CONTENTS

TABLES

FIGURES

APPENDICES

13.0 LANDSCAPE

13.1 Introduction

This Landscape and Visual Impact Assessment (LVIA) has been prepared in relation to the proposed Knocknacran West Open-Cast Mine and Community Sports Complex, located in the townlands of Knocknacran (East & West), Drumgoosat, Enagh, Derrynaglah, Drummond, Derrynascobe and Clontrain in Co. Monaghan, near the Co. Cavan border.

This report has been prepared by Macro Works Limited who have extensive experience in the preparation of landscape and visual impact assessments in Ireland. Relevant experience includes landscape and visual assessments for a range of industrial, commercial and infrastructural developments as well as over 80 wind farms, including six Strategic Infrastructure Development (SID) projects.

13.2 Legislative and Policy Context

While the site is located within County Monaghan, it's location in the far south of the county means that the Cavan County border is within 1 km southwest of the site, while the Meath County border is less than 1.7 km south/southeast of the site. As both counties are within the study area (refer to Section 13.3.7 for further details), their county development plans are also addressed in this chapter, for any potential designated/protected views or scenic routes that may be of relevance to the site.

13.2.1 Monaghan County Development Plan 2019 - 2025

According to the Monaghan County Development Plan (CDP):

> "*The unique character of the Monaghan landscape is its intimate quality with drumlins, interspersed with lakes, trees and woodlands. This landscape of small enclosed fields with foreshortened horizons is different and indeed unique from that of the more open landscape found in many other parts of Ireland. It is a landscape that has evolved over the centuries and has traditionally been moulded and protected by agricultural practices.*
>
> *"Whilst there is significant potential to accommodate sensitively designed development which respects the existing landform, one of the principal roles of the Planning Authority is to protect the most sensitive landscapes from intrusive and unsympathetic development which would irreversibly damage County Monaghan's environment and heritage."*

The Monaghan CDP identifies areas of Primary Amenity and Secondary Amenity, as well as designated scenic routes. However, none of these sensitive landscape and scenic designations occurs within the vicinity of the proposal site. Indeed, the site is not within 20 km of any Area of Primary Amenity Value, not within 2 km of an Area of Secondary Amenity Value, and not within 10 km from any Views from Scenic Routes. The County Monaghan Landscape Character Assessment (LCA) outlines the physical and historical influences that have shaped the various types of landscapes in the county. According to the LCA:

> *"The LCA assesses and categorises the county's landscapes by their character and capacity to accommodate development types. The LCA defines thirteen Landscape Character Types (Physical*

Units) and divides the county into nine Landscape Character Areas (Image Units). The LCA will inform decision making in relation to the protection of the environment, natural resources and heritage and will be used to guide development."

According to the LCA, the "Land use Type" of the study area comprises of "Pasture and Arable," while its "Landscape Character Type" (LCT) is split between LCT 2 "Drumlin Farmland", and LCT 8 "Undulating Farmland", (Figure 13.1).

LCT No 2. 'Drumlin Farmland' Key Characteristics:

- Low lying small to medium sized drumlins predominantly in a north to south orientation;
- A patchwork of predominantly medium sized fields defined typically by native hedgerows and used for pasture;
- Dispersed small to medium sized loughs;
- Extensive network of tertiary roads;
- Isolated and small clusters of farm and residential properties; and
- Minor roads bounded occasionally by large estates; the boundary definition being cut limestone walling.

LCT No 2. 'Drumlin Farmland' Description:

"The farmed field pattern presents itself at a medium scale and typically the field boundaries are defined by neatly cut hedgerows containing species such as hawthorn (Crataegus monogyna) and ash (Fraxinus excelsior). Mature deciduous trees are a prominent feature of this character type and many of these are heavily clad with ivy. The principal species is Beech (Fagus spp) and Ash (Fraxinus excelsior). Clumps of deciduous woodland are present as a regular feature of this landscape and include some Beech (Fagus spp) and principally Oak (Quercus spp), frequently present on the summits of drumlins. In addition to these a number of small copses of coniferous forestry are located towards the northern part of the County. Lower ground is occupied by pasture and occasional patches of marsh land."

There are no "forces for change" listed within this LCT that are applicable to the Proposed Development.

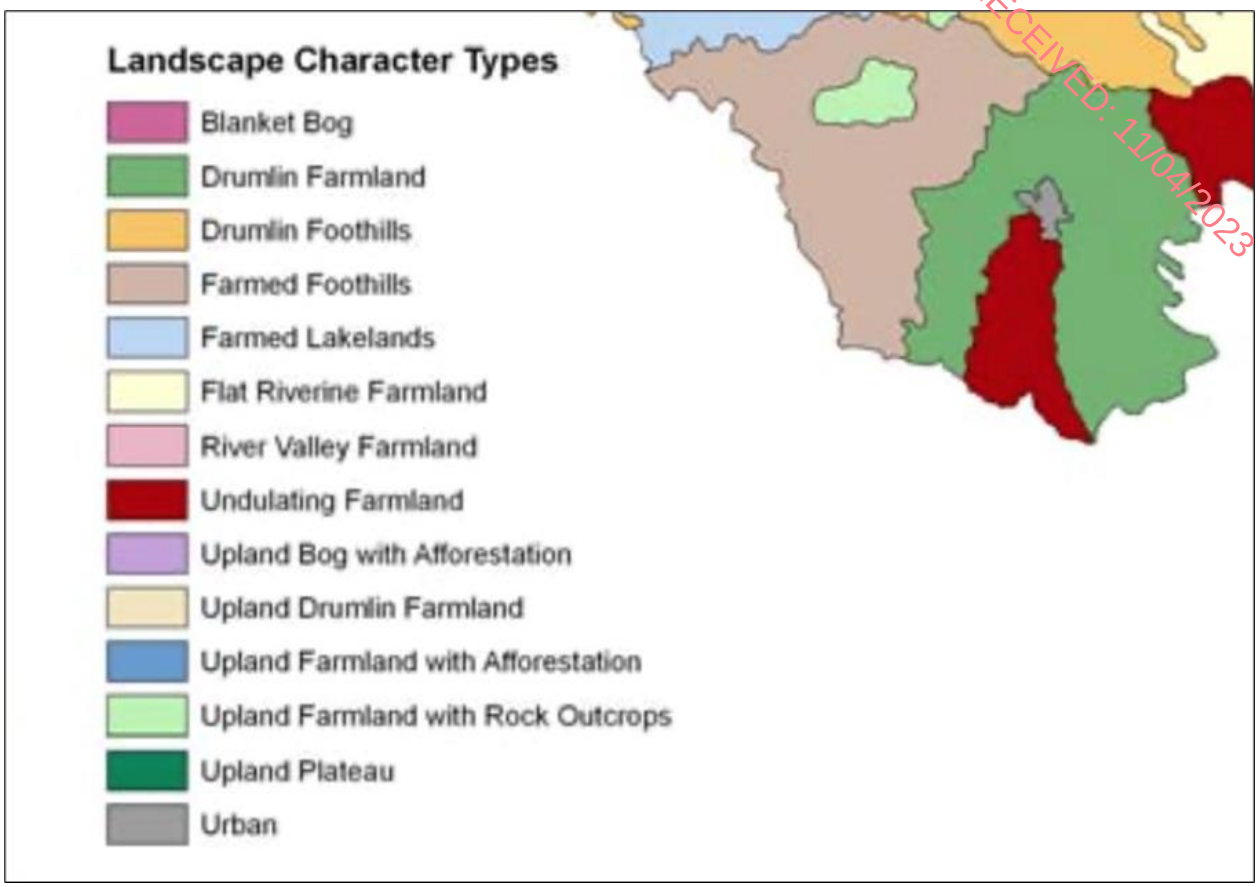

Figure 13.1: Extract of Figure 7b of the County Monaghan Landscape Character Assessment

LCT No. 8. Undulating Farmland key characteristics:

- A patchwork of predominantly medium sized fields defined typically by native species hedgerows and used for pasture; and
- Isolated farm and residential properties.

LCT No. 8. Undulating Farmland key characteristics:

"This landscape type is low lying and has a smooth rolling topography with occasional small hills and drumlins in between which a number of small loughs of streams are a regular occurrence. Many of these loughs contain crannogs."

"Hedgerows containing mature trees define predominantly pastoral fields and these include species such as ash (Fraxinus spp), and hawthorn (Crataegus monogyna). Mature individual trees feature in this landscape such as beech (Fagus sylvatica.) and occasional clumps of trees are also evident. In the east of the County many of these tree groups are seen on the crests of individual hills and signify the presence of historic ring and fairy forts. Scrub features in the more low lying areas, alongside large tracts of wet ground containing wetland grass species. Commercial forestry is present to the west of the County although this is low key and fits well into the landscape."

Once more, there are no "forces for change" listed within this LCT that are applicable to the Proposed Development.

According to the CDP, its objectives for Landscape Protection entail:

LPO1: Sustain, conserve, manage and enhance the landscape diversity, character and quality of the County for the benefits of current and future generations.

LPO2: Zone important landscape features and elevated lands within settlements as Landscape Protection/Conservation Areas, to ensure that developments do not detrimentally impact on the amenity of the landscape or on the natural setting of settlements.

According to the CDP, its objectives for Landscape Protection entail:

LPP1: Ensure the preservation and uniqueness of the county's landscape by having regard to the character, value and sensitivity of landscape as identified in the County Monaghan Landscape Character Assessment, August 2008 (or any subsequent versions) when determining a planning application.

LPP2: Protect the landscapes and natural environments of the county by ensuring that any new developments in designated sensitive rural landscapes do not detrimentally impact on the character, integrity, distinctiveness or scenic value of the area.

LPP3: Development which fails to appropriately integrate into the landscape with due regard to visual impact, landscape amenity, the protection of skylines, amenities such as lakes, designated walkways, heritage sites and recreational and tourist facilities shall be resisted.

Lastly, there are no known or marked cycling, walking or tourist routes within or near the study area.

13.2.2 Cavan County Development Plan 2022 – 2028

A small section of County Cavan falls within the southern portion of the study 3 km radius study area. The only designated scenic view and/or viewpoint listed in the County Development Plan that is within 30 km of the site is "SV8 – Lough an Leagh Gap." However, this is located ca. 9 km from the site, and has no views of it. As previously stated above, Dún a Rí Forest Park straddles the south-western periphery of the study area, in County Cavan, and contains multiple short walks. However, as these walks are within the forest and as there is no listed scenic view and/or viewpoint contained within the County Development Plan that is from within the forest park, it is of no relevance to the Proposed Development.

13.2.3 Meath County Development Plan 20212 – 2027

A small section of County Meath falls within the southern portion of the study 3km radius study area. There are no designated scenic view listed in the County Development Plan that fall within or even near to the study area.

13.2.4 National Parks and Wildlife Service (NPWS)

The only known NPWS designation within 3 km of the site is the Proposed Natural Heritage Area (pNHA): Lough Fea Demesne (Site Code: 000560), which is located ca. 2.7 km northeast of the site.

13.3 Assessment Methodology and Significance Criteria

13.3.1 Landscape and Visual Impact Assessments

Although closely linked, landscape and visual effects are assessed separately as the effects to the physical landscape and landscape character resulting from the development form the baseline of the assessment of visual impacts from key visual receptors.

Landscape Impact Assessment (LIA) relates to changes in the physical landscape, brought about by the proposed development, which may alter its character and how this is experienced. This requires a detailed analysis of the individual elements and characteristics of a landscape that go together to make up the overall landscape character of that area. By understanding the aspects that contribute to landscape character it is possible to make judgements in relation to its quality (integrity) and to identify key sensitivities. This, in turn, provides a measure of the ability of the landscape in question to accommodate the type and scale of change associated with the proposed development, without causing unacceptable adverse changes to its character.

Visual Impact Assessment (VIA) relates to changes in the composition of views as a result of changes to the landscape, how these are perceived and the effects on visual amenity. Such effects are population based rather than resource based as in the case of landscape effects. Visual effects are measured on the basis of:

- Visual Obstruction (blocking of a view, be it full, partial or intermittent) or; and
- Visual Intrusion (interruption of a view without blocking).

This landscape and visual impact assessment is based on:

- The 'Guidelines for Landscape and Visual Impact Assessment – 3rd Edition' (GLVIA3 - 2013) produced by the Institute of Environmental Management and Assessment (IEMA) in conjunction with the Landscape Institute (UK);
- The Environmental Protection Agency (EPA) publication 'Guidelines on the Information to be contained in Environmental Impact Assessment Reports' (2022) and the accompanying 'Advice Notes for Preparing Environmental Impact Statement' (2015);
- Visual Representation of Development Proposals – Technical Guidance Note 06/19 (2019); and
- Scottish Natural Heritage (SNH) 'Environmental Impact Assessment Handbook – Appendix 2: Landscape and Visual Impact Assessment' (2018).

13.3.2 Landscape Effect Assessment Criteria

When assessing the potential effect on the landscape resulting from a proposed development, the following criteria are considered:

- Landscape character, value and sensitivity;
- Magnitude of likely impacts; and
- Significance of landscape effects.

The sensitivity of the landscape to change is the degree to which a particular landscape receptor (Landscape Character Area (LCA) or feature) can accommodate changes or new elements without unacceptable detrimental effects to its essential characteristics. Landscape Value and Sensitivity is classified using the following criteria set out in Table 13.1.

Table 13.1: Landscape Value and Sensitivity

Sensitivity	Description
Very High	Areas where the landscape character exhibits a very low capacity for change in the form of development. Examples of which are high value landscapes, protected at an international or national level (World Heritage Site/National Park), where the principal management objectives are likely to be protection of the existing character.
High	Areas where the landscape character exhibits a low capacity for change in the form of development. Examples of which are high value landscapes, protected at a national or regional level (Area of Outstanding Natural Beauty), where the principal management objectives are likely to be considered conservation of the existing character.
Medium	Areas where the landscape character exhibits some capacity and scope for development. Examples of which are landscapes, which have a designation of protection at a county level or at non-designated local level where there is evidence of local value and use.
Low	Areas where the landscape character exhibits a higher capacity for change from development. Typically this would include lower value, non-designated landscapes that may also have some elements or features of recognisable quality, where landscape management objectives include, enhancement, repair and restoration.
Negligible	Areas of landscape character that include derelict, mining, industrial land or are part of the urban fringe where there would be a reasonable capacity to embrace change or the capacity to include the development proposals. Management objectives in such areas could be focused on change, creation of landscape improvements and/or restoration to realise a higher landscape value.

The magnitude of a predicted landscape impact is a product of the scale, extent or degree of change that is likely to be experienced as a result of the proposed development. The magnitude takes into account whether there is a direct physical impact resulting from the loss of landscape components and/or a change that extends beyond the Application Site boundary that may have an effect on the landscape character of the area (Table 13.2).

Table 13.2: Magnitude of Landscape Impacts

Magnitude of Impact	Description
Very High	Change that would be large in extent and scale with the loss of critically important landscape elements and features, that may also involve the introduction of uncharacteristic new elements or features that contribute to an overall change of the landscape in terms of character, value and quality.
High	Change that would be more limited in extent and scale with the loss of important landscape elements and features, that may also involve the introduction of

	uncharacteristic new elements or features that contribute to an overall change of the landscape in terms of character, value and quality.
Medium	Changes that are modest in extent and scale involving the loss of landscape characteristics or elements that may also involve the introduction of uncharacteristic new elements or features that would lead to changes in landscape character, and quality.
Low	Changes affecting small areas of landscape character and quality, together with the loss of some less characteristic landscape elements or the addition of new features or elements.
Negligible	Changes affecting small or very restricted areas of landscape character. This may include the limited loss of some elements or the addition of some new features or elements that are characteristic of the existing landscape or are hardly perceivable.

The significance of a landscape effect is based on a balance between the sensitivity of the landscape receptor and the magnitude of the impact. The significance of landscape effect is arrived at using the following matrix set out in Table 13.3.

Table 13.3: Effect Significance Matrix

	Sensitivity of Receptor				
Scale/Magnitude	***Very High***	***High***	***Medium***	***Low***	***Negligible***
Very High	Profound	Profound-substantial	Substantial	Moderate	Slight
High	Profound-substantial	Substantial	Substantial-moderate	Moderate-slight	Slight-Imperceptible
Medium	Substantial	Substantial-Moderate	Moderate	Slight	Imperceptible
Low	Moderate	Moderate-Slight	Slight	Slight-Imperceptible	Imperceptible
Negligible	Slight	Slight-Imperceptible	Imperceptible	Imperceptible	Imperceptible

Note: The significance matrix provides an indicative framework from which the significance of impact is derived. The significance judgement is ultimately determined by the assessor using professional judgement. Due to nuances within the constituent sensitivity and magnitude judgements, this may be up to one category higher or lower than indicated by the matrix. Judgements indicated in orange are considered to be 'significant impacts' in EIA terms.

13.3.3 Sensitivity of Visual Receptors

Unlike landscape sensitivity, the sensitivity of visual receptors has an anthropocentric basis. It considers factors such as the perceived quality and values associated with the view, the landscape context of the viewer, the likely activity they are engaged in and whether this heightens their awareness of the surrounding landscape. A list of the factors considered by the assessor in estimating the level of sensitivity for a particular

visual receptor is outlined below and used in Table 13.6 (Section 13.3.8) to establish visual receptor sensitivity at each VRP:

1) Susceptibility of Receptors

In accordance with the Institute of Environmental Management and Assessment ("IEMA") Guidelines for Landscape and Visual Assessment (3rd edition 2013) visual receptors most susceptible to changes in views and visual amenity are:

- "Residents at home;
- People, whether residents or visitors, who are engaged in outdoor recreation, including use of public rights of way, whose attention or interest is likely to be focussed on the landscape and on particular views;
- Visitors to heritage assets, or to other attractions, where views of the surroundings are an important contributor to the experience;
- Communities where views contribute to the landscape setting enjoyed by residents in the area; and
- Travellers on road rail or other transport routes where such travel involves recognised scenic routes and awareness of views is likely to be heightened".

Visual receptors that are less susceptible to changes in views and visual amenity include:

- "People engaged in outdoor sport or recreation, which does not involve or depend upon appreciation of views of the landscape; and
- People at their place of work whose attention may be focussed on their work or activity, not their surroundings and where the setting is not important to the quality of working life".

2) **Recognised scenic value of the view** (County Development Plan designations, guidebooks, touring maps, postcards etc). These represent a consensus in terms of which scenic views and routes within an area are strongly valued by the population because in the case of County Developments Plans, for example, a public consultation process is required;

3) **Views from within highly sensitive landscape areas**. Again, highly sensitive landscape designations are usually part of a county's Landscape Character Assessment, which is then incorporated within the County Development Plan and is therefore subject to the public consultation process. Viewers within such areas are likely to be highly attuned to the landscape around them;

4) **Primary views from dwellings**. A proposed development might be seen from anywhere within a particular residential property with varying degrees of sensitivity. Therefore, this category is reserved for those instances in which the design of dwellings or housing estates, has been influenced by the desire to take in a particular view. This might involve the use of a slope or the specific orientation of a house and/or its internal social rooms and exterior spaces;

5) **Intensity of use, popularity**. This relates to the number of viewers likely to experience a view on a regular basis and whether this is significant at county or regional scale;
6) **Connection with the landscape.** This considers whether or not receptors are likely to be highly attuned to views of the landscape i.e., commuters hurriedly driving on busy national route versus hill walkers directly engaged with the landscape enjoying changing sequential views over it;

7) **Provision of elevated panoramic views**. This relates to the extent of the view on offer and the tendency for receptors to become more attuned to the surrounding landscape at locations that afford broad vistas;

8) **Sense of remoteness and/or tranquillity.** Receptors taking in a remote and tranquil scene, which is likely to be fairly static, are likely to be more receptive to changes in the view than those taking in the view of a busy street scene, for example;

9) **Degree of perceived naturalness.** Where a view is valued for the sense of naturalness of the surrounding landscape it is likely to be highly sensitive to visual intrusion by distinctly manmade features;

10) **Presence of striking or noteworthy features**. A view might be strongly valued because it contains a distinctive and memorable landscape feature such as a promontory headland, lough or castle;

11) **Historical, cultural and / or spiritual significance**. Such attributes may be evident or sensed by receptors at certain viewing locations, which may attract visitors for the purposes of contemplation or reflection heightening the sense of their surroundings;

12) **Rarity or uniqueness of the view.** This might include the noteworthy representativeness of a certain landscape type and considers whether the receptor could take in similar views anywhere in the broader region or the country;

13) **Integrity of the landscape character.** This looks at the condition and intactness of the landscape in view and whether the landscape pattern is a regular one of few strongly related components or an irregular one containing a variety of disparate components;

14) **Sense of place.** This considers whether there is special sense of wholeness and harmony at the viewing location; and

15) **Sense of awe.** This considers whether the view inspires an overwhelming sense of scale or the power of nature.

Those locations, which are deemed to satisfy many of the above criteria, are likely to be of higher sensitivity. No relative importance is inferred by the order of listing in Table 13.6 below in Section 13.3.8. Overall sensitivity may be a result of a number of these factors or, alternatively, a strong association with one or two in particular.

13.3.4 Visual Impact Magnitude

The magnitude of visual effects is determined on the basis of two factors; the visual presence (relative visual dominance) of the proposal and its effect on visual amenity.

The magnitude of visual impacts is classified in Table 13.4.

Table 13.4: Magnitude of Visual Impact

Criteria	Description
Very High	The proposal intrudes into a large proportion or critical part of the available vista and is without question the most noticeable element. A high degree of visual clutter or disharmony is also generated, strongly reducing the visual amenity of the scene
High	The proposal intrudes into a significant proportion or important part of the available vista and is one of the most noticeable elements. A considerable degree of visual clutter or disharmony is also likely to be generated, appreciably reducing the visual amenity of the scene
Medium	The proposal represents a moderate intrusion into the available vista, is a readily noticeable element and/or it may generate a degree of visual clutter or disharmony, thereby reducing the visual amenity of the scene. Alternatively, it may represent a balance of higher and lower order estimates in relation to visual presence and visual amenity
Low	The proposal intrudes to a minor extent into the available vista and may not be noticed by a casual observer and/or the proposal would not have a marked effect on the visual amenity of the scene
Negligible	The proposal would be barely discernible within the available vista and/or it would not detract from, and may even enhance, the visual amenity of the scene

13.3.5 Quality and Timescale of Effects

In addition to assessing the significance of landscape effects and visual effects, EPA Guidance for EIA requires that the quality of the effects is also determined. This could be negative/adverse, neutral, or positive/beneficial. In the case of new energy / infrastructure developments within rural and semi-rural settings, the landscape and visual change brought about by an increased scale and intensity of built form is seldom considered to be positive / beneficial.

Landscape and Visual effects are also categorised according to their duration:

- Temporary – Lasting for one year or less;
- Short Term – Lasting one to seven years;
- Medium Term – Lasting seven to fifteen years;
- Long Term – Lasting fifteen years to sixty years; and
- Permanent – Lasting over sixty years.

13.3.6 Visual Effect Significance

As stated above, the significance of visual effects is a function of visual receptor sensitivity and visual impact magnitude. This relationship is expressed in the same significance matrix and applies the same EPA definitions of significance as used earlier in respect of landscape effects (Table 13.3).

13.3.7 Study Area

For the purposes of this study, a 3 km study area (Figure 13.2) has been established, which entails areas of Counties Monaghan, Cavan and Meath. This 3 km study area was established because any views of the Proposed Development are unlikely beyond this distance, primarily owing to the nearest hills (and drumlins)

overlooking the Site. The second reason is that such a 3 km radius will allow for any potential visibility of the Proposed Development from hill/drumlin tops or Lough Fea to the east and northeast of the Site, as well as Dun a Ri Forest Park ca. 2.5 km southwest of the Site. However, it is considered that any significant landscape and visual planning risk is most likely to relate to receptors within 3 km, and principally those within 1.5 km.

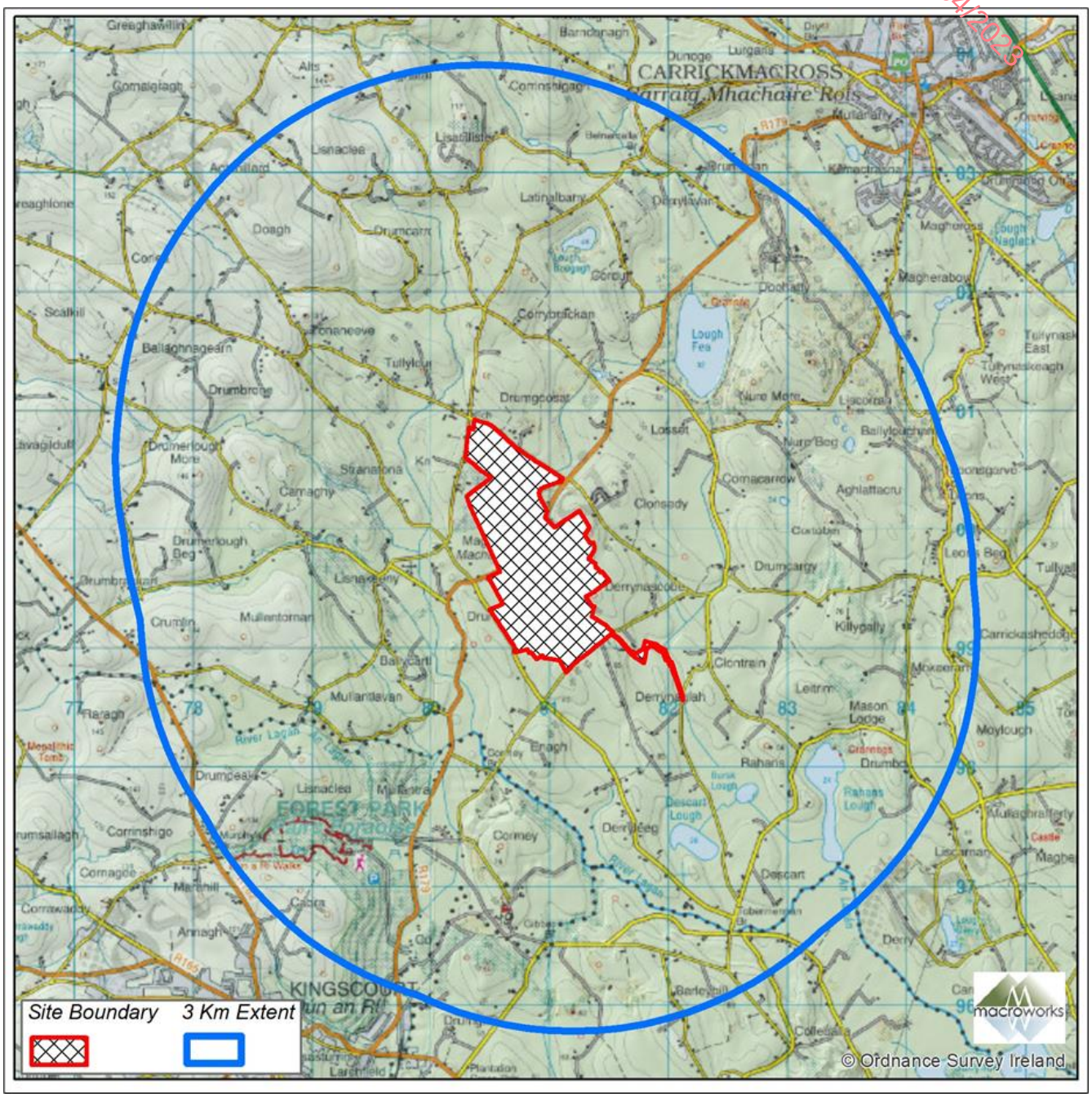

Figure 13.2: Study Area for the Proposed Development

13.3.8 Viewpoint Selection Process: Potential Visibility of the Proposed Development

A map showing areas of potential visibility of the Proposed Mine Development from within the study area, based solely on terrain data, has been prepared to illustrate where the open-cast mine is potentially visible from. Given the vegetation patterns within this landscape, the main value of this form of mapping is to determine those parts of the landscape from which the Proposed Development will never be visible (Figure

13.3) and to aid with selection of viewpoints for the visual impact assessment. Digital Terrain Modelling (DTM) was applied to generate a Zone of Theoretical Visibility (ZTV) for the proposed Knocknacran West Open-Cast Mine within the study area.

Figure 13.3 illustrates the following key points:

- Most of the south-eastern quadrant of the study area will experience little theoretical visibility of the Mine Development, while there will be limited and selected degree of theoretical visibility from the north-eastern quadrant, with minimal theoretical visibility from the public sphere;
- There is a high degree of theoretical visibility within 500 m in most directions from the Site. However, the village of Drumgoosat – including most dwellings, the school/school grounds, church and graveyard – has no theoretical visibility of the proposed Knocknacran West Open-Cast Mine;
- The highest amount of theoretical visibility is located in the west of the study area, along the pronounced drumlin hillscape, ca. 1-2.5 km northwest, west and southwest of the site of the proposed Knocknacran West Open-Cast Mine. Along these drumlins, theoretical visibility is primarily over 60% (of site area potentially visible), while frequently being over 80%. However, most of such visibility is from private property (e.g., agricultural lands);
- While sections of the Dún a Rí Forest Park will experience theoretical visibility of the proposed Knocknacran West Open-Cast Mine, this is from within mature woodland; and
- Neither Cabra Castle, nor its area of parkland and gardens, will experience theoretical visibility of the proposed Knocknacran West Open-Cast Mine.

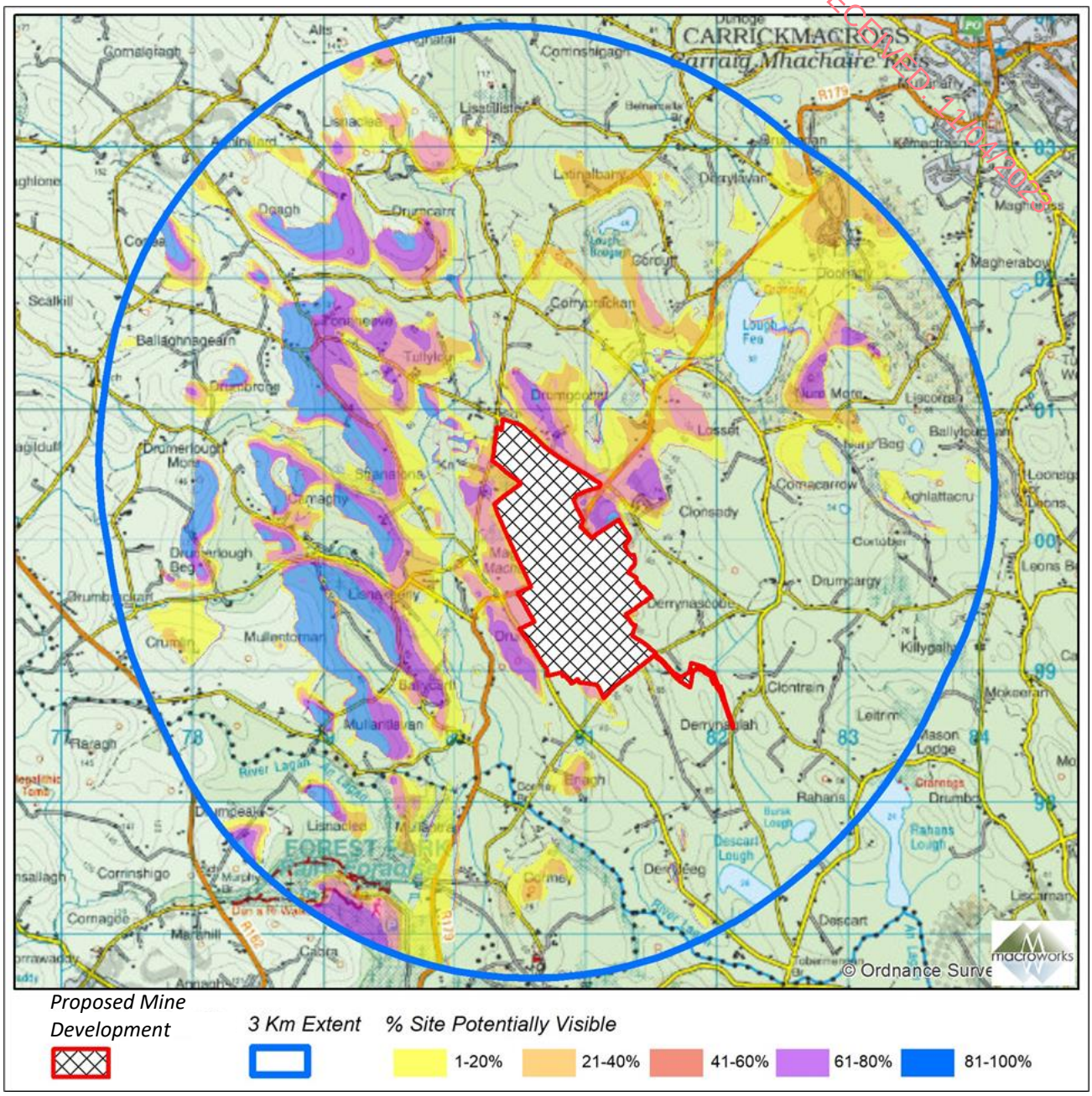

Figure 13.3: Zone of Theoretical Visibility (ZTV) for the proposed Knocknacran West Open-Cast Mine, based on a bare-ground scenario

It needs to be stressed that this figure pertains solely to existing contour levels within the proposed mine extension site on the basis that if land within the site is potentially visible, so will the future excavation area. For a more realistic understanding of the nature and extent of scheme visibility, the photomontages prepared for the purposes of the visual impact appraisal should be referred to (Appendix 13.1).

13.3.9 Identification of Viewshed Reference Points as a Basis for Assessment

Viewshed Reference Points (VRPs) are the locations used to study the visual impacts of the Proposed Development in detail. It is not warranted to include each and every location that provides a view of this development as this would result in an unwieldy report and make it extremely difficult to draw out the key effects arising from the project. Instead, the selected viewpoints are intended to reflect a range of different

receptor types, distances and angles. The visual impact of a Proposed Development is assessed using up to 6 categories of receptor type as listed below:

- Key Views (from features of national or international importance);
- Designated Scenic Routes and Views;
- Local Community views;
- Centres of Population;
- Major Routes; and
- Amenity and heritage features.

VRPs might be relevant to more than one category and this makes them even more valid for inclusion in the assessment. In such cases the VRP will be identified in terms of the primary reason for which they were chosen, but all attributes of the receptor location will be considered in the assessment of its sensitivity. The Viewshed Reference Points selected in this instance are set out in the table below, and well as Figure 13.4.

It should be noted that following a recent community engagement event, two additional viewpoints were raised and agreed upon, bringing up the total number of VRPs from 13 to 15 No. (Table 13.5).

Table 13.5: Outline Description of Selected Viewshed Reference Points (VRPs)

VRP No.	Location	Direction of view
VP1	Third class road aligning western boundary of site, at Drummond townland	NE/E
VP2 (a&b)	R179 at western boundary of site	NE/E/SE/S
VP3 (a&b)	R179 at proposed Cut-and-Cover Tunnel	180°
VP4 (a&b)	R179 at former entrance to former Magheracloone GAA grounds (part of the existing Knocknacran West site)	180°
VP5	Third class 'slip' road off the R179 at Knocknacran East townland	N/NW
VP6	Third class road aligning north-eastern boundary of site at Drumgoosat Townland	NW/W/SW
VP7	Crossroads at Drumgoosat village	S/SE
VP8	Third class road aligning north-western boundary of site at Knocknacran East Townland	E/SE
VP9	Third class road near small settlement of Magheracloone	NE/E/SE
VP10	Church of Ireland church of St. Molua, Camaghy townland	NE/E/SE

VP11	Elevated third class road at Stranatona townland	E/SE
VP12	Elevated third class road at Tonaneeve townland	SE
VP13	Elevated third class road at Ballycartlan townland	E/NE
VP14	Local road connecting Magheracloone with R179	NE/E
VP15	Third class road aligning north-eastern boundary of site near Drumgoosat	NW/W/SW

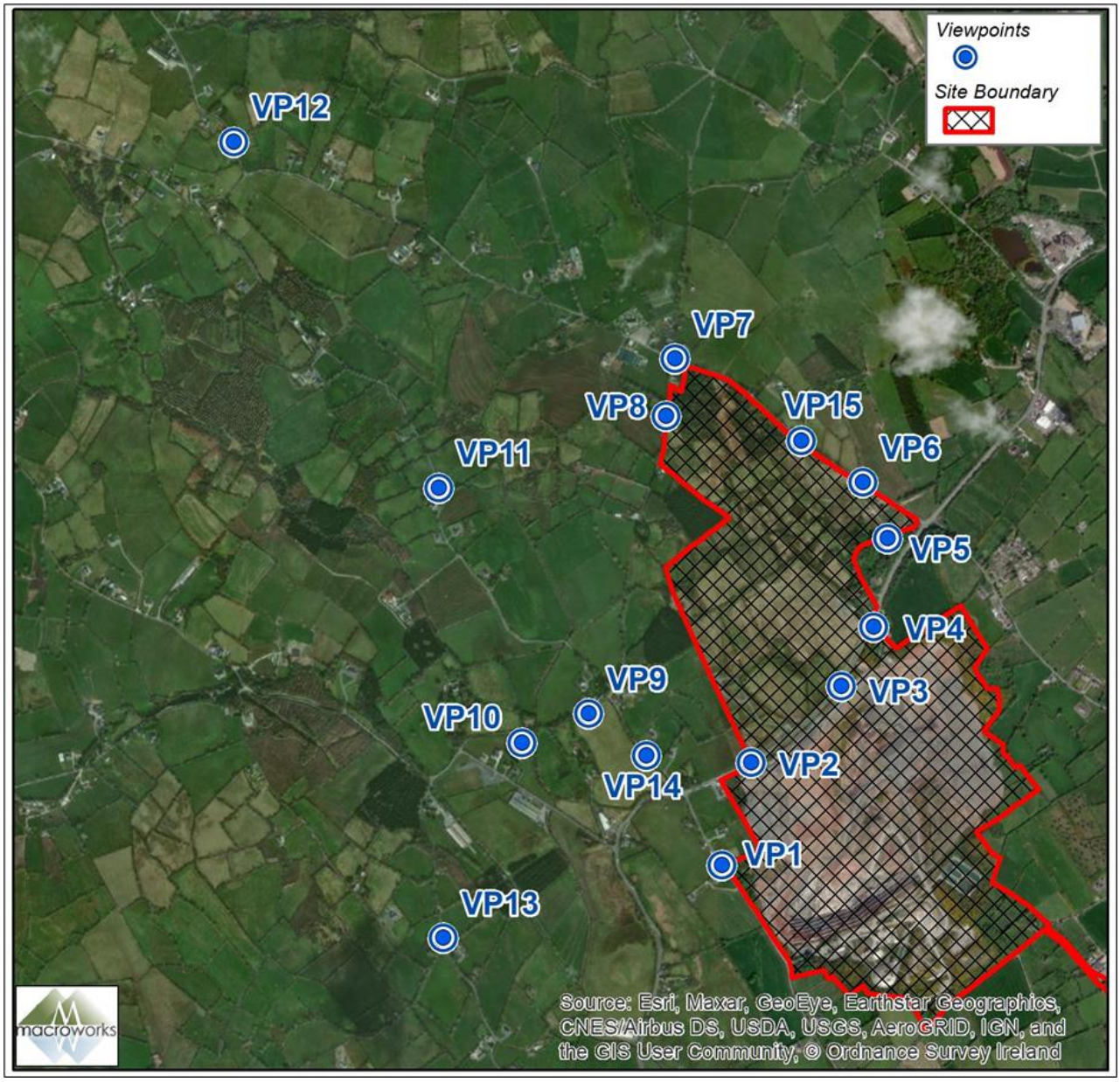

Figure 13.4: Viewpoint location map

13.4 Baseline

13.4.1 Site Context

The Application Site is located adjacent to the R179 regional road in the south of Co. Monaghan, near the border of County Cavan.

The R179 runs between the settlements of Carrickmacross in County Monaghan and Kingscourt in County Cavan. The Application Site is accessed via a local road, which runs southward from the R179 approximately mid-way between the two settlements.

The site area is ca. 140.4 ha, of which the proposed Knocknacran West Open-Cast Mine comprises ca. 54.3 ha; ca. 24.6 ha comprises the Knocknacran Processing Plant, ca. 8.6 ha will comprise the Community Sports Complex and ca. 51.5 ha will comprise the restoration area for the existing Knocknacran Open-Cast Mine. The red line area also encompasses a small area of the R179 (ca. 1.4 ha). In all, the site stretches more than 2 km, in northwest-southeast alignment.

The proposed Knocknacran West Open-Cast Mine, which is within the townlands of Knocknacran (East & West) and Drumgoosat, is a continuation of the existing deposit at Knocknacran/Drumgoosat but is separated on the surface by the R179, from the existing open-cast mine (Knocknacran) and associated processing plant at Knocknacran. The existing Knocknacran Open-Cast Mine (including mine water discharge pipeline and discharge point), which is located in the townlands of Enagh, Derrynaglah, Drummond, Derrynascobe and Clontrain, has been in operation since 1989. The adjacent Drumgoosat Mine (to the north-west) operated between 1958 and 1989. Underground mining currently (since 2006) takes place from the Drummond Mine immediately to the south.

Adjacent to the existing Knocknacran Open-Cast Mine is the first phase of the Community Sports Complex (permitted under Reg. Ref. 20/365). The second phase of which forms part of the Proposed Development site.

13.4.2 Landform and Drainage

The defining landform of the study area is that of the undulating drumlin landscape of southern County Monaghan, containing limited flat expanses (Figure 13.5 and Figure 13.6). In spite of its furrowed dips and rises, the landscape remains distinctly low-lying, ranging from less than 30 m AOD, along the fringes of some loughs, to over 150 m AOD, across drumlin tops. The drumlin range is most pronounced in the northwest and north of the study area, forming an arc-shaped curve near the periphery of the area. Land to the east and southeast is proportionally lower and less dramatic, with several relatively small loughs forming. The largest lough, Lough Fea, is located in the northeast of the study area (Figure 13.2).

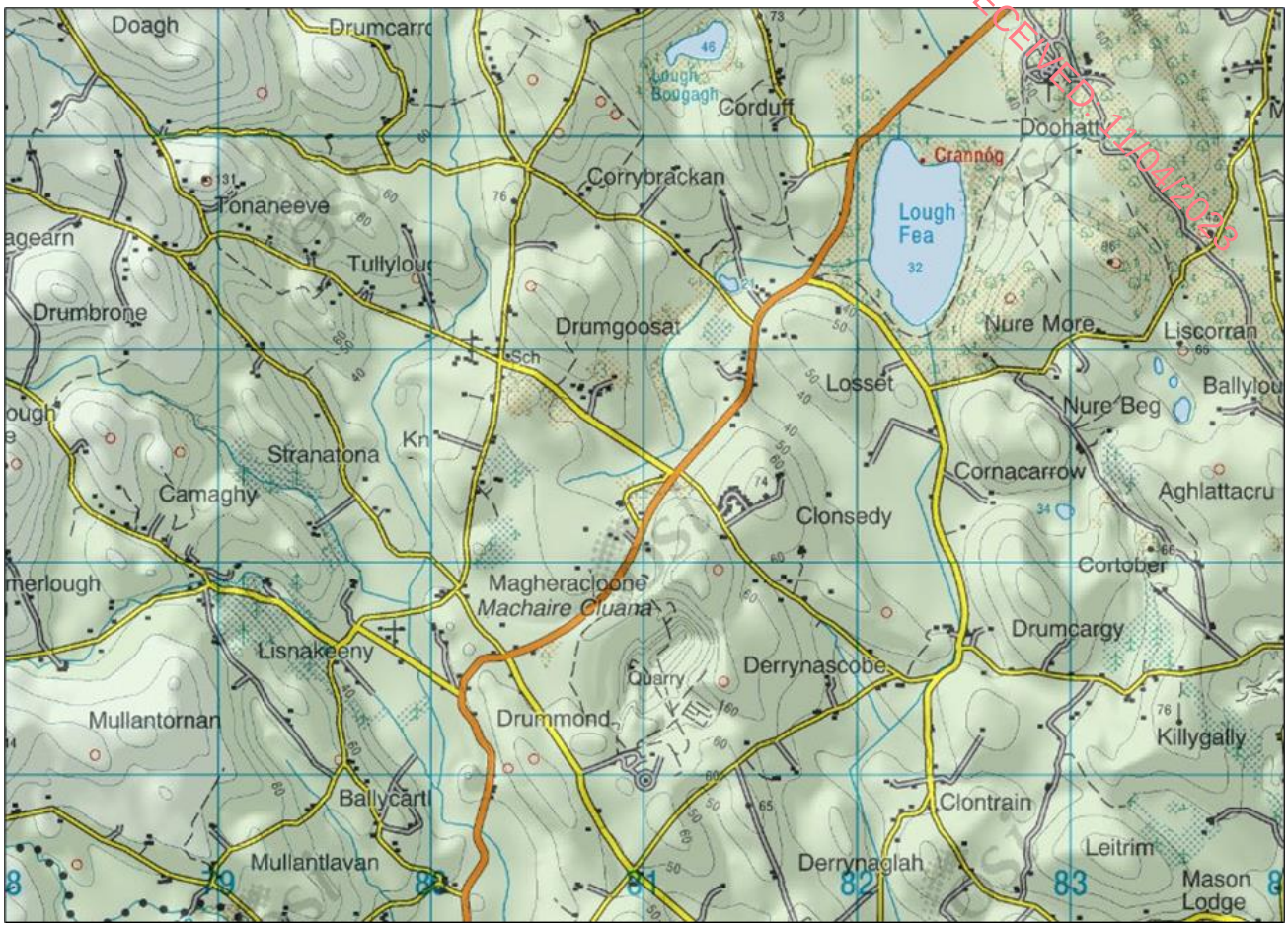

Figure 13.5: Ordnance Survey map extract showing the perpetually undulating drumlin landscape in the vicinity of the site

Figure 13.6: Drumlin landscape of study area

There are a number of small streams found throughout the study area, with the only notable river being the Lagan, which largely serves to separate Counties Cavan and Monaghan. Within the site of the Knocknacran West proposed mine, land is largely contained within 40 - 50m AOD, with one stream located towards the eastern side of this site. In the southwest corner of this site, poorly-drained, low-lying land is particularly noticeable.

13.4.3 Vegetation and Land Use

The dominant land use in the study area is agriculture (i.e., improved pasture, followed by tillage), while woodland and mining/quarrying are also evident. This pasture consists of modest sized fields defined by a geometric network of broadleaf hedgerows. In the southwest, Dún a Rí Forest Park is located. The tree storey is dominated by oak and ash, with an under storey of hazel, holly and rhododendron. In the northeast, Lough Fea, the private demesne that is understood to be the largest estate in County Monaghan, has made an imprint on land use and selected vegetation that is reflective of its demesne status. There is also a presence of manufacturing industry in the study area, including the Kingspan factory/facility in the far south, the MacFab waste/baler facility within 700 m west of the site, MDS TEREX facility within 800 m south of the site and the ADN Materials plastic reprocessing facility within 1 km northeast of the site.

North of the R179, the proposed Knocknacran West Mine site is occupied by a mixture of pastoral/grazing land (improved pasture) (Figure 13.7); poorly-drained, low-lying, unimproved pasture (Figure 13.8); wet semi-natural grassland; pockets of semi-natural woodland; remediated playing fields and associated buildings (demolished following a subsidence event, refer to Chapter 7.0) and unoccupied houses and sheds. Tall, mature vegetation is found within field boundaries of the Application Site, and its vicinity. An underground gypsum mine (Drumgoosat) previously operated at this location, though ceased operations several decades ago. This has left legacy issues visible in the landscape, with remediation having been carried out on sinkholes and areas of subsidence within the grounds of the former GAA pitches. Historical maps over the last 200 years suggest that agriculture remained the dominant land use upon the site.

South of the R179, the existing Knocknacran Mine is a large open-cast mine that produces gypsum as a raw material (Figure 13.9). The site of the next phase of the Community Sports Complex is the next stage of the development permitted under Reg. Ref.: 20/365 and a further development of this existing and operational facility. The legacy of extractive industry in the region is underlined by the presence of a limestone quarry ca. 3.5 km southeast of the site, the large 'Barleystone Quarry' ca. 7.5 km west of the site, the existing Knocknacran and Drummond Mines, Cormey clay pit ca. 1 km south of the site and the now-defunct, centuries-old lime kiln located ca. 300 m south west of the site, alongside the R179.

Figure 13.7: Improved pasture within a more elevated area of the proposed Knocknacran West Mine site, looking southeast towards the existing open-cast Knocknacran Mine

Figure 13.8: View of the southwest corner of the proposed Knocknacran West Mine site, from the R179, where poorly-drained, low-lying, unimproved pasture is evident

Figure 13.9: View of existing Knocknacran open-cast mine (behind new berm) and recently constructed Phase 1 of the Community Sports Complex as viewed from the R179

13.4.4 Transport Routes

The main transport route in the study area is the R179, a busy regional road connecting Carrickmacross to Kingscourt, and which bisects the site of the proposed Knocknacran West Mine, with the existing Knocknacran Mine (Figure 13.10). There are no rail lines or canals in the study area, but there is a rich and winding network of local roads.

Figure 13.10: The R179 where it bisects the site of the proposed Knocknacran West Mine (to the left/south of the road) with the existing Knocknacran Mine (to the north/right of the road)

13.4.5 Centres of Population and Housing

The town of Kingscourt, Co. Cavan is located ca. 7 km south of the site along the R179 and the town of Carrickmacross, Co. Monaghan is located ca. 7 km north of the site along the R179 (i.e., both outside the study area). However, the largest settlements within the study area are villages. The village of Drumgoosat is located to the northwest of the site and contains a church, national school, mushroom farm, a shop and

several residential houses. A Community Centre has been recently granted planning permission (Reg. Ref. 22/33) and will be located within the village. There are scattered residential properties in the vicinity of the site, primarily concentrated along the R179 and the local road network. This rural landscape is also dotted with farmsteads and rural dwellings that are served by the network of local roads.

13.4.6 Public Amenity and Heritage Facilities

The *Dún a Rí* Forest Park straddles the south-western periphery of the study area and offers the most sizeable and well-known public amenity in the wider community. The Coillte-owned and -managed forest park primarily serves the adjacent community of Kingscourt and south Monaghan, and forms part of what was formerly the Cabra Estate, which was originally owned by the Pratt family before eventually being acquired by the Irish Forest Service in 1959. The forest park consists of ca. 229 ha, 146 of which are managed as a commercial forest, with the remainder being predominantly broadleaved woodland accessed by the public. Within that public section of the park, there are four signposted walks between ca. 1.5 – 2 km in length – all enclosed within the woodland (i.e., not offering views out beyond the forest park). Aside from numerous sculptures scattered about the park, there is also a duck pond and walled gardens. According to ancient Gaelic legend, Cúchullain rested in these woods while fighting the armies of Queen Maeve of Connaught.

Adjacent to the forest park, and in the southern extremes of the study area, is Cabra Castle. Set in a centuries-old castle, this large 4-Star hotel is set in parkland and gardens and is a popular wedding venue. The Castle and its grounds are located more than 2 km from the site of the Proposed Development. The Magheracloone Mitchells GAA Club have a pitch ca. 1 km from the site, which was granted planning permission after the aforementioned 2018 subsidence event. However, the first phase of the GAA Community Sports Complex has been constructed within the western fringe of the site boundary (i.e., to the west of the existing Knocknacran Mine), which will house several pitches and a clubhouse, among other features (Reg. Ref.: 20/365). In addition, the aforementioned Community Centre is proposed to be located within Drumgoosat village, although planning has not yet been lodged for this development.

Elsewhere, there is a negligible degree of known public amenities within the study area. However, in terms of private heritage, Lough Fea demesne is a large, private, walled estate in the northeast of the area, while a now-defunct, centuries-old lime kiln is located ca. 300 m south-west of the site, within private agricultural land.

13.4.7 Existing Landscape Character, Value and Sensitivity

The character, value and sensitivity of the existing Site is hugely varied and inconsistent, owing to the diversity of land use and landform within it. Thus, as well as the central study area, it is deemed best to assess each of the Site's constituent areas.

Existing Landscape Character, Value and Sensitivity: Community Sports Complex Development Site

This section of the site contains the operational initial development of the Community Sports Complex and includes an all-weather playing pitch with flood lighting, a changing room and car parking area. A perimeter berm surrounds the site. There is some immature planting lining the roadside paladin fencing as well as newly

planted trees lining the access road into the Community Sports Centre. The landscape sensitivity of this area is deemed to be **Low**.

Existing Landscape Character, Value and Sensitivity: Mine Development Site

Proposed Knocknacran West Mine Site

While this site has some naturalistic and aesthetic character to parts of it, it still remains a highly modified man-made landscape with legacy issues associated with the former Drumgoosat Underground Mine which previously operated here several decades ago. It has a tight matrix of farmed fields and hedgerows, except in the area formerly occupied by the Magheracloone GAA ground. The former GAA sports fields have been levelled and restored to an open area of agricultural grassland. Overall, such landscape sensitivity is deemed to be **Medium-Low**.

Existing Knocknacran Processing Plant and Knocknacran Mine Restoration Sites

As this area is dominated by a large and deep open-cast mine, as well as a processing plant used to process gypsum from that mine, the landscape sensitivity of this area is deemed to be **Low**.

Existing Landscape Character, Value and Sensitivity: Central Study Area (within ca. 1 km of site boundary)

Across this much-modified working landscape, a rich and storied anthropocentric legacy is evident in the central study area (i.e., 1 km radius of the site). While hedgerow-bound farmland, between tillage and pasture, engenders the lion's share of this landscape character, the extractive industries have also left a clear imprint on the landscape character. Furthermore, small settlements and a light presence of manufacturing industry are also apparent within ca. 1 km of the site. Indeed, the character of Monaghan's drumlin landscape, typically interspersed with lakes, trees and woodlands, is more apparent in the outer realm of the wider study area (i.e., 2-3 km). Overall, landscape sensitivity of the central study area can be summarised as **Medium-Low**.

Summary

The Monaghan CDP identifies areas of Primary Amenity and Secondary Amenity, as well as designated scenic routes, but none of these sensitive landscape designations occur within the study area. Furthermore, there are no known NPWS designations within 2.5 km of the site.

In addition, the Site is set within an area that retains certain characteristics including:

- The adjacent existing open-cast mine (Knocknacran Mine);
- Historical sinkholes and subsidence within the Knocknacran West site;
- Tall, mature vegetation in field boundaries in the vicinity of the Proposed Development;
- The existing Community Sports Complex development;

- The local undulating topography that will reduce the impact of the proposal on the visual character of the surrounding landscape; and
- The historic precedent/influence of other extractive sites within the wider study area, which have contributed to the character and value of this landscape for generations.

On the basis of the reasons outlined above and the sensitivity descriptions outlined in Table 13.1, the sensitivity of the receiving landscape of the central study area is considered to be **Medium-Low,** but the sensitivity of the receiving landscape within the application site (both Mine Development site and Community Sports Complex site) is considered to be **Low.**

13.4.8 Sensitivity of Existing Visual Receptors

Table 13.6 presents an analysis of existing visual receptor sensitivity at Viewshed Reference Points (VRPs). Refer to Figure 13.4 for the location of the VRPs.

Table 13.6: Analysis of Visual Receptor Sensitivity at Viewshed Reference Points - Scale for each criterion

Strong association	Moderate association	Mild association	Negligible association

Values associa	VP1	VP2	VP3	VP4	VP5	VP6	VP7	VP8	VP9	VP10	VP11	VP12	VP13	VP14	VP15
Suscept															
Recogni															
Views															
Primary															
Intensit															
Viewer															
Provisio															
Sense															
Degree															
Presenc															
Sense															
Rarity															
Integrit															
Sense															
Sense															
Overall	**ML**	**L**	**L**	**L**	**ML**	**ML**	**M**	**ML**	**ML**	**M**	**M**	**M**	**M**	**ML**	**ML**

(**N** = Negligible; **L** = low sensitivity; **ML** = medium-low sensitivity **M** = medium sensitivity; **HM** = High-medium sensitivity; **H** = high sensitivity; **VH** = very high sensitivity)

13.5 Key Characteristics of the Proposed Development

Please refer to Figure 13.11, below, for the Proposed Development areas associated with this project.

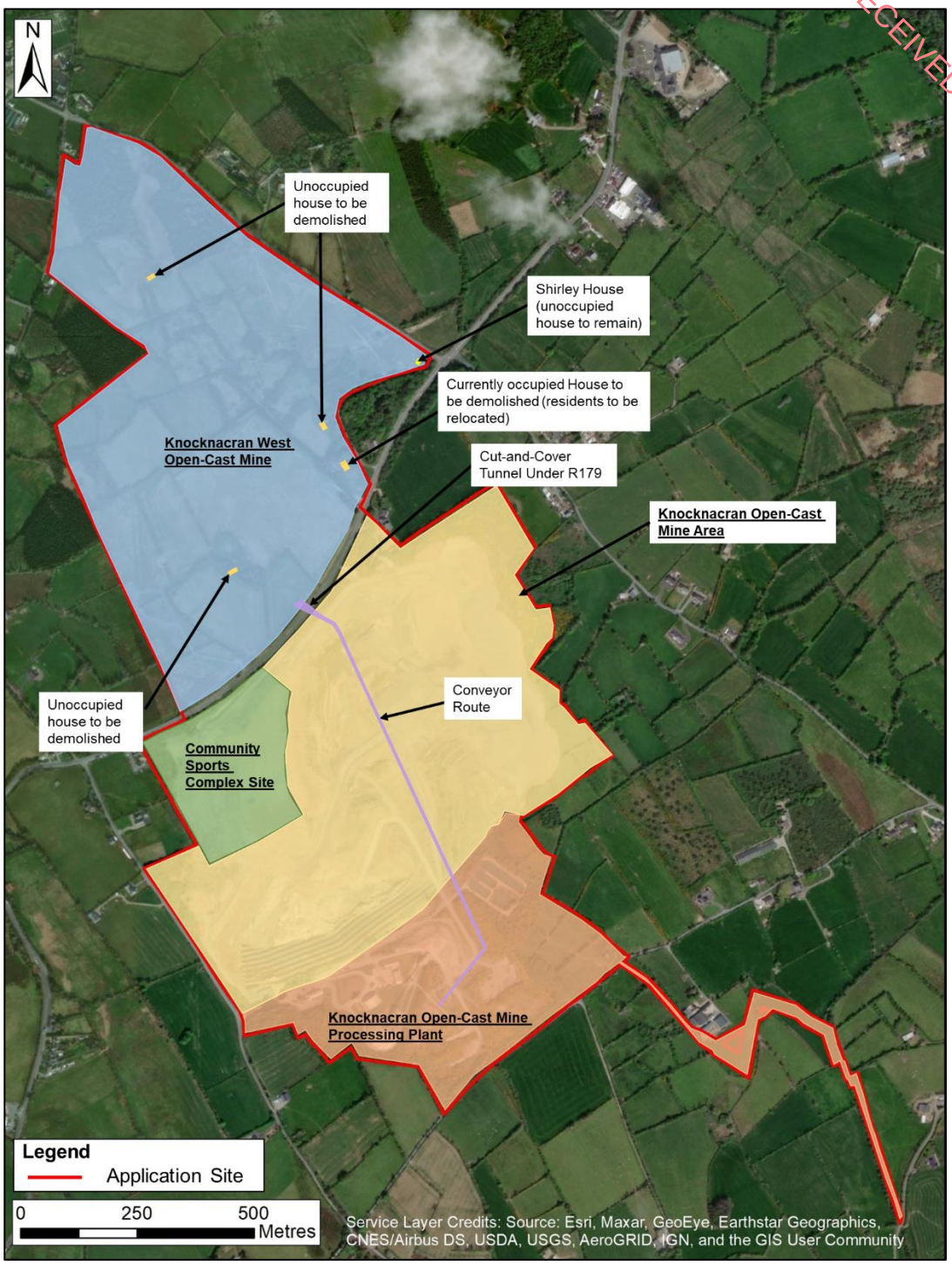

Figure 13.11: Proposed Development Areas

13.5.1 Key Characteristics: Construction Phase: Community Sports Complex

The construction phase traffic considerations for the Community Sports Complex development includes details for the following:

- The further development of a Community Sports Complex. The initial phase of this development has received planning permission (Reg. Ref.: 20/365), and the next phase will involve extending

the Community Sports Complex by the construction of two further playing pitches, one with a perimeter running track, an all-weather pitch, a new club building, including a sports hall, a handball alley, changing rooms & toilets, a viewing gallery, a part-covered grandstand, additional parking and associated siteworks; and

- During the construction of Phase 2 of the Community Sports Complex development, the pitch, changing facilities and carpark constructed during Phase 1 will be in use. Access to the Community Sports Complex will be directly from the R179 Regional Road.

13.5.2 Key Characteristics: Construction Phase: Mine Development

The construction phase for the Mine Development includes:

- The construction of screening berms and planting (including bolstering and retention of the existing perimeter hedgerow which sits in front of/is separate to the proposed planted screening berms), perimeter fencing and the demolition of one residential house and three unoccupied houses and sheds on the Knocknacran West site;

- The construction of a temporary diversion of the R179 (on the Knocknacran West site) and a Cut-and-Cover Tunnel under the R179 for the transport of gypsum to the existing processing plant at the existing Knocknacran Mine, and for the transport of overburden and interburden to the existing Knocknacran Mine for restoration purposes;

- The construction of a new vehicular access to the existing Knocknacran Mine site from the L4816; and

- During construction, a temporary construction access to the site of the proposed Knocknacran West Open-Cast Mine will be provided via an existing emergency access on the L4900, ca. 240m north-west from the junction with the R179.

13.5.3 Key Characteristics: Operational Phase: Community Sports Complex

The key characteristics for the Community Sports Complex includes details for the following:

- Operation of the Community Sports Complex.

13.5.4 Key Characteristics: Operational Phase: Mine Development

The key characteristics of the operational phase of the Mine Developmentincludes details for the following:

- The extraction of gypsum from the former (Drumgoosat) underground mine at Knocknacran West by open-cast mining methods;

- Production rates will be the same as the existing Mine Development(i.e. production rates between ca. 250,000 and 500,000 tonnes of gypsum per annum, depending on market conditions);

- The continued restoration of the existing Knocknacran Mine to modify the currently permitted restoration plan and return the existing Knocknacran Mine to near original ground levels. The restoration material will be moved within the Knocknacran West and Knocknacran mine sites

using the Cut-and-Cover Tunnel. These are internal site haul truck movements and therefore are not considered in the traffic assessment further as they do not enter the public road network and have no effect on it; and

- The continuation of use and refurbishment of the existing processing plant, water treatment facilities and associated infrastructure on the existing Knocknacran Mine site.

13.5.5 Key Characteristics: Restoration/Closure Phase: Community Sports Complex

There is no proposal to close the Community Sports Complex development and this phase is non-applicable.

13.5.6 Key Characteristics: Restoration/Closure Phase: Mine Development

It should be noted that phased restoration of the Knocknacran and Knocknacran West sites will be undertaken throughout the operational life of the development, given the nature of overburden and interburden movements. This phase considered in the assessment refers to the final restoration phase, once extraction has ceased.

During the final restoration and closure phase, the Knocknacran West site will be returned to grassland and a waterbody. The Knocknacran site will be returned to near original ground levels (i.e. grassland) and the Knocknacran Plant site will be partially dismantled whereby mine plant is removed but non-mining buildings (such as the office) may be retained by a developer for further use, subject to necessary regulatory permissions being granted in advance of closure.

However, it is presented that here that a suitable developer would be sought towards closure to utilise the non-mining plant (such as the office) for a light industrial usage into the future. This would be subject to a future developer seeking the necessary permission such as gaining planning permission for continuation of use and/or change of use from mining to a non-mining use for relevant onsite plant.

13.6 Potential Effects

The following subsections will consider two types of effects:

- 13.6.1 - Landscape Effects (within the Landscape Impact Assessment); and
- 13.6.2 - Visual Effects (within the Visual Impact Assessment).

Within the landscape and visual effects subsections, consideration will be given to both the Mine Development and the Community Sports Complex development throughout the relevant project phases (i.e. construction, operational and restoration/closure phases).

13.6.1 Potential Effects: Landscape Effects

13.6.1.1 Magnitude of Landscape Impact

Similar to the character, value and sensitivity of the landscape on the site (Section 13.4.7, above), the magnitude of landscape impacts is varied and inconsistent, owing to the diversity of proposed land uses and the pre-existing land use and landform within it. Thus, as well as the central study area, it is once more deemed best to assess each of the Proposed Development components and assess each individually.

Magnitude of Landscape Impact: Community Sports Complex Development: Construction Phase

This section of the site contains the operational initial development of the Community Sports Complex and includes an all-weather playing pitch with flood lighting, a changing room and car parking area. A perimeter berm surrounds the site.

Further construction works will take place to complete the Community Sports Complex including the main gymnasium building, which will be the largest structure associated with this aspect of the proposed Development. Construction stage works will involve the further clearance of ground for the building foundations as well as temporary fencing, stockpiling of excavated material and building materials. There will be heavy machinery and cranes as well as worker facilities and a high degree of site activity. In addition, there will be HGVs going to and from the site with building materials.

During the construction stage, the highest impacts will occur when the new structures have fully emerged in terms of their finished size, but are not yet tidily finished and workers and machinery remain on site. This will be balanced by the already completed and established Phase 1 aspects of the Community Sports Complex, which will prevent the site appearance as a complete construction zone. The duration of the Phase 2 construction works is likely to be 2 years, which equates to a 'short-term' impact according to EPA definitions.

On balance of the factors outlined above, the magnitude of landscape impact will be **Medium**, the quality of effect will be **Negative** and the duration **Short-term**.

Magnitude of Landscape Impact: Community Sports Complex Development: Operational Phase

Once Phase 2 construction is complete and it is fully operational, the Community Sports Complex will represent a high-quality design and finished built development that will be operational for general community benefit. Whilst it is a substantial scale development of buildings, sports pitches, lighting, car parking and all associated features, it is a substantially upgraded replacement of the former Magheracloone GAA facility. It will also draw attention from the Knocknacran Mine that surrounds it to the east, whilst screening the mine processing plant from the R179. On balance, the magnitude of operational stage landscape impact for this aspect of the development is considered to be **Medium,** the quality of the effect is **Positive** and the duration, **Permanent.**

Magnitude of Landscape Impact: Community Sports Complex Development: Restoration/Closure Phase

There is no proposed closure of the Community Sports Complex, and this is not considered further here.

Magnitude of Landscape Impact: Mine Development: Construction Phase

Proposed Knocknacran West Mine

This phase of the development is overall a short-term impact, although elements of the construction phase are individually temporary in duration. Key construction activities will involve the construction of screening berms around the Knocknacran West Mine site, a temporary diversion of the R179, the construction of a Cut-and-Cover Tunnel beneath the R179 and the demolition of three unoccupied houses and one currently

occupied house on the Knocknacran West site. In addition, bolstering of existing perimeter hedgerows will be undertaken around the perimeter of the Knocknacran West site, this is in addition to the construction, and planting, of the screening berms (refer to Figure 13.12).

The impacts described above will be particularly noticeable from the R179, which dissects the existing Knocknacran Mine from the proposed Knocknacran West Mine and there will be a high intensity of activity involving heavy machinery and workers. There will be temporary stockpiling of material as well as formation of permanent berms. There will be excavation of existing land cover and loss of vegetation.

Overall, the magnitude of construction stage landscape impact is considered to be **High** the quality of effect will be **Negative** and the duration **Short-term**.

Existing Knocknacran Processing Plant and Knocknacran Mine Restoration Sites

There will be little material landscape impact on the existing processing plant and Knocknacran Mine open-cast area in the site during this phase as the tunnel needs to be constructed before restoration activities are undertaken here. The mine site access will be relocated to improve sightline visibility, however, the move is ca. 20 m north of its current location. There will be some minor construction works associated with the movement of the mine site access, but this is on the context of a busy mining site where frequent HGV movements already occur.

Thus, the magnitude of landscape impact is considered to **Low-negligible**, the quality of effect only marginally negative (i.e. **Neutral – Negative**) and the duration of effects is **Short-term**.

Magnitude of Landscape Impact: Mine Development: Operational Phase

Proposed Knocknacran West Mine

A substantial element of the Proposed Development during this phase is the excavation of an open-cast mine at Knocknacran West, over an area of ca. 53.4 ha, to a maximum depth of ca. 100 m, in order to extract gypsum rock.

The larger landscape impact upon the Knocknacran West site pertains to the everyday nature and operations of the open-cast mine on the site. While this involves the extraction of overburden, interburden and gypsum over multiple phases, it also involves the progressive restoration of completed sections of the existing Knocknacran Mine as phased works are completed. In this manner, the landscape impacts of the operational phases of the proposed Knocknacran West Mine serve as an extension of the landscape operations of the existing Knocknacran Mine south of it. However, with that operational phase comes the removal - prior to reinstatement upon completion of extraction - of existing pasture, hedgerow and topsoil. Thus, the magnitude of landscape impact is considered to be **High,** of a **Negative** quality and of a **Long-term** duration.

Existing Knocknacran Processing Plant and Knocknacran Mine Restoration Sites

During the initial operational phase, there will be some refurbishment works to add in conveyors and extend the rock shed in the plant site and open-cast area once the Cut-and-Cover Tunnel is operational and

overburden/interburden material can be moved to establish an area for the overland conveyor to be constructed on.

However, the Knocknacran Mine includes existing and establishing screening including the existing Phase 1 and proposed Phase 2 Community Sports Complex and most of the elements described above will largely occur out of view within the context of the existing open cast mine.

Thus, the magnitude of landscape impact is considered to be **Low,** of a **Negative** quality and **Long-term** duration.

Magnitude of Landscape Impact: Mine Development: Restoration/Closure Phase

Following cessation of mining, the site of the Knocknacran West Mine will be restored to a lake and grassland while the Knocknacran open-cast will be restored to near original ground levels and grassland.

The Knocknacran Plant site will be partially dismantled whereby mine plant is removed. However, it is presented that here a suitable developer would be sought towards closure to utilise the non-mining plant (such as the office) for a light industrial usage into the future. This would be subject to a future developer seeking the necessary permission such as gaining planning permission for continuation of use and/or change of use from mining to a non-mining use for relevant onsite plant.

There will be some construction-like activity during the early part of the restoration phase as demolition of structures takes place, ground levels are contoured to blend with surrounding terrain and replanting / seeding occurs. Once the restoration measures have become established and the mines are restored to agricultural grassland and a lake, it is likely that there will be little evidence that large open cast mines existed on the Knocknacran and Knocknacran West sites. The restored landscape will blend seamlessly with the surrounding agricultural landscape, which also has frequent lakes in this part of the county. The character of the landscape will revert from intensive extraction to a more classical pastoral one with a greater sense of rural tranquillity.

Thus, the magnitude of landscape impact at restoration stage is considered to be **Medium,** but of a **Positive** quality and a **Permanent** duration.

Magnitude of Landscape Impact: Central Study Area (Site Boundary to 1km radius)

Whilst there will be no direct physical effects to the landform and land cover within the central study area there will be impacts on the landscape character that will be noticeable in close proximity to the site, reducing with separation distance as the proposed development becomes a proportionately small component of the overall landscape fabric. The nature, quality and duration of the impacts will be the same as described above in relation to each of the development elements ('Community Sports Complex Development' and 'Mine Development') duration construction and operational stages. However, the magnitude of those impacts will be diminished by contextual separation and visual screening. As such, the magnitude of effects is deemed to be at least one classification lower than for the direct effects experienced within and immediately adjacent to the site.

It is not considered that there will be any material impacts on landscape character beyond 1 km from the site boundary.

Summary

According to the aforementioned Environmental Protection Agency's (EPA) *EIAR Guidelines,* "long-term effects" are defined as lasting 15-60 years and "short-term effects" are defined as lasting 1-7 years. The construction phase of the proposed development is characterised as having 'short-term' effects. The operational life cycle of the proposed development, therefore, is characterised as having 'long-term' effects. The restoration/closure phase of the Mine Development will have "permanent effects" which is defined as effects lasting over 60 years.

The potential landscape impacts of proposed extraction sites (i.e., open-cast mines) tend to be more notable than potential visual impacts. Any open-cast mine has the potential to create a considerable permanent physical impact upon the landscape as a resource in its own right. The elements that make up the landscape in this instance include fields, woodland, ditches, transitional scrub and buildings.

These landscape elements will either be entirely removed, or substantially altered, as a result of the Proposed Development, and therefore notably impact the aesthetic and perceptual aspects of the landscape. Consequently, the Proposed Development is likely to impact the landscape fabric and character of the site.

13.6.1.2 Significance of Landscape Effect

With reference to the significance matrix (Table 13.3) above, the significance of landscape effects is best represented in tabular format covering the various receptor areas and development aspects (Table 13.7).

Table 13.7: Landscape Impact Summary

Landscape Receptor Area	Phase	Receptor Sensitivity	Magnitude of Landscape impact	Significance/ Quality/ Duration of Effect
Community Sports Centre Development	Construction	Low	Medium	**Slight / Negative / Short-term**
Community Sports Centre Development	Operational	Low	Medium	**Slight / Positive / Permanent**
Community Sports Centre Development	Restoration/Closure	Low	N/A	**N/A**
Mine Development: **Knocknacran West Site**	Construction	Medium-Low	High	**Moderate / Negative / Short-term**

Knocknacran Open-Cast and Plant Sites		Low	Low-negligible	**Imperceptible / Negative / Short-term**
Mine Development: **Knocknacran West Site**	Operational	Medium-Low	High	**Moderate / Negative / Long-term**
Knocknacran Open-Cast and Plant Sites		Low	Low	**Slight-imperceptible / Negative / Long-term**
Mine Development: **Knocknacran West Site**	Restoration/Closure	Medium-Low	Medium	**Moderate-slight / Positive / Permanent**
Knocknacran Open-Cast and Plant Sites		Low	Medium	**Slight / Positive / Permanent**
Central Study Area (site boundary to 1 km)	Construction	Medium-Low	Medium-low	**Moderate-Slight/ Negative / Short-term**
	Operational		High-medium	**Moderate/ Negative / Long-term**
	Restoration/Closure		Medium-low	**Moderate-slight / Positive / Permanent**

As can be seen from Table 13.7 the highest significance of effect relates to the proposed Knocknacran West Mine and this is 'Moderate'. It will be a 'long-term' negative effect but does have a strong degree of reversibility in the form of restoration to grassland and a waterbody. None of the landscape effects associated with the overall development are deemed to be significant.

13.6.2 Visual Impact Assessment

13.6.2.1 Magnitude of Visual Impacts and Significance of Visual Effects

The assessment as described below in tabular format inherently includes consideration that these are contiguous developments (Mine Development and Community Sports Complex), as they are located adjacent to each other (are present cumulatively) and will occur simultaneously. Where relevant, viewpoints and their assessment will reflect this.

Regarding the significance of effects, as noted above, embedded mitigation measures form part of the key characteristics of the Mine Development. For the Community Sports Complex, as Phase 1 has already been constructed and a landscaping plan is in place for the wider side, including the proposed further development, this too has embedded mitigation measures inherent in it (refer to Section 13.7).

Viewshed Reference Point		Viewing distance to site boundary	Direction of View
VP1	Third class road aligning western boundary of site, at Drummond townland	15 m	NE/E

Representative of:	Local Community views
Receptor Sensitivity	**Medium-Low**
Existing View	The context of this view is that of a local road adjacent to the site boundary. While this road is the main approach of vehicles entering/exiting the existing Knocknacran Mine, it also serves the community, with numerous residences located to either side of it. At this location, to the southeast, a heavily vegetated site boundary aligns the roadside embankments, preventing views into the Knocknacran Mine site from that section of the site. To the northeast, beyond a foreground pastoral field, partial views into the existing mine can be attained along with the recently completed Phase 1 of the Community Sports Complex and associated playing fields, lighting etc. Some excavated faces on the far side of the mine can be discerned, as well as a road (the R179) running to its north; each separated by a large berm running to the immediate south of the road. A band of vegetation aligns the skyline above the mine. A foreground residence, set before a thicket of broadleaf trees, can be seen to the north. Within the site of the proposed Knocknacran West Mine, multiple trees and snippets of pasture can be seen, contained within small fields with mature field boundaries. However, owing to a foreground dwelling and trees, most of the site is screened from this location. It is further noted that a recent planning permission was granted to build a house in the field in the foreground of this VP, while not yet built, it is reasonably foreseeable that this view will be further obscured by a house being located here in the future.
Construction Phase Visual Impact: 1. Community Sports Complex 2. Mine Development	1. During the construction of Phase 2 of the Community Sports Complex, bolstering of the existing hedgerow will be undertaken. In the short-term, as the additions to the Community Sports Complex are constructed, a notable increase in the scale and intensity of development emerging from the site in combination with the construction related activity will be experienced from here and the new mitigation planting will be of limited screening value. 2. During the construction phase of the Mine Development, the nearer construction works and emerging structure of the Community Sports Facility will serve to screen and diminish visual change associated with the Mine Development. Given the contiguous and overlapping nature of the two developments, the overall visual impact magnitude during construction is considered to be **Medium-low**, of a **Negative** quality and **Short-term** in duration.
Operational Phase Visual Impact: 1. Community Sports Complex	1. During the operational phase of the Community Sports Complex, and south of the R179, the Knocknacran Mine site will be partially restored in the medium term, mainly in relation to the upper levels, resulting in more agricultural pasture visible. However, proposed screen planting along the western boundary of the Community Sports Complex

2. Mine Development	will partially screen much of the Knocknacran Mine site, as well as the clubhouse, whose curved roof is partially visible above that treeline, as well as the tips of goalposts. In terms of the site of the proposed Knocknacran West Mine, this will be almost exclusively screened from this viewpoint, owing to the aforementioned dwelling and existing trees, as well as the proposed screen planting along the western boundary of the Community Sports Complex, and the permitted clubhouse. Furthermore, while the embedded mitigation measures within the Community Sports Complex will foreshorten most views in that direction, these measures would not have a marked effect on the visual amenity of the scene. 2. Views of the operational phase of the Mine Development, will be largely precluded / dominated by the nearer Community Sports Complex at this viewpoint. Given the contiguous and overlapping nature of the two developments, the overall visual impact magnitude during operations is considered to be **Moderate-slight**, of a **Positive** quality and **Long-term** in duration.
Restoration/Closure Phase Visual Impact: 1. Community Sports Complex 2. Mine Development	1. There is no proposed decommissioning of the Community Sports Complex, as such no restoration/closure phase impacts are considered here from this development. 2. South of the R179, the Knocknacran Mine site will be restored to near original ground levels, resulting in more agricultural pasture visible at this viewpoint. However, proposed screen planting along the western boundary of the Community Sports Complex will partially screen much of the Knocknacran Mine site, as well as the clubhouse, whose curved roof is partially visible above that treeline, as well as the tips of goalposts. In terms of the site of the proposed Knocknacran West Mine, this will be almost exclusively screened from this viewpoint, owing to the aforementioned dwelling and existing trees, as well as the proposed screen planting along the western boundary of the Community Sports Complex, and the permitted clubhouse. Furthermore, while the embedded mitigation measures within the Community Sports Complex will foreshorten most views in that direction, these measures would not have a marked effect on the visual amenity of the scene. The visual impact magnitude is considered to be **Low-negligible**, **Positive** and **Permanent**.
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.

Visual Effect Assessment	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Medium-low	Medium-low	**Moderate-slight / Negative / Short-term**
Operational Phase		Medium-low	**Moderate-Slight / Positive / Long-term**
Restoration/Closure Phase		Low-negligible	**Slight-imperceptible / Positive / Permanent**

Viewshed Reference Point		Viewing distance to site boundary	Direction of View
VP2	R179 at western boundary of site	10 m	NE/E/SE/S
Representative of:	Local community Views Major routes		
Receptor Sensitivity	**Low**		
Existing View	This view is from the R179, where it meets the south-western corner of the Knocknacran West mine site. The recently-constructed entrance to the Community Sport Complex is evident south of the road from this viewpoint leading towards the new changing rooms and playing pitches. A paladin security gate and fencing mark this wide entrance, behind which a new laurel hedge and tree planting is evident in the foreground. Beyond the sports complex can be seen parts of the large plant serving the existing mine site along with some of the upper faces of the mine site. Further to the northeast, a newly formed embankment precludes visibility of the lower sections of the mine, but again, the upper faces of the mine are visible. To the north of the road (i.e., the location of the proposed Knocknacran West Mine), the roadside boundary is less defined, and takes the form of an overgrown wire fence. The land inside this fenceline is low-lying, damp and rush-strewn. Within ca. 200 m, a low, gentle hill emerges, with more productive, free-draining pasture and more distinct field boundaries than in the foreground. What little visual amenity this scene has to offer is provided by the pastoral spread north of the R179.		
Construction Phase Visual Impact: 1. Community Sports Complex 2. Mine Development	1. To the south of the road, the entrance into the operational Community Sport Complex has been completed, with a berm to the north of the entrance avenue. During this phase, the existing berm and hedge will have matured slightly from baseline conditions (e.g. the berm will be grassed and planted with saplings). More formal 'street planting' of native trees will be discernible to both sides of the entrance avenue. In the short-term, as the additional buildings are constructed there will be construction related impacts from heavy machinery and material stockpiling, as well as the emergence of the unfinished Phase 2 Sports Complex buildings to the south of the existing changing rooms. 2. In addition to the points noted above regarding the Community Sports Complex site (which will also bolster screening into Knocknacran Mine from this viewpoint), during the construction phase of the Mine Development, this viewpoint will initially show the temporary impact of the construction of the temporary diversion of the R179 on the north side of the existing R179. During the later phase, a screening berm and perimeter fence will be established around the perimeter of the Knocknacran West site which will screen further constructions works from this viewpoint. The proposed works along the R179 will read as typical,		

	albeit substantial scale, roadworks and will be temporary in duration prior to the construction of the berm and installation of the palisade security fence. Given the contiguous and overlapping nature of the two developments, the overall visual impact magnitude during construction is considered to be **Medium**, of a **Negative** quality and **Short-term** in duration.
Operational Phase Visual Impact: 1. Community Sports Complex 2. Mine Development	1. To the south of the road, the entrance into the operational Community Sport Complex has been completed, with a berm to the north of the entrance avenue. During this phase, the existing berm and hedge will have matured slightly from the construction phase. The 'street planting' of native trees on both sides of the entrance avenue will have matured. The completed Community Sport Complex clubhouse and car park will be discernible from this location, though elsewhere the planting will likely screen all views of the existing plant and excavations within the Knocknacran Mine site. Overall, this represents an improvement to the visual amenity south of the road. 2. In addition to the points noted above regarding the Community Sports Complex the following is relevant for the Mine Development. North of the road, a dark green palisade fencing will run along the site boundary, inhibiting some views into the site. Behind the fence, set further within the site, a large and long, planted, screening berm will preclude all further views into the site, from this location, while also serving to channel the views of road users strictly along the road corridor. However, it is worth noting that if it were not for this proposed berm, those views within the site will be of extensive and intensive open-cast mining and that this berm will appear broadly consistent and compatible with the existing berm aligning the southern section of the R179. Given the contiguous and overlapping nature of the two developments, the overall visual impact magnitude during operations is considered to be **Medium-low** and of a **Neutral** quality on balance of the improved nature of the view to the southern side of the road from both the baseline and construction phase, but the truncation of views to the north relative to the baseline view across farmland. The duration is **Long-term**.
Restoration/Closure Phase Visual Impact: 1. Community Sports Complex 2. Mine Development	1. There is no proposed decommissioning of the Community Sports Complex, as such no restoration/closure phase impacts are considered here. 2. To the south of the road, there will be little difference between operational and restoration phases beyond maturation of mitigation planting along the berm to the east of the Community Sport Complex entrance. To the north of the road, the native woodland mitigation planting to either side of the proposed palisade fence will have matured during the operational phase to provide a verdant thicket aligning the northern side of the R179. While this will further foreshorten views north of the road, and increase a sense of enclosure, those views are limited to a woodland thicket. In addition, the native, verdant boundary treatment to the north of the road will be broadly similar to that south of the road, and will, open maturation,

	generate a source of visual amenity in their own right. The magnitude of visual impact from this location is deemed to be the same as for the operational stage (**Medium-low / Neutral**), but the duration will be **Permanent.**		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect Assessment	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Low	Medium	**Moderate-slight / Negative / Short-term**
Operational Phase		Medium	**Slight / Neutral / Long-term**
Restoration/Closure Phase		Medium	**Slight / Neutral / Long-term**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP3	R179 at proposed Cut-and-Cover Tunnel	4m	180°
Representative of:	Local community Views Major routes		
Receptor Sensitivity	**Low**		
Existing View	Located along the R179 at the location that the proposed Cut-and-Cover Tunnel will be constructed beneath, this is a marginally elevated view towards the west and southwest. On the far side (i.e., north side) of the road, an embankment aligns the site boundary to the northeast. The embankment drops away to the west, allowing for more open views into the site of the proposed Knocknacran West Mine. Downhill, land is low-lying, damp and rush-strewn, while closer to this location, a low, gentle hill emerges, with more productive, free-draining pasture and more distinct field boundaries. While the site of the proposed Knocknacran West Mine generates a modest degree of scenic amenity, mostly such inherent amenity is derived in more distant views attainable to the west and southwest, including the low verdant hills on the horizon. To the south of the road (i.e., left), a large chain-link security fence, topped with rows of barbed wire, is evident in the verge. Behind this fence is a large berm with unmanaged grass species and briar.; a berm that channels the either along the roadside, further downhill. Ca.		

	400 m to the southwest, the entrance to the operational Community Sport Complex phase 1 grounds is discernible in the middle-distance just to the left of the road alignment.
Construction Phase Visual Impact: 1. **Community Sports Complex** 2. **Mine Development**	1. On the southside of the road (i.e., left/near side), the newly planted native hedgerow will be apparent, partially screening the large berm (both Knocknacran's and the Sports Complex's berms), but not curtailing any discernible sources of visual amenity. In the distance, ca. 400 m to the southwest, the construction area within the Community Sports Complex site will largely be hidden from view by the existing berms, but the upper sections of the emerging structure of the main building will be visible above intervening berms and vegetation screening. 2. During the initial temporary diversion of the R179, the diversion and construction working area will be visible here and will present as temporary road works to passers-by. Once the diversion is removed, on the far side of the road, a dark green palisade fence outside a large berm will be aligned just within the site boundary. It will mirror the drop in elevation of the road and will read as an extension of the aforementioned pre-existing embankment to the east of this location. It will also serve as a more consistent accompaniment to the large, pre-existing berm along the southern side of this road; together, serving to channel views of road users along the road corridor. While clearly a highly engineered construction, this proposed berm will screen views into the site. While the proposed berm represents a moderate intrusion into the available vista, it is worth nothing that if it were not for it, those views within the future Knocknacran West Mine would be of extensive open-cast mining activities. In addition, the inherent scenic amenity of this setting (i.e., primarily to the west and southwest) will largely stay intact in the residual context and bolstering of the existing hedgerow which sits outside the boundary fence will further shield views. Given the contiguous and overlapping nature of the two developments, the overall visual impact magnitude during construction is considered to be **Medium-Low** of a **Negative** quality and **Short-term** in duration.
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. On the southside of the road (i.e., left/near side), the established native hedgerow will generate a degree of verdant enclosure, but curtailing any discernible sources of visual amenity. In the distance, ca. 400 m to the southwest, the upper corner of the Community Sport Complex clubhouse will be discernible, as will the street tree planting along the new entrance avenue. 2. On the far side of the road, the planting on the berm will have matured since the Construction Phase and will provide a greater degree of verdant enclosure. While the proposed berm represents a moderate intrusion into the available vista, it is worth nothing that if it were not for it, those views within the Knocknacran West site will be of extensive and intensive open-cast mining activities. In addition, the inherent scenic amenity of this setting (i.e., primarily to the west and southwest) will largely stay intact in the residual context.

	Given the contiguous and overlapping nature of the two developments, the overall visual impact magnitude during operation is considered to be **Low** of a **Neutral** quality and **Long-term** in duration**.**		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no proposed decommissioning of the Community Sports Complex, as such no restoration/closure phase impacts are considered here. 2. North of the road, the screen of native woodland planting to either side of the proposed palisade fence will mature to provide a verdant thicket aligning the northern side of the R179. While this will increase a sense of enclosure, those views would mostly entrail a palisade fence and large berm, although some more distant views of low, bucolic hills will also be curtailed. Be that as it may, the native, verdant boundary treatment to the north of the road will be broadly similar to that south of the road, and will, upon maturation, generate a source of visual amenity in their own right. To the south of the road, the native woodland mix will mature across the berm, while set behind the roadside hedgerow. While this will increase the sense of enclosure created by the treelined road corridor, it will be broadly similar to most rural roads, in that regard, within the study area, and will not inhibit any known sources of inherent visual amenity. It will also substantially screen the view of Community Sports Facility buildings On balance, the magnitude of visual impact from this location is considered to be **Low,** of a **Neutral** quality and **Permanent** in duration		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect Assessment	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Low	Medium-low	**Slight / Negative / Short-term**
Operational Phase		Low	**Slight-imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Low	**Slight-imperceptible / Neutral / Long-term**

Viewshed Reference Point	Viewing distance to site boundary	Direction of View

VP4	R179 at former entrance to former Magheracloone GAA grounds	19 m	180°
Representative of:	Local community Views Major routes		
Receptor Sensitivity	**Low**		
Existing View	Located along the R179 at the location of the former Magheracloone GAA Club and Community Centre, this is a marginally elevated view near the crest of a low hill, which this regional road crosses. Along the road alignment within the dip in the middle distance to the south can be seen the newly formed access road into (Community Sports Complex Phase 1). On the far side (i.e., north side) of the road, an embankment aligns the site boundary of the Knocknacran West site, which drops away to allow for the former entrance to the former Magheracloone GAA Club and Community Centre. The entrance avenue is gradually overgrowing with the large evergreen trees to either side of it. Beyond the roadside embankment, little can be discerned about the site of the proposed Knocknacran West Mine site. It is, overall, a view of modest visual amenity.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. The construction phase of the Community Sports Complex Phase 2 will be just visible from here as the upper level of the main club house building emerges above the planted berm that lines the left hand side of the road. Most of the construction related activity will be screened from view. 2. The temporary diversion of the R179 will be visible during the initial construction phase. At this location, the diversion will tie back into the existing R179. The diversion will later be removed and bolstering of hedgerows, perimeter fencing and re-establishment and planting of the screening berm. The magnitude of visual impact will be **Low** but **Negative** in quality and T**emporary** in duration during the Construction Phase.		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. The operational phase of the Community Sports Complex will reveal only a small section of the upper roofline of the club house building above the maturing vegetation the lines the roadside embankment. 2. In place of the site entrance, dark green palisade railing and a large berm will be aligned just within the site boundary. It will read as an extension of the aforementioned pre-existing embankment and will also serve as a more consistent accompaniment to the large, pre-existing berm along the southern side of this road, together serving to channel views of road users along this regional road. The proposed berm will screen views into the site, in which extensive and intensive open-cast mining activities will be present and although it represents notable visual change it is of a familiar form. On balance, the magnitude of visual impact from this location is considered to be **Low-negligible** of a **Neutral quality** and is **Permanent** in duration.		

Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. A rich ticket of native woodland planting to either side of the proposed palisade fence will mature to provide a verdant screen aligning the northern side of the R179. While this will increase a sense of enclosure, those views would mostly entrail a palisade fence and large berm. Upon maturation, the proposed planting will generate a source of visual amenity in their own right. On balance, the magnitude of visual impact from this location is considered to be **Low-Negligible,** of a **Neutral quality** and is **Permanent** in duration		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect Assessment	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Low	Low	**Slight / Negative / Short-term**
Operational Phase		Low-negligible	**Slight-imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Low-negligible	**Slight-imperceptible / Neutral / Permanent**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP5	Third class 'slip road' off the R179 at Knocknacran East townland	9 m	N/NW
Representative of:	Local Community Views		
Receptor Sensitivity	**Medium-Low**		

Existing View	This narrow, quiet 'slip road' is heavily cloaked in mature deciduous trees to either side of most of its short stretch, generating a palpable degree of visual amenity in its immediate setting. It also aligns the site boundary of the proposed Knocknacran West Mine, and is served by a vehicular entrance from it, allowing for partial visibility of the site; the only such clearing of vegetation along it (where it aligns the site boundary). Behind a tall, mesh-like security gate and chain-link fencing to either site, an undulating field of overgrown/ rewilding grassland is evident, with tall poplar trees visible in the distance. While the view through/beyond the foreground gate and fence is appealing, it arrives so, expectantly, in the context of an otherwise veritable 'tunnel' of trees through which this short road passes.
Construction Phase Visual Impact: 1. **Community Sports Complex** 2. **Mine Development**	1. The construction phase of the Community Sports Complex is not visible at this viewpoint. 2. During the construction phase of the Mine Development, a 2 m high screening berm will be provided at this location and will be planted during this phase to shield views into Knocknacran West Mine. As this is a site access gate location, bolstering of the existing hedgerow will not be required. The temporary diversion of the R179 and the Cut-and-Cover tunnel work areas will not be visible from this location, regardless of the screening berm. On balance, the magnitude of visual impact from this location is considered to be **Low**, of a **Negative** quality and **Short-term** duration.
Operational Phase Visual Impact: 1. **Community Sports Complex** 2. **Mine Development**	1. The operational phase of the Community Sports Complex is not visible at this viewpoint. 2. During the operational phase of the Mine Development, the 2 m high berm will run in a broader parallel alignment to the fenceline and road. This berm will preclude most views beyond it, although the tips of the aforementioned poplars will be discernible above it. While the proposed berm will screen out aesthetic views beyond, as previously noted, the main source of visual amenity along this setting is that of the veritable 'tree tunnel' the road cuts through. In addition, such gateway views tend to be fleeting and temporary in their nature. A rich thicket of native woodland will cover the aforementioned berm, thereby screening all views beyond. On balance, the magnitude of visual impact from this location is considered to be **Low-negligible**, of a **Neutral** quality and **Long-term** duration.
Restoration/Closure Phase Visual Impact:	1. There is no restoration/closure phase for the Community Sports Complex. 2. Similar to the operational phase of the Mine Development, a rich thicket of native woodland will cover the 2 m high berm, thereby screening all views beyond. This will have fully matured during this phase. On balance, the magnitude of visual impact from this location is considered to remain **Low-Negligible** of a **Neutral** quality and **Permanent** duration**.**

1. **Community Sports Complex** 2. **Mine Development**			
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	Significance of Visual Effect
Construction Phase	Medium-low	Low	**Slight / Negative / Short-term**
Operational Phase		Low-negligible	**Slight-imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Low-negligible	**Slight-imperceptible / Neutral / Permanent**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP6	Third class road aligning north-eastern boundary of site at Drumgoosat Townland	10 m	NW/W/SW
Representative of:	Local Community Views		
Receptor Sensitivity	**Medium-Low**		
Existing View	The context of this view is that of a third-class road aligning the north-eastern boundary of the Knocknacran West site. Although this road connects Drumgoosat village with the R179, there is a paucity of residents along it. Across the road, the site of the proposed Knocknacran West Mine is visible. While multiple roadside poplars align the site boundary, outside a chain-link security fence, views between these trees reveal the rough, unmanaged pasture and transitional scrub associated with this section of the site. A large vehicular entrance with wide, chain link security fence is apparent in the foreground, while the density of vegetation within the site, and southeast of it, precludes more distant views.		
Construction Phase Visual Impact:	1. The construction phase of the Community Sports Complex is not visible at this viewpoint.		

1. Community Sports Complex **2. Mine Development**	2. During the construction phase of the Mine Development, and behind a large, iron mesh gate and dark green palisade fence, a 2 m high berm will run in parallel alignment to the fence line and road. This berm will be planted during this phase and will preclude some views into the site but owing to the comparatively elevated position of this viewpoint, it will not preclude all such view views. Further within the site, multiple trees and shrubs will have been removed, although the distant skyline remains chiefly vegetated. Overall, the magnitude of visual impact from this location is considered to be **Medium-Low,** of a **Negative** quality and **Short-term** duration**.**		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. The operational phase of the Community Sports Complex is not visible at this viewpoint. 2. Within the site, the upper lip of a quarried face will be discerned, although it will be unlikely to be noticed by a casual observer. Views along this road will become more 'channelled' along the tarmac, as a result of the proposed vegetated berm. While the Proposed Development will be a readily noticeable element within this scene, it is unlikely to have a marked effect on its visual amenity. The magnitude of visual impact from this location is deemed to be **Low-negligible** of a **Neutral** quality and **Long-term** duration**.**		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is restoration/closure phase for the Community Sports Complex. 2. Once the vegetation has become fully established along the roadside berm and there is only a glimpse into the restored quarry there will be little bearing on visual amenity. The magnitude of visual impact from this location is deemed to remain **Low-Negligible,** of a **Neutral** quality and **Permanent** duration		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	Significance of Visual Effect
Construction Phase	Medium-low	Medium-low	**Moderate-slight / Negative / Short-term**
Operational Phase		Low-negligible	**Slight-imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Low-negligible	**Slight-imperceptible / Neutral / Permanent**

Viewshed Reference Point		Viewing distance to site boundary	Direction of View
VP7	Crossroads at Drumgoosat village	46 m	S/SE
Representative of:	Centres of Population Local Community Views		
Receptor Sensitivity	**Medium**		
Existing View	This location is adjacent to the crossroads at the small village of Drumgoosat. Aside from several residences, a national school, a church (and its attendant graveyard), a shop and a mushroom farm (i.e., polytunnels) are also present in the village. In the foreground of this view, the roads that align the eastern and north-western boundaries of the proposed Knocknacran West Mine site meet. However, the, site boundary is set back ca. 46 m from this location. In addition, behind the small foreground field and its adjacent dwelling, landform lifts within the site, while also being heavily cloaked in mature woodland, which lies between this village and the proposed pit excavation.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Owing primarily to the aforementioned wooded low hill, in combination with existing vegetation, no aspect of the Community Sports Complex will be visible from this location. 2. Owing primarily to the aforementioned wooded low hill, in combination with existing vegetation, no aspect of the Mine Development will be visible from this location. Thus, the magnitude of visual impact from this location is, therefore, **Negligible**.		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Owing primarily to the aforementioned wooded low hill, in combination with existing vegetation, no aspect of the Community Sports Complex will be visible from this location. 2. Owing primarily to the aforementioned wooded low hill, in combination with existing vegetation, no aspect of the Mine Development will be visible from this location. Thus, the magnitude of visual impact from this location is, therefore, **Negligible**.		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Owing primarily to the aforementioned wooded low hill, in combination with existing vegetation, no aspect of the Community Sports Complex will be visible from this location. 2. Owing primarily to the aforementioned wooded low hill, in combination with existing vegetation, no aspect of the Mine Development will be visible from this location. Thus, the magnitude of visual impact from this location is, therefore, **Negligible**.		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**

Construction Phase	Medium	Negligible	**Imperceptible / Neutral / Short-term**
Operational Phase		Negligible	**Imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Negligible	**Imperceptible / Neutral / Permanent**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP8	Third class road aligning north-western boundary of site at Knocknacran East Townland	8 m	E/SE
Representative of:	Local community views		
Receptor Sensitivity	**Medium-Low**		
Existing View	The context of this view is from a quiet, third class road aligning the north-western boundary of the proposed Knocknacran West Mine. Although sedate and seemingly remote, this location is less than 200 m south of the crossroads at Drumgoosat village. In this view, a mid-height roadside hedgerow precludes most views into the site, except where allowed by an agricultural gateway. Within the site, land gently lifts to accommodate mature woodland to the east, as well as a small pastoral field to the west.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. The construction phase of the Community Sports Complex is not visible at this viewpoint. 2. During the construction phase of the Mine Development, security fencing and the access gate will be upgraded from existing conditions in the foreground of this scene. Perimeter hedging will be bolstered, although no berm is proposed at this boundary (as the future open-cast and berm are located further within the site and not visible at this viewpoint). On balance, the magnitude of visual impact from this location is, therefore, **Low,** of a **Negative** quality and **Short-term** duration.		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. The operational phase of the Community Sports Complex is not visible at this viewpoint. 2. A dark green, security fence and palisade fencing will be evident in the foreground of this scene. Owing to the height of both of these elements, as well as the dense iron mesh of the large gate, a sense of enclosure is likely to be increased at this location. Indeed, the typology of such boundary treatment results in what had been a semi-agricultural vista being transported to one that infers an industrial and/or extractive land use within. The proposed Knocknacran West Mine will		

	be surrounded by a berm that would be barely discernible within the available vista and would not detract from the visual amenity of the scene. On balance, the magnitude of visual impact from this location is, therefore, **Low-negligible**, of a **Negative** quality and **Long-term** duration.		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. During the restoration/closure phase of the Mine Development, the only discernible difference in this scene will be the native woodland planting proposed inside the boundary fence. As a result, views along this road are likely to become more 'channelled' along the road corridor, as they are for large stretch of this narrow, local road. On balance, the magnitude of visual impact from this location is, therefore, **Low-negligible** of a **Negative** quality and **Short-term** duration.		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	Significance of Visual Effect
Construction Phase	Medium-low	Low	**Slight / Negative / Short-term**
Operational Phase		Low-negligible	**Slight-imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Low-negligible	**Slight-imperceptible / Neutral / Permanent**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP9	Third class road near small settlement of Magheracloone	411 m	NE/E/SE
Representative of:	Local community views		
Receptor Sensitivity	**Medium-Low**		
Existing View	The small settlement of Magheracloone constitutes less than five dwellings, near the junctions of three quiet local roads, ca. 300-400 m west of the western boundary of the proposed Knocknacran West Mine. As this local road undulates up from the road junctions, a		

	cut/maintained roadside hedgerow allows for views in the direction of the site. Aside from some buildings within ca. 100 m of this location, the most striking feature of this view is the dense web of mature vegetation surrounding fields and buildings, permeating a particularly high degree of screening, as well as visual absorption. At one location between mature trees upon the skyline, the earth-coloured tones of the existing Knocknacran mine can be discerned, at a distance of over 1 km. No views of the proposed Knocknacran West site can be availed of from this location.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. The construction phase of the Community Sports Complex is not visible at this viewpoint. 2. The construction phase of the Mine Development is not visible at this viewpoint. Thus, the visual impact will be **Negligible**.		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. The operational phase of the Community Sports Complex is not visible at this viewpoint. 2. The operational phase of the Mine Development is not visible at this viewpoint. Thus, the visual impact will be **Negligible**.		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. The restoration/closure phase of the Mine Development is not visible at this viewpoint Thus, the residual visual impact will be **Negligible**.		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Medium-low	Negligible	**Imperceptible / Neutral / Short-term**
Operational Phase		Negligible	**Imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Negligible	**Imperceptible / Neutral / Permanent**

Viewshed Reference Point		Viewing distance to site boundary	Direction of View
VP10	Church of Ireland church of St. Molua, Camaghy townland	644 m	NE/E/SE
Representative of:	Local community views Amenity and heritage features		
Receptor Sensitivity	**Medium**		
Existing View	The Church of Ireland church of St. Molua is located on a low knoll that offers marginally elevated, short-medium distance views, where vegetation allows. This is because there are a number of trees aligning much of the graveyard, which marks the site of the medieval parish church of Magheracloone, as well as dense network of rich, tree-lined field boundaries in the vicinity. While the church is still regularly used for worship, the building and graveyard hold valued heritage for the area.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Although located ca. 700 m from this churchyard, owing to the aforementioned intervening mature hedgerows, as well as landform, no aspect of the construction phase of the Community Sports Complex will be visible form this location. 2. Although located less than 700 m from this churchyard, owing to the aforementioned intervening mature hedgerows, as well as landform, no aspect of the construction phase of the Mine Development will be visible from this location. Thus, the residual visual impact will be **Negligible**.		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Although located ca. 700 m from this churchyard, owing to the aforementioned intervening mature hedgerows, as well as landform, no aspect of the operational phase of the Community Sports Complex will be visible form this location. 2. Although located less than 700 m from this churchyard, owing to the aforementioned intervening mature hedgerows, as well as landform, no aspect of the operational Mine Development will be visible from this location. Thus, the residual visual impact will be **Negligible**.		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. Although located less than 700 m from this churchyard, owing to the aforementioned intervening mature hedgerows, as well as landform, no aspect of the Proposed Development will be visible from this location. Thus, the residual visual impact will be **Negligible**.		

Summary	Based on the assessment criteria and matrices outlined at Sections 13.4 and 13.5, the significance of residual visual impact is summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Medium	Negligible	**Imperceptible / Neutral / Short-term**
Operational Phase		Negligible	**Imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Negligible	**Imperceptible / Neutral / Permanent**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP11	Elevated third class road at Stranatona townland	716m	E/SE
Representative of:	Local community views		
Receptor Sensitivity	**Medium**		
Existing View	This location is from a low hill northwest of the site, where pastoral farming dominates across the tree-splattered fields of these South Monaghan drumlins. Roadside hedgerows across these drumlins tend to be thick and relatively tall, resulting in limited open views in the direction of the site, despite their elevated origin. In this instance, through a roadside field entrance, rolling pastoral fields undulate towards the village of Drumgoosat, ca. 800 m northeast of this road. The inherent richness of the lush, mature hedgerows across these drumlins is on show, which give rise a considerable degree of both screening and, in the distance, visual absorption.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There will be no discernible difference in the visual amenity of this setting, as a result of the construction phase for the Community Sports Complex. 2. There will be no discernible difference in the visual amenity of this setting, as a result of the construction phase for the Mine Development. Thus, the visual impact will be **Negligible**.		
Operational Phase Visual Impact:	1. There will be no discernible difference in the visual amenity of this setting, as a result of the operational phase for the Community Sports Complex.		

1. Community Sports Complex **2. Mine Development**	2. There will be no discernible difference in the visual amenity of this setting, as a result of the restoration/closure phase for the Mine Development. Thus, the visual impact will be **Negligible**.		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. There will be no discernible difference in the visual amenity of this setting, as a result of the restoration/closure phase for the Mine Development. Thus, the visual impact will be **Negligible**.		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Medium	Negligible	**Imperceptible / Neutral / Short-term**
Operational Phase		Negligible	**Imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Negligible	**Imperceptible / Neutral / Permanent**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP12	Elevated third class road at Tonaneeve townland	1.6 km	SE
Representative of:	Local community views		
Receptor Sensitivity	**Medium**		
Existing View	This location is from a low hill ca. 1.6 km to the northwest of the site, where pastoral farming dominates across the tree-splattered fields of these South Monaghan drumlins. Roadside hedgerows across these drumlins tend to be thick and relatively tall, resulting in limited open views in the direction of the site, despite their elevated origin. In this instance, above a low-cut roadside hedgerow, lower land can be spied, including the existing Knocknacran Mine, where sizeable plant and the earth-coloured faces (benches) can be discerned.		

Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. It is not expected that any of the proposed Community Sports Complex will materially affect the visual impact from this location during the construction phase. This is primarily owing to the elevated nature of this view, along with the distance to the site and the scale of intervening vegetation screening the Proposed Development. 2. Similar to the proposed Community Sports Complex rationale presented above, the construction phase of the Mine Development will not materially affect the visual impact at this location due to the elevated nature of the view, distance to the site and intervening vegetation screening. The magnitude of visual impact from this location is, therefore, **Negligible/ Neutral**.		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. It is not expected that any of the proposed Community Sports Complex will materially affect the visual impact from this location during the operational phase. This is primarily owing to the elevated nature of this view, along with the distance to the site and the scale of intervening vegetation screening the Proposed Development. 2. The site of the former Knocknacran Mine will be partially restored to pre-existing ground levels/contours, and covered in agricultural pasture, while some of the excavations within the proposed Knocknacran West site will also be discernible. However, in a setting in which open cast mining has been present for at least decades, these changes are likely to marginally enhance the visual amenity of the scene. In addition, the main sources of inherent visual amenity in this view will remain unaffected by the Proposed Development. Mine faces (benches) at the proposed Knocknacran West site will be considerably less discernible from this location, while the northern entrance into the proposed tunnel beneath the regional road is unlikely to be visible any longer. The magnitude of visual impact from this location will be **Low-negligible/positive**.		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. The site of the former Knocknacran Mine will be near-fully restored to pre-existing ground levels/contours, and covered in agricultural pasture. No other aspects of the Mine Development are likely to be visible. The magnitude of visual impact from this location remains **Low-negligible /positive**.		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	Significance of Visual Effect
Construction Phase	Medium	Negligible	**Imperceptible / Neutral / Short-term**
Operational Phase		Low-negligible	**Imperceptible / Positive / Long-term**
Restoration/Closure Phase		Low-negligible	**Imperceptible / Positive / Permanent**

Viewshed Reference Point		Viewing distance to site boundary	Direction of View
VP13	Elevated third class road at Ballycartlan townland	937 m	E/NE
Representative of:	Local community views		
Receptor Sensitivity	**Medium**		
Existing View	This location is from a low hill almost 1 km to the west/southwest of the site, where pastoral farming dominates across the tree-splattered fields of these South Monaghan drumlins. Roadside hedgerows across these drumlins tend to be thick and relatively tall, resulting in limited open views in the direction of the site, despite their elevated origin. In this instance, above a busy foreground of Leylandii and native hedges, lower land can be spied, including the existing Knocknacran Mine. The earth-coloured faces (benches) can be easily detected among an otherwise sea of green, although the distant skyline remains vegetated.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. It is not expected that any of the proposed Community Sports Complex will materially affect the visual impact from this location during the construction phase. This is primarily owing to the elevated nature of this view, along with the distance to the site and the scale of intervening vegetation screening the Proposed Development. 2. It is not expected that any of the proposed construction phase for the Mine Development will materially affect the visual impact from this location. This is primarily owing to the elevated nature of this view, along with the distance to the site and the scale of intervening vegetation screening the Proposed Development. The magnitude of visual impact from this location is, therefore, **Negligible/Neutral**.		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. It is not expected that any of the proposed Community Sports Complex will materially affect the visual impact from this location during the operational phase. This is primarily owing to the elevated nature of this view, along with the distance to the site and the scale of intervening vegetation screening the Proposed Development. 2. The site of the former Knocknacran Mine will be restored to pre-existing ground levels/contours during the operational life of the proposed Mine Development. However, the lower levels of this original mine will still be discernible from this elevated location. The proposed Knocknacran West Open-Cast Mine will be largely screened from this viewpoint, owing to foreground and other intervening vegetation. It is not expected that any of the proposed comprehensive embedded mitigation measures will materially affect the visual impact of the Mine Development from this location. This is primarily owing to the elevated nature of this view, along with the distance to the site and the scale of intervening vegetation screening the proposed		

	development. The eastern faces (benches) of the proposed Knocknacran West site will be more visible in the latter operational phases. On balance of the factors outlined above, the magnitude of visual impact from this location is, therefore, **Low-negligible /Neutral**.		
Restoration/Closure Phase **Visual Impact:** **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. The site of the former Knocknacran Mine will be fully restored to pre-existing ground levels/contours, and coated with agricultural pasture. The magnitude of visual impact from this location remains **Low-negligible / Neutral**		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	Significance of Visual Effect
Construction Phase	Medium	Negligible	**Imperceptible / Neutral / Short-term**
Operational Phase		Low-negligible	**Slight-imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Low-negligible	**Slight-imperceptible / Neutral / Permanent**

Viewshed Reference Point		**Viewing distance to site boundary**	**Direction of View**
VP14	Local road connecting Magheracloone with R179	301 m	E/NE
Representative of:	Local community views		
Receptor Sensitivity	**Medium-Low**		
Existing View	This location is from along a short, quiet local road connecting the R179 with the petite settlement of Magheracloone. There are three residences located along this road, all on its eastern side (i.e., between the road and the Knocknacran West site) and all with intervening, albeit small, fields between each residence. At this location, and for most of the way along this road, the western site boundary is uphill and 2-3 small, pastoral fields away, with mature trees and bushes throughout the intervening field boundaries.		

Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Owing to the aforementioned vegetation and landform, no views of the Community Sports Complex will be attainable from this location. 2. Owing to the aforementioned vegetation and landform, no views of the Mine Development will be attainable from this location. Thus, the magnitude of visual impact from this location **Negligible**		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Owing to the aforementioned vegetation and landform, no views of the Community Sports Complex will be attainable from this location. 2. Owing to the aforementioned vegetation and landform, no views of the Mine Development will be attainable from this location. Thus, the magnitude of visual impact from this location **Negligible**		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. Owing to the aforementioned vegetation and landform, no views of the Mine Development will be attainable from this location. Thus, the magnitude of visual impact from this location **Negligible**		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	**Significance of Visual Effect**
Construction Phase	Medium-low	Negligible	**Imperceptible / Neutral / Short-term**
Operational Phase		Negligible	**Imperceptible / Neutral / Long-term**
Restoration/Closure Phase		Negligible	**Imperceptible / Neutral / Permanent**

Viewshed Reference Point		Viewing distance to site boundary	Direction of View
VP15	Third class road aligning north-eastern boundary of site near Drumgoosat	13 m	NW/W/SW

Representative of:	Local community views		
Receptor Sensitivity	**Medium-Low**		
Existing View	The context of this view is that of a third-class road aligning the north-eastern boundary of the Knocknacran West site, and is located ca. 600 m southeast of Drumgoosat village. Although this road connects Drumgoosat village with the R179, there is a paucity of residents along it. Across the road, the site boundary of the proposed Knocknacran West mine is visible, in the form of an uneven, mid-height roadside hedgerow, with some sporadic tall trees growing from it. Within the site, most of what can be observed is in the form of tree tops of what appears to be a thicket of deciduous trees, as well as a utility pole with 38kV overhead power line.		
Construction Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Owing to the aforementioned vegetation and landform, no views of the Community Sports Complex will be attainable from this location. 2. The only discernible difference in this view will be the upper rim of the proposed dark green palisade fence within the site which will be put up during the construction phase and which will be partially visible above the roadside hedgerow. What will be visible of this fence line will not detract from the visual amenity of the scene to only a very minor degree. Consequently, the magnitude of visual impact from this location is, therefore, **Low-negligible / Neutral-Negative.**		
Operational Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. Owing to the aforementioned vegetation and landform, no views of the Community Sports Complex will be attainable from this location. 2. For the Mine Development, upon maturation, the proposed native tree planting inside the proposed palisade fence will mature to provide a clear and immediate backdrop to the fence line. Consequently, this dark green fencing will become harder to discern from the roadside context. As a result, the magnitude of visual impact from this location is **Negligible / Neutral.**		
Restoration/Closure Phase Visual Impact: **1. Community Sports Complex** **2. Mine Development**	1. There is no restoration/closure phase for the Community Sports Complex. 2. For the Mine Development, upon maturation, the proposed native tree planting inside the proposed palisade fence will mature to provide a clear and immediate backdrop to the fence line. Consequently, this dark green fencing will become harder to discern from the roadside context. As a result, the magnitude of visual impact from this location is **Negligible/ Neutral.**		
Summary	Based on the assessment criteria and matrices outlined at Sections 13.3, the significance of the visual effects are summarised below.		
Visual Effect	Visual Receptor Sensitivity	Visual Impact Magnitude	Significance of Visual Effect
Construction Phase	Medium-low	Low-negligible	**Slight imperceptible / Neutral-Negative / Short-term**
Operational Phase		Negligible	**Imperceptible / Neutral / Long-term**

Restoration/Closure Phase		Negligible	**Imperceptible / Neutral / Permanent**

13.6.3 Summary of Landscape and Visual Effects

13.6.3.1 Landscape Effects

Landscape Sensitivity

On the basis of the reasons outlined in Section 13.4.7, the sensitivity of the receiving landscape of the site and its immediate context was considered to be **Low** due to the presence of the existing mine. Beyond the immediate site context, the landscape within the more typically rural study area is deemed to be **Medium-low**.

Landscape Impacts

The potential landscape impacts of proposed open-cast mines (and quarries) tend to be more notable than potential visual impacts due to their sub-surface nature. Any open-cast mine has the potential to create a considerable permanent physical impact upon the landscape as a resource in its own right. The elements that make up the landscape in this instance include fields, woodland, ditches, transitional scrub and buildings. Some of these landscape elements will either be entirely removed, or substantially altered, as a result of the Proposed Development, and therefore notably impact the aesthetic and perceptual aspects of the landscape. Phase 1 of the Community Sports Complex has already been completed and includes the sports pitches and changing rooms with the Phase 2 clubhouse subject of this application. Consequently, the Proposed Development will considerably alter the landscape fabric and character of the site, but in different ways and in general accordance with existing characteristics.

In this broad, varied and complex scenario, the assessment of landscape impacts is broken-down by site area / development type. The highest impact magnitude of 'High / Negative' occurs in respect of the proposed Knocknacran West Mine, which will occur within an existing agricultural setting. At the other end of the spectrum, the restoration works in respect of the existing Knocknacran Mine are deemed to result in 'Medium /Positive' effects. After the construction Phase the permanent presence of the proposed Community Sports Complex facility is deemed to be Medium due to the intensity and scale of that development aspect, but due to the high quality design / finish and its community benefit the effect will be a 'Positive' one. Taken as a whole, the significance of impact of the Proposed Development on the landscape character of the landscape surrounding the site within ca. 1 km (the central study area) is deemed to be no higher than Moderate / Negative during the Operational Phase and will revert to Moderate-slight / Positive once the Mine Development is restored to agricultural grassland and a lake with the Community Sports Complex a permanent and beneficial feature.

13.6.3.2 Visual Effects

In terms of visual impacts, it is worth remembering that the Proposed Development in its entirety is not one solely of a proposed mine extension, but has multiple other elements to it that directly influence the resulting visual impact assessment. These include the construction of a Cut-and-Cover Tunnel under the R179; the proposed phased restoration of the existing Knocknacran Mine site; the demolition of a house and a number of unoccupied houses and sheds, as well as the further development of a Community Sports Complex.

It is noted that any Mine Developmenthas the potential to be a conspicuous and severe element in any landscape, which some people can perceive as devaluing, degrading or scarring that landscape. On balance, such perspectives are influenced by the precedence, scale, shape and duration of the proposal, and how it may complement or contrast with its immediate surroundings, including its impact on local/neighbouring properties and/or roads. In the case of the proposed Mine Development, the scale of development - including its gradual and eventual restoration - is likely to make it more visible than smaller extraction developments; all things being equal.

In addition, the Mine Development is split east-west by a busy regional road, as well as the site being located in a lowland setting where there are hills within the western margins of the study area with at least theoretical visibility of the development, such is the gain in terrain. However, these factors do not take into account the scale of inherent screening about the study area (offsite), mostly in the form of roadside embankments and tree-laden hedgerows, as well as a similarly made-up labyrinth of field boundaries (in the numerous small or mid-sized fields about the study area) and the clumps or thickets of woodland present. Furthermore, owing to the embedded mitigation measures that are integral to the proposal (e.g., 2-4 m high berms surrounding the proposed Knocknacran West Mine, as well as vast swathes of native hedge and tree planting), there is relatively little opportunity for open views into the site. This was comprehensively demonstrated above in Section 13.6.2 across 15 distinct viewpoints, captured from a range of different distances, angles and contexts. Overall, the range of potential residual visible impacts that are likely to be generated as a result of the Proposed Development was notably modest.

The highest significance of visual impacts occur during the construction stage is at VP1 and VP2 (Moderate-slight / Negative) where there will be views into the Community Sports Complex while the main Phase 2 clubhouse is constructed and mitigation screen planting is still establishing. The temporary road diversion of the R179 around the Cut-and-Cover Tunnel will also negatively influence the views at VP2 and VP3 prior to its removal and replacement with the permanent screen berm along the north western side of the road.

During the operational phase the planted perimeter berm will be in place with vegetation established leaving few opportunities to see into the propose Mine Development, indeed most of the visual impacts relates to gradual containment of views by vegetation and tend not to exceed Slight-imperceptible / Neutral. The only exceptions are VP1 where the current view into the Knocknacran mine and partially completed Community Sports Complex will be replaced with a partial view of the completed Sports Complex clubhouse and a consolidated hedgerow that screens the mine pit and sports fields. The significance of impact is Moderate-slight in this case, bit of a Positive quality. Also at VP2, the operation stage impact is deemed Slight / Neutral on balance of the fact that the open view across the Knocknacran West site has been truncated by the vegetated berm, but that is at least screening the operational pit from view.

This is a distinctively low range of likely visual effect for most proposed developments; even more so for a development that partially entails an open-cast mine of this scale.

13.7 Mitigation and Management

13.7.1 Mitigation and Management: Construction Phase: Community Sports Complex

13.7.1.1 Embedded Mitigation Measures: Construction Phase: Community Sports Complex

A landscaping plan is presented in Appendix 13.2, which provides planting and screening berms for the development site, including those already constructed under Reg. Ref. 20/365.

13.7.1.2 Additional Mitigation Measures: Construction Phase: Community Sports Complex

Embedded mitigation outlined above provides that some screening has been provided on the site under Reg. Ref. 20/365 and is in place. Further planting and screening will be provided by the implementation of the landscaping plan (Appendix 13.2) which incorporates both existing and proposed screening in a holistic sense during the construction phase.

No further mitigation and management is presented here for this phase and site.

13.7.2 Mitigation and Management: Construction Phase: Mine Development

13.7.2.1 Embedded Mitigation Measures: Construction Phase: Mine Development

A key objective of the construction phase is to ensure that screening berms and other screening measures (i.e. bolstering existing perimeter hedgerows) are carried out early on, and in advance of the operational phase of development. A landscaping plan is presented in Appendix 13.3, for the proposed Knocknacran West Mine development.

During the construction phase, a 2 m to 4 m-high screening berm will be constructed and completed on all sides of the Knocknacran West Open-Cast Mine site (Figure 13.12). This will assist in screening works at the site from sensitive views to the south (i.e., along the busy R179 road) and to the eastern and north-western boundaries of the site, which are aligned by local/third class roads, on which local dwellings are located (i.e., where such roads align the site boundary). In addition, this will screen any potential views of the proposed Knocknacran West Mine from the village of Drumgoosat, and the smaller settlement of Magheracloone. As illustrated in Figure 13.12, the existing perimeter boundary hedgerow will be maintained and thickened. The security fence and an internal access track will sit between the existing hedgerow and the newly constructed (and planted) screening berms.

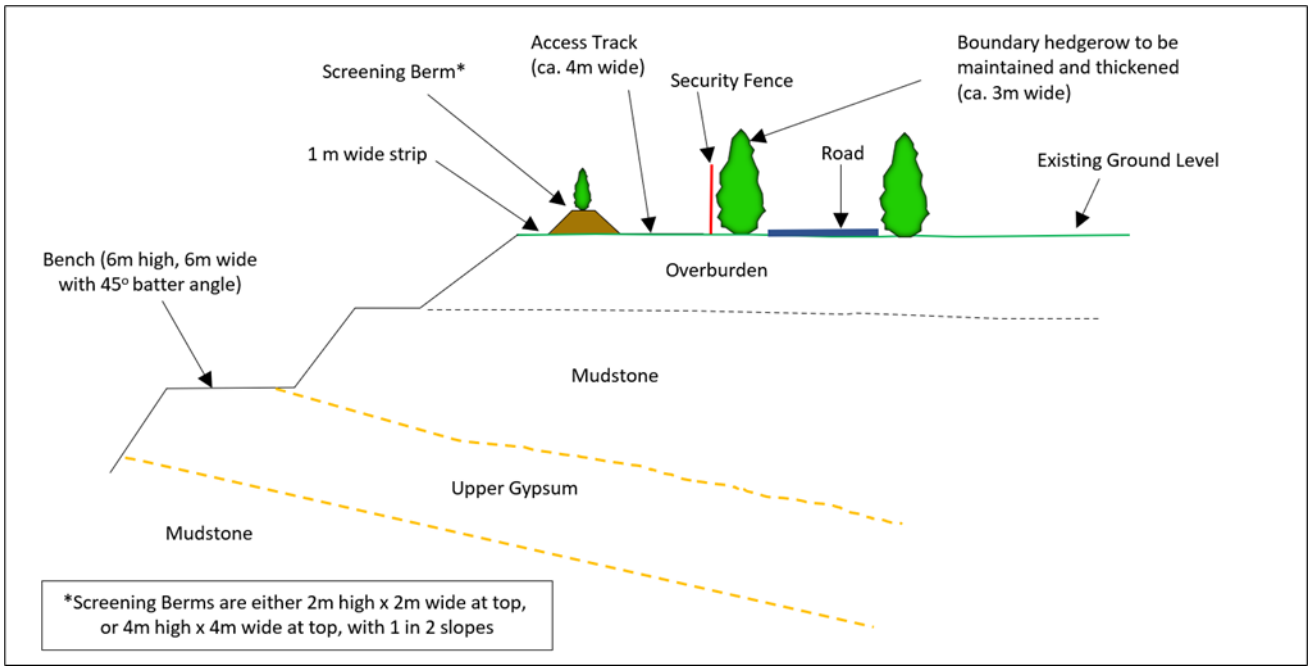

Figure 13.12: Schematic cross-section of generic boundary treatment for the Knocknacran West Mine site

Furthermore, all existing roadside trees and vegetation will be retained along the three adjacent roads to the Knocknacran West Mine site, to further assist in screening the proposed Knocknacran West Mine site.

An area of existing wooded, higher to the north of the proposed extraction area will be left in place and will screen any potential views of the future excavation area at Knocknacran West from the village of Drumgoosat.

In addition, upon construction, the proposed berms will be planted in a native woodland mix. As this mix will be planted with advanced nursery stock, the trees are likely to reach ca. 6 m height within a 4-5 year period, resulting in at least a 10 m-high 'green' screen surrounding the Knocknacran West Open-Cast Mine boundary.

This embedded mitigation measure is called the Miyawaki Method. The main principles of the Miyawaki Method are to plant species of trees that would naturally occur in the area at a high density. It is proposed to plant trees at 1.5 m centres, whilst a mixed arrangement of native shrubs are to be planted at 900 mm centres. Using a combination of the Miyawaki Method, and planting of advanced nursery stock (standard trees ca. 2 – 3 m planted height), it is considered that five years is sufficient time for the proposed woodland planting to reach a height of ca. 6 m.

13.7.2.2 Additional Mitigation Measures: Construction Phase: Mine Development

Embedded mitigation as presented above provides that screening exists on the existing Knocknacran site and the design for Knocknacran West inherently will provide screening berms and perimeter hedge bolstering during construction. This will be in accordance with the landscaping plan (Appendix 13.3).

Given the temporary nature of the proposed construction of the R179 diversion, Cut-and-Cover tunnel, house demolitions and mine access relocation, additional mitigation is not proposed.

No further mitigation and management is presented here for this phase and site.

13.7.3 Mitigation and Management: Operational Phase: Community Sports Complex

Embedded mitigation as presented above will be maintained during the operational life of the development.

13.7.4 Mitigation and Management: Operational Phase: Mine Development

13.7.4.1 Embedded Mitigation Measures: Operational Phase: Mine Development

The operational phase will carry through the embedded mitigation measures listed above regarding screening provided by berms and perimeter hedgerows.

In addition, the material (overburden and interburden) will be transferred from the proposed Knocknacran West Mine via haul truck, through a Cut-and-Cover Tunnel beneath the R179, to be used in the phased restoration of Knocknacran Mine site.

The proposed Knocknacran West Mine open-cast void will never be revealed in its entirety as a completely excavated pit with bare faces by inherent design. By the time that the later phases (immediately due north pf the R179) of the Knocknacran West Mine Site are excavated, the earlier phases of the excavation immediately due south of the L4900 will have been restored. The majority of all works, including vehicular movement, will take place in a visually obscured area towards the pit floor, and so will have reduced visual effects beyond the mine area.

13.7.4.2 Additional Mitigation Measures: Operational Phase: Mine Development

Embedded mitigation as outlined above will be maintained during the operational life of the development.

13.7.5 Mitigation and Management: Restoration/Closure Phase: Community Sports Complex

There is no proposal to close the Community Sports Complex development and this phase is non-applicable.

13.7.6 Mitigation and Management: Restoration/Closure Phase: Mine Development

13.7.6.1 Embedded Mitigation Measures: Restoration/Closure: Mine Development

It is worth noting that the operational and restoration phases of the proposed Mine Development are co-existent and inter-related, as the material needed for the gradual restoration of the existing Knocknacran Open-Cast Mine is reliant upon the gradual excavation of the Knocknacran West site. In addition, following on from cessation of extraction at Knocknacran West, material temporarily stored onsite will also be used in the final restoration phase at Knocknacran West itself.

The material (interburden and overburden) will be transferred from the proposed Knocknacran West Mine via haul truck, and through a Cut-and-Cover Tunnel beneath the R179, to be used in the phased restoration of Knocknacran Mine to near original ground levels. It is not expected that any excess material will need to be imported from another facility. This will minimise any long-term or lasting visible presence of the open-cast pit on the landscape and will help facilitate the re-establishment of hedgerows and pasture, and their accompanying ecological habitats.

The existing Knocknacran Mine will be restored to grassland. This land will consist of regular-sized fields bordered by field boundaries consisting of native vegetation; in other words, compatible and consistent with the topography, land use, historical field boundary arrangements, field sizes and field boundaries of agricultural lands bordering the site within the central study area. Such a restoration will reduce any long-term or lasting visible presence of the open-cast mine on the landscape and will help facilitate the re-establishment pasture, and its accompanying ecological habitat. This land will be dressed with ca. 0.3 m of topsoil (originally stored in stockpiles from the Knocknacran West excavation) and re-seeded with an agricultural grade grass seed mixture.

In addition, following cessation of mining, the site of the Knocknacran West Mine will be partially restored, with a waterbody (lake) towards the centre of the site. In this incremental working process, the site (i.e., both the existing Knocknacran Mine and the proposed Knocknacran West Mine) will never be revealed in its entirety as a completely excavated open-cast void/pit with bare faces (benches). By the time that the later stage sections of the site are excavated north of the R179 (i.e., Knocknacran West Mine), the existing Knocknacran Mine to the south of the R179 will have been restored. The majority of all extraction works, including vehicular movement, will take place in visually obscured areas towards the open-cast mine floor, and so will have reduced visual effects beyond the mine area.

Three distinct habitats will be created through the closure of the Knocknacran West Open-Cast Mine:

- Open Water Habitat.
- Shoreline / Washland Habitat.
- Open Ground Habitat.

Each of these habitats are quite different from the other and will require different measures to establish and support diverse and sustainable ecosystems.

A consideration that is quite unique to this project compared to other habitat creation projects is that the size of the open waterbody will increase year on year as the area rewaters, and as such the rehabilitation plan to establish the new habitats needs to be able to be flexible with this changing environment.

The priority is to introduce only native species and this work will be carried out under the guidance of an ecologist and as part of a Biodiversity Action Plan. Each of the habitats is presented below.

Open Water Habitat

The open water habitat will be akin to a lake. The water quality will be of suitable quality to support a diverse range of species. It will not be necessary to introduce any species as indigenous species will migrate from nearby waterbodies and colonise the open water. The shoreline of the lake will be of a suitable depth to support benthic populations of macroinvertebrates. It is known that disconnected virgin freshwater bodies will over time develop a population of invertebrate life as species such as mayfly and stone fly etc can colonies these areas by flight. Species such as frogs can migrate to the waterbody and even fish eggs can be transported by vectors such as birds, so that fish populations can become established. There is no plan to introduce any vertebrate aquatic species such as fish and indeed protections may be installed at the outlet of the lake such as a gabion basket wall to ensure that fish life from the waterbody does not migrate into the receiving surface waterbody (Corduff Stream). Saint-Gobain will liaise with Inland Fisheries Ireland with respect to the open waterbody and associated habitat.

Q Rating tests will be conducted to monitor the establishment of macroinvertebrates within the waterbody and ecosystem, and this will also be a good measure of the biodiversity of the habitat.

Shoreline / Washland Habitat

A shoreline is a habitat that provides major opportunity for the development of diverse habitat. The washland is the land next to the shore that will become covered in water seasonally and during periods of heavy rainfall.

The shoreline will support benthic macro invertebrate populations, plants, and invertebrate populations including mammals and birds.

The shoreline is an important habitat and is capable of supporting a diverse population of flora and fauna. To maximise the potential of this area reprofiling of the open-cast at the projected elevation of the final shoreline will introduce inlets to maximise contact area between land and water, which will maximise the extent of this habitat.

Plant species will be introduced by transplanting from donor sites around the area, such that the species introduced will be indigenous. An amount of soil will be imported with the root system during the transfer of the donor species to enhance the growing media. A shallow cover of soil (from the stripping of the Site) will be introduced on the land that will become shoreline and then lakebed as the lake expands. The shoreline species will be introduced in the early years of rewatering as the initial shoreline is established and these species will push out naturally as the water rises and the shoreline expands.

No invertebrate or vertebrate species will be introduced, these species will colonize naturally once the habitat is established. Ecological surveys, including bird surveys will be conducted routinely to monitor the success of the habitat.

Open Ground Habitat

The open ground habitat will be planted with a selection of grasses, shrubs and plants to form a diverse habitat. It is proposed to seed areas of the Site with a range of seed mixes to increase the cover and to improve the habitat value. The grass mixes will be consistent with species in the surrounding lands. The first planting of pioneer grass species will occur following the final contouring of the open-cast mine slopes. Planting will be used to facilitate a long-term process of succession and colonization in order to create a diverse ecological habitat.

The open ground that will be above the elevation of the final water level will have a deeper cover of soil so that it can be planted with tree species such as birch and alder. These species tolerate harsh and exposed conditions and will create shelter for other tree species to be planted such as oak.

Hawthorn, hazel and dogwood will also be planted, and these woody plants will encourage bird species to establish in wooded areas and assist with the dispersal of seeds and the natural plantation of the Site. Tree and hedge plantations will be placed to create links with existing hedgerows creating corridors for fauna to move from area to area. They will also create habitat islands which will help in the dispersal of seed.

Habitat surveys will be completed to monitor the performance and success of the rehabilitation. In the early years pruning and general maintenance will be carried out to promote success but ultimately the habitat will be designed to be self-sustaining, with minimal input required from the landowner.

The restoration plan for the site will be updated annually as part of the Applicant's commitments under the site's IE Licence (Reg. No. P0519-04). It is the intention of the Applicant to restore the site in line with an overall site Closure Restoration Aftercare Management Plan (CRAMP) to be agreed with the EPA.

The following approaches / measures will also be undertaken:

- Physical stabilisation of slopes through precise profiling and contouring;
- Removal and remodelling of any conspicuous, 'unnatural-looking' localised contour profiles to ensure they seamlessly 'marry-in' with existing/undisturbed contour profiles;
- Safeguard that drainage of slopes does not adversely affect neighbouring lands or watercourses; and
- All mine plant, infrastructure and detritus will be permanently removed off-site.

13.7.6.2 Embedded Mitigation Measures: Mine Development: Closure/Restoration

Embedded mitigation as presented above will be maintained during this phase.

13.8 Monitoring

13.8.1 Monitoring: Construction Phase: Community Sports Complex

Embedded mitigation outlined above will be monitored during this phase.

13.8.2 Monitoring: Construction Phase: Mine Development

Embedded mitigation has already been outlined above and will be monitored during this phase.

13.8.3 Monitoring: Operational Phase: Community Sports Complex

Embedded mitigation as outlined above will be monitored during this phase.

13.8.4 Monitoring: Operational Phase: Mine Development

Embedded mitigation as outlined above will be monitored during this phase.

13.8.5 Monitoring: Restoration/Closure Phase: Community Sports Complex

There is no proposal to close the Community Sports Complex development and this phase is non-applicable.

13.8.6 Monitoring: Restoration/Closure Phase: Mine Development

Embedded mitigation as outlined above will be monitored during this phase.

13.9 Residual Effects

13.9.1 Community Sports Complex

Given the embedded nature of mitigation measures surrounding screening berms and planting for the Community Sports Complex and the addition of further mitigation as outlined in Section 13.7, the residual effects for the Community Sports Complex align with the operational effects shown in Section 13.6. The residual effects are **Not Significant**.

13.9.2 Mine Development

Given the embedded nature of mitigation measures surrounding screening berms and planting for the Mine Development), and the addition of further mitigation as outlined in Section 13.7, the residual effects for the Mine Development align with the restoration/closure effects shown in Section 13.6. The residual effects are **Not Significant**.

13.10 Cumulative Effects

13.10.1 The Project – Community Sports Complex and Mine Development

As stated in Section 13.6, it is intrinsic that if the Mine Development is in construction/operation/closure, then the Community Sports Complex is also going to be in the relevant construction/operation phases. These developments will inherently occur together and are contiguous. During consideration of the potential effects, the assessment has already included the cumulative aspect of the two developments and associated landscape and visual considerations because they will occur cumulatively/contiguously.

Additionally, a key factor for consideration in this section is the phased restoration of the existing Knocknacran Mine site as the proposed Knocknacran West Mine site is gradually excavated. Thus, in broad terms, as one future mine expands in area, the existing mine retreats in area. More importantly, both of these are within the Application Site, while given the nature of the end use effects, it is not considered that

the Proposed Development will have any material landscape or visual impacts in-combination with other existing or permitted developments in the vicinity. There may be minor cumulative visual effect relating to HGV movement and activity during the construction and restoration phase. However, these will be temporary/short-term in duration and will not be significant in terms of magnitude in any event.

13.10.2 The Project and Other Offsite Projects

A recent planning application has been granted permission for a Community Centre in the village of Drumgoosat. This will not be visible in conjunction with either the proposed Community Sports Complex or the proposed Mine Development as evidenced by VP7 (From Drumgoosat). Together with the proposed Community Sports Complex there will be a general sense of increased scale and quality of community based infrastructure, but this will be minor and of a generally positive quality.

A review of the planning file (to date 3rd April 2023) indicate that Losset ADN Materials Ltd. also have a planning application under consideration (Reg. Ref. 22/254) and are located ca. 1 km to the north of the Project site. Based on a review of the current planning file data this development will not be visible in the context of the proposed development and they will only be adding slightly to the intensity of existing rural / industrial development which are an established part of the landscape character of the study area.

Other industry within the wider area is currently operating within the area and forms part of the baseline assessment in Section 13.4, as such, these are inherently considered within Section 13.6.

The cumulative effects are deemed **Not Significant** between the Project and other offsite Projects.

13.11 Do-Nothing Scenario

In the event of a Do-Nothing scenario at the Community Sports Complex site, Phase 1, the existing development under Reg. Ref. 20/365 would be the only sports development at this location. Phase 2 would not be developed and would therefore not contribute to the landscape or visual baseline.

In the event of a Do-Nothing scenario for the Mine Development, the Knocknacran West site would remain as it is currently, with vehicular access for maintenance works such as drainage, and hedge clearance works and routine monitoring. The Knocknacran Mine would continue to operate until it reaches closure, at which point the potential effects would be similar to the closure phase that would have been associated with this site had the Knocknacran West Mine been permitted (i.e. a waterbody would be developed in the former open-cast area). However, Knocknacran Mine would enter closure in the short-term rather than in the long-term and landscape and visual effects would therefore happen sooner.

13.12 Difficulties Encountered

There were no difficulties encountered undertaking this assessment.

13.13 References

- Cavan County Council (2014) 'Cavan County Development Plan 2022-2028'. Available at: https://www.cavancoco.ie/cavan-county-development-plan.htm (Accessed: 16th February 2023).
- Environmental Protection Agency (2015) 'Advice Notes for Preparing Environmental Impact Statement - Draft'.
- Environmental Protection Agency (2022) 'Guidelines on the information to be contained in Environmental Impact Assessment Reports'. Available at: https://www.epa.ie/publications/monitoring--assessment/assessment/EIAR_Guidelines_2022_Web.pdf (Accessed: 16th February 2023).
- Landscape Institute (UK) & Institute of Environmental Management and Assessment (IEMA) (2013) 'Guidelines for Landscape and Visual Impact Assessment – 3rd Edition (GLVIA3)'. Available at: https://www.iema.net/resources/news/2013/04/11/glvia3-guidelines-now-available (Accessed: 16th February 2023).
- Meath County Council (2013) 'Meath County Development Plan 2021-2027'. Available at: https://countydevelopmentplan.meath.ie/adoptedplan/ (Accessed: 16th February 2023)
- Monaghan County Council (2008) 'County Monaghan Landscape Character Assessment'. Available at: https://monaghan.ie/planning/landscape-character-assessment/ (Accessed: 16th February 2023).
- Monaghan County Council (2019) 'Monaghan County Development Plan 2019 - 2025'. Available at: https://monaghan.ie/planning/wp-content/uploads/sites/4/2019/04/Monaghan-County-Development-Plan-2019-2025-%E2%80%93-Written-Statement.pdf (Accessed: 16th February 2023).
- Scottish Natural Heritage (2018) 'Environmental Impact Assessment Handbook – Appendix 2: Landscape and Visual Impact Assessment'. Available at: https://www.nature.scot/sites/default/files/2018-05/Publication%202018%20-%20Environmental%20Impact%20Assessment%20Handbook%20V5.pdf (Accessed: 16th February 2023).

APPENDIX 13.1

Photomontages

Knocknacran West Mine and Community Sports Complex

LVIA Photomontages

This book contains imagery for the viewpoints chosen for the LVIA study

March 2023

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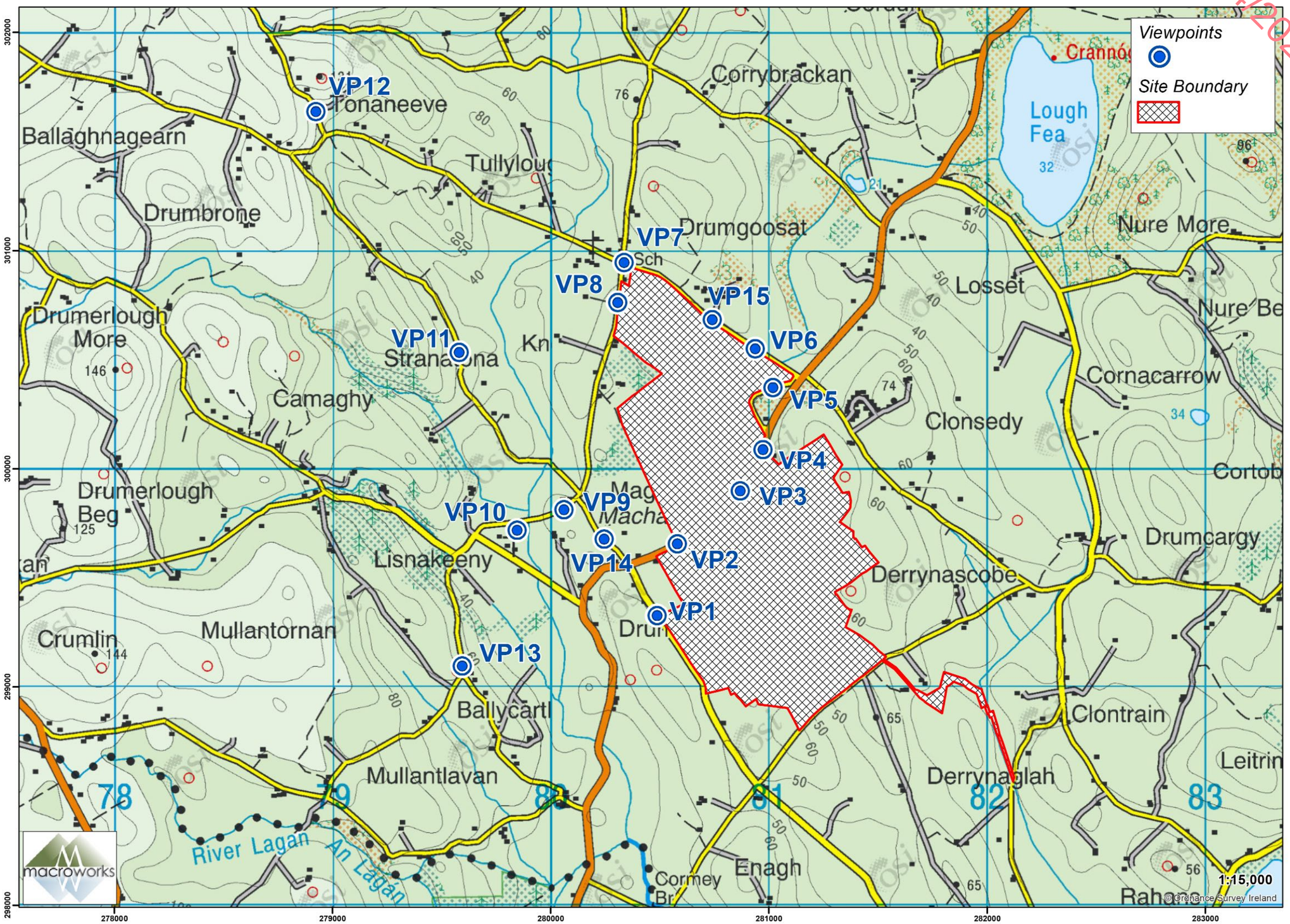
INDEX

LVIA viewpoints selected for the Knocknacran West Mine and Community Sports Complex project



Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

Third class road aligning western boundary of site, at Drummond townland

VP1

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280487	Lens:	50mm / Full Frame Sensor	Date:	30/03/2023
Northing (IG):	299327	Camera:	Canon 1-D Mark II digital SLR	Time:	16:22
Direction of View	29° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Operational Phase View

Restoration Phase View

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

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Direction of View	29° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

R179 at western boundary of site VP2a

Existing View

Construction Phase View

These are 120° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

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Easting (IG):	280585	Lens:	50mm / Full Frame Sensor	Date:	21/02/2023
Northing (IG):	299660	Camera:	Canon 1-D Mark II digital SLR	Time:	12:26
Direction of View	33° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	120°				

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Operational Phase View

Restoration Phase View

These are 120° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

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Direction of View	33° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	120°				

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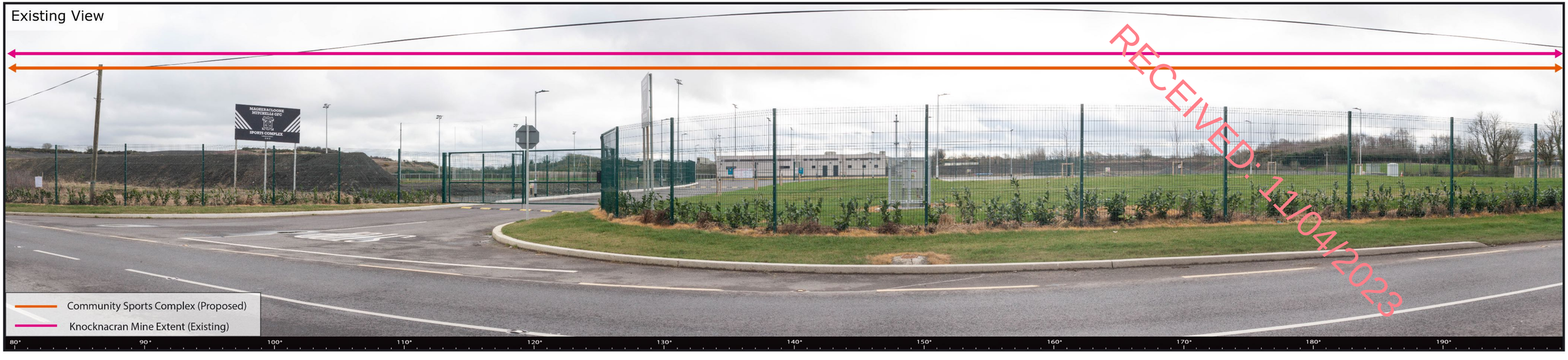
Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

R179 at western boundary of site VP2b

Existing View



Construction Phase View

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Direction of View	138° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	120°				

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Operational Phase View

Restoration Phase View

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Direction of View	138° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	120°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

R179 at proposed cut-and-cover tunnel VP3a

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280873	Lens:	50mm / Full Frame Sensor	Date:	21/02/2023
Northing (IG):	299900	Camera:	Canon 1-D Mark II digital SLR	Time:	12:17
Direction of View	132° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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R179 at proposed cut-and-cover tunnel VP3a

Operational Phase View

Restoration Phase View

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Northing (IG):	299900	Camera:	Canon 1-D Mark II digital SLR	Time:	12:17
Direction of View	132° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

R179 at proposed cut-and-cover tunnel VP3b

Existing View

Construction Phase View

These are 160° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 120°.

Easting (IG):	280873	Lens:	50mm / Full Frame Sensor	Date:	21/02/2023
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Direction of View	53° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	160°				

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Operational Phase View

Restoration Phase View

These are 160° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 120°.

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Northing (IG):	299900	Camera:	Canon 1-D Mark II digital SLR	Time:	12:17
Direction of View	53° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	160°				

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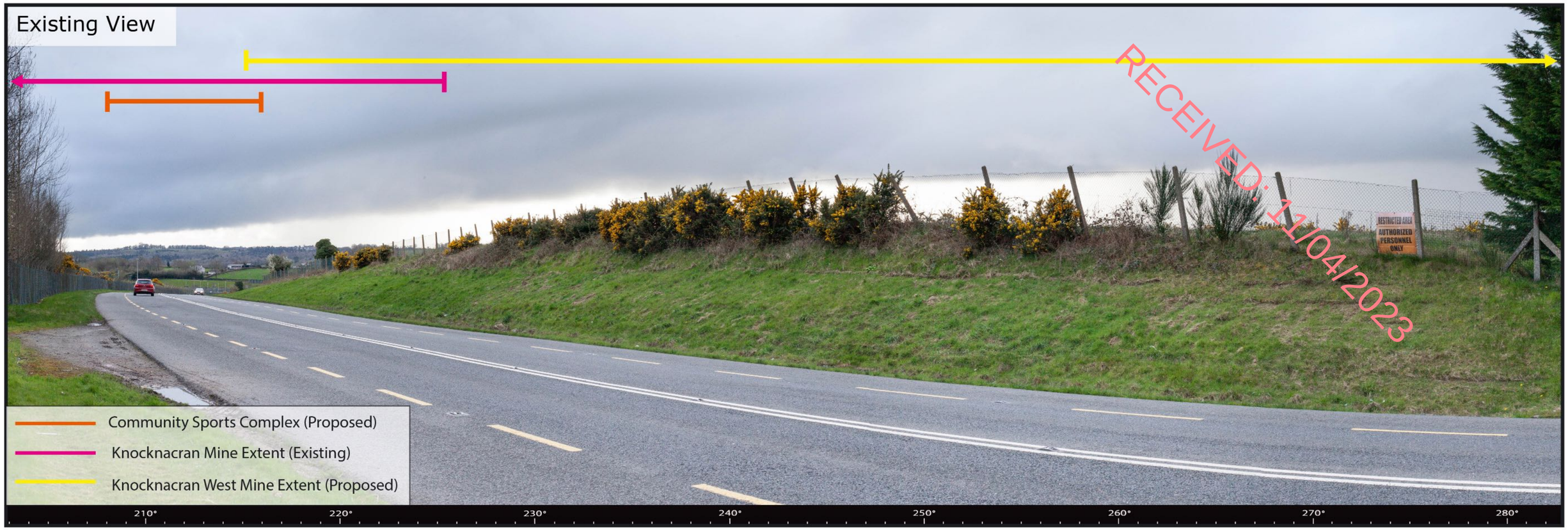
Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

R179 at former entrance to former Magheracloone GAA grounds VP4a



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Easting (IG):	280974	Lens:	50mm / Full Frame Sensor	Date:	30/03/2023
Northing (IG):	300087	Camera:	Canon 1-D Mark II digital SLR	Time:	16:39
Direction of View	117° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Operational Phase View

Restoration Phase View

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

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Direction of View	117° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

R179 at former entrance to former Magheracloone GAA grounds VP4b

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280974	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
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Direction of View	41° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Operational Phase and Restoration Phase)

R179 at former entrance to former Magheracloone GAA grounds VP4b

Operational Phase View

Restoration Phase View

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

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Northing (IG):	300087	Camera:	Canon 1-D Mark II digital SLR	Time:	11:39
Direction of View	41° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Third class 'slip' road off the R179 at Knocknacran East townland VP5

Existing View

Construction Phase View

These are 120° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 80°.

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Angle of View:	120°				

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Operational Phase View

Restoration Phase View

These are 120° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

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Direction of View	20°W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	120°				

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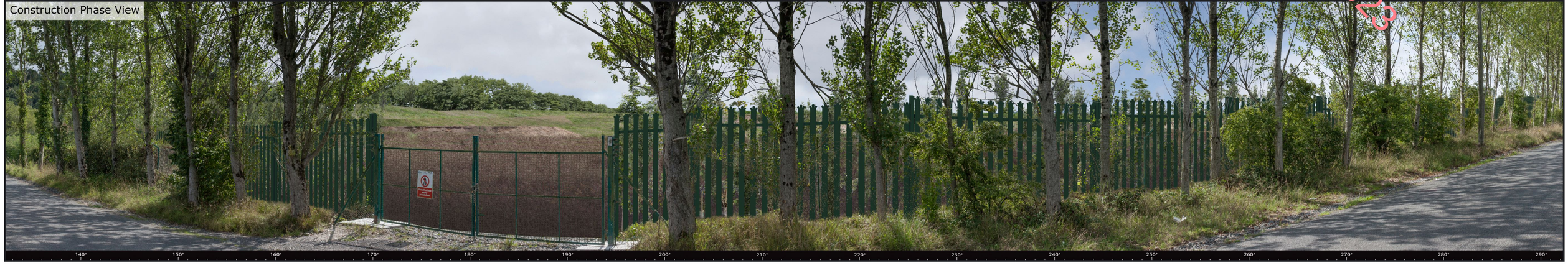
Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

Third class road aligning north-eastern boundary of site at Drumgoosat Townland VP6



These are 160° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 120°.

Easting (IG):	280937	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	300551	Camera:	Canon 1-D Mark II digital SLR	Time:	13:26
Direction of View	148° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	160°				

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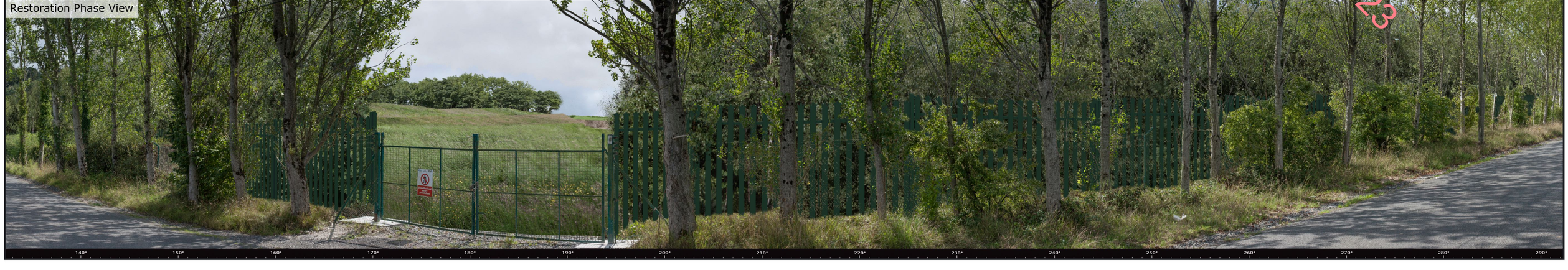
Imagery depicting the view towards the site (Operational Phase and Restoration Phase)

Third class road aligning north-eastern boundary of site at Drumgoosat Townland VP6

Operational Phase View

Restoration Phase View



These are 160° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 120°.

Easting (IG):	280937	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	300551	Camera:	Canon 1-D Mark II digital SLR	Time:	13:26
Direction of View	148° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	160°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing)

Crossroads at Drumgoosat village VP7

Please Note: There are no Montage Views for this viewpoint as the development is completely screened by landform and existing vegetation

These are 100° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 60°.

Easting (IG):	280348	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	300939	Camera:	Canon 1-D Mark II digital SLR	Time:	13:34
Direction of View 151°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	100°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase) Third class road aligning north-western boundary of site at Knocknacran East Townland VP8

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280307	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	300760	Camera:	Canon 1-D Mark II digital SLR	Time:	13:43
Direction of View 139°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Operational Phase and Restoration Phase) Third class road aligning north-western boundary of site at Knocknacran East Townland VP8

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280307	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	300760	Camera:	Canon 1-D Mark II digital SLR	Time:	13:43
Direction of View 139°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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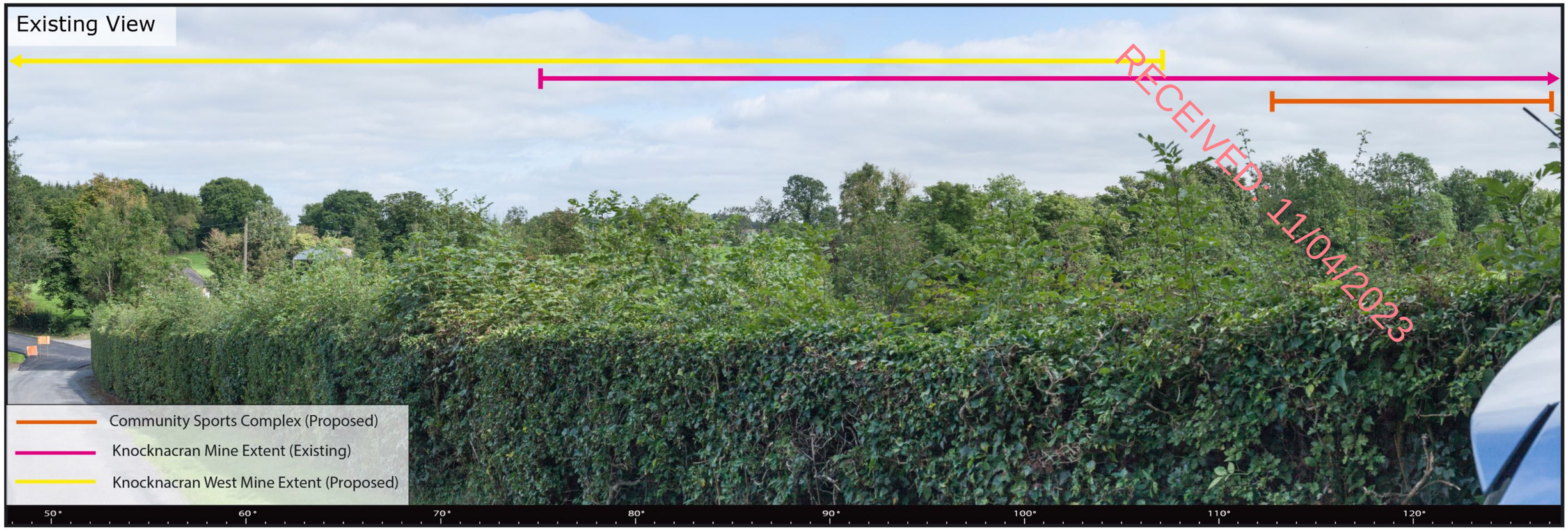
Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

Third class road near small settlement of Maheracloone VP9



These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280064	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	299814	Camera:	Canon 1-D Mark II digital SLR	Time:	13:51
Direction of View	88° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Operational Phase View

Restoration Phase View

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280064	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	299814	Camera:	Canon 1-D Mark II digital SLR	Time:	13:51
Direction of View	88° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing)

Church of Ireland church of St Molua, Camaghy townland VP10

Please Note: There are no Montage Views for this viewpoint as the development is completely screened by landform and existing vegetation

These are 120° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 80°.

Easting (IG):	279848	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	299719	Camera:	Canon 1-D Mark II digital SLR	Time:	13:59
Direction of View	77° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	120°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

Elevated third class road at Stranatona townland VP11

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	279582	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	300534	Camera:	Canon 1-D Mark II digital SLR	Time:	14:09
Direction of View 105°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Operational Phase View

Restoration Phase View

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	279582	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	300534	Camera:	Canon 1-D Mark II digital SLR	Time:	14:09
Direction of View 105°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

Elevated third class road at Tonaneeve townland VP12

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	278926	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	301636	Camera:	Canon 1-D Mark II digital SLR	Time:	14:19
Direction of View 132°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Operational Phase and Restoration Phase) Elevated third class road at Tonaneeve townland VP12

Operational Phase View

Restoration Phase View

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	278926	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	301636	Camera:	Canon 1-D Mark II digital SLR	Time:	14:19
Direction of View 132°	E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

Elevated third class road at Ballycartlan townland VP13

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	279597	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	299095	Camera:	Canon 1-D Mark II digital SLR	Time:	14:38
Direction of View	56° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Operational Phase and Restoration Phase)

Elevated third class road at Ballycartlan townland VP13

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	279597	Lens:	50mm / Full Frame Sensor	Date:	31/08/2021
Northing (IG):	299095	Camera:	Canon 1-D Mark II digital SLR	Time:	14:38
Direction of View	56° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing)

Local road connecting Magheracloone with R179 VP14

Please Note: There are no Montage Views for this viewpoint as the development is completely screened by landform and existing vegetation

These are 80° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 40°.

Easting (IG):	280245	Lens:	50mm / Full Frame Sensor	Date:	05/10/2021
Northing (IG):	299679	Camera:	Canon 1-D Mark II digital SLR	Time:	17:04
Direction of View	87° E of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	80°				

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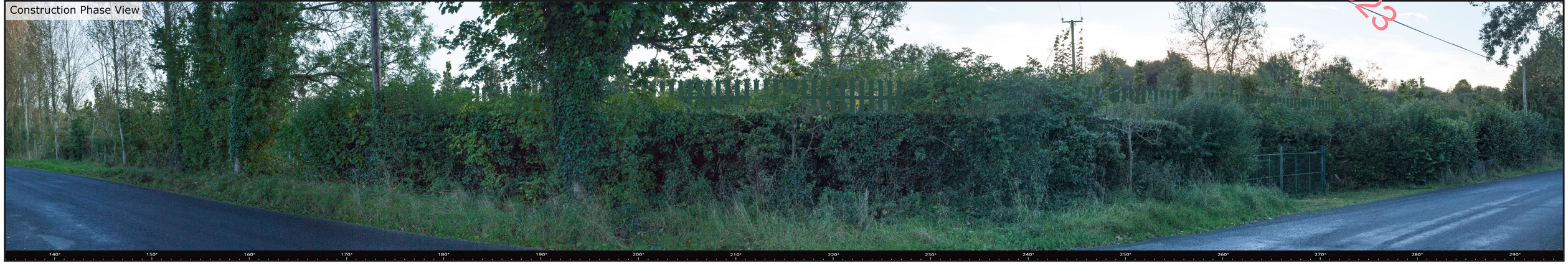
Knocknacran West Mine and Community Sports Complex

Imagery depicting the view towards the site (Existing and Construction Phase)

Third class road aligning north-eastern boundary of site near Drumgoosat VP15



These are 160° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 120°.

Easting (IG):	280740	Lens:	50mm / Full Frame Sensor	Date:	05/10/2021
Northing (IG):	300682	Camera:	Canon 1-D Mark II digital SLR	Time:	17:30
Direction of View	145° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	160°				

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Third class road aligning north-eastern boundary of site near Drumgoosat VP15

Operational Phase View

Restoration Phase View

These are 160° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 120°.

Easting (IG):	280740	Lens:	50mm / Full Frame Sensor	Date:	05/10/2021
Northing (IG):	300682	Camera:	Canon 1-D Mark II digital SLR	Time:	17:30
Direction of View	145° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	160°				

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Third class road aligning north-eastern boundary of site near Drumgoosat VP15

Operational Phase View

Restoration Phase View

These are 160° panoramic montages captured and presented in accordance with the guidance set by the British Landscape Institute 2011 - Advice Note 01/11.

To view these panoramas on a flat surface one must move from left to right along its length whilst maintaining a perpendicular viewing direction and the specified correct viewing distance of 30cm. To see this entire panoramic scene in reality would necessitate turning one's head through 120°.

Easting (IG):	280740	Lens:	50mm / Full Frame Sensor	Date:	05/10/2021
Northing (IG):	300682	Camera:	Canon 1-D Mark II digital SLR	Time:	17:30
Direction of View	145° W of Grid North	Camera Height:	1.7m Above Ground Level		
Angle of View:	160°				

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APPENDIX 13.2

Landscape Plan - Boundary Treatment Plan Community Sports Complex

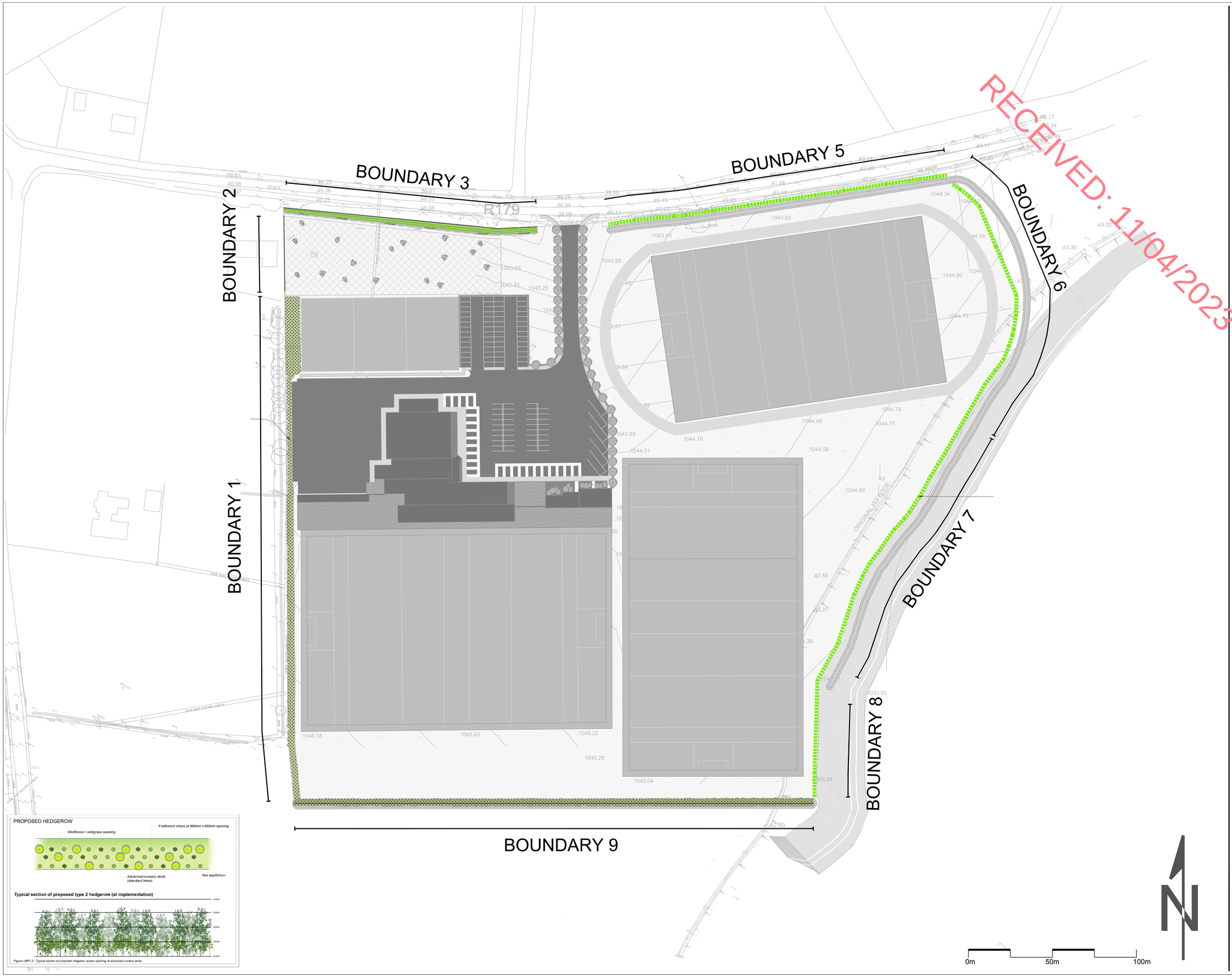

Figure LMP1.2 - Typical section of proposed mitigation screen planting of advanced nursery stock.

0m 50m 100m

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Registered Landscape Architect

Legend:

- PROPOSED WOODLAND MIX
- PROPOSED HEDGEROW
- SHRUB/PERENNIAL MIX AND WILDFLOWER SEEDING (NORTHERN BOUNDARY)

NOTES:

Boundary 1: 1366sq m of woodland mix. Woodland planting mix to comprise of High Canopy Dominants (<10%), Low-canopy: Sub-dominants (25-30%), Understorey and Fringe: High-Shrubs (25-40%) and Understorey and Edge: Lower-Shrubs (15-25%).

Larger Trees to be planted at 1.5m centres. Smaller shrubs to be planted at spacing between 900mm and 1500mm centres depending on species.

Boundary 2 : TBD

Boundary 3: 525 sqm of shrub and perennial plantings. Stock to be planted in blocks of 5-10 plants across the existing berm and to the north of the berm.

Boundary 5: 203 linear meters of hedgerow. Hedgerow planted with a native whip planting mix in a triple staggered row as per figure LMP1.2.

Boundary 6: 161 linear meters of hedgerow. Hedgerow planted with a native whip planting mix in a triple staggered row as per figure LMP1.2.

Boundary 7: 176 linear meters of hedgerow. Hedgerow planted with a native whip planting mix in a triple staggered row as per figure LMP1.2.

Boundary 8: 69 linear meters of hedgerow. Hedgerow planted with a native whip planting mix in a triple staggered row as per figure LMP1.2.

Boundary 9: 1456sq m of woodland mix. Woodland planting mix to comprise of High Canopy Dominants (<10%), Low-canopy: Sub-dominants (25-30%), Understorey and Fringe: High-Shrubs (25-40%) and Understorey and Edge: Lower-Shrubs (15-25%).

Larger Trees to be planted at 1.5m centres. Smaller shrubs to be planted at spacing between 900mm and 1500mm centres depending on species.

All planting must be true to form & size.

See BS 5837:2012 Guide to Trees in Relation to Construction, BS 3998:2010 Recommendations for Tree Work, BS 3936 1:1992 Nursery Stock Trees & Shrubs

SHRUB/PERENNIAL MIX SPECIES:

Botanical name	Size	Density
SHRUBS		
Viburnum opulus	2ltr	1 per sqm
Rosmarinus officinalis	2ltr	1 per sqm
Cornus alba	2ltr	1 per sqm
Ilex 'Silver Queen'	2ltr	1 per sqm
Ilex 'Golden King'	2ltr	1 per sqm
Euonymus in variety	2ltr	3 per sqm
Hebe in variety	2ltr	3 per sqm
GRASSES		
Carex 'Phoenix Green'	2ltr	5 per sqm
Stipa arundinacea	2ltr	3 per sqm
HERBACEOUS PERENNIALS		
Achellia 'Summer Berries'	2ltr	5 per sqm
Geranium 'Brookside'	2ltr	5 per sqm
Rudbeckia 'Goldstrum'	2ltr	5 per sqm
Helleborus varieties	2ltr	5 per sqm
Seedum 'Autumn Joy'	2ltr	3 per sqm
Lavndula varieties	2ltr	3 per sqm
Nepeta 'Walkers Low'	2ltr	3 per sqm

LOW CANOPY WOODLAND MIX SPECIES:

Botanical name	Common name	Size	%
High Canopy (Dominants);			
Quercus Robur	Pendunculate Oak	Standard Tree, 250-350cm, bare root	<10%
Pinus sylvestris	Scots Pine	Feathered Trees, 250-300cm, root ball	
Low Canopy (Sub-dominants);			
Alnus glutinosa	Alder	Feathered Trees, 250-300cm, bare root	25-30%
Betula pubescens	Downy Birch	Feathered Trees, 250-300cm, bare root	
Prunus avium	Wild Cherry	1+1tr, 90-120cm, bare root	
Understory and fringe (higher shrubs);			
Prunus Padus	Crab Apple	1+1tr 90-120cm	25-40%
Corylus avellana	Hazel	1+1tr 90-120cm	
Ilex aquifolium	Holly	1+1tr 90-120cm	
Crataegus monogyna	Hawthorn	1+1tr 90-120cm	
Understory and edge (lower shrubs);			
Prunus spinosa	Blackthorn	1+1tr 40-60cm	15-25%
Rosa canina	Dog-rose	1+1tr 40-60cm	
Euonymus europaeus	Spindle	1+1tr 40-60cm	

NATIVE HEDGEROW SPECIES:

Botanical name	Common name	Size	%
Primary structure;			
Crataegus monogyna	Hawthorn	1+2tr 80-100cm	60%
Secondary structure;			
Prunus spinosa	Blackthorn	1+2tr 80-100cm	15%
Ilex aquifolium	Holly	1+2tr 80-100cm	15%
Shrub species structure;			
Rubus fruticosus	Bramble	1+1tr 40-60cm	2.5%
Corylus avellana	Hazel	1+1tr 40-60cm	2.5%
Rosa canina	Dog-rose	1+1tr 40-60cm	2.5%
Euonymus europaeus	Spindle	1+1tr 40-60cm	2.5%

Prepared by:
MACRO WORKS,

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Site location:
DERRYNASCOBE,
COUNTY MONAGHAN

Drawing Title:
LANDSCAPE PLAN - BOUNDARY TREATMENT PLAN

Project:
KNOCKANACRAN GAA COMPLEX

Drawn by:	Checked by:
CD	RB

Drawing Ref:
LD.KNKCRN_RFI 1.0

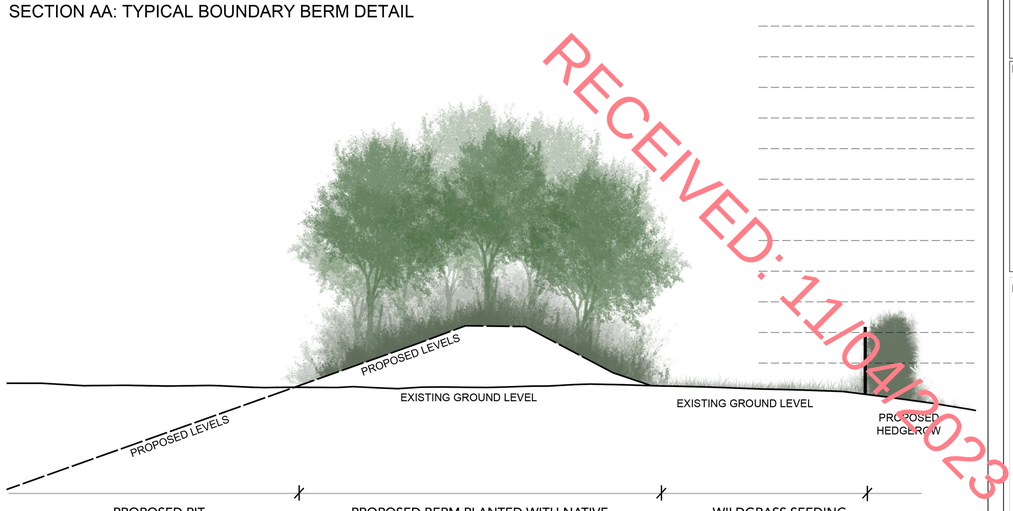
Scale:	Date:
1:1000 @ A1	SEPTEMBER 2022

RFI_ISSUED

APPENDIX 13.3

Landscape Management Plan Knocknacran West Site

SECTION AA: TYPICAL BOUNDARY BERM DETAIL



PROPOSED NATIVE WOODLAND MIX (3.7494 ha)
Native woodland mix to be planted across the proposed embankments that surround the site. Woodland mix to comprise a native whip planting mix and advanced nursery stock.

NATIVE POLLINATOR FRIENDLY WILDFLOWER MIX
Native wildflower mix of local provenance to occupy residual space between the proposed woodland mix and the proposed site security fence

PROPOSED SECURITY FENCE
Proposed security fence and bolstering of the existing perimeter boundary hedgerow (which runs adjacent to the exterior of the fence line along the field boundaries) will be undertaken.

PROPOSED HEDGEROW

Typical section of proposed type 2 hedgerow (at implementation)

Figure LMP1.2 - Typical section of proposed mitigation screen planting of advanced nursery stock.

Registered Landscape Architect

Legend:

- PROPOSED WOODLAND MIX
- PROPOSED HEDGEROW
- PROPOSED SECURITY FENCE
- EXISTING HEDGEROW RETAINED
- SITE BOUNDARY

Notes:

The function of the proposed mitigation planting is primarily for screening, but it will also enhance the ecological corridors that area already present within the surrounding trees lines and hedgerows.

Proposed Woodland Mix
Species mix to comprise of High-Canopy: Dominants (<20%), Low-canopy: Sub-dominants (<20-25%), Understorey and Fringe: High-Shrubs (20-40%) and Understorey and Edge: Lower-Shrubs (15%-25%). Planting on embankments to be allowed to grow to reach maturity and to be concentrated on the lower portions of the embankments.Trees to be planted at 1.5m centres, whilst a mixed arrangement of shrubs are to be planted at 900mm centres.

Hedgerows
Mitigation screen planting shall consist of a mixture of native hedgerow species that are prevalent in the immediate area. Planting to consist of feathered whips (of various sizes) and advanced nursery stock in staggered rows at a spacing of 600mm.

All native species will be planted as whips, with the primary and secondary structure species to be of a minimum height of 80-100cm and the other shrub species to be of a minimum height of 40-60cm.

Existing and new sections of hedgerow to be planted and bolstered as per diagram LMP1.2 and maintained at a height of 3-4m unless otherwise specified

Species mix to be finalised in conjunction with the project ecologist. All species to be from certified native stock and preferably from an approved supplier of the Green, Low-Carbon, Agri Environment Scheme (GLAS).

Polinator Friendly Wildflower seeding
Birdsfoot Trefoil, Black Meddick, Cowslip, Devil's Bit Scabious, Meadow Buttercup, Field Scabious, Hemp Agrimony, Kidney Vetch, Lady's Bedstraw, Lady's Ann lace, Lesser Knapweed, Meadowsweet, Mullein, Ox-eye Daisy, Purple Loosestrife, Ragged Robin, Red Campion, Red Clover, Ribwort Plantain, Rough Hawksbit, Sorrel, St Johnswort, Wild Angelica, Wild Carrot, Yarrow, Yellow Agrimony, Yellow Rattle, Teasel and more. Also includes 35% annuals: Corn Marigold, Corn Poppy, Corncockle, Cornflower, Scented Mayweed,

Species mix to be finalised in conjunction with the project ecologist. All species to be from certified native stock and preferably from an approved supplier of the Green, Low-Carbon, Agri Environment Scheme (GLAS).

NATIVE HEDGEROW SPECIES:

Botanical name	Common name	Size	%
Primary structure;			
Crataegus monogyna	Hawthorn	90-120cm / 8-10cm girth 3m br standard trees	60%
Secondary structure;			
Prunus spinosa	Blackthorn	90-120cm	15%
Ilex aquifolium	Holly	90-120cm	15%
Shrub species structure;			
Viburnum opulus	Guelder Rose	60-90cm	2.5%
Corylus avellana	Hazel	60-90cm	2.5%
Rosa canina	Dog-rose	60-90cm	2.5%
Euonymus europaeus	Spindle	60-90cm	2.5%

WOODLAND MIX:

Botanical name	Common name	Size	%
High Canopy (Dominants);			
Quercus robur	Pendunculate Oak	Standard Tree, 10-12cmg, B	<20%
Quercus petraea	Sessile Oak	Standard Tree, 10-12cmg, B	
Pinus sylvestris	Scots Pine	Standard Tree, 250-300cm, RB	
Low Canopy (Sub-dominants);			
Alnus glutinosa	Alder	90-120cm	20-25%
Betula pubescens	Downy Birch	90-120cm	
Prunus avium	Wild Cherry	90-120cm	
Understory and fringe (higher shrubs);			
Prunus Padus	Bird Cherry	60-90cm	20-40%
Corylus avellana	Hazel	60-90cm	
Ilex aquifolium	Holly	60-90cm	
Crataegus monogyna	Hawthorn	60-90cm	
Salix caprea	Goat Willow	60-90cm	
Salix purpurea	Purple Willow	60-90cm	
Understory and edge (lower shrubs);			
Prunus spinosa	Blackthorn	40-60cm	15-25%
Rosa canina	Dog-rose	40-60cm	
Euonymus europaeus	Spindle	40-60cm	
Salix aurita	Eared Willow	40-60cm	
Rubus fruticosus	Bramble	40-60cm	

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Site location:
COUNTY MONAGHAN

Drawing Title:
LANDSCAPE PLAN

Project:
KNOCKNACRAN OPEN-CAST MINE

Drawn by:	Checked by:
CD	RB

Drawing Ref: LD.KNCKRN 1.1

Scale:	Date:
1:3000 @ A1	MARCH 2023

ISSUED