

DROGHEDA LANDFILL

Environmental Impact Assessment Screening Report



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REPORT

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1 INTRODUCTION

1.1 Purpose of the Screening Report

This EIA Screening Report has been prepared by RPS on behalf of Louth County Council. RPS was instructed to undertake an Environmental Impact Assessment (EIA) screening and prepare this report to determine if an Environmental Impact Assessment Report (EIAR) is required in respect to the proposed capping restoration works at the existing Drogheda discontinued landfill site.

The site is located approximately 600m north of the Boyne Estuary on the north-western edge of Drogheda town. The site is adjacent to Leonards Cross at the junction of the R168 to Collon and the Cement Road, a minor road which links the Slane Road and the N1 Primary road northwards from Drogheda to Dundalk. Louth County Council wishes to undertake restoration works at the Drogheda discontinued landfill site to continue the remediation works at the closed facility.

The site is approximately 32 hectares in extent and was formally a limestone quarry. The site was developed on the benches of the redundant limestone quarry in 1983. The site historically operated on a dilute and disperse principle.

The site ceased accepting waste for disposal since the waste licence (Registration number W0033-01) was granted on the 30th of December 1999, however, inert waste was used for the restoration and capping works following this.

The area to the northeast of the site has been acquired by Louth County Council and Specified Engineering Works proposed for the proposed works. The capping of this area will deal with all areas of waste deposited outside the boundary to the northern part of the landfill site. LCC proposed to undertake a further restoration works on these lands and include the area within the waste licence boundary.

The purpose of this EIA Screening Report is to establish the likely significant effects of the proposed restoration works on the environment and advise if an EIA is required or not. This EIA Screening Report is set out as follows:

- Section 1 - Introduction
- Section 2- EIA Screening Methodology
- Section 3 – Screening for EIA
- Section 4 – EIA Screening Checklists
- Section 5 – Conclusions

Other supporting documents (including stand-alone specialist reports) not included in this report but available for consideration as part of the planning application to ensure a robust review of the proposed development on the selected site include the following:

- Proposed capping details
- Surface water drainage details
- Appropriate Assessment Screening



Figure 1.1 Site Location

2 EIA SCREENING METHODOLOGY

The EIA screening exercise initially assesses the development for mandatory EIA using classifications defined in the appropriate legislation (refer **Section 1.2.1**). Where no mandatory requirement is concluded, screening advances to sub-threshold development assessment, where the competent authority evaluates whether the project is likely to have a significant effect on the environment, with reference to its scale, nature, location and context.

2.1 EIA Screening of sub-threshold development

The Criteria as set out in Schedule 7 of the Planning and Development Regulations 2001 (as amended) for determining whether a project should be subject to EIA, are grouped under three headings as follows and set out in further detail in **Table 2-1** below:

1. Characteristics of the proposed development;
2. Location of the proposed development; and
3. Characteristics of potential impacts.

As required under Schedule 7A of the Planning and Development Regulations 2001 (as amended),

- A description of the aspects (including those set out under Article 3(1) if of the EIA Directive) of the environment likely to be significantly affected by the proposed development; and
- A description of any likely significant effects, to the extent of the information available on such effects, of the proposed development on the environment.

Table 2.1: Significant Criteria for determining whether a development would or would not be likely to have significant effect on the environment.

Characteristics of Projects
<p>The characteristics of projects must be considered, with particular regard to:</p> <ol style="list-style-type: none"> a) the size and design of the whole project; b) cumulation with other existing and/or approved projects; c) the nature of any associated demolition works (note in the Directive but included in the Regs); d) the use of natural resources, in particular land, soil, water and biodiversity; e) the production of waste; f) pollution and nuisances; g) the risk of major accidents and/or disasters which are relevant to the project concerned, including those caused by climate change, in accordance with scientific knowledge; h) the risks to human health (for example due to water contamination or air pollution).
Location of the Project
<p>The environmental sensitivity of geographical areas likely to be affected by projects must be considered, with particular regard to:</p> <ol style="list-style-type: none"> a) the existing and approved land use, b) the relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground, c) the absorption capacity of the natural environment, paying particular attention to the following areas: <ol style="list-style-type: none"> i. wetlands, riparian areas, river mouths

- ii. coastal zones and the marine environment,
- iii. mountain and forest areas,
- iv. nature reserves and parks,
- v. areas classified or protected under national legislation, Natura 2000 areas designated by Member States pursuant to Directives 92/43/EEC and Directive 2009/147/EC,
- vi. areas in which there has been a failure to meet the environmental quality standards, laid down in Union legislation and relevant to the project, or in which it is considered that there is such a failure,
- vii. densely populated areas,
- viii. Landscapes and sites of historical, cultural or archaeological significance.

Type and Characteristics of the potential impact

The likely significant effects of projects on the environment must be considered in relation to criteria set out in points 1 and 2 of this Annex, with regard to the impact of the project on the factors specified in Article 3(1), taking into account:

- a) the magnitude and spatial extent of the impact (for example geographical area and size of the population likely to be affected),
- b) the nature of the impact,
- c) the transboundary nature of the impact,
- d) the intensity and complexity of the impact,
- e) the probability of the impact,
- f) the expected onset, duration, frequency and reversibility of the impact,
- g) the cumulation of the impact with the impact of other existing and/or approved projects,
- h) the possibility of effectively reducing the impact

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3 SCREENING FOR EIA

3.1 Screening for Mandatory EIA

Under the Planning and Development Regulations 2001 as amended every project listed in Part 1 of Schedule 5 must be subject to an EIA if the stated threshold set therein has been met or exceeded or where no thresholds are set, and accordingly, an EIAR must be submitted to the competent authority with an application for development consent in this regard. Projects listed in Part 2 of Schedule 5, which meet or exceed the thresholds set out, or where no thresholds are set, also require an EIA. There are also no classes of development identified in either Part 1 or Part 2 of Schedule 5 which are considered potentially applicable to the proposed Landfill restoration project and therefore the preparation of an EIAR is not mandatory with reference to the Planning and Development Act 2000 Section 172(1)(a)(ii).

The proposed development does not fall within the threshold of any of the classes of development prescribed by Parts 1 or 2 of Schedule 5 (Article 93: Development for the Purposes of Part 10) of the Planning and Development Regulations 2001-2020 therefore an EIAR is not mandatory. As the classes of developments requiring a mandatory EIAR are not applicable to this project, it is therefore appropriate to undertake an EIA Screening Evaluation to address the requirements of Schedule 7A and consider the criteria in Schedule 7 of the Planning and Development Regulations 2001 EIA Regulations (See Section 4.2).

3.2 EIA Screening Evaluation

This section provides information on the project for EIA Screening and to address the requirements of Schedule 7A and considers the criteria in Schedule 7 of the EIA Regulations. It provides an assessment on whether there are any likely significant impacts arising from the proposed development which would trigger the requirement for an EIA. The assessment has considered the scheme individually and cumulatively with other projects.

As outlined above the Criteria as set out in Schedule 7 of the Planning and Development Regulations 2001 as amended for determining whether a project should be subject to EIA, are grouped under three headings as follows:

1. Characteristics of the proposed development (Section 4.2.1);
2. Location of the proposed development (Section 4.2.2); and
3. Characteristics of potential impacts (Section 4.2.3).

3.2.1 Characterisation of the Proposed Development

3.2.1.1 The need for the Drogheda Landfill capping

The proposed restoration works are necessary at the site to continue the remediation works at the closed Drogheda landfill facility.

Restoration works were undertaken at the site during a period in 2005-2007 and 2016-2017. The following works were undertaken in between 2005 and 2007:

- Installation of 55 No. gas extraction wells
- Installation and commissioning of an active gas extraction flare and methane stripper
- Installation of capping layers consisting of gas drainage layer, LLDPE capping and surface water drainage layer (a total area of approximately 101,650m²).
- Reinforcement of the capping system using geogrid on slopes greater than 1 in 2.5.
- Surface water drainage system.

- Construction of 1.0m high safety bund along cliff edges on the site to improve safety.
- Subsoil and topsoil have been placed above the capping layer to a depth of 850mm and 150mm respectively across the site.

Investigations were undertaken in 2007 within an area north and northeast of the site boundary with regards to disposal of waste outside of the licensed boundary. The area to the north was acquired by Louth County Council from a third party and subsequently included within the landfill licence boundary as a technical amendment on the 18th of June 2013. Restoration works were then undertaken between September 2016 and March 2017 in an area to the north/northwest of the landfill site. The following works were undertaken:

- Installation of 4 No. gas extraction wells and horizontal gas extraction pipework.
- Installation of capping layers consisting of gas drainage layer, LLDPE capping and surface water drainage layer (a total area of approximately 14,60m²).
- Reinforcement of the capping system using geogrid on slopes greater than 1 in 3.
- Surface water drainage system.
- Subsoil and topsoil have been placed above the capping layer to a depth of 850mm and 150mm respectively across the site.

3.2.1.2 The Proposed Works at the Existing Site

The proposed works will include the following:

- Final capping of the waste following reprofiling of the site. An area of approximately 15,000m² is proposed to be capped (Appendix A). Prior to capping works taking place, a permanent perimeter bund shall be constructed. This perimeter bund will act as containment for capping works and will remain in situ on completion of restoration works at the site.
- The capping will consist of a geonet gas collection layer, a linear low density polyethylene (LLDPE) layer, surface water drainage layer (geonet), 850mm subsoil layer and a 150mm deep topsoil layer as undertaken in restoration works 2005-2007 and 2016. The soils used for soil layers are currently located at stockpiles A and B on site (Appendix B).
- Reinforcement of capping layer on slopes greater than 1 in 4.
- Installation of gas wells, horizontal gas extraction pipework and connection to the existing landfill gas extraction system.
- Installation of a surface water drainage channel to the edge of the proposed capping area on its northern and eastern fringe, approximately 1.4 km upstream of the SAC (Appendix C).
- The hydrogeological report also recommended the decommissioning of ground water monitoring boreholes, BH4A and BH5A as they are potentially impacted by their close proximity to the waste body. New boreholes will be installed in suitable locations to replace these two.

3.2.1.3 Temporary and Long Term Mitigation Works

During the construction stage, a permanent perimeter bund will be constructed prior to all other works at the site. This is necessary to provide containment for the capping works both during the construction phase and operational phase of the development. The purpose of the bund is to contain the capping works and it will remain in-situ on completion of works. The installation of the capping layer will be supervised in accordance with normal Civil Engineering good practice and, in addition, full Construction Quality Assurance (CQA) will be applied to ensure that the materials and workmanship meet the design specification. Following this, movement of soils and vehicle operation during the construction of subsoil and topsoil layers will be limited, as stockpiled soils for capping are currently located on the site. Therefore the movement of machinery and stockpiled soils within the bund area will be minimised during construction.

During the operational phase the proposed capping itself will provide a barrier preventing rainfall incident on the site from infiltrating through the waste mass and therefore preventing it from becoming contaminated.

3.2.2 Environmental Characteristics of the Location of the proposed development

3.2.2.1 Population and Human Health

When considering the environmental characteristics of the proposal area in the context of EIA, Population and Human Health is directly linked to the number of population in proximity to the restoration works and those likely to be exposed to its effects - whether these are beneficial or adverse.

The site is located on the north-western edge of Drogheda town, which according to the 2016 census had a population of 40,956. The site is adjacent to Leonards Cross at the junction of the R168 to Collon and the Cement Road, a minor road which links the Slane Road and the N1 Primary road northwards from Drogheda to Dundalk.

3.2.2.2 Biodiversity

The site is not located within any sensitive area, within the meaning of the EIA regulations. There are no statutory designations within the site either i.e. there are no Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar Sites or Natural Heritage Areas.

Designated sites present within a 5km zone of influence of the proposed works include: River Boyne and River Blackwater SAC (700m), Boyne Coast and Estuary SAC (4.5km), Boyne Estuary SPA (3.5km) and River Boyne and River Blackwater SPA (1.3km). The qualifying features of the designated sites are as follows; alkaline fens, alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*), *Lampetra fluviatilis* (River Lamprey), *Salmo salar* (Salmon), *Lutra* (Otter), estuaries, mudflats and sandflats not covered by seawater at low tide, annual vegetation of drift lines, Salicornia and other annuals colonising mud and sand, atlantic salt meadows (*Glauco-Puccinellietalia maritimae*), embryonic shifting dunes and shifting dunes along the shoreline with *Ammophila arenaria* (white dunes).

Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130] and various different birds are designated under the SPAs.

3.2.2.3 Land and Soil

Currently, the land use is a disused landfill site, therefore, the proposed restoration works will not cause any change to this.

3.2.2.4 Water

The Water framework Directive requires countries to protect the status of waterbodies from deterioration and, where necessary and practical, restore waterbodies to good status. The area of proposed works is situated within 1 km from the Boyne Estuary and approximately 700m east of the main channel of Tullyeskar_010 water body which lies within the Boyne catchment. The Tullyeskar_010 then flows into the Boyne Estuary downstream of Yellow Island.

The Tullyeskar_010 is currently unassigned a WFD ecological status and under review in terms of WFD risk status. The Boyne Estuary has a WFD ecological status of 'moderate' and is currently 'at risk'. The water body has been deemed moderate as a result of phytoplankton, macroalgae, hydromorphological conditions and other determinand for nutrient conditions. The Drogheda ground water body has an overall status of 'good' and is under review in terms of risk status. A hydrogeological risk assessment is unable to determine whether the site in its present condition appears to be impacting on surface waters immediately downstream from the landfill as there currently is no status assigned.

3.2.2.5 Air

The Air Pollution Act 1987 places an obligation on all local authorities to regularly review and assess air quality in their areas. Local authorities have to consider the current and likely future air quality in their areas, and assess whether the objectives are likely to be achieved by the due dates. They must take measures necessary to limit or prevent air pollution. Currently, Drogheda is rated Good (Index 1) under the EPA Air Quality Index for Health (AQIH), with $5.45\mu\text{g}/\text{m}^3$ for PM_{10} 24 hour mean and $2.90\mu\text{g}/\text{m}^3$ for $\text{PM}_{2.5}$ 24 hour mean.

3.2.2.6 Climate

A changing climate and growing populations will put increasing pressure on areas prone to flood and natural disasters. The proposed restoration works are to take place on a closed landfill site, therefore, it is unlikely that the proposed works or operational phase will exacerbate any sensitivities that many arise from a changing climate.

3.2.2.7 Material Assets

In the context of the proposal for restoration works at the disused Drogheda landfill, material assets will not be altered.

3.2.2.8 Cultural Heritage

There are no statutory designations within the vicinity of the site and the area of the works is made of fill material. There are a number of listed buildings located c.1km to the south east and North West of the site. These ranged from houses (Boyne View registration number 13616001, House registration 13616003, and Mary's Villa registration number 13616002) dated from 1835 and 1910 and a 1850s farm house (registration number 13902408).

The site is 1.5km north east of one of Ireland's two UNESCO World Heritage sites, Brú na Bóinne. The site is an important example of prehistoric landscapes, dating from the Neolithic period in history.

3.2.2.9 Landscape

The proposed works are located along the southern section of County Louth, within the Boyne and Mattock Valleys landscape character area classified as internationally important. The immediate surrounding landscape consists primarily of residential land. The site is located approximately 600m north of the Boyne Estuary on the north-western edge of Drogheda town. The site is adjacent to Leonards Cross at the junction of the R168 to Collon and the Cement Road, a minor road which links the Slane Road and the N1 Primary road northwards from Drogheda to Dundalk. The main bedrock in the town of Drogheda is a pale micritised grainstone-wackestone from the carboniferous period extending from the coast.

3.2.3 Characteristics of Potential Impacts

3.2.3.1 Population and Human Health

The proposed development may result in temporary noise and/ or vibration from associated machinery during the construction phase. For the most part, noise generated through construction activities is likely to be continuous and low frequency.

Whilst all care can be taken to reduce the negative impacts/disruption that works may have to the surrounding area and the people who live in it, completely eliminating all disruption is unlikely.

The proposed development is located adjacent to residential developments. Given the distance from the site and scale of the proposed works, any potential negative impacts are anticipated to be minimal.

No further potential for noise or vibration is anticipated following the construction phase.

During the operational phase following the completion of the proposed works, the isolation of the waste from rainwater ingress will result in positive impacts. The works will reduce the production of leachate and gas exposure following capping.

The proposed works will be temporary and minor in nature during the construction phase, as a result it is not anticipated that there will be any adverse impacts to the human population.

3.2.3.2 Biodiversity

The Appropriate Assessment Screening (Appendix D) determined that the closed landfill site is not located within any sensitive or designated areas (National Parks, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), or Ramsar Sites).

The nearest designated sites are River Boyne and River Blackwater SAC (002299), Boyne Coast and Estuary SAC (001957), Clogher Head SAC (001459), Boyne Estuary SPA (004080), River Nanny Estuary and Shore SPA (004158) and River Boyne and River Blackwater SPA (004232).

The Appropriate Assessment Screening concluded that the possibility of likely significant water quality and habitat deterioration effects can be discounted for the all of the above listed designated sites during the construction phase and operational phase of the restoration works due to the lack of hydrological connectivity of the surface water network to the site as a result of the perimeter bund.

3.2.3.3 Land and Soil

The soil and sub soil already present on the site is to be used for the proposed capping works. Combined with remediation works for the waste currently on site will result in an improvement in the land use and condition of the site.

3.2.3.4 Water

As mentioned above (Section 3.2.2.4), the downstream Tullyeskar_010 is currently unassigned a WFD ecological status and the Boyne Estuary is at 'moderate' status. Following completion, water quality will benefit from the restoration works as surface water generated within the capping area will be prevented from penetrating through the waste body. The proposed design will see surface water generated within the capped area of the site collected by surface water drainage pipes and ultimately discharged to the drainage channel. The drawing illustrating the capping system layout is provided in Appendix C and shows the measures taken to direct surface waters to the drainage channels and prevent penetration through the waste mass thereby avoiding the generation of further leachate volumes.

The Drogheda ground water body has an overall status of 'good' and is under review in terms of risk status. Given that the ground waterbody is currently at 'good' status, it appears to be unaffected by the landfill in its current condition. However, the proposed work will potentially improve conditions as a result of the reduction in leachate production during the operation phase. The impact of run-off during the construction phase will be limited due to perimeter bund acting as a containment measure. Bunding of the site for recapping at the outset will contain any run-off allowing it to be managed on site.

The possibility of likely significant water quality effects can be discounted for all downstream water bodies during the construction phase of the restoration works due to the presence of the perimeter bund which will effectively break the hydrological pathway to the surface water network downstream. During operation the capping of the site and collection of clean drainage water will ensure that additional leachate generation will cease and an improvement in hydrological conditions and water quality will occur.

3.2.3.5 Air

The proposed works will include the closed landfill gas venting to the air, however these emissions will be controlled and monitored. Therefore, it is unlikely that the proposed works will result in any significant impacts to air quality during both phases.

3.2.3.6 Climate

There is no significant impact on climate change. The gas extraction wells included in the proposed works will ultimately reduce the impact of landfill gas, however there will be no net increase in greenhouse gases.

3.2.3.7 Material Assets

The operation of the proposed development is not likely to result in cumulative impacts given the nature of the works and the benefit arising from the capping of the site to prevent the ingress of water into the waste mass and the subsequent generation of leachate. There will be no impact on existing developments, approved developments or developments the subject of valid applications in the vicinity given the confined nature of the works, the fact that the capping material is already on site and the temporary nature of the works.

3.2.3.8 Cultural Heritage

There will be no impact on known archaeology. Furthermore, as this is the capping of an existing waste mass there is no potential for disturbance of unknown archaeology.

In terms of the Cultural landscape, Bru Na Boinne, is located nearby but the proposed capping and remediation of the site will not significantly change the nature of the land use or result in any impact to the viewpoints of landscape character of the area.

3.2.3.9 Landscape

Given the nature and the scale of the restoration works proposed, it is not anticipated that there will be any adverse impacts to the special qualities associated with the Boyne and Mattock Valleys landscape. Given the works are to cap an existing closed landfill site and restore the site to the land use of the surrounding area there is not potential for landscape impacts even with the proximity of the World Heritage Site.

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4 EIA SCREENING CHECKLISTS

This section provides information on the project for EIA Screening and to address the requirements of Schedule 7A and considers the criteria in Schedule 7 of the EIA Regulations. It provides an assessment on whether there are any likely significant impacts arising from the proposed development which would trigger the requirement for an EIA. The assessment has considered the scheme individually and cumulatively with other projects.

As outlined above the Criteria as set out in Schedule 7 of the Planning and Development Regulations 2001 as amended for determining whether a project should be subject to EIA, are grouped under three headings as follows:

1. Characteristics of the proposed development (Table 4.1);
2. Location of the proposed development (Table 4.2); and
3. Characteristics of potential impacts (Table 4.3).

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The EIA Checklist is based on the European Commission’s Environmental Impact Assessment of Projects Guidance on Screening (Directive 2011/92/EU as amended by 2014/52/EU) (EC, 2017) for considering whether a scheme is likely to have a significant effect on the environment.

Table 4.1: Characteristics of the proposal

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
1. Characteristics of the Development			
(a) Size and design of the development			
Will the proposed development be out of scale with the existing environment?	No	The proposed restoration works will require no additional land take. They relate only to the existing landfill and the capping and containment of the waste body for the sections of the site that have not already been restored appropriately.	-
(b) Cumulation with other existing and/or approved development			
Will the proposed development lead to further consequential development or works?	No	The proposed works involves the capping of a closed landfill site works, therefore potentially negating the requirement for future remediation works. Once in place, it is unlikely that any further capping protection will be required at the proposed location.	-

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Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
Are there potential cumulative impacts with other existing development, approved developments or developments the subject of valid applications?	No	<p>There is the potential during construction for some noise and vehicular movements with the associated risk of disturbance spillage and run-off.</p> <p>The operation of the proposed development is not likely to result in cumulative impacts given the nature of the works and the benefit arising from the capping of the site to prevent the ingress of water into the waste mass and the subsequent generation of leachate. There will be no impact on existing developments, approved developments or developments the subject of valid applications in the vicinity given the confined nature of the works, the fact that the capping material is already on site and the temporary nature of the works.</p>	Bunding of the site for recapping at the outset will contain any run-off allowing it to be managed on site, Vehicle movements will be limited on the local road network and will included limited deliveries of material for the surface water drainage and geonet capping layer, gas flares and pipework.
Should the application for the proposed development be regarded as an integral part of a more substantial project? If so, can related developments which are subject to separate applications proceed independently?	No	<p>The site will benefit from the restoration works as surface water generated within the capping area being prevented from penetrating through the waste body. The proposed design will see surface water generated within the capped area of the site collected by surface water drainage pipes and ultimately discharged to the drainage channel. The drawing illustrating the capping system layout is provided in Appendix C, shows the measures taken to direct surface waters to the drainage channels and prevent penetration through the waste mass, however it is not considered part of a more substantial project/ development.</p>	-
(c) Use of natural resources, in particular land, soil, water and biodiversity			
Will the proposed development use natural resources such as land, water, materials or energy, especially any resources which are non-renewable or are in short supply?	Yes	<p>The proposed restoration will use top soil for capping.</p> <p>No natural resources are expected to be used following the construction phase.</p> <p>Although prefabricated material for the drainage system and the geonet will be used in order to remediate the site.</p>	No – these materials are not non-renewable nor are in short supply.

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Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
(d) Production of waste			
Will the construction, operation or decommissioning of the proposed development produce wastes?	No	No wastes nor decommissioning is anticipated for the restoration works.	-
(e) Pollution and nuisances			
Will the construction, operation or decommissioning phases of the proposed development release pollutants or any hazardous, toxic or noxious substances to the air?	No	<p>Emissions will be generated from site traffic, from transportation of construction materials and staff travel to and from the site, however given the scale of the proposed works, this is anticipated to be minimal.</p> <p>Run-off from the site during construction could result in sediment loading to the water courses in the area.</p> <p>No pollution and / or nuisances are expected following the construction phase.</p>	There is unlikely to be a significant effect as the perimeter bund will contain any run-off to the site during the capping operations.
Will the construction, operation or decommissioning of the proposed development lead to risk of contamination of land or water from releases of pollutants?	No	<p>There is potential for temporary negative impacts upon water quality in the short term as a result of construction activities, particularly with regard to sedimentation. The risk of this can be minimised with good site practice and adherence to good practice such as those identified in the Construction Quality Assurance.</p> <p>Upon completion of the proposed restoration works, the capping will provide a barrier preventing a rainfall incident on the site from infiltrating through the waste mass and therefore becoming contaminated. There is therefore no further potential for releases of contaminated material anticipated post construction phase.</p>	<p>No – if appropriate procedures are adhered to in line with the Specific Engineering Works Report, there is not likely to be any significant effects.</p> <p>It should also be noted that in the absence of the proposed works, ingress of rainwater will continue and potentially increase contaminated materials.</p>

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Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
<p>Will the construction, operation or decommissioning phases of the proposed development cause noise, vibration or the release of light?</p>	<p>Yes</p>	<p>The proposed development may result in temporary noise and/ or vibration from associated machinery during the construction phase. For the most part, noise generated through construction activities is likely to be continuous and low frequency.</p> <p>Whilst all care can be taken to reduce the negative impacts/disruption that works may have to the surrounding area and the people who live in it, completely eliminating all disruption is unlikely.</p> <p>The proposed development is located adjacent to residential developments. Given the distance from the site and scale of the proposed works, any potential negative impacts are anticipated to be minimal.</p> <p>No further potential for noise or vibration is anticipated following the construction phase.</p>	<p>No – noise and vibration is likely to be minimal.</p>
<p>(f) Risk of major accidents and/or disasters which are relevant to the development concerned, including those caused by climate change, in accordance with scientific knowledge</p>			
<p>Will there be any risk of accidents during construction, operation or decommissioning of the proposed development which could affect the environment or human health?</p>	<p>No</p>	<p>The main risk to human health presented by the development is likely to be the risk of injury during construction work. No further risk of accidents, having regard in particular to substances or technologies used, is anticipated following the construction phase.</p> <p>The capping of the site will be beneficial to human health in that it will prevent generation of further leachate and will also manage and mitigate the generation of landfill gas in a safe manner.</p>	<p>A safety plan will be developed and approved prior to work commencing to address the following health, safety and welfare issues:</p> <ul style="list-style-type: none"> • Emergency procedures • First Aid • Work Activity Risk Assessment <p>It is anticipated that with the aforementioned mitigation and risk assessments in place, there is unlikely to be a risk to human health as a result of the proposal.</p>

REPORT

Selection Criteria	Yes/No	Briefly describe potential impact	Is this likely to result in a significant effect? Please explain
(g) Risk to human health			
Will the construction, operation or decommissioning phases of the proposed development involve the use, storage, transport, handling or production of substances or materials which could be harmful to human health?	No	No substances which are harmful to human health will be used, stored, transported, handled or produced throughout all phases.	-

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Table 4.2 Location of the proposed restoration works

Selection Criteria	Yes/No	Briefly describe potential impact	Is effect likely to result in a significant effect? Please explain
Location of the Development			
(a) Existing and approved land use			
Are there existing and/ or approved land uses in the locality of the proposed development site which could be affected by the proposed development?	No	The proposed development would not cause a change of land use to these areas.	-
(b) Relative abundance, availability, quality and regenerative capacity of natural resources (including soil, land, water and biodiversity) in the area and its underground			
Are there any areas on or around the location of the proposed development and its underground which contain important, high quality or scarce resources which could be affected by the proposed development?	No	There are no important, high quality or scarce resources which will be affected as a result of the proposed development.	-
(c) Absorption capacity of the natural environment			
Are there any areas on or around the application site that are protected under international or national legislation for their ecological, landscape, cultural heritage or other value which could be affected by the construction, operation or decommissioning of the proposed development?	No	<p>The site is not located within any sensitive or designated areas, within the meaning of the EIA regulations i.e. there are no Scheduled Monuments, Sites of Special Scientific Interest (SSSIs), National Parks, National Scenic Areas (NSAs), World Heritage Sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), or Ramsar Sites.</p> <p>The nearest designated sites are River Boyne and River Blackwater SAC (002299), Boyne Coast and Estuary SAC (001957), Clogher Head SAC (001459), Boyne Estuary SPA (004080), River Nanny Estuary and Shore SPA (004158) and River Boyne and River Blackwater SPA (004232).</p>	The possibility of likely significant water quality and habitat deterioration effects can be discounted for all these designated sites during the construction phase and operational phase of the restoration works due to the lack of hydrological connectivity of the surface water network to the site as a result of the perimeter bund.

REPORT

Selection Criteria	Yes/No	Briefly describe potential impact	Is effect likely to result in a significant effect? Please explain
<p>Are there any other areas on or around the location which are important or sensitive for reasons of their ecology which could be affected by the proposed development? Particular attention should be paid to the following areas:</p> <p>wetlands, riparian areas, river mouths;</p> <p>(ii) coastal zones and the marine environment;</p> <p>(iii) mountain and forest areas;</p> <p>(iv) nature reserves and parks.</p>	No	<p>There are no other ecologically sensitive areas within or in close proximity to the proposed development site.</p>	-
<p>Are there any areas on or around the location which are used by protected, important or sensitive species of fauna or flora which could be affected by the proposed development?</p>	No	<p>There are no statutory designations within, or in close proximity to the proposed development site.</p>	-
<p>Are there any groundwater source protection zones or areas that contribute to the recharge of groundwater resources which could be affected by the proposed development?</p>	Yes	<p>There are two groundwater source protection zones or areas that contribute to recharge in the vicinity of the site, Drybridge PWS and Ballymakenny GWS. Both of which are defined as SI Inner Protection Area source protection areas.</p>	
<p>Are there any areas on or around the location of the proposed development where environmental quality standards are already exceeded which could be affected by the proposed development?</p>	No	<p>The Tullyeskar_010 and Boyne Estuary water bodies downstream of the site are currently unassigned and of moderate ecological status respectively, under the WFD. The Boyne Estuary is assigned moderate status due to hydromorphological, biological and nutrient conditions and is also defined as "At Risk" of deterioration. Neither water bodies are currently meeting their WFD objectives, however, the proposed works will not cause</p>	-

REPORT

Selection Criteria	Yes/No	Briefly describe potential impact	Is effect likely to result in a significant effect? Please explain
		further deterioration in the water bodies, nor prevent them from achieving their objectives.	
Are there any areas on or around the location which are densely populated which could be affected by the proposed development?	No	Given the scale of the proposed development and the short term and temporary nature of the works, it is not likely to affect local populations.	-
Is the proposed development in a location where it is likely to be visible to many people?	No	The proposed restoration works is to occur at the existing landfill site. Although additional machinery will access the site during the construction phase, given that this will be short term and temporary in nature, this is not likely to have an additional visual impact to local populations. Upon completion of the construction phase, natural soil will be placed on the surface, and will be sympathetic with the existing environment.	-
Are there any routes or facilities on or around the location which are used by the public for access to recreation or other facilities, which could be affected by the proposed development?	No	The current land use of the site will remain post restoration works, therefore no changes are expected.	No – the construction phase of the proposed development may result in temporary traffic disturbance in the vicinity. Given the scale of the proposed works, this is likely to be short-term and temporary in nature.
Are there any areas of local landscape or scenic value on or around the location which could be affected by the proposed development?	No	The site is located in the Boyne and Mattock Valleys and is of international importance. The restoration works proposed are not likely to affect the scenic value of this landscape.	Given the works are to cap an existing closed landfill site and restore the site to the land use of the surrounding area there is not potential for landscape impacts even with the proximity of the World Heritage Site

REPORT

Selection Criteria	Yes/No	Briefly describe potential impact	Is effect likely to result in a significant effect? Please explain
Are there any areas of features of historic, cultural or archaeological value on or around the location which could be affected by the proposed development?	Yes	<p>There are 8 scheduled monuments located within 1.0km of the proposed works:</p> <ul style="list-style-type: none"> • Fulacht fia is located a 1km north west of the site; • Ritual site (holy well and St. Patricks Stone) located 400m west; • Ringfort located 900m south west of the site; • Ritual site (holy well), souterrain, enclosure site and burial ground located 900m south of the site. 	<p>No – given their locations and the scale of the proposed works, there is not likely to be any impact to the features of these sites or their setting. The site is a closed landfill and the capping is required above the existing waste mass in this area of the site – there is therefore no potential for previously undiscovered cultural heritage features to be disturbed.</p>
Is the proposed development location susceptible to earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions?	No	<p>The proposed works is primarily located in an area of low landslide susceptibility classification, with small areas of moderate to moderately high also. The site is not within an area susceptible to flood events.</p>	<p>No the area is primarily low to moderate landslide susceptibility classification.</p>

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Table 4.3 Characteristics of the potential impacts

Selection Criteria
Characteristics of the Potential Impact
(a) Magnitude and special extent of the impact (for example geographical area and size of the population likely to be affected)
<p>Will the effect extend over a large geographical area, affecting many people and resulting in social changes, e.g. in demography, traditional lifestyles, employment?</p> <p>No – the proposed works will be confined to the existing area of a closed landfill site and will have no impact on social changes such as demography, traditional lifestyles or employment.</p>
(b) Nature of impact
<p>Is the development located within or close to any other areas which are protected under international, EU, or national or local legislation for their ecological, landscape, cultural or other value, which would be significantly affected by the development?</p> <p>No, the site is not located within any sensitive or designated areas, within the meaning of the EIA regulations i.e. there are no Scheduled Monuments, Sites of Special Scientific Interest (SSSIs), National Parks, National Scenic Areas (NSAs), World Heritage Sites, Special Areas of Conservation (SACs), Special Protection Areas (SPAs), or Ramsar Sites.</p> <p>The nearest designated sites are River Boyne and River Blackwater SAC (002299), Boyne Coast and Estuary SAC (001957), Clogher Head SAC (001459), Boyne Estuary SPA (004080), River Nanny Estuary and Shore SPA (004158) and River Boyne and River Blackwater SPA (004232). Given the scale of the proposed development site and the short term and temporary nature of the works, it is not likely that these sites would be affected by the proposed development.</p>
(c) Transboundary nature of the impact
<p>Will there be any potential for transboundary impact?</p> <p>No</p>
(d) Intensity and complexity of the impact
<p>Is there a risk that environmental standards will be breached?</p> <p>No. The project will provide a protective function in that it will manage landfill gas and leachate generation to a safe level and prevent potential for further deterioration in receiving environment.</p>

REPORT

Selection Criteria
(e) Probability of the impact
Is there a high or low probability of a potentially highly significant effect? The potential effects of the proposed development can be clearly established and the probability of any highly significant effects is low.
(f) Expected onset, duration, frequency and reversibility of the impact
Will the effect be permanent, continuous or irreversible? No – During the construction phase, any potential adverse effects would be short-term and temporary and could be minimised through the implementation of good practice measures.
(g) Culmination of the impact with the impact of other existing and/or approved development
Will the Project have cumulative effects, due to its proximity to other existing or planned Projects with similar effects? No
(h) Possibility of effectively reducing the impact
Will there be any significant adverse effects on any aspect of the environment during the construction and operational phases of the development, has the developer included mitigation measures to avoid, prevent, repair or reduce the potential impact? During the construction phase, any potential impacts associated with the proposal can be mitigated against through adherence to the Specific Engineering Works.

5 CONCLUSIONS

The proposed restoration works at the site has been screened to determine if an Environmental Impact Assessment Report (EIAR) is required.

The proposed restoration works were screened for Mandatory EIA based on the classes of development prescribed by Parts 1 or 2 of Schedule 5 of the Planning and Development Regulations 2001-2020. It was found that the classes of developments requiring a mandatory EIAR are not applicable to this project.

The proposed works were also screened in respect of sub-threshold development based on the criteria set out in Schedule 7 of the Planning and Development Regulations 2001 as amended (See Section 4). This screening assessment determined that the proposal will not have significant effects on the environment. An EIAR is therefore not required.

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Appendix A

Photographs of the proposal site

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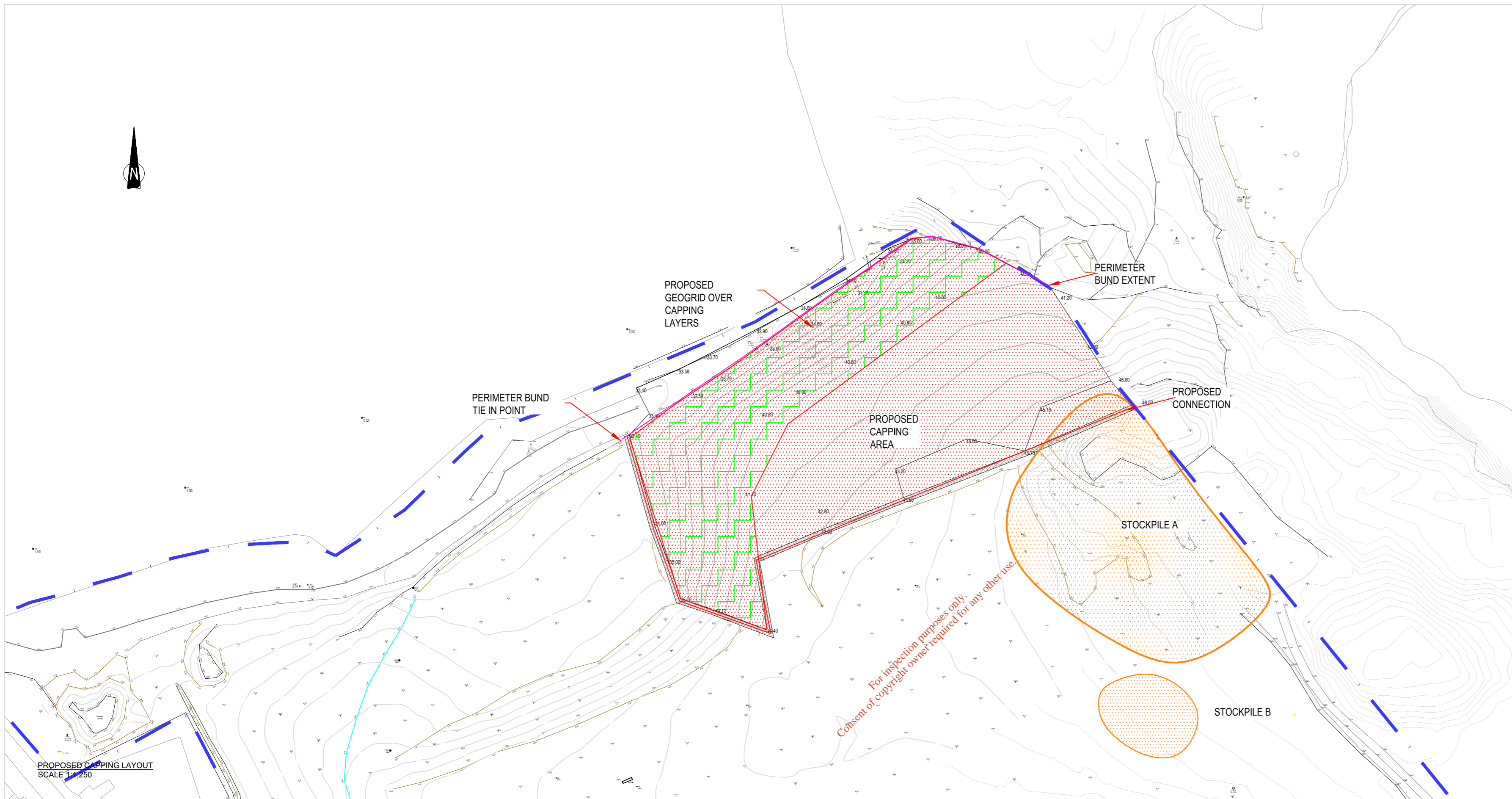


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Appendix B

Proposed capping details

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NOTES

- Verifying Dimensions.
The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
 - Existing Services.
Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
 - Issue of Drawings.
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 - Datum.
 - Key:
 - Proposed Capping Layers
 - Stockpile
 - Proposed Connection
 - This drawing to be read in conjunction with Drawing IBR1092/107
- Note: 100mm depth of topsoil to be filled under Stockpile A on site after subsoils are utilised in the capping system.

PROPOSED CAPPING LAYOUT
SCALE 1:250

rev	amendments	drawn	date

rps Elmwod House T +44 (0) 28 90 667914
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Louth County Council

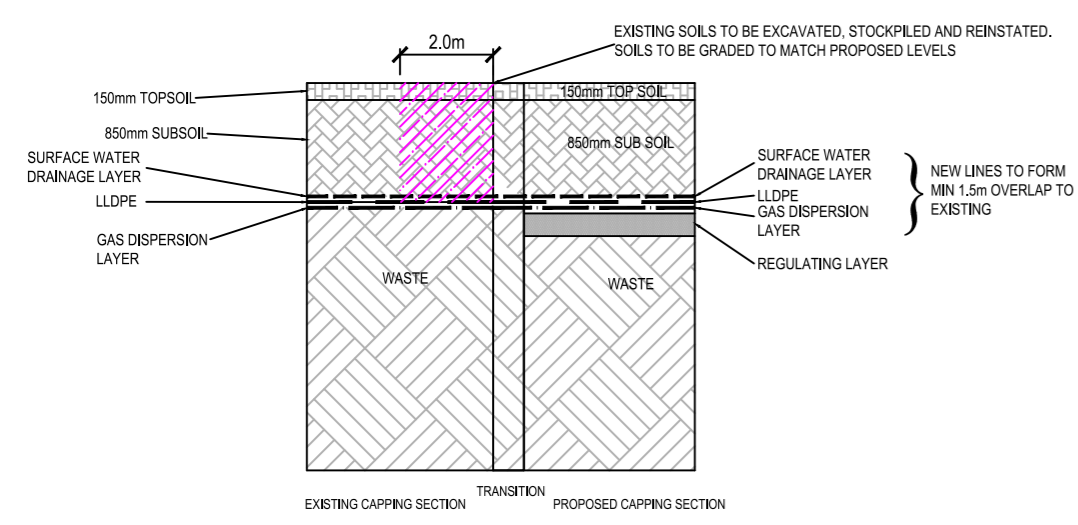
Project
Drogheda Phase 3 Capping

Title
Proposed Capping Layout

Drawing Status Tender	Sheet Size A2	Drawing Scale As Shown
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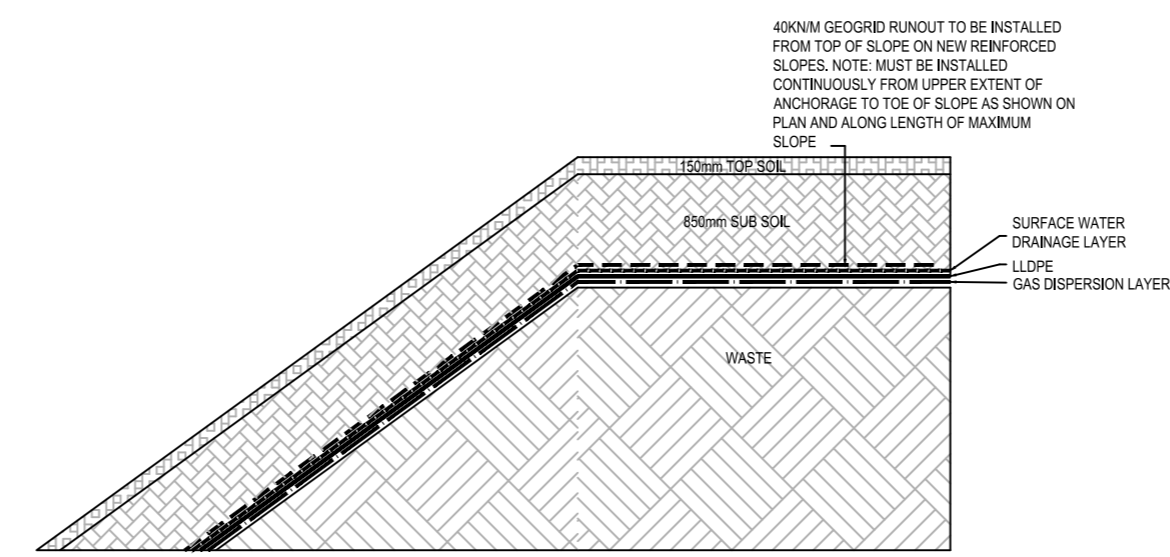
Drawing Number IBR1092/102	Rev -
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Project Leader J Byrne	Drawn By J Close	Date 10-05-19	Initial Review J Byrne
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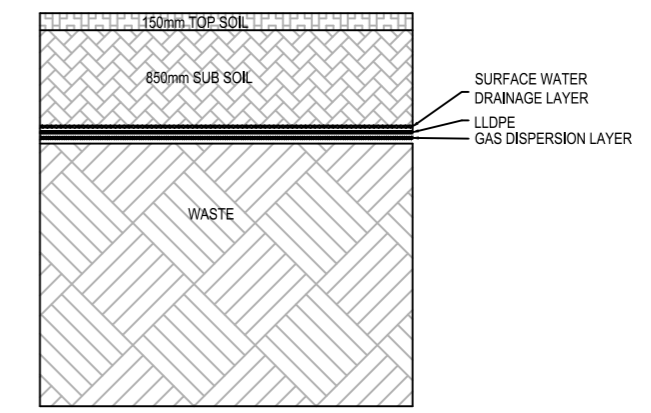


NOTES: EXISTING LINERS TO BE EXPOSED TO ENABLE TIE IN EXCAVATION DIRECTLY ADJACENT TO LINERS TO REQUIRE HAND DIGGING TO MINIMISE RISK OF DAMAGE TO EXISTING GEOSYNTHETICS

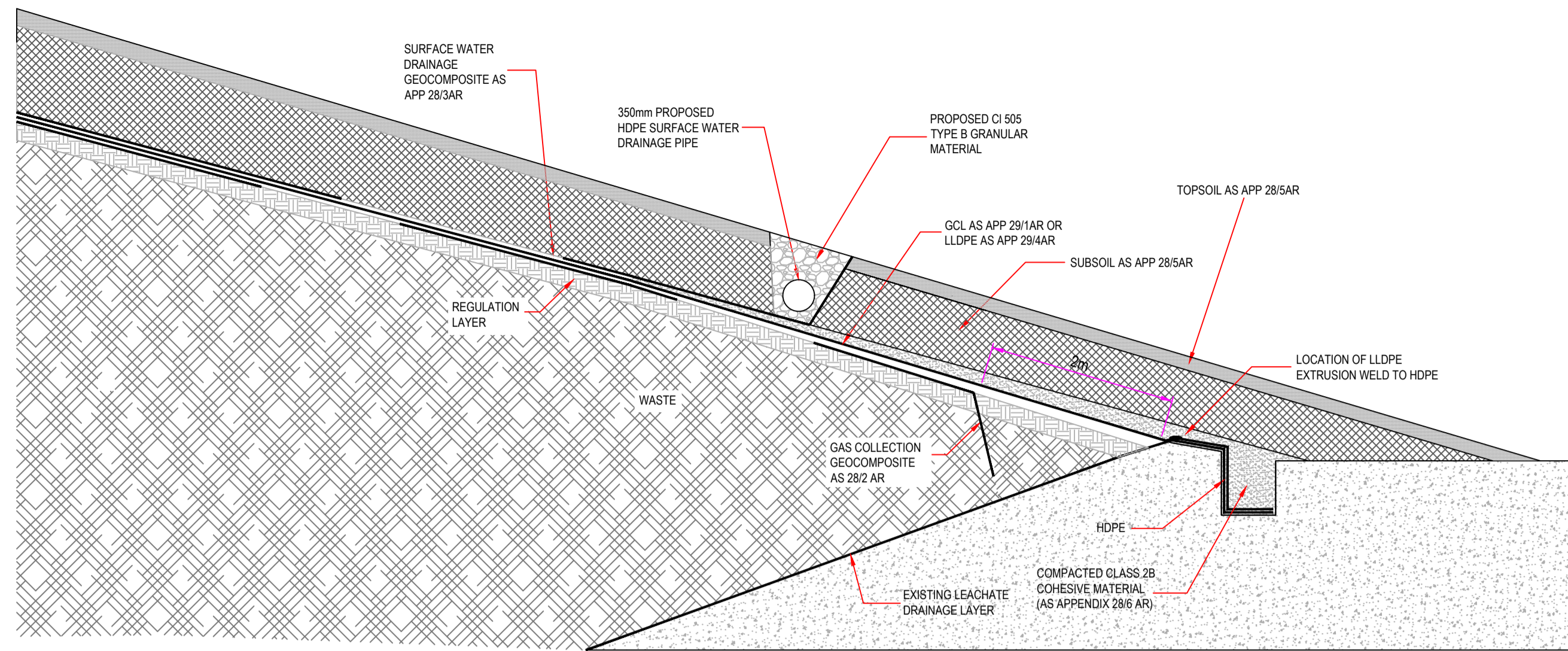
TRANSITION CONNECTION DETAIL TO EXISTING CAPPING (NTS)



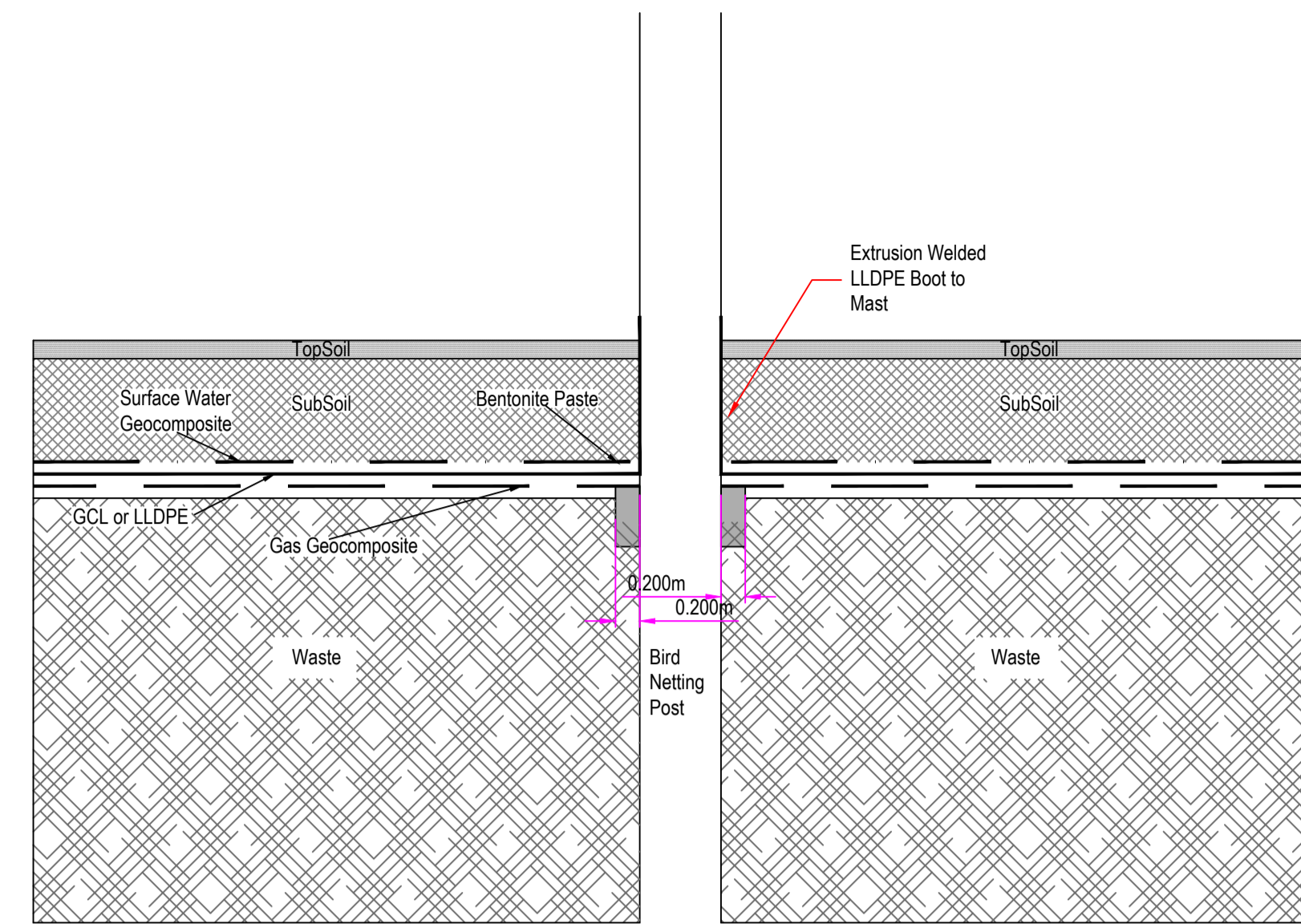
ANCHOR TRENCH RUNOUT ON NEW CAP (NTS)



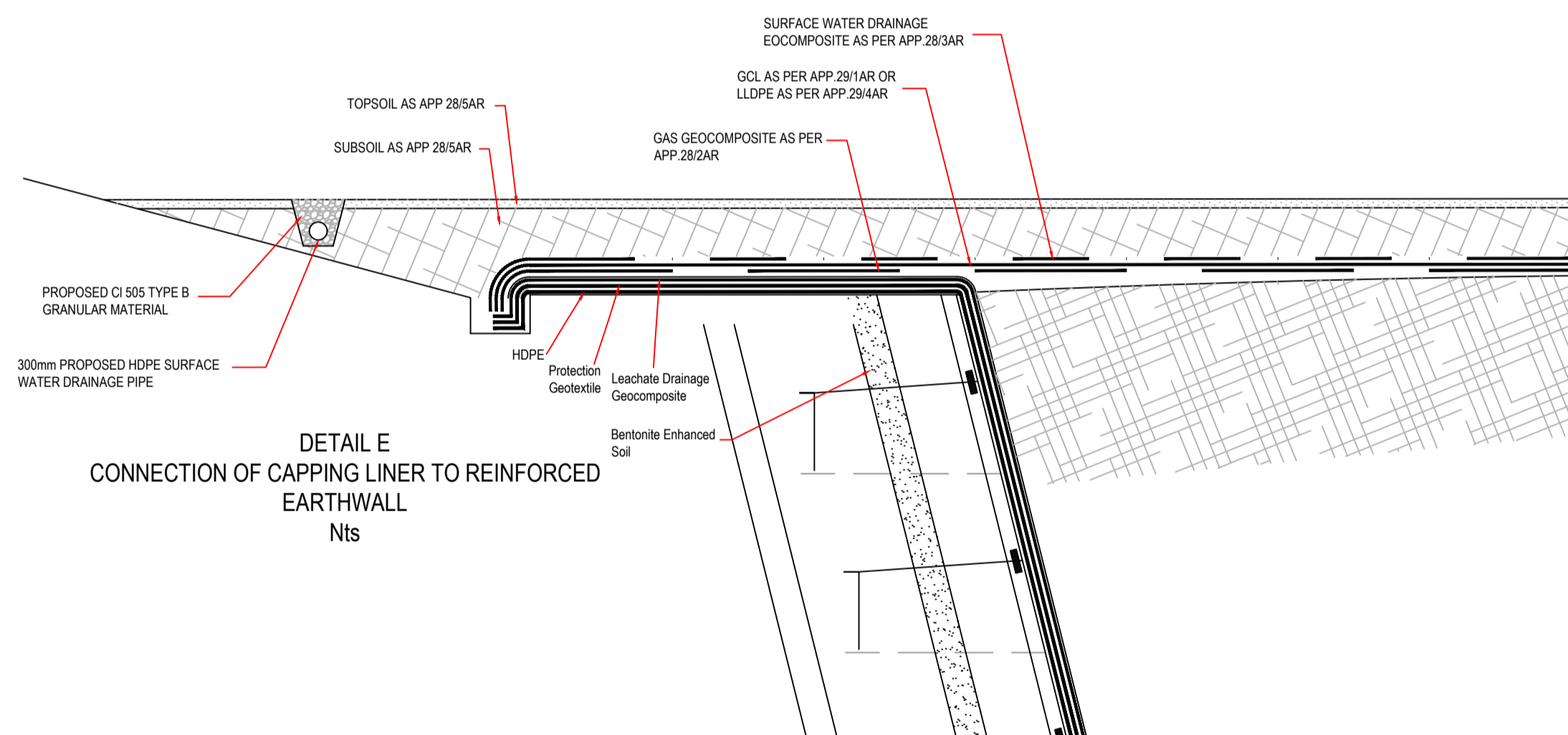
TYPICAL CAPPING SECTION (NTS)



DETAIL D
CONNECTION OF SURFACE WATER DRAINAGE GEOCOMPOSITE TO PROPOSED SURFACE WATER CHANNEL
SCALE 1:50

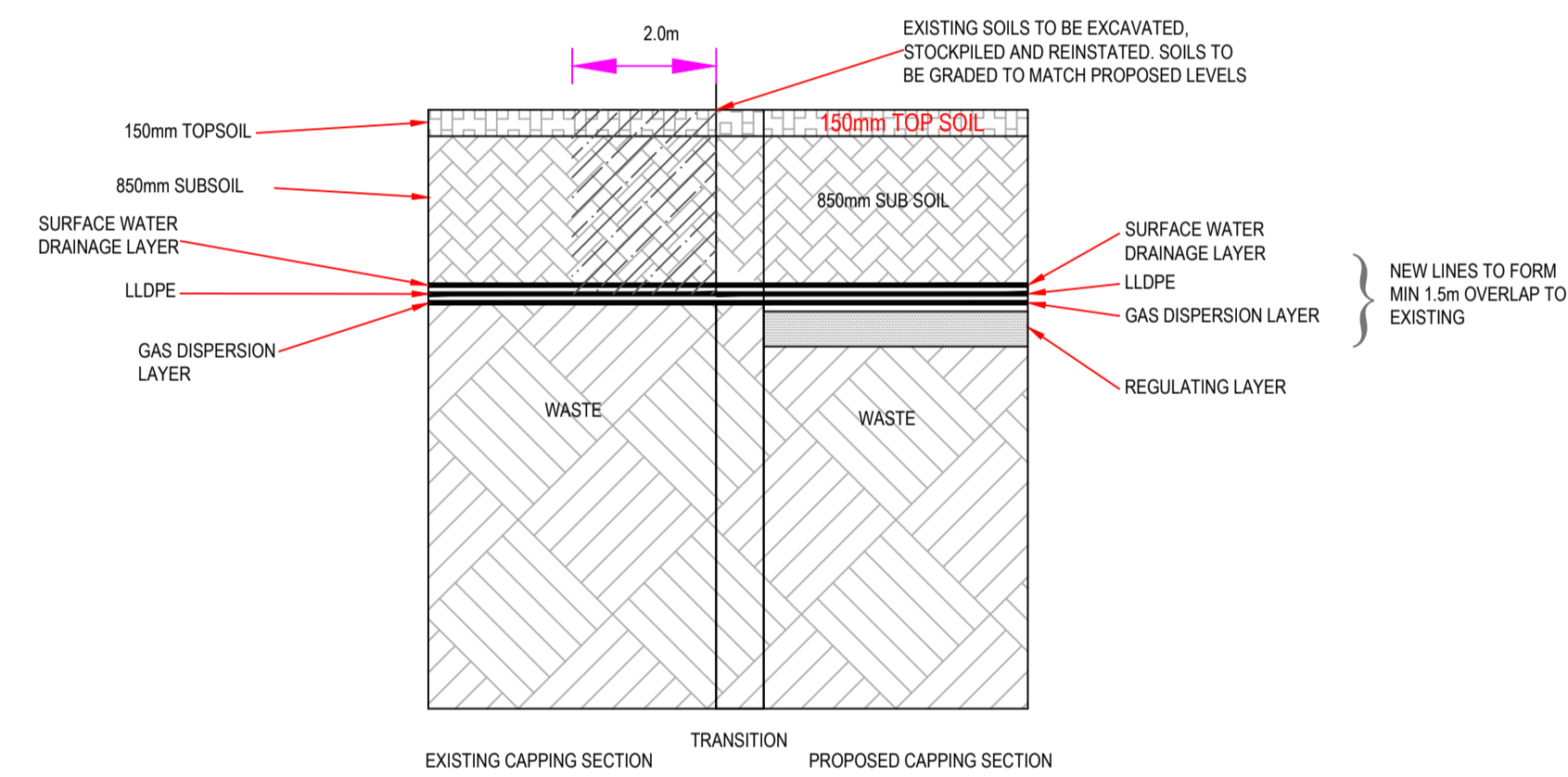


DETAIL C
CAP CONNECTION AROUND BIRD NETTING MASTS
SCALE 1:50



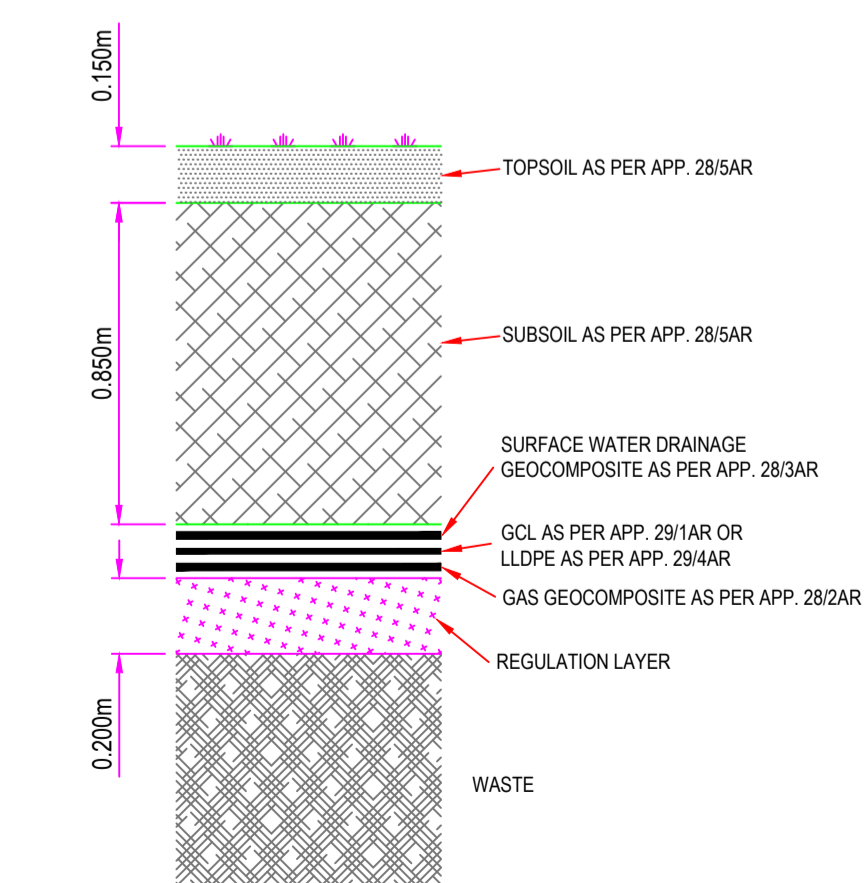
DETAIL E
CONNECTION OF CAPPING LINER TO REINFORCED EARTH WALL
NTs

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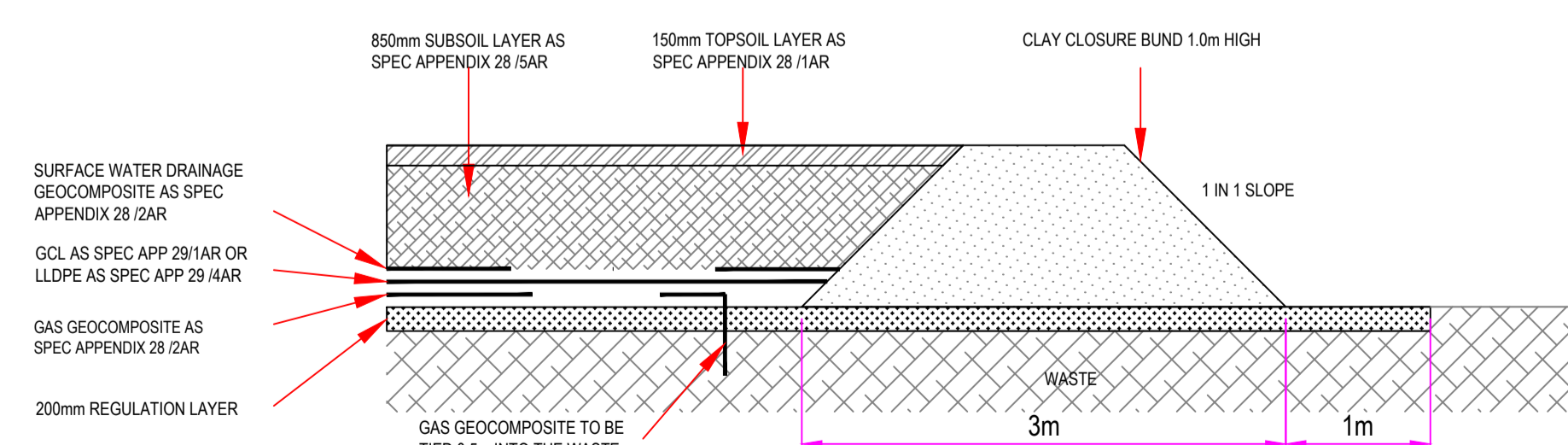


DETAIL F
TRANSITION CONNECTION DETAIL TO EXISTING CAPPING
NTS

NOTES: EXISTING LINERS TO BE EXPOSED TO ENABLE THE TIE IN. EXCAVATION DIRECTLY ADJACENT TO LINERS TO REQUIRE HAND DIGGING TO MINIMISE RISK OF DAMAGE TO EXISTING GEOSYNTHETICS



DETAIL A
PROPOSED CAPPING SYSTEM PROFILE
SCALE 1:25



DETAIL B
CAPPING EDGE BUND DETAIL
NTS

NOTES

1. Verifying Dimensions.
The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
2. Existing Services.
Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
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4. Datum.

rev	amendments	drawn	date
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Client
Louth County Council

Project
Drogheda Phase 3 Capping

Title
Capping Details

Drawing Status Tender	Sheet Size A1	Drawing Scale As Shown
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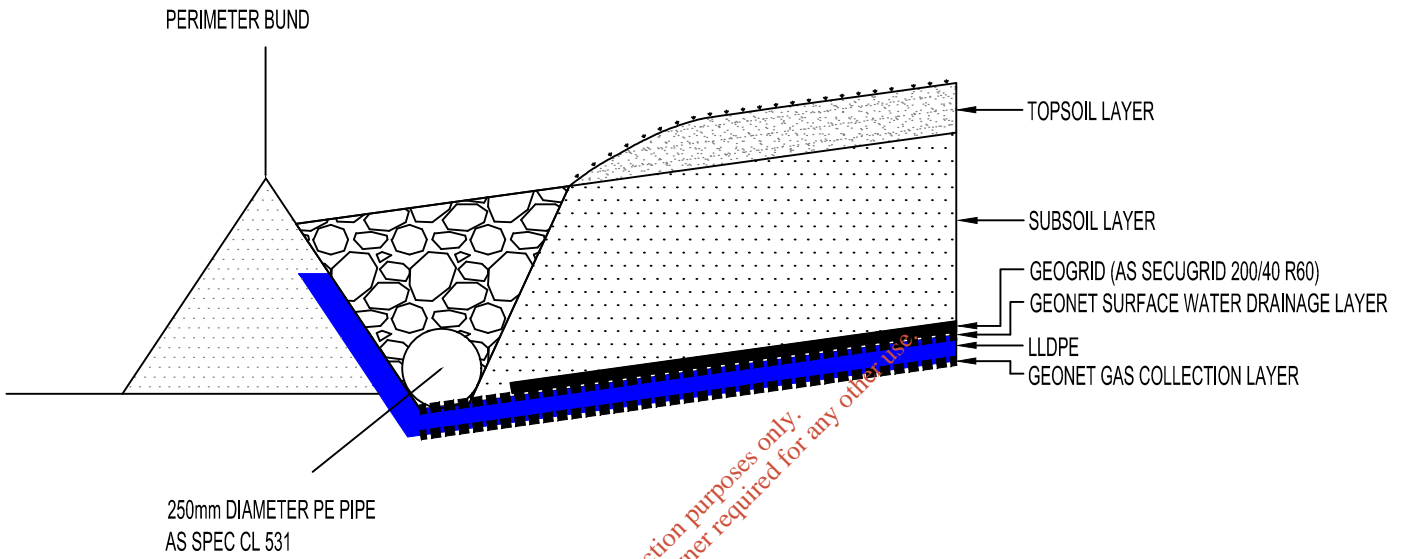
Drawing Number IBR1092 /106	Rev -
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Project Leader J Byrne	Drawn By J Close	Date 13-05-19	Initial Review J Byrne
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Appendix C

Surface water drainage details

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DETAIL A

rev	amendments	drawn	date
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Project Drogheda Landfill Site		Title Surface Waster Drianage Details		
Client  Comhairle Contae Lú Louth County Council		Architect		
Drawing Status Preliminary	Sheet Size A4	Drawing Scale 1:50,000	Project Leader DD	Drawn By AMB
		Date May - 2018	Initial Review JB	

Appendix D

Appropriate Assessment Screening

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DROGHEDA LANDFILL SITE

Appropriate Assessment Screening Report

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IBE1709
Drogheda Landfill Site
F01
March 2020

Document status						
Version	Purpose of document	Authored by		Reviewed by	Approved by	Review date
D01	Draft	Caoimhe Magee	Murray/Mark	Mark Magee	Mark Magee	24/03/2020
F01	Final	Caoimhe Magee	Murray/Mark	Mark Magee	Mark Magee	31/03/2020

Approval for issue		
Mark Magee		31/03/2020

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Prepared for:

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1 INTRODUCTION

This Appropriate Assessment Screening Statement has been prepared by RPS on behalf of Louth County Council, to assist the restoration works at the discontinued landfill site, in Drogheda, County Louth.

An Appropriate Assessment Screening and, if required, an Appropriate Assessment, is required under the Habitats Directive for any plan or project likely to have significant effect on a Natura 2000 site.

This Statement documents the evaluation and analysis, undertaken on behalf of Louth County Council, seeking to undertaken capping restoration works at the Drogheda site. The document will establish whether the Drogheda site, hereafter referred to as the development, is likely to have a significant effect on any European site, and if so whether those Likely Significant Effects (LSEs) will adversely affect the integrity of any European site.

The exercise considers the proposed site by itself has been undertaken in view of best scientific knowledge and in view of the conservation objectives of the site concerned. Measures intended to avoid or reduce the harmful effects of the proposed development on European sites have not been taken into account at screening stage, in accordance with the judgment of the Court of Justice of the European Union (CJEU) in case [C-323/17](#) (People Over Wind).

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2 APPROACH

2.1 Guidance Documents

This Appropriate Assessment Screening supporting the restoration works at the Drogheda discontinued landfill site has been carried out using the following guidance:

- Department of Environment Heritage and Local Government Circular NPW 1/10 and PSSP 2/10 on *Appropriate Assessment under Article 6 of the Habitats Directive – Guidance for Planning Authorities* March 2010.
- Appropriate Assessment of Plans and Projects in Ireland: Guidance for Planning Authorities, Department of the Environment, Heritage and Local Government 2009; <http://www.npws.ie/en/media/NPWS/Publications/CodesofPractice/AA%20Guidance.pdf>
- Managing Natura 2000 Sites: the provisions of Article 6 of the Habitats Directive 92/43/EEC, European Commission 2000; http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/provision_of_art6_en.pdf
- Assessment of Plans and Projects Significantly Affecting Natura 2000 Sites: Methodological guidance on the provisions of Article 6(3) and (4) of the Habitats Directive 92/43/EEC; http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/natura_2000_assess_en.pdf
- Guidance document on Article 6(4) of the 'Habitats Directive' 92/43/EEC – Clarification of the concepts of: alternative solutions, imperative reasons of overriding public interest, compensatory measures, overall coherence, opinion of the commission. http://ec.europa.eu/environment/nature/natura2000/management/docs/art6/guidance_art6_4_en.pdf

2.2 Likely Significant Effect

The threshold for a Likely Significant Effect (LSE) is treated as being above a *de minimis* level. A *de minimis* effect is a level of risk that is too small to be concerned with when considering ecological requirements of an Annex I habitat or a population of Annex II species present on a European site necessary to ensure their favourable conservation condition. If low level effects on habitats or individuals of species are judged to be in this order of magnitude and that judgment has been made in the absence of reasonable scientific doubt, then those effects are not considered to be likely significant effects.

“...the requirement that the effect in question be ‘significant’ exists in order to lay down a de minimis threshold. Plans or projects that have no appreciable effect on a European site are thereby excluded. If all plans or projects capable of having any effect whatsoever on the site were to be caught by Article 6(3), activities on or near the site would risk being impossible by reason of legislative overkill”.

[Paragraphs 46-50 of the Opinion of the Advocate General in the Court of Justice of the European Union case (CJEU) [C-258/11](#)]

2.3 Mitigation Measures

In relation to mitigation measures, EC (2001) states that *“project and plan proponents are often encouraged to design mitigation measures into their proposals at the outset”*. However, it is important to recognise that the screening assessment should be carried out in the absence of any consideration of mitigation measures that form part of a project or plan and are designed to avoid or reduce the impact of a project or plan on a Natura 2000 site”. This direction in the European Commission’s guidance document is unambiguous in that it does not promote the inclusion of mitigation at screening stage.

In April 2018, the CJEU issued a ruling in case [C-323/17](#) (People Over Wind) that Article 6(3) of Directive 92/43/EEC must be interpreted as meaning that, in order to determine whether it is necessary to carry out, subsequently, an appropriate assessment of the implications, for a site concerned, of a plan or project, it is not appropriate, at the screening stage, to take account of the measures intended to avoid or reduce the harmful effects of the plan or project on that site.

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3 PROPOSED DEVELOPMENT

3.1 Summary of the Proposed Works

Louth County Council wishes to undertake restoration works at the Drogheda discontinued landfill site to continue the remediation works at the closed facility.

The area to the northeast of the site has been acquired by Louth County Council and Specified Engineering Works proposed for the proposed works. The capping of this area will deal with all areas of waste deposited outside the boundary to the northern part of the landfill site. LCC proposed to undertake a further restoration works on these lands and include the area within the waste licence boundary.

The proposed works will include the following:

- Final capping of the waste following reprofiling of the site. An area of approximately 15,000m² is proposed to be capped (Appendix 1). Prior to capping works taking place, a permanent perimeter bund shall be constructed. This perimeter bund will act as containment for capping works and will remain insitu on completion of restoration works at the site.
- The capping will consist of a geonet gas collection layer, a linear low density polyethylene (LLDPE) layer, surface water drainage layer (geonet), 850mm subsoil layer and a 150mm deep topsoil layer as undertaken in restoration works 2005-2007 and 2016. The soils used for soil layers are currently located at stockpiles A and B on site (Appendix 2).
- Reinforcement of capping layer on slopes greater than 1 in 4.
- Installation of gas wells, horizontal gas extraction pipework and connection to the existing landfill gas extraction system.
- Installation of a surface water drainage channel to the edge of the proposed capping area on its northern and eastern fringe, approximately 1.4 km upstream of the SAC (Appendix 3).
- The hydrogeological report also recommended the decommissioning of ground water monitoring boreholes, BH4A and BH5A as they are potentially impacted by their close proximity to the waste body. New boreholes will be installed in suitable locations to replace these two.

3.2 Site Location

The site is located approximately 600m north of the Boyne Estuary on the north-western edge of Drogheda town. The site is adjacent to Leonards Cross at the junction of the R168 to Collon and the Cement Road, a minor road which links the Slane Road and the N1 Primary road northwards from Drogheda to Dundalk.

3.3 Site History

The site is approximately 32 hectares in extent and was formally a limestone quarry. The site was developed on the benches of the redundant limestone quarry in 1983. The site historically operated on a dilute and disperse principle.

The site ceased accepting waste for disposal since the waste licence (Registration number W0033-01) was granted on the 30th of December 1999, however, inert waste was used for the restoration and capping works following this.

3.4 Restoration Works Completed to date

Restoration works were undertaken at the site during a period in 2005-2007 and 2016-2017. The following works were undertaken in between 2005 and 2007:

- Installation of 55 No. gas extraction wells

- Installation and commissioning of an active gas extraction flare and methane stripper
- Installation of capping layers consisting of gas drainage layer, LLDPE capping and surface water drainage layer (a total area of approximately 101,650m²).
- Reinforcement of the capping system using geogrid on slopes greater than 1 in 2.5.
- Surface water drainage system.
- Construction of 1.0m high safety bund along cliff edges on the site to improve safety.
- Subsoil and topsoil have been placed above the capping layer to a depth of 850mm and 150mm respectively across the site.

Investigations were undertaken in 2007 within an area north and northeast of the site boundary with regards to disposal of waste outside of the licensed boundary. The area to the north was acquired by Louth County Council from a third party and subsequently included within the landfill licence boundary as a technical amendment on the 18th of June 2013. Restoration works were then undertaken between September 2016 and March 2017 in an area to the north/northwest of the landfill site. The following works were undertaken:

- Installation of 4 No. gas extraction wells and horizontal gas extraction pipework.
- Installation of capping layers consisting of gas drainage layer, LLDPE capping and surface water drainage layer (a total area of approximately 14,60m²).
- Reinforcement of the capping system using geogrid on slopes greater than 1 in 3.
- Surface water drainage system.
- Subsoil and topsoil have been placed above the capping layer to a depth of 850mm and 150mm respectively across the site.

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Figure 3-1: Site Location

4 SCREENING FOR APPROPRIATE ASSESSMENT

The overall aim of the Habitats Directive is to maintain or restore the favourable conservation status of habitats and species of community interest. These habitats and species are listed in the Habitats and Birds Directives and Special Areas of Conservation and Special Protection Areas are designated to afford protection to the most vulnerable of them. These two designations are collectively known as the Natura 2000 network.

This screening exercise principally considers European sites (Special Areas of Conservation or SACs and Special Protection Areas or SPAs designated under the Habitats Directive 92/43/EEC).

The proposed development must be screened against those sites for which a pathway of effect can be reasonably established between a receptor and the proposed development.

4.1 Establishing an Impact Pathway

Current guidance (DEHLG, 2010) on the Zone of Influence to be considered during the Screening for AA states the following:

“A distance of 15km is currently recommended in the case of plans, and derives from UK guidance (Scott Wilson et al., 2006). For projects, the distance could be much less than 15km, and in some cases less than 100m, but this must be evaluated on a case-by-case basis with reference to the nature, size and location of the project, and the sensitivities of the ecological receptors, and the potential for in-combination effects”.

As stated above, a buffer of 15km is typically taken as the initial Zone of Influence extending beyond the reach of the footprint of a plan or project, although there may be scientifically appropriate reasons for extending this Zone of Influence further depending on pathways for potential impacts.

The possibility of significant effects is considered in this report using the source-pathway-receptor model. ‘Source’ is defined as the individual elements of the proposed works that have the potential to affect the identified ecological receptors. ‘Pathway’ is defined as the means or route by which a source can affect the ecological receptor. ‘Ecological receptor’ is defined as the qualifying features of European sites (and for which conservation objectives have been set in the case of SACs or SPAs) being assessed. Each element can exist independently however an effect is created when there is a linkage between the source, pathway and receptor.

This source pathway receptor model has been used to screen the potential for impact on those Natura 2000 sites. This is primarily due to the need to consider the potential for likely significant effects on European Sites with regard to aquatic and water dependent receptors that are hydrologically linked to the reach of the River Boyne that receives the discharge from the Drogheda site. Therefore, the Zone of Influence for this project includes all of the hydrologically connected surface water sub catchments which have the potential to impact on a downstream Natura 2000 site.

Figure 4.1 includes illustrates the Natura Network within the Zone of Influence. The relevant sites are:

- River Boyne and River Blackwater SAC (002299)
- Boyne Coast and Estuary SAC (001957)
- Clogher Head SAC (001459)
- Boyne Estuary SPA (004080)
- River Nanny Estuary and Shore SPA (004158)
- River Boyne and River Blackwater SPA (004232)



Figure 4-1: SAC and SPA location within the vicinity of the Drogheda Landfill

Table 4.1 below provide a list of European sites, their qualifying features and relative distances from the proposed development

Table 4-1: Downstream European sites, their qualifying features and relative distances from the proposed development

European Site	Downstream distance	Qualifying features
River Boyne and River Blackwater SAC	Approximately 700m from the closest part of the SAC to the site (See Figure 4-1)	Alkaline fens [7230] Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (<i>Alno-Padion</i> , <i>Alnion incanae</i> , <i>Salicion albae</i>) [91E0] <i>Lampetra fluviatilis</i> (River Lamprey) [1099] <i>Salmo salar</i> (Salmon) [1106] <i>Lutra lutra</i> (Otter) [1355]
Boyne Coast and Estuary SAC	Approximately 4.5 km from the closest part of the SAC to the site (See Figure 4-1)	Estuaries [1130] Mudflats and sandflats not covered by seawater at low tide [1140] Annual vegetation of drift lines [1210] <i>Salicornia</i> and other annuals colonising mud and sand [1310] Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>) [1330] Embryonic shifting dunes [2110] Shifting dunes along the shoreline with <i>Ammophila arenaria</i> (white dunes) [2120] Fixed coastal dunes with herbaceous vegetation (grey dunes) [2130]
Clogher Head SAC	Approximately 12.5 km from the closest part of the SAC to the site (See Figure 4-1)	Vegetated sea cliffs of the Atlantic and Baltic coasts [1230] European dry heaths [4030]
Boyne Estuary SPA	Approximately 3.5 km from the closest part of the SPA to the site (See Figure 4-1)	<i>Shelduck</i> (<i>Tadorna tadorna</i>) [A048] <i>Oystercatcher</i> (<i>Haematopus ostralegus</i>) [A130] <i>Golden Plover</i> (<i>Pluvialis apricaria</i>) [A140] <i>Grey Plover</i> (<i>Pluvialis squatarola</i>) [A141] <i>Lapwing</i> (<i>Vanellus vanellus</i>) [A142] <i>Knot</i> (<i>Calidris canutus</i>) [A143] <i>Sanderling</i> (<i>Calidris alba</i>) [A144] <i>Black-tailed Godwit</i> (<i>Limosa limosa</i>) [A156] <i>Redshank</i> (<i>Tringa totanus</i>) [A162] <i>Turnstone</i> (<i>Arenaria interpres</i>) [A169] <i>Little Tern</i> (<i>Sterna albifrons</i>) [A195]

European Site	Downstream distance	Qualifying features
		Wetland and Waterbirds [A999]
River Nanny Estuary and Shore SPA	Approximately 10.0 km from the closest part of the SPA to the site (See Figure 4-1)	Oystercatcher (<i>Haematopus ostralegus</i>) [A130] Ringed Plover (<i>Charadrius hiaticula</i>) [A137] Golden Plover (<i>Pluvialis apricaria</i>) [A140] Knot (<i>Calidris canutus</i>) [A143] Sanderling (<i>Calidris alba</i>) [A144] Herring Gull (<i>Larus argentatus</i>) [A184] Wetland and Waterbirds [A999]
River Boyne and River Blackwater SPA	Approximately 1.3 km from the closest part of the SPA to the site (See Figure 4-1)	Kingfisher (<i>Alcedo atthis</i>) [A229]

4.2 Initial Screening of European Sites within the Zone of Influence

The tables below, 4-2 to 4-5 demonstrate the conservation objectives of the qualifying features that may be impacted by water quality issues within the Zol, for each of the European sites.

Table 4-2: River Boyne and River Blackwater SAC

Qualifying features	Distance from proposed works	Conservation objectives that may be impacted
Alkaline fens	Over 700m	Water quality issues, particularly nutrient levels, can affect natural structure and function of qualifying feature habitat.
Alluvial forests with <i>Alnus glutinosa</i> and <i>Fraxinus excelsior</i> (Alno-Padion, <i>Alnion incanae</i> , <i>Salicion albae</i>)		Qualifying feature is not water quality dependent.
<i>Lampetra fluviatilis</i> (River Lamprey)		To support these qualifying features, the water bodies should be compliant with the ecological conditions for 'good' WFD status. Any water quality issues that hamper a water body from improving to 'good' status or deteriorate will impact on the conservation objectives. The otter depends on salmon as a source of food so impact of water quality issues on fish stock will in turn impact on otter communities.
<i>Salmo salar</i> (Salmon)		
<i>Lutra lutra</i> (Otter)		

Table 4-3: Boyne Coast and Estuary SAC

Qualifying features	Distance from proposed works	Conservation objectives that may be impacted
Estuaries	4.5 km	A review of the SSCOs (NPWS, 2012) for this habitat show the conservation objectives for this qualifying feature is reliant on community distribution, some of which may be negatively affected by deterioration in water quality.
Mudflats and sandflats not covered by seawater at low tide	4.5 km	As above, deterioration in water quality may reduce community distribution, which is a conservation objective for this qualifying feature.
Annual vegetation of drift lines	7.5 km	-
Salicornia and other annuals colonising mud and sand	4.5 km	Habitat distribution, vegetation cover and composition may all be affected by water quality deterioration.
Atlantic salt meadows (Glauco-Puccinellietalia maritima)	4.5 km	Water quality has the potential to affect habitat distribution and vegetative composition.
Embryonic shifting dunes	7.5 km	Habitat distribution and vegetative composition are all conservation objectives of these dune systems that could potentially be affected by water quality issues.
Shifting dunes along the shoreline with Ammophila arenaria (white dunes)	7.5 km	
Fixed coastal dunes with herbaceous vegetation (grey dunes)	4.5km	

Table 4-4: Clogher Head SAC

Qualifying features	Distance from proposed works	Conservation objectives that may be impacted
Vegetated sea cliffs of the Atlantic and Baltic coasts	12.5 km	Habitat distribution and vegetative composition are all conservation objectives of these both these qualifying features that could potentially be affected by water quality issues.
European dry heaths		

Table 4-5: SPAs within the vicinity of the development

SPA	Distance from proposed works	Conservation objectives that may be impacted
Boyne Estuary SPA	Approximately 3.5 km from the closest part of the SPA to the site (See Figure 4-1)	
River Nanny Estuary and Shore SPA	Approximately 10.0 km from the closest part of the SPA to the site (See Figure 4-1)	The SPA habitats have the potential to be impacted by deterioration in water quality and pollutants.
River Boyne and River Blackwater SPA	Approximately 1.3 km from the closest part of the SPA to the site (See Figure 4-1)	

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4.3 Habitat Loss

The Drogheda site is not located or directly connected with any European site.

Therefore, there will be no direct impact on the footprint of the SAC or SPA listed and thus no habitat loss from any of the European sites listed in Section 4.1 above.

4.4 Water Quality and Habitat Deterioration

4.4.1 Hydrological Setting

The site of the proposed development is not directly linked to any European site listed above but may be indirectly linked. As a result, the European sites listed above must be taken into consideration due to their hydrological connection to the development. However, only the qualifying features within these European Sites that are water dependent and have the potential to be impacted through a hydrological link to the discharge point, will be considered.

A key requirement of the Water Framework Directive is that surface water bodies attain at least 'good' surface water status, requiring both ecological status and chemical status to be at least 'good', and that there should be no deterioration in existing status. The surface water bodies and underlying groundwater body are:

- Tullyeskar_010 (IE_EA_07T270880)
- Boyne Estuary (IE)EA_010_0100)
- Drogheda Groundwater (IE_EA_G_025)

The area of proposed works is situated within 1 km from the Boyne Estuary and approximately 700m east of the main channel of Tullyeskar_010 water body which lies within the Boyne catchment. The Tullyeskar_010 then flows into the Boyne Estuary downstream of Yellow Island.

The Tullyeskar_010 is currently unassigned a WFD ecological status and under review in terms of WFD risk status. The Boyne Estuary has a WFD ecological status of 'moderate' and is currently 'at risk'. The water body has been deemed moderate as a result of phytoplankton, macroalgae, hydromorphological conditions and other determinand for nutrient conditions. The Drogheda ground water body has an overall status of 'good' and is under review in terms of risk status. A hydrogeological risk assessment is unable to determine whether the site in its present condition appears to be impacting on surface waters immediately downstream from the landfill as there currently is no status assigned. Figure 4-2, shows the WFD status currently assigned to the water bodies within the vicinity of the site.

4.4.2 Assessment of Water Quality and Habitat Deterioration

During the construction stage, a perimeter bund will be constructed prior to all other works at the site. This is necessary to provide containment for the capping works both during the construction phase and operational phase of the development. The purpose of the bund is to contain the capping works and it will remain in-situ on completion of works. Following this, movement of soils and vehicle operation during the construction of subsoil and topsoil layers will be limited, as stockpiled soils for capping are currently located on the site. Therefore the movement of machinery and stockpiled soils within the bunded area will be minimised during construction.

Furthermore, during the construction works, L two groundwater monitoring boreholes, BH4A and BH5A, will be decommissioned and relocated, as recommended by the Hydrological Report undertaken by Bluerock Environmental Ltd in November 2015. This will involve excavation trial pits approximately 10m north of the vicinity of the existing boreholes under hydrogeologist supervision.

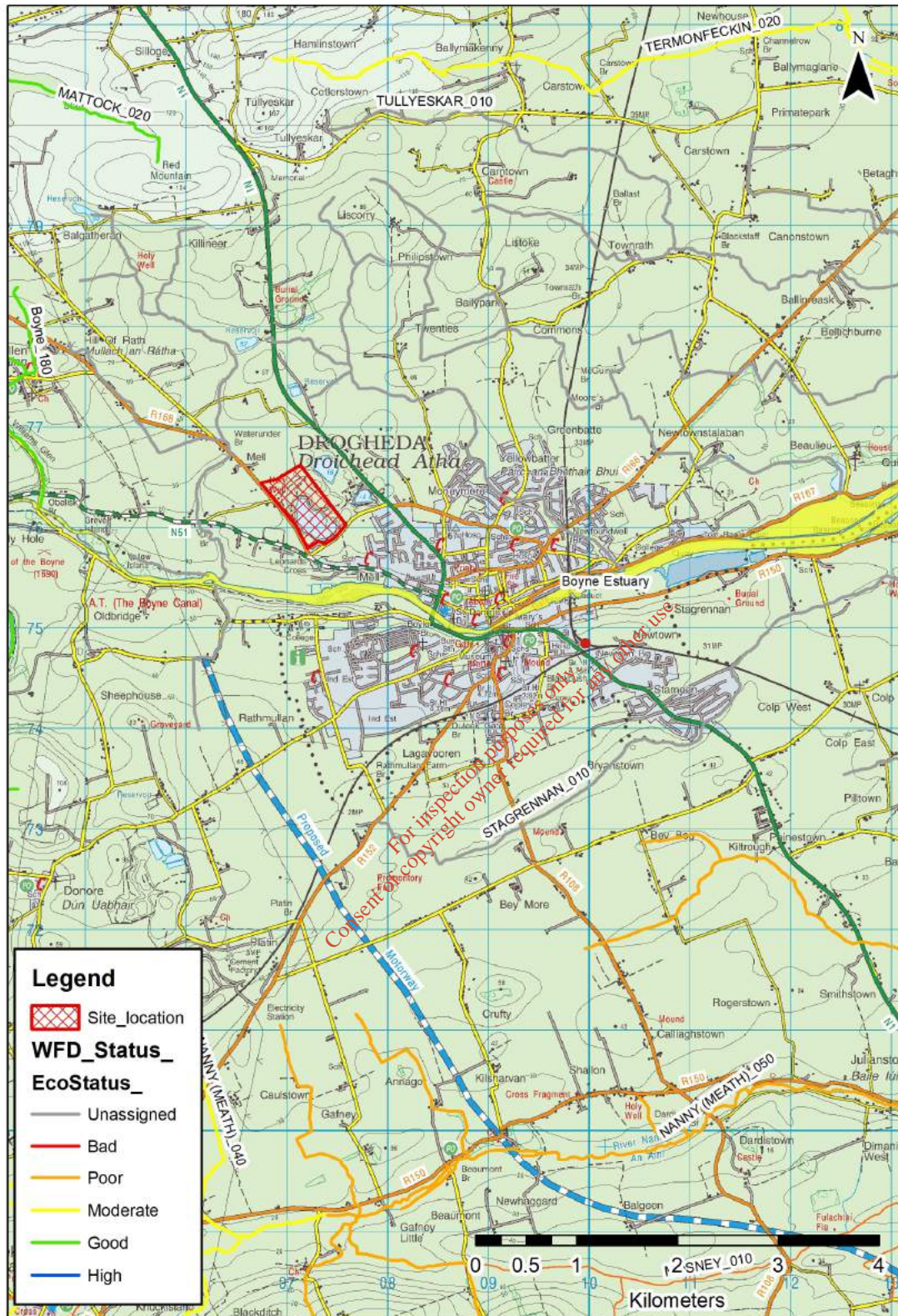


Figure 4-2: WFD status of water bodies surrounding the Drogheda site.

During the operational stage, the site will benefit from the restoration works as surface water generated within the capping area being prevented from penetrating through the waste body. The proposed design will see surface water generated within the capped area of the site collected by surface water drainage pipes and ultimately discharged to the drainage channel. The drawing

illustrating the capping system layout is provided in Appendix 3, shows the measures taken to direct surface waters to the drainage channels and prevent penetration through the waste mass.

This will ensure that surface waters from rainfall events will not be subject to potential contamination from exposure to the waste body itself. This improvement in water quality, in combination with the distance to the qualifying features of the European sites means that there will not be a significant adverse impact caused during the operational phase, indeed the surface water generated at this part of the site will be improved as a result of the capping works.

4.5 Summary of the Screening Assessment

4.5.1 Habitat Loss

Likely significant effects have been discounted for all European sites.

4.5.2 Water Quality and Habitat Deterioration

The possibility of likely significant water quality and habitat deterioration effects can be discounted for the River Boyne and Blackwater SAC, the Boyne Coast and Estuary SAC, the Clogher Head SAC, the Boyne Estuary SPA, the River Nanny Estuary and Shore SPA and the River Boyne and River Blackwater SPA during the construction phase and operational phase of the restoration works due to the lack of hydrological connectivity of the surface water network to the site as a result of the perimeter bund.

Additionally, the operational phase of the restoration works will improve the current water quality conditions and thus have an overall positive impact on the European sites and their qualifying features.

4.6 Likely Significant Effects (LSE)

This Appropriate Assessment Screening relates to the remedial works at the landfill site and the potential impact this may have on the water quality and the surrounding Natura 2000 sites.

The assessment indicates that there is unlikely potential for an impact on the integrity of the Tullyeskar_010 and its downstream water bodies, as a result of the perimeter bund acting as containment during the construction of the capping layer.

During the operational phase the capping will provide a barrier preventing rainfall incident on the site from infiltrating through the waste mass and therefore becoming contaminated. The surface water drainage will not represent a risk to water quality deterioration and therefore will not impact on the conservation objectives of the downstream European sites.

Post construction, the works will ultimately have reduced the risk to the water bodies and thus the protected sites due to site restoration works. The site currently may represent risks to the achievement of the conservation objectives of the River Boyne and River Blackwater SAC, where hydrological connectivity exists. The works to the site will improve the quality of the discharge to the river system at present.

This Appropriate Assessment Screening has been prepared by RPS on behalf of Louth County Council in support of the proposed restoration works for the Drogheda Landfill. The purpose of the report is to document the evaluation and analysis of the potential impact on the water bodies and conservation objectives of connected Natura 2000 sites.

Having regard to the methodology employed and the findings of the screening stage exercise, it is concluded that an appropriate assessment of the implications of the proposed discharge is not required.

5 CONCLUSION

The report was prepared with regards to relevant legislation outlined in Section 1 of this report and methodological guidance outlined in Section 2 of this report.

A screening exercise was completed in Section 4 of this report to determine whether or not 'Likely Significant Effects' on any European site could be discounted as a result of the proposed development.

The likely impacts that will arise from the restoration works at the Drogheda site have been examined in the context of a number of factors that could potentially affect the integrity of the river water bodies and associated European sites. It is unlikely that the proposed restoration works will result in a significant impact on the water quality in the Tullyskar_010 and therefore the conservation objectives of the water dependent qualifying features within the hydrologically connected Natura 2000 sites downstream.

The landfill restoration works is unlikely to compromise the water body and will not prevent the achievement of the assigned WFD objectives for the waterbody. Additionally, the operational phase will improve water quality resulting in significant positive impact to downstream European sites, in particular the River Boyne and River Blackwater SAC.

From the findings of the screening stage exercise, the possibility of likely significant water quality and habitat deterioration effects can be discounted for all the downstream European sites due to their hydrological connectivity.

On the basis of these findings, it is concluded that the proposed restoration works are unlikely to have significant effects on the conservation objectives of the qualifying habitats and species of the Tullyskar_010, or the downstream European sites. Therefore, a Stage 2 Appropriate Assessment is not required.

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NPWS (2017) *Conservation Objectives: Clogher Head SAC 001459*. Version 1. National Parks and Wildlife Service, Department of Arts, Heritage and the Gaeltacht.

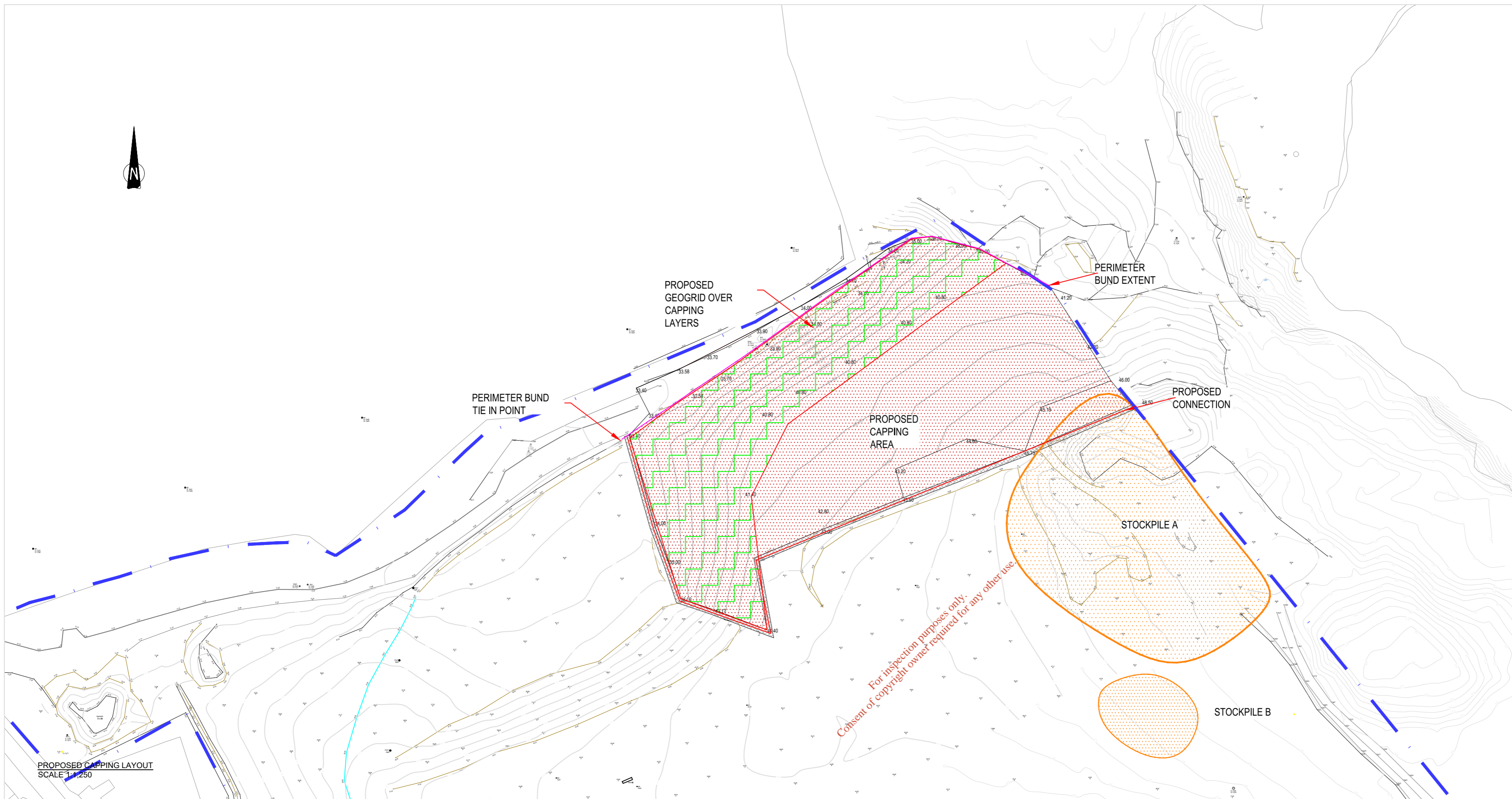
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Appendix 1

Proposed capping area

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NOTES

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The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
 - Existing Services.
Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
 - Issue of Drawings.
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 - Datum.
 - Key:
 - Proposed Capping Layers
 - Stockpile
 - Proposed Connection
 - This drawing to be read in conjunction with Drawing IBR1092/107
- Note: 100mm depth of topsoil to be filled under Stockpile A on site after subsoils are utilised in the capping system.

rev	amendments	drawn	date

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Client
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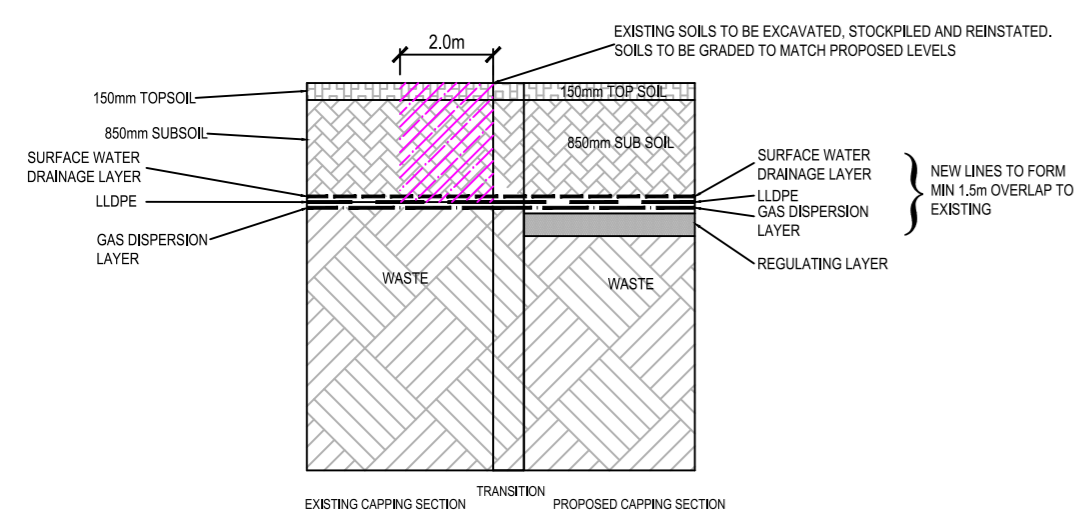
Project
Drogheda Phase 3 Capping

Title
Proposed Capping Layout

Drawing Status Tender	Sheet Size A2	Drawing Scale As Shown
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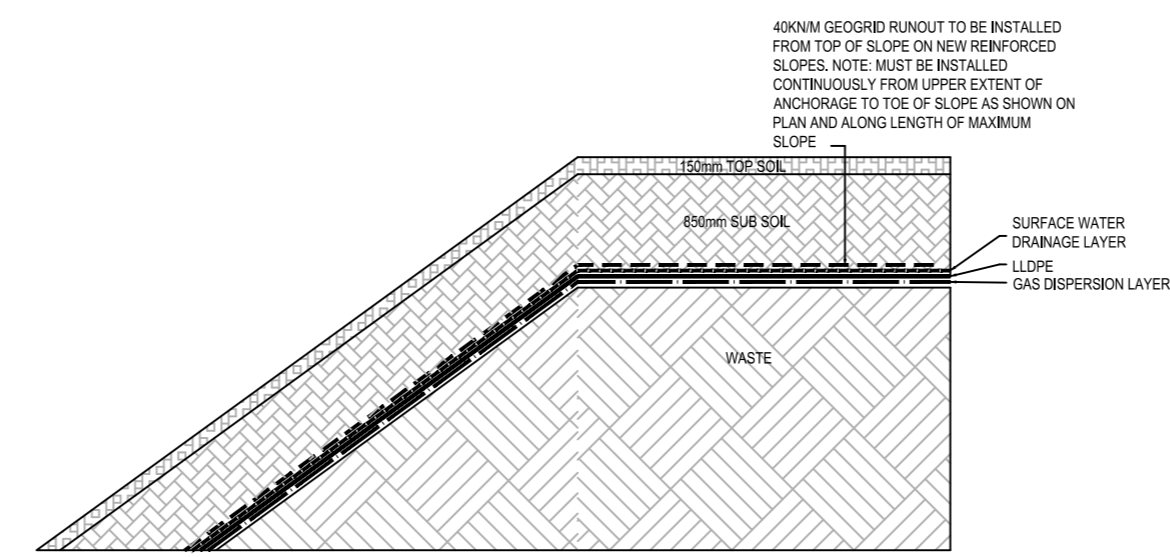
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Project Leader J Byrne	Drawn By J Close	Date 10-05-19	Initial Review J Byrne
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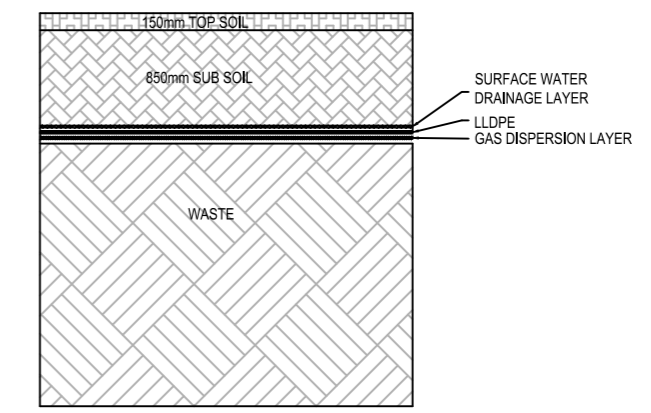


NOTES: EXISTING LINERS TO BE EXPOSED TO ENABLE TIE IN EXCAVATION DIRECTLY ADJACENT TO LINERS TO REQUIRE HAND DIGGING TO MINIMISE RISK OF DAMAGE TO EXISTING GEOSYNTHETICS

TRANSITION CONNECTION DETAIL TO EXISTING CAPPING (NTS)



ANCHOR TRENCH RUNOUT ON NEW CAP (NTS)

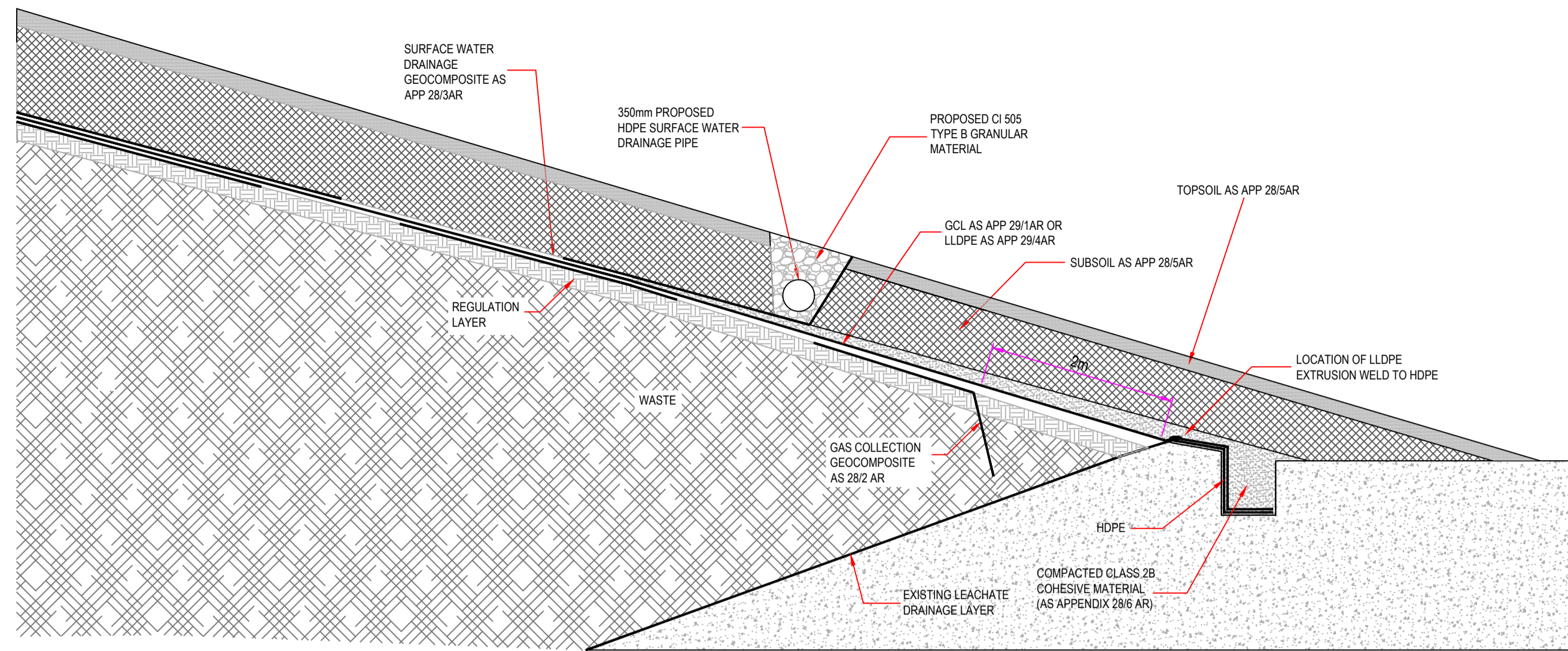


TYPICAL CAPPING SECTION (NTS)

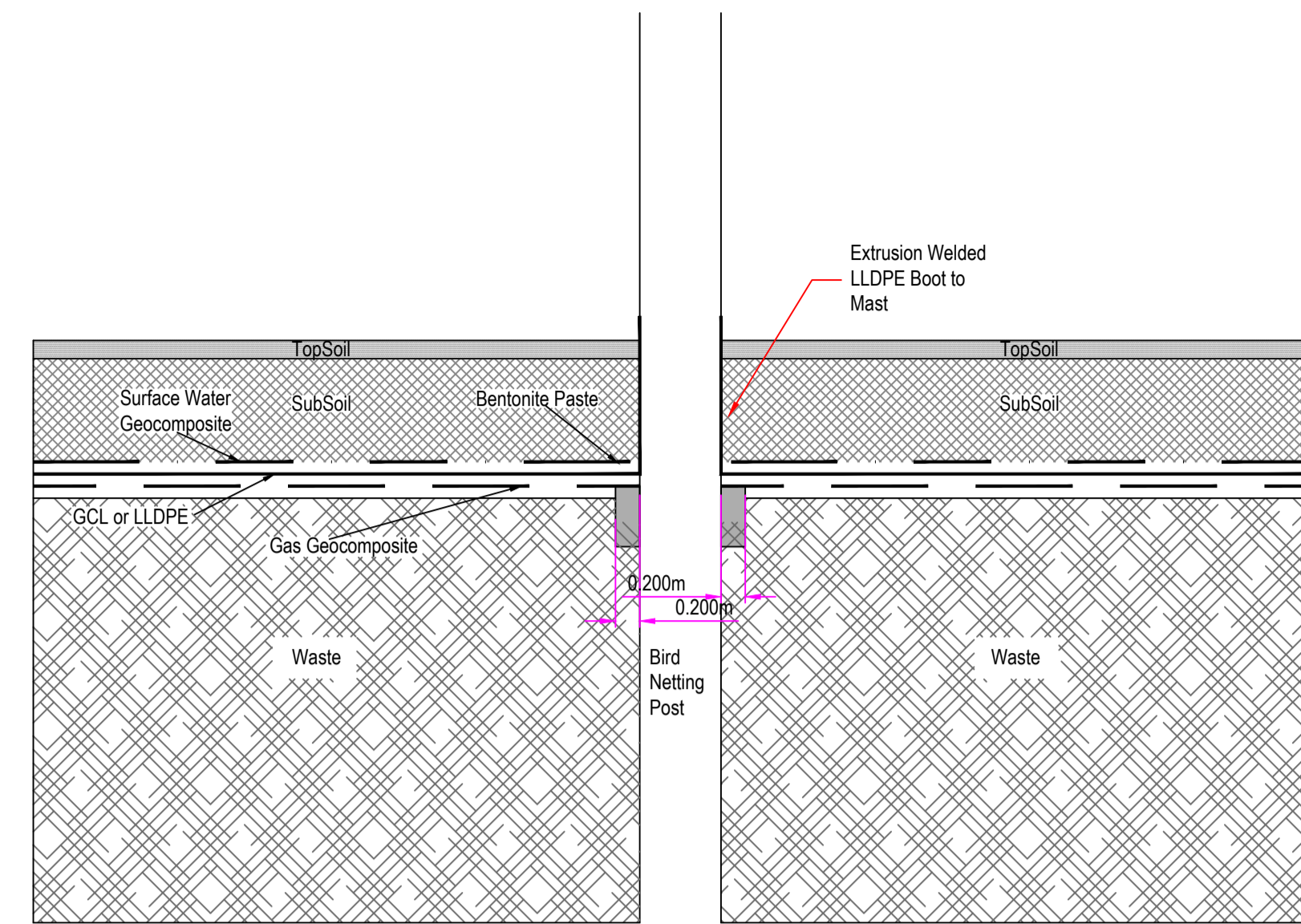
Appendix 2

Proposed capping details

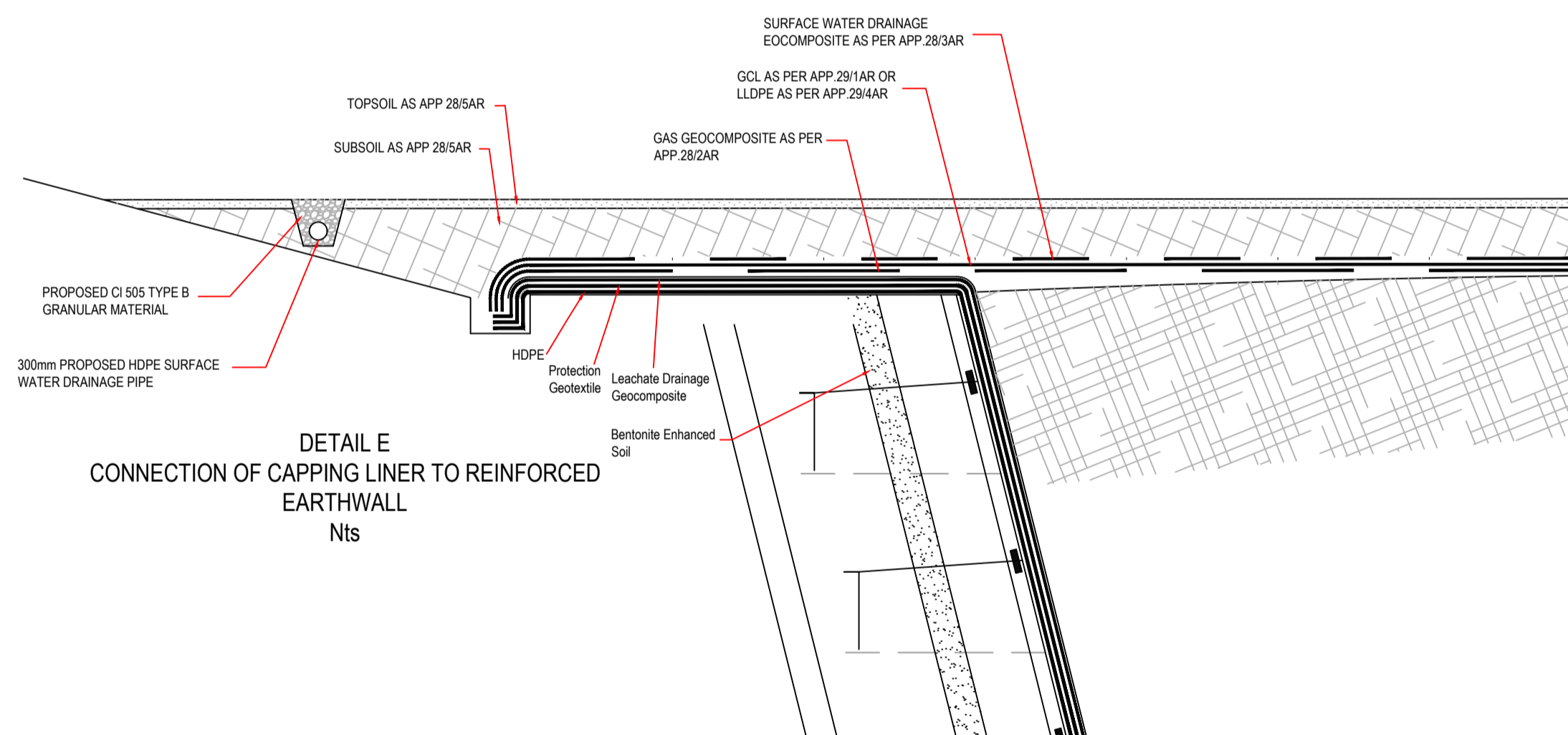
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DETAIL D
CONNECTION OF SURFACE WATER DRAINAGE GEOCOMPOSITE TO PROPOSED SURFACE WATER CHANNEL
SCALE 1:50

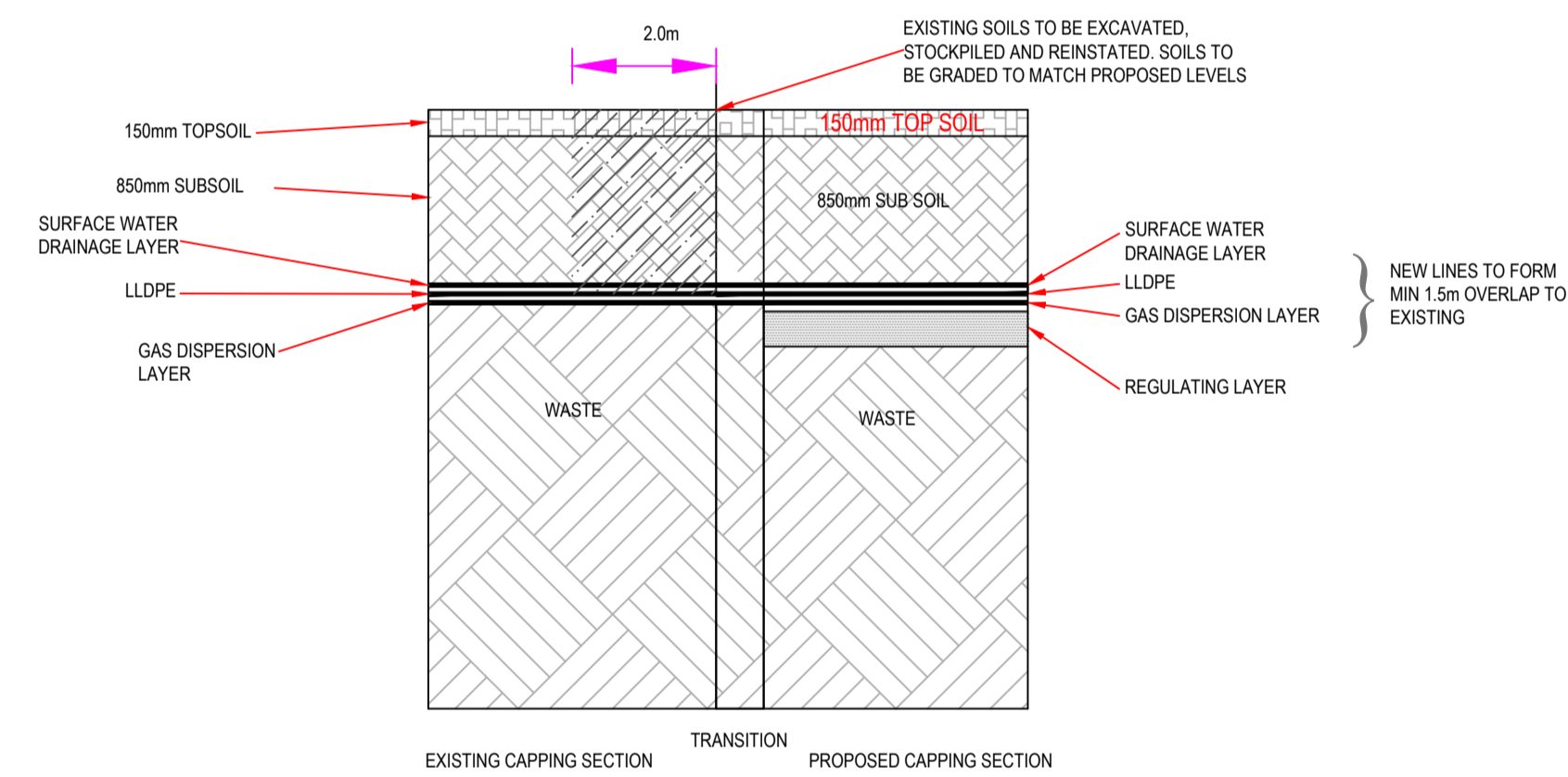


DETAIL C
CAP CONNECTION AROUND BIRD NETTING MASTS
SCALE 1:50

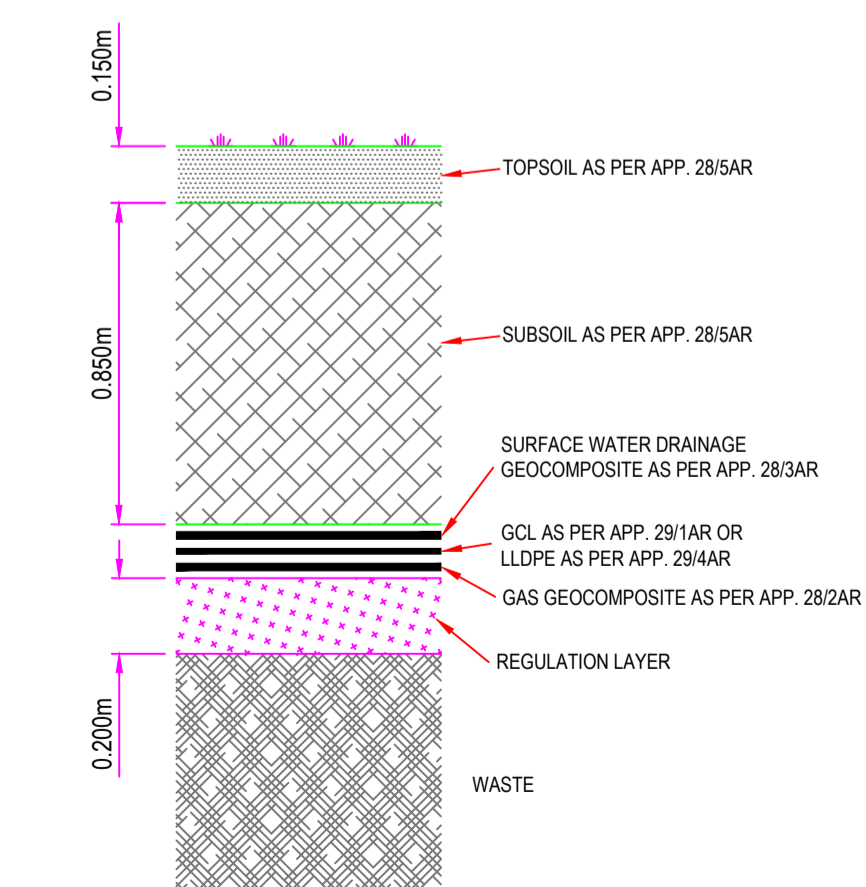


DETAIL E
CONNECTION OF CAPPING LINER TO REINFORCED EARTH WALL
NTs

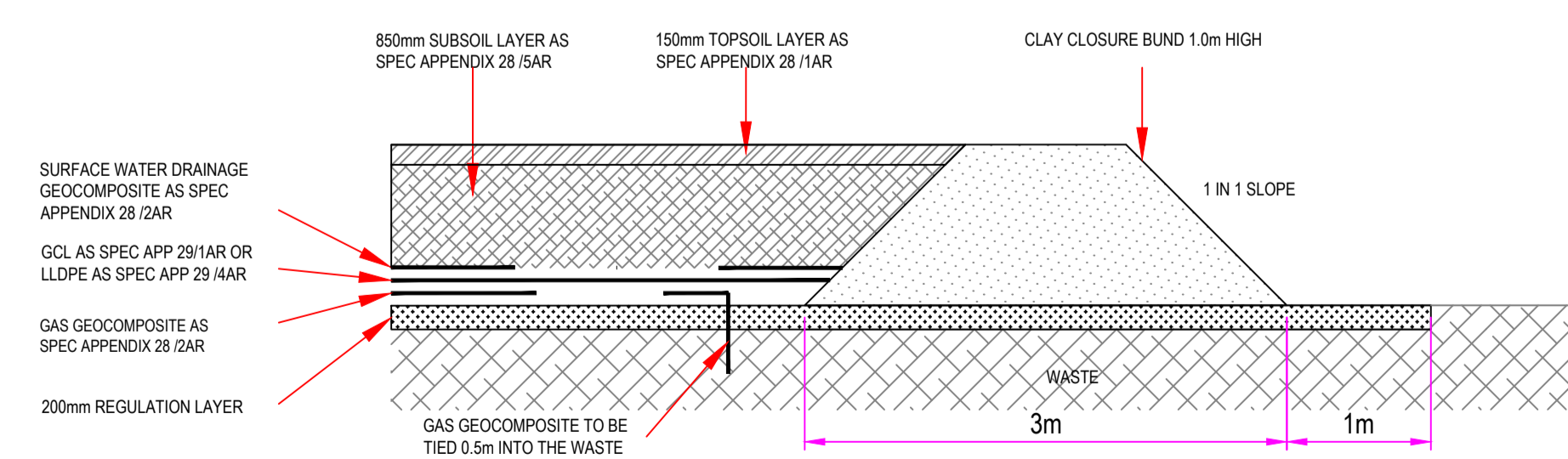
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DETAIL F
TRANSITION CONNECTION DETAIL TO EXISTING CAPPING
NTS



DETAIL A
PROPOSED CAPPING SYSTEM PROFILE
SCALE 1:25



DETAIL B
CAPPING EDGE BUND DETAIL
NTS

NOTES

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The contractor shall verify dimensions against such other drawings or site conditions as pertain to this part of the work.
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Any information concerning the location of existing services indicated on this drawing is intended for general guidance only. It shall be the responsibility of the contractor to determine and verify the exact horizontal and vertical alignment of all cables, pipes, etc. (both underground and overhead) before work commences.
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4. Datum.

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Client
Louth County Council

Project
Drogheda Phase 3 Capping

Title
Capping Details

Drawing Status	Sheet Size	Drawing Scale
Tender	A1	As Shown

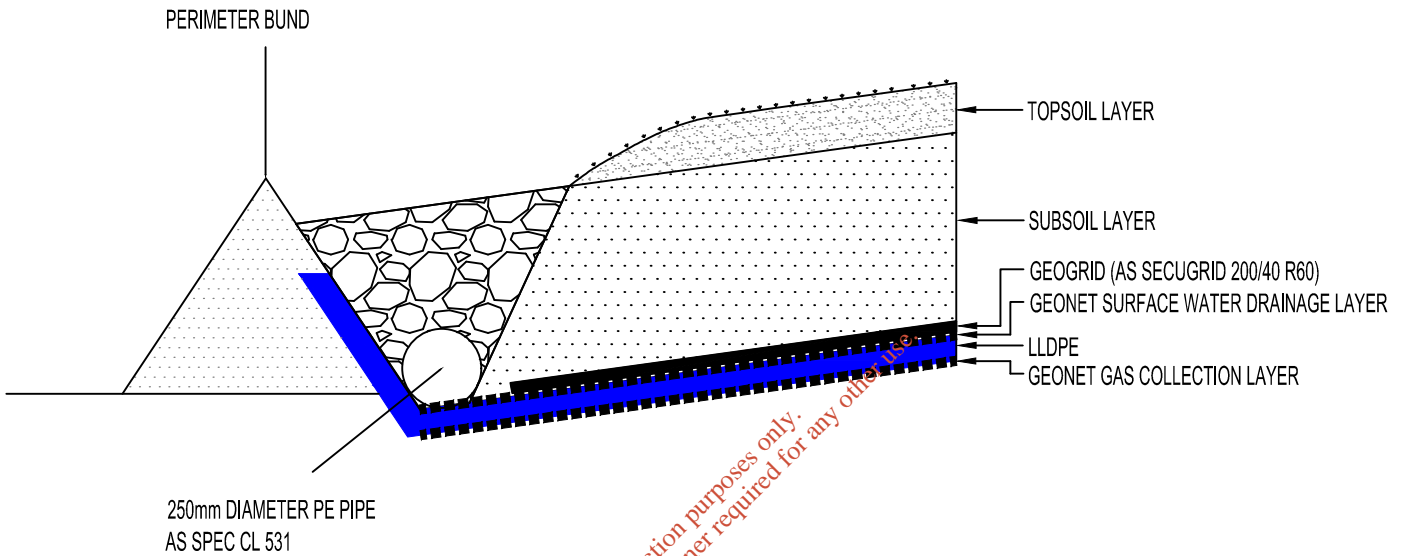
Drawing Number	Rev
IBR1092 /106	-

Project Leader	Drawn By	Date	Initial Review
J Byrne	J Close	13-05-19	J Byrne

Appendix 3

Surface water drainage details


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DETAIL A

rev	amendments	drawn	date
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		IBR01092/105	-			
Project Drogheda Landfill Site		Title Surface Waster Drianage Details				
Client  Comhairle Contae Lú Louth County Council		Architect				
Drawing Status Preliminary	Sheet Size A4	Drawing Scale 1:50,000	Project Leader DD	Drawn By AMB	Date May - 2018	Initial Review JB