Facilities), Site C (SHD), The MOOR, Kildare Bridge works and the Moyglare Bridge. Where applicable, other permitted and planned developments of similar scope and scale within the surrounding landscape (mapped in Section 11.5 and listed in Chapter 2) will be considered in the judgement of visual effects.

Viewpoint 1 – Residential Receptor on the R157 north-east	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View west from a residential property on the R157 Regional Road as it approaches Site A and Maynooth from the north-east. ➤ This viewpoint is located on the verge of the R157 Regional Road approximately 205 metres east of the nearest proposed building (Office Block C) within Site A. ➤ Field of View: West-south-west ➤ Grid Ref (ITM): E: 695,157; N: 739,327
Visual Receptors and their sensitivity	A Single Residential Receptor – High/Medium Motorised traffic on the R157 – Low
Description of ‘Baseline VVM’	The Baseline image shows medium ranging views across a flat field of agricultural pasture. Site A of the Proposed Development is located beyond the mature treeline demarking the field boundary in the background of the image. A driveway entrance to a residential dwelling forms the foreground of the image. The R157 Regional Road is visible to the left tracking away from the viewpoint to the south-west. Approximately 300 metres (~150m to 400 metres at different locations) metres of relatively dense deciduous woodland separates Site A from Carton Demesne to the south-east, the westerly extent of which is seen in the left background of the baseline image beyond the R157. The view is of a rural character, however, aesthetic qualities of the landscape are diminished by the presence of the R157, utility poles and overhead lines seen through the view.
Proposed Photomontage Description	The second and third storeys of the proposed office blocks of Site A are visible above the treeline in the background of the photomontage. The ground floor and surface infrastructure of Site A are obscured from view by the intervening vegetation. The Proposed Development comprises a relatively small spatial extent within this view and although the proposed office blocks raise the skyline in the centre of the view, they do not obstruct any longer ranging landscape views. As a background addition to the existing view, the Proposed Development slightly alters the character and composition of the exiting landscape.
Cumulative Effects	As shown by the cumulative wireline image, no other infrastructure of the Proposed Development will not be visible from this viewpoint and no cumulative effects will occur.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.”

Viewpoint 1 – Residential Receptor on the R157 north-east	
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Moderate = Moderate/Minor = Slight (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ The Proposed Development is only visible from the gable end of the residential property where this photomontage was captured. The primary residential visual amenity of this property is directed to the north-west and south-east, away from the Proposed Development. ➤ This is the only residential receptor which will have any visibility of the proposed infrastructure of Site A. ➤ The proposed infrastructure of Site A aligns with the zoning of these lands as ‘E1 – Strategic Employment Zone’ in the Maynooth Environs Written Statement (2021-2027). ➤ The impact of vegetation screening has seasonal variation. In order to show a worst-case scenario for visual effects, all photomontages were captured during the winter months. As demonstrated by images within Chapter 11 (See Section 11.4.1.3), roadside vegetation on the R157 will be much denser during summer months when existing hedges and deciduous trees are full of foliage. In this regard, the distant deciduous treeline and vegetation in the foreground of the view will greatly reduce visibility of the Proposed Development in summer months and reduce the significance of visual effects from this location.
Residual Effect (incl. mitigating factors)	Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities

Viewpoint 2 – R157 Approach from the north-east	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View west from the R157 Regional Road as it approaches Site A and Maynooth from the north-east. ➤ This viewpoint is located on the verge of the R157 Regional Road approximately 105 metres east of the nearest proposed building (Office Block C) within Site A. ➤ Field of View: West ➤ Grid Ref (ITM): E: 695,078; N: 739,238
Visual Receptors and their sensitivity	Motorised traffic on the R157 - Low
Description of 'Baseline VVM'	The baseline view is directed along the R157 Regional Road within a landscape of rural character. The eye is drawn along the path of the roadway which is enclosed by hedgerows and a stone wall. A tall treeline is visible in the middle distance. No long ranging views are available from this location and the view does not comprise any landscape features of unique aesthetic value.
Proposed Photomontage Description	The second and third storeys of the proposed office blocks of Site A are visible above the treeline in the background of the view. The ground floor and surface infrastructure of the proposal such as the proposed car parks and internal road network are obscured from view by the intervening vegetation. The mass and bulk of the proposed office buildings raise the skyline in the centre of the view and alter the composition and character of the landscape to that of a semi-urban, semi-rural landscape.
Cumulative Effects	As shown by the cumulative wireline image, no other infrastructure of the Proposed Development will not be visible from this viewpoint and no cumulative effects will occur.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	“Low: Includes viewers engaged in activities where the focus is not on the landscape or view. These including those travelling along a busy route, viewers at work or engaged in sport not related to views or experience of the landscape.”
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Low x Moderate = Minor = Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Mitigation Factors	<ul style="list-style-type: none"> ➤ The proposed infrastructure of Site A aligns with the zoning of these lands as ‘E1 – Strategic Employment Zone’ in the Maynooth Environs Written Statement (2021-2027). ➤ The impact of vegetation screening has seasonal variation. The photomontages within the Volume 2 booklet were captured during the winter months. As demonstrated by images within Chapter 11 (See



Viewpoint 2 – R157 Approach from the north-east	
	Section 11.4.1.3), roadside vegetation on the R157 will be much denser during summer months when existing hedges and deciduous trees are full of foliage. In this regard, the distant deciduous treeline will greatly reduce visibility of the Proposed Development from Viewpoint 02 in summer months and reduce visual effects from this location.
Residual Effect (incl. mitigating factors)	Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.

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Viewpoint 3 – Queen Victoria Gate on the R157	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View west from Queen Victoria Gate, an old disused access gate into the woodland within the Carton Estate east of the R157 Regional Road. ➤ This viewpoint is located within the ELAR Study Boundary and at the south-eastern extent of Site A on the verge of the R157 Regional Road where there is a gap in the roadside hedgerow. ➤ Field of View: West ➤ Grid Ref (ITM): E: 694,937; N: 739,141
Visual Receptors and their sensitivity	Motorised traffic on the R157 – Low
Description of 'Baseline VVM'	The baseline view looks across the R157 Regional Road through a gap in the existing hedgerows to a flat agricultural field beyond. Overhead lines and utility poles are man-made features visible along the roadside. As demonstrated by the baseline image, distant visibility is limited in the flat landscape. The mature woodland surrounding Moygaddy House can be seen in the middle distance and form the background of the view.
Proposed Photomontage Description	<p>The proposed MOOR and proposed internal roads of Site A are visible in the foreground of the photomontage. Two of the proposed office blocks of Site A are clearly visible in the centre of the photomontage. Due to the proximity of this viewpoint, the proposed office blocks are seen as large and prominent features of the landscape. The addition of the office blocks, new roads, car parks, pedestrian walkway and cycleway alter the character of the existing view to that of a semi-urban, semi-rural landscape.</p> <p>The most easterly office block (Block C) is not visible in the field of view presented in the photomontage but would be fully seen as a prominent feature from this location if the view was focussed in a northerly direction. This has been factored into the rating of 'magnitude of change' and visual effects determined for this viewpoint.</p>
Cumulative Effects	As shown by the cumulative wireline image, no other infrastructure of the Proposed Development will not be visible from this viewpoint and no cumulative effects will occur.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	“Low: Includes viewers engaged in activities where the focus is not on the landscape or view. These including those travelling along a busy route, viewers at work or engaged in sport not related to views or experience of the landscape.
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	Substantial: Substantial change, where the proposals would result in large-scale, prominent or very prominent change, leading to substantial obstruction of existing view or complete change in character and composition of the baseline though removal of key elements or addition of uncharacteristic elements which may or may not be visually discordant. This includes viewpoints where the Proposed Development is fully or almost fully visible over a wide extent, at close proximity to the viewer. This change could be long term or of a long duration.
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Low x Substantial = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends



Viewpoint 3 – Queen Victoria Gate on the R157	
Mitigation Factors	<ul style="list-style-type: none">➤ The proposed infrastructure of Site A aligns with the zoning of these lands as ‘E1 – Strategic Employment Zone’ in the Maynooth Environs Written Statement (2021-2027).➤ Proposed planting as part of the landscape plan softens the visual impact of the three and five story office blocks, improving the integration of the Proposed Development within the existing rural landscape.
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends.

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Viewpoint 04A – View focussed on Site A from Existing Junction (R157 & L2214-3)	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View north towards Site A – proposed Strategic Employment Zone from the existing junction between the L2214-3 Local Road and R157 Regional Road. ➤ This viewpoint is located on the verge of the L2214-3 Local Road, approximately 62 metres south of the nearest proposed Office Block building of Site A at its closest point. ➤ Field of View: north-north-west ➤ Grid Ref (ITM): E: 694,728; N: 739,023
Visual Receptors and their sensitivity	<p>Motorised traffic on the L2214-3 - Low</p> <p>Motorised traffic on the R157 – Low</p>
Description of ‘Baseline VVM’	<p>The baseline view looks across the L2214-3 local road where it joins the R157 Regional Road which tracks around a bend away from the viewpoint to the right of the image. This is a relatively recognisable location due to the collection of traffic signage at this junction. A field of agricultural grassland is seen through roadside vegetation in the centre and left of the image. Dense woodland extends approximately 400 metres east from the wall seen to the right of the photomontage. This woodland screens any visibility of this location or the Proposed Development from Carton House and Carton Demesne which are sensitive receptors to the east.</p>
Proposed Photomontage Description	<p>All three office blocks of Site A are clearly visible from this location. Due to the proximity of this viewpoint, they are seen as large and prominent features of the landscape. The proposed north-westerly section of the MOOR is visible to the left of the photomontage and the proposed realigned R157 cuts across the photomontage to from left to right. The removal of existing vegetation and addition of the office blocks, new roads, pedestrian walkways and cycleways alter the character of the existing view to that of a semi-urban, semi-rural landscape.</p>
Cumulative Effects	<p>Photomontage Viewpoint 4B (seen next in the photomontage booklet and described in the following table) was captured from the roadside verge adjacent to the signage visible in the right foreground of ‘Baseline View’, the view in that photomontage is focussed in the opposite direction – to the south (Viewpoint 4B). As shown by Viewpoint 4B, the infrastructure of the proposed Site B - Healthcare Facilities will be partially visible beyond a distant treeline. Upgrades to the local road forming the proposed MOOR will also be visible to the left of the photomontage as it tracks west towards Site C, Moygaddy House and Moygaddy Castle ruins. In this regard, cumulative visual effects will occur and have been factored into the rating of visual effects given to this viewpoint.</p>
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>“Low: Includes viewers engaged in activities where the focus is not on the landscape or view. These including those travelling along a busy route, viewers at work or engaged in sport not related to views or experience of the landscape.</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	<p>“Substantial: Substantial change, where the proposals would result in large-scale, prominent or very prominent change, leading to substantial obstruction of existing view or complete change in character and composition of the baseline though removal of key elements or addition of uncharacteristic elements which may or may not be visually discordant. This</p>

Viewpoint 04A – View focussed on Site A from Existing Junction (R157 & L2214-3)	
	includes viewpoints where the Proposed Development is fully or almost fully visible over a wide extent, at close proximity to the viewer. This change could be long term or of a long duration.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Low x Substantial = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ The proposed infrastructure of Site A aligns with the zoning of these lands as ‘E1 – Strategic Employment Zone’ and the ‘indicative road route’ within the Maynooth Environs Written Statement (2021-2027). ➤ Landscape elements such as a large agricultural field and mature vegetation along field boundaries act as a buffer, visually separating the proposed infrastructure of Site A, Site B and Site C, therefore mitigating the potential for significant cumulative visual effects. ➤ Proposed planting as part of the landscape plan softens the visual impact of the three and five story office blocks, enabling the Proposed Development to better assimilate within the existing rural landscape.
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends.

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Viewpoint 04B – View focussed on Site B from Existing Junction (R157 & L2214-3)	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View south-west towards Site B – proposed Healthcare Facilities from the R157 Regional Road at the existing junction with the L2214-3 Local Road. ➤ This viewpoint is on the verge of the R157 Regional Road approximately 250 metres north of the nearest proposed building of Site B (Primary Care Centre building) at its closest point. ➤ This viewpoint is located at the southern extent of Site A, across the road from Viewpoint 4A (Assessed in the previous table above). ➤ Field of View: south-west ➤ Grid Ref (ITM): E: 694,745; N: 739,033
Visual Receptors and their sensitivity	<p>Motorised traffic on the L2214-3 - Low</p> <p>Motorised traffic on the R157 - Low</p>
Description of 'Baseline VVM'	<p>The baseline view looks south-west across the existing junction between the R157 Regional Road which seen to the left of the image and the L2214-3 Local Road, seen to the right. The junction is located at a bend in the R157 as it tracks along the boundary wall of Carton Demesne which is seen to the very left of the view. The thin roadside verges are lined by mature deciduous trees and low hedgerows. Beyond the junction there are medium range views across a flat field of grazing pasture. A line of dense woodland forms the distant field boundary comprising the background of this view.</p>
Proposed Photomontage Description	<p>The proposed MOOR is visible tracking across the foreground of the photomontage, loss of existing roadside hedgerows and trees has opened up views across the agricultural grasslands in the middle distance. An access path to woodlands of Carton Demense is visible in the left foreground of the photomontage. Infrastructure of Site B is just discernible beyond the distant treeline, it is substantially screened from view by the intervening vegetation. Elevated elements of the proposed PCC is just visible through the trees to the left of the photomontage. The proposed nursing home (the light-coloured building) is visible beyond the distant treeline in the centre of the photomontage, the ground floor and surface elements are obscured from view by the treeline.</p>
Cumulative Effects	<p>Photomontage Viewpoint 4A (seen in the booklet and described in the previous table) was captured from the roadside verge visible in the centre foreground of this photomontage (Viewpoint 4B). As shown by viewpoint 4A, the infrastructure of Site A and MOOR will be visible directly behind this photomontage. As there will be substantial change to the landscape and visual amenity to the north of this viewpoint, cumulative visual effects will occur and have been factored into the rating of visual effects given to this viewpoint.</p> <p>As shown by the indicative (purple) wireline image, Site C is located beyond the treelines to the west (right) of the photomontage. However, due to the intervening screening, visibility is likely to be very limited and no significant cumulative visual effects will arise in relation to the Site C SHD from this viewpoint.</p>
Sensitivity of Visual Receptor(s)	<p>“Low: Includes viewers engaged in activities where the focus is not on the landscape or view. These including those travelling along a busy route,</p>

Viewpoint 04B – View focussed on Site B from Existing Junction (R157 & L2214-3)	
<i>(Definition, See Section 11.2.4)</i>	viewers at work or engaged in sport not related to views or experience of the landscape.
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Low x Moderate = Minor = Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Mitigation Factors	<ul style="list-style-type: none"> ➤ Landscape elements such as the mature vegetation along the field boundaries and the field itself act as a buffer, visually separating the proposed infrastructure of Site A, Site B and Site C, therefore mitigating the potential for significant cumulative visual effects. ➤ The Proposed Development is sited in a location zoned for its purpose; the Site B Healthcare Facilities are sited in lands zoned for ‘G1 – Community Infrastructure’ in the Maynooth Environs Written Statement (2021-2027). ➤ As demonstrated by images within Chapter 11 (See Plate 11-14; Plate 11-51; & Plate 11-52) vegetation will be much denser during summer months when existing hedges and deciduous trees are full of foliage. In this regard, visibility of the Proposed Development will have some seasonal variation. It is unlikely that the proposed Healthcare Zone at Site B would be visible from this viewpoint if the photomontage was captured from this location during the summer months, therefore there would be no visual impact during that time.
Residual Effect (incl. mitigating factors)	Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities

Viewpoint 5 – Residential Receptors on the L2214 north-west	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View south-south-east from the L2214 Local Road as it approaches The Proposed Development from the north. ➤ This viewpoint represents a small cluster of residential receptors situated on this local road. ➤ This viewpoint is located approximately The viewpoint is located approximately 250 metres north of the EIAR Study Boundary. ➤ Field of View: south-south-east ➤ Grid Ref (ITM): E: 694,494; N: 740,058
Visual Receptors and their sensitivity	Cluster of Residential Receptors – High Motorised traffic on the R157 – Low
Description of ‘Baseline VVM’	The Baseline view is of a rural character. The image shows open views across flat fields of grazing pasture. The verge of the L2214 Local Road is seen to the right of the view. The three residential dwellings seen in the middle distance are located off the local road in a linear arrangement. Site A of the Proposed Development is located beyond the mature treelines demarking distant field boundaries in the background centre of the image. A large electricity pylon is seen above the treeline in the background left of the view, utility poles and overhead lines are also prominent features along the roadway.
Proposed Photomontage Description	As indicated by the red wireline in the photomontage, the proposed Development will be almost entirely screened from view behind the distant treelines. The most western rooftops of Office Block A may be just discernible above the treeline, no other elements of the Proposed Development can be seen from this location.
Cumulative Effects	As shown by the cumulative wireline image, Site B and Site C of the Proposed Development will not be visible from this viewpoint. It is not anticipated that the MOOR will be visible from this location and no cumulative visual effects will occur.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	“High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.”
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Negligible: Any change would only be barely distinguishable from the status quo “do-nothing scenario” in the surroundings. The composition and character of the view would be substantially unaltered, approximating to little or no change.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	High x Negligible = Minor = Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Mitigation Factors	<ul style="list-style-type: none"> ➤ The primary residential visual amenity of these properties is directed east, not directly towards the Proposed Development which is located to the south-south-east.

Viewpoint 5 – Residential Receptors on the L2214 north-west	
	<ul style="list-style-type: none"> ➤ The proposed infrastructure of Site A aligns with the zoning of these lands as ‘E1 – Strategic Employment Zone’ in the Maynooth Environs Written Statement (2021-2027). ➤ The impact of vegetation screening has seasonal variation. The photomontages within the Volume 2 booklet were captured during the winter months. In general, vegetation will be much denser during summer months when existing hedges and deciduous trees are full of foliage. In this regard, the distant deciduous treeline will completely obscure the Proposed Development from view in summer months causing no visual effects from this location.
Residual Effect (incl. mitigating factors)	<p>Not Significant (EPA, 2022)</p> <p>An effect which causes noticeable changes in the character of the environment but without significant consequences.</p>

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Viewpoint 06 - Site B from the R157 Regional Road	
Viewpoint Description and Details	<ul style="list-style-type: none"> > View south-west towards Site B from the R157 Regional Road. > This viewpoint is located on the verge of a public road, within the EIAR Study Boundary, immediately adjacent to the proposed vehicular access road into Site B. > Field of View: south-west > Grid Ref (ITM): E: 694,707; N: 738,814
Visual Receptors and their sensitivity	Motorised traffic on the R157 – Low
Description of 'Baseline VVM'	Beyond the roadside verge of the R157, the baseline image shows the existing eastern field boundary of Site B comprising low timber fencing and deciduous vegetation. The mature woodland that forms the northern boundary of Site B is visible to the right of the image. From this specific location on the R157, there is a gap in the roadside screening and a relatively unobstructed view into the agricultural field where Site B is located. Several residential developments are just discernible in the distant background of the view where they are located beyond the valley of lower ground along the Rye Water.
Proposed Photomontage Description	<p>The proposed Primary Care Centre (PCC) is visible in the foreground of the photomontage as well as the proposed vehicular access route and junction with the R157. The proposed nursing home is visible beyond the PCC in the background right of the photomontage, although it is softened by the proposed tree planting along the access road.</p> <p>The proposed PCC is a three-storey building viewed in close proximity to this viewpoint (approximately 37 metres at its closest point), due to its scale and mass it is seen as a substantial feature of the photomontage. The proposed PCC causes some visual obstruction, blocking longer ranging views of the landscape beyond. The Proposed Development alters the baseline character and composition of the view from that of a rural landscape to one of a more urban nature.</p>
Cumulative Effects	The proposed road upgrades to the R157 as part of the MOOR and new junction will be visible along the road to the north (right of photomontage view). The Proposed Kildare bridge works may have some minor visibility within views to the south from this viewpoint, although it is likely to be screened from view by the intervening roadside vegetation. From this viewpoint there will be some minor visual connectivity with the nearest proposed Office Block of Site A which will be visible to the north (right of photomontage field of view), although visual effects will be mitigated by distance. A view of the Proposed Development at Site A from the south are presented in Photomontage Viewpoint 04A and visual effects are assessed in a table previously. Site C and Moyglare Bridge will not be visible from this viewpoint.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	Low: Includes viewers engaged in activities where the focus is not on the landscape or view. These including those travelling along a busy route, viewers at work or engaged in sport not related to views or experience of the landscape.

Viewpoint 06 - Site B from the R157 Regional Road	
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	Substantial: Substantial change, where the proposals would result in large-scale, prominent or very prominent change, leading to substantial obstruction of existing view or complete change in character and composition of the baseline though removal of key elements or addition of uncharacteristic elements which may or may not be visually discordant. This includes viewpoints where the Proposed Development is fully or almost fully visible over a wide extent, at close proximity to the viewer. This change could be long term or of a long duration.
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Low x Substantial = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ Receptors will only have this view momentarily and the road is not oriented towards the site. ➤ The Proposed Development is sited in a location zoned for its purpose; the Site B Healthcare Facilities are sited in lands zoned for ‘G1 – Community Infrastructure’. ➤ Proposed infrastructure at Site A and Site B will not be visible within the same field of view from this location. Cumulative visual effects are mitigated by distance and screening.
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends

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Viewpoint 07 – Kildare Bridge	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View north-west towards Site B and Kildare Bridge from a location on the R157 Regional Road. ➤ This viewpoint is located on the public footpath approximately 10 metres south of the existing Kildare Bridge structure and the location/origin of County Kildare Designated Scenic View RW-4. ➤ This viewpoint was chosen south of the designated scenic view in order to show a wider perspective and more open view towards the Proposed Development, set back from existent roadside screening. ➤ Field of View: north-north-west ➤ Grid Ref (ITM): E: 694,671; N: 738,561
Visual Receptors and their sensitivity	County Kildare Designated Scenic View RW-4 (in close proximity) - High Motorised traffic on the R157 - Low
Description of 'Baseline VVM'	The existing Kildare Bridge structure and the R157 is visible in the foreground of the view. As shown in the baseline image there is limited safe pedestrian access to the western side of the bridge. The verge of the road either side of the bridge is lined by tall hedges and deciduous trees. The road and landform rises to the north, away from the viewpoint and bridge over the Rye Water. The agricultural field comprising Site B is visible beyond the bridge in the centre of the image.
Proposed Photomontage Description	<p>The cycleway/pedestrian access is visible as part of the MOOR along the verge of the existing R157. The Proposed Kildare Bridge works is visible adjacent to the stone wall of the existing Kildare Bridge structure in the left foreground. The proposed bridge itself has limited visibility from this viewpoint as it is located beyond the stone wall parapet of the existing Kildare Bridge Structure.</p> <p>Due to its elevated position from this perspective, the three storey Primary Care Centre (PCC) of Site B is a relatively prominent feature in the background-right of the photomontage beyond the treeline existent along the verge of the R157. The two-storey proposed nursing home is visible in the centre background of the photomontage, although a large portion of it is substantially screened from view by existing vegetation. The proposed car park is located upon the flat ground between the two proposed healthcare buildings. As shown by the photomontage, visibility of cars (and other element of the Proposed Development within Site B) will be softened by the proposed planting of native trees along the proposed recreational walking route to the south of the site.</p>
Cumulative Effects	<p>From this viewpoint location the Proposed Development at Site A will not be visible. From this viewpoint the R157 heads north and bends slightly to the north-north-east as it passes the entrance to proposed Site B. The dense woodland and topographical characteristics will therefore screen Site A (to the right of the field of view presented in the photomontage) from view. As shown by the indicative cumulative wireline image, Site C will not be visible from this viewpoint.</p> <p>The Permitted Dunboyne Road housing development is located approximately 200 metres south-west of this viewpoint, however no visibility of this development is expected from this viewpoint due to screening from intervening landform and vegetation. Plans for the proposed Maynooth</p>

Viewpoint 07 – Kildare Bridge	
	Eastern Ring Road (MERR – P82019.08) which is a transport network linking with the Dunboyne roundabout, and associated works for this development will likely be visible from this viewpoint, however, cumulative visual effects will not be significant.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”</p> <p>Although this photomontage viewpoint is located in proximity (within 10m) to a designated scenic view, on-site appraisal determined that, on balance, this viewpoint does not represent receptors of high sensitivity and due to limited pedestrian access and height of the walls on the existing Kildare Bridge it is unlikely that receptors will come to this location to appreciate the designated scenic views.</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Moderate = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ The designated scenic views are from the existing Kildare Bridge and are oriented directly east and directly west along the Rye Water, in a direction perpendicular to the Proposed Development. Therefore, the Proposed Development is not the focus of the designated scenic view from this location and receptors will only have this view (shown in the photomontage) momentarily as they walk or drive across the existing Kildare Bridge. ➤ Whilst nice views of the Rye Water can be seen from above the wall on the existing Kildare Bridge (presented in Plate 11-35 & Plate 11-36 of Chapter 11), a pedestrian (receptor) walking across the bridge (or within a car driving past) would struggle to experience these scenic views due to the height of the stone walls on the bridge which have been constructed higher than average human eye height. Unless a receptor is either very tall or within an elevated vehicle these scenic views cannot be experienced. ➤ The proposed Kildare Bridge works and pedestrian and cycleway will enhance the accessibility of the designated scenic views (RW-4) available to the west ➤ As demonstrated by images within Chapter 11 (Plate 11-37, Plate 11-38), tall and dense vegetation will provide visual screening along much of the R157 during summer months when existing hedges and deciduous trees are full of foliage. The existing roadside screening, as well as

Viewpoint 07 – Kildare Bridge	
	<p>proposed planting as part of the landscape plan will restrict visibility and mitigate visual effects from this viewpoint location.</p> <ul style="list-style-type: none"> ➤ The Proposed Development is sited in a location zoned for its purpose; Site B Healthcare Facilities is sited in lands zoned for ‘G1 – Community Infrastructure’.
Residual Effect (incl. mitigating factors)	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>

Viewpoint 08 – Lyreen Housing Estate	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View north-east from the Lyreen Housing Development in the townland of Mariavilla. ➤ This viewpoint is located adjacent to an area of recreational green space at the eastern extent of the Lyreen Housing Development. ➤ The viewpoint is approximately 500 metres south-west of the proposed nursing home in Site B. ➤ Field of View: north-east ➤ Grid Ref (ITM): E: 694,051; N: 738,522
Visual Receptors and their sensitivity	<p>Residential Receptors - The Lyreen Housing Estate – High/Medium Park users and Pedestrians along the River Lyreen – High/Medium</p>
Description of ‘Baseline VVM’	<p>The baseline view shows a relatively long ranging view across the Rye Water Valley where the River Lyreen joins the Rye Water. Several small loughs which are part of the Lyreen angling centre are visible in the middle distance amongst bushes and riparian vegetation. The park and boundary fencing of the Lyreen Housing estate is seen in the foreground left of the image. An agricultural field which is the location of Site B is seen in the distance beyond the low-lying ground surrounding the watercourses and waterbodies. Tall mature woodland is visible across the background of the view restricting longer ranging views of the wider landscape.</p>
Proposed Photomontage Description	<p>The proposed buildings of the Site B are visible in the background centre of the photomontage, they are enclosed in a backdrop of tall woodland. The proposed buildings of Site B (nursing home and PCC) comprise a wide horizontal extent of the view, however, they do not raise the height of the skyline and are neatly framed within the surrounding woodland. Surface elements of Site B are not discernible at this distance. Due to its siting on elevated ground beyond Site B, the Proposed Development at Site A is visible in the background centre-left of the Photomontage. The proposed five storey Office Block A is a prominent feature as its profile raises the skyline within the landscape. Lower elements of Site A will be obscured from view by intervening vegetation. Elevated ridgelines of housing infrastructure of Site C is just visible to the far left of the photomontage.</p>

Viewpoint 08 – Lyreen Housing Estate	
	Cumulatively, all elements of the Proposed Development will alter the composition and character of this view, but will not detract value from its more aesthetic attributes such as the riparian landscape visible in the middle distance.
Cumulative Effects	<p>The proposed Site C SHD is located beyond the Lyreen Housing estate located to the left (west-north-west) of the photomontage. It will have very limited visibility from this location.</p> <p>There will be combined successional visibility of the Proposed Development with several other SHD developments located to the south (Proposed Moyglare Road – ABP 314337) and east (Permitted Dunboyne Road ABP 310865-21) of this viewpoint. These developments will be partially visible in opposing fields of view to the Proposed Development. They will add to the existing residential and suburban character of the landscape immediately east and west of this viewpoint. These developments and the Proposed Development will have a cumulative effect aligning with the current trend of urbanisation in this area. Considering the separation distances and screening elements obscuring full intervisibility between the Proposed Development and these two developments, significant cumulative visual effects are not likely to occur.</p>
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>Although residential receptors are generally deemed to be of high sensitivity, the separation distance and orientation of houses are such that primary residential visual amenity is not directed towards the Proposed Development. On balance, sensitivity of this viewpoint is deemed to be of medium sensitivity.</p> <p>“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Moderate = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ The woodland surrounding the Proposed Development and proposed planting at Site B effectively absorb the Proposed Development within the landscape and it does not obstruct views of aesthetic landscape features such as the loughs visible in the middle distance. ➤ In order to capture a completely unobstructed view of the Proposed Development from this perspective, the photomontage was captured outside of the Lyreen Housing estate boundary (seen to the left of the

Viewpoint 08 – Lyreen Housing Estate	
	<p>photomontage). Visual receptors in the park would therefore have more limited visibility of the Proposed Development than is shown in the photomontage.</p> <ul style="list-style-type: none"> ➤ Orientation of housing in the development (left of the photomontage) is such that most primary residential visual amenity is directed to the south-east and north-west, therefore, not directly focussed in the direction of the Proposed Development reducing the visual impact upon residential receptors. ➤ Visual effects are mitigated by distance and appropriate siting of the various Proposed Development elements within the subject lands aligns with the zoning strategy detailed in the Maynooth Environs Written Statement (2021-2027).
Residual Effect (incl. mitigating factors)	<p>Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends</p>

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Viewpoint 09A – View Focused on Site B from Mogaddy House & Moygaddy Castle Ruins	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View south-south-east towards Site B from the L2214-3 Local Road in proximity to Moygaddy House and Moygaddy Castle Ruins. ➤ The viewpoint is located within the EIAR Study Boundary, approximately 295 metres north of the proposed nursing home in Site B at its closest point. ➤ Field of View: south-south-east ➤ Grid Ref (ITM): E: 694,461; N: 739,171
Visual Receptors and their sensitivity	L2214-3 Local Road - Low Nearby Moygaddy Castle Ruins (Cultural Heritage Receptor) - Medium
Description of 'Baseline VVM'	An open view across a flat field of agricultural grassland. The field boundary comprising mature trees and hedges are visible in the middle distance, they partially restrict long ranging views towards distant hills just visible in the background of the view. The pinnacle of an obelisk of Conolly's Folly (located in the townland of Barrogstown West) is just discernible above the treeline in the background left of the baseline image.
Proposed Photomontage Description	The proposed Healthcare Zone is visible from this viewpoint beyond the distant treeline; however, it is substantially screened from view by the intervening vegetation. The upper storeys of the proposed PCC and nursing home buildings are visible amongst the treetops across the centre of the photomontage. The ground floor and surface elements are obscured from view by the vegetation. The proposed PCC building slightly obscures longer ranging views and the lower section of the obelisk at Conolly's Folly. The Proposed Development comprises a relatively wide horizontal extent of the view, however, as a whole it is a minor addition to the background of the view and does not fundamentally change the character of the landscape from this viewpoint.
Cumulative Effects	From this viewpoint location the Proposed Development at Site A will not be visible due to the dense woodland to the north of the Local Road – east of Moygaddy House. Site C is located to the west of this viewpoint location and is not visible in the field of view presented in the photomontage. Photomontage 9B was captured from the same location and shows the view west focussed to the west towards Site C where various infrastructure elements of the proposed housing development will be visible beyond a distant treeline, as well as landscaping proposals around Moygaddy castle ruins and the MOOR.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	The rural agricultural landscape view has some aesthetic value. Also, as Moygaddy Castle Ruins are located in proximity to this viewpoint and has local cultural heritage value. However, as there is currently limited public access to the ruins it is only seen by the public from the Local Road and in essence, the only visual receptors are the local road users. On balance this viewpoint is on balance deemed to be of Medium sensitivity. “Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”

Viewpoint 09A – View Focused on Site B from Mogaddy House & Moygaddy Castle Ruins	
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Slight = Minor = Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities
Mitigation Factors	<ul style="list-style-type: none"> ➤ Due to roadside vegetation screening, receptors will only have this view momentarily and the road is not oriented towards Site B. ➤ The Proposed Development is sited in a location zoned for its purpose; the proposed Healthcare Facilities (which is visible in the photomontage) is sited in lands zoned for ‘G1 – Community Infrastructure’ in the Maynooth Environs Written Statement (2021-2027). ➤ As demonstrated by images within Chapter 11 vegetation will be much denser during summer months when existing hedges and deciduous trees are full of foliage. In this regard, visibility of the Proposed Development will have some seasonal variation. It is likely that visibility of the proposed Healthcare Zone at Site B would have much more limited visibility from this viewpoint if the photomontage was captured from this location during the summer months.
Residual Effect (incl. mitigating factors)	Not Significant (EPA, 2022) An effect which causes noticeable changes in the character of the environment but without significant consequences.

Viewpoint 09B – View Focused on Site C from Mogaddy House & Moygaddy Castle Ruins	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View focused west towards Site C and Moygaddy Castle Ruins from the L2214-3 Local Road adjacent to Moygaddy House. ➤ The viewpoint is located within the EIAR Study Boundary. ➤ Field of View: west-north-west ➤ Grid Ref (ITM): E: 694,447; N: 739,187
Visual Receptors and their sensitivity	L2214-3 Local Road - Low Moygaddy Castle Ruins, a Cultural Heritage Receptor of Local Importance - Medium
Description of 'Baseline VVM'	A short distance view along the local road adjacent to Moygaddy House. The ruins of Moygaddy Castle are visible beyond a low stone wall lining the narrow road. Moygaddy Castle ruins are located within a small field of grassland enclosed by relatively dense woodland.
Proposed Photomontage Description	The Proposed MOOR (upgrades to the existing roadway in this location) is visible in the foreground of the photomontage. A new walking path tracks through the grasslands via Moygaddy Castle ruins to the proposed Scout Den Facility which is seen as a small single storey building within the field enclosure. The two upper storeys of Apartment Block B of the Site C infrastructure are visible above the treeline in the centre background of the photomontage. The addition of the apartment block and Scout Den facility alters the character of the view and slightly intrudes upon the wider setting of this landscape view. The Proposed Development does not obstruct views or alter the integrity of key sensitivities such as the immediate setting of the castle ruins within its field, enclosed by woodland.
Cumulative Effects	As shown in Viewpoint 9A, Site B will also be visible beyond a distant treeline to the south-east and will be a further addition to landscape views from this location.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>The view of Moygaddy Castle Ruins has local cultural heritage value and some scenic value. However, as there is currently limited public access to the ruins it is only seen by the public from the Local Road and in essence, the only visual receptors are the local road users. On balance this viewpoint is deemed to be of Medium sensitivity.</p> <p>“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.”

Viewpoint 09B – View Focused on Site C from Mogaddy House & Moygaddy Castle Ruins	
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Moderate = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ The Proposed Development infrastructure – (Site C - visible in the photomontage) is appropriately sited, aligned with the land zoning in the Maynooth Environs Written Statement (2021-2027). Proposed housing infrastructure is visible within lands zoned as ‘A2 – New Residential’ and the proposed Scout Den Facility and landscaped pathways within lands zoned as ‘H1 Amenity’ which include for development such as “<i>Cycleways / Greenways / Trail Development, Land & Water Based Recreational Activities Open Space, Cultural Activities</i>”. ➤ Provision of safe public rights of way included in the landscape plan, as well as the cycleway and pedestrian route along the MOOR will enhance the accessibility of Moygaddy Castle ruins to the general public and a variety of visual receptors beyond regular commuter traffic along the local road.
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends

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Viewpoint 10 – Carton Demesne	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View north-west towards Site B from Carton Demesne. ➤ The viewpoint is located on a popular walking path (Extension of carton Avenue or ‘Lime Walk’) through Carton House Golf Course. ➤ Field of View: north-north-west ➤ Grid Ref (ITM): E: 694,945; N: 738,366
Visual Receptors and their sensitivity	Carton House Demesne (Landscape Receptor) - High Carton Avenue (Lime Walk) Walking Route - High Carton House Golf Course - Low/Medium
Description of ‘Baseline VVM’	The baseline image shows a relatively short-range view across the fairway and green of Carton House Golf Course towards flat marshy lands around the Rye Water which is located at lower elevation in the middle distance. The landscape is enclosed by mature woodland and hedgerows. There is a narrow corridor of visibility through the trees around the existing Kildare Bridge where the agricultural field of Site B is visible in the background of the image.
Proposed Photomontage Description	The elevated profile of the proposed nursing home (Site B) and a row of housing from Site C are just visible beyond the trees in the background of the photomontage. Most of the Proposed Development is substantially screened from view by the intervening woodland. Kildare Bridge, Site A, The MOOR and Moyglare Bridge are not visible from this location. Due to the set back distance and screening, the Proposed Development is a very small addition to the background of the view and has a very minor alteration to the character of this view.
Cumulative Effects	It is likely that there will be some in-combination visibility of the Proposed Development with the permitted Dunboyne Road SHD which may be partially visible left of the view shown in the photomontage, beyond the distant treeline. The Proposed Development and this proposed SHD would add minor visibility of built infrastructure to the landscape seen from within Carton Demesne, however, cumulative visual effects are not deemed to be significant.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	“High: Includes viewers at designated views or landscapes. Viewers such as residents in close proximity to the viewpoint who have primary views that will be in the direction of the development that may not necessarily be of a particularly scenic quality; viewers at well-known heritage or popular tourist or recreational areas, viewers along scenic or tourist routes.”
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Slight: The proposals would be partially visible or visible at sufficient distance to be perceptible and result in a low level of change in the view and its composition and a low degree of contrast. The character of the view may be altered but will remain similar to the baseline existing situation. This change could be short term or of a short duration.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	High x Slight = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends.
Mitigation Factors	<ul style="list-style-type: none"> ➤ This viewpoint is one of the only locations within Carton Demesne where the Proposed Development will be visible. The dense woodland

Viewpoint 10 – Carton Demesne	
	<p>located between the Proposed Development and Carton Demesne obscures the Proposed Development from view elsewhere within the vast majority of Carton Demesne. The Proposed Development will not have any impact on the setting of Carton House or designated scenic amenity along the Rye Water.</p> <ul style="list-style-type: none"> ➤ Receptors walking along Carton Avenue will only have views of the Proposed Development for a brief period as visibility will be greatly restricted to the east of this viewpoint location. ➤ The Proposed Development is not located within any particularly scenic parts of views within the demesne landscape. ➤ The Proposed Development is sited in a location zoned for its purpose; the proposed Healthcare Zone (which is visible in the photomontage) is sited in lands zoned for ‘G1 – Community Infrastructure’ in the Maynooth Environs Written Statement (2021-2027). ➤ As demonstrated by images within Chapter 11, vegetation will be much denser during summer months when existing hedges and deciduous trees are full of foliage. In this regard, visibility of the Proposed Development will have some seasonal variation. It is likely that visibility of the proposed Healthcare Zone at Site B would have much more limited visibility from this viewpoint if the photomontage was captured from this location during the summer months.
Residual Effect (incl. mitigating factors)	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities.</p>

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Viewpoint 11 – Moygaddy Local Road T-Junction	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View south-west towards Site C from the T junction between the L6219, L2214 and the L2214-3 Local roads. ➤ The viewpoint is located within the EIAR Study Boundary. ➤ Field of View: South-west ➤ Grid Ref (ITM): E: 694,339; N: 739,258
Visual Receptors and their sensitivity	Local Road Users - Low
Description of 'Baseline VVM'	Beyond the road junction visible in the foreground, there is a medium distance view to the right along the L6219 local road which is lined by hedgerows and occasional deciduous trees. The centre of the view comprises a gateway into a field of agricultural grassland. Trees and bushes are seen to the left of the image adjacent to the roadside, this vegetation forms part of a tract of woodland either side of the Blackhall Little stream. These trees and a small V-shape valley act as a physical and visual buffer between the agricultural field seen in the centre of the view (site of the proposed housing infrastructure) and the field enclosure at Moygaddy Castle ruins, approximately 45 metres east of the viewpoint.
Proposed Photomontage Description	The Proposed SHD infrastructure of Site C is clearly visible in the centre and right of the photomontage. A four storey apartment block (Block B) is visible in the centre foreground and a streetscape of residential development lines the entirety of one side of the roadway to the right of the photomontage. The carriageway and cycle/pedestrian access of the MOOR is visible along the route of the existing roadway, until the road is re-aligned to the right (north-west) in the background right of the photomontage. The existing hedgerows along the southern side of the local road have been removed to enable the proposed cycleway and pedestrian access alongside the MOOR. Proposed tree planting along the roadside will soften the landscape and visual impact where these hedgerows have been removed. The woodland to the left of the photomontage will be retained. The Proposed Development has altered the character of the rural view to that of a semi-urban, residential setting.
Cumulative Effects	It is unlikely that the proposed Development at Site A, Site B, Kildare Bridge and Moyglare Bridge will be visible from this location. Road and bridge upgrades included as part of the MOOR will be visible to the east (left of the photomontage).
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	“Low: Includes viewers engaged in activities where the focus is not on the landscape or view. These including those travelling along a busy route, viewers at work or engaged in sport not related to views or experience of the landscape.”
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Substantial: Substantial change, where the proposals would result in large-scale, prominent or very prominent change, leading to substantial obstruction of existing view or complete change in character and composition of the baseline though removal of key elements or addition of uncharacteristic elements which may or may not be visually discordant. This includes viewpoints where the Proposed Development is fully or almost fully visible over a wide extent, at close proximity to the viewer. This change could be long term or of a long duration.”

Viewpoint 11 – Moygaddy Local Road T-Junction	
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Low x Substantial = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ The Proposed housing infrastructure is visible within lands zoned as ‘A2 – New Residential’ land zoning in the Maynooth Environs Written Statement (2021-2027). ➤ The woodland seen to the left of the image will not be removed, retaining the integrity of the of the Blackhall Little stream and its surrounds, as well as providing a visual buffer between the proposed housing infrastructure and the amenity area at Moygaddy Castle and Moygaddy House. ➤ The proposed Development does not obscure any long-ranging views of high scenic value.
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends

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Viewpoint 12 – Residential Development South of the Rye Water	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View north towards Site C from a residential housing estate (Mariavilla/Moyglare Hall) south of the Rye Water. ➤ The viewpoint is located approximately 340 metres south of the EIAR Site Boundary at its closest point. ➤ Field of View: north ➤ Grid Ref (ITM): E: 694,447; N: 739,187
Visual Receptors and their sensitivity	Residential Receptors (medium distance) – High/Medium
Description of ‘Baseline VVM’	The baseline image shows an open and medium-distance view across the Rye Water flood plain comprising grassland and wooded field boundaries. Beyond the walled enclosure of a residential housing development, the landform dips to the low elevation of the Rye Water River in the middle distance. A relatively flat field and dense treeline form the background of the view. Utility infrastructure such as telecommunications uprights and large overhead power line are visible throughout the view. The view is of a semi-urban, semi-rural character.
Proposed Photomontage Description	The proposed residential infrastructure of site C is visible as a linear array of development across the background of the view on the elevated lands beyond the Rye Water River. The ridgelines of the proposed residential infrastructure is vertically aligned with the existing treeline forming the background of the view, however, the profile of the Proposed Development slightly raises the skyline in the very centre of the photomontage. Although the Proposed Development only alters a small spatial extent of the view, it contributes an additional suburban influence to the landscape view.
Cumulative Effects	No visibility of Site A is anticipated from this viewpoint. There may be some limited visibility of Site B, but this will be mostly restricted by intervening woodland. And the housing developments
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>The residential receptors are approximately 390 metres from the nearest proposed residential unit of Site C and are deemed to be in moderate proximity and the view does not comprise any unique features or attributes of value.</p> <p>“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.”

Viewpoint 12 – Residential Development South of the Rye Water	
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Moderate = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ The proposed housing infrastructure is visible within lands zoned as ‘A2 – New Residential’ land zoning in the Maynooth Environs Written Statement (2021-2027). ➤ Once planting as part of the landscaping plan establishes over times, the planting at the southern perimeter of Site C will soften the visual impact of the Proposed Development from this perspective.
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends

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Viewpoint 13 – Moyglare Hall Road	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View north-east towards Site C from Moyglare Hall Road, the viewpoint is located adjacent to Maynooth Community College Campus. ➤ The viewpoint is located just within the EIAR Study Area, on the southern perimeter of the Moyglare Bridge Application. ➤ Field of View: north-east ➤ Grid Ref (ITM): E: 693,551; N: 739,208
Visual Receptors and their sensitivity	<p>Traffic and Local Road Users – Low</p> <p>Maynooth College Campus – Low to Medium</p> <p>Residential Receptors in the vicinity – High/Medium</p>
Description of ‘Baseline VVM’	<p>The foreground of the view shows a field of grassland in a relatively derelict state. Housing from a residential estate is visible to the right of the view. The landform dips to the low elevation of the Rye Water River in the middle distance, agricultural grassland and wooded field boundaries comprise the background of the view. A large overhead power line is a dominant man-made feature to the left of the view detracting quality from the rural landscape character seen in that direction.</p>
Proposed Photomontage Description	<p>The Proposed MOOR and Moyglare Bridge are substantial features visible throughout the foreground of the photomontage. The proposed carriageway, verge and cycle/pedestrian routes extending away from the viewpoint, across the Rye Water valley to Site C which is visible in the background of the photomontage. The proposed Duplex Block A is the most visually prominent building, seen adjacent to the MOOR in the centre-left background of the photomontage. At this distance and perspective, the proposed residential developments of Site C only slightly raise the skyline. The eastern extent of Site C is screened from view by vegetation in the intervening landscape.</p>
Cumulative Effects	<p>No visibility of Site A, Site B or Kildare Bridge is anticipated from this viewpoint.</p>
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>Human influences detract value from this view and it is not a landscape view of any particularly scenic value or uniqueness. Whilst there are residential receptors in proximity to this viewpoint, it is not deemed to be a viewpoint of high sensitivity. On balance, the viewpoint is deemed to be of Medium sensitivity.</p> <p>“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	<p>“Substantial: Substantial change, where the proposals would result in large-scale, prominent or very prominent change, leading to substantial obstruction of existing view or complete change in character and composition of the baseline though removal of key elements or addition of uncharacteristic elements which may or may not be visually discordant. This includes viewpoints where the Proposed Development is fully or almost</p>

Viewpoint 13 – Moyglare Hall Road	
	fully visible over a wide extent, at close proximity to the viewer. This change could be long term or of a long duration.”.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Substantial = Moderate = Significant (EPA, 2022) An effect, which by its character, magnitude, duration or intensity alters a sensitive aspect of the environment.
Mitigation Factors	<ul style="list-style-type: none"> ➤ The MOOR and Moyglare Bridge are visible, following a route where it is envisaged for a transport road network to exist within local planning policy. The MOOR and Moyglare Bridge are sited within lands zoned as ‘Transport - Indicative Road Route’ in the land zoning (Sheet No: 26(a)) in the Maynooth Environs Written Statement (2021-2027). ➤ The photomontage imagery was captured from a viewpoint in the very centre of the Proposed MOOR/Moyglare Bridge route, accentuating the perceived magnitude of change from this location. In reality the visual effects of the Proposed Development is not by its character or magnitude adversely impacting any valuable landscape view or sensitive visual amenity. ➤ Immediately behind this viewpoint is the end of an existing road network, therefore, visual effects of the MOOR is best categorised as ‘An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends’(See EPA Definition below). ➤ The proposed housing infrastructure is visible, sited within lands zoned as ‘A2 – New Residential’ land zoning in the Maynooth Environs Written Statement (2021-2027). ➤ The gable end of residential properties in proximity to the viewpoint is directed in the same direction as the view shown in the photomontage - to the north-east. Primary residential amenity of these residences is directed north-west, over/across the road of the Proposed MOOR and only a small spatial extent of the Proposed Development will be actually visible compared to the extent which is shown in the photomontage which shows a view to the north-east. ➤ Once planting as part of the landscaping plan establishes over times, the planting at the southern perimeter of Site C will soften the visual impact of the Proposed Development from this perspective.
Residual Effect (incl. mitigating factors)	Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends

Viewpoint 14 – L1012 Local Road, Moyglare	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View south-west from an elevated vantage point on the L1012 Local Road in the townland of Moyglare. ➤ The viewpoint is located approximately 850 metres from the EIAR Study Boundary at its closest point. ➤ Field of View: north-north-west ➤ Grid Ref (ITM): E: 693,003; N: 739,904
Visual Receptors and their sensitivity	<p>Local Road Users – Low</p> <p>Residential Receptors in the vicinity – High/Medium</p> <p>Moyglare Stud (in proximity to the west) – High/Medium</p>
Description of ‘Baseline VVM’	<p>The baseline image shows a relatively open and long ranging view across an agricultural landscape of grassland and woodland. The northern fringes of Maynooth Town is visible, framed amongst the deciduous trees to the right of the view. Maynooth Community Campus is identifiable as a large white building to the far right. The Wicklow Mountains form the distant backdrop of the long-ranging landscape view.</p>
Proposed Photomontage Description	<p>Site A, Site B, and Kildare Bridge are not visible, they are screened from view by intervening landscape elements, primarily mature treelines, hedgerows and localised topography. Moyglare Bridge and the MOOR may be slightly visible from this viewpoint, but are difficult to distinguish at this distance.</p>
Cumulative Effects	<p>As demonstrated by the wireline image, no cumulative visual effects will occur.</p>
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>The main receptor at this viewpoint is local traffic, however, there are some residential receptors located in close proximity to this viewpoint. Also, the open, rural landscape view has some scenic qualities. On balance, the sensitivity is deemed to be Medium.</p> <p>“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	<p>“Negligible: Any change would only be barely distinguishable from the status quo “do-nothing scenario” in the surroundings. The composition and character of the view would be substantially unaltered, approximating to little or no change.”</p>
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	<p>Medium x Negligible = Minor/Negligible = Not Significant (EPA, 2022)</p> <p>An effect which causes noticeable changes in the character of the environment but without significant consequences.</p>
Mitigation Factors	<ul style="list-style-type: none"> ➤ The MOOR and Moyglare Bridge are visible, following a route where it is envisaged for a transport road network to exist within local planning policy. The MOOR and Moyglare Bridge are sited within lands zoned as ‘Transport - Indicative Road Route’ in the land zoning (Sheet No: 26(a)) in the Maynooth Environs Written Statement (2021-2027).



Viewpoint 14 – L1012 Local Road, Moyglare	
Residual Effect (incl. mitigating factors)	Not Significant (EPA, 2022) An effect which causes noticeable changes in the character of the environment but without significant consequences.

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Viewpoint 15 – L6219 Local Road West	
Viewpoint Description and Details	<ul style="list-style-type: none"> ➤ View east-south-east towards Site C along the L6219 Local Road ➤ The viewpoint is located approximately 10 metres west of the EIAR Study Boundary. ➤ Field of View: north-north-west ➤ Grid Ref (ITM): E: 693,621; N: 739,358
Visual Receptors and their sensitivity	Local Road Users - Low Residential Receptors in Proximity to Proposed Development - High
Description of 'Baseline VVM'	The 'Baseline VVM' shows a short-distance view around a slight bend on the narrow local road. The road is enclosed on both sides by narrow hedgerows. A cluster of bushes and trees are visible to the left of the view. The skyline is broken by overhead power lines and a large pylon structure to the right of the view.
Proposed Photomontage Description	A small portion of the Proposed SHD infrastructure of Site C is visible at the end of the bend where the Proposed MOOR begins. A vast majority of Site C is screened from view behind the roadside hedgerows and other roadside vegetation. The loss of some hedgerows and addition of housing infrastructure slightly alters the character of the rural view to that of a semi-urban, semi-rural setting.
Cumulative Effects	Site A, Site B, Kildare Bridge and Moyglare Bridge will not be visible from this location and no cumulative visual effects will occur.
Sensitivity of Visual Receptor(s) <i>(Definition, See Section 11.2.4)</i>	<p>The main receptor at this viewpoint is local traffic. Some residential receptors are located in close proximity to this viewpoint, however they will have limited visibility of the Proposed Development due to the nature of vegetation screening in the area. On balance, the sensitivity is deemed to be Medium.</p> <p>“Medium: Includes viewers who may have some susceptibility to a change in view. Viewers such as residents in medium proximity but who do not have views focused in the direction of the Proposed Development or whose views are not of a particularly scenic quality; those from views which are not designated but may have local recreational uses or those travelling along routes or at view which are considered moderately scenic.”</p>
Magnitude of Change <i>(Definition, See Section 11.2.4)</i>	“Moderate: The change in the view may involve partial obstruction of existing view or partial change in character and composition of the baseline through the introduction of new elements or removal of existing elements. Likely to occur at locations where the development is partially visible over a moderate or medium extent, and which are not in close proximity to the development. Change may be readily noticeable but not substantially different in scale and character from the surroundings and wider setting.”
Significance of Effect <i>(Definition, See Section 11.2.4)</i>	Medium x Moderate = Moderate/Minor = Moderate (EPA, 2022) An effect that alters the character of the environment in a manner consistent with existing and emerging baseline trends
Mitigation Factors	<ul style="list-style-type: none"> ➤ Due to roadside vegetation, as well as the winding and undulating nature of the local road, there will be very limited visibility of the

Viewpoint 15 – L6219 Local Road West	
	<p>Proposed Development from much of the Local road to the west of this viewpoint.</p> <ul style="list-style-type: none"> ➤ The Proposed housing infrastructure is visible within lands zoned as ‘A2 – New Residential’ land zoning in the Maynooth Environs Written Statement (2021-2027). ➤ The Proposed Development does not obscure or intrude upon sensitive or scenic landscape views or valuable scenic amenity from this perspective.
Residual Effect (incl. mitigating factors)	<p>Slight (EPA, 2022) An effect which causes noticeable changes in the character of the environment without affecting its sensitivities</p>

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APPENDIX 13-1

TRAFFIC IMPACT ASSESSMENT

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TRAFFIC IMPACT ASSESSMENT

MAYNOOTH OUTER ORBITAL ROAD

Sky Castle Ltd

S665

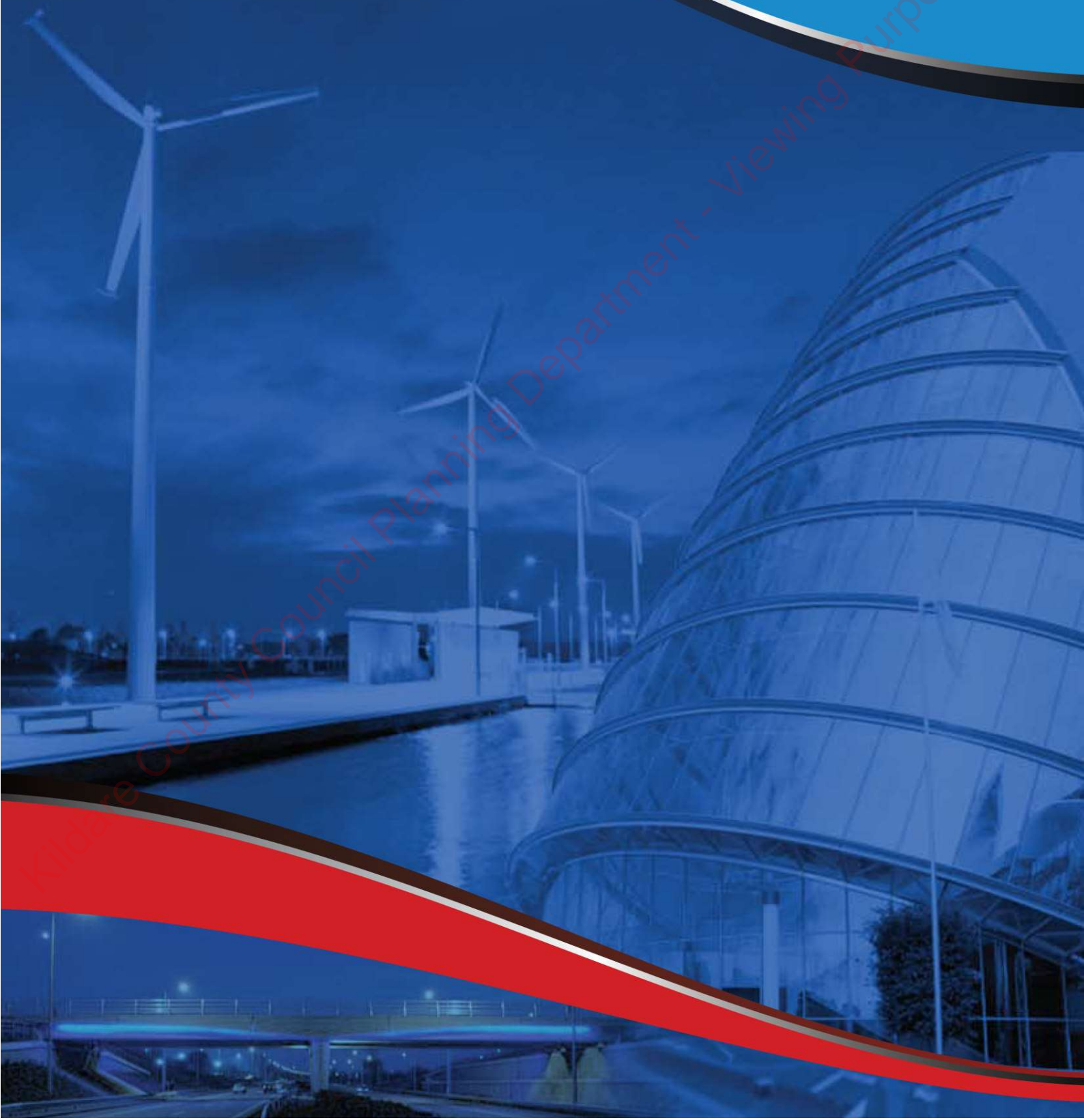
29 August 2022



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TRAFFIC IMPACT ASSESSMENT

Maynooth Outer Orbital Road

Sky Castle Ltd
S665
29 August 2022

Kildare County Council Planning Department - Viewing Purposes Only

TRAFFIC IMPACT ASSESSMENT

MAYNOOTH OUTER ORBITAL ROAD



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DOCUMENT CONTROL & HISTORY

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1 INTRODUCTION

APPOINTMENT

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by Sky Castle Ltd to carry out the design of the civil engineering services associated with the development of the proposed Maynooth Outer Orbital Road (MOOR) on lands at Moygaddy, Co. Meath, which is located northeast of the town of Maynooth, Co. Kildare.

SETTING

Maynooth environs is a large growth area, category II Town status located in south County Meath, and is an economically vibrant area with high-quality transport links to larger towns/cities. The Meath Development Plan 2021-2027 outlines the social, economic, and planning context for the Maynooth environ lands, setting the framework for the plan's policies and objectives. It has a core strategic vision that seeks to ensure that future growth is based on principles of sustainable development that meet the needs of residents per National and Regional guidelines. The environs of Maynooth is a Core Economic Area included in the Gateway Core Economic Area located on the M4 corridor. The wider Maynooth Environs Lands proposed land-use zoning includes A2 – New Residential, E1 – Strategic Employment Zones, G1 – Community Infrastructure, D1 – Tourism and H1 – High Amenity.

The delivery of the Maynooth Outer Orbital Route (MOOR) is critical to facilitating residential, high-end employment, tourist, and leisure development in the Maynooth environ lands and fulfilling the transport infrastructure needs in proximity to Maynooth University and Maynooth town.

ADMINISTRATIVE JURISDICTION

The proposed development is located primarily in the jurisdiction of Meath County Council (MCC), and therefore the Maynooth Outer Orbital Route design and the associated civil engineering services were carried out with reference to the following:

- Meath County Development Plan 2021-2027;
- Maynooth Environs Local Area Plan 2014 (incorporated into adopted MCDP);
- Regional Spatial and Economic Strategy for the Eastern and Midland Region (2019);

Even though Maynooth Environs is situated in the Meath County Council administrative area, the Maynooth Environs Local Area Plan contains an objective to liaise with Kildare County Council in the identification, design, reservation and delivery of the section of the Maynooth Outer Relief Road located within the administrative area of Meath County Council. The administrative area of Kildare County Council is located immediately adjacent to the LAP environs lands and some infrastructure improvements will be located within the Kildare County Council (KCC) administrative area. Therefore, the design will also be conducted with due regard to:

- Maynooth LAP
- Kildare County Development Plan
- Maynooth Traffic Management Plan

OCSC held discussions with Kildare County Council (KCC) and Meath County Council (MCC) on this scheme, as detailed below:

- OCSC met with MCC on 19 July 2021 to open preliminary discussions on the design of the MOOR. In attendance were Martin Murry (Director of Services for Infrastructure) and Nicholas Whyatt (Senior Engineer Transportation). Since this meeting, a Traffic Modelling Scoping Report has been issued to MCC. It should be noted that KCC specifically requested a Dynamically Assigned traffic model for this scheme. The Developer opted to request OCSC to utilise the PTV Vissim micro-

simulation software package to prepare the requested model, which could then be incorporated into the wider KCC transport study for Maynooth as a whole.

- As noted previously, although the scheme is planned within the MCC 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 were Brigette Rea, Daragh Conlan, George Willoughby, Jonathan Hennessy, and Lisa Kirwan, all from KCC. The same Traffic Modelling Scoping Report has also been issued to KCC.
- OCSC met with MCC on 20 June 2022. In attendance were Michael Costelloe, Joe McGarvey and Paul McNulty. This meeting aimed to establish the outstanding design requirements of the MOOR. Several comments were received, which were included in the design.

In addition, the following submissions were made as part of the proposed development:

- 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 (Appended as Annexure D).
- 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 (Appended as Annexure E).

STUDY AREA

The subject site is located on the southernmost extent of County Meath, as shown in Figure 1, aligning with the county boundary to Co. Kildare. It is approximately 1.5km north of the town of Maynooth, Co. Kildare, which forms part of a larger strategic landbank on zoned lands known as Maynooth Environs. The site is immediately bound by:

- R157 Maynooth – Dunboyne Road, to the east;

- Agricultural lands, to the north and west; and
- River Rye Water, to the south;

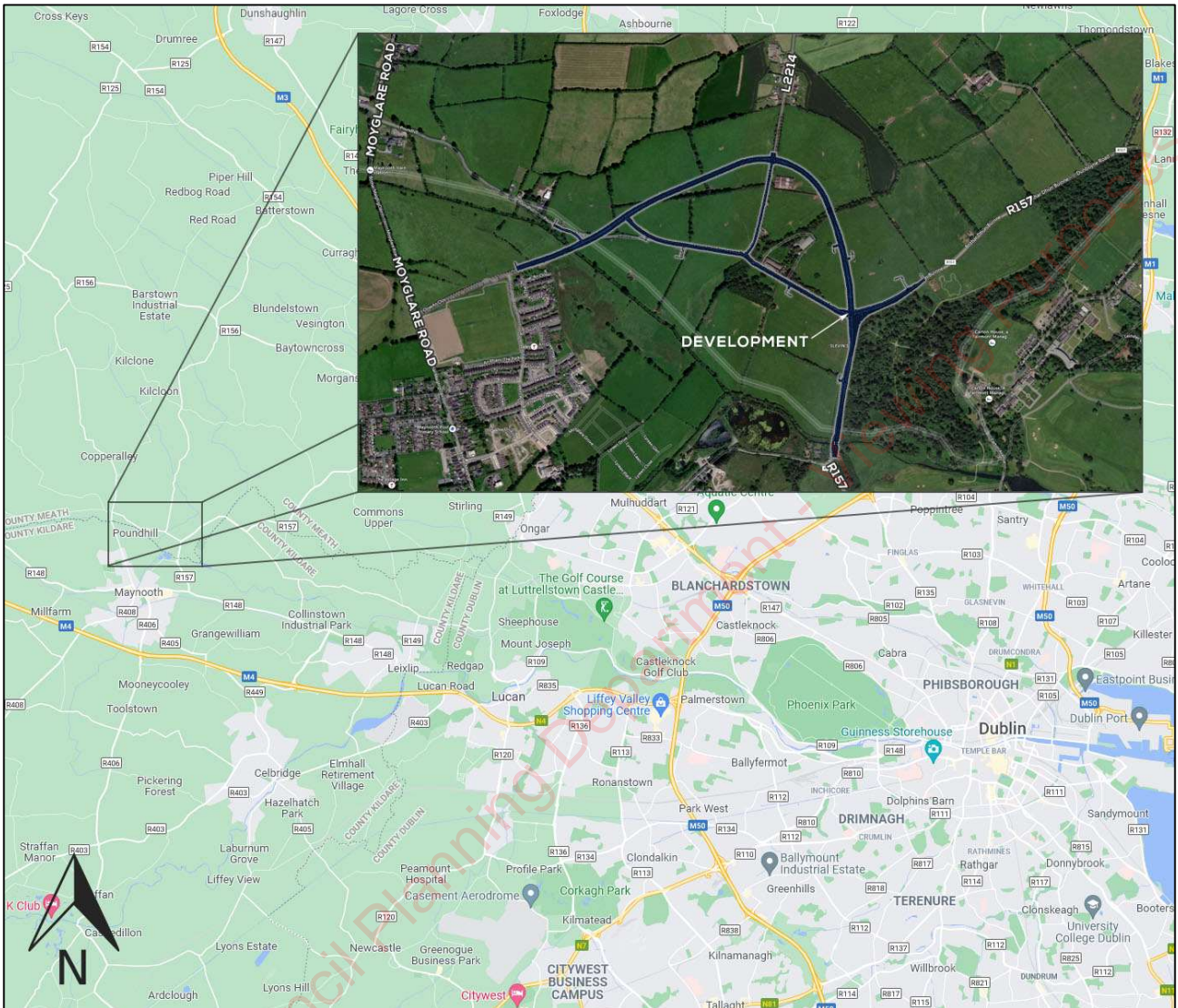


Figure 1: Development Locality Plan

DEVELOPMENT DESCRIPTION

Planning Permission is sought by Sky Castle Ltd. for the development of the Maynooth Outer Orbital Road (MOOR) in the townland of Moygaddy, Maynooth Environs, Co. Meath.

The proposed road development will consist of the following:

1. Provision of approximately 1,700m of new distributor road (MOOR Arc) 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.
2. 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 L22143 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).
 - (iv) Realignment of a section of the existing L22143 local road and R157, which will entail the demolition of an existing section of the road which extends to circa 3,200 sqm.
 - (v) Provision of a new signalised junction at the realigned junction between the L22143 and R157.
 - (vi) Provision of a new signalised junction between the L2214 local road and the MOOR with right-turn lanes on approaches.
 - (vii) Reconfiguration of the L2214 section within the MOOR arc to a one-way from north to south with right-turn lanes, where applicable.
 - (viii) Reconfiguration of the northbound lane of the L2214 within the arc to a shared facility for use by pedestrians and cyclists.
 - (ix) Addition of chicanes on the L6219 and L22143 local road to reduce traffic flow and encourage utilisation of the MOOR.
3. 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 Blackhall Little Stream on the L22143 adjacent to the existing unnamed bridge.
 - (iv) an integral single span bridge on the north-eastern section of the MOOR arc, over the Blackhall Little Stream, and associated floodplain works and embankments.
4. Provision of site landscaping, public lighting, site services and all associated site development works.
 5. A Natura Impact Statement (NIS) and Environmental Impact Assessment Report (EIAR) has been included with this application.

The purpose of this report is to provide a detailed and conservative assessment of the development proposals and the potential traffic impact on the operation of the local road network. It should be noted that this report on the traffic & transportation analysis on this specific application has been prepared on the basis of an assessment which includes the full buildout of the MOOR by the base year, as well as the entire Masterplan area and all components of the development that are deliverable between the base year and 2030 (Opening Year + 5). Furthermore, an additional assessment was conducted on the strategic master planning for future phases that will be delivered from 2029 to 2040 (the Design Year).

In carrying out the above, this assessment has given due consideration to the relevant guidelines including:

- *Traffic & Transport Assessment Guidelines (2014)* as published by the former National Roads Authority (NRA) now Transport Infrastructure Ireland (TII);
- *Guidelines for Traffic Impact Assessment (1997)* as published by the Chartered Institute of Highways & Transportation;

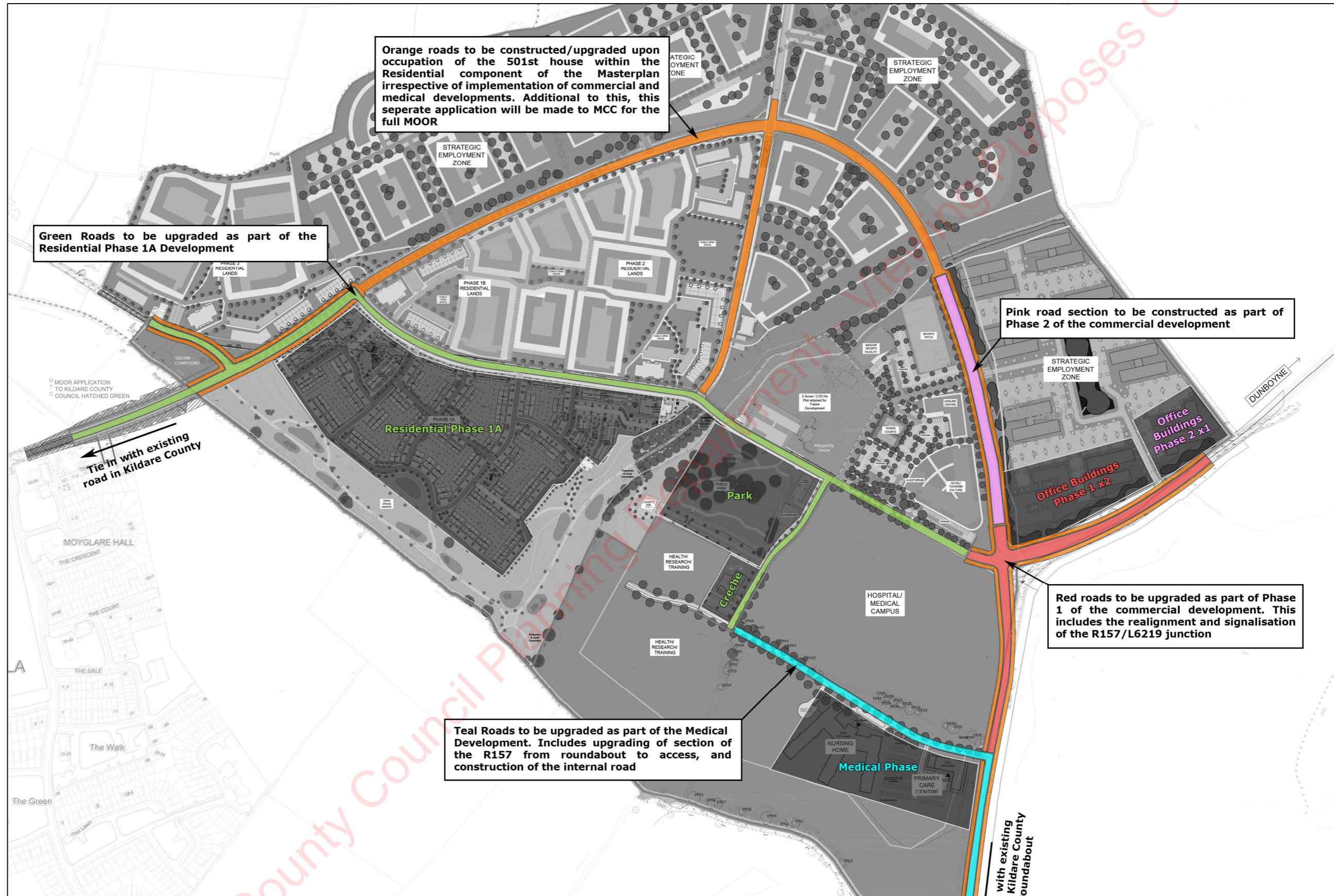
MASTERPLAN PHASING

This application is submitted for the full MOOR to be delivered. The various masterplan development applications will be submitted on the basis that the MOOR will be delivered in phases, linked to individual planning applications which form part of the wider Masterplan for the Maynooth Environs/Moygaddy lands.

The colour of the first three columns links to the figure on the next page. Specific road infrastructure upgrades will be required depending on the timetable when each phase is constructed. The last column of the table indicates in which scenario year the trip generation of that section of the development will be relevant.

Item	Linked Road Infrastructure	Trip Generation Year
Medical Phase		
Primary Care Centre & Nursing Home	Upgrade the R157 from the roundabout in the south up to the access to medical facility	Opening Year (2025)
Medical Research Campus	Full MOOR already operational	Design Year (2040)
Public Hospital	Full MOOR already operational	Design Year (2040)
Office Phase		
Office Buildings Phase 1 x2	Upgrade the R157 north of medical facility access up to the junction between the R157 and the L6219	Opening Year (2025)
	Upgrade R157/L6219 junction to 3-leg signalised junction	Opening Year (2025)
	Upgrade R157 east of junction towards Dunboyne	Opening Year (2025)
Office Buildings Phase 2 x1	Construct the first section of the eastern leg of the MOOR (northern leg of junction) up to the stream	Opening Year (2025)
Office Buildings Phase 3 & 4 x6	Full MOOR already operational	Design Year (2040)
Residential Phases		
Residential Phase 1A, Park & Creche	Construct link road in the west and upgrade road up to junction with R157	Opening Year (2025)
Residential Phase 1B	Full MOOR already operational	Opening Year + 5 (2030)
Residential Phase 2	Full MOOR already operational	Design Year (2040)
Residential Phase 3	Full MOOR already operational	Design Year (2040)
Other Phases		
Tourism and Sports Campus	Full MOOR already operational	Opening Year + 5 (2030)
Hotel	Full MOOR already operational	Design Year (2040)

Table 1: Moygaddy Masterplan Phasing



2 BACKGROUND TRAFFIC VOLUMES

At the time of writing, the ongoing Covid 19 pandemic and associated restrictions have had a significant impact on traffic and travel patterns across the country. As a result, procurement of new survey data, which would be a true reflection of typical traffic levels, has not been possible. However, survey data is available from 2019. The use of this survey data combined with TII traffic growth factors to account for any background traffic increase in the interim is considered to give the most accurate representation possible of the typical traffic levels experienced within the study area.

Details of the junction surveys used for this development are shown in Table 2:

No	Junction	Source	Survey Date	Survey Times
1	Moyglare Road/L6219	Nationwide Data Collection	25/05/2019	07:00 to 19:00
2	Moyglare Road/Mariavilla	Nationwide Data Collection	25/05/2019	07:00 to 19:00
3	L6219/L2214	Nationwide Data Collection	25/05/2019	07:00 to 19:00
4	R157/L6219	Nationwide Data Collection	25/05/2019	07:00 to 19:00
5	R157/Dunboyne Road	Nationwide Data Collection	25/05/2019	07:00 to 19:00
6	R148/R157	Nationwide Data Collection	25/05/2019	07:00 to 19:00

Table 2: Junction Survey Details

A seven-fold classification system was used which recorded cars, taxis, light goods vehicles, heavy goods vehicles, public service vehicles, motorcycles, and bicycles.

The exact locations of these junctions are highlighted in Figure 2.



Figure 2: Traffic Survey Locations

The junction surveys also include queue length surveys which recorded the maximum queue lengths observed on a per lane basis at each approach of each junction over 15-minute intervals.

A full copy of the results of all traffic surveys can be found in *Appendix A*, attached to this report.

The recorded flows during the above peak hours, and across the course of an average day are shown in the following:

- Diagram 1: 2019 A.M. Peak Hour Base Flows (08:00 – 09:00);
- Diagram 2: 2019 P.M. Peak Hour Base Flows (17:00 – 18:00);
- Diagram 3: 2019 Annual Average Daily Traffic Base Flows.

These diagrams, and all others referenced in this text, can be found in *Appendix B*, attached to this report. Any apparent discrepancy in flows between sites may be attributed to vehicles exiting the survey zone either by accessing developments or via minor roads between surveyed junctions.

3 STUDY METHODOLOGY

The short-term traffic counts were expanded to Annual Average Daily Traffic (AADT) using expansion factors¹ from TII. The base year flows were then adjusted to the predicted Year of Opening for the development (2025), Year of Opening + 5 (2030) and the Design Year (2040) using medium-range TII growth factors². This is conservative as traffic growth estimates are directly influenced by projections for economic activity which are now unlikely to be realised due to the impact of the global pandemic, while commuter patterns are also expected to be permanently impacted.

The traffic generation potential of masterplan sites was assessed using the Trics³ planning database. This database contains information on thousands of sites in Ireland and the U.K. and can be used to predict the traffic that will be generated by numerous types of development.

VISSIM MICRO-SIMULATION SOFTWARE

For this project, a dynamic traffic model was built utilizing the Vissim software package, developed by PTV.

Dynamic Assignment

A model was developed for this project using dynamic assignment. The reason for this is due to the objectives of the study. Developing a static model would not yield the desired outcome, as the traffic redistribution due to the implementation of the MOOR would not be accounted for. A further redistribution is possible to other road links should the demand at some junctions exceed the capacity.

¹ Project Appraisal Guidelines for National Roads Unit 16.1 - Expansion Factors for Short Period Traffic Counts, TII (October 2016)

² Project Appraisal Guidelines for National Roads Unit 5.3 - Travel Demand Projections, TII (May 2019)

³ Trip Rate Information Computer System

Dynamic assignment uses an origin-destination (O-D) matrix to distribute traffic throughout the network. This means that vehicles can dynamically choose their route, to a certain destination in the network.

A good summary of the benefit of dynamic assignment for a study such as this is given in Vissim's documentation:

"In the static assignment, the vehicles follow routes in the road network which you have manually defined. Therefore, the drivers in the simulation have no choice which path to follow from their start point to their destination. For a lot of traffic flow simulation applications this is an appropriate way of modelling.

When the simulated road network grows, there are usually several options for the drivers can choose to go from one point in the road network to another. The simulated traffic must be realistically distributed among these alternatives. Using the traffic assignment, a given traffic demand is distributed among the various paths in the road network. Traffic assignment is one of the basic tasks in the transport planning process. It is essentially a path selection model of transport users, for example drivers of motorized and non-motorized vehicles.

For such a model, first a set of possible paths is determined. These alternatives must be assessed appropriately. A representation follows on how the drivers decide on the basis of this assessment. This path selection decision model is a special case of the general problem of decision based on discrete alternatives (discrete choice). A lot of theory behind traffic assignment models originates from the discrete decision theory. The most common assignment processes in transport planning belong to the class of static assignments. Static thereby means that neither the traffic demand, indicating how many trips should be made in the network, nor the road network changes. This does not correspond to reality. The traffic demand can vary significantly during the day. The road network can have time-dependent characteristics, such as when different signal programs run throughout the day at the signalized nodes and thus create time-dependent capacities for the individual flows. Dynamic assignment takes these temporal fluctuations into account.

The motivations to model the path selection in a Vissim simulation model:

- *With the increasing size of the simulated road network, it will become more and more difficult to enter all paths from sources to destinations by hand, even if no alternative paths are considered.*
- *The path selection behaviour can itself be the subject of your investigation if the effects of measures are to be judged. This would also affect the path selection."*

Origin-Destination Matrix

The O-D matrix was originally sourced from Kildare County Council's (KCC) existing 2016 macro model. However, the full study area comprised one zone within this model, with no zonal information available to the north. As the redistribution of northbound vehicles is an important outcome of this model, this lack of information required a different approach.

It was agreed with KCC & MCC that a different approach would be taken to obtain an O-D matrix. The approach which was agreed upon would be to use the junction surveys to develop an O-D matrix, with the assumption that all traffic travelling north on Moyglare Road and the L2214 would be destined for the R156. This would enable the model to determine a possible redistribution between these two roads, should the MOOR be constructed.

This approach led to the development of a 9x9 O-D matrix with the following zones:

- Zone 1: Moygaddy, south via Moyglare Road
- Zone 2: Moyglare Hall
- Zone 3: Moyglare Road West
- Zone 4: Moyglare Road North
- Zone 5: L2214/Kilcloon Road North
- Zone 6: R157 East
- Zone 7: Dunboyne Road
- Zone 8: Moygaddy, west via the R148
- Zone 9: R148 east

These zones are shown in the figure below:



Figure 3: Model Zones

Road Network

The available capacity at certain junctions could potentially also lead to redistribution. Should capacity not be available along the L6219 or the MOOR, vehicles could reroute through Moygaddy itself. To determine this, the link between Zone 1 and Zone 8 was completed, providing an alternate route. However, in reality, the majority of road users will opt to use the MOOR as driving through town will increase the road user cost due to lower speeds, junctions, pedestrians, etc.

To simulate this increased cost, a reduced speed of 20km/h was added to the road section traversing the town. Combined with this, path pre-selection was also limited to rejecting any paths with a total cost higher than 50% as compared to the best path available.

Calibration Criteria

To assess the accuracy of a model, calibration is necessary. Dynamic models utilise origin-destination matrices as inputs, which means that vehicles leave a certain area, and are destined for a different area. These vehicles are then free to choose their routing, usually based on travel time, congestion, etc.

Calibration assesses the volumes in the model and compares them to traffic counts to determine, within certain criteria, the accuracy. This is done per vehicle class used in the model. Changes to the routing of vehicles, the input matrix, or the network itself can then be made to improve accuracy.

For this process, a certain set of calibration criteria is used. Should these criteria be fulfilled, the model can be certified to be accurate and correct in terms of traffic volumes. The criteria assumed for calibration are taken from the U.K. Department for Transport, Transport Analysis Guidance (TAG) Unit M3 and are shown below.

Criteria and Measures	Acceptability Guidelines
Assigned Hourly flows compared with observed flows:	
Individual flows within 15% for flows 700 - 2 700 vph	> 85% of the cases
Individual flows within 100 vph for flows < 700 vph	> 85% of the cases
Individual flows within 400 vph for flow > 2 700 vph	> 85% of the cases
GEH statistic:	
Individual flows: GEH < 5	> 85% of the cases

Table 3: TAG Unit M3.1 Criteria (<https://www.gov.uk/transport-analysis-guidance-tag>)

The following section details the peak hour calibration results for each scenario, defined for the two vehicle classes used in the models, light vehicles, and heavy vehicles. A summary of the results is shown in the table below.

Summary of TAG Calibration Statistics – Light Vehicles		
Description	AM Model	PM Model
Individual flows within 15% for flows 700-2,700 vph	98.9%	96.8%
Individual flows within 100 vph for flows < 700 vph	No observations above 700 Vehicles	No observations above 700 Vehicles
Individual flows within 400 vph for flows > 2700 vph	No observations above 2 700 Vehicles	No observations above 2 700 Vehicles
Individual flows: GEH < 5	98.3%	98.3%

Table 4: TAG Calibration Results - Light Vehicles

Summary of WebTAG Calibration Statistics – Heavy Vehicles		
Description	AM Model	PM Model
Individual flows within 15% for flows 700-2,700 vph	100.0%	100.0%
Individual flows within 100 vph for flows < 700 vph	No observations above 700 Vehicles	No observations above 700 Vehicles
Individual flows within 400 vph for flows > 2700 vph	No observations above 2 700 Vehicles	No observations above 2 700 Vehicles
Individual flows: GEH < 5	100.0%	100.0%

Table 5: TAG Calibration Results - Heavy Vehicles

As can be seen from the above tables, all models are well within the calibration criteria. This confirms that no modelling errors are present.

Extent of the Model

The extent of the modelled area can be seen in Figure 4. The rationale for extending the model north towards the R156 is related to the redistribution assessment and explained in further detail in the assessment chapter of this report.



Figure 4: Extent of the Model

SCENARIOS

To assess the actual impact of the operational development on the local road network, three different scenarios have been analysed as follows:

- Base Year (2019) – The current performance of the local road network;
- Year of Opening (2025) – The performance of the local road network during the Year of Opening. It is anticipated that the full MOOR could potentially be in operation as early as 2025, which is why this was chosen as the Year of Opening;
- Year of Opening + 5 (2030) – The performance of the local road network during the Year of Opening with a 5-year horizon;
- Design Year (2040) – The performance of the local road network during the Design Year.

The future year assessments considered the following scenarios:

- Do Nothing: - This assessment allows for only normal background traffic growth, with no other developments in the area, aside from the Maynooth Community College on the corner of Moyglare Road and the L6219.
- Do Something: - This assessment allows for everything considered in the Do Nothing scenario, with the inclusion of the MOOR, as well as any trips generated by masterplan developments expected to be operational during each of the analysis years. Three developments are expected to be operational by the Year of Opening. These are:
 - Moygaddy Castle SHD, which is a 360 no. unit residential development with a creche on the western side of the development area;
 - A Primary Care Centre (PCC) and Nursing Home Unit to the west of R157, and south-east of the residential development;
 - Three office buildings on the eastern side of the development area, accessed off the R157.
- For the Year of Opening + 5, a further two developments are included. These are:
 - Residential phase 1B, which entails a total of 140 units located north of the R6219. This development is linked to the capped population allocations for the lands between 2022 and 2030. It is envisioned that the balance of residential lands will be brought on stream between 2030 and 2034 subject to additional population figures being allocated to the lands in the 2030 Meath Development Plan;

- Tourism and sports fields located north of the R6219, and east of the L2214, excluding the planned hotel development.
- Do Maximum: - This assessment allows for everything considered in the Do Something scenario, with the addition of trips generated by future developments which form part of the masterplan, that are planned to be implemented by the design year. These include:
 - Six office buildings on the eastern side of the development area;
 - A hospital located west of the R157, and south of the R6219;
 - The addition of a hotel to the tourism area located north of the R6219, and east of the L2214;
 - A medical research campus located west of the planned primary care centre, and will utilise the same access onto the road network;
 - Residential Phase 2 which includes a total of 296 residential units;
 - Residential Phase 3 which includes a total of 222 residential units.

As per the masterplan framework, there is a portion of land on the northern side of the MOOR, zoned for strategic employment. However, it is unrealistic to assume that these lands will be developed within the design year period. This will lead to an oversupply of employment opportunities without the associated demand being present.

As the masterplan development accounts for the majority of development in the area, no natural background traffic growth was applied to this Do Maximum scenario. Rather this scenario includes the full buildout of the masterplan, except for the previously mentioned strategic employment zones. Only natural background traffic growth is not included. The rationale behind this is that these developments will account for future traffic growth in the area. Applying background traffic growth in addition to the trips generated by these would lead to a significant overestimation of traffic in the area and indicate unrealistic capacity problems.

The addition of the background traffic growth to possible future developments outside of the design year has the potential to cause a large overestimation of vehicles from the development and will result in double, or even triple counts of some vehicles. In addition, the potential impact of the reduction of trips due to work-from-home changes

as a result of the covid19 pandemic has not been allowed. Furthermore, the developments assessed in this scenario include several trip generators (residential) and trip attractors (commercial). There will be a large element of internal and diverted trips within the development lands, which have not been accounted for in this assessment and no account has been taken of the modal shift that may arise from enhanced pedestrian & cycle connectivity. Given these facts, it is considered that the calculated traffic volumes used are conservative and wholly appropriate.

Should further trips be included, above what is already being considered, it will lead to an unrealistic view of future traffic. This in turn will lead to a requirement for unnecessarily extensive infrastructure, which will promote private car use and be to the detriment of the sustainable transport goals set out in the Development Plan.

In summary, the full scenario roadmap, which will be used as part of the assessment, is shown in Table 6:

Number	Peak	Year	Scenario
1	AM Peak	2019	Do Nothing
2		2025	Do Nothing
3		2025	Do Something
4		2030	Do Nothing
5		2030	Do Something
6		2040	Do Nothing
7		2040	Do Something
8		2040	Do Maximum
9	PM Peak	2019	Do Nothing
10		2025	Do Nothing
11		2025	Do Something
12		2030	Do Nothing
13		2030	Do Something
14		2040	Do Nothing
15		2040	Do Something
16		2040	Do Maximum

Table 6: Scenario Roadmap

TRAFFIC GROWTH

To accurately assess the impact of the MOOR in the future, the base traffic flows for the local network in 2019 have been expanded to the Year of Opening, Year of Opening + 5, and the Design Year using the medium-range TII growth factors detailed in Table 7:

Year	Growth Rates	
	Light Vehicles	Heavy Vehicles
2019 - 2025	10.84%	24.00%
2019 - 2030	20.76%	48.34%
2019 - 2040	29.49%	78.36%

Table 7: Background Traffic Growth Factors

The growth factors are based on table 6.2 in the *Project Appraisal Guidelines for National Roads Unit 5.3 – Travel Demand Projections* document. The medium-range rates that were used for the calculation of the above growth rates are shown in the table below:

Region	Central Growth Rates					
	2016-2030		2030-2040		2040-2050	
	LV	HV	LV	HV	LV	HV
Meath	1.0173	1.0365	1.007	1.0186	1.0059	1.0207

Table 8: Rates used for Growth Calculation (TII, May 2019)

The application of the above growth factors should be further considered in the context of the Covid 19 pandemic and potential modal shift, which is expected to have a lasting impact on traffic growth potential and travel patterns over the coming years. Specifically, growth factors are generally developed using projections for economic growth. The global pandemic has had a significant impact in this regard which means such projections are now unlikely to be realised, meaning traffic growth is expected to be similarly over-estimated.

Furthermore, restrictions imposed because of the pandemic response have resulted in a significant portion of the population being forced to work from home. This has

highlighted the viability of this approach in industries where it was previously thought to be incompatible. The knock-on effect is expected to be that a percentage of workers continue to be based at home on a part- or full-time basis even after the pandemic restrictions are lifted. This in turn will have a knock-on effect on commuter and peak traffic levels. The National Transport Authority (NTA) has acknowledged this likelihood in a recently circulated note titled "Alternative Future Scenario for Travel Demand" dated November 2020 where it defines the Covid 19 pandemic as a "shock wave" that "can lead to an acceleration in the natural rate of change in society". The note concludes that the total number of daily trips could be up to 8% lower than previous projections.

Thus, considering the above, the applied growth factors are very conservative.

Additional to the normal traffic growth, the following have been considered for future Do Nothing scenarios and included as part of the background traffic:

- The trips generated by the Maynooth Community College, east of Moyglare Road and south of the L6219. This development was not yet operational during the survey period. For these volumes, the approved planning trip generation rates have been used and included, as per KCC's Online Planning Enquiry System;
- Other large developments in the area have also been investigated and considered where applicable.

4 THE RECEIVING ENVIRONMENT

The receiving environment is rural in nature. The existing primary artery through the study area is the R157, which is a southwest to northeast road connecting Maynooth to Dunboyne. The R157 acts as an important regional distributor road, connecting the M7, M4 and N3 national corridors. Branching off from this road is the L6219 which is a county road, and traverses the Moygaddy areas west to east. The study area is bisected by the existing north-south L2214, which intersects with the L6219. This road is known as the Kilcloon Road. It follows a north-south direction before travelling eastwards to connect to the R156, which link Killucan and Dunboyne.

The Masterplan will consist of trip generators and attractors and so it is expected that there will be an element of internal trips within the Masterplan. While there is substantial variation in the type of traffic travelling on the links locally, during the peak travel hours, they would primarily be expected to carry commuter traffic.

As noted earlier, base traffic levels have been surveyed on the local network in 2019. By combining these base flows with the traffic generation estimates for the proposed development, the following peaks were identified:

- A.M. Peak Hour: 08:00 – 09:00;
- P.M. Peak Hour: 17:00 – 18:00.

The proposed development will impact several existing County roads. Details of these roads are shown in the table below:

No	Street Name	Description	Design	Average Road Width (m)	Traffic Classification
1	Moyglare Road	This north-south road connects the western side of Maynooth in the south, to the R156 in the north	Environment: Rural to urban	6.00	Rural Link Road
			Layout: Two-lane undivided road west of the development		
			Verge: Rural shoulders in the vicinity of the site		
			NMT: No specific provision		
			Illumination: None in the vicinity of the site		
2	L6219	This is a connecting road between Moyglare Road in the west and the R157 in the east	Environment: Rural fringe	5.80	Rural Local Road
			Layout: Two-lane undivided road central in the development		
			Verge: Rural shoulders		
			NMT: No specific provision		
			Illumination: None in the vicinity of the site		
3	L2214 Kilcloon Road	This is a small connecting road, parallel to Moyglare Road. This road connects L6219 in the south to the R156, passing by Kilcloon	Environment: Rural to rural fringe	5.00	Rural Local Road
			Layout: Two-lane undivided road north of the development		
			Verge: Narrow rural shoulders in the vicinity of the site		

No	Street Name	Description	Design		Average Road Width (m)	Traffic Classification
			NMT:	No specific provision		
			Illumination:	None in the vicinity of the site		
4	R157	Road which links Maynooth in the south-west and Dunboyne in the north-east.	Environment:	Rural to urban	7.00	Rural Distributor Road
			Layout:	Two-lane undivided road east of the development		
			Verge:	Rural shoulders in the vicinity of the site		
			NMT:	Walkways from Maynooth up to River Rye Water. No provision in the vicinity of the site		
			Illumination:	None in the vicinity of the site		

Table 9: Base Year Road Network

5 CHARACTERISTICS OF THE DEVELOPMENT

MAYNOOTH OUTER ORBITAL ROAD OVERVIEW

The MOOR will be a single carriageway road connecting the Maynooth environs between the east and west. A portion on the western side will be constructed in County Kildare and tie in with existing infrastructure by means of a new bridge and road section. This can be seen in the figure below.

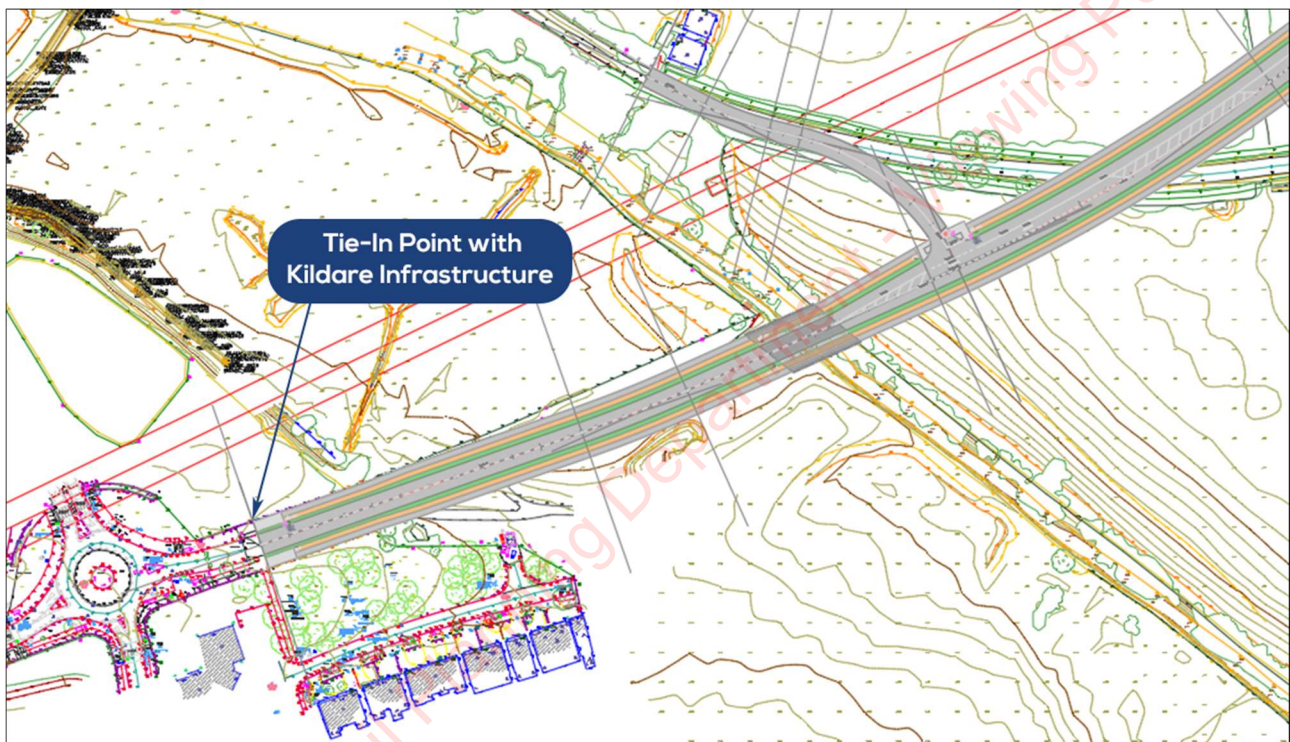


Figure 5: MOOR Western Kildare Tie-In

On the eastern side, the road will again tie in in County Kildare, just north of the roundabout on the R157. A separate cycle and pedestrian bridge will be constructed alongside the existing bridge to allow for continuation of this infrastructure, tying in with existing infrastructure in County Kildare. The tie-in location has been agreed with Kildare and on review of planning compliance submission made by Cairn Homes. This can be seen in the figure below.

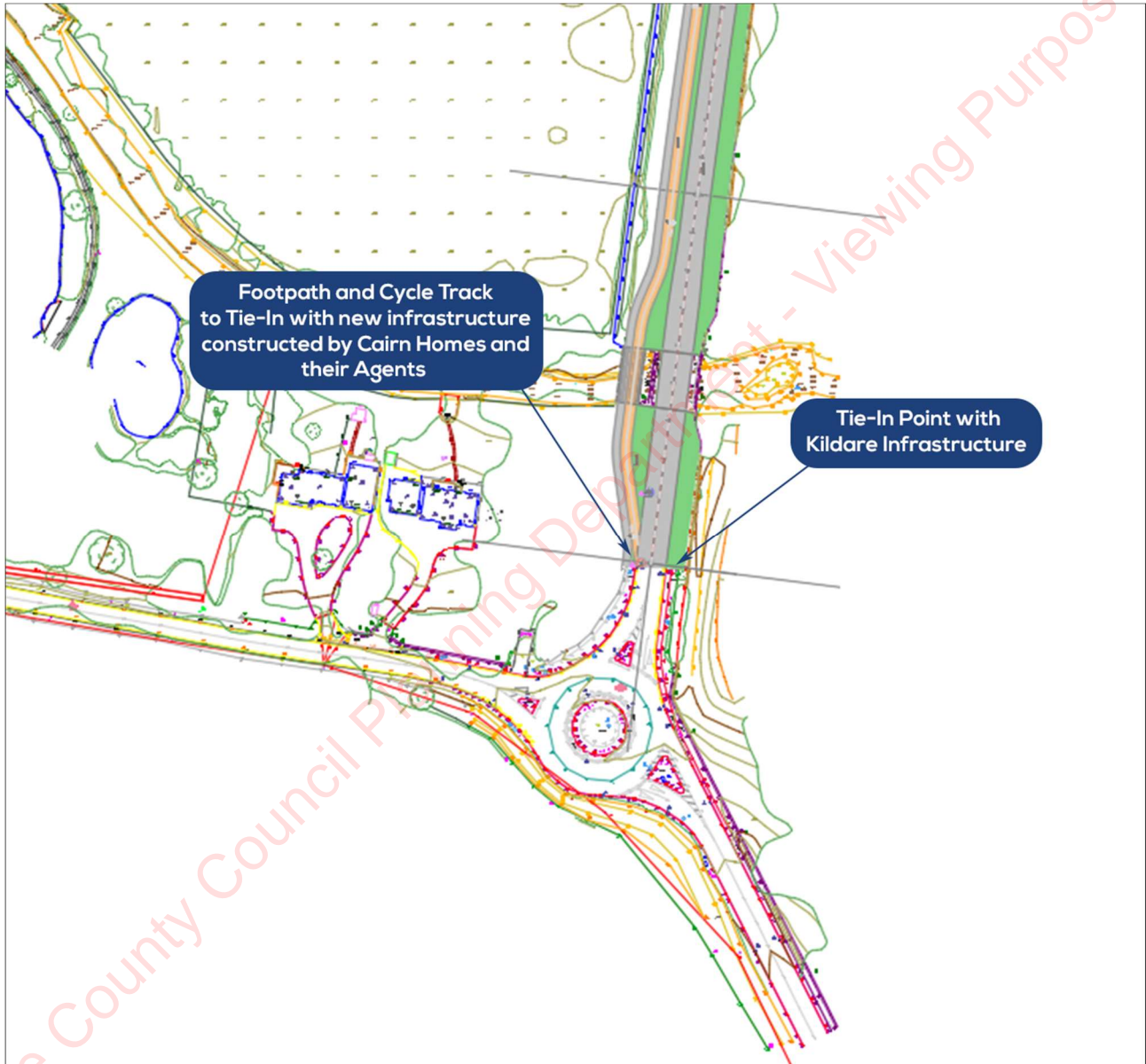


Figure 6: MOOR Eastern Kildare Tie-In

The rest of the MOOR will form an arc through the Maynooth Environs, connecting the western and eastern ends. A portion of the L6219 on the western side will be realigned to accommodate the arc. This section is shown in the figure below.

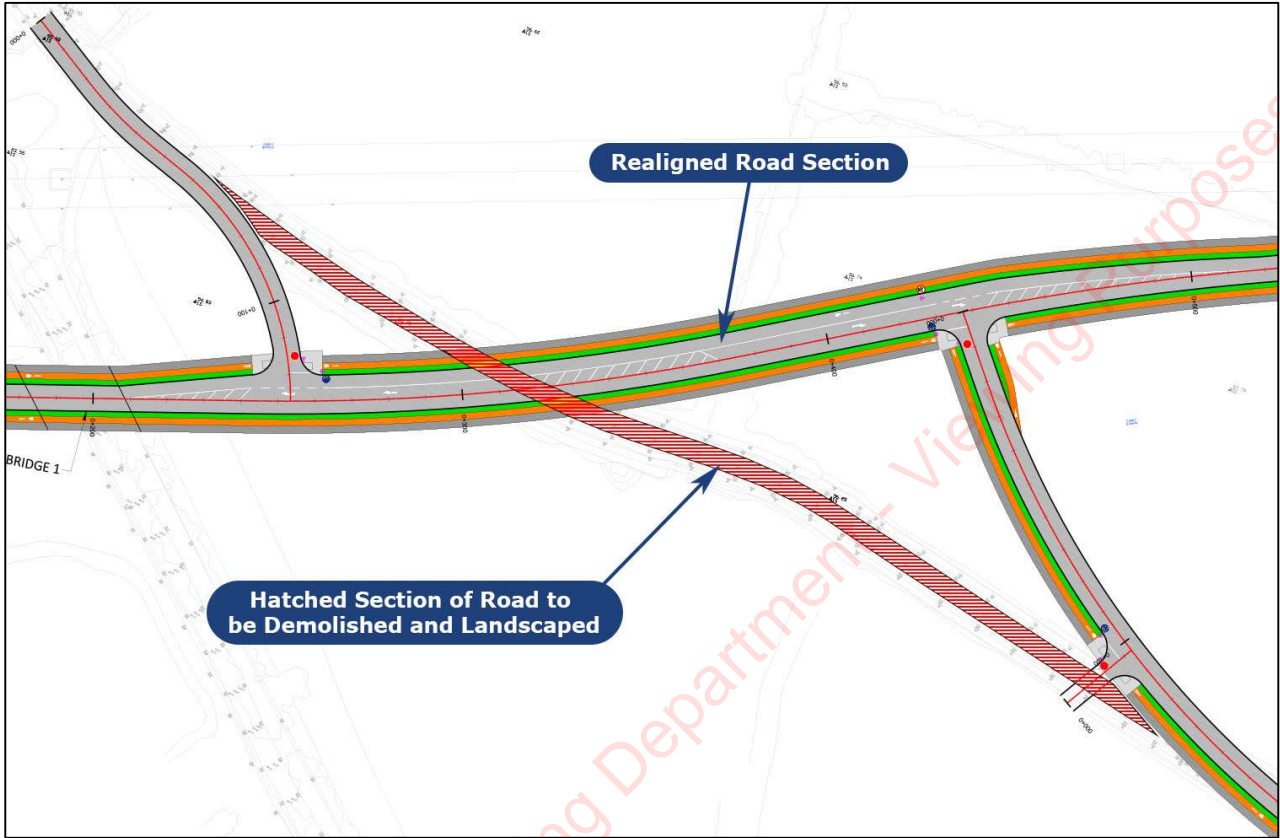


Figure 7: Road Section to be Realigned

The current L2214 (Kilcloon Road) will change to a north-to-south one-way road within the arc. The current south-to-north lane will be converted to a shared facility which can be used by pedestrians and cyclists. The new northern junction between the MOOR and the L2214 will be constructed as a signalised junction. This is shown in the figure below.

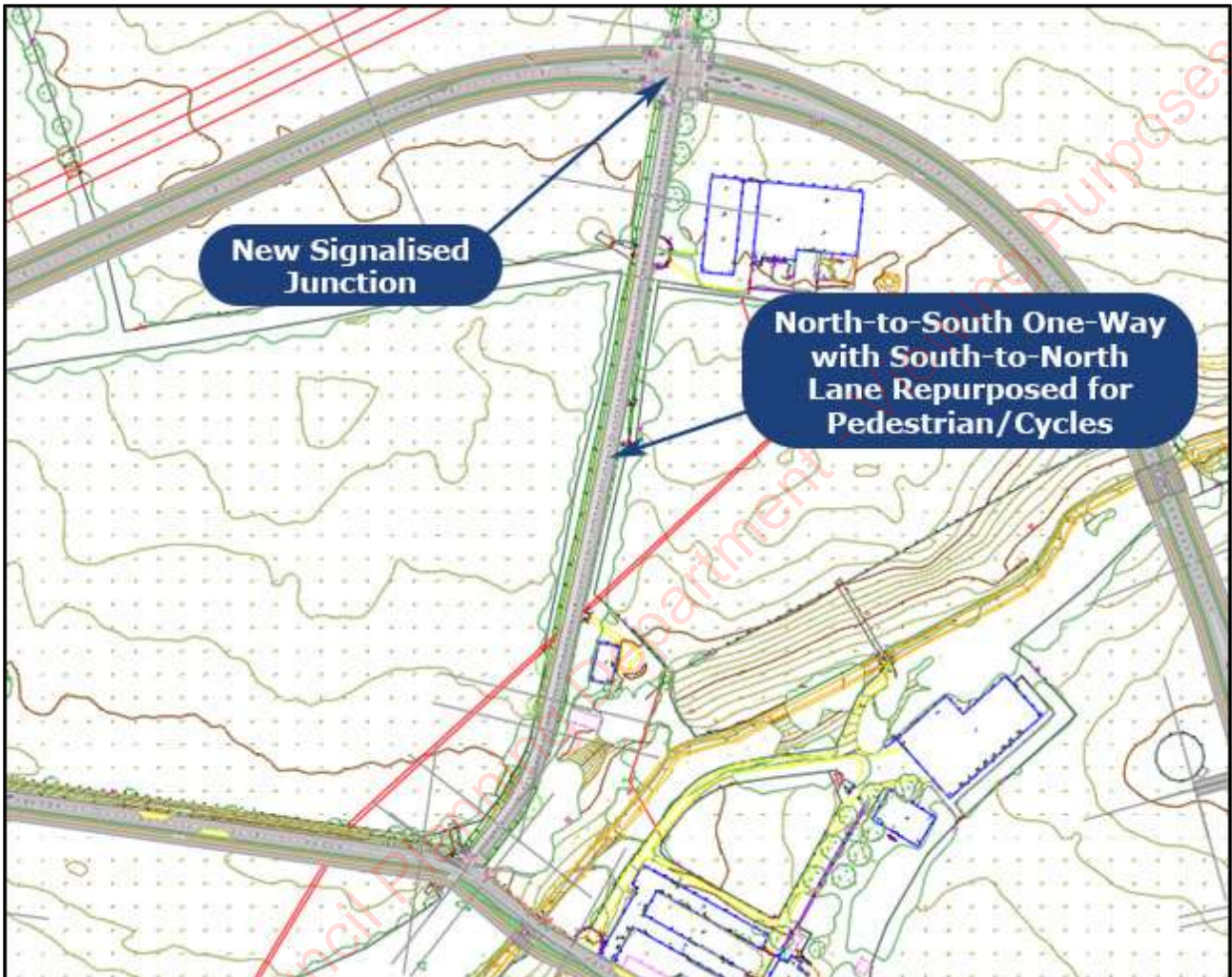


Figure 8: Center of Arc (L2214 - Kilcloon Road)

The junction between the R157, L6219, MOOR and Dunboyne Road on the eastern side of the arc will be realigned and constructed as 4-leg signalised junction, as shown below.

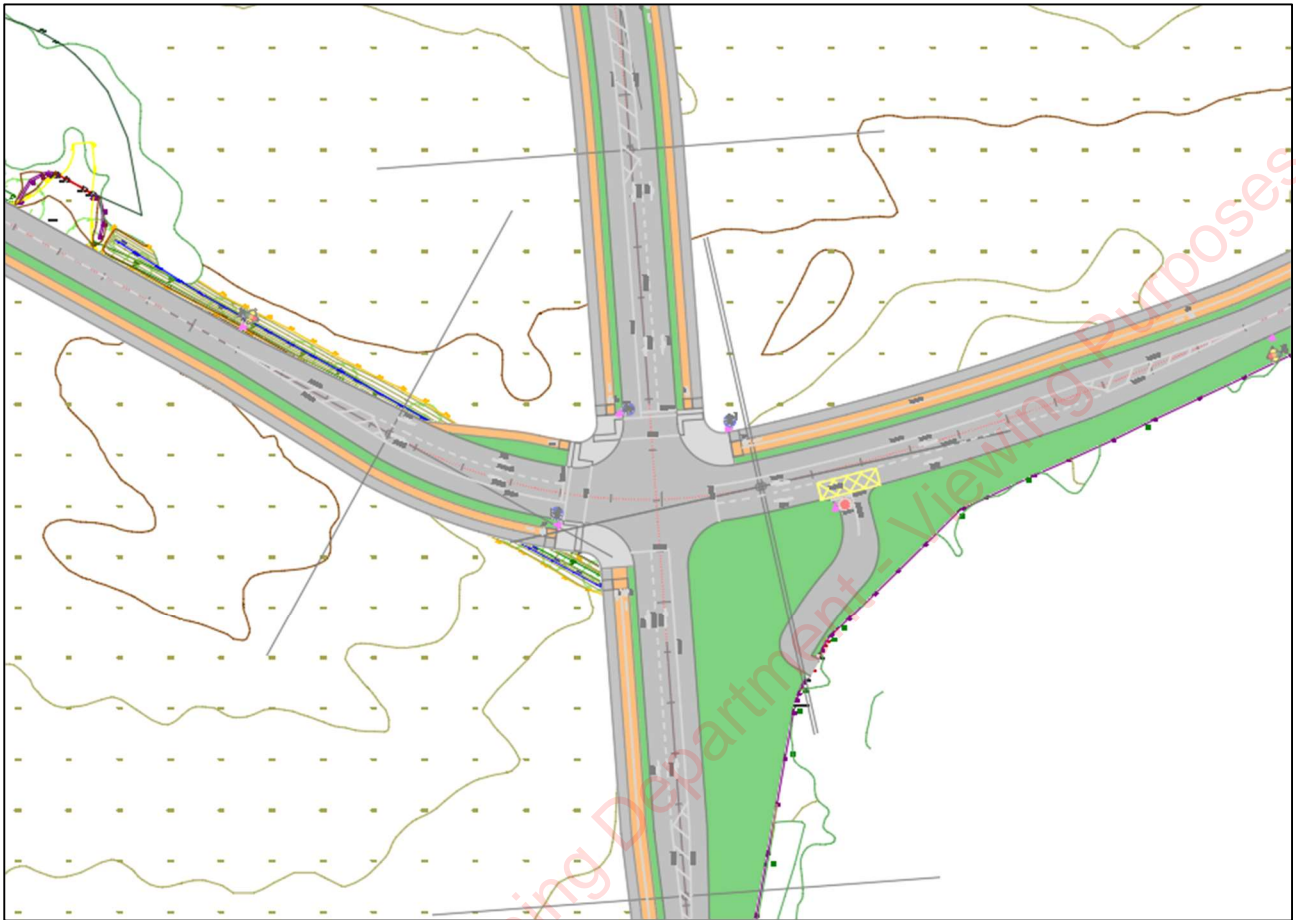


Figure 9: Realigned Signalised Junction on Eastern

For the construction of this junction, a portion of the existing R157 and Dunboyne Road will be realigned, as shown in the figure below.

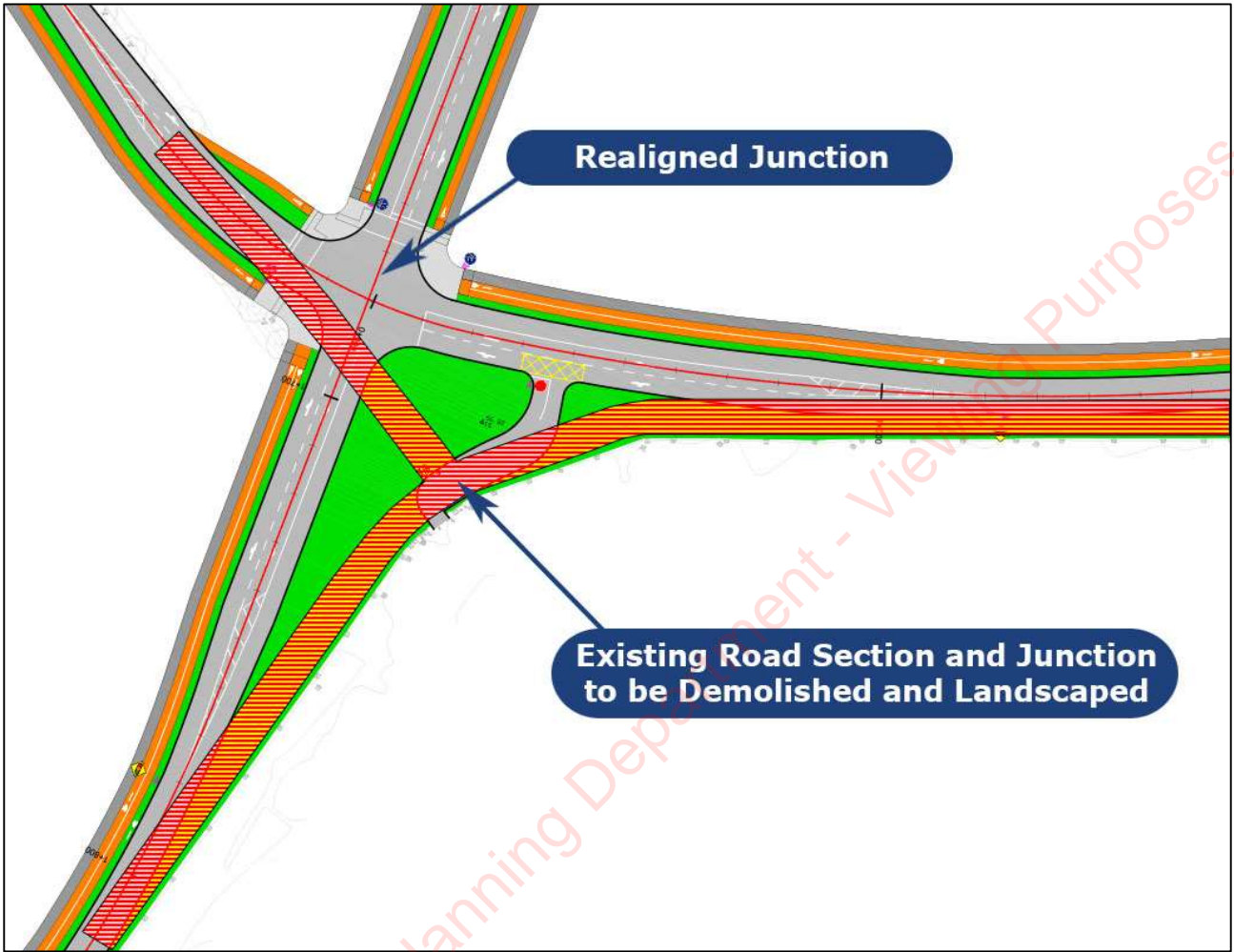


Figure 10: Existing R157/Dunboyne Road Realignment

Four different bridges will be constructed as part of the MOOR. These are highlighted in the figure below.

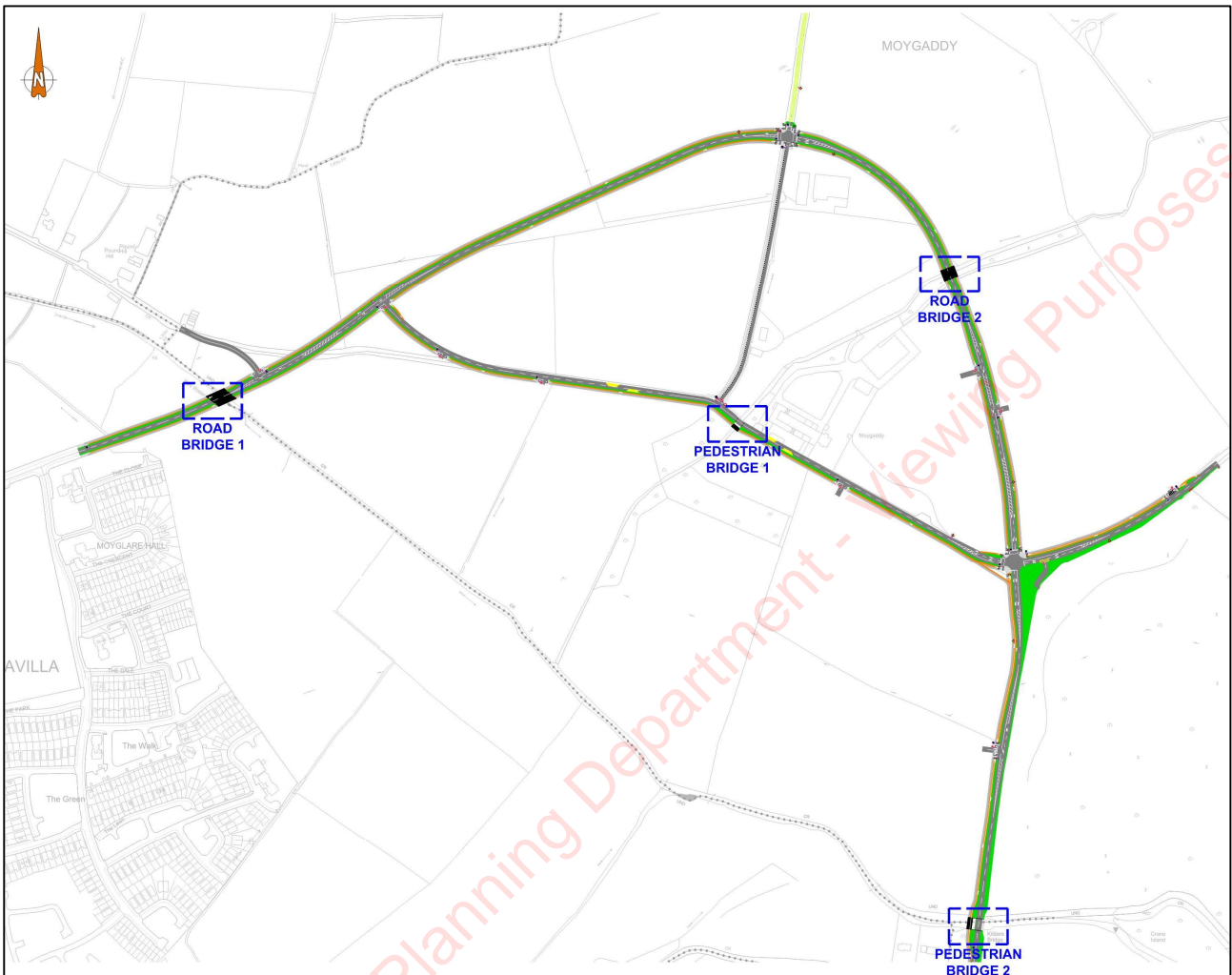


Figure 11: MOOR Bridges

Road bridges 1 and 2 will be new bridges which will be constructed as part of the MOOR. Pedestrian bridges 1 and 2 will be additional structures constructed adjacent to the existing bridge structures to accommodate pedestrian and cycle permeability. More information on these bridges is available in OCSC report "Bridge Options Report" submitted separately.

TRIP GENERATION

The traffic generation potential of the developments, which are part of the Masterplan, for each analysis year has been estimated using the Trics software modelling database. This database contains records of surveys carried out at a range of development types across the UK and Ireland. It records a variety of details including the number and type of vehicles entering and exiting the site as well as several other site-specific factors.

It is noted that the potential additional trips generated by the developments are estimated to allow the maximum estimated trips included as part of this assessment which will ensure a comprehensive and conservative assessment. Cognisance should be taken of the fact that the trip generation makes no allowance for any internal or diverted trips. This masterplan contains mixed land-uses, including several trip generators and attractors in the area. This aspect has not been considered for the trip generation, further highlighting the conservative nature of this calculation.

When developing traffic generation estimates for any development, several surveys are selected from the database based on a range of factors including development type, size, location, public transport etc. The results are then used to establish trip rates for the development in question which is ultimately used to derive estimates for traffic generation.

Opening Year Developments

The trip generation for the developments in the vicinity, anticipated to be operational by the Opening Year, as discussed in Chapter 3, are shown in the tables following:

Time Range	Apartments			Houses			SHD Development
	166	units	Total	194	units	Total	Total
	Arrivals	Departures		Arrivals	Departures		
07:00-08:00	13	45	58	7	37	44	102
08:00-09:00	15	33	48	17	53	71	119
09:00-10:00	16	16	32	28	29	57	89
10:00-11:00	12	14	26	17	24	41	67
11:00-12:00	10	10	20	21	19	40	60
12:00-13:00	14	15	30	24	15	39	69
13:00-14:00	15	13	28	22	21	43	71
14:00-15:00	13	13	26	17	31	49	75
15:00-16:00	16	13	29	37	20	56	85
16:00-17:00	19	16	35	33	20	53	88
17:00-18:00	33	10	42	41	14	55	97
18:00-19:00	21	16	37	33	23	56	93
19:00-20:00	13	45	58	12	10	22	80
20:00-21:00	15	33	48	6	4	10	58
Daily Trips:	198	214	412	316	320	636	1048

Table 10: Estimated Future Trips Generated by the SHD Development

Time Range	Primary Care Centre			Nursing Home Unit			Medical Development
	30.49	per 100m ²	Total	156	beds	Total	Total
	Arrivals	Departures		Arrivals	Departures		
07:00-08:00	2	4	6	28	7	35	41
08:00-09:00	8	0	8	12	13	25	33
09:00-10:00	16	8	24	27	11	38	62
10:00-11:00	8	14	22	32	15	47	69
11:00-12:00	8	14	22	23	25	48	70
12:00-13:00	11	4	15	18	27	45	60
13:00-14:00	8	10	18	35	30	65	83
14:00-15:00	16	17	33	31	47	78	111
15:00-16:00	11	10	21	31	31	62	83
16:00-17:00	2	7	9	15	32	47	56
17:00-18:00	10	7	17	13	21	34	51
18:00-19:00	7	10	17	12	15	27	44
19:00-20:00	2	4	6	5	10	15	21
20:00-21:00	0	0	0	10	9	19	19
Daily Trips:	109	109	218	292	293	585	803

Table 11: Estimated Future Trips Generated by the Primary Care Center & Nursing Home Development

Time Range	Business Park – 3 Buildings		
	323	Parking spaces	Total
	Arrivals	Departures	
07:00-08:00	62	7	69
08:00-09:00	119	14	132
09:00-10:00	49	14	63
10:00-11:00	18	13	30
11:00-12:00	16	16	32
12:00-13:00	22	30	52
13:00-14:00	27	24	50
14:00-15:00	17	20	37
15:00-16:00	12	35	47
16:00-17:00	11	58	69
17:00-18:00	8	89	97
18:00-19:00	5	46	50
Daily Trips:	364	365	729

Table 12: Estimated Future Trips Generated by the Office Development – 3 Buildings

Opening Year + 5 and Design Year Developments

The trip generation for the developments in the vicinity, anticipated to be operational by either the Design Year only, or both the Opening Year + 5 and Design Year, as discussed in Chapter 3, are shown in the tables below:

Time Range	Residential Phase 1B ¹		
	140	units	Total
	Arrivals	Departures	
07:00-08:00	10	36	46
08:00-09:00	13	30	42
09:00-10:00	15	15	30
10:00-11:00	11	13	24
11:00-12:00	10	9	19
12:00-13:00	13	13	26
13:00-14:00	13	12	25
14:00-15:00	11	13	24
15:00-16:00	16	12	28
16:00-17:00	18	13	31
17:00-18:00	28	9	37
18:00-19:00	19	14	33
19:00-20:00	2	1	3
Daily Trips:	179	190	369

¹Included in both Opening Year + 5 and Design Year Scenarios

Table 13: Estimated Future Trips Generated by Residential Phase 1B

Time Range	Residential Phase 2		
	275	units	Total
	Arrivals	Departures	
07:00-08:00	22	75	97
08:00-09:00	26	54	79
09:00-10:00	26	27	53
10:00-11:00	20	23	43
11:00-12:00	17	17	34
12:00-13:00	24	26	50
13:00-14:00	25	22	46
14:00-15:00	22	21	43
15:00-16:00	26	22	48
16:00-17:00	32	26	58
17:00-18:00	54	17	70
18:00-19:00	34	26	61
19:00-20:00	22	75	97
Daily Trips:	328	354	682

Table 14: Estimated Future Trips Generated by Residential Phase 2

Time Range	Residential Phase 3		
	222	units	Total
	Arrivals	Departures	
07:00-08:00	18	60	78
08:00-09:00	21	44	64
09:00-10:00	21	22	43
10:00-11:00	16	19	35
11:00-12:00	14	13	27
12:00-13:00	19	21	40
13:00-14:00	20	18	38
14:00-15:00	18	17	34
15:00-16:00	21	18	39
16:00-17:00	26	21	47
17:00-18:00	44	13	57
18:00-19:00	28	21	49
19:00-20:00	18	60	78
Daily Trips:	265	286	551

Table 15: Estimated Future Trips Generated by Residential Phase 3

Time Range	Hospital		Total
	270	Per 100 m ²	
	Arrivals	Departures	
07:00-08:00	211	41	252
08:00-09:00	254	87	341
09:00-10:00	231	108	339
10:00-11:00	173	163	336
11:00-12:00	158	175	333
12:00-13:00	121	131	252
13:00-14:00	148	145	293
14:00-15:00	134	150	285
15:00-16:00	123	167	289
16:00-17:00	106	205	312
17:00-18:00	108	200	308
18:00-19:00	79	158	237
19:00-20:00	61	109	170
20:00-21:00	29	102	131
21:00-22:00	5	29	34
Daily Trips:	1941	1969	3911

Table 16: Estimated Future Trips Generated by the Hospital

Time Range	Medical Research Facility (Business Park)		
	215	Parking spaces	Total
	Arrivals	Departures	
07:00-08:00	154	18	171
08:00-09:00	294	34	327
09:00-10:00	121	34	155
10:00-11:00	44	31	75
11:00-12:00	38	40	78
12:00-13:00	54	75	129
13:00-14:00	66	58	125
14:00-15:00	42	50	93
15:00-16:00	30	86	115
16:00-17:00	27	144	171
17:00-18:00	20	221	241
18:00-19:00	11	114	125
Daily Trips:	901	905	1806

Table 17: Estimated Future Trips Generated by the Medical Research Facility

Time Range	Business Park – 6 Buildings		
	477	Parking spaces	Total
	Arrivals	Departures	
07:00-08:00	92	10	102
08:00-09:00	175	20	195
09:00-10:00	72	21	93
10:00-11:00	26	19	45
11:00-12:00	23	24	47
12:00-13:00	32	45	77
13:00-14:00	40	35	74
14:00-15:00	25	30	55
15:00-16:00	18	51	69
16:00-17:00	16	86	102
17:00-18:00	12	132	144
18:00-19:00	7	68	74
Daily Trips:	537	539	1077

Table 18: Estimated Future Trips Generated by the Office Development – 6 Buildings

Hotel and Tourism Development											
Time Range	Leisure Centre ¹		Theatre ¹		Art Galleries ¹		Hotel		Total		
	25	per 100 sqm	250	seats	10	per 100 sqm	118	Beds	Arrivals	Departures	Total
	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures	Arrivals	Departures			
06:00-07:00	5	0	0	0	0	0	0	0	5	0	5
07:00-08:00	14	4	0	0	0	0	12	17	26	21	46
08:00-09:00	23	15	8	3	0	0	18	21	48	38	87
09:00-10:00	25	17	0	5	2	1	21	25	48	48	96
10:00-11:00	18	19	0	0	1	1	18	26	37	46	83
11:00-12:00	20	20	0	0	0	1	18	22	38	43	81
12:00-13:00	25	22	0	0	2	0	23	21	51	43	94
13:00-14:00	21	27	0	0	1	2	18	20	40	50	90
14:00-15:00	22	20	15	8	3	2	21	22	61	52	114
15:00-16:00	31	25	5	3	4	2	20	19	60	48	108
16:00-17:00	35	32	23	20	1	5	25	22	84	79	163
17:00-18:00	40	43	0	3	0	1	33	23	73	69	143
18:00-19:00	38	40	33	7	0	0	22	17	93	63	157
19:00-20:00	39	36	82	11	0	0	16	15	137	62	199
20:00-21:00	24	27	5	3	0	0	12	12	41	42	83
21:00-22:00	5	32	0	38	0	0	13	18	17	88	106
22:00-23:00	2	3	0	5	0	0	12	16	13	24	37
23:00-24:00	0	0	0	0	0	0	3	0	3	0	3
Daily Trips:	386	383	170	104	15	16	305	316	875	818	1693

¹Included in both Opening Year + 5 and Design Year Scenarios

Table 19: Estimated Future Trips Generated by the Hotel and Tourism Development

TRIP DISTRIBUTION

Trip distribution was done through an origin-destination assessment, using the junction surveys. A percentage arrival/departure split was calculated according to the peak hour. These percentages are shown in the table below:

Origin/Destination	AM		PM		AADT	
	Arr	Dep	Arr	Dep	Arr	Dep
Moyglare Road (S)	8%	18%	14%	9%	12%	13%
Moyglare Road (N)	8%	2%	3%	8%	6%	5%
Moyglare Road (W)	11%	3%	3%	9%	6%	6%
Mariavilla	10%	3%	3%	6%	6%	5%
L2214	6%	3%	3%	6%	6%	5%
R157 (N)	15%	28%	24%	13%	18%	18%
Dunboyne Road	12%	7%	5%	11%	1%	8%
R148 (W)	15%	16%	23%	18%	23%	19%
R148 (E)	16%	20%	23%	20%	22%	21%
Total	100%	100%	100%	100%	100%	100%

Table 20: Trip Distribution Percentages

The origin and destination values for the additional zones included in the various models to represent the developments, as discussed in the *Trip Generation* section of this document, were distributed according to the above table. The percentage of arrivals and departures of this development are shown in the figures overleaf. In reality, the model uses the percentages as the origin-destination values. The distribution along the roads are estimated, with the model assigning these trips automatically.

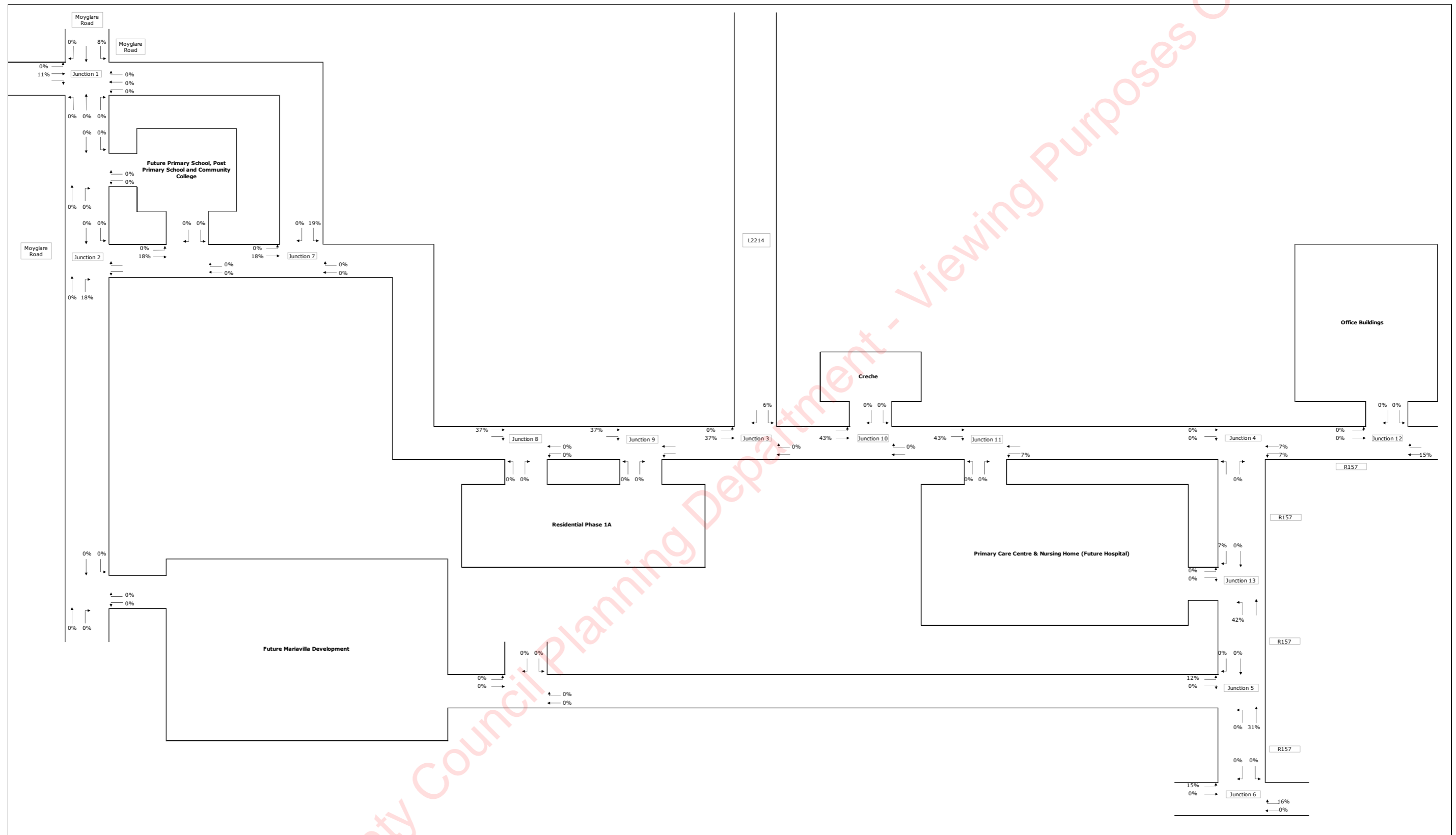


Figure 12: Development Trip Arrival Distribution – AM Peak

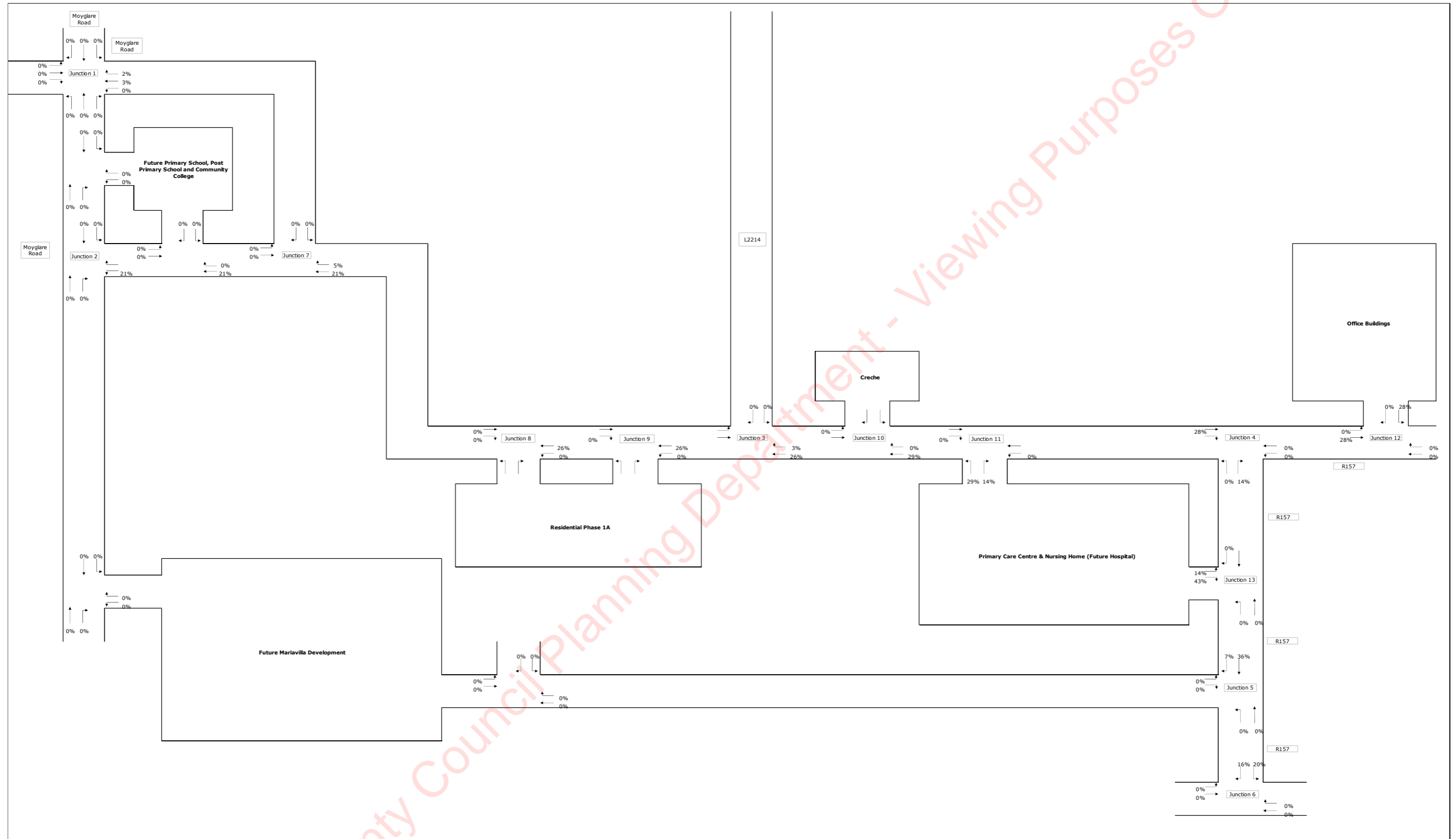


Figure 13: Development Trip Destination Distribution – AM Peak

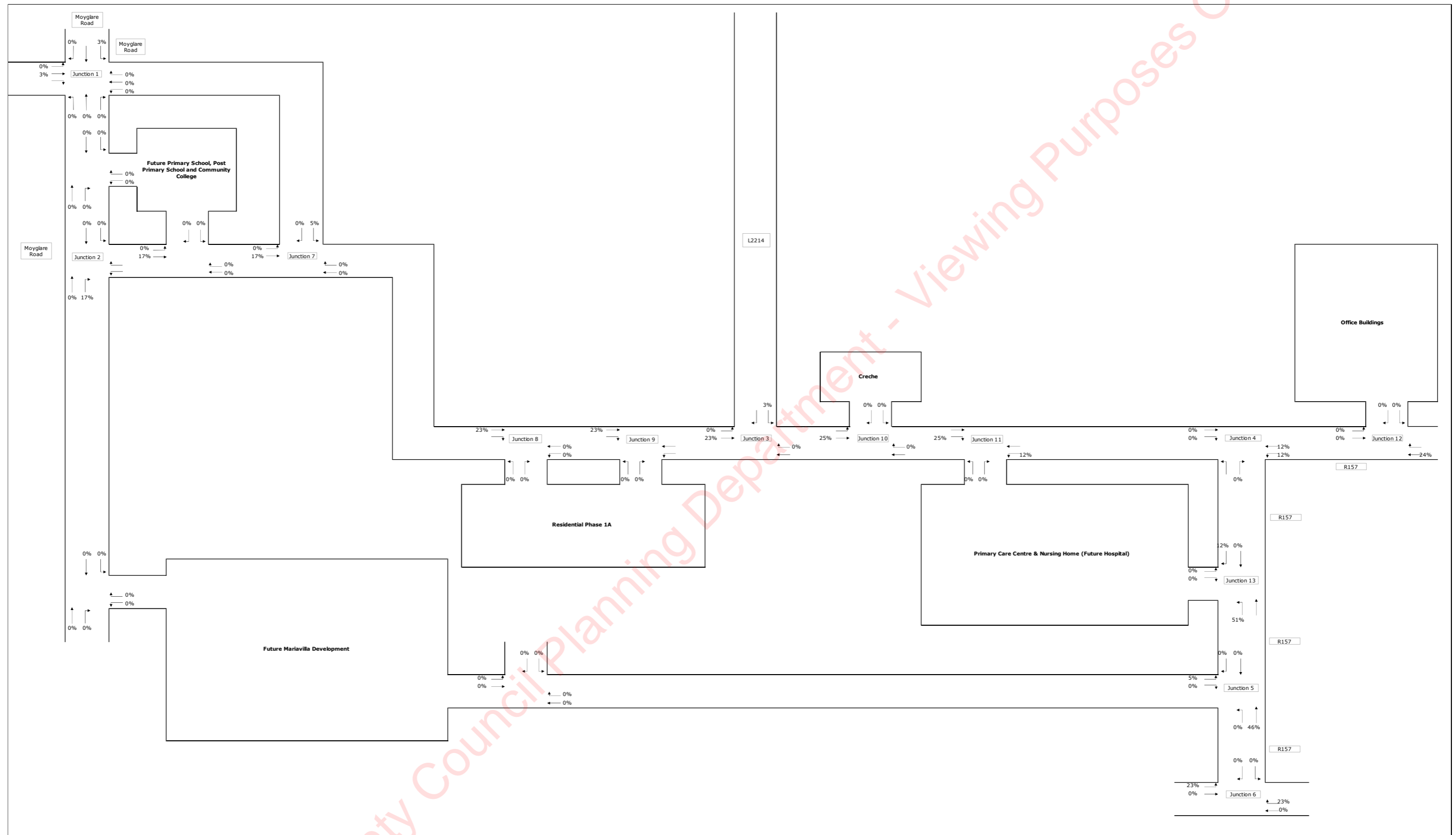


Figure 14: Development Trip Arrival Distribution – PM Peak

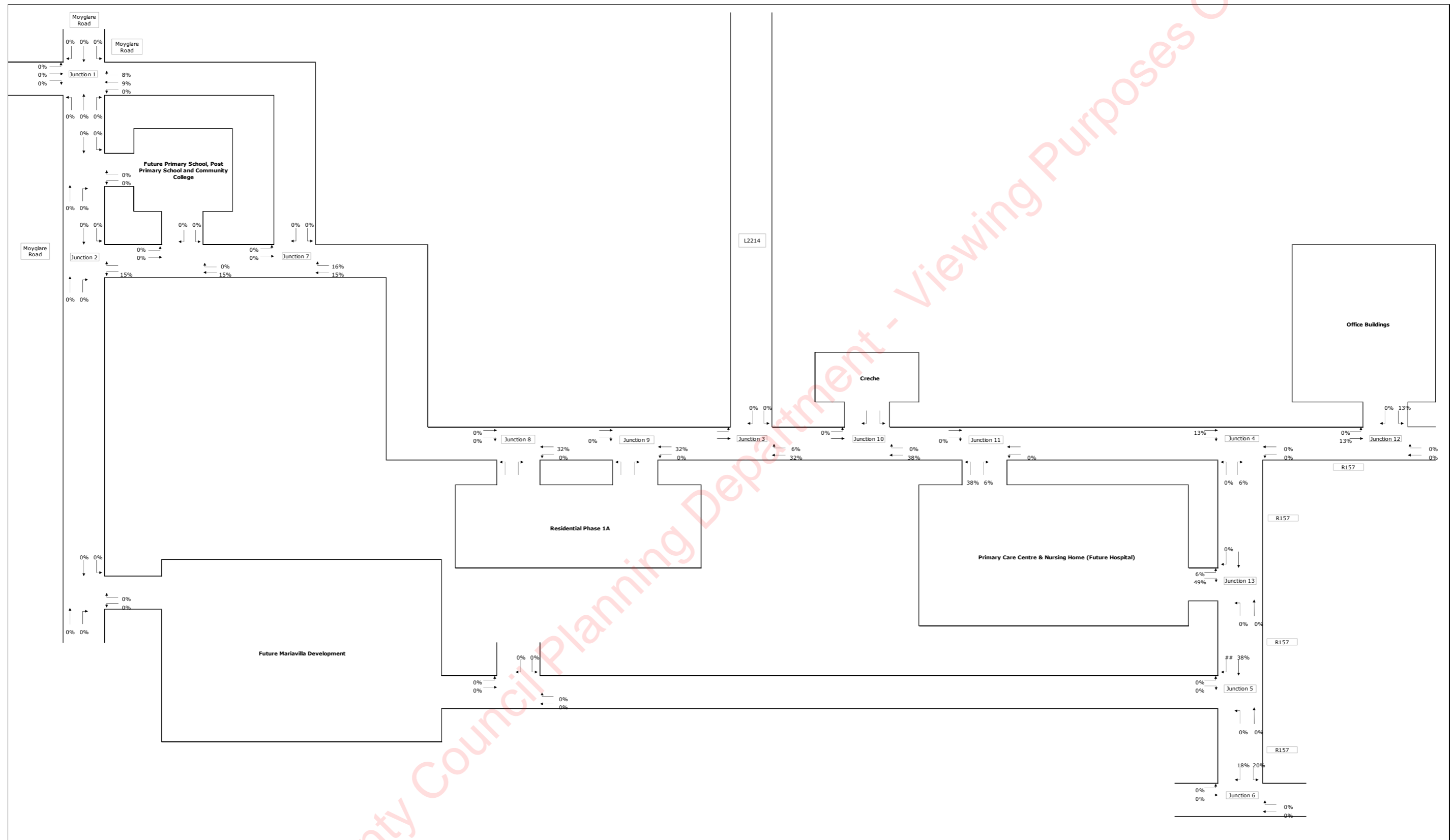


Figure 15: Development Trip Destination Distribution – PM Peak

6 POTENTIAL IMPACT OF DEVELOPMENT CONSTRUCTION

It is difficult to assess the exact quantum of traffic that will be generated during the construction period. However, to estimate the volume and rate of construction traffic, it is first necessary to estimate the amount of excavation and earthworks required on the site. Topsoil and subsoil/stones will be excavated to accommodate roads, footpaths, services, and construction. It is noted that for all areas of new construction (excluding green areas such as public open spaces and gardens) that the existing topsoil needs to be removed. As is good sustainable practice the topsoil excavated on the site will all be utilised on the site and added to the existing topsoil in areas such as gardens and open spaces. This will improve the depth of the growing medium in these areas and remove any requirement to transport topsoil from the site. The geotechnical investigations of the site suggest that there is generally 100mm of topsoil in the area for construction with some areas of 200mm of topsoil uncovered in the study area. There will be a requirement to remove topsoil from the site. Based on a 3d ground model of the existing site the expected volume of materials has been calculated. The following calculations have been made (see Table 2 over):

Item	Cut Volume (m ³)		Fill Volume (m ³)
Roads	34 750		17 250
Total Cut	Cut	Reuse	Export
	34 750 m ³	17 250 m ³	17 500 m ³
Total Fill	Fill	Reuse	Import
	17 250 m ³	17 250 m ³	0 m ³
Total Haulage	c. 40 250 Tonnes		

Table 21: Development Cut & Fill Calculations

The cited figures in the table above are overall cumulative cut and fill volumes and relate to all proposed works at the site. It should be noted that these numbers are approximated and will be subject to change depending on construction methodologies

and ambient weather conditions at the time of the works. It was assumed that the density of excavated material is approximately 2.3 tons/m³.

Based on this, and from the experience of similar construction projects, it is considered that there will be a maximum of twelve HGVs serving the site during any given daytime hour. This is based upon the knowledge that it takes on average 10 minutes to load a lorry with spoil but could be as short as 5 minutes. As such, the two-way HGV traffic is unlikely to be higher than 24 vehicles per hour at any point of the day. Based on an 8-hour day and a 22-working day month, 24 vehicles per hour equates to 4,224 vehicles per month.

It is worth noting however that the 40 250 tonnes of combined recycling & disposal equate to just over 2 015 truckloads based on 20 tonnes per load. It should be further noted that three other developments, an office development, Nursing Home & Primary Care Centre & SHD development, are earmarked for construction during a similar timeframe as this development, within the same area. It could be possible that excess cut volumes from these sites can be used for the shortfall of fill volume for this site, reducing the amount of material that needs to be imported.

Measures will be put in place to minimise the amount of construction traffic generated by the development. These measures will include the reuse of materials within the site for landscape purposes, or within adjacent sites for fill, to limit the amount of spoilage.

It will be an objective of this development to reuse as much material as possible and minimise the amount of material to be transported off-site. Furthermore, the possibility will be investigated of using excess cut material in other developments which form part of the wider masterplan, implemented within the same timeframe of this development. This will minimise the transportation distance, which will reduce the environmental impacts and cost of the development.

The contractor will maximise the use of precast materials or prefabricated materials wherever possible and economically viable. Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the

timing of deliveries to the site. Trips by construction workers will be limited by the provision of car-sharing and Travel to Work Scheme benefits. Construction workers will be encouraged to use public transport to the maximum possible extent. Adequate storage space will be provided on site for the storage of materials and a site strategy will be put in place to manage the timing of deliveries to the site.

It is not anticipated that the amount of construction traffic will exceed the amount of operational traffic.

7 POTENTIAL IMPACT OF DEVELOPMENT OPERATION

TRAFFIC REDISTRIBUTION

To assess the potential redistribution of traffic due to the implementation of the development, the dynamically assigned Vissim model was consulted. It should be noted that route choice was limited to reject paths with a total cost higher than 50% as compared to the best path, as road users will in general avoid long detours. Two potential redistribution implications are relevant to this area.

Redistribution to Kilcloon Road (L2214)

The first potential redistribution entails vehicles north- and southbound on Moyglare Road and Kilcloon Road (L2214), to and from the R156 in the north. With the inclusion of the MOOR, the Kilcloon residents have historically raised a concern that the route along Kilcloon is an easier access route than along Moyglare Road, towards the R156 in the north, which could lead to redistribution and an increase in traffic through the village of Kilcloon.

To assess this potential redistribution, an assumption was made that all surveyed vehicles travelling north and south, north of the junctions between Moyglare Road and the L6219, and between the L6219 and L2214, travel to and from the R156. Although this is unlikely, it does represent a worst-case scenario and is a very conservative and robust assumption.

For Vissim to accurately determine this redistribution, Moyglare Road and the L2214 were extended up to the R156, with all associated speed changes along the way. This is important as the average speed will affect route choice.

It should be noted that through discussions with Meath County Council, it was identified that they are planning on implementing various traffic calming measures at Kilcloon to

deter traffic from using this road. The Kilcloon Traffic Calming Scheme proposes traffic calming at two locations, shown in the figure below, extracted from drawing number TRA-04-012-04-99-DG3802 of the Kilcloon Traffic Calming Scheme:

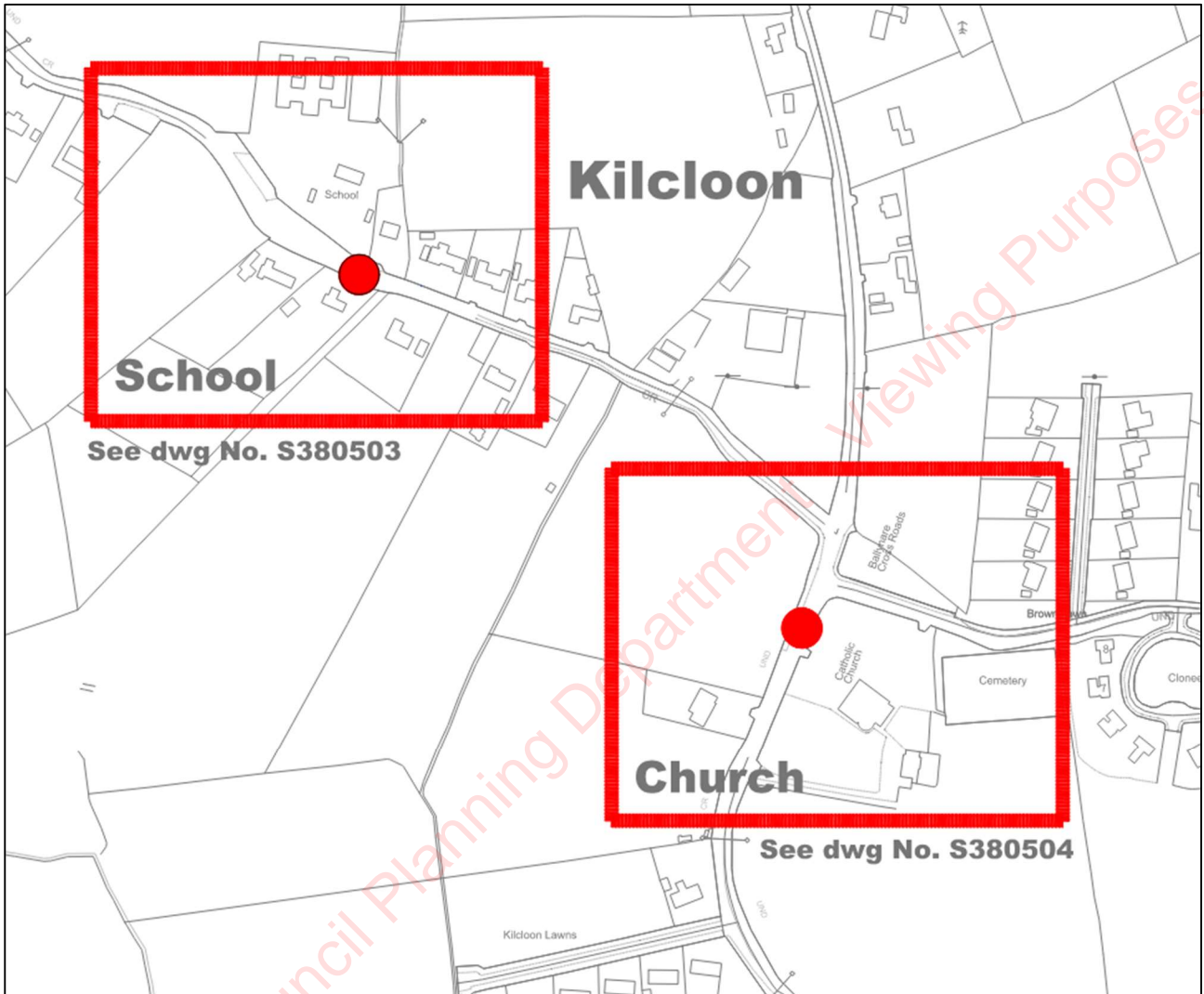


Figure 16: Proposed Site Location of Kilcloon Traffic Calming Scheme

Of particular importance to this assessment is the traffic calming proposed at the Catholic Church. The extent of proposed works at this location is shown in the figure overleaf, extracted from drawing number TRA-04-012-04-99-DG3804 of the Kilcloon Traffic Calming Scheme. Whilst these traffic calming works are not part of this SHD application, due consideration has been given to the impact of the works proposed by MCC.

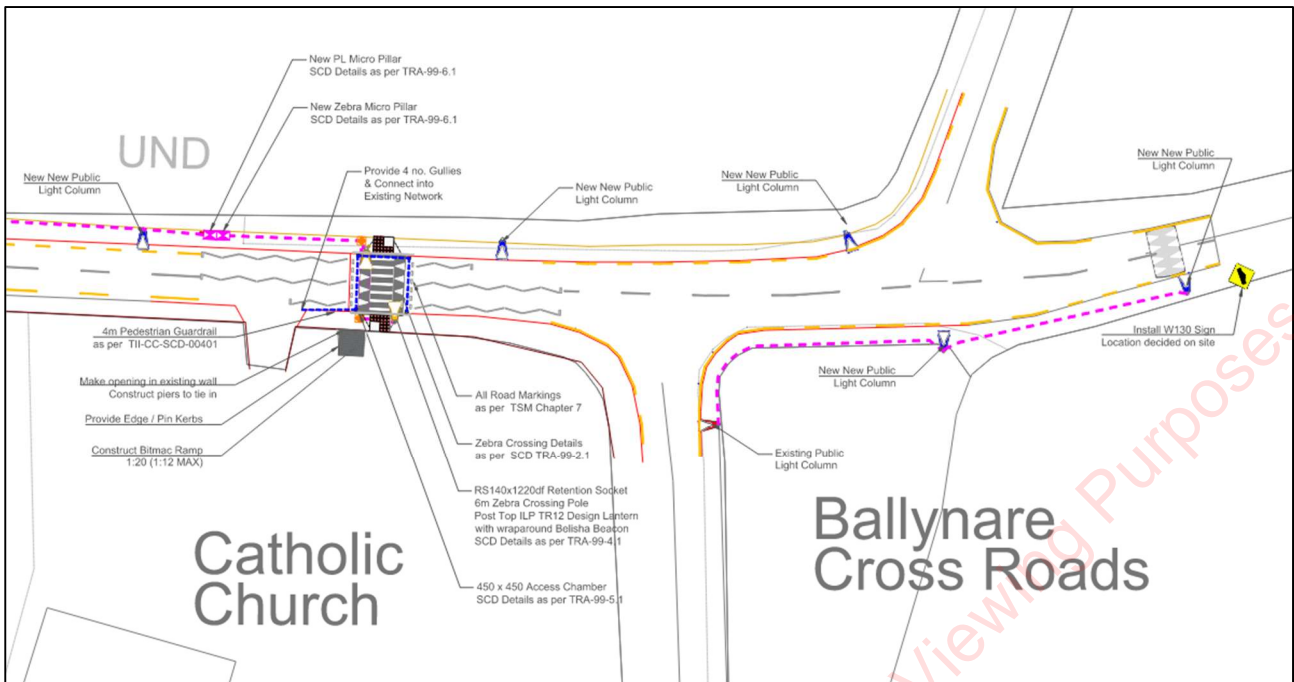


Figure 17: Extent of Traffic Calming Proposed at Kilcloon Catholic Church

Through discussions with MCC, it has been determined that these works are currently being tendered for, with tenders due from contractors on 11 August 2022. It is anticipated by MCC that all works will be completed by the end of November 2022, subject to receipt of a compliant tender.

In the interests of prudence, this traffic calming was not considered as part of the redistribution assessment so that a worst-case scenario could be assessed. The drawing pack for this scheme, as received from MCC, is included as *Appendix F* of this document.

The tables below show the vehicles travelling on these roads, as per the Vissim model, for all scenarios, and compare these volumes to the Do Nothing scenarios as a percentage increase/decrease:

Scenario	Year	Moyglare Road				L2214 – Kilcloon Road			
		North	%	South	%	North	%	South	%
Do Nothing	2019	50	-	131	-	54	-	116	-
	2023	64	-	174	-	59	-	145	-
	2028	70	-	186	-	59	-	155	-
	2038	67	-	188	-	75	-	162	-
Do Something	2023	59	-8%	166	-5%	69	17%	160	10%
	2028	72	3%	196	5%	72	22%	153	-1%
	2038	74	10%	204	9%	84	12%	178	10%
Do Max	2038	60	-10%	168	-11%	74	-1%	217	34%

Table 22: R156 Potential Traffic Redistribution - AM Peak

Scenario	Year	Moyglare Road				L2214 – Kilcloon Road			
		North	%	South	%	North	%	South	%
Do Nothing	2019	156	-	56	-	142	-	56	-
	2023	176	-	70	-	163	-	60	-
	2028	165	-	75	-	165	-	67	-
	2038	217	-	88	-	173	-	70	-
Do Something	2023	176	0%	74	6%	174	7%	66	10%
	2028	197	19%	77	3%	193	17%	76	13%
	2038	219	1%	87	-1%	198	14%	73	4%
Do Max	2038	215	-1%	75	-15%	182	5%	72	3%

Table 23: R156 Potential Traffic Redistribution - PM Peak

These results should be considered in the context of the link capacity. The table below indicates the available link capacity along Kilcloon Road, and the worst-case scenario volumes as per the scenarios shown in the table above.

Link	Width (m)	Link Capacity (veh/hr)	A.M. Peak (veh/hr)	RFC (%)	P.M. Peak (veh/hr)	RFC (%)
L2214 – Kilcloon Road – Do Nothing	5.00	1020	350	34%	158	15%
L2214 – Kilcloon Road – Do Maximum	5.00	1020	385	38%	160	16%

Table 24: Worst-Case Scenario (2040) Kilcloon Link Volumes

From the above tables, the following can be concluded:

- The volumes stay relatively consistent throughout the analysis years, as compared to the Do Nothing scenarios;
- An increase in the volumes of the Do Something and Do Maximum scenarios are to be expected as compared to the Do Nothing, as the development and masterplan trips are included;
- Compared to the Do Nothing scenarios within the same analysis years, the Do Something and Do Maximum scenarios have a negligible impact on Kilcloon Road;
- The table detailing link volumes shows that without specific development, just applying natural traffic growth as specific by TII will lead to a similar volume on this road as compared to the Do Maximum scenario;
- **The potential trip redistribution through Kilcloon due to the construction of the MOOR is negligible;**
- Furthermore, the expected impact will be further reduced with the inclusion of the Kilcloon Traffic Calming Scheme once it is implemented by MCC;

Redistribution to Maynooth

The second potential redistribution entails vehicles travelling through Maynooth towards their destination. Since the traffic along the L6219 and the R157 will increase, specifically at the junction between these two roads, there is a possibility that vehicles will opt to travel through Maynooth should the distance or travel time between their origins and destinations be similar. To assess this, a link was included between Zone 1 and Zone 8, through Maynooth. To simulate the cost of travelling through town, the speed of this road section was reduced to 20km/h. This section starts just north of the Maynooth Boys' National School and ends just east of the Carton Retail Park access.

The tables below show the vehicles travelling on this road for all scenarios, and compare these volumes to the Do Nothing scenarios as a percentage increase/decrease. It should be noted that junction surveys were not conducted within the town. The traffic on this link was estimated from the junction surveys at Moyglare Road and Moyglare Hall

Estate, and the R157 and R148. Although this does not represent an accurate volume of vehicles through town, the redistribution through town should be evident.

Scenario	Year	Maynooth Town Road			
		Southeast	%	Northwest	%
Do Nothing	2019	16	-	31	-
	2023	192	-	26	-
	2028	227	-	27	-
	2038	255	-	43	-
Do Something	2023	47	-76%	13	-50%
	2028	86	-62%	9	-67%
	2038	164	-36%	36	-16%
Do Max	2038	330	29%	9	-79%

Table 25: Maynooth Potential Traffic Redistribution - AM Peak

During the morning peak period, a large volume of vehicles will redistribute through Maynooth in the future Do Nothing scenarios. This is due to the lack of capacity at the junction between the L6219 and the R157. It is evident that with the upgrade of this junction, as part of this development, the increased capacity will counteract this redistribution leading to much less traffic travelling through town. This emphasises the benefit of this development to the town of Maynooth in future.

Scenario	Year	Maynooth Town Road			
		Southeast	%	Northwest	%
Do Nothing	2019	1	-	14	-
	2023	10	-	35	-
	2028	9	-	69	-
	2038	22	-	79	-
Do Something	2023	14	40%	46	31%
	2028	11	22%	62	-10%
	2038	46	109%	67	-15%
Do Max	2038	32	45%	369	367%

Table 26: Maynooth Potential Traffic Redistribution - PM Peak

The results from the afternoon peak period differ slightly. The demand at the junction between the L6219 and the R157 is less during this peak as compared to the morning, which means sufficient capacity is available. When considering the Opening Year and Design Year scenarios, the situation is relatively similar with an increase in the southeast direction and a decrease in the northwest direction as compared to the Do Nothing scenarios. Even though the percentages seem significant, the actual difference isn't substantial for these scenarios.

LINK CAPACITIES

For this study, and the context in which this area will transition from a more rural to a more urban setting due to the nature of the development, the links within the study area are assessed using an urban criterion.

TA 79/99 "Traffic Capacity of Urban Roads" from the DMRB provides information on the capacity of urban roads based on classification and width. Table 27 following shows the capacities of various road types based on this manual and using a 60:40 split in flow.

2 Way Single Carriageway – Busiest Direction of Flow (60/40 split)										
		Total Number of lanes								
		2				2-3	3	3-4	4	4+
Carriageway Width (m)		6.10	6.75	7.30	9.0	10.0		12.3	13.5	18.0
Road Type	UM	Not Applicable								
	UAP1	1020	1320	1590	1860	2010	2550	2800	3050	3300
	UAP2	1020	1260	1470	1550	1650	1700	1900	2100	2700
	UAP3	900	1110	1300	1530	1620	*	*	*	*
	UAP4	750	900	1140	1320	1410	*	*	*	*

Table 27: Urban Road Capacities

The local links have been classified based on the associated definitions in the DMRB. Using the previous table, link capacities have been calculated and current Ratio of Flow to Capacity (RFC) values have been assessed for the key links bordering the site. It should be noted that given the variation in width across the links in question, an average figure for each has been used which is rounded down to the nearest value shown in the above table, thus ensuring a conservative assessment of link capacity.

These values were extracted from the Vissim model. The base year values are calibrated according to the junction surveys, with all future year traffic free to redistribute throughout the network, as detailed previously in this chapter.

Base Year (2019)

The Base Year RFC value for the links within the study area are shown in Table 28 below:

Link	Width (m)	Link Capacity (veh/hr)	A.M. Peak (veh/hr)	RFC (%)	P.M. Peak (veh/hr)	RFC (%)
Moyglare Road	6.00	1020	345	34%	339	33%
L6219	5.80	1020	429	42%	437	43%
L2214 – Kilcloon Road	5.00	1020	116	11%	142	14%
R157 – Dunboyne Road	7.00	1320	368	28%	587	45%

Table 28: Base Year Link RFC Values for Local Network

The link capacities during the base year are sufficient to accommodate the traffic with the highest ratio of flow to capacity occurring in the afternoon peak period on the L6219 and R157, with a value of 45%.

Opening Year (2025)

The Opening Year Do Something scenario RFC value for the links within the study area are shown in Table 29 below:

Link	Width (m)	Link Capacity (veh/hr)	A.M. Peak (veh/hr)	RFC (%)	P.M. Peak (veh/hr)	RFC (%)
Moyglare Road	6	1260	920	73%	743	59%
L6219	7	1260	151	12%	222	18%
L2214 – Kilcloon Road	5	1020	223	22%	244	24%
R157 – Dunboyne Road	7	1320	931	71%	892	68%

Table 29: Opening Year Do Something Link RFC Values for Local Network

For the Opening Year, the full MOOR will be in operation. Flow on the L6219 will be restricted by means of chicanes. Furthermore, the section of the L2214 which traverses the Masterplan site area only, will be converted into a north-to-south one-way street with the adjacent lane converted into a pedestrian and cycling facility. The highest ratio of flow to capacity will occur on Moyglare Road during the morning peak with a value of 73%.

Opening Year + 5 (2030)

The Opening Year + 5 Do Something scenario RFC value for the links within the study area are shown in Table 30 below:

Link	Width (m)	Link Capacity (veh/hr)	A.M. Peak (veh/hr)	RFC (%)	P.M. Peak (veh/hr)	RFC (%)
Moyglare Road	6.00	1260	945	75%	820	65%
L6219	7.00	1260	347	28%	284	23%
L2214 – Kilcloon Road	5.00	1020	225	22%	269	26%
R157 – Dunboyne Road	7.00	1320	1000	76%	1018	77%

Table 30: Opening Year + 5 Do Something Link RFC Values for Local Network

This scenario will utilise the same road infrastructure as the Opening Year scenario, with increased traffic due to additional masterplan developments. The highest ratio of flow to capacity will again be on the R157 during the afternoon peak with a value of 77%.

Design Year (2040)

The Design Year Do Something scenario RFC value for the links within the study area are shown in Table 31 below:

Link	Width (m)	Link Capacity (veh/hr)	A.M. Peak (veh/hr)	RFC (%)	P.M. Peak (veh/hr)	RFC (%)
Moyglare Road	6.00	1260	1021	81%	887	70%
L6219	7.00	1260	281	22%	264	21%
L2214 – Kilcloon Road	5.00	1020	262	26%	271	27%
R157 – Dunboyne Road	7.00	1320	1060	80%	1008	76%

Table 31: Design Year Do Something Link RFC Values for Local Network

The road network will be identical to the Opening Year + 5 (2030) network, again with additional developments. The highest ratio of flow to capacity will again be on Moyglare Road during the morning peak, with a value of 81%.

The links around the development will thus provide sufficient capacity for all scenarios.

JUNCTION CAPACITIES

The junction analysis was carried out using Vissim micro-simulation software as described earlier in this report. The scenarios in the table below correspond to the scenarios discussed in Chapter 3.

Analysis Criteria

The results of the intersection analysis will be based on a Level of Service (LOS) measurement, which uses measured delay experienced by a vehicle at the intersection and compares it to a scale of values defining the LOS. According to the National Roads Network Indicators 2019, published by TII, LOS is a quality measure describing operational conditions within a traffic stream and is a recognised international standard. The Level of Service (LOS) is based on the below, which has been taken from the Highway Capacity Manual (HCM) 2010. The type of intersection affects the allowable delay in each LOS bracket resulting in different values for a traffic signal and non-signalized intersection. An acceptable LOS is on an intersection where a LOS D and above (A, B and C) is achieved. An unacceptable LOS is represented by an E and an F.

LOS	Signalized Intersection	Unsignalized Intersection
A	≤10 sec	≤10 sec
B	10–20 sec	10–15 sec
C	20–35 sec	15–25 sec
D	35–55 sec	25–35 sec
E	55–80 sec	35–50 sec
F	>80 sec	>50 sec

Table 32: Level of Service (Exhibit 18-4, HCM 2010)

Saturation flow measurements are not a built-in feature of Vissim, because, unlike statistical models, micro-simulation models are not validated by degree of saturation, but rather by delays and queue lengths.

Junction 1 - Moyglare Road/L6219

This junction is currently operating as a priority-controlled staggered four-leg junction with the north-south movement (Moyglare Road) as the major road. The worst-performing movement at each approach, for each scenario, is shown in the table below.

Peak	Scenario		Year	Moyglare (N)		L6219 (E)		Moyglare (S)		Moyglare (W)	
				LOS	Queue	LOS	Queue	LOS	Queue	LOS	Queue
AM	1	DN	2019	A	0.01	A	0.21	A	0.00	A	0.51
	2	DN	2025	A	0.00	B	1.85	A	0.64	A	0.87
	3	DS	2025	A	0.00	A	0.43	A	0.33	A	1.27
	4	DN	2030	A	0.00	C	5.04	A	0.67	A	0.96
	5	DS	2030	A	0.01	A	1.40	A	0.74	A	1.31
	6	DN	2040	A	0.02	B	3.87	A	0.81	A	1.49
	7	DS	2040	A	0.04	A	0.91	A	0.19	A	2.08
	8	DM	2040	A	0.05	A	0.89	A	1.49	A	1.40
Peak	Scenario		Year	Moyglare (N)		L6219 (E)		Moyglare (S)		Moyglare (W)	
				LOS	Queue	LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DN	2019	A	0.02	A	1.13	A	0.00	A	0.25
	10	DN	2025	A	0.05	A	3.47	A	0.04	A	0.27
	11	DS	2025	A	0.00	A	0.49	A	0.00	A	0.26
	12	DN	2030	A	0.06	A	3.07	A	0.14	A	0.29
	13	DS	2030	A	0.06	A	1.28	A	0.01	A	0.36
	14	DN	2040	A	0.02	B	4.40	A	0.09	A	0.39
	15	DS	2040	A	0.04	A	1.05	A	0.01	A	0.39
	16	DM	2040	A	0.00	A	3.36	A	0.84	A	0.35

Table 33: Junction 1 Analysis Results

The following conclusions can be drawn from the scenarios:

- **Do Nothing:** This junction performs adequately for all the analysed scenarios for DN, with no significant delays.
- **Do Something:** This junction performs adequately for all the analysed scenarios for DS, with no significant delays.

- **Do Maximum:** This junction performs adequately for the analysed scenarios of DM, with no significant delays.

Junction 2 - Moyglare Road/Mariavilla

This junction is currently operating as a priority-controlled T-junction with the north-south movement (Moyglare Road) as the major road. The worst-performing movement at each approach, for each scenario, is shown in the table below.

Peak	Scenario		Year	Moyglare (N)		Mariavilla (E)		Moyglare (S)	
				LOS	Queue	LOS	Queue	LOS	Queue
AM	1	DN	2019	A	0.00	A	0.17	A	0.02
	2	DN	2025	A	0.00	B	4.67	A	0.82
	3	DS	2025	A	0.00	C	15.57	A	0.47
	4	DN	2030	A	0.00	B	7.52	A	0.56
	5	DS	2030	A	0.04	C	8.62	A	0.88
	6	DN	2040	A	0.00	B	6.37	A	0.66
	7	DS	2040	A	0.00	C	9.88	A	0.57
	8	DM	2040	A	0.00	B	8.03	A	0.45
Peak	Scenario		Year	Moyglare (N)		Mariavilla (E)		Moyglare (S)	
				LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DN	2019	A	0.00	A	0.11	A	0.10
	10	DN	2025	A	0.00	A	0.22	A	0.19
	11	DS	2025	A	0.00	A	0.25	A	0.13
	12	DN	2030	A	0.00	A	0.77	A	0.44
	13	DS	2030	A	0.00	B	0.53	A	0.15
	14	DN	2040	A	0.00	A	0.53	A	0.33
	15	DS	2040	A	0.00	A	0.69	A	0.22
	16	DM	2040	A	0.00	E	17.25	A	1.30

Table 34: Junction 2 Analysis Results

The following conclusions can be drawn from the scenarios:

- **Do Nothing:** This junction performs adequately for all the analysed scenarios for DN, with no significant delays.
- **Do Something:** This junction performs adequately for all the analysed scenarios for DS, with no significant delays.
- **Do Maximum:** There could be congestion at this junction during the afternoon peak on the eastern approach. This is mainly due to the majority of the masterplan trips being included in the analysis. However, as previously mentioned the traffic estimations for the masterplan is very conservative. It should be noted that this junction is earmarked to be upgraded as part of the extension of a section of the MOOR within County Kildare to the west, in future by Kildare County Council.

Junction 3 - L6219/L2214

This junction is currently operating as a priority-controlled T-junction with the east-west movement (L6219) as the major road. The worst performing movement at each approach, for each scenario, is shown in the table overleaf.

Peak	Scenario		Year	L6219 (W)		L2214 (N)		L6219 (E)	
				LOS	Queue	LOS	Queue	LOS	Queue
AM	1	DN	2019	A	0.00	A	0.22	A	0.06
	2	DN	2025	A	0.00	A	0.59	A	0.05
	3	DS	2025	A	0.00	A	0.0	A	0.0
	4	DN	2030	A	0.00	A	0.67	A	0.06
	5	DS	2030	A	1.23	C	0.97	A	0.00
	6	DN	2040	A	0.00	A	0.53	A	0.10
	7	DS	2040	A	1.23	C	0.97	A	0.00
	8	DM	2040	C	1.23	C	0.97	A	0.00
Peak	Scenario		Year	L6219 (W)		L2214 (N)		L6219 (E)	
				LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DN	2019	A	0.00	A	0.12	A	0.03
	10	DN	2025	A	0.00	A	0.11	A	0.28
	11	DS	2025	A	0.00	A	0.02	A	0.00
	12	DN	2030	A	0.00	A	0.18	A	0.14
	13	DS	2030	A	0.00	A	0.15	A	0.00
	14	DN	2040	A	0.00	A	0.11	A	0.64
	15	DS	2040	A	0.00	A	0.15	A	0.00
	16	DM	2040	A	0.00	A	0.15	A	0.00

Table 35: Junction 3 Analysis Results - DN & DS

- **Do Nothing:** This junction performs adequately for all the analysed scenarios for DN, with no significant delays.
- It should be noted that this junction will be modified for the Do Something scenarios, as well as the Do Maximum scenario. Flows will be reduced on the L6219 by means of chicanes as this area will change from a rural to a more urban area post development, and the section of the L2214 which traverses the wider Masterplan site will be changed to a north-to-south one-way road with the adjacent lane converted to a pedestrian and cyclist facility.
- **Do Something:** This junction performs adequately for all the analysed scenarios for DS, with no significant delays.

- **Do Maximum:** This junction performs adequately for all the analysed scenarios for DM, with no significant delays.

Junction 4 - R157/L6219

This junction is currently operating as a priority-controlled T-junction with the north-west movement (R157) as the major road. The worst-performing movement at each approach, for each scenario, is shown in the table below. **It should be noted that this junction is earmarked to be signalised (do something layout) as part of the phase 1 office development as well as this application.** This means that only the Do Nothing scenarios were analysed with the aforementioned geometry.

Peak	Scenario		Year	R157 (E)		R157 (S)		L6219 (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
AM	1	DN	2019	B	6.60	A	0.54	A	0.00
	2	DN	2025	C	13.46	A	1.34	A	0.00
	4	DN	2030	F	70.07	A	1.96	A	0.00
	6	DN	2040	F	151.12	A	4.00	A	0.00
Peak	Scenario		Year	R157 (E)		R157 (S)		L6219 (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DN	2019	B	0.80	A	1.41	A	0.00
	10	DN	2025	C	1.41	A	3.55	A	0.00
	12	DN	2030	D	3.99	A	4.97	A	0.00
	14	DN	2040	D	4.93	A	7.56	A	0.00

Table 36: Junction 4 Analysis Results – DN

As can be seen from the previous table, the junction performs within acceptable levels during the Base Year, with delays being experienced on the eastern approach for all future analysis years during the morning peak.

For the Opening Year Do Something scenario, this junction will be upgraded to a four-leg signalised junction. Upgrading this junction will improve the delays to within acceptable levels, with the addition of the Do Something traffic volumes. As can be seen, the delays are improved compared to the Do Nothing scenarios, which emphasise the benefit of the development to the local road network. The four-leg junction layout is shown in the figure following:

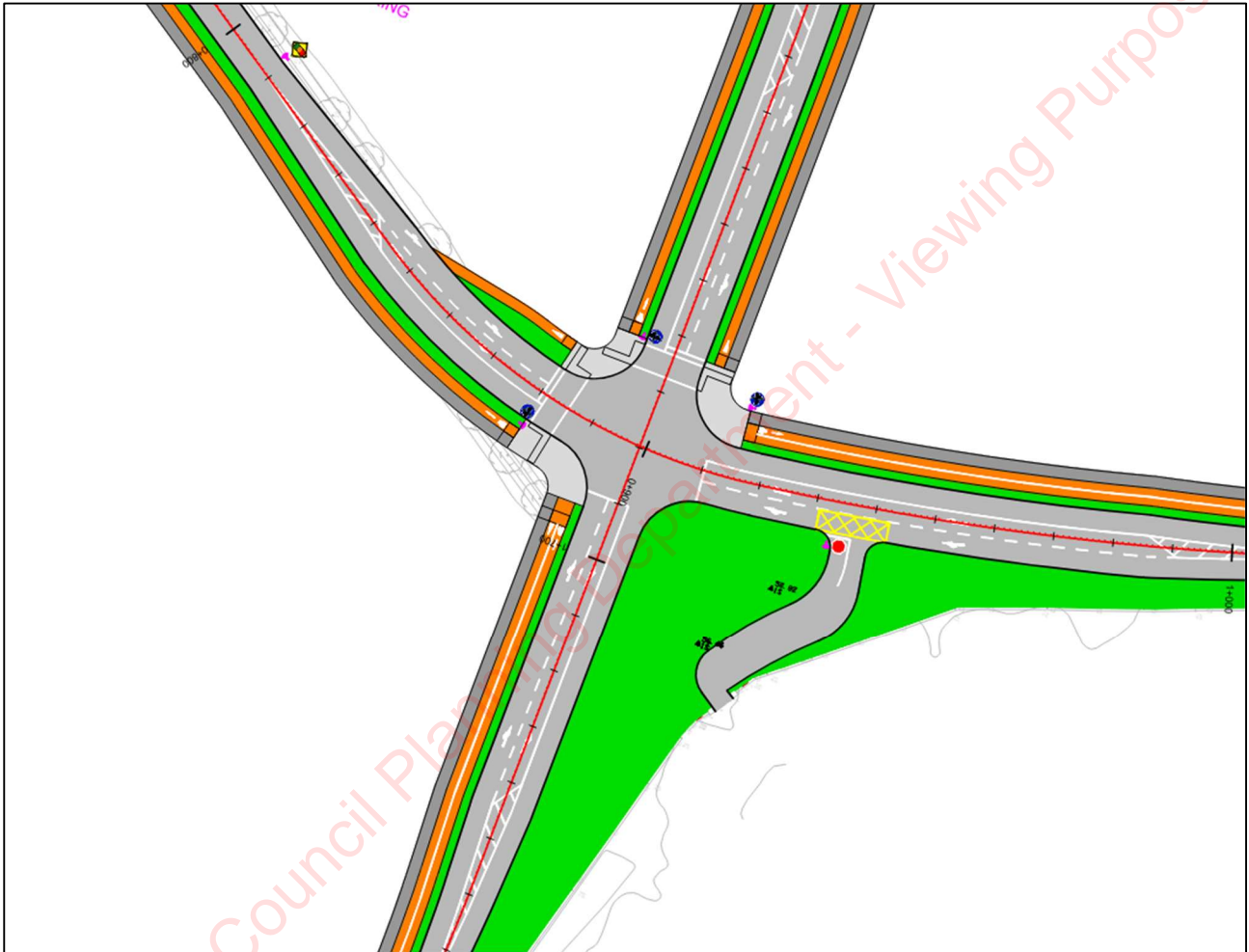


Figure 18: Junction 4 Do Something Layout

Peak	Scenario		Year	MOOR (N)		R157 (E)		R157 (S)		R6219 (W)	
				LOS	Queue	LOS	Queue	LOS	Queue	LOS	Queue
AM	3	DS	2025	C	21.07	D	17.29	C	16.04	D	2.48
	5	DS	2030	C	13.31	D	17.44	C	13.34	D	14.21
	7	DS	2040	D	29.41	D	24.46	D	42.42	D	5.07
	8	DM	2040	D	19.35	D	14.09	C	21.15	D	8.53
Peak	Scenario		Year	MOOR (N)		R157 (E)		R157 (S)		R6219 (W)	
				LOS	Queue	LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DS	2025	C	3.91	C	22.44	C	14.24	C	3.60
	9	DS	2030	D	6.50	C	26.36	D	18.76	D	4.08
	13	DS	2040	C	5.83	C	31.38	C	16.69	C	4.99
	16	DM	2040	B	6.43	C	21.99	C	9.26	C	9.00

Table 37: Junction 4 Analysis Results – DM

The demand at this junction will be fairly high, due to the trips generated by additional developments within the masterplan. In addition, the traffic estimation for the Do Maximum scenario is very conservative as described previously in this document. To achieve acceptable levels of service at the junction during this scenario, an additional left-turning lane might be required on the northern approach, as well as an east-to-south (R157 to MOOR) left-turning slip lane.

According to the layout of the current development proposals, there will be sufficient space available to implement these infrastructural upgrades, should they be required in the future. However, each masterplan development will be applied for separately, and these further upgrades will be identified as part of those future applications, if required.

Junction 5 - R157/Dunboyne Road

This junction is currently operating as a three-leg roundabout. The worst-performing movement at each approach, for each scenario, is shown in the table below.

Peak	Scenario		Year	R157 (N)		R157 (S)		Dunboyne Road (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
AM	1	DN	2019	A	0.44	A	0.20	A	0.82
	2	DN	2025	A	0.89	A	0.50	A	0.74
	3	DS	2025	A	2.40	A	0.54	A	1.08
	4	DN	2030	A	0.97	A	0.72	A	1.18
	5	DS	2030	A	3.56	A	1.16	A	1.26
	6	DN	2040	A	1.32	A	1.25	A	1.50
	7	DS	2040	C	14.50	A	3.20	A	2.75
	8	DM	2040	A	1.30	B	33.46	D	22.14
Peak	Scenario		Year	R157 (N)		R157 (S)		Dunboyne Road (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DN	2019	A	0.37	A	0.58	A	0.25
	10	DN	2025	A	0.44	A	1.48	A	0.31
	11	DS	2025	A	3.23	A	1.18	A	0.48
	12	DN	2030	A	0.66	A	1.17	A	0.44
	13	DS	2030	A	3.50	A	3.90	A	0.41
	14	DN	2040	A	1.22	A	1.77	A	0.41
	15	DS	2040	B	5.61	A	3.09	A	0.52
	16	DM	2040	A	2.76	A	1.76	A	0.29

Table 38: Junction 5 Analysis Results

The following conclusions can be drawn from the scenarios:

- **Do Nothing:** This junction performs adequately for all the analysed scenarios for DN, with no significant delays.

- **Do Something:** This junction performs adequately for all the analysed scenarios for DS, with no significant delays.
- **Do Maximum:** This junction performs adequately for the analysed scenarios of DM, with no significant delays.

Junction 6 - R148/R157

This junction is currently operating as a priority-controlled T-junction with the east-west movement (R148) as the major road. The worst performing movement at each approach, for each scenario, is shown in the table overleaf.

Peak	Scenario		Year	R157 (N)		R148 (E)		R148 (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
AM	1	DN	2019	A	0.82	A	0.50	A	0.00
	2	DN	2025	C	4.28	A	3.00	A	0.00
	3	DS	2025	C	7.24	A	2.00	A	0.00
	4	DN	2030	C	6.14	A	2.40	A	0.00
	5	DS	2030	C	5.52	A	1.76	A	0.00
	6	DN	2040	C	5.90	A	3.76	A	0.00
	7	DS	2040	F	46.98	C	14.99	A	0.00
	8	DM	2040	D	13.42	C	20.20	A	0.00
Peak	Scenario		Year	R157 (N)		R148 (E)		R148 (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DN	2019	B	2.00	A	2.34	A	0.00
	10	DN	2025	D	5.70	B	10.91	A	0.00
	11	DS	2025	D	9.45	A	5.04	A	0.00
	12	DN	2030	E	14.56	B	16.58	A	0.00
	13	DS	2030	F	42.16	C	18.82	A	0.00
	14	DN	2040	F	24.45	C	26.91	A	0.00
	15	DS	2040	F	141.53	C	27.97	A	0.00
	16	DM	2040	F	115.77	A	4.82	A	0.00

Table 39: Junction 6 Analysis Results

The following conclusions can be drawn from the scenarios:

- **Do Nothing:** This junction performs adequately for all morning peak scenarios of the DN. During the afternoon peak, delays occur on the northern approach in 2030 and 2040.
- **Do Something:** The junction performs adequately during the morning peak period for all analysis years aside from the Design Year, during which some congestion is experienced on the northern approach. During the afternoon peak, congestion could be present on the northern approach for most of the analysed scenarios.
- **Do Maximum:** Delays will be present on the northern approach during the morning peak period.

It should be noted that this junction is earmarked for upgrading as part of Kildare County Council's proposal for the Maynooth Eastern Ring Road (MERR) scheme, which will increase the capacity. The junction is poised to be upgraded to a four-leg signalised junction.

This upgrade should address all the identified capacity problems.

MOOR Junctions

The additional junctions to be constructed as part of the MOOR, not included in the previous analysis, are shown in the figure overleaf.



Figure 19: Access Junctions

Junction 7: L6219/Mariavilla Access Road

This is a new junction that will be constructed with the extension of the Mariavilla Access Road to the R6219, as shown in Figure 19. The junction will operate as a priority-controlled T-junction with the east-west movement (Mariavilla Access Road/MOOR) as the major road. The worst performing movement at each approach, for each scenario, is shown in the table below.

Peak	Scenario		Year	L6219 (N)		MOOR (E)		Mariavilla (W)	
				DOS	Queue	DOS	Queue	DOS	Queue
AM	3	DS	2025	A	0.18	A	0.22	-	-
	5	DS	2030	A	0.75	A	0.25	-	-
	7	DS	2040	A	2.06	A	0.21	-	-
	8	DM	2040	A	0.53	A	0.18	-	-
Peak	Scenario		Year	L6219 (N)		MOOR (E)		Mariavilla (W)	
				DOS	Queue	DOS	Queue	DOS	Queue
PM	11	DS	2025	A	0.05	A	0.31	-	-
	13	DS	2030	A	0.17	A	0.13	-	-
	15	DS	2040	A	0.17	A	0.48	-	-
	16	DM	2040	B	93.00	A	1.26	-	-

Table 40: Junction 7 – Worst DoS & Queue Results

This junction will function adequately for all scenarios.

Junction 14 – MOOR/R6219

This junction will be included as part of the build-out of the MOOR, as shown in Figure 19. The junction will operate as a priority-controlled T-junction with the east-west movement (MOOR) as the major road. The worst-performing movement at each approach is shown in the table below.

Peak	Scenario		Year	MOOR (E)		R6219 (S)		MOOR (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
AM	3	DS	2025	-	-	A	0.18	A	0.02
	5	DS	2030	-	-	A	0.37	A	1.15
	7	DS	2040	-	-	A	0.32	A	1.05
	8	DM	2040	-	-	A	0.51	A	0.20
Peak	Scenario		Year	MOOR (E)		R6219 (S)		MOOR (W)	
				LOS	Queue	LOS	Queue	LOS	Queue
PM	11	DS	2025	-	-	A	0.12	A	0.28
	13	DS	2030	-	-	A	0.29	A	0.64
	15	DS	2040	-	-	A	0.66	A	1.18
	16	DM	2040	-	-	A	0.21	A	1.28

Table 41: Junction 14 – Worst DoS & Queue Results

This junction will function adequately for all scenarios.

Junction 16 – MOOR/L2214

This junction will be included as part of the build-out of the MOOR, as shown in Figure 19. The junction will operate as a traffic signal controlled four-leg junction. The southern approach (L2214) will be a one-way exit road only. The worst-performing movement at each approach is shown in the table below.

Peak	Scenario		Year	L2214 (N)		MOOR (E)		L2214 (S)		MOOR (W)	
				LOS	Queue	LOS	Queue	LOS	Queue	LOS	Queue
AM	3	DS	2025	C	8.11	B	4.45	-	-	B	12.21
	5	DS	2030	D	8.70	B	7.34	-	-	B	12.94
	7	DS	2040	C	10.53	B	6.31	-	-	B	7.94
	8	DM	2040	D	10.50	B	6.48	-	-	B	14.16
Peak	Scenario		Year	L2214 (N)		MOOR (E)		L2214 (S)		MOOR (W)	
				LOS	Queue	LOS	Queue	LOS	Queue	LOS	Queue
PM	9	DS	2025	D	3.02	B	8.46	-	-	B	2.96
	9	DS	2030	D	3.68	B	13.29	-	-	B	4.36
	13	DS	2040	D	3.30	B	15.45	-	-	B	4.22
	16	DM	2040	C	2.90	B	19.63	-	-	B	7.47

Table 42: Junction 14 – Worst DoS & Queue Results

This junction will function adequately for all scenarios.

8 REMEDIAL/MITIGATION MEASURES

The previous chapter details the link and junction analysis. From this, it is evident that all links will have sufficient capacity for each analysis period. In terms of junctions, no remedial measures are required during the Opening Year (2025), aside from the upgrading of junction 4 (R157/L6219) which is already discussed in this report.

There could potentially be some congestion present at Junctions 2 and 6 in future, however, these junctions are already earmarked to be upgraded as part of other road projects.

Junction 2 will be upgraded as part of the extension of a section of the MOOR within County Kildare to the west, in future by Kildare County Council.

Junction 6 will be upgraded as part of Kildare County Council's proposal for the Maynooth Eastern Ring Road (MERR) scheme, which will increase the capacity.

9 VERIFICATION

This report was compiled and verified by:

Wian Marais BE (US), BE (Hons) (UP), Professional Engineer (ECSA)

Civil Engineer

O'Connor Sutton Cronin & Associates



Kildare County Council Planning Department - Viewing Purposes Only

Appendix A **TRAFFIC SURVEY DATA**



	Sites / Location:	1 to 6 / Moygaddy	Project No.:	10084	Diagram No.:	10084-01	Drawn By:	AC
	Survey Date:	Tuesday 28th May 2019	Project Name:	MOYGADDY				
	Survey Times:	07:00 to 19:00	Diagram Title:	General Location Plan				

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	A to D - Moyglare Road(N) to Moyglare Road(E)							Veh. Total	A to C - Moyglare Road(N) to Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	13	1	4	0	0	0	0	18	16	0	5	1	0	1	0	23
7:15	17	0	2	0	0	0	0	19	19	0	7	1	0	0	0	27
7:30	20	0	0	0	0	0	0	20	17	0	7	4	0	0	0	28
7:45	11	0	2	1	0	0	1	15	15	0	1	0	0	1	0	17
8:00	13	0	0	0	0	0	0	13	14	0	3	3	0	0	1	21
8:15	21	0	0	0	0	0	0	21	28	0	2	0	1	0	0	31
8:30	10	0	2	0	0	0	0	12	22	0	2	0	0	0	0	24
8:45	12	0	0	1	0	0	0	13	16	0	0	5	0	0	1	22
9:00	7	0	0	0	0	0	0	7	12	0	1	2	0	0	1	16
9:15	14	0	0	0	0	0	0	14	18	0	0	1	0	0	0	19
9:30	8	0	2	0	0	0	0	10	13	1	0	2	0	0	0	16
9:45	8	0	0	1	0	0	0	9	15	0	2	0	0	0	0	17
10:00	3	0	1	0	0	0	0	4	5	0	0	3	0	0	0	8
10:15	6	0	0	1	0	0	0	7	7	0	2	0	0	0	0	9
10:30	2	1	1	0	0	0	0	4	10	0	3	0	0	0	0	13
10:45	7	0	0	1	0	0	0	8	9	0	1	2	0	0	0	12
11:00	2	0	1	0	0	0	0	3	5	0	1	1	0	0	0	7
11:15	2	0	1	0	0	0	0	3	9	0	0	3	0	0	3	15
11:30	2	0	1	0	0	0	0	3	8	0	1	2	0	0	0	11
11:45	5	0	0	0	0	0	0	5	4	0	1	2	0	0	0	7
12:00	3	0	1	1	0	0	0	5	7	0	1	0	0	0	0	8
12:15	1	0	1	1	0	0	1	4	10	0	0	0	0	0	1	11
12:30	6	0	0	0	0	0	0	6	6	0	1	1	0	0	0	8
12:45	3	0	1	0	0	0	0	4	9	0	0	2	0	0	0	11
13:00	3	0	1	0	0	0	0	4	1	1	1	0	0	0	0	3
13:15	3	0	0	0	0	0	0	3	8	0	0	1	0	0	0	9
13:30	6	0	1	1	0	0	0	8	3	0	0	3	0	0	0	6
13:45	5	0	1	0	0	0	0	6	10	0	1	1	0	0	0	12
14:00	0	0	0	1	0	0	0	1	12	0	2	0	0	0	0	14
14:15	5	0	0	0	0	0	0	5	6	0	0	0	0	0	0	6
14:30	7	0	0	0	0	0	0	7	8	0	2	2	0	0	1	13
14:45	3	1	0	0	0	0	0	4	8	0	0	2	0	0	0	10
15:00	4	0	3	0	0	0	0	7	11	0	1	3	0	0	0	15
15:15	3	0	0	0	0	0	0	3	5	1	2	2	0	0	0	10
15:30	2	0	1	1	0	0	0	4	9	0	1	1	0	0	0	11
15:45	4	0	1	0	0	0	0	5	15	0	1	1	0	0	0	17
16:00	3	0	0	0	0	0	0	3	10	0	4	0	0	0	0	14
16:15	2	0	0	0	0	0	0	2	7	0	0	0	1	0	0	8
16:30	7	0	0	1	0	0	0	8	8	0	1	0	1	0	0	10
16:45	4	0	0	0	0	0	0	4	9	0	0	1	0	0	0	10
17:00	5	0	0	0	0	0	0	5	7	0	3	0	0	0	0	10
17:15	3	0	1	0	0	0	0	4	5	0	4	0	0	0	0	9
17:30	5	0	0	0	0	0	0	5	10	0	3	0	0	0	0	13
17:45	4	0	1	0	0	0	0	5	10	1	1	0	0	0	0	12
18:00	5	0	0	0	0	0	0	5	5	0	0	0	0	0	0	5
18:15	2	0	0	0	0	0	0	2	13	1	1	2	0	0	0	17
18:30	6	0	1	0	0	0	1	8	8	1	2	1	0	0	0	12
18:45	7	0	2	0	0	0	0	9	10	0	0	0	0	0	1	11
Total	294	3	33	11	0	0	3	344	492	6	71	55	3	2	9	638

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10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	C to B - Moyglare Road(S) to Moyglare Road(W)							Veh. Total	C to A - Moyglare Road(S) to Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	1	0	0	0	0	0	0	1	3	0	1	0	0	0	0	4
7:15	1	0	1	0	0	0	0	2	7	0	1	1	0	0	0	9
7:30	2	0	1	1	0	0	0	4	1	0	2	1	0	0	0	4
7:45	0	0	0	0	0	0	0	0	6	0	2	6	1	0	0	15
8:00	2	0	0	0	0	0	0	2	3	0	2	1	0	0	0	6
8:15	1	0	0	0	0	0	0	1	4	0	2	0	0	0	0	6
8:30	5	0	0	0	0	0	1	6	9	0	0	1	0	0	0	10
8:45	7	0	1	0	0	0	0	8	6	0	1	1	0	0	0	8
9:00	5	0	1	1	0	0	0	7	6	0	0	2	0	0	0	8
9:15	6	0	0	1	0	0	0	7	7	1	0	2	0	0	0	10
9:30	4	0	1	1	0	0	0	6	3	0	2	0	0	0	0	5
9:45	0	0	1	1	0	0	0	2	1	0	0	2	0	0	0	3
10:00	1	0	1	0	0	0	0	2	9	0	0	1	0	0	1	11
10:15	0	0	0	0	0	0	0	0	9	0	3	1	0	0	0	13
10:30	2	0	2	0	0	0	0	4	0	0	1	0	0	0	0	1
10:45	3	0	1	0	0	0	0	4	6	0	1	2	0	0	0	9
11:00	2	0	0	0	0	0	0	2	7	1	1	1	0	0	0	10
11:15	1	1	1	2	0	0	0	5	3	0	1	2	0	0	0	6
11:30	1	0	0	1	0	0	0	2	8	0	0	5	0	0	0	13
11:45	1	0	0	0	0	0	0	1	7	0	0	1	0	0	0	8
12:00	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12
12:15	2	0	3	0	0	0	0	5	7	0	1	0	0	0	0	8
12:30	3	0	0	0	0	0	0	3	14	0	1	1	0	0	0	16
12:45	2	0	0	0	0	0	0	2	6	0	0	2	0	0	0	8
13:00	2	0	1	0	0	0	0	3	9	0	1	0	0	0	0	10
13:15	0	0	1	1	0	0	0	2	13	0	1	2	0	0	0	16
13:30	6	0	0	0	0	0	0	6	10	0	1	0	0	0	1	12
13:45	1	0	0	0	0	0	0	1	11	1	3	1	0	0	0	16
14:00	2	0	1	1	0	0	0	4	5	0	0	0	0	0	0	5
14:15	2	0	0	0	0	0	0	2	12	0	1	0	0	0	0	13
14:30	3	0	1	0	0	0	0	4	8	0	2	0	0	0	0	10
14:45	2	0	0	0	0	0	0	2	7	0	4	0	0	0	0	11
15:00	4	0	2	0	0	0	0	6	13	0	0	1	0	0	1	15
15:15	3	0	0	0	0	0	0	3	9	0	1	4	0	0	1	15
15:30	6	0	2	1	0	0	0	9	7	0	1	0	0	0	0	8
15:45	7	0	1	1	0	0	0	9	13	0	5	1	0	0	1	20
16:00	9	0	2	1	0	0	0	12	16	0	1	1	0	0	1	19
16:15	9	0	1	0	0	1	0	11	28	0	6	2	0	0	0	36
16:30	2	0	3	0	0	0	3	8	17	0	2	1	0	0	0	20
16:45	5	0	1	0	0	0	0	6	19	0	4	2	0	0	0	25
17:00	5	0	4	0	0	0	0	9	18	0	4	2	0	0	1	25
17:15	6	0	2	0	0	0	1	9	23	0	6	0	0	0	0	29
17:30	10	0	0	0	0	0	0	10	25	0	4	0	0	1	0	30
17:45	7	0	0	0	0	0	1	8	29	0	2	1	0	0	0	32
18:00	1	0	1	0	0	0	1	3	15	1	1	1	0	0	0	18
18:15	8	0	0	0	0	0	1	9	13	0	2	0	0	1	0	16
18:30	4	0	1	0	0	0	0	5	13	0	1	0	0	0	0	14
18:45	1	0	1	0	0	0	1	3	12	0	1	0	0	0	0	13
25:75	157	1	39	13	0	1	9	220	489	4	76	52	1	2	7	631



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	C to D - Moyglare Road(S) to Moyglare Road(E)							Veh. Total	D to C - Moyglare Road(E) to Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	12	0	4	0	0	0	0	16	9	0	6	0	0	0	0	15
7:15	18	0	1	1	0	0	0	20	7	0	4	1	0	0	0	12
7:30	29	0	0	1	0	0	0	30	17	0	2	0	0	0	0	19
7:45	19	0	0	0	0	0	0	19	28	0	2	2	0	0	0	32
8:00	23	1	2	0	0	0	1	27	17	0	2	2	0	0	0	21
8:15	35	0	1	0	0	0	0	36	36	0	4	1	0	0	0	41
8:30	57	0	4	1	1	0	0	63	42	1	2	0	1	0	0	46
8:45	38	2	1	1	0	0	0	42	48	0	2	2	1	0	0	53
9:00	24	0	1	2	1	0	0	28	49	0	4	3	0	0	0	56
9:15	18	2	0	0	0	0	0	20	35	0	1	0	0	0	0	36
9:30	16	0	2	2	0	0	0	20	26	2	0	0	0	0	1	29
9:45	12	1	2	0	0	0	0	15	15	0	0	2	0	0	0	17
10:00	15	0	0	2	0	0	0	17	14	0	0	2	0	0	0	16
10:15	2	0	1	1	0	0	0	4	9	0	3	0	0	0	0	12
10:30	7	1	1	1	0	0	0	10	9	0	1	1	0	0	0	11
10:45	18	0	4	1	0	0	0	23	14	1	2	1	0	0	0	18
11:00	17	0	1	2	0	0	1	21	11	0	3	1	0	0	0	15
11:15	21	0	3	0	0	0	0	24	9	0	1	0	0	0	0	10
11:30	15	0	0	0	0	0	0	15	28	0	3	1	0	0	0	32
11:45	16	0	2	0	0	0	0	18	32	0	2	1	0	0	0	35
12:00	14	0	3	1	0	0	0	18	24	0	1	1	0	0	0	26
12:15	13	1	4	1	0	0	0	19	23	0	1	1	0	0	0	25
12:30	11	0	0	0	0	0	0	11	11	0	2	1	0	0	0	14
12:45	13	0	1	1	0	0	0	15	7	0	2	1	0	0	0	10
13:00	11	0	0	0	0	0	0	11	13	0	3	1	0	0	0	17
13:15	17	0	1	1	0	0	0	19	18	0	4	1	0	0	0	23
13:30	21	0	1	3	0	0	0	25	20	1	3	0	0	0	0	24
13:45	10	1	2	0	0	0	0	13	24	1	0	0	0	0	0	25
14:00	17	1	2	2	0	0	0	22	18	0	5	0	0	0	0	23
14:15	33	0	0	0	0	0	0	33	20	0	0	1	0	0	0	21
14:30	23	0	2	0	0	0	0	25	17	0	0	1	0	0	0	18
14:45	23	1	1	0	1	0	0	26	52	0	0	3	0	0	0	55
15:00	28	0	2	1	0	0	0	31	23	0	1	1	0	0	0	25
15:15	21	1	3	1	0	0	0	26	24	1	0	0	0	0	0	25
15:30	8	0	3	0	0	0	0	11	32	4	1	0	0	0	0	37
15:45	22	0	3	0	0	0	0	25	29	0	2	0	1	0	0	32
16:00	22	0	1	0	0	0	0	23	35	0	3	1	0	0	0	39
16:15	27	0	2	0	1	0	0	30	21	0	2	1	0	0	0	24
16:30	29	0	4	0	0	0	1	34	28	0	6	1	0	0	0	35
16:45	19	0	4	0	0	0	0	23	42	0	4	0	1	0	0	47
17:00	32	0	0	0	0	0	0	32	36	0	4	1	0	0	1	42
17:15	47	0	3	1	0	0	0	51	41	0	3	0	0	0	0	44
17:30	30	0	3	0	0	0	0	33	45	0	3	1	0	0	0	49
17:45	34	0</														



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	D to B - Moyglare Road(E) to Moyglare Road(W)							Veh. Total	D to A - Moyglare Road(E) to Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	1	0	3	0	0	0	0	4	1	0	0	0	0	0	1	
7:15	2	0	0	1	0	0	0	3	1	0	0	0	0	0	1	
7:30	8	0	4	1	0	0	0	13	1	0	0	0	0	0	1	
7:45	4	0	1	0	0	0	0	5	0	0	1	0	0	0	1	
8:00	7	0	2	0	0	0	0	9	3	0	1	0	0	0	4	
8:15	8	0	2	2	0	0	0	12	0	0	0	0	0	0	0	
8:30	13	0	1	0	0	0	0	14	3	0	1	0	0	0	4	
8:45	5	0	2	2	0	0	0	9	6	0	1	0	0	0	7	
9:00	6	0	1	0	0	0	0	7	3	0	0	3	0	0	6	
9:15	6	0	1	1	0	0	0	8	2	0	2	1	0	0	5	
9:30	9	1	0	0	0	0	0	10	0	0	0	0	0	0	0	
9:45	4	0	1	0	0	0	0	5	2	0	0	1	0	0	3	
10:00	3	0	1	1	0	0	0	5	3	0	1	0	0	0	4	
10:15	6	0	1	0	0	0	0	7	1	0	0	0	0	0	1	
10:30	1	0	0	2	0	0	1	4	3	0	1	0	0	0	4	
10:45	7	0	2	1	0	0	1	11	5	0	0	1	0	0	6	
11:00	4	0	3	1	0	0	0	8	2	0	0	0	0	0	2	
11:15	2	0	1	1	0	0	0	4	5	1	0	0	0	0	6	
11:30	13	0	1	0	0	0	0	14	1	0	1	1	0	0	3	
11:45	5	0	1	1	0	0	0	7	6	0	0	1	0	0	7	
12:00	11	0	1	0	0	0	0	12	5	0	1	1	0	0	7	
12:15	7	0	2	1	0	0	0	10	3	0	0	0	0	0	3	
12:30	7	0	0	1	0	0	2	10	5	0	2	0	0	0	7	
12:45	9	0	3	1	0	0	1	14	5	1	0	0	0	0	6	
13:00	7	0	1	0	0	0	0	8	7	0	0	0	0	0	7	
13:15	7	0	0	1	0	0	0	8	4	1	0	0	0	0	5	
13:30	6	1	2	0	0	1	0	10	7	0	1	1	0	0	9	
13:45	8	0	1	0	0	0	0	9	3	0	1	1	0	0	5	
14:00	13	0	4	0	0	0	0	17	8	0	0	0	0	0	8	
14:15	12	0	1	2	0	0	0	15	5	0	0	0	0	0	5	
14:30	4	0	0	0	0	0	0	4	10	0	1	0	0	0	11	
14:45	14	0	0	0	0	0	0	14	7	0	1	1	0	0	9	
15:00	19	0	0	1	0	0	0	20	10	0	0	0	0	0	10	
15:15	24	1	4	0	0	0	0	29	7	0	1	1	0	0	9	
15:30	25	1	0	0	0	0	1	27	5	0	0	1	0	0	6	
15:45	24	1	2	0	0	0	0	27	3	0	3	0	0	0	6	
16:00	25	0	8	0	0	0	0	33	9	0	2	0	0	0	11	
16:15	35	0	4	1	0	1	0	41	10	0	0	1	0	0	11	
16:30	43	1	2	2	0	1	0	49	11	0	1	1	0	0	13	
16:45	50	0	7	1	0	0	0	58	7	0	1	0	0	0	8	
17:00	37	0	7	0	0	0	0	44	15	1	3	1	0	0	20	
17:15	40	0	7	0	0	0	0	47	17	0	1	1	0	0	19	
17:30	43	0	5	0	0	0	0	48	14	0	0	0	0	0	14	
17:45	36	1	6	0	0	0	0	43	13	0	1	0	0	0	14	
18:00	48	0	7	1	0	0	1	57	13	0	4	0	0	0	17	
18:15	44	0	7	1	0	0	0	52	6	0	2	0	0	0	8	
18:30	26	0	3	0	0	0	1	30	13	0	0	0	0	0	13	
18:45	25	0	6	0	0	0	0	31	6	0	2	1	0	0	9	
25:75	763	7	118	27	0	3	8	926	276	4	37	19	0	0	1	337



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm A - Moyglare Road(N)						Veh. Total	From Arm A - Moyglare Road(N)						Veh. Total		
	CAR	Taxi	LGV	HGV	PSV	M/C		P/C	CAR	Taxi	LGV	HGV	PSV		M/C	P/C
7:00	5	0	1	0	0	0	6	29	1	9	1	0	1	0	41	
7:15	8	0	1	2	0	0	11	37	0	9	1	0	0	0	47	
7:30	3	0	2	1	0	0	6	37	0	7	4	0	0	0	48	
7:45	7	0	3	6	1	0	18	26	0	4	1	0	1	1	33	
8:00	6	0	3	1	0	0	10	28	0	3	3	0	0	1	35	
8:15	4	0	2	0	0	0	6	49	0	2	0	1	0	0	52	
8:30	12	0	1	1	0	0	14	33	0	5	0	0	0	0	38	
8:45	13	0	3	1	0	0	17	28	0	0	6	0	0	1	35	
9:00	10	0	1	5	0	0	16	21	0	1	2	0	0	1	25	
9:15	11	1	2	3	0	0	17	32	0	1	1	0	0	0	34	
9:30	3	0	2	0	0	0	5	22	1	2	2	0	0	0	27	
9:45	3	0	0	3	0	0	6	23	0	2	1	0	0	0	26	
10:00	12	0	1	1	0	0	15	8	0	1	3	0	0	0	12	
10:15	11	0	3	1	0	0	15	13	0	2	1	0	0	0	16	
10:30	4	0	3	0	0	0	7	12	1	4	0	0	0	0	17	
10:45	12	0	1	3	0	0	16	16	0	1	3	0	0	0	20	
11:00	10	1	1	1	0	0	13	7	0	2	1	0	0	0	10	
11:15	8	1	1	2	0	0	12	11	0	1	3	0	0	3	18	
11:30	9	0	1	6	0	1	17	10	0	2	2	0	0	0	14	
11:45	14	0	0	2	0	0	16	11	0	1	2	0	0	0	14	
12:00	17	0	1	1	0	0	19	12	0	2	1	0	0	0	15	
12:15	11	0	1	0	0	0	12	11	0	2	1	0	0	2	16	
12:30	19	0	4	1	0	0	24	13	0	2	1	0	0	0	16	
12:45	11	1	1	2	0	0	15	12	0	2	2	0	0	0	16	
13:00	18	0	3	0	0	0	21	4	1	2	0	0	0	0	7	
13:15	19	1	1	2	0	0	23	11	0	0	1	0	0	0	12	
13:30	17	0	3	1	0	0	22	11	0	1	5	0	0	0	17	
13:45	14	1	4	3	0	0	22	16	0	2	1	0	0	0	19	
14:00	14	0	0	0	0	0	14	14	0	2	1	0	0	0	17	
14:15	17	0	1	0	0	0	18	11	0	0	0	0	0	0	11	
14:30	19	0	3	0	0	0	22	17	0	2	2	0	0	1	22	
14:45	15	0	5	1	0	0	21	11	1	0	2	0	0	0	14	
15:00	23	0	0	1	0	0	25	15	0	4	3	0	0	0	22	
15:15	18	0	2	5	0	1	26	9	1	2	2	0	0	0	14	
15:30	14	0	1	1	0	0	16	12	0	2	2	0	0	0	16	
15:45	16	0	8	1	0	0	26	19	0	2	1	0	0	0	22	
16:00	27	0	3	1	0	0	32	15	0	4	0	0	0	0	19	
16:15	38	0	6	4	0	0	48	10	0	1	0	1	0	0	12	
16:30	28	0	3	3	0	0	34	16	0	1	1	1	0	0	19	
16:45	27	0	5	2	0	0	34	15	0	0	1	0	0	0	16	
17:00	34	1	8	3	0	0	47	13	0	3	0	0	0	0	16	
17:15	40	0	7	1	0	0	48	8	0	6	0	0	0	0	14	
17:30	40	0	4	0	0	1	45	16	0	4	0	0	0	0	20	
17:45	42	0	3	1	0	0	46	14	1	2	1	0	0	0	18	
18:00	28	1	5	1	0	0	35	11	0	0	0	0	0	0	11	
18:15	19	0	5	0	0	1	25	15	1	2	2	0	0	0	20	
18:30	27	0	1	0	0	0	28	15	1	3	1	0	0	1	21	
18:45	22	0	3	1	0	0	26	18	0	2	0	0	0	1	21	
25:75	799	8	123	75	1	2	9	1017	817	9	114	68	3	2	12	1025



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm B - Moyglare Road(W)							Veh. Total	From Arm B - Moyglare Road(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	2	0	3	0	0	0	0	5	48	0	9	2	0	0	0	59
7:15	4	0	1	1	0	0	0	6	60	0	18	1	0	0	0	79
7:30	10	0	5	2	0	0	0	17	69	0	13	3	0	0	0	85
7:45	4	0	2	0	0	0	0	6	61	1	9	1	0	0	0	72
8:00	10	0	2	0	0	0	0	12	61	0	8	1	0	0	0	70
8:15	9	0	2	2	0	0	0	13	72	0	4	3	0	0	0	79
8:30	19	0	2	0	0	0	1	22	39	0	2	0	0	0	0	41
8:45	12	0	3	2	0	0	0	17	38	0	5	2	0	1	0	46
9:00	13	0	2	1	0	0	0	16	37	1	3	3	0	0	0	44
9:15	12	0	2	2	0	0	0	16	26	0	6	1	0	0	1	34
9:30	14	1	1	1	0	0	0	17	18	0	1	2	0	0	0	21
9:45	4	0	2	1	0	0	0	7	10	0	2	1	0	0	0	13
10:00	4	0	2	1	0	0	0	7	9	0	4	0	0	0	0	13
10:15	6	0	1	0	0	0	0	7	13	0	3	1	0	0	0	17
10:30	3	0	2	2	0	0	1	8	10	0	1	0	0	0	0	11
10:45	10	0	3	1	0	0	1	15	8	1	2	2	0	0	0	13
11:00	6	0	3	1	0	0	0	10	14	0	3	1	0	0	0	18
11:15	3	1	2	3	0	0	0	9	10	0	3	1	0	0	2	16
11:30	14	0	1	1	0	0	0	16	6	0	0	1	0	0	1	8
11:45	8	0	1	1	0	0	0	10	9	1	2	0	0	0	0	12
12:00	13	0	1	0	0	0	0	14	9	0	1	0	0	0	0	10
12:15	9	0	6	1	0	0	0	16	9	0	1	0	0	0	0	10
12:30	11	0	1	1	0	0	2	15	10	0	5	1	0	0	1	17
12:45	11	0	4	1	0	0	1	17	7	0	1	0	0	0	0	8
13:00	9	0	2	0	0	0	0	11	15	0	4	2	0	0	0	21
13:15	7	0	1	2	0	0	0	10	12	0	1	1	0	0	0	14
13:30	14	1	2	1	0	1	0	19	11	0	3	0	0	0	0	14
13:45	10	0	1	0	0	0	0	11	11	0	1	2	0	3	0	17
14:00	17	0	5	1	0	0	0	23	14	0	1	2	0	0	2	19
14:15	14	0	1	2	0	0	0	17	14	0	0	1	0	0	0	15
14:30	9	0	1	0	0	0	0	10	11	0	1	1	0	0	1	14
14:45	16	0	0	0	0	0	0	16	19	1	4	0	0	0	0	24
15:00	23	0	2	1	0	0	0	26	9	0	2	0	0	0	0	11
15:15	28	1	4	0	0	0	0	33	9	0	1	0	0	0	0	10
15:30	32	1	2	1	0	0	1	37	19	0	0	0	0	0	0	19
15:45	31	1	3	1	0	0	0	36	5	0	0	0	0	0	1	6
16:00	36	0	10	1	0	0	0	47	14	0	4	1	0	0	0	19
16:15	45	0	6	1	0	2	0	54	19	0	5	1	0	0	2	27
16:30	46	1	5	2	0	1	3	58	16	0	3	1	0	0	0	20
16:45	57	0	8	1	0	0	0	66	11	0	0	0	0	0	0	11
17:00	43	0	11	0	0	0	0	54	16	0	6	0	0	0	0	22
17:15	46	0	10	0	0	0	1	57	14	0	0	0	0	0	0	14
17:30	54	0	6	0	0	0	0	60	13	0	5	0	0	0	0	18
17:45	43	1	6	1	0	0	1	52	10	0	2	0	0	0	0	12
18:00	50	0	8	1	0	0	2	61	17	0	0	0	0	0	0	17
18:15	52	0	8	1	0	0	1	62	14	0	2	0	0	0	0	16
18:30	31	0	4	0	0	0	1	36	12	0	2	1	0	0	1	16
18:45	27	0	7	0	0	0	1	35	11	0	1	0	0	0	0	12
25:75	951	8	167	42	0	4	17	1189	969	5	154	40	0	4	12	1184



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm C - Moyglare Road(S)							Veh. Total	From Arm C - Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	28	0	13	1	0	1	0	43	16	0	5	0	0	0	0	21
7:15	30	0	15	2	0	0	0	47	26	0	3	2	0	0	0	31
7:30	39	0	10	6	0	0	0	55	32	0	3	3	0	0	0	38
7:45	52	0	5	2	0	1	0	60	25	0	2	6	1	0	0	34
8:00	38	0	6	5	0	0	1	50	28	1	4	1	0	0	1	35
8:15	71	0	7	2	1	0	0	81	40	0	3	0	0	0	0	43
8:30	76	1	4	0	1	0	0	82	71	0	4	2	1	0	1	79
8:45	71	0	4	7	1	0	1	84	51	2	3	2	0	0	0	58
9:00	67	0	5	6	0	0	1	79	35	0	2	5	1	0	0	43
9:15	59	0	2	2	0	0	1	64	31	3	0	3	0	0	0	37
9:30	41	3	1	3	0	0	1	49	23	0	5	3	0	0	0	31
9:45	31	0	3	2	0	0	0	36	13	1	3	3	0	0	0	20
10:00	21	0	0	5	0	0	0	26	25	0	1	3	0	0	1	30
10:15	24	0	6	0	0	0	0	30	11	0	4	2	0	0	0	17
10:30	23	0	4	1	0	0	0	28	9	1	4	1	0	0	0	15
10:45	24	2	4	4	0	0	0	34	27	0	6	3	0	0	0	36
11:00	20	0	4	3	0	0	0	27	26	1	2	3	0	0	1	33
11:15	19	0	1	4	0	0	4	28	25	1	5	4	0	0	0	35
11:30	38	0	4	3	0	0	0	45	24	0	0	6	0	0	0	30
11:45	38	0	3	3	0	0	0	44	24	0	2	1	0	0	0	27
12:00	31	0	2	1	0	0	0	34	26	0	3	1	0	0	0	30
12:15	35	0	1	1	0	0	1	38	22	1	8	1	0	0	0	32
12:30	18	0	5	3	0	0	0	26	28	0	1	1	0	0	0	30
12:45	17	0	2	3	0	0	0	22	21	0	1	3	0	0	0	25
13:00	17	1	4	1	0	0	0	23	22	0	2	0	0	0	0	24
13:15	31	0	4	2	0	0	0	37	30	0	3	4	0	0	0	37
13:30	24	1	3	3	0	0	0	31	37	0	2	3	0	0	1	43
13:45	39	1	1	2	0	0	0	43	22	2	5	1	0	0	0	30
14:00	37	0	8	0	0	0	1	46	24	1	3	3	0	0	0	31
14:15	29	0	0	1	0	0	0	30	47	0	1	0	0	0	0	48
14:30	28	0	3	3	0	0	2	36	34	0	5	0	0	0	0	39
14:45	63	1	1	5	0	0	0	70	32	1	5	0	1	0	0	39
15:00	37	0	2	4	0	0	0	43	45	0	4	2	0	0	0	52
15:15	30	2	3	2	0	0	0	37	33	1	4	5	0	0	1	44
15:30	47	4	2	1	0	0	0	54	21	0	6	1	0	0	0	28
15:45	46	0	3	1	1	0	0	51	42	0	9	2	0	0	1	54
16:00	48	0	7	2	0	0	0	57	47	0	4	2	0	0	1	54
16:15	29	0	6	1	1	0	0	37	64	0	9	2	1	1	0	77
16:30	40	0	8	1	1	0	0	50	48	0	9	1	0	0	4	62
16:45	52	0	4	1	1	0	0	58	43	0	9	2	0	0	0	54
17:00	44	0	7	1	0	0	1	53	55	0	8	2	0	0	1	66
17:15	47	0	7	0	0	0	0	54	76	0	11	1	0	0	1	89
17:30	57	0	7	1	0	0	0	65	65	0						



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm D - Moyglare Road(E)							Veh. Total	From Arm D - Moyglare Road(E)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	69	1	15	2	0	0	0	87	11	0	9	0	0	0	0	20
7:15	91	0	17	1	0	0	0	109	10	0	4	2	0	0	0	16
7:30	112	0	12	2	0	0	0	126	26	0	6	1	0	0	0	33
7:45	81	1	9	2	0	0	1	94	32	0	4	2	0	0	1	39
8:00	90	1	9	1	0	0	1	102	27	0	5	2	0	0	0	34
8:15	121	0	4	2	0	0	0	127	44	0	6	3	0	0	0	53
8:30	94	0	8	1	1	0	0	104	58	1	4	0	1	0	0	64
8:45	80	2	3	4	0	1	0	90	59	0	5	4	1	0	0	69
9:00	61	1	3	4	1	0	0	70	58	0	5	6	0	0	0	69
9:15	50	2	5	0	0	0	0	57	43	0	4	2	0	0	0	49
9:30	40	0	4	3	0	0	0	47	35	3	0	0	0	0	1	39
9:45	29	1	3	2	0	0	0	35	21	0	1	3	0	0	0	25
10:00	25	0	5	2	0	0	0	32	20	0	2	3	0	0	0	25
10:15	12	0	3	3	0	0	0	18	16	0	4	0	0	0	0	20
10:30	14	2	2	1	0	0	0	19	13	0	2	3	0	0	1	19
10:45	31	0	5	3	0	0	0	39	26	1	4	3	0	0	1	35
11:00	28	0	5	2	0	0	1	36	17	0	6	2	0	0	0	25
11:15	32	0	7	0	0	0	1	40	16	1	2	1	0	0	0	20
11:30	21	0	1	1	0	0	0	23	42	0	5	2	0	0	0	49
11:45	27	1	4	0	0	0	0	32	43	0	3	3	0	0	0	49
12:00	26	0	5	2	0	0	0	33	40	0	3	2	0	0	0	45
12:15	20	1	6	2	0	0	1	30	33	0	3	2	0	0	0	38
12:30	26	0	2	0	0	0	1	29	23	0	4	2	0	0	2	31
12:45	22	0	2	1	0	0	0	25	21	1	5	2	0	0	1	30
13:00	24	0	3	2	0	0	0	29	27	0	4	1	0	0	0	32
13:15	25	0	2	2	0	0	0	29	29	1	4	2	0	0	0	36
13:30	37	0	4	4	0	0	0	45	33	2	6	1	0	1	0	43
13:45	21	1	4	0	0	3	0	29	35	1	2	1	0	0	0	39
14:00	23	1	2	5	0	0	1	32	39	0	9	0	0	0	0	48
14:15	49	0	0	1	0	0	0	50	37	0	1	3	0	0	0	41
14:30	37	0	2	1	0	0	0	40	31	0	1	1	0	0	0	33
14:45	41	2	4	0	1	0	0	48	73	0	1	4	0	0	0	78
15:00	38	0	7	1	0	0	0	46	52	0	1	2	0	0	0	55
15:15	30	1	3	1	0	0	0	35	55	2	5	1	0	0	0	63
15:30	21	0	4	1	0	0	0	26	62	5	1	1	0	0	1	70
15:45	29	0	4	0	0	0	1	34	56	1	7	0	1	0	0	65
16:00	34	0	5	0	0	0	0	39	69	0	13	1	0	0	0	83
16:15	47	0	3	0	1	0	2	53	66	0	6	3	0	1	0	76
16:30	48	0	6	1	0	0	1	56	82	1	9	4	0	1	0	97
16:45	32	0	4	0	0	0	0	36	99	0	12	1	1	0	0	113
17:00	51	0	5	0	0	0	0	56	88	1	14	2	0	0	1	106
17:15	63	0	4	1	0	0	0	68	98	0	11	1	0	0	0	110
17:30	45	0	7	0	0	0	0	52	102	0	8	1	0	0	0	111
17:45	42	0	4	0	0	0	0	46	99	2	11	0	0	0	0	112
18:00	32	3	1	0	0	0	0	36	106	0	13	2	0	0	1	122
18:15	27	1	3	0	0	0	0	31	91	0	13	1	0	0	0	105
18:30	31	0	5	1	0	0	1	38	66	2	4	1	0	0	1	74
18:45	29	1	3	0	2	0	1	36	71	0	10	1	0	0	0	82
25:75	2058	23	228	62	6	4	13	2394	2300	25	262	85	4	3	11	2690



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	A to D - Moyglare Road(N) to Moyglare Road(E)							Veh. Total	A to C - Moyglare Road(N) to Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	13	1	4	0	0	0	0	18	16	0	5	2.3	0	0.4	0	23.7
7:15	17	0	2	0	0	0	0	19	19	0	7	2.3	0	0	0	28.3
7:30	20	0	0	0	0	0	0	20	17	0	7	9.2	0	0	0	33.2
7:45	11	0	2	2.3	0	0	0.2	15.5	15	0	1	0	0	0.4	0	16.4
8:00	13	0	0	0	0	0	0	13	14	0	3	6.9	0	0	0.2	24.1
8:15	21	0	0	0	0	0	0	21	28	0	2	0	2	0	0	32
8:30	10	0	2	0	0	0	0	12	22	0	2	0	0	0	0	24
8:45	12	0	0	2.3	0	0	0	14.3	16	0	0	11.5	0	0	0.2	27.7
9:00	7	0	0	0	0	0	0	7	12	0	1	4.6	0	0	0.2	17.8
9:15	14	0	0	0	0	0	0	14	18	0	0	2.3	0	0	0	20.3
9:30	8	0	2	0	0	0	0	10	13	1	0	4.6	0	0	0	18.6
9:45	8	0	0	2.3	0	0	0	10.3	15	0	2	0	0	0	0	17
10:00	3	0	1	0	0	0	0	4	5	0	0	6.9	0	0	0	11.9
10:15	6	0	0	2.3	0	0	0	8.3	7	0	2	0	0	0	0	9
10:30	2	1	1	0	0	0	0	4	10	0	3	0	0	0	0	13
10:45	7	0	0	2.3	0	0	0	9.3	9	0	1	4.6	0	0	0	14.6
11:00	2	0	1	0	0	0	0	3	5	0	1	2.3	0	0	0	8.3
11:15	2	0	1	0	0	0	0	3	9	0	0	6.9	0	0	0.6	16.5
11:30	2	0	1	0	0	0	0	3	8	0	1	4.6	0	0	0	13.6
11:45	5	0	0	0	0	0	0	5	4	0	1	4.6	0	0	0	9.6
12:00	3	0	1	2.3	0	0	0	6.3	7	0	1	0	0	0	0	8
12:15	1	0	1	2.3	0	0	0.2	4.5	10	0	0	0	0	0	0.2	10.2
12:30	6	0	0	0	0	0	0	6	6	0	1	2.3	0	0	0	9.3
12:45	3	0	1	0	0	0	0	4	9	0	0	4.6	0	0	0	13.6
13:00	3	0	1	0	0	0	0	4	1	1	1	0	0	0	0	3
13:15	3	0	0	0	0	0	0	3	8	0	0	2.3	0	0	0	10.3
13:30	6	0	1	2.3	0	0	0	9.3	3	0	0	6.9	0	0	0	9.9
13:45	5	0	1	0	0	0	0	6	10	0	1	2.3	0	0	0	13.3
14:00	0	0	0	2.3	0	0	0	2.3	12	0	2	0	0	0	0	14
14:15	5	0	0	0	0	0	0	5	6	0	0	0	0	0	0	6
14:30	7	0	0	0	0	0	0	7	8	0	2	4.6	0	0	0.2	14.8
14:45	3	1	0	0	0	0	0	4	8	0	0	4.6	0	0	0	12.6
15:00	4	0	3	0	0	0	0	7	11	0	1	6.9	0	0	0	18.9
15:15	3	0	0	0	0	0	0	3	5	1	2	4.6	0	0	0	12.6
15:30	2	0	1	2.3	0	0	0	5.3	9	0	1	2.3	0	0	0	12.3
15:45	4	0	1	0	0	0	0	5	15	0	1	2.3	0	0	0	18.3
16:00	3	0	0	0	0	0	0	3	10	0	4	0	0	0	0	14
16:15	2	0	0	0	0	0	0	2	7	0	0	0	2	0	0	9
16:30	7	0	0	2.3	0	0	0	9.3	8	0	1	0	2	0	0	11
16:45	4	0	0	0	0	0	0	4	9	0	0	2.3	0	0	0	11.3
17:00	5	0	0	0	0	0	0	5	7	0	3	0	0	0	0	10
17:15	3	0	1	0	0	0	0	4	5	0	4	0	0			



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	A to B - Moyglare Road(N) to Moyglare Road(W)							Veh. Total	B to A - Moyglare Road(W) to Moyglare Road(N)							Veh. Total	
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C		
7:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:15	1	0	0	0	0	0	0	1	0	0	0	2.3	0	0	0	0	2.3
7:30	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
7:45	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1
8:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
8:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30	1	0	1	0	0	0	0	2	0	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
9:00	2	0	0	0	0	0	0	2	1	0	1	0	0	0	0	0	2
9:15	0	0	1	0	0	0	0	1	2	0	0	0	0	0	0	0	2
9:30	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
10:30	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	2
10:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
11:00	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.2	0.2	0.2
11:45	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
12:00	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0
12:15	0	0	1	0	0	0	0	1	1	0	0	0	0	0	0	0	1
12:30	1	0	1	0	0	0	0	2	0	0	1	0	0	0	0	0	1
12:45	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1
13:00	0	0	0	0	0	0	0	0	2	0	2	0	0	0	0	0	4
13:15	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
13:30	2	0	0	2.3	0	0	0	4.3	0	0	1	0	0	0	0	0	1
13:45	1	0	0	0	0	0	0	1	0	0	0	2.3	0	0	0	0	2.3
14:00	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
14:45	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2
15:30	1	0	0	0	0	0	0	1	2	0	0	0	0	0	0	0	2
15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16:00	2	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	2
16:15	1	0	1	0	0	0	0	2	0	0	0	2.3	0	0	0	0	2.3
16:30	1	0	0	0	0	0	0	1	0	0	0	2.3	0	0	0	0	2.3
16:45	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	1
17:00	1	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	2
17:15	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
17:30	1	0	1	0	0	0	0	2	1	0	0	0	0	0	0	0	1
17:45	0	0	0	2.3	0	0	0	2.3	0	0	0	0	0	0	0	0	0
18:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
18:15	0	0	1	0	0	0	0	1	0	0	1	0	0	0	0	0	1
18:30	1	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1
18:45	1	0	0	0	0	0	0	1	4	0	0	0	0	0	0	0	4
25:75	31	0	10	4.6	0	0	0	45.6	34	0	10	9.2	0	0	0.2	0	53.4



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	B to D - Moyglare Road(W) to Moyglare Road(E)							Veh. Total	B to C - Moyglare Road(W) to Moyglare Road(S)							Veh. Total	
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C		
7:00	44	0	7	4.6	0	0	0	55.6	3	0	2	0	0	0	0	0	5
7:15	56	0	14	0	0	0	0	70	4	0	4	0	0	0	0	0	8
7:30	63	0	12	2.3	0	0	0	77.3	5	0	1	4.6	0	0	0	0	10.6
7:45	51	1	7	2.3	0	0	0	61.3	9	0	2	0	0	0	0	0	11
8:00	54	0	7	2.3	0	0	0	63.3	7	0	1	0	0	0	0	0	8
8:15	65	0	3	4.6	0	0	0	72.6	7	0	1	2.3	0	0	0	0	10.3
8:30	27	0	2	0	0	0	0	29	12	0	0	0	0	0	0	0	12
8:45	30	0	2	4.6	0	0.4	0	37	7	0	2	0	0	0	0	0	9
9:00	30	1	2	4.6	0	0	0	37.6	6	0	0	2.3	0	0	0	0	8.3
9:15	18	0	5	0	0	0	0	23	6	0	1	2.3	0	0	0.2	0	9.5
9:30	16	0	0	2.3	0	0	0	18.3	2	0	1	2.3	0	0	0	0	5.3
9:45	9	0	1	2.3	0	0	0	12.3	1	0	1	0	0	0	0	0	2
10:00	7	0	4	0	0	0	0	11	2	0	0	0	0	0	0	0	2
10:15	4	0	2	2.3	0	0	0	8.3	8	0	1	0	0	0	0	0	9
10:30	5	0	0	0	0	0	0	5	4	0	0	0	0	0	0	0	4
10:45	6	0	1	2.3	0	0	0	9.3	1	1	1	2.3	0	0	0	0	5.3
11:00	9	0	3	0	0	0	0	12	4	0	0	2.3	0	0	0	0	6.3
11:15	9	0	3	0	0	0	0.2	12.2	1	0	0	2.3	0	0	0.2	0	3.5
11:30	4	0	0	2.3	0	0	0	6.3	2	0	0	0	0	0	0	0	2
11:45	6	1	2	0	0	0	0	9	2	0	0	0	0	0	0	0	2
12:00	9	0	1	0	0	0	0	10	0	0	0	0	0	0	0	0	0
12:15	6	0	1	0	0	0	0	7	2	0	0	0	0	0	0	0	2
12:30	9	0	2	0	0	0.2	0	11.2	1	0	2	2.3	0	0	0	0	5.3
12:45	6	0	0	0	0	0	0	6	1	0	0	0	0	0	0	0	1
13:00	10	0	2	4.6	0	0	0	16.6	3	0	0	0	0	0	0	0	3
13:15	5	0	1	2.3	0	0	0	8.3	5	0	0	0	0	0	0	0	5
13:30	10	0	2	0	0	0	0	12	1	0	0	0	0	0	0	0	1
13:45	6	0	1	0	0	1.2	0	8.2	5	0	0	2.3	0	0	0	0	7.3
14:00	6	0	0	4.6	0	0.2	0	10.8	7	0	1	0	0	0	0.2	0	8.2
14:15	11	0	0	2.3	0	0	0	13.3	3	0	0	0	0	0	0	0	3
14:30	7	0	0	2.3	0	0	0	9.3	3	0	1	0	0	0	0.2	0	4.2
14:45	15	0	3	0	0	0	0	18	3	1	1	0	0	0	0	0	5
15:00	6	0	2	0	0	0	0	8	3	0	0	0	0	0	0	0	3
15:15	6	0	0	0	0	0	0	6	1	0	1	0	0	0	0	0	2
15:30	11	0	0	0	0	0	0	11	6	0	0	0	0	0	0	0	6
15:45	3	0	0	0	0	0.2	0	3.2	2	0	0	0	0	0	0	0	2
16:00	9	0	4	0	0	0	0	13	3	0	0	2.3	0	0	0	0	5.3
16:15	18	0	1	0	0	0	0.4	19.4	1	0	4	0	0	0	0	0	5
16:30	12	0	2	0	0	0	0	14	4	0	1	0	0	0	0	0	5
16:45	9	0	0	0	0	0	0	9	1	0	0	0	0	0	0	0	1
17:00	14	0	5	0	0	0	0	19	1	0	0	0	0	0	0	0	1
17:15	13	0	0	0	0	0	0	13	1	0	0	0	0	0	0	0	1
17:30	10	0	4	0	0	0	0	14	2	0	1	0	0	0	0	0	3
17:45	4	0	2	0	0	0	0	6	6	0	0	0	0	0	0	0	6
18:00	12	0	0	0	0	0	0	12	5	0	0	0	0	0	0	0	5
18:15	10	0	1	0	0	0	0	11	4	0	0	0	0	0	0	0	4
18:30	8	0	2	2.3	0	0	0	12.3	3	0	0	0	0	0	0.2	0	3.2



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	C to B - Moyglare Road(S) to Moyglare Road(W)							Veh. Total	C to A - Moyglare Road(S) to Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	1	0	0	0	0	0	0	1	3	0	1	0	0	0	0	4
7:15	1	0	1	0	0	0	0	2	7	0	1	2.3	0	0	0	10.3
7:30	2	0	1	2.3	0	0	0	5.3	1	0	2	2.3	0	0	0	5.3
7:45	0	0	0	0	0	0	0	0	6	0	2	13.8	2	0	0	23.8
8:00	2	0	0	0	0	0	0	2	3	0	2	2.3	0	0	0	7.3
8:15	1	0	0	0	0	0	0	1	4	0	2	0	0	0	0	6
8:30	5	0	0	0	0	0	0.2	5.2	9	0	0	2.3	0	0	0	11.3
8:45	7	0	1	0	0	0	0	8	6	0	1	2.3	0	0	0	9.3
9:00	5	0	1	2.3	0	0	0	8.3	6	0	0	4.6	0	0	0	10.6
9:15	6	0	0	2.3	0	0	0	8.3	7	1	0	4.6	0	0	0	12.6
9:30	4	0	1	2.3	0	0	0	7.3	3	0	2	0	0	0	0	5
9:45	0	0	1	2.3	0	0	0	3.3	1	0	0	4.6	0	0	0	5.6
10:00	1	0	1	0	0	0	0	2	9	0	0	2.3	0	0	0.2	11.5
10:15	0	0	0	0	0	0	0	0	9	0	3	2.3	0	0	0	14.3
10:30	2	0	2	0	0	0	0	4	0	0	1	0	0	0	0	1
10:45	3	0	1	0	0	0	0	4	6	0	1	4.6	0	0	0	11.6
11:00	2	0	0	0	0	0	0	2	7	1	1	2.3	0	0	0	11.3
11:15	1	1	1	4.6	0	0	0	7.6	3	0	1	4.6	0	0	0	8.6
11:30	1	0	0	2.3	0	0	0	3.3	8	0	0	11.5	0	0	0	19.5
11:45	1	0	0	0	0	0	0	1	7	0	0	2.3	0	0	0	9.3
12:00	0	0	0	0	0	0	0	0	12	0	0	0	0	0	0	12
12:15	2	0	3	0	0	0	0	5	7	0	1	0	0	0	0	8
12:30	3	0	0	0	0	0	0	3	14	0	1	2.3	0	0	0	17.3
12:45	2	0	0	0	0	0	0	2	6	0	0	4.6	0	0	0	10.6
13:00	2	0	1	0	0	0	0	3	9	0	1	0	0	0	0	10
13:15	0	0	1	2.3	0	0	0	3.3	13	0	1	4.6	0	0	0	18.6
13:30	6	0	0	0	0	0	0	6	10	0	1	0	0	0	0.2	11.2
13:45	1	0	0	0	0	0	0	1	11	1	3	2.3	0	0	0	17.3
14:00	2	0	1	2.3	0	0	0	5.3	5	0	0	0	0	0	0	5
14:15	2	0	0	0	0	0	0	2	12	0	1	0	0	0	0	13
14:30	3	0	1	0	0	0	0	4	8	0	2	0	0	0	0	10
14:45	2	0	0	0	0	0	0	2	7	0	4	0	0	0	0	11
15:00	4	0	2	0	0	0	0	6	13	0	0	2.3	0	0	0.2	15.5
15:15	3	0	0	0	0	0	0	3	9	0	1	9.2	0	0	0.2	19.4
15:30	6	0	2	2.3	0	0	0	10.3	7	0	1	0	0	0	0	8
15:45	7	0	1	2.3	0	0	0	10.3	13	0	5	2.3	0	0	0.2	20.5
16:00	9	0	2	2.3	0	0	0	13.3	16	0	1	2.3	0	0	0.2	19.5
16:15	9	0	1	0	0	0.4	0	10.4	28	0	6	4.6	0	0	0	38.6
16:30	2	0	3	0	0	0	0.6	5.6	17	0	2	2.3	0	0	0	21.3
16:45	5	0	1	0	0	0	0	6	19	0	4	4.6	0	0	0	27.6
17:00	5	0	4	0	0	0	0	9	18	0	4	4.6	0	0	0.2	26.8
17:15	6	0	2	0	0	0	0.2	8.2	23	0	6	0	0	0	0	29
17:30	10	0	0	0	0	0	0	10	25	0	4	0	0	0.4	0	29.4
17:45	7	0	0	0	0	0	0.2	7.2	29	0	2	2.3	0	0	0	33.3
18:00	1	0	1	0	0	0	0.2	2.2	15	1	1	2.3	0	0	0	19.3
18:15	8	0	0	0	0	0	0.2	8.2	13	0	2	0	0	0.4	0	15.4
18:30	4	0	1	0	0	0	0	5	13	0	1	0	0	0	0	14
18:45	1	0	1	0	0	0	0.2	2.2	12	0	1	0	0	0	0	13
25:75	157	1	39	29.9	0	0.4	1.8	229.1	489	4	76	119.6	2	0.8	1.4	692.8



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	C to D - Moyglare Road(S) to Moyglare Road(E)							Veh. Total	D to C - Moyglare Road(E) to Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	12	0	4	0	0	0	0	16	9	0	6	0	0	0	0	15
7:15	18	0	1	2.3	0	0	0	21.3	7	0	4	2.3	0	0	0	13.3
7:30	29	0	0	2.3	0	0	0	31.3	17	0	2	0	0	0	0	19
7:45	19	0	0	0	0	0	0	19	28	0	2	4.6	0	0	0	34.6
8:00	23	1	2	0	0	0	0.2	26.2	17	0	2	4.6	0	0	0	23.6
8:15	35	0	1	0	0	0	0	36	36	0	4	2.3	0	0	0	42.3
8:30	57	0	4	2.3	2	0	0	65.3	42	1	2	0	2	0	0	47
8:45	38	2	1	2.3	0	0	0	43.3	48	0	2	4.6	2	0	0	56.6
9:00	24	0	1	4.6	2	0	0	31.6	49	0	4	6.9	0	0	0	59.9
9:15	18	2	0	0	0	0	0	20	35	0	1	0	0	0	0	36
9:30	16	0	2	4.6	0	0	0	22.6	26	2	0	0	0	0	0.2	28.2
9:45	12	1	2	0	0	0	0	15	15	0	0	4.6	0	0	0	19.6
10:00	15	0	0	4.6	0	0	0	19.6	14	0	0	4.6	0	0	0	18.6
10:15	2	0	1	2.3	0	0	0	5.3	9	0	3	0	0	0	0	12
10:30	7	1	1	2.3	0	0	0	11.3	9	0	1	2.3	0	0	0	12.3
10:45	18	0	4	2.3	0	0	0	24.3	14	1	2	2.3	0	0	0	19.3
11:00	17	0	1	4.6	0	0	0.2	22.8	11	0	3	2.3	0	0	0	16.3
11:15	21	0	3	0	0	0	0	24	9	0	1	0	0	0	0	10
11:30	15	0	0	0	0	0	0	15	28	0	3	2.3	0	0	0	33.3
11:45	16	0	2	0	0	0	0	18	32	0	2	2.3	0	0	0	36.3
12:00	14	0	3	2.3	0	0	0	19.3	24	0	1	2.3	0	0	0	27.3
12:15	13	1	4	2.3	0	0	0	20.3	23	0	1	2.3	0	0	0	26.3
12:30	11	0	0	0	0	0	0	11	11	0	2	2.3	0	0	0	15.3
12:45	13	0	1	2.3	0	0	0	16.3	7	0	2	2.3	0	0	0	11.3
13:00	11	0	0	0	0	0	0	11	13	0	3	2.3	0	0	0	18.3
13:15	17	0	1	2.3	0	0	0	20.3	18	0	4	2.3	0	0	0	24.3
13:30	21	0	1	6.9	0	0	0	28.9	20	1	3	0	0	0	0	24
13:45	10	1	2	0	0	0	0	13	24	1	0	0	0	0	0	25
14:00	17	1	2	4.6	0	0	0	24.6	18	0	5	0	0	0	0	23
14:15	33	0	0	0	0	0	0	33	20	0	0	2.3	0	0	0	22.3
14:30	23	0	2	0	0	0	0	25	17	0	0	2.3	0	0	0	19.3
14:45	23	1	1	0	2	0	0	27	52	0	0	6.9	0	0	0	58.9
15:00	28	0	2	2.3	0	0	0	32.3	23	0	1	2.3	0	0	0	26.3
15:15	21	1	3	2.3	0	0	0	27.3	24	1	0	0	0	0	0	25
15:30	8	0	3	0	0	0	0	11	32	4	1	0	0	0	0	37
15:45	22	0	3	0	0	0	0	25	29	0	2	0	2	0	0	33
16:00	22	0	1	0	0	0	0	23	35	0	3	2.3	0	0	0	40.3
16:15	27	0	2	0	2	0	0	31	21	0	2	2.3	0	0	0	25.3
16:30	29	0	4	0	0	0	0.2	33.2	28	0	6	2.3	0	0	0	36.3
16:45	19	0	4	0	0	0	0	23	42	0	4	0	2	0	0	48
17:00	32	0	0	0	0	0	0	32	36	0	4	2.3	0	0	0.2	42.5
17:15	47	0	3	2.3	0	0	0	52.3	41	0	3	0	0	0	0	44
17:30	30	0	3	0	0	0	0	33	45	0	3	2.3	0	0	0	50.3
17:45	34	0	1	0	0	0	0	35	50	1	4	0	0	0	0	55
18:00	15	3	1	0	0	0	0	19	45	0	2	2.3	0	0	0	49.3
18:15	15	1	2	0	0	0	0	18	41	0	4	0	0	0	0	45
18:30	17	0	2	0	0	0	0	19	27	2	1	2.3	0	0	0	32.3
18:45	16	1	0	0	4	0	0.2	21.2	40	0	2	0	0	0	0	42
25:75</																



Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	D to B - Moyglare Road(E) to Moyglare Road(W)							Veh. Total	D to A - Moyglare Road(E) to Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	1	0	3	0	0	0	0	4	1	0	0	0	0	0	0	1
7:15	2	0	0	2.3	0	0	0	4.3	1	0	0	0	0	0	0	1
7:30	8	0	4	2.3	0	0	0	14.3	1	0	0	0	0	0	0	1
7:45	4	0	1	0	0	0	0	5	0	0	1	0	0	0	0.2	1.2
8:00	7	0	2	0	0	0	0	9	3	0	1	0	0	0	0	4
8:15	8	0	2	4.6	0	0	0	14.6	0	0	0	0	0	0	0	0
8:30	13	0	1	0	0	0	0	14	3	0	1	0	0	0	0	4
8:45	5	0	2	4.6	0	0	0	11.6	6	0	1	0	0	0	0	7
9:00	6	0	1	0	0	0	0	7	3	0	0	6.9	0	0	0	9.9
9:15	6	0	1	2.3	0	0	0	9.3	2	0	2	2.3	0	0	0	6.3
9:30	9	1	0	0	0	0	0	10	0	0	0	0	0	0	0	0
9:45	4	0	1	0	0	0	0	5	2	0	0	2.3	0	0	0	4.3
10:00	3	0	1	2.3	0	0	0	6.3	3	0	1	0	0	0	0	4
10:15	6	0	1	0	0	0	0	7	1	0	0	0	0	0	0	1
10:30	1	0	0	4.6	0	0	0.2	5.8	3	0	1	0	0	0	0	4
10:45	7	0	2	2.3	0	0	0.2	11.5	5	0	0	2.3	0	0	0	7.3
11:00	4	0	3	2.3	0	0	0	9.3	2	0	0	0	0	0	0	2
11:15	2	0	1	2.3	0	0	0	5.3	5	1	0	0	0	0	0	6
11:30	13	0	1	0	0	0	0	14	1	0	1	2.3	0	0	0	4.3
11:45	5	0	1	2.3	0	0	0	8.3	6	0	0	2.3	0	0	0	8.3
12:00	11	0	1	0	0	0	0	12	5	0	1	2.3	0	0	0	8.3
12:15	7	0	2	2.3	0	0	0	11.3	3	0	0	0	0	0	0	3
12:30	7	0	0	2.3	0	0	0.4	9.7	5	0	2	0	0	0	0	7
12:45	9	0	3	2.3	0	0	0.2	14.5	5	1	0	0	0	0	0	6
13:00	7	0	1	0	0	0	0	8	7	0	0	0	0	0	0	7
13:15	7	0	0	2.3	0	0	0	9.3	4	1	0	0	0	0	0	5
13:30	6	1	2	0	0	0.4	0	9.4	7	0	1	2.3	0	0	0	10.3
13:45	8	0	1	0	0	0	0	9	3	0	1	2.3	0	0	0	6.3
14:00	13	0	4	0	0	0	0	17	8	0	0	0	0	0	0	8
14:15	12	0	1	4.6	0	0	0	17.6	5	0	0	0	0	0	0	5
14:30	4	0	0	0	0	0	0	4	10	0	1	0	0	0	0	11
14:45	14	0	0	0	0	0	0	14	7	0	1	2.3	0	0	0	10.3
15:00	19	0	0	2.3	0	0	0	21.3	10	0	0	0	0	0	0	10
15:15	24	1	4	0	0	0	0	29	7	0	1	2.3	0	0	0	10.3
15:30	25	1	0	0	0	0	0.2	26.2	5	0	0	2.3	0	0	0	7.3
15:45	24	1	2	0	0	0	0	27	3	0	3	0	0	0	0	6
16:00	25	0	8	0	0	0	0	33	9	0	2	0	0	0	0	11
16:15	35	0	4	2.3	0	0.4	0	41.7	10	0	0	2.3	0	0	0	12.3
16:30	43	1	2	4.6	0	0.4	0	51	11	0	1	2.3	0	0	0	14.3
16:45	50	0	7	2.3	0	0	0	59.3	7	0	1	0	0	0	0	8
17:00	37	0	7	0	0	0	0	44	15	1	3	2.3	0	0	0	21.3
17:15	40	0	7	0	0	0	0	47	17	0	1	2.3	0	0	0	20.3
17:30	43	0	5	0	0	0	0	48	14	0	0	0	0	0	0	14
17:45	36	1	6	0	0	0	0	43	13	0	1	0	0	0	0	14
18:00	48	0	7	2.3	0	0	0.2	57.5	13	0	4	0	0	0	0	17
18:15	44	0	7	2.3	0	0	0	53.3	6	0	2	0	0	0	0	8
18:30	26	0	3	0	0	0	0.2	29.2	13	0	0	0	0	0	0	13
18:45	25	0	6	0	0	0	0	31	6	0	2	2.3	0	0	0	10.3
25:75	763	7	118	62.1	0	1.2	1.6	952.9	276	4	37	43.7	0	0	0.2	360.9



Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm A - Moyglare Road(N)							Veh. Total	From Arm A - Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	5	0	1	0	0	0	0	6	29	1	9	2.3	0	0.4	0	41.7
7:15	8	0	1	4.6	0	0	0	13.6	37	0	9	2.3	0	0	0	48.3
7:30	3	0	2	2.3	0	0	0	7.3	37	0	7	9.2	0	0	0	53.2
7:45	7	0	3	13.8	2	0	0.2	26	26	0	4	2.3	0	0.4	0.2	32.9
8:00	6	0	3	2.3	0	0	0	11.3	28	0	3	6.9	0	0	0.2	38.1
8:15	4	0	2	0	0	0	0	6	49	0	2	0	2	0	0	53
8:30	12	0	1	2.3	0	0	0	15.3	33	0	5	0	0	0	0	38
8:45	13	0	3	2.3	0	0	0	18.3	28	0	0	13.8	0	0	0.2	42
9:00	10	0	1	11.5	0	0	0	22.5	21	0	1	4.6	0	0	0.2	26.8
9:15	11	1	2	6.9	0	0	0	20.9	32	0	1	2.3	0	0	0	35.3
9:30	3	0	2	0	0	0	0	5	22	1	2	4.6	0	0	0	29.6
9:45	3	0	0	6.9	0	0	0	9.9	23	0	2	2.3	0	0	0	27.3
10:00	12	0	1	2.3	0	0	0.2	15.5	8	0	1	6.9	0	0	0	15.9
10:15	11	0	3	2.3	0	0	0	16.3	13	0	2	2.3	0	0	0	17.3
10:30	4	0	3	0	0	0	0	7	12	1	4	0	0	0	0	17
10:45	12	0	1	6.9	0	0	0	19.9	16	0	1	6.9	0	0	0	23.9
11:00	10	1	1	2.3	0	0	0	14.3	7	0	2	2.3	0	0	0	11.3
11:15	8	1	1	4.6	0	0	0	14.6	11	0	1	6.9	0	0	0.6	19.5
11:30	9	0	1	13.8	0	0	0.2	24	10	0	2	4.6	0	0	0	16.6
11:45	14	0	0	4.6	0	0	0	18.6	11	0	1	4.6	0	0	0	16.6
12:00	17	0	1	2.3	0	0	0	20.3	12	0	2	2.3	0	0	0	16.3
12:15	11	0	1	0	0	0	0	12	11	0	2	2.3	0	0	0.4	15.7
12:30	19	0	4	2.3	0	0	0	25.3	13	0	2	2.3	0	0	0	17.3
12:45	11	1	1	4.6	0	0	0	17.6	12	0	2	4.6	0	0	0	18.6
13:00	18	0	3	0	0	0	0	21	4	1	2	0	0	0	0	7
13:15	19	1	1	4.6	0	0	0	25.6	11	0	0	2.3	0	0	0	13.3
13:30	17	0	3	2.3	0	0	0.2	22.5	11	0	1	11.5	0	0	0	23.5
13:45	14	1	4	6.9	0	0	0	25.9	16	0	2	2.3	0	0	0	20.3
14:00	14	0	0	0	0	0	0	14	14	0	2	2.3	0	0	0	18.3
14:15	17	0	1	0	0	0	0	18	11	0	0	0	0	0	0	11
14:30	19	0	3	0	0	0	0	22	17	0	2	4.6	0	0	0.2	23.8
14:45	15	0	5	2.3	0	0	0	22.3	11	1	0	4.6	0	0	0	16.6
15:00	23	0	0	2.3	0	0	0.2	25.5	15	0	4	6.9	0	0	0	25.9
15:15	18	0	2	11.5	0	0	0.2	31.7	9	1	2	4.6	0	0	0	16.6
15:30	14	0	1	2.3	0	0	0	17.3	12	0	2	4.6	0	0	0	18.6
15:45	26	0	8	2.3	0	0	0.2	36.5	19	0	2	2.3	0	0	0	23.3
16:00	27	0	3	2.3	0	0	0.2	32.5	15	0	4	0	0	0	0	19
16:15	38	0	6	9.2	0	0	0	53.2	10	0	1	0	2	0	0	13
16:30	28	0	3	6.9	0	0	0	37.9	16	0	1	2.3	2	0	0	21.3
16:45	27	0	5	4.6	0	0	0	36.6	15	0	0	2.3	0	0	0	17.3
17:00	34	1	8	6.9	0	0	0.2	50.1	13	0	3	0	0	0	0	16
17:15	40	0	7	2.3	0	0	0	49.3	8	0	6	0	0	0	0	14
17:30	40	0	4	0	0	0	0.4	44.4	16	0	4	0	0	0	0	20
17:45	42	0	3	2.3	0	0	0	47.3	14	1	2	2.3	0	0	0	19.3
18:00	28	1	5	2.3	0	0	0	36.3	11	0	0	0	0	0	0	11
18:15	19	0	5	0	0	0	0.4	24.4	15	1	2	4.6	0	0	0	22.6
18:30	27	0	1	0	0	0	0	28	15	1	3	2.3	0	0	0.2	21.5
18:45	22	0	3	2.3	0	0	0	27.3	18	0	2	0	0	0	0.2	2



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm B - Moyglare Road(W)							Veh. Total	From Arm B - Moyglare Road(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	2	0	3	0	0	0	0	5	48	0	9	4.6	0	0	0	61.6
7:15	4	0	1	2.3	0	0	0	7.3	60	0	18	2.3	0	0	0	80.3
7:30	10	0	5	4.6	0	0	0	19.6	69	0	13	6.9	0	0	0	88.9
7:45	4	0	2	0	0	0	0	6	61	1	9	2.3	0	0	0	73.3
8:00	10	0	2	0	0	0	0	12	61	0	8	2.3	0	0	0	71.3
8:15	9	0	2	4.6	0	0	0	15.6	72	0	4	6.9	0	0	0	82.9
8:30	19	0	2	0	0	0	0.2	21.2	39	0	2	0	0	0	0	41
8:45	12	0	3	4.6	0	0	0	19.6	38	0	5	4.6	0	0.4	0	48
9:00	13	0	2	2.3	0	0	0	17.3	37	1	3	6.9	0	0	0	47.9
9:15	12	0	2	4.6	0	0	0	18.6	26	0	6	2.3	0	0	0.2	34.5
9:30	14	1	1	2.3	0	0	0	18.3	18	0	1	4.6	0	0	0	23.6
9:45	4	0	2	2.3	0	0	0	8.3	10	0	2	2.3	0	0	0	14.3
10:00	4	0	2	2.3	0	0	0	8.3	9	0	4	0	0	0	0	13
10:15	6	0	1	0	0	0	0	7	13	0	3	2.3	0	0	0	18.3
10:30	3	0	2	4.6	0	0	0.2	9.8	10	0	1	0	0	0	0	11
10:45	10	0	3	2.3	0	0	0.2	15.5	8	1	2	4.6	0	0	0	15.6
11:00	6	0	3	2.3	0	0	0	11.3	14	0	3	2.3	0	0	0	19.3
11:15	3	1	2	6.9	0	0	0	12.9	10	0	3	2.3	0	0	0.4	15.7
11:30	14	0	1	2.3	0	0	0	17.3	6	0	0	2.3	0	0	0.2	8.5
11:45	8	0	1	2.3	0	0	0	11.3	9	1	2	0	0	0	0	12
12:00	13	0	1	0	0	0	0	14	9	0	1	0	0	0	0	10
12:15	9	0	6	2.3	0	0	0	17.3	9	0	1	0	0	0	0	10
12:30	11	0	1	2.3	0	0	0.4	14.7	10	0	5	2.3	0	0	0.2	17.5
12:45	11	0	4	2.3	0	0	0.2	17.5	7	0	1	0	0	0	0	8
13:00	9	0	2	0	0	0	0	11	15	0	4	4.6	0	0	0	23.6
13:15	7	0	1	4.6	0	0	0	12.6	12	0	1	2.3	0	0	0	15.3
13:30	14	1	2	2.3	0	0.4	0	19.7	11	0	3	0	0	0	0	14
13:45	10	0	1	0	0	0	0	11	11	0	1	4.6	0	1.2	0	17.8
14:00	17	0	5	2.3	0	0	0	24.3	14	0	1	4.6	0	0	0.4	20
14:15	14	0	1	4.6	0	0	0	19.6	14	0	0	2.3	0	0	0	16.3
14:30	9	0	1	0	0	0	0	10	11	0	1	2.3	0	0	0.2	14.5
14:45	16	0	0	0	0	0	0	16	19	1	4	0	0	0	0	24
15:00	23	0	2	2.3	0	0	0	27.3	9	0	2	0	0	0	0	11
15:15	28	1	4	0	0	0	0	33	9	0	1	0	0	0	0	10
15:30	32	1	2	2.3	0	0	0.2	37.5	19	0	0	0	0	0	0	19
15:45	31	1	3	2.3	0	0	0	37.3	5	0	0	0	0	0	0.2	5.2
16:00	36	0	10	2.3	0	0	0	48.3	14	0	4	2.3	0	0	0	20.3
16:15	45	0	6	2.3	0	0.8	0	54.1	19	0	5	2.3	0	0	0.4	26.7
16:30	46	1	5	4.6	0	0.4	0.6	57.6	16	0	3	2.3	0	0	0	21.3
16:45	57	0	8	2.3	0	0	0	67.3	11	0	0	0	0	0	0	11
17:00	43	0	11	0	0	0	0	54	16	0	6	0	0	0	0	22
17:15	46	0	10	0	0	0	0.2	56.2	14	0	0	0	0	0	0	14
17:30	54	0	6	0	0	0	0	60	13	0	5	0	0	0	0	18
17:45	43	1	6	2.3	0	0	0.2	52.5	10	0	2	0	0	0	0	12
18:00	50	0	8	2.3	0	0	0.4	60.7	17	0	0	0	0	0	0	17
18:15	52	0	8	2.3	0	0	0.2	62.5	14	0	2	0	0	0	0	16
18:30	31	0	4	0	0	0	0.2	35.2	12	0	2	2.3	0	0	0.2	16.5
18:45	27	0	7	0	0	0	0.2	34.2	11	0	1	0	0	0	0	12
25:75	951	8	167	96.6	0	1.6	3.4	1227.6	969	5	154	92	0	1.6	2.4	1224



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm C - Moyglare Road(S)							Veh. Total	From Arm C - Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	28	0	13	2.3	0	0.4	0	43.7	16	0	5	0	0	0	0	21
7:15	30	0	15	4.6	0	0	0	49.6	26	0	3	4.6	0	0	0	33.6
7:30	39	0	10	13.8	0	0	0	62.8	32	0	3	6.9	0	0	0	41.9
7:45	52	0	5	4.6	0	0.4	0	62	25	0	2	13.8	2	0	0	42.8
8:00	38	0	6	11.5	0	0	0.2	55.7	28	1	4	2.3	0	0	0.2	35.5
8:15	71	0	7	4.6	2	0	0	84.6	40	0	3	0	0	0	0	43
8:30	76	1	4	0	2	0	0	83	71	0	4	4.6	2	0	0.2	81.8
8:45	71	0	4	16.1	2	0	0.2	93.3	51	2	3	4.6	0	0	0	60.6
9:00	67	0	5	13.8	0	0	0.2	86	35	0	2	11.5	2	0	0	50.5
9:15	59	0	2	4.6	0	0	0.2	65.8	31	3	0	6.9	0	0	0	40.9
9:30	41	3	1	6.9	0	0	0.2	52.1	23	0	5	6.9	0	0	0	34.9
9:45	31	0	3	4.6	0	0	0	38.6	13	1	3	6.9	0	0	0	23.9
10:00	21	0	0	11.5	0	0	0	32.5	25	0	1	6.9	0	0	0.2	33.1
10:15	24	0	6	0	0	0	0	30	11	0	4	4.6	0	0	0	19.6
10:30	23	0	4	2.3	0	0	0	29.3	9	1	4	2.3	0	0	0	16.3
10:45	24	2	4	9.2	0	0	0	39.2	27	0	6	6.9	0	0	0	39.9
11:00	20	0	4	6.9	0	0	0	30.9	26	1	2	6.9	0	0	0.2	36.1
11:15	19	0	1	9.2	0	0	0.8	30	25	1	5	9.2	0	0	0	40.2
11:30	38	0	4	6.9	0	0	0	48.9	24	0	0	13.8	0	0	0	37.8
11:45	38	0	3	6.9	0	0	0	47.9	24	0	2	2.3	0	0	0	28.3
12:00	31	0	2	2.3	0	0	0	35.3	26	0	3	2.3	0	0	0	31.3
12:15	35	0	1	2.3	0	0	0.2	38.5	22	1	8	2.3	0	0	0	33.3
12:30	18	0	5	6.9	0	0	0	29.9	28	0	1	2.3	0	0	0	31.3
12:45	17	0	2	6.9	0	0	0	25.9	21	0	1	6.9	0	0	0	28.9
13:00	17	1	4	2.3	0	0	0	24.3	22	0	2	0	0	0	0	24
13:15	31	0	4	4.6	0	0	0	39.6	30	0	3	9.2	0	0	0	42.2
13:30	24	1	3	6.9	0	0	0	34.9	37	0	2	6.9	0	0	0.2	46.1
13:45	39	1	1	4.6	0	0	0	45.6	22	2	5	2.3	0	0	0	31.3
14:00	37	0	8	0	0	0	0.2	45.2	24	1	3	6.9	0	0	0	34.9
14:15	29	0	0	2.3	0	0	0	31.3	47	0	1	0	0	0	0	48
14:30	28	0	3	6.9	0	0	0.4	38.3	34	0	5	0	0	0	0	39
14:45	63	1	1	11.5	0	0	0	76.5	32	1	5	0	2	0	0	40
15:00	37	0	2	9.2	0	0	0	48.2	45	0	4	4.6	0	0	0.2	53.8
15:15	30	2	3	4.6	0	0	0	39.6	33	1	4	11.5	0	0	0.2	49.7
15:30	47	4	2	2.3	0	0	0	55.3	21	0	6	2.3	0	0	0	29.3
15:45	46	0	3	2.3	2	0	0	53.3	42	0	9	4.6	0	0	0.2	55.8
16:00	48	0	7	4.6	0	0	0	59.6	47	0	4	4.6	0	0	0.2	55.8
16:15	29	0	6	2.3	2	0	0	39.3	64	0	9	4.6	2	0.4	0	80
16:30	40	0	8	2.3	2	0	0	52.3	48	0	9	2.3	0	0	0.8	60.1
16:45	52	0	4	2.3	2	0	0	60.3	43	0	9	4.6	0	0	0	56.6
17:00	44	0	7	2.3	0	0	0.2	53.5	55	0	8	4.6	0	0	0.2	67.8
17:15	47	0	7	0	0	0	0	54	76	0	11	2.3	0	0	0.2	89.5
17:30	57	0	7	2.3	0	0	0	66.3	65	0	7	0	0	0.4	0	72.4
17:45	66	2	5	0	0	0	0	73	70	0	3	2.3	0	0	0.2	75.5
18:00	55	0	2	2.3	0	0	0	59.3	31	4	3	2.3	0	0	0.2	40.5
18:15	58	1	5	4.6	0	0	0	68.6	36	1	4	0	0			



Site No. 1
Location Moyglare Road(N) / Moyglare Road(W) / Moyglare Road(S) / Moyglare Road(E)
Date Tuesday 28 May 2019

Time	To Arm D - Moyglare Road(E)							Veh. Total	From Arm D - Moyglare Road(E)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	69	1	15	4.6	0	0	0	89.6	11	0	9	0	0	0	0	20
7:15	91	0	17	2.3	0	0	0	110.3	10	0	4	4.6	0	0	0	18.6
7:30	112	0	12	4.6	0	0	0	128.6	26	0	6	2.3	0	0	0	34.3
7:45	81	1	9	4.6	0	0	0.2	95.8	32	0	4	4.6	0	0	0.2	40.8
8:00	90	1	9	2.3	0	0	0.2	102.5	27	0	5	4.6	0	0	0	36.6
8:15	121	0	4	4.6	0	0	0	129.6	44	0	6	6.9	0	0	0	56.9
8:30	94	0	8	2.3	2	0	0	106.3	58	1	4	0	2	0	0	65
8:45	80	2	3	9.2	0	0.4	0	94.6	59	0	5	9.2	2	0	0	75.2
9:00	61	1	3	9.2	2	0	0	76.2	58	0	5	13.8	0	0	0	76.8
9:15	50	2	5	0	0	0	0	57	43	0	4	4.6	0	0	0	51.6
9:30	40	0	4	6.9	0	0	0	50.9	35	3	0	0	0	0	0.2	38.2
9:45	29	1	3	4.6	0	0	0	37.6	21	0	1	6.9	0	0	0	28.9
10:00	25	0	5	4.6	0	0	0	34.6	20	0	2	6.9	0	0	0	28.9
10:15	12	0	3	6.9	0	0	0	21.9	16	0	4	0	0	0	0	20
10:30	14	2	2	2.3	0	0	0	20.3	13	0	2	6.9	0	0	0.2	22.1
10:45	31	0	5	6.9	0	0	0	42.9	26	1	4	6.9	0	0	0.2	38.1
11:00	28	0	5	4.6	0	0	0.2	37.8	17	0	6	4.6	0	0	0	27.6
11:15	32	0	7	0	0	0	0.2	39.2	16	1	2	2.3	0	0	0	21.3
11:30	21	0	1	2.3	0	0	0	24.3	42	0	5	4.6	0	0	0	51.6
11:45	27	1	4	0	0	0	0	32	43	0	3	6.9	0	0	0	52.9
12:00	26	0	5	4.6	0	0	0	35.6	40	0	3	4.6	0	0	0	47.6
12:15	20	1	6	4.6	0	0	0.2	31.8	33	0	3	4.6	0	0	0	40.6
12:30	26	0	2	0	0	0	0.2	28.2	23	0	4	4.6	0	0	0.4	32
12:45	22	0	2	2.3	0	0	0	26.3	21	1	5	4.6	0	0	0.2	31.8
13:00	24	0	3	4.6	0	0	0	31.6	27	0	4	2.3	0	0	0	33.3
13:15	25	0	2	4.6	0	0	0	31.6	29	1	4	4.6	0	0	0	38.6
13:30	37	0	4	9.2	0	0	0	50.2	33	2	6	2.3	0	0.4	0	43.7
13:45	21	1	4	0	0	1.2	0	27.2	35	1	2	2.3	0	0	0	40.3
14:00	23	1	2	11.5	0	0	0.2	37.7	39	0	9	0	0	0	0	48
14:15	49	0	0	2.3	0	0	0	51.3	37	0	1	6.9	0	0	0	44.9
14:30	37	0	2	2.3	0	0	0	41.3	31	0	1	2.3	0	0	0	34.3
14:45	41	2	4	0	2	0	0	49	73	0	1	9.2	0	0	0	83.2
15:00	38	0	7	2.3	0	0	0	47.3	52	0	1	4.6	0	0	0	57.6
15:15	30	1	3	2.3	0	0	0	36.3	55	2	5	2.3	0	0	0	64.3
15:30	21	0	4	2.3	0	0	0	27.3	62	5	1	2.3	0	0	0.2	70.5
15:45	29	0	4	0	0	0	0.2	33.2	56	1	7	0	2	0	0	66
16:00	34	0	5	0	0	0	0	39	69	0	13	2.3	0	0	0	84.3
16:15	47	0	3	0	2	0	0.4	52.4	66	0	6	6.9	0	0.4	0	79.3
16:30	48	0	6	2.3	0	0	0.2	56.5	82	1	9	9.2	0	0.4	0	101.6
16:45	32	0	4	0	0	0	0	36	99	0	12	2.3	2	0	0	115.3
17:00	51	0	5	0	0	0	0	56	88	1	14	4.6	0	0	0.2	107.8
17:15	63	0	4	2.3	0	0	0	69.3	98	0	11	2.3	0	0	0	111.3
17:30	45	0	7	0	0	0	0	52	102	0	8	2.3	0	0	0	112.3
17:45	42	0	4	0	0	0	0	46	99	2	11	0	0	0	0	112
18:00	32	3	1	0	0	0	0	36	106	0	13	4.6	0	0	0.2	123.8
18:15	27	1	3	0	0	0	0	31	91	0	13	2.3	0	0	0	106.3
18:30	31	0	5	2.3	0	0	0.2	38.5	66	2	4	2.3	0	0	0.2	74.5
18:45	29	1	3	0	4	0	0.2	37.2	71	0	10	2.3	0	0	0	83.3
25:75	2058	23	228	142.6	12	1.6	2.6	2467.8	2300	25	262	195.5	8	1.2	2.2	2793.9



Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	A to C - Moyglare Road(N) to Mariavilla						Veh. Total	A to B - Moyglare Road(N) to Moyglare Road(S)						Veh. Total		
	CAR	Taxi	LGV	HGV	PSV	M/C		P/C	CAR	Taxi	LGV	HGV	PSV		M/C	P/C
7:00	2	0	1	0	0	0	0	3	22	0	8	1	0	1	0	32
7:15	4	0	2	0	0	0	0	6	28	0	10	2	0	0	0	40
7:30	1	0	2	0	0	0	0	3	30	0	6	6	0	0	0	42
7:45	5	0	2	1	0	0	0	8	54	0	5	1	0	1	0	61
8:00	2	0	0	0	0	0	0	2	34	0	3	5	0	0	1	43
8:15	4	0	1	0	0	0	0	5	64	0	3	1	1	0	0	69
8:30	4	1	0	0	0	0	0	5	60	0	7	1	1	0	0	69
8:45	4	0	1	1	0	0	0	6	61	0	4	7	1	0	1	74
9:00	8	0	1	0	0	0	0	9	62	0	4	6	0	0	1	73
9:15	5	0	3	1	0	0	0	9	54	0	0	1	0	0	1	56
9:30	4	0	1	1	0	0	0	6	36	3	0	2	0	0	1	42
9:45	1	0	0	0	0	0	0	1	31	0	2	3	0	0	0	36
10:00	4	0	0	0	0	0	0	4	19	0	6	4	0	0	0	29
10:15	2	0	1	0	0	0	0	3	19	0	3	0	0	0	0	22
10:30	1	0	0	0	0	0	0	1	25	0	4	2	0	0	0	31
10:45	1	0	1	1	0	0	0	3	27	1	3	3	0	0	0	34
11:00	1	0	1	1	0	0	0	3	14	0	2	2	0	0	0	18
11:15	2	0	1	1	0	0	0	4	22	0	0	3	0	0	4	29
11:30	2	0	0	0	0	0	0	2	32	0	4	3	0	0	0	39
11:45	8	0	0	0	0	0	0	8	34	0	4	3	0	0	0	41
12:00	6	0	1	0	0	0	0	7	24	0	1	1	0	0	0	26
12:15	4	0	1	0	0	0	0	5	25	0	3	1	0	0	1	30
12:30	5	0	0	1	0	0	0	6	16	0	4	1	0	0	0	21
12:45	2	0	0	0	0	0	0	2	14	0	3	3	0	0	0	20
13:00	1	0	0	0	0	0	0	1	15	1	5	2	0	0	0	23
13:15	4	0	1	0	0	0	0	5	24	0	4	2	0	0	0	30
13:30	1	1	1	0	0	0	0	3	27	0	2	4	0	0	0	33
13:45	8	0	0	1	0	0	0	9	29	1	3	1	0	0	0	34
14:00	3	0	1	0	0	0	0	4	24	0	7	0	0	0	1	32
14:15	7	0	1	0	0	0	0	8	23	0	0	2	0	0	1	26
14:30	3	0	1	0	0	0	0	4	30	0	1	2	0	0	2	35
14:45	17	0	0	2	0	0	0	19	45	0	2	5	0	0	0	52
15:00	8	0	1	0	0	0	0	9	28	0	1	3	0	0	0	32
15:15	4	1	0	0	0	0	0	5	26	2	4	3	0	0	0	35
15:30	11	2	1	0	0	0	0	14	35	1	0	0	0	0	0	36
15:45	10	1	1	0	0	0	0	12	38	0	4	2	1	0	0	45
16:00	10	0	1	0	0	0	0	11	31	0	8	2	0	0	0	41
16:15	14	0	2	0	0	0	0	16	24	0	8	1	1	0	0	34
16:30	7	0	2	1	0	0	0	10	31	0	5	0	1	0	0	37
16:45	17	0	2	0	0	0	0	19	31	0	2	1	1	0	0	35
17:00	16	0	2	0	0	0	1	19	32	0	4	1	0	0	0	37
17:15	22	0	0	0	0	0	0	22	26	0	6	0	0	0	0	32
17:30	19	0	1	0	0	0	0	20	36	0	5	2	0	0	0	43
17:45	20	0	0	0	0	0	0	20	48	2	6	0	0	0	0	56
18:00	20	0	1	0	0	0	0	21	33	0	3	1	0	0	0	37
18:15	27	0	4	0	0	0	0	31	32	1	1	2	0	0	0	36
18:30	11	0	2	0	0	0	0	13	22	3	1	2	0	0	1	29
18:45	6	0	0	0	0	0	0	6	38	0	2	0	0	0	1	41
Total</																



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

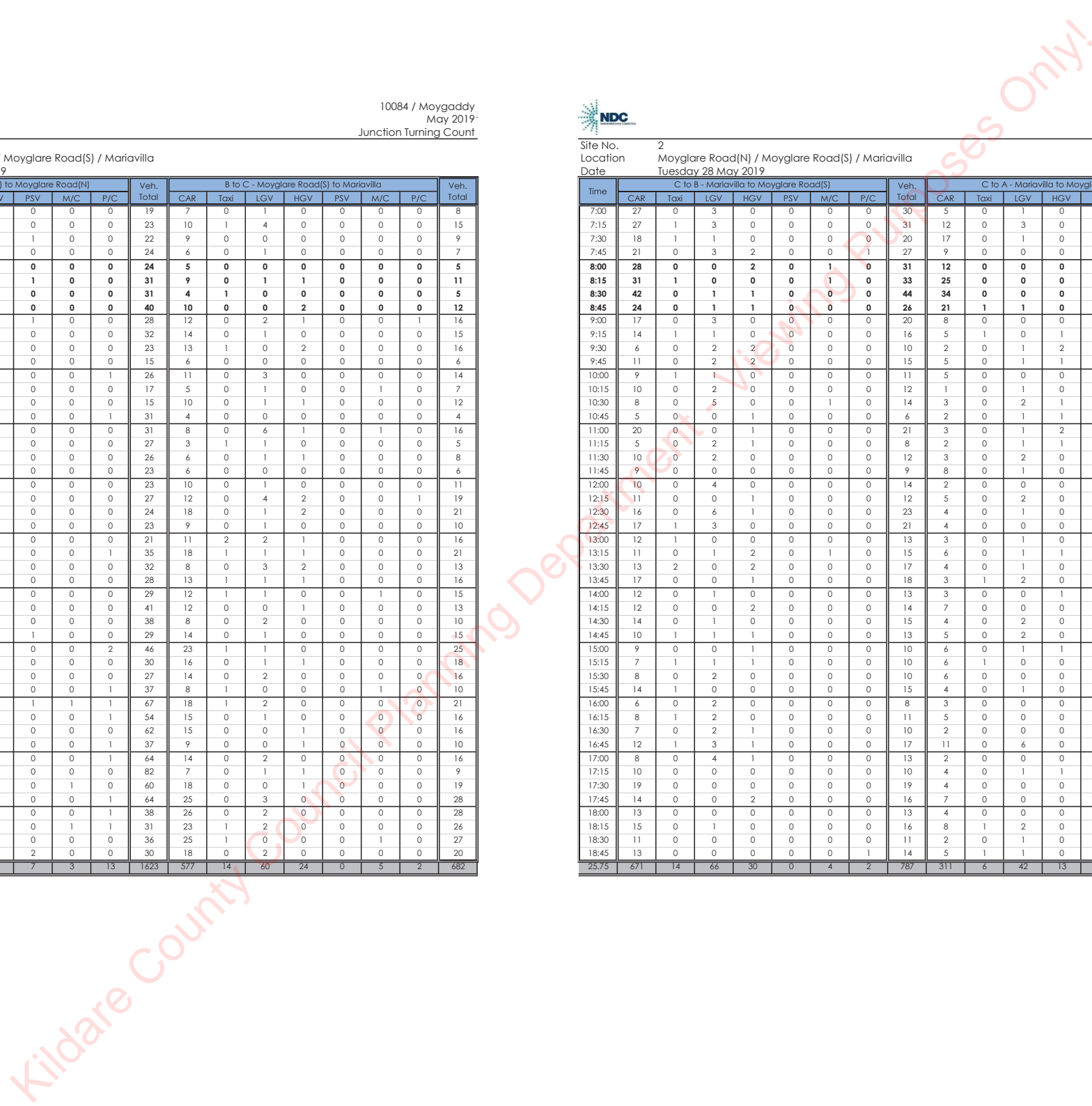
Time	B to A - Moyglare Road(S) to Moyglare Road(N)							Veh. Total	B to C - Moyglare Road(S) to Mariavilla							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	16	0	3	0	0	0	0	19	7	0	1	0	0	0	0	8
7:15	15	0	7	1	0	0	0	23	10	1	4	0	0	0	0	15
7:30	15	0	3	3	1	0	0	22	9	0	0	0	0	0	0	9
7:45	16	0	2	6	0	0	0	24	6	0	1	0	0	0	0	7
8:00	16	1	5	2	0	0	0	24	5	0	0	0	0	0	0	5
8:15	27	0	3	0	1	0	0	31	9	0	1	1	0	0	0	11
8:30	26	0	3	2	0	0	0	31	4	1	0	0	0	0	0	5
8:45	33	1	3	3	0	0	0	40	10	0	0	2	0	0	0	12
9:00	22	0	1	4	1	0	0	28	12	0	2	1	0	0	1	16
9:15	25	2	1	4	0	0	0	32	14	0	1	0	0	0	0	15
9:30	18	0	3	2	0	0	0	23	13	1	0	2	0	0	0	16
9:45	11	1	1	2	0	0	0	15	6	0	0	0	0	0	0	6
10:00	22	0	3	0	0	0	1	26	11	0	3	0	0	0	0	14
10:15	10	0	4	3	0	0	0	17	5	0	1	0	0	1	0	7
10:30	10	1	2	2	0	0	0	15	10	0	1	1	0	0	0	12
10:45	23	0	4	3	0	0	1	31	4	0	0	0	0	0	0	4
11:00	25	1	1	4	0	0	0	31	8	0	6	1	0	1	0	16
11:15	20	0	5	2	0	0	0	27	3	1	1	0	0	0	0	5
11:30	21	0	0	5	0	0	0	26	6	0	1	1	0	0	0	8
11:45	20	0	2	1	0	0	0	23	6	0	0	0	0	0	0	6
12:00	19	0	3	1	0	0	0	23	10	0	1	0	0	0	0	11
12:15	20	1	6	0	0	0	0	27	12	0	4	2	0	0	1	19
12:30	22	0	1	1	0	0	0	24	18	0	1	2	0	0	0	21
12:45	19	0	0	4	0	0	0	23	9	0	1	0	0	0	0	10
13:00	21	0	0	0	0	0	0	21	11	2	2	1	0	0	0	16
13:15	24	0	5	5	0	0	1	35	18	1	1	1	0	0	0	21
13:30	30	0	1	1	0	0	0	32	8	0	3	2	0	0	0	13
13:45	21	1	4	2	0	0	0	28	13	1	1	1	0	0	0	16
14:00	23	1	3	2	0	0	0	29	12	1	1	0	0	1	0	15
14:15	39	0	2	0	0	0	0	41	12	0	0	1	0	0	0	13
14:30	35	0	3	0	0	0	0	38	8	0	2	0	0	0	0	10
14:45	26	0	2	0	1	0	0	29	14	0	1	0	0	0	0	15
15:00	38	0	4	2	0	0	2	46	23	1	1	0	0	0	0	25
15:15	20	0	6	4	0	0	0	30	16	0	1	1	0	0	0	18
15:30	22	0	4	1	0	0	0	27	14	0	2	0	0	0	0	16
15:45	27	0	7	2	0	0	1	37	8	1	0	0	0	1	0	10
16:00	56	0	5	3	1	1	1	67	18	1	2	0	0	0	0	21
16:15	45	0	7	1	0	0	1	54	15	0	1	0	0	0	0	16
16:30	53	0	8	1	0	0	0	62	15	0	0	1	0	0	0	16
16:45	32	0	2	2	0	0	1	37	9	0	0	1	0	0	0	10
17:00	55	0	6	2	0	0	1	64	14	0	2	0	0	0	0	16
17:15	74	0	8	0	0	0	0	82	7	0	1	1	0	0	0	9
17:30	53	0	6	0	0	1	0	60	18	0	0	1	0	0	0	19
17:45	59	0	3	1	0	0	1	64	25	0	3	0	0	0	0	28
18:00	29	4	3	1	0	0	1	38	26	0	2	0	0	0	0	28
18:15	26	0	3	0	0	1	1	31	23	1	2	0	0	0	0	26
18:30	34	0	2	0	0	0	0	36	25	1	0	0	0	1	0	27
18:45	27	0	1	0	2	0	0	30	18	0	2	0	0	0	0	20
25:75	1340	14	161	85	7	3	13	1623	577	14	60	24	0	5	2	682



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	C to B - Mariavilla to Moyglare Road(S)							Veh. Total	C to A - Mariavilla to Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	27	0	3	0	0	0	0	30	5	0	1	0	0	0	0	6
7:15	27	1	3	0	0	0	0	31	12	0	3	0	0	0	0	15
7:30	18	1	1	0	0	0	0	20	17	0	1	0	0	0	0	18
7:45	21	0	3	2	0	0	1	27	9	0	0	0	0	0	0	9
8:00	28	0	0	2	0	1	0	31	12	0	0	0	0	0	1	13
8:15	31	1	0	0	0	1	0	33	25	0	0	0	0	0	0	25
8:30	42	0	1	1	0	0	0	44	34	0	0	0	0	0	1	35
8:45	24	0	1	1	0	0	0	26	21	1	1	0	0	0	0	23
9:00	17	0	3	0	0	0	0	20	8	0	0	0	0	0	0	8
9:15	14	1	1	0	0	0	0	16	5	1	0	1	0	0	0	7
9:30	6	0	2	2	0	0	0	10	2	0	1	2	0	0	0	5
9:45	11	0	2	2	0	0	0	15	5	0	1	1	0	0	0	7
10:00	9	1	1	0	0	0	0	11	5	0	0	0	0	0	0	5
10:15	10	0	2	0	0	0	0	12	1	0	1	0	0	0	0	2
10:30	8	0	5	0	0	1	0	14	3	0	2	1	0	0	0	6
10:45	5	0	0	1	0	0	0	6	2	0	1	1	0	0	0	4
11:00	20	0	0	1	0	0	0	21	3	0	1	2	0	0	0	6
11:15	5	0	2	1	0	0	0	8	2	0	1	1	0	0	0	4
11:30	10	0	2	0	0	0	0	12	3	0	2	0	0	0	0	5
11:45	9	0	0	0	0	0	0	9	8	0	1	0	0	0	0	9
12:00	10	0	4	0	0	0	0	14	2	0	0	0	0	0	0	2
12:15	11	0	0	1	0	0	0	12	5	0	2	0	0	0	0	7
12:30	16	0	6	1	0	0	0	23	4	0	1	0	0	0	0	5
12:45	17	1	3	0	0	0	0	21	4	0	0	0	0	0	0	4
13:00	12	1	0	0	0	0	0	13	3	0	1	0	0	0	0	4
13:15	11	0	1	2	0	1	0	15	6	0	1	1	0	0	0	8
13:30	13	2	0	2	0	0	0	17	4	0	1	0	0	0	0	5
13:45	17	0	0	1	0	0	0	18	3	1	2	0	0	0	0	6
14:00	12	0	1	0	0	0	0	13	3	0	0	1	0	0	0	4
14:15	12	0	0	2	0	0	0	14	7	0	0	0	0	0	0	7
14:30	14	0	1	0	0	0	0	15	4	0	2	0	0	0	0	6
14:45	10	1	1	1	0	0	0	13	5	0	2	0	0	0	0	7
15:00	9	0	0	1	0	0	0	10	6	0	1	1	0	0	0	8
15:15	7	1	1	1	0	0	0	10	6	1	0	0	0	0	0	7
15:30	8	0	2	0	0	0	0	10	6	0	0	0	0	0	0	6
15:45	14	1	0	0	0	0	0	15	4	0	1	0	0	0	0	5
16:00	6	0	2	0	0	0	0	8	3	0	0	0	0	0	0	3
16:15	8	1	2	0	0	0	0	11	5	0	0	0	0	0	0	5
16:30	7	0	2	1	0	0	0	10	2	0	0	0	0	0	3	5
16:45	12	1	3	1	0	0	0	17	11	0	6	0	0	0	0	17
17:00	8	0	4	1	0	0	0	13	2	0	0	0	0	0	0	2
17:15	10	0	0	0	0	0	0	10	4	0	1	1	0	0	0	6
17:30	19	0	0	0	0	0	0	19	4	0	0	0	0	0	0	4
17:45	14	0	0	2	0	0	0	16	7	0	0	0	0	0	0	7
18:00	13	0	0	0	0	0	0	13	4	0	0	0	0	0	0	4
18:15	15	0	1	0	0	0	0	16	8	1	2	0	0	0	0	11
18:30	11	0	0	0	0	0	0	11	2	0	1	0	0	0	1	4
18:45	13	0	0	0	0	0	1	14	5	1	1	0	0	0	1	8
25:75	671	14	66	30	0	4	2	787	311	6	42	13	0	0	7	379





10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	To Arm A - Moyglare Road(N)							Veh. Total	From Arm A - Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	21	0	4	0	0	0	0	25	24	0	9	1	0	1	0	35
7:15	27	0	10	1	0	0	0	38	32	0	12	2	0	0	0	46
7:30	32	0	4	3	1	0	0	40	31	0	8	6	0	0	0	45
7:45	25	0	2	6	0	0	0	33	59	0	7	2	0	1	0	69
8:00	28	1	5	2	0	0	1	37	36	0	3	5	0	0	1	45
8:15	52	0	3	0	1	0	0	56	68	0	4	1	1	0	0	74
8:30	60	0	3	2	0	0	1	66	64	1	7	1	1	0	0	74
8:45	54	2	4	3	0	0	0	63	65	0	5	8	1	0	1	80
9:00	30	0	1	4	1	0	0	36	70	0	5	6	0	0	1	82
9:15	30	3	1	5	0	0	0	39	59	0	3	2	0	0	1	65
9:30	20	0	4	4	0	0	0	28	40	3	1	3	0	0	1	48
9:45	16	1	2	3	0	0	0	22	32	0	2	3	0	0	0	37
10:00	27	0	3	0	0	0	1	31	23	0	6	4	0	0	0	33
10:15	11	0	5	3	0	0	0	19	21	0	4	0	0	0	0	25
10:30	13	1	4	3	0	0	0	21	26	0	4	2	0	0	0	32
10:45	25	0	5	4	0	0	1	35	28	1	4	4	0	0	0	37
11:00	28	1	2	6	0	0	0	37	15	0	3	3	0	0	0	21
11:15	22	0	6	3	0	0	0	31	24	0	1	4	0	0	4	33
11:30	24	0	2	5	0	0	0	31	34	0	4	3	0	0	0	41
11:45	28	0	3	1	0	0	0	32	42	0	4	3	0	0	0	49
12:00	21	0	3	1	0	0	0	25	30	0	2	1	0	0	0	33
12:15	25	1	8	0	0	0	0	34	29	0	4	1	0	0	1	35
12:30	26	0	2	1	0	0	0	29	21	0	4	2	0	0	0	27
12:45	23	0	0	4	0	0	0	27	16	0	3	3	0	0	0	22
13:00	24	0	1	0	0	0	0	25	16	1	5	2	0	0	0	24
13:15	30	0	6	6	0	0	1	43	28	0	5	2	0	0	0	35
13:30	34	0	2	1	0	0	0	37	28	1	3	4	0	0	0	36
13:45	24	2	6	2	0	0	0	34	37	1	3	2	0	0	0	43
14:00	26	1	3	3	0	0	0	33	27	0	8	0	0	0	1	36
14:15	46	0	2	0	0	0	0	48	30	0	1	2	0	0	1	34
14:30	39	0	5	0	0	0	0	44	33	0	2	2	0	0	2	39
14:45	31	0	4	0	1	0	0	36	62	0	2	7	0	0	0	71
15:00	44	0	5	3	0	0	2	54	36	0	2	3	0	0	0	41
15:15	26	1	6	4	0	0	0	37	30	3	4	3	0	0	0	40
15:30	28	0	4	1	0	0	0	33	46	3	1	0	0	0	0	50
15:45	31	0	8	2	0	0	1	42	48	1	5	2	1	0	0	57
16:00	59	0	5	3	1	1	1	70	41	0	9	2	0	0	0	52
16:15	50	0	7	1	0	0	1	59	38	0	10	1	1	0	0	50
16:30	55	0	8	1	0	0	3	67	38	0	7	1	1	0	0	47
16:45	43	0	8	2	0	0	1	54	48	0	4	1	1	0	0	54
17:00	57	0	6	2	0	0	1	66	48	0	6	1	0	0	1	56
17:15	78	0	9	1	0	0	0	88	48	0	6	0	0	0	0	54
17:30	57	0	6	0	0	1	0	64	55	0	6	2	0	0	0	63
17:45	66	0	3	1	0	0	1	71	68	2	6	0	0	0	0	76
18:00	33	4	3	1	0	0	1	42	53	0	4	1	0	0	0	58
18:15	34	1	5	0	0	1	1	42	59	1	5	2	0	0	0	67
18:30	36	0	3	0	0	0	1	40	33	3	3	2	0	0	1	42
18:45	32	1	2	0	2	0	1	38	44	0	2	0	0	0	1	47
25:75	1651	20	203	98	7	3	20	2002	1883	21	218	112	7	2	17	2260



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	To Arm B - Moyglare Road(S)							Veh. Total	From Arm B - Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	49	0	11	1	0	1	0	62	23	0	4	0	0	0	0	27
7:15	55	1	13	2	0	0	0	71	25	1	11	1	0	0	0	38
7:30	48	1	7	6	0	0	0	62	24	0	3	3	1	0	0	31
7:45	75	0	8	3	0	1	1	88	22	0	3	6	0	0	0	31
8:00	62	0	3	7	0	1	1	74	21	1	5	2	0	0	0	29
8:15	95	1	3	1	1	1	0	102	36	0	4	1	1	0	0	42
8:30	102	0	8	2	1	0	0	113	30	1	3	2	0	0	0	36
8:45	85	0	5	8	1	0	1	100	43	1	3	5	0	0	0	52
9:00	79	0	7	6	0	0	1	93	34	0	3	5	1	0	1	44
9:15	68	1	1	1	0	0	1	72	39	2	2	4	0	0	0	47
9:30	42	3	2	4	0	0	1	52	31	1	3	4	0	0	0	39
9:45	42	0	4	5	0	0	0	51	17	1	1	2	0	0	0	21
10:00	28	1	7	4	0	0	0	40	33	0	6	0	0	0	1	40
10:15	29	0	5	0	0	0	0	34	15	0	5	3	0	1	0	24
10:30	33	0	9	2	0	1	0	45	20	1	3	3	0	0	0	27
10:45	32	1	3	4	0	0	0	40	27	0	4	3	0	0	1	35
11:00	34	0	2	3	0	0	0	39	33	1	7	5	0	1	0	47
11:15	27	0	2	4	0	0	4	37	23	1	6	2	0	0	0	32
11:30	42	0	6	3	0	0	0	51	27	0	1	6	0	0	0	34
11:45	43	0	4	3	0	0	0	50	26	0	2	1	0	0	0	29
12:00	34	0	5	1	0	0	0	40	29	0	4	1	0	0	0	34
12:15	36	0	3	2	0	0	1	42	32	1	10	2	0	0	1	46
12:30	32	0	10	2	0	0	0	44	40	0	2	3	0	0	0	45
12:45	31	1	6	3	0	0	0	41	28	0	1	4	0	0	0	33
13:00	27	2	5	2	0	0	0	36	32	2	2	1	0	0	0	37
13:15	35	0	5	4	0	1	0	45	42	1	6	6	0	0	1	56
13:30	40	2	2	6	0	0	0	50	38	0	4	3	0	0	0	45
13:45	46	1	3	2	0	0	0	52	34	2	5	3	0	0	0	44
14:00	36	0	8	0	0	0	1	45	35	2	4	2	0	1	0	44
14:15	35	0	0	4	0	0	1	40	51	0	2	1	0	0	0	54
14:30	44	0	2	2	0	0	2	50	43	0	5	0	0	0	0	48
14:45	55	1	3	6	0	0	0	65	40	0	3	0	1	0	0	44
15:00	37	0	1	4	0	0	0	42	61	1	5	2	0	0	2	71
15:15	33	3	5	4	0	0	0	45	36	0	7	5	0	0	0	48
15:30	43	1	2	0	0	0	0	46	36	0	6	1	0	0	0	43
15:45	52	1	4	2	1	0	0	60	35	1	7	2	0	1	1	47
16:00	37	0	10	2	0	0	0	49	74	1	7	3	1	1	1	88
16:15	32	1	10	1	1	0	0	45	60	0	8	1	0	0	1	70
16:30	38	0	7	1	1	0	0	47	68	0	8	2	0	0	0	78
16:45	43	1	5	2	1	0	0	52	41	0	2	3	0	0	1	47
17:00	40	0	8	2	0	0	0	50	69	0	8	2	0	0	1	80
17:15	36	0	6	0	0	0	0	42	81	0	9	1	0	0	0	91
17:30	55	0	5	2	0	0	0	62	71	0	6	1	0	1	0	79
17:45	62	2	6	2	0	0	0	72	84	0	6	1	0	0	1	92
18:00	46	0	3	1	0	0	0	50	55	4	5	1	0	0	1	66
18:15	47	1	2	2	0	0	0	52	49	1	5	0	0	1	1	57
18:30	33	3	1	2												



Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	To Arm C - Mariavilla							Veh. Total	From Arm C - Mariavilla							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	9	0	2	0	0	0	0	11	32	0	4	0	0	0	0	36
7:15	14	1	6	0	0	0	0	21	39	1	6	0	0	0	0	46
7:30	10	0	2	0	0	0	0	12	35	1	2	0	0	0	0	38
7:45	11	0	3	1	0	0	0	15	30	0	3	2	0	0	1	36
8:00	7	0	0	0	0	0	0	7	40	0	0	2	0	1	1	44
8:15	13	0	2	1	0	0	0	16	56	1	0	0	0	1	0	58
8:30	8	2	0	0	0	0	0	10	76	0	1	1	0	0	1	79
8:45	14	0	1	3	0	0	0	18	45	1	2	1	0	0	0	49
9:00	20	0	3	1	0	0	1	25	25	0	3	0	0	0	0	28
9:15	19	0	4	1	0	0	0	24	19	2	1	1	0	0	0	23
9:30	17	1	1	3	0	0	0	22	8	0	3	4	0	0	0	15
9:45	7	0	0	0	0	0	0	7	16	0	3	3	0	0	0	22
10:00	15	0	3	0	0	0	0	18	14	1	1	0	0	0	0	16
10:15	7	0	2	0	0	1	0	10	11	0	3	0	0	0	0	14
10:30	11	0	1	1	0	0	0	13	11	0	7	1	0	1	0	20
10:45	5	0	1	1	0	0	0	7	7	0	1	2	0	0	0	10
11:00	9	0	7	2	0	1	0	19	23	0	1	3	0	0	0	27
11:15	5	1	2	1	0	0	0	9	7	0	3	2	0	0	0	12
11:30	8	0	1	1	0	0	0	10	13	0	4	0	0	0	0	17
11:45	14	0	0	0	0	0	0	14	17	0	1	0	0	0	0	18
12:00	16	0	2	0	0	0	0	18	12	0	4	0	0	0	0	16
12:15	16	0	5	2	0	0	1	24	16	0	2	1	0	0	0	19
12:30	23	0	1	3	0	0	0	27	20	0	7	1	0	0	0	28
12:45	11	0	1	0	0	0	0	12	21	1	3	0	0	0	0	25
13:00	12	2	2	1	0	0	0	17	15	1	1	0	0	0	0	17
13:15	22	1	2	1	0	0	0	26	17	0	2	3	0	1	0	23
13:30	9	1	4	2	0	0	0	16	17	2	1	2	0	0	0	22
13:45	21	1	1	2	0	0	0	25	20	1	2	1	0	0	0	24
14:00	15	1	2	0	0	1	0	19	15	0	1	1	0	0	0	17
14:15	19	0	1	1	0	0	0	21	19	0	0	2	0	0	0	21
14:30	11	0	3	0	0	0	0	14	18	0	3	0	0	0	0	21
14:45	31	0	1	2	0	0	0	34	15	1	3	1	0	0	0	20
15:00	31	1	2	0	0	0	0	34	15	0	1	2	0	0	0	18
15:15	20	1	1	1	0	0	0	23	13	2	1	1	0	0	0	17
15:30	25	2	3	0	0	0	0	30	14	0	2	0	0	0	0	16
15:45	18	2	1	0	0	1	0	22	18	1	1	0	0	0	0	20
16:00	28	1	3	0	0	0	0	32	9	0	2	0	0	0	0	11
16:15	29	0	3	0	0	0	0	32	13	1	2	0	0	0	0	16
16:30	22	0	2	2	0	0	0	26	9	0	2	1	0	0	3	15
16:45	26	0	2	1	0	0	0	29	23	1	9	1	0	0	0	34
17:00	30	0	4	0	0	0	1	35	10	0	4	1	0	0	0	15
17:15	29	0	1	1	0	0	0	31	14	0	1	1	0	0	0	16
17:30	37	0	1	1	0	0	0	39	23	0	0	0	0	0	0	23
17:45	45	0	3	0	0	0	0	48	21	0	0	2	0	0	0	23
18:00	46	0	3	0	0	0	0	49	17	0	0	0	0	0	0	17
18:15	50	1	6	0	0	0	0	57	23	1	3	0	0	0	0	27
18:30	36	1	2	0	0	1	0	40	13	0	1	0	0	0	1	15
18:45	24	0	2	0	0	0	0	26	18	1	1	0	0	0	2	22
25:75	925	20	105	36	0	5	3	1094	982	20	108	43	0	4	9	1166



Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	A to C - Moyglare Road(N) to Mariavilla							Veh. Total	A to B - Moyglare Road(N) to Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	2	0	1	0	0	0	0	3	22	0	8	2.3	0	0.4	0	32.7
7:15	4	0	2	0	0	0	0	6	28	0	10	4.6	0	0	0	42.6
7:30	1	0	2	0	0	0	0	3	30	0	6	13.8	0	0	0	49.8
7:45	5	0	2	2.3	0	0	0	9.3	54	0	5	2.3	0	0.4	0	61.7
8:00	2	0	0	0	0	0	0	2	34	0	3	11.5	0	0	0.2	48.7
8:15	4	0	1	0	0	0	0	5	64	0	3	2.3	2	0	0	71.3
8:30	4	1	0	0	0	0	0	5	60	0	7	2.3	2	0	0	71.3
8:45	4	0	1	2.3	0	0	0	7.3	61	0	4	16.1	2	0	0.2	83.3
9:00	8	0	1	0	0	0	0	9	62	0	4	13.8	0	0	0	80
9:15	5	0	3	2.3	0	0	0	10.3	54	0	0	2.3	0	0	0.2	56.5
9:30	4	0	1	2.3	0	0	0	7.3	36	3	0	4.6	0	0	0.2	43.8
9:45	1	0	0	0	0	0	0	1	31	0	2	6.9	0	0	0	39.9
10:00	4	0	0	0	0	0	0	4	19	0	6	9.2	0	0	0	34.2
10:15	2	0	1	0	0	0	0	3	19	0	3	0	0	0	0	22
10:30	1	0	0	0	0	0	0	1	25	0	4	4.6	0	0	0	33.6
10:45	1	0	1	2.3	0	0	0	4.3	27	1	3	6.9	0	0	0	37.9
11:00	1	0	1	2.3	0	0	0	4.3	14	0	2	4.6	0	0	0	20.6
11:15	2	0	1	2.3	0	0	0	5.3	22	0	0	6.9	0	0	0.8	29.7
11:30	2	0	0	0	0	0	0	2	32	0	4	6.9	0	0	0	42.9
11:45	8	0	0	0	0	0	0	8	34	0	4	6.9	0	0	0	44.9
12:00	6	0	1	0	0	0	0	7	24	0	1	2.3	0	0	0	27.3
12:15	4	0	1	0	0	0	0	5	25	0	3	2.3	0	0	0.2	30.5
12:30	5	0	0	2.3	0	0	0	7.3	16	0	4	2.3	0	0	0	22.3
12:45	2	0	0	0	0	0	0	2	14	0	3	6.9	0	0	0	23.9
13:00	1	0	0	0	0	0	0	1	15	1	5	4.6	0	0	0	25.6
13:15	4	0	1	0	0	0	0	5	24	0	4	4.6	0	0	0	32.6
13:30	1	1	1	0	0	0	0	3	27	0	2	9.2	0	0	0	38.2
13:45	8	0	0	2.3	0	0	0	10.3	29	1	3	2.3	0	0	0	35.3
14:00	3	0	1	0	0	0	0	4	24	0	7	0	0	0	0.2	31.2
14:15	7	0	1	0	0	0	0	8	23	0	0	4.6	0	0	0.2	27.8
14:30	3	0	1	0	0	0	0	4	30	0	1	4.6	0	0	0.4	36
14:45	17	0	0	4.6	0	0	0	21.6	45	0	2	11.5	0	0	0	58.5
15:00	8	0	1	0	0	0	0	9	28	0	1	6.9	0	0	0	35.9
15:15	4	1	0	0	0	0	0	5	26	2	4	6.9	0	0	0	38.9
15:30	11	2	1	0	0	0	0	14	35	1	0	0	0	0	0	36
15:45	10	1	1	0	0	0	0	12	38	0	4	4.6	2	0	0	48.6
16:00	10	0	1	0	0	0	0	11	31	0	8	4.6	0	0	0	43.6
16:15	14	0	2	0	0	0	0	16	24	0	8	2.3	2	0	0	36.3
16:30	7	0	2	2.3	0	0	0	11.3	31	0	5	0	2	0	0	38
16:45	17	0	2	0	0	0	0	19	31	0	2	2.3	2	0	0	37.3
17:00	16	0	2	0	0	0	0.2	18.2	32	0	4	2.3	0	0	0	38.3
17:15	22	0	0	0	0	0	0	22	26	0	6	0	0	0	0	32
17:30	19	0	1	0	0	0	0	20	36	0	5	4.6	0	0	0	45.6
17:45	20	0	0	0	0	0	0	20	48	2	6	0	0	0	0	56
18:00	20	0	1	0	0	0	0	21	33	0	3	2.3	0	0	0	38.3
18:15																



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	B to A - Moyglare Road(S) to Moyglare Road(N)							Veh. Total	B to C - Moyglare Road(S) to Mariavilla							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	16	0	3	0	0	0	0	19	7	0	1	0	0	0	0	8
7:15	15	0	7	2.3	0	0	0	24.3	10	1	4	0	0	0	0	15
7:30	15	0	3	6.9	2	0	0	26.9	9	0	0	0	0	0	0	9
7:45	16	0	2	13.8	0	0	0	31.8	6	0	1	0	0	0	0	7
8:00	16	1	5	4.6	0	0	0	26.6	5	0	0	0	0	0	0	5
8:15	27	0	3	0	2	0	0	32	9	0	1	2.3	0	0	0	12.3
8:30	26	0	3	4.6	0	0	0	33.6	4	1	0	0	0	0	0	5
8:45	33	1	3	6.9	0	0	0	43.9	10	0	0	4.6	0	0	0	14.6
9:00	22	0	1	9.2	2	0	0	34.2	12	0	2	2.3	0	0.2	0	16.5
9:15	25	2	1	9.2	0	0	0	37.2	14	0	1	0	0	0	0	15
9:30	18	0	3	4.6	0	0	0	25.6	13	1	0	4.6	0	0	0	18.6
9:45	11	1	1	4.6	0	0	0	17.6	6	0	0	0	0	0	0	6
10:00	22	0	3	0	0	0	0.2	25.2	11	0	3	0	0	0	0	14
10:15	10	0	4	6.9	0	0	0	20.9	5	0	1	0	0	0.4	0	6.4
10:30	10	1	2	4.6	0	0	0	17.6	10	0	1	2.3	0	0	0	13.3
10:45	23	0	4	6.9	0	0	0.2	34.1	4	0	0	0	0	0	0	4
11:00	25	1	1	9.2	0	0	0	36.2	8	0	6	2.3	0	0.4	0	16.7
11:15	20	0	5	4.6	0	0	0	29.6	3	1	1	0	0	0	0	5
11:30	21	0	0	11.5	0	0	0	32.5	6	0	1	2.3	0	0	0	9.3
11:45	20	0	2	2.3	0	0	0	24.3	6	0	0	0	0	0	0	6
12:00	19	0	3	2.3	0	0	0	24.3	10	0	1	0	0	0	0	11
12:15	20	1	6	0	0	0	0	27	12	0	4	4.6	0	0	0.2	20.8
12:30	22	0	1	2.3	0	0	0	25.3	18	0	1	4.6	0	0	0	23.6
12:45	19	0	0	9.2	0	0	0	28.2	9	0	1	0	0	0	0	10
13:00	21	0	0	0	0	0	0	21	11	2	2	2.3	0	0	0	17.3
13:15	24	0	5	11.5	0	0	0.2	40.7	18	1	1	2.3	0	0	0	22.3
13:30	30	0	1	2.3	0	0	0	33.3	8	0	3	4.6	0	0	0	15.6
13:45	21	1	4	4.6	0	0	0	30.6	13	1	1	2.3	0	0	0	17.3
14:00	23	1	3	4.6	0	0	0	31.6	12	1	1	0	0	0.4	0	14.4
14:15	39	0	2	0	0	0	0	41	12	0	0	2.3	0	0	0	14.3
14:30	35	0	3	0	0	0	0	38	8	0	2	0	0	0	0	10
14:45	26	0	2	0	2	0	0	30	14	0	1	0	0	0	0	15
15:00	38	0	4	4.6	0	0	0.4	47	23	1	1	0	0	0	0	25
15:15	20	0	6	9.2	0	0	0	35.2	16	0	1	2.3	0	0	0	19.3
15:30	22	0	4	2.3	0	0	0	28.3	14	0	2	0	0	0	0	16
15:45	27	0	7	4.6	0	0	0.2	38.8	8	1	0	0	0	0.4	0	9.4
16:00	56	0	5	6.9	2	0.4	0.2	70.5	18	1	2	0	0	0	0	21
16:15	45	0	7	2.3	0	0	0.2	54.5	15	0	1	0	0	0	0	16
16:30	53	0	8	2.3	0	0	0	63.3	15	0	0	2.3	0	0	0	17.3
16:45	32	0	2	4.6	0	0	0.2	38.8	9	0	0	2.3	0	0	0	11.3
17:00	55	0	6	4.6	0	0	0.2	65.8	14	0	2	0	0	0	0	16
17:15	74	0	8	0	0	0	0	82	7	0	1	2.3	0	0	0	10.3
17:30	53	0	6	0	0	0.4	0	59.4	18	0	0	2.3	0	0	0	20.3
17:45	59	0	3	2.3	0	0	0.2	64.5	25	0	3	0	0	0	0	28
18:00	29	4	3	2.3	0	0	0.2	38.5	26	0	2	0	0	0	0	28
18:15	26	0	3	0	0	0.4	0.2	29.6	23	1	2	0	0	0	0	26
18:30	34	0	2	0	0	0	0	36	25	1	0	0	0	0.4	0	26.4
18:45	27	0	1	0	4	0	0	32	18	0	2	0	0	0	0	20
25:75	1340	14	161	195.5	14	1.2	2.6	1728.3	577	14	60	55.2	0	2	0.4	708.6



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	C to B - Mariavilla to Moyglare Road(S)							Veh. Total	C to A - Mariavilla to Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	27	0	3	0	0	0	0	30	5	0	1	0	0	0	0	6
7:15	27	1	3	0	0	0	0	31	12	0	3	0	0	0	0	15
7:30	18	1	1	0	0	0	0	20	17	0	1	0	0	0	0	18
7:45	21	0	3	4.6	0	0	0.2	28.8	9	0	0	0	0	0	0	9
8:00	28	0	0	4.6	0	0.4	0	33	12	0	0	0	0	0	0.2	12.2
8:15	31	1	0	0	0	0.4	0	32.4	25	0	0	0	0	0	0	25
8:30	42	0	1	2.3	0	0	0	45.3	34	0	0	0	0	0	0.2	34.2
8:45	24	0	1	2.3	0	0	0	27.3	21	1	1	0	0	0	0	23
9:00	17	0	3	0	0	0	0	20	8	0	0	0	0	0	0	8
9:15	14	1	1	0	0	0	0	16	5	1	0	2.3	0	0	0	8.3
9:30	6	0	2	4.6	0	0	0	12.6	2	0	1	4.6	0	0	0	7.6
9:45	11	0	2	4.6	0	0	0	17.6	5	0	1	2.3	0	0	0	8.3
10:00	9	1	1	0	0	0	0	11	5	0	0	0	0	0	0	5
10:15	10	0	2	0	0	0	0	12	1	0	1	0	0	0	0	2
10:30	8	0	5	0	0	0.4	0	13.4	3	0	2	2.3	0	0	0	7.3
10:45	5	0	0	2.3	0	0	0	7.3	2	0	1	2.3	0	0	0	5.3
11:00	20	0	0	2.3	0	0	0	22.3	3	0	1	4.6	0	0	0	8.6
11:15	5	0	2	2.3	0	0	0	9.3	2	0	1	2.3	0	0	0	5.3
11:30	10	0	2	0	0	0	0	12	3	0	2	0	0	0	0	5
11:45	9	0	0	0	0	0	0	9	8	0	1	0	0	0	0	9
12:00	10	0	4	0	0	0	0	14	2	0	0	0	0	0	0	2
12:15	11	0	0	2.3	0	0	0	13.3	5	0	2	0	0	0	0	7
12:30	16	0	6	2.3	0	0	0	24.3	4	0	1	0	0	0	0	5
12:45	17	1	3	0	0	0	0	21	4	0	0	0	0	0	0	4
13:00	12	1	0	0	0	0	0	13	3	0	1	0	0	0	0	4
13:15	11	0	1	4.6	0	0.4	0	17	6	0	1	2.3	0	0	0	9.3
13:30	13	2	0	4.6	0	0	0	19.6	4	0	1	0	0	0	0	5
13:45	17	0	0	2.3	0	0	0	19.3	3	1	2	0	0	0	0	6
14:00	12	0	1	0	0	0	0	13	3	0	0	2.3	0	0	0	5.3
14:15	12	0	0	4.6	0	0	0	16.6	7	0	0	0	0	0	0	7
14:30	14	0	1	0	0	0	0	15	4	0	2	0	0	0	0	6
14:45	10	1	1	2.3	0	0	0	14.3	5	0	2	0	0	0	0	7
15:00	9	0	0	2.3	0	0	0	11.3	6	0	1	2.3	0	0	0	9.3
15:15	7	1	1	2.3	0	0	0	11.3	6	1	0	0	0	0	0	7
15:30	8	0	2	0	0	0	0	10	6	0	0	0	0	0	0	6
15:45	14	1	0	0	0	0	0	15	4	0	1	0	0	0	0	5
16:00	6	0	2	0	0	0	0	8	3	0	0	0	0	0	0	3
16:15	8	1	2	0	0	0	0	11	5	0	0	0	0	0	0	5
16:30	7	0	2	2.3	0	0	0	11.3	2	0	0	0	0	0	0.6	2.6
16:45	12	1	3	2.3	0	0	0	18.3	11	0	6	0	0	0	0	17
17:00	8	0	4	2.3	0	0	0	14.3	2	0	0	0	0	0	0	2
17:15	10	0	0	0	0	0	0	10	4	0	1	2.3	0	0	0	7.3
17:30	19	0	0	0	0	0	0	19	4	0	0	0	0	0	0	4
17:45	14	0	0	4.6	0	0	0	18.6	7	0	0	0	0	0	0	7
18:00	13	0	0	0	0	0	0	13	4	0	0	0	0	0	0	4
18:15	15	0	1	0	0	0	0	16	8	1	2	0	0	0	0	11
18:30	11	0	0	0	0	0	0	11	2	0	1	0	0	0	0.2	3.2
18:45	13	0	0	0	0	0	0.2	13.2	5	1	1	0	0	0	0.2	7.2
25:75	671	14	66	69	0	1.6	0.4	822	311							



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	To Arm A - Moyglare Road(N)							Veh. Total	From Arm A - Moyglare Road(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	21	0	4	0	0	0	0	25	24	0	9	2.3	0	0.4	0	35.7
7:15	27	0	10	2.3	0	0	0	39.3	32	0	12	4.6	0	0	0	48.6
7:30	32	0	4	6.9	2	0	0	44.9	31	0	8	13.8	0	0	0	52.8
7:45	25	0	2	13.8	0	0	0	40.8	59	0	7	4.6	0	0.4	0	71
8:00	28	1	5	4.6	0	0	0.2	38.8	36	0	3	11.5	0	0	0.2	50.7
8:15	52	0	3	0	2	0	0	57	68	0	4	2.3	2	0	0	76.3
8:30	60	0	3	4.6	0	0	0.2	67.8	64	1	7	2.3	2	0	0	76.3
8:45	54	2	4	6.9	0	0	0	66.9	65	0	5	18.4	2	0	0.2	90.6
9:00	30	0	1	9.2	2	0	0	42.2	70	0	5	13.8	0	0	0.2	89
9:15	30	3	1	11.5	0	0	0	45.5	59	0	3	4.6	0	0	0.2	66.8
9:30	20	0	4	9.2	0	0	0	33.2	40	3	1	6.9	0	0	0.2	51.1
9:45	16	1	2	6.9	0	0	0	25.9	32	0	2	6.9	0	0	0	40.9
10:00	27	0	3	0	0	0	0.2	30.2	23	0	6	9.2	0	0	0	38.2
10:15	11	0	5	6.9	0	0	0	22.9	21	0	4	0	0	0	0	25
10:30	13	1	4	6.9	0	0	0	24.9	26	0	4	4.6	0	0	0	34.6
10:45	25	0	5	9.2	0	0	0.2	39.4	28	1	4	9.2	0	0	0	42.2
11:00	28	1	2	13.8	0	0	0	44.8	15	0	3	6.9	0	0	0	24.9
11:15	22	0	6	6.9	0	0	0	34.9	24	0	1	9.2	0	0	0.8	35
11:30	24	0	2	11.5	0	0	0	37.5	34	0	4	6.9	0	0	0	44.9
11:45	28	0	3	2.3	0	0	0	33.3	42	0	4	6.9	0	0	0	52.9
12:00	21	0	3	2.3	0	0	0	26.3	30	0	2	2.3	0	0	0	34.3
12:15	25	1	8	0	0	0	0	34	29	0	4	2.3	0	0	0.2	35.5
12:30	26	0	2	2.3	0	0	0	30.3	21	0	4	4.6	0	0	0	29.6
12:45	23	0	0	9.2	0	0	0	32.2	16	0	3	6.9	0	0	0	25.9
13:00	24	0	1	0	0	0	0	25	16	1	5	4.6	0	0	0	26.6
13:15	30	0	6	13.8	0	0	0.2	50	28	0	5	4.6	0	0	0	37.6
13:30	34	0	2	2.3	0	0	0	38.3	28	1	3	9.2	0	0	0	41.2
13:45	24	2	6	4.6	0	0	0	36.6	37	1	3	4.6	0	0	0	45.6
14:00	26	1	3	6.9	0	0	0	36.9	27	0	8	0	0	0	0.2	35.2
14:15	46	0	2	0	0	0	0	48	30	0	1	4.6	0	0	0.2	35.8
14:30	39	0	5	0	0	0	0	44	33	0	2	4.6	0	0	0.4	40
14:45	31	0	4	0	2	0	0	37	62	0	2	16.1	0	0	0	80.1
15:00	44	0	5	6.9	0	0	0.4	56.3	36	0	2	6.9	0	0	0	44.9
15:15	26	1	6	9.2	0	0	0	42.2	30	3	4	6.9	0	0	0	43.9
15:30	28	0	4	2.3	0	0	0	34.3	46	3	1	0	0	0	0	50
15:45	31	0	8	4.6	0	0	0.2	43.8	48	1	5	4.6	2	0	0	60.6
16:00	59	0	5	6.9	2	0.4	0.2	73.5	41	0	9	4.6	0	0	0	54.6
16:15	50	0	7	2.3	0	0	0.2	59.5	38	0	10	2.3	2	0	0	52.3
16:30	55	0	8	2.3	0	0	0.6	65.9	38	0	7	2.3	2	0	0	49.3
16:45	43	0	8	4.6	0	0	0.2	55.8	48	0	4	2.3	2	0	0	56.3
17:00	57	0	6	4.6	0	0	0.2	67.8	48	0	6	2.3	0	0	0.2	56.5
17:15	78	0	9	2.3	0	0	0	89.3	48	0	6	0	0	0	0	54
17:30	57	0	6	0	0	0.4	0	63.4	55	0	6	4.6	0	0	0	65.6
17:45	66	0	3	2.3	0	0	0.2	71.5	68	2	6	0	0	0	0	76
18:00	33	4	3	2.3	0	0	0.2	42.5	53	0	4	2.3	0	0	0	59.3
18:15	34	1	5	0	0	0.4	0.2	40.6	59	1	5	4.6	0	0	0	69.6
18:30	36	0	3	0	0	0	0.2	39.2	33	3	3	4.6	0	0	0.2	43.8
18:45	32	1	2	0	4	0	0.2	39.2	44	0	2	0	0	0	0.2	46.2
25:75	1651	20	203	225.4	14	1.2	4	2118.6	1883	21	218	257.6	14	0.8	3.4	2397.8



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	To Arm B - Moyglare Road(S)							Veh. Total	From Arm B - Moyglare Road(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	49	0	11	2.3	0	0.4	0	62.7	23	0	4	0	0	0	0	27
7:15	55	1	13	4.6	0	0	0	73.6	25	1	11	2.3	0	0	0	39.3
7:30	48	1	7	13.8	0	0	0	69.8	24	0	3	6.9	2	0	0	35.9
7:45	75	0	8	6.9	0	0.4	0.2	90.5	22	0	3	13.8	0	0	0	38.8
8:00	62	0	3	16.1	0	0.4	0.2	81.7	21	1	5	4.6	0	0	0	31.6
8:15	95	1	3	2.3	2	0.4	0	103.7	36	0	4	2.3	2	0	0	44.3
8:30	102	0	8	4.6	2	0	0	116.6	30	1	3	4.6	0	0	0	38.6
8:45	85	0	5	18.4	2	0	0.2	110.6	43	1	3	11.5	0	0	0	58.5
9:00	79	0	7	13.8	0	0	0.2	100	34	0	3	11.5	2	0	0.2	50.7
9:15	68	1	1	2.3	0	0	0.2	72.5	39	2	2	9.2	0	0	0	52.2
9:30	42	3	2	9.2	0	0	0.2	56.4	31	1	3	9.2	0	0	0	44.2
9:45	42	0	4	11.5	0	0	0	57.5	17	1	1	4.6	0	0	0	23.6
10:00	28	1	7	9.2	0	0	0	45.2	33	0	6	0	0	0	0.2	39.2
10:15	29	0	5	0	0	0	0	34	15	0	5	6.9	0	0.4	0	27.3
10:30	33	0	9	4.6	0	0.4	0	47	20	1	3	6.9	0	0	0	30.9
10:45	32	1	3	9.2	0	0	0	45.2	27	0	4	6.9	0	0	0.2	38.1
11:00	34	0	2	6.9	0	0	0	42.9	33	1	7	11.5	0	0.4	0	52.9
11:15	27	0	2	9.2	0	0	0.8	39	23	1	6	4.6	0	0	0	34.6
11:30	42	0	6	6.9	0	0	0	54.9	27	0	1	13.8	0	0	0	41.8
11:45	43	0	4	6.9	0	0	0	53.9	26	0	2	2.3	0	0	0	30.3
12:00	34	0	5	2.3	0	0	0	41.3	29	0	4	2.3	0	0	0	35.3
12:15	36	0	3	4.6	0	0	0.2	43.8	32	1	10	4.6	0	0	0.2	47.8
12:30	32	0	10	4.6	0	0	0	46.6	40	0	2	6.9	0	0	0	48.9
12:45	31	1	6	6.9	0	0	0	44.9	28	0	1	9.2	0	0	0	38.2
13:00	27	2	5	4.6	0	0	0	38.6	32	2	2	2.3	0	0	0	38.3
13:15	35	0	5	9.2	0	0.4	0	49.6	42	1	6	13.8	0	0	0.2	63
13:30	40	2	2	13.8	0	0	0	57.8	38	0	4	6.9	0	0	0	48.9
13:45	46	1	3	4.6	0	0	0	54.6	34	2	5	6.9	0	0	0	47.9
14:00	36	0	8	0	0	0	0.2	44.2	35	2	4	4.6	0	0.4	0	46
14:15	35	0	0	9.2	0	0	0.2	44.4	51	0	2	2.3	0	0	0	55.3
14:30	44	0	2	4.6	0	0	0.4	51	43	0	5	0	0	0	0	48
14:45	55	1	3	13.8	0	0	0	72.8	40	0	3	0	2	0	0	45
15:00	37	0	1	9.2	0	0	0	47.2	61	1	5	4.6	0	0	0.4	72
15:15	33	3	5	9.2	0	0	0	50.2	36	0	7	11.5	0	0	0	54.5
15:30	43	1	2	0	0	0	0	46	36	0	6	2.3	0	0	0	44.3
15:45	52	1	4	4.6	2	0	0	63.6	35	1	7	4.6	0	0.4	0.2	48.2
16:00	37	0	10	4.6	0	0	0	51.6	74	1	7	6.9	2	0.4	0.2	91.5
16:15	32	1	10	2.3	2	0	0	47.3	60	0	8	2.3	0	0	0.2	70.5
16:30	38	0	7	2.3	2	0	0	49.3	68	0	8	4.6	0	0	0	80.6
16:45	43	1	5	4.6	2	0	0	55.6	41	0	2	6.9	0	0	0.2	50.1
17:00	40	0	8	4.6	0	0	0	52.6	69	0	8	4.6	0	0	0.2	81.8
17:15	36	0	6	0	0	0	0	42	81	0	9	2.3	0	0	0	92.3
17:30	55	0	5	4.6	0	0	0	64.6	71	0	6	2.3	0	0.4	0	79.7
17:45	62	2	6	4.6	0	0	0	74.6	84	0	6	2.3	0	0	0.2	92.5
18:00	46	0	3	2.3	0	0	0									



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 2
Location Moyglare Road(N) / Moyglare Road(S) / Mariavilla
Date Tuesday 28 May 2019

Time	To Arm C - Mariavilla							Veh. Total	From Arm C - Mariavilla							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	9	0	2	0	0	0	0	11	32	0	4	0	0	0	0	36
7:15	14	1	6	0	0	0	0	21	39	1	6	0	0	0	0	46
7:30	10	0	2	0	0	0	0	12	35	1	2	0	0	0	0	38
7:45	11	0	3	2.3	0	0	0	16.3	30	0	3	4.6	0	0	0.2	37.8
8:00	7	0	0	0	0	0	0	7	40	0	0	4.6	0	0.4	0.2	45.2
8:15	13	0	2	2.3	0	0	0	17.3	56	1	0	0	0	0.4	0	57.4
8:30	8	2	0	0	0	0	0	10	76	0	1	2.3	0	0	0.2	79.5
8:45	14	0	1	6.9	0	0	0	21.9	45	1	2	2.3	0	0	0	50.3
9:00	20	0	3	2.3	0	0	0.2	25.5	25	0	3	0	0	0	0	28
9:15	19	0	4	2.3	0	0	0	25.3	19	2	1	2.3	0	0	0	24.3
9:30	17	1	1	6.9	0	0	0	25.9	8	0	3	9.2	0	0	0	20.2
9:45	7	0	0	0	0	0	0	7	16	0	3	6.9	0	0	0	25.9
10:00	15	0	3	0	0	0	0	18	14	1	1	0	0	0	0	16
10:15	7	0	2	0	0	0.4	0	9.4	11	0	3	0	0	0	0	14
10:30	11	0	1	2.3	0	0	0	14.3	11	0	7	2.3	0	0.4	0	20.7
10:45	5	0	1	2.3	0	0	0	8.3	7	0	1	4.6	0	0	0	12.6
11:00	9	0	7	4.6	0	0.4	0	21	23	0	1	6.9	0	0	0	30.9
11:15	5	1	2	2.3	0	0	0	10.3	7	0	3	4.6	0	0	0	14.6
11:30	8	0	1	2.3	0	0	0	11.3	13	0	4	0	0	0	0	17
11:45	14	0	0	0	0	0	0	14	17	0	1	0	0	0	0	18
12:00	16	0	2	0	0	0	0	18	12	0	4	0	0	0	0	16
12:15	16	0	5	4.6	0	0	0.2	25.8	16	0	2	2.3	0	0	0	20.3
12:30	23	0	1	6.9	0	0	0	30.9	20	0	7	2.3	0	0	0	29.3
12:45	11	0	1	0	0	0	0	12	21	1	3	0	0	0	0	25
13:00	12	2	2	2.3	0	0	0	18.3	15	1	1	0	0	0	0	17
13:15	22	1	2	2.3	0	0	0	27.3	17	0	2	6.9	0	0.4	0	26.3
13:30	9	1	4	4.6	0	0	0	18.6	17	2	1	4.6	0	0	0	24.6
13:45	21	1	1	4.6	0	0	0	27.6	20	1	2	2.3	0	0	0	25.3
14:00	15	1	2	0	0	0.4	0	18.4	15	0	1	2.3	0	0	0	18.3
14:15	19	0	1	2.3	0	0	0	22.3	19	0	0	4.6	0	0	0	23.6
14:30	11	0	3	0	0	0	0	14	18	0	3	0	0	0	0	21
14:45	31	0	1	4.6	0	0	0	36.6	15	1	3	2.3	0	0	0	21.3
15:00	31	1	2	0	0	0	0	34	15	0	1	4.6	0	0	0	20.6
15:15	20	1	1	2.3	0	0	0	24.3	13	2	1	2.3	0	0	0	18.3
15:30	25	2	3	0	0	0	0	30	14	0	2	0	0	0	0	16
15:45	18	2	1	0	0	0.4	0	21.4	18	1	1	0	0	0	0	20
16:00	28	1	3	0	0	0	0	32	9	0	2	0	0	0	0	11
16:15	29	0	3	0	0	0	0	32	13	1	2	0	0	0	0	16
16:30	22	0	2	4.6	0	0	0	28.6	9	0	2	2.3	0	0	0.6	13.9
16:45	26	0	2	2.3	0	0	0	30.3	23	1	9	2.3	0	0	0	35.3
17:00	30	0	4	0	0	0	0.2	34.2	10	0	4	2.3	0	0	0	16.3
17:15	29	0	1	2.3	0	0	0	32.3	14	0	1	2.3	0	0	0	17.3
17:30	37	0	1	2.3	0	0	0	40.3	23	0	0	0	0	0	0	23
17:45	45	0	3	0	0	0	0	48	21	0	0	4.6	0	0	0	25.6
18:00	46	0	3	0	0	0	0	49	17	0	0	0	0	0	0	17
18:15	50	1	6	0	0	0	0	57	23	1	3	0	0	0	0	27
18:30	36	1	2	0	0	0.4	0	39.4	13	0	1	0	0	0	0.2	14.2
18:45	24	0	2	0	0	0	0	26	18	1	1	0	0	0	0.4	20.4
25:75	925	20	105	82.8	0	2	0.6	1135.4	982	20	108	98.9	0	1.6	1.8	1212.3



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	A to C - Owenstown(N) to Moygaddy							Veh. Total	A to B - Owenstown(N) to Owenstown(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	19	0	1	0	0	0	0	20	2	0	2	0	0	0	0	4
7:15	23	0	5	1	0	0	0	29	4	0	2	0	0	0	0	6
7:30	30	0	5	0	0	0	0	35	6	0	2	0	0	0	0	8
7:45	25	0	4	0	0	0	0	29	4	0	0	1	0	0	0	5
8:00	26	0	1	0	0	0	0	27	7	0	2	0	0	0	0	9
8:15	19	0	4	0	0	0	0	23	5	0	2	0	0	0	0	7
8:30	23	0	5	1	0	0	0	29	6	0	1	0	0	0	0	7
8:45	19	0	1	0	0	0	0	20	8	0	0	0	0	0	0	8
9:00	21	0	2	0	0	0	0	23	11	0	1	0	0	0	0	12
9:15	36	0	1	0	0	0	0	37	12	0	0	1	0	0	0	13
9:30	30	2	1	1	1	0	0	35	7	2	0	0	0	0	0	9
9:45	20	0	0	1	0	0	0	21	5	0	0	0	0	0	0	5
10:00	15	0	2	1	2	0	0	20	2	0	1	0	0	0	0	3
10:15	8	0	1	0	0	0	0	9	4	0	1	1	0	0	0	6
10:30	5	0	0	1	0	0	0	6	4	0	1	0	0	0	0	5
10:45	12	0	1	0	0	0	0	13	1	0	0	0	0	0	0	1
11:00	11	0	3	0	0	0	0	14	5	0	3	1	0	0	0	9
11:15	11	0	0	0	0	0	0	11	3	0	2	0	0	0	0	5
11:30	5	0	1	0	0	0	0	6	9	0	1	0	0	0	0	10
11:45	13	1	0	1	0	0	0	15	7	0	1	0	0	0	0	8
12:00	9	0	1	0	0	0	0	10	4	0	0	0	0	0	0	4
12:15	9	0	0	1	0	0	0	10	1	0	1	0	0	0	0	2
12:30	10	0	1	0	0	0	0	11	4	0	0	0	0	0	0	4
12:45	10	0	1	0	0	0	0	11	1	0	0	0	0	0	0	1
13:00	10	0	1	0	0	0	0	11	3	0	0	0	0	0	0	3
13:15	4	0	0	0	0	0	0	4	5	0	0	0	0	0	0	5
13:30	7	0	1	0	0	0	0	8	3	0	2	0	0	0	0	5
13:45	10	0	2	0	0	0	0	12	1	0	2	0	0	0	0	3
14:00	16	0	1	0	0	0	0	17	8	0	0	0	0	0	0	8
14:15	7	0	0	0	0	0	0	7	3	0	0	0	0	0	1	4
14:30	7	0	1	0	0	0	0	8	2	0	1	0	0	0	0	3
14:45	6	0	0	0	0	0	0	6	2	0	0	0	0	0	0	2
15:00	18	0	1	0	0	0	0	19	13	0	0	0	0	0	0	13
15:15	26	0	0	0	0	0	0	26	11	2	1	0	0	0	0	14
15:30	13	1	1	1	0	0	0	16	6	0	0	0	0	0	0	6
15:45	15	0	1	0	2	0	0	18	8	0	0	0	0	0	0	8
16:00	18	0	3	0	0	0	0	21	5	0	1	0	0	0	0	6
16:15	20	0	3	0	0	0	0	23	4	0	0	1	0	0	0	5
16:30	17	0	2	0	0	0	0	19	1	0	1	1	0	0	0	3
16:45	10	0	2	0	0	0	0	12	8	0	2	0	0	0	0	10
17:00	7	0	1	0	0	0	0	8	6	0	1	0	0	0	0	7
17:15	10	0	1	0	0	0	0	11	5	0	1	0	0	0	0	6
17:30	13	0	1	0	0	0	0	14	8	0	0	0	0	0	0	8
17:45	5	0	1	0	0	0	0	6	7	0	0	0	0	0	0	7
18:00	10	0	2	0	0	0	0	12	5	0	3	0	0	0	0	8
18:15	12	0	3	0	0	0	0	15	3	1	0	0	0	0	0	4
18:30	14	0	2	0	0	0	0	16	3	0	1	0	0	0	0	4
18:45	12	0	0	0	0	0	0	12	8	0	0	0	0	0	0	8
Total	696	4	71	9	5	0	0	785	250	5	39	6	0	0	1	301



Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	B to A - Owenstown(W) to Owenstown(N)							Veh. Total	B to C - Owenstown(W) to Moygaddy							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	2	0	0	0	0	0	0	2	74	1	17	2	0	0	0	94
7:15	3	0	1	0	0	0	0	4	88	0	14	2	0	0	0	104
7:30	2	0	1	0	0	0	0	3	107	0	8	1	0	0	0	116
7:45	2	0	1	0	0	0	0	3	84	0	10	2	0	0	1	97
8:00	5	0	1	0	0	0	0	6	81	2	8	0	0	0	0	91
8:15	7	0	0	0	0	0	0	7	104	0	3	3	0	0	1	111
8:30	4	0	1	0	0	0	0	5	100	0	7	1	1	0	0	109
8:45	10	0	0	0	0	0	0	10	78	2	4	4	0	1	0	89
9:00	12	0	0	0	0	0	0	12	43	0	3	3	1	0	0	50
9:15	9	2	1	0	0	0	0	12	49	1	6	1	0	0	0	57
9:30	4	0	0	0	0	0	0	4	39	0	4	2	0	0	0	45
9:45	4	0	0	0	0	0	0	4	27	0	2	3	0	0	0	32
10:00	2	0	1	0	0	0	0	3	23	0	4	2	0	0	0	29
10:15	4	0	0	0	0	0	0	4	9	0	2	3	0	0	0	14
10:30	3	0	1	0	0	0	0	4	14	1	1	0	0	0	0	16
10:45	3	0	1	0	0	0	0	4	28	0	2	3	0	0	0	33
11:00	1	0	1	0	0	0	0	2	29	0	5	1	0	0	1	36
11:15	7	0	1	0	0	0	0	8	23	0	4	1	0	0	1	29
11:30	3	0	0	0	0	0	0	3	16	0	2	1	0	0	0	19
11:45	7	0	0	0	0	0	0	7	26	1	2	0	0	0	0	29
12:00	3	0	1	0	0	0	0	4	22	0	6	2	0	0	0	30
12:15	2	0	0	0	0	0	1	3	17	0	6	1	0	0	0	24
12:30	3	0	0	0	0	0	0	3	24	0	2	0	0	0	0	26
12:45	3	0	0	0	0	0	1	4	21	0	2	2	0	0	0	25
13:00	4	0	0	0	0	0	0	4	19	0	3	2	0	0	0	24
13:15	6	0	0	0	0	0	0	6	22	0	1	3	0	0	0	26
13:30	5	0	0	0	0	0	0	5	31	0	4	4	0	0	0	39
13:45	9	0	1	0	0	0	0	10	16	0	3	0	0	3	0	22
14:00	3	0	0	1	0	0	0	4	22	2	2	4	0	0	1	31
14:15	2	0	0	0	0	0	0	2	46	0	0	0	0	0	0	46
14:30	3	0	1	0	0	0	0	4	31	0	1	2	0	0	0	34
14:45	14	1	0	1	0	0	0	16	29	1	2	0	1	0	0	33
15:00	12	0	1	0	0	0	0	13	30	0	7	0	0	0	0	37
15:15	1	0	0	0	0	0	0	1	27	1	4	2	0	0	0	34
15:30	1	0	1	0	0	0	0	2	20	0	3	1	0	0	0	24
15:45	3	0	0	0	0	0	0	3	21	0	3	0	0	0	0	24
16:00	13	0	0	0	0	0	0	13	22	0	2	0	0	0	1	25
16:15	6	0	0	0	1	0	0	7	43	0	1	0	0	0	2	46
16:30	7	0	1	0	0	0	0	8	37	0	6	0	0	0	1	44
16:45	5	0	1	0	0	0	0	6	29	0	4	1	0	0	0	34
17:00	9	0	1	0	0	0	0	10	46	0	3	0	0	0	0	49
17:15	7	0	2	0	0	0	0	9	56	0	2	1	0	0	0	59
17:30	6	0	2	0	0	0	0	8	34	0	4	0	0	0	0	38
17:45	5	0	0	0	0	0	0	5	37	0	5	0	0	0	0	42
18:00	9	1	0	0	0	0	0	10	30	2	0	0	0	0	0	32
18:15	4	0	0	0	0	0	0	4	22	1	4	0	0	0	0	27
18:30	3	0	1	0	0	0	1	5	32	0	3	1	0	0	0	36
18:45	3	0	1	0	0	0	0	4	27	1	2	0	2	0	1	33
25:75	245	4	25	2	1	0	3	280	1855	16	193	61	5	4	10	2144

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	C to B - Moygaddy to Owenstown(W)							Veh. Total	C to A - Moygaddy to Owenstown(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	9	0	5	1	0	0	0	15	7	0	0	0	0	0	0	7
7:15	10	0	4	2	0	0	0	16	4	0	1	1	0	0	0	6
7:30	18	0	3	0	0	0	1	22	7	0	1	0	0	0	0	8
7:45	26	0	3	1	0	0	0	30	8	0	3	0	1	0	0	12
8:00	25	0	3	2	0	0	0	30	4	0	1	0	0	0	0	5
8:15	42	0	5	3	0	0	0	50	4	0	0	0	0	0	0	4
8:30	45	1	5	1	1	0	0	53	13	0	1	0	0	0	0	14
8:45	50	0	7	2	1	0	0	60	10	0	3	0	0	0	0	13
9:00	44	0	3	6	0	0	0	53	23	0	1	0	0	0	0	24
9:15	32	0	4	1	0	0	0	37	22	2	1	0	0	0	0	25
9:30	27	1	0	0	0	0	1	29	4	1	0	1	1	0	0	7
9:45	15	0	1	4	0	0	0	20	4	0	1	0	1	0	0	6
10:00	14	0	1	2	0	0	0	17	8	0	0	0	0	0	0	8
10:15	13	0	3	0	0	0	0	16	5	0	3	0	0	0	0	8
10:30	12	0	2	3	0	0	1	18	11	0	2	1	0	0	0	14
10:45	24	1	2	2	0	0	1	30	8	0	0	0	0	0	0	8
11:00	13	0	3	1	0	0	0	17	7	0	2	1	0	0	0	10
11:15	20	1	0	1	0	0	0	22	7	0	3	0	0	0	0	10
11:30	29	0	4	3	0	0	0	36	6	1	1	0	0	0	0	8
11:45	34	0	2	3	0	0	0	39	13	0	2	0	0	0	1	16
12:00	36	0	3	2	0	0	0	41	10	0	0	0	0	0	0	10
12:15	29	0	3	2	0	0	0	34	17	0	1	0	0	0	0	18
12:30	22	0	2	2	0	0	2	28	7	0	3	0	0	0	0	10
12:45	21	1	6	2	0	0	1	31	4	0	2	0	0	0	0	6
13:00	24	0	3	1	0	0	0	28	12	0	3	0	0	0	0	15
13:15	22	1	5	2	0	0	0	30	13	0	0	1	0	0	0	14
13:30	31	2	6	1	0	1	0	41	8	0	2	0	0	0	0	10
13:45	33	1	0	1	0	0	0	35	15	0	2	0	0	0	0	17
14:00	32	0	8	0	0	0	0	40	9	0	3	0	0	0	0	12
14:15	33	0	2	3	0	0	0	38	10	0	2	0	0	0	1	13
14:30	35	0	0	1	0	0	0	36	14	1	1	0	0	0	0	16
14:45	64	0	2	4	0	0	0	70	20	1	0	0	1	0	0	22
15:00	43	0	3	2	0	0	0	48	12	2	1	1	0	0	0	16
15:15	38	2	4	1	0	0	0	45	18	0	2	0	2	0	0	22
15:30	56	4	2	1	0	0	1	64	14	0	1	0	0	0	0	15
15:45	51	1	7	0	1	0	0	60	17	0	1	0	0	0	0	18
16:00	65	0	11	3	0	0	0	79	17	0	3	0	0	0	0	20
16:15	66	0	7	3	0	1	0	77	16	0	4	0	0	0	0	20
16:30	83	1	8	2	0	1	0	95	25	0	5	0	0	0	0	30
16:45	84	0	11	0	1	0	0	96	20	0	2	0	0	0	0	22
17:00	85	1	12	2	0	0	1	101	30	0	6	1	0	0	0	37
17:15	90	0	9	1	0	0	0	100	19	0	3	0	0	0	0	22
17:30	96	0	8	1	0	0	0	105	31	0	4	0	0	0	0	35
17:45	93	2	12	0	0	0	1	108	26	0	1	0	0	0	0	27
18:00	95	0	12	2	0	0	0	109	23	0	5	0	0	0	1	29
18:15	97	0	12	1	0	0	0	110	24	0	2	0	0	0	0	26
18:30	56	1	3	1	0	0	1	62	16	0	2	0	0	0	0	18
18:45	58	0	11	1	0	0	0	70	15	0	5	0	0	1	0	21
25:75	2040	21	232	80	4	3	11	2391	637	8	92	7	6	1	3	754

10084 / Moygaddy
May 2019
Junction Turning Count



Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	To Arm A - Owenstown(N)							Veh. Total	From Arm A - Owenstown(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	9	0	0	0	0	0	0	9	21	0	3	0	0	0	0	24
7:15	7	0	2	1	0	0	0	10	27	0	7	1	0	0	0	35
7:30	9	0	2	0	0	0	0	11	36	0	7	0	0	0	0	43
7:45	10	0	4	0	1	0	0	15	29	0	4	1	0	0	0	34
8:00	9	0	2	0	0	0	0	11	33	0	3	0	0	0	0	36
8:15	11	0	0	0	0	0	0	11	24	0	6	0	0	0	0	30
8:30	17	0	2	0	0	0	0	19	29	0	6	1	0	0	0	36
8:45	20	0	3	0	0	0	0	23	27	0	1	0	0	0	0	28
9:00	35	0	1	0	0	0	0	36	32	0	3	0	0	0	0	35
9:15	31	4	2	0	0	0	0	37	48	0	1	1	0	0	0	50
9:30	8	1	0	1	1	0	0	11	37	4	1	1	1	0	0	44
9:45	8	0	1	0	1	0	0	10	25	0	0	1	0	0	0	26
10:00	10	0	1	0	0	0	0	11	17	0	3	1	2	0	0	23
10:15	9	0	3	0	0	0	0	12	12	0	2	1	0	0	0	15
10:30	14	0	3	1	0	0	0	18	9	0	1	1	0	0	0	11
10:45	11	0	1	0	0	0	0	12	13	0	1	0	0	0	0	14
11:00	8	0	3	1	0	0	0	12	16	0	6	1	0	0	0	23
11:15	14	0	4	0	0	0	0	18	14	0	2	0	0	0	0	16
11:30	9	1	1	0	0	0	0	11	14	0	2	0	0	0	0	16
11:45	20	0	2	0	0	0	1	23	20	1	1	1	0	0	0	23
12:00	13	0	1	0	0	0	0	14	13	0	1	0	0	0	0	14
12:15	19	0	1	0	0	0	1	21	10	0	1	1	0	0	0	12
12:30	10	0	3	0	0	0	0	13	14	0	1	0	0	0	0	15
12:45	7	0	2	0	0	0	1	10	11	0	1	0	0	0	0	12
13:00	16	0	3	0	0	0	0	19	13	0	1	0	0	0	0	14
13:15	19	0	0	1	0	0	0	20	9	0	0	0	0	0	0	9
13:30	13	0	2	0	0	0	0	15	10	0	3	0	0	0	0	13
13:45	24	0	3	0	0	0	0	27	11	0	4	0	0	0	0	15
14:00	12	0	3	1	0	0	0	16	24	0	1	0	0	0	0	25
14:15	12	0	2	0	0	0	1	15	10	0	0	0	0	0	1	11
14:30	17	1	2	0	0	0	0	20	9	0	2	0	0	0	0	11
14:45	34	2	0	1	1	0	0	38	8	0	0	0	0	0	0	8
15:00	24	2	2	1	0	0	0	29	31	0	1	0	0	0	0	32
15:15	19	0	2	0	2	0	0	23	37	2	1	0	0	0	0	40
15:30	15	0	2	0	0	0	0	17	19	1	1	1	0	0	0	22
15:45	20	0	1	0	0	0	0	21	23	0	1	0	2	0	0	26
16:00	30	0	3	0	0	0	0	33	23	0	4	0	0	0	0	27
16:15	22	0	4	0	1	0	0	27	24	0	3	1	0	0	0	28
16:30	32	0	6	0	0	0	0	38	18	0	3	1	0	0	0	22
16:45	25	0	3	0	0	0	0	28	18	0	4	0	0	0	0	22
17:00	39	0	7	1	0	0	0	47	13	0	2	0	0	0	0	15
17:15	26	0	5	0	0	0	0	31	15	0	2	0	0	0	0	17
17:30	37	0	6	0	0	0	0	43	21	0	1	0	0	0	0	22
17:45	31	0	1	0	0	0	0	32	12	0	1	0	0	0	0	13
18:00	32	1	5	0	0	0	1	39	15	0	5	0	0	0	0	20
18:15	28	0	2	0	0	0	0	30	15	1	3	0	0	0	0	19
18:30	19	0	3	0	0	0	1	23	17	0	3	0	0	0	0	20
18:45	18	0	6	0	0	1	0	25	20	0	0	0	0	0	0	20
25:75	882	12	117	9	7	1	6	1034	946	9	110	15	5	0	1	1086



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	To Arm B - Owenstown(W)							Veh. Total	From Arm B - Owenstown(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	11	0	7	1	0	0	0	19	76	1	17	2	0	0	0	96
7:15	14	0	6	2	0	0	0	22	91	0	15	2	0	0	0	108
7:30	24	0	5	0	0	0	1	30	109	0	9	1	0	0	0	119
7:45	30	0	3	2	0	0	0	35	86	0	11	2	0	0	1	100
8:00	32	0	5	2	0	0	0	39	86	2	9	0	0	0	0	97
8:15	47	0	7	3	0	0	0	57	111	0	3	3	0	0	1	118
8:30	51	1	6	1	1	0	0	60	104	0	8	1	1	0	0	114
8:45	58	0	7	2	1	0	0	68	88	2	4	4	0	1	0	99
9:00	55	0	4	6	0	0	0	65	55	0	3	3	1	0	0	62
9:15	44	0	4	2	0	0	0	50	58	3	7	1	0	0	0	69
9:30	34	3	0	0	0	0	1	38	43	0	4	2	0	0	0	49
9:45	20	0	1	4	0	0	0	25	31	0	2	3	0	0	0	36
10:00	16	0	2	2	0	0	0	20	25	0	5	2	0	0	0	32
10:15	17	0	4	1	0	0	0	22	13	0	2	3	0	0	0	18
10:30	16	0	3	3	0	0	1	23	17	1	2	0	0	0	0	20
10:45	25	1	2	2	0	0	1	31	31	0	3	3	0	0	0	37
11:00	18	0	6	2	0	0	0	26	30	0	6	1	0	0	1	38
11:15	23	1	2	1	0	0	0	27	30	0	5	1	0	0	1	37
11:30	38	0	5	3	0	0	0	46	19	0	2	1	0	0	0	22
11:45	41	0	3	3	0	0	0	47	33	1	2	0	0	0	0	36
12:00	40	0	3	2	0	0	0	45	25	0	7	2	0	0	0	34
12:15	30	0	4	2	0	0	0	36	19	0	6	1	0	0	1	27
12:30	26	0	2	2	0	0	2	32	27	0	2	0	0	0	0	29
12:45	22	1	6	2	0	0	1	32	24	0	2	2	0	0	1	29
13:00	27	0	3	1	0	0	0	31	23	0	3	2	0	0	0	28
13:15	27	1	5	2	0	0	0	35	28	0	1	3	0	0	0	32
13:30	34	2	8	1	0	1	0	46	36	0	4	4	0	0	0	44
13:45	34	1	2	1	0	0	0	38	25	0	4	0	0	3	0	32
14:00	40	0	8	0	0	0	0	48	25	2	2	5	0	0	1	35
14:15	36	0	2	3	0	0	1	42	48	0	0	0	0	0	0	48
14:30	37	0	1	1	0	0	0	39	34	0	2	2	0	0	0	38
14:45	66	0	2	4	0	0	0	72	43	2	2	1	1	0	0	49
15:00	56	0	3	2	0	0	0	61	42	0	8	0	0	0	0	50
15:15	49	4	5	1	0	0	0	59	28	1	4	2	0	0	0	35
15:30	62	4	2	1	0	0	1	70	21	0	4	1	0	0	0	26
15:45	59	1	7	0	1	0	0	68	24	0	3	0	0	0	0	27
16:00	70	0	12	3	0	0	0	85	35	0	2	0	0	0	1	38
16:15	70	0	7	4	0	1	0	82	49	0	1	0	1	0	2	53
16:30	84	1	9	3	0	1	0	98	44	0	7	0	0	0	1	52
16:45	92	0	13	0	1	0	0	106	34	0	5	1	0	0	0	40
17:00	91	1	13	2	0	0	1	108	55	0	4	0	0	0	0	59
17:15	95	0	10	1	0	0	0	106	63	0	4	1	0	0	0	68
17:30	104	0	8	1	0	0	0	113	40	0	6	0	0	0	0	46
17:45	100	2	12	0	0	0	1	115	42	0	5	0	0	0	0	47
18:00	100	0	15	2	0	0	0	117	39	3	0	0	0	0	0	42
18:15	100	1	12	1	0	0	0	114	26	1	4	0	0	0	0	31
18:30	59	1	4	1	0	0	1	66	35	0	4	1	0	0	1	41
18:45	66	0	11	1	0	0	0	78	30	1	3	0	2	0	1	37
25:75	2290	26	271	86	4	3	12	2692	2100	20	218	63	6	4	13	2424



Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	To Arm C - Moygaddy							Veh. Total	From Arm C - Moygaddy							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	93	1	18	2	0	0	0	114	16	0	5	1	0	0	0	22
7:15	111	0	19	3	0	0	0	133	14	0	5	3	0	0	0	22
7:30	137	0	13	1	0	0	0	151	25	0	4	0	0	0	1	30
7:45	109	0	14	2	0	0	1	126	34	0	6	1	1	0	0	42
8:00	107	2	9	0	0	0	0	118	29	0	4	2	0	0	0	35
8:15	123	0	7	3	0	0	1	134	46	0	5	3	0	0	0	54
8:30	123	0	12	2	1	0	0	138	58	1	6	1	1	0	0	67
8:45	97	2	5	4	0	1	0	109	60	0	10	2	1	0	0	73
9:00	64	0	5	3	1	0	0	73	67	0	4	6	0	0	0	77
9:15	85	1	7	1	0	0	0	94	54	2	5	1	0	0	0	62
9:30	69	2	5	3	1	0	0	80	31	2	0	1	1	0	1	36
9:45	47	0	2	4	0	0	0	53	19	0	2	4	1	0	0	26
10:00	38	0	6	3	2	0	0	49	22	0	1	2	0	0	0	25
10:15	17	0	3	3	0	0	0	23	18	0	6	0	0	0	0	24
10:30	19	1	1	1	0	0	0	22	23	0	4	4	0	0	1	32
10:45	40	0	3	3	0	0	0	46	32	1	2	2	0	0	1	38
11:00	40	0	8	1	0	0	1	50	20	0	5	2	0	0	0	27
11:15	34	0	4	1	0	0	1	40	27	1	3	1	0	0	0	32
11:30	21	0	3	1	0	0	0	25	35	1	5	3	0	0	0	44
11:45	39	2	2	1	0	0	0	44	47	0	4	3	0	0	1	55
12:00	31	0	7	2	0	0	0	40	46	0	3	2	0	0	0	51
12:15	26	0	6	2	0	0	0	34	46	0	4	2	0	0	0	52
12:30	34	0	3	0	0	0	0	37	29	0	5	2	0	0	2	38
12:45	31	0	3	2	0	0	0	36	25	1	8	2	0	0	1	37
13:00	29	0	4	2	0	0	0	35	36	0	6	1	0	0	0	43
13:15	26	0	1	3	0	0	0	30	35	1	5	3	0	0	0	44
13:30	38	0	5	4	0	0	0	47	39	2	8	1	0	1	0	51
13:45	26	0	5	0	0	3	0	34	48	1	2	1	0	0	0	52
14:00	38	2	3	4	0	0	1	48	41	0	11	0	0	0	0	52
14:15	53	0	0	0	0	0	0	53	43	0	4	3	0	0	1	51
14:30	38	0	2	2	0	0	0	42	49	1	1	1	0	0	0	52
14:45	35	1	2	0	1	0	0	39	84	1	2	4	1	0	0	92
15:00	48	0	8	0	0	0	0	56	55	2	4	3	0	0	0	64
15:15	53	1	4	2	0	0	0	60	56	2	6	1	2	0	0	67
15:30	33	1	4	2	0	0	0	40	70	4	3	1	0	0	1	79
15:45	36	0	4	0	2	0	0	42	68	1	8	0	1	0	0	78
16:00	40	0	5	0	0	0	1	46	82	0	14	3	0	0	0	99
16:15	63	0	4	0	0	0	2	69	82	0	11	3	0	1	0	97
16:30	54	0	8	0	0	0	1	63	108	1	13	2	0	1	0	125
16:45	39	0	6	1	0	0	0	46	104	0	13	0	1	0	0	118
17:00	53	0	4	0	0	0	0	57	115	1	18	3	0	0	1	138
17:15	66	0	3	1	0	0	0	70	109	0	12	1	0	0	0	122
17:30	47	0	5	0	0	0	0	52	127	0	12	1	0	0	0	140
17:45	42	0	6	0	0	0	0	48	119	2	13	0	0	0	1	135
18:00	40	2	2	0	0	0	0	44	118	0	17	2	0	0	1	138
18:15	34	1	7	0	0	0	0	42	121	0	14	1	0	0	0	136
18:30	46	0	5	1	0	0	0	52	72	1	5	1	0	0	1	80
18:45	39	1	2	0	2	0	1	45	73	0	16	1	0	1	0	91
25:75	2551	20	264	70	10	4	10	2929	2677	29	324	87	10	4	14	3145



Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	A to C - Owenstown(N) to Moygaddy							Veh. Total	A to B - Owenstown(N) to Owenstown(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	19	0	1	0	0	0	0	20	2	0	2	0	0	0	0	4
7:15	23	0	5	2.3	0	0	0	30.3	4	0	2	0	0	0	0	6
7:30	30	0	5	0	0	0	0	35	6	0	2	0	0	0	0	8
7:45	25	0	4	0	0	0	0	29	4	0	0	2.3	0	0	0	6.3
8:00	26	0	1	0	0	0	0	27	7	0	2	0	0	0	0	9
8:15	19	0	4	0	0	0	0	23	5	0	2	0	0	0	0	7
8:30	23	0	5	2.3	0	0	0	30.3	6	0	1	0	0	0	0	7
8:45	19	0	1	0	0	0	0	20	8	0	0	0	0	0	0	8
9:00	21	0	2	0	0	0	0	23	11	0	1	0	0	0	0	12
9:15	36	0	1	0	0	0	0	37	12	0	0	2.3	0	0	0	14.3
9:30	30	2	1	2.3	2	0	0	37.3	7	2	0	0	0	0	0	9
9:45	20	0	0	2.3	0	0	0	22.3	5	0	0	0	0	0	0	5
10:00	15	0	2	2.3	4	0	0	23.3	2	0	1	0	0	0	0	3
10:15	8	0	1	0	0	0	0	9	4	0	1	2.3	0	0	0	7.3
10:30	5	0	0	2.3	0	0	0	7.3	4	0	1	0	0	0	0	5
10:45	12	0	1	0	0	0	0	13	1	0	0	0	0	0	0	1
11:00	11	0	3	0	0	0	0	14	5	0	3	2.3	0	0	0	10.3
11:15	11	0	0	0	0	0	0	11	3	0	2	0	0	0	0	5
11:30	5	0	1	0	0	0	0	6	9	0	1	0	0	0	0	10
11:45	13	1	0	2.3	0	0	0	16.3	7	0	1	0	0	0	0	8
12:00	9	0	1	0	0	0	0	10	4	0	0	0	0	0	0	4
12:15	9	0	0	2.3	0	0	0	11.3	1	0	1	0	0	0	0	2
12:30	10	0	1	0	0	0	0	11	4	0	0	0	0	0	0	4
12:45	10	0	1	0	0	0	0	11	1	0	0	0	0	0	0	1
13:00	10	0	1	0	0	0	0	11	3	0	0	0	0	0	0	3
13:15	4	0	0	0	0	0	0	4	5	0	0	0	0	0	0	5
13:30	7	0	1	0	0	0	0	8	3	0	2	0	0	0	0	5
13:45	10	0	2	0	0	0	0	12	1	0	2	0	0	0	0	3
14:00	16	0	1	0	0	0	0	17	8	0	0	0	0	0	0	8
14:15	7	0	0	0	0	0	0	7	3	0	0	0	0	0	0.2	3.2
14:30	7	0	1	0	0	0	0	8	2	0	1	0	0	0	0	3
14:45	6	0	0	0	0	0	0	6	2	0	0	0	0	0	0	2
15:00	18	0	1	0	0	0	0	19	13	0	0	0	0	0	0	13
15:15	26	0	0	0	0	0	0	26	11	2	1	0	0	0	0	14
15:30	13	1	1	2.3	0	0	0	17.3	6	0	0	0	0	0	0	6
15:45	15	0	1	0	4	0	0	20	8	0	0	0	0	0	0	8
16:00	18	0	3	0	0	0	0	21	5	0	1	0	0	0	0	6
16:15	20	0	3	0	0	0	0	23	4	0	0	2.3	0	0	0	6.3
16:30	17	0	2	0	0	0	0	19	1	0	1	2.3	0	0	0	4.3
16:45	10	0	2	0	0	0	0	12	8	0	2	0	0	0	0	10
17:00	7	0	1	0	0	0	0	8	6	0	1	0	0	0	0	7
17:15	10	0	1	0	0	0	0	11	5	0	1	0	0	0	0	6
17:30	13	0	1	0	0	0	0	14	8	0	0	0	0	0	0	8
17:45	5	0	1	0	0	0	0	6	7	0	0	0	0	0	0	7
18:00	10	0	2	0	0	0	0	12	5	0	3	0	0	0	0	8
18:15	12	0	3	0	0	0	0	15	3	1	0	0	0	0	0	4
18:30	14	0	2	0	0	0	0	16	3	0	1	0	0	0	0	4
18:45	12	0	0	0	0	0	0	12	8	0	0	0	0	0	0	8
Total	696	4	71	20.7	10	0	0	801.7	250	5	39	13.8	0	0	0.2	308

CAR TAXI LGV HGV PSV M/C P/C
1 1 1 2.3 2 0.4 0.2



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	B to A - Owenstown(W) to Owenstown(N)								Veh. Total	B to C - Owenstown(W) to Moygaddy								Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C			CAR	Taxi	LGV	HGV	PSV	M/C	P/C		
7:00	2	0	0	0	0	0	0	0	2	74	1	17	4.6	0	0	0	96.6	
7:15	3	0	1	0	0	0	0	0	4	88	0	14	4.6	0	0	0	106.6	
7:30	2	0	1	0	0	0	0	0	3	107	0	8	2.3	0	0	0	117.3	
7:45	2	0	1	0	0	0	0	0	3	84	0	10	4.6	0	0	0.2	98.8	
8:00	5	0	1	0	0	0	0	0	6	81	2	8	0	0	0	0	91	
8:15	7	0	0	0	0	0	0	0	7	104	0	3	6.9	0	0	0.2	114.1	
8:30	4	0	1	0	0	0	0	0	5	100	0	7	2.3	2	0	0	111.3	
8:45	10	0	0	0	0	0	0	0	10	78	2	4	9.2	0	0.4	0	93.6	
9:00	12	0	0	0	0	0	0	0	12	43	0	3	6.9	2	0	0	54.9	
9:15	9	2	1	0	0	0	0	0	12	49	1	6	2.3	0	0	0	58.3	
9:30	4	0	0	0	0	0	0	0	4	39	0	4	4.6	0	0	0	47.6	
9:45	4	0	0	0	0	0	0	0	4	27	0	2	6.9	0	0	0	35.9	
10:00	2	0	1	0	0	0	0	0	3	23	0	4	4.6	0	0	0	31.6	
10:15	4	0	0	0	0	0	0	0	4	9	0	2	6.9	0	0	0	17.9	
10:30	3	0	1	0	0	0	0	0	4	14	1	1	0	0	0	0	16	
10:45	3	0	1	0	0	0	0	0	4	28	0	2	6.9	0	0	0	36.9	
11:00	1	0	1	0	0	0	0	0	2	29	0	5	2.3	0	0	0.2	36.5	
11:15	7	0	1	0	0	0	0	0	8	23	0	4	2.3	0	0	0.2	29.5	
11:30	3	0	0	0	0	0	0	0	3	16	0	2	2.3	0	0	0	20.3	
11:45	7	0	0	0	0	0	0	0	7	26	1	2	0	0	0	0	29	
12:00	3	0	1	0	0	0	0	0	4	22	0	6	4.6	0	0	0	32.6	
12:15	2	0	0	0	0	0	0.2	0	2.2	17	0	6	2.3	0	0	0	25.3	
12:30	3	0	0	0	0	0	0	0	3	24	0	2	0	0	0	0	26	
12:45	3	0	0	0	0	0	0.2	0	3.2	21	0	2	4.6	0	0	0	27.6	
13:00	4	0	0	0	0	0	0	0	4	19	0	3	4.6	0	0	0	26.6	
13:15	6	0	0	0	0	0	0	0	6	22	0	1	6.9	0	0	0	29.9	
13:30	5	0	0	0	0	0	0	0	5	31	0	4	9.2	0	0	0	44.2	
13:45	9	0	1	0	0	0	0	0	10	16	0	3	0	0	1.2	0	20.2	
14:00	3	0	0	2.3	0	0	0	0	5.3	22	2	2	9.2	0	0	0.2	35.4	
14:15	2	0	0	0	0	0	0	0	2	46	0	0	0	0	0	0	46	
14:30	3	0	1	0	0	0	0	0	4	31	0	1	4.6	0	0	0	36.6	
14:45	14	1	0	2.3	0	0	0	0	17.3	29	1	2	0	2	0	0	34	
15:00	12	0	1	0	0	0	0	0	13	30	0	7	0	0	0	0	37	
15:15	1	0	0	0	0	0	0	0	1	27	1	4	4.6	0	0	0	36.6	
15:30	1	0	1	0	0	0	0	0	2	20	0	3	2.3	0	0	0	25.3	
15:45	3	0	0	0	0	0	0	0	3	21	0	3	0	0	0	0	24	
16:00	13	0	0	0	0	0	0	0	13	22	0	2	0	0	0	0.2	24.2	
16:15	6	0	0	0	2	0	0	0	8	43	0	1	0	0	0	0.4	44.4	
16:30	7	0	1	0	0	0	0	0	8	37	0	6	0	0	0	0.2	43.2	
16:45	5	0	1	0	0	0	0	0	6	29	0	4	2.3	0	0	0	35.3	
17:00	9	0	1	0	0	0	0	0	10	46	0	3	0	0	0	0	49	
17:15	7	0	2	0	0	0	0	0	9	56	0	2	2.3	0	0	0	60.3	
17:30	6	0	2	0	0	0	0	0	8	34	0	4	0	0	0	0	38	
17:45	5	0	0	0	0	0	0	0	5	37	0	5	0	0	0	0	42	
18:00	9	1	0	0	0	0	0	0	10	30	2	0	0	0	0	0	32	
18:15	4	0	0	0	0	0	0	0	4	22	1	4	0	0	0	0	27	
18:30	3	0	1	0	0	0	0.2	0	4.2	32	0	3	2.3	0	0	0	37.3	
18:45	3	0	1	0	0	0	0	0	4	27	1	2	0	4	0	0.2	34.2	
25:75	245	4	25	4.6	2	0	0.6		281.2	1855	16	193	140.3	10	1.6	2	2217.9	



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	C to B - Moygaddy to Owenstown(W)								Veh. Total	C to A - Moygaddy to Owenstown(N)								Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C			CAR	Taxi	LGV	HGV	PSV	M/C	P/C		
7:00	9	0	5	2.3	0	0	0	0	16.3	7	0	0	0	0	0	0	7	
7:15	10	0	4	4.6	0	0	0	0	18.6	4	0	1	2.3	0	0	0	7.3	
7:30	18	0	3	0	0	0	0.2	0	21.2	7	0	1	0	0	0	0	8	
7:45	26	0	3	2.3	0	0	0	0	31.3	8	0	3	0	2	0	0	13	
8:00	25	0	3	4.6	0	0	0	0	32.6	4	0	1	0	0	0	0	5	
8:15	42	0	5	6.9	0	0	0	0	53.9	4	0	0	0	0	0	0	4	
8:30	45	1	5	2.3	2	0	0	0	55.3	13	0	1	0	0	0	0	14	
8:45	50	0	7	4.6	2	0	0	0	63.6	10	0	3	0	0	0	0	13	
9:00	44	0	3	13.8	0	0	0	0	60.8	23	0	1	0	0	0	0	24	
9:15	32	0	4	2.3	0	0	0	0	38.3	22	2	1	0	0	0	0	25	
9:30	27	1	0	0	0	0	0.2	0	28.2	4	1	0	2.3	2	0	0	9.3	
9:45	15	0	1	9.2	0	0	0	0	25.2	4	0	1	0	2	0	0	7	
10:00	14	0	1	4.6	0	0	0	0	19.6	8	0	0	0	0	0	0	8	
10:15	13	0	3	0	0	0	0	0	16	5	0	3	0	0	0	0	8	
10:30	12	0	2	6.9	0	0	0.2	0	21.1	11	0	2	2.3	0	0	0	15.3	
10:45	24	1	2	4.6	0	0	0.2	0	31.8	8	0	0	0	0	0	0	8	
11:00	13	0	3	2.3	0	0	0	0	18.3	7	0	2	2.3	0	0	0	11.3	
11:15	20	1	0	2.3	0	0	0	0	23.3	7	0	3	0	0	0	0	10	
11:30	29	0	4	6.9	0	0	0	0	39.9	6	1	1	0	0	0	0	8	
11:45	34	0	2	6.9	0	0	0	0	42.9	13	0	2	0	0	0	0.2	15.2	
12:00	36	0	3	4.6	0	0	0	0	43.6	10	0	0	0	0	0	0	10	
12:15	29	0	3	4.6	0	0	0	0	36.6	17	0	1	0	0	0	0	18	
12:30	22	0	2	4.6	0	0	0.4	0	29	7	0	3	0	0	0	0	10	
12:45	21	1	6	4.6	0	0	0.2	0	32.8	4	0	2	0	0	0	0	6	
13:00	24	0	3	2.3	0	0	0	0	29.3	12	0	3	0	0	0	0	15	
13:15	22	1	5	4.6	0	0	0	0	32.6	13	0	0	2.3	0	0	0	15.3	
13:30	31	2	6	2.3	0	0.4	0	0	41.7	8	0	2	0	0	0	0	10	
13:45	33	1	0	2.3	0	0	0	0	36.3	15	0	2	0	0	0	0	17	
14:00	32	0	8	0	0	0	0	0	40	9	0	3	0	0	0	0	12	
14:15	33	0	2	6.9	0	0	0	0	41.9	10	0	2	0	0	0	0.2	12.2	
14:30	35	0	0	2.3	0	0	0	0	37.3	14	1	1	0	0	0	0	16	
14:45	64	0	2	9.2	0	0	0	0	75.2	20	1	0	0	2	0	0	23	
15:00	43	0	3	4.6	0	0	0	0	50.6	12	2	1	2.3	0	0	0	17.3	
15:15	38	2	4	2.3	0	0	0	0	46.3	18	0	2	0	4	0	0	24	
15:30	56	4	2	2.3	0	0	0.2	0	64.5	14	0	1	0	0	0	0	15	
15:45	51	1	7	0	2	0	0	0	61	17	0	1	0	0	0	0	18	
16:00	65	0	11	6.9	0	0	0	0	82.9	17	0	3	0	0	0	0	20	
16:15	66	0	7	6.9	0	0.4	0	0	80.3	16	0	4	0	0	0	0	20	
16:30	83	1	8	4.6	0	0.4	0	0	97	25	0	5	0	0	0	0	30	
16:45	84	0	11	0	2	0	0	0	97	20	0	2	0	0	0	0	22	
17:00	85	1	12	4.6	0	0	0.2	0	102.8	30	0	6	2.3	0	0	0	38.3	
17:15	90	0	9	2.3	0	0	0	0	101.3	19	0	3	0	0	0	0	22	
17:30	96	0	8	2.3	0	0	0	0	106.3	31	0	4	0	0	0	0	35	
17:45	93	2	12	0	0	0	0.2	0	107.2	26	0	1	0	0	0	0	27	
18:00																		



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	To Arm A - Owenstown(N)							Veh. Total	From Arm A - Owenstown(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	9	0	0	0	0	0	0	9	21	0	3	0	0	0	0	24
7:15	7	0	2	2.3	0	0	0	11.3	27	0	7	2.3	0	0	0	36.3
7:30	9	0	2	0	0	0	0	11	36	0	7	0	0	0	43	
7:45	10	0	4	0	2	0	0	16	29	0	4	2.3	0	0	35.3	
8:00	9	0	2	0	0	0	0	11	33	0	3	0	0	0	36	
8:15	11	0	0	0	0	0	0	11	24	0	6	0	0	0	30	
8:30	17	0	2	0	0	0	0	19	29	0	6	2.3	0	0	37.3	
8:45	20	0	3	0	0	0	0	23	27	0	1	0	0	0	28	
9:00	35	0	1	0	0	0	0	36	32	0	3	0	0	0	35	
9:15	31	4	2	0	0	0	0	37	48	0	1	2.3	0	0	51.3	
9:30	8	1	0	2.3	2	0	0	13.3	37	4	1	2.3	2	0	46.3	
9:45	8	0	1	0	2	0	0	11	25	0	0	2.3	0	0	27.3	
10:00	10	0	1	0	0	0	0	11	17	0	3	2.3	4	0	26.3	
10:15	9	0	3	0	0	0	0	12	12	0	2	2.3	0	0	16.3	
10:30	14	0	3	2.3	0	0	0	19.3	9	0	1	2.3	0	0	12.3	
10:45	11	0	1	0	0	0	0	12	13	0	1	0	0	0	14	
11:00	8	0	3	2.3	0	0	0	13.3	16	0	6	2.3	0	0	24.3	
11:15	14	0	4	0	0	0	0	18	14	0	2	0	0	0	16	
11:30	9	1	1	0	0	0	0	11	14	0	2	0	0	0	16	
11:45	20	0	2	0	0	0	0.2	22.2	20	1	1	2.3	0	0	24.3	
12:00	13	0	1	0	0	0	0	14	13	0	1	0	0	0	14	
12:15	19	0	1	0	0	0	0.2	20.2	10	0	1	2.3	0	0	13.3	
12:30	10	0	3	0	0	0	0	13	14	0	1	0	0	0	15	
12:45	7	0	2	0	0	0	0.2	9.2	11	0	1	0	0	0	12	
13:00	16	0	3	0	0	0	0	19	13	0	1	0	0	0	14	
13:15	19	0	0	2.3	0	0	0	21.3	9	0	0	0	0	0	9	
13:30	13	0	2	0	0	0	0	15	10	0	3	0	0	0	13	
13:45	24	0	3	0	0	0	0	27	11	0	4	0	0	0	15	
14:00	12	0	3	2.3	0	0	0	17.3	24	0	1	0	0	0	25	
14:15	12	0	2	0	0	0	0.2	14.2	10	0	0	0	0	0.2	10.2	
14:30	17	1	2	0	0	0	0	20	9	0	2	0	0	0	11	
14:45	34	2	0	2.3	2	0	0	40.3	8	0	0	0	0	0	8	
15:00	24	2	2	2.3	0	0	0	30.3	31	0	1	0	0	0	32	
15:15	19	0	2	0	4	0	0	25	37	2	1	0	0	0	40	
15:30	15	0	2	0	0	0	0	17	19	1	1	2.3	0	0	23.3	
15:45	20	0	1	0	0	0	0	21	23	0	1	0	4	0	28	
16:00	30	0	3	0	0	0	0	33	23	0	4	0	0	0	27	
16:15	22	0	4	0	2	0	0	28	24	0	3	2.3	0	0	29.3	
16:30	32	0	6	0	0	0	0	38	18	0	3	2.3	0	0	23.3	
16:45	25	0	3	0	0	0	0	28	18	0	4	0	0	0	22	
17:00	39	0	7	2.3	0	0	0	48.3	13	0	2	0	0	0	15	
17:15	26	0	5	0	0	0	0	31	15	0	2	0	0	0	17	
17:30	37	0	6	0	0	0	0	43	21	0	1	0	0	0	22	
17:45	31	0	1	0	0	0	0	32	12	0	1	0	0	0	13	
18:00	32	1	5	0	0	0	0.2	38.2	15	0	5	0	0	0	20	
18:15	28	0	2	0	0	0	0	30	15	1	3	0	0	0	19	
18:30	19	0	3	0	0	0	0.2	22.2	17	0	3	0	0	0	20	
18:45	18	0	6	0	0	0.4	0	24.4	20	0	0	0	0	0	20	
25:75	882	12	117	20.7	14	0.4	1.2	1047.3	946	9	110	34.5	10	0	0.2	1109.7



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	To Arm B - Owenstown(W)							Veh. Total	From Arm B - Owenstown(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	11	0	7	2.3	0	0	0	20.3	76	1	17	4.6	0	0	0	98.6
7:15	14	0	6	4.6	0	0	0	24.6	91	0	15	4.6	0	0	0	110.6
7:30	24	0	5	0	0	0	0.2	29.2	109	0	9	2.3	0	0	0	120.3
7:45	30	0	3	4.6	0	0	0	37.6	86	0	11	4.6	0	0	0.2	101.8
8:00	32	0	5	4.6	0	0	0	41.6	86	2	9	0	0	0	0	97
8:15	47	0	7	6.9	0	0	0	60.9	111	0	3	6.9	0	0	0.2	121.1
8:30	51	1	6	2.3	2	0	0	62.3	104	0	8	2.3	2	0	0	116.3
8:45	58	0	7	4.6	2	0	0	71.6	88	2	4	9.2	0	0.4	0	103.6
9:00	55	0	4	13.8	0	0	0	72.8	55	0	3	6.9	2	0	0	66.9
9:15	44	0	4	4.6	0	0	0	52.6	58	3	7	2.3	0	0	0	70.3
9:30	34	3	0	0	0	0	0.2	37.2	43	0	4	4.6	0	0	0	51.6
9:45	20	0	1	9.2	0	0	0	30.2	31	0	2	6.9	0	0	0	39.9
10:00	16	0	2	4.6	0	0	0	22.6	25	0	5	4.6	0	0	0	34.6
10:15	17	0	4	2.3	0	0	0	23.3	13	0	2	6.9	0	0	0	21.9
10:30	16	0	3	6.9	0	0	0.2	26.1	17	1	2	0	0	0	0	20
10:45	25	1	2	4.6	0	0	0.2	32.8	31	0	3	6.9	0	0	0	40.9
11:00	18	0	6	4.6	0	0	0	28.6	30	0	6	2.3	0	0	0.2	38.5
11:15	23	1	2	2.3	0	0	0	28.3	30	0	5	2.3	0	0	0.2	37.5
11:30	38	0	5	6.9	0	0	0	49.9	19	0	2	2.3	0	0	0	23.3
11:45	41	0	3	6.9	0	0	0	50.9	33	1	2	0	0	0	0	36
12:00	40	0	3	4.6	0	0	0	47.6	25	0	7	4.6	0	0	0	36.6
12:15	30	0	4	4.6	0	0	0	38.6	19	0	6	2.3	0	0	0.2	27.5
12:30	26	0	2	4.6	0	0	0.4	33	27	0	2	0	0	0	0	29
12:45	22	1	6	4.6	0	0	0.2	33.8	24	0	2	4.6	0	0	0.2	30.8
13:00	27	0	3	2.3	0	0	0	32.3	23	0	3	4.6	0	0	0	30.6
13:15	27	1	5	4.6	0	0	0	37.6	28	0	1	6.9	0	0	0	35.9
13:30	34	2	8	2.3	0	0.4	0	46.7	36	0	4	9.2	0	0	0	49.2
13:45	34	1	2	2.3	0	0	0	39.3	25	0	4	0	0	1.2	0	30.2
14:00	40	0	8	0	0	0	0	48	25	2	2	11.5	0	0	0.2	40.7
14:15	36	0	2	6.9	0	0	0.2	45.1	48	0	0	0	0	0	0	48
14:30	37	0	1	2.3	0	0	0	40.3	34	0	2	4.6	0	0	0	40.6
14:45	66	0	2	9.2	0	0	0	77.2	43	2	2	2.3	2	0	0	51.3
15:00	56	0	3	4.6	0	0	0	63.6	42	0	8	0	0	0	0	50
15:15	49	4	5	2.3	0	0	0	60.3	28	1	4	4.6	0	0	0	37.6
15:30	62	4	2	2.3	0	0	0.2	70.5	21	0	4	2.3	0	0	0	27.3
15:45	59	1	7	0	2	0	0	69	24	0	3	0	0	0	0	27
16:00	70	0	12	6.9	0	0	0	88.9	35	0	2	0	0	0	0.2	37.2
16:15	70	0	7	9.2	0	0.4	0	86.6	49	0	1	0	2	0	0.4	52.4
16:30	84	1	9	6.9	0	0.4	0	101.3	44	0	7	0	0	0	0.2	51.2
16:45	92	0	13	0	2	0	0	107	34	0	5	2.3	0	0	0	41.3
17:00	91	1	13	4.6	0	0	0.2	109.8	55	0	4	0	0	0	0	59
17:15	95	0	10	2.3	0	0	0	107.3	63	0	4	2.3	0	0	0	69.3
17:30	104	0	8	2.3	0	0	0	114.3	40	0	6	0	0	0	0	46
17:45	100	2	12	0	0	0	0.2	114.2	42	0	5	0	0	0	0	47
18:00	100	0	15	4.6	0	0	0	119.6	39	3	0	0	0	0	0	42
18:15	100	1	12	2.3	0	0	0	115.3	26	1	4	0	0	0	0	31
18:30	59	1	4	2.3	0	0	0.2	66.5	35	0	4	2.3	0	0	0.2	41.5
18:45	66	0	11	2.3	0	0	0	79.3	30	1	3	0	4	0	0.2	38.2
25:75	2290	26	271	197.8	8	1.2	2.4	2796.4	2100	20	218	144.9	12	1.6	2.6	2499.1



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 3
Location Owenstown(N) / Owenstown(W) / Moygaddy
Date Tuesday 28 May 2019

Time	To Arm C - Moygaddy							Veh. Total	From Arm C - Moygaddy							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	93	1	18	4.6	0	0	116.6	16	0	5	2.3	0	0	23.3		
7:15	111	0	19	6.9	0	0	136.9	14	0	5	6.9	0	0	25.9		
7:30	137	0	13	2.3	0	0	152.3	25	0	4	0	0	0.2	29.2		
7:45	109	0	14	4.6	0	0.2	127.8	34	0	6	2.3	2	0	44.3		
8:00	107	2	9	0	0	0	118	29	0	4	4.6	0	0	37.6		
8:15	123	0	7	6.9	0	0.2	137.1	46	0	5	6.9	0	0	57.9		
8:30	123	0	12	4.6	2	0	141.6	58	1	6	2.3	2	0	69.3		
8:45	97	2	5	9.2	0	0.4	113.6	60	0	10	4.6	2	0	76.6		
9:00	64	0	5	6.9	2	0	77.9	67	0	4	13.8	0	0	84.8		
9:15	85	1	7	2.3	0	0	95.3	54	2	5	2.3	0	0	63.3		
9:30	69	2	5	6.9	2	0	84.9	31	2	0	2.3	2	0.2	37.5		
9:45	47	0	2	9.2	0	0	58.2	19	0	2	9.2	2	0	32.2		
10:00	38	0	6	6.9	4	0	54.9	22	0	1	4.6	0	0	27.6		
10:15	17	0	3	6.9	0	0	26.9	18	0	6	0	0	0	24		
10:30	19	1	1	2.3	0	0	23.3	23	0	4	9.2	0	0.2	36.4		
10:45	40	0	3	6.9	0	0	49.9	32	1	2	4.6	0	0.2	39.8		
11:00	40	0	8	2.3	0	0.2	50.5	20	0	5	4.6	0	0	29.6		
11:15	34	0	4	2.3	0	0.2	40.5	27	1	3	2.3	0	0	33.3		
11:30	21	0	3	2.3	0	0	26.3	35	1	5	6.9	0	0	47.9		
11:45	39	2	2	2.3	0	0	45.3	47	0	4	6.9	0	0.2	58.1		
12:00	31	0	7	4.6	0	0	42.6	46	0	3	4.6	0	0	53.6		
12:15	26	0	6	4.6	0	0	36.6	46	0	4	4.6	0	0	54.6		
12:30	34	0	3	0	0	0	37	29	0	5	4.6	0	0.4	39		
12:45	31	0	3	4.6	0	0	38.6	25	1	8	4.6	0	0.2	38.8		
13:00	29	0	4	4.6	0	0	37.6	36	0	6	2.3	0	0	44.3		
13:15	26	0	1	6.9	0	0	33.9	35	1	5	6.9	0	0	47.9		
13:30	38	0	5	9.2	0	0	52.2	39	2	8	2.3	0	0.4	51.7		
13:45	26	0	5	0	0	1.2	32.2	48	1	2	2.3	0	0	53.3		
14:00	38	2	3	9.2	0	0.2	52.4	41	0	11	0	0	0	52		
14:15	53	0	0	0	0	0	53	43	0	4	6.9	0	0.2	54.1		
14:30	38	0	2	4.6	0	0	44.6	49	1	1	2.3	0	0	53.3		
14:45	35	1	2	0	2	0	40	84	1	2	9.2	2	0	98.2		
15:00	48	0	8	0	0	0	56	55	2	4	6.9	0	0	67.9		
15:15	53	1	4	4.6	0	0	62.6	56	2	6	2.3	4	0	70.3		
15:30	33	1	4	4.6	0	0	42.6	70	4	3	2.3	0	0.2	79.5		
15:45	36	0	4	0	4	0	44	68	1	8	0	2	0	79		
16:00	40	0	5	0	0	0.2	45.2	82	0	14	6.9	0	0	102.9		
16:15	63	0	4	0	0	0.4	67.4	82	0	11	6.9	0	0.4	100.3		
16:30	54	0	8	0	0	0.2	62.2	108	1	13	4.6	0	0.4	127		
16:45	39	0	6	2.3	0	0	47.3	104	0	13	0	2	0	119		
17:00	53	0	4	0	0	0	57	115	1	18	6.9	0	0.2	141.1		
17:15	66	0	3	2.3	0	0	71.3	109	0	12	2.3	0	0	123.3		
17:30	47	0	5	0	0	0	52	127	0	12	2.3	0	0	141.3		
17:45	42	0	6	0	0	0	48	119	2	13	0	0	0.2	134.2		
18:00	40	2	2	0	0	0	44	118	0	17	4.6	0	0.2	139.8		
18:15	34	1	7	0	0	0	42	121	0	14	2.3	0	0	137.3		
18:30	46	0	5	2.3	0	0	53.3	72	1	5	2.3	0	0.2	80.5		
18:45	39	1	2	0	4	0.2	46.2	73	0	16	2.3	0	0.4	91.7		
25:75	2551	20	264	161	20	1.6	3019.6	2677	29	324	200.1	20	1.6	2.8	3254.5	



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	A to C - R157(N) to R157(S)							Veh. Total	A to B - R157(N) to Moygaddy							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	23	0	6	1	0	0	30	6	0	4	0	0	0	10		
7:15	28	0	13	3	0	0	44	10	0	3	2	0	0	15		
7:30	33	0	9	2	0	0	44	14	0	2	0	0	0	17		
7:45	30	1	4	1	0	0	36	23	0	1	0	0	0	24		
8:00	37	0	5	3	0	0	45	17	0	2	3	0	0	22		
8:15	26	1	7	2	0	0	36	35	0	5	1	0	0	41		
8:30	35	0	4	3	0	0	42	35	0	1	0	1	0	37		
8:45	32	1	3	4	0	0	40	27	0	5	1	1	0	34		
9:00	22	0	2	2	1	0	27	29	0	1	2	0	0	32		
9:15	18	0	0	1	0	0	19	42	0	1	0	0	0	43		
9:30	19	0	4	7	3	0	33	21	1	1	1	0	0	25		
9:45	27	0	3	4	0	0	34	11	0	0	4	0	0	15		
10:00	11	0	3	2	0	0	16	11	0	3	2	0	0	16		
10:15	29	0	4	4	0	0	37	12	1	0	0	0	0	13		
10:30	14	0	4	1	0	0	19	9	0	1	1	0	0	11		
10:45	29	0	2	1	0	0	32	15	1	3	2	0	0	21		
11:00	25	0	1	2	0	0	28	10	0	2	2	0	0	14		
11:15	28	0	3	4	0	0	35	11	0	0	1	0	0	12		
11:30	24	0	2	2	1	0	29	19	0	3	2	0	0	24		
11:45	20	1	5	0	0	0	26	23	0	3	2	0	0	28		
12:00	19	0	4	1	0	0	24	14	0	2	2	0	0	18		
12:15	20	0	2	2	0	0	24	22	0	2	0	0	0	24		
12:30	30	0	4	3	0	0	37	9	0	0	1	0	0	13		
12:45	16	0	1	2	0	1	20	9	0	4	2	0	0	15		
13:00	24	0	2	0	0	0	26	12	0	3	1	0	0	16		
13:15	28	0	6	0	0	0	34	10	0	4	1	0	0	15		
13:30	25	0	3	4	0	0	32	16	1	4	0	0	0	21		
13:45	27	0	4	1	0	0	32	21	1	1	1	0	0	24		
14:00	25	0	3	3	1	0	32	14	0	5	0	0	0	19		
14:15	28	0	7	3	0	0	39	18	0	2	1	0	0	21		
14:30	32	0	2	4	0	0	38	24	0	0	0	0	0	24		
14:45	26	0	2	0	0	1	29	29	0	1	3	0	0	33		
15:00	31	0	0	3	0	0	34	15	1	1	0	0	0	17		
15:15	28	0	5	2	0	0	35	28	1	2	0	0	0	31		
15:30	28	0	3	2	0	0	33	36	2	2	0	1	0	42		
15:45	46	0	6	1	0	0	53	29	1	1	0	0	0	31		
16:00	43	0	12	6	0	1	62	37	0	7	3	0	0	47		
16:15	47	0	8	1	0	0	56	42	0	6	2	0	1	51		
16:30	59	1	10	0	0	1	71	48	1	3	2	0	1	55		
16:45	71	0	7	0	0	0	78	51	0	10	0	1	0	62		
17:00	52	0	15	1	0	1	69	48	1	5	1	0	0	56		
17:15	74	0	14	1	0	1	90	50	0	7	0	0	0	57		
17:30	84	0	11	1	1	0	97	61	0	4	0	0	0	65		
17:45	80	1	5	0	0	0	86	56	2	10	0	0	0	68		
18:00	53	1	14	1	0	0	69	51	0	5	1	0	0	57		
18:15	54	0	3	3	0	0	60	58	0	8	0	0	0	66		
18:30	50	0	2	0	0	1	53	34	1	2	0	0	1	38		
18:45	44	0	3	0	0	0	48	39	0	11	0	0	0	50		
Total	1654	7	242	94	7	2	2013	1261	15	153	47	4	2	8	1490	

Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count



Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	B to A - Moygaddy to R157(N)							Veh. Total	B to C - Moygaddy to R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	57	0	11	2	0	0	0	70	35	0	4	0	0	0	0	39
7:15	63	0	14	2	0	0	0	79	43	1	5	1	0	0	0	50
7:30	72	0	8	2	0	0	0	82	41	0	7	0	0	0	0	48
7:45	76	0	7	0	0	0	0	83	43	0	5	1	0	0	0	49
8:00	72	1	10	1	0	0	1	85	53	0	3	0	0	0	0	56
8:15	71	0	3	3	0	0	1	78	41	0	2	0	0	0	0	43
8:30	48	0	5	1	1	0	0	55	59	0	7	1	0	0	0	67
8:45	45	1	2	0	0	1	0	49	72	0	3	2	0	0	0	77
9:00	41	0	3	3	1	0	0	48	29	1	3	1	0	0	0	34
9:15	39	1	5	2	0	0	0	47	40	0	1	0	0	0	0	41
9:30	32	1	1	2	0	0	0	36	42	2	4	1	1	0	0	50
9:45	22	1	2	1	0	0	0	26	22	0	1	2	0	0	0	25
10:00	14	0	3	3	0	0	0	20	22	0	2	1	2	0	0	27
10:15	5	0	2	2	0	0	0	9	16	0	3	1	0	0	0	20
10:30	10	1	2	0	0	0	0	13	8	1	0	0	0	0	0	9
10:45	18	0	2	2	0	0	0	22	19	0	2	0	0	0	0	21
11:00	18	0	2	2	0	0	1	23	18	0	6	1	0	0	0	25
11:15	20	0	2	1	0	0	1	24	18	0	2	0	0	0	0	20
11:30	13	0	1	0	0	0	0	14	8	0	2	0	0	0	0	10
11:45	13	0	2	1	0	0	0	16	24	2	0	1	0	0	0	27
12:00	19	0	4	1	0	0	0	24	15	0	2	1	0	0	0	18
12:15	13	1	2	0	0	0	0	16	7	0	5	2	0	0	0	14
12:30	12	1	0	0	0	0	0	13	22	0	2	0	0	0	0	24
12:45	15	0	1	0	0	0	0	16	17	0	2	1	0	0	0	20
13:00	14	0	3	1	0	0	0	18	11	0	1	1	0	0	0	13
13:15	15	0	1	2	0	0	0	18	10	0	1	0	0	0	0	11
13:30	18	0	3	4	0	0	0	25	19	0	2	1	0	0	0	22
13:45	11	0	3	0	0	3	0	17	9	0	2	0	0	0	0	11
14:00	14	2	2	2	0	0	1	21	23	0	2	2	0	0	0	27
14:15	34	0	0	0	0	0	0	34	23	0	0	0	0	0	0	23
14:30	19	0	0	1	0	0	0	20	19	0	2	1	0	0	0	22
14:45	15	0	1	0	2	0	0	18	17	1	1	0	0	0	0	19
15:00	17	0	4	0	0	0	0	21	22	0	2	1	0	0	0	25
15:15	32	0	3	1	0	0	0	36	28	2	1	0	0	0	1	32
15:30	18	0	2	0	0	0	0	20	11	1	2	1	0	0	0	15
15:45	11	0	1	0	0	0	0	12	27	0	2	0	2	0	0	31
16:00	14	0	5	0	0	0	0	19	27	0	1	0	0	0	1	29
16:15	37	0	1	0	0	0	2	40	25	0	4	0	0	0	0	29
16:30	28	0	5	0	0	0	1	34	24	0	3	0	0	0	0	27
16:45	21	0	4	0	0	0	0	25	20	0	2	1	0	0	0	23
17:00	42	0	2	0	0	0	0	44	10	0	2	0	0	0	0	12
17:15	34	0	1	1	0	0	0	36	20	0	3	0	0	0	0	23
17:30	39	0	3	0	0	0	0	42	17	0	4	0	0	0	0	21
17:45	23	0	6	0	0	0	0	29	19	0	1	0	0	0	0	20
18:00	20	2	1	0	0	0	0	23	17	0	1	0	0	0	0	18
18:15	17	0	2	0	0	0	0	19	16	1	5	0	0	0	0	22
18:30	21	0	1	1	0	0	0	23	23	0	3	0	0	0	0	26
18:45	21	0	1	0	2	0	1	25	19	0	1	0	0	0	0	20
25.75	1343	12	149	44	6	4	9	1567	1170	12	121	25	5	0	2	1335



Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	C to B - R157(S) to Moygaddy							Veh. Total	C to A - R157(S) to R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	12	0	1	1	0	0	0	14	59	1	16	0	0	0	0	76
7:15	4	0	2	1	0	0	0	7	74	0	6	1	1	0	0	82
7:30	10	0	3	0	0	0	0	13	97	0	14	5	0	2	0	118
7:45	12	0	4	1	1	0	0	18	106	0	13	4	0	0	0	123
8:00	9	0	1	0	0	0	0	10	75	0	8	6	0	0	0	89
8:15	13	0	0	1	0	0	0	14	74	0	3	9	0	0	0	86
8:30	23	1	5	1	0	0	0	30	69	1	7	2	0	0	0	79
8:45	33	0	5	1	0	0	0	39	48	1	3	7	1	0	0	60
9:00	37	0	3	4	0	0	0	44	36	0	6	4	0	1	0	47
9:15	12	2	4	1	0	0	0	19	40	0	3	1	0	0	0	44
9:30	9	1	1	0	1	0	0	12	25	1	3	0	0	0	0	29
9:45	8	0	2	0	1	0	0	11	27	0	0	2	0	0	0	29
10:00	11	0	0	0	0	0	0	11	20	1	4	2	0	0	1	28
10:15	8	0	7	0	0	0	0	15	24	0	3	2	0	0	1	30
10:30	16	0	2	2	0	0	0	20	19	0	7	2	0	0	0	28
10:45	14	0	0	0	0	0	0	14	16	0	5	1	0	0	0	22
11:00	10	0	3	0	0	0	0	13	14	0	3	3	0	0	0	20
11:15	17	0	3	0	0	0	0	20	24	0	3	2	0	0	6	35
11:30	18	1	2	1	0	0	1	23	14	0	3	3	0	0	0	20
11:45	20	0	3	1	0	0	0	24	23	0	1	2	0	0	0	26
12:00	30	0	3	0	0	0	0	33	34	0	3	1	0	0	3	41
12:15	23	0	3	2	0	0	0	28	23	0	3	4	0	0	0	30
12:30	18	0	5	1	0	0	0	24	25	1	3	4	0	0	0	33
12:45	16	1	3	0	0	0	0	20	21	0	0	4	0	1	0	26
13:00	20	0	4	1	0	0	0	25	26	0	2	4	0	0	0	32
13:15	28	0	1	1	0	0	0	30	27	1	3	4	0	0	0	35
13:30	21	1	3	1	0	0	0	26	23	1	3	3	1	0	0	31
13:45	24	0	2	0	0	0	0	26	23	0	5	3	2	0	0	33
14:00	27	0	5	0	0	0	0	32	29	0	3	1	0	0	0	33
14:15	24	0	3	1	0	0	1	29	16	0	4	1	0	0	0	21
14:30	26	1	1	1	0	0	0	29	22	1	2	0	0	0	0	25
14:45	60	1	1	3	1	0	0	66	28	0	2	2	0	0	0	32
15:00	33	1	3	1	0	0	0	38	29	0	3	1	0	0	0	33
15:15	29	1	4	1	2	0	0	37	22	0	4	4	0	0	1	31
15:30	34	2	3	1	0	0	0	40	33	1	6	1	0	1	0	42
15:45	39	0	5	0	0	0	0	44	27	1	5	2	0	0	0	35
16:00	40	0	7	0	0	0	0	47	28	0	5	2	0	0	0	35
16:15	45	0	4	1	0	0	0	50	31	0	5	0	0	0	0	36
16:30	53	0	10	0	0	0	0	63	33	1	5	0	0	0	0	39
16:45	57	0	4	0	0	0	0	61	27	0	7	0	0	0	0	34
17:00	62	0	13	2	0	0	0	77	29	0	7	2	0	0	0	38
17:15	53	0	5	1	0	0	0	59	36	0	4	2	0	0	0	42
17:30	71	0	7	1	0	0	0	79	41	0	3	2	0	0	0	46
17:45	53	0	3	0	0	0	1	57	35	0	2	0	0	0	0	37
18:00	75	0	12	1	0	0	1	89	35	0	10	2	0	0	0	47
18:15	54	0	4	1	0	0	0	59	34	2	2	0	0	0	0	38
18:30	38	0	3	2	0	0	0	43	35	0	2	0	0	0	1	38
18:45	39	0	5	0	0	1	2	47	18	0	3	2	0	0	0	23
25.75	1388	13	177	38	6	1	6	1629	1674	14	217	109	5	5	13	2037

10084 / Moygaddy
May 2019
Junction Turning Count



Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	To Arm A - R157(N)							Veh. Total	From Arm A - R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	116	1	27	2	0	0	0	146	29	0	10	1	0	0	0	40
7:15	137	0	20	3	1	0	0	161	38	0	16	5	0	0	0	59
7:30	169	0	22	7	0	2	0	200	47	0	11	2	0	0	1	61
7:45	182	0	20	4	0	0	0	206	53	1	5	1	0	0	0	60
8:00	147	1	18	7	0	0	1	174	54	0	7	6	0	0	0	67
8:15	145	0	6	12	0	0	1	164	61	1	12	3	0	0	0	77
8:30	117	1	12	3	1	0	0	134	70	0	5	3	1	0	0	79
8:45	93	2	5	7	1	1	0	109	59	1	8	5	1	0	0	74
9:00	77	0	9	7	1	1	0	95	51	0	3	4	1	0	0	59
9:15	79	1	8	3	0	0	0	91	60	0	1	1	0	0	0	62
9:30	57	2	4	2	0	0	0	65	40	1	5	8	3	0	1	58
9:45	49	1	2	3	0	0	0	55	38	0	3	8	0	0	0	49
10:00	34	1	7	5	0	0	1	48	22	0	6	4	0	0	0	32
10:15	29	0	5	4	0	0	1	39	41	1	4	4	0	0	0	50
10:30	29	1	9	2	0	0	0	41	23	0	5	2	0	0	0	30
10:45	34	0	7	3	0	0	0	44	44	1	5	3	0	0	0	53
11:00	32	0	5	5	0	0	1	43	35	0	3	4	0	0	0	42
11:15	44	0	5	3	0	0	7	59	39	0	3	5	0	0	0	47
11:30	27	0	4	3	0	0	0	34	43	0	5	4	1	0	0	53
11:45	36	0	3	3	0	0	0	42	43	1	8	2	0	0	0	54
12:00	53	0	7	2	0	0	3	65	33	0	6	3	0	0	0	42
12:15	36	1	5	4	0	0	0	46	42	0	4	2	0	0	0	48
12:30	37	2	3	4	0	0	0	46	39	0	4	4	0	0	3	50
12:45	36	0	1	4	0	1	0	42	25	0	5	4	0	1	0	35
13:00	40	0	5	5	0	0	0	50	36	0	5	1	0	0	0	42
13:15	42	1	4	6	0	0	0	53	38	0	10	1	0	0	0	49
13:30	41	1	6	7	1	0	0	56	41	1	7	4	0	0	0	53
13:45	34	0	8	3	2	3	0	50	48	1	5	2	0	0	0	56
14:00	43	2	5	3	0	0	1	54	39	0	8	3	1	0	0	51
14:15	50	0	4	1	0	0	0	55	46	0	9	4	0	0	1	60
14:30	41	1	2	1	0	0	0	45	56	0	2	4	0	0	0	62
14:45	43	0	3	2	2	0	0	50	55	0	3	3	0	1	0	62
15:00	46	0	7	1	0	0	0	54	46	1	1	3	0	0	0	51
15:15	54	0	7	5	0	0	1	67	56	1	7	2	0	0	0	66
15:30	51	1	8	1	0	1	0	62	64	2	5	2	1	0	1	75
15:45	38	1	6	2	0	0	0	47	75	1	7	1	0	0	0	84
16:00	42	0	10	2	0	0	0	54	80	0	19	9	0	1	0	109
16:15	68	0	6	0	0	0	2	76	89	0	14	3	0	1	0	107
16:30	61	1	10	0	0	0	1	73	107	2	13	2	0	2	0	126
16:45	48	0	11	0	0	0	0	59	122	0	17	0	1	0	0	140
17:00	71	0	9	2	0	0	0	82	100	1	20	2	0	1	1	125
17:15	70	0	5	3	0	0	0	78	124	0	21	1	0	1	0	147
17:30	80	0	6	2	0	0	0	88	145	0	15	1	1	0	0	162
17:45	58	0	8	0	0	0	0	66	136	3	15	0	0	0	0	154
18:00	55	2	11	2	0	0	0	70	104	1	19	2	0	0	0	126
18:15	51	2	4	0	0	0	0	57	112	0	11	3	0	0	0	126
18:30	56	0	3	1	0	0	1	61	84	1	4	0	0	1	1	91
18:45	39	0	4	2	2	0	1	48	83	0	14	0	0	0	1	98
25.75	3017	26	366	153	11	9	22	3604	2915	22	395	141	11	9	10	3503



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	To Arm B - Moygaddy							Veh. Total	From Arm B - Moygaddy							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	18	0	5	1	0	0	0	24	92	0	15	2	0	0	0	109
7:15	14	0	5	3	0	0	0	22	106	1	19	3	0	0	0	129
7:30	24	0	5	0	0	0	1	30	113	0	15	2	0	0	0	130
7:45	35	0	5	1	1	0	0	42	119	0	12	1	0	0	0	132
8:00	26	0	3	3	0	0	0	32	125	1	13	1	0	0	1	141
8:15	48	0	5	2	0	0	0	55	112	0	5	3	0	0	0	121
8:30	58	1	6	1	1	0	0	67	107	0	12	2	1	0	0	122
8:45	60	0	10	2	1	0	0	73	117	1	5	2	0	1	0	126
9:00	66	0	4	6	0	0	0	76	70	1	6	4	1	0	0	82
9:15	54	2	5	1	0	0	0	62	79	1	6	2	0	0	0	88
9:30	30	2	2	1	1	0	1	37	74	3	5	3	1	0	0	86
9:45	19	0	2	4	1	0	0	26	44	1	3	3	0	0	0	51
10:00	22	0	3	2	0	0	0	27	36	0	5	4	2	0	0	47
10:15	20	1	7	0	0	0	0	28	21	0	5	3	0	0	0	29
10:30	25	0	3	3	0	0	0	31	18	2	2	0	0	0	0	22
10:45	29	1	3	2	0	0	0	35	37	0	4	2	0	0	0	43
11:00	20	0	5	2	0	0	0	27	36	0	8	3	0	0	1	48
11:15	28	0	3	1	0	0	0	32	38	0	4	1	0	0	1	44
11:30	37	1	5	3	0	0	1	47	21	0	3	0	0	0	0	24
11:45	43	0	6	3	0	0	0	52	37	2	2	2	0	0	0	43
12:00	44	0	5	2	0	0	0	51	34	0	6	2	0	0	0	42
12:15	45	0	5	2	0	0	0	52	20	1	7	2	0	0	0	30
12:30	27	0	5	2	0	0	3	37	34	1	2	0	0	0	0	37
12:45	25	1	7	2	0	0	0	35	32	0	3	1	0	0	0	36
13:00	32	0	7	2	0	0	0	41	25	0	4	2	0	0	0	31
13:15	38	0	5	2	0	0	0	45	25	0	2	2	0	0	0	29
13:30	37	2	7	1	0	0	0	47	37	0	5	5	0	0	0	47
13:45	45	1	3	1	0	0	0	50	20	0	5	0	0	3	0	28
14:00	41	0	10	0	0	0	0	51	37	2	4	4	0	0	1	48
14:15	42	0	5	2	0	0	1	50	57	0	0	0	0	0	0	57
14:30	50	1	1	1	0	0	0	53	38	0	2	2	0	0	0	42
14:45	89	1	2	6	1	0	0	99	32	1	2	0	2	0	0	37
15:00	48	2	4	1	0	0	0	55	39	0	6	1	0	0	0	46
15:15	57	2	6	1	2	0	0	68	60	2	4	1	0	0	1	68
15:30	70	4	5	1	1	0	1	82	29	1	4	1	0	0	0	35
15:45	68	1	6	0	0	0	0	75	38	0	3	0	2	0	0	43
16:00	77	0	14	3	0	0	0	94	41	0	6	0	0	0	1	48
16:15	87	0	10	3	0	1	0	101	62	0	5	0	0	0	2	69
16:30	101	1	13	2	0	1	0	118	52	0	8	0	0	0	1	61
16:45	108	0	14	0	1	0	0	123	41	0	6	1	0	0	0	48
17:00	110	1	18	3	0	0	1	133	52	0	4	0	0	0	0	56
17:15	103	0	12	1	0	0	0	116	54	0	4	1	0	0	0	59
17:30	132	0	11	1	0	0	0	144	56	0	7	0	0	0	0	63
17:45	109	2	13	0	0	0	1	125	42	0	7	0	0	0	0	49
18:00	126	0	17	2	0	0	1	146	37	2	2	0	0	0	0	41
18:15	112	0	12	1	0	0	0	125	33	1	7	0	0	0	0	41
18:30	72	1	5	2	0	0	1	81	44	0	4	1	0	0	0	49
18:45	78	0	16	0	0	1	2	97	40	0	2	0	2	0	1	45
25.75	2649	28	330	85	10	3	14	3119	2513	24	270	69	11	4	11	2902



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	To Arm C - R157(S)							Veh. Total	From Arm C - R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	58	0	10	1	0	0	0	69	71	1	17	1	0	0	0	90
7:15	71	1	18	4	0	0	0	94	78	0	8	2	1	0	0	89
7:30	74	0	16	2	0	0	0	92	107	0	17	5	0	2	0	131
7:45	73	1	9	2	0	0	0	85	118	0	17	5	1	0	0	141
8:00	90	0	8	3	0	0	0	101	84	0	9	6	0	0	0	99
8:15	67	1	9	2	0	0	0	79	87	0	3	10	0	0	0	100
8:30	94	0	11	4	0	0	0	109	92	2	12	3	0	0	0	109
8:45	104	1	6	6	0	0	0	117	81	1	8	8	1	0	0	99
9:00	51	1	5	3	1	0	0	61	73	0	9	8	0	1	0	91
9:15	58	0	1	1	0	0	0	60	52	2	7	2	0	0	0	63
9:30	61	2	8	8	4	0	0	83	34	2	4	0	1	0	0	41
9:45	49	0	4	6	0	0	0	59	35	0	2	2	1	0	0	40
10:00	33	0	5	3	2	0	0	43	31	1	4	2	0	0	1	39
10:15	45	0	7	5	0	0	0	57	32	0	10	2	0	0	1	45
10:30	22	1	4	1	0	0	0	28	35	0	9	4	0	0	0	48
10:45	48	0	4	1	0	0	0	53	30	0	5	1	0	0	0	36
11:00	43	0	7	3	0	0	0	53	24	0	6	3	0	0	0	33
11:15	46	0	5	4	0	0	0	55	41	0	6	2	0	0	6	55
11:30	32	0	4	2	1	0	0	39	32	1	5	4	0	0	1	43
11:45	44	3	5	1	0	0	0	53	43	0	4	3	0	0	0	50
12:00	34	0	6	2	0	0	0	42	64	0	6	1	0	0	3	74
12:15	27	0	7	4	0	0	0	38	46	0	6	6	0	0	0	58
12:30	52	0	6	3	0	0	0	61	43	1	8	5	0	0	0	57
12:45	33	0	3	3	0	1	0	40	37	1	3	4	0	1	0	46
13:00	35	0	3	1	0	0	0	39	46	0	6	5	0	0	0	57
13:15	38	0	7	0	0	0	0	45	55	1	4	5	0	0	0	65
13:30	44	0	5	5	0	0	0	54	44	2	6	4	1	0	0	57
13:45	36	0	6	1	0	0	0	43	47	0	7	3	2	0	0	59
14:00	48	0	5	5	1	0	0	59	56	0	8	1	0	0	0	65
14:15	51	0	7	3	0	0	1	62	40	0	7	2	0	0	1	50
14:30	51	0	4	5	0	0	0	60	48	2	3	1	0	0	0	54
14:45	43	1	3	0	0	1	0	48	88	1	3	5	1	0	0	98
15:00	53	0	2	4	0	0	0	59	62	1	6	2	0	0	0	71
15:15	56	2	6	2	0	0	1	67	51	1	8	5	2	0	1	68
15:30	39	1	5	3	0	0	0	48	67	3	9	2	0	1	0	82
15:45	73	0	8	1	2	0	0	84	66	1	10	2	0	0	0	79
16:00	70	0	13	6	0	1	1	91	68	0	12	2	0	0	0	82
16:15	72	0	12	1	0	0	0	85	76	0	9	1	0	0	0	86
16:30	83	1	13	0	0	1	0	98	86	1	15	0	0	0	0	102
16:45	91	0	9	1	0	0	0	101	84	0	11	0	0	0	0	95
17:00	62	0	17	1	0	1	0	81	91	0	20	4	0	0	0	115
17:15	94	0	17	1	0	1	0	113	89	0	9	3	0	0	0	101
17:30	101	0	15	1	1	0	0	118	112	0	10	3	0	0	0	125
17:45	99	1	6	0	0	0	0	106	88	0	5	0	0	0	1	94
18:00	70	1	15	1	0	0	0	87	110	0	22	3	0	0	1	136
18:15	70	1	8	3	0	0	0	82	88	2	6	1	0	0	0	97
18:30	73	0	5	0	0	1	0	79	73	0	5	2	0	0	1	81
18:45	63	0	4	0	0	0	1	68	57	0	8	2	0	1	2	70
25.75	2824	19	363	119	12	7	4	3348	3062	27	394	147	11	6	19	3666



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	A to C - R157(N) to R157(S)							Veh. Total	A to B - R157(N) to Moygaddy							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	23	0	6	2.3	0	0	0	31.3	6	0	4	0	0	0	0	10
7:15	28	0	13	6.9	0	0	0	47.9	10	0	3	4.6	0	0	0	17.6
7:30	33	0	9	4.6	0	0	0	46.6	14	0	2	0	0	0	0.2	16.2
7:45	30	1	4	2.3	0	0	0	37.3	23	0	1	0	0	0	0	24
8:00	37	0	5	6.9	0	0	0	48.9	17	0	2	6.9	0	0	0	25.9
8:15	26	1	7	4.6	0	0	0	38.6	35	0	5	2.3	0	0	0	42.3
8:30	35	0	4	6.9	0	0	0	45.9	35	0	1	0	2	0	0	38
8:45	32	1	3	9.2	0	0	0	45.2	27	0	5	2.3	2	0	0	36.3
9:00	22	0	2	4.6	2	0	0	30.6	29	0	1	4.6	0	0	0	34.6
9:15	18	0	0	2.3	0	0	0	20.3	42	0	1	0	0	0	0	43
9:30	19	0	4	16.1	6	0	0	45.1	21	1	1	2.3	0	0	0.2	25.5
9:45	27	0	3	9.2	0	0	0	39.2	11	0	0	9.2	0	0	0	20.2
10:00	11	0	3	4.6	0	0	0	18.6	11	0	3	4.6	0	0	0	18.6
10:15	29	0	4	9.2	0	0	0	42.2	12	1	0	0	0	0	0	13
10:30	14	0	4	2.3	0	0	0	20.3	9	0	1	2.3	0	0	0	12.3
10:45	29	0	2	2.3	0	0	0	33.3	15	1	3	4.6	0	0	0	23.6
11:00	25	0	1	4.6	0	0	0	30.6	10	0	2	4.6	0	0	0	16.6
11:15	28	0	3	9.2	0	0	0	40.2	11	0	0	2.3	0	0	0	13.3
11:30	24	0	2	4.6	2	0	0	32.6	19	0	3	4.6	0	0	0	26.6
11:45	20	1	5	0	0	0	0	26	23	0	3	4.6	0	0	0	30.6
12:00	19	0	4	2.3	0	0	0	25.3	14	0	2	4.6	0	0	0	20.6
12:15	20	0	2	4.6	0	0	0	26.6	22	0	2	0	0	0	0	24
12:30	30	0	4	6.9	0	0	0	40.9	9	0	0	2.3	0	0	0.6	11.9
12:45	16	0	1	4.6	0	0.4	0	22	9	0	4	4.6	0	0	0	17.6
13:00	24	0	2	0	0	0	0	26	12	0	3	2.3	0	0	0	17.3
13:15	28	0	6	0	0	0	0	34	10	0	4	2.3	0	0	0	16.3
13:30	25	0	3	9.2	0	0	0	37.2	16	1	4	0	0	0	0	21
13:45	27	0	4	2.3	0	0	0	33.3	21	1	1	2.3	0	0	0	25.3
14:00	25	0	3	6.9	2	0	0	36.9	14	0	5	0	0	0	0	19
14:15	28	0	7	6.9	0	0	0.2	42.1	18	0	2	2.3	0	0	0	22.3
14:30	32	0	2	9.2	0	0	0	43.2	24	0	0	0	0	0	0	24
14:45	26	0	2	0	0	0.4	0	28.4	29	0	1	6.9	0	0	0	36.9
15:00	31	0	0	6.9	0	0	0	37.9	15	1	1	0	0	0	0	17
15:15	28	0	5	4.6	0	0	0	37.6	28	1	2	0	0	0	0	31
15:30	28	0	3	4.6	0	0	0	35.6	36	2	2	0	2	0	0.2	42.2
15:45	46	0	6	2.3	0	0	0	54.3	29	1	1	0	0	0	0	31
16:00	43	0	12	13.8	0	0.4	0	69.2	37	0	7	6.9	0	0	0	50.9
16:15	47	0	8	2.3	0	0	0	57.3	42	0	6	4.6	0	0.4	0	53
16:30	59	1	10	0	0	0.4	0	70.4	48	1	3	4.6	0	0.4	0	57
16:45	71	0	7	0	0	0	0	78	51	0	10	0	2	0	0	63
17:00	52	0	15	2.3	0	0.4	0	69.7	48	1	5	2.3	0	0	0.2	56.5
17:15	74	0	14	2.3	0	0.4	0	90.7	50	0	7	0	0	0	0	57
17:30	84	0	11	2.3	2	0	0	99.3	61	0	4	0	0	0	0	65
17:45	80	1	5	0	0	0	0	86	56	2	10	0	0	0	0	68
18:00	53	1	14	2.3	0	0	0	70.3	51	0	5	2.3	0	0	0	58.3
18:15	54	0	3	6.9	0	0	0	63.9	58	0	8	0	0	0	0	66
18:30	50	0	2	0	0	0.4	0	52.4	34	1	2	0	0	0	0.2	37.2
18:45	44	0	3	0	0	0	0.2	47.2	39	0	11	0	0	0	0	50</



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	B to A - Moygaddy to R157(N)							Veh. Total	B to C - Moygaddy to R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	57	0	11	4.6	0	0	0	72.6	35	0	4	0	0	0	0	39
7:15	63	0	14	4.6	0	0	0	81.6	43	1	5	2.3	0	0	0	51.3
7:30	72	0	8	4.6	0	0	0	84.6	41	0	7	0	0	0	0	48
7:45	76	0	7	0	0	0	0	83	43	0	5	2.3	0	0	0	50.3
8:00	72	1	10	2.3	0	0	0.2	85.5	53	0	3	0	0	0	0	56
8:15	71	0	3	6.9	0	0	0.2	81.1	41	0	2	0	0	0	0	43
8:30	48	0	5	2.3	2	0	0	57.3	59	0	7	2.3	0	0	0	68.3
8:45	45	1	2	0	0	0.4	0	48.4	72	0	3	4.6	0	0	0	79.6
9:00	41	0	3	6.9	2	0	0	52.9	29	1	3	2.3	0	0	0	35.3
9:15	39	1	5	4.6	0	0	0	49.6	40	0	1	0	0	0	0	41
9:30	32	1	1	4.6	0	0	0	38.6	42	2	4	2.3	2	0	0	52.3
9:45	22	1	2	2.3	0	0	0	27.3	22	0	1	4.6	0	0	0	27.6
10:00	14	0	3	6.9	0	0	0	23.9	22	0	2	2.3	4	0	0	30.3
10:15	5	0	2	4.6	0	0	0	11.6	16	0	3	2.3	0	0	0	21.3
10:30	10	1	2	0	0	0	0	13	8	1	0	0	0	0	0	9
10:45	18	0	2	4.6	0	0	0	24.6	19	0	2	0	0	0	0	21
11:00	18	0	2	4.6	0	0	0.2	24.8	18	0	6	2.3	0	0	0	26.3
11:15	20	0	2	2.3	0	0	0.2	24.5	18	0	2	0	0	0	0	20
11:30	13	0	1	0	0	0	0	14	8	0	2	0	0	0	0	10
11:45	13	0	2	2.3	0	0	0	17.3	24	2	0	2.3	0	0	0	28.3
12:00	19	0	4	2.3	0	0	0	25.3	15	0	2	2.3	0	0	0	19.3
12:15	13	1	2	0	0	0	0	16	7	0	5	4.6	0	0	0	16.6
12:30	12	1	0	0	0	0	0	13	22	0	2	0	0	0	0	24
12:45	15	0	1	0	0	0	0	16	17	0	2	2.3	0	0	0	21.3
13:00	14	0	3	2.3	0	0	0	19.3	11	0	1	2.3	0	0	0	14.3
13:15	15	0	1	4.6	0	0	0	20.6	10	0	1	0	0	0	0	11
13:30	18	0	3	9.2	0	0	0	30.2	19	0	2	2.3	0	0	0	23.3
13:45	11	0	3	0	0	1.2	0	15.2	9	0	2	0	0	0	0	11
14:00	14	2	2	4.6	0	0	0.2	22.8	23	0	2	4.6	0	0	0	29.6
14:15	34	0	0	0	0	0	0	34	23	0	0	0	0	0	0	23
14:30	19	0	0	2.3	0	0	0	21.3	19	0	2	2.3	0	0	0	23.3
14:45	15	0	1	0	4	0	0	20	17	1	1	0	0	0	0	19
15:00	17	0	4	0	0	0	0	21	22	0	2	2.3	0	0	0	26.3
15:15	32	0	3	2.3	0	0	0	37.3	28	2	1	0	0	0	0.2	31.2
15:30	18	0	2	0	0	0	0	20	11	1	2	2.3	0	0	0	16.3
15:45	11	0	1	0	0	0	0	12	27	0	2	0	4	0	0	33
16:00	14	0	5	0	0	0	0	19	27	0	1	0	0	0	0.2	28.2
16:15	37	0	1	0	0	0	0.4	38.4	25	0	4	0	0	0	0	29
16:30	28	0	5	0	0	0	0.2	33.2	24	0	3	0	0	0	0	27
16:45	21	0	4	0	0	0	0	25	20	0	2	2.3	0	0	0	24.3
17:00	42	0	2	0	0	0	0	44	10	0	2	0	0	0	0	12
17:15	34	0	1	2.3	0	0	0	37.3	20	0	3	0	0	0	0	23
17:30	39	0	3	0	0	0	0	42	17	0	4	0	0	0	0	21
17:45	23	0	6	0	0	0	0	29	19	0	1	0	0	0	0	20
18:00	20	2	1	0	0	0	0	23	17	0	1	0	0	0	0	18
18:15	17	0	2	0	0	0	0	19	16	1	5	0	0	0	0	22
18:30	21	0	1	2.3	0	0	0	24.3	23	0	3	0	0	0	0	26
18:45	21	0	1	0	4	0	0.2	26.2	19	0	1	0	0	0	0	20
25:75	1343	12	149	101.2	12	1.6	1.8	1620.6	1170	12	121	57.5	10	0	0.4	1370.9



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	C to B - R157(S) to Moygaddy							Veh. Total	C to A - R157(S) to R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	12	0	1	2.3	0	0	0	15.3	59	1	16	0	0	0	0	76
7:15	4	0	2	2.3	0	0	0	8.3	74	0	6	2.3	2	0	0	84.3
7:30	10	0	3	0	0	0	0	13	97	0	14	11.5	0	0.8	0	123.3
7:45	12	0	4	2.3	2	0	0	20.3	106	0	13	9.2	0	0	0	128.2
8:00	9	0	1	0	0	0	0	10	75	0	8	13.8	0	0	0	96.8
8:15	13	0	0	2.3	0	0	0	15.3	74	0	3	20.7	0	0	0	97.7
8:30	23	1	5	2.3	0	0	0	31.3	69	1	7	4.6	0	0	0	81.6
8:45	33	0	5	2.3	0	0	0	40.3	48	1	3	16.1	2	0	0	70.1
9:00	37	0	3	9.2	0	0	0	49.2	36	0	6	9.2	0	0.4	0	51.6
9:15	12	2	4	2.3	0	0	0	20.3	40	0	3	2.3	0	0	0	45.3
9:30	9	1	1	0	2	0	0	13	25	1	3	0	0	0	0	29
9:45	8	0	2	0	2	0	0	12	27	0	0	4.6	0	0	0	31.6
10:00	11	0	0	0	0	0	0	11	20	1	4	4.6	0	0	0.2	29.8
10:15	8	0	7	0	0	0	0	15	24	0	3	4.6	0	0	0.2	31.8
10:30	16	0	2	4.6	0	0	0	22.6	19	0	7	4.6	0	0	0	30.6
10:45	14	0	0	0	0	0	0	14	16	0	5	2.3	0	0	0	23.3
11:00	10	0	3	0	0	0	0	13	14	0	3	6.9	0	0	0	23.9
11:15	17	0	3	0	0	0	0	20	24	0	3	4.6	0	0	1.2	32.8
11:30	18	1	2	2.3	0	0	0.2	23.5	14	0	3	6.9	0	0	0	23.9
11:45	20	0	3	2.3	0	0	0	25.3	23	0	1	4.6	0	0	0	28.6
12:00	30	0	3	0	0	0	0	33	34	0	3	2.3	0	0	0.6	39.9
12:15	23	0	3	4.6	0	0	0	30.6	23	0	3	9.2	0	0	0	35.2
12:30	18	0	5	2.3	0	0	0	25.3	25	1	3	9.2	0	0	0	38.2
12:45	16	1	3	0	0	0	0	20	21	0	0	9.2	0	0.4	0	30.6
13:00	20	0	4	2.3	0	0	0	26.3	26	0	2	9.2	0	0	0	37.2
13:15	28	0	1	2.3	0	0	0	31.3	27	1	3	9.2	0	0	0	40.2
13:30	21	1	3	2.3	0	0	0	27.3	23	1	3	6.9	2	0	0	35.9
13:45	24	0	2	0	0	0	0	26	23	0	5	6.9	4	0	0	38.9
14:00	27	0	5	0	0	0	0	32	29	0	3	2.3	0	0	0	34.3
14:15	24	0	3	2.3	0	0	0.2	29.5	16	0	4	2.3	0	0	0	22.3
14:30	26	1	1	2.3	0	0	0	30.3	22	1	2	0	0	0	0	25
14:45	60	1	1	6.9	2	0	0	70.9	28	0	2	4.6	0	0	0	34.6
15:00	33	1	3	2.3	0	0	0	39.3	29	0	3	2.3	0	0	0	34.3
15:15	29	1	4	2.3	4	0	0	40.3	22	0	4	9.2	0	0	0.2	35.4
15:30	34	2	3	2.3	0	0	0	41.3	33	1	6	2.3	0	0.4	0	42.7
15:45	39	0	5	0	0	0	0	44	27	1	5	4.6	0	0	0	37.6
16:00	40	0	7	0	0	0	0	47	28	0	5	4.6	0	0	0	37.6
16:15	45	0	4	2.3	0	0	0	51.3	31	0	5	0	0	0	0	36
16:30	53	0	10	0	0	0	0	63	33	1	5	0	0	0	0	39
16:45	57	0	4	0	0	0	0	61	27	0	7	0	0	0	0	34
17:00	62	0	13	4.6	0	0	0	79.6	29	0	7	4.6	0	0	0	40.6
17:15	53	0	5	2.3	0	0	0	60.3	36	0	4	4.6	0	0	0	44.6
17:30	71	0	7	2.3	0	0	0	80.3	41	0	3	4.6	0	0	0	48.6
17:45	53	0	3	0	0	0	0.2	56.2	35	0	2	0	0	0	0	37
18:00	75	0	12	2.3	0	0	0.2	89.5	35	0	10	4.6	0	0	0	49.6
18:15	54	0	4	2.3	0	0	0	60.3	34	2	2	0				



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	To Arm A - R157(N)							Veh. Total	From Arm A - R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	116	1	27	4.6	0	0	0	148.6	29	0	10	2.3	0	0	0	41.3
7:15	137	0	20	6.9	2	0	0	165.9	38	0	16	11.5	0	0	0	65.5
7:30	169	0	22	16.1	0	0.8	0	207.9	47	0	11	4.6	0	0	0.2	62.8
7:45	182	0	20	9.2	0	0	0	211.2	53	1	5	2.3	0	0	0	61.3
8:00	147	1	18	16.1	0	0	0.2	182.3	54	0	7	13.8	0	0	0	74.8
8:15	145	0	6	27.6	0	0	0.2	178.8	61	1	12	6.9	0	0	0	80.9
8:30	117	1	12	6.9	2	0	0	138.9	70	0	5	6.9	2	0	0	83.9
8:45	93	2	5	16.1	2	0.4	0	118.5	59	1	8	11.5	2	0	0	81.5
9:00	77	0	9	16.1	2	0.4	0	104.5	51	0	3	9.2	2	0	0	65.2
9:15	79	1	8	6.9	0	0	0	94.9	60	0	1	2.3	0	0	0	63.3
9:30	57	2	4	4.6	0	0	0	67.6	40	1	5	18.4	6	0	0.2	70.6
9:45	49	1	2	6.9	0	0	0	58.9	38	0	3	18.4	0	0	0	59.4
10:00	34	1	7	11.5	0	0	0.2	53.7	22	0	6	9.2	0	0	0	37.2
10:15	29	0	5	9.2	0	0	0.2	43.4	41	1	4	9.2	0	0	0	55.2
10:30	29	1	9	4.6	0	0	0	43.6	23	0	5	4.6	0	0	0	32.6
10:45	34	0	7	6.9	0	0	0	47.9	44	1	5	6.9	0	0	0	56.9
11:00	32	0	5	11.5	0	0	0.2	48.7	35	0	3	9.2	0	0	0	47.2
11:15	44	0	5	6.9	0	0	1.4	57.3	39	0	3	11.5	0	0	0	53.5
11:30	27	0	4	6.9	0	0	0	37.9	43	0	5	9.2	2	0	0	59.2
11:45	36	0	3	6.9	0	0	0	45.9	43	1	8	4.6	0	0	0	56.6
12:00	53	0	7	4.6	0	0	0.6	65.2	33	0	6	6.9	0	0	0	45.9
12:15	36	1	5	9.2	0	0	0	51.2	42	0	4	4.6	0	0	0	50.6
12:30	37	2	3	9.2	0	0	0	51.2	39	0	4	9.2	0	0	0.6	52.8
12:45	36	0	1	9.2	0	0.4	0	46.6	25	0	5	9.2	0	0.4	0	39.6
13:00	40	0	5	11.5	0	0	0	56.5	36	0	5	2.3	0	0	0	43.3
13:15	42	1	4	13.8	0	0	0	60.8	38	0	10	2.3	0	0	0	50.3
13:30	41	1	6	16.1	2	0	0	66.1	41	1	7	9.2	0	0	0	58.2
13:45	34	0	8	6.9	4	1.2	0	54.1	48	1	5	4.6	0	0	0	58.6
14:00	43	2	5	6.9	0	0	0.2	57.1	39	0	8	6.9	2	0	0	55.9
14:15	50	0	4	2.3	0	0	0	56.3	46	0	9	9.2	0	0	0.2	64.4
14:30	41	1	2	2.3	0	0	0	46.3	56	0	2	9.2	0	0	0	67.2
14:45	43	0	3	4.6	4	0	0	54.6	55	0	3	6.9	0	0.4	0	65.3
15:00	46	0	7	2.3	0	0	0	55.3	46	1	1	6.9	0	0	0	54.9
15:15	54	0	7	11.5	0	0	0.2	72.7	56	1	7	4.6	0	0	0	68.6
15:30	51	1	8	2.3	0	0.4	0	62.7	64	2	5	4.6	2	0	0.2	77.8
15:45	38	1	6	4.6	0	0	0	49.6	75	1	7	2.3	0	0	0	85.3
16:00	42	0	10	4.6	0	0	0	56.6	80	0	19	20.7	0	0.4	0	120.1
16:15	68	0	6	0	0	0	0.4	74.4	89	0	14	6.9	0	0.4	0	110.3
16:30	61	1	10	0	0	0	0.2	72.2	107	2	13	4.6	0	0.8	0	127.4
16:45	48	0	11	0	0	0	0	59	122	0	17	0	2	0	0	141
17:00	71	0	9	4.6	0	0	0	84.6	100	1	20	4.6	0	0.4	0.2	126.2
17:15	70	0	5	6.9	0	0	0	81.9	124	0	21	2.3	0	0.4	0	147.7
17:30	80	0	6	4.6	0	0	0	90.6	145	0	15	2.3	2	0	0	164.3
17:45	58	0	8	0	0	0	0	66	136	3	15	0	0	0	0	154
18:00	55	2	11	4.6	0	0	0	72.6	104	1	19	4.6	0	0	0	128.6
18:15	51	2	4	0	0	0	0	57	112	0	11	6.9	0	0	0	129.9
18:30	56	0	3	2.3	0	0	0.2	61.5	84	1	4	0	0	0.4	0.2	89.6
18:45	39	0	4	4.6	4	0	0.2	51.8	83	0	14	0	0	0	0.2	97.2
25:75	3017	26	366	351.9	22	3.6	4.4	3790.9	2915	22	395	324.3	22	3.6	2	3683.9



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 4
Location R157(N) / Moygaddy / R157(S)
Date Tuesday 28 May 2019

Time	To Arm B - Moygaddy							Veh. Total	From Arm B - Moygaddy							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	18	0	5	2.3	0	0	0	25.3	92	0	15	4.6	0	0	0	111.6
7:15	14	0	5	6.9	0	0	0	25.9	106	1	19	6.9	0	0	0	132.9
7:30	24	0	5	0	0	0	0.2	29.2	113	0	15	4.6	0	0	0	132.6
7:45	35	0	5	2.3	2	0	0	44.3	119	0	12	2.3	0	0	0	133.3
8:00	26	0	3	6.9	0	0	0	35.9	125	1	13	2.3	0	0	0.2	141.5
8:15	48	0	5	4.6	0	0	0	57.6	112	0	5	6.9	0	0	0.2	124.1
8:30	58	1	6	2.3	2	0	0	69.3	107	0	12	4.6	2	0	0	125.6
8:45	60	0	10	4.6	2	0	0	76.6	117	1	5	4.6	0	0.4	0	128
9:00	66	0	4	13.8	0	0	0	83.8	70	1	6	9.2	2	0	0	88.2
9:15	54	2	5	2.3	0	0	0	63.3	79	1	6	4.6	0	0	0	90.6
9:30	30	2	2	2.3	2	0	0.2	38.5	74	3	5	6.9	2	0	0	90.9
9:45	19	0	2	9.2	2	0	0	29.4	44	1	3	6.9	0	0	0	54.9
10:00	22	0	3	4.6	0	0	0	29.6	36	0	5	9.2	4	0	0	54.2
10:15	20	1	7	0	0	0	0	28	21	0	5	6.9	0	0	0	32.9
10:30	25	0	3	6.9	0	0	0	34.9	18	2	2	0	0	0	0	22
10:45	29	1	3	4.6	0	0	0	37.6	37	0	4	4.6	0	0	0	45.6
11:00	20	0	5	4.6	0	0	0	29.6	36	0	8	6.9	0	0	0.2	51.1
11:15	28	0	3	2.3	0	0	0	33.3	38	0	4	2.3	0	0	0.2	44.5
11:30	37	1	5	6.9	0	0	0.2	50.1	21	0	3	0	0	0	0	24
11:45	43	0	6	6.9	0	0	0	55.9	37	2	2	4.6	0	0	0	45.6
12:00	44	0	5	4.6	0	0	0	53.6	34	0	6	4.6	0	0	0	44.6
12:15	45	0	5	4.6	0	0	0	54.6	20	1	7	4.6	0	0	0	32.6
12:30	27	0	5	4.6	0	0	0.6	37.2	34	1	2	0	0	0	0	37
12:45	25	1	7	4.6	0	0	0	37.6	32	0	3	2.3	0	0	0	37.3
13:00	32	0	7	4.6	0	0	0	43.6	25	0	4	4.6	0	0	0	33.6
13:15	38	0	5	4.6	0	0	0	47.6	25	0	2	4.6	0	0	0	31.6
13:30	37	2	7	2.3	0	0	0	48.3	37	0	5	11.5	0	0	0	53.5
13:45	45	1	3	2.3	0	0	0	51.3	20	0	5	0	0	1.2	0	26.2
14:00	41	0	10	0	0	0	0	51	37	2	4	9.2	0	0	0.2	52.4
14:15	42	0	5	4.6	0	0	0.2	51.8	57	0	0	0	0	0	0	57
14:30	50	1	1	2.3	0	0	0	54.3	38	0	2	4.6	0	0	0	44.6
14:45	89	1	2	13.8	2	0	0	107.8	32	1	2	0	4	0	0	39
15:00	48	2	4	2.3	0	0	0	56.3	39	0	6	2.3	0	0	0	47.3
15:15	57	2	6	2.3	4	0	0	71.3	60	2	4	2.3	0	0	0.2	68.5
15:30	70	4	5	2.3	2	0	0.2	83.5	29	1	4	2.3	0	0	0	36.3
15:45	68	1	6	0	0	0	0	75	38	0	3	0	4	0	0	45
16:00	77	0	14	6.9	0	0	0	97.9	41	0	6	0	0	0	0.2	47.2
16:15	87	0	10	6.9	0	0.4	0	104.3	62	0	5	0	0	0	0.4	67.4
16:30	101	1	13	4.6	0	0.4	0	120	52	0	8	0	0	0	0.2	60.2
16:45	108	0	14	0	2	0	0	124	41	0	6	2.3	0	0	0	49.3
17:00	110	1	18	6.9	0	0	0.2	136.1	52	0	4	0	0	0	0	56
17:15	103	0	12	2.3	0	0	0	117.3	54	0	4	2.3	0	0	0	60.3
17:30	132	0	11	2.3	0	0	0	145.3	56	0	7	0	0	0	0	63
17:45	109	2	13	0	0	0	0.									



Site No. 4
 Location R157(N) / Moygaddy / R157(S)
 Date Tuesday 28 May 2019

10084 / Moygaddy
 May 2019
 Junction Turning Count

Time	To Arm C - R157(S)							Veh. Total	From Arm C - R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	58	0	10	2.3	0	0	0	70.3	71	1	17	2.3	0	0	0	91.3
7:15	71	1	18	9.2	0	0	0	99.2	78	0	8	4.6	2	0	0	92.6
7:30	74	0	16	4.6	0	0	0	94.6	107	0	17	11.5	0	0.8	0	136.3
7:45	73	1	9	4.6	0	0	0	87.6	118	0	17	11.5	2	0	0	148.5
8:00	90	0	8	6.9	0	0	0	104.9	84	0	9	13.8	0	0	0	106.8
8:15	67	1	9	4.6	0	0	0	81.6	87	0	3	2.3	0	0	0	113
8:30	94	0	11	9.2	0	0	0	114.2	92	2	12	6.9	0	0	0	112.9
8:45	104	1	6	13.8	0	0	0	124.8	81	1	8	18.4	2	0	0	110.4
9:00	51	1	5	6.9	2	0	0	65.9	73	0	9	18.4	0	0.4	0	100.8
9:15	58	0	1	2.3	0	0	0	61.3	52	2	7	4.6	0	0	0	65.6
9:30	61	2	8	18.4	8	0	0	97.4	34	2	4	0	2	0	0	42
9:45	49	0	4	13.8	0	0	0	66.8	35	0	2	4.6	2	0	0	43.6
10:00	33	0	5	6.9	4	0	0	48.9	31	1	4	4.6	0	0	0.2	40.8
10:15	45	0	7	11.5	0	0	0	63.5	32	0	10	4.6	0	0	0.2	46.8
10:30	22	1	4	2.3	0	0	0	29.3	35	0	9	9.2	0	0	0	53.2
10:45	48	0	4	2.3	0	0	0	54.3	30	0	5	2.3	0	0	0	37.3
11:00	43	0	7	6.9	0	0	0	56.9	24	0	6	6.9	0	0	0	36.9
11:15	46	0	5	9.2	0	0	0	60.2	41	0	6	4.6	0	0	1.2	52.8
11:30	32	0	4	4.6	2	0	0	42.6	32	1	5	9.2	0	0	0.2	47.4
11:45	44	3	5	2.3	0	0	0	54.3	43	0	4	6.9	0	0	0	53.9
12:00	34	0	6	4.6	0	0	0	44.6	64	0	6	2.3	0	0	0.6	72.9
12:15	27	0	7	9.2	0	0	0	43.2	46	0	6	13.8	0	0	0	65.8
12:30	52	0	6	6.9	0	0	0	64.9	43	1	8	11.5	0	0	0	63.5
12:45	33	0	3	6.9	0	0.4	0	43.3	37	1	3	9.2	0	0.4	0	50.6
13:00	35	0	3	2.3	0	0	0	40.3	46	0	6	11.5	0	0	0	63.5
13:15	38	0	7	0	0	0	0	45	55	1	4	11.5	0	0	0	71.5
13:30	44	0	5	11.5	0	0	0	60.5	44	2	6	9.2	2	0	0	63.2
13:45	36	0	6	2.3	0	0	0	44.3	47	0	7	6.9	4	0	0	64.9
14:00	48	0	5	11.5	2	0	0	66.5	56	0	8	2.3	0	0	0	66.3
14:15	51	0	7	6.9	0	0	0.2	65.1	40	0	7	4.6	0	0	0.2	51.8
14:30	51	0	4	11.5	0	0	0	66.5	48	2	3	2.3	0	0	0	55.3
14:45	43	1	3	0	0	0.4	0	47.4	88	1	3	11.5	2	0	0	105.5
15:00	53	0	2	9.2	0	0	0	64.2	62	1	6	4.6	0	0	0	73.6
15:15	56	2	6	4.6	0	0	0.2	68.8	51	1	8	11.5	4	0	0.2	75.7
15:30	39	1	5	6.9	0	0	0	51.9	67	3	9	4.6	0	0.4	0	84
15:45	73	0	8	2.3	4	0	0	87.3	66	1	10	4.6	0	0	0	81.6
16:00	70	0	13	13.8	0	0.4	0.2	97.4	68	0	12	4.6	0	0	0	84.6
16:15	72	0	12	2.3	0	0	0	86.3	76	0	9	2.3	0	0	0	87.3
16:30	83	1	13	0	0	0.4	0	97.4	86	1	15	0	0	0	0	102
16:45	91	0	9	2.3	0	0	0	102.3	84	0	11	0	0	0	0	95
17:00	62	0	17	2.3	0	0.4	0	81.7	91	0	20	9.2	0	0	0	120.2
17:15	94	0	17	2.3	0	0.4	0	113.7	89	0	9	6.9	0	0	0	104.9
17:30	101	0	15	2.3	2	0	0	120.3	112	0	10	6.9	0	0	0	128.9
17:45	99	1	6	0	0	0	0	106	88	0	5	0	0	0	0.2	93.2
18:00	70	1	15	2.3	0	0	0	88.3	110	0	22	6.9	0	0	0.2	139.1
18:15	70	1	8	6.9	0	0	0	85.9	88	2	6	2.3	0	0	0	98.3
18:30	73	0	5	0	0	0.4	0	78.4	73	0	5	4.6	0	0	0.2	82.8
18:45	63	0	4	0	0	0	0.2	67.2	57	0	8	4.6	0	0.4	0.4	70.4
25:75	2824	19	363	273.7	24	2.8	0.8	3507.3	3062	27	394	338.1	22	2.4	3.8	3849.3



Site No. 5
 Location R157(N) / Dillow's Road / R157(S)
 Date Tuesday 28 May 2019

Received
 Kildare County Council
 10 Oct 2022
 10084 / Moygaddy
 May 2019
 Junction Turning Count

Time	A to C - R157(N) to R157(S)							Veh. Total	A to B - R157(N) to Dillow's Road							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	39	0	6	1	0	0	1	47	19	0	5	0	0	0	0	24
7:15	48	1	6	2	0	0	0	57	19	0	12	1	0	0	0	32
7:30	45	0	6	1	0	0	0	52	30	0	8	1	0	0	0	39
7:45	58	0	3	1	0	0	0	62	19	1	5	0	0	0	0	25
8:00	58	0	7	3	0	0	0	68	28	0	2	1	0	0	0	31
8:15	47	0	4	2	0	0	0	53	25	0	5	0	0	0	0	30
8:30	68	0	9	3	0	0	0	80	27	0	2	0	0	0	0	29
8:45	59	0	3	2	0	0	0	64	47	1	3	1	0	0	0	52
9:00	39	1	2	5	0	0	0	47	12	0	1	0	1	0	0	14
9:15	40	0	2	1	0	0	0	43	17	0	0	0	0	0	0	17
9:30	47	1	4	6	3	0	0	61	14	0	4	1	1	0	0	20
9:45	36	0	3	7	0	0	0	46	12	0	0	0	0	0	0	12
10:00	29	0	5	2	2	0	0	38	6	0	1	0	0	0	0	7
10:15	29	0	6	3	0	0	0	38	13	0	1	2	0	0	0	16
10:30	17	0	0	0	0	0	0	17	11	0	3	1	0	0	0	15
10:45	33	0	3	0	0	0	0	36	14	0	2	0	0	0	0	16
11:00	24	0	5	2	0	0	0	31	18	0	2	1	0	0	0	21
11:15	33	0	3	4	0	0	0	40	16	0	1	0	0	0	0	17
11:30	19	0	2	2	1	0	0	24	11	0	3	0	0	0	0	14
11:45	25	1	2	1	0	0	0	29	21	0	3	0	0	0	0	24
12:00	22	0	2	2	0	0	0	26	11	0	2	0	0	0	0	13
12:15	18	0	2	4	0	0	0	24	12	0	3	0	0	0	0	15
12:30	38	0	3	2	0	0	0	43	14	0	4	1	0	0	0	19
12:45	22	0	2	3	0	0	0	27	11	0	0	0	0	0	0	11
13:00	22	0	3	1	0	0	0	26	10	0	1	0	0	0	0	11
13:15	27	0	1	1	0	0	0	29	11	1	3	0	0	0	0	15
13:30	26	1	2	3	0	0	0	32	16	0	4	2	0	0	0	22
13:45	20	0	3	1	0	0	0	24	17	0	2	0	0	0	0	19
14:00	34	0	1	5	1	0	0	41	12	0	4	0	0	0	0	16
14:15	29	0	3	2	0	0	1	35	19	0	3	1	0	0	0	23
14:30	29	0	2	4	0	0	0	35	22	0	6	1	0	0	0	29
14:45	27	0	2	0	0	1	0	30	17	0	1	0	0	0	0	18
15:00	34	0	2	2	0	0	0	38	18	0	1	1	0	0	0	20
15:15	35	1	2	2	0	0	0	40	25	0	4	0	0	0	0	29
15:30	15	1	1	4	0	0	0	21	20	0	2	0	0	0	0	22
15:45	52	0	5	1	2	0	0	60	22	0	7	0	0	0	0	29
16:00	39	0	5	4	0	1	2	51	31	0	4	3	0	0	0	38
16:15	42	0	7	1	0	0	0	50	26	0	6	0	0	0	0	32
16:30	45	0	4	0	0	1	0	50	30	1	7	0	1	0	0	39
16:45	46	0	3	1	0	0	0	50	50	0	7	0	0	0	0	57
17:00	25	0	4	1	0	0	1	31	29	0	10	0	0	0	0	39
17:15	57	0	9	1	0	0	0	67	37	0	10	0	0	1	0	48
17:30	55	0	2	0	0	0	0	57	57	1	8	1	1	0	0	68
17:45	55	0	4	0	0	0	0	59	34	1	6	0	0	0	0	41
18:00	34	0	7	1	0	0	0	42	41	1	6	0	0	0	0	48
18:15	29	0	5	2	0	0	0	36	39	0	3	0	0	0	0	42
18:30	38	1	2	0	0	0	0	41	34	0	2	0	0	1	0</	



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	A to A - R157(N) to R157(N)							Veh. Total	B to A - Dillow's Road to R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	0	0	0	0	0	0	0	0	48	1	11	0	0	0	0	60
7:15	0	0	0	0	0	0	0	0	58	0	4	1	0	0	0	63
7:30	2	0	1	0	0	0	0	3	65	0	15	0	0	2	0	82
7:45	0	0	0	0	0	0	0	0	71	0	9	2	0	0	0	82
8:00	0	0	0	0	0	0	0	0	52	0	7	0	0	0	0	59
8:15	0	0	0	0	0	0	0	0	47	0	3	1	0	0	0	51
8:30	0	0	0	0	0	0	0	0	51	1	6	1	0	0	0	59
8:45	0	0	0	1	0	0	0	1	42	0	4	0	0	0	0	46
9:00	1	0	0	0	0	0	0	1	36	0	5	1	0	0	0	42
9:15	0	0	0	0	0	0	0	0	23	0	5	0	0	0	0	28
9:30	0	0	0	0	0	0	0	0	16	1	2	0	0	0	0	19
9:45	0	0	0	0	0	0	0	0	17	0	1	0	0	0	0	18
10:00	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	17
10:15	0	0	0	0	0	0	0	0	14	0	3	0	0	0	0	17
10:30	0	0	0	0	0	0	0	0	15	0	4	2	0	0	0	21
10:45	0	0	0	0	0	0	0	0	11	0	3	1	0	0	0	15
11:00	1	0	0	0	0	0	0	1	10	0	3	0	0	0	0	13
11:15	0	0	0	0	0	0	0	0	16	0	6	0	0	0	6	28
11:30	0	0	0	0	0	0	0	0	4	0	4	1	0	0	1	10
11:45	0	0	0	0	0	0	0	0	20	0	1	0	0	0	3	24
12:00	1	0	0	0	0	0	0	1	28	0	3	1	0	0	0	32
12:15	0	0	0	0	0	0	0	0	13	0	3	1	0	0	0	17
12:30	0	0	0	0	0	0	0	0	19	0	5	1	0	0	0	25
12:45	0	0	0	0	0	1	0	1	9	0	1	2	0	0	0	12
13:00	0	0	0	0	0	0	0	0	12	0	3	1	0	0	0	16
13:15	0	0	0	0	0	0	0	0	18	0	2	0	0	0	0	20
13:30	0	0	0	0	0	0	0	0	13	0	2	0	0	0	0	15
13:45	0	0	0	0	0	0	0	0	16	0	2	0	0	0	0	18
14:00	1	0	0	0	0	0	0	1	15	0	3	0	0	0	1	19
14:15	0	0	0	0	0	0	0	0	10	0	1	0	0	0	0	11
14:30	0	0	0	0	0	0	0	0	14	1	1	0	0	0	0	16
14:45	0	0	0	0	0	0	0	0	19	0	2	0	0	0	0	21
15:00	0	0	0	0	0	0	0	0	14	0	4	1	0	0	0	19
15:15	0	0	0	0	0	0	0	0	18	0	1	1	0	0	1	21
15:30	0	0	0	0	0	0	0	0	29	2	5	0	0	0	0	36
15:45	0	0	0	0	0	0	0	0	21	0	3	0	0	0	0	24
16:00	0	0	0	0	0	0	0	0	22	0	1	0	0	0	0	23
16:15	1	0	0	0	0	0	0	1	23	0	2	0	0	0	0	25
16:30	0	0	0	0	0	0	0	0	18	0	2	0	0	0	0	20
16:45	0	0	0	0	0	0	0	0	18	0	5	0	0	0	0	23
17:00	0	0	0	0	0	0	0	0	21	0	8	0	0	0	0	29
17:15	0	0	0	0	0	0	0	0	22	0	4	0	0	0	0	26
17:30	2	0	0	0	0	0	0	2	19	0	4	0	0	0	0	23
17:45	0	0	0	0	0	0	0	0	20	0	2	0	0	0	0	22
18:00	1	0	0	0	0	0	0	1	25	0	7	1	0	0	0	33
18:15	0	0	0	1	0	0	0	1	20	2	1	0	0	0	0	23
18:30	1	0	0	0	0	0	0	1	25	0	1	0	0	0	0	26
18:45	0	0	0	0	0	0	0	0	15	0	1	0	0	0	0	16
25:75	11	0	1	2	0	1	0	15	1149	8	175	19	0	2	12	1365



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	B to C - Dillow's Road to R157(S)							Veh. Total	B to B - Dillow's Road to Dillow's Road							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	11	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0
7:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
7:30	9	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
7:45	12	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
8:00	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
8:15	9	0	0	1	0	0	0	10	0	0	0	0	0	0	0	0
8:30	9	0	1	0	0	0	0	10	0	0	0	0	0	0	0	0
8:45	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
9:00	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
9:15	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
9:30	6	0	0	1	0	0	0	7	0	0	0	0	0	0	0	0
9:45	7	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
10:00	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
10:15	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
10:30	2	0	0	1	0	0	0	3	0	0	0	0	0	0	0	0
10:45	1	0	1	2	0	0	0	4	0	0	0	0	0	0	0	0
11:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11:15	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
11:30	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1
11:45	3	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0
12:00	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
12:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
12:30	2	2	0	3	0	0	0	7	0	0	0	0	0	0	0	0
12:45	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
13:00	0	0	1	2	0	0	0	3	0	0	0	0	0	0	0	0
13:15	3	0	0	1	0	0	0	4	0	0	0	0	0	0	0	0
13:30	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
13:45	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
14:00	3	1	1	0	0	0	0	5	0	0	0	0	0	0	0	0
14:15	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
14:30	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
14:45	2	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0
15:00	3	0	0	2	0	0	0	5	0	0	0	0	0	0	0	0
15:15	6	0	1	1	0	0	0	8	0	0	0	0	0	0	0	0
15:30	3	0	0	1	0	0	0	4	0	0	1	0	0	0	1	0
15:45	10	0	2	0	0	0	0	12	0	0	0	0	0	0	0	0
16:00	3	0	3	0	0	0	0	6	0	0	0	0	0	0	0	0
16:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
16:30	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
16:45	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
17:00	5	0	2	0	0	0	0	7	0	0	0	0	0	0	0	0
17:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
17:30	7	0	1	0	0	0	0	8	0	0	0	0	0	0	0	0
17:45	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
18:00	4	0	2	0	0	0	0	6	0	0	0	0	0	0	0	0
18:15	5	0	2	0	0	0	0	7	0	0	0	0	0	0	0	0
18:30	6	0	2	0	0	0	0	8	0	0	0	0	0	0	0	0
18:45	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
25:75	231	3	20	17	0	0	0	271	1	0	0	1	0	0	0	2

Kildare County Council Planning Department - Viewing Purposes Only!



Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	C to B - R157(S) to Dillow's Road							Veh. Total	C to A - R157(S) to R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	0	0	0	0	0	0	0	0	23	0	4	2	0	0	0	29
7:15	1	0	0	0	0	0	0	1	24	0	5	2	1	0	0	32
7:30	1	0	0	0	0	0	0	1	35	0	2	4	0	0	0	41
7:45	2	0	0	0	0	0	0	2	46	0	7	3	1	0	0	57
8:00	1	0	0	0	0	0	0	1	37	0	3	6	0	0	0	46
8:15	1	0	0	1	0	0	0	2	37	0	1	9	0	0	0	47
8:30	3	0	0	0	0	0	0	3	42	1	7	2	0	0	0	52
8:45	8	0	0	1	0	0	0	9	37	1	4	7	1	0	0	50
9:00	4	0	0	1	0	0	0	5	35	0	5	7	0	1	0	48
9:15	3	0	0	0	0	0	0	3	25	2	4	2	0	0	0	33
9:30	9	0	0	0	0	0	0	9	17	1	1	1	1	0	0	21
9:45	1	0	0	0	0	0	0	1	17	0	1	2	1	0	1	22
10:00	2	0	0	0	0	0	0	2	14	1	4	2	0	0	0	21
10:15	1	0	0	0	0	0	0	1	19	0	8	3	0	0	1	31
10:30	3	0	0	1	0	0	0	4	19	0	4	2	0	0	0	25
10:45	2	0	0	0	0	0	0	2	19	0	2	0	0	0	0	21
11:00	1	0	0	0	0	0	0	1	16	0	2	3	0	0	0	21
11:15	2	0	0	0	0	0	0	2	25	1	1	2	0	0	0	29
11:30	6	0	0	1	0	0	0	7	24	1	0	3	0	0	0	28
11:45	3	0	0	0	0	0	0	3	25	0	2	3	0	0	0	30
12:00	4	0	0	1	0	0	0	5	40	0	1	0	0	0	0	41
12:15	1	0	0	4	0	0	0	5	31	0	3	5	0	0	0	39
12:30	10	1	0	1	0	0	0	12	24	1	2	4	0	0	0	31
12:45	4	0	0	0	0	0	0	4	29	1	3	2	0	0	0	35
13:00	3	0	1	3	0	0	0	7	36	0	2	4	0	0	0	42
13:15	5	0	0	1	0	0	0	6	35	1	2	5	0	0	0	43
13:30	5	0	2	0	0	0	0	7	31	2	3	4	1	0	0	41
13:45	4	0	1	0	0	0	0	5	31	0	5	4	2	0	0	42
14:00	3	0	0	0	0	0	0	3	40	0	6	1	0	0	0	47
14:15	7	0	0	0	0	0	0	7	27	0	6	1	0	0	0	34
14:30	5	0	0	0	0	0	0	5	35	1	2	1	0	0	0	39
14:45	11	0	0	1	0	0	0	12	69	1	2	5	1	0	0	78
15:00	11	0	1	2	0	0	0	14	48	1	2	1	0	0	0	52
15:15	13	0	1	0	0	0	0	14	32	1	7	4	2	0	0	46
15:30	5	0	0	0	0	0	0	5	43	1	4	2	0	1	0	51
15:45	9	0	3	0	0	0	0	12	43	0	7	2	0	0	0	52
16:00	6	0	1	0	0	0	0	7	50	0	11	2	0	0	0	63
16:15	17	0	3	0	0	0	0	20	49	0	8	1	0	0	0	58
16:30	8	0	1	0	0	0	0	9	74	1	12	0	0	0	0	87
16:45	15	0	0	0	0	0	0	15	63	0	5	0	0	0	0	68
17:00	12	0	1	0	0	0	0	13	71	0	13	4	0	0	0	88
17:15	15	0	0	0	0	0	0	15	69	0	5	3	0	0	0	77
17:30	17	0	2	0	0	0	0	19	87	0	5	3	0	0	0	95
17:45	21	0	2	0	0	0	0	23	67	0	4	0	0	0	1	72
18:00	10	0	1	0	0	0	0	11	84	0	15	2	0	0	1	102
18:15	15	0	1	0	0	0	0	16	70	0	4	0	0	0	0	74
18:30	6	0	1	0	0	0	0	7	51	0	4	1	0	0	1	57
18:45	9	0	0	0	0	0	0	9	43	0	7	2	0	1	2	55
25:75	305	1	22	18	0	0	0	346	1908	19	217	128	11	3	7	2293



Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	C to C - R157(S) to R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	1	0	0	0	0	1
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0
9:00	1	0	0	0	0	0	0	1
9:15	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0
15:00	0	0	0	1	0	0	0	1
15:15	1	0	0	0	0	0	0	1
15:30	1	0	0	0	0	0	0	1
15:45	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	1	0	0	0	0	0	0	1
17:45	1	0	0	0	0	0	0	1
18:00	1	0	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0
25:75	5	0	1	1	0	0	0	7



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	To Arm C - R157(S)							Veh. Total	From Arm C - R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	50	0	6	1	0	0	1	58	23	0	4	2	0	0	0	29
7:15	53	1	6	2	0	0	0	62	25	0	5	2	1	0	0	33
7:30	54	0	6	1	0	0	0	61	36	0	2	4	0	0	0	42
7:45	70	0	3	1	0	0	0	74	48	0	7	3	1	0	0	59
8:00	66	0	7	3	0	0	0	76	38	0	3	6	0	0	0	47
8:15	56	0	5	3	0	0	0	64	38	0	2	10	0	0	0	50
8:30	77	0	10	3	0	0	0	90	45	1	7	2	0	0	0	55
8:45	67	0	3	2	0	0	0	72	45	1	4	8	1	0	0	59
9:00	46	1	2	5	0	0	0	54	40	0	5	8	0	1	0	54
9:15	43	0	2	1	0	0	0	46	28	2	4	2	0	0	0	36
9:30	53	1	4	7	3	0	0	68	26	1	1	1	1	0	0	30
9:45	43	0	3	8	0	0	0	54	18	0	1	2	1	0	1	23
10:00	33	0	5	2	2	0	0	42	16	1	4	2	0	0	0	23
10:15	30	0	6	3	0	0	0	39	20	0	8	3	0	0	1	32
10:30	19	0	0	1	0	0	0	20	22	0	4	3	0	0	0	29
10:45	34	0	4	2	0	0	0	40	21	0	2	0	0	0	0	23
11:00	25	0	5	2	0	0	0	32	17	0	2	3	0	0	0	22
11:15	36	0	3	4	0	0	0	43	27	1	1	2	0	0	0	31
11:30	21	0	2	2	1	0	0	26	30	1	0	4	0	0	0	35
11:45	28	1	2	2	0	0	0	33	28	0	2	3	0	0	0	33
12:00	29	0	2	2	0	0	0	33	44	0	1	1	0	0	0	46
12:15	23	0	2	4	0	0	0	29	32	0	3	9	0	0	0	44
12:30	40	2	3	5	0	0	0	50	34	2	2	5	0	0	0	43
12:45	23	0	2	3	0	0	0	28	33	1	3	2	0	0	0	39
13:00	22	0	4	3	0	0	0	29	39	0	3	7	0	0	0	49
13:15	30	0	1	2	0	0	0	33	40	1	2	6	0	0	0	49
13:30	34	1	2	3	0	0	0	40	36	2	5	4	1	0	0	48
13:45	26	0	3	1	0	0	0	30	35	0	6	4	2	0	0	47
14:00	37	1	2	5	1	0	0	46	43	0	6	1	0	0	0	50
14:15	30	0	3	2	0	0	1	36	34	0	6	1	0	0	0	41
14:30	32	0	2	4	0	0	0	38	40	1	2	1	0	0	0	44
14:45	29	0	3	0	0	1	0	33	80	1	2	6	1	0	0	90
15:00	37	0	2	5	0	0	0	44	59	1	3	4	0	0	0	67
15:15	41	1	3	3	0	0	0	48	45	1	8	4	2	0	0	60
15:30	19	1	1	5	0	0	0	26	49	1	4	2	0	1	0	57
15:45	62	0	7	1	2	0	0	72	52	0	10	2	0	0	0	64
16:00	42	0	8	4	0	1	2	57	56	0	12	2	0	0	0	70
16:15	47	0	7	1	0	0	0	55	66	0	11	1	0	0	0	78
16:30	48	0	4	0	0	1	0	53	82	1	13	0	0	0	0	96
16:45	49	0	3	1	0	0	0	53	78	0	5	0	0	0	0	83
17:00	30	0	6	1	0	1	0	38	83	0	14	4	0	0	0	101
17:15	62	0	9	1	0	0	0	72	84	0	5	3	0	0	0	92
17:30	63	0	3	0	0	0	0	66	105	0	7	3	0	0	0	115
17:45	63	0	4	0	0	0	0	67	89	0	6	0	0	0	1	96
18:00	39	0	9	1	0	0	0	49	95	0	16	2	0	0	1	114
18:15	34	0	7	2	0	0	0	43	85	0	5	0	0	0	0	90
18:30	44	1	4	0	0	0	0	49	57	0	5	1	0	0	1	64
18:45	35	1	6	0	0	0	0	42	52	0	7	2	0	1	2	64



Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	A to C - R157(N) to R157(S)							Veh. Total	A to B - R157(N) to Dillow's Road							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	39	0	6	2.3	0	0	0.2	47.5	19	0	5	0	0	0	0	24
7:15	48	1	6	4.6	0	0	0	59.6	19	0	12	2.3	0	0	0	33.3
7:30	45	0	6	2.3	0	0	0	53.3	30	0	8	2.3	0	0	0	40.3
7:45	58	0	3	2.3	0	0	0	63.3	19	1	5	0	0	0	0	25
8:00	58	0	7	6.9	0	0	0	71.9	28	0	2	2.3	0	0	0	32.3
8:15	47	0	4	4.6	0	0	0	55.6	25	0	5	0	0	0	0	30
8:30	68	0	9	6.9	0	0	0	83.9	27	0	2	0	0	0	0	29
8:45	59	0	3	4.6	0	0	0	66.6	47	1	3	2.3	0	0	0	53.3
9:00	39	1	2	11.5	0	0	0	53.5	12	0	1	0	2	0	0	15
9:15	40	0	2	2.3	0	0	0	44.3	17	0	0	0	0	0	0	17
9:30	47	1	4	13.8	6	0	0	71.8	14	0	4	2.3	2	0	0	22.3
9:45	36	0	3	16.1	0	0	0	55.1	12	0	0	0	0	0	0	12
10:00	29	0	5	4.6	4	0	0	42.6	6	0	1	0	0	0	0	7
10:15	29	0	6	6.9	0	0	0	41.9	13	0	1	4.6	0	0	0	18.6
10:30	17	0	0	0	0	0	0	17	11	0	3	2.3	0	0	0	16.3
10:45	33	0	3	0	0	0	0	36	14	0	2	0	0	0	0	16
11:00	24	0	5	4.6	0	0	0	33.6	18	0	2	2.3	0	0	0	22.3
11:15	33	0	3	9.2	0	0	0	45.2	16	0	1	0	0	0	0	17
11:30	19	0	2	4.6	2	0	0	27.6	11	0	3	0	0	0	0	14
11:45	25	1	2	2.3	0	0	0	30.3	21	0	3	0	0	0	0	24
12:00	22	0	2	4.6	0	0	0	28.6	11	0	2	0	0	0	0	13
12:15	18	0	2	9.2	0	0	0	29.2	12	0	3	0	0	0	0	15
12:30	38	0	3	4.6	0	0	0	45.6	14	0	4	2.3	0	0	0	20.3
12:45	22	0	2	6.9	0	0	0	30.9	11	0	0	0	0	0	0	11
13:00	22	0	3	2.3	0	0	0	27.3	10	0	1	0	0	0	0	11
13:15	27	0	1	2.3	0	0	0	30.3	11	1	3	0	0	0	0	15
13:30	26	1	2	6.9	0	0	0	35.9	16	0	4	4.6	0	0	0	24.6
13:45	20	0	3	2.3	0	0	0	25.3	17	0	2	0	0	0	0	19
14:00	34	0	1	11.5	2	0	0	48.5	12	0	4	0	0	0	0	16
14:15	29	0	3	4.6	0	0	0.2	36.8	19	0	3	2.3	0	0	0	24.3
14:30	29	0	2	9.2	0	0	0	40.2	22	0	6	2.3	0	0	0	30.3
14:45	27	0	2	0	0	0.4	0	29.4	17	0	1	0	0	0	0	18
15:00	34	0	2	4.6	0	0	0	40.6	18	0	1	2.3	0	0	0	21.3
15:15	35	1	2	4.6	0	0	0	42.6	25	0	4	0	0	0	0	29
15:30	15	1	1	9.2	0	0	0	26.2	20	0	2	0	0	0	0	22
15:45	52	0	5	2.3	4	0	0	63.3	22	0	7	0	0	0	0	29
16:00	39	0	5	9.2	0	0.4	0.4	54	31	0	4	6.9	0	0	0	41.9
16:15	42	0	7	2.3	0	0	0	51.3	26	0	6	0	0	0	0	32
16:30	45	0	4	0	0	0.4	0	49.4	30	1	7	0	2	0	0	40
16:45	46	0	3	2.3	0	0	0	51.3	50	0	7	0	0	0	0	57
17:00	25	0	4	2.3	0	0.4	0	31.7	29	0	10	0	0	0	0	39
17:15	57	0	9	2.3	0	0	0	68.3	37	0	10	0	0	0.4	0	47.4
17:30	55	0	2	0	0	0	0	57	57	1	8	2.3	2	0	0	70.3
17:45	55	0	4	0	0	0	0	59	34	1	6	0	0	0	0	41
18:00	34	0	7	2.3	0	0	0	43.3	41	1	6	0	0	0	0	48
18:15	29	0	5	4.6	0	0	0	38.6	39	0	3	0	0	0	0	42
18:30	38	1	2	0	0	0	0	41	34	0	2	0	0	0.4	0	36.4
18:45	30	1	6	0	0	0	0	37	30	0	2	0	0	0	0	32
Total	1738	9	175	220.8	18	1.6	0.8	2163.2	1074	7	181	43.7	8	0.8	0	1314.5

CAR TAXI LGV HGV PSV M/C P/C
1 1 1 2.3 2 0.4 0.2



Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	A to A - R157(N) to R157(N)							Veh. Total	B to A - Dillow's Road to R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	0	0	0	0	0	0	0	0	48	1	11	0	0	0	0	60
7:15	0	0	0	0	0	0	0	0	58	0	4	2.3	0	0	0	64.3
7:30	2	0	1	0	0	0	0	3	65	0	15	0	0	0.8	0	80.8
7:45	0	0	0	0	0	0	0	0	71	0	9	4.6	0	0	0	84.6
8:00	0	0	0	0	0	0	0	0	52	0	7	0	0	0	0	59
8:15	0	0	0	0	0	0	0	0	47	0	3	2.3	0	0	0	52.3
8:30	0	0	0	0	0	0	0	0	51	1	6	2.3	0	0	0	60.3
8:45	0	0	0	2.3	0	0	0	2.3	42	0	4	0	0	0	0	46
9:00	1	0	0	0	0	0	0	1	36	0	5	2.3	0	0	0	43.3
9:15	0	0	0	0	0	0	0	0	23	0	5	0	0	0	0	28
9:30	0	0	0	0	0	0	0	0	16	1	2	0	0	0	0	19
9:45	0	0	0	0	0	0	0	0	17	0	1	0	0	0	0	18
10:00	0	0	0	0	0	0	0	0	17	0	0	0	0	0	0	17
10:15	0	0	0	0	0	0	0	0	14	0	3	0	0	0	0	17
10:30	0	0	0	0	0	0	0	0	15	0	4	4.6	0	0	0	23.6
10:45	0	0	0	0	0	0	0	0	11	0	3	2.3	0	0	0	16.3
11:00	1	0	0	0	0	0	0	1	10	0	3	0	0	0	0	13
11:15	0	0	0	0	0	0	0	0	16	0	6	0	0	1.2	0	23.2
11:30	0	0	0	0	0	0	0	0	4	0	4	2.3	0	0	0.2	10.5
11:45	0	0	0	0	0	0	0	0	20	0	1	0	0	0	0.6	21.6
12:00	1	0	0	0	0	0	0	1	28	0	3	2.3	0	0	0	33.3
12:15	0	0	0	0	0	0	0	0	13	0	3	2.3	0	0	0	18.3
12:30	0	0	0	0	0	0	0	0	19	0	5	2.3	0	0	0	26.3
12:45	0	0	0	0	0	0.4	0	0.4	9	0	1	4.6	0	0	0	14.6
13:00	0	0	0	0	0	0	0	0	12	0	3	2.3	0	0	0	17.3
13:15	0	0	0	0	0	0	0	0	18	0	2	0	0	0	0	20
13:30	0	0	0	0	0	0	0	0	13	0	2	0	0	0	0	15
13:45	0	0	0	0	0	0	0	0	16	0	2	0	0	0	0	18
14:00	1	0	0	0	0	0	0	1	15	0	3	0	0	0	0.2	18.2
14:15	0	0	0	0	0	0	0	0	10	0	1	0	0	0	0	11
14:30	0	0	0	0	0	0	0	0	14	1	1	0	0	0	0	16
14:45	0	0	0	0	0	0	0	0	19	0	2	0	0	0	0	21
15:00	0	0	0	0	0	0	0	0	14	0	4	2.3	0	0	0	20.3
15:15	0	0	0	0	0	0	0	0	18	0	1	2.3	0	0	0.2	21.5
15:30	0	0	0	0	0	0	0	0	29	2	5	0	0	0	0	36
15:45	0	0	0	0	0	0	0	0	21	0	3	0	0	0	0	24
16:00	0	0	0	0	0	0	0	0	22	0	1	0	0	0	0	23
16:15	1	0	0	0	0	0	0	1	23	0	2	0	0	0	0	25
16:30	0	0	0	0	0	0	0	0	18	0	2	0	0	0	0	20
16:45	0	0	0	0	0	0	0	0	18	0	5	0	0	0	0	23
17:00	0	0	0	0	0	0	0	0	21	0	8	0	0	0	0	29
17:15	0	0	0	0	0	0	0	0	22	0	4	0	0	0	0	26
17:30	2	0	0	0	0	0	0	2	19	0	4	0	0	0	0	23
17:45	0	0	0	0	0	0	0	0	20	0	2	0	0	0	0	22
18:00	1	0	0	0	0	0	0	1	25	0	7	2.3	0	0	0	34.3
18:15	0	0	0	2.3	0	0	0	2.3	20	2	1	0	0	0	0	23
18:30	1	0	0	0	0	0	0	1	25	0	1	0	0	0	0	26
18:45	0	0	0	0	0	0	0	0	15	0	1	0	0	0	0	16
25:75	11	0	1	4.6	0	0.4	0	17	1149	8	175	43.7	0	0.8	2.4	1378.9



Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	B to C - Dillow's Road to R157(S)							Veh. Total	B to B - Dillow's Road to Dillow's Road							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	11	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0
7:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
7:30	9	0	0	0	0	0	0	9	0	0	0	0	0	0	0	0
7:45	12	0	0	0	0	0	0	12	0	0	0	0	0	0	0	0
8:00	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
8:15	9	0	0	2.3	0	0	0	11.3	0	0	0	0	0	0	0	0
8:30	9	0	1	0	0	0	0	10	0	0	0	0	0	0	0	0
8:45	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
9:00	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
9:15	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
9:30	6	0	0	2.3	0	0	0	8.3	0	0	0	0	0	0	0	0
9:45	7	0	0	2.3	0	0	0	9.3	0	0	0	0	0	0	0	0
10:00	4	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0
10:15	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
10:30	2	0	0	2.3	0	0	0	4.3	0	0	0	0	0	0	0	0
10:45	1	0	1	4.6	0	0	0	6.6	0	0	0	0	0	0	0	0
11:00	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
11:15	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
11:30	2	0	0	0	0	0	0	2	1	0	0	0	0	0	0	1
11:45	3	0	0	2.3	0	0	0	5.3	0	0	0	0	0	0	0	0
12:00	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
12:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
12:30	2	2	0	6.9	0	0	0	10.9	0	0	0	0	0	0	0	0
12:45	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
13:00	0	0	1	4.6	0	0	0	5.6	0	0	0	0	0	0	0	0
13:15	3	0	0	2.3	0	0	0	5.3	0	0	0	0	0	0	0	0
13:30	8	0	0	0	0	0	0	8	0	0	0	0	0	0	0	0
13:45	6	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0
14:00	3	1	1	0	0	0	0	5	0	0	0	0	0	0	0	0
14:15	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
14:30	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
14:45	2	0	1	0	0	0	0	3	0	0	0	0	0	0	0	0
15:00	3	0	0	4.6	0	0	0	7.6	0	0	0	0	0	0	0	0
15:15	6	0	1	2.3	0	0	0	9.3	0	0	0	0	0	0	0	0
15:30	3	0	0	2.3	0	0	0	5.3	0	0	0	2.3	0	0	0	2.3
15:45	10	0	2	0	0	0	0	12	0	0	0	0	0	0	0	0
16:00	3	0	3	0	0	0	0	6	0	0	0	0	0	0	0	0
16:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
16:30	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
16:45	3	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0
17:00	5	0	2	0	0	0	0	7	0	0	0	0	0	0	0	0
17:15	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
17:30	7	0	1	0	0	0	0	8	0	0	0	0	0	0	0	0
17:45	7	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0
18:00	4	0	2	0	0	0	0	6	0	0	0	0	0	0	0	0
18:15	5	0	2	0	0	0	0	7	0	0	0	0	0	0	0	0
18:30	6	0	2	0	0	0	0	8	0	0	0	0	0	0	0	0
18:45	5	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0
25:75	231	3	20	39.1	0	0	0	293.1	1	0	0	2.3	0	0	0	3.3



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	C to B - R157(S) to Dillow's Road							Veh. Total	C to A - R157(S) to R157(N)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	0	0	0	0	0	0	0	0	23	0	4	4.6	0	0	0	31.6
7:15	1	0	0	0	0	0	0	1	24	0	5	4.6	2	0	0	35.6
7:30	1	0	0	0	0	0	0	1	35	0	2	9.2	0	0	0	46.2
7:45	2	0	0	0	0	0	0	2	46	0	7	6.9	2	0	0	61.9
8:00	1	0	0	0	0	0	0	1	37	0	3	13.8	0	0	0	53.8
8:15	1	0	0	2.3	0	0	0	3.3	37	0	1	20.7	0	0	0	58.7
8:30	3	0	0	0	0	0	0	3	42	1	7	4.6	0	0	0	54.6
8:45	8	0	0	2.3	0	0	0	10.3	37	1	4	16.1	2	0	0	60.1
9:00	4	0	0	2.3	0	0	0	6.3	35	0	5	16.1	0	0.4	0	56.5
9:15	3	0	0	0	0	0	0	3	25	2	4	4.6	0	0	0	35.6
9:30	9	0	0	0	0	0	0	9	17	1	1	2.3	2	0	0	23.3
9:45	1	0	0	0	0	0	0	1	17	0	1	4.6	2	0	0.2	24.8
10:00	2	0	0	0	0	0	0	2	14	1	4	4.6	0	0	0	23.6
10:15	1	0	0	0	0	0	0	1	19	0	8	6.9	0	0	0.2	34.1
10:30	3	0	0	2.3	0	0	0	5.3	19	0	4	4.6	0	0	0	27.6
10:45	2	0	0	0	0	0	0	2	19	0	2	0	0	0	0	21
11:00	1	0	0	0	0	0	0	1	16	0	2	6.9	0	0	0	24.9
11:15	2	0	0	0	0	0	0	2	25	1	1	4.6	0	0	0	31.6
11:30	6	0	0	2.3	0	0	0	8.3	24	1	0	6.9	0	0	0	31.9
11:45	3	0	0	0	0	0	0	3	25	0	2	6.9	0	0	0	33.9
12:00	4	0	0	2.3	0	0	0	6.3	40	0	1	0	0	0	0	41
12:15	1	0	0	9.2	0	0	0	10.2	31	0	3	11.5	0	0	0	45.5
12:30	10	1	0	2.3	0	0	0	13.3	24	1	2	9.2	0	0	0	36.2
12:45	4	0	0	0	0	0	0	4	29	1	3	4.6	0	0	0	37.6
13:00	3	0	1	6.9	0	0	0	10.9	36	0	2	9.2	0	0	0	47.2
13:15	5	0	0	2.3	0	0	0	7.3	35	1	2	11.5	0	0	0	49.5
13:30	5	0	2	0	0	0	0	7	31	2	3	9.2	2	0	0	47.2
13:45	4	0	1	0	0	0	0	5	31	0	5	9.2	4	0	0	49.2
14:00	3	0	0	0	0	0	0	3	40	0	6	2.3	0	0	0	48.3
14:15	7	0	0	0	0	0	0	7	27	0	6	2.3	0	0	0	35.3
14:30	5	0	0	0	0	0	0	5	35	1	2	2.3	0	0	0	40.3
14:45	11	0	0	2.3	0	0	0	13.3	69	1	2	11.5	2	0	0	85.5
15:00	11	0	1	4.6	0	0	0	16.6	48	1	2	2.3	0	0	0	53.3
15:15	13	0	1	0	0	0	0	14	32	1	7	9.2	4	0	0	53.2
15:30	5	0	0	0	0	0	0	5	43	1	4	4.6	0	0.4	0	53
15:45	9	0	3	0	0	0	0	12	43	0	7	4.6	0	0	0	54.6
16:00	6	0	1	0	0	0	0	7	50	0	11	4.6	0	0	0	65.6
16:15	17	0	3	0	0	0	0	20	49	0	8	2.3	0	0	0	59.3
16:30	8	0	1	0	0	0	0	9	74	1	12	0	0	0	0	87
16:45	15	0	0	0	0	0	0	15	63	0	5	0	0	0	0	68
17:00	12	0	1	0	0	0	0	13	71	0	13	9.2	0	0	0	93.2
17:15	15	0	0	0	0	0	0	15	69	0	5	6.9	0	0	0	80.9
17:30	17	0	2	0	0	0	0	19	87	0	5	6.9	0	0	0	98.9
17:45	21	0	2	0	0	0	0	23	67	0	4	0	0	0	0.2	71.2
18:00	10	0	1	0	0	0	0	11	84	0	15	4.6	0	0	0.2	103.8
18:15	15	0	1	0	0	0	0	16	70	0	4	0	0	0	0	74
18:30	6	0	1	0	0	0	0	7	51	0	4	2.3	0	0	0.2	57.5
18:45	9	0	0	0	0	0	0	9	43	0	7	4.6	0	0.4	0.4	55.4
25:75	305	1	22	41.4	0	0	0	369.4	1908	19	217	294.4	22	1.2	1.4	2463



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	C to C - R157(S) to R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	0	0	0	0	0	0	0	0
7:15	0	0	0	0	0	0	0	0
7:30	0	0	0	0	0	0	0	0
7:45	0	0	0	0	0	0	0	0
8:00	0	0	0	0	0	0	0	0
8:15	0	0	1	0	0	0	0	1
8:30	0	0	0	0	0	0	0	0
8:45	0	0	0	0	0	0	0	0
9:00	1	0	0	0	0	0	0	1
9:15	0	0	0	0	0	0	0	0
9:30	0	0	0	0	0	0	0	0
9:45	0	0	0	0	0	0	0	0
10:00	0	0	0	0	0	0	0	0
10:15	0	0	0	0	0	0	0	0
10:30	0	0	0	0	0	0	0	0
10:45	0	0	0	0	0	0	0	0
11:00	0	0	0	0	0	0	0	0
11:15	0	0	0	0	0	0	0	0
11:30	0	0	0	0	0	0	0	0
11:45	0	0	0	0	0	0	0	0
12:00	0	0	0	0	0	0	0	0
12:15	0	0	0	0	0	0	0	0
12:30	0	0	0	0	0	0	0	0
12:45	0	0	0	0	0	0	0	0
13:00	0	0	0	0	0	0	0	0
13:15	0	0	0	0	0	0	0	0
13:30	0	0	0	0	0	0	0	0
13:45	0	0	0	0	0	0	0	0
14:00	0	0	0	0	0	0	0	0
14:15	0	0	0	0	0	0	0	0
14:30	0	0	0	0	0	0	0	0
14:45	0	0	0	0	0	0	0	0
15:00	0	0	0	2.3	0	0	0	2.3
15:15	1	0	0	0	0	0	0	1
15:30	0	0	0	0	0	0	0	0
15:45	0	0	0	0	0	0	0	0
16:00	0	0	0	0	0	0	0	0
16:15	0	0	0	0	0	0	0	0
16:30	0	0	0	0	0	0	0	0
16:45	0	0	0	0	0	0	0	0
17:00	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0
17:30	1	0	0	0	0	0	0	1
17:45	1	0	0	0	0	0	0	1
18:00	1	0	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	0	0
25:75	5	0	1	2.3	0	0	0	8.3

Received
Kildare County Council
10 Oct 2022
10084 / Moygaddy
May 2019
Junction Turning Count

Kildare County Council Planning Department - Viewing Purposes Only!



Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	To Arm A - R157(N)							Veh. Total	From Arm A - R157(N)							Veh. Total
	CAR	Taxi	LGW	HGV	PSV	M/C	P/C		CAR	Taxi	LGW	HGV	PSV	M/C	P/C	
7:00	71	1	15	4.6	0	0	0	91.6	58	0	11	2.3	0	0	0.2	71.5
7:15	82	0	9	6.9	2	0	0	99.9	67	1	18	6.9	0	0	0	92.9
7:30	102	0	18	9.2	0	0.8	0	130	77	0	15	4.6	0	0	0	96.6
7:45	117	0	16	11.5	2	0	0	146.5	77	1	8	2.3	0	0	0	88.3
8:00	89	0	10	13.8	0	0	0	112.8	86	0	9	2.3	0	0	0	104.2
8:15	84	0	4	2.3	0	0	0	111	72	0	9	4.6	0	0	0	85.6
8:30	93	2	13	6.9	0	0	0	114.9	95	0	11	6.9	0	0	0	112.9
8:45	79	1	8	18.4	2	0	0	108.4	106	1	6	2.3	0	0	0	122.2
9:00	72	0	10	18.4	0	0.4	0	100.8	52	1	3	11.5	2	0	0	69.5
9:15	48	2	9	4.6	0	0	0	63.6	57	0	2	2.3	0	0	0	61.3
9:30	33	2	3	2.3	2	0	0	42.3	61	1	8	16.1	8	0	0	94.1
9:45	34	0	2	4.6	2	0	0.2	42.8	48	0	3	16.1	0	0	0	67.1
10:00	31	1	4	4.6	0	0	0	40.6	35	0	6	4.6	4	0	0	49.6
10:15	33	0	11	6.9	0	0	0.2	51.1	42	0	7	11.5	0	0	0	60.5
10:30	34	0	8	9.2	0	0	0	51.2	28	0	3	2.3	0	0	0	33.3
10:45	30	0	5	2.3	0	0	0	37.3	47	0	5	0	0	0	0	52
11:00	27	0	5	6.9	0	0	0	38.9	43	0	7	6.9	0	0	0	56.9
11:15	41	1	7	4.6	0	0	1.2	54.8	49	0	4	9.2	0	0	0	62.2
11:30	28	1	4	9.2	0	0	0.2	42.4	30	0	5	4.6	2	0	0	41.6
11:45	45	0	3	6.9	0	0	0.6	55.5	46	1	5	2.3	0	0	0	54.3
12:00	69	0	4	2.3	0	0	0	75.3	34	0	4	4.6	0	0	0	42.6
12:15	44	0	6	13.8	0	0	0	63.8	30	0	5	9.2	0	0	0	44.2
12:30	43	1	7	11.5	0	0	0	62.5	52	0	7	6.9	0	0	0	65.9
12:45	38	1	4	9.2	0	0.4	0	52.6	33	0	2	6.9	0	0.4	0	42.3
13:00	48	0	5	11.5	0	0	0	64.5	32	0	4	2.3	0	0	0	38.3
13:15	53	1	4	11.5	0	0	0	69.5	38	1	4	2.3	0	0	0	45.3
13:30	44	2	5	9.2	2	0	0	62.2	42	1	6	11.5	0	0	0	60.5
13:45	47	0	7	9.2	4	0	0	67.2	37	0	5	2.3	0	0	0	44.3
14:00	56	0	9	2.3	0	0	0.2	67.5	47	0	5	11.5	2	0	0	65.5
14:15	37	0	7	2.3	0	0	0	46.3	48	0	6	6.9	0	0	0.2	61.1
14:30	49	2	3	2.3	0	0	0	56.3	51	0	8	11.5	0	0	0	70.5
14:45	88	1	4	11.5	2	0	0	106.5	44	0	3	0	0	0.4	0	47.4
15:00	62	1	6	4.6	0	0	0	73.6	52	0	3	6.9	0	0	0	61.9
15:15	50	1	8	11.5	4	0	0.2	74.7	60	1	6	4.6	0	0	0	71.6
15:30	72	3	9	4.6	0	0.4	0	89	35	1	3	9.2	0	0	0	48.2
15:45	64	0	10	4.6	0	0	0	78.6	74	0	12	2.3	4	0	0	92.3
16:00	72	0	12	4.6	0	0	0	88.6	70	0	9	16.1	0	0.4	0	95.9
16:15	73	0	10	2.3	0	0	0	85.3	69	0	13	2.3	0	0	0	84.3
16:30	92	1	14	0	0	0	0	107	75	1	11	0	2	0.4	0	89.4
16:45	81	0	10	0	0	0	0	91	96	0	10	2.3	0	0	0	108.3
17:00	92	0	21	9.2	0	0	0	122.2	54	0	14	2.3	0	0.4	0	70.7
17:15	91	0	9	6.9	0	0	0	106.9	94	0	19	2.3	0	0.4	0	115.7
17:30	108	0	9	6.9	0	0	0	123.9	114	1	10	2.3	2	0	0	129.3
17:45	87	0	6	0	0	0	0.2	93.2	89	1	10	0	0	0	0	100
18:00	110	0	22	6.9	0	0	0.2	139.1	76	1	13	2.3	0	0	0	92.3
18:15	90	2	5	2.3	0	0	0	99.3	68	0	8	6.9	0	0	0	82.9
18:30	77	0	5	2.3	0	0	0.2	84.5	73	1	4	0	0	0.4	0	78.4
18:45	58	0	8	4.6	0	0.4	0.4	71.4	60	1	8	0	0	0	0	69
25:75	3068	27	393	342.7	22	2.4	3.8	3858.9	2823	16	357	269.1	26	2.8	0.8	3494.7



Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	To Arm B - Dillow's Road							Veh. Total	From Arm B - Dillow's Road							Veh. Total
	CAR	Taxi	LGW	HGV	PSV	M/C	P/C		CAR	Taxi	LGW	HGV	PSV	M/C	P/C	
7:00	19	0	5	0	0	0	0	24	59	1	11	0	0	0	0	71
7:15	20	0	12	2.3	0	0	0	34.3	63	0	4	2.3	0	0	0	69.3
7:30	31	0	8	2.3	0	0	0	41.3	74	0	15	0	0	0.8	0	89.8
7:45	21	1	5	0	0	0	0	27	83	0	9	4.6	0	0	0	96.6
8:00	29	0	2	2.3	0	0	0	33.3	60	0	7	0	0	0	0	67
8:15	26	0	5	2.3	0	0	0	33.3	56	0	3	4.6	0	0	0	63.6
8:30	30	0	2	0	0	0	0	32	60	1	7	2.3	0	0	0	70.3
8:45	55	1	3	4.6	0	0	0	63.6	50	0	4	0	0	0	0	54
9:00	16	0	1	2.3	2	0	0	21.3	42	0	5	2.3	0	0	0	49.3
9:15	20	0	0	0	0	0	0	20	26	0	5	0	0	0	0	31
9:30	23	0	4	2.3	2	0	0	31.3	22	1	2	2.3	0	0	0	27.3
9:45	13	0	0	0	0	0	0	13	24	0	1	2.3	0	0	0	27.3
10:00	8	0	1	0	0	0	0	9	21	0	0	0	0	0	0	21
10:15	14	0	1	4.6	0	0	0	19.6	15	0	3	0	0	0	0	18
10:30	14	0	3	4.6	0	0	0	21.6	17	0	4	6.9	0	0	0	27.9
10:45	16	0	2	0	0	0	0	18	12	0	4	6.9	0	0	0	22.9
11:00	19	0	2	2.3	0	0	0	23.3	11	0	3	0	0	0	0	14
11:15	18	0	1	0	0	0	0	19	19	0	6	0	0	0	1.2	26.2
11:30	18	0	3	2.3	0	0	0	23.3	7	0	4	2.3	0	0	0.2	13.5
11:45	24	0	3	0	0	0	0	27	23	0	1	2.3	0	0	0.6	26.9
12:00	15	0	2	2.3	0	0	0	19.3	35	0	3	2.3	0	0	0	40.3
12:15	13	0	3	9.2	0	0	0	25.2	18	0	3	2.3	0	0	0	23.3
12:30	24	1	4	4.6	0	0	0	33.6	21	2	5	9.2	0	0	0	37.2
12:45	15	0	0	0	0	0	0	15	10	0	1	4.6	0	0	0	15.6
13:00	13	0	2	6.9	0	0	0	21.9	12	0	4	6.9	0	0	0	22.9
13:15	16	1	3	2.3	0	0	0	22.3	21	0	2	2.3	0	0	0	25.3
13:30	21	0	6	4.6	0	0	0	31.6	21	0	2	0	0	0	0	23
13:45	21	0	3	0	0	0	0	24	22	0	2	0	0	0	0	24
14:00	15	0	4	0	0	0	0	19	18	1	4	0	0	0	0.2	23.2
14:15	26	0	3	2.3	0	0	0	31.3	11	0	1	0	0	0	0	12
14:30	27	0	6	2.3	0	0	0	35.3	17	1	1	0	0	0	0	19
14:45	28	0	1	2.3	0	0	0	31.3	21	0	3	0	0	0	0	24
15:00	29	0	2	6.9	0	0	0	37.9	17	0	4	6.9	0	0	0	27.9
15:15	38	0	5	0	0	0	0	43	24	0	2	4.6	0	0	0.2	30.8
15:30	25	0	2	2.3	0	0	0	29.3	32	2	5	4.6	0	0	0	43.6
15:45	31	0	10	0	0	0	0	41	31	0	5	0	0	0	0	36
16:00	37	0	5	6.9	0	0	0	48.9	25	0	4	0	0	0	0	29
16:15	43	0	9	0	0	0	0	52	28	0	2	0	0	0	0	30
16:30	38	1	8	0	2	0	0	49	21	0	2	0	0	0	0	23
16:45	65	0	7	0	0	0	0	72	21	0	5	0	0	0	0	26
17:00	41	0	11	0	0	0	0	52	26	0	10	0	0	0	0	36
17:15	52	0	10	0	0	0.4	0	62.4	27	0	4	0	0	0	0	31
17:30	74	1	10	2.3	2	0	0	89.3	26	0	5	0	0	0	0	31
17:45	55	1	8	0	0	0	0	64	27	0	2	0	0	0	0	29
18:00	51	1	7	0	0	0	0	59	29	0	9	2.3	0	0	0	40.3



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 5
Location R157(N) / Dillow's Road / R157(S)
Date Tuesday 28 May 2019

Time	To Arm C - R157(S)							Veh. Total	From Arm C - R157(S)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	50	0	6	2.3	0	0	0.2	58.5	23	0	4	4.6	0	0	0	31.6
7:15	53	1	6	4.6	0	0	0	64.6	25	0	5	4.6	2	0	0	36.6
7:30	54	0	6	2.3	0	0	0	62.3	36	0	2	9.2	0	0	0	47.2
7:45	70	0	3	2.3	0	0	0	75.3	48	0	7	6.9	2	0	0	63.9
8:00	66	0	7	6.9	0	0	0	79.9	38	0	3	13.8	0	0	0	54.8
8:15	56	0	5	6.9	0	0	0	67.9	38	0	2	2.3	0	0	0	63
8:30	77	0	10	6.9	0	0	0	93.9	45	1	7	4.6	0	0	0	57.6
8:45	67	0	3	4.6	0	0	0	74.6	45	1	4	18.4	2	0	0	70.4
9:00	46	1	2	11.5	0	0	0	60.5	40	0	5	18.4	0	0.4	0	63.8
9:15	43	0	2	2.3	0	0	0	47.3	28	2	4	4.6	0	0	0	38.6
9:30	53	1	4	16.1	6	0	0	80.1	26	1	1	2.3	2	0	0	32.3
9:45	43	0	3	18.4	0	0	0	64.4	18	0	1	4.6	2	0	0.2	25.8
10:00	33	0	5	4.6	4	0	0	46.6	16	1	4	4.6	0	0	0	25.6
10:15	30	0	6	6.9	0	0	0	42.9	20	0	8	6.9	0	0	0.2	35.1
10:30	19	0	0	2.3	0	0	0	21.3	22	0	4	6.9	0	0	0	32.9
10:45	34	0	4	4.6	0	0	0	42.6	21	0	2	0	0	0	0	23
11:00	25	0	5	4.6	0	0	0	34.6	17	0	2	6.9	0	0	0	25.9
11:15	36	0	3	9.2	0	0	0	48.2	27	1	1	4.6	0	0	0	33.6
11:30	21	0	2	4.6	2	0	0	29.6	30	1	0	9.2	0	0	0	40.2
11:45	28	1	2	4.6	0	0	0	35.6	28	0	2	6.9	0	0	0	36.9
12:00	29	0	2	4.6	0	0	0	35.6	44	0	1	2.3	0	0	0	47.3
12:15	23	0	2	9.2	0	0	0	34.2	32	0	3	20.7	0	0	0	55.7
12:30	40	2	3	11.5	0	0	0	56.5	34	2	2	11.5	0	0	0	49.5
12:45	23	0	2	6.9	0	0	0	31.9	33	1	3	4.6	0	0	0	41.6
13:00	22	0	4	6.9	0	0	0	32.9	39	0	3	16.1	0	0	0	58.1
13:15	30	0	1	4.6	0	0	0	35.6	40	1	2	13.8	0	0	0	56.8
13:30	34	1	2	6.9	0	0	0	43.9	36	2	5	9.2	2	0	0	54.2
13:45	26	0	3	2.3	0	0	0	31.3	35	0	6	9.2	4	0	0	54.2
14:00	37	1	2	11.5	2	0	0	53.5	43	0	6	2.3	0	0	0	51.3
14:15	30	0	3	4.6	0	0	0.2	37.8	34	0	6	2.3	0	0	0	42.3
14:30	32	0	2	9.2	0	0	0	43.2	40	1	2	2.3	0	0	0	45.3
14:45	29	0	3	0	0	0.4	0	32.4	80	1	2	13.8	2	0	0	98.8
15:00	37	0	2	11.5	0	0	0	50.5	59	1	3	9.2	0	0	0	72.2
15:15	41	1	3	6.9	0	0	0	51.9	45	1	8	9.2	4	0	0	67.2
15:30	19	1	1	11.5	0	0	0	32.5	49	1	4	4.6	0	0.4	0	59
15:45	62	0	7	2.3	4	0	0	75.3	52	0	10	4.6	0	0	0	66.6
16:00	42	0	8	9.2	0	0.4	0.4	60	56	0	12	4.6	0	0	0	72.6
16:15	47	0	7	2.3	0	0	0	56.3	66	0	11	2.3	0	0	0	79.3
16:30	48	0	4	0	0	0.4	0	52.4	82	1	13	0	0	0	0	96
16:45	49	0	3	2.3	0	0	0	54.3	78	0	5	0	0	0	0	83
17:00	30	0	6	2.3	0	0.4	0	38.7	83	0	14	9.2	0	0	0	106.2
17:15	62	0	9	2.3	0	0	0	73.3	84	0	5	6.9	0	0	0	95.9
17:30	63	0	3	0	0	0	0	66	105	0	7	6.9	0	0	0	118.9
17:45	63	0	4	0	0	0	0	67	89	0	6	0	0	0	0.2	95.2
18:00	39	0	9	2.3	0	0	0	50.3	95	0	16	4.6	0	0	0.2	115.8
18:15	34	0	7	4.6	0	0	0	45.6	85	0	5	0	0	0	0	90
18:30	44	1	4	0	0	0	0	49	57	0	5	2.3	0	0	0.2	64.5
18:45	35	1	6	0	0	0	0	42	52	0	7	4.6	0	0	0.4	64.4



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May 2019
Junction Turning Count

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	A to C - R157 to R148(E)						Veh. Total	A to B - R157 to R148(W)						Veh. Total		
	CAR	Taxi	LGV	HGV	PSV	M/C		P/C	CAR	Taxi	LGV	HGV	PSV		M/C	P/C
7:00	41	0	5	1	0	0	1	48	10	0	1	0	0	0	0	11
7:15	47	1	2	2	0	0	1	53	8	0	3	1	0	0	1	13
7:30	42	0	5	0	0	0	0	47	12	0	4	0	0	0	0	16
7:45	52	0	1	1	0	0	0	54	18	0	2	1	0	0	0	21
8:00	42	0	4	1	0	0	0	47	20	0	1	2	0	0	0	23
8:15	44	0	1	3	0	0	0	48	12	0	4	1	0	0	0	17
8:30	58	0	8	4	0	0	0	70	19	0	3	0	0	0	0	22
8:45	35	0	1	2	0	0	0	38	31	0	2	0	0	0	0	33
9:00	27	1	5	1	0	0	0	34	22	0	1	0	0	0	0	23
9:15	22	0	0	1	0	0	0	23	21	0	2	0	0	0	0	23
9:30	36	2	3	6	0	0	0	47	16	0	1	0	1	0	0	18
9:45	21	0	2	2	7	0	0	32	24	0	1	0	2	0	1	28
10:00	18	0	2	2	2	0	0	24	16	0	3	0	0	0	0	19
10:15	12	0	5	2	0	0	0	19	18	0	1	1	0	0	0	20
10:30	4	0	0	1	0	0	0	5	15	0	0	0	0	0	0	15
10:45	10	0	1	1	0	0	0	12	18	0	3	0	0	0	1	22
11:00	10	0	4	1	0	0	0	15	21	0	1	0	0	0	0	22
11:15	18	0	2	4	0	0	0	24	18	1	0	0	0	0	0	19
11:30	5	0	2	1	0	0	0	8	12	0	0	1	1	0	0	14
11:45	11	1	1	1	0	0	0	14	18	1	1	1	0	0	0	21
12:00	14	0	0	2	0	0	0	16	15	0	2	0	0	0	0	17
12:15	13	0	1	1	0	0	0	15	14	0	1	1	0	0	0	16
12:30	11	1	3	5	0	0	0	20	22	0	1	2	0	0	0	25
12:45	6	0	1	1	0	0	0	8	19	0	1	1	0	0	0	21
13:00	5	0	2	1	3	0	0	11	18	0	2	0	0	0	0	20
13:15	11	0	0	2	0	0	0	13	21	0	1	0	0	0	0	22
13:30	17	1	2	3	0	0	0	23	16	0	0	0	0	0	0	16
13:45	8	0	0	1	0	0	0	9	21	0	1	0	0	0	0	22
14:00	14	0	3	4	0	0	0	21	21	1	1	0	1	0	0	24
14:15	7	0	1	3	0	0	1	12	22	0	2	0	0	0	0	24
14:30	14	0	2	4	0	0	0	20	17	0	0	0	0	0	0	17
14:45	14	1	0	0	0	1	0	16	15	0	3	0	0	0	0	18
15:00	15	0	0	4	0	0	0	19	23	0	0	1	0	0	0	24
15:15	19	2	4	3	0	0	0	28	24	0	1	0	0	0	0	25
15:30	7	1	0	2	0	0	0	10	10	0	1	1	0	0	0	12
15:45	22	0	6	1	2	0	0	31	38	0	0	1	0	0	0	39
16:00	21	0	5	3	0	0	1	30	17	0	3	2	0	1	1	24
16:15	16	0	6	1	0	0	0	23	31	0	2	0	0	0	0	33
16:30	27	1	2	0	0	0	0	30	24	0	2	0	0	1	0	27
16:45	15	0	2	1	0	0	0	18	35	0	0	0	0	0	0	35
17:00	20	0	6	1	0	0	0	27	11	0	1	0	0	0	0	12
17:15	28	0	8	0	0	0	0	36	29	0	2	0	0	0	0	31
17:30	37	0	3	1	0	0	0	41	27	0	0	0	0	0	0	27
17:45	30	0	0	0	0	0	0	30	32	0	3	0	0	0	0	35
18:00	17	0	2	0	0	0	0	19	19	0						



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	B to A - R148(W) to R157							Veh. Total	B to C - R148(W) to R148(E)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	9	0	2	0	0	0	0	11	92	0	8	1	5	2	0	108
7:15	15	0	3	0	1	0	0	19	80	2	6	0	4	0	2	94
7:30	18	0	1	0	0	0	0	19	86	1	8	1	5	0	0	101
7:45	17	0	0	1	1	0	0	19	78	2	3	1	2	0	4	90
8:00	19	0	1	1	0	0	0	21	57	0	3	1	3	0	3	67
8:15	14	0	1	4	0	0	0	19	62	0	3	0	2	0	2	69
8:30	16	0	3	0	0	0	0	19	60	2	5	0	1	0	1	69
8:45	17	1	0	2	0	0	0	20	50	0	3	1	1	1	0	56
9:00	20	0	2	1	0	0	0	23	59	1	4	0	1	0	0	65
9:15	14	0	1	0	0	0	0	15	34	0	6	0	1	1	0	42
9:30	10	0	1	0	0	0	0	11	51	0	6	1	2	1	0	61
9:45	10	0	1	0	0	0	1	12	47	1	5	1	1	0	0	55
10:00	9	0	2	0	0	0	0	11	33	0	2	0	3	1	0	39
10:15	12	0	2	0	0	0	1	15	51	0	5	3	0	0	0	59
10:30	13	0	1	0	0	0	0	14	56	1	3	1	2	0	0	63
10:45	16	0	0	0	0	0	0	16	78	2	1	1	0	0	2	84
11:00	13	0	0	3	0	0	0	16	53	1	5	2	3	1	0	65
11:15	18	1	0	1	0	0	0	20	60	1	6	0	0	0	0	67
11:30	16	0	0	0	0	0	0	16	63	1	8	1	2	0	0	75
11:45	19	0	0	0	0	0	0	19	51	1	4	3	1	0	1	61
12:00	22	0	0	0	0	0	0	22	58	1	5	1	3	1	0	69
12:15	19	0	2	2	0	0	1	24	53	1	6	3	0	0	1	64
12:30	24	0	1	0	0	0	0	25	63	1	9	0	2	0	0	75
12:45	28	0	0	1	0	0	0	29	63	0	11	2	0	0	0	76
13:00	25	1	0	2	0	0	0	28	88	0	6	0	3	0	0	97
13:15	22	0	1	2	0	0	0	25	64	1	7	1	0	0	0	73
13:30	17	1	3	1	1	0	0	23	58	1	3	2	0	0	2	66
13:45	25	0	3	1	2	0	0	31	89	0	2	2	3	1	0	97
14:00	29	0	1	0	0	0	0	30	71	0	9	3	3	7	1	94
14:15	15	0	6	0	0	0	0	21	74	0	8	3	0	0	0	85
14:30	27	0	1	1	1	0	0	30	65	0	7	0	1	0	0	73
14:45	54	0	2	1	0	0	0	57	82	1	5	2	0	0	0	90
15:00	39	0	1	1	0	0	0	41	70	1	7	1	3	0	0	82
15:15	24	2	3	2	0	0	0	31	70	3	3	0	0	1	1	78
15:30	27	0	3	2	0	1	0	33	62	0	3	3	1	0	0	69
15:45	22	0	5	1	0	0	0	28	65	0	3	0	1	0	0	69
16:00	30	0	4	0	0	0	0	34	59	1	2	0	0	0	0	62
16:15	26	0	3	0	0	0	0	29	60	0	5	0	0	1	1	67
16:30	38	0	2	0	0	0	0	40	59	0	7	0	2	1	0	69
16:45	20	0	1	0	0	0	0	21	79	5	5	0	0	0	1	90
17:00	31	0	5	1	0	0	0	37	101	0	9	1	2	3	1	117
17:15	39	0	2	0	0	0	0	41	94	0	2	0	0	0	0	96
17:30	49	0	1	1	0	0	0	51	79	1	2	0	0	1	2	85
17:45	51	0	2	0	0	0	0	53	83	1	4	0	3	0	0	91
18:00	45	0	4	0	0	0	1	50	76	0	6	0	2	2	0	86
18:15	38	0	2	0	0	0	0	40	71	0	2	1	0	0	0	74
18:30	25	0	2	0	0	0	1	28	68	0	3	1	1	0	1	74
18:45	22	0	4	1	0	0	0	27	59	1	4	0	0	0	2	66
25:75	1128	6	85	33	6	1	5	1264	3184	35	239	44	69	25	28	3624



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May 2019
Junction Turning Count

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	C to B - R148(E) to R148(W)							Veh. Total	C to A - R148(E) to R157							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	26	0	4	2	1	0	0	33	11	0	2	2	0	0	0	15
7:15	22	1	4	0	1	1	0	29	13	0	3	2	0	0	0	18
7:30	27	0	2	1	2	0	0	32	16	0	1	0	0	0	0	17
7:45	33	0	5	1	0	0	1	40	31	0	6	3	0	0	0	40
8:00	27	0	4	3	1	0	0	35	13	0	2	6	0	0	0	21
8:15	59	0	4	0	1	0	0	64	20	0	2	4	0	0	0	26
8:30	62	1	0	2	2	0	1	68	19	1	3	3	1	0	0	27
8:45	83	2	5	2	1	0	0	93	21	0	3	4	0	0	0	28
9:00	50	1	1	1	0	0	0	53	16	0	3	4	0	0	0	23
9:15	49	1	7	1	0	0	1	59	13	2	0	2	0	0	0	17
9:30	61	0	7	0	2	0	1	71	8	1	0	1	1	0	0	11
9:45	57	1	6	2	0	0	1	67	8	0	1	2	1	0	0	12
10:00	53	0	2	1	1	0	0	57	4	0	2	2	0	0	0	8
10:15	52	0	6	0	0	0	1	59	9	0	2	3	0	0	0	14
10:30	40	0	5	0	2	0	6	53	10	0	3	3	0	0	0	16
10:45	52	0	4	2	0	0	0	58	6	0	2	0	0	0	0	8
11:00	46	0	2	1	1	1	0	51	4	0	1	1	0	0	0	6
11:15	57	0	4	1	1	1	0	64	13	0	1	1	0	0	0	15
11:30	58	4	4	0	2	0	0	68	9	1	0	4	0	0	0	14
11:45	61	2	7	2	0	0	0	72	15	0	3	2	0	0	0	20
12:00	52	0	7	2	1	0	0	62	15	0	2	2	0	0	0	19
12:15	55	0	4	0	1	1	0	61	11	0	1	6	0	0	0	18
12:30	81	0	8	1	2	0	1	93	11	1	2	4	0	0	0	18
12:45	58	0	1	1	1	7	1	69	7	0	3	3	0	0	0	13
13:00	66	0	4	1	1	0	0	72	16	0	2	4	0	0	0	22
13:15	73	2	4	0	0	0	0	79	16	0	1	3	0	0	0	20
13:30	56	2	2	4	4	0	0	68	17	1	3	4	0	0	0	25
13:45	51	0	3	0	1	0	1	56	9	0	2	2	0	0	0	13
14:00	55	0	6	3	0	1	0	65	16	0	3	1	0	0	0	20
14:15	76	0	5	0	1	0	1	83	18	0	0	1	0	0	0	19
14:30	49	1	9	1	3	0	0	63	11	1	0	0	0	0	0	12
14:45	55	1	8	3	0	0	0	67	31	2	0	4	0	0	0	37
15:00	75	2	3	1	1	0	0	82	10	0	1	2	0	0	0	13
15:15	76	0	7	2	0	0	1	86	12	0	0	1	2	0	0	15
15:30	67	0	4	1	2	0	0	74	12	1	0	1	0	0	0	14
15:45	61	1	2	0	1	0	1	66	32	0	6	0	0	0	0	38
16:00	69	1	7	0	1	2	0	80	30	0	6	2	0	0	0	38
16:15	72	0	7	0	1	1	1	82	33	0	8	1	0	0	0	42
16:30	75	1	4	0	2	0	1	83	43	0	7	1	0	0	0	51
16:45	83	0	4	0	1	0	2	90	57	0	3	0	0	0	0	60
17:00	85	0	4	0	0	0	1	90	52	0	9	3	0	0	0	64
17:15	74	2	5	1	2	0	0	84	50	0	3	4	0	0	0	57
17:30	80	2	6	1	1	0	1	91	64	0	4	1	0	0	0	69
17:45	81	0	6	0	4	0	1	92	35	0	3	0	0	0	2	40
18:00	70	0	5	0	0	1	2	78	55	0	12	2	0	0	0	69
18:15	63	0	2	0	1	1	2	69	42	0	3	0	0	0	0	45
18:30	78	0	5	0	3	0	1	87	36	0	4	1				



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	To Arm A - R157							Veh. Total	From Arm A - R157							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	20	0	4	2	0	0	0	26	51	0	6	1	0	0	1	59
7:15	28	0	6	2	1	0	0	37	55	1	5	3	0	0	2	66
7:30	34	0	2	0	0	0	0	36	54	0	9	0	0	0	0	63
7:45	48	0	6	4	1	0	0	59	70	0	3	2	0	0	0	75
8:00	32	0	3	7	0	0	0	42	62	0	5	3	0	0	0	70
8:15	34	0	3	8	0	0	0	45	56	0	5	4	0	0	0	65
8:30	35	1	6	3	1	0	0	46	77	0	11	4	0	0	0	92
8:45	38	1	3	6	0	0	0	48	66	0	3	2	0	0	0	71
9:00	36	0	5	5	0	0	0	46	49	1	6	1	0	0	0	57
9:15	27	2	1	2	0	0	0	32	43	0	2	1	0	0	0	46
9:30	18	1	1	1	1	0	0	22	52	2	4	6	1	0	0	65
9:45	18	0	2	2	1	0	1	24	45	0	3	2	9	0	1	60
10:00	13	0	4	2	0	0	0	19	34	0	5	2	2	0	0	43
10:15	21	0	4	3	0	0	1	29	30	0	6	3	0	0	0	39
10:30	23	0	4	3	0	0	0	30	19	0	0	1	0	0	0	20
10:45	22	0	2	0	0	0	0	24	28	0	4	1	0	0	1	34
11:00	17	0	1	4	0	0	0	22	31	0	5	1	0	0	0	37
11:15	31	1	1	2	0	0	0	35	36	1	2	4	0	0	0	43
11:30	25	1	0	4	0	0	0	30	17	0	2	2	1	0	0	22
11:45	34	0	3	2	0	0	0	39	29	2	2	2	0	0	0	35
12:00	37	0	2	2	0	0	0	41	29	0	2	2	0	0	0	33
12:15	30	0	3	8	0	0	1	42	27	0	2	2	0	0	0	31
12:30	35	1	3	4	0	0	0	43	33	1	4	7	0	0	0	45
12:45	35	0	3	4	0	0	0	42	25	0	2	2	0	0	0	29
13:00	41	1	2	6	0	0	0	50	23	0	4	1	3	0	0	31
13:15	38	0	2	5	0	0	0	45	32	0	1	2	0	0	0	35
13:30	34	2	6	5	1	0	0	48	33	1	2	3	0	0	0	39
13:45	34	0	5	3	2	0	0	44	29	0	1	1	0	0	0	31
14:00	45	0	4	1	0	0	0	50	35	1	4	4	1	0	0	45
14:15	33	0	6	1	0	0	0	40	29	0	3	3	0	0	1	36
14:30	38	1	1	1	1	0	0	42	31	0	2	4	0	0	0	37
14:45	85	2	2	5	0	0	0	94	29	1	3	0	0	1	0	34
15:00	49	0	2	3	0	0	0	54	38	0	0	5	0	0	0	43
15:15	36	2	3	3	2	0	0	46	43	2	5	3	0	0	0	53
15:30	39	1	3	3	0	1	0	47	17	1	1	3	0	0	0	22
15:45	54	0	11	1	0	0	0	66	60	0	6	2	2	0	0	70
16:00	60	0	10	2	0	0	0	72	38	0	8	5	0	1	2	54
16:15	59	0	11	1	0	0	0	71	47	0	8	1	0	0	0	56
16:30	81	0	9	1	0	0	0	91	51	1	4	0	0	1	0	57
16:45	77	0	4	0	0	0	0	81	50	0	2	1	0	0	0	53
17:00	83	0	14	4	0	0	0	101	31	0	7	1	0	0	0	39
17:15	89	0	5	4	0	0	0	98	57	0	10	0	0	0	0	67
17:30	113	0	5	2	0	0	0	120	64	0	3	1	0	0	0	68
17:45	86	0	5	0	0	0	2	93	62	0	3	0	0	0	0	65
18:00	100	0	16	2	0	0	1	119	36	0	8	2	0	0	0	46
18:15	80	0	5	0	0	0	0	85	34	5	4	1	0	0	0	44
18:30	61	0	6	1	0	0	1	69	42	1	3	0	0	0	0	46
18:45	50	0	7	2	0	1	2	62	35	1	7	0	0	0	0	43
25:75	2156	17	216	136	11	2	9	2547	1964	22	197	101	19	3	8	2314



Received
Kildare County Council
10 Oct 2022

10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	To Arm B - R148(W)							Veh. Total	From Arm B - R148(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	36	0	5	2	1	0	0	44	101	0	10	1	5	2	0	119
7:15	30	1	7	1	1	1	1	42	95	2	9	0	5	0	2	113
7:30	39	0	6	1	2	0	0	48	104	1	9	1	5	0	0	120
7:45	51	0	7	2	0	0	1	61	95	2	3	2	3	0	4	109
8:00	47	0	5	5	1	0	0	58	76	0	4	2	3	0	3	88
8:15	71	0	8	1	1	0	0	81	76	0	4	4	2	0	2	88
8:30	81	1	3	2	2	0	1	90	76	2	8	0	1	0	1	88
8:45	114	2	7	2	1	0	0	126	67	1	3	3	1	1	0	76
9:00	72	1	2	1	0	0	0	76	79	1	6	1	1	0	0	88
9:15	70	1	9	1	0	0	1	82	48	0	7	0	1	1	0	57
9:30	77	0	8	0	3	0	1	89	61	0	7	1	2	1	0	72
9:45	81	1	7	2	2	0	2	95	57	1	6	1	1	0	1	67
10:00	69	0	5	1	1	0	0	76	42	0	4	0	3	1	0	50
10:15	70	0	7	1	0	0	1	79	63	0	7	3	0	0	1	74
10:30	55	0	5	0	2	0	6	68	69	1	4	1	2	0	0	77
10:45	70	0	7	2	0	0	1	80	94	2	1	1	0	0	2	100
11:00	67	0	3	1	1	1	0	73	66	1	5	5	3	1	0	81
11:15	75	1	4	1	1	1	0	83	78	2	6	1	0	0	0	87
11:30	70	4	4	1	3	0	0	82	79	1	8	1	2	0	0	91
11:45	79	3	8	3	0	0	0	93	70	1	4	3	1	0	1	80
12:00	67	0	9	2	1	0	0	79	80	1	5	1	3	1	0	91
12:15	69	0	5	1	1	1	0	77	72	1	8	5	0	0	2	88
12:30	103	0	9	3	2	0	1	118	87	1	10	0	2	0	0	100
12:45	77	0	2	2	1	7	1	90	91	0	11	3	0	0	0	105
13:00	84	0	6	1	1	0	0	92	113	1	6	2	3	0	0	125
13:15	94	2	5	0	0	0	0	101	86	1	8	3	0	0	0	98
13:30	72	2	2	4	4	0	0	84	75	2	6	3	1	0	2	89
13:45	72	0	4	0	1	0	1	78	114	0	5	3	5	1	0	128
14:00	76	1	7	3	1	1	0	89	100	0	10	3	3	7	1	124
14:15	98	0	7	0	1	0	1	107	89	0	14	3	0	0	0	106
14:30	66	1	9	1	3	0	0	80	92	0	8	1	2	0	0	103
14:45	70	1	11	3	0	0	0	85	136	1	7	3	0	0	0	147
15:00	98	2	3	2	1	0	0	106	109	1	8	2	3	0	0	123
15:15	100	0	8	2	0	0	1	111	94	5	6	2	0	1	1	109
15:30	77	0	5	2	2	0	0	86	89	0	6	5	1	1	0	102
15:45	99	1	2	1	1	0	1	105	87	0	8	1	1	0	0	97
16:00	86	1	10	2	1	3	1	104	89	1	6	0	0	0	0	96
16:15	103	0	9	0	1	1	1	115	86	0	8	0	0	1	1	96
16:30	99	1	6	0	2	1	1	110	97	0	9	0	2	1	0	109
16:45	118	0	4	0	1	0	2	125	99	5	6	0	0	0	1	111
17:00	96	0	5	0	0	0	1	102	132	0	14	2	2	3	1	154
17:15	103	2	7	1	2	0	0	115	133	0	4	0	0	0	0	137
17:30	107	2	6	1	1	0	1	118	128	1	3	1	0	1	2	136
17:45	113	0	9	0	4	0	1	127	134	1	6	0	3	0	0	144
18:00	89	0	11	2	0	1	2	105	121	0	10	0	2	2	1	136
18:15	77	0	5	1	1	1	2	87	109	0	4	1	0	0	0	114
18:30	96	0	6	0	3	0	1	106	93	0	5	1	1	0	2	102
18:45	80	0	6	0	1	2	4	93	81	1	8	1	0	0	2	93
25:75	3813	31	295	64	59	21	38	4321	4312	41	324	77	75	26	33	4888



10084 / Moygaddy
May 2019
Junction Turning Count

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	To Arm C - R148(E)							Veh. Total	From Arm C - R148(E)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	133	0	13	2	5	2	1	156	37	0	6	4	1	0	0	48
7:15	127	3	8	2	4	0	3	147	35	1	7	2	1	1	0	47
7:30	128	1	13	1	5	0	0	148	43	0	3	1	2	0	0	49
7:45	130	2	4	2	2	0	4	144	64	0	11	4	0	0	1	80
8:00	99	0	7	2	3	0	3	114	40	0	6	9	1	0	0	56
8:15	106	0	4	3	2	0	2	117	79	0	6	4	1	0	0	90
8:30	118	2	13	4	1	0	1	139	81	2	3	5	3	0	1	95
8:45	85	0	4	3	1	1	0	94	104	2	8	6	1	0	0	121
9:00	86	2	9	1	1	0	0	99	66	1	4	5	0	0	0	76
9:15	56	0	6	1	1	1	0	65	62	3	7	3	0	0	1	76
9:30	87	2	9	7	2	1	0	108	69	1	7	1	3	0	1	82
9:45	68	1	7	3	8	0	0	87	65	1	7	4	1	0	1	79
10:00	51	0	4	2	5	1	0	63	57	0	4	3	1	0	0	65
10:15	63	0	10	5	0	0	0	78	61	0	8	3	0	0	1	73
10:30	60	1	3	2	2	0	0	68	50	0	8	3	2	0	6	69
10:45	88	2	2	2	0	0	2	96	58	0	6	2	0	0	0	66
11:00	63	1	9	3	3	1	0	80	50	0	3	2	1	1	0	57
11:15	78	1	8	4	0	0	0	91	70	0	5	2	1	1	0	79
11:30	68	1	10	2	2	0	0	83	67	5	4	4	2	0	0	82
11:45	62	2	5	4	1	0	1	75	76	2	10	4	0	0	0	92
12:00	72	1	5	3	3	1	0	85	67	0	9	4	1	0	0	81
12:15	66	1	7	4	0	0	1	79	66	0	5	6	1	1	0	79
12:30	74	2	12	5	2	0	0	95	92	1	10	5	2	0	1	111
12:45	69	0	12	3	0	0	0	84	65	0	4	4	1	7	1	82
13:00	93	0	8	1	6	0	0	108	82	0	6	5	1	0	0	94
13:15	75	1	7	3	0	0	0	86	89	2	5	3	0	0	0	99
13:30	75	2	5	5	0	0	2	89	73	3	5	8	4	0	0	93
13:45	97	0	2	3	3	1	0	106	60	0	5	2	1	0	1	69
14:00	85	0	12	7	3	7	1	115	71	0	9	4	0	1	0	85
14:15	81	0	9	6	0	0	1	97	94	0	5	1	1	0	1	102
14:30	79	0	9	4	1	0	0	93	60	2	9	1	3	0	0	75
14:45	96	2	5	2	0	1	0	106	86	3	8	7	0	0	0	104
15:00	85	1	7	5	3	0	0	101	85	2	4	3	1	0	0	95
15:15	89	5	7	3	0	1	1	106	88	0	7	3	2	0	1	101
15:30	69	1	3	5	1	0	0	79	79	1	4	2	2	0	0	88
15:45	87	0	9	1	3	0	0	100	93	1	8	0	1	0	1	104
16:00	80	1	7	3	0	0	1	92	99	1	13	2	1	2	0	118
16:15	76	0	11	1	0	1	1	90	105	0	15	1	1	1	1	124
16:30	86	1	9	0	2	1	0	99	118	1	11	1	2	0	1	134
16:45	94	5	7	1	0	0	1	108	140	0	7	0	1	0	2	150
17:00	121	0	15	2	2	3	1	144	137	0	13	3	0	0	1	154
17:15	122	0	10	0	0	0	0	132	124	2	8	5	2	0	0	141
17:30	116	1	5	1	0	1	2	126	144	2	10	2	0	0	1	160
17:45	113	1	4	0	3	0	0	121	116	0	9	0	4	0	3	132
18:00	93	0	8	0	2	2	0	105	125	0	17	2	0	1	2	147
18:15	91	5	3	1	0	0	0	100	105	0	5	0	1	1	2	114
18:30	92	1	5	1	1	0	1	101	114	0	9	1	3	0	1	128
18:45	82	2	9	0	0	0	2	95	96	0	7	1	1	3	6	114
25:75	4214	54	360	125	83	26	32	4894	3907	39	350	147	59	20	38	4560



Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	A to C - R157 to R148(E)							Veh. Total	A to B - R157 to R148(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	41	0	5	2.3	0	0	0.2	48.5	10	0	1	0	0	0	0	11
7:15	47	1	2	4.6	0	0	0.2	54.8	8	0	3	2.3	0	0	0.2	13.5
7:30	42	0	5	0	0	0	0	47	12	0	4	0	0	0	0	16
7:45	52	0	1	2.3	0	0	0	55.3	18	0	2	2.3	0	0	0	22.3
8:00	42	0	4	2.3	0	0	0	48.3	20	0	1	4.6	0	0	0	25.6
8:15	44	0	1	6.9	0	0	0	51.9	12	0	4	2.3	0	0	0	18.3
8:30	58	0	8	9.2	0	0	0	75.2	19	0	3	0	0	0	0	22
8:45	35	0	1	4.6	0	0	0	40.6	31	0	2	0	0	0	0	33
9:00	27	1	5	2.3	0	0	0	35.3	22	0	1	0	0	0	0	23
9:15	22	0	0	2.3	0	0	0	24.3	21	0	2	0	0	0	0	23
9:30	36	2	3	13.8	0	0	0	54.8	16	0	1	0	2	0	0	19
9:45	21	0	2	4.6	14	0	0	41.6	24	0	1	0	4	0	0.2	29.2
10:00	18	0	2	4.6	4	0	0	28.6	16	0	3	0	0	0	0	19
10:15	12	0	5	4.6	0	0	0	21.6	18	0	1	2.3	0	0	0	21.3
10:30	4	0	0	2.3	0	0	0	6.3	15	0	0	0	0	0	0	15
10:45	10	0	1	2.3	0	0	0	13.3	18	0	3	0	0	0	0.2	21.2
11:00	10	0	4	2.3	0	0	0	16.3	21	0	1	0	0	0	0	22
11:15	18	0	2	9.2	0	0	0	29.2	18	1	0	0	0	0	0	19
11:30	5	0	2	2.3	0	0	0	9.3	12	0	0	2.3	2	0	0	16.3
11:45	11	1	1	2.3	0	0	0	15.3	18	1	1	2.3	0	0	0	22.3
12:00	14	0	0	4.6	0	0	0	18.6	15	0	2	0	0	0	0	17
12:15	13	0	1	2.3	0	0	0	16.3	14	0	1	2.3	0	0	0	17.3
12:30	11	1	3	11.5	0	0	0	26.5	22	0	1	4.6	0	0	0	27.6
12:45	6	0	1	2.3	0	0	0	9.3	19	0	1	2.3	0	0	0	22.3
13:00	5	0	2	2.3	6	0	0	15.3	18	0	2	0	0	0	0	20
13:15	11	0	0	4.6	0	0	0	15.6	21	0	1	0	0	0	0	22
13:30	17	1	2	6.9	0	0	0	26.9	16	0	0	0	0	0	0	16
13:45	8	0	0	2.3	0	0	0	10.3	21	0	1	0	0	0	0	22
14:00	14	0	3	9.2	0	0	0	26.2	21	1	1	0	2	0	0	25
14:15	7	0	1	6.9	0	0	0.2	15.1	22	0	2	0	0	0	0	24
14:30	14	0	2	9.2	0	0	0	25.2	17	0	0	0	0	0	0	17
14:45	14	1	0	0	0	0.4	0	15.4	15	0	3	0	0	0	0	18
15:00	15	0	0	9.2	0	0	0	24.2	23	0	0	2.3	0	0	0	25.3
15:15	19	2	4	6.9	0	0	0	31.9	24	0	1	0	0	0	0	25
15:30	7	1	0	4.6	0	0	0	12.6	10	0	1	2.3	0	0	0	13.3
15:45	22	0	6	2.3	4	0	0	34.3	38	0	0	2.3	0	0	0	40.3
16:00	21	0	5	6.9	0	0	0.2	33.1	17	0	3	4.6	0	0.4	0.2	25.2
16:15	16	0	6	2.3	0	0	0	24.3	31	0	2	0	0	0	0	33
16:30	27	1	2	0	0	0	0	30	24	0	2	0	0	0.4	0	26.4
16:45	15	0	2	2.3	0	0	0	19.3	35	0	0	0	0	0	0	35
17:00	20	0	6	2.3	0	0	0	28.3	11	0	1	0	0	0	0	12
17:15	28	0	8	0	0	0	0	36	29	0	2	0	0	0	0	31
17:30	37	0	3	2.3	0	0	0	42.3	27	0	0	0	0	0	0	27
17:45	30	0	0	0	0	0	0	30	32	0	3	0	0	0	0	35
18:00	17	0	2	0	0	0	0	19	19	0	6	4.6	0	0	0	29.6
18:15	20	5	1	0	0	0	0	26	14	0	3	2.3	0	0	0	19.3
18:30	24	1	2	0	0	0	0	27	18	0	1	0	0	0	0	19
18:45	23															



Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	B to A - R148(W) to R157							Veh. Total	B to C - R148(W) to R148(E)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	9	0	2	0	0	0	0	11	92	0	8	2.3	10	0.8	0	113.1
7:15	15	0	3	0	2	0	0	20	80	2	6	0	8	0	0.4	96.4
7:30	18	0	1	0	0	0	0	19	86	1	8	2.3	10	0	0	107.3
7:45	17	0	0	2.3	2	0	0	21.3	78	2	3	2.3	4	0	0.8	90.1
8:00	19	0	1	2.3	0	0	0	22.3	57	0	3	2.3	6	0	0.6	68.9
8:15	14	0	1	9.2	0	0	0	24.2	62	0	3	0	4	0	0.4	69.4
8:30	16	0	3	0	0	0	0	19	60	2	5	0	2	0	0.2	69.2
8:45	17	1	0	4.6	0	0	0	22.6	50	0	3	2.3	2	0.4	0	57.7
9:00	20	0	2	2.3	0	0	0	24.3	59	1	4	0	2	0	0	66
9:15	14	0	1	0	0	0	0	15	34	0	6	0	2	0.4	0	42.4
9:30	10	0	1	0	0	0	0	11	51	0	6	2.3	4	0.4	0	63.7
9:45	10	0	1	0	0	0	0.2	11.2	47	1	5	2.3	2	0	0	57.3
10:00	9	0	2	0	0	0	0	11	33	0	2	0	6	0.4	0	41.4
10:15	12	0	2	0	0	0	0.2	14.2	51	0	5	6.9	0	0	0	62.9
10:30	13	0	1	0	0	0	0	14	56	1	3	2.3	4	0	0	66.3
10:45	16	0	0	0	0	0	0	16	78	2	1	2.3	0	0	0.4	83.7
11:00	13	0	0	6.9	0	0	0	19.9	53	1	5	4.6	6	0.4	0	70
11:15	18	1	0	2.3	0	0	0	21.3	60	1	6	0	0	0	0	67
11:30	16	0	0	0	0	0	0	16	63	1	8	2.3	4	0	0	78.3
11:45	19	0	0	0	0	0	0	19	51	1	4	6.9	2	0	0.2	65.1
12:00	22	0	0	0	0	0	0	22	58	1	5	2.3	6	0.4	0	72.7
12:15	19	0	2	4.6	0	0	0.2	25.8	53	1	6	6.9	0	0	0.2	67.1
12:30	24	0	1	0	0	0	0	25	63	1	9	0	4	0	0	77
12:45	28	0	0	2.3	0	0	0	30.3	63	0	11	4.6	0	0	0	78.6
13:00	25	1	0	4.6	0	0	0	30.6	88	0	6	0	6	0	0	100
13:15	22	0	1	4.6	0	0	0	27.6	64	1	7	2.3	0	0	0	74.3
13:30	17	1	3	2.3	2	0	0	25.3	58	1	3	4.6	0	0	0.4	67
13:45	25	0	3	2.3	4	0	0	34.3	89	0	2	4.6	6	0.4	0	102
14:00	29	0	1	0	0	0	0	30	71	0	9	6.9	6	2.8	0.2	95.9
14:15	15	0	6	0	0	0	0	21	74	0	8	6.9	0	0	0	88.9
14:30	27	0	1	2.3	2	0	0	32.3	65	0	7	0	2	0	0	74
14:45	54	0	2	2.3	0	0	0	58.3	82	1	5	4.6	0	0	0	92.6
15:00	39	0	1	2.3	0	0	0	42.3	70	1	7	2.3	6	0	0	86.3
15:15	24	2	3	4.6	0	0	0	33.6	70	3	3	0	0	0.4	0.2	76.6
15:30	27	0	3	4.6	0	0.4	0	35	62	0	3	6.9	2	0	0	73.9
15:45	22	0	5	2.3	0	0	0	29.3	65	0	3	0	2	0	0	70
16:00	30	0	4	0	0	0	0	34	59	1	2	0	0	0	0	62
16:15	26	0	3	0	0	0	0	29	60	0	5	0	0	0.4	0.2	65.6
16:30	38	0	2	0	0	0	0	40	59	0	7	0	4	0.4	0	70.4
16:45	20	0	1	0	0	0	0	21	79	5	5	0	0	0	0.2	89.2
17:00	31	0	5	2.3	0	0	0	38.3	101	0	9	2.3	4	1.2	0.2	117.7
17:15	39	0	2	0	0	0	0	41	94	0	2	0	0	0	0	96
17:30	49	0	1	2.3	0	0	0	52.3	79	1	2	0	0	0.4	0.4	82.8
17:45	51	0	2	0	0	0	0	53	83	1	4	0	6	0	0	94
18:00	45	0	4	0	0	0	0.2	49.2	76	0	6	0	4	0.8	0	86.8
18:15	38	0	2	0	0	0	0	40	71	0	2	2.3	0	0	0	75.3
18:30	25	0	2	0	0	0	0.2	27.2	68	0	3	2.3	2	0	0.2	75.5
18:45	22	0	4	2.3	0	0	0	28.3	59	1	4	0	0	0	0.4	64.4
25:75	1128	6	85	75.9	12	0.4	1	1308.3	3184	35	239	101.2	138	10	5.6	3712.8

Time	C to B - R148(E) to R148(W)							Veh. Total	C to A - R148(E) to R157							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	26	0	4	4.6	2	0	0	36.6	11	0	2	4.6	0	0	0	17.6
7:15	22	1	4	0	2	0.4	0	29.4	13	0	3	4.6	0	0	0	20.6
7:30	27	0	2	2.3	4	0	0	35.3	16	0	1	0	0	0	0	17
7:45	33	0	5	2.3	0	0	0.2	40.5	31	0	6	6.9	0	0	0	43.9
8:00	27	0	4	6.9	2	0	0	39.9	13	0	2	13.8	0	0	0	28.8
8:15	59	0	4	0	2	0	0	65	20	0	2	9.2	0	0	0	31.2
8:30	62	1	0	4.6	4	0	0.2	71.8	19	1	3	6.9	2	0	0	31.9
8:45	83	2	5	4.6	2	0	0	96.6	21	0	3	9.2	0	0	0	33.2
9:00	50	1	1	2.3	0	0	0	54.3	16	0	3	9.2	0	0	0	28.2
9:15	49	1	7	2.3	0	0	0.2	59.5	13	2	0	4.6	0	0	0	19.6
9:30	61	0	7	0	4	0	0.2	72.2	8	1	0	2.3	2	0	0	13.3
9:45	57	1	6	4.6	0	0	0.2	68.8	8	0	1	4.6	2	0	0	15.6
10:00	53	0	2	2.3	2	0	0	59.3	4	0	2	4.6	0	0	0	10.6
10:15	52	0	6	0	0	0	0	58.2	9	0	2	6.9	0	0	0	17.9
10:30	40	0	5	0	4	0	1.2	50.2	10	0	3	6.9	0	0	0	19.9
10:45	52	0	4	4.6	0	0	0	60.6	6	0	2	0	0	0	0	8
11:00	46	0	2	2.3	2	0.4	0	52.7	4	0	1	2.3	0	0	0	7.3
11:15	57	0	4	2.3	2	0.4	0	65.7	13	0	1	2.3	0	0	0	16.3
11:30	58	4	4	0	4	0	0	70	9	1	0	9.2	0	0	0	19.2
11:45	61	2	7	4.6	0	0	0	74.6	15	0	3	4.6	0	0	0	22.6
12:00	52	0	7	4.6	2	0	0	65.6	15	0	2	4.6	0	0	0	21.6
12:15	55	0	4	0	2	0.4	0	61.4	11	0	1	13.8	0	0	0	25.8
12:30	81	0	8	2.3	4	0	0.2	95.5	11	1	2	9.2	0	0	0	23.2
12:45	58	0	1	2.3	2	2.8	0.2	66.3	7	0	3	6.9	0	0	0	16.9
13:00	66	0	4	2.3	2	0	0	74.3	16	0	2	9.2	0	0	0	27.2
13:15	73	2	4	0	0	0	0	79	16	0	1	6.9	0	0	0	23.9
13:30	56	2	2	9.2	8	0	0	77.2	17	1	3	9.2	0	0	0	30.2
13:45	51	0	3	0	2	0	0.2	56.2	9	0	2	4.6	0	0	0	15.6
14:00	55	0	6	6.9	0	0.4	0	68.3	16	0	3	2.3	0	0	0	21.3
14:15	76	0	5	0	2	0	0.2	83.2	18	0	0	2.3	0	0	0	20.3
14:30	49	1	9	2.3	6	0	0	67.3	11	1	0	0	0	0	0	12
14:45	55	1	8	6.9	0	0	0	70.9	31	2	0	9.2	0	0	0	42.2
15:00	75	2	3	2.3	2	0	0	84.3	10	0	1	4.6	0	0	0	15.6
15:15	76	0	7	4.6	0	0	0.2	87.8	12	0	0	2.3	4	0	0	18.3
15:30	67	0	4	2.3	4	0	0	77.3	12	1	0	2.3	0	0	0	15.3
15:45	61	1	2	0	2	0	0.2	66.2	32	0	6	0	0	0	0	38
16:00	69	1	7	0	2	0.8	0	79.8	30	0	6	4.6	0	0	0	40.6
16:15	72	0	7	0	2	0.4	0.2	81.6	33	0	8	2.3	0	0	0	43.3
16:30	75	1	4	0	4	0	0.2	84.2	43	0	7	2.3	0	0	0	52.3
16:45	83	0	4	0	2	0	0.4	89.4	57	0	3	0	0	0	0	60
17:00	85	0	4	0	0	0	0.2	89.2	52	0	9	6.9	0	0	0	67.9
17:15	74	2	5	2.3	4	0	0	87.3	50	0	3	9.2	0	0	0	62.2
17:30	80	2	6	2.3	2	0	0.2	92.5	64	0	4	2.3	0	0	0	70.3
17:45	81	0	6	0	8	0	0.2	95.2	35	0	3	0	0	0	0.4	38.4
18:00	70	0	5	0	0	0.4	0.4	75.8	55	0	12	4.6	0	0	0	71.6
18:15	63	0	2	0	2	0.4	0.4	67.8	42	0	3	0	0	0	0	45
18:30	78	0	5	0	6	0	0.2	89.2	36	0	4</					



Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	To Arm A - R157							Veh. Total	From Arm A - R157							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	20	0	4	4.6	0	0	0	28.6	51	0	6	2.3	0	0	0.2	59.5
7:15	28	0	6	4.6	2	0	0	40.6	55	1	5	6.9	0	0	0.4	68.3
7:30	34	0	2	0	0	0	0	36	54	0	9	0	0	0	0	63
7:45	48	0	6	9.2	2	0	0	65.2	70	0	3	4.6	0	0	0	77.6
8:00	32	0	3	16.1	0	0	0	51.1	62	0	5	6.9	0	0	0	73.9
8:15	34	0	3	18.4	0	0	0	55.4	56	0	5	9.2	0	0	0	70.2
8:30	35	1	6	6.9	2	0	0	50.9	77	0	11	9.2	0	0	0	97.2
8:45	38	1	3	13.8	0	0	0	55.8	66	0	3	4.6	0	0	0	73.6
9:00	36	0	5	11.5	0	0	0	52.5	49	1	6	2.3	0	0	0	58.3
9:15	27	2	1	4.6	0	0	0	34.6	43	0	2	2.3	0	0	0	47.3
9:30	18	1	1	2.3	2	0	0	24.3	52	2	4	13.8	2	0	0	73.8
9:45	18	0	2	4.6	2	0	0.2	26.8	45	0	3	4.6	18	0	0.2	70.8
10:00	13	0	4	4.6	0	0	0	21.6	34	0	5	4.6	4	0	0	47.6
10:15	21	0	4	6.9	0	0	0.2	32.1	30	0	6	6.9	0	0	0	42.9
10:30	23	0	4	6.9	0	0	0	33.9	19	0	0	2.3	0	0	0	21.3
10:45	22	0	2	0	0	0	0	24	28	0	4	2.3	0	0	0.2	34.5
11:00	17	0	1	9.2	0	0	0	27.2	31	0	5	2.3	0	0	0	38.3
11:15	31	1	1	4.6	0	0	0	37.6	36	1	2	9.2	0	0	0	48.2
11:30	25	1	0	9.2	0	0	0	35.2	17	0	2	4.6	2	0	0	25.6
11:45	34	0	3	4.6	0	0	0	41.6	29	2	2	4.6	0	0	0	37.6
12:00	37	0	2	4.6	0	0	0	43.6	29	0	2	4.6	0	0	0	35.6
12:15	30	0	3	18.4	0	0	0.2	51.6	27	0	2	4.6	0	0	0	33.6
12:30	35	1	3	9.2	0	0	0	48.2	33	1	4	16.1	0	0	0	54.1
12:45	35	0	3	9.2	0	0	0	47.2	25	0	2	4.6	0	0	0	31.6
13:00	41	1	2	13.8	0	0	0	57.8	23	0	4	2.3	6	0	0	35.3
13:15	38	0	2	11.5	0	0	0	51.5	32	0	1	4.6	0	0	0	37.6
13:30	34	2	6	11.5	2	0	0	55.5	33	1	2	6.9	0	0	0	42.9
13:45	34	0	5	6.9	4	0	0	49.9	29	0	1	2.3	0	0	0	32.3
14:00	45	0	4	2.3	0	0	0	51.3	35	1	4	9.2	2	0	0	51.2
14:15	33	0	6	2.3	0	0	0	41.3	29	0	3	6.9	0	0	0.2	39.1
14:30	38	1	1	2.3	2	0	0	44.3	31	0	2	9.2	0	0	0	42.2
14:45	85	2	2	11.5	0	0	0	100.5	29	1	3	0	0	0.4	0	33.4
15:00	49	0	2	6.9	0	0	0	57.9	38	0	0	11.5	0	0	0	49.5
15:15	36	2	3	6.9	4	0	0	51.9	43	2	5	6.9	0	0	0	56.9
15:30	39	1	3	6.9	0	0.4	0	50.3	17	1	1	6.9	0	0	0	25.9
15:45	54	0	11	2.3	0	0	0	67.3	60	0	6	4.6	4	0	0	74.6
16:00	60	0	10	4.6	0	0	0	74.6	38	0	8	11.5	0	0.4	0.4	58.3
16:15	59	0	11	2.3	0	0	0	72.3	47	0	8	2.3	0	0	0	57.3
16:30	81	0	9	2.3	0	0	0	92.3	51	1	4	0	0	0.4	0	56.4
16:45	77	0	4	0	0	0	0	81	50	0	2	2.3	0	0	0	54.3
17:00	83	0	14	9.2	0	0	0	106.2	31	0	7	2.3	0	0	0	40.3
17:15	89	0	5	9.2	0	0	0	103.2	57	0	10	0	0	0	0	67
17:30	113	0	5	4.6	0	0	0	122.6	64	0	3	2.3	0	0	0	69.3
17:45	86	0	5	0	0	0	0.4	91.4	62	0	3	0	0	0	0	65
18:00	100	0	16	4.6	0	0	0.2	120.8	36	0	8	4.6	0	0	0	48.6
18:15	80	0	5	0	0	0	0	85	34	5	4	2.3	0	0	0	45.3
18:30	61	0	6	2.3	0	0	0.2	69.5	42	1	3	0	0	0	0	46
18:45	50	0	7	4.6	0	0.4	0.4	62.4	35	1	7	0	0	0	0	43
25:75	2156	17	216	312.8	22	0.8	1.8	2726.4	1964	22	197	232.3	38	1.2	1.6	2456.1



Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

Time	To Arm B - R148(W)							Veh. Total	From Arm B - R148(W)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	36	0	5	4.6	2	0	0	47.6	101	0	10	2.3	10	0.8	0	124.1
7:15	30	1	7	2.3	2	0.4	0.2	42.9	95	2	9	0	10	0	0.4	116.4
7:30	39	0	6	2.3	4	0	0	51.3	104	1	9	2.3	10	0	0	126.3
7:45	51	0	7	4.6	0	0	0.2	62.8	95	2	3	4.6	6	0	0.8	111.4
8:00	47	0	5	11.5	2	0	0	65.5	76	0	4	4.6	6	0	0.6	91.2
8:15	71	0	8	2.3	2	0	0	83.3	76	0	4	9.2	4	0	0.4	93.6
8:30	81	1	3	4.6	4	0	0.2	93.8	76	2	8	0	2	0	0.2	88.2
8:45	114	2	7	4.6	2	0	0	129.6	67	1	3	6.9	2	0.4	0	80.3
9:00	72	1	2	2.3	0	0	0	77.3	79	1	6	2.3	2	0	0	90.3
9:15	70	1	9	2.3	0	0	0.2	82.5	48	0	7	0	2	0.4	0	57.4
9:30	77	0	8	0	6	0	0.2	91.2	61	0	7	2.3	4	0.4	0	74.7
9:45	81	1	7	4.6	4	0	0.4	98	57	1	6	2.3	2	0	0.2	68.5
10:00	69	0	5	2.3	2	0	0	78.3	42	0	4	0	6	0.4	0	52.4
10:15	70	0	7	2.3	0	0	0.2	79.5	63	0	7	6.9	0	0	0.2	77.1
10:30	55	0	5	0	4	0	1.2	65.2	69	1	4	2.3	4	0	0	80.3
10:45	70	0	7	4.6	0	0	0.2	81.8	94	2	1	2.3	0	0	0.4	99.7
11:00	67	0	3	2.3	2	0.4	0	74.7	66	1	5	11.5	6	0.4	0	89.9
11:15	75	1	4	2.3	2	0.4	0	84.7	78	2	6	2.3	0	0	0	88.3
11:30	70	4	4	2.3	6	0	0	86.3	79	1	8	2.3	4	0	0	94.3
11:45	79	3	8	6.9	0	0	0	96.9	70	1	4	6.9	2	0	0.2	84.1
12:00	67	0	9	4.6	2	0	0	82.6	80	1	5	2.3	6	0.4	0	94.7
12:15	69	0	5	2.3	2	0.4	0	78.7	72	1	8	11.5	0	0	0.4	92.9
12:30	103	0	9	6.9	4	0	0.2	123.1	87	1	10	0	4	0	0	102
12:45	77	0	2	4.6	2	2.8	0.2	88.6	91	0	11	6.9	0	0	0	108.9
13:00	84	0	6	2.3	2	0	0	94.3	113	1	6	4.6	6	0	0	130.6
13:15	94	2	5	0	0	0	0	101	86	1	8	6.9	0	0	0	101.9
13:30	72	2	2	9.2	8	0	0	93.2	75	2	6	6.9	2	0	0.4	92.3
13:45	72	0	4	0	2	0	0.2	78.2	114	0	5	6.9	10	0.4	0	136.3
14:00	76	1	7	6.9	2	0.4	0	93.3	100	0	10	6.9	6	2.8	0.2	125.9
14:15	98	0	7	0	2	0	0.2	107.2	89	0	14	6.9	0	0	0	109.9
14:30	66	1	9	2.3	6	0	0	84.3	92	0	8	2.3	4	0	0	106.3
14:45	70	1	11	6.9	0	0	0	88.9	136	1	7	6.9	0	0	0	150.9
15:00	98	2	3	4.6	2	0	0	109.6	109	1	8	4.6	6	0	0	128.6
15:15	100	0	8	4.6	0	0	0.2	112.8	94	5	6	4.6	0	0.4	0.2	110.2
15:30	77	0	5	4.6	4	0	0	90.6	89	0	6	11.5	2	0.4	0	108.9
15:45	99	1	2	2.3	2	0	0.2	106.5	87	0	8	2.3	2	0	0	99.3
16:00	86	1	10	4.6	2	1.2	0.2	105	89	1	6	0	0	0	0	96
16:15	103	0	9	0	2	0.4	0.2	114.6	86	0	8	0	0	0.4	0.2	94.6
16:30	99	1	6	0	4	0.4	0.2	110.6	97	0	9	0	4	0.4	0	110.4
16:45	118	0	4	0	2	0	0.4	124.4	99	5	6	0	0	0	0.2	110.2
17:00	96	0	5	0	0	0	0.2	101.2	132	0	14	4.6	4	1.2	0.2	156
17:15	103	2	7	2.3	4	0	0	118.3	133	0	4	0	0	0	0	137
17:30	107	2	6	2.3	2	0	0.2	119.5	128	1	3	2.3	0	0.4	0.4	135.1
17:45	113	0	9</													



10084 / Moygaddy
May 2019
Junction Turning Count

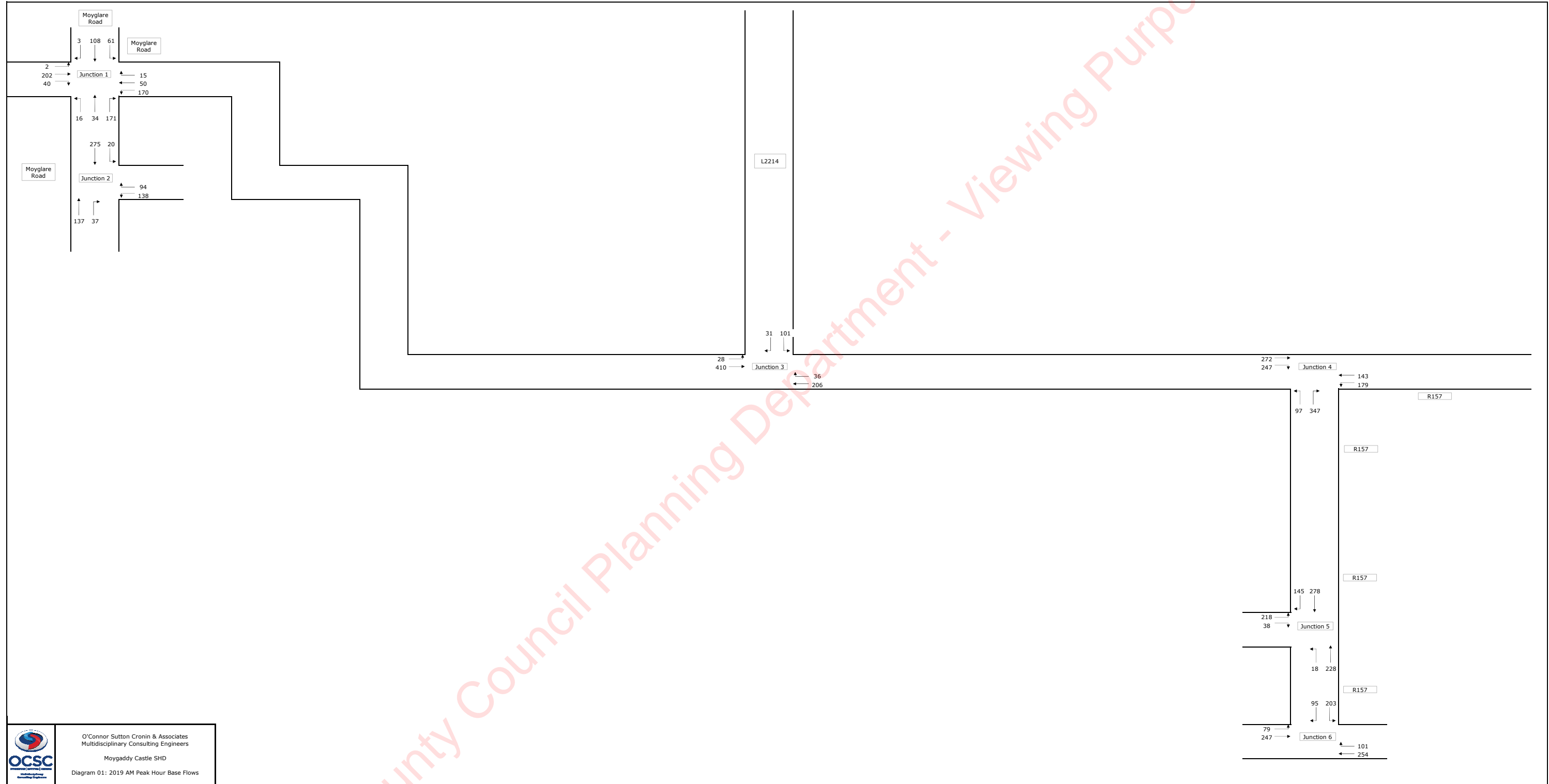
Received
Kildare County Council
10 Oct 2022

Site No. 6
Location R157 / R148(W) / R148(E)
Date Tuesday 28 May 2019

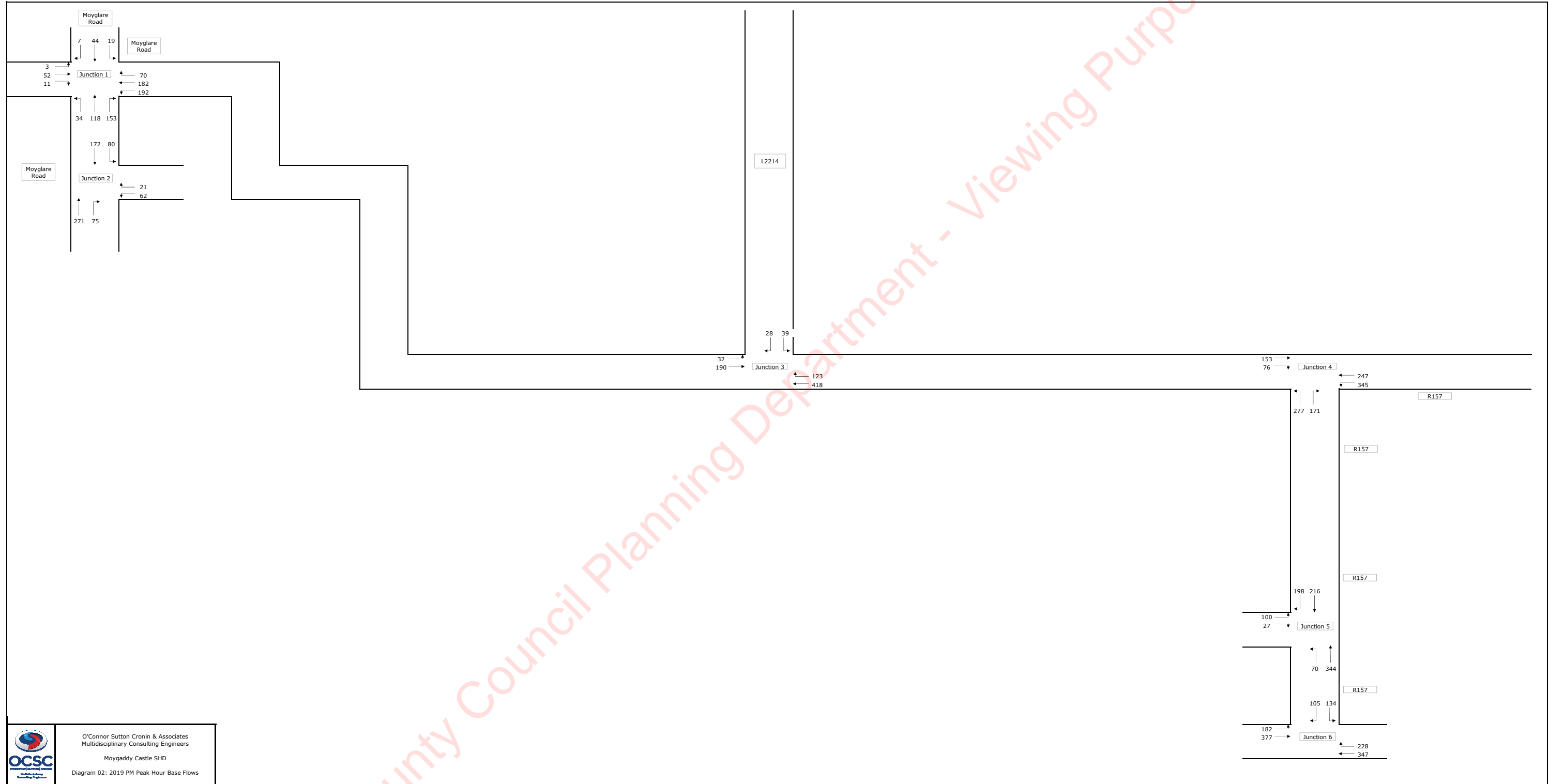
Time	To Arm C - R148(E)							Veh. Total	From Arm C - R148(E)							Veh. Total
	CAR	Taxi	LGV	HGV	PSV	M/C	P/C		CAR	Taxi	LGV	HGV	PSV	M/C	P/C	
7:00	133	0	13	4.6	10	0.8	0.2	161.6	37	0	6	9.2	2	0	0	54.2
7:15	127	3	8	4.6	8	0	0.6	151.2	35	1	7	4.6	2	0.4	0	50
7:30	128	1	13	2.3	10	0	0	154.3	43	0	3	2.3	4	0	0	52.3
7:45	130	2	4	4.6	4	0	0.8	145.4	64	0	11	9.2	0	0	0.2	84.4
8:00	99	0	7	4.6	6	0	0.6	117.2	40	0	6	20.7	2	0	0	68.7
8:15	106	0	4	6.9	4	0	0.4	121.3	79	0	6	9.2	2	0	0	96.2
8:30	118	2	13	9.2	2	0	0.2	144.4	81	2	3	11.5	6	0	0.2	103.7
8:45	85	0	4	6.9	2	0.4	0	98.3	104	2	8	13.8	2	0	0	129.8
9:00	86	2	9	2.3	2	0	0	101.3	66	1	4	11.5	0	0	0	82.5
9:15	56	0	6	2.3	2	0.4	0	66.7	62	3	7	6.9	0	0	0.2	79.1
9:30	87	2	9	16.1	4	0.4	0	118.5	69	1	7	2.3	6	0	0.2	85.5
9:45	68	1	7	6.9	16	0	0	98.9	65	1	7	9.2	2	0	0.2	84.4
10:00	51	0	4	4.6	10	0.4	0	70	57	0	4	6.9	2	0	0	69.9
10:15	63	0	10	11.5	0	0	0	84.5	61	0	8	6.9	0	0	0.2	76.1
10:30	60	1	3	4.6	4	0	0	72.6	50	0	8	6.9	4	0	1.2	70.1
10:45	88	2	2	4.6	0	0	0.4	97	58	0	6	4.6	0	0	0	68.6
11:00	63	1	9	6.9	6	0.4	0	86.3	50	0	3	4.6	2	0.4	0	60
11:15	78	1	8	9.2	0	0	0	96.2	70	0	5	4.6	2	0.4	0	82
11:30	68	1	10	4.6	4	0	0	87.6	67	5	4	9.2	4	0	0	89.2
11:45	62	2	5	9.2	2	0	0.2	80.4	76	2	10	9.2	0	0	0	97.2
12:00	72	1	5	6.9	6	0.4	0	91.3	67	0	9	9.2	2	0	0	87.2
12:15	66	1	7	9.2	0	0	0.2	83.4	66	0	5	13.8	2	0.4	0	87.2
12:30	74	2	12	11.5	4	0	0	103.5	92	1	10	11.5	4	0	0.2	118.7
12:45	69	0	12	6.9	0	0	0	87.9	65	0	4	9.2	2	2.8	0.2	83.2
13:00	93	0	8	2.3	12	0	0	115.3	82	0	6	11.5	2	0	0	101.5
13:15	75	1	7	6.9	0	0	0	89.9	89	2	5	6.9	0	0	0	102.9
13:30	75	2	5	11.5	0	0	0.4	93.9	73	3	5	18.4	8	0	0	107.4
13:45	97	0	2	6.9	6	0.4	0	112.3	60	0	5	4.6	2	0	0.2	71.8
14:00	85	0	12	16.1	6	2.8	0.2	122.1	71	0	9	9.2	0	0.4	0	89.6
14:15	81	0	9	13.8	0	0	0.2	104	94	0	5	2.3	2	0	0.2	103.5
14:30	79	0	9	9.2	2	0	0	99.2	60	2	9	2.3	6	0	0	79.3
14:45	96	2	5	4.6	0	0.4	0	108	86	3	8	16.1	0	0	0	113.1
15:00	85	1	7	11.5	6	0	0	110.5	85	2	4	6.9	2	0	0	99.9
15:15	89	5	7	6.9	0	0.4	0.2	108.5	88	0	7	6.9	4	0	0.2	106.1
15:30	69	1	3	11.5	2	0	0	86.5	79	1	4	4.6	4	0	0	92.6
15:45	87	0	9	2.3	6	0	0	104.3	93	1	8	0	2	0	0.2	104.2
16:00	80	1	7	6.9	0	0	0.2	95.1	99	1	13	4.6	2	0.8	0	120.4
16:15	76	0	11	2.3	0	0.4	0.2	89.9	105	0	15	2.3	2	0.4	0.2	124.9
16:30	86	1	9	0	4	0.4	0	100.4	118	1	11	2.3	4	0	0.2	136.5
16:45	94	5	7	2.3	0	0	0.2	108.5	140	0	7	0	2	0	0.4	149.4
17:00	121	0	15	4.6	4	1.2	0.2	146	137	0	13	6.9	0	0	0.2	157.1
17:15	122	0	10	0	0	0	0	132	124	2	8	11.5	4	0	0	149.5
17:30	116	1	5	2.3	0	0.4	0.4	125.1	144	2	10	4.6	2	0	0.2	162.8
17:45	113	1	4	0	6	0	0	124	116	0	9	0	8	0	0.6	133.6
18:00	93	0	8	0	4	0.8	0	105.8	125	0	17	4.6	0	0.4	0.4	147.4
18:15	91	5	3	2.3	0	0	0	101.3	105	0	5	0	2	0.4	0.4	112.8
18:30	92	1	5	2.3	2	0	0.2	102.5	114	0	9	2.3	6	0	0.2	131.5
18:45	82	2	9	0	0	0	0.4	93.4	96	0	7	2.3	2	1.2	1.2	109.7
25:75	4214	54	360	287.5	166	10.4	6.4	5098.3	3907	39	350	338.1	118	8	7.6	4767.7

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Appendix B **TRAFFIC FLOW DIAGRAMS**



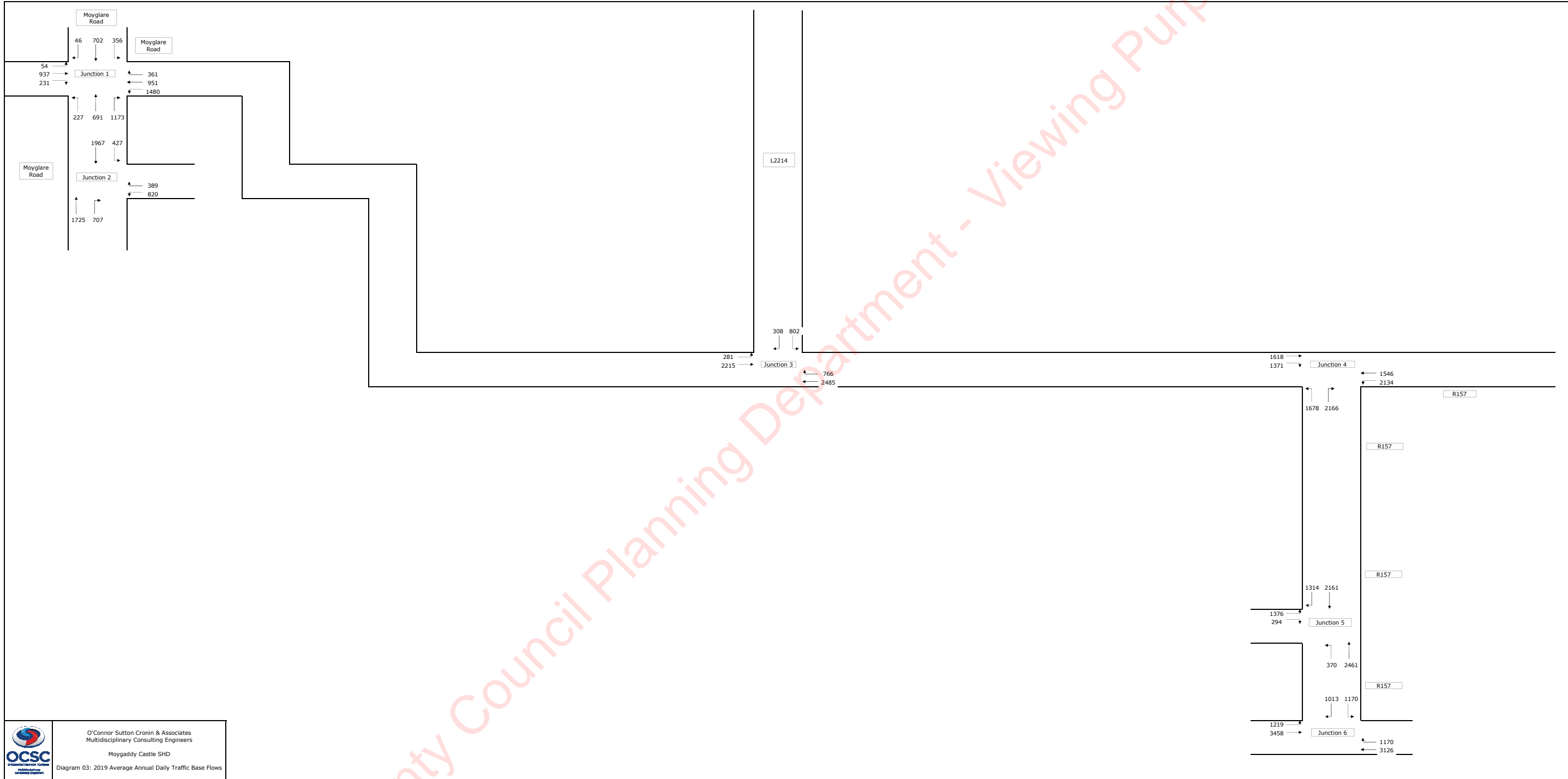
O'Connor Sutton Cronin & Associates
Multidisciplinary Consulting Engineers
Moygaddy Castle SHD
Diagram 01: 2019 AM Peak Hour Base Flows




O'Connor Sutton Cronin & Associates
Multidisciplinary Consulting Engineers
Moygaddy Castle SHD
Diagram 02: 2019 PM Peak Hour Base Flows

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 O'Connor Sutton Cronin & Associates
Multidisciplinary Consulting Engineers
Moygaddy Castle SHD
Diagram 03: 2019 Average Annual Daily Traffic Base Flows

Appendix C **TRICS OUTPUT FILES**

Calculation Reference: AUDIT-322901-211014-1033

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : C - FLATS PRIVATELY OWNED
 TOTAL VEHICLES

Selected regions and areas:

01	GREATER LONDON EN ENFIELD	1 days
02	SOUTH EAST HF HERTFORDSHIRE	2 days
03	SOUTH WEST DC DORSET	1 days
05	EAST MIDLANDS LE LEICESTERSHIRE	1 days
11	SCOTLAND EB CITY OF EDINBURGH	1 days
13	MUNSTER WA WATERFORD	1 days
15	GREATER DUBLIN DL DUBLIN	3 days
17	ULSTER (NORTHERN IRELAND) AN ANTRIM	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
 Actual Range: 14 to 84 (units:)
 Range Selected by User: 6 to 493 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 10/06/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	4 days
Wednesday	1 days
Thursday	1 days
Friday	3 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	6
Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3 11 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS@.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	1 days
20,001 to 25,000	4 days
25,001 to 50,000	5 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

50,001 to 75,000	2 days
125,001 to 250,000	3 days
250,001 to 500,000	3 days
500,001 or More	3 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	2 days
0.6 to 1.0	5 days
1.1 to 1.5	4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	2 days
No	9 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	10 days
2 Poor	1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	AN-03-C-02 BLOCK OF FLATS SUMMERHILL AVENUE BELFAST KNOCK Edge of Town Residential Zone Total No of Dwellings: 22 <i>Survey date: FRIDAY 28/11/14</i>	ANTRIM	<i>Survey Type: MANUAL</i>
2	DC-03-C-02 FLATS IN BLOCKS PALM COURT WEYMOUTH SPA ROAD Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 14 <i>Survey date: FRIDAY 28/03/14</i>	DORSET	<i>Survey Type: MANUAL</i>
3	DL-03-C-13 BLOCK OF FLATS SANDYFORD ROAD DUBLIN Neighbourhood Centre (PPS6 Local Centre) Built-Up Zone Total No of Dwellings: 52 <i>Survey date: TUESDAY 10/09/13</i>	DUBLIN	<i>Survey Type: MANUAL</i>
4	DL-03-C-15 BLOCKS OF FLATS MONKSTOWN ROAD DUBLIN MONKSTOWN Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 20 <i>Survey date: WEDNESDAY 01/10/14</i>	DUBLIN	<i>Survey Type: MANUAL</i>
5	DL-03-C-16 BLOCKS OF FLATS BOTANIC AVENUE DUBLIN DRUMCONDRA Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 31 <i>Survey date: TUESDAY 22/11/16</i>	DUBLIN	<i>Survey Type: MANUAL</i>
6	EB-03-C-01 BLOCKS OF FLATS MYRESIDE ROAD EDINBURGH CRAIGLOCKHART Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 32 <i>Survey date: TUESDAY 26/05/15</i>	CITY OF EDINBURGH	<i>Survey Type: MANUAL</i>
7	EN-03-C-01 BLOCK OF FLATS SOUTH STREET ENFIELD Suburban Area (PPS6 Out of Centre) Built-Up Zone Total No of Dwellings: 16 <i>Survey date: MONDAY 16/11/15</i>	ENFIELD	<i>Survey Type: MANUAL</i>

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LIST OF SITES relevant to selection parameters (Cont.)

8	HF-03-C-04 OXHEY DRIVE WATFORD SOUTH OXHEY Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings: 84 <i>Survey date: THURSDAY 10/06/21</i>	BLOCKS OF FLATS	HERTFORDSHIRE	<i>Survey Type: MANUAL</i>
9	HF-03-C-05 FERNDOWN ROAD WATFORD SOUTH OXHEY Edge of Town Residential Zone Total No of Dwellings: 26 <i>Survey date: MONDAY 07/06/21</i>	BLOCKS OF FLATS	HERTFORDSHIRE	<i>Survey Type: MANUAL</i>
10	LE-03-C-01 NEW STREET LEICESTER OADBY Neighbourhood Centre (PPS6 Local Centre) Residential Zone Total No of Dwellings: 19 <i>Survey date: FRIDAY 16/10/20</i>	BLOCK OF FLATS	LEICESTERSHIRE	<i>Survey Type: MANUAL</i>
11	WA-03-C-01 UPPER YELLOW ROAD WATERFORD Suburban Area (PPS6 Out of Centre) Residential Zone Total No of Dwellings: 51 <i>Survey date: TUESDAY 12/05/15</i>	BLOCKS OF FLATS	WATERFORD	<i>Survey Type: MANUAL</i>

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address; the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
CA-03-C-03	PT
CB-03-C-02	PT
CB-03-C-03	PT
DL-03-C-12	PT
DL-03-C-14	PT
DL-03-C-17	PT
DS-03-C-03	PT
EN-03-C-03	PT
ES-03-C-01	PT
GA-03-C-01	PT
HF-03-C-01	PT
HG-03-C-02	PT
HK-03-C-03	PT
HO-03-C-04	PT
HO-03-C-05	PT
HV-03-C-01	PT
NF-03-C-02	PT
NH-03-C-01	PT
NT-03-C-01	PT
NT-03-C-02	PT
RD-03-C-03	PT
RD-03-C-04	PT
RI-03-C-01	PT
SF-03-C-03	PT
SR-03-C-03	PT
WA-03-C-01	PT
WA-03-C-01	PT

TRIP RATE for Land Use 03 - RESIDENTIAL/C - FLATS PRIVATELY OWNED

TOTAL VEHICLES

Calculation factor: 1 DWELLS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	11	33	0.079	11	33	0.272	11	33	0.351
08:00 - 09:00	11	33	0.093	11	33	0.196	11	33	0.289
09:00 - 10:00	11	33	0.095	11	33	0.098	11	33	0.193
10:00 - 11:00	11	33	0.074	11	33	0.084	11	33	0.158
11:00 - 12:00	11	33	0.063	11	33	0.060	11	33	0.123
12:00 - 13:00	11	33	0.087	11	33	0.093	11	33	0.180
13:00 - 14:00	11	33	0.090	11	33	0.079	11	33	0.169
14:00 - 15:00	11	33	0.079	11	33	0.076	11	33	0.155
15:00 - 16:00	11	33	0.095	11	33	0.079	11	33	0.174
16:00 - 17:00	11	33	0.117	11	33	0.095	11	33	0.212
17:00 - 18:00	11	33	0.196	11	33	0.060	11	33	0.256
18:00 - 19:00	11	33	0.125	11	33	0.095	11	33	0.220
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.193			1.287			2.480

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 14 - 84 (units:)
 Survey date range: 01/01/13 - 10/06/21
 Number of weekdays (Monday-Friday): 11
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 27

This section displays a quick summary of some of the data filtering selections made by the TRICS@ user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-322901-211014-1002

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 03 - RESIDENTIAL
 Category : A - HOUSES PRIVATELY OWNED
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	EX ESSEX	1 days
	WS WEST SUSSEX	1 days
03	SOUTH WEST	
	DV DEVON	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE	
	NY NORTH YORKSHIRE	1 days
	SY SOUTH YORKSHIRE	1 days
	WY WEST YORKSHIRE	1 days
09	NORTH	
	DH DURHAM	2 days
11	SCOTLAND	
	FA FALKIRK	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: No of Dwellings
 Actual Range: 21 to 197 (units:)
 Range Selected by User: 4 to 4334 (units:)

Parking Spaces Range: All Surveys Included

Parking Spaces per Dwelling Range: All Surveys Included

Bedrooms per Dwelling Range: All Surveys Included

Percentage of dwellings privately owned: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 16/06/21

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	4 days
Tuesday	1 days
Wednesday	2 days
Thursday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	9 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	5
Edge of Town	2
Neighbourhood Centre (PPS6 Local Centre)	2

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	9
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This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C3 9 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS@.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	1 days
5,001 to 10,000	2 days
10,001 to 15,000	3 days
15,001 to 20,000	1 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
75,001 to 100,000	2 days
125,001 to 250,000	3 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	5 days
1.1 to 1.5	4 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	8 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	8 days
2 Poor	1 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

- | | | |
|---|--|----------------------------|
| 1 | DH-03-A-01
SEMI DETACHED
GREENFIELDS ROAD
BISHOP AUCKLAND | DURHAM |
| | Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 50
<i>Survey date: TUESDAY 28/03/17</i> | <i>Survey Type: MANUAL</i> |
| 2 | DH-03-A-02
MIXED HOUSES
LEAZES LANE
BISHOP AUCKLAND
ST HELEN AUCKLAND
Neighbourhood Centre (PPS6 Local Centre)
Residential Zone
Total No of Dwellings: 125
<i>Survey date: MONDAY 27/03/17</i> | DURHAM |
| | | <i>Survey Type: MANUAL</i> |
| 3 | DV-03-A-03
TERRACED & SEMI DETACHED
LOWER BRAND LANE
HONITON | DEVON |
| | Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 70
<i>Survey date: MONDAY 28/09/15</i> | <i>Survey Type: MANUAL</i> |
| 4 | EX-03-A-02
DETACHED & SEMI-DETACHED
MANOR ROAD
CHIGWELL
GRANGE HILL
Edge of Town
Residential Zone
Total No of Dwellings: 97
<i>Survey date: MONDAY 27/11/17</i> | ESSEX |
| | | <i>Survey Type: MANUAL</i> |
| 5 | FA-03-A-01
SEMI -DETACHED/TERRACED
MANDELA AVENUE
FALKIRK | FALKIRK |
| | Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 37
<i>Survey date: THURSDAY 30/05/13</i> | <i>Survey Type: MANUAL</i> |
| 6 | NY-03-A-08
TERRACED HOUSES
NICHOLAS STREET
YORK | NORTH YORKSHIRE |
| | Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 21
<i>Survey date: MONDAY 16/09/13</i> | <i>Survey Type: MANUAL</i> |
| 7 | SY-03-A-01
SEMI DETACHED HOUSES
A19 BENTLEY ROAD
DONCASTER
BENTLEY RISE
Suburban Area (PPS6 Out of Centre)
Residential Zone
Total No of Dwellings: 54
<i>Survey date: WEDNESDAY 18/09/13</i> | SOUTH YORKSHIRE |
| | | <i>Survey Type: MANUAL</i> |

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TRIP RATE for Land Use 03 - RESIDENTIAL/A - HOUSES PRIVATELY OWNED
 TOTAL VEHICLES
 Calculation factor: 1 DWELLS
 BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate	No. Days	Ave. DWELLS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	9	77	0.037	9	77	0.189	9	77	0.226
08:00 - 09:00	9	77	0.089	9	77	0.275	9	77	0.364
09:00 - 10:00	9	77	0.145	9	77	0.148	9	77	0.293
10:00 - 11:00	9	77	0.090	9	77	0.123	9	77	0.213
11:00 - 12:00	9	77	0.106	9	77	0.100	9	77	0.206
12:00 - 13:00	9	77	0.122	9	77	0.079	9	77	0.201
13:00 - 14:00	9	77	0.113	9	77	0.109	9	77	0.222
14:00 - 15:00	9	77	0.089	9	77	0.162	9	77	0.251
15:00 - 16:00	9	77	0.189	9	77	0.102	9	77	0.291
16:00 - 17:00	9	77	0.172	9	77	0.102	9	77	0.274
17:00 - 18:00	9	77	0.211	9	77	0.070	9	77	0.281
18:00 - 19:00	9	77	0.172	9	77	0.119	9	77	0.291
19:00 - 20:00	1	97	0.062	1	97	0.052	1	97	0.114
20:00 - 21:00	1	97	0.031	1	97	0.021	1	97	0.052
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.628			1.651			3.279

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: COUNT/TRP*FACT. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 21 - 197 (units:)
 Survey date range: 01/01/13 - 16/06/21
 Number of weekdays (Monday-Friday): 9
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 32

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-322901-210928-0915

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
 Category : F - CARE HOME (ELDERLY RESIDENTIAL)
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST HC HAMPSHIRE	1 days
07	YORKSHIRE & NORTH LINCOLNSHIRE NY NORTH YORKSHIRE	1 days
11	SCOTLAND SR STIRLING	1 days
12	CONNAUGHT CS SLIGO	1 days
15	GREATER DUBLIN DL DUBLIN	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of residents
 Actual Range: 16 to 99 (units:)
 Range Selected by User: 16 to 180 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 02/05/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	2 days
Tuesday	2 days
Wednesday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	2
Edge of Town	3

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	4
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C2 5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

5,001 to 10,000 4 days
10,001 to 15,000 1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000 1 days
25,001 to 50,000 3 days
250,001 to 500,000 1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5 5 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes 1 days
No 4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present 5 days

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	CS-05-F-01 CHURCH HILL SLIGO	NURSING HOME	SLIGO
	Edge of Town Residential Zone Total Number of residents: 99 <i>Survey date: MONDAY 27/04/15</i>		<i>Survey Type: MANUAL</i>
2	DL-05-F-01 MOUNT ANVILLE PARK DUBLIN GOATSTOWN	NURSING HOME	DUBLIN
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of residents: 16 <i>Survey date: TUESDAY 05/09/17</i>		<i>Survey Type: MANUAL</i>
3	HC-05-F-01 BOTLEY ROAD SOUTHAMPTON	CARE HOME	HAMPSHIRE
	Edge of Town No Sub Category Total Number of residents: 42 <i>Survey date: TUESDAY 24/11/15</i>		<i>Survey Type: MANUAL</i>
4	NY-05-F-05 SEAGRIM CRESCENT RICHMOND	NURSING HOME	NORTH YORKSHIRE
	Edge of Town Residential Zone Total Number of residents: 37 <i>Survey date: MONDAY 04/03/19</i>		<i>Survey Type: MANUAL</i>
5	SR-05-F-01 PERTH ROAD DUNBLANE	NURSING HOME	STIRLING
	Suburban Area (PPS6 Out of Centre) Residential Zone Total Number of residents: 60 <i>Survey date: WEDNESDAY 18/06/14</i>		<i>Survey Type: MANUAL</i>

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
DS-05-F-01	public transport
ES-05-F-02	public transport
EX-05-F-01	public transport
GM-05-F-03	public transport
HF-05-F-02	public transport
LC-05-F-02	public transport
NT-05-F-02	public transport
SF-05-F-01	public transport
SW-05-F-01	public transport
TW-05-F-03	public transport

TRIP RATE for Land Use 05 - HEALTH/F - CARE HOME (ELDERLY RESIDENTIAL)

TOTAL VEHICLES

Calculation factor: 1 RESIDE

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate	No. Days	Ave. RESIDE	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	5	51	0.177	5	51	0.039	5	51	0.216
08:00 - 09:00	5	51	0.075	5	51	0.083	5	51	0.158
09:00 - 10:00	5	51	0.169	5	51	0.067	5	51	0.236
10:00 - 11:00	5	51	0.201	5	51	0.094	5	51	0.295
11:00 - 12:00	5	51	0.146	5	51	0.157	5	51	0.303
12:00 - 13:00	5	51	0.110	5	51	0.169	5	51	0.279
13:00 - 14:00	5	51	0.220	5	51	0.189	5	51	0.409
14:00 - 15:00	5	51	0.197	5	51	0.295	5	51	0.492
15:00 - 16:00	5	51	0.193	5	51	0.197	5	51	0.390
16:00 - 17:00	5	51	0.091	5	51	0.205	5	51	0.296
17:00 - 18:00	5	51	0.083	5	51	0.130	5	51	0.213
18:00 - 19:00	5	51	0.071	5	51	0.091	5	51	0.162
19:00 - 20:00	4	39	0.032	4	39	0.058	4	39	0.090
20:00 - 21:00	4	39	0.058	4	39	0.052	4	39	0.110
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.823			1.826			3.649

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 16 - 99 (units:)
 Survey date range: 01/01/13 - 02/05/19
 Number of weekdays (Monday-Friday): 5
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 0
 Surveys manually removed from selection: 10

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-322901-210928-0901

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 05 - HEALTH
 Category : E - CLINICS
 TOTAL VEHICLES

Selected regions and areas:

06	WEST MIDLANDS	
	WK WARWICKSHIRE	1 days
14	LEINSTER	
	KK KILKENNY	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 210 to 1720 (units: sqm)
 Range Selected by User: 17 to 4000 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 26/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Friday 2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count 2 days
 Directional ATC Count 0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Residential Zone	2
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This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

E(e) 2 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
10,001 to 15,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,000 or Less	1 days
50,001 to 75,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	2 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	2 days
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This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

- 1 KK-05-E-01 PHYSICAL THERAPY CLINIC KILKENNY
CLONMEL ROAD
CALLAN
- Suburban Area (PPS6 Out of Centre)
Residential Zone
Total Gross floor area: 1720 sqm
Survey date: FRIDAY 27/10/17 *Survey Type: MANUAL*
- 2 WK-05-E-01 CHIROPRACTIC CLINIC WARWICKSHIRE
ALCESTER ROAD
STRATFORD-UPON-AVON
- Edge of Town
Residential Zone
Total Gross floor area: 310 sqm
Survey date: FRIDAY 29/06/18 *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AD-05-E-01	public transport
MS-05-E-01	public transport
NF-05-E-01	public transport
NF-05-E-02	public transport
WL-05-E-01	public transport

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
LN-05-E-02	10/06/13	Public transport

Kildare County Council Planning Department - Viewing Purposes Only!

TRIP RATE for Land Use 05 - HEALTH/E - CLINICS

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	1	1720	0.058	1	1720	0.116	1	1720	0.174
08:00 - 09:00	2	1015	0.246	2	1015	0.000	2	1015	0.246
09:00 - 10:00	2	1015	0.493	2	1015	0.246	2	1015	0.739
10:00 - 11:00	2	1015	0.246	2	1015	0.443	2	1015	0.689
11:00 - 12:00	2	1015	0.246	2	1015	0.443	2	1015	0.689
12:00 - 13:00	2	1015	0.345	2	1015	0.099	2	1015	0.444
13:00 - 14:00	2	1015	0.246	2	1015	0.296	2	1015	0.542
14:00 - 15:00	2	1015	0.493	2	1015	0.542	2	1015	1.035
15:00 - 16:00	2	1015	0.345	2	1015	0.296	2	1015	0.641
16:00 - 17:00	2	1015	0.049	2	1015	0.197	2	1015	0.246
17:00 - 18:00	2	1015	0.296	2	1015	0.197	2	1015	0.493
18:00 - 19:00	2	1015	0.197	2	1015	0.296	2	1015	0.493
19:00 - 20:00	2	1015	0.049	2	1015	0.099	2	1015	0.148
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			3.309			3.270			6.579

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected: 210 - 1720 (units: sqm)
 Survey date range: 01/01/13 - 26/11/19
 Number of weekdays (Monday-Friday): 3
 Number of Saturdays: 0
 Number of Sundays: 0
 Surveys automatically removed from selection: 1
 Surveys manually removed from selection: 5

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-322901-210928-0944

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 02 - EMPLOYMENT
 Category : B - BUSINESS PARK
 TOTAL VEHICLES

Selected regions and areas:

06	WEST MIDLANDS	
	WO WORCESTERSHIRE	1 days
08	NORTH WEST	
	GM GREATER MANCHESTER	1 days
14	LEINSTER	
	LU LOUTH	1 days
15	GREATER DUBLIN	
	DL DUBLIN	1 days
16	ULSTER (REPUBLIC OF IRELAND)	
	DN DONEGAL	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Parking spaces
 Actual Range: 60 to 750 (units:)
 Range Selected by User: 7 to 4167 (units:)

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/13 to 21/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Monday	1 days
Tuesday	1 days
Wednesday	1 days
Thursday	1 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	5 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Suburban Area (PPS6 Out of Centre)	1
Edge of Town	3
Neighbourhood Centre (PPS6 Local Centre)	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Industrial Zone	1
Commercial Zone	2
Village	1
No Sub Category	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

Not Known 5 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Filter by Site Operations Breakdown:

All Surveys Included

Population within 500m Range:

All Surveys Included

Population within 1 mile:

5,001 to 10,000	1 days
10,001 to 15,000	2 days
20,001 to 25,000	1 days
25,001 to 50,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
25,001 to 50,000	1 days
50,001 to 75,000	1 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	2 days
1.1 to 1.5	3 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Yes	1 days
No	4 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	5 days
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This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

1	DL-02-B-07 BUSINESS PARK BURTON HALL AVENUE DUBLIN LEOPARDSTOWN Edge of Town Commercial Zone Total Parking spaces: 174 Survey date: WEDNESDAY 01/10/14	DUBLIN	Survey Type: MANUAL
2	DN-02-B-02 BUSINESS PARK N56 LETTERKENNY KNOCKNAMONA Edge of Town No Sub Category Total Parking spaces: 750 Survey date: MONDAY 29/09/14	DONEGAL	Survey Type: MANUAL
3	GM-02-B-04 BUSINESS PARK SALMON FIELDS OLDHAM Suburban Area (PPS6 Out of Centre) Industrial Zone Total Parking spaces: 92 Survey date: THURSDAY 22/10/15	GREATER MANCHESTER	Survey Type: MANUAL
4	LU-02-B-01 BUSINESS PARK N52 DUNDALK Edge of Town Commercial Zone Total Parking spaces: 193 Survey date: FRIDAY 13/09/13	LOUTH	Survey Type: MANUAL
5	WO-02-B-02 BUSINESS PARK BIRMINGHAM ROAD NEAR BROMSGROVE LICKEY END Neighbourhood Centre (PPS6 Local Centre) Village Total Parking spaces: 233 Survey date: TUESDAY 26/06/18	WORCESTERSHIRE	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AD-02-B-02	public transport
AN-02-B-02	public transport
AN-02-B-03	public transport
AN-02-B-04	public transport
CA-02-B-02	public transport
CF-02-B-04	public transport
CF-02-B-05	public transport
CF-02-B-06	public transport
CH-02-B-01	public transport
CR-02-B-01	public transport
DL-02-B-06	public transport
DL-02-B-08	public transport
DV-02-B-01	public transport
EX-02-B-01	public transport
EX-02-B-02	public transport
FA-02-B-02	public transport
FI-02-B-01	public transport
HC-02-B-02	public transport
LN-02-B-02	public transport
ST-02-B-04	public transport
TW-02-B-05	public transport
TW-02-B-06	public transport
WG-02-B-02	public transport

MANUALLY DESELECTED SITES (Cont.)

Site Ref	Reason for Deselection
WK-02-B-01	public transport
WM-02-B-02	public transport
WM-02-B-03	public transport
WY-02-B-01	public transport
WY-02-B-02	public transport
WY-02-B-03	public transport

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
AN-02-B-01	27/11/14	Public Transport
CF-02-B-07	13/03/18	Public Transport
CF-02-B-08	14/10/19	Public Transport
WY-02-B-03	15/09/16	Public Transport

Kildare County Council Planning Department - Viewing Purposes Only!

TRIP RATE for Land Use 02 - EMPLOYMENT/B - BUSINESS PARK

TOTAL VEHICLES

Calculation factor: 1 PARKING SPACES

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. PARKING	Trip Rate	No. Days	Ave. PARKING	Trip Rate	No. Days	Ave. PARKING	Trip Rate
00:00 - 00:30									
00:30 - 01:00									
01:00 - 01:30									
01:30 - 02:00									
02:00 - 02:30									
02:30 - 03:00									
03:00 - 03:30									
03:30 - 04:00									
04:00 - 04:30									
04:30 - 05:00									
05:00 - 05:30									
05:30 - 06:00									
06:00 - 06:30									
06:30 - 07:00									
07:00 - 07:30	5	288	0.064	5	288	0.008	5	288	0.072
07:30 - 08:00	5	288	0.128	5	288	0.014	5	288	0.142
08:00 - 08:30	5	288	0.181	5	288	0.019	5	288	0.200
08:30 - 09:00	5	288	0.186	5	288	0.023	5	288	0.209
09:00 - 09:30	5	288	0.097	5	288	0.022	5	288	0.119
09:30 - 10:00	5	288	0.054	5	288	0.021	5	288	0.075
10:00 - 10:30	5	288	0.031	5	288	0.019	5	288	0.005
10:30 - 11:00	5	288	0.024	5	288	0.002	5	288	0.044
11:00 - 11:30	5	288	0.024	5	288	0.022	5	288	0.046
11:30 - 12:00	5	288	0.024	5	288	0.028	5	288	0.052
12:00 - 12:30	5	288	0.029	5	288	0.047	5	288	0.076
12:30 - 13:00	5	288	0.038	5	288	0.047	5	288	0.085
13:00 - 13:30	5	288	0.042	5	288	0.044	5	288	0.086
13:30 - 14:00	5	288	0.041	5	288	0.029	5	288	0.070
14:00 - 14:30	5	288	0.032	5	288	0.030	5	288	0.062
14:30 - 15:00	5	288	0.021	5	288	0.033	5	288	0.054
15:00 - 15:30	5	288	0.018	5	288	0.005	5	288	0.068
15:30 - 16:00	5	288	0.019	5	288	0.057	5	288	0.076
16:00 - 16:30	5	288	0.017	5	288	0.008	5	288	0.097
16:30 - 17:00	5	288	0.017	5	288	0.100	5	288	0.117
17:00 - 17:30	5	288	0.014	5	288	0.147	5	288	0.161
17:30 - 18:00	5	288	0.011	5	288	0.129	5	288	0.140
18:00 - 18:30	5	288	0.008	5	288	0.088	5	288	0.096
18:30 - 19:00	5	288	0.006	5	288	0.054	5	288	0.060
19:00 - 19:30									
19:30 - 20:00									
20:00 - 20:30									
20:30 - 21:00									
21:00 - 21:30									
21:30 - 22:00									
22:00 - 22:30									
22:30 - 23:00									
23:00 - 23:30									
23:30 - 24:00									
Total Rates:			1.126			1.131			2.257

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	60 - 750 (units:)
Survey date date range:	01/01/13 - 21/11/19
Number of weekdays (Monday-Friday):	9
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	4
Surveys manually removed from selection:	29

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are show. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-322901-210705-0718

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
 Category : W - THEATRE
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	WS WEST SUSSEX	1 days
12	CONNAUGHT	
	CS SLIGO	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of seats
 Actual Range: 100 to 815 (units:)
 Range Selected by User: 100 to 1915 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/93 to 25/10/13

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Wednesday	1 days
Friday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Built-Up Zone	2
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This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

Sui Generis	2 days
-------------	--------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

Not Known	1 days
10,001 to 15,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

Not Known	1 days
5,001 to 25,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

1.1 to 1.5	2 days
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This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Not Known	1 days
No	1 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	2 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

Kildare County Council Planning Department - Viewing Purposes Only

LIST OF SITES relevant to selection parameters

- 1 CS-07-W-01 THEATRE SLIGO
LOWER QUAY STREET
SLIGO
- Town Centre
Built-Up Zone
Total Number of seats: 100
Survey date: FRIDAY 25/10/13 *Survey Type: MANUAL*
- 2 WS-07-W-01 THEATRE WEST SUSSEX
HAWTH AVENUE
CRAWLEY
- Edge of Town Centre
Built-Up Zone
Total Number of seats: 815
Survey date: WEDNESDAY 28/04/93 *Survey Type: MANUAL*

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AG-07-W-01	public transport
DE-07-W-01	public transport
NF-07-W-01	public transport
NY-07-W-01	public transport
SY-07-W-01	public transport
WK-07-W-01	public transport
WK-07-W-02	public transport

TRIP RATE for Land Use 07 - LEISURE/W - THEATRE

TOTAL VEHICLES

Calculation factor: 1 SEATS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. SEATS	Trip Rate	No. Days	Ave. SEATS	Trip Rate	No. Days	Ave. SEATS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00	1	100	0.030	1	100	0.010	1	100	0.040
09:00 - 10:00	1	100	0.000	1	100	0.020	1	100	0.020
10:00 - 11:00	1	100	0.000	1	100	0.000	1	100	0.000
11:00 - 12:00	1	100	0.000	1	100	0.000	1	100	0.000
12:00 - 13:00	1	100	0.000	1	100	0.000	1	100	0.000
13:00 - 14:00	1	100	0.000	1	100	0.000	1	100	0.000
14:00 - 15:00	1	100	0.060	1	100	0.030	1	100	0.090
15:00 - 16:00	1	100	0.020	1	100	0.010	1	100	0.030
16:00 - 17:00	1	100	0.090	1	100	0.080	1	100	0.170
17:00 - 18:00	1	100	0.000	1	100	0.010	1	100	0.010
18:00 - 19:00	2	458	0.133	2	458	0.027	2	458	0.160
19:00 - 20:00	2	458	0.328	2	458	0.045	2	458	0.373
20:00 - 21:00	2	458	0.019	2	458	0.012	2	458	0.031
21:00 - 22:00	1	100	0.000	1	100	0.150	1	100	0.150
22:00 - 23:00	1	100	0.000	1	100	0.020	1	100	0.020
23:00 - 24:00									
Total Rates:			0.680			0.414			1.094

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	100 - 815 (units:)
Survey date range:	01/01/93 - 25/10/13
Number of weekdays (Monday-Friday):	2
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	0
Surveys manually removed from selection:	7

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Calculation Reference: AUDIT-322901-210705-0731

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 07 - LEISURE
 Category : I - ART GALLERIES/MUSEUMS/EXHIBITIONS
 TOTAL VEHICLES

Selected regions and areas:

13	MUNSTER	
	CR CORK	1 days
16	ULSTER (REPUBLIC OF IRELAND)	
	DN DONEGAL	1 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Gross floor area
 Actual Range: 200 to 10880 (units: sqm)
 Range Selected by User: 200 to 22662 (units: sqm)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 23/11/19

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Wednesday	1 days
Thursday	1 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	2 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Town Centre	1
Edge of Town Centre	1

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Built-Up Zone	1
High Street	1

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

F1(c)	2 days
-------	--------

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS®.

Population within 500m Range:

All Surveys Included

Secondary Filtering selection (Cont.):

Population within 1 mile:

1,001 to 5,000	1 days
15,001 to 20,000	1 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	1 days
75,001 to 100,000	1 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.6 to 1.0	1 days
1.1 to 1.5	1 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

No	2 days
----	--------

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	2 days
-----------------	--------

This data displays the number of selected surveys with PTAL Ratings.

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LIST OF SITES relevant to selection parameters

- 1 CR-07-I-01 CORK BUTTER MUSEUM CORK
 JOHN REDMOND STREET
 CORK
 SHANDON
 Town Centre
 Built-Up Zone
 Total Gross floor area: 200 sqm
 Survey date: THURSDAY 25/06/09 Survey Type: MANUAL
- 2 DN-07-I-02 COUNTY MUSEUM DONEGAL
 HIGH ROAD
 LETTERKENNY
 BALLYBOE GLENCAR
 Edge of Town Centre
 High Street
 Total Gross floor area: 750 sqm
 Survey date: WEDNESDAY 10/10/18 Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AD-07-I-01	public transport
AD-07-I-02	public transport
AD-07-I-03	public transport
CF-07-I-01	public transport
DC-07-I-02	public transport
DS-07-I-01	public transport
DU-07-I-01	public transport
DU-07-I-02	public transport
GC-07-I-02	public transport
HI-07-I-01	public transport
HI-07-I-02	public transport
KH-07-I-01	public transport
KH-07-I-02	public transport
MS-07-I-01	public transport
MS-07-I-02	public transport
MS-07-I-03	public transport
NR-07-I-01	public transport
NY-07-I-01	public transport
NY-07-I-02	public transport
OX-07-I-01	public transport
OX-07-I-01	public transport

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
OX-07-I-01	11/06/03	Public Transport

TRIP RATE for Land Use 07 - LEISURE/I - ART GALLERIES/MUSEUMS/EXHIBITIONS

TOTAL VEHICLES

Calculation factor: 100 sqm

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate	No. Days	Ave. GFA	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00									
08:00 - 09:00	1	200	0.000	1	200	0.000	1	200	0.000
09:00 - 10:00	2	475	0.211	2	475	0.105	2	475	0.316
10:00 - 11:00	2	475	0.105	2	475	0.105	2	475	0.210
11:00 - 12:00	2	475	0.000	2	475	0.105	2	475	0.105
12:00 - 13:00	2	475	0.211	2	475	0.000	2	475	0.211
13:00 - 14:00	2	475	0.105	2	475	0.211	2	475	0.316
14:00 - 15:00	2	475	0.316	2	475	0.211	2	475	0.527
15:00 - 16:00	2	475	0.421	2	475	0.211	2	475	0.632
16:00 - 17:00	2	475	0.105	2	475	0.526	2	475	0.631
17:00 - 18:00	2	475	0.000	2	475	0.105	2	475	0.105
18:00 - 19:00									
19:00 - 20:00									
20:00 - 21:00									
21:00 - 22:00									
22:00 - 23:00									
23:00 - 24:00									
Total Rates:			1.474			1.579			3.053

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	200 - 10880 (units: sqm)
Survey date range:	01/01/00 - 23/11/19
Number of weekdays (Monday-Friday):	3
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	1
Surveys manually removed from selection:	21

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

TRIP RATE CALCULATION SELECTION PARAMETERS:

Land Use : 06 - HOTEL, FOOD & DRINK
 Category : A - HOTELS
 TOTAL VEHICLES

Selected regions and areas:

02	SOUTH EAST	
	HC HAMPSHIRE	2 days
	HF HERTFORDSHIRE	1 days
03	SOUTH WEST	
	WL WILTSHIRE	1 days
09	NORTH	
	DH DURHAM	1 days
11	SCOTLAND	
	AG ANGUS	1 days
	DU DUNDEE CITY	1 days
	HI HIGHLAND	1 days
12	CONNAUGHT	
	CS SLIGO	1 days
14	LEINSTER	
	KK KILKENNY	2 days

This section displays the number of survey days per TRICS® sub-region in the selected set

Primary Filtering selection:

This data displays the chosen trip rate parameter and its selected range. Only sites that fall within the parameter range are included in the trip rate calculation.

Parameter: Number of bedrooms
 Actual Range: 4 to 156 (units:)
 Range Selected by User: 4 to 483 (units:)

Parking Spaces Range: All Surveys Included

Public Transport Provision:

Selection by: Include all surveys

Date Range: 01/01/00 to 26/11/20

This data displays the range of survey dates selected. Only surveys that were conducted within this date range are included in the trip rate calculation.

Selected survey days:

Tuesday	3 days
Thursday	6 days
Friday	2 days

This data displays the number of selected surveys by day of the week.

Selected survey types:

Manual count	11 days
Directional ATC Count	0 days

This data displays the number of manual classified surveys and the number of unclassified ATC surveys, the total adding up to the overall number of surveys in the selected set. Manual surveys are undertaken using staff, whilst ATC surveys are undertaken using machines.

Selected Locations:

Edge of Town Centre	3
Edge of Town	8

This data displays the number of surveys per main location category within the selected set. The main location categories consist of Free Standing, Edge of Town, Suburban Area, Neighbourhood Centre, Edge of Town Centre, Town Centre and Not Known.

Selected Location Sub Categories:

Commercial Zone	1
Development Zone	1
Residential Zone	3
Built-Up Zone	1
No Sub Category	5

This data displays the number of surveys per location sub-category within the selected set. The location sub-categories consist of Commercial Zone, Industrial Zone, Development Zone, Residential Zone, Retail Zone, Built-Up Zone, Village, Out of Town, High Street and No Sub Category.

Secondary Filtering selection:

Use Class:

C1 11 days

This data displays the number of surveys per Use Class classification within the selected set. The Use Classes Order 2005 has been used for this purpose, which can be found within the Library module of TRICS@.

Population within 500m Range:

All Surveys Included

Population within 1 mile:

1,001 to 5,000	2 days
5,001 to 10,000	4 days
10,001 to 15,000	1 days
15,001 to 20,000	4 days

This data displays the number of selected surveys within stated 1-mile radii of population.

Population within 5 miles:

5,001 to 25,000	2 days
25,001 to 50,000	2 days
75,001 to 100,000	3 days
100,001 to 125,000	1 days
125,001 to 250,000	1 days
250,001 to 500,000	2 days

This data displays the number of selected surveys within stated 5-mile radii of population.

Car ownership within 5 miles:

0.5 or Less	1 days
0.6 to 1.0	3 days
1.1 to 1.5	7 days

This data displays the number of selected surveys within stated ranges of average cars owned per residential dwelling, within a radius of 5-miles of selected survey sites.

Travel Plan:

Not Known	1 days
No	10 days

This data displays the number of surveys within the selected set that were undertaken at sites with Travel Plans in place, and the number of surveys that were undertaken at sites without Travel Plans.

PTAL Rating:

No PTAL Present	11 days
-----------------	---------

This data displays the number of selected surveys with PTAL Ratings.

LIST OF SITES relevant to selection parameters

1	AG-06-A-01 BOUTIQUE B&B CLIFFBURN ROAD ARBROATH HAYSHEAD Edge of Town Residential Zone Total Number of bedrooms: 4 <i>Survey date: TUESDAY 22/05/12</i>	ANGUS	<i>Survey Type: MANUAL</i>
2	CS-06-A-03 HOTEL STRANDHILL ROAD SLIGO Edge of Town Centre Built-Up Zone Total Number of bedrooms: 98 <i>Survey date: THURSDAY 31/10/13</i>	SLIGO	<i>Survey Type: MANUAL</i>
3	DH-06-A-01 PREMIER INN FREEMANS PLACE DURHAM MILLENNIUM PLACE Edge of Town Centre Development Zone Total Number of bedrooms: 103 <i>Survey date: THURSDAY 04/12/08</i>	DURHAM	<i>Survey Type: MANUAL</i>
4	DU-06-A-01 TRAVEL INN RIVERSIDE DRIVE DUNDEE DISCOVERY QUAY Edge of Town Centre No Sub Category Total Number of bedrooms: 40 <i>Survey date: TUESDAY 31/05/05</i>	DUNDEE CITY	<i>Survey Type: MANUAL</i>
5	HC-06-A-05 TRAVEL INN M27 WESTBOUND SOUTHAMPTON ROWNHAMS Edge of Town No Sub Category Total Number of bedrooms: 39 <i>Survey date: THURSDAY 18/07/02</i>	HAMPSHIRE	<i>Survey Type: MANUAL</i>
6	HC-06-A-06 HOTEL GRANGE ROAD SOUTHAMPTON HEDGE END Edge of Town No Sub Category Total Number of bedrooms: 56 <i>Survey date: THURSDAY 18/07/02</i>	HAMPSHIRE	<i>Survey Type: MANUAL</i>
7	HF-06-A-03 NOVOTEL A1(M) STEVENAGE KNEBWORTH PARK Edge of Town No Sub Category Total Number of bedrooms: 100 <i>Survey date: THURSDAY 08/07/04</i>	HERTFORDSHIRE	<i>Survey Type: MANUAL</i>
8	HI-06-A-03 EXPRESS BY HOL.INN A96 INVERNESS STONEFIELD BUSINESS PK Edge of Town Commercial Zone Total Number of bedrooms: 94 <i>Survey date: THURSDAY 25/05/06</i>	HIGHLAND	<i>Survey Type: MANUAL</i>
9	KK-06-A-01 B&B CIRCULAR ROAD KILKENNY Edge of Town Residential Zone Total Number of bedrooms: 9 <i>Survey date: FRIDAY 21/11/08</i>	KILKENNY	<i>Survey Type: MANUAL</i>

LIST OF SITES relevant to selection parameters (Cont.)

10	KK-06-A-02 COLLEGE ROAD KILKENNY	HOTEL		KILKENNY
	Edge of Town Residential Zone Total Number of bedrooms:		138	
	Survey date: FRIDAY		21/11/08	Survey Type: MANUAL
11	WL-06-A-03 LAWRENCE HILL WINCANTON	TRAVELODGE		WILTSHIRE
	Edge of Town No Sub Category Total Number of bedrooms:		57	
	Survey date: TUESDAY		18/09/18	Survey Type: MANUAL

This section provides a list of all survey sites and days in the selected set. For each individual survey site, it displays a unique site reference code and site address, the selected trip rate calculation parameter and its value, the day of the week and date of each survey, and whether the survey was a manual classified count or an ATC count.

MANUALLY DESELECTED SITES

Site Ref	Reason for Deselection
AN-06-A-02	public transport
BU-06-A-01	public transport
BU-06-A-02	public transport
CA-06-A-01	public transport
CA-06-A-02	public transport
CA-06-A-03	public transport
CF-06-A-02	public transport
CF-06-A-03	public transport
CF-06-A-05	public transport
CR-06-A-01	public transport
DL-06-A-01	public transport
DL-06-A-02	public transport
DL-06-A-03	public transport
DL-06-A-05	public transport
DL-06-A-06	public transport
DL-06-A-07	public transport
DO-06-A-01	public transport
DS-06-A-01	public transport
DV-06-A-02	public transport
DV-06-A-03	public transport
EB-06-A-01	public transport
GC-06-A-02	public transport
GM-06-A-06	public transport
GM-06-A-07	public transport
GS-06-A-01	public transport
GS-06-A-02	public transport
HF-06-A-02	public transport
HI-06-A-05	public transport
LC-06-A-04	public transport
LE-06-A-01	public transport
NF-06-A-04	public transport
NT-06-A-01	public transport
NT-06-A-02	public transport
NY-06-A-01	public transport
SW-06-A-01	public transport
TV-06-A-02	public transport
TW-06-A-01	public transport
TW-06-A-02	public transport
WM-06-A-03	public transport
WM-06-A-04	public transport
WO-06-A-02	public transport
WO-06-A-03	public transport
WS-06-A-02	public transport
WS-06-A-03	public transport
WY-06-A-01	public transport
WY-06-A-02	public transport
WY-06-A-03	public transport

MANUALLY DESELECTED SURVEYS

Site Ref	Survey Date	Reason for Deselection
CF-06-A-01	21/10/02	Public Transport

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TRIP RATE for Land Use 06 - HOTEL, FOOD & DRINK/A - HOTELS

TOTAL VEHICLES

Calculation factor: 1 BEDRMS

BOLD print indicates peak (busiest) period

Time Range	ARRIVALS			DEPARTURES			TOTALS		
	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate	No. Days	Ave. BEDRMS	Trip Rate
00:00 - 01:00									
01:00 - 02:00									
02:00 - 03:00									
03:00 - 04:00									
04:00 - 05:00									
05:00 - 06:00									
06:00 - 07:00									
07:00 - 08:00	10	70	0.104	10	70	0.144	10	70	0.248
08:00 - 09:00	11	67	0.156	11	67	0.176	11	67	0.332
09:00 - 10:00	11	67	0.179	11	67	0.210	11	67	0.389
10:00 - 11:00	11	67	0.149	11	67	0.222	11	67	0.371
11:00 - 12:00	11	67	0.150	11	67	0.188	11	67	0.338
12:00 - 13:00	11	67	0.198	11	67	0.182	11	67	0.380
13:00 - 14:00	11	67	0.154	11	67	0.173	11	67	0.327
14:00 - 15:00	11	67	0.179	11	67	0.190	11	67	0.369
15:00 - 16:00	11	67	0.168	11	67	0.157	11	67	0.325
16:00 - 17:00	11	67	0.213	11	67	0.186	11	67	0.399
17:00 - 18:00	11	67	0.283	11	67	0.192	11	67	0.475
18:00 - 19:00	11	67	0.183	11	67	0.141	11	67	0.324
19:00 - 20:00	9	71	0.132	9	71	0.128	9	71	0.260
20:00 - 21:00	9	71	0.104	9	71	0.098	9	71	0.202
21:00 - 22:00	7	64	0.107	7	64	0.156	7	64	0.263
22:00 - 23:00	2	72	0.098	2	72	0.133	2	72	0.231
23:00 - 24:00	1	40	0.025	1	40	0.000	1	40	0.025
Total Rates:			2.582			2.676			5.258

This section displays the trip rate results based on the selected set of surveys and the selected count type (shown just above the table). It is split by three main columns, representing arrivals trips, departures trips, and total trips (arrivals plus departures). Within each of these main columns are three sub-columns. These display the number of survey days where count data is included (per time period), the average value of the selected trip rate calculation parameter (per time period), and the trip rate result (per time period). Total trip rates (the sum of the column) are also displayed at the foot of the table.

To obtain a trip rate, the average (mean) trip rate parameter value (TRP) is first calculated for all selected survey days that have count data available for the stated time period. The average (mean) number of arrivals, departures or totals (whichever applies) is also calculated (COUNT) for all selected survey days that have count data available for the stated time period. Then, the average count is divided by the average trip rate parameter value, and multiplied by the stated calculation factor (shown just above the table and abbreviated here as FACT). So, the method is: $COUNT/TRP*FACT$. Trip rates are then rounded to 3 decimal places.

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Parameter summary

Trip rate parameter range selected:	4 - 156 (units:)
Survey date range:	01/01/00 - 26/11/20
Number of weekdays (Monday-Friday):	12
Number of Saturdays:	0
Number of Sundays:	0
Surveys automatically removed from selection:	7
Surveys manually removed from selection:	47

This section displays a quick summary of some of the data filtering selections made by the TRICS® user. The trip rate calculation parameter range of all selected surveys is displayed first, followed by the range of minimum and maximum survey dates selected by the user. Then, the total number of selected weekdays and weekend days in the selected set of surveys are shown. Finally, the number of survey days that have been manually removed from the selected set outside of the standard filtering procedure are displayed.

Appendix D **MAYNOOTH TRANSPORT STRATEGY SUBMISSION**

MAYNOOTH TRANSPORT STRATEGY SUBMISSION REPORT

MOYGADDY DEVELOPMENT

Sky Castle Ltd
S665
12 November 2021



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers



Kildare County Council Planning Department - Viewing Purposes Only

MAYNOOTH TRANSPORT STRATEGY SUBMISSION REPORT

MOYGADDY DEVELOPMENT



OCSC

O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers

Kildare County Council Planning Department - Viewing Purposes Only

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DOCUMENT CONTROL & HISTORY

OCSC Job No: S665	Project Code	Originator	Zone Volume	Level	File Type	Role Type	Number	Status / Suitability Code	Revision
	S665	OCSC	1C	XX	RP	C	0007	S2	P01

Rev.	Status	Authors	Checked	Authorised	Issue Date
P02	S2	W. Marais	S. McGivney	A. Horan	12/11/2021
P01	S2	W. Marais	S. McGivney	A. Horan	12/11/2021

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Kildare County Council Planning Department - Viewing Purposes Only

1 INTRODUCTION

O'Connor Sutton Cronin & Associates (OCSC) have been appointed by Sky Castle Ltd to prepare a submission on the current proposals for the developments at Moygaddy, Co. Meath, which forms part of the Maynooth environs and its potential impact, if any, on the Maynooth Transport Strategy (MTS).

The Maynooth Outer Orbital Route is located within the Sky Castle land holding and therefore the delivery of this strategic road infrastructure is a key consideration in the context of the MTS.

The Moygaddy Masterplan is a non-statutory plan that has been prepared by the developer to assist with the co-ordination and phased delivery of the project. Pre-planning discussions have been undertaken with Meath County Council and lodging of the full planning applications are imminent. The full Moygaddy Development consists of the following parts:

- Pre-planning applications:
 - Medical phase (Primary Care Centre and Nursing Home Unit)
 - Offices phase 1 (three office buildings, approximately 16,700 m²)
 - Residential phase 1A (360 no. residential units, 289m² creche, and public park)
- Future Applications:
 - Offices phase 2 & 3 (six office buildings, approximately 33,400 m²)
 - Future Residential phases
 - Public hospital
 - Hotel & leisure facilities

Included with these developments are a number of road infrastructure upgrades, which are described in full detail in Section 3 of this report.

The location of the Moygaddy Development can be seen in Figure 1 overleaf.



Figure 1: Locality Plan

The purpose of this report is to:

- Summarise the proposed developments within the wider Maynooth Environs;
- List the infrastructural upgrades planned as part of these developments;
- **Assess the impact of these infrastructural upgrades on the Maynooth Transport Strategy.**

2 OVERVIEW OF THE MAYNOOTH TRANSPORT STRATEGY

According to the Maynooth Transport Strategy document prepared on behalf of Kildare County Council (KCC), the MTS can be summarised as below:

- A transport strategy is being developed which will **propose** measures to improve walking, cycling, public transport, roads and parking in Maynooth and its environs
- The strategy will place particular focus on improving conditions for pedestrians, **cyclists**, and public transport users
- Measures from the transport strategy will be incorporated into the new Local Area Plan for Maynooth and its environs
- The document presents information based on Census 2016 to give an indication of the existing transport situation in the Maynooth. When developing the transport strategy, 2021 data will be used which is currently being collected.

The study area for the transport strategy is shown in the figure below, with the Moygaddy land holding highlighted in dark blue:

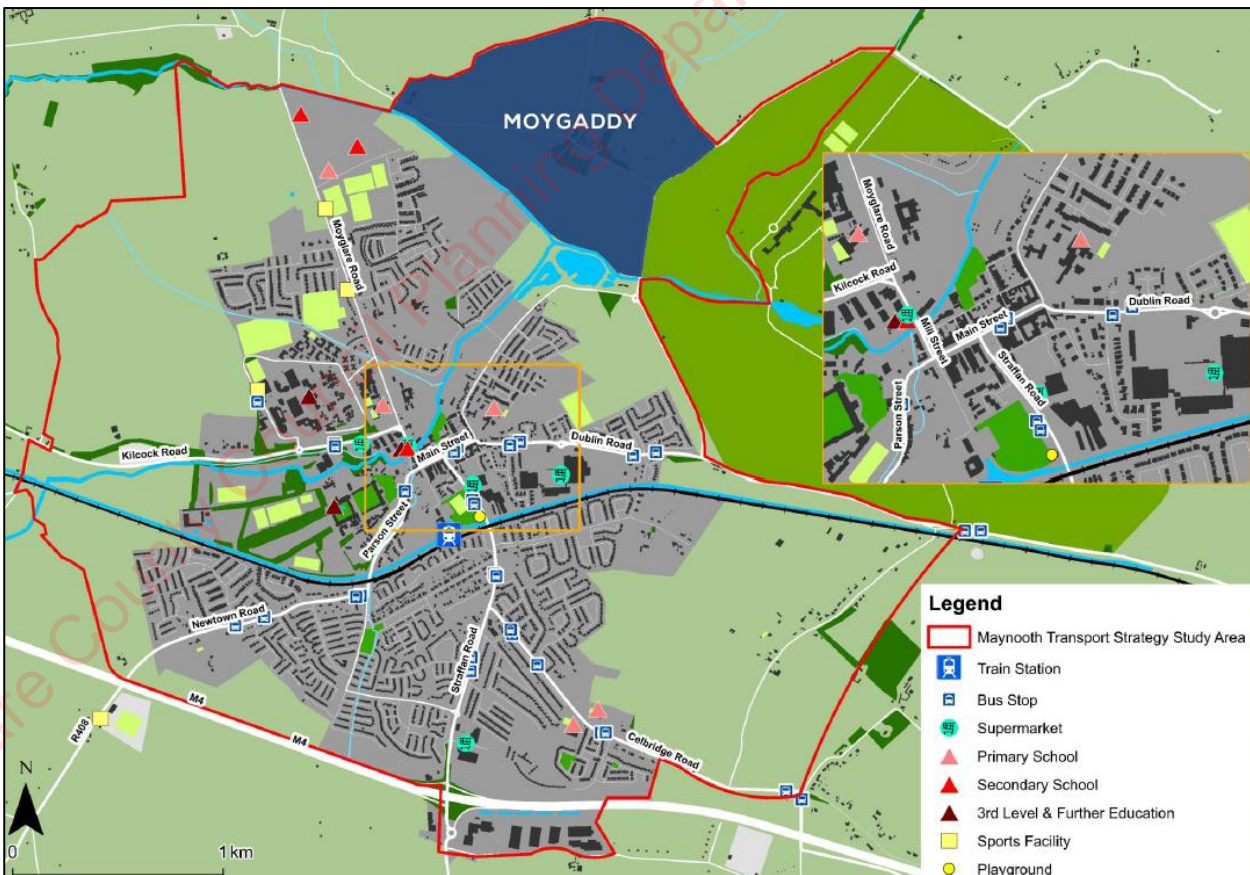


Figure 2: Transport Strategy Study Area

3 MOYGADDY INFRASTRUCTURAL UPGRADES

Several infrastructural upgrades are proposed as part of the development of the Moygaddy lands, which will have a direct impact on the town of Maynooth. These upgrades will be linked with the phasing plan discussed in Section 1 of this document.

The figure below indicates the road upgrades linked to specific phases of the development:



Figure 3: Moygaddy Development Phasing

As part of the proposed development, the following infrastructure upgrades will be introduced:

- Construction of the Maynooth Outer Orbital Route (MOOR) from **the existing section already constructed at Moyglare Hall, crossing the River Rye and Moyglare Stream and connecting to the R157 at the junction with the L6219 to include pedestrian and cycle facilities;**
- Upgrading of the R157/L6219 junction **to a signalised junction that includes pedestrian and cyclist crossings;**

- Upgrading of the L6219, **which will include pedestrian and cyclist infrastructure within the scheme area;**
- A new bridge section on a portion of the MOOR, over the adjacent River Rye that crosses into the jurisdiction of Kildare County Council at Moyglare;
- Segregated cyclist and pedestrian infrastructure along the MOOR;
- A shared pedestrian/cyclist path along the frontage of the SHD development along the L6219;
- A pedestrian and cycle bridge over the Moyglare Stream to link the residential SHD scheme with the new public park at Moygaddy Castle;
- A **new bridge crossing the Moyglare Stream as part of the MOOR that will accommodate vehicular, pedestrian and cyclist movements;**
- Dedicated crossing facilities that will accommodate pedestrians and cyclists at all junctions along the proposed MOOR;
- A new pedestrian and cycle bridge at the Kildare bridge which will link the Moygaddy lands with the network in County Kildare.

As part of the masterplan, a submission has been made to BusConnects, to advise them of the proposed development at Moygaddy and to request that due consideration be given to the expansion of the network to include the Maynooth Environ lands so that public transport services are extended to the new developments.

4 IMPACT ON THE MAYNOOTH TRANSPORT STRATEGY

The following benefits to the Maynooth Transport Strategy are expected as part of this development:

- Improvements to the connectivity in the area of the development;
- Increase in capacity of roads and junctions in the immediate vicinity;
- Provision of dedicated pedestrian and cycle infrastructure, enabling a strong modal shift towards sustainable transport;
- The upcoming proposals will also allow the BusConnects proposal to take account of the new infrastructure and further service the Maynooth area.

As part of the planning application for the this development, OCSC have been commissioned to prepare a Traffic Impact Assessment Report and associated traffic models. A copy of this report will be provided to both Meath County Council and Kildare County Council in ordinary course.

In summary, the infrastructural upgrades proposed as part of the Moygaddy development will have an overall positive impact on Maynooth and its environs.

5 VERIFICATION

This report was compiled and verified by:

Wian Marais BE (US), BE (Hons) (UP), Professional Engineer (ECSA)

Civil Engineer

O'Connor Sutton Cronin & Associates





OCSC
O'CONNOR | SUTTON | CRONIN

Multidisciplinary
Consulting Engineers

9 Prussia Street
Dublin 7
Ireland

T | +353 (0)1 8682000
W | www.ocsc.ie

Appendix E **BUSCONNECTS SUBMISSION**

Bus Connects
National Transport Authority
Dún Scéine
Hardcourt Lane
Dublin 2
D02 WT20

15/11/2021

Ref: T-SMG

Project No. S665



**RE: Maynooth Transport Strategy (MTS)
Our Client; Sky Castle Limited
Maynooth Environs – Lands At Moygaddy, Co, Meath, Maynooth**

Dear

We are writing to draw your attention to our client's submission to the Maynooth Transport Strategy (MTS) review initiated by Kildare County Council.

HEAD OFFICE
9 Prussia Street
Dublin 7
Ireland

T | +353 (0)1 8682000
F | +353 (0)1 8682100
E | ocsc@ocsc.ie
W | www.ocsc.ie

We enclose a copy of the submission to the MTS for your information.

We would like to draw your attention to the opportunity to expand the public transport network to include Bus Connects as part of the strategic Residential and Employment lead developments proposed on our client's landholding at Moygaddy Co. Meath which forms part of the Maynooth Environs.

We would welcome the opportunity to speak with you about this initiative and we look forward to your feedback in early course

Yours sincerely

Shane McGivney
Chartered Engineer
For O'Connor Sutton Cronin

CC. Ronan Barrett, Sky Castle Limited

cc. Meath County Council

cc. Kildare County Council



Civil | Structural | Mechanical | Electrical | Sustainability | Environmental

O'Connor Sutton Cronin & Associates Limited – Registered in Ireland No. 138329

Directors: Tony Horan (MD) | James Barrett (Secretary) | Paul Healy | Brian Madden | Martin McGrath | Francis McNulty | John Millar | Andrew O'Brien | Michael O'Reilly | Brian O'Rourke

Associate Directors: Shaun Doody | Brian Heron | Eddie Lyons | Anthony Horan | Paul McSteen

Associates: Derek Connolly | Ian Crehan | Paul Devine | Vernon McAllorum | Niall McMenamin | Pat Moynihan | Dan O'Keefe | Patrick Raggett

Administrative Associate: Carrie Poettcker

Appendix F **KILCLOON TRAFFIC CALMING SCHEME DRAWING PACK**



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 4. All Dimensions shown are in millimeters unless stated otherwise.

No.	Date	Amendment / Issue	Drn	Chk	App
T01	30/06/2022	Tender Issue	PC	TK	PT

Stage:

Comhairle Chontae na Mí
Meath
 County Council

Buvinda House, Dublin Road, Navan, Co Meath C15 Y291
 T: 046 909 7000 F: 046 909 7001 W: www.meath.ie

Project:

Kilcloon Traffic Calming Scheme

Title:

Proposed Site Location

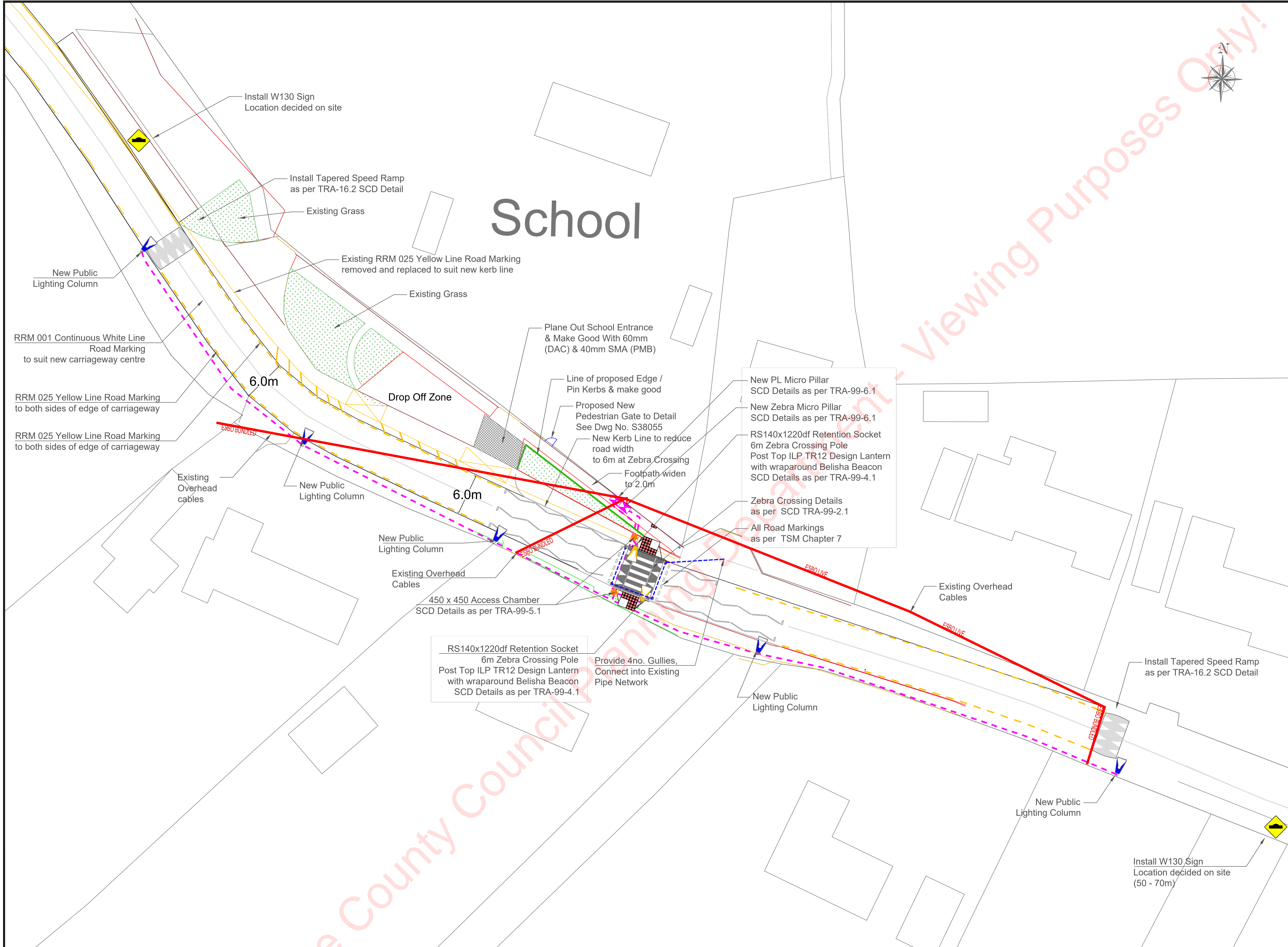
Drawn by:	Checked by:	Approved by:
PC	TK	P.Trappe
File Reference: TRA-04-012-04-99		
Scale: 1:250 @ A1	Drg. No: DG3802	Rev: T01
1:500 @ A3		
Date: 09/05/2022		

comhairle chontae na mí
meath county council

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A1 0 10 50 100

LEGEND



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T01	30/06/2022	Tender Issue	PC	TK	PT
No.	Date	Amendment / Issue	Drn	Chk	App

Stage:

Comhairle Chontae na Mí
Meath
County Council



Buvinda House, Dublin Road, Navan, Co Meath C15 Y291
T: 046 909 7000 F: 046 909 7001 W: www.meath.ie

Project:
Kilcloon Traffic Calming Scheme


Title:
Pedestrian Crossing at Kilcloon National School

Drawn by: PC
Checked by: TK
Approved by: P.Trappe

File Reference: TRA-04-012-04-99

Scale: 1:250 @ A1
1:500 @ A3
Date: 09/05/2022

Drg. No.: DG3803
Rev.: T01



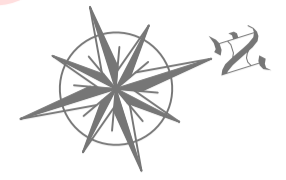
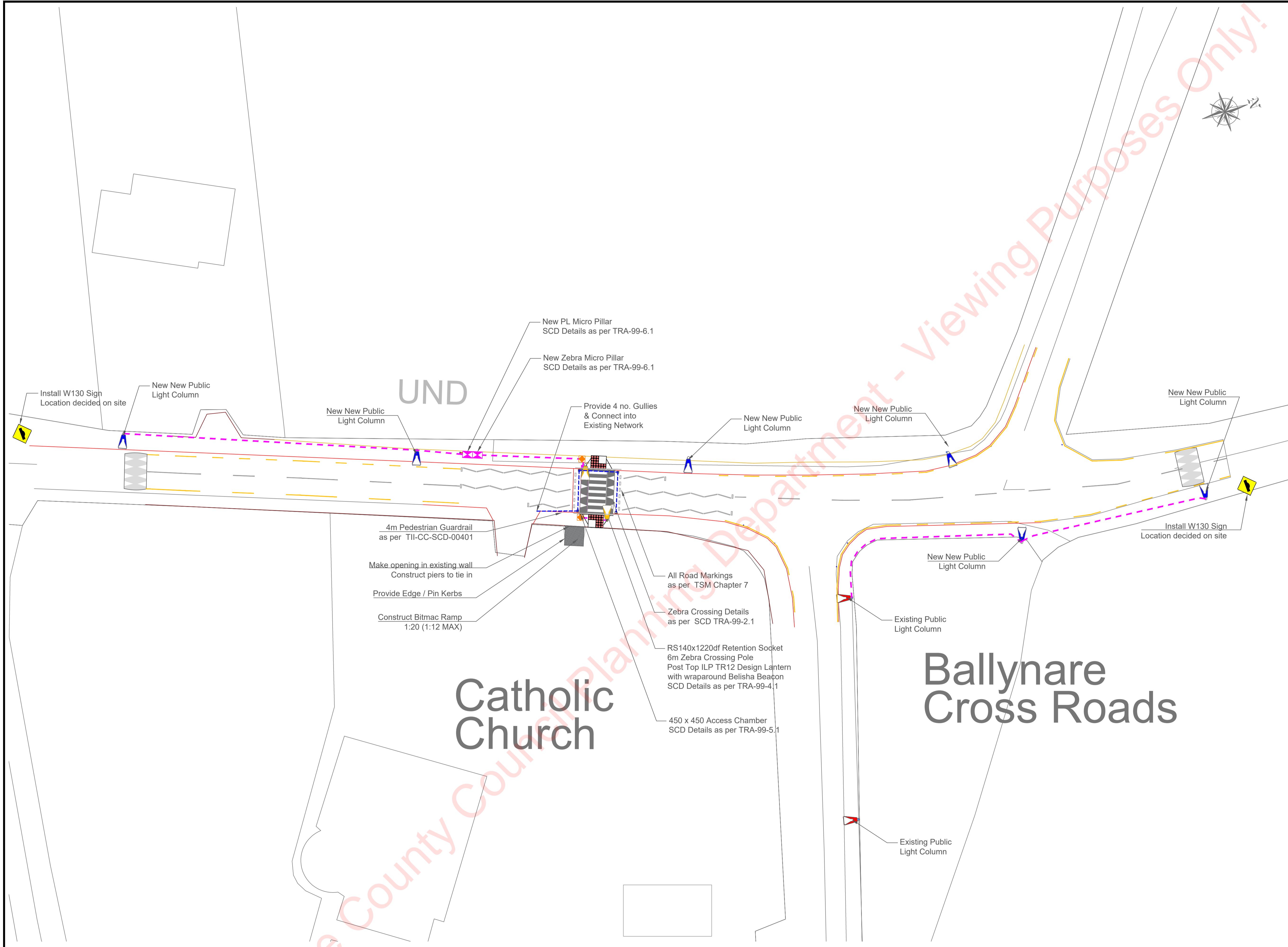
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A1

LEGEND

- Philips LumiStreet_BGS212_DX70_5.2klm_32W 6m Column_Post Top_0° Tilt
- ESB Networks Pole
- Public Lighting 107mm Duct with draw rope
- ESB Networks 50mm Duct with draw rope
- Proposed Drainage to Connect to Existing Network
- Existing Overhead Network



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T01	30/06/2022	Tender Issue	PC	TK	PT
No.	Date	Amendment / Issue	Drn	Chk	App

Stage:
 Comhairle Chontae na Mí
Meath
 County Council
 Buvinda House, Dublin Road, Navan, Co Meath C15 Y291
 T: 046 909 7000 F: 046 909 7001 W: www.meath.ie

Project:
Kilcloon Traffic Calming Scheme

Title:
Pedestrian Crossing at Kilcloon Catholic Church

Drawn by: PC
 Checked by: TK
 Approved by: P.Trappe

File Reference: TRA-04-012-04-99

Scale: 1:250 @ A1
 1:500 @ A3
 Date: 09/05/2022
 Drg. No: DG3804
 Rev: T01

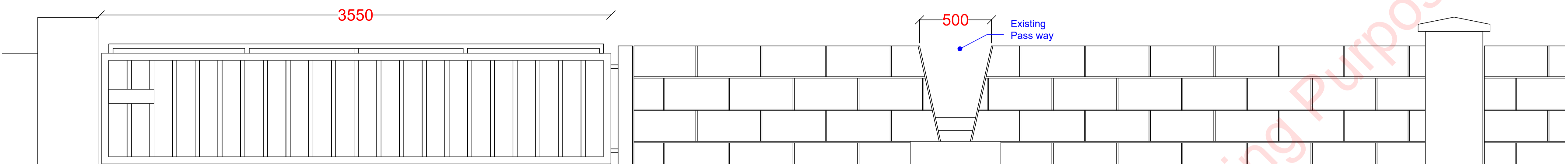
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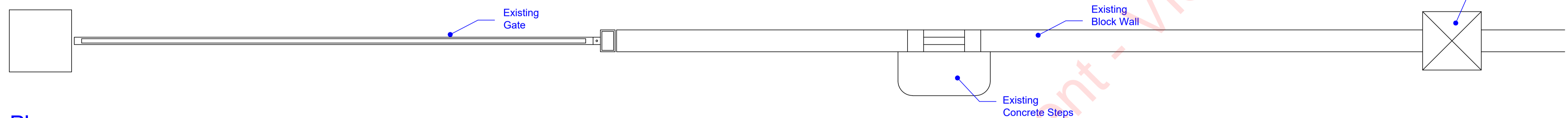
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LEGEND

- Philips LumiStreet_BGS212_DX70_5.2klm_32W 6m Column_Post Top_0° Tilt
- ESB Networks Pole
- Public Lighting 107mm Duct with draw rope
- ESB Networks 50mm Duct with draw rope
- Proposed Drainage to Connect to Existing Network
- Existing Overhead Network

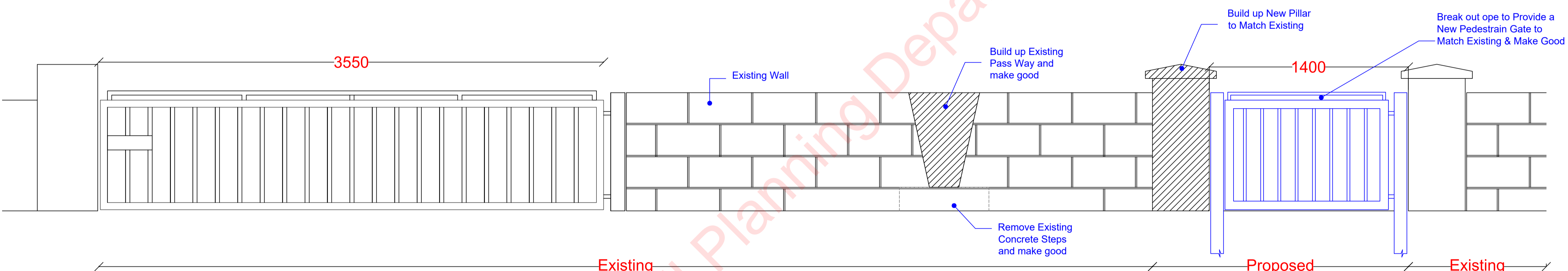


Elevation

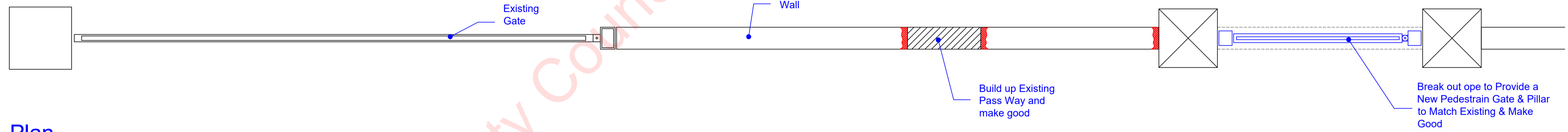


Plan

Existing Wall Detail



Elevation



Plan

Proposed New Pedestrian Gate Detail

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SPECIFICATION FOR NEW PEDESTRIAN GATE

Single Leaf 90° Left gate of width required 1.0m high x 1.5.m wide infilled with 20mm Bar infill solid round bar. Frame 60 X 60mm SHS Mitred corners with fully welded joints Infill to be affixed to frame by full welds or by clips specified by Irfen®, to be supplied with Irfen® drop bolts and receivers, adjustable Irfen® hangers, and Sliding Bolt+Drop Bolts locking system. Installed to Gate Posts of 100 x 100 + Hangers. Finish: Galvanised & Powdercoated (Plasgalv®), Colour: Blue RAL

T01	30/06/2022	Tender Issue	PC	TK	PT
No.	Date	Amendment / Issue	Dm	Chk	App

Stage:

Comhairle Chontae na Mí
Meath
County Council




Buvinda House, Dublin Road, Navan, Co Meath C15 Y291
T: 046 909 7000 F: 046 909 7001 W: www.meath.ie

Project:
Kilcloon Traffic Calming Scheme

Title:
Proposed New Pedestrian Gate At School

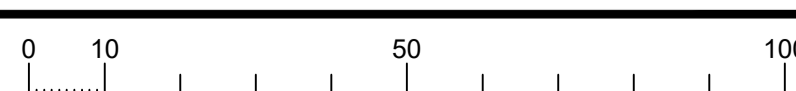
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File Reference: TRA-04-012-04-99		
Scale: 1:50 @ A1 1:100 @ A3	Drg. No: DG3805	Rev: T01
Date: 09/05/2022		



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meath county council

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LEGEND





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