

# **ENVIRONMENTAL IMPACT ASSESSMENT REPORT NON-TECHNICAL SUMMARY**

**SECTION 37L APPLICATION FOR A  
SAND AND GRAVEL PIT AT  
ROSCAT, TULLOW,  
CO. CARLOW**

**Prepared For:**



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## 1.0 Introduction

This Environmental Impact Assessment Report (EIAR) has been prepared to accompany an application under Section 37L of the Planning and Development (Amendment) (No. 2) Regulations 2015 regarding the proposed development of a 14.7ha sand and gravel pit located at Roscat, Tullow, Co. Carlow.

Section 37L permits quarry operators who were required to submit applications to An Bord Pleanála for Substitute Consent in respect of their quarries pursuant to Section 261A, the opportunity to submit an application to the Board for further development of their quarry subject to compliance with Section 37L. The provision states that an operator can only apply for further development “of a quarry as a quarry”. As such, this application for proposed future works accompanies a retrospective Substitute Consent application (remedial EIAR and remedial NIS) for a 4.7ha area which overlaps the south western section of the Section 37L application area. The geographical location of the application site is illustrated on Figure 1.1 and 1.2, which are presented at the end of this chapter.

The 14.7 hectare application area can be divided into the following areas:

- Approximately 8 hectares of a greenfield area which is currently subject to agricultural use and which the applicant proposes to extract the available resource from.
- Approximately 6.7 hectares consisting of an area which is the subject of a Substitute Consent application to An Bord Pleanála, an area which is authorised by planning permission (Planning Ref: CW7850), the existing haul road to the site and undisturbed areas.

Material will be extracted by excavators and exported to a processing plant offsite. On occasion, material will be passed through mobile processing plant onsite, which will process the material into various grades of aggregate, as and when required. Landscaping of the sand and gravel pit will be undertaken during the operational phase and restoration of the pit on completion of extraction. All associated ancillary facilities/works are also included in this application. The applicant is seeking a 25 year permission as part of the application. This EIAR is accompanied by a Natura Impact Statement.

The site is located in the townland of Roscat approximately 3 km south west of Tullow and 2 km east of Rathtoe. The N81 national road which connects Tullow with the N80 at Ballon passes in a north-south direction 1.5 km east of the site.

Vehicular access is off a local road and via a c.1km long gated laneway that provides access to the quarry and surrounding lands. The site is surrounded by agricultural fields and a farm is located nearby.

The site is situated on the eastern side of a minor valley which is defined by a small north-south trending ridge that peaks at 94 mOD, 1 km northeast of the site at Ellengrove Crossroads, and a

wider area of raised ground which reaches 93 mOD, 1.8 km southwest of the site. This valley flattens out to less than 70 mOD a short distance southwest of the site. OS Discovery maps indicate the site elevation to be in the range 68 – 74 mOD.

The area immediately around the site is sparsely populated, with individual farmsteads and scattered houses along the road network. A series of irregular third class roads run around the lands, serving a number of dwellings and farms.

The existing sand and gravel pit area which is also subject to Substitute Consent has been registered with Carlow County Council in accordance with the requirements of Section 261 of the Planning and Development Act, 2000 (Quarry Ref. No. QY12/28). An area of 6.02ha of the landholding was registered in this process.

The final extraction level will vary from 63mOD at the south western portion of the greenfield area to a level of 64.5mOD in the north eastern portion of greenfield area. This will ensure that there is a buffer in place between the finished extraction level and the groundwater level. The restoration plan involves placing a layer of approximately 0.5m of overburden on top of extracted areas and returning to agricultural land.

Plant and machinery which will operate in the application area will consist of tracked excavators, wheel loaders, dump trucks and mobile processing plant. Ancillary plant such as a water bowser for dust suppression will be deployed where required. As all production will be a dry process, surface water will percolate through the pit floor.

The primary objective of this EIAR is to identify baseline environmental and socioeconomic conditions in the area of the proposed development, predict potential beneficial and/or adverse effects of the development and propose appropriate mitigating actions where necessary.

The EIAR is presented in the 'Grouped Format Structure' which gives an introduction an overall project description, then examines each topic as a separate chapter. The coverage of each topic includes descriptions of the relevant characteristics of the proposed project, the existing environment, predicted impacts, mitigation measures and residual impacts.

## **2.0 Screening, Scoping and Consideration of Alternatives**

The first step of the EIA process is screening which establishes whether an EIA is required or not. The project needs to be considered in its entirety for screening purposes. EIA is a mandatory requirement as the proposed development is 14.7 hectares in area which is greater than the 5 hectare threshold listed under Part 2, Class 2(b) of Schedule 5 of the Planning and Development Regulations 2001 (S.I. 600 of 2001) as amended.

A scoping exercise was conducted as part of the planning application process to establish the range and aspects of the environment to be considered as part of the planning application as well as all topics specified in the Environmental Impact Assessment Regulations and guidance

documents. A Screening and Scoping Document was compiled and forwarded on to the relevant stakeholders for comment.

Based on discussion and comments from the design team and various third parties, assessments were undertaken in relation to the various elements of the environment to assess any potential impacts associated with the proposed development. These are discussed in the various chapters of the EIAR.

EIA guidance and legislation requires that consideration should be given to alternatives which should include, where relevant, sites, routes, alignments/layouts, processes and strategies. A number of alternatives were considered as part of the application.

In terms of environmental considerations and constraints, the proposed site was considered the only option given that it would be an extension of an existing previously operational pit and is within the applicant's ownership.

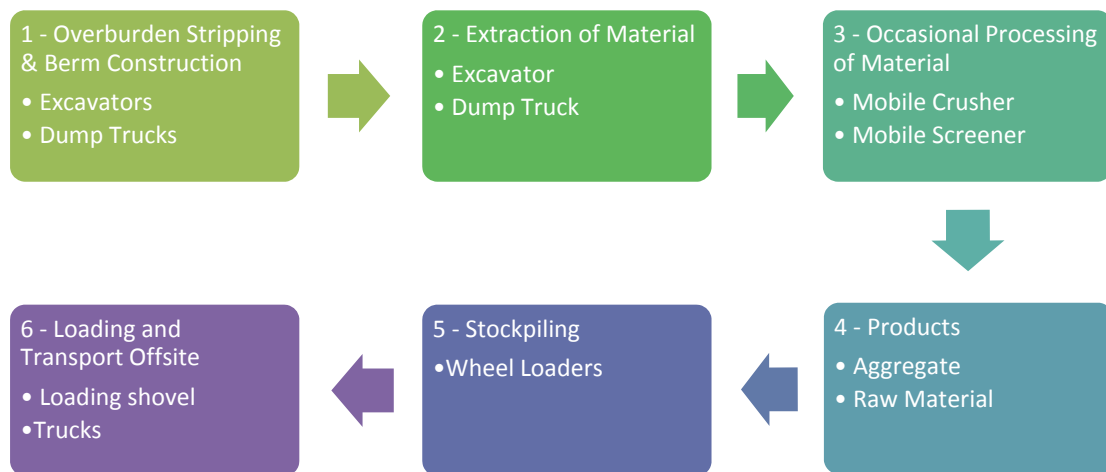
### 3.0 Project Description

The application site consists of an area which currently comprises a greenfield area, currently subject to agricultural use, and the existing pit area.

The proposed activity, which includes the removal of overburden and extraction of underlying sand and gravel, will result in the extension of the previously disturbed area associated with the existing Substitute Consent area into the greenfield area. The applicant proposes to deepen the application area down to a maximum level of 63 mOD with the final extraction level varying from 63mOD at the south western portion of the greenfield area to a level of 64.5mOD in the north eastern portion of greenfield area.

The activities undertaken at the site as part of the extraction process include the following (as also outlined in Plate 3.1):

1. Overburden stripping
2. Extraction of material
3. Occasional processing of material
4. Products
5. Stockpiling
6. Loading and transport offsite



**Plate 3-1:** Summary of activities undertaken within the Section 37L application area and the Substitute Consent area.

Primary operation will be “Dig and Haul” with some minor and occasional primary processing i.e. screening and grading with mobile plant, undertaken onsite as and when required.

In addition, the project design also includes surface and groundwater management during the operation of the proposed development as well as a landscape and restoration plan which will be implemented during the operational and decommissioning phases of the proposed development.

Environmental monitoring will be undertaken on a regular basis which will include noise, dust and water monitoring.

#### 4.0 Planning and Legislative Framework

This chapter of the EIAR sets out the planning and development context relating to the sand and gravel pit development and reviews the national, regional and local planning policy relevant to the development.

In recent years, there has been a conscious move in Ireland towards strategic planning with various policy documents and plans introduced over the years to support strategic planning and development. Policies and objectives of the Government are contained in documents such as “*Sustainable Development: A Strategy for Ireland (1997)*”, “*National Spatial Strategy 2002 – 2020*” and more recently, “*Ireland 2040 - Our Plan*”. These, in turn, have derived their authority from higher order World and European Union (EU) agreed agendas and directives. Policy support filters down from national and regional levels through to specific County Development Plans and Local Area Plans (LAPs).

The proposal consists of an area of 14.7 Ha. comprising of an existing pit area, haul road undisturbed areas and a greenfield area of approximately 8 hectares. The Carlow County

Development Plan (2015-2021) supports and facilitates the exploitation of aggregate resources in the County provided that they do not impact on environmental elements and residential amenity.

The pit provides direct and indirect local and regional employment associated with the production of construction materials and transport of these to customers. It is also a local and regional source of aggregate material to construction projects. A number of objectives and policies relating to the extractive/ natural resources industry are included as part of the County Development Plan.

A number of previous planning permissions are attached to the existing pit for extraction, manufacturing and ancillary activities. Most recently, a Substitute Consent application has been submitted to An Bord Pleanála regarding 4.7ha of the previously worked area of the existing pit. This application is in progress. The current application is being submitted in order to secure a reserve for future extraction and secure employment.

## 5.0 Population and Human Health

This chapter of the EIA Report considers the potential effects of the proposed development on human beings living, working and visiting in the vicinity of existing and proposed development. An acknowledged consideration in the development process is that people, as individuals or communities, should experience no diminution in their quality of life from the direct or indirect effects arising from the proposed development.

The application site is located in the townland of Roscat, Tullow, Co. Carlow. The application area is situated within the Electoral Division (ED) of Tullowbeg (Small Area Population (SAP) 340901046). The nearest urban centre is the village of Tullow, Co. Carlow, which is located approximately 3km to the northeast of the sand and gravel pit. Carlow town, the nearest large urban centre, is located approximately 16km to the northwest of the site.

Based on the latest census data (CSO, 2016), a total of 622 persons resided in the Tullowbeg SAP on Census Night in 2016. The majority of the populations of the SAP live in one off houses and farmsteads, which are sparsely populated throughout the SAP.

To assess the effects of the proposed development on human health, a risk assessment has been carried out to estimate the nature and probability of adverse health effects in humans as a result of the proposed development. While every human being should be considered a sensitive receptor, clearly the vulnerable are the most sensitive. Of relevance to the human health with regards to the existing and proposed development are air emissions, noise and vibration emissions, emissions to water and traffic associated with day to day activities and therefore, these factors are assessed as part of this chapter.

Provided that the existing and proposed development operate in line with recommended guideline values for noise, vibration and air emissions and limits set for discharge to water, the human health effect for all receptors arising from the development are assessed as being

Imperceptible. Each of these issues is also evaluated in detail within their relevant respective chapters throughout the Environmental Impact Assessment Report.

## 6.0 Biodiversity

This purpose of this chapter of the EIAR is to assess the potential effects of the proposed development on the biodiversity of the proposed application area and surrounding environs. This mainly concentrates on ecological receptors of particular significance within the proposed development area, primarily protected habitats and species.

The area of study included the application site, which is 14.7 hectares in area and consists of the continuation of use and extension to the existing sand and gravel pit. The study area also included important habitats within the “zone of influence”.

The zone of influence is defined as the area in which the proposed development has the potential to result in direct or indirect effects on biodiversity. This size and shape of this zone varies according to the particular ecological receptor being evaluated. For example, all sites designated for national (NHAs/pNHAs) and EU (Natura 2000 network) nature conservation located within a 15km radius, in addition to those beyond 15km which are identified as being hydrologically connected to the proposed application area, were included and evaluated.

The following 3 EU designated sites (3 Special Areas of Conservation – SACs) are located within a 15km radius of the proposed application area (listed from closest (1.8km) to farthest (14.2km) in distance):

- Slaney River Valley SAC (Site Code: 000781)
- River Barrow And River Nore SAC (Site Code: 002162)
- Blackstairs Mountains SAC (Site Code: 000770)

There are no Natural Heritage Areas (NHAs) located within a 15km radius of the proposed application area. The following 8 proposed Natural Heritage Areas (pNHAs) located within a 15km radius of the proposed application area (listed from closest (0.01km) to farthest (14.5km) in distance):

- Ardristan Fen pNHA (Site Code: 000788)
- Slaney River Valley pNHA (Site Code: 000781)
- Oakpark pNHA (Site Code: 000810)
- Cloghrick Wood pNHA (Site Code: 000806)
- Ballymoon Esker pNHA (Site Code: 000797)
- John's Hill pNHA (Site Code: 000808)
- Blackstairs Mountains pNHA (Site Code: 000770)
- Baggot's Wood pNHA (Site Code: 000792)



The Biodiversity chapter includes the following description and assessment of the biodiversity within the proposed application area:

- Baseline ecological data was collated through a detailed field visit to the subject site and surrounding areas by Senior Ecologist, Ms. Sarah Ingham MSc. ACIEEM of Earth Science Partnership Ireland (ESPI) 25<sup>th</sup> May 2018.
- A Phase I habitat survey was undertaken to inform an ecological evaluation of the habitats present within the proposed development site in accordance with methods outlined in the Heritage Council publication, *“Guidance for Habitat Survey and Mapping”* (Smith *et al.*, 2011).
- Habitats were recorded using the habitat classification scheme published by the Heritage Council in *A Guide to Habitats in Ireland* (Fossitt, 2000) and evaluated using the geographical frame of reference scheme as per *“Guidelines for Assessment of Ecological Impacts of National Road Schemes”* (NRA, 2009).
- Other ecological receptors such as birds, non-volant mammals, bats, amphibians, reptiles and invertebrates were also recorded during the site walkover, as per best practice survey methods.
- Within the subject site, the habitat classified as “arable crops (BC1)” is the dominant habitat.
- Pockets of scrub (WS1) and mature hedgerow (WL1) have also developed along the boundaries of the proposed application area.
- This mono-culture arable plantation is considered to be of low ecological value and as such, is classified as being of Local importance (Lower value).
- Given its importance to breeding birds, scrub and hedgerow are evaluated as being of Local Importance (Higher Value).
- A breeding Sand Martin (*Riparia riparia*) colony exists in a large stockpile of sand which has been classified as “exposed sand, gravel or till (ED1)”. There were approximately 50 nest entrances recorded within the colony.
- Given that presence of a breeding colony of Sand Martin within this habitat, onsite exposed sand, gravel and till is considered to be of Local Importance (Higher Value).
- All habitats that are in and around the subject site were assessed and mitigation measures were included where appropriate.

Following a detailed ecological impact assessment of the proposed application, it is concluded that the proposed development will not have any significant residual effects on biodiversity assuming the mitigation measures outlined herein are strictly adhered to during continuing operations at the pit.

It is recommended that the proposed operational works are monitored periodically, particularly during the bird breeding to ensure that the mitigation proposed is implemented and that the conservation interests within the receiving environment are effectively protected. Ongoing monitoring of water quality will also be undertaken.

## 7.0 Land, Soils and Geology

The site is located in the townland of Roscat approximately 3 km south west of Tullow and 2 km east of Rathoe. The N81 national road which connects Tullow with the N80 at Ballon passes in a north-south direction 1.5 km east of the site.

In terms of regional topography, lands within a 6 km radius of the site form part of a broad valley partially confined by the following features:

- a narrow north-south trending ridge 7km to the west, that peaks locally at 195 mOD;
- the southern extents of the Wicklow Mountains 11.5 km to the east, which peak locally to the east at Aghowle Upper (420 mOD)
- to the northeast by lands which rise gradually through Tullow and Rathvilly;
- the northern limits of the Blackstairs Mountains 13 km to the south which peak locally at Croaghaun (455 mOD). Another small hill is noted 5 km south of the site at Ballon (131 mOD).

At a more local scale the site is situated on the eastern side of a minor valley which is defined by a small north-south trending ridge that peaks at 94 mOD, 1 km northeast of the site at Ellengrove Crossroads, and a wider area of raised ground which reaches 93 mOD, 1.8 km southwest of the site. This valley flattens out to less than 70 mOD a short distance southwest of the site. OS Discovery maps indicate the site elevation to be in the range 68 – 74 mOD.

Reference was made to Gardiner and Radford (1980) and Teagasc soil maps which show that the agricultural soils which originally overlaid the pit, and overlie the proposed extension area, consist principally of shallow, well-drained mineral soils with alkaline signature.

Soils of County Carlow (Conry and Ryan, 1967) show that soils at the site belong to the shallower sub-group Broughillstown Complex Series. These have developed on esker hummocks and are described as gravelly sandy (coarse) loams, classified as Brown Earths. The profile is characterised by a dark greyish-brown, friable and crumb-structured upper horizon of depth 150 – 250 mm, which passes directly into the coarse-texture, calcareous parent material. These soils are shown to have a wide-use range but are best suited to tillage. They exhibit moderate to rapid permeability which can develop a moisture deficit during dry periods, resulting in crops maturing unevenly, as evidenced in the summer of 2018.

Extraction of sand and gravel requires the stripping/removal and storage of soils. Soils observed in-situ over exposed faces were noted as being thin. Soils have been stripped in order to facilitate extraction of overburden during previous activities. This stripped material has been stockpiled and formed into earthen bunds which partly define the site boundary. This soil will be utilised during site rehabilitation. It is intended that this practice shall be continued into the extension area.

The bedrock and structural geology in the vicinity of the site is described within the chapter. The 1:100,000 GSI bedrock geology Sheet 19: Geology of Carlow-Wexford (Tietzsch-Tyler and Sleeman, 1995) shows the subject site and surrounding area to be underlain by the Tullow Type 2 Sparsely Porphyritic Granite Formation.

The Tullow Granites are described by the GSI as a late Silurian granite which was formed underground as molten igneous rock was forced upward before being slowly cooled beneath the remnants of older sea floor Ordovician sediments. The rock is characterised as porphyritic granite containing some microcline phenocrysts. Porphyritic is an adjective used to describe the physical differences in in crystal sizes present in the rock matrix which is characterised by larger crystals surrounded by a finer grained rock mass.

Previous operations in the existing pit have targeted the local sands and gravels for extraction. Extraction depths at the site appear to have ceased upon encountering groundwater. Upon approaching groundwater vertical excavation ceased and horizontal extraction progressed westwards across the site.

The procedure for determination of potential impacts on the receiving soil and geological environment is to identify potential receptors within the site boundary and surrounding environment and use the information gathered during the desk study and field work to assess the degree to which these receptors will be impacted upon. Impacts are described in terms of quality, significance, duration and type in accordance with current EIAR guidelines (EPA, 2017; DHPLG, 2018).

In accordance with the NRA Guidelines (2009) (as included in 'Guidelines for the Preparation of Soils, Geology and Hydrogeology Chapters of Environmental Impact Statements' (IGI, 2013)), the site is deemed to be an attribute of Medium importance as a function of being a small existing quarry. The target geological resource is an attribute of value or significance on a local scale.

Impacts to the land, soils and geology environment were assessed, and appropriate mitigation measures have been presented. These measures relate to protection of soil structure, dust suppression, protection from contaminants, and reinstatement practices to return the site to a condition suitable for agricultural use. Removal of the underlying sand and gravel will not interfere with quality of the land for standard agricultural purposes provided the preparation and restoration of the site is carried out in an organised manner based on recognition of the properties and fertility status of the various horizons.

## 8.0 Water

The site lies within the surface water catchment of the Roscat Stream, which flows in a southeast to northwest direction, passing the site 520 m to the southwest. The stream has a catchment of 5.9 km<sup>2</sup> as it passes adjacent to the site. The stream rises approximately 2 km southeast of the

site in a topographical depression at Aghade. It outfalls to the Burren River just north of Rathtoe, which subsequently enters the River Barrow at Carlow Town.

The aim of this EIA section is to establish the following:

- Conduct a review to establish current baseline conditions relevant to the hydrological and hydrogeological environment within the site boundary, and the local surrounding environs;
- Assess the potential impacts to the hydrological and hydrogeological environment, which can be reasonably expected to occur as a result of the proposed development;
- Recommend suitable mitigation measures to address identified adverse impacts.

The initial evaluation consisted of inspections of the site and adjacent lands by examination of aerial photography and Ordnance Survey plans, followed by site walkover survey. Relevant hydrogeological data from the Geological Survey of Ireland (1:100,000 Sheet 19: Geology of Carlow-Wexford) was reviewed together with additional data collated from data sources at Carlow County Council, Environmental Protection Agency (EPA), National Parks and Wildlife Service (NPWS), Ordnance Survey of Ireland (OSI) and Met Eireann.

The chapter has been compiled primarily taking cognisance of all relevant published best practice guidance.

Intrusive investigation in June 2018 involved trial pitting and borehole drilling to assess groundwater flow patterns. Groundwater sampling at the groundwater monitoring points was carried out, along with an assessment of primary.

Potential impacts that may arise from proposed activities are summarized within the EIA chapter, using the headings discussed under the criteria for determination of impacts (EPA, 2017). The key activities include stripping and stockpiling of soils, excavation of sands and gravels, and haulage of material off site.

Results of onsite investigations show there will be no significant impacts to the groundwater regime in terms of flow and quality and as such, there will be no impacts to the groundwater supply to Ardristan Fen pNHA. Mitigation measures are proposed to ensure a minimum of 1 m of protective overburden is maintained across the site. There will be no pumping of groundwater within or across the site boundary.

Runoff from compacted areas of the pit floor and a hardstanding pad will be passed through an existing series of settlement ponds to remove suspended sediment prior to outfalling at the southern boundary. All refuelling and parking of vehicles will take place on the existing hardstanding pad. Any runoff generated on the hardstanding pad shall pass through a hydrocarbon interceptor prior to outfalling to the ponds.

Ardristan Fen has contracted significantly in the latter part of the last century due to arterial drainage, implemented to restore peats to productive grassland soils. Water quality in the fen also appears to have been affected by nutrient inputs. There are no nutrient sources associated with proposed activities.

## 9.0 Climate

The Irish climate is subject to strong maritime influences, the effects decreasing with increasing distance from the Atlantic coast. The climate of the study area is typical of the Irish climate, which is temperate maritime. Impacts associated with activities undertaken within the application area will include the extraction of sand and gravel and transport of material off site to market. Vehicles and plant associated with these activities will give rise to CO<sub>2</sub> and N<sub>2</sub>O emissions

No additional plant on that which was utilised at the pit when operational will be required for the proposed development and it is not proposed to increase the level of extraction and production above that experienced in the past. Therefore, there will be no increase in emissions to the local and regional climate above that which are associated with the existing development. Emissions associated with the development are assessed as having a slight impact over a long term period.

## 10.0 Air

Day to day activities have the potential to give rise to elevated dust levels if activities associated with extraction, occasional processing and transportation of product to market are not managed correctly. The action of wind over dry ground can lead to particles being carried in the air. This can occur in most environments where particles are present.

The impact of dust is usually monitored by measuring rates of dust deposition (DoE, 1995). There are currently no Irish statutory standards or EPA guidelines relating specifically to dust deposition thresholds for inert mineral dust (EPA, 2006). There are a number of methods to measure dust deposition but the German TA Luft Air Quality Standards (TA Luft, 1986) specify a method of measuring dust deposition – The Bergerhoff Method (German Standard VDI 2119, 1972) – with dust nuisance. Where this method is deemed unsuitable for use, and only in these circumstances, an alternative method may be agreed with the local authority, such as the “Frisbee Method”, which is one of the most widely used deposit gauges in the UK and its use has superseded that of the original “British Standard” gauge.

Having reviewed the above, it is recommended that the following TA Luft dust deposition limit value be adopted at site boundaries associated with quarry developments – total dust deposition (soluble and insoluble): 350 mg/m<sup>2</sup>/day (when averaged over a 30-day period).

As the existing sand and gravel pit has not been in operation since 2008, dust monitoring was not undertaken at the site either since then or during operation. However, baseline dust monitoring began onsite in November 2018 with one month of results available for analysis.

As expected, given the current absence of onsite activity, results of dust deposition monitoring were well below the recommended value of 350 mg/m<sup>2</sup>/day ranging from 25-191 mg/m<sup>2</sup>/day. Monitoring is set to continue from should the proposed development be granted permission to continue.

Emissions from the application site will lead to a dust deposition level averaged over the full year of 42.2 mg/(m<sup>2</sup>\*day) at the land ownership boundary to the pit. Based on a worst case background dust deposition of 191 mg/(m<sup>2</sup>\*day) in the region of the site, the combined dust deposition level peaks at 233mg/(m<sup>2</sup>\*day) which is 67% of the TA Luft Limit Value of 350 mg/(m<sup>2</sup>\*day). However, operational activities from the pit contributes a maximum of 12% of the TA-Luft Limit Value. The impact of dust deposition is considered slight adverse, localised and long-term.

Predicted PM<sub>10</sub> concentrations are significantly lower than the ambient air quality standards at the worst-case residential receptor due to background concentrations and emissions from the application site. For emissions from application site the predicted 24-hour and annual concentrations (excluding background) at the worst-case receptor peak at 2.0µg/m<sup>3</sup> and 0.86 µg/m<sup>3</sup> respectively. Based on a background PM<sub>10</sub> concentration of 11 µg/m<sup>3</sup> in the region of the application site, the combined annual PM<sub>10</sub> concentration including the site peaks at 11.84 µg/m<sup>3</sup>. This predicted level equates to at most 30% of the annual limit value of 40 µg/m<sup>3</sup>. The predicted 24-hour PM<sub>10</sub> concentration (including background) peaks at 17.84µg/m<sup>3</sup> which is 36% of the 24-hour limit value of 50 µg/m<sup>3</sup> (measured as a 90.4<sup>th</sup>ile). Operational activities from the pit will contribute a maximum of 2.2% of the PM<sub>10</sub> annual mean limit value. The impact of PM<sub>10</sub> is considered negligible, localised and long-term.

Predicted PM<sub>2.5</sub> concentrations at the worst-case receptor are significantly lower than the limit value of 25 µg/m<sup>3</sup> for the application site. The predicted annual concentration (excluding background) at the worst-case receptor peaks at 0.24 µg/m<sup>3</sup>. Based on a background PM<sub>2.5</sub> concentration of 5.7 µg/m<sup>3</sup> in the region of the sand and gravel pit, the annual PM<sub>2.5</sub> concentration including the operations peaks at 5.96 µg/m<sup>3</sup>. This peak level equates to 24% of the annual limit value for PM<sub>2.5</sub>. Operational activities from the pit contribute a maximum of 1 % of the PM<sub>2.5</sub> annual mean limit value. The impact of PM<sub>2.5</sub> is considered negligible, localised and long-term.

## 11.0 Noise and Vibration

Sand and gravel extraction activity by its nature will generate noise on an ongoing basis; the level of emissions will depend on the nature of activity being undertaken. Day to day activities associated with the extraction and transport of products have the potential to contribute to background noise levels in the area. Overburden removal will be an intermittent operation, which will progress in advance of the development during periods of suitable weather.

A comprehensive assessment of the current/baseline noise conditions within and surrounding the site boundary in order to assess the potential noise emissions from the proposed works was

undertaken by a noise specialist at some of the nearest receptors to the proposed development. Three noise monitors were set up to run continuously between 4<sup>th</sup> and 6<sup>th</sup> October 2018.

The following instruments were used:

- One Larson Davis LxT Sound Expert Precision Integrating Sound Level Analyser/Data logger.
- Two Larson Davis 812 Precision Integrating Sound Level Analyser/Data logger
- Wind Shields Type: Double Skinned Wind Screens.
- Calibration Type: Larson Davis Precision Acoustic Calibrator.

All instruments conform to BS EN 61672-1 and BS EN 60942, Class 1 and ISO Type 1.

Noise monitors were set up to run continuously with instruments set on 30 minute intervals with microphones at 1.2-1.5m above ground level. All the environmental noise analysers had data logging facilities set on real-time, the logged data was later downloaded via a personal computer using software. All noise monitors were calibrated before and after the survey and the maximum drift of calibration was 0.02dB. All monitors were within calibration certification times.

Noise levels were predicted at receptor locations based on the above scenarios with the associated plant and machinery operating at the pit. The calculated levels were below that recommended by the EPA Environmental Management Guidelines-Environmental Management in Extractive Industry (Non Scheduled Minerals). Therefore activity associated with the operation of the pit is unlikely to impact on noise levels at nearest sensitive receptors. Mitigating measures have been recommended where deemed necessary.

## 12.0 Traffic

The purpose of this chapter is to assess the traffic impact of the additional traffic movements that will be generated by the Proposed Development, which is located in the townland of Roscat, County Carlow. The site is situated approximately 3 kms to the south of Tullow off the N81 National Secondary Road, which links Tullow and Enniscorthy. The magnitude of the increase in traffic volumes experienced on the surrounding network is identified during the operational phase of the Proposed Development.

From the assessment outlined in this section, it is concluded that the relatively low volumes of traffic that will be generated by the proposed development will have a slight impact on the existing local highway network, which is forecast to operate well within capacity up to the year 2034 and beyond.

### 13.0 Landscape and Restoration

A landscaping assessment was undertaken to assess the impact of the development on the surrounding landscape. This involved undertaking a visual impact assessment of the area and a desk-based study to gather information on the existing landscape, visual resource, planning context and landscape designations.

The visibility of the application area and the working quarry was initially assessed by a desktop study of OS maps in order to identify potential vantage points. This was followed up by field survey. A total of 6 no. vantage points were chosen to give a representative sample of views of the development within the landscape to illustrate the impact on local residential properties, where relevant.

The visual impact assessment concluded that the proposed development will not result in a significant increase in visibility of the pit. A number of mitigation measures are proposed which include grading existing stockpiles into berm like features. These will then be vegetated with grass to provide additional screening.

A landscape and restoration plan has been devised for the pit which includes the construction of berms, landscaping of areas and spreading a layer of overburden on the pit floor which will be seeded and returned to grassland. This will be supplemented with the planting of vegetation in areas around the pit.

### 14.0 Material Assets

Material assets comprise the physical resources in the environment, which may be of human or natural origin. The material assets that have been identified within the application site and in the surrounding landscape are listed below:

- Residential buildings
- Geological resource
- Land resource
- Roads and traffic
- Public utilities
- Groundwater and water supplies
- Scenic routes and views
- Tourism
- Archaeology
- Waste

The potential impacts on residences associated with quarries are in relation to landscape, noise, vibration, dust and traffic as a result of the day to day activities. The proposed development will result in an increase in the extraction area. Management measures in relation to extraction



activities are listed in various sections of the EIAR. These measures will aid in reducing the impact of quarrying activity.

The pit will generate a number of traffic movements based on the transport of products to market. The current proposal does not propose to increase levels of traffic on the road infrastructure in the vicinity of the pit as levels will be similar to that which was granted as part of previous permissions attached to the pit. The pit has not impacted on tourism levels in the area to date and this is anticipated to be the case going forward. Environmental monitoring including noise, dust and vibration monitoring will be undertaken in order to ensure that the quarry is compliant in relation to levels set.

### 15.0 Cultural Heritage

This chapter consists of a desk and fieldwork assessment which was carried out in May 2018. There are no items of cultural heritage, monuments or buildings of heritage interest known from the application area. There are no direct or indirect impacts on any known items of cultural heritage, archaeology or buildings of heritage interest in the application area or the vicinity.

### 16.0 Interactions

In examining the interactions of the impacts for the development one must investigate the combined physical, environment, visual and socio-economic impacts of the development on the receiving environment. Table 1 below illustrates the interaction of impacts assessed for the development.

**Table 1: Interactions of potential effects assessed for this project.**

Factors	Pop. and Human Health	Biodiversity	Land, Soils and Geology	Water	Climate	Air	Noise and Vibration	Traffic	Landscape and Restoration	Material Assets	Cultural Heritage
Pop. and Human Health											
Biodiversity											
Land, Soils and Geology		x									
Water	x	x	x								
Climate	x										
Air	x	x	x	x	x						
Noise and Vibration	x	x									
Traffic	x					x	x				
Landscape and Restoration	x	x	x								
Material Assets	x		x				x	x	x		
Cultural Heritage											

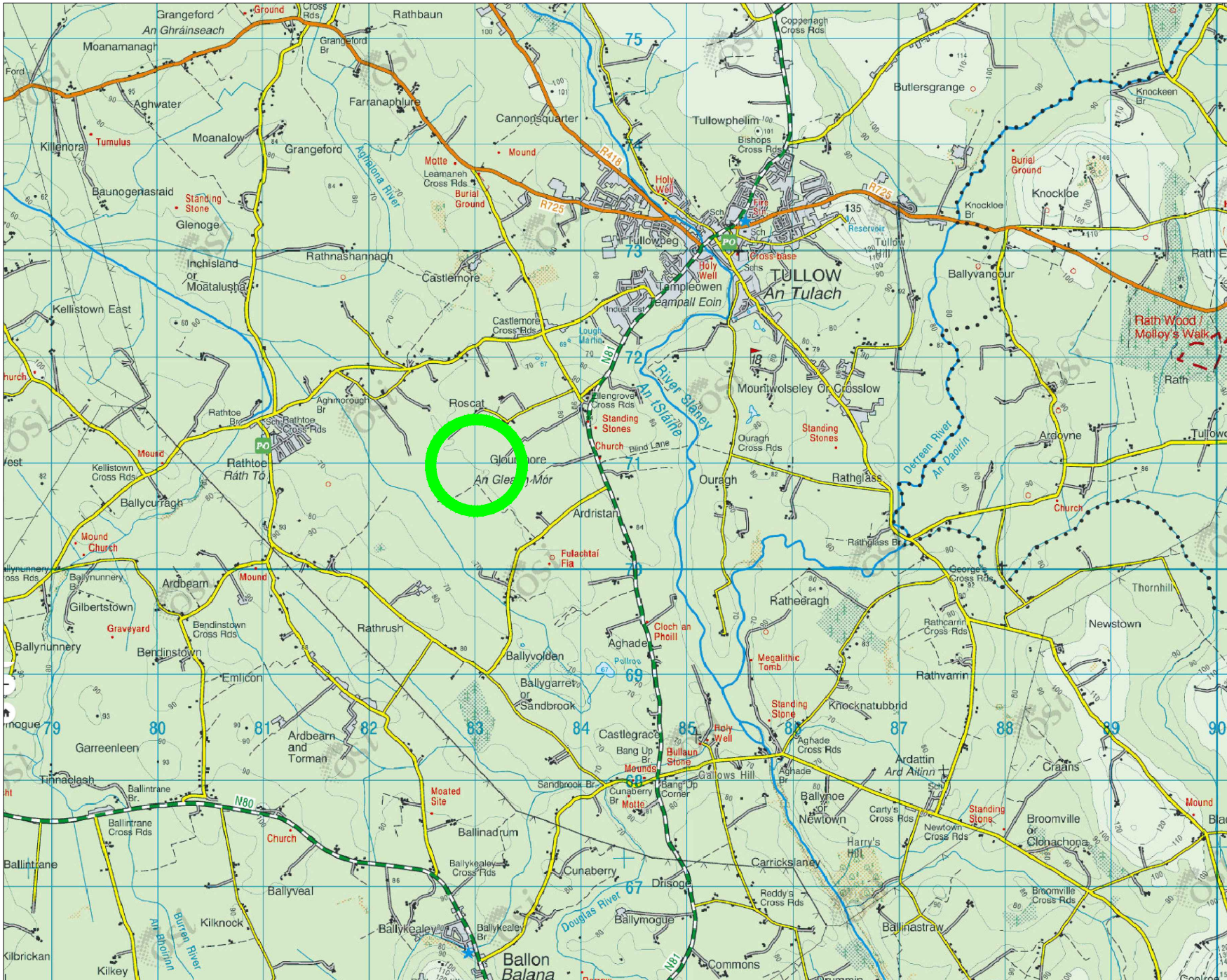
The assessment concluded that, given the implementation and strict adherence to the proposed mitigation measure, it is unlikely that there will be significant adverse impacts to the area as a result of the proposed development and related activities.

### **17.0 Mitigation and Monitoring Summary**

A summary of mitigation and monitoring measures has been compiled. These will be extended or implemented at the development and audits will be undertaken to ensure that measures are in place.

## Figures

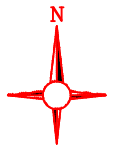




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**Legend**

Site Location



ITM Coordinates: 683027 E, 670998 N

Rev	Description	Date

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Client: Kilcarrig Quarries Ltd.

Project: Non Technical Summary to Accompany a Planning Application for the Extension to a Sand & Gravel Pit Located at Roscat, Tullow, Co. Carlow

Title: Site Location Map  
 Drawn By: Sean O' Donnell  
 Checked By: Patrick O' Donnell  
 Scale: 1:50,000 @ A4 Date: Apr. 2019  
 Job No: EI 061 Rev: 0

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**Legend**

**Ownership Boundary**

**Application Area**  
Area = 14.7 Ha

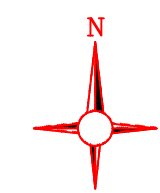
Aggregate Stockpile

Water

Vegetation

Access Road/Track

Tree Cover



**Vegetation/Access:**

Due to the density of the vegetation situated throughout the site, the sub-canopy contouring cannot be guaranteed. ESP will not take responsibility for errors in the sub-vegetation contouring as ESP cannot confirm or deny the presence of surface anomalies that may alter the present contouring. It is strongly advised that any wooded areas that are assigned for future development, are cleared and re-surveyed to ensure accurate elevation data.

All Levels Relative to Ordnance Datum

O.S. Map Ref No. 4475 - B

ITM Coordinates: 683027 E, 670998 N

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Client: Kilcarrig Quarries Ltd.

Project: Non Technical Summary to Accompany a Planning Application for the Extension to a Sand & Gravel Pit Located at Roscat, Tullow, Co. Carlow

Title: Existing Site Layout Map

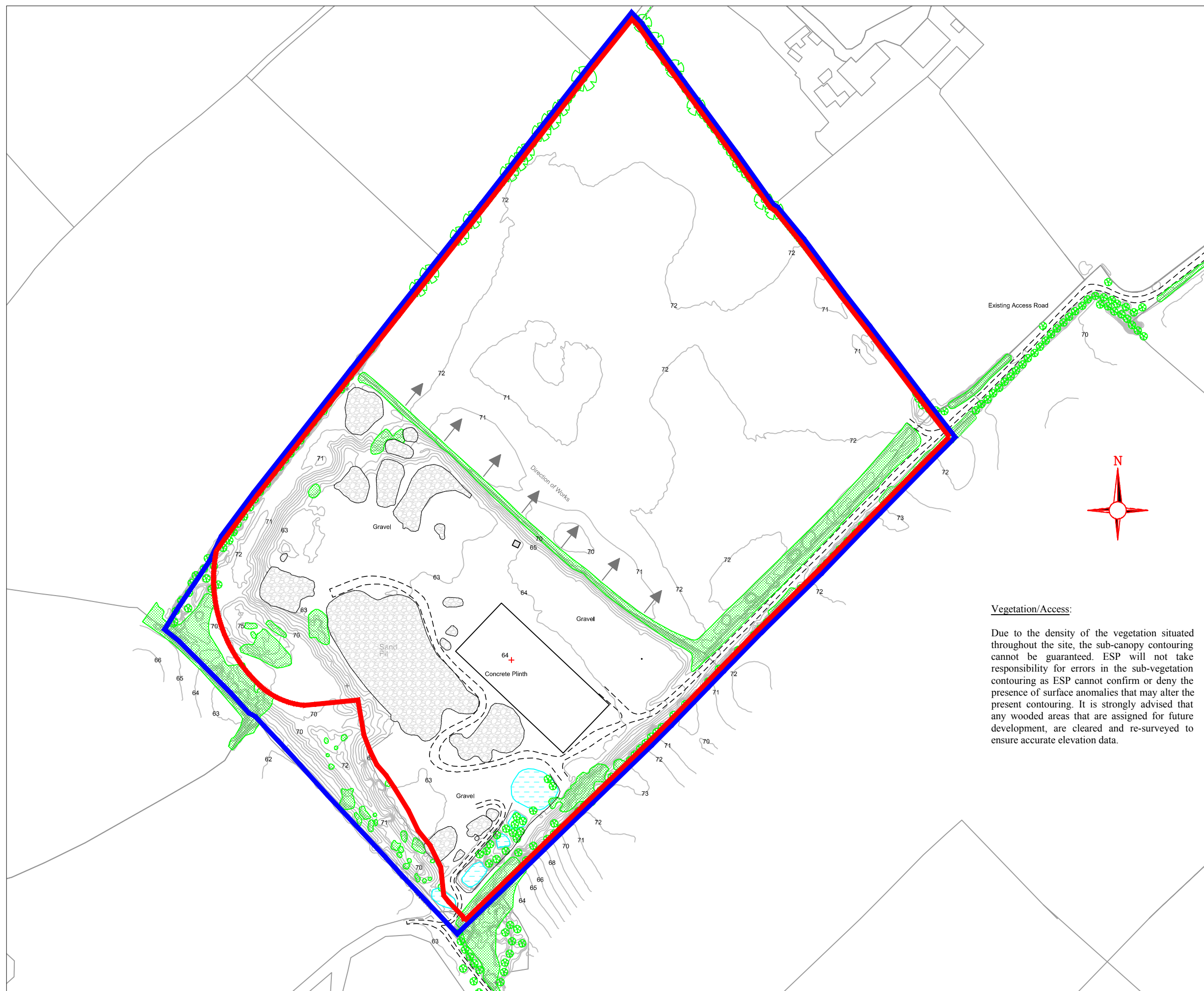
Drawn By: Sean O' Donnell

Checked By: Patrick O' Donnell

Scale: 1 : 2,500 @ A3 Date: Apr. 2019

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NTS Fig 2



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**Legend**

Ownership Boundary

Application Area  
Area = 14.7 Ha

Water

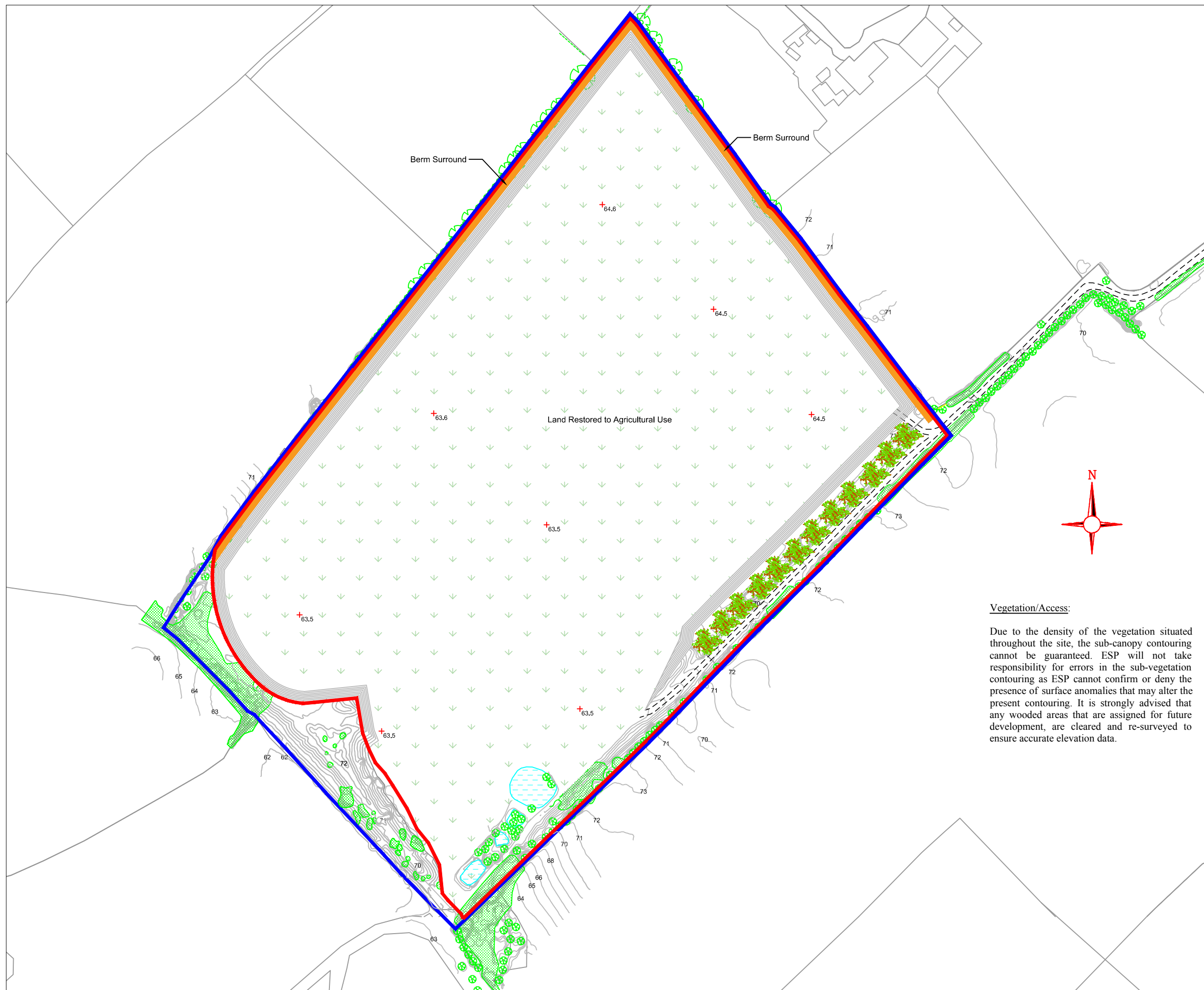
Vegetation

Access Road/Track

Tree Cover

Constructed Berms

Vegetation



Vegetation/Access:

Due to the density of the vegetation situated throughout the site, the sub-canopy contouring cannot be guaranteed. ESP will not take responsibility for errors in the sub-vegetation contouring as ESP cannot confirm or deny the presence of surface anomalies that may alter the present contouring. It is strongly advised that any wooded areas that are assigned for future development, are cleared and re-surveyed to ensure accurate elevation data.

All Levels Relative to Ordnance Datum

O.S. Map Ref No. 4475 - B

ITM Coordinates: 683027 E, 670998 N

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Client: Kilcarrig Quarries Ltd.

Project: Non Technical Summary to Accompany a Planning Application for the Extension to a Sand & Gravel Pit Located at Roscat, Tullow, Co. Carlow

Title: Proposed Final Restoration Layout

Drawn By: Sean O' Donnell

Checked By: Patrick O' Donnell

Scale: 1 : 2,500 @ A3 Date: Apr. 2019

Job No: EI061 Rev: 0

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**Legend**



O.S. Map Ref No. 4475 - B

ITM Coordinates: 683027 E, 670998 N

Rev	Description	Date

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Client: Kilcarrig Quarries Ltd.

Project: Non Technical Summary to Accompany a Planning Application for the Extension to a Sand & Gravel Pit Located at Roscat, Tullow, Co. Carlow

Title: Proposed Side Slope & Berm Detail

Drawn By: Sean O' Donnell

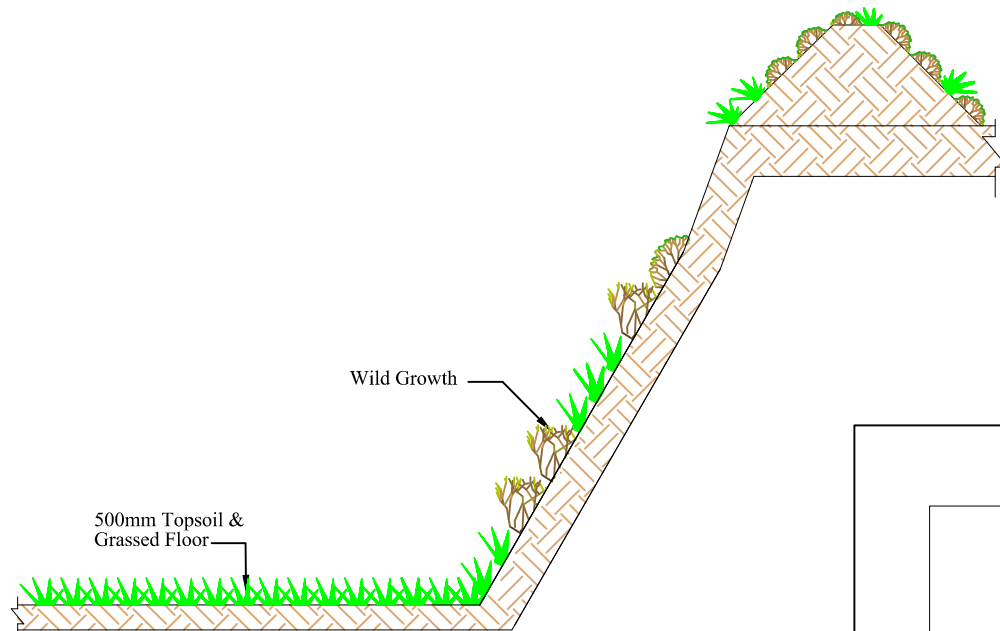
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Scale: As Shown @ A4 Date: Apr. 2019

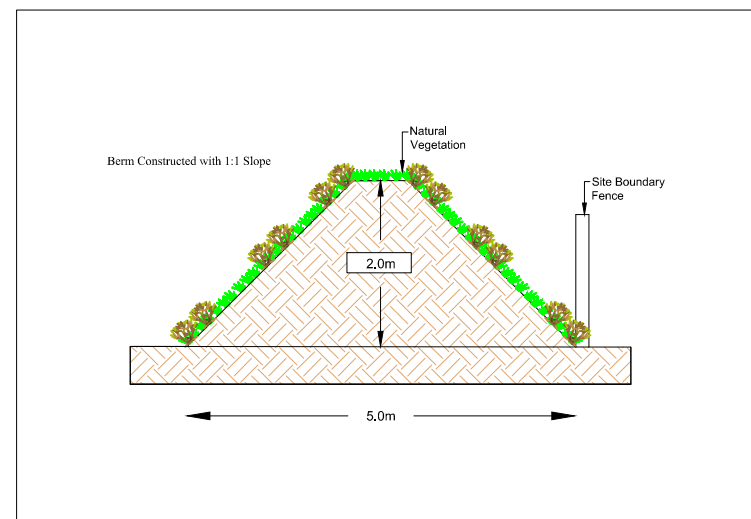
Job No: EI 061 Rev: 0

NTS Fig 4

Grassed Pit Floor      Side Slope & Berm Planting



Typical Side Slope Detail  
(Scale 1:150)



Typical Berm Detail  
(Scale 1:100)