CONTENTS

EXISTING SITE

Planning Application Area (Proposed Sand & Gravel Extraction) – west of R108 regional road

2.1 The overall planning application area covers a total area of approximately 14.9 hectares (c. 36.8 acres) which comprises all or part of three adjoining agricultural fields, currently under crop.

2.2 The general site layout is shown on **Figure 2-1** and consists of the proposed extraction development lands located to the west of R108 regional road with a sloping landform from north to south which extends towards the Delvin River. The Delvin River forms the boundary between counties Meath and Dublin and it flows in an easterly direction from its source north of Garristown until it enters the Irish Sea at Gormanston.

2.3 A coniferous woodland plantation is located to the northeast of the extraction application area, measuring approximately 5 hectares. Sections of this northern boundary along with the western site boundary contain a mature hedgerow and individual trees. The eastern site boundary is formed by a hedgerow along which runs a hard-core farm access track linking the landowner's farm facility to the east of the site with the forestry plantation to the north.

2.4 The internal field boundary running northwest to southeast between the two lower fields also consists of mature hedgerows and intermittent mature trees. There is an area of dense vegetation to the southeast of the site along the lower slope adjacent to the river. The application area includes an extensive deposit of sand and gravel which is proposed to be extracted and processed on site. To the southwest of the site is a former sand and gravel pit which is not operational, and which has had its slopes regraded and vegetated. Some stockpiles of aggregates and concrete foundations of former plant remain but the site has for the most part become vegetated with a combination of grass, shrub and tree species.

Existing permitted concrete batching plant – east of R108 regional road

2.5 On the eastern side of the R108, the existing batching plant site (operated by the Applicant) is bounded along the southern boundary with mature vegetation and trees, and similarly along the western boundary with the exception of the site entrance which consists of a post and wire fence with metal gate. The northern and eastern site boundary consists of a metal palisade fence which divides the batching facility from the Clashford Recovery Facility.

2.6 The concrete batching plant does not fall within the red line planning application area but given that it is controlled by the Applicant the site is enclosed by the blue line. For the purposes of preparing a robust EIA assessment, the concrete batching plant is cumulatively assessed with the proposed extraction development where relevant, in respect of noise, dust, traffic, visual impact, etc. and shown on the various EIAR figures and planning drawings.

Site Access

2.7 The site is accessed from the R108 regional road by an existing gated entrance, off the western side of the road. The entrance serves as an access for the landowner's existing agricultural business. The site entrance is c. 240m north of the road junction between the R108/R122, and approximately 400m from the centre of Naul village.

2.8 The site entrance to the existing Kilsaran Concrete Batching facility is located c. 70m to the north on the opposite (eastern) side of the R108 regional road.

PROPOSED DEVELOPMENT

Development Overview

2.9 The main element of the proposed development is the extraction of the sand and gravel within the limits of the proposed extraction area. Processing of the extracted materials will be carried out on-site to produce a range of aggregates for use by the applicant in the manufacture of concrete at the existing batching facility on the eastern side of the R108 regional road. The application also includes for the ancillary facilities required to serve the development, as outlined below. Details of the proposed site layout are provided in **Figures 2-2** to **2-5**.

2.10 The proposed development being applied for under this planning application comprises of:

- Extraction and processing on site, to include washing (with associated closed recycled washing plant and lagoon system), screening and crushing plant; storage; stockpiling and haulage of sand and gravel to service the existing readymix concrete plant operated by Kilsaran on the eastern side of the R108 regional road and permitted under P. Ref. 80/572 & 22/153 (ABP-314881-22);
- The total extraction proposal extends to an area of c. 6.2 hectares and will be worked (extracted and restored) on a phased basis for a period of 11 years plus 1 year to complete final restoration works (total duration of 12 years);
- Phased stripping and storage of topsoil and overburden materials for reuse in the restoration works. Restoration of the site will be to a beneficial agricultural after-use;
- Access to the site will be through the existing agricultural enterprise site entrance onto the R108 regional road with upgrade of same to consist of setting-back of the existing boundary wall to the north of the site access, and provision for the upgrade of the existing internal access track and sections of a new access track which will include a new weighbridge; and
- All associated site ancillary works within an overall application area of c. 14.9 hectares.

Construction Phase (Entrance Upgrades and Ancillary Facilities)

2.11 It is anticipated that the construction stage works as outlined below will be carried out within a 6-month period. It should be noted that extraction and production operations may be commenced within this 6-month period and carried out in tandem with the below-mentioned development works. In addition to the proposed works outlined below, a dedicated weighbridge for HGV traffic serving the extraction area will be installed along the internal access track.

Existing Agricultural Entrance Upgrade Works on Western Side of R108 Regional – to service the Sand & Gravel Extraction Area

2.12 Refer to Trafficwise **Figures 03108-PL01B** and **03108-PL02B** in EIAR Chapter 14 (Traffic) which shows improvement, overlay and road strengthening proposals to accommodate the proposed development as follows:

- improve the development access where the access accommodates the left turn for HGVs whilst permitting the passage of southbound vehicles (including HGV) on the R108;
- proposed new carriageway construction along development road frontage to achieve consistent road width and verge along development boundary;
- road edge strengthening works adjacent to new carriageway construction;
- road edge strengthening works along the eastern edge of the R108 carriageway;

- localised carriageway repair;
- carriageway overlay 40mm HRA.

2.13 It is proposed to strengthen the road edge over the length of the new road construction and to ensure a sound jointing between the existing and proposed carriageway layers in accordance with best practice. It is also proposed to strengthen the road edge on the eastern side of the R108 between the proposed development access and the existing concrete plant access. Upon completion of the road construction and strengthening works the entire road width, and between the accesses, will be provided with a 40mm thick overlay. The overlay will provide a new and uniform road surface which will reinforce the seal over the various carriageway jointing between construction and strengthened works and existing carriageway.

2.14 The proposals as shown on Trafficwise **Figures 03108-PL01B** and **03108-PL02B** do not compromise the visibility sightlines at the upgraded development access. Sightlines in the order of 90m are achieved in both directions.

2.15 The proposed works to set back the wall to provide adequate sightlines are not covered by the Roads Acts and are included in the red line application area. The overlay and road strengthening proposals within the existing curtilage of the road are not considered development works and are not therefore required to be included within the red line boundary of the application. For the avoidance of doubt, while the works are not included within the red line boundary the impacts of those works are assessed within this EIAR. The proposed works are road strengthening and overlay works and the provision of such services is an executive function of Meath County Council. Kilsaran propose to bear the costs of undertaking the works which will be completed under a road opening licence issuing from Meath County Council.

2.16 From consultations with Meath County Council Transportation Section it is accepted that the above proposals with respect to road strengthening and overlay works are satisfactory.

Operational Phase (Sand and Gravel Extraction and Processing)

2.17 The extraction of the sand and gravel will be carried out in line with best international practice.

2.18 The volume, lateral extent and depth of overburden / sands and gravels for the site have been determined from site investigations. The proposed extraction and processing tasks and activities to be implemented at the site within an overall application area of c. 14.9 hectares consist of:

- extraction and processing on site, to include washing (with associated closed recycled washing plant and lagoon system), screening and crushing plant; storage; stockpiling and haulage of sand and gravel to service the existing readymix concrete plant operated by Kilsaran on the eastern side of the R108 regional road and permitted under P. Ref. 80/572 & 22/153 (ABP-314881-22);
- the total extraction proposal extends to an area of c. 6.2 hectares and will be worked (extracted and restored) on a phased basis for a period of 11 years plus 1 year to complete final restoration works (total duration of 12 years) as outlined in **Figure 2-2**;
- phased stripping and storage of topsoil and overburden materials for reuse in the restoration works. Restoration of the site will be to a beneficial agricultural after-use; and
- access to the site will be through the existing agricultural enterprise site entrance onto the R108 regional road with upgrade of same to consist of setting-back of the existing boundary wall to the north of the site access, and provision for the upgrade of the existing internal access track and section of a new access track which will include a new weighbridge.

Restoration Phase (Extraction Area Reinstatement to Agricultural Use)

2.19 Where feasible, restoration of exhausted areas will be carried out at the earliest opportunity in tandem with extraction operations with the final restoration proposals being carried out after extraction operations at the site have ceased.

2.20 It is proposed to return the worked lands to an agricultural use, including re-instatement of hedgerows in locations similar to those which will be removed, to facilitate the development.

2.21 The only material requirements in respect of the planned restoration scheme are those topsoils and subsoils already present on site over the application area and which will be temporarily stored separately for the duration of extraction operations before being used in the restoration works.

2.22 Redundant structures, plant equipment and stockpiles will be removed from the site on permanent cessation of extraction activity. Machinery and structures will either be utilised by Kilsaran on other sites or be sold as working machinery or scrap.

2.23 The existing concrete batching plant and all ancillary site facilities on the eastern side of the R108 regional road will be retained indefinitely. Once extraction has been completed, the continued operation of the concrete batching plant will be facilitated by using aggregates sourced from external Kilsaran and third party supplies, as is the case currently.

Aggregate Reserve Assessment

2.24 The total recoverable reserve of sand and gravel from within the proposed extraction area is assessed at c. 1.3 million tonnes. This is based on a final extraction design to a depth of c. 100m AOD along the northern extraction limit of Phase 1 to c. 70mAOD along the southern extraction boundary of Phases 2 and 3.

Duration of Extraction

2.25 A term of 11 years is sought for the extraction and processing period and a further one year to complete final restoration of the site giving a total planning permission term of 12 years. It is anticipated that extraction would be carried out at a rate of up to 120,000 tonnes per annum. This annual output is considered relatively small in comparison to typical mineral extraction developments.

Site Screening

2.26 The existing site of the proposed extraction area is bounded to the north, east and west by mature boundary hedgerows which restrict views from public roads to the east and west of the site. Owing to the site sloping down from north to south and the lack of continuous vegetation along the southern site boundary (Delvin river), there are some open views towards the site from the R122 road to the south, albeit broken up by intermittent hedgerows and trees along the R122 road itself.

2.27 In order to minimise visibility from the south, phased extraction and operational considerations, as shown on **Figures 2-2** and **2-3** and outlined in the Extraction Phasing section below will be carried out. Further to this, sections of the existing topography within the site will be retained for as long a duration as possible to further minimise the extent of lands being disturbed at any one time.

2.28 Retention of the archaeological buffer zone associated with MH034-031 within the centre of the site will further mitigate visibility of the processing plant to be located on the southern end of Phase 1.

Removal of Topsoil and Overburden Soils

2.29 Topsoil in advance of the extraction working area will be stripped (in phases as described below) using a hydraulic excavator and moved to the designated location of temporary topsoil storage.

2.30 Similarly, overburden stripped to obtain access to the sand and gravel resource will also be moved to the designated location of temporary overburden storage.

2.31 These materials in turn will be used in the restoration of this area.

Hedgerow / Treeline (Removal / Reinstatement)

2.32 Please refer to **Figure 2-9** for an indication of the hedgerows and associated trees to be removed, to facilitate the proposed development. The trees are deemed to be exempted from obtaining a felling licence should the planning permission be obtained, as set out in the Forestry Act 2014.

2.33 In order to compensate the loss of approximately 180m of native hedgerows within the proposed sand and gravel extraction area, as well as to provide screening of the upper pit slope along the north-western boundary, a total of 430m of native hedge will be planted within the site (230m as part of Restoration Phase 1, i.e. by year 5 and 200m as part of Restoration Phase 3, i.e. by year 12), refer to **Figure 2-6**.

Site Drainage & Water Management

2.34 The Delvin River flows along the southern boundary of the site in an easterly direction. The Fourknocks River flows c. 300m east of the site in a southerly direction initially then in an easterly direction into the Delvin River. There are two open drainage ditches within the site along existing field boundaries which direct surface water run-off in a southerly direction into the Delvin River. It is not proposed to discharge any site waters to rivers in the vicinity of the proposed application site.

2.35 A hydrological / hydrogeological assessment has been carried out to determine what the requirements are for the proposed development, with regard to a water regime. It addresses mitigation measures to eliminate and/or minimise the potential impacts, if any, on surface water and groundwater. These measures will be incorporated into the pit design and operation, (refer to **EIAR Chapter 7** – Surface Water and Groundwater).

Surface Water Runoff

2.36 Rainfall across the extraction areas will percolate naturally to the ground as diffuse groundwater recharge and this is a standard water management measure in Sand and Gravel Pits. The rainfall percolates naturally to the groundwater as is the current situation at the existing greenfield site. The storm runoff will be contained within the working areas and the water may be used for site operations as required.

2.37 During extreme storm events surface water runoff across the working areas will be managed before the water infiltrates to the ground; storm water management measure during extreme weather events is a standard requirement in the operation of Sand and Gravel Pits. Kilsaran operate numerous Sand and Gravel Pits across the country and have many years of experience in the management of storm water at their sites.

2.38 Storm water runoff may pond on the pit floor on a temporary basis prior to the water infiltrating naturally to the ground; however, no specific site measures or infrastructure are required for the management of this storm water within the pit prior to infiltration to the ground.

2.39 The management of storm water within the pit during extreme storm events will be a site operational matter for Kilsaran. No potential impacts are envisaged from the management of the storm water

or from the temporary ponding of storm water within the pit working area on any receptors outside of the extraction areas; and potential impacts from storm water runoff will only be on the operation of the site by Kilsaran and will be temporary in nature before the water infiltrates naturally to the ground.

Existing Field Drainage Ditches

2.40 A surface water drainage ditch runs through the site, along the existing hedgerow boundary to the west of Phase 1 where it turns 90 degrees to the east before turning 90 degrees south and runs along the field boundary between Phases 2 and 3, and discharges into the Delvin River, as shown on **Figure 2-1**. A smaller section of ditch runs between Phases 1 and 2 and joins the ditch that runs north to south to the river.

2.41 The drainage ditches provide a route for surface water runoff from the agricultural lands and are normally dry and only respond to high rainfall events. The vast majority of rainfall falling at the site recharges to ground.

2.42 Two sections of the drainage ditches will require removal over the course of the development. Firstly, a section of ditch will be removed as extraction advances from Phase 1 to Phase 2. The main drainage ditch running from north to south through the centre of the site will remain in place for the duration of extraction operations in Phases 1 and 2 and a portion of this drainage ditch will only be removed as extraction advances from Phase 2 to Phase 3. During Phase 3 extraction operations and following final restoration, the ditch will be directed to the pit floor where water will percolate to ground.

2.43 A shallow drainage channel will be dug along the southern application boundary to prevent any run-off from the topsoil storage berm leaving the site or entering the river. A silt fence will also be installed along the outer boundary of the of the drainage channel to further ensure no runoff from the site reaches the river. Details of the proposed shallow cut-off drain and silt fence are provided in Planning **Drawing 12**. The proposed cut-off drain will be isolated from the existing surface field drains and any water entering the cut-off drain will percolate to ground. Where the cut-off drain intersects with an existing drainage ditch, then they will be separated by a clay plug.

Aggregate Washing

2.44 The proposed development will use a CDE Aquacycle Thickener Unit[1] or similar type of unit to recycle process water from the aggregate washing process for re-use and thus eliminate the need for large-scale surface settlement lagoons[2] at the site.

2.45 The Aquacycle system is a high-rate thickener, recycling up to 90% of the process water for immediate re-use in the washing system. It is a single, compact, and user-friendly unit that can be applied to high and low tonnages. It is a highly efficient water management solution that minimises costly water consumption by ensuring the process water is recycled for immediate recirculation. After feed material has been washed and classified, waste is sent to the thickener tank. The clean water on the top overflows the weir and is stored in a water tank before being re-circulated around the plant. The result is a highly efficient water recycling system that requires only a 10% supply of top-up water. The thickened sludge (comprising the washed fines from the sand and gravel) is periodically pumped from the unit to an adjacent lagoon to allow the material to solidify further. Water released from the sludge will be pumped back to the plant for top-up, further conserving water. The proposed lagoon is not the same as a traditional silt disposal lagoon system that rely on the sediment falling out of suspension over a given retention time, because the settlement has

[1] AquaCycle™ Thickener Primary Stage Water Management - CDE | CDE (cdegroup.com)
[2] Large scale surface lagoons were included in the previous application design (P. Ref. AA/191263 *ABP-308009-20*)

already taken place in the Aquacycle thickener. The resultant dewatered fines are periodically dug out of the lagoon and will be used as a restoration material for use in regrading excavation slopes.

Method of Extraction

2.46 It is proposed a load, haul, dump method of extraction system will be used. A wheeled front-end loader will be used to excavate the in-situ sand and gravel deposit following topsoil and overburden stripping. The material from the working face will then be directly fed into the processing plant by the same loader.

2.47 An overview of the development is shown on **Figure 2-2** with detailed phased extraction and restoration plans provided on **Figures 2-3** to **2-6**. The advance stripping of topsoil and overburden followed by sand and gravel extraction will take c. 11 years to complete. Final site restoration will be achieved over the subsequent year giving a development term of 12 years.

Extraction and Blasting

2.48 There will be no blasting associated with the proposed sand and gravel extraction process.

Extraction Phasing

2.49 The site layout plan shown on **Figure 2-2**, illustrates the proposed phasing of the extraction operations. For Phase 1 the general working direction is from south to north. For Phases 2 and 3 the general working direction is from north to south and east to west respectively.

2.50 To minimise the visual impact and help mitigate noise it was decided that the deposit itself could provide maximum protection to outside views and adjoining land uses from the working area. The centre of the development area retains the existing internal hedgerows for the maximum time period to provide natural screening. Phasing of the extraction along with progressive restoration has the benefit of minimising the extent of land stripped and exposed at any one time along with allowing for restoration to be completed at the earliest opportunity and returned to the farmer for recommencement of agricultural activities. Cross sections illustrating the phased design are provided in **Figure 2-7** whilst the final restoration plan and sections are provided in **Figures 2-6** and **2-8** respectively.

Phase 1 - Extraction

2.51 Phase 1 extraction will commence at the centre of the application area and covers an area of c. 2.7 hectares. It is estimated that extraction within this phase will last approximately 4 years. Phase 1 is further sub-divided into three smaller phases; 1A, 1B and 1C (see **Figures 2-2** and **2-3**).

2.52 Topsoil and overburden material stripped from Phase 1A will be stored to the east of the extraction area. The materials will be placed to a height of no more than 2m, with gently graded side slopes and seeded at the earliest opportunity to blend in with the agricultural field. These stripped materials from Phase 1A will be stockpiled for the duration of all extraction operations and will be used to restore Phase 1A during the final year of restoration operations due to the positioning of the processing plant.

2.53 Sand and gravel extraction will be carried out in Phase 1A in a northerly direction with positioning of the processing plant on the pit floor at the earliest opportunity. This provides for visual screening along with noise and dust attenuation from the processing plant to the nearest residences to the west by the intervening ground. Further to this, the processing plant will be screened in views from the R122 to the south for the duration of the development by the retention of the land within the SMR zone for feature MH034-031 (see photomontages in EIAR Chapter 13 **Figures 13-3** and **13-4**).

2.54 Following completion and set-up of the processing and ancillary facilities, extraction of the sand and gravel will continue in a northerly direction.

2.55 Topsoil material will be stripped from Phases 1B & 1C in tandem and will be stored to the east of the Phase 1C area for a period of approximately 2 years.

2.56 Overburden material will be stripped from Phase 1B and stored in Phase 1C to allow the underlying sand and gravel material from Phase 1B to be extracted.

2.57 Following extraction within Phase 1B, the stored overburden material in Phase 1C will be moved to Phase 1B in tandem with extraction of the underlying sand and gravel in Phase 1C.

2.58 Following extraction within Phase 1C, the overburden material will be returned to Phase 1C followed by capping with the topsoil over both Phases 1B and 1C to restore these areas to a beneficial agricultural use.

Phase 2 – Extraction and Restoration

2.59 Phase 2 extraction will commence in approximately Year 5 in tandem with the restoration works being carried out in Phase 1C. Phase 2 covers an area of c. 1.8 hectares and it is estimated that extraction within this phase will last c. 2 years. Phase 2 is further sub-divided into two smaller phases; 2A and 2B (see **Figures 2-2** and **2-4**).

2.60 Topsoil material will be stripped from Phases 2A & 2B in tandem and will be stored to the east of the Phase 2 area for a period of approximately 3-4 years. The material will be placed to a height of no more than 2m to maintain the integrity of the soils, with gently graded side slopes and seeded at the earliest opportunity to minimise any surface-water runoff from the site.

2.61 Overburden material will be stripped from Phase 2A and stored in Phase 2B to allow the underlying sand and gravel material from Phase 2A to be extracted.

2.62 Following sand and gravel extraction within Phase 2A, the stored overburden material in Phase 2B will be moved to Phase 2A in tandem with extraction of the underlying sand and gravel in Phase 2B.

2.63 Following extraction within Phase 2B, the overburden material will be returned to Phase 2B followed by capping with the topsoil over both Phases 2A and 2B to restore these areas to a beneficial agricultural use.

2.64 There is a requirement to remove a section of hedgerow (c. 70m) between Phases 1 and 2.

Phase 3 – Extraction and Restoration

2.65 Phase 3 will be the final phase of extraction and will commence in approximately Year 9 in tandem with the restoration works being carried out in Phase 2B. Phase 3 covers an area of c. 1.9 hectares and it is estimated that extraction within this phase will last c. 3 years. Phase 3 is further sub-divided into two smaller phases; 3A and 3B (see **Figures 2-2** and **2-5**).

2.66 Topsoil material will be stripped from Phases 3A & 3B in tandem and will be stored to the south of the Phase 3 area for a period of approximately 2-3 years. The material will be placed to a height of no more than 2m to maintain the integrity of the soils, with gently graded side slopes and seeded at the earliest opportunity to minimise any surface-water runoff from the site.

2.67 Overburden material will be stripped from Phase 3A and stored in Phase 3B to allow the underlying sand and gravel material from Phase 3A to be extracted.

2.68 Following sand and gravel extraction within Phase 3A, the stored overburden material in Phase 3B will be moved to Phase 3A in tandem with extraction of the underlying sand and gravel in Phase 3B.

2.69 There is a requirement to remove a section of hedgerow (c. 110m) between Phases 2 and 3.

Phase 4 – Final Year Restoration

2.70 Following extraction within Phase 3B, part of the overburden material will be returned to Phase 3B followed by capping with some of the topsoil to restore the Phase 3B areas to a beneficial agricultural use (see **Figures 2-2** and **2-6**).

2.71 The processing plant will be removed from Phase 1A and the overburden and topsoil materials returned to this area.

Photomontages

2.72 To further demonstrate the proposed visibility of the extraction area from the R122, 2 no. photomontages are provided as part of the Landscape and Visual Impact Assessment as outlined in EIAR Chapter 13 – Landscape (**Figures 13-3** and **13-4**).

2.73 The photomontages for each viewpoint illustrate the extraction phases (3 no.) and the final restoration phase.

2.74 An overview of the four stages shown on the photomontages are provided in **Plates 2-1** to **2-4** below. The elements visible in each stage can be summarised as follows:

1. **Year 4 – On completion of Extraction Phase 1:** The area covered by Phase 1 is fully extracted, but no restoration activities have yet taken place. Overburden and topsoil are stored in grass covered berms to the east of the Phase 1 extraction area.
2. **Year 8 – On completion of Extraction Phase 2:** The area covered by Phase 2 is fully extracted and the northern section of Phase 1 is restored (i.e. northern and eastern slopes lowered to 3:1 (H:V), using some of the overburden and topsoil stored from stripping the Phase 1 area and the slopes and pit floor are grass seeded). Overburden and topsoil are stored in a grass covered storage berm to the east of the Phase 2 extraction area. The southern section of Phase 1 has not yet been restored, as the processing plant is located in this area, taking advantage of the screening provided by the land and hedgerows retained, due to the archaeological buffer zone (note: the screening plant will stay in this location for the duration of the development, in order to minimise its visibility in views from the south/south-east).
3. **Year 11 – On completion of Extraction Phase 3:** The area covered by Phase 3 is fully extracted and the south-eastern section of Phase 2 is restored (i.e. southern and eastern slopes lowered to 3:1 (H:V), using the overburden and topsoil stored from stripping the Phase 2 area and the slopes and pit floor grass seeded). Overburden and topsoil are stored in a grass covered berm to the south of the Phase 3 extraction area. The north-western section of Phase 2 has not yet been restored, as this is required to provide access between the processing plant and the Phase 3 extraction area.
4. **Year 12 – On completion of all Restoration Works:** All plant and stockpiles are removed from the extraction areas and all slopes (with the exception of the western boundary of the Phase 1 area) are lowered to 3:1 (H:V), using all remaining overburden and topsoil stored from stripping the development area. The pit slopes and pit floor are grass seeded. Native hedgerows are planted to replace those sections of hedgerows removed to facilitate the development and thereby re-connect the retained hedgerows.

- Please refer to **Appendix 13-C** of Chapter 13 (Landscape) of the EIAR for the Viewpoint Photography and Photomontage Methodology.

Plate 2-1
Proposed Phase 1 Development Detail

Plate 2-2
Proposed Phase 2 Development Detail

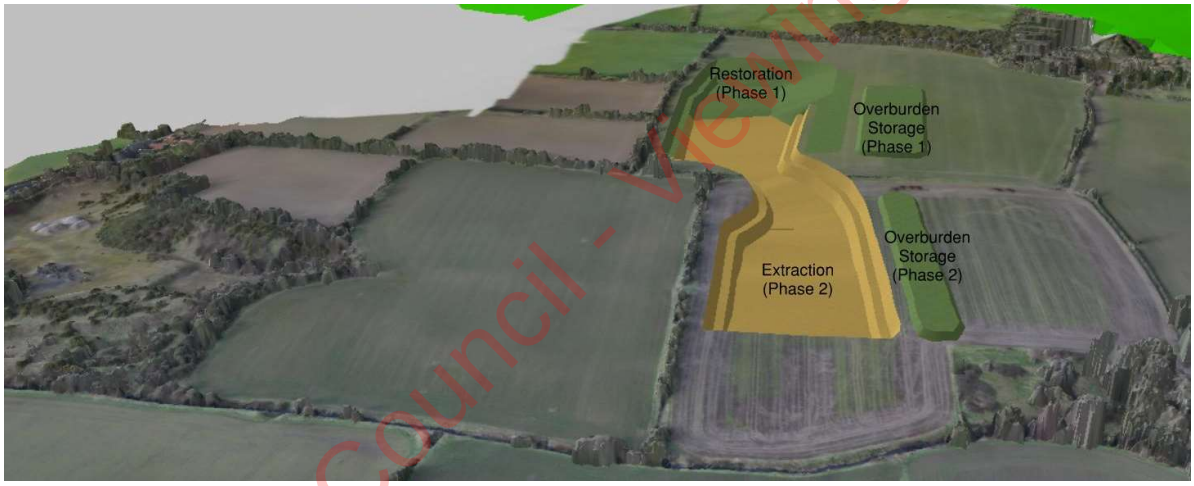

Plate 2-3
Proposed Phase 3 Development Detail

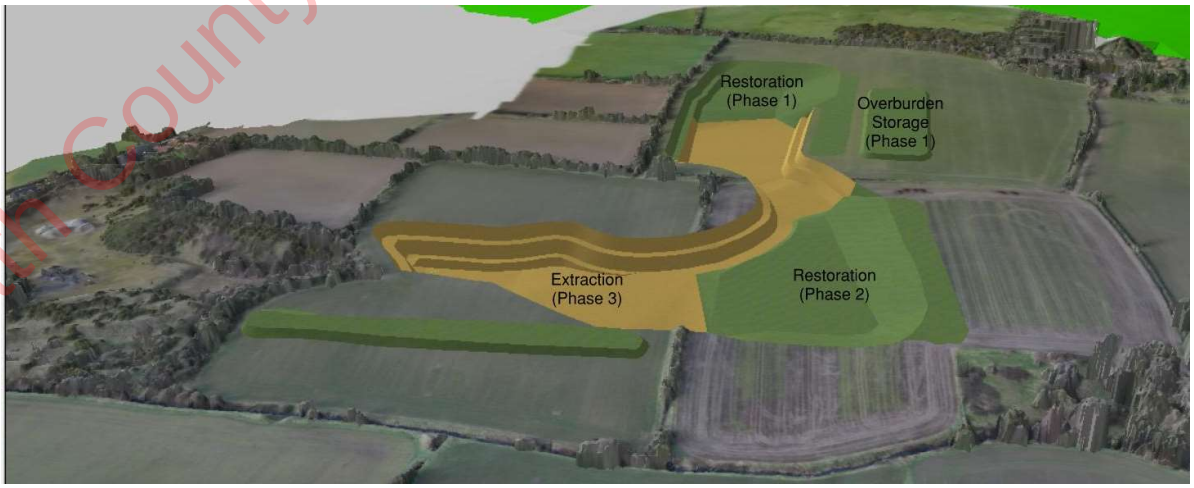

Plate 2-4
Proposed Restoration Detail

Processing Methods

Sand and Gravel Processing Method

2.75 The sand and gravel processing methods will be: crushing, washing and screening, using a modern processing plant, to produce a range of aggregates primarily for use by the company in their adjacent concrete product manufacture facility located on the eastern side of the R108 regional road. The modern plant will operate in a closed circuit with the processes water recycling unit to minimise the need for excessive take of groundwater and to eliminate the need to discharge process water from the site.

Dispatch of Aggregate Product

2.76 Processed aggregate from the stockpiles will be loaded by means of a mechanical loading shovel directly to incoming road trucks. Trucks will then leave the stockpile area and travel to the weighbridge where loads dispatched off-site will be weighed and recorded. The dispatch office will monitor the movement of incoming and outgoing road trucks and will also be responsible for the issuing of dispatch dockets.

Working Hours

2.77 The proposed hours for operations (extraction, processing and haulage) at the site will be 08.00 hours to 18.00 hours Monday to Friday only. Operations will be carried out on Saturday between 08.00 and 14.00 hours with no operations on Sunday or Public Holidays.

Employment

2.78 The proposed sand and gravel extraction development will provide employment for 3 people (one technical/operations manager and two general operative) directly on-site, with additional Kilsaran employee truck drivers also being utilised.

2.79 Therefore, the proposal will secure direct employment of up to 3 people for the duration of the proposed development i.e. 12 years.

2.80 The continued development of proven aggregate reserves is required to ensure Kilsaran meets the demands of the market(s) they have built up over the past 30 years in the region, including supply, to the local construction industry and infrastructure projects and Local Authorities.

2.81 Development of the site is consistent with the policies set out in the National Planning Framework for the sector; the (Eastern & Midland Regional Assembly) Regional Spatial & Economic Strategy 2019-2031) and the Meath County Development Plan 2021-2027 which recognise the requirement for:

- a secure supply of construction aggregates and related products is necessary for the continued development of the region;
- proven aggregate reserves need to be safeguarded for future extraction; and
- 'Best environmental management practice' to be implemented within quarry developments.

SITE INFRASTRUCTURE

Site Access

2.82 There is an existing agricultural site access located at the western side of the R108 regional road. The existing access is located within a 50km/h speed limit zone. The transition to the 60km/h speed zone is location just north of the access between it and the access into the concrete batching facility on the eastern side of the R108 road.

2.83 Access to the proposed sand and gravel extraction area will be through the existing agricultural commercial site entrance onto the R108 regional road which this application seeks to upgrade and improve to provide suitable geometry to accommodate manoeuvring of quarry vehicles. The proposed improvements will include upgrade of the farm access geometry including the provision of tapered access bellmouth, setting back of boundary wall to farm and road edge strengthening. The improvement works to the entrances will provide for improved visibility sightlines.

2.84 There will be no net increase in traffic on the receiving road in the immediate vicinity of the site entrance as HGV traffic from the proposed development will effectively replace the existing HGV traffic hauling aggregates to the concrete batching facility from outside the area.

2.85 The proposed development will benefit the wider road network as it will eliminate (bar the c. 70m distance from the site entrance to the concrete batching facility) all associated aggregates supply HGV traffic travelling in both directions on the R108 which import materials to the concrete batching facility from other Kilsaran supply sites currently at Annagor and Ballynamona. Eliminating the requirement to transport materials from Ballynamona will also have the added benefit of eliminating those HGV truck movements passing through Naul village towards the concrete batching facility for the duration of the development life.

2.86 Existing haulage from Annagor to Naul (via the M1) is c. 20km one-way and from Ballynamona to Naul (via the R122) is c. 40km one-way. Based on the average annual HGV one-way movements from Annagor (c. 5,333) and Ballynamona (c. 3,555)[3] which represents a 60:40 split, this equates to annual travel distances from the two locations being 106,660km (one-way) and 142,200km (one-way) respectively.

[3] 120,000t (annual import) ÷ 27t (HGV load) = c.8,888 one-way movements per annum. Split 60:40 = c.5,333 (Annagor) and c.3,555 (Ballynamona) one-way movements

2.87 The proposed development will therefore result in a total annual road distance saving of 248,860km with a consequential and beneficial reduction in carbon emissions of c. 177,353 kg CO_2eq[4].

Site Security

2.88 The boundaries of the land interest site consist of a combination of stock-proof fencing and mature hedgerows. The site boundary will be inspected on a regular basis and maintained as required under the Mines and Quarries Legislation. Where the application area does not bound an existing hedgerow and instead crosses an open field, a post and wire boundary fence will be erected along the planning application area to define the limits of the site from the surrounding agricultural lands.

2.89 Appropriate warning signs will be displayed at visible locations along the boundary at appropriate intervals.

2.90 The existing entrance to the site has an electric and lockable gate with security cameras to prevent unauthorised access outside of the working hours.

Proposed Fencing Detail

2.91 **Figure 2-2** shows the locations of the proposed fencing for the site in plan view. Within the proposed sand and gravel extraction area of the application site, it is proposed to erect fencing:

1. to demarcate the northern application boundary where there is currently no physical barrier such as a hedgerow, wall or fence / proposed fence length c. 525m.
2. to demarcate the southern application boundary parallel to the Delvin River where there is currently no physical barrier such as a hedgerow, wall or fence / proposed fence length c. 370m.
3. surrounding the two archaeological exclusions zones / proposed fence length c. 650m.

2.92 The fencing will be a typical stockproof type fence consisting of wooden posts and wire, refer to **Plates 2-5** and **2-6** below. The fencing will be standard agricultural fencing (c. 1.2m – 1.4m in height) to be less intrusive than a typical palisade or industrial metal fencing. The fencing will be such that it will also allow wildlife to pass through freely.

2.93 Prior to excavation works being carried out at a particular phase of extraction on site, the fence lines will be set out and marked on the ground by a topographic surveyor. A fencing contractor will be employed to erect the fencing in accordance with the following standards as set out in the *'Minimum Specification for Farm Fencing'* from the Department of Agriculture, Food and the Marine (S148, August 2019), to ensure a quality fence is installed which will last for the duration of the proposed development of 12 years:

1. The fence shall be erected so that on completion the posts are located along the designated fencing line and the posts follow a smooth alignment. The finished fence shall follow approximately the profile of the ground;
2. The posts shall be driven using a purpose built post driver such that on completion of driving, the fence shall remain stable and upright. The posts to be installed shall be pointed;
3. In order to protect the post from damage, the driving weight shall impact directly on the post top;
4. Wire should be fixed with galvanised or zinc / aluminium coating staples. To prevent splitting of the post, staples should be driven at an angle and staggered along the length of the post. Staples

[4] 248,860km x 0.71266kg/km conversion factor

should not be driven home fully as such staples will inhibit movement of the fencing wire and will damage the galvanised or zinc / aluminium coating;

5. The posts shall be a minimum height of c. 1.2m above ground and spaced no more than 5m apart.

Plate 2-5
Proposed fence typical detail (wooden post and wire stockproof fencing)

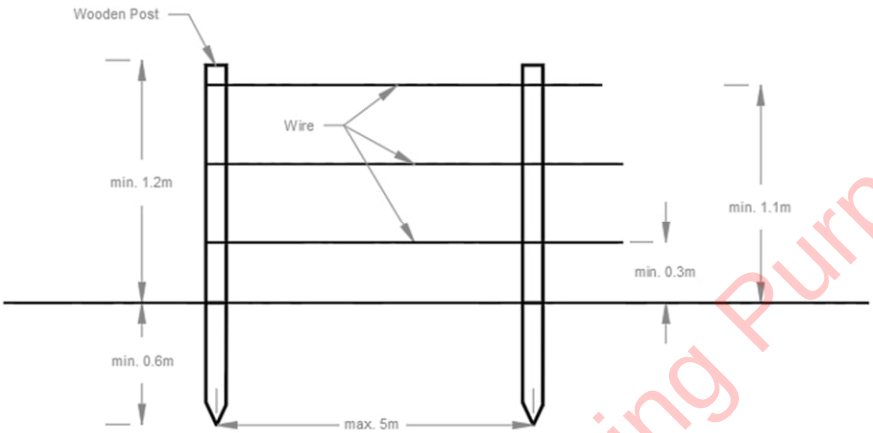

Plate 2-6
Proposed fence example (wooden post and wire stockproof fencing)

Site Roads, Parking and Hardstanding Areas

2.94 Internal farm access roads are already provided within the application site, running from the site entrance to the existing agricultural weighbridge/office facility and onto the proposed application sand and gravel extraction area. The section of the existing internal access road from the existing agricultural weighbridge to the public road is already a concrete hard-paved surface.

2.95 The internal farm access road will be upgraded, and two new sections of hardcore roadway will be constructed, one in an east-west direction from where the existing agricultural track ends into the Phase 1A extraction area (c. 140m length) and the second (c. 100m length) in the vicinity of the proposed new weighbridge, refer to **Figure 2-2**. Access track drainage works will be carried out along the northern edge of the track to provide a linear filter drain with the access track cambered towards

the filter drain to allow any surface water runoff percolate to the ground. This will prevent any surface water run-off from the access road in a southerly direction towards the Delvin river. Details of the access track drainage are provided in Planning **Drawing 12**.

2.96 A designated car parking area is provided for employees and for visitors adjacent to the existing agricultural weighbridge office.

2.97 Within the existing concrete batching facility, the site is hard surfaced with provision for both HGV and car parking already in place.

Wheelwash

2.98 There is no proposal to install a wheelwash at the proposed development. HGV traffic will travel over a paved internal access road from the proposed extraction area to the site entrance over a distance of c. 950m. It is anticipated that travelling over this distance will not drag mud or other materials onto the public road. In addition, the public road between and in the vicinity of the site entrances will be regularly cleaned with a road sweeper.

2.99 In the event of material being spilled on the public road the operator will ensure that spilled material is removed from the road surface in a safe and timely manner, as soon as they notice or are notified that a spillage has arisen.

Weighbridge

2.100 In order to track and record the amount of material leaving the site, all HGV traffic will be directed across a dedicated new weighbridge associated with the extraction operations to be located c. 100m from the site entrance and adjacent to the existing agricultural weighbridge office and toilet facility as shown on **Figures 2-1** and **2-2**.

Offices and Ancillary Welfare Facilities

2.101 There is no requirement for the provision of any new office or ancillary welfare facilities at the proposed development.

2.102 The existing agricultural weighbridge office and toilet facility will be used by site staff for the duration of the proposed development in connection with the sand and gravel extraction element of the development. Existing office, welfare and toilet facilities are in place for staff at the concrete batching facility.

Aggregate Processing Plant

2.103 Within the proposed sand and gravel extraction area, an aggregate processing plant for the crushing, washing and screening of the extracted sand and gravels will be erected for the duration of the proposed extraction life (c. 11 years). The location of the plant is provided in **Figures 2-2** and **2-3** and design detail (plan and elevations) is provided in SLR Planning **Drawing 10**.

Utilities and Services

2.104 A new connection to the Electricity Supply Board (ESB)'s National Grid will be used to supply electrical power to the processing plant within the sand and gravel extraction area.

2.105 Lighting present within the site will be headlights on the machinery used for the extraction works. Lighting would only be in use for wintertime operations, when darkness has fallen, within the proposed site operating hours of 08.00 hours until 18.00 hours Monday to Friday and until 14.00

hours on Saturdays. There will therefore be a period where such lighting will be required for up to 1 hour in the morning and up to 2.5 hours in the evening, during periods in winter.

2.106 As the processing plant is to be provided on the pit floor it will be below the surrounding ground level and therefore no lighting will be directed outside of the site.

2.107 Existing utilities are in place at the concrete batching facility.

Fuel and Oil Storage

2.108 No fuel and oils will be stored at the sand and gravel extraction site. Any refuelling and maintenance will be carried out at the existing concrete batching facility where fuels and oils are currently stored in bunded fuel tanks.

2.109 Notwithstanding this, a spill kit will be stored at the sand and gravel extraction site in case of any accidental leaks from vehicles or machinery at the application site.

WASTE MANAGEMENT

Extractive Waste Management

2.110 Almost all products and by-products arising from the aggregate processing will have commercial value. Any waste materials from the site will be stored, collected, recycled and/or disposed of in accordance with any requirements of Meath County Council.

General Waste Management

2.111 Kilsaran Concrete as a member of the Irish Concrete Federation commits themselves to the principles of the Federations Environmental Code. The code states:-

2.112 "ICF members will minimise production of waste and where appropriate consider its beneficial use including recycling. They will deal with all waste in accordance with the relevant legislation and other controls in place, including using waste contractors with valid Waste Collection Permits"

2.113 Potential waste produced and the measures used to control it are described as follows:-

- **Scrap metal** – these materials are chiefly produced from the maintenance of the processing plants and can cause a nuisance if allowed to build up in an uncontrolled manner. A designated scrap metal area will be demarcated on site and the build-up of scrap will be controlled by the regular removal by licensed scrap metal dealers.
- **Used Oil and Oil Filters** – any waste oil/oil filters that may arise from servicing of plant will be removed from the site by a licensed waste contractor.
- **Used Batteries** – similarly, all used batteries will be removed from site for collection and recycling by a licensed waste contractor in accordance with the Waste Management Regulations.
- **Domestic Style Waste** (Canteen Waste) – domestic waste generated at the existing farm offices and employee's facility will be collected by a licensed waste collection contractor.
- Note: overburden stripped from above the sand and gravel deposit, and silt produced during the washing process are not considered waste. They are an essential component of the restoration programme. These materials are required for the reshaping and landscaping of the worked-out area to make it more suitable for an agricultural after-use.

PROPOSED ENVIRONMENTAL CONTROLS

General

2.114 Extraction, processing and ultimately restoration activities at the application site require a number of environmental controls to eliminate or minimise the potential nuisance to the public arising from the extraction and processing operations. The environmental control measures to be implemented at the site are outlined in the following sections.

2.115 Any additional control measures, over and above those outlined below, which may be instructed on foot of the proposed planning application, will also be implemented.

Bird Control

2.116 As the process of sand and gravel extraction is free of putrescible (food / kitchen) waste, site activities are unlikely to attract scavenging birds such as gulls and crows for the duration of works. Accordingly, it is not intended to implement any specific bird control measures at the site.

Dust Control

2.117 In dry, windy weather conditions, site activities may give rise to dust blows across and beyond the planned development site areas. In order to control dust emissions, the following measures will be implemented:-

- water will be sprayed from a tractor drawn bowser on dry exposed surfaces and stockpiles (paved roads, unsealed haul roads and hardstand areas);
- areas of bare or exposed soils will, insofar as practicable, be kept to a minimum;
- newly constructed screening berms / soil storage areas will be grassed at the earliest opportunity;
- emission of fugitive dust from machinery such as the proposed processing plant will be minimised by utilising dust suppression and by locating the plant within the sand and gravel void area at a lower elevation to the surrounding land profile;
- all on site roads will be maintained and all HGV's exiting the site will travel over a concrete paved road from the weighbridge before entering the public road. This will minimise the transport of fines by HGVs out onto the public road network;
- all dry loads (fines materials) leaving the site will be sheeted.

2.118 The amount of dust or fines carried onto the public road network will be further reduced by regular sweeping of internal paved site roads and surrounding public roads as required.

Traffic Control

2.119 The existing agricultural enterprise entrance onto the R108 regional road will be altered and upgraded to provide the necessary visibility splays in both directions for HGV traffic entering and exiting the sand and gravel extraction area. This site entrance is already provided with a secure and lockable gate, set-back off the carriageway to allow a car or truck to pull in off the public road should the gate be closed.

Litter Control

2.120 As the proposed development will be largely free of litter, the daily operational activities are unlikely to give rise to problems with windblown litter. Accordingly, there is no requirement to implement any specific litter control measures at the site.

2.121 In the unlikely event that any litter waste is identified, it will be immediately removed off-site to an authorised waste disposal or recovery site.

Odour Control

2.122 As the sand and gravel extraction activities or the concrete production at the site will not be biodegradable and will not therefore emit odorous gases and site activities will not give rise to odour nuisance. Accordingly, it is not intended to implement any specific odour control measures at the site.

Vermin Control

2.123 As the proposed development will be free of putrescible (food / kitchen) waste, on-site activities will not attract vermin (rats) for the duration of the extraction or subsequent restoration operations. Accordingly, no specific vermin control measures will be implemented at the site.

Fire Control

2.124 As the proposed development will be free of flammable and biodegradable materials which could create a fire or explosion risk, on-site extraction activities will not present a fire risk for the duration of the extraction operations. Accordingly, there is no requirement to implement specific fire control measures at the site.

2.125 In the unlikely event that a fire does occur, the local fire stations in Balbriggan (8.5km east), Ashbourne (15km southwest) and Skerries (15km east) will be contacted and emergency response procedures will be implemented. Fire extinguishers (water and foam) are provided at the office/canteen at the existing concrete batching facility to deal with any small outbreaks which may occur.

PROPOSED ENVIRONMENTAL MONITORING

General

2.126 Kilsaran operates an environmental management programme to monitor and manage emissions from all their established operations and an environmental monitoring programme will be established in connection with the proposed sand and gravel extraction and aggregate processing at the site. The environmental monitoring programme will comply with any requirements in respect of these activities should they be granted by Meath County Council.

2.127 Environmental sampling, monitoring and testing is generally undertaken by external consultants on behalf of Kilsaran as and when required. Records of environmental monitoring and testing will be held on Kilsaran's cloud based network and submitted to the Local Authority as required.

2.128 Environmental noise, dust and water monitoring carried out on a regular basis, will demonstrate that the sand and gravel pit will not have any significant adverse effects on the surrounding environment.

Dust Monitoring

2.129 Dust monitoring will be carried out at the site at five dust monitoring station, D1 – D5. These locations are similar to those used in the baseline assessment (refer to EIAR **Figure 8-1**). The applicant is happy to facilitate any request for relocation of these or additional monitoring locations should the planning authority deem this necessary.

2.130 The dust monitoring gauges will be located close to emission sources or potentially sensitive receptors located beyond the site boundary. It is proposed that the dust monitoring stations will remain in place for the duration of extraction and processing operations at the site and be monitored on a monthly basis from May to September inclusive (similar to Condition 5b of the previous Meath County Council Notification Decision to Grant on P. Ref. AA191263).

2.131 Baseline monitoring and experience from similar types of development indicate that, subject to implementation of appropriate mitigation measures (as described in **Chapter 8** of the EIAR), the development can comply with the DoEHLG (2004) / EPA (2006) recommended total dust deposition threshold of 350 milligrams per day (averaged over a 30-day period).

Noise Monitoring

2.132 Noise monitoring will be carried out at the site at six noise monitoring station, N1 – N6. These locations are the same as those used in the baseline assessment (refer to EIAR **Figure 10-1**).

2.133 It is proposed that the noise monitoring survey will be carried out for the duration of extraction and processing operations at the site on an annual basis (similar to Condition 5c of the previous Meath County Council Notification Decision to Grant on P. Ref. AA191263).

2.134 Baseline monitoring and experience from similar types of development indicate that, subject to implementation of appropriate mitigation measures (as described in **Chapter 10** of the EIAR), the development can comply with the noise threshold limit of 55 dB(A) recommended in the EPA (2006) environmental management guidelines for the sector. The mitigation measures are in accordance with the 'best practice / mitigation' measures described in Section 3.2 of the DoEHLG (2004) guidelines.

Odour Monitoring

2.135 As the materials to be extracted at the site are not organic or biodegradable and will not therefore emit odorous gases, the on-site activities will not give rise to odour nuisance. Accordingly, no provision has been made for odour monitoring at the site.

Ecological Monitoring

2.136 It is recommended that the breeding bird population on-site is monitored annually during the proposed development using the Countryside Bird Survey methodology which will consist of two early morning survey visits between April and June.

2.137 Trail cameras can be used to monitor potential badger activity near the locations where previous old setts have been reported. Static bats detectors should also be employed to monitor the movement of bats to ensure the construction and operational works are not effecting the local bat populations.

Groundwater Monitoring

2.138 A number of groundwater monitoring wells has been drilled around the perimeter of the proposed extraction area. Groundwater levels will be recorded in these wells on bi-monthly basis.

2.139 It is proposed to undertake groundwater quality monitoring at R2 (groundwater quality to the south of the site) and R16 (groundwater quality lateral to the site) subject to owner consent. Baseline groundwater samples will be taken prior to the commencement of works. The analysis will be undertaken by an accredited laboratory. Groundwater samples will be tested for the following parameters:

- Conductivity (µS/cm);
- pH;
- Total Petroleum Hydrocarbons (TPH) (mg/l);
- Petroleum Range Organic (PRO) (mg/l); and,
- Diesel Range Organics (DRO) (mg/l).

2.140 The results of the groundwater monitoring programme will be submitted to Meath County Council on a quarterly basis.

Surface Water Monitoring

2.141 There is one surface water course in the vicinity of the proposed application site, running along the southern landholding boundary.

2.142 It is not proposed to discharge any site waters to this river and therefore the proposal poses no pollution potential to surface water. Notwithstanding this, the applicant would be agreeable to carrying out surface water sampling at a location upstream and downstream of the site on a bi-annual basis.

PROPOSED FINAL RESTORATION

Proposed Restoration Scheme

2.143 The principal activity which will be undertaken at the application site is the extraction and processing of the in-situ sand and gravel with ultimate restoration of lands returned to an agricultural afteruse and for the most part will merge back into the surrounding pastoral landscape.

2.144 The final restoration scheme relates only to the sand and gravel extraction element to be carried out on the western side of the R108 road and detail is shown on the restoration plan and cross sections in **Figures 2-5** and **2-6**. A one-year period following completion of extraction is being requested in order to carry out final restoration of the site. The existing concrete batching facility site will continue to operate following completion of extraction operations within the pit area through a supply of externally sourced aggregates and therefore does not form part of the restoration proposals.

2.145 As stated previously, progressive restoration will form an integral part of the development process and will be carried out at the earliest opportunity as outlined on the phasing overview plan in **Figure 2-2** and in detail in **Figures 2-3** to **2-5**.

2.146 The final phase of the restoration will start when all the accessible sand and gravel deposits have been exhausted and details are provided in **Figure 2-6**. All processing plant in Phase 1A associated with extraction and processing activities will be removed from site. The remaining pit slopes will also be regraded and the areas returned to a beneficial agricultural use.

2.147 The remaining stored subsoil and topsoil will be spread on the contoured area and seeded with a mix of suitable grasses to create pasture and when this operation is completed the site will have fully reverted back to agricultural land and will blend in with the surrounding topography.

2.148 During all phases of restoration, a layer of overburden/silt material will be spread over the worked-out pit floor as a sub-base in the progressive restoration area. Topsoil will be spread over the entire treated area; stone picked and promptly grass seeded under expert supervision.

2.149 Thus, the use of progressive restoration (where feasible) is not only beneficial from an environmental view point but it also reduces the handling requirements for the soils and overburden; hence it has a positive economic benefit too.

2.150 On completion of the extraction works the sand and gravel pit will be restored to an agricultural use, which is one of the beneficial after uses listed in the EPA Guidelines: 'Environmental Management in the Extractive Industry' (2006). This will be achieved by the following measures:

- on completion of all extraction works, all of the plant and machinery within the site will be removed;
- re-grading to a gradient of 1v:3h (c. 18°) or less of the sand and gravel pit side slopes to achieve a relatively uniform ground level in this area. The exception to this will be the regrading of the western pit face in Phase 1 to a gradient of 1v:2h (c. 27°). The re-graded areas will be spread with topsoil and grassed; and
- all existing perimeter boundary fences and hedgerows will be retained to ensure that the site is secure. The existing gates at the site entrance will continue to be used as an agricultural entrance as is the existing situation.

2.151 In order to compensate the loss of approximately 180m of native hedgerows within the proposed sand and gravel extraction area, as well as to provide screening of the upper pit slope along the north-western boundary, a total of 430m of native hedge will be planted within the site (230m as part of Restoration Phase 1, i.e. by year 5 and 200m as part of Restoration Phase 3, i.e. by year 12), refer to **Figure 2-6**.

2.152 The hedgerow replacement within the sand and gravel extraction area will be planted in 2 staggered rows, with the rows 50cm apart and plants within each row 50cm apart (i.e. 4 plants per m). Transplants and container grown shrubs will be planted in random groups of 3-5. One feathered tree will be planted every 10-15m.

2.153 Having been founded in 1964, Kilsaran Concrete has a long history and proven track record within the construction minerals sector in Ireland.

2.154 The company operates over 20 quarry and sand & gravel pit sites throughout the country. The company has an established and proven track record in quality reinstatement works following extraction operations at several of their sites.

2.155 A number of previous large-scale restoration schemes have been completed by Kilsaran within the Kildare / Meath areas. These schemes are similar to what is proposed here with restoration to a beneficial agricultural landuse following extraction of sand and gravel from the sites. Photographic evidence of the restoration examples is contained in **Appendix 2-A** for the following sites:

- Site 1: Halverstown, Kilcullen, County Kildare - 22 hectares / restoration completed in 2015
- Site 2: Ballynamona, Summerhill, County Meath - 14 hectares / restoration completed in 2008
- Site 3: Mitchelstown, Summerhill, County Meath - 12 hectares / restoration completed in 2014

2.156 The restoration works represent a good comparative example of the type and quality of the restoration works that Kilsaran have expertise in providing at their worked-out sand and gravel pits.

Site Management and Supervision

2.157 The applicant will clearly define the management responsibility for the site restoration work and will ensure that this person has the necessary information (from the planning application) and authority to manage the whole restoration process. Relevant staff will be briefed on the scheme and will be adequately supervised / controlled. A system of record keeping for the key restoration activities will be put in place.

Long Term Safety and Security

2.158 The existing boundary fences, walls and hedgerows will be maintained in a stock proof state of repair as part of the future agricultural land use. The area will be landscaped and vegetated so as to blend into the surrounding existing landscape as illustrated by the accompanying photomontages provided in EIAR Chapter 13 **Figures 13-3** and **13-4**.

Long Term Stability of Pit Faces

2.159 The restoration scheme provides for the re-grading of the external worked out pit faces to a safe angle of repose of in and around 18 - 27 degrees. This will ensure the long-term stability of slopes and faces.

Long Term Surface Water and Groundwater

2.160 Any surface water will percolate to ground. There is no requirement for any active long-term surface water or groundwater management at the site.

Decommissioning of Plant and Machinery

2.161 Redundant structures, plant equipment and stockpiles within the sand and gravel extraction area will be removed from site on permanent cessation of extraction activity. Machinery and buildings will either be utilised by Kilsaran on other sites, or be sold as working machinery or scrap.

2.162 As no fuels or oils are to be stored on the extraction site, there will be no potential for fuel or oil to cause long-term water pollution following completion of extraction activities.

Aftercare and Monitoring

2.163 There will be no on-going requirement for monitoring noise or dust after extraction and processing and manufacturing operations have ceased.

2.164 A final site inspection 6 months after formal site closure will be carried out to ensure the final site restoration as implemented is functioning.

APPENDICES

Appendix 2-A

Previous examples of restoration works of sand and gravel pits, similar to that proposed at the Naul

Site 1: Halverstown, Kilcullen, County Kildare

Sand & Gravel Pit prior to and during restoration works

Halverstown Restoration to Agricultural Use: completed in 2015

Site 2: Ballynamona, Summerhill, County Meath

Restoration of Sand & Gravel Pit to agricultural use: completed in 2008

Site 3: Mitchelstown, Summerhill, County Meath

Restoration of Sand & Gravel Pit to agricultural use: completed in 2014

FIGURES

1. Extract from 1:2,500 scale Ordnance Survey Mapping - Digital Maps 2648-B & 2649-A

2. Ordnance Survey Ireland Licence No. CYAL50381397 (c) Tailte Éireann - Surveying

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LEGEND

- LAND INTEREST AREA c.25 HECTARES (c.61.8 ACRES)
  Cyan Shaded Area = Kilsaran Ownership
  Remainder = Third Party Ownership with Lease Agreement
- APPLICATION AREA c.14.9 HECTARES (c.36.8 ACRES)
- **PROPOSED** EXTRACTION AREA c.6.2 HECTARES (c.15.3 ACRES)
- EXISTING KILSARAN BATCHING PLANT P.REFS. 80/572 & 22/153 (ABP-314881-22)
- ARCHAEOLOGICAL EXCLUSION ZONES (EXCLUDES SAND & GRAVEL EXTRACTION)
- EXISTING VEGETATION / HEDGEROWS
- SHED / COMMERCIAL STRUCTURE
- RESIDENTIAL PROPERTY
- RIGHT OF WAY
- **PROPOSED** DRAINAGE DETAILS (REFER TO PLANNING DRAWING 12)

Naul

An Aill Naul

An Baile Thiar Westown

Quarry

Nursing Home

Delvin River

Right of Way

Proposed Phase 1 Extraction Area

Proposed extraction area (c.6.2 ha)

Proposed Phase 2 Extraction Area

Proposed Phase 3 Extraction Area

MH034-031 SMR ZONE
No sand and gravel extraction to be carried out within exclusion zone

Ditch for surface water run-off drainage

Proposed shallow cut-off drain and silt fence to prevent any silt run-off from site entering Delvin River (refer to Planning **Drawing 12** for details)
Note: Cutoff drain to be isolated from all existing drains. Water entering the cutoff drain will percolate to ground. Where the cutoff drain intersects with an existing drainage ditch, then they will be separated by a clay plug.

Proposed post and wire security fence along application boundary for duration of operations (Biodiversity friendly to allow free movement of wildlife) refer to Planning **Drawing 5A**

Proposed HGV access route over existing farm access track

Proposed access track drainage channel (refer to Planning **Drawing 12** for details)

Existing Site Entrance to Kilsaran Concrete Plant

Proposed New Section of Internal Track (c.100m length / 7m width)

Existing Site Entrance Gate

Proposed New Weighbridge to be used for duration of extraction operations (refer to Planning **Drawing 11**)

Existing Agricultural Weighbridge Office / Toilet to be used by site operatives for duration of extraction operations

Existing Agricultural Sheds

Existing Agricultural Weighbridge

R108 Regional Road

Kilsaran Concrete Plant P.Ref. 80/572 & 22/153 (ABP-314881-22)

Kilsaran
ideas taking shape

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Kilsaran Concrete Unlimited Company

Environmental Impact Assessment Report

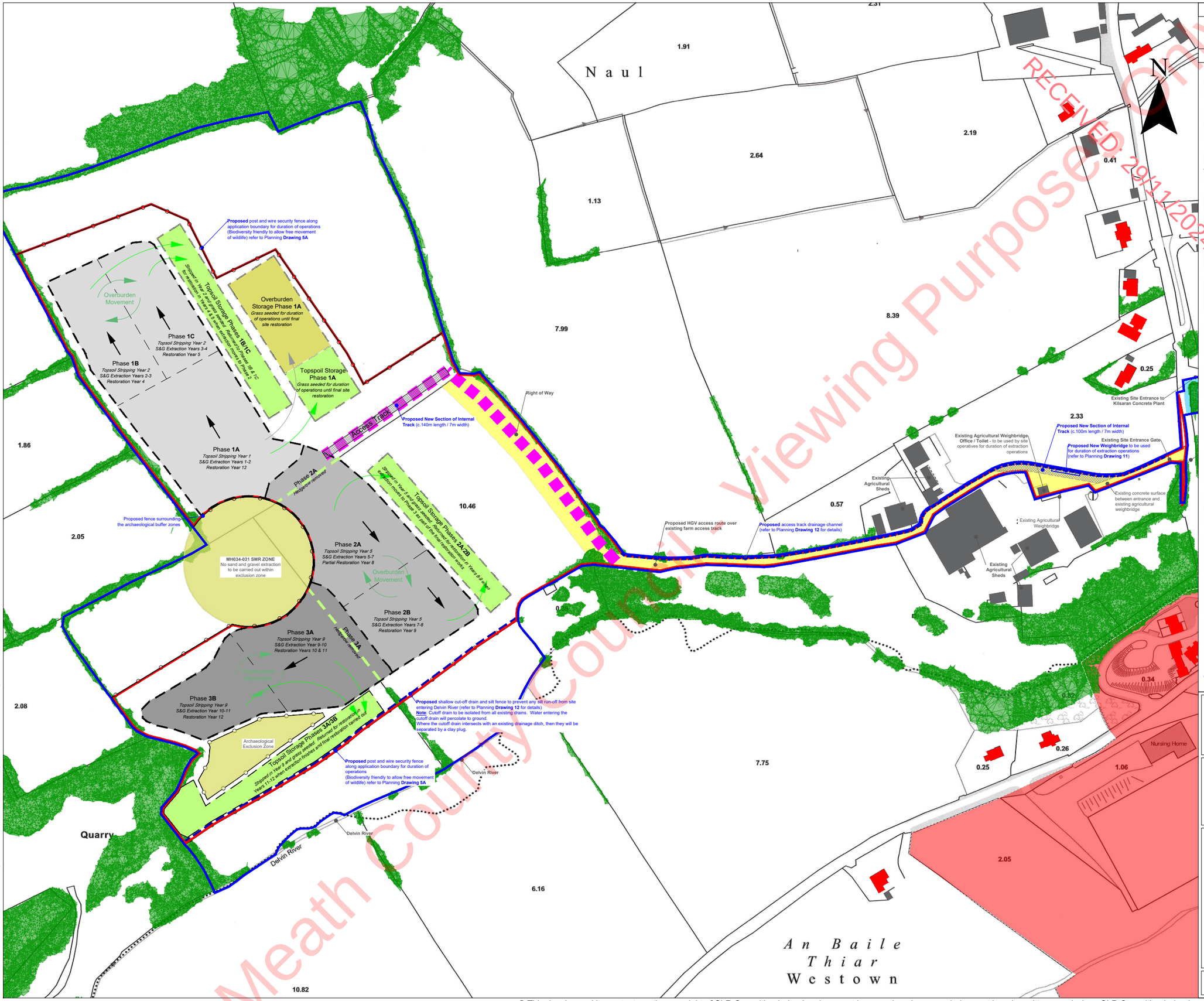
PROPOSED SAND & GRAVEL DEVELOPMENT AT NAUL TOWNLAND, CO. MEATH

EXISTING SITE LAYOUT

FIGURE 2-1

Scale	Date
1:4,000 @ A3	OCTOBER 2024

00036.064988.Naul.EIAR Fig2-1 Existing Layout R2.dwg



NOTES

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2. Ordnance Survey Ireland Licence No. CYAL50381397 (c) Tailte Éireann - Surveying

LEGEND

- LAND INTEREST AREA c.25 HECTARES (c.61.8 ACRES)
- APPLICATION AREA c.14.9 HECTARES (c.36.8 ACRES)
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- ARCHAEOLOGICAL EXCLUSION ZONES (EXCLUDES SAND & GRAVEL EXTRACTION)
- EXISTING VEGETATION / HEDGEROWS
- SHED / COMMERCIAL STRUCTURE
- RESIDENTIAL PROPERTY
- RIGHT OF WAY
- EXISTING VEGETATION / HEDGEROWS TO BE REMOVED
- ACCESS TRACK
- DIRECTION OF WORKING / EXTRACTION
- TOPSOIL MOVEMENT
- OVERBURDEN MOVEMENT
- PROPOSED DRAINAGE DETAILS (REFER TO PLANNING DRAWING 12)

Kilsaran
ideas taking shape

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Kilsaran Concrete Unlimited Company

Environmental Impact Assessment Report

PROPOSED SAND & GRAVEL DEVELOPMENT AT NAUL TOWNLAND, CO. MEATH

PROPOSED PHASING OVERVIEW SAND & GRAVEL EXTRACTION AREA

FIGURE 2-2

Scale	Date
NTS @ A3	OCTOBER 2024

00036.064988.Naul.EIAR Fig2-2 Proposed Phasing Overview R2.dwg

NOTES

1. Extract from 1:2,500 scale Ordnance Survey Mapping - Digital Maps 2648-B & 2649-A
2. Ordnance Survey Ireland Licence No. CYAL50381397 (c) Tailte Éireann - Surveying

LEGEND

- LAND INTEREST AREA c.25 HECTARES (c.61.8 ACRES)
- APPLICATION AREA c.14.9 HECTARES (c.36.8 ACRES)
- PROPOSED EXTRACTION AREA c.6.2 HECTARES (c.15.3 ACRES)
- EXISTING KILSARAN BATCHING PLANT P. REFS. 80/572 & 22/153 (ABP-314881-22)
- ARCHAEOLOGICAL EXCLUSION ZONES (EXCLUDES SAND & GRAVEL EXTRACTION)
- EXISTING VEGETATION / HEDGEROWS
- SHED / COMMERCIAL STRUCTURE
- RESIDENTIAL PROPERTY
- RIGHT OF WAY
- PROPOSED DRAINAGE DETAILS (REFER TO PLANNING DRAWING 12)

N

0 80m 200
Metres 1:2500

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PROPOSED SAND & GRAVEL DEVELOPMENT AT NAUL TOWNLAND, CO. MEATH

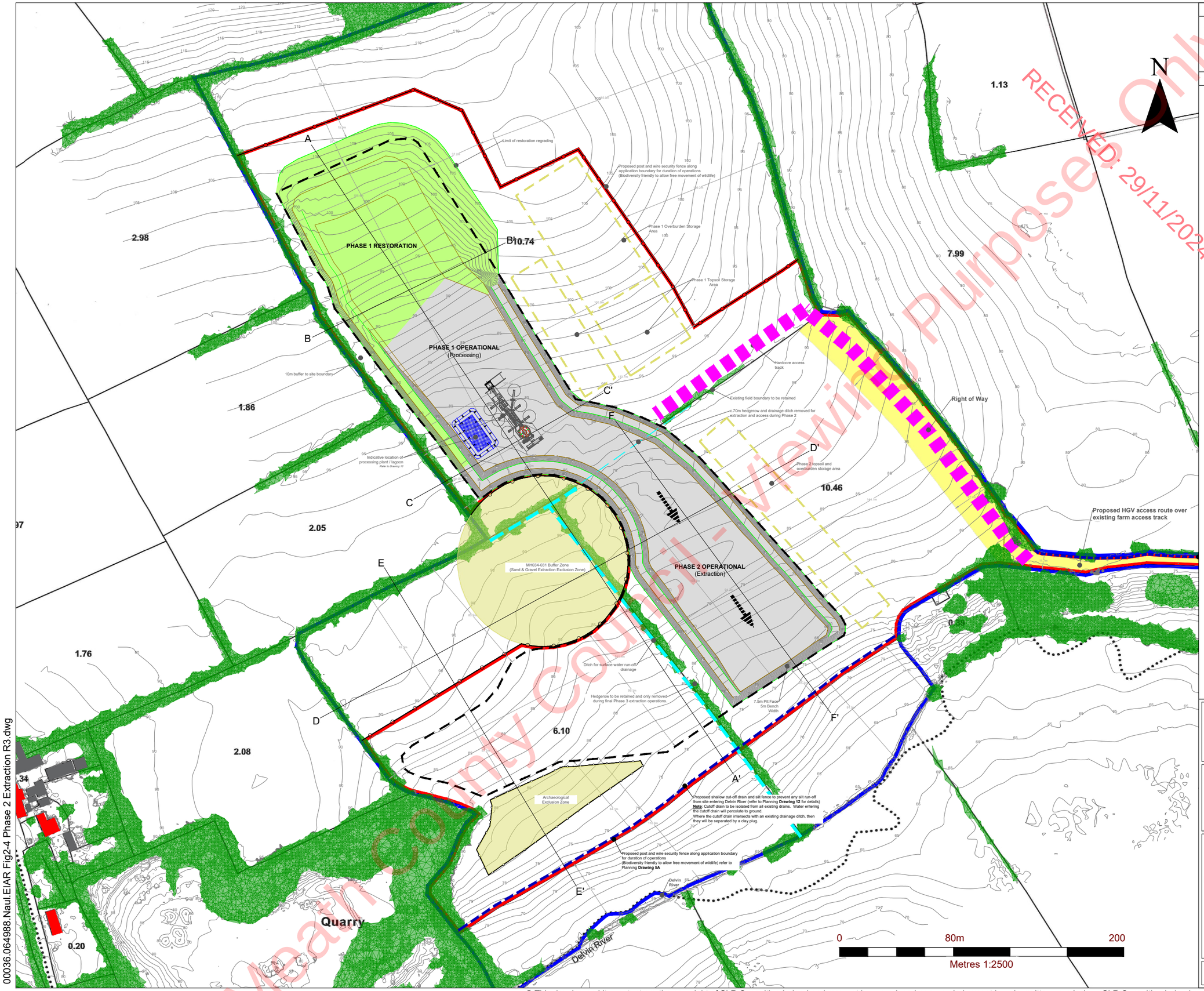
PROPOSED PHASE 1 DEVELOPMENT

FIGURE 2-3

Scale: 1:2,500 @ A3

Date: OCTOBER 2024

00036.064988.Naul.EIAR Fig2-3 Phase 1 Extraction R3.dwg



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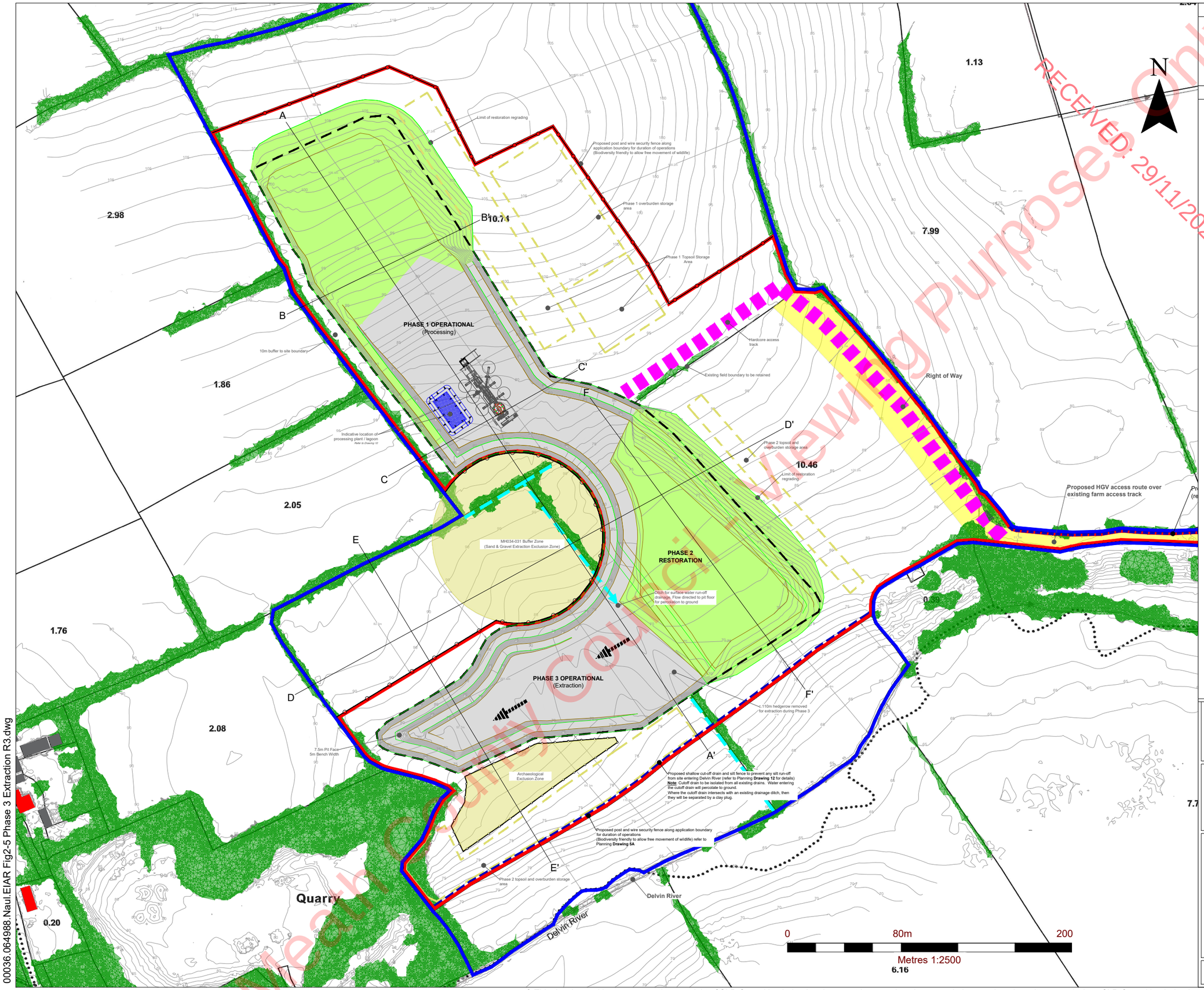
PROPOSED PHASE 2 DEVELOPMENT

FIGURE 2-4

Scale	Date
1:2,500 @ A3	OCTOBER 2024

00036.064988.Naul.EIAR Fig2-4 Phase 2 Extraction R3.dwg



NOTES

1. Extract from 1:2,500 scale Ordnance Survey Mapping - Digital Maps 2648-B & 2649-A

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PROPOSED SAND & GRAVEL DEVELOPMENT AT NAUL TOWNLAND, CO. MEATH

PROPOSED PHASE 3 EXTRACTION

FIGURE 2-5

Scale	Date
1:2,500 @ A3	OCTOBER 2024

00036.064988.Naul.EIAR Fig2-5 Phase 3 Extraction R3.dwg

RESTORATION PROPOSALS

It is proposed to restore the lands at Naul townland, Co. Meath to an agricultural land use, which is one of the beneficial afteruses recommended in the EPA Guidelines 'Environmental Management in the Extractive Industry' (2006).

The proposed restoration works will be carried on a phased basis.

The main aim of the phased restoration works is to keep the area worked at any one time to a minimum (e.g. the northern part of the site, i.e. the Restoration Phase 1 area, will be fully restored to an agricultural land use while the Restoration Phase 2 area is worked and before the south-western parts of the site, i.e. the Restoration Phase 3 area, is stripped).

The phased restoration will also keep the handling/movement of topsoil and overburden to a minimum. In effect the topsoil and overburden stripped from any one area will be used in the restoration of that area. This will provide sufficient topsoil material for each of the areas, which will then be re-used for tillage or seeded with a suitable agricultural grass seed (in case of grass seeding: prior to any seeding works surface preparation and final cultivation will be carried out in accordance with current best practice. Seeding to take place whilst suitable weather conditions prevail. The sowing specifications will be as per the manufacturer's instructions).

In order to compensate the loss of approximately 180m of native hedgerows within the proposed sand and gravel extraction area, as well as to provide screening of the upper pit slope along the north-western boundary, a total of 430m of native hedge will be planted within the site (230m as part of Restoration Phase 1, i.e. by year 5 and 200m as part of Restoration Phase 3, i.e. by year 12). Refer to the planting notes below for more detail. In addition, a section of native hedgerow (c. 40m) is proposed to be planted between the new wall and fencing along the upgraded boundary of the existing concrete batching facility with the R108 regional road.

NATIVE HEDGE PLANTING NOTES

Species: All proposed species are native and present in local vegetation.

Planting Specification (for sand and gravel extraction area only):
Two rows to be planted at 40cm centres with rows 40cm apart (i.e. 2.5 plants/m; approx. 430m in total = 1,075 plants; Restoration Phase 1: 575 plants; Restoration Phase 3: 500 plants). Transplants to be planted randomly with no more than 3 plants of the same species in one group. Feathered Transplants to be planted approximately every 8m, to be single staked and to be maintained as hedgerow trees.

All plants to be protected with spiral guards or alternatively with rabbit proof fencing. All plant handling, planting and establishment works will be carried out in accordance with current best practice and will take place in the appropriate planting season (e.g. bareroot planting: November to March only) and in favourable weather conditions. The planting will be carried out by a suitably qualified landscape contractor.

Aftercare: Establishment maintenance will be carried out for 2 years following the planting works (minimum 3 maintenance visits per year; i.e. spring, summer and autumn). This will include weed control, replacement planting where required and the adjustment/removal of tree ties and spiral guards.

NATIVE HEDGE MIX

No.	*Plant Name*	*Common Name*	*Height (cm)*	*Age*	*%*
Transplants/Container Grown Shrubs					
160	Corylus avellana	Hazel	60-90	1+0	15
330	Crataegus monogyna	Hawthorn	60-90	1+1	30
160	Ilex aquifolium	Holly	60-80	2L	15
215	Prunus spinosa	Blackthorn	60-90	1+0	20
160	Sambucus nigra	Elder	60-90	1+1	15
Feathered Transplants					
50	Quercus robur	Pedunculate oak	175-200	2xTR	5

NOTES

*'Orthomosaic produced from Aerial Photography flown **February 2019** by SLR Consulting Ireland (IAA Permit No. 150052) www.slrconsulting.com Tel. +353-1-2964667.*

Orthomosaic produced using Ground Control Points; Related to Irish Transverse Mercator Coordinate System and OS Malin Head Level Datum.

The accuracy of the orthomosaics and the digital elevation models (DEM) strongly depends on the flight height, lighting conditions, availability of textures, image quality, overlap, and type of terrain. Contours / 3D data relates to the surface model and not terrain levels. Typical accuracies: E: 0.05 m; N:0.05 m; Levels: 0.30 m.

All Dimensions and Levels are to be checked on site.

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LEGEND

- LAND INTEREST BOUNDARY
- APPLICATION AREA
- ARCHAEOLOGICAL BUFFER ZONE

RESTORATION PROPOSALS

- RESTORATION PHASE 1 (YEAR 5): AGRICULTURAL USE
- RESTORATION PHASE 1 (YEAR 5): NATIVE HEDGE
- RESTORATION PHASE 2 (YEAR 9): AGRICULTURAL USE
- RESTORATION PHASE 3 (YEAR 12): AGRICULTURAL USE
- RESTORATION PHASE 3 (YEAR 12): NATIVE HEDGE

NOTE: Restoration proposals shown relate only to the Sand and Gravel Extraction elment of the application and not the existing Concrete Batching Facility on the eastern side of the R108 regional road which is an existing permitted facility [P. Ref. 80/572 & 22/153 (ABP-314881-22)].

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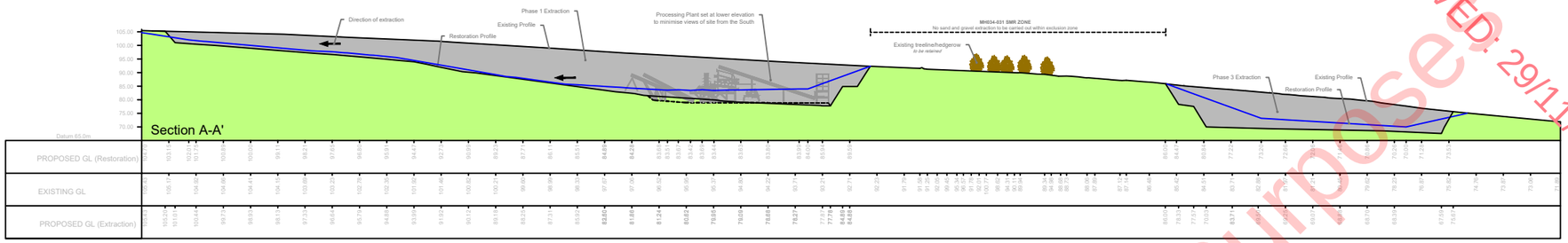
PROPOSED FINAL RESTORATION

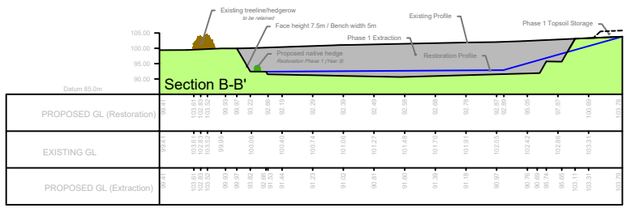
FIGURE 2-6

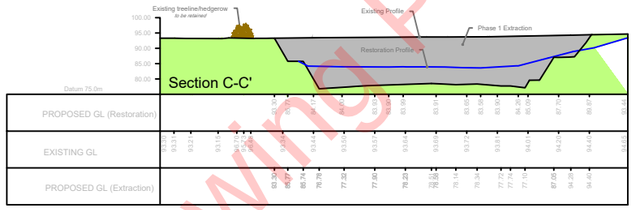
Scale: 1:2,500 @ A3

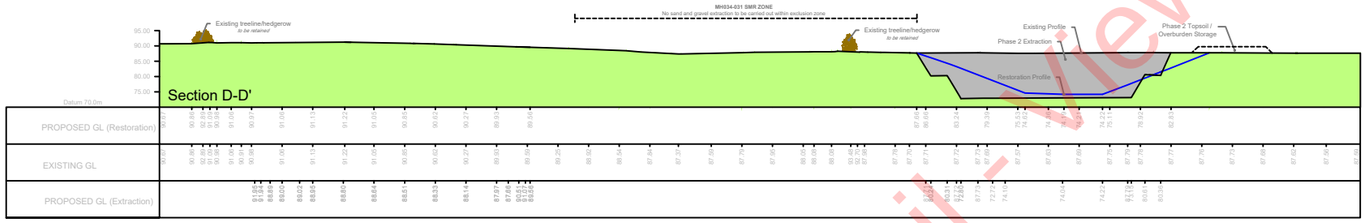
Date: OCTOBER 2024

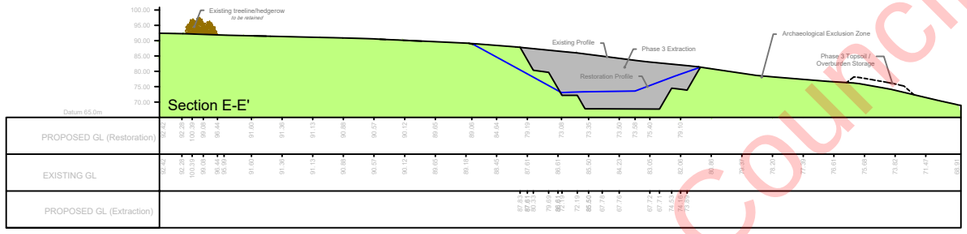
00036.064988.Naul.EIAR Fig2-6 Restoration R3.dwg

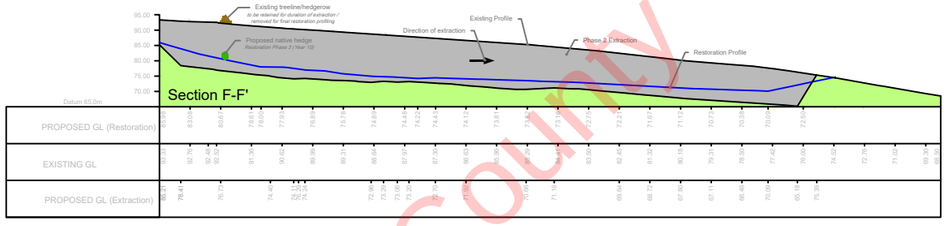












0 20 40 60 80m 120 160 200

Metres 1:2000

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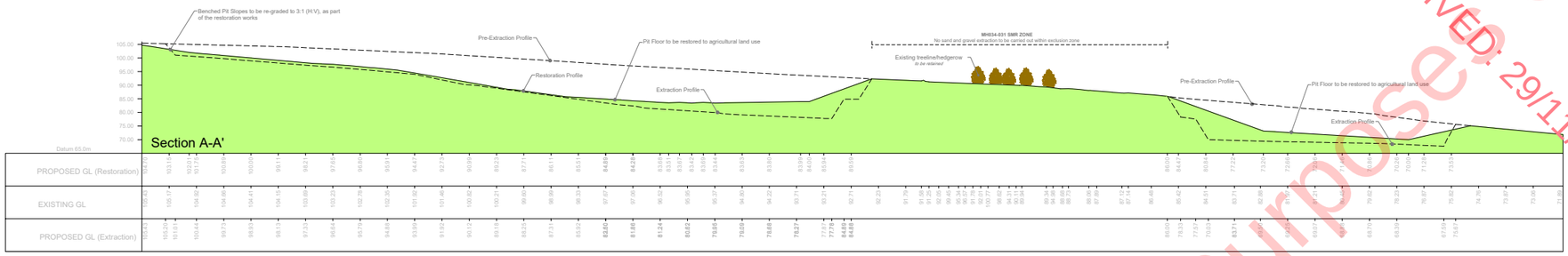
PROPOSED SAND & GRAVEL DEVELOPMENT AT NAUL TOWNLAND, CO. MEATH

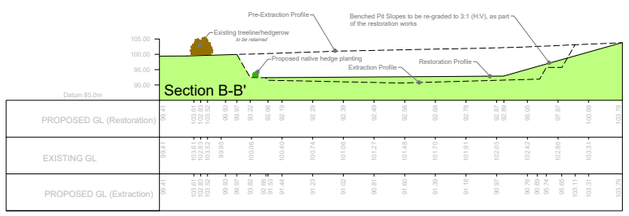
EXISTING / PROPOSED CROSS SECTIONS

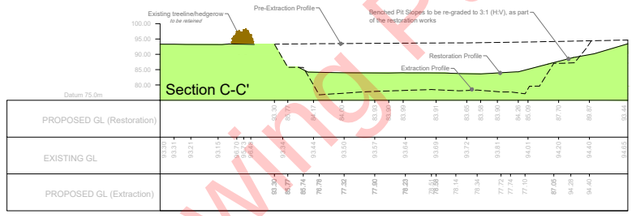
FIGURE 2-7

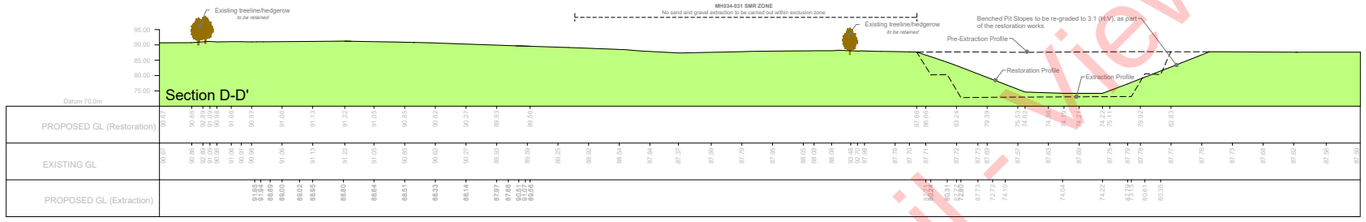
Scale	Date
1:2,000 @ A3	OCTOBER 2024

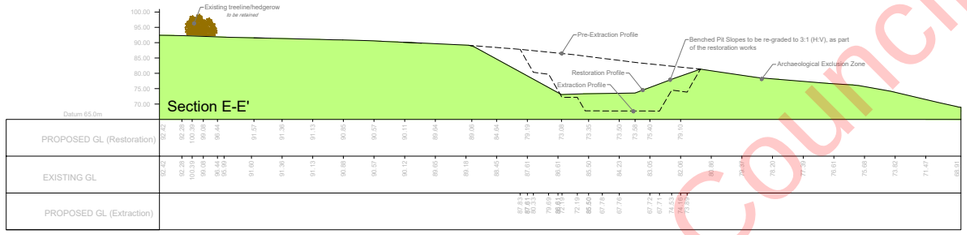
00036.064988.Naul.EIAR Fig2-7 Development Cross Sections R2.dwg











0 20 40 60 80m 120 160 200

Metres 1:2000

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FINAL RESTORATION CROSS SECTIONS

FIGURE 2-8

Scale	Date
1:2,000 @ A3	OCTOBER 2024

00036.064988.NaulEIAR Fig2-8 Final Restoration Cross Sections R2.dwg

NOTES

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LEGEND

- LAND INTEREST BOUNDARY
- APPLICATION AREA
- PROPOSED EXTRACTION AREA c.6.2 HECTARES (c.15.3 ACRES)

VEGETATION TO BE REMOVED

- EXTENT OF HAWTHORN DOMINATED HEDGEROW TO BE REMOVED TO FACILITATE THE DEVELOPMENT
- TREES WITHIN HEDGEROW TO BE REMOVED

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PROPOSED SAND & GRAVEL EXTRACTION AT NAUL TOWNLAND, CO. MEATH

VEGETATION TO BE REMOVED

FIGURE 2-9

Scale	Date
2,000 @ A3	OCTOBER 2024

00036.064988.Naul.EIAR Fig2-9 Vegetation to be removed.dwg