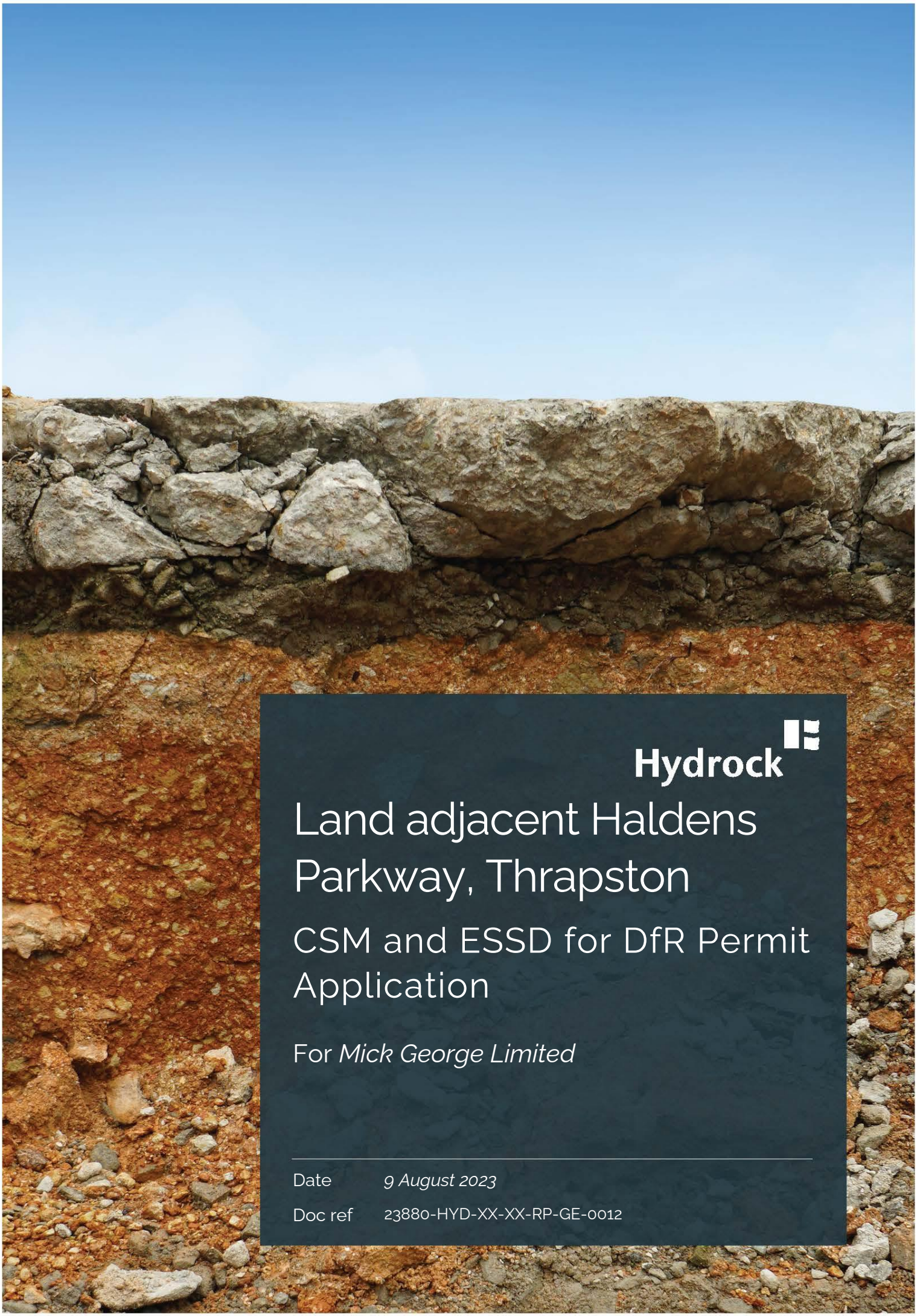

Hydrock

Land adjacent Haldens Parkway, Thrapston

CSM and ESSD for DfR Permit Application

For *Mick George Limited*

Date	*9 August 2023*
Doc ref	23880-HYD-XX-XX-RP-GE-0012

Document control sheet

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Contents

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Appendices

1. Report Context

1.1 Proposed Activity

This Environmental Setting and Site Design Report (ESSD) has been prepared to support a Deposit for Recovery (DfR) Permit application by Mick George Limited (MGL), the contractor appointed to carry out the works (activity) described in Section 0 below.

It specifically satisfies the requirement for an ESSD stated in Point 1 of Appendix 2 to Application Form B4 (New bespoke waste operation permit).

1.2 Presentation Format

The presentation format accords with the following guidance:

https://www.gov.uk/guidance/landfill-operators-environmental-permits/what-to-include-in-your-environmental-setting-and-site-design-report.

Where appropriate, this report includes references to numerous key documents prepared to support the permit application, such as site investigation reports, DQRA etc.

1.3 The Operator of the Proposed Activity

For the purposes of this ESSD the operator of the proposed activity is Mick George Limited, whose registered address is 6, Lancaster Way, Ermine Business Park, Huntingdon, Cambridgeshire PE29 6XU.

Telephone: 01480 498099

Key Contact: Mr Paul Ayres, paul.ayres@mickgeorge.co.uk

1.4 The Agent who Completed this Report

Hydrock Consultants, 4 Lakeside, Festival Park, Hanley, Stoke on Trent, ST1 5RY. Key Contact: Eric Cooper, Technical Director, Tel: 07917 097681.

1.5 Outline of the Proposed Activity

1.5.1 General

The 74.83 ha (184.90 acres) development site is located to the north of the A14 on the eastern edges of Thrapston, Northamptonshire, with the National Grid Reference of the approximate centre of the site being 501800E, 278350N. Drawings at Appendix A include a Site Location Plan (Drawing reference 23880-HYD-XX-ZZ-DR-GE-1024). The proposed Waste Recovery Area is the former landfill permit boundary and Deposit for Recovery Area is the landscaped bund on Drawing reference 18443-HYD-XX-ZZ-DR-GE-1033 at Appendix B which also contains the Contractor's Site Plan.

This project comprises the development of a logistical warehousing facility (reference pHp Architects drawing 'Indicative Masterplan and Plot 1 Details'; HRT-pHp-01-XX-DR-A-4432-012-P18 at Appendix A), comprising approximately 186,177 sq.m (2,004,000 sq. ft.) of warehouse floor space, with a total of 197,790 sq.m (2,129,000 sq. ft.) of development.

The development site comprises open agricultural land with hedge and tree lined fields, with Castle Manor Farm, associated buildings and hardstanding in the central east of the site.

The site also includes the Rectory Farm Landfill, which was a sand gravel quarry restored to agriculture by landfilling with inert waste. The Environmental Permit reference EPR/BT98971Y for this landfill is scheduled for surrender in late 2023.

The North Northamptonshire Council planning permission reference for the development is NE/22/00151/FUL and is currently pending. It will be a Hybrid planning application comprising:

- Outline permission for storage and distribution (Use Class B8) and ancillary office space. The development incorporates the erection of up to 200,000 sq.m (Gross Internal Area including potential mezzanines) storage and distribution (Use Class B8) space.
- Full permission for a building measuring 49,704 sq.m to include B8 storage and ancillary office space to meet the needs of a specific occupier (referred to as Plot 1).

As related to this ESSD the proposed development includes:

- Earthworks to create a development plateau across the site, and to form landscaped bunding, focused around the northern and eastern edges of the site.
- Provision of on-site landscaping and new habitat creation, including on the landscape bunding, to deliver new and retained existing green infrastructure which supports biodiversity, and to help screen the site from outside view.
- Demolition of all existing buildings and structures to enable the development of the site.
- Provision for new drainage features as part of a site-wide sustainable drainage strategy.

The project will include creating an approved development plateau in accordance with the masterplan, parameters plan, and planning conditions expected imposed by NNC as the Local Planning Authority (LPA).

A large quantity of site-won material is required to construct the development plateau and the landscape bunds. Inert waste materials located within the development footprint (from the permitted landfill area), along with other natural and Made Ground materials present on-site, are proposed to be used to create the development plateau and the landscaped screening bunds.

It is the re-use of the waste materials to construct the landscape bunds that constitutes Deposit for Recovery aspects of the proposed earthworks.

1.5.2 Waste Recovery

The element of the scheme that is specifically Waste Recovery is the excavation, sorting, treatment and re-use (Deposit for Recovery) of materials contained within that part of the development site referred to as the Rectory Farm Landfill. The extent of the landfill permit boundary is presented on Hydrock Drawing 23880-HYD-ZZ-XX-DR-GE-1025, a copy of which is presented at Appendix A, with an extract provided as Figure 1-1.

The materials that comprise the landfill were placed in the recent past with works being completed in 2016, and there are very good records on their composition. It is considered that the materials are suitable, subject to an appropriate recovery operation, for use as an engineered fill to form the landscape bund, The landscape bund itself is a planning requirement, to provide screening of the development site.

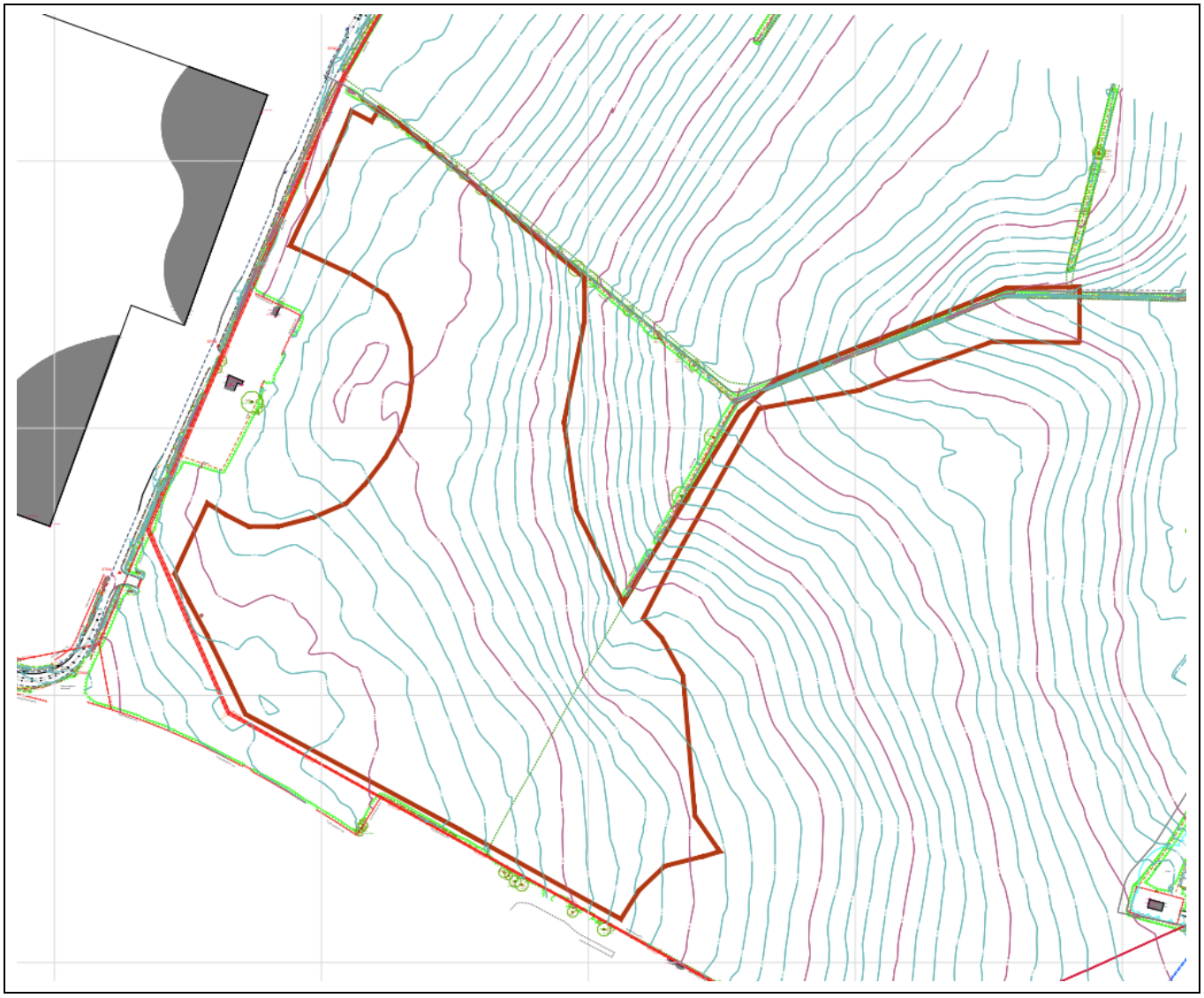


Figure 1-1: Permit Boundary Location Plan.

The volume of material within the landfill permit area is estimated to be in the order of 668,000 m^3, which include the restoration soils (Topsoil and Sub Soil). All materials are anticipated to be found to be suitable for re-use subject to appropriate recovery, however a small allowance has been made to account for any material that is found to be unacceptable.

In consideration of the current volumetric assessment, the Deposit for Recovery Volume will be circa 665,000 m^3.

1.5.3 *Activity Sequence*

The recovery and re-use of this waste will take place in accordance with the following sequence of activities:

- Excavation and Segregation;
- Treatment; and
- Re-use (Deposit for Recovery).

More details of these activities are given in Section 3.1.

2. Site Details

2.1 Site Location and Access

See Drawing 23880-HYD-XX-ZZ-DR-GE-1024 (Site Location Plan) at Appendix A.

2.2 Site Classification

As related to the permit application, the site is for the recovery of waste on land.

2.3 Application Boundary

The Deposit for Recovery permit boundary is defined by the location of the landscaped bunds. Drawing reference 18443-HYD-XX-ZZ-DR-GE-1033 at Appendix B refers.

2.4 Relevant Former Waste Activity Boundaries

Please refer to Section 1.5.2 and Figure 1-1. above.

2.5 Site Context (Environmental Site Setting)

See Drawing 23880-HYd-XX-ZZ-DR-GE-1023 at Appendix C.

2.6 Supporting Information

This ESSD makes reference to numerous other reports containing relevant information and submitted as part of this DfR application, all of which are listed in Section 4

3. Conceptual Site Model (CSM)

3.1 CSM Summary

The focus of the CSM is the landscaped bunds that will be constructed using recovered waste materials from the closed, inert, Rectory Farm Landfill that currently occupies the western part of the development site. On completion, the landfill waste will have been fully recovered down to natural materials.

The bunds will be founded on a quasi-horizontal layered system of sedimentary Jurassic strata that are a mix of aquifers and aquicludes conceptually in hydraulic continuity with the local surface water system. However, actual conditions are such that there is little or no hydraulic continuity between individual units and the overall flux of water through the system is negligible. A DQRA has established re-use criteria for recovered waste using selected contaminants of concern. There is no use of groundwater as a resource within influential distance of the site.

Other than the landfill, the remainder of the development site, having been mostly cropped farmland, has no significant history of contaminative use, and a combination of site investigation and risk assessment has shown no sign of environmental impairment. This assessment includes gas risk assessment, noting that the material re-use does not include significant amounts of biodegradable material.

The human health risk associated with the completed bunds will be negated by the incorporation of a clean cover layer validated to compliance with Human Health Risk GAC for public open space.

The construction works to complete the bund will be validated against re-use criteria derived from the DQRA together with gas, groundwater, and surface water monitoring data obtained during and after the construction works.

3.2 CSM Presentation Format

The presentation follows the Source-Pathway-Receptor pollution linkage format.

For the purposes of this DfR application:

- The Source is the recovered waste from the Rectory Farm Landfill used to complete the landscape bunds;
- The Receptors include the natural and built environment located within influential distance of the source, including all end-users thereof; and
- Pathways are specific to the relationship between the source and the receptors.

In terms of supporting information, the key references for the CSM are:

- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-3003-S2-P01; Land adjacent Halden's Parkway, Thrapston. Detailed Quantitative Risk Assessment for Impact of Recovered Waste on Controlled Waters.
- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-3001-S2-P01; Land adjacent Halden's Parkway, Thrapston. Remediation Strategy and Verification Plan - Enablement Phase

3.3 Source Characterisation

3.3.1 Site Development Ground Model

3.3.1.1 General

The completed development is shown on pHp Architects drawing 'Indicative Masterplan and Plot 1 Details'; HRT-pHp-01-XX-DR-A-4432-012-P18 at Appendix A. The site layout portrayed on this drawing is currently indicative only.

Details of the structure landscape bunds where the materials will be re-used (i.e., the Deposit for Recovery area) are shown on Hydrock Drawing 18443-HYD-XX-XX-DR-GE-1028 at Appendix D

The works sequence to create the bunds is as follows:

- Excavation and Segregation: upon excavation, materials will be visually inspected and segregated according to core constituents (inert waste in the form of construction derived materials (soils, brick, and concrete) with small amounts of man-made constituents such as glass, wood, ceramics, timber etc;
- Treatment: screening of oversized materials; removal of unacceptable constituents (i.e., materials that cannot be treated to make them suitable for re-use as a Deposit for Recovery); modification with hydraulic binders; crushing;
- Re-use (Deposit for Recovery): re-engineering of all materials that meet both the geotechnical and geo-environmental requirements, as defined in the Earthworks Specification, Remediation Method Statement (RMS) and DQRA, to be used in the Deposit for Recovery activity and retained on site.

The above process will be defined by compliance at pre-determined stages, or Gateways, as identified on Hydrock Drawing 18443-HYD-ZZ-XX-DR-GE-1021, a copy of which is provided at Appendix A. The key stages are summarised below:

1. Site zonation and pre-excavation testing and validation.
    a. The study area will be divided by a sampling and testing grid, and with samples recovered from each grid at agreed vertical intervals.
    b. Sampling shall include visual examination of the material, and this shall be used in the attribution of the appropriate WM3 code.
2. Chemical analysis of samples and attribution of WM3 code.
3. WM3 code checked against list of permitted materials as defined in the Waste Recovery Plan
4. Transportation to Mobile Plant Permit (MPP) area for commencement of any required recovery treatment and processing
5. Compliance sampling and testing to ensure the material is chemically suitable for re-use as the intended class of fill
6. Geotechnical treatment and processing to ensure the material is geotechnical suitable for re-use as the intended class of fill
    a. As part of the geotechnical assessment process, the material will be allocated a fill designation, commensurate with the recommendations from BS EN 16907-1, with the SHW used as the basis for the earthwork specification.
    b. Where a material is found to be initially geotechnically unsuitable, the fill designation shall be Class U1A, and the material treated and modified until it is suitable for use,
    c. Only material with an acceptable fill designation shall be transported to the DfR,
7. Transportation to the DfR, for re-use as the intended class of fill, with confirmatory geotechnical testing undertaken to demonstrate compliance with the Geotechnical Design and Earthwork Specification,

Between each of the above stages will be a Gateway, with physical records, including appropriate testing and certificates, collated to ensure only permitted materials can move from one stage to the next and that the sequence is fully documented.

Material that is found to be unsuitable will be allocated a fill class designation beginning with U. Material which cannot be re-used will be given a final fill designation of Class U2, and is required to be disposed of, off site, to an appropriately licenced facility. Only material which fails to meet the re-use criteria will be disposed of off-site.

All other recovered and treated waste will exclusively be used to form the core of the landscaped bunds that constitute the Deposit for Recovery area and nowhere else on the development site.

3.3.1.2 *Environmental Base Layer*

An environmental basal layer will be constructed using site-won natural materials. Relevant construction quality assurance proposals are contained in Appendix 1/24 of the earthworks specifications presented in the GDR.

3.3.1.3 *Development Sequence*

The landscape bund construction will be undertaken as a concurrent activity with multiple phases being worked on at the same time. This is because the rate at which the bund can be constructed is limited by geotechnical requirements in order to ensure stability.

As required by the Earthwork Specification, and in particular Appendix 1/24 of that document, the Contractor will be required to prepare a Quality Control Plan and Construction Quality Assurance procedures, Intrinsic with the development of this plan will be the production of Risk Assessments and Method Statements (RAMS) for all activities, including all geotechnical risks identified in the Geotechnical Design Report (GDR).

Dependent upon the proposed method of work and speed of fill placement, hold points may be required in order to ensure both short and medium term stability. The need for hold points will be advised by the Designer's Geotechnical Advisor (DGA), upon their review of the Contractor's Method Statements.

Typical types of hold points may be to limit the increase in vertical height within a set period, as well as a temporary suspension of works to allow excessive pore water pressure to dissipate.

As the landscape bund is a long-linear feature it is anticipated that control on the rate of fill placement would be sufficient, however this is dependent upon the proposed method of work by the Contractor.

In consideration of the nature of the earthworks, it is likely that additional geotechnical works may be required within the DfR area, to maintain the integrity of the haul routes. With very large volumes of fill being required to be transported within a very narrow corridor, it is likely that without additional mitigation, the haul route for site plant will impact the global stability of previously placed material. As such, whilst no treatment that is required to render the material suitable for re-use will only be undertaken outside the MPP area, there is likely to be a requirement to undertake some geotechnical modification in the bund, on material that is already deemed to have been fully recovered, as a result of plant operation and trafficking.

3.3.1.4 *Treatment Proposals*

General

The treatment proposals are summarised in Table 3.1 below.

Table 3.1: Treatment Proposals

Treatment	Volume
Moisture modification	As recovered
Screening & hand picking	As recovered
Crushing of oversized material	As recovered

Waste codes are as Table 3.2 below:

Table 3.2: Waste Codes

Waste Code	Description	Quantity
17 01 01	Concrete	5%
17 01 02	Bricks	5%
17 01 03	Tiles and ceramics	5%
17 01 07	Mixtures of the above	25%
17 05 04	Soil and stones	60%
		1,135,000 tonnes in total

Blending of materials may be required but only to achieve required geotechnical properties.

Modification, Solidification, and Stabilisation

Any treatment using hydraulic binders, such as lime and cement, is expected to be limited to geotechnical improvement of the fill, following any preceding processing for environmental purposes.

The use of hydraulic binders may be required, where modification of the moisture content is required. It is not considered that a remedial treatment, using hydraulic binders to solidify or stabilize contaminants will be required.

The geotechnical design of the landscape bund does not require any artificial increase in strength and stiffness through the addition of hydraulic binders (stabilisation).

The volume of binder added to the fill will be tightly controlled and only sufficient material would be added to provide the requisite improvement in handling and compatibility of the fill. Records will be retained on the volume of material treated with hydraulic binders and the volume of binders used in the process.

The equipment to be used to apply the hydraulic binder, and the subsequent rotovation of the material, will be based on commercially available construction plant and equipment. The Contractor shall provide the requisite RAMS to cover the treatment of the material, including details of testing and verification.

The design and earthworks requirements on the use of hydraulic binders is defined within the GDR and Earthwork Specification, with particular reference made in Appendix 6/1 and Appendix 6/3.

Bund Height

The maximum height for the landscape bund is defined by the minimum elevation required by planning as stated on pHp Drawing reference HRT-pHp-01-xx-dr-a-4432-014-022 a copy of which is presented at Appendix D.

This maximum height is commensurate with a range in elevation of between 47.18 m OD and 59.79 m OD in the long-term condition. In order to construct the landscape bund to ensure long-term geotechnical stability, an element of over-excavation and re-engineering of materials below the footprint of the landscape bund is required. This approach has also been adopted so as to ensure the optimum use of materials across the site, and prevent the sterilisation of high-quality engineered fill material. This has resulted in a maximum fill thickness within the landscape bund of around 20m, the bulk of which shall comprise recovered materials. This would include the re-

engineering of the basal material, as well as the topsoil and subsoil, placed as part of the final construction sequence.

The indicative maximum thickness of recovered material is anticipated to be less than 19m, and varies locally dependent upon the final land form, the current ground level, and the extent of re-engineering required at the base. The typical thickness of recovered materials is expected to be in the range of 5 to 11m.

Pending the depth of re-engineering required the overall fill thickness may increase marginally from this indicative maximum value; however, the overall thickness of recovered material would not be expected to change.

4. Pathway and Receptors

Issues relating to pathways and receptors are comprehensively addressed in the reports listed below.

Of particular relevance are the following:

- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-1002-S2-P05; Land adjacent Halden's Parkway, Thrapston. Desk Study Report.
- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-1005-S2-P07; Land adjacent Halden's Parkway, Thrapston. Ground Investigation Report. Geo-environmental Interpretation.
- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-3004-S0-P03; Land adjacent Halden's Parkway, Thrapston. Waste Recovery Plan
- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-4001-S4-P02; Land adjacent Halden's Parkway, Thrapston. Geotechnical Design Report
- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-3003-S2-P01; Land adjacent Halden's Parkway, Thrapston. Detailed Quantitative Risk Assessment for Impact of Recovered Waste on Controlled Waters.
- Hydrock Report reference 18443-HYD-XX-XX-RP-GE-3001-S2-P01; Land adjacent Halden's Parkway, Thrapston. Remediation Strategy and Verification Plan - Enablement Phase
- Hydrock Report reference 23880-HYD-XX-XX-RP-GE-0003-S2-P03; Rectory Farm (Thrapston) Landfill (EPR/BT98791Y). Hydrogeological Risk Assessment Review
- Hydrock Report reference 23880-HYD-XX-XX-RP-GE-0011-S2-P01; Rectory Farm (Thrapston) Landfill (EPR/BT98791Y). Surrender Report;
  - Appendix K, Leachate Assessment;
  - Appendix L, Gas Risk Assessment

Issues addressed therein are:

- Historical development and contaminative use;
- Geology, local and regional
  - (Drawing reference 18443-HYD-XX-ZZ-DR-GE-1015 at Appendix A is a geological map);
  - Stratigraphy;
  - Lithology;
  - Structure.
- Hydrology
  - Watercourses potentially affected by the development, including discharges from the site;
  - Flood Risk;
  - Water quality and contamination sources;
  - Ecology is addressed in Chapter 7 of the Environmental Statement submitted to support the planning application to which the Agency was a consultee.
- Hydrogeology
  - Location of site in relation to SPZs;
  - Aquifer vulnerability;
  - Hydrogeological interpretation (aquifers, aquicludes);
  - Hydraulic Parameters (permeability, porosity, storativity etc.);
  - Groundwater flow (direction, quantity);

- Relationship with surface waters;
- Potential changes to hydraulic balance;
- Groundwater quality, including current and future;
- Receptors and compliance points;

- Amenity issues (insofar as relevant to the development proposals).

5. Pollution Control Measures

5.1 References

The following issues are dealt with in:

Hydrock Report reference 18443-HYD-XX-XX-RP-GE-4001-S4-P02; Land adjacent Halden's Parkway, Thrapston. Geotechnical Design Report

- Site Engineering (of landscape bunds)
  - Basal preparation, earthworks engineering and side slope design & construction;
  - Clean cover;
  - Restoration
  - Surface Water Management;
  - Post closure controls (aftercare).

Specifically:

- Section 1: Earthworks, including earthworks requirements, volumes, geotechnical engineering, settlement and stability.
- Section 7: Ground Improvement
- Section 8: Monitoring, including settlement.
- Appendix 6/12: Instrumentation and monitoring.
- Drawing 18443-HYd-XX-ZZ-DR-GE-1029 Geotechnical Monitoring

5.2 Summary of Site Engineering (Deposit for Recovery Area)

The Deposit for Recovery Area is in all cases the Landscape Bunds.

The overall structure of the landscape bunds is shown in Drawing 18443-HYD-XX-XX-DR-GE-1028 at Appendix D (which includes a clean cover layer) and includes the generation requirements for the engineering of the basal layer.

Based on the adopted model used in the development of the DQRA, an environmental basal layer is required, nominally a minimum of 0.5m in thickness, with a typical intrinsic permeability of less than 1 x 10-6 m/s (expected to be in the range of 1 x 10-6 m/s to 1 x 10-8 m/s). This requirement has been encapsulated within the geotechnical design, and the associated drawings.

Note that the clean-cover layer, will be a minimum of 1m thick, comprising topsoil and subsoil ranging 0.3m-0.9m depending upon the planting regime, and clean engineered soils compliant with the requisite Human Health Risk Criteria as defined in the RSVP. The environmental basal layer will be predominantly constructed using site won, natural undisturbed cohesive deposits that are required to be cut as part of the reprofiling of the site. Testing and assessment for acceptability of the proposed soils will include the measurement of the permeability of remoulded specimens. .

Relevant construction quality assurance proposals are contained in Appendix 1/24 of the earthwork specifications presented in the GDR.

5.3 Maintenance of the 0.5m Unsaturated Zone

Appendix B of the DQRA, presented as Hydrock Report 18443-HYD-XX-XX-TP-GE-3003, provides an assessment of the groundwater levels, as related to each of the geological units below the proposed landscape bund, that is, the DfR permit area. These focus on an assessment of the Cornbrash Limestone Formation and the Blisworth Limestone as the main water-bearing units. The

highest recorded groundwater levels are those associated with the Cornbrash Formation, which is generally topographically controlled.

The groundwater level within the Cornbrash Limestone is under a marginal artesian pressure, being confined by the cohesive superficial soils above it. In order to ensure the model assumptions are consistent with the final as constructed condition, the lower layers of the landscape bund shall take into account both geotechnical and environmental considerations and constraints. The environmental considerations relate to a maximum permeability, which is defined to be less than 1 x 10^{-6} m/s. This requirement is set out within the earthwork requirements in the GDR.

The essential elements of the assessment are:

- The presence of a minimum 0.5m low permeability engineered layer, at the base of the landscape bund.
- There are no aspects of the development that could be expected to result in higher groundwater levels post development.
- Under post-development conditions, lower groundwater levels may be expected due to reduction in recharge through the area that has been built over.

Where required, the low permeability engineered layer will be increased in thickness to ensure that an unsaturated zone is maintained beneath any recovered waste (typically in the north-west of the proposed bund area).

6. Monitoring

6.1 Weather

6.1.1 Rainfall

The following are data area for the nearest Met Office station (Cambridge NIAB (National Institute for Agricultural Botany)), 56km south-west of the site (all data in mm for the period 2010 -2021):

- Minimum 350;
- Average 550;
- Maximum 730.

These data or derivatives thereof have been used for drainage design and groundwater level assessments.

6.1.2 Wind

Wind rose data have been obtained for a site a weather station at Thurleigh near Bedford (Figure 6.1.

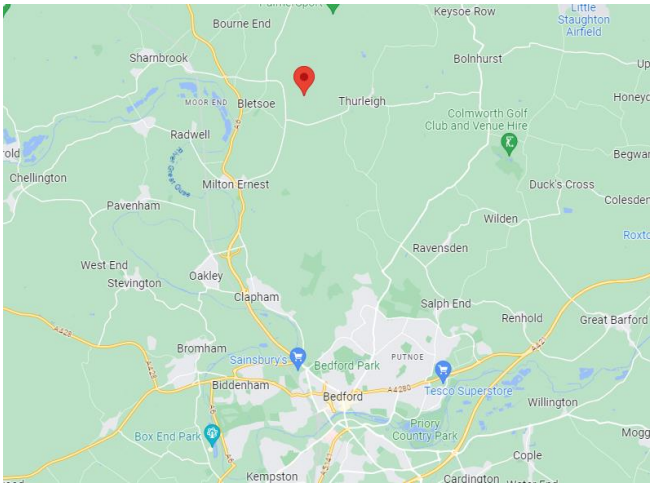


Figure 6.1: Source of wind rose data

Data for 2019 -2022 is presented in Appendix F. The dominant wind direction is from the south west.

6.2 Ground Gas Monitoring Infrastructure

6.2.1 Current

A gas monitoring network within and outwith the landfill was established in compliance with the permit and augmented to support the surrender of the landfill permit. Details are given in Appendix L to:

Hydrock Report reference 23880-HYD-XX-XX-RP-GE-0011-S2-P01; Rectory Farm (Thrapston) Landfill (EPR/BT98791Y). Surrender Report

6.2.2 Future

The development works will remove much of the current gas monitoring infrastructure with affected boreholes being professionally decommissioned but a new network will be established.

Post earthworks completion gas monitoring infrastructure is shown on Drawing 23880-HYD-XX-ZZ-DR-GE-1022 included in Appendix E.

6.3 Gas Monitoring Data

6.3.1 Historical/Baseline

Baseline conditions are well established and all historical gas monitoring data will be made available for project design purposes.

It is generally the case that, in respect of the gases methane and carbon dioxide, the site outwith the landfill (which will be fully removed) is characterised by very low ground gas concentrations and emission rates.

6.3.2 Future Conditions

Treatment of the waste materials to form the core of the bunds is expected to minimise the propensity for gas generation, for example, by the removal of biodegradable materials.

Nevertheless, because the new development buildings are potentially at risk from gas migration and accumulation so monthly monitoring of gas concentrations and flows using the new network will be undertaken for a period of two years after project completion, to prove the anticipated low-risk condition and that the site is in a stable condition.

Gas monitoring proposals are described in:

- Technical Design Note 23880-HYD-XX-XX-RP-GE-5007
- Drawing 23880-HYD-XX-ZZ-DR-GE-1022

6.4 Groundwater Monitoring

Please refer to:

- Technical Design Note 23880-HYD-XX-XX-RP-GE-5007
- Drawing 23880-HYD-XX-ZZ-DR-GE-1022

6.5 Surface Water Monitoring

Please refer to:

- Technical Design Note 23880-HYD-XX-XX-RP-GE-5007
- Drawing 23880-HYD-XX-ZZ-DR-GE-1022

7. Site Condition Report

Hydrock Technical Design Note reference 2880-HYD-XX-XX-RP-GE-5001 is Site Condition Report (SCR) which describes pre-development conditions, that is, the condition of the land at permit issue. This SCR cross references to numerous site investigation reports which contain details that are the basis for the summary presented.

A post-remediation Verification Report will provide details of post-development conditions.

8. Closure Report

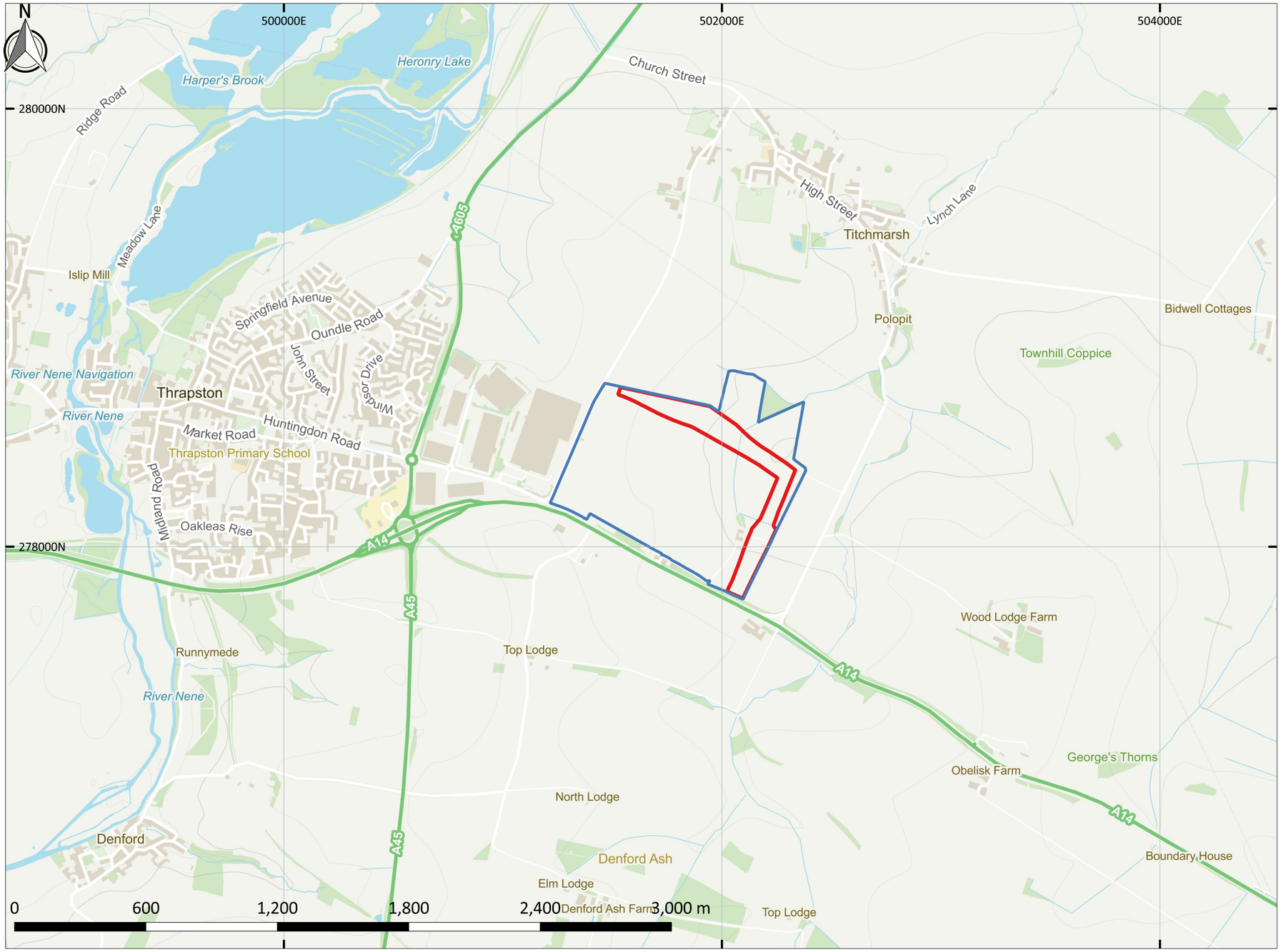
No Closure Report will be required. The proposed procedure will be as follows:

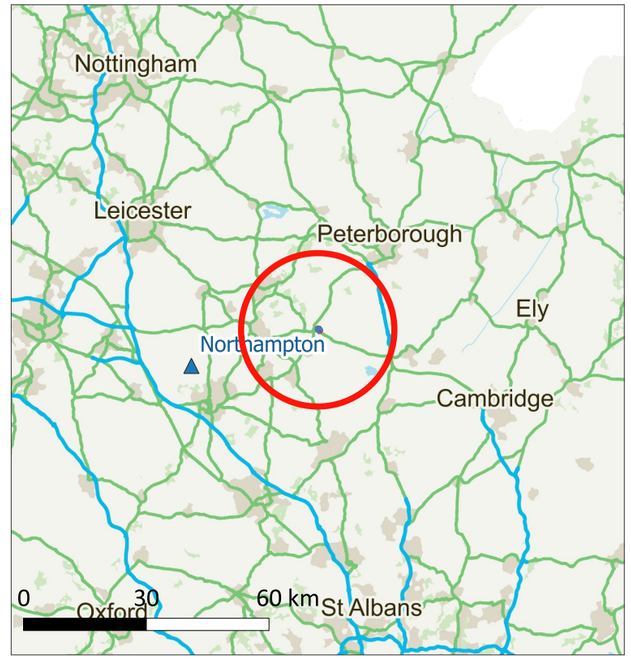
On completion of all works under the DfR permit, the site will be fully decommissioned and handed over to the developer for release to the contractor responsible for building construction and associated works.

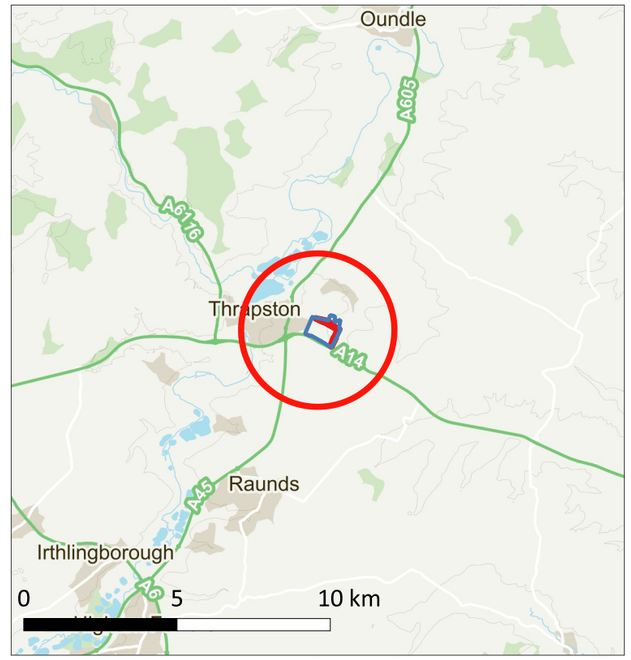
Decommissioning will include removal of all plant and machinery, storage facilities and accommodation. It will also include decommissioning of all gas and groundwater monitoring boreholes subject to CQA planning and reporting with EA approval being required for both.

When decommissioning is fully complete, a Surrender Report will be prepared by the Operator for submission to the EA along with the appropriate surrender application forms and fee.

Appendix A Drawings







KEY PLAN

- Overall Site Boundary
- DfR Boundary

NOTES

1. Contains OS data © Crown copyright and database right (2022)

REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	LH	EC	20/06/23	First issue

Hydrock

TITLE
ESSD SITE LOCATION PLAN

HYDROCK PROJECT NO.
23880

SCALE @ A3
1:20,000

CLIENT
Mick George Ltd

PURPOSE OF ISSUE
SUITABLE FOR INFORMATION

STATUS
S2

PROJECT
THRAPSTON

DRAWING NO.
23880-HYD-XX-XX-DR-GE-1024

REVISION
P01

Areas Schedule									Parking and docks - figures quoted are minimum, plots may allow additional.						Plot Areas
Plot No.	Warehouse GIA SQFT	Warehouse GIA SQM	Offices GIA SQFT	Offices GIA SQM	Hub Office SQFT	Hub Office SQM	Total GIA SQFT	Total GIA SQM	Car Parking @1/120sqm	HGV Parking	Docks	Level Access	cycles	PTW's	Plot Areas
1	500000	46451	25000	2323	10000	929	535000	49704	414	142	68	8	100	16	11.061 ha / 27.09 acres
2	360000	33445	15000	1394	5000	465	380000	35304	294	85	48	8	70	12	8.145 ha / 20.13 acres
3	594000	55184	25000	2323	10000	929	629000	58436	487	201	72	8	117	18	13.130 ha / 32.44 acres
4	550000	51097	25000	2323	10000	929	585000	54348	454	202	72	8	109	17	13.043 ha / 32.23acres
Total	2,004,000	186,177	90,000	8,363	35,000	3,252	2,129,000	197,790	1649	630	260	32	396	63	

Revisions:

P14	Permissive Routes added	04.01.22 RG
P15	Update to correct parking no. discrepancy	06.01.22 RG
P16	Status updated to Planning	17.01.22 RG
P17	Minor correction to rounding within Areas stated	31.01.22 RG
P18	Foul Pumping Station added.	03.02.22 RG

newlands developments

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pHp architects

HUNTINGDON ROAD THRAPSTON

INDICATIVE MASTERPLAN AND PLOT 1 DETAILS

Status	PLANNING
Drawn by : RG	Checked by : RM
Date	01/04/2021

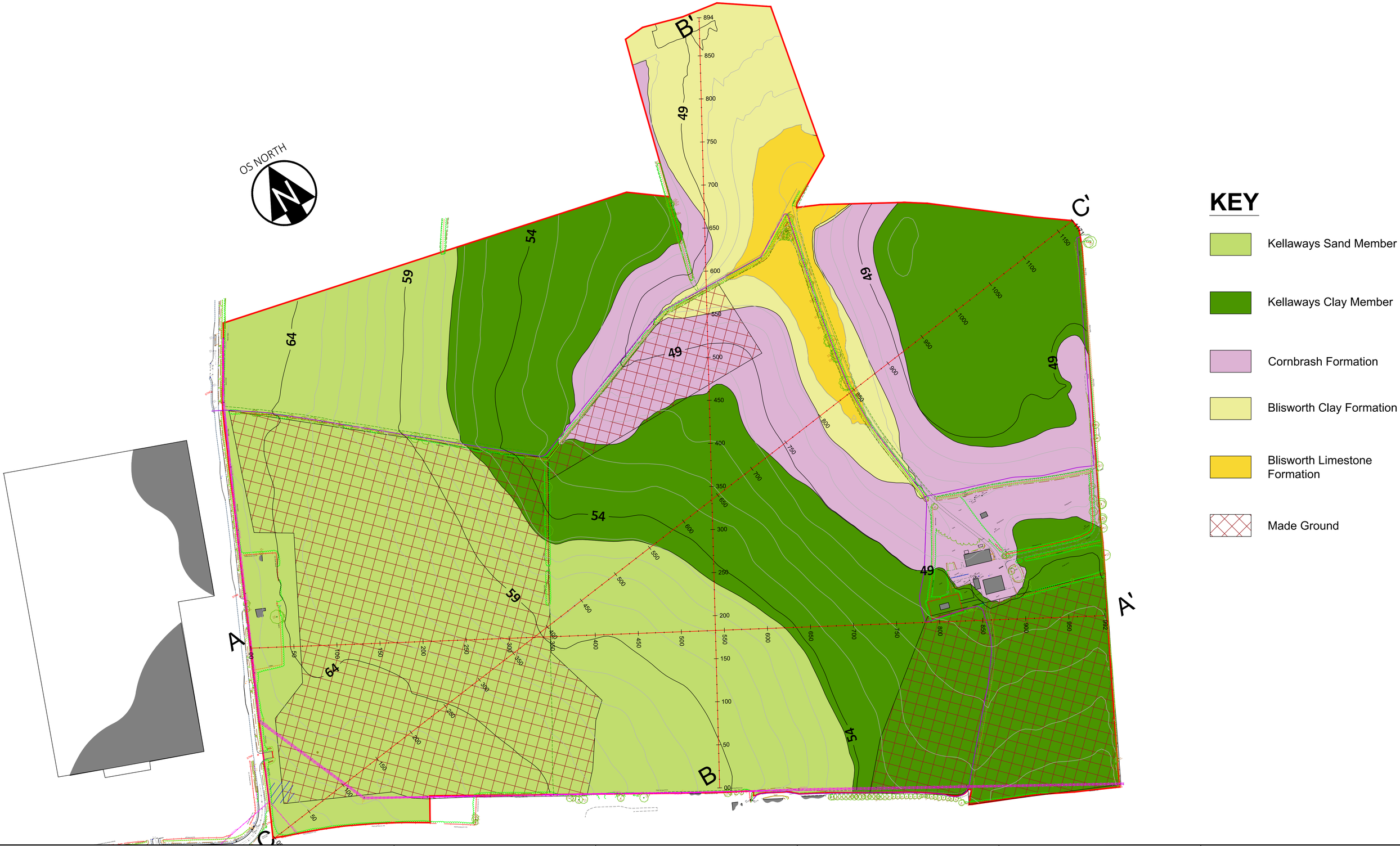
Document Number:

Project Code Zone Level-Info Type Role Job No. Drg No. Revison

HRT-PHP-01-XX-DR-A-4432-012-P18

Scale@ A1 1:2000

0 50m 100m



KEY

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information: Statsurv Drawing 'Huntignton Road, Thrapston. Topography Survey'. Ref: 11521a-0, dated 10/03/21

4.Surfaces have been created using Hydrock Site Investigation data (July 2021). Levels and depths are accurate at investigation locations. Between investigation locations, levels and depths have been extrapolated and are indicative only.

REV.	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P1	FIRST ISSUE	RT	06.10.21	NS/NT	06.10.21	AB	06.10.21

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CLIENT
NEWLANDS DEVELOPMENTS

PROJECT
HUNTINGDON ROAD, THRAPSTON

TITLE
SOLID GEOLOGY - OUTCROP LEVEL

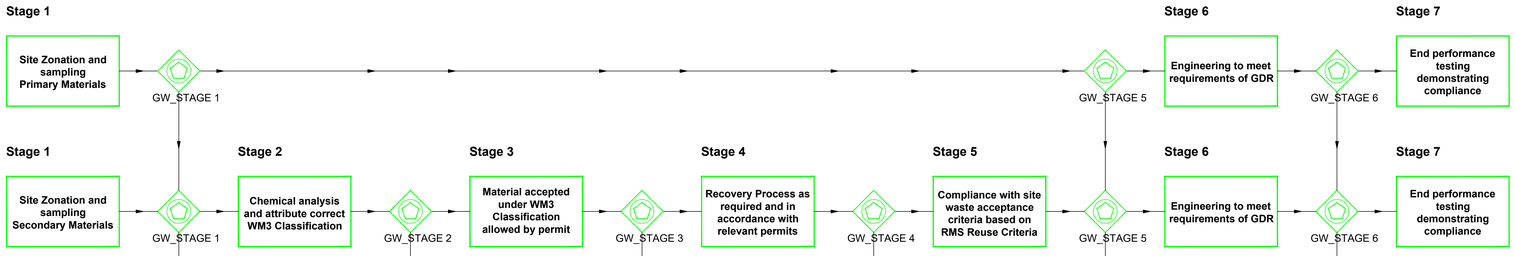
HYDROCK PROJECT NO.	SCALE @ A1
C-18443	1:2000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)
18443-HYD-XX-ZZ-DR-GE-1015

REVISION
P2

General sequence for the Recovery of Waste and the reuse of site won soils - Gateways to compliance



Gateway Stage 1
Report prepared on investigation and testing demonstrating material designation as being either Primary or Secondary

Gateway Stage 2
Records provided as to application of WM 3 classification and designation of material as being hazardous or non-hazardous, suitable for re-use or requires off-site disposal. For off-site disposal, to include all transfer tickets etc in accordance with Appendix 6/2 of the earthwork specification

Gateway Stage 3
Records provided on comparison to re-use criteria, and defining what remediation and recovery is required before material may be permitted for re-use within the permanent works

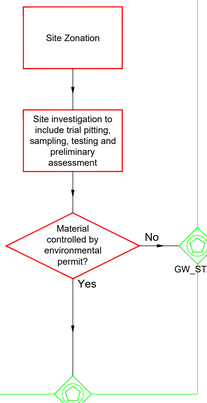
Gateway Stage 4
Records provided on recovery procedure employed, including any relevant test results

Gateway Stage 5
Report prepared demonstrating compliance with RS&VP reuse criteria before transfer to deposition area

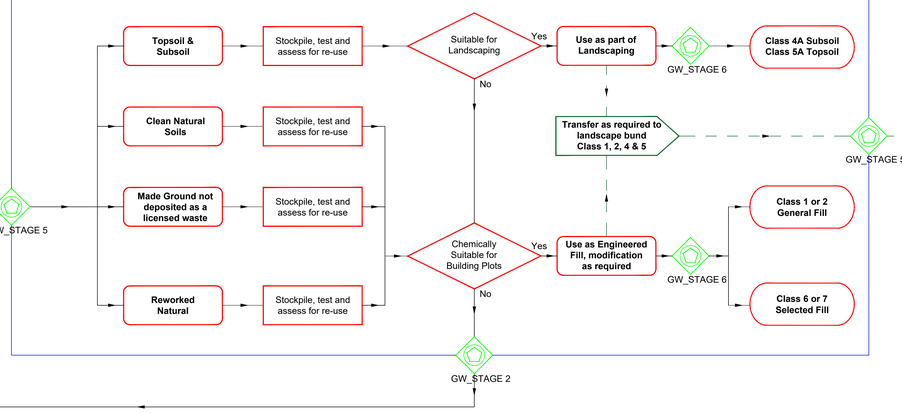
Gateway Stage 6
Geotechnical Feedback Report prepared in accordance with DMRB CD 622, demonstrating geotechnical compliance

Notes:
1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers', Remediation Consultant and Service Engineers' drawings and specifications.

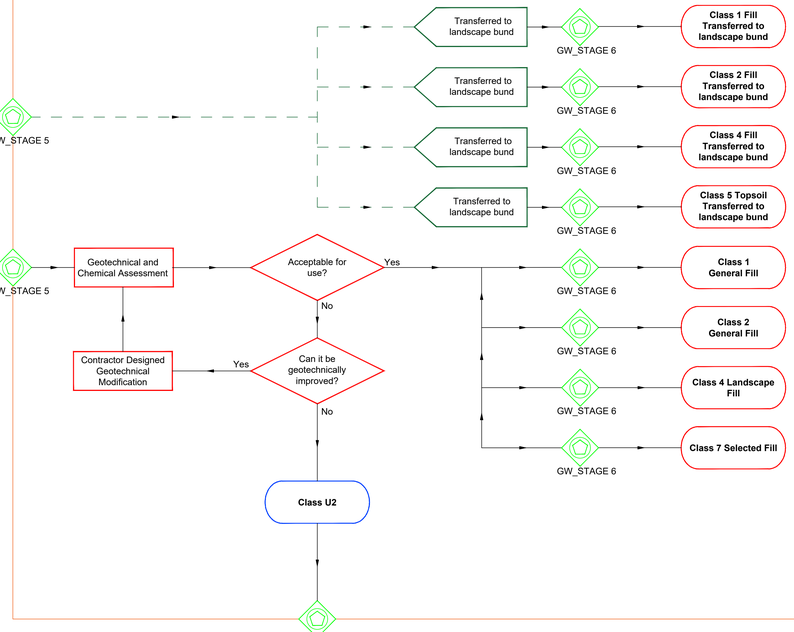
Site Appraisal



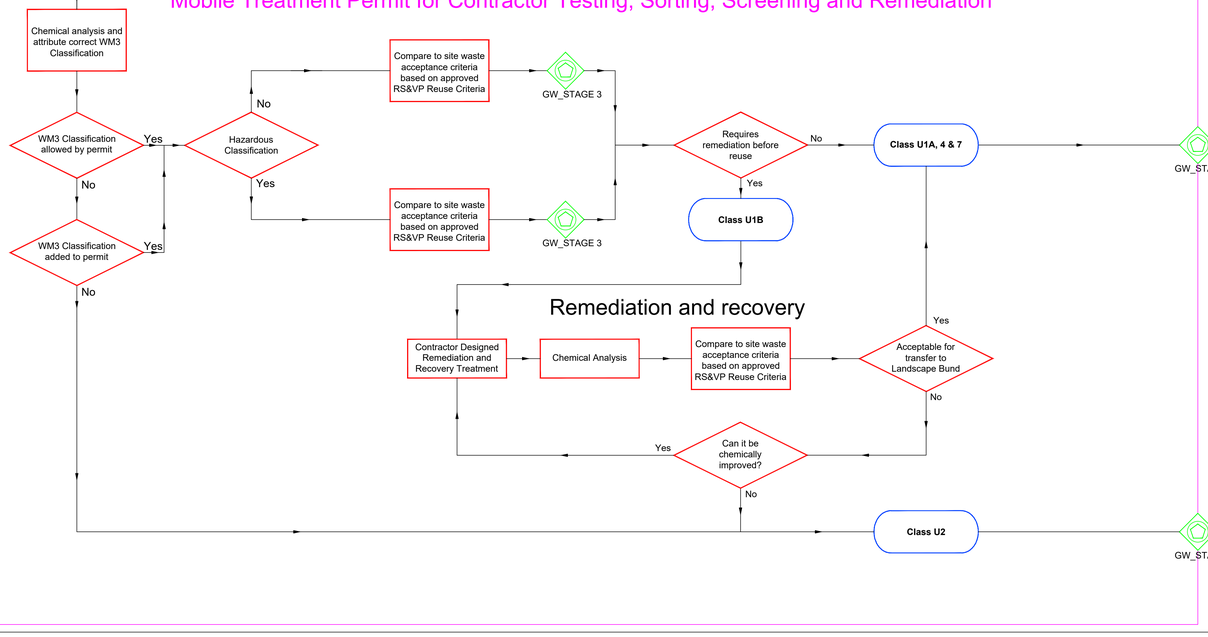
DoWCoP - MMP Building Plots and Highways



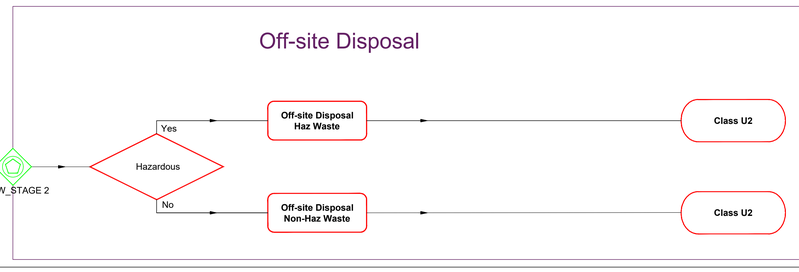
Bespoke Permit - Deposit for Recovery DfR - Landscape Bund



Mobile Treatment Permit for Contractor Testing, Sorting, Screening and Remediation



Off-site Disposal



Rev	Date	Description	By	Ckd
P01	11/01/21	Initial Issue	IG	EC

Architect :

Client :
NEWLANDS DEVELOPMENTS LTD

Project Title:
THRAPSTON

Drawing Title:
Enabling Works - Indicative Materials Recovery and Treatment Sequence

Drawing Status:	Revision:
S2	P01

Hydrock Job No: C-18443-C

Drawn	Checked	Scale @ A0	Date	Issue Date
IG	EC	N.T.S.	09/12/21	11/01/21

Drawing No: 18443-HYD-XX-ZZ-DR-GE-1021

KEY

Landfill Permit Boundary (EPR3837LU). As per variation PP3233XK, Schedule 2 - Site Plan dated 11/01/2008

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
3. This drawing has been based on the following drawings and information:
4. This drawing has been based on the Stafsurv Drawing. 'Huntingdon Road, Thrapston. Topographic Survey'. Ref: 11521a-0, dated 10/03/21.

REV	REVISION NOTES/COMMENTS	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P01	FIRST ISSUE	LW	09/08/23	EC	09/08/23	EC	09/08/23

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CLIENT: MICK GEORGE LTD

PROJECT: THRAPSTON LANDFILL PERMIT SURRENDER

TITLE: PERMIT BOUNDARIES

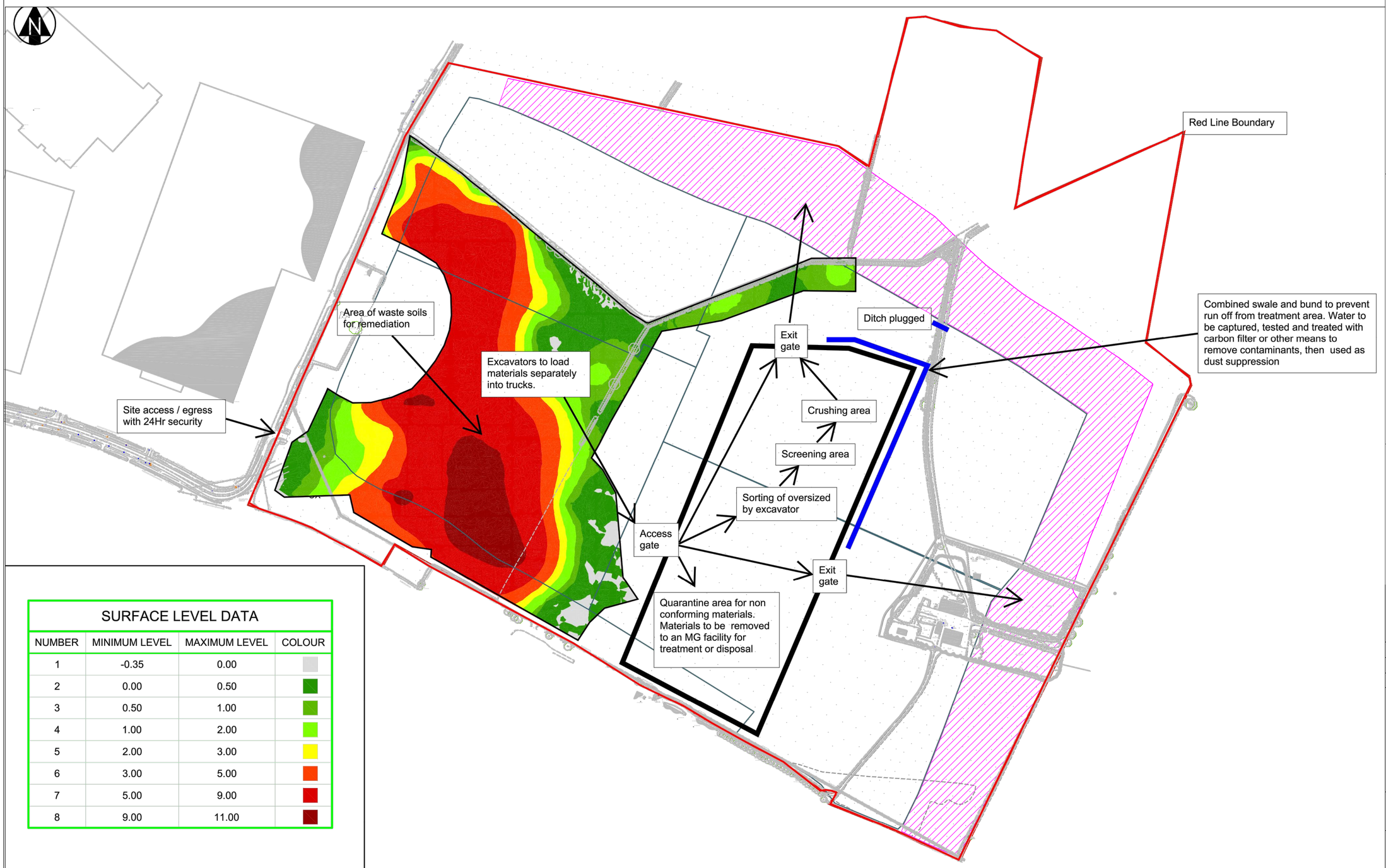
HYDROCK PROJECT NO.	SCALE @ A0
23880	1:1000

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT-CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): 23880-HYD-XX-ZZ-DR-GE-1025

REVISION: P01

Appendix B DfR Contractor Site Plan



Legend

DFR Area

All waste to transit treatment area regardless of whether treatment is required

SURFACE LEVEL DATA			
NUMBER	MINIMUM LEVEL	MAXIMUM LEVEL	COLOUR
1	-0.35	0.00	
2	0.00	0.50	
3	0.50	1.00	
4	1.00	2.00	
5	2.00	3.00	
6	3.00	5.00	
7	5.00	9.00	
8	9.00	11.00	

Made Ground - Landfill waste management license

Total Volume = 597,530m^3

Rev	Date	Description
I2	02.08.23	For Information
I1	28.07.23	For Information

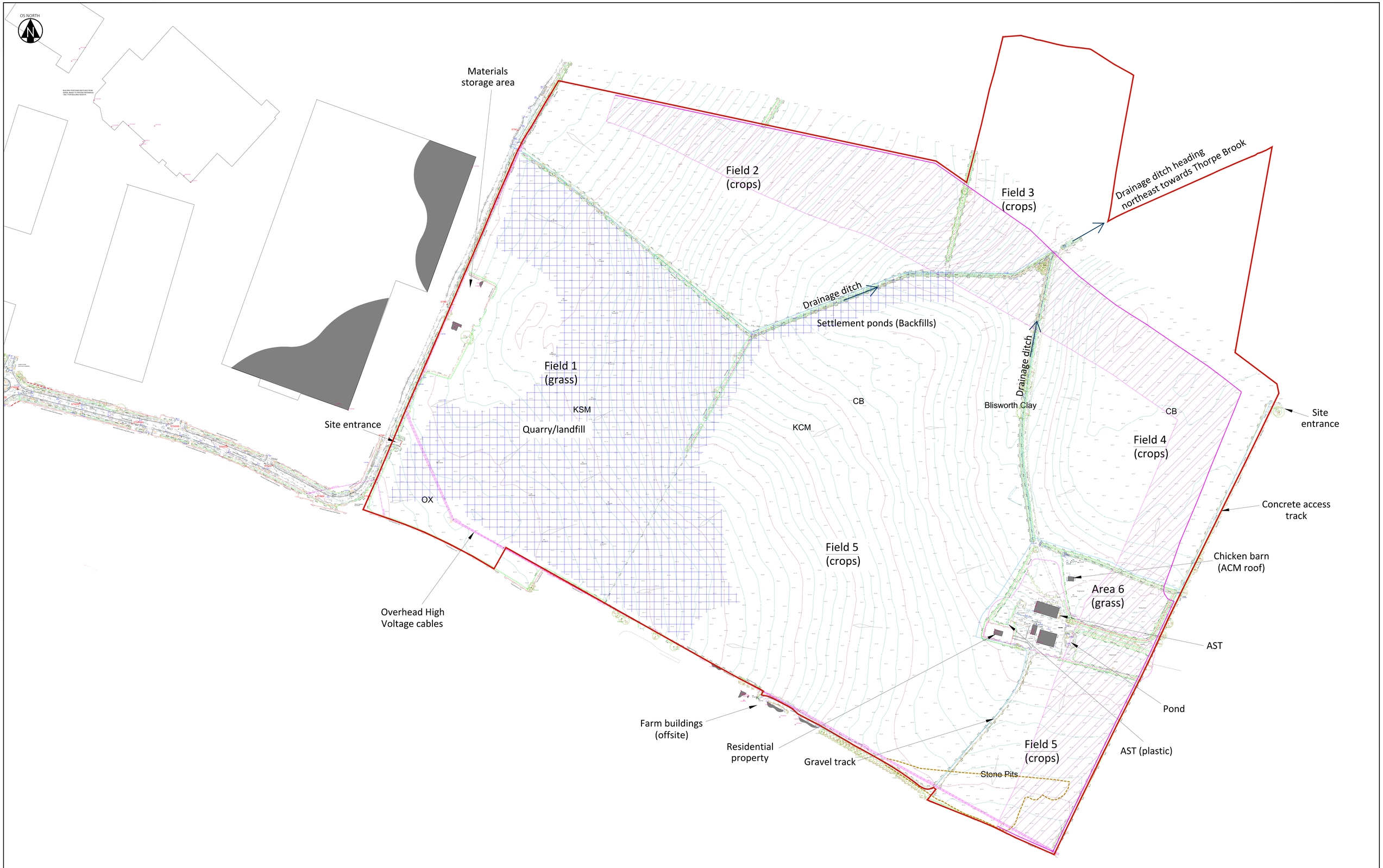
MICK GEORGE
6 LANCASTER WAY
ERMINE BUISNESS PARK
HUNTINGDON
CAMBRIDGESHIRE
PE29 6XU
Tel : 01480 498099 Fax : 01480 498077
www.mickgeorge.co.uk

Client:

Project Title:
Land Adjacent to Halden Parkway
Thrapston

Drawing Title:
DFR location plan

Drawn : MM - GC	Approved : GC	
Date : 28.07.23	Scale : NTS	
Drawing Number: 261190/DFR/5A	Paper size A1	Rev I2



KEY

- Site Boundary (approximate)
- Waste Recovery Area
- Deposit for Recovery Area
- Drainage ditch (direction of flow)
- Old Stone Pits (approximate) Historical 1885

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
3. This drawing has been based on the following drawings and information:
3. This drawing has been based on the Statsurv Drawing, 'Huntingdon Road, Thrapston. Topographic Survey'. Ref: 11521a-0, dated 10/03/21.

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CLIENT: EQUITES NEWLANDS (THRPASTON EAST) LTD

PROJECT: LAND ADJACENT TO HALDEN PARKWAY, THRAPSTON

TITLE: SITE FEATURES PLAN

REV.	FIRST ISSUE					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE
P01	RT	30.08.22	CD	30.08.22	AB	30.08.22

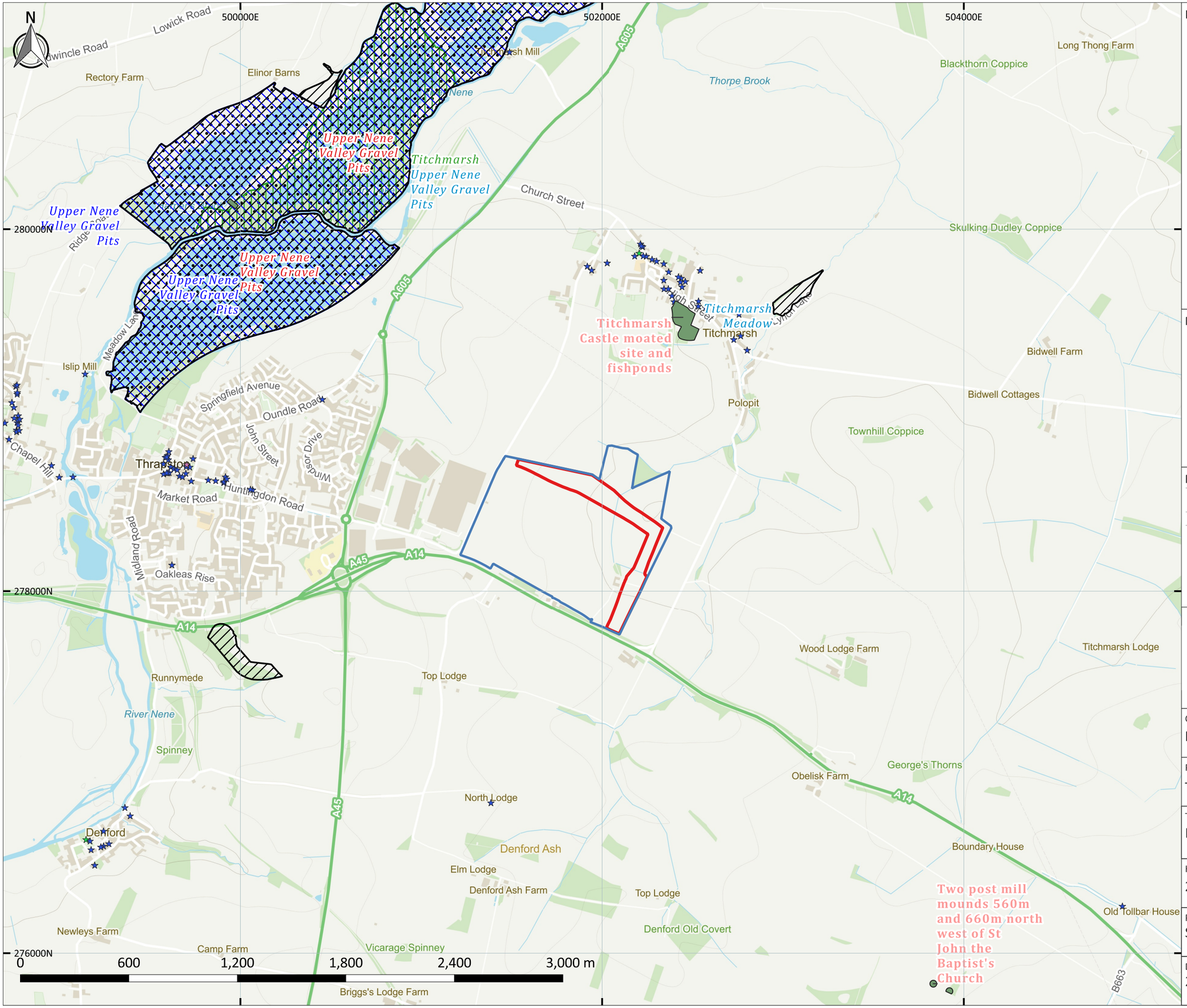
REVISION NOTES/COMMENTS

HYDROCK PROJECT NO.	SCALE @ A0
C-18443	1:1500

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT-CODE-ORIGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER)	REVISION
18443-HYD-XX-ZZ-DR-GE-1033	P01

Appendix C Environmental Setting



KEY PLAN

- Overall Site Boundary
- DfR Boundary
- Grade II*

Historical Designations

- Scheduled Ancient Monument

Listed Buildings

- Grade I
- Grade II

Environmental Designations

- Local Nature Reserves
- Ramsar
- SSSI
- Special Protection Area

NOTES

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REVISIONS

REV.	DRAWN BY INITIALS	CHECKED BY INITIALS	DATE	REVISION NOTES/COMMENTS
P01	LW	EC	20/06/23	First issue

Hydrock

CLIENT
Mick George Ltd

PROJECT
THRAPSTON

TITLE
ESSD - Environmental Setting

HYDROCK PROJECT NO.	SCALE @ A3
23880	1:20,000

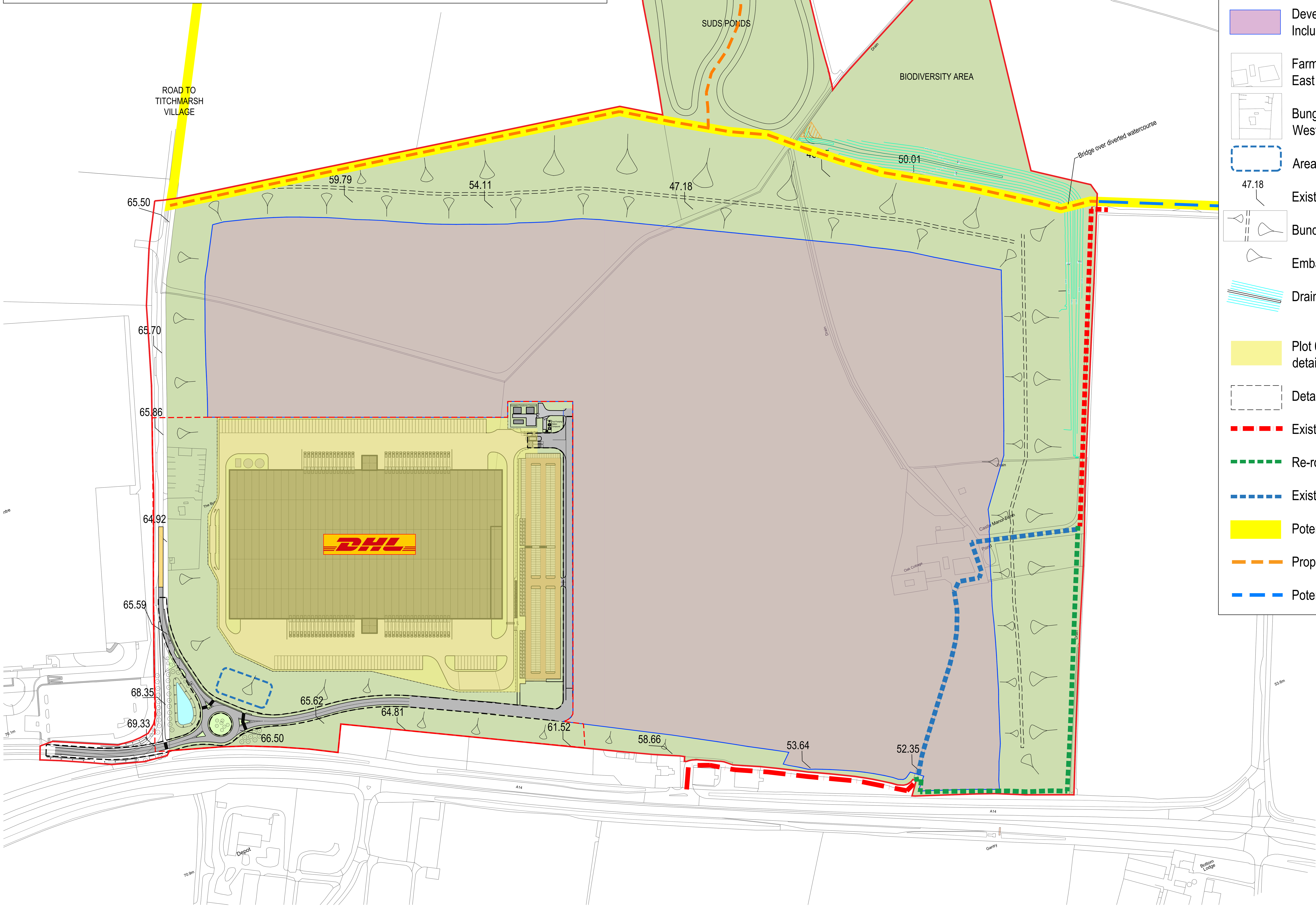
PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO.	REVISION
23880-HYD-XX-XX-DR-GE-1023	P01

Appendix D Landscaped Bunds

SCHEDULE OF PARAMETERS

Development Zone	Number of Units	Maximum development floor space per Zone in m²	Minimum to Maximum finished floor level (in m above ordnance datum)	Maximum building height measured to roof ridge / highest point (in metres above ordnance datum)
Plateau Area	2 to 6	200,000	54.50 to 55.50	79.50



LEGEND

- Landscaping, Biodiversity and SUDS zone Including Earth Bunding & Batters 40.3ha / 99.68ac
- New Road and Roundabout Zone
- Development Plateau Including Plot 1 34.49ha / 85.25ac
- Farm Buildings to be Demolished to the East of the site
- Bungalow and associated buildings to the West of the site
- Area for Development Signage
- 47.18 Existing Site Levels AOD
- Bund to North and West Boundary
- Embankments to Create Buiding Plateau
- Drainage Ditch to the NE Boundary
- Plot 01 (plot layout to be approved by detailed drawings and plan
- Detailed Site and Plot 01 Access
- Existing Farm Track retained
- Re-routed Farm Track
- Existing Farm Track to be removed
- Potential Greenway Route
- Proposed on-site Permissive Route
- Potential off-site Permissive Route

Revisions:

P17	Red line amended to Titchmarsh roadway	03.11.21 RG
P18	Substation included within Plot 1 Area	16.12.21 RG
P19	Permissive routes added.	04.01.22 RG
P20	Status of drawing updated to Planning	17.01.22 RG
P21	Key updated. Farm buildings shown for clarity	31.01.22 RG
P22	Foul Pumping Station added.	03.02.22 RG

newlands developments

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pHp architects

HUNTINGDON ROAD THRAPSTON

PARAMETERS PLAN

Status: PLANNING

Drawn by : RG Checked by : RM

Date: 01/04/2021

Document Number:

Project Code - Zone - Level-Info - Type - Role - Job No. - Drg.No. - Revision

HRT-PHP-01-XX-DR-A-4432-014-P22

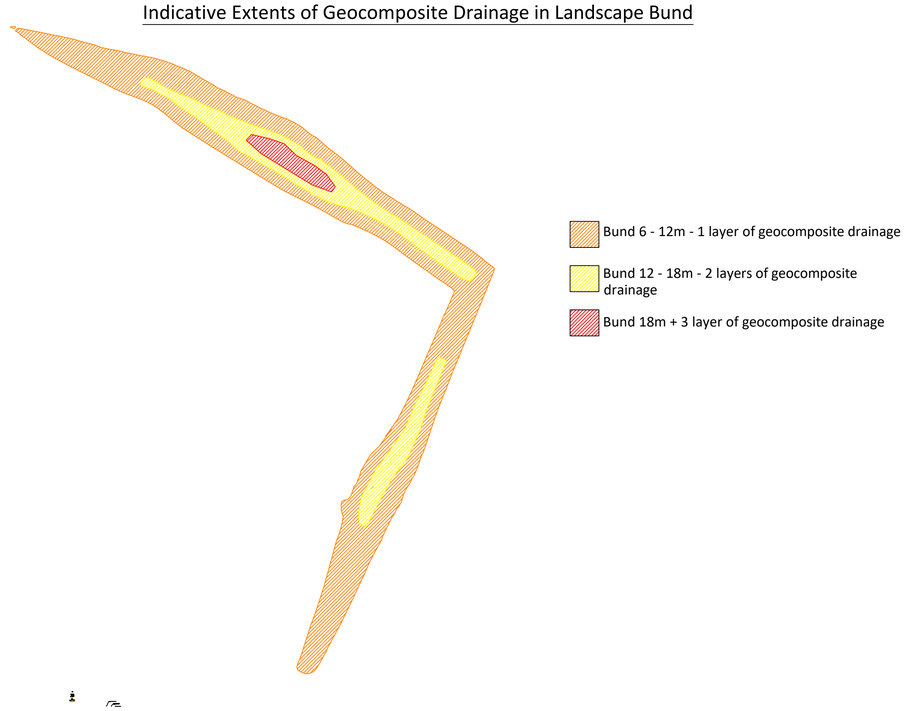
Scale@ A1 1:2000

0 50m 100m

N

OS NORTH

Indicative Extents of Geocomposite Drainage in Landscape Bund



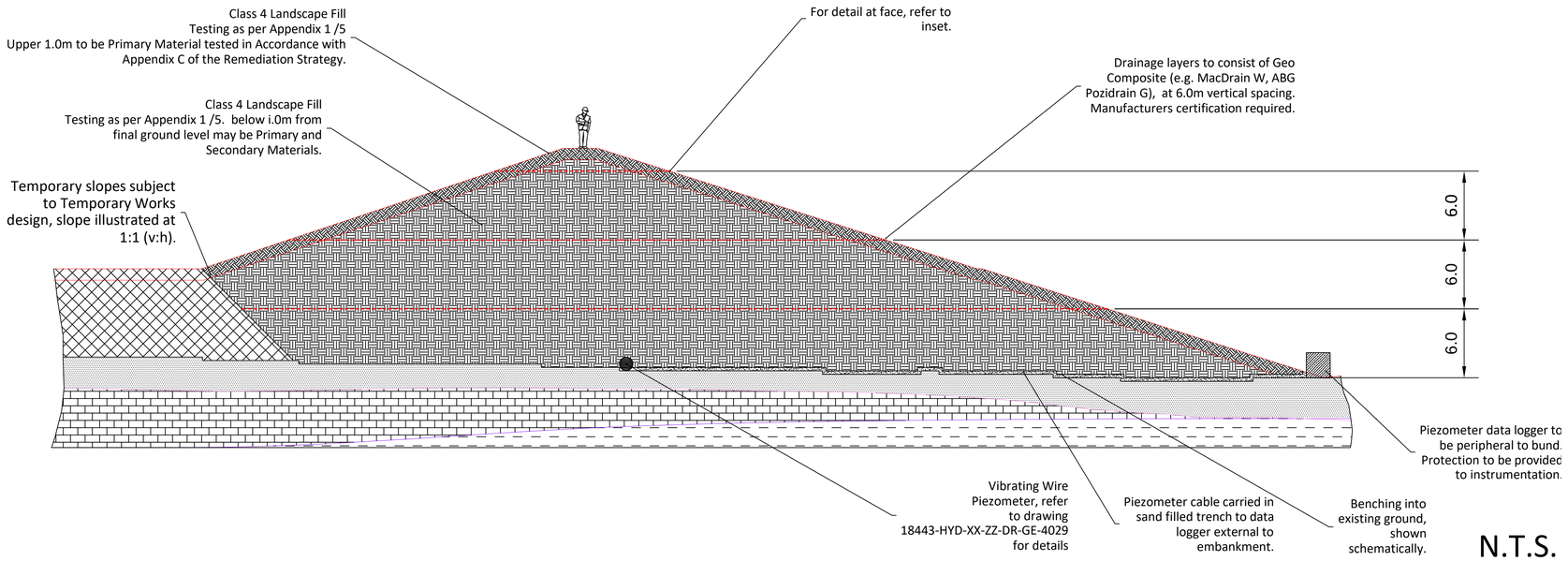
Bund 6 - 12m - 1 layer of geocomposite drainage

Bund 12 - 18m - 2 layers of geocomposite drainage

Bund 18m + 3 layer of geocomposite drainage

SCALE 1:4000

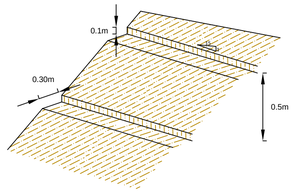
Schematic Landscape Bund Construction



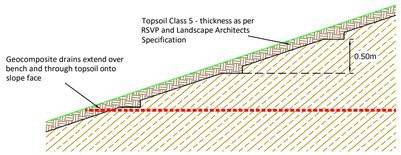
N.T.S.

Inset

Slope Benching / Scarifying Detail
To be undertaken before drainage installation and topsoiling



Finishing Detail



N.T.S.

KEY

- Class 4 Landscape Fill
- Class7 Selected Fill
- Glaciofluvial Deposits
- Blisworth Limestone
- Rutland Formation
- Geocomposite Drainage

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.
2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.
3. This drawing has been based on the following drawings and information: 11686a-0, Proposed Plateau and Bund Levels, 15/06/21.

REV.						
P1	FIRST ISSUE					
	RB	04/05/22	AB	04/05/22		
	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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CLIENT: EQUITIES NEWLANDS (THRAPSTON EAST) LIMITED

PROJECT: HALDEN PARKWAY, THRAPSTON

TITLE: LANDSCAPE BUND CONSTRUCTION

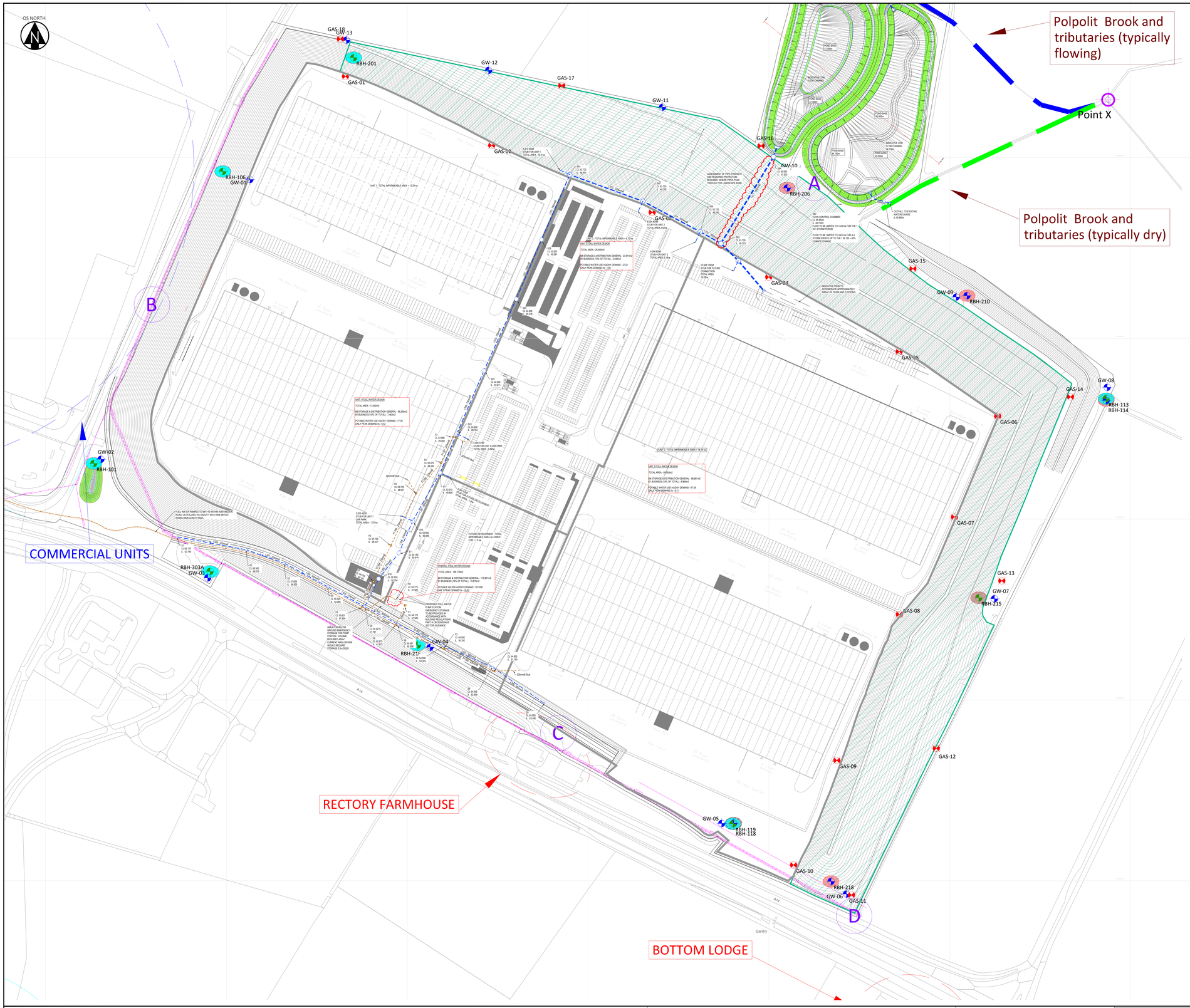
HYDROCK PROJECT NO.	SCALE @ A1
18443	AS SHOWN

PURPOSE OF ISSUE	STATUS
SUITABLE FOR INFORMATION	S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER): 18443-HYD-XX-XX-DR-GE-1028

REVISION: P1

Appendix E Monitoring Plan



Surface Water Monitoring Point			
Location	X	Y	Zone
Point X	502375	278664	Polpolit Brook

Nuisance Receptors Monioring Point			
Location	Provisional x	Provisional y	Receptor
A	502050	278570	General receptor
B	501320	278435	Haldens Parkway Industrial Estate
C	501765	277965	Rectory Farmhouse
D	502095	277760	Bottom Lodge

Shallow Gas Monitoring Wells			
Location	Provisional x	Provisional y	Zone
GAS01	501532	278690	DfR Bund - Development Side
GAS02	501693	278614	DfR Bund - Development Side
GAS03	501871	278540	DfR Bund - Development Side
GAS04	502000	278468	DfR Bund - Development Side
GAS05	502144	278385	DfR Bund - Development Side
GAS06	502253	278314	DfR Bund - Development Side
GAS07	502205	278203	DfR Bund - Development Side
GAS08	502144	278095	DfR Bund - Development Side
GAS09	502075	277933	DfR Bund - Development Side
GAS10	502027	277817	DfR Bund - Development Side
GAS11	502091	277784	DfR Bund - Field Side
GAS12	502185	277947	DfR Bund - Field Side
GAS13	502258	278132	DfR Bund - Field Side
GAS14	502333	278335	DfR Bund - Field Side
GAS15	502159	278477	DfR Bund - Field Side
GAS16	501991	278613	DfR Bund - Field Side
GAS17	501771	278680	DfR Bund - Field Side
GAS18	501526	278731	DfR Bund - Field Side

Groundwater Monitoring Wells				
Location	Provisional x	Provisional y	Orientation	Anticipated Strata
GW01	501426	278576	Up-gradient	Cornbrash Formation
GW02	501261	278266	Up-gradient	Cornbrash Formation
GW03	501379	278135	Up-gradient	Cornbrash Formation
GW04	501625	278058	Up-gradient	Cornbrash Formation
GW05	501948	277863	Up-gradient	Cornbrash Formation
GW06	502086	277785	Up-gradient	Cornbrash Formation
GW07	502249	278112	Cross-gradient	Blisworth Limestone
GW08	502374	278346	Up-gradient	Cornbrash Formation
GW09	502207	278446	Down-gradient	Blisworth Limestone
GW10	502035	278586	Down-gradient	Blisworth Limestone
GW11	501882	278656	Down-gradient	Cornbrash Formation
GW12	501690	278697	Down-gradient	Cornbrash Formation
GW13	501533	278730	Cross-gradient	Cornbrash Formation

The current development plan indicates that the following existing groundwater monitoring points may potentially serviceable thoughout the development process. Preference is to be given to retaining these locations instead of constructing the associated new monitoring point.

Location		
Existing	Proposed	Screened Strata
RBH-113	GW08	Cornbrash Formation
RBH-119	GW05	Cornbrash Formation
RBH-303A	GW03	Cornbrash Formation
RBH-101	GW02	Cornbrash Formation

KEY

Existing Installation (for historical trends at equivalent locations to post DfR monitoring plan)

Cornbrash Limestone Formation

Blisworth Limestone Formation

Proposed Monitoring Plan

GAS-17 Shallow gas monitoring well (installed above groundwater level)

GW-13 Groundwater Monitoring Well (installed in either Blisworth Limestone or Cornbrash Formation as appropriate)

Point X Surface water monitoring point (Polopit Brook, most up-stream location where flows are observed)

A Nuisance Receptor Monitoring Point

DfR Area

KEY:
- PROPOSED SURFACE WATER DRAINAGE
- PROPOSED FOUL WATER DRAINAGE
- PROPOSED FOUL RISING MAIN
- PROPOSED HEADWALL - SIZE T.B.C
- EXISTING ANGLIAN WATER FOUL WATER SEWER

NOTES

1. All dimensions are to be checked on site before the commencement of works. Any discrepancies are to be reported to the Architect & Engineer for verification. Figured dimensions only are to be taken from this drawing.

2. This drawing is to be read in conjunction with all relevant Engineers' and Service Engineers' drawings and specifications.

3. This drawing has been based on the following drawings and information:
HRT-php-01-XX-DR-A-4432-012-P18
ACAD-LTP-BWB-DGT-XX-M3-C-0601-S1-P1_Basins Proposed Levels-Model
x-332210963-STN-HDG-SW-M2-CD-0501_On-Site FW-SW

REV						
P03	Key amended					
	LW	09/08/23	EC	09/08/23	EC	09/08/23
P02	22/06/23					
	LW	22/06/23	AB	22/06/23	AB	22/06/23
P01	FIRST ISSUE					
	LH	22/06/23	LW	22/06/23	EC	22/06/23
REV	REVISION NOTES/COMMENTS					
	DRAWN BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE

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e: northampton@hydrock.com
or visit www.hydrock.com

CLIENT
MICK GEORGE LIMITED

PROJECT
LAND ADJACENT HALDEN PARKWAY THRAPSTON

TITLE
DfR Proposed
Environmental Monitoring Plan

HYDROCK PROJECT NO. 23880

SCALE @ A0 1:1500

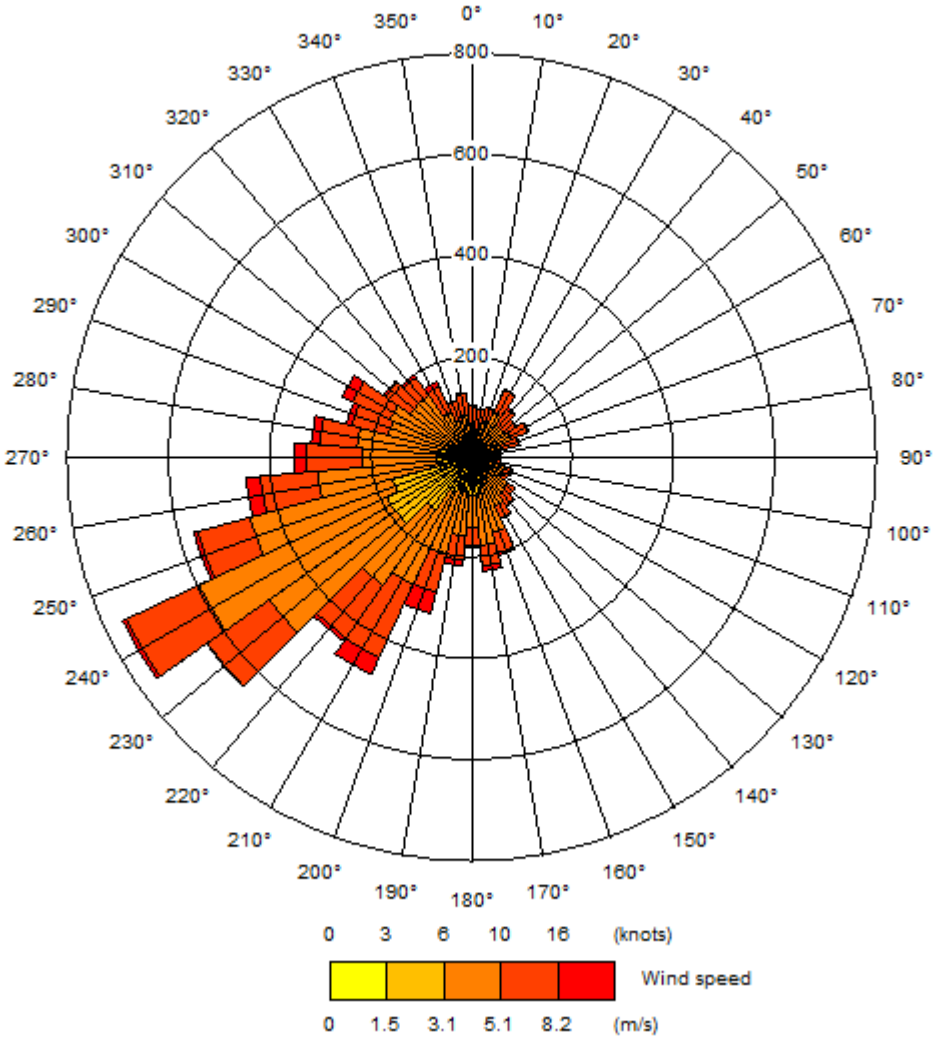
PURPOSE OF ISSUE SUITABLE FOR INFORMATION

STATUS S2

DRAWING NO. (PROJECT CODE-ORGINATOR-ZONE-LEVEL-TYPE-ROLE-NUMBER) 23880-HYD-XX-ZZ-DR-GE-1022

REVISION P03

Appendix F Wind Rose Data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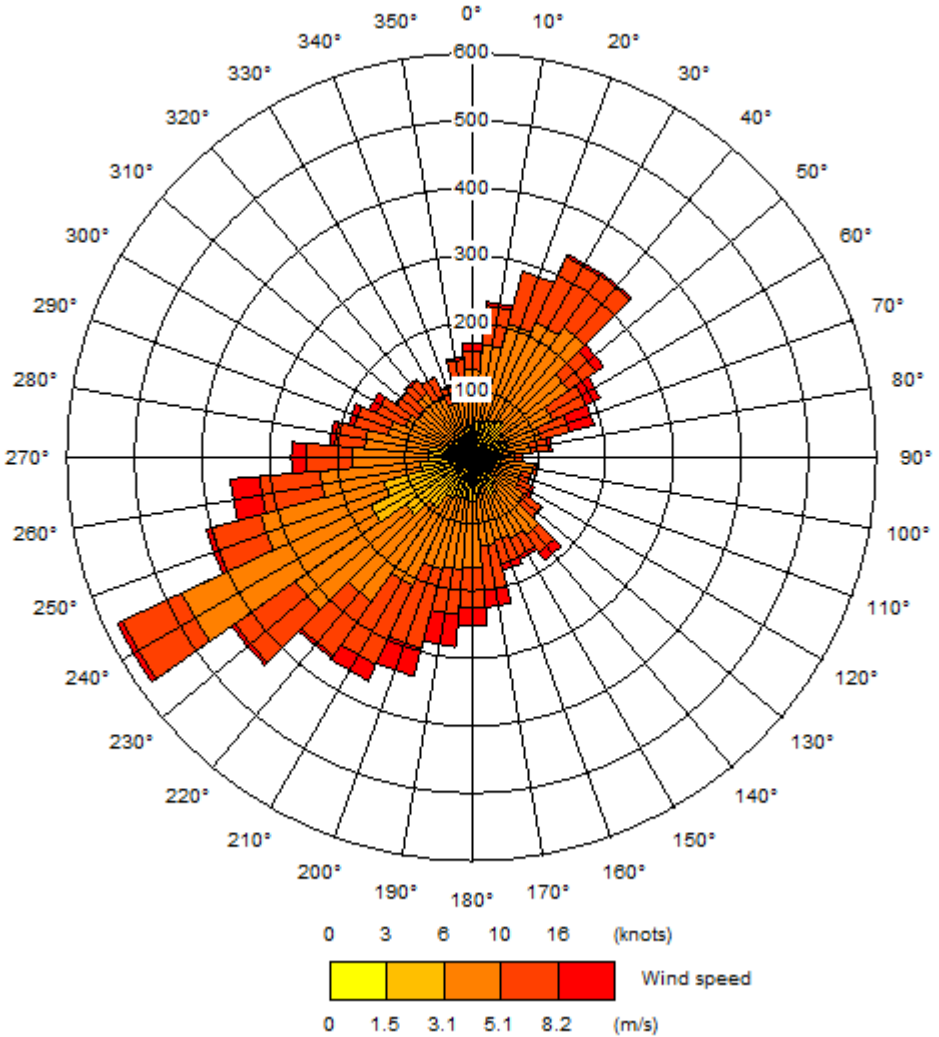
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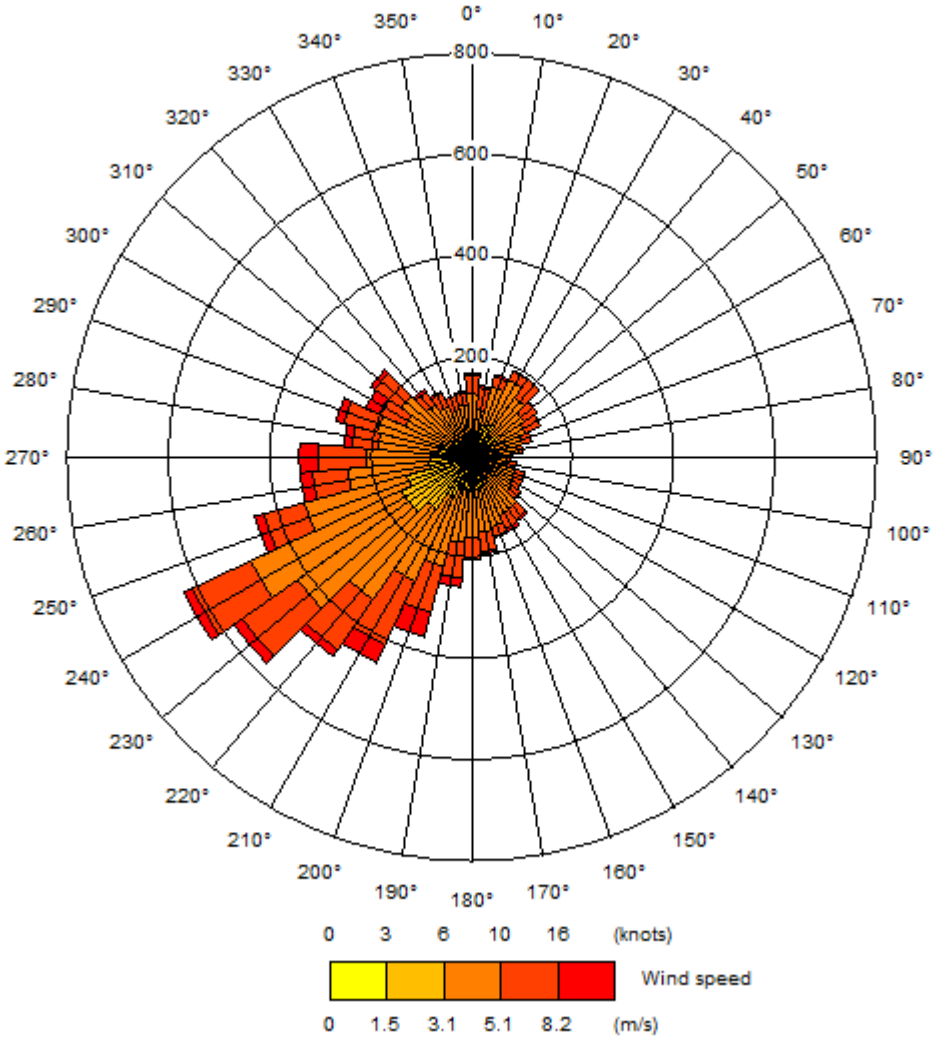
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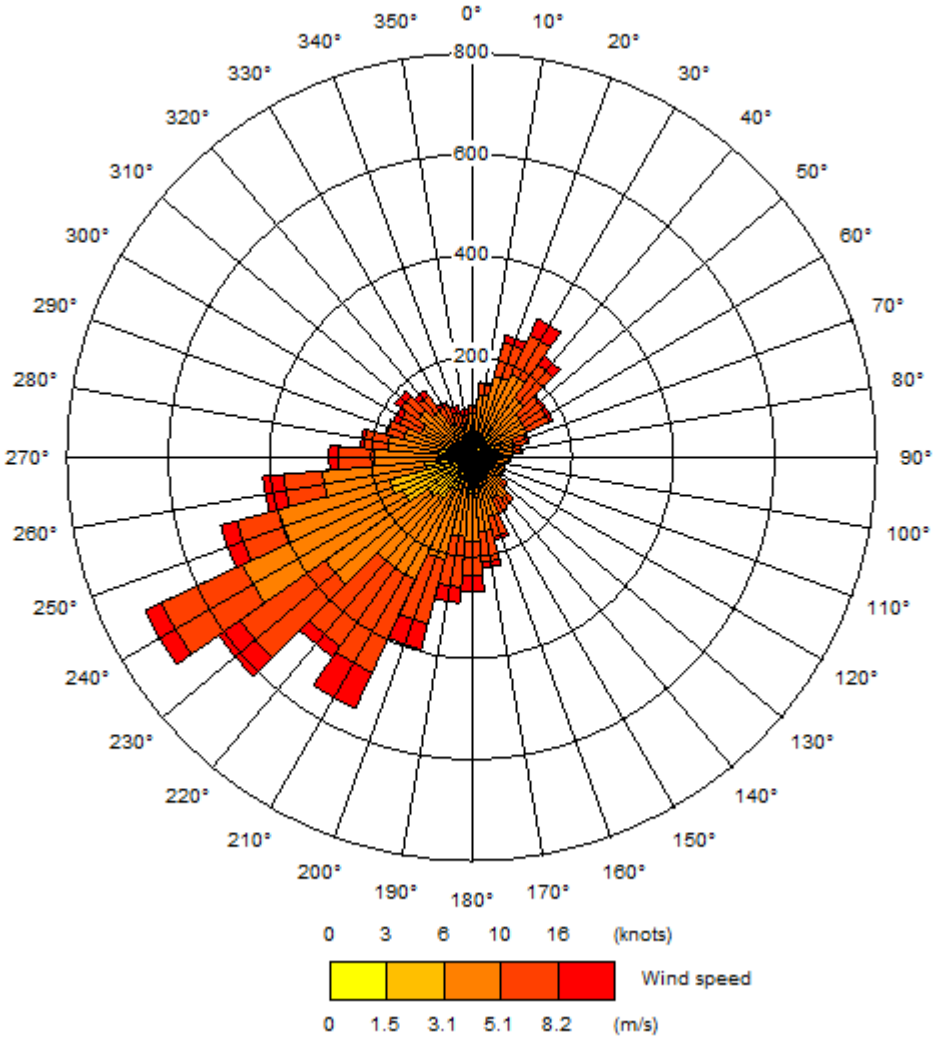
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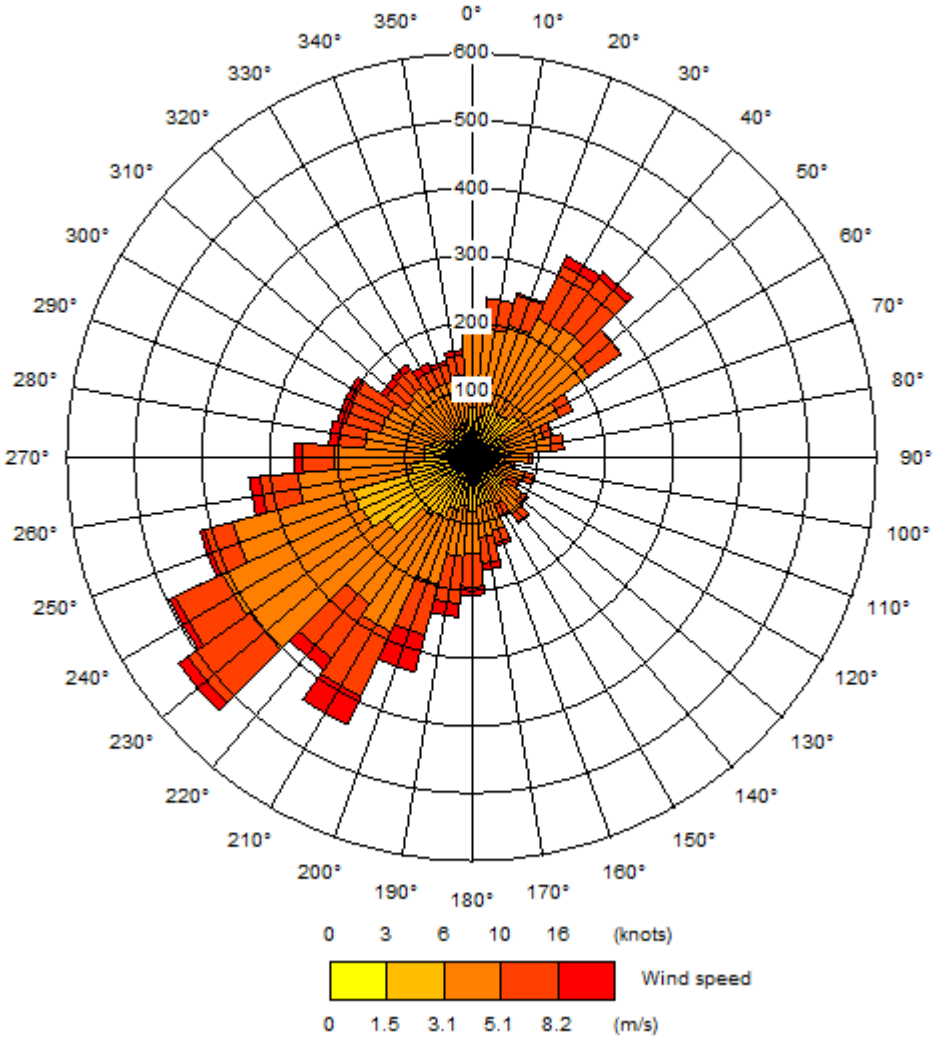
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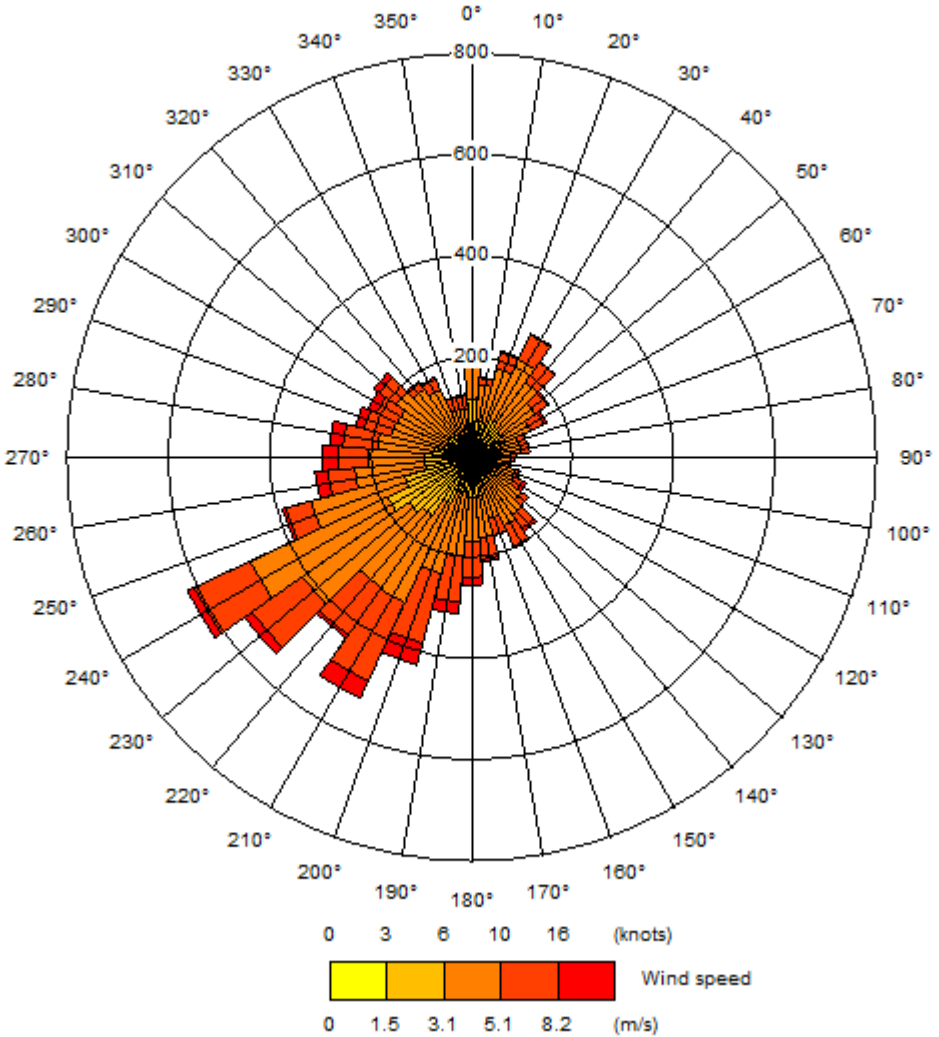
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