

DROGHEDA LANDFILL SITE

Appropriate Assessment Screening Report

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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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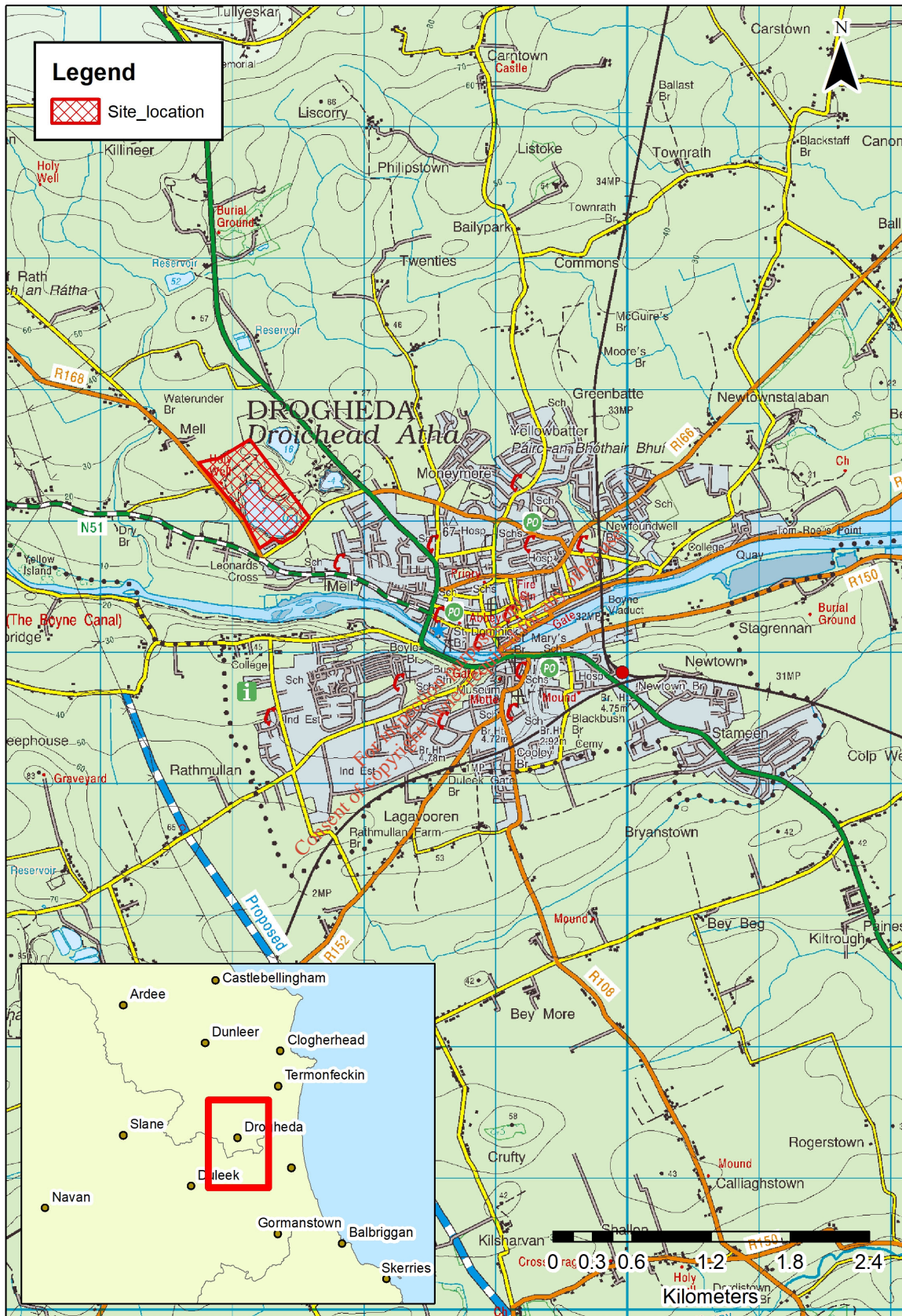


Figure 3-1: Site Location

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)

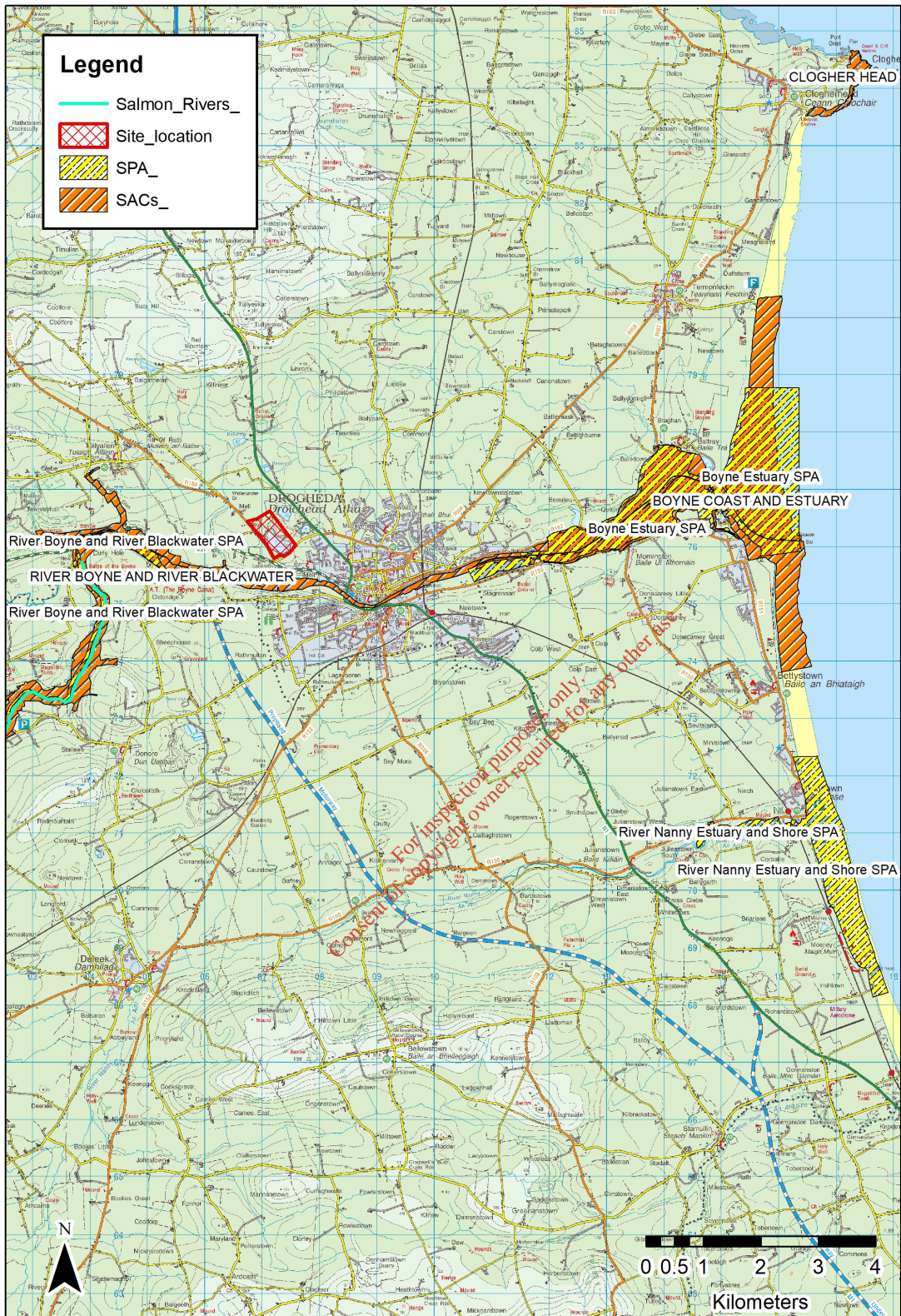


Figure 4-1: SAC and SPA location within the vicinity of the Drogheda Landfill

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 (Glaucopuccinellietalia 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)	The SPA habitats have the potential to be impacted by deterioration in water quality and pollutants.
River Nanny Estuary and Shore SPA	Approximately 10.0 km from the closest part of the SPA to the site (See Figure 4-1)	
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 banded 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.

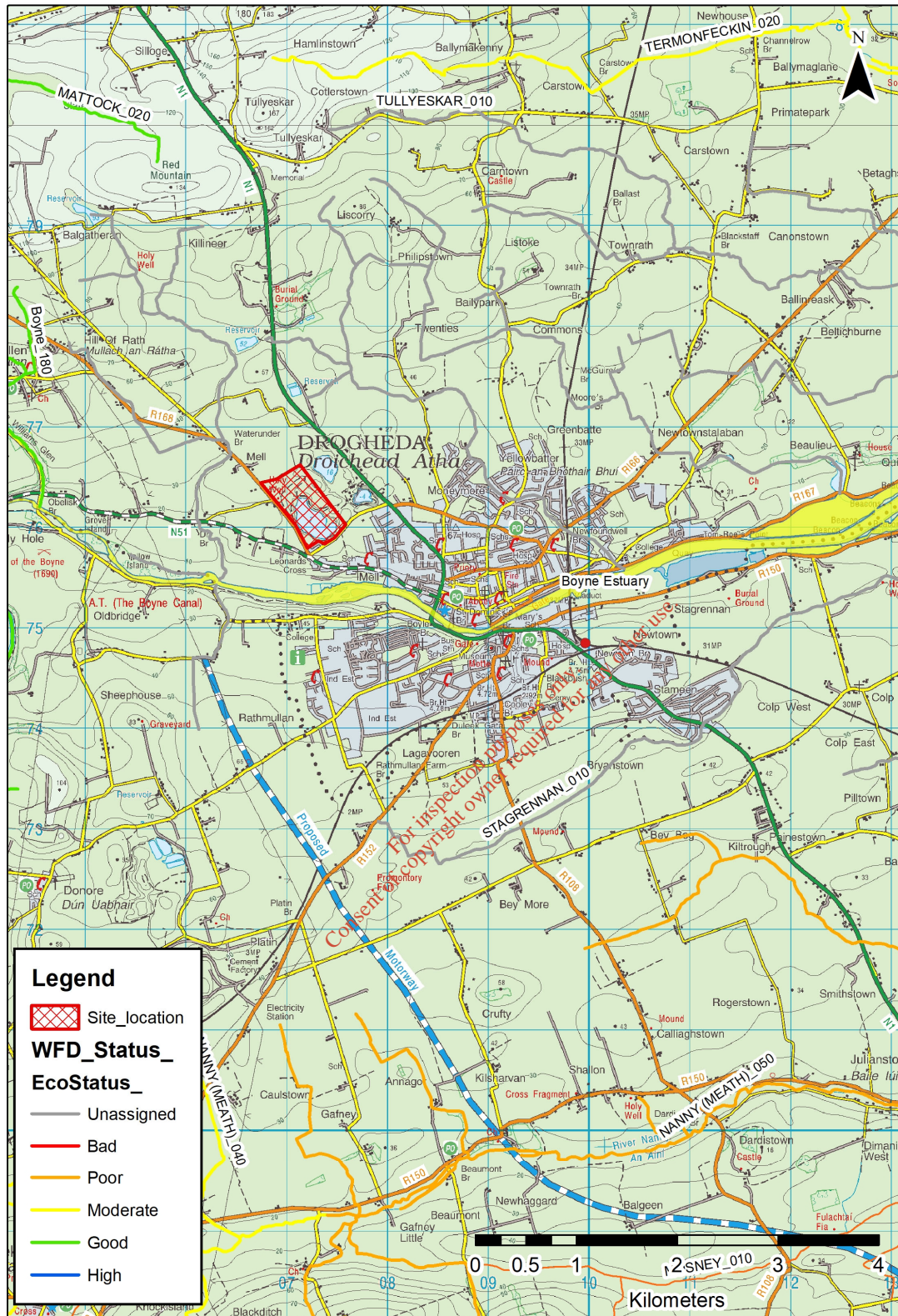


Figure 4-2: WFD status of water bodies surrounding the Drogheda site.

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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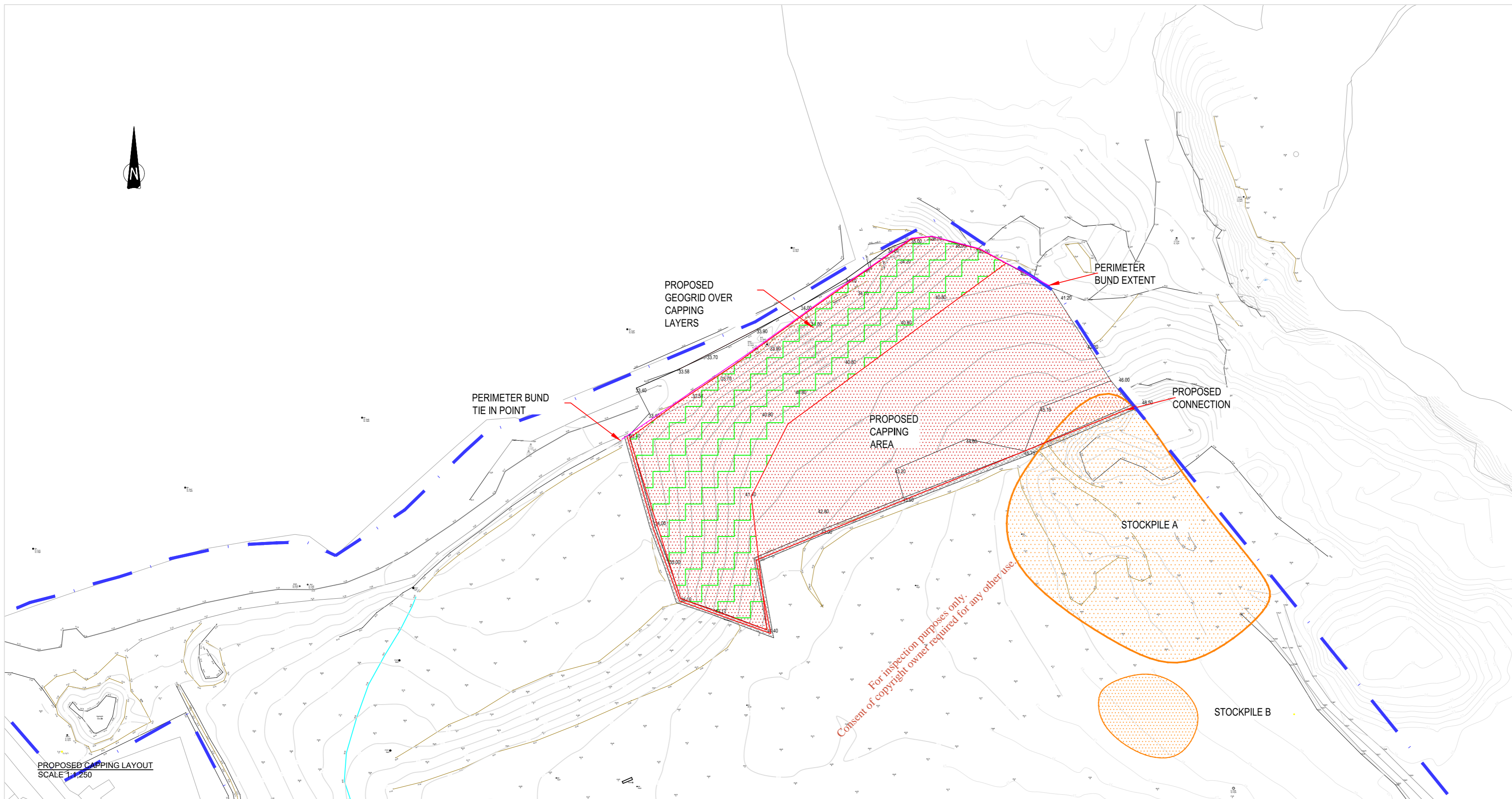
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Appendix 1

Proposed capping area

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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. Hard copies, dwf and pdf will form a controlled issue of the drawing. All other formats (dwg, dxf etc.) are deemed to be an uncontrolled issue and any work carried out based on these files is at the recipient's own risk. RPS will not accept any responsibility for any errors arising from the use of these files, either by human error or by the recipient, listing of un-dimensioned measurements, compatibility issues with the recipient's software, and any errors arising when these files are used to aid the recipient's drawing production, or setting out on site.
 - 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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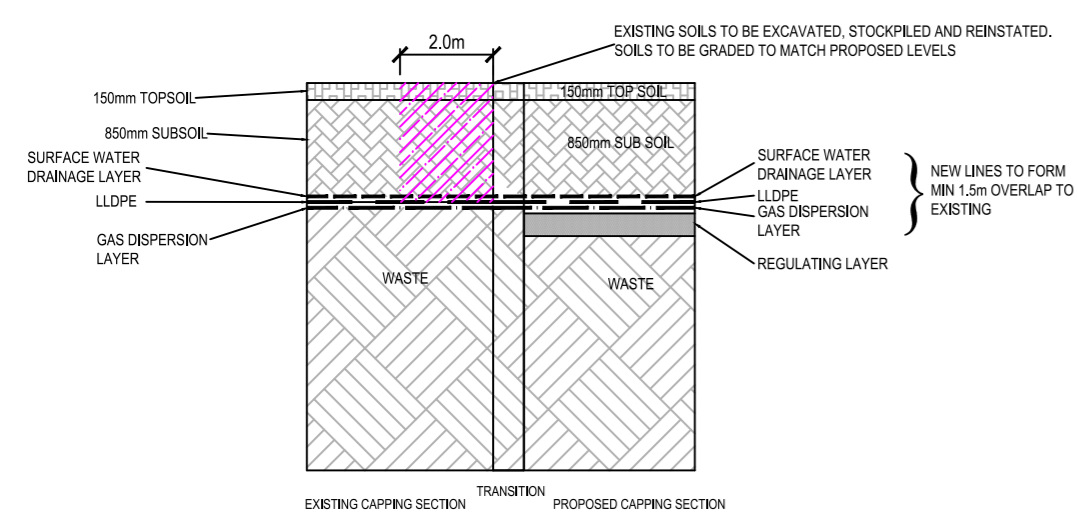
Project
Drogheda Phase 3 Capping

Title
Proposed Capping Layout

Drawing Status	Sheet Size	Drawing Scale
Tender	A2	As Shown

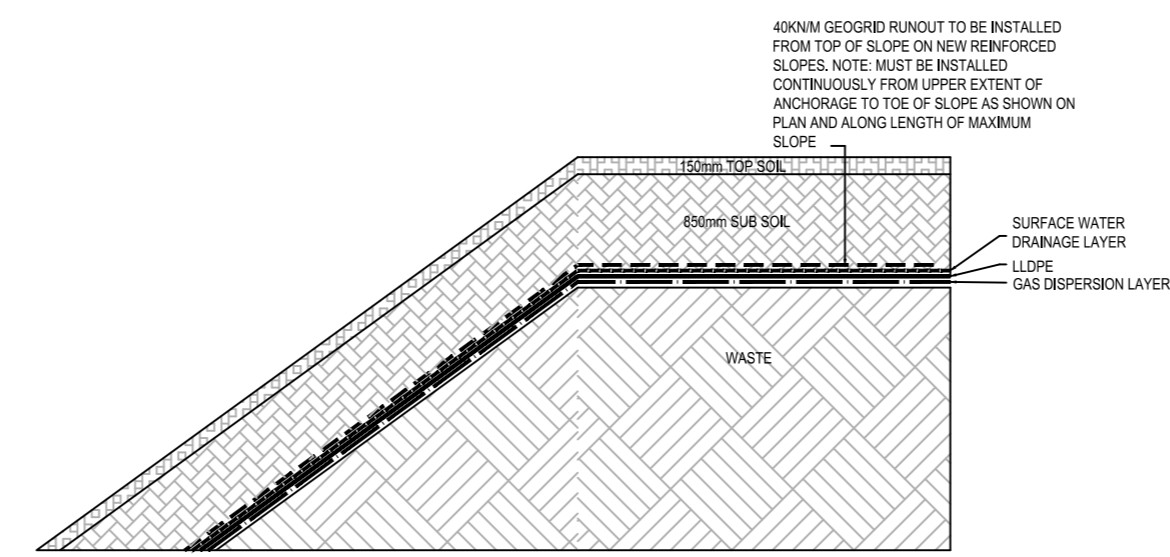
Drawing Number	Rev
IBR1092 /102	-

Project Leader	Drawn By	Date	Initial Review
J Byrne	J Close	10-05-19	J Byrne

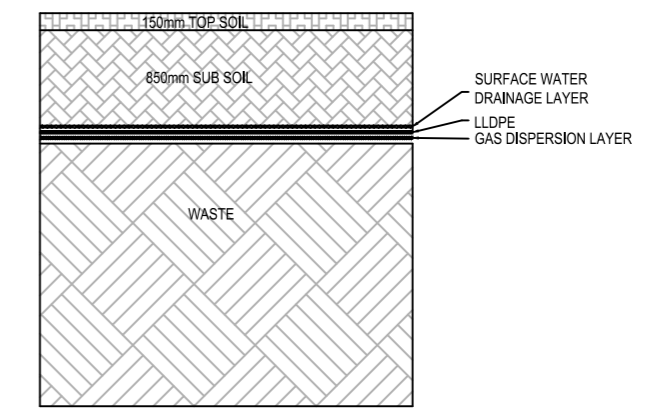


NOTES: EXISTING LINERS TO BE EXPOSED TO ENABLE TIE IN EXCAVATION DIRECTLY ADJACENT TO LINERS TO REQUIRE HAND DIGGING TO MINIMISE RISK OF DAMAGE TO EXISTING GEOSYNTHETICS

TRANSITION CONNECTION DETAIL TO EXISTING CAPPING (NTS)



ANCHOR TRENCH RUNOUT ON NEW CAP (NTS)

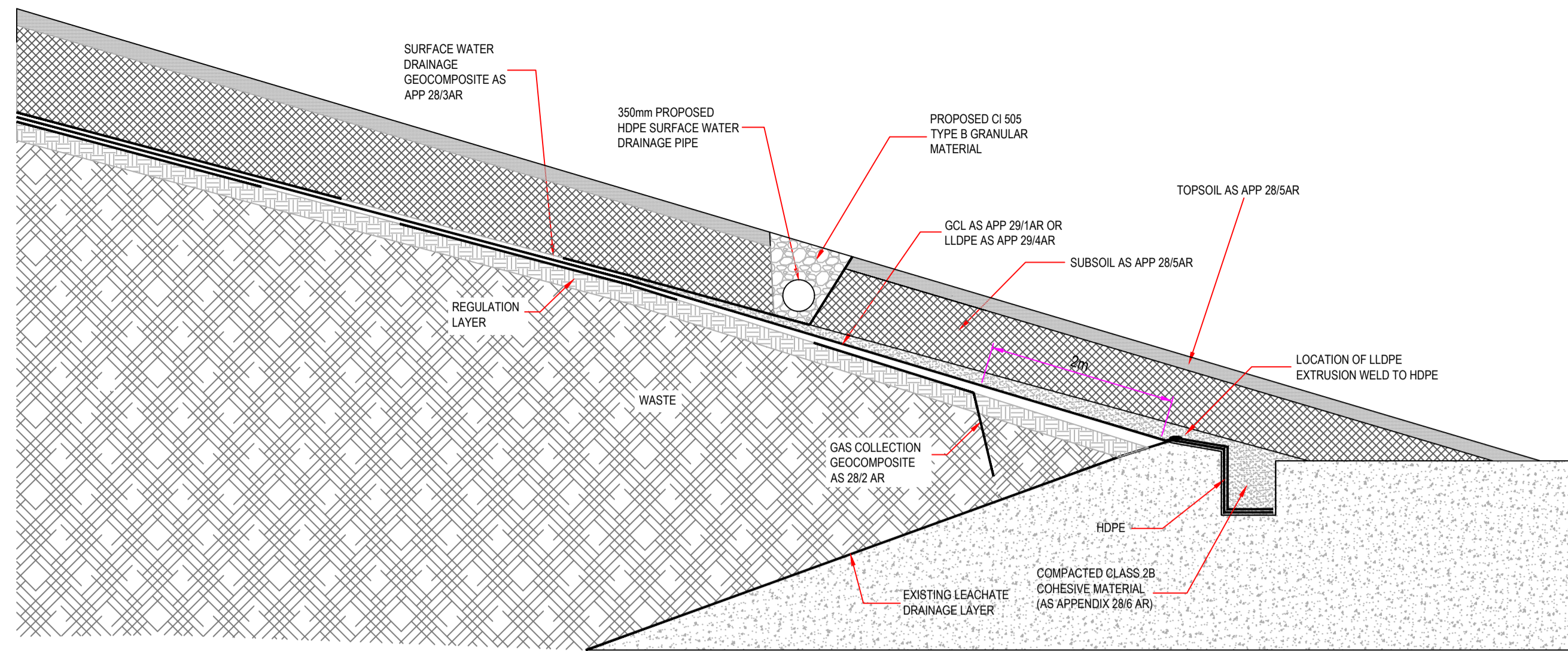


TYPICAL CAPPING SECTION (NTS)

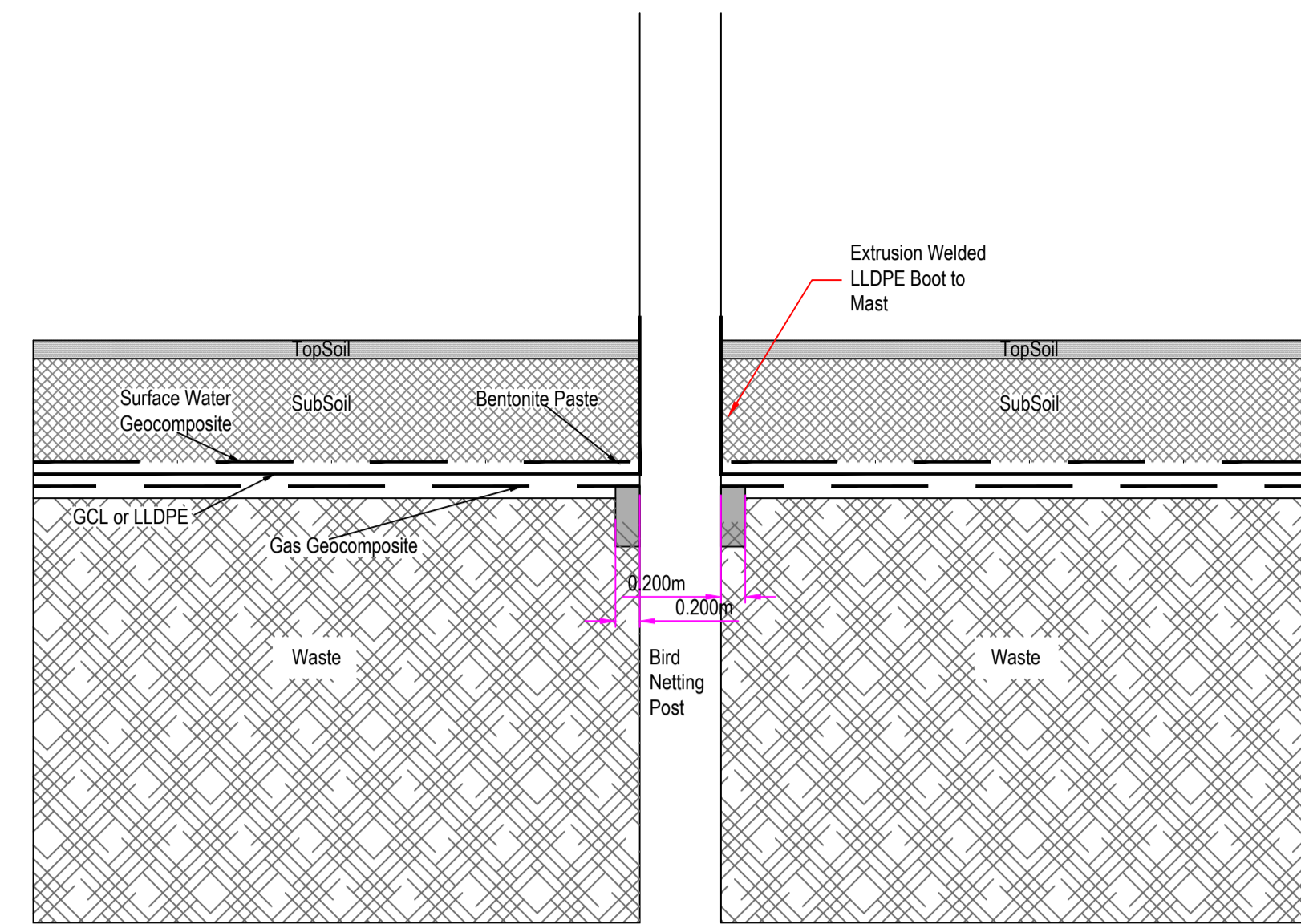
Appendix 2

Proposed capping details

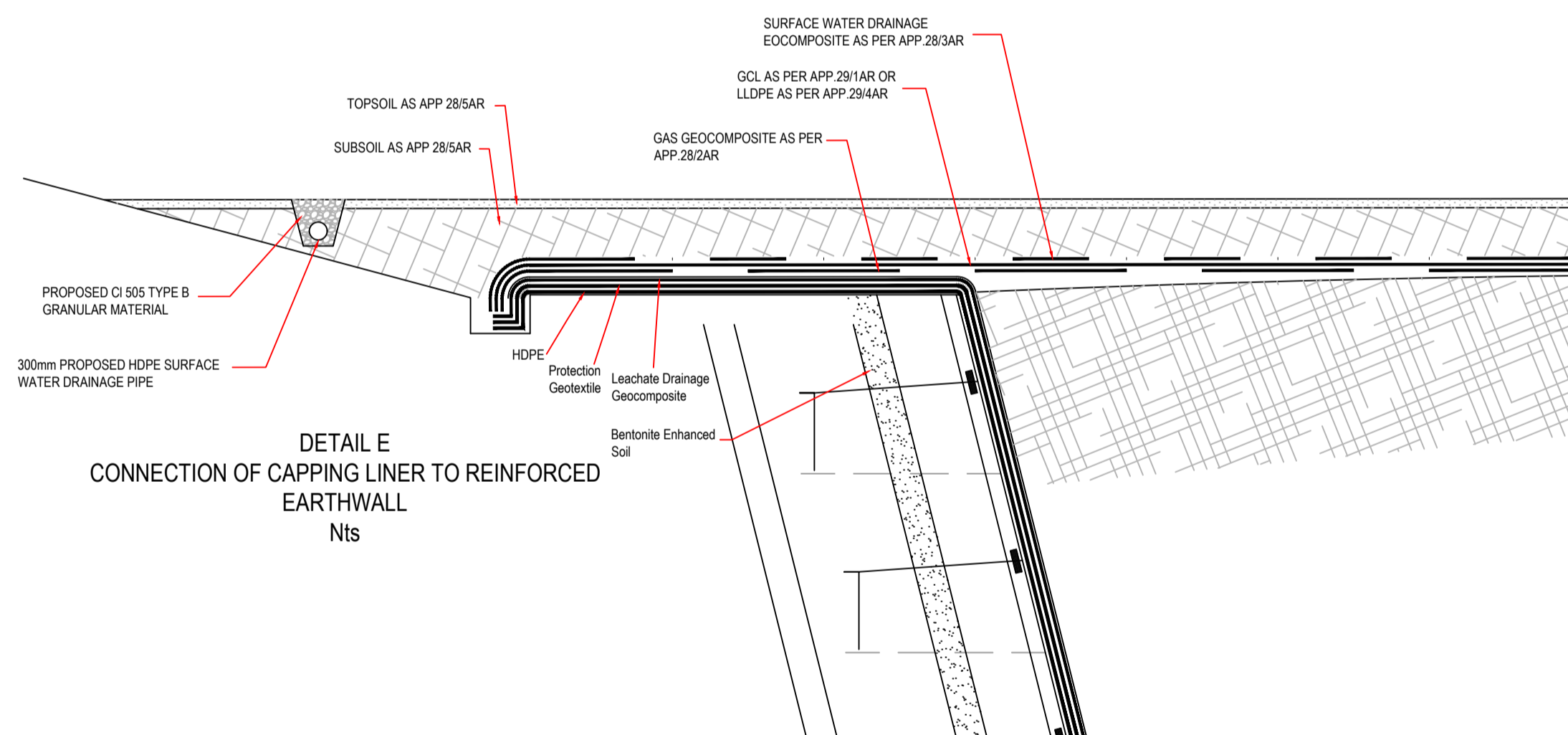
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DETAIL D
CONNECTION OF SURFACE WATER DRAINAGE GEOCOMPOSITE TO PROPOSED SURFACE WATER CHANNEL
SCALE 1:50

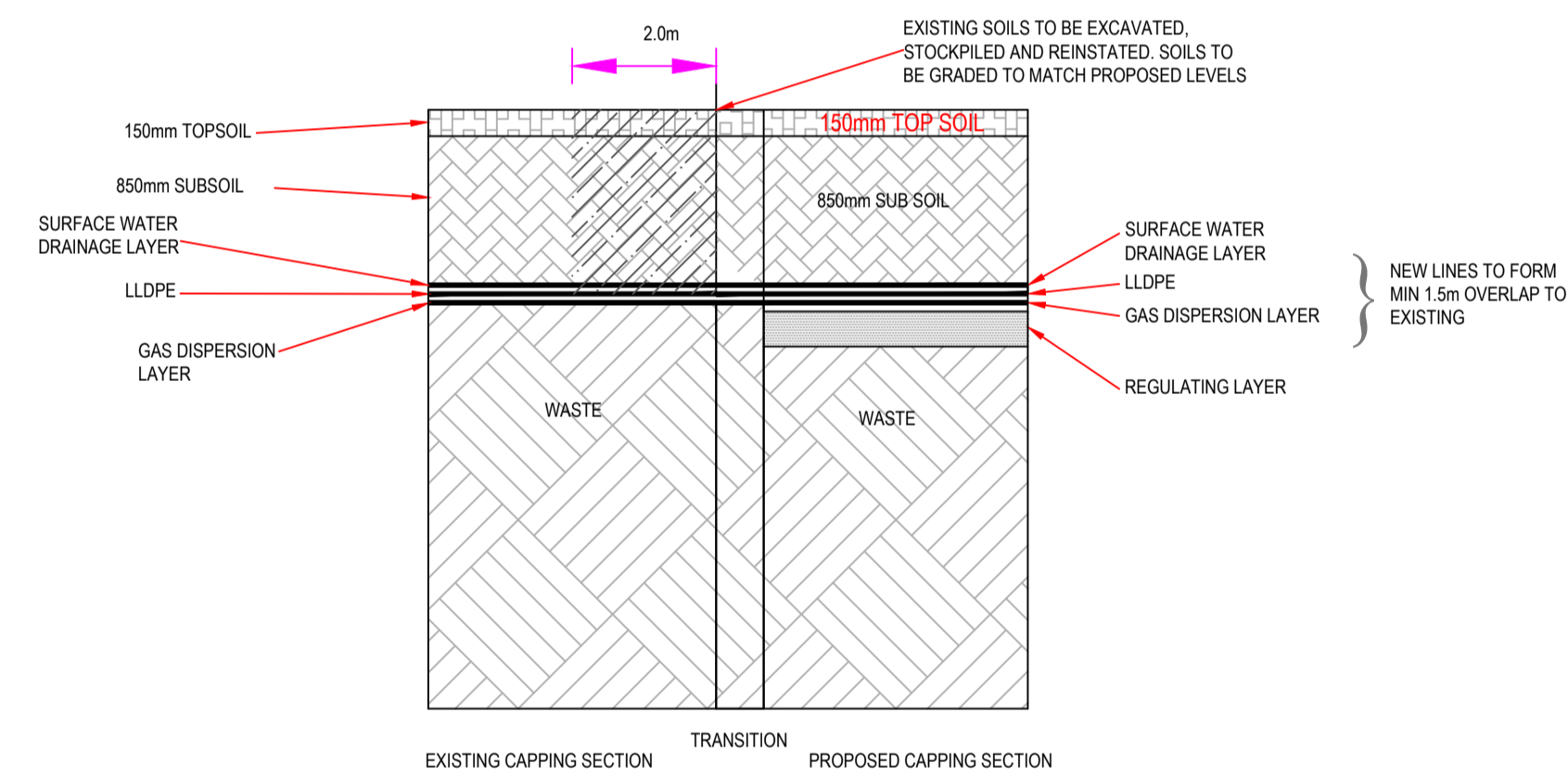


DETAIL C
CAP CONNECTION AROUND BIRD NETTING MASTS
SCALE 1:50



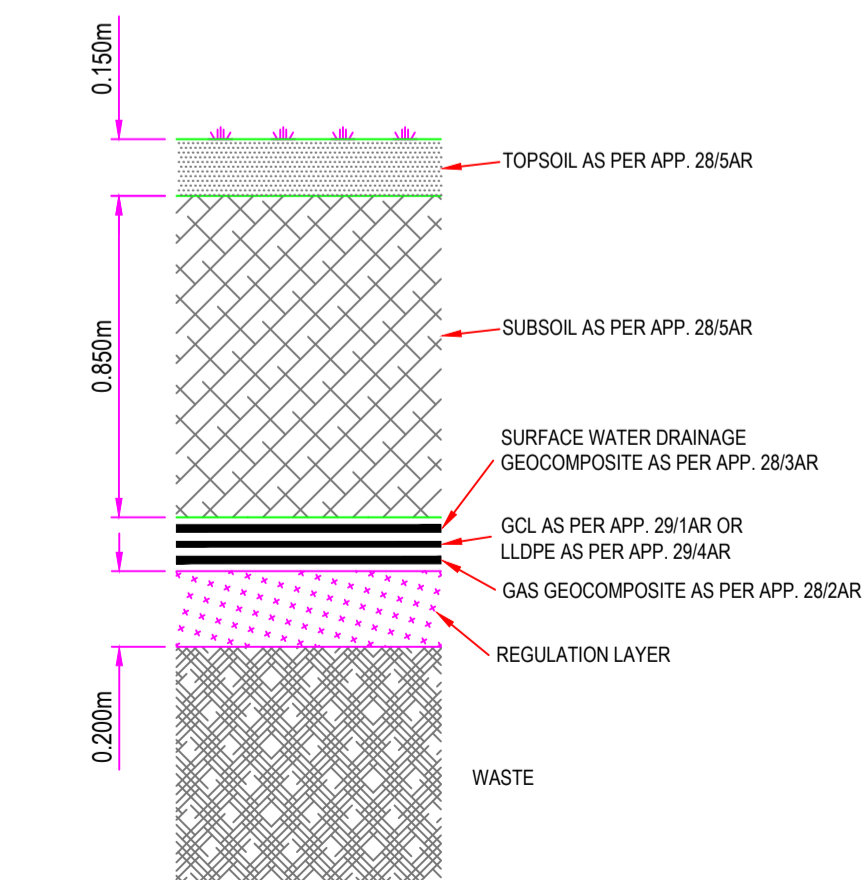
DETAIL E
CONNECTION OF CAPPING LINER TO REINFORCED EARTH WALL
NTs

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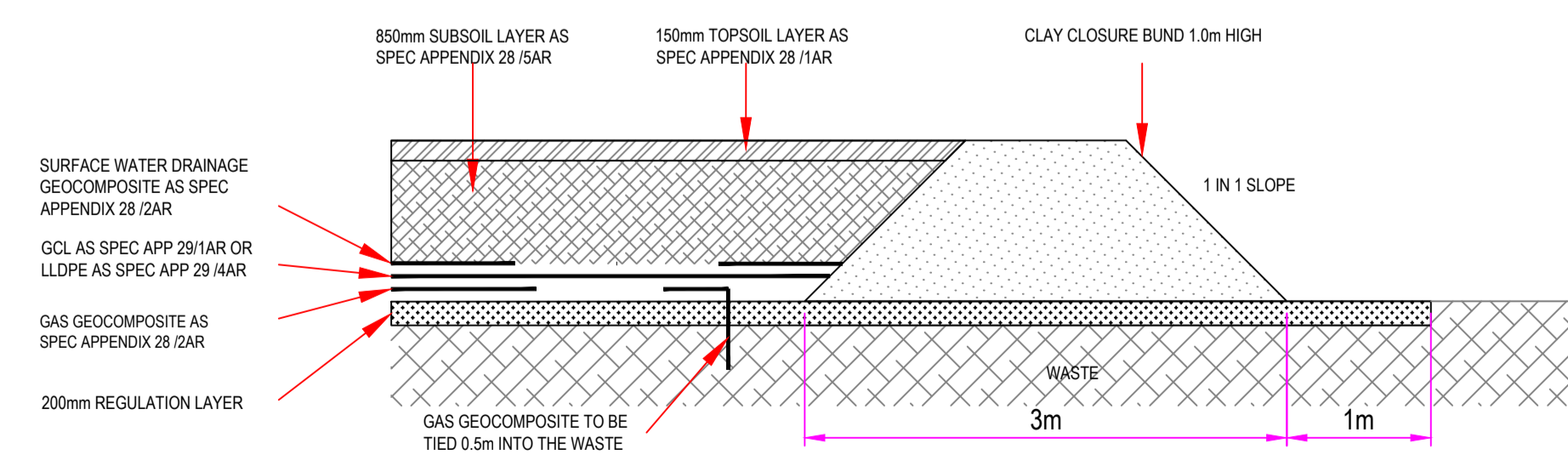


DETAIL F
TRANSITION CONNECTION DETAIL TO EXISTING CAPPING
NTS

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	Sheet Size	Drawing Scale
Tender	A1	As Shown

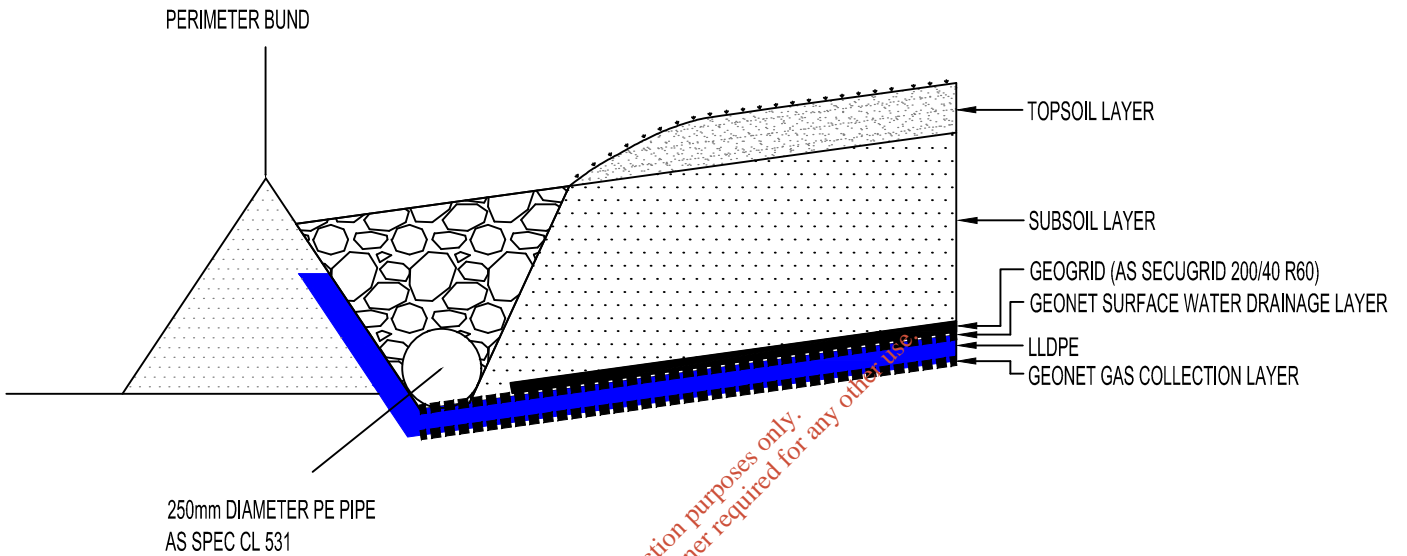
Drawing Number	Rev
IBR1092 /106	-

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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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	